

Date Created: 16-JAN-2010 14:09:07

Logging Cable

| | |
|--------------------|-----------|
| Type: | 7-39P LXS |
| Serial Number: | 708273 |
| Length: | 12560 FT |
| <hr/> | |
| Conveyance Method: | Wireline |
| Rig Type: | LAND |

| | |
|-----------------------------|-----------------------|
| Log Sequence: | First Log In the Well |
| Rig Up Length At Surface: | 0.00 FT |
| Rig Up Length At Bottom: | 0.00 FT |
| Rig Up Length Correction: | 0.00 FT |
| Stretch Correction: | 7.50 FT |
| Tool Zero Check At Surface: | 0.00 FT |

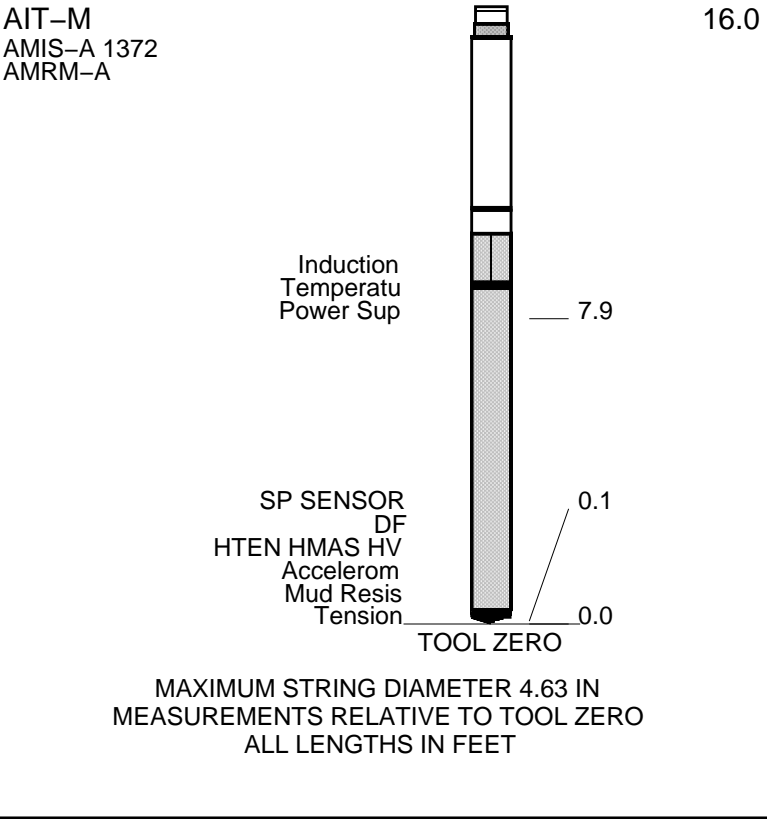
1. All Schlumberger depth policy procedures applied
2. This is the primary depth reference
- 3.
- 4.
- 5.
- 6.

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

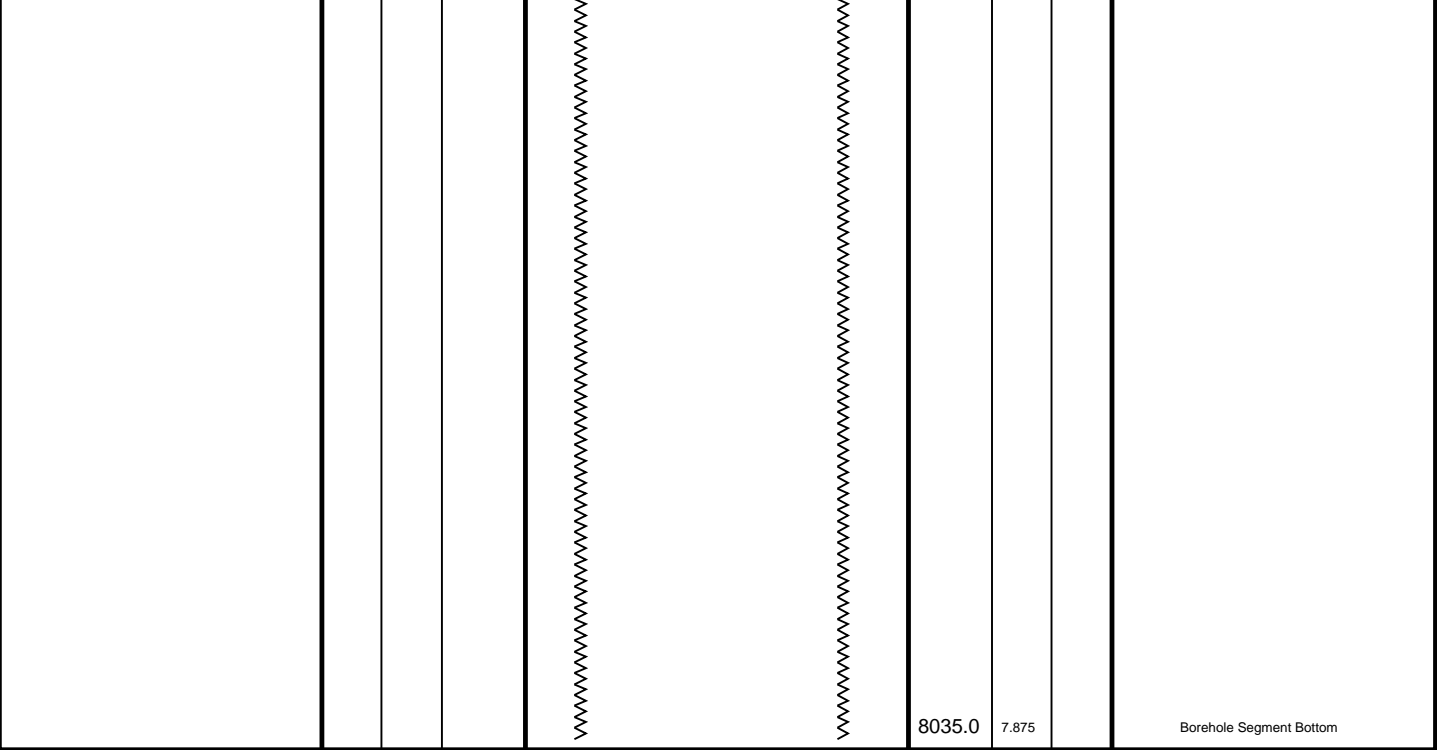
OTHER SERVICES2
OS1:
OS2:
OS3:
OS4:
OS5:

REMARKS: RUN NUMBER 2

1. This is the first run in hole.
2. Tool run as per tool sketch.
3. Matrix Changes are as noted on porosity logs.
4. Tool run with minimum jewelry.
5. IND data is from the downlog, as the AIT failed upon hitting TD.



| Production String | (in) | | (ft) | Well Schematic | (ft) | (in) | | Casing String |
|-------------------|------|----|------|----------------|-------|-------|----|------------------|
| | OD | ID | MD | | MD | OD | ID | |
| | | | | | 0.0 | 8.625 | | Casing String |
| | | | | | 909.0 | 8.625 | | Casing Shoe |
| | | | | | 909.0 | 7.875 | | Borehole Segment |



8035.0 7.875 Borehole Segment Bottom

All depths are driller's depths

Schlumberger

UPPER MICROLOG 5" = 100'

MAXIS Field Log

Input DLIS Files

DEFAULT AIT_TLD_MCFL_CNL_028PUP FN:22 PRODUCER 16-Jan-2010 16:01 8026.5 FT 615.5 FT

Integrated Hole/Cement Volume Summary

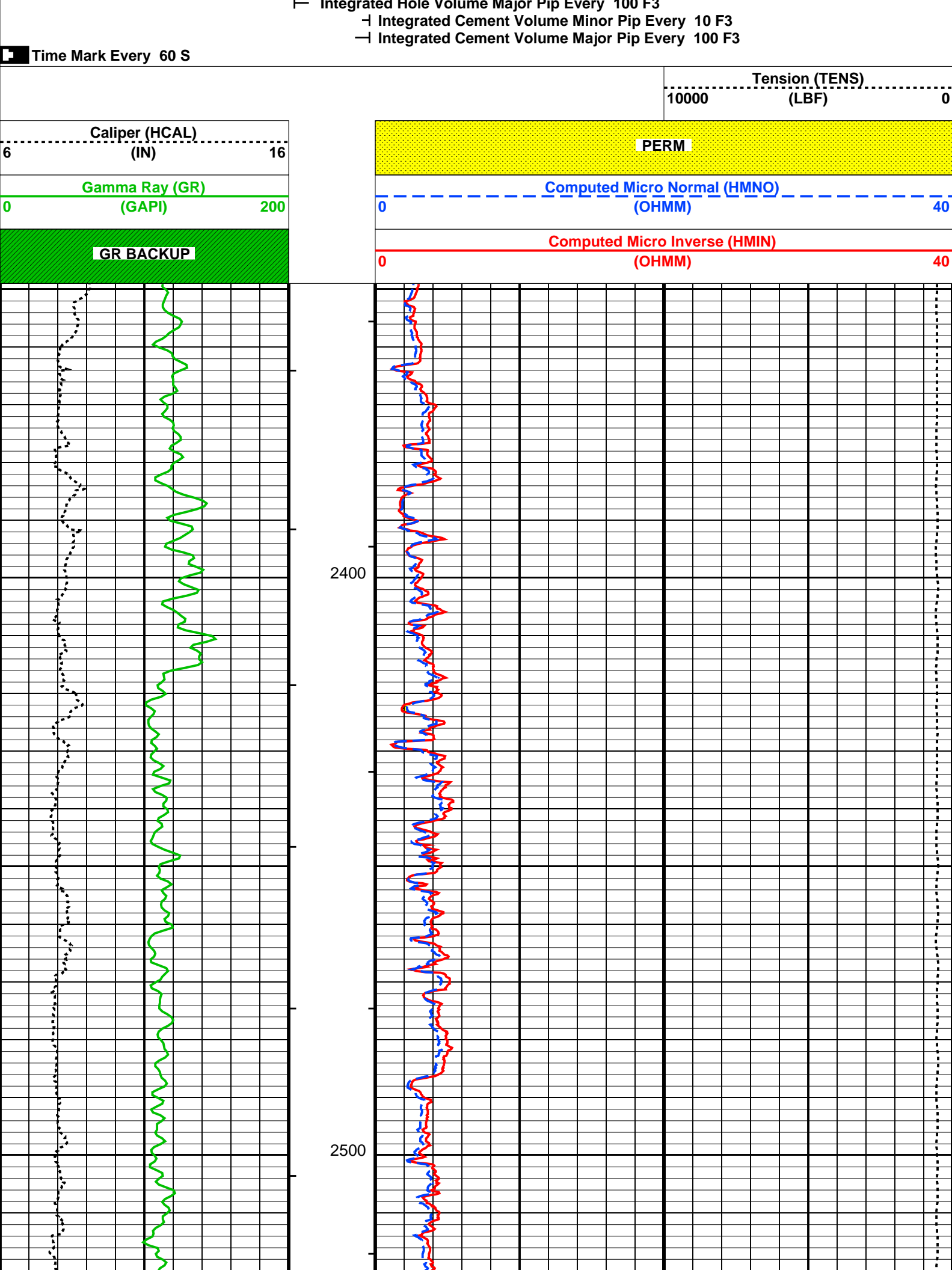
Hole Volume = 987.85 ft3
Cement Volume = 683.52 ft3 (assuming 4.50 in casing O.D.)
Computed from 5099.5 ft to 2344.5 ft

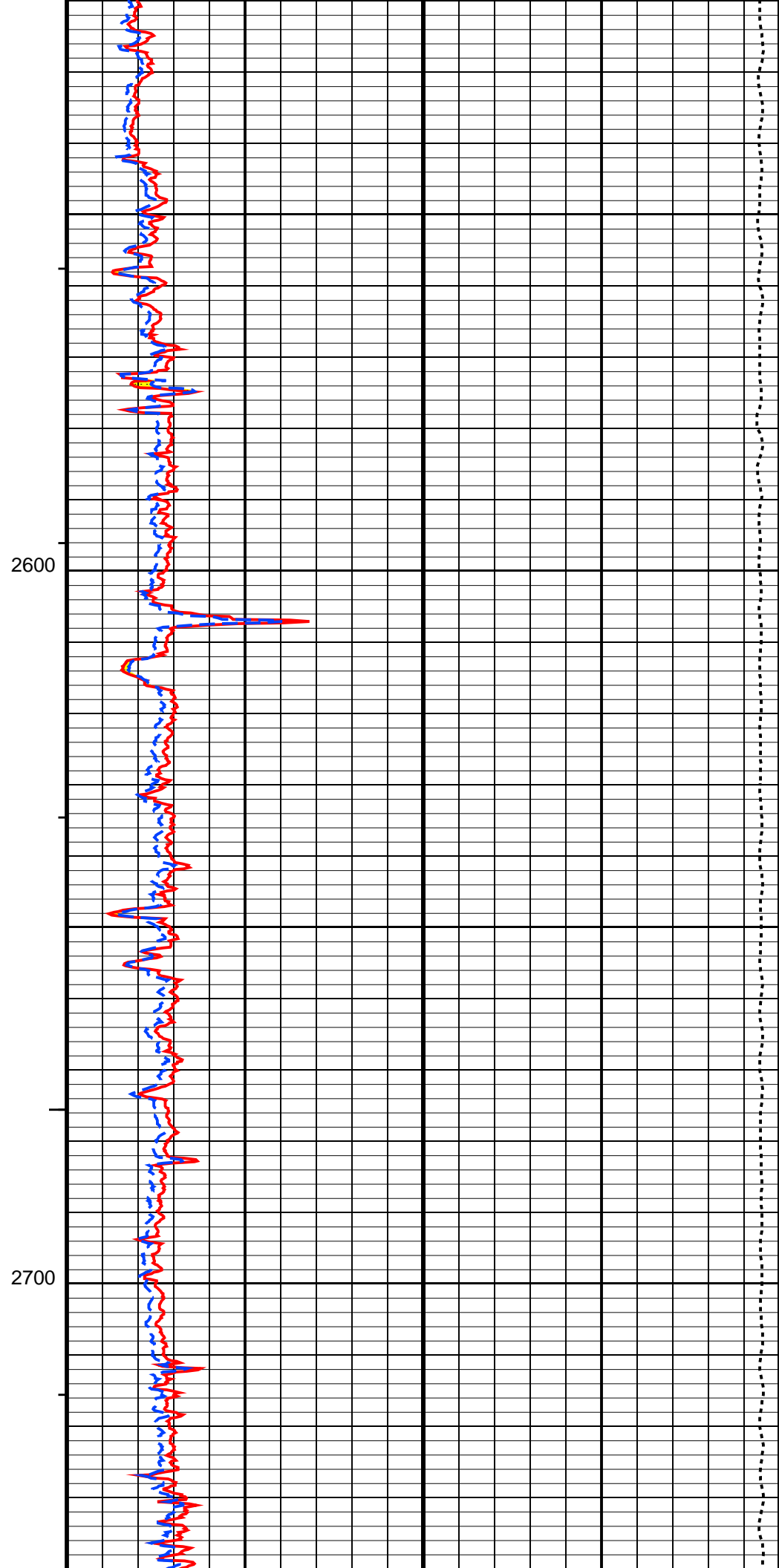
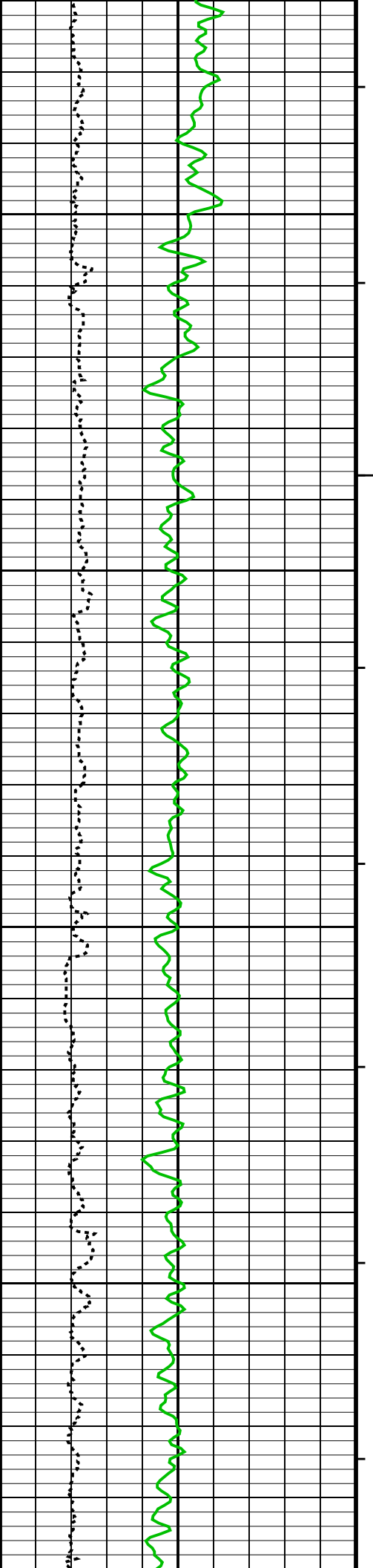
OP System Version: 17C0-154

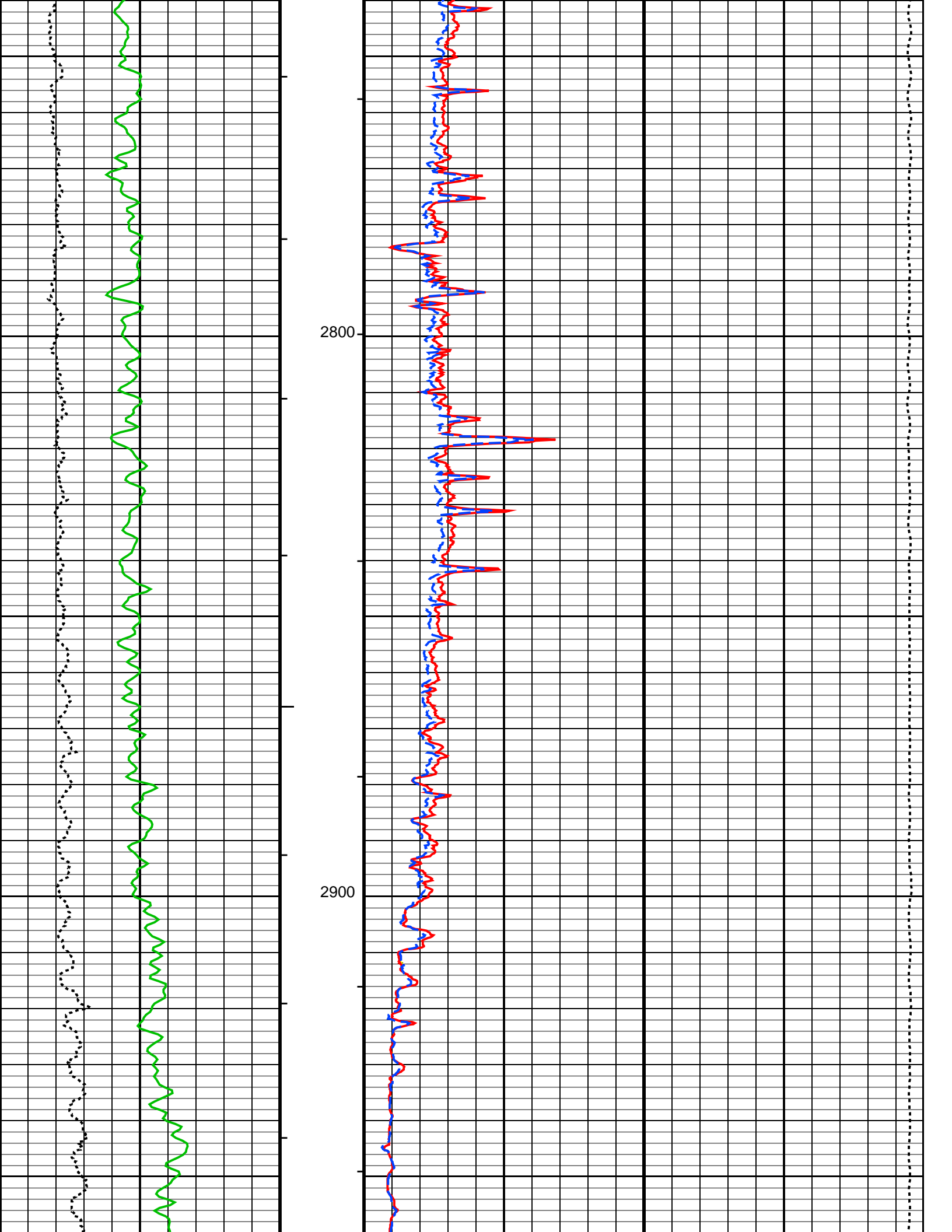
AITM 17C0-154 HILTD 17C0-154
DTCH 17C0-154

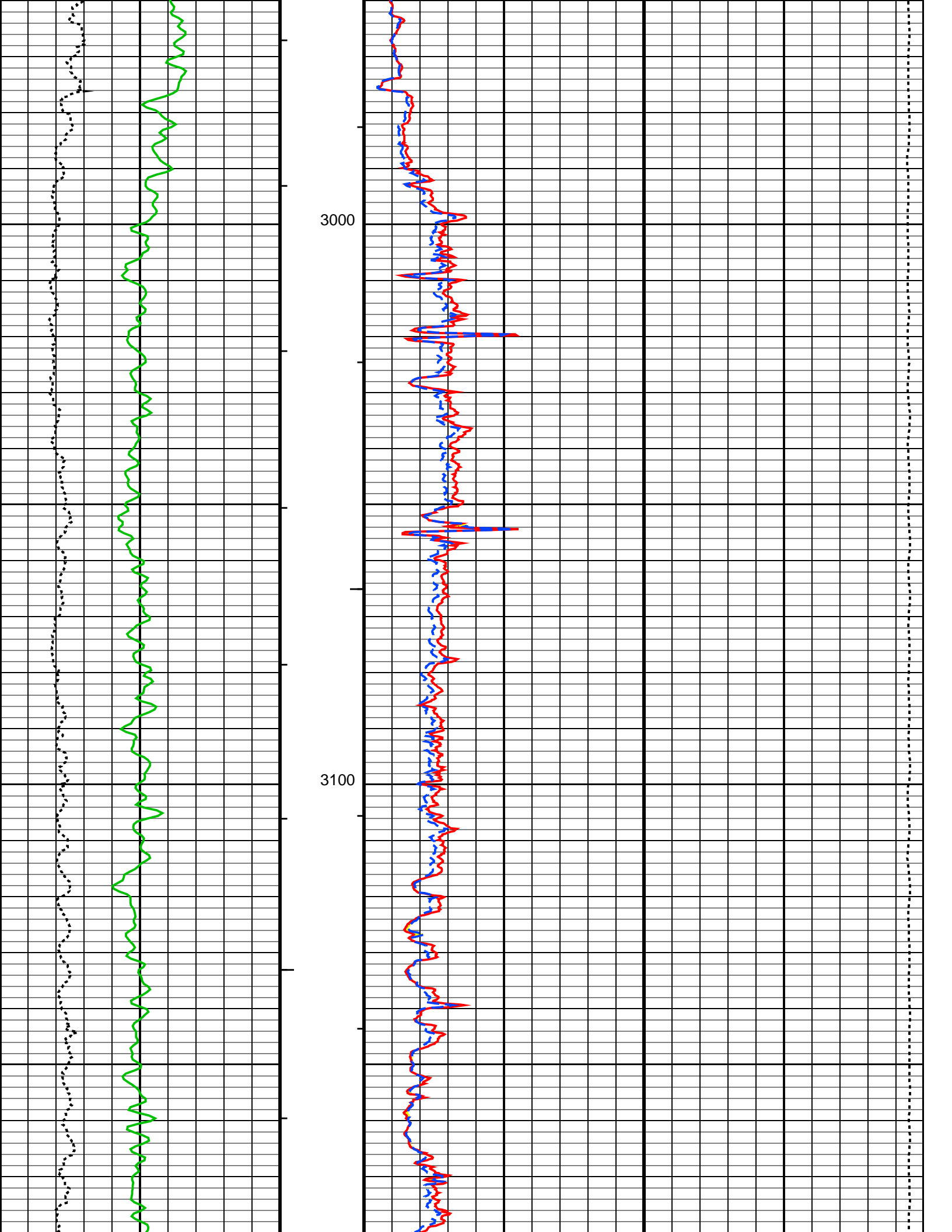
PIP SUMMARY

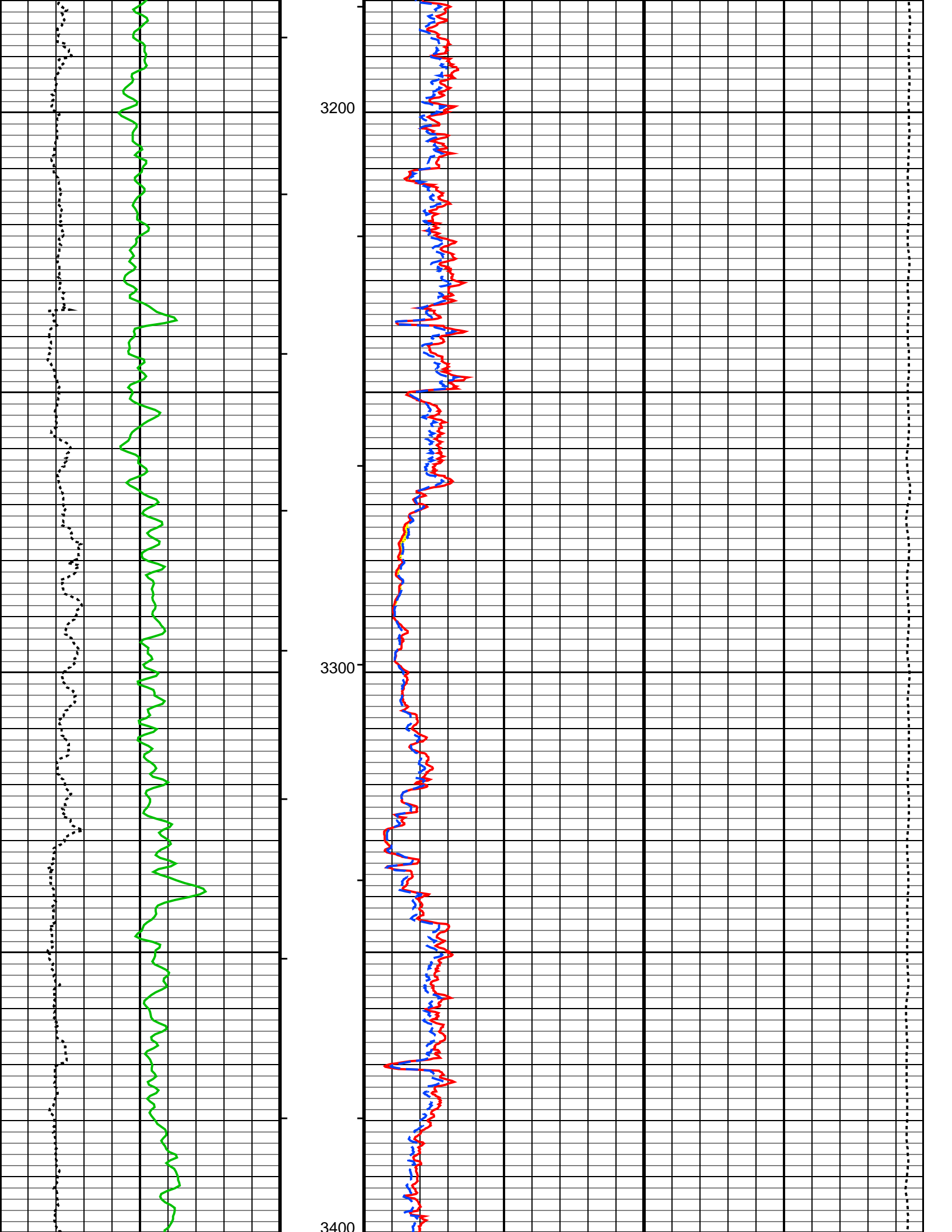
Integrated Hole Volume Minor Pip Every 10 F3

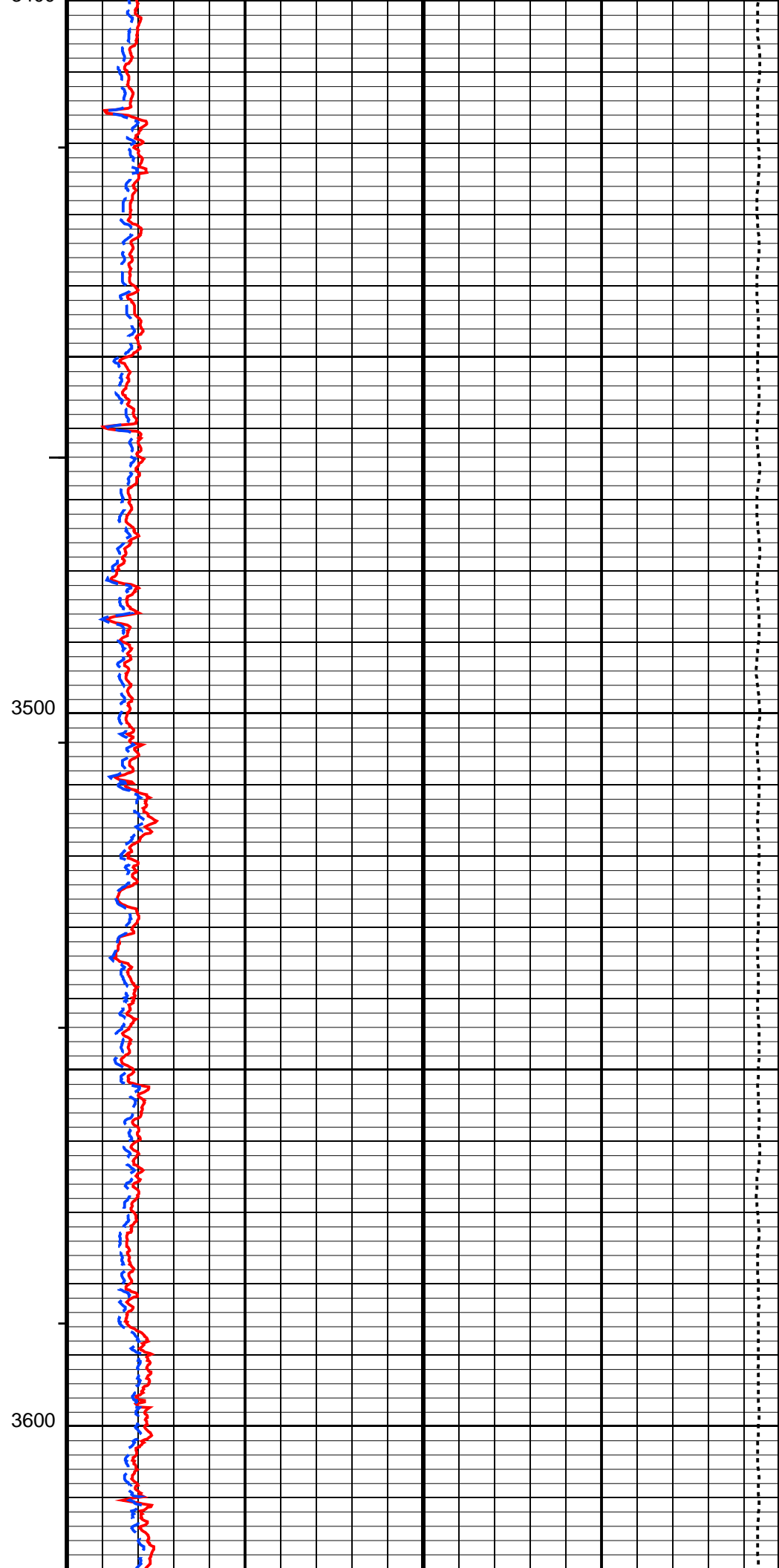
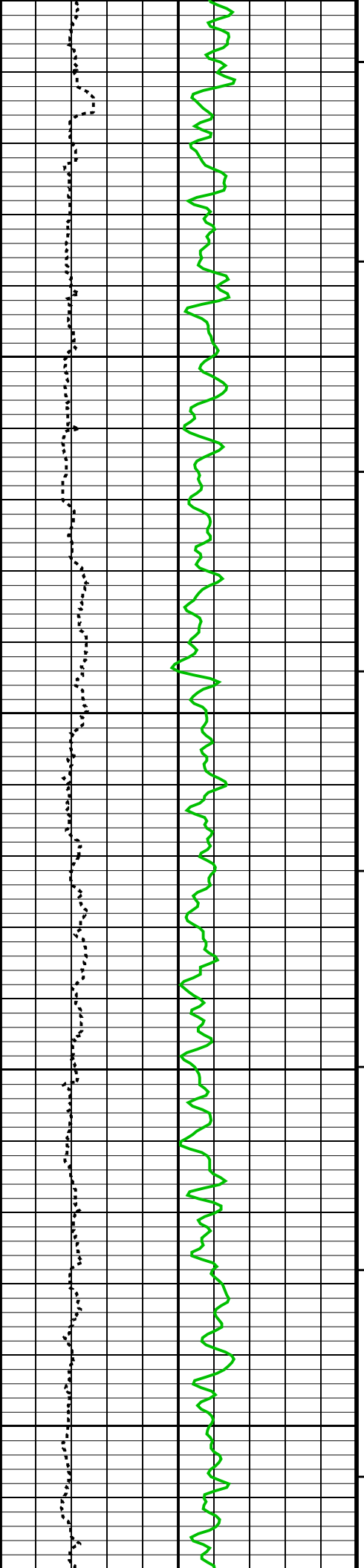


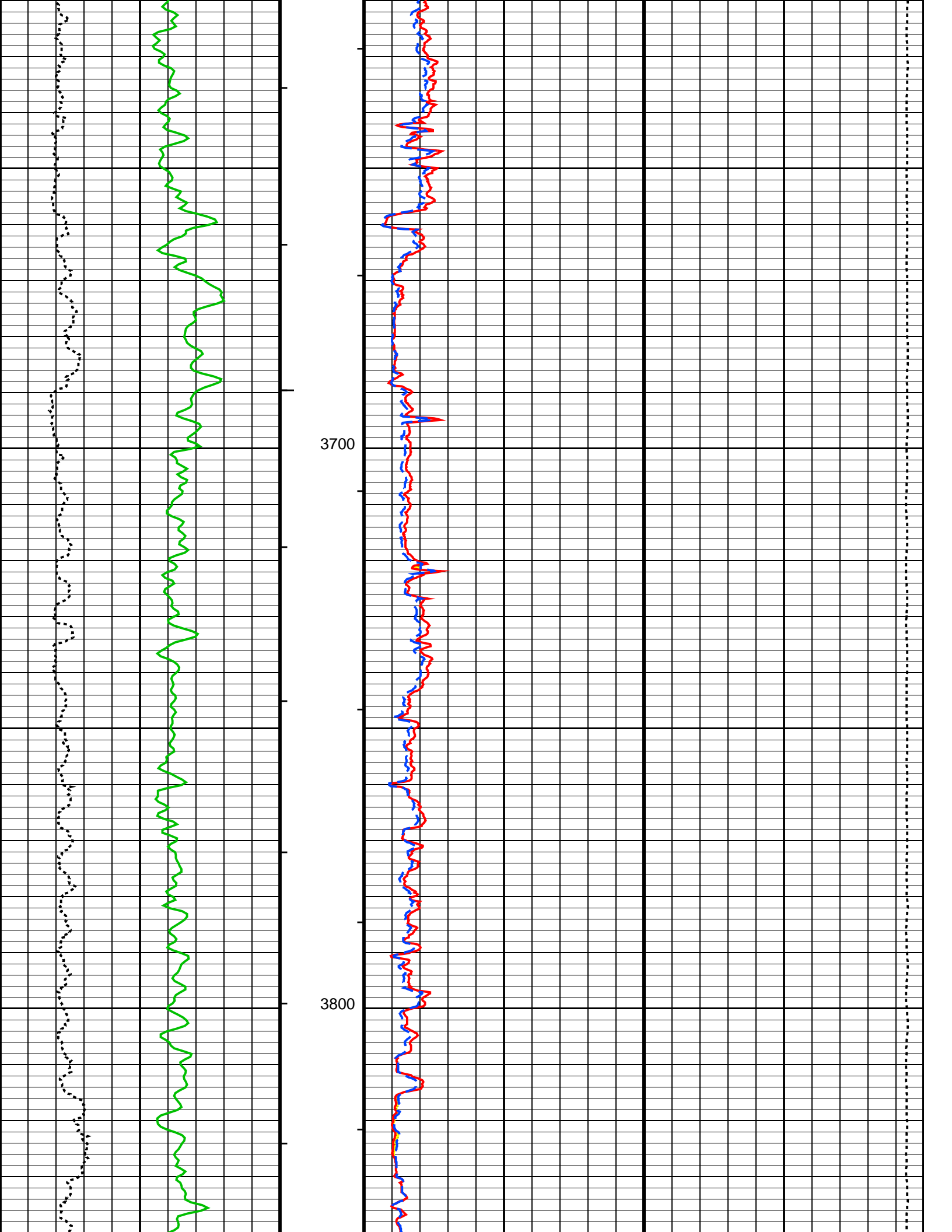


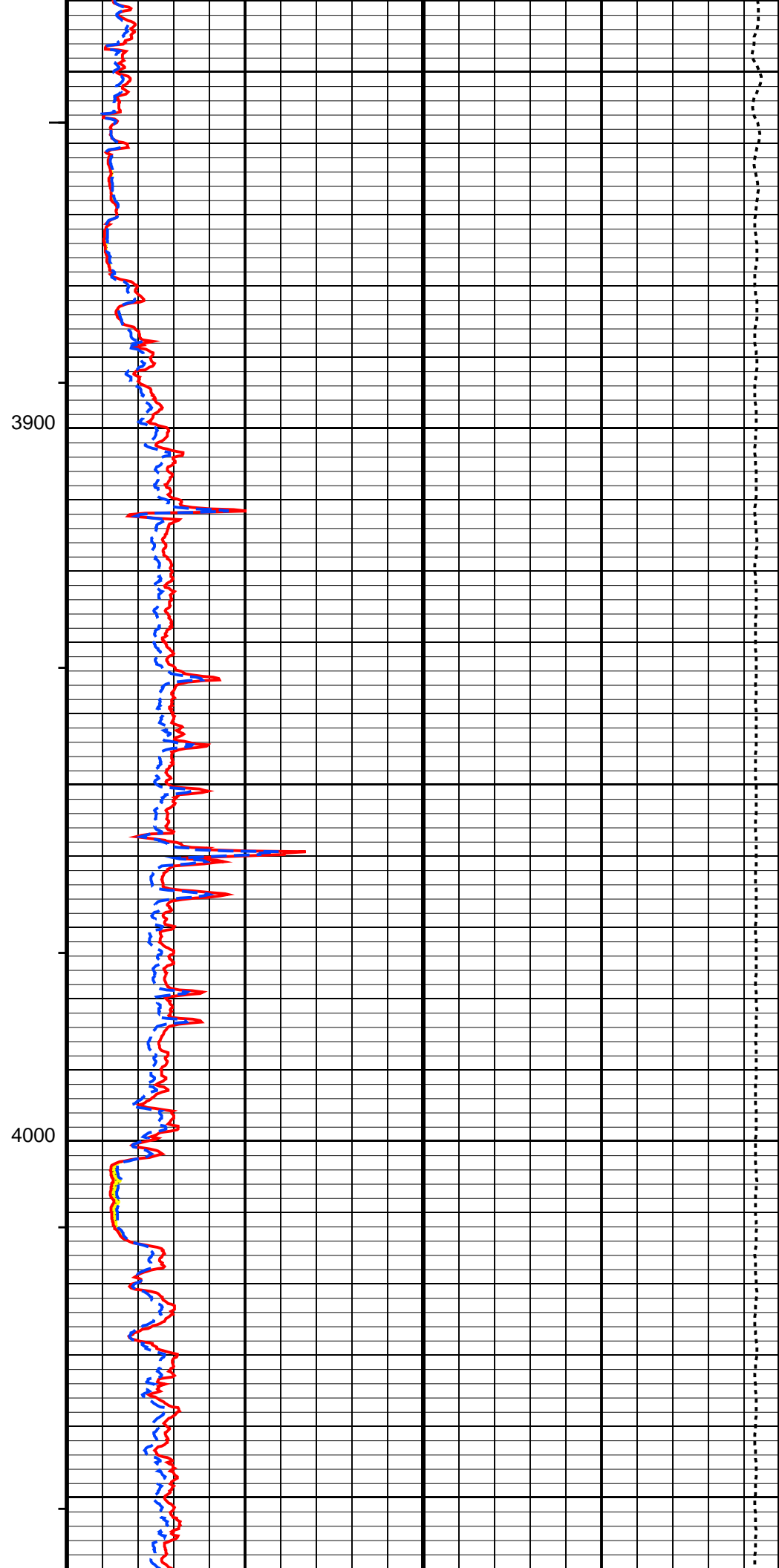
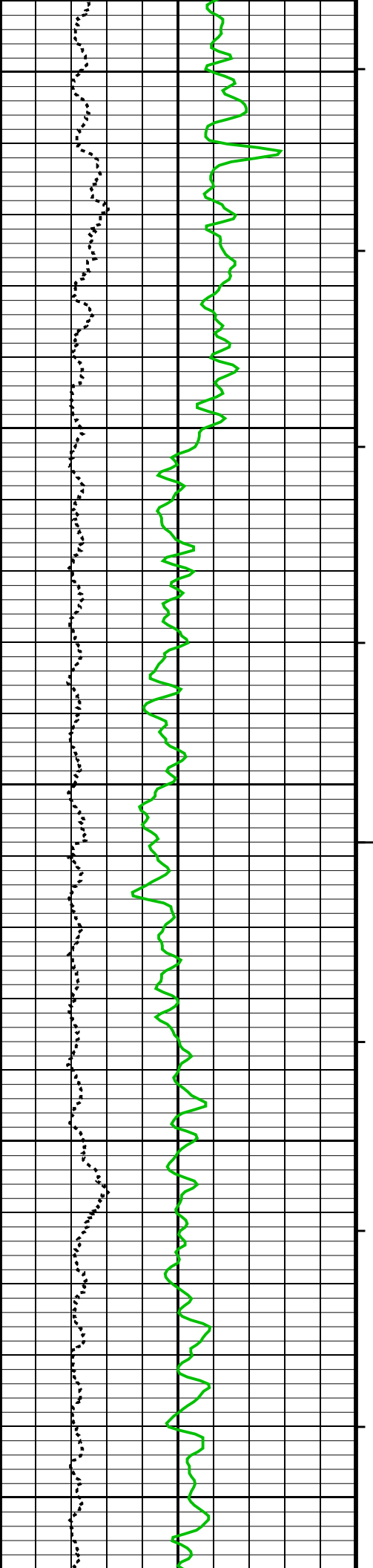


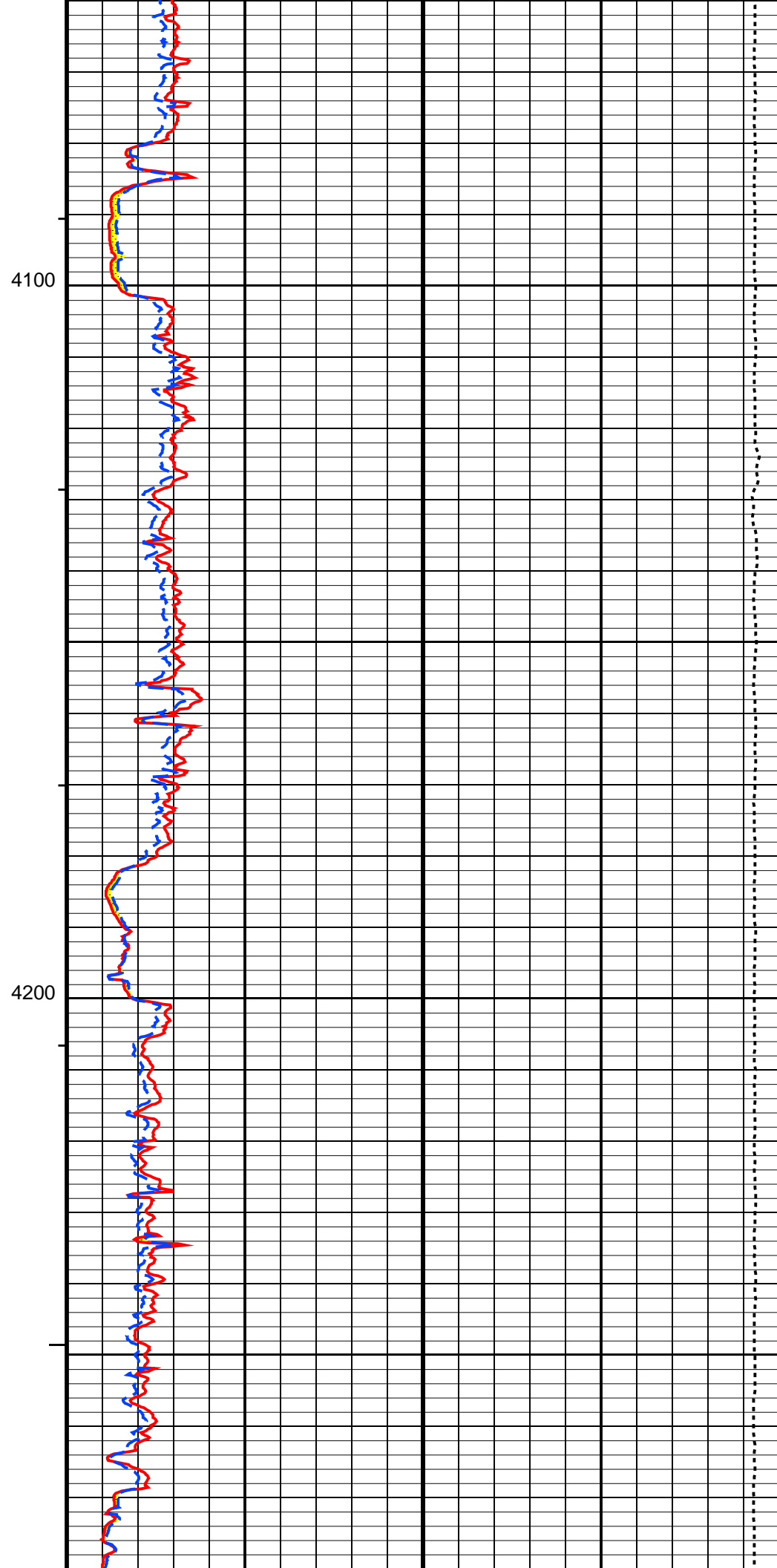
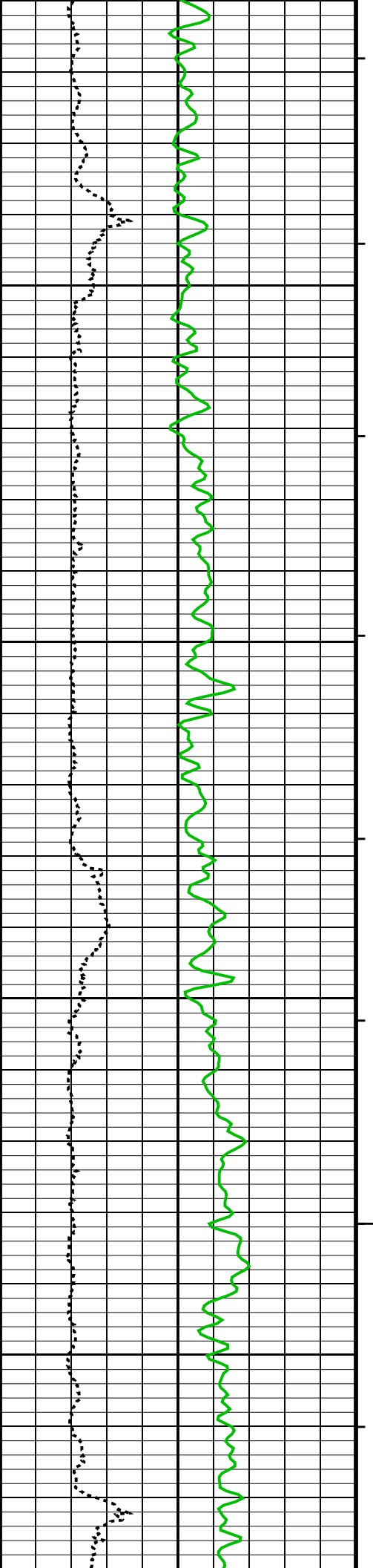


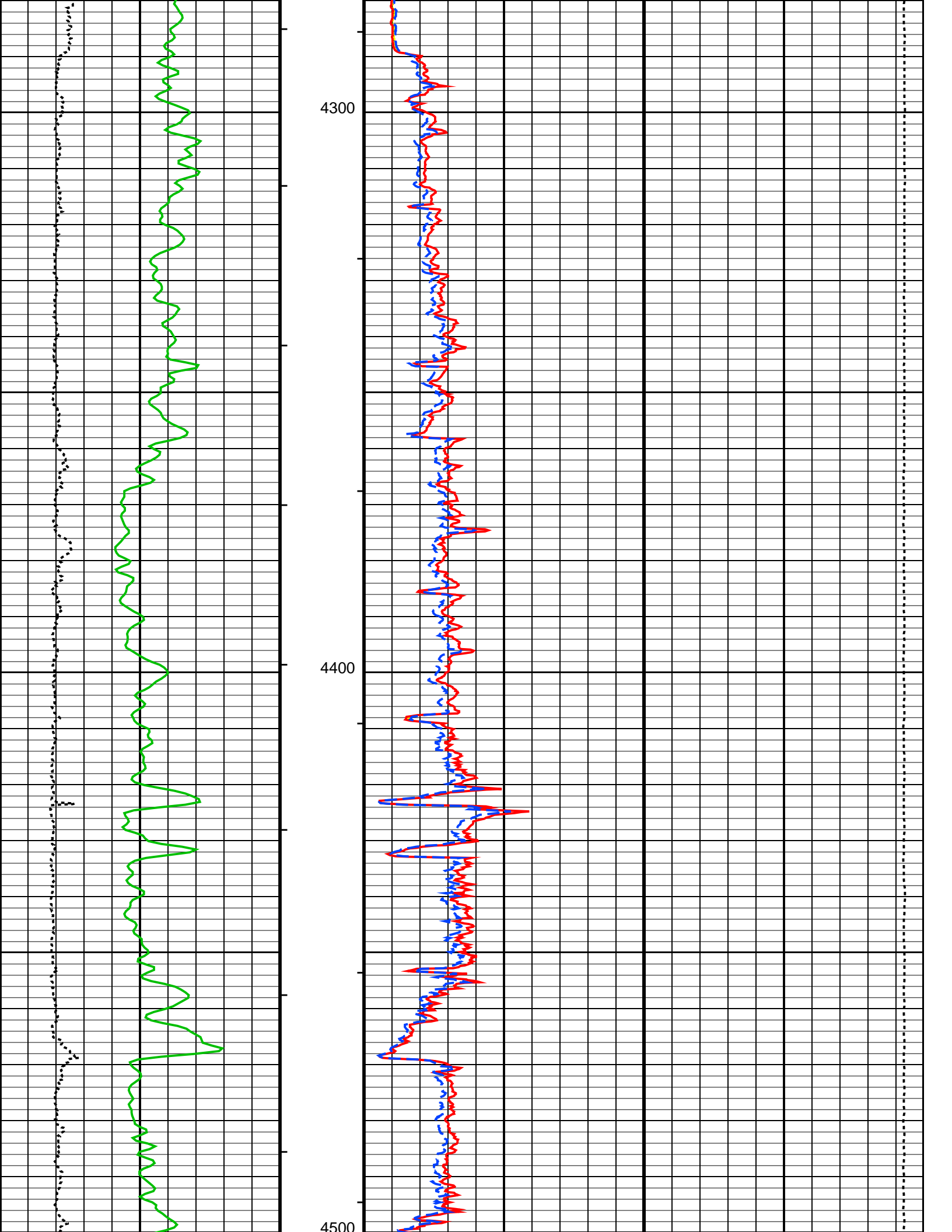


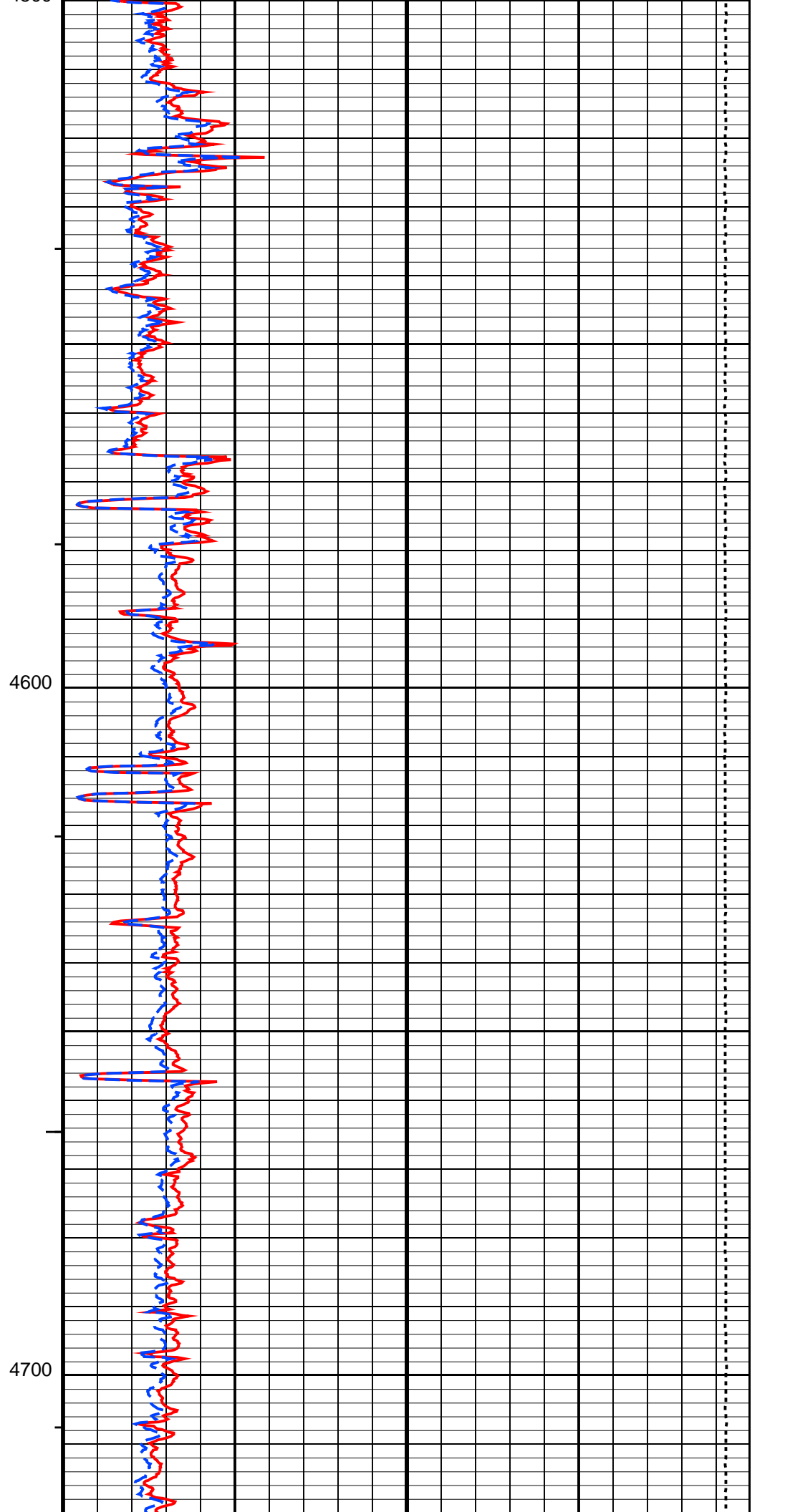
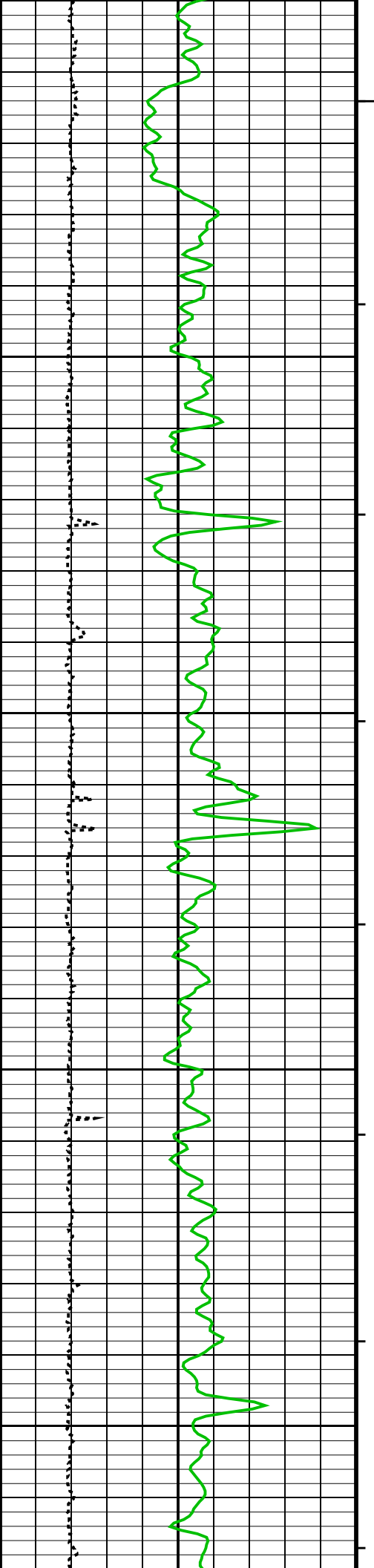


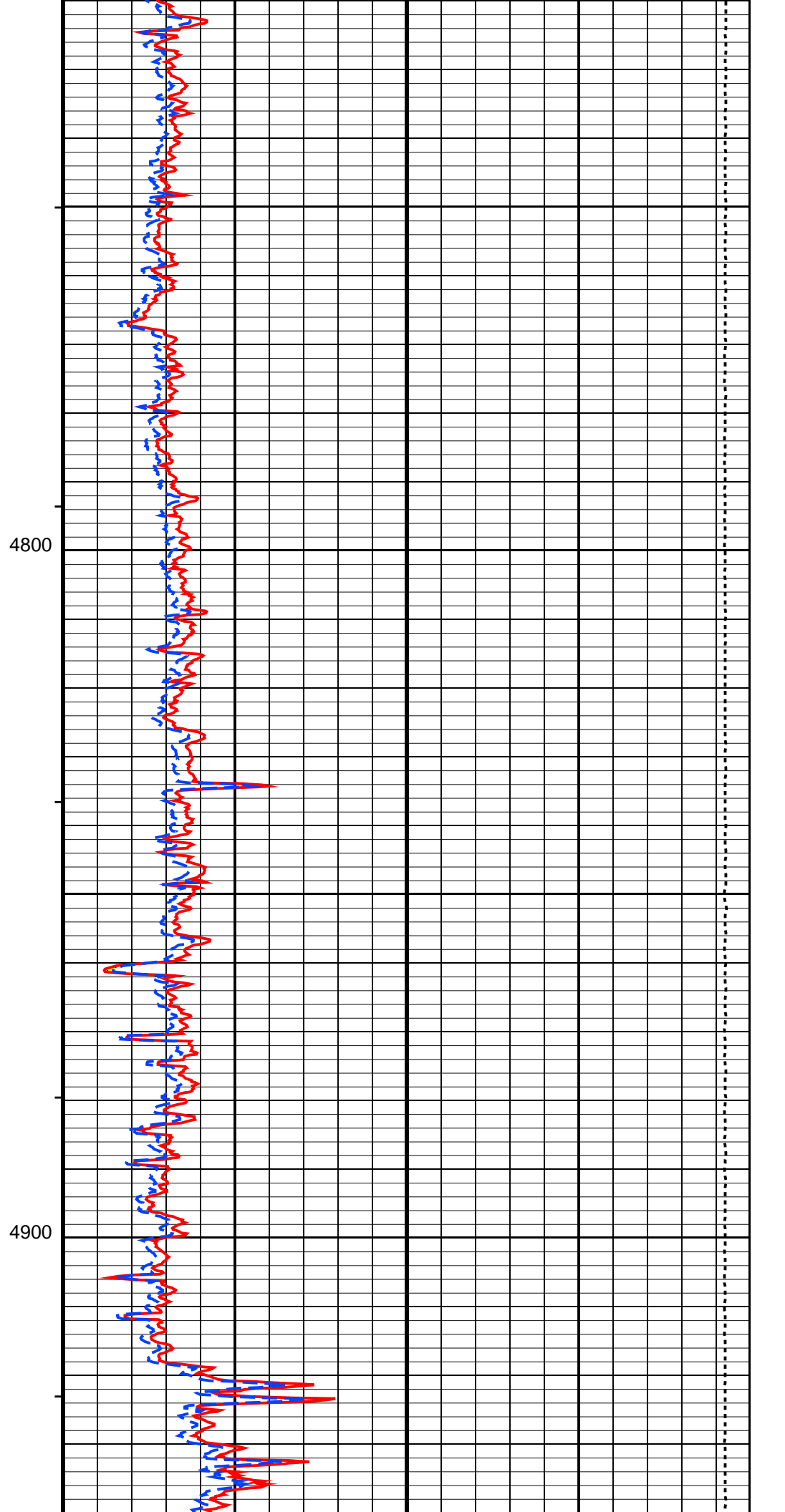
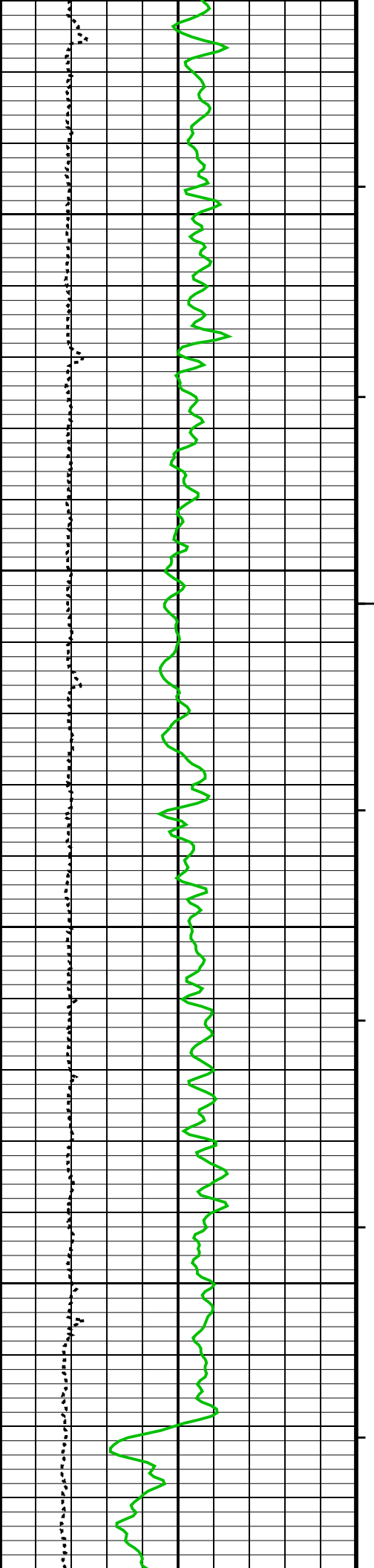


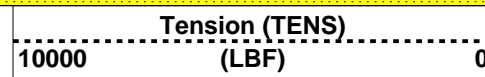
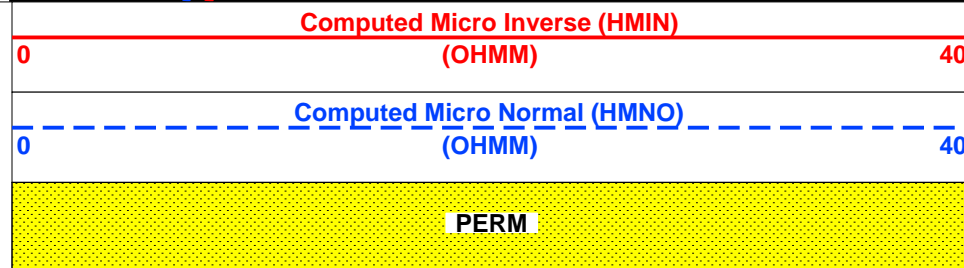
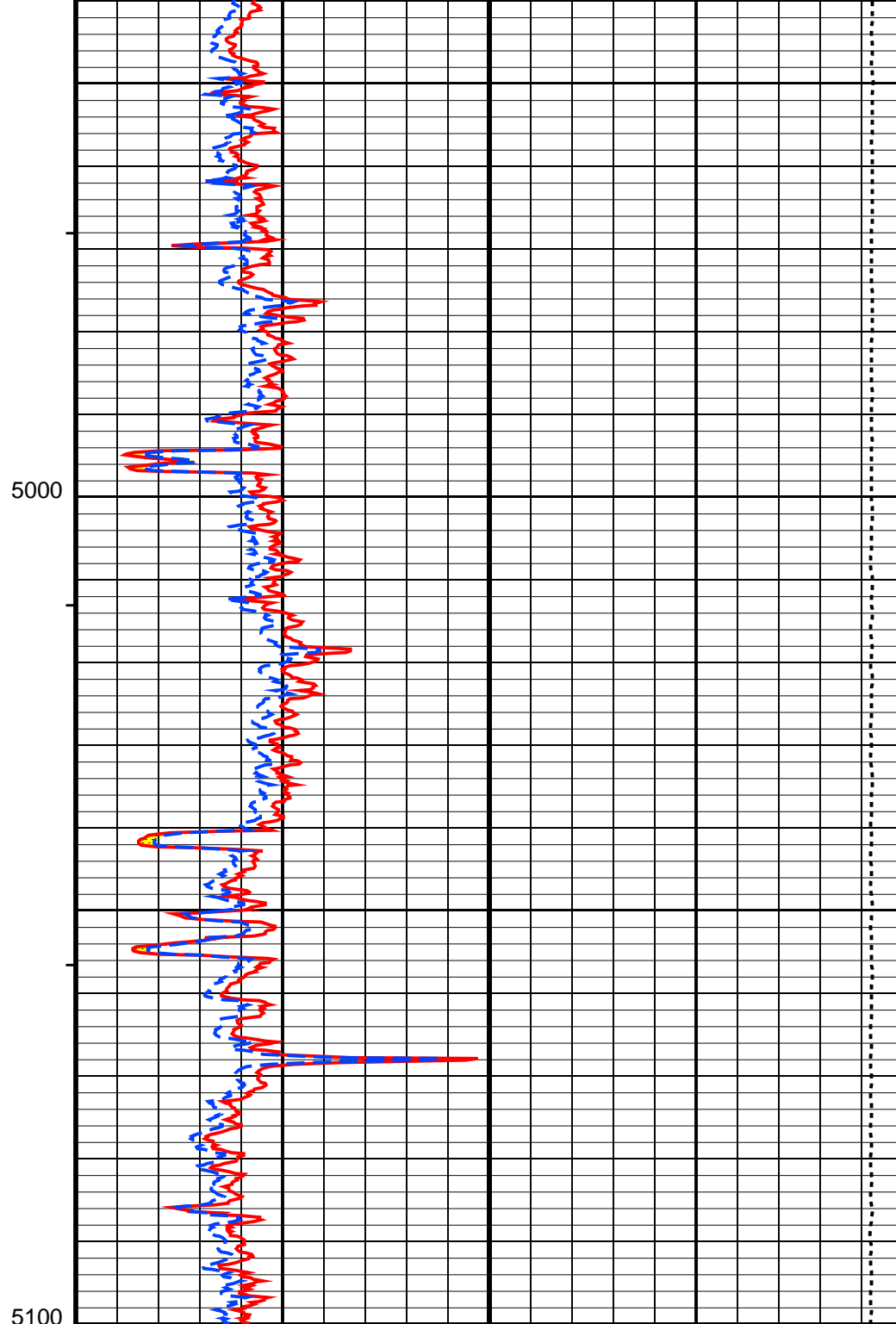
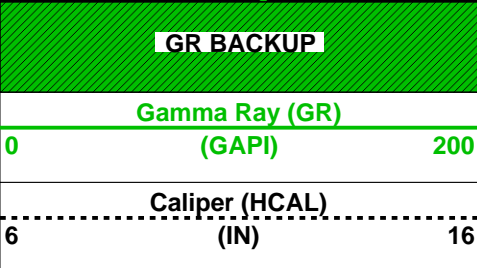
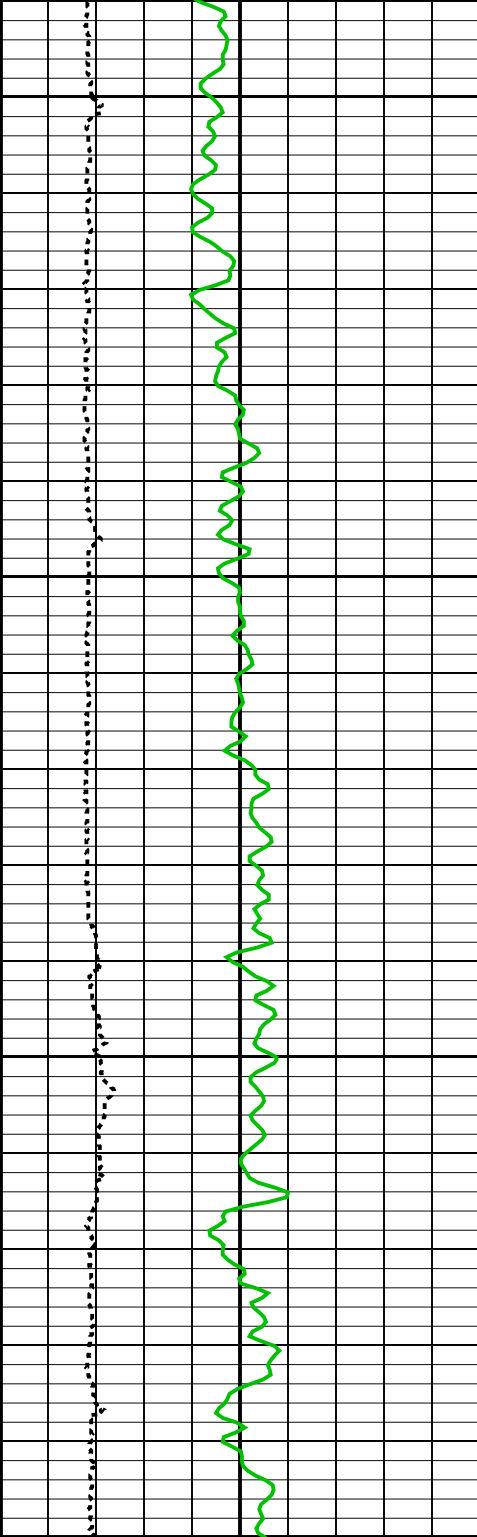












PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

Parameters

| DLIS Name | Description | Value |
|-----------|-------------|-------|
|-----------|-------------|-------|

| | | |
|------|--|----------|
| MPOF | HILTB-FTB: High resolution Integrated Logging Tool-DTS MCFL Processing Operation Mode | ON |
| BS | System and Miscellaneous Bit Size | 7.875 in |

| | | |
|-------------------|-----------------------------|--|
| Format: UPPER_MLT | Vertical Scale: 5" per 100' | Graphics File Created: 16-Jan-2010 16:07 |
|-------------------|-----------------------------|--|

OP System Version: 17C0-154

| | | | |
|------|----------|-------|----------|
| AITM | 17C0-154 | HILTD | 17C0-154 |
| DTCH | 17C0-154 | | |

Input DLIS Files

| | | | | | | |
|---------|-------------------------|-------|----------|-------------------|-----------|----------|
| DEFAULT | AIT_TLD_MCFL_CNL_028PUP | FN:22 | PRODUCER | 16-Jan-2010 16:01 | 8026.5 FT | 615.5 FT |
|---------|-------------------------|-------|----------|-------------------|-----------|----------|

Schlumberger

MAIN MICROLOG 5" = 100'

MAXIS Field Log

Input DLIS Files

| | | | | | | |
|---------|---------------|------|----------|-------------------|-----------|----------|
| DEFAULT | MERGE_AIT_027 | FN:1 | PRODUCER | 16-Jan-2010 15:57 | 8026.5 FT | 615.0 FT |
|---------|---------------|------|----------|-------------------|-----------|----------|

Output DLIS Files

| | | | | |
|---------|-------------------------|-------|----------|-------------------|
| DEFAULT | AIT_TLD_MCFL_CNL_028PUP | FN:22 | PRODUCER | 16-Jan-2010 16:01 |
|---------|-------------------------|-------|----------|-------------------|

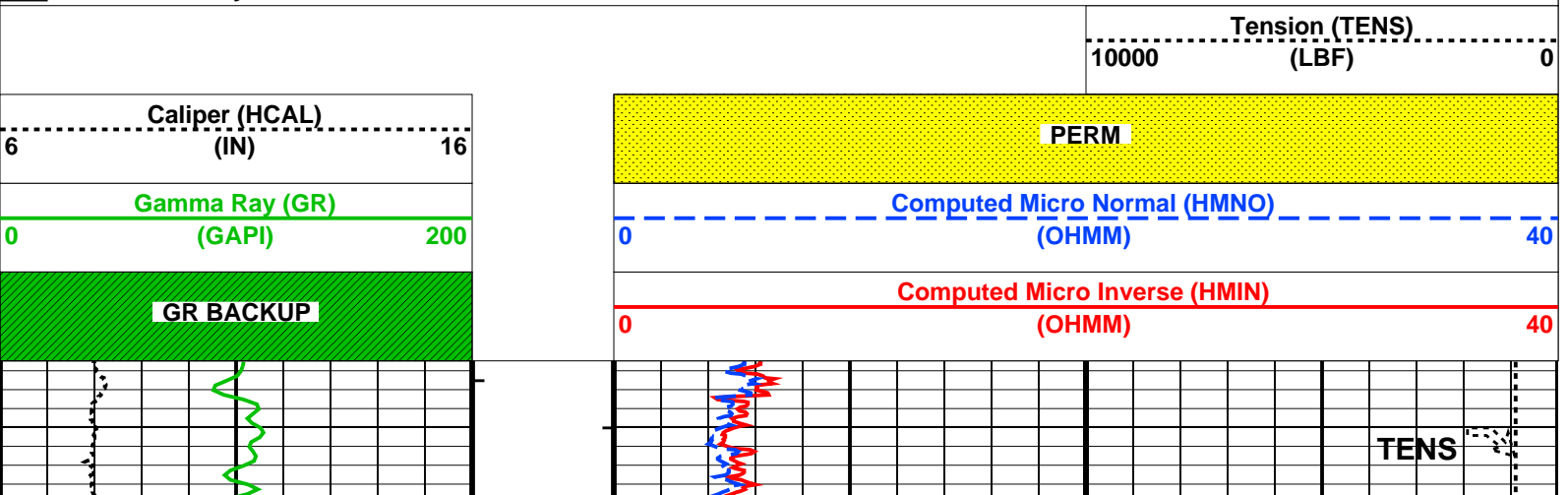
OP System Version: 17C0-154

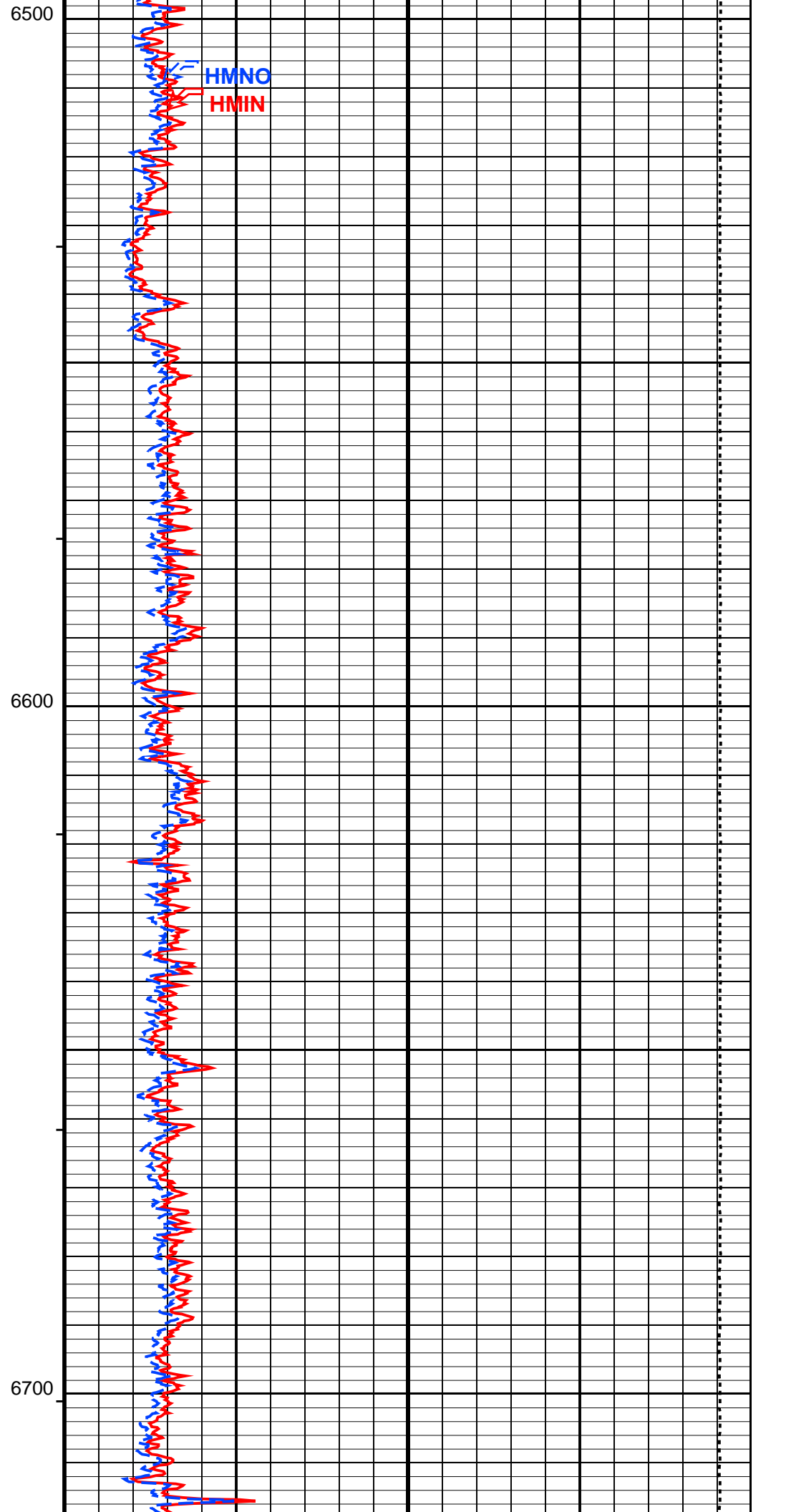
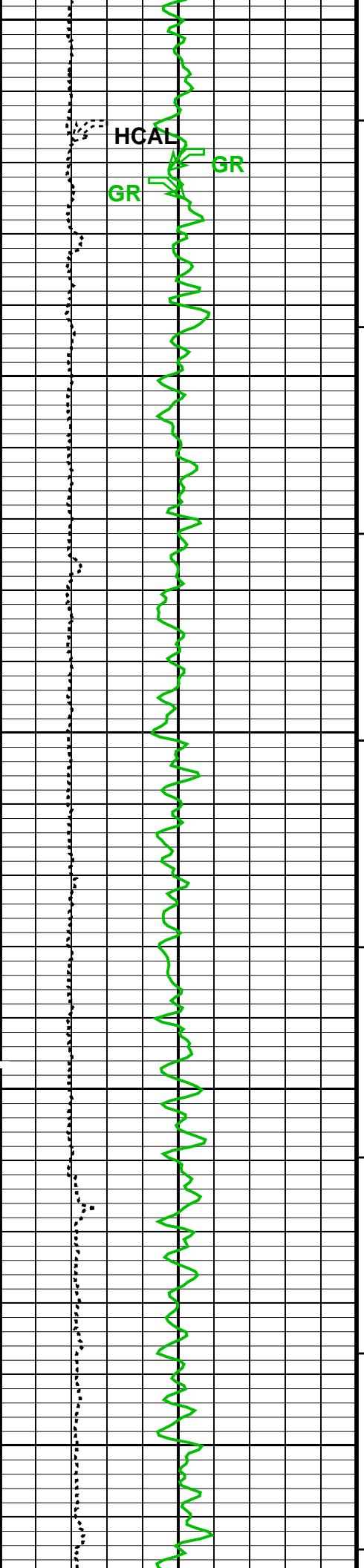
| | | | |
|-------|----------|-----------|----------|
| AIT-M | 17C0-154 | HILTB-FTB | 17C0-154 |
| DTC-H | 17C0-154 | | |

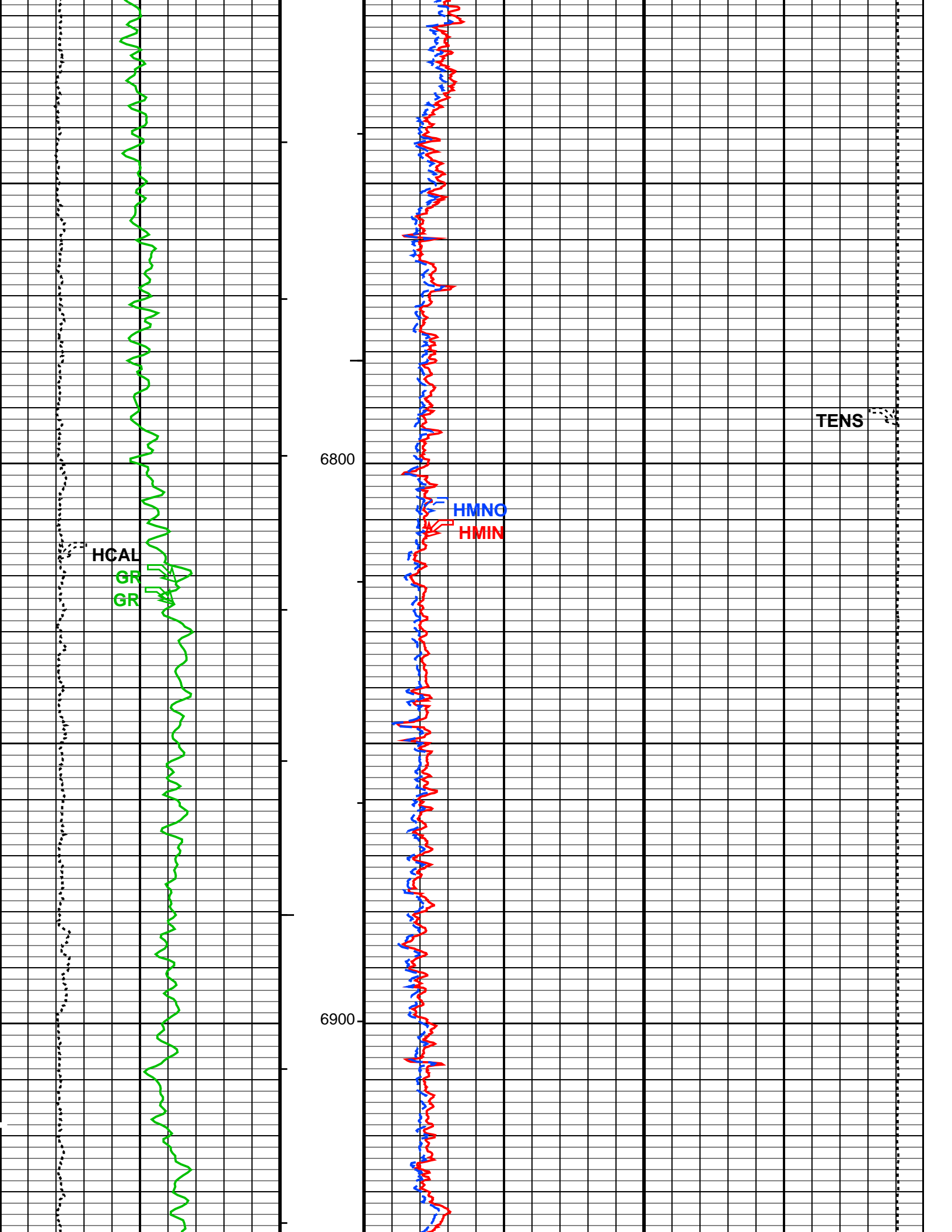
PIP SUMMARY

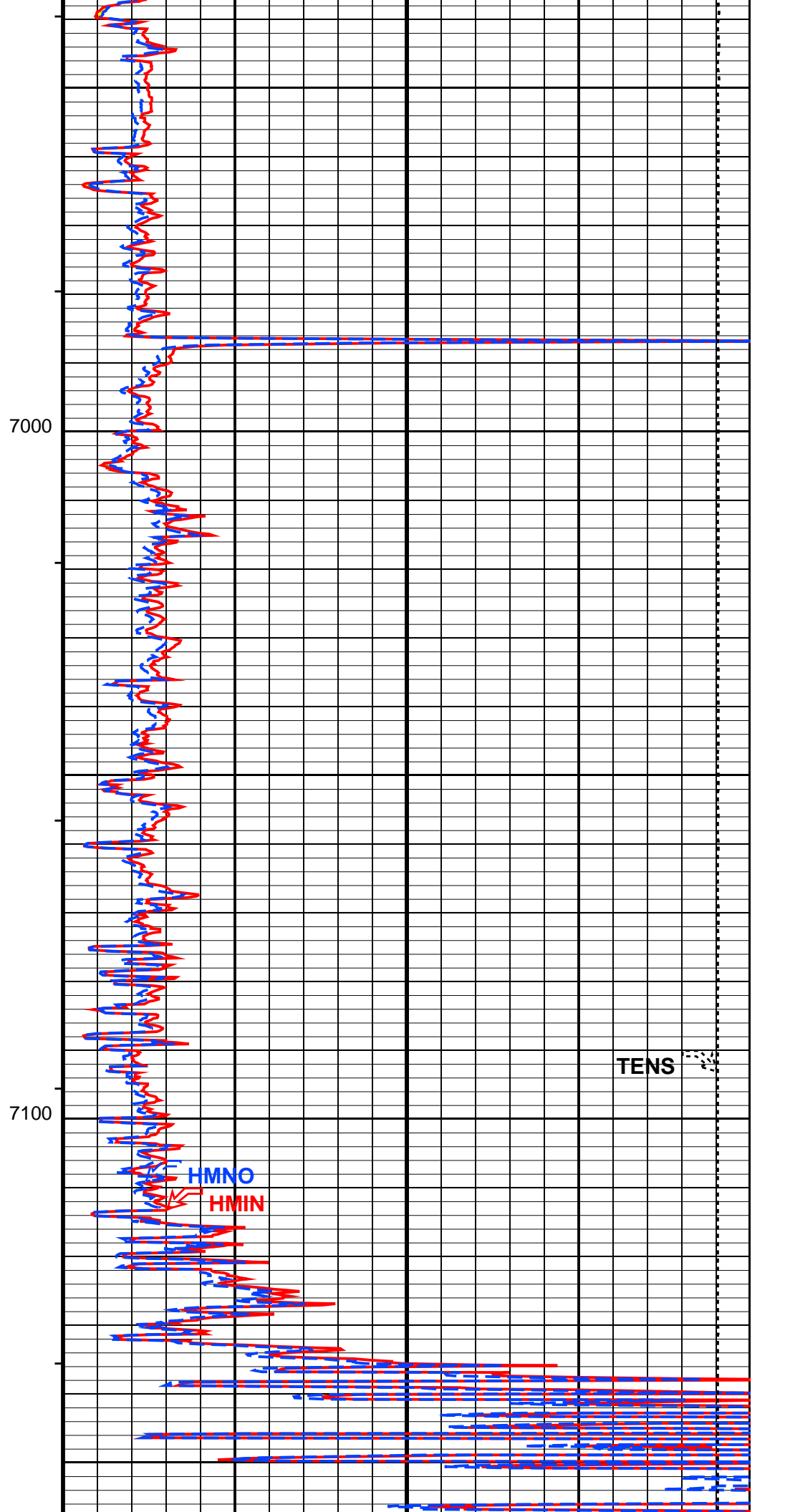
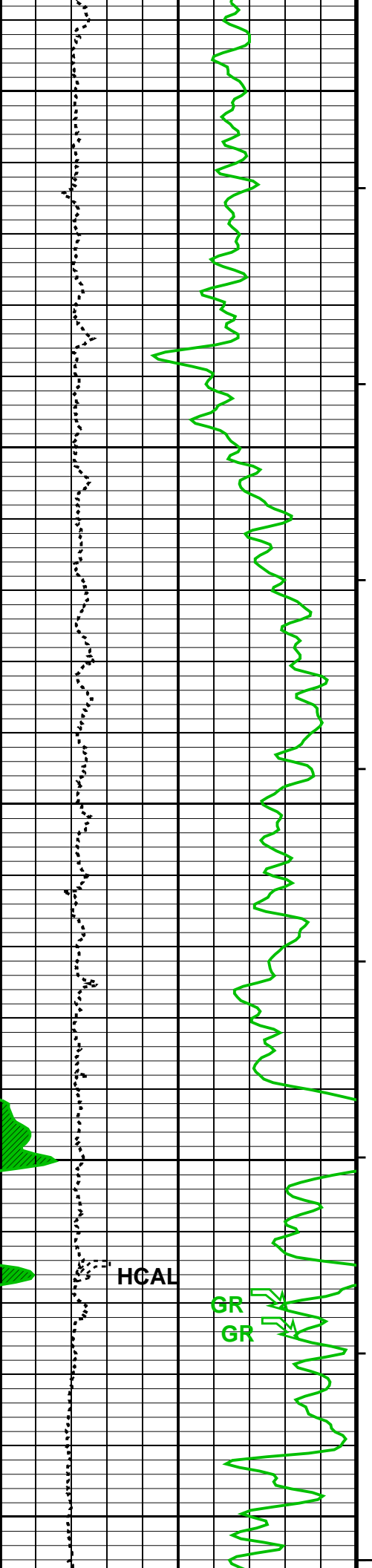
- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

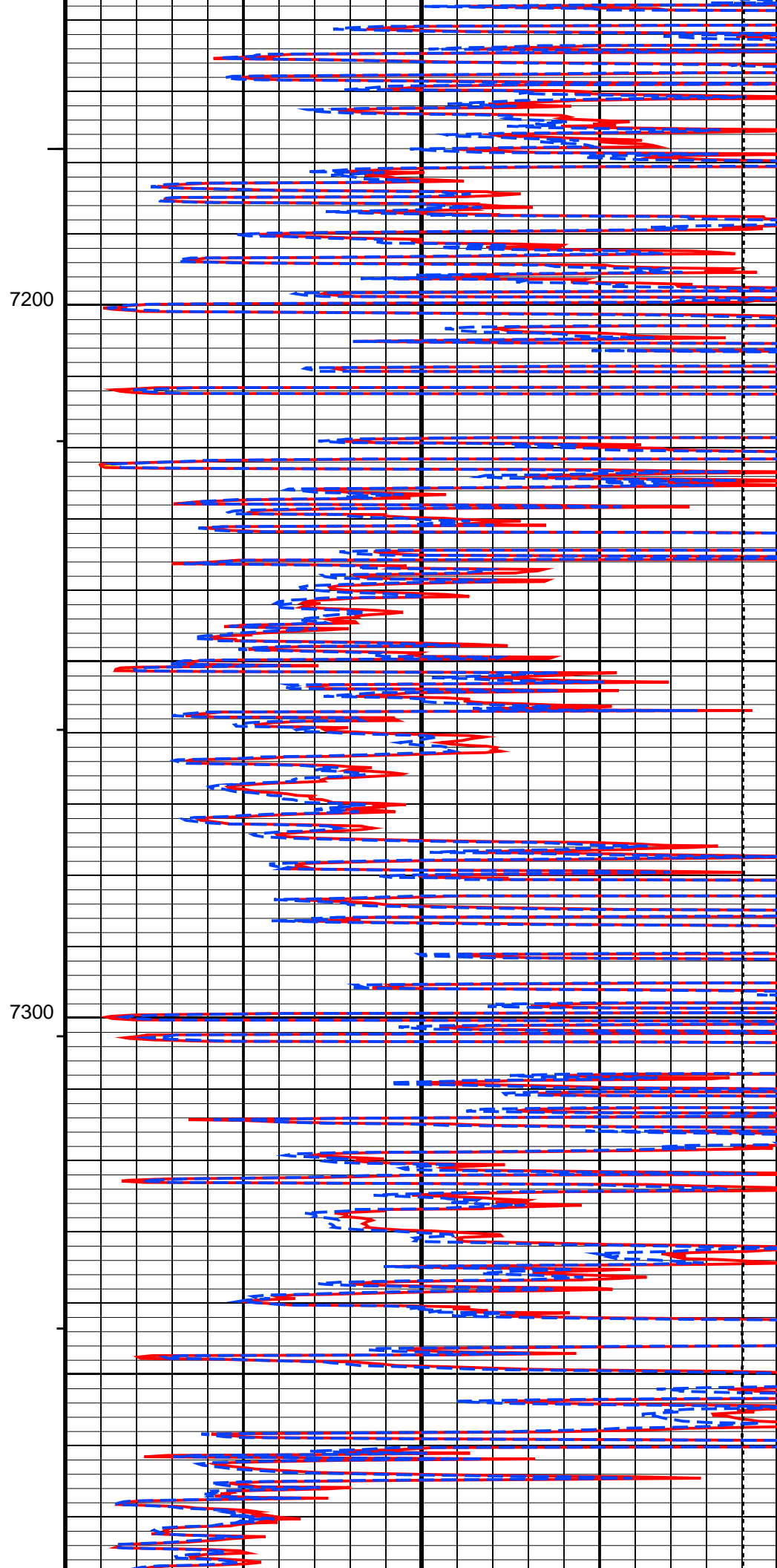
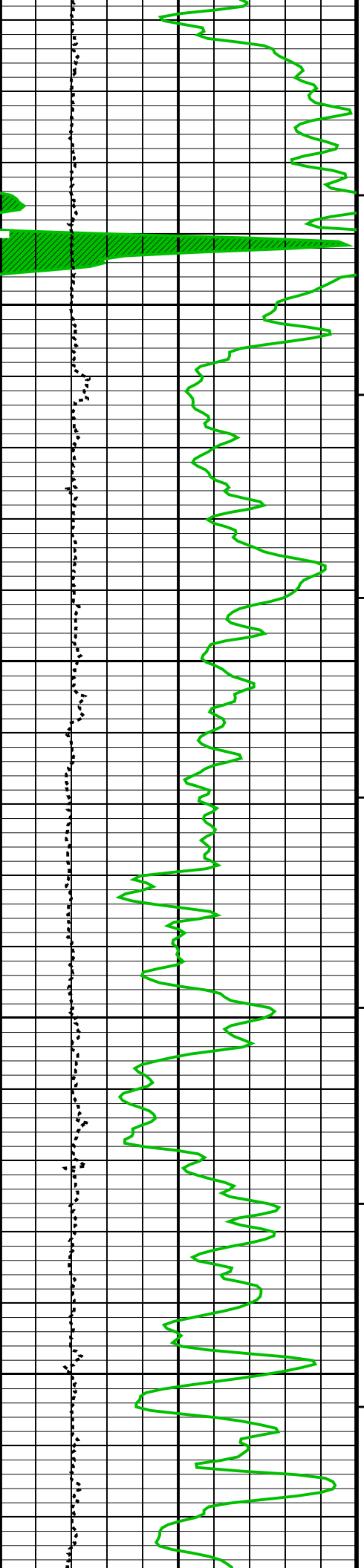
Time Mark Every 60 S

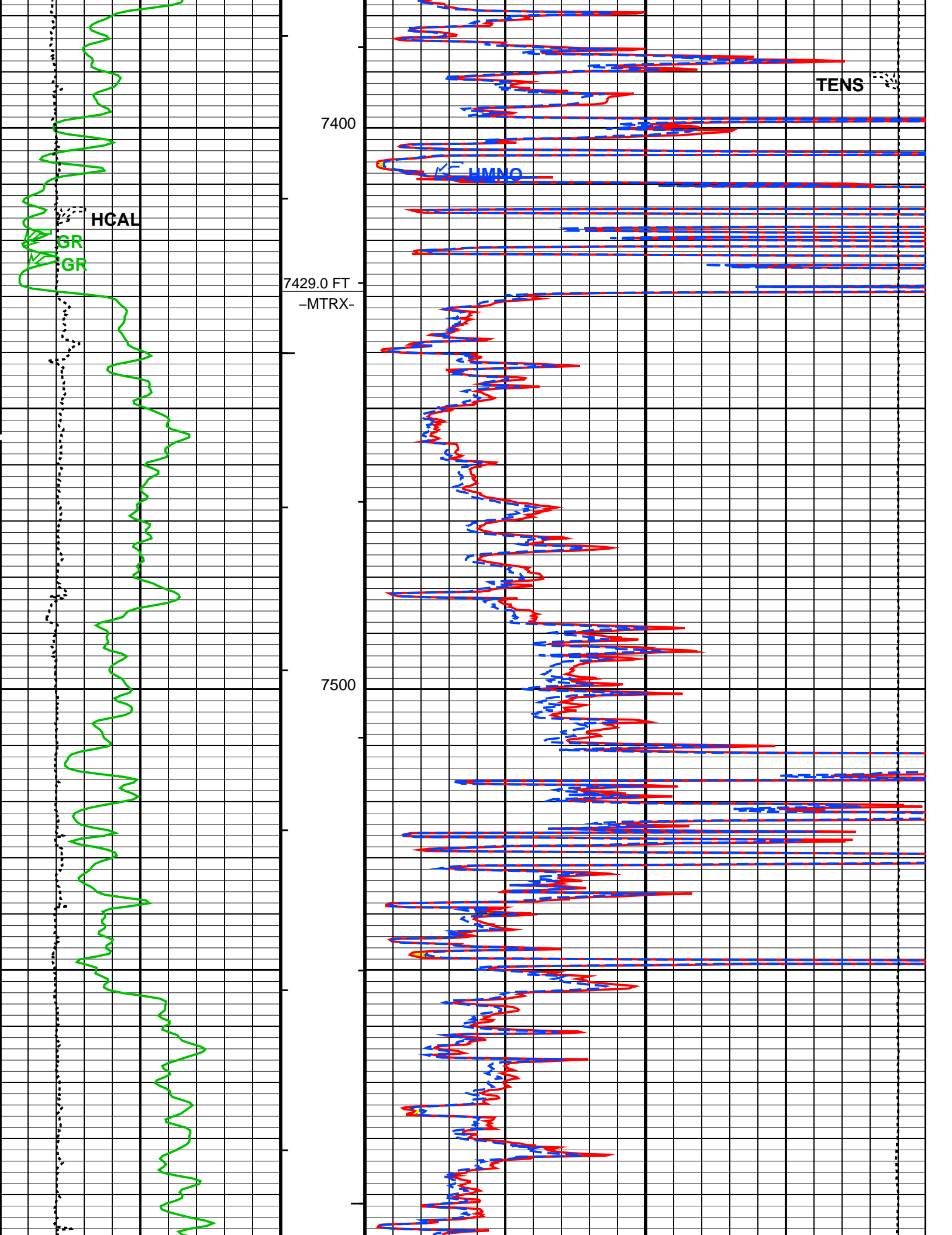


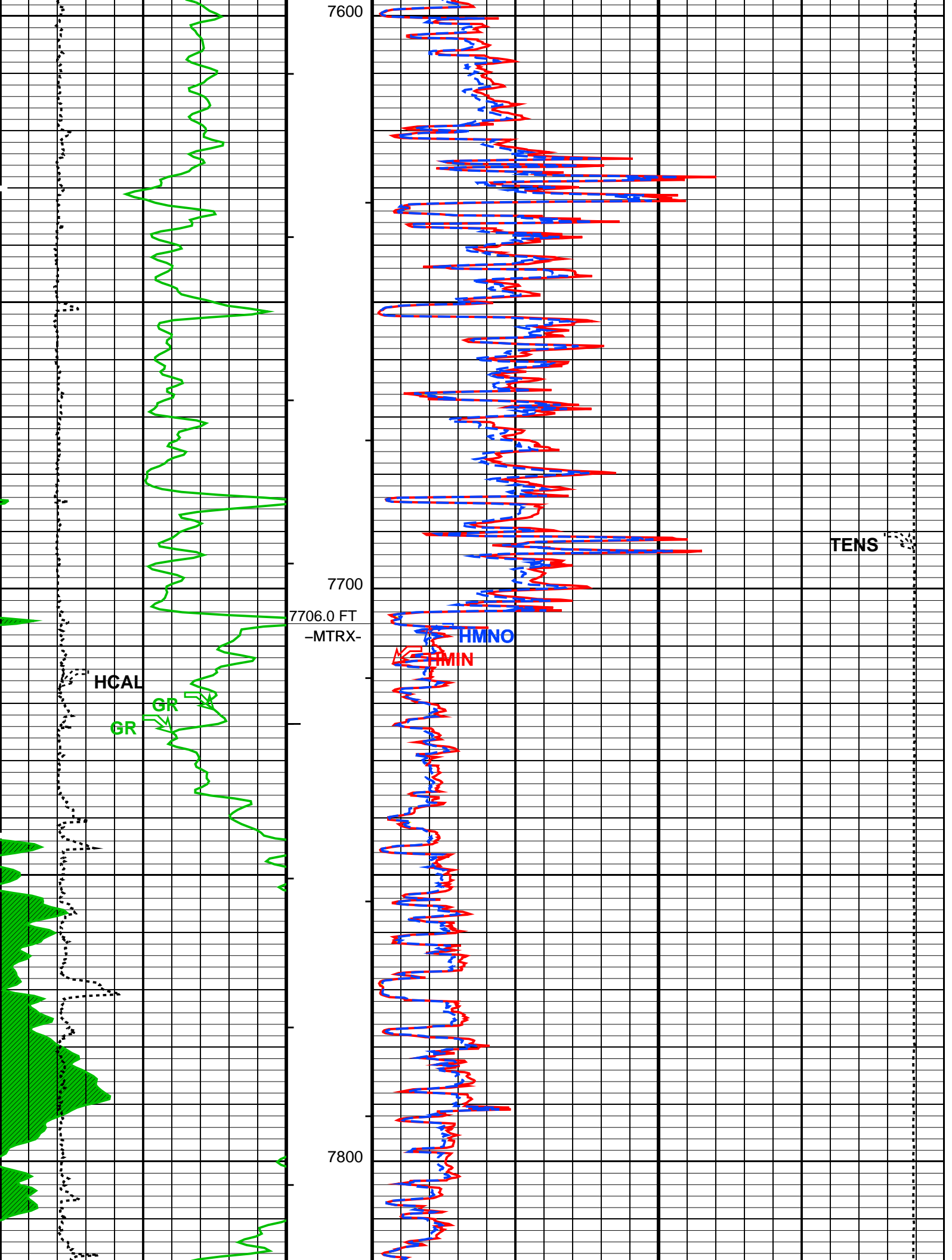


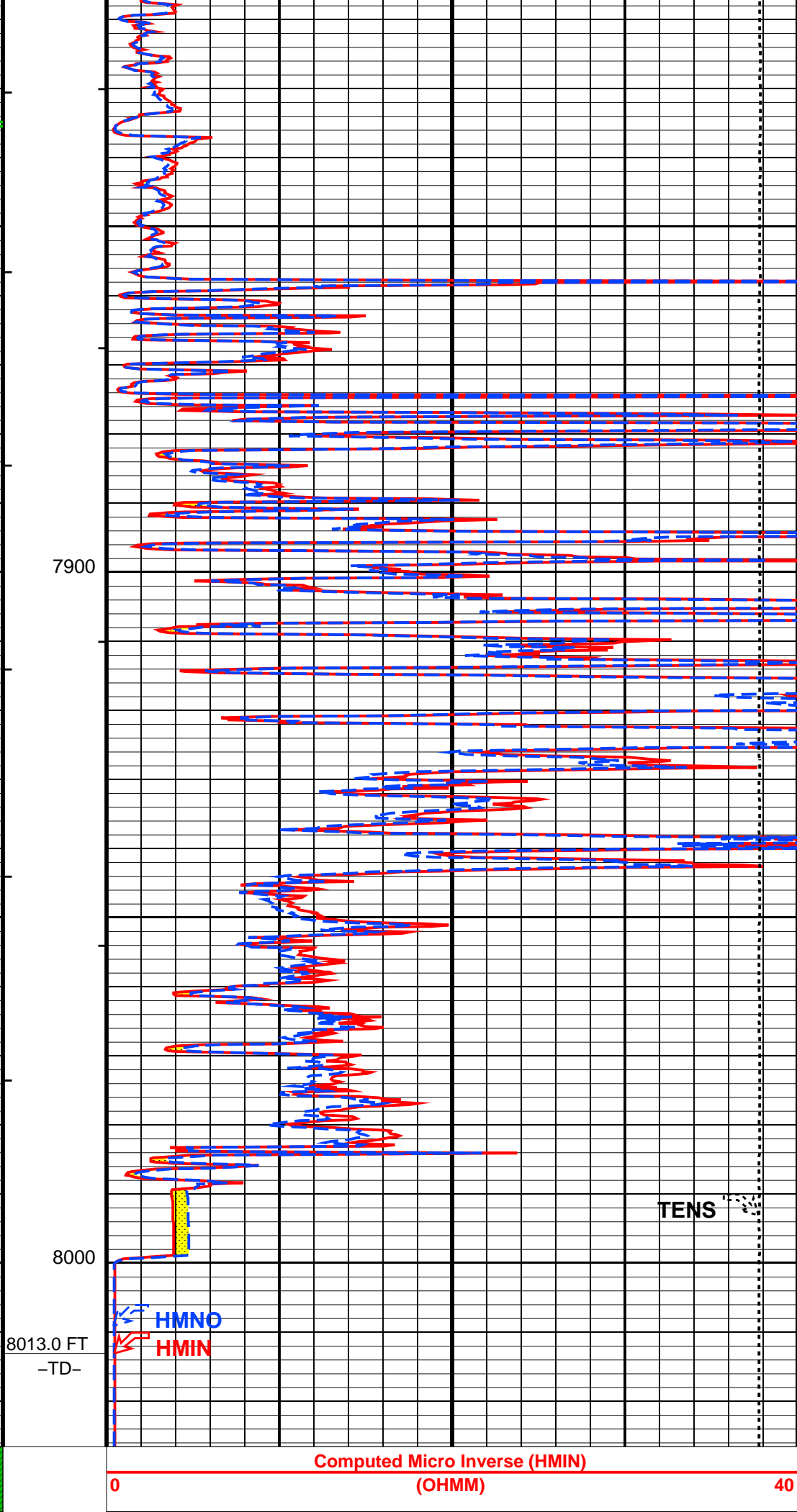
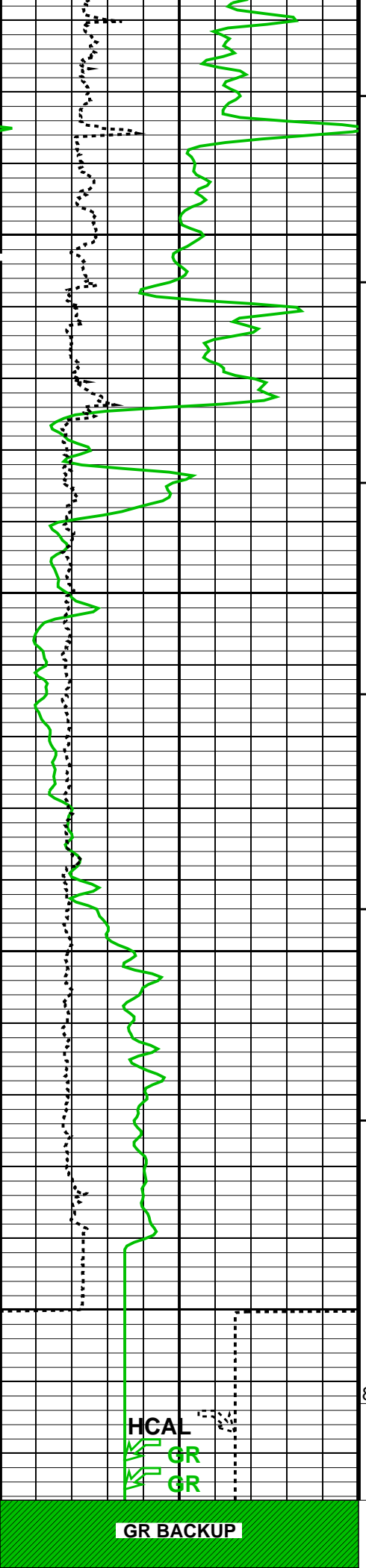













| | |
|--------------------------------|---|
| Gamma Ray (GR) 0 (GAPI) 200 | Computed Micro Normal (HMNO) 0 (OHMM) 40 |
| Caliper (HCAL) 6 (IN) 16 | PERM |
| | Tension (TENS) 10000 (LBF) 0 |

| | |
|---|--|
| <div>PIP SUMMARY</div> <div> <div>└ Integrated Hole Volume Minor Pip Every 10 F3</div> <div>└ Integrated Hole Volume Major Pip Every 100 F3</div> <div>└ Integrated Cement Volume Minor Pip Every 10 F3</div> <div>└ Integrated Cement Volume Major Pip Every 100 F3</div> </div> <div>Time Mark Every 60 S</div> | |
|---|--|

| Parameters | | | |
|--|--|--|----|
| DLIS Name | Description | Value | |
| MPOF | HILTB-FTB: High resolution Integrated Logging Tool-DTS | ON | |
| | MCFL Processing Operation Mode | | |
| FCD | HOLEV: Integrated Hole/Cement Volume | | |
| HVCS | Future Casing (Outer) Diameter | 4.5 | IN |
| | Integrated Hole Volume Caliper Selection | HCAL | |
| BS | System and Miscellaneous | | |
| DO | Bit Size | 7.875 | IN |
| PP | Depth Offset for Playback | 0.0 | FT |
| TD | Playback Processing | NORMAL | |
| | Total Depth | 8013 | FT |
| Format: LOWER_MLT Vertical Scale: 5" per 100' | | Graphics File Created: 16-Jan-2010 16:01 | |

| OP System Version: 17C0-154 | | | |
|-----------------------------|----------|-----------|----------|
| AIT-M | 17C0-154 | HILTB-FTB | 17C0-154 |
| DTC-H | 17C0-154 | | |

| Input DLIS Files | | | | | | |
|-------------------|-------------------------|-------|----------|-------------------|-----------|----------|
| DEFAULT | MERGE_AIT_027 | FN:1 | PRODUCER | 16-Jan-2010 15:57 | 8026.5 FT | 615.0 FT |
| Output DLIS Files | | | | | | |
| DEFAULT | AIT_TLD_MCFL_CNL_028PUP | FN:22 | PRODUCER | 16-Jan-2010 16:01 | | |



REPEAT ANALYSIS

MAXIS Field Log

| Input DLIS Files | | | | | | |
|-------------------|-------------------------|------|----------|-------------------|-----------|-----------|
| DEFAULT | AIT_TLD_MCFL_CNL_007PUP | FN:6 | PRODUCER | 16-Jan-2010 14:06 | 8038.5 FT | 7623.5 FT |
| Output DLIS Files | | | | | | |
| DEFAULT | AIT_TLD_MCFL_CNL_009LUP | FN:8 | PRODUCER | 16-Jan-2010 14:11 | | |

| OP System Version: 17C0-154 | | | |
|-----------------------------|----------|-----------|----------|
| AIT-M | 17C0-154 | HILTB-FTB | 17C0-154 |

PIP SUMMARY

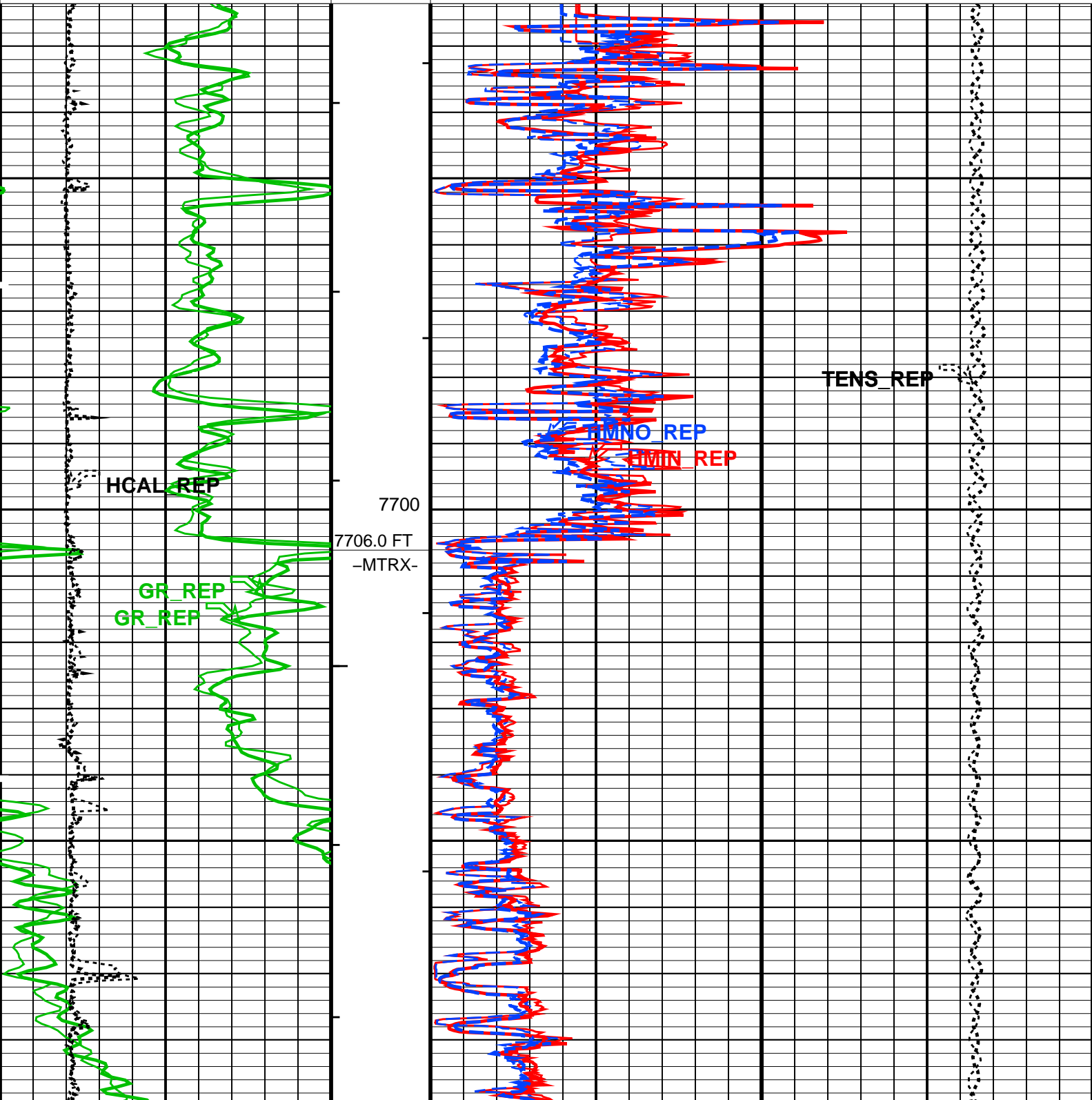
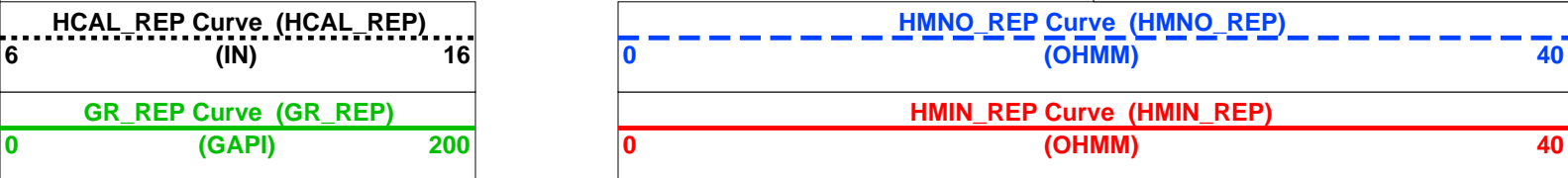
└ Integrated Hole Volume Minor Pip Every 10 F3

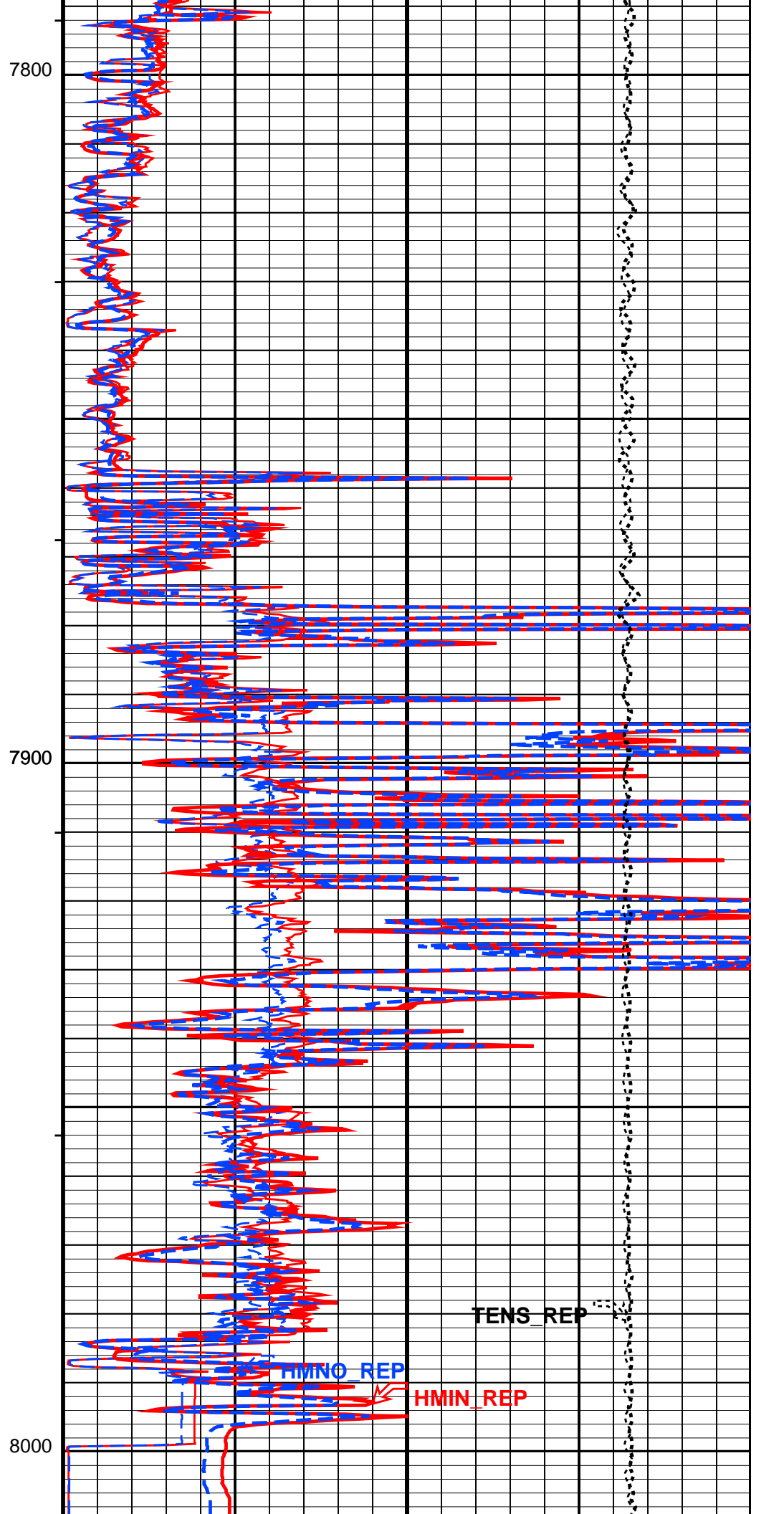
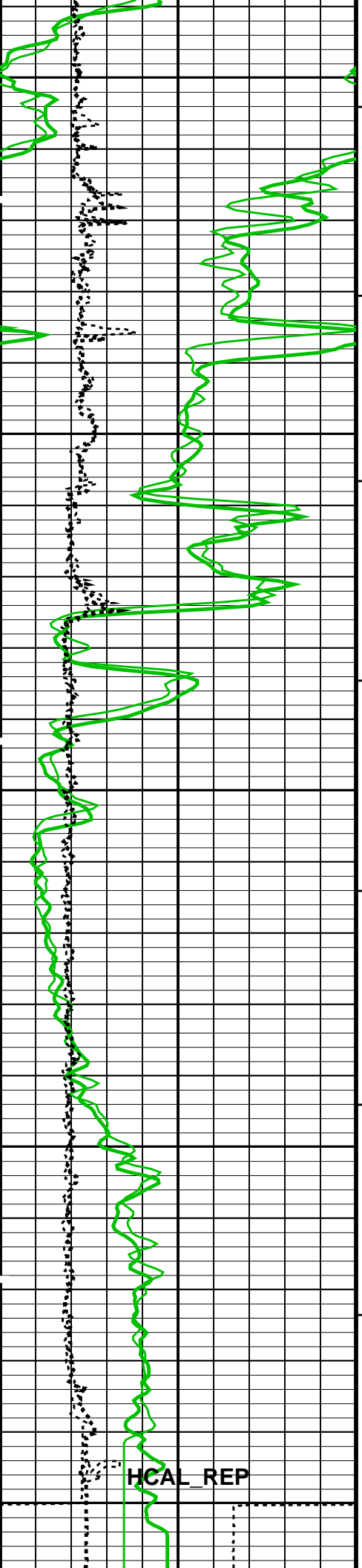
└ Integrated Hole Volume Major Pip Every 100 F3

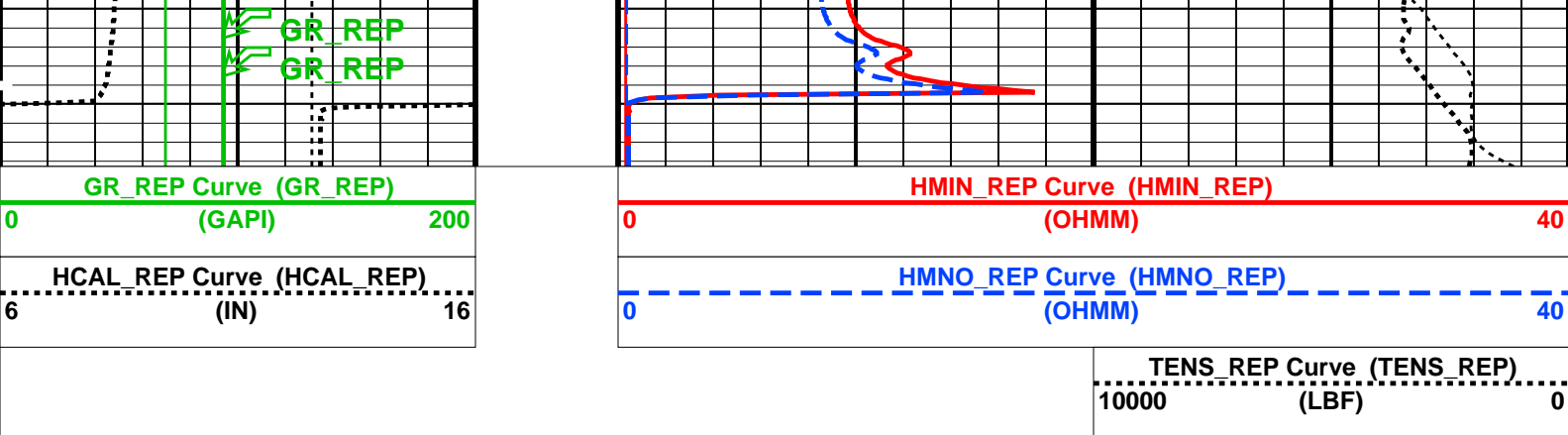
└ Integrated Cement Volume Minor Pip Every 10 F3

└ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S







PIP SUMMARY

- └ Integrated Hole Volume Minor Pip Every 10 F3
- └ Integrated Hole Volume Major Pip Every 100 F3
 - └ Integrated Cement Volume Minor Pip Every 10 F3
 - └ Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

Parameters

| DLIS Name | Description | Value |
|-----------|---|----------|
| MPOF | HILTB-FTB: High resolution Integrated Logging Tool-DTS MCFL Processing Operation Mode | ON |
| FCD | HOLEV: Integrated Hole/Cement Volume | 4.5 IN |
| HVCS | Future Casing (Outer) Diameter | HCAL |
| | Integrated Hole Volume Caliper Selection | |
| BS | System and Miscellaneous | |
| DORL | Bit Size | 7.875 IN |
| TD | Depth Offset for Repeat Analysis | 0.0 FT |
| | Total Depth | 8013 FT |

Format: MLT_REP Vertical Scale: 5" per 100' Graphics File Created: 16-Jan-2010 14:11

OP System Version: 17C0-154

| | | | |
|-------|----------|-----------|----------|
| AIT-M | 17C0-154 | HILTB-FTB | 17C0-154 |
| DTC-H | 17C0-154 | | |

Input DLIS Files

| | | | | | | |
|---------|-------------------------|------|----------|-------------------|-----------|-----------|
| DEFAULT | AIT_TLD_MCFL_CNL_007PUP | FN:6 | PRODUCER | 16-Jan-2010 14:06 | 8038.5 FT | 7623.5 FT |
|---------|-------------------------|------|----------|-------------------|-----------|-----------|

Output DLIS Files

| | | | | |
|---------|-------------------------|------|----------|-------------------|
| DEFAULT | AIT_TLD_MCFL_CNL_009LUP | FN:8 | PRODUCER | 16-Jan-2010 14:11 |
|---------|-------------------------|------|----------|-------------------|

Schlumberger

BEFORE CALIBRATIONS

MAXIS Field Log

Calibration and Check Summary

| Measurement | Nominal | Master | Before | After | Change | Limit | Units |
|-------------|---------|--------|--------|-------|--------|-------|-------|
|-------------|---------|--------|--------|-------|--------|-------|-------|

Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Thru Cal Mag. & Phase

Master: 13-Jan-2010 12:35 Before: 15-Jan-2010 16:47

| | | | | | | | |
|------------------------|---|--------|--------|-----|-----|-----|-----|
| Thru Cal Magnitude – 0 | 0 | 0.6204 | 0.6205 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 1 | 0 | 1.271 | 1.271 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 2 | 0 | 0.6318 | 0.6316 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 3 | 0 | 0.7131 | 0.7129 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 4 | 0 | 1.334 | 1.334 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 5 | 0 | 1.953 | 1.953 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 6 | 0 | 1.949 | 1.949 | N/A | N/A | N/A | V |
| Thru Cal Magnitude – 7 | 0 | 1.419 | 1.416 | N/A | N/A | N/A | V |
| Thru Cal Phase – 0 | 0 | 180.2 | 181.6 | N/A | N/A | N/A | DEG |
| Thru Cal Phase – 1 | 0 | 179.1 | 180.6 | N/A | N/A | N/A | DEG |
| Thru Cal Phase – 2 | 0 | 175.5 | 177.0 | N/A | N/A | N/A | DEG |
| Thru Cal Phase – 3 | 0 | 174.8 | 176.3 | N/A | N/A | N/A | DEG |
| Thru Cal Phase – 4 | 0 | 168.6 | 170.1 | N/A | N/A | N/A | DEG |
| Thru Cal Phase – 5 | 0 | 166.9 | 168.4 | N/A | N/A | N/A | DEG |
| Thru Cal Phase – 6 | 0 | 167.0 | 168.4 | N/A | N/A | N/A | DEG |
| Thru Cal Phase – 7 | 0 | 166.2 | 167.6 | N/A | N/A | N/A | DEG |

Array Induction Tool – M Wellsite Calibration – Electronics Calibration Check – Auxiliary

Master: 13-Jan-2010 12:35 Before: 15-Jan-2010 16:47

| | | | | | | | |
|--------------------------------|--------|-----------|-----------|-----|-----|-----|----|
| Array Induction SPA Plus | 991.0 | 992.7 | 992.7 | N/A | N/A | N/A | MV |
| Array Induction SPA Zero | 0 | 0.6657 | 0.6835 | N/A | N/A | N/A | MV |
| Array Induction Temperature PI | 0.9170 | 0.9196 | 0.9196 | N/A | N/A | N/A | V |
| Array Induction Temperature Ze | 0 | 0.0006534 | 0.0006749 | N/A | N/A | N/A | V |

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

Master: 13-Jan-2010 12:35

| | | | | | | | |
|------------------------------|---|----------|-----|-----|-----|-----|-----|
| Test Loop Gain Correctio – 0 | 0 | 1.034 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Correctio – 1 | 0 | 1.022 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Correctio – 2 | 0 | 1.015 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Correctio – 3 | 0 | 1.011 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Correctio – 4 | 0 | 0.9928 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Correctio – 5 | 0 | 0.9883 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Correctio – 6 | 0 | 0.9934 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Correctio – 7 | 0 | 1.004 | N/A | N/A | N/A | N/A | V |
| Test Loop Gain Correctio – 0 | 0 | 0.4776 | N/A | N/A | N/A | N/A | DEG |
| Test Loop Gain Correctio – 1 | 0 | 0.7064 | N/A | N/A | N/A | N/A | DEG |
| Test Loop Gain Correctio – 2 | 0 | 0.1915 | N/A | N/A | N/A | N/A | DEG |
| Test Loop Gain Correctio – 3 | 0 | 0.1817 | N/A | N/A | N/A | N/A | DEG |
| Test Loop Gain Correctio – 4 | 0 | 0.1287 | N/A | N/A | N/A | N/A | DEG |
| Test Loop Gain Correctio – 5 | 0 | -0.03256 | N/A | N/A | N/A | N/A | DEG |
| Test Loop Gain Correctio – 6 | 0 | 0.3307 | N/A | N/A | N/A | N/A | DEG |
| Test Loop Gain Correctio – 7 | 0 | -0.2143 | N/A | N/A | N/A | N/A | DEG |

Array Induction Tool – M Wellsite Calibration – Sonde Error Correction

Master: 13-Jan-2010 12:35

| | | | | | | | |
|------------------------------|---|--------|-----|-----|-----|-----|------|
| R Sonde Error Correction – 0 | 0 | -73.77 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 1 | 0 | 170.3 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 2 | 0 | 115.4 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 3 | 0 | 61.79 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 4 | 0 | 25.72 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 5 | 0 | 11.35 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 6 | 0 | 9.275 | N/A | N/A | N/A | N/A | MM/M |
| R Sonde Error Correction – 7 | 0 | -1.480 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 0 | 0 | -344.0 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 1 | 0 | 133.8 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 2 | 0 | 62.75 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 3 | 0 | -33.85 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 4 | 0 | 22.34 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 5 | 0 | -14.54 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 6 | 0 | -4.481 | N/A | N/A | N/A | N/A | MM/M |
| X Sonde Error Correction – 7 | 0 | -10.82 | N/A | N/A | N/A | N/A | MM/M |

Array Induction Tool – M Wellsite Calibration – Mud Gain Correction

Master: 13-Jan-2010 12:35

| | | | | | | |
|------------------------------|---|--------|-----|-----|-----|-----|
| Coarse – Mag, Real, Imag – 0 | 0 | 0.8500 | N/A | N/A | N/A | N/A |
| Coarse – Mag, Real, Imag – 1 | 0 | 0.8500 | N/A | N/A | N/A | N/A |
| Coarse – Mag, Real, Imag – 2 | 0 | 0.8500 | N/A | N/A | N/A | N/A |
| Fine – Mag, Real, Imag – 0 | 0 | 0.8500 | N/A | N/A | N/A | N/A |
| Fine – Mag, Real, Imag – 1 | 0 | 0.8500 | N/A | N/A | N/A | N/A |
| Fine – Mag, Real, Imag – 2 | 0 | 0.8500 | N/A | N/A | N/A | N/A |

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

Before: 15-Jan-2010 17:02

| | | | | | | | |
|-----------------|--------|-----|--------|-----|-----|-----|-----|
| BS Window Ratio | 0.7094 | N/A | 0.7116 | N/A | N/A | N/A | |
| BS Window Sum | 8629 | N/A | 8598 | N/A | N/A | N/A | CPS |
| SS Window Ratio | 0.4898 | N/A | 0.4908 | N/A | N/A | N/A | |
| SS Window Sum | 9755 | N/A | 9725 | N/A | N/A | N/A | CPS |
| LS Window Ratio | 0.2973 | N/A | 0.2892 | N/A | N/A | N/A | |
| LS Window Sum | 1027 | N/A | 1009 | N/A | N/A | N/A | CPS |

| | | | | | | | |
|--|-------|--------|-------|-----|-----|-------|------|
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Photo–multiplier High Voltages Calibrations | | | | | | | |
| Before: 15–Jan–2010 17:02 | | | | | | | |
| BS PM High Voltage (Command) | 1499 | N/A | 1492 | N/A | N/A | N/A | V |
| SS PM High Voltage (Command) | 1689 | N/A | 1690 | N/A | N/A | N/A | V |
| LS PM High Voltage (Command) | 1479 | N/A | 1478 | N/A | N/A | N/A | V |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Crystal Quality Resolutions Calibration | | | | | | | |
| Before: 15–Jan–2010 17:02 | | | | | | | |
| BS Crystal Resolution | 10.47 | N/A | 10.54 | N/A | N/A | N/A | % |
| SS Crystal Resolution | 9.822 | N/A | 9.881 | N/A | N/A | N/A | % |
| LS Crystal Resolution | 10.15 | N/A | 10.16 | N/A | N/A | N/A | % |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – MCFL Calibration | | | | | | | |
| Before: 15–Jan–2010 16:48 | | | | | | | |
| Raw B0 Resistivity | 3875 | N/A | 3853 | N/A | N/A | N/A | OHMM |
| Raw B1 Resistivity | 3830 | N/A | 3797 | N/A | N/A | N/A | OHMM |
| Raw B2 Resistivity | 3830 | N/A | 3800 | N/A | N/A | N/A | OHMM |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – HILT Caliper Calibration | | | | | | | |
| Before: 15–Jan–2010 16:48 | | | | | | | |
| HILT Caliper Zero Measurement | 8.000 | N/A | 8.543 | N/A | N/A | N/A | IN |
| HILT Caliper Plus Measurement | 12.00 | N/A | 12.64 | N/A | N/A | N/A | IN |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Detector Calibration | | | | | | | |
| Before: 15–Jan–2010 16:47 | | | | | | | |
| Gamma Ray Background | 30.00 | N/A | 85.52 | N/A | N/A | N/A | GAPI |
| Gamma Ray (Jig – Bkg) | 179.7 | N/A | 179.7 | N/A | N/A | 16.33 | GAPI |
| Gamma Ray (Calibrated) | 165.0 | N/A | 165.0 | N/A | N/A | 15.00 | GAPI |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Zero Measurement | | | | | | | |
| Master: 10–Jan–2010 18:05 Before: 15–Jan–2010 16:48 | | | | | | | |
| CNTC Background | 26.74 | 26.74 | 26.89 | N/A | N/A | 4.011 | CPS |
| CFTC Background | 26.83 | 26.83 | 28.58 | N/A | N/A | 4.025 | CPS |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Ratio Measurement | | | | | | | |
| Master: 10–Jan–2010 18:05 | | | | | | | |
| Thermal Near Corr. (Tank) | 5800 | 5204 | N/A | N/A | N/A | N/A | CPS |
| Thermal Far Corr. (Tank) | 2400 | 2196 | N/A | N/A | N/A | N/A | CPS |
| CNTC/CFTC (Tank) | 2.159 | 2.370 | N/A | N/A | N/A | N/A | |
| High resolution Integrated Logging Tool–DTS Wellsite Calibration – Accelerometer Calibration | | | | | | | |
| Before: 16–Jan–2010 13:23 | | | | | | | |
| Z–Axis Acceleration | 32.19 | N/A | 32.08 | N/A | N/A | N/A | F/S2 |
| High resolution Integrated Logging Tool–DTS Master Calibration – Inversion results | | | | | | | |
| Master: 20–Dec–2009 17:11 | | | | | | | |
| Rho Aluminum | 2.596 | 2.600 | --- | --- | --- | --- | G/C3 |
| Rho Magnesium | 1.686 | 1.689 | --- | --- | --- | --- | G/C3 |
| Pe Aluminum | 2.570 | 2.536 | --- | --- | --- | --- | |
| Pe Magnesium | 2.650 | 2.630 | --- | --- | --- | --- | |
| High resolution Integrated Logging Tool–DTS Master Calibration – Deviation Summary | | | | | | | |
| Master: 20–Dec–2009 17:11 | | | | | | | |
| BS Average Deviation | 0 | 0.3690 | --- | --- | --- | --- | % |
| BS Max Deviation | 0 | 0.6436 | --- | --- | --- | --- | % |
| SS Average Deviation | 0 | 0.3737 | --- | --- | --- | --- | % |
| SS Max Deviation | 0 | 1.617 | --- | --- | --- | --- | % |
| LS Average Deviation | 0 | 0.5129 | --- | --- | --- | --- | % |
| LS Max Deviation | 0 | 1.805 | --- | --- | --- | --- | % |

The GLS–VJ source activity is acceptable.

The HGNS Neutron Master Calibration was done with the following parameters :

NCT–B Water Temperature 57.6 DEGF.
Thermal Housing Size 3.362 IN.
NSR–F serial number 5068

Array Induction Tool – M / Equipment Identification

Primary Equipment:
Rm/SP Bottom Nose
Array Induction Sonde

AMRM – A
AMIS – A

| Array Induction Tool – M Wellsite Calibration | | | | | | | |
|---|--------|----------------------|----------------------|---------------------------|-------------------------|--------------------|--------------------------|
| Electronics Calibration Check – Thru Cal Mag. & Phase | | | | | | | |
| Idx | Phase | Value | Thru Cal Magnitude V | Nominal | Value | Thru Cal Phase DEG | Nominal |
| 0 | Master | 0.6204 | | 0.6100 | 180.2 | | 197.0 |
| | Before | 0.6205 | | | 181.6 | | |
| 1 | Master | 1.271 | | 1.270 | 179.1 | | 196.0 |
| | Before | 1.271 | | | 180.6 | | |
| 2 | Master | 0.6318 | | 0.6200 | 175.5 | | 192.0 |
| | Before | 0.6316 | | | 177.0 | | |
| 3 | Master | 0.7131 | | 0.7000 | 174.8 | | 191.0 |
| | Before | 0.7129 | | | 176.3 | | |
| 4 | Master | 1.334 | | 1.340 | 168.6 | | 185.0 |
| | Before | 1.334 | | | 170.1 | | |
| 5 | Master | 1.953 | | 1.960 | 166.9 | | 182.0 |
| | Before | 1.953 | | | 168.4 | | |
| 6 | Master | 1.949 | | 1.960 | 167.0 | | 181.0 |
| | Before | 1.949 | | | 168.4 | | |
| 7 | Master | 1.419 | | 1.410 | 166.2 | | 175.0 |
| | Before | 1.416 | | | 167.6 | | |
| | | 60.00 % (Minimum) | (Nominal) | 140.0 % (Maximum) | Nom -60.00 (Minimum) | (Nominal) | Nom + 60.00 (Maximum) |
| Master: 13-Jan-2010 12:35 | | | | Before: 15-Jan-2010 16:47 | | | |

| Array Induction Tool – M Wellsite Calibration | | | | | | | |
|---|------------------------------------|---------------------|---------------------|---------------------------|------------------------------------|----------------|----------------------|
| Electronics Calibration Check – Auxiliary | | | | | | | |
| Phase | Array Induction SPA Plus MV | | Value | Phase | Array Induction SPA Zero MV | | Value |
| Master | | | 992.7 | Master | | | 0.6657 |
| Before | | | 992.7 | Before | | | 0.6835 |
| | 941.0 (Minimum) | 991.0 (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 | | | 0.9196 | Master | | | 0.0006534 |
| Before | | | 0.9196 | Before | | | 0.0006749 |
| | 0.8710 (Minimum) | 0.9170 (Nominal) | 0.9630 (Maximum) | | -0.05000 (Minimum) | 0 (Nominal) | 0.05000 (Maximum) |
| Master: 13-Jan-2010 12:35 | | | | Before: 15-Jan-2010 16:47 | | | |





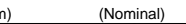

| Array Induction Tool – M Wellsite Calibration | | | | | | | |
|---|--------|---------------------------------------|--------------------|--------------------|--------|-------------------------------------|----------------------------------|
| Test Loop Gain Correction | | | | | | | |
| Idx | Value | Test Loop Gain Correction Magnitude V | | | Value | Test Loop Gain Correction Phase DEG | |
| 0 | 1.034 | | | | 0.4776 | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal)3.000 (Maximum) |
| 1 | 1.022 | | | | 0.7064 | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal)3.000 (Maximum) |
| 2 | 1.015 | | | | 0.1915 | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal)3.000 (Maximum) |
| 3 | 1.011 | | | | 0.1817 | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal)3.000 (Maximum) |
| 4 | 0.9928 | | | | 0.1287 | | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal)3.000 (Maximum) |

| | | | | | | |
|---|---------------------|--------------------|--------------------|---------------------|----------------|--------------------|
| | (Minimum) | (Nominal) | (Maximum) | (Minimum) | (Nominal) | (Maximum) |
| 5 | 0.9883 | | | -0.03256 | | |
| | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |
| 6 | 0.9934 | | | 0.3307 | | |
| | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |
| 7 | 1.004 | | | -0.2143 | | |
| | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |













Master: 13-Jan-2010 12:35

| Array Induction Tool – M Wellsite Calibration | | | | | | | |
|---|--------|-------------------------------|---------------------|--------------------|--------|-------------------------------|----------------|
| Sonde Error Correction | | | | | | | |
| Idx | Value | R Sonde Error Correction MM/M | | | Value | X Sonde Error Correction MM/M | |
| 0 | -73.77 | <div><div></div></div> | | | -344.0 | <div><div></div></div> | |
| | | -231.0 (Minimum) | -56.00 (Nominal) | 119.0 (Maximum) | | -2250 (Minimum) | 0 (Nominal) |
| 1 | 170.3 | <div><div></div></div> | | | 133.8 | <div><div></div></div> | |
| | | 114.0 (Minimum) | 159.0 (Nominal) | 204.0 (Maximum) | | -625.0 (Minimum) | 0 (Nominal) |
| 2 | 115.4 | <div><div></div></div> | | | 62.75 | <div><div></div></div> | |
| | | 66.00 (Minimum) | 111.0 (Nominal) | 156.0 (Maximum) | | -350.0 (Minimum) | 0 (Nominal) |
| 3 | 61.79 | <div><div></div></div> | | | -33.85 | <div><div></div></div> | |
| | | 39.00 (Minimum) | 64.00 (Nominal) | 89.30 (Maximum) | | -250.0 (Minimum) | 0 (Nominal) |
| 4 | 25.72 | <div><div></div></div> | | | 22.34 | <div><div></div></div> | |
| | | 15.00 (Minimum) | 25.00 (Nominal) | 35.00 (Maximum) | | -63.00 (Minimum) | 0 (Nominal) |
| 5 | 11.35 | <div><div></div></div> | | | -14.54 | <div><div></div></div> | |
| | | 4.000 (Minimum) | 14.00 (Nominal) | 24.00 (Maximum) | | -50.00 (Minimum) | 0 (Nominal) |
| 6 | 9.275 | <div><div></div></div> | | | -4.481 | <div><div></div></div> | |
| | | 5.000 (Minimum) | 10.00 (Nominal) | 15.00 (Maximum) | | -30.00 (Minimum) | 0 (Nominal) |
| 7 | -1.480 | <div><div></div></div> | | | -10.82 | <div><div></div></div> | |
| | | -5.000 (Minimum) | 0 (Nominal) | 5.000 (Maximum) | | -30.00 (Minimum) | 0 (Nominal) |

Master: 13-Jan-2010 12:35





| Array Induction Tool – M Wellsite Calibration | | | | | | | |
|---|--------|---|--------------------|--------------------|--------|---|--|
| Mud Gain Correction | | | | | | | |
| Idx | Value | Coarse – Mag, Real, Imag | | | Value | Fine – Mag, Real, Imag | |
| 0 | 0.8500 |  | | | 0.8500 |  | |
| | | 0.8000 (Minimum) | 1.000 (Nominal) | 1.200 (Maximum) | | 0.8000 (Minimum) | 1.000 (Nominal) 1.200 (Maximum) |
| 1 | 0.8500 |  | | | 0.8500 |  | |
| | | 0.8000 (Minimum) | 1.000 (Nominal) | 1.200 (Maximum) | | 0.8000 (Minimum) | 1.000 (Nominal) 1.200 (Maximum) |
| 2 | 0.8500 |  | | | 0.8500 |  | |
| | | 0.8000 (Minimum) | 1.000 (Nominal) | 1.200 (Maximum) | | 0.8000 (Minimum) | 1.000 (Nominal) 1.200 (Maximum) |

Master: 13-Jan-2010 12:35

| Array Induction Tool – M Master Calibration | | | | | | | |
|---|--------|--------|---|---------|-------|---|---------|
| Electronics Calibration Check – Thru Cal Mag. & Phase | | | | | | | |
| Idx | Phase | Value | Thru Cal Magnitude V | Nominal | Value | Thru Cal Phase DEG | Nominal |
| 0 | Master | 0.6204 |  | 0.6100 | 180.2 |  | 197.0 |
| 1 | Master | 1.271 |  | 1.270 | 179.1 |  | 196.0 |
| 2 | Master | 0.6318 |  | 0.6200 | 175.5 |  | 192.0 |
| 3 | Master | 0.7131 |  | 0.7000 | 174.8 |  | 191.0 |
| 4 | Master | 1.334 |  | 1.340 | 168.6 |  | 185.0 |
| | | |  | | |  | |

| | | | | | | | |
|---|--------|----------------------|-----------|----------------------|-------------------------|-----------|--------------------------|
| 5 | Master | 1.953 | | 1.960 | 166.9 | | 182.0 |
| 6 | Master | 1.949 | | 1.960 | 167.0 | | 181.0 |
| 7 | Master | 1.419 | | 1.410 | 166.2 | | 175.0 |
| | | 60.00 % (Minimum) | (Nominal) | 140.0 % (Maximum) | Nom -60.00 (Minimum) | (Nominal) | Nom + 60.00 (Maximum) |

Master: 13-Jan-2010 12:35

| Array Induction Tool – M Master Calibration | | | | | | | | | |
|---|---|---------------------|---------------------|-----------------------|--------|---|----------------------|--|-----------|
| Electronics Calibration Check – Auxiliary | | | | | | | | | |
| Phase | Array Induction SPA Plus MV | | | Value | Phase | Array Induction SPA Zero MV | | | Value |
| Master |  | | | 992.7 | Master |  | | | 0.6657 |
| | 941.0 (Minimum) | 991.0 (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 |  | | | 0.9196 | Master |  | | | 0.0006534 |
| | 0.8710 (Minimum) | 0.9170 (Nominal) | 0.9630 (Maximum) | -0.05000 (Minimum) | | 0 (Nominal) | 0.05000 (Maximum) | | |
| Master: 13-Jan-2010 12:35 | | | | | | | | | |

Master: 13-Jan-2010 12:35

| Array Induction Tool – M Master Calibration | | | | | | | | |
|---|--------|------------------------|------------------------|--------------------|----------|------------------------|------------------------|--------------------|
| Test Loop Gain Correction | | | | | | | | |
| Idx | Value | Test Loop Gain | Correction Magnitude | V | Value | Test Loop Gain | Correction Phase | DEG |
| 0 | 1.034 | <div><div></div></div> | <div><div></div></div> | | 0.4776 | <div><div></div></div> | <div><div></div></div> | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |
| 1 | 1.022 | <div><div></div></div> | <div><div></div></div> | | 0.7064 | <div><div></div></div> | <div><div></div></div> | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |
| 2 | 1.015 | <div><div></div></div> | <div><div></div></div> | | 0.1915 | <div><div></div></div> | <div><div></div></div> | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |
| 3 | 1.011 | <div><div></div></div> | <div><div></div></div> | | 0.1817 | <div><div></div></div> | <div><div></div></div> | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |
| 4 | 0.9928 | <div><div></div></div> | <div><div></div></div> | | 0.1287 | <div><div></div></div> | <div><div></div></div> | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |
| 5 | 0.9883 | <div><div></div></div> | <div><div></div></div> | | -0.03256 | <div><div></div></div> | <div><div></div></div> | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |
| 6 | 0.9934 | <div><div></div></div> | <div><div></div></div> | | 0.3307 | <div><div></div></div> | <div><div></div></div> | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |
| 7 | 1.004 | <div><div></div></div> | <div><div></div></div> | | -0.2143 | <div><div></div></div> | <div><div></div></div> | |
| | | 0.9500 (Minimum) | 1.000 (Nominal) | 1.050 (Maximum) | | -3.000 (Minimum) | 0 (Nominal) | 3.000 (Maximum) |

Master: 13-Jan-2010 12:35

| Array Induction Tool – M Master Calibration | | | | | | |
|---|--------|-------------------------------|---------------------|--------------------|--------|---|
| Sonde Error Correction | | | | | | |
| Idx | Value | R Sonde Error Correction MM/M | | | Value | X Sonde Error Correction MM/M |
| 0 | -73.77 | <div><div></div></div> | | | -344.0 | <div><div></div></div> |
| | | -231.0 (Minimum) | -56.00 (Nominal) | 119.0 (Maximum) | | 0 (Nominal) 2250 (Maximum) |
| 1 | 170.3 | <div><div></div></div> | | | 133.8 | <div><div></div></div> |
| | | 114.0 (Minimum) | 159.0 (Nominal) | 204.0 (Maximum) | | -625.0 (Minimum) 0 (Nominal) 625.0 (Maximum) |
| 2 | 115.4 | <div><div></div></div> | | | 62.75 | <div><div></div></div> |
| | | 66.00 (Minimum) | 111.0 (Nominal) | 156.0 (Maximum) | | -350.0 (Minimum) 0 (Nominal) 350.0 (Maximum) |
| 3 | 61.79 | <div><div></div></div> | | | -33.85 | <div><div></div></div> |
| | | 39.00 (Minimum) | 64.00 (Nominal) | 89.30 (Maximum) | | -250.0 (Minimum) 0 (Nominal) 250.0 (Maximum) |
| 4 | 25.72 | <div><div></div></div> | | | 22.34 | <div><div></div></div> |
| | | 15.00 (Minimum) | 25.00 (Nominal) | 35.00 (Maximum) | | -63.00 (Minimum) 0 (Nominal) 63.00 (Maximum) |




Master: 13-Jan-2010 12:35

Master: 13-Jan-2010 12:35



NCT – B
GSR – U/Y
HGNH –

Before: 15-Jan-2010 17:02



Before: 15-Jan-2010 17:02



| | | | | | | | | | | | | | | |
|--------------------|--|--------------------|--------------------|-------|--------------------|--|--------------------|--------------------|-------|--------------------|--|--------------------|--------------------|-------|
| Before |  | 10.47 (Nominal) | 11.47 (Maximum) | 10.54 | Before |  | 9.822 (Nominal) | 10.82 (Maximum) | 9.881 | Before |  | 10.15 (Nominal) | 11.15 (Maximum) | 10.16 |
| 9.466 (Minimum) | | | | | 8.822 (Minimum) | | | | | 9.153 (Minimum) | | | | |

Before: 15-Jan-2010 17:02





| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | | | |
|--|---|-------------------|-------------------|-------|--------|---|-------------------|-------------------|-------|
| MCFL Calibration | | | | | | | | | |
| Phase | Raw B0 Resistivity OHMM | | | Value | Phase | Raw B1 Resistivity OHMM | | | Value |
| Before |  | | | 3853 | Before |  | | | 3797 |
| | 3565 (Minimum) | 3875 (Nominal) | 4185 (Maximum) | | | 3524 (Minimum) | 3830 (Nominal) | 4136 (Maximum) | |



Before: 15-Jan-2010 16:48

| 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 |  | | 8.543 | Before |  | | 12.64 |
| | 6.000 (Minimum) | 8.000 (Nominal) | 10.00 (Maximum) | | 9.000 (Minimum) | 12.00 (Nominal) | 15.00 (Maximum) |
| Before: 15-Jan-2010 16:48 | | | | | | | |

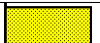
| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | | | |
|--|---|--------------------|--------------------|-------|--------|---|--------------------|--------------------|-------|
| Detector Calibration | | | | | | | | | |
| Phase | Gamma Ray Background GAPI | | | Value | Phase | Gamma Ray (Jig - Bkg) GAPI | | | Value |
| Before |  | | | 85.52 | Before |  | | | 179.7 |
| | 0 (Minimum) | 30.00 (Nominal) | 120.0 (Maximum) | | | 163.3 (Minimum) | 179.7 (Nominal) | 196.0 (Maximum) | |


Before: 15-Jan-2010 16:47

| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | | |
|--|---|--|--------------------|---------------------------|---|--|--------------------|--------------------|
| Zero Measurement | | | | | | | | |
| Phase | CNTC Background CPS | | Value | Phase | CFTC Background CPS | | Value | |
| Master |  | | 26.74 | Master |  | | 26.83 | |
| Before |  | | 26.89 | Before |  | | 28.58 | |
| 5.000 (Minimum) | | | 26.74 (Nominal) | 5.000 (Minimum) | | | 26.83 (Nominal) | 40.00 (Maximum) |
| Master: 10-Jan-2010 18:05 | | | | Before: 15-Jan-2010 16:48 | | | | |





| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | | | | | | | |
|--|---|-------------------|-------------------|-------|--------|---|-------------------|-------------------|-------|
| Ratio Measurement | | | | | | | | | |
| Phase | Thermal Near Corr. (Tank) CPS | | | Value | Phase | Thermal Far Corr. (Tank) CPS | | | Value |
| Master |  | | | 5204 | Master |  | | | 2196 |
| | 4700 (Minimum) | 5800 (Nominal) | 6900 (Maximum) | | | 1900 (Minimum) | 2400 (Nominal) | 2900 (Maximum) | |

Master: 10-Jan-2010 18:05

| Phase | CNTC/CFTC (Tank) | | | Value |
|--------|---|--------------------|--------------------|-------|
| Master |  | | | 2.370 |
| | 2.120 (Minimum) | 2.159 (Nominal) | 2.540 (Maximum) | |



| High resolution Integrated Logging Tool-DTS Wellsite Calibration | | | |
|---|---|--------------------|--------------------|
| Accelerometer Calibration | | | |
| Phase | Z-Axis Acceleration F/S2 | Value | |
| Before |  | 32.08 | |
| | 31.53 (Minimum) | 32.19 (Nominal) | 32.84 (Maximum) |

Before: 16-Jan-2010 13:23




| High resolution Integrated Logging Tool-DTS Master Calibration | | | | | | | | | |
|--|---|--------------------|--------------------|-------|--------|---|--------------------|--------------------|-------|
| Inversion results | | | | | | | | | |
| Phase | Rho Aluminum G/C3 | | | Value | Phase | Rho Magnesium G/C3 | | | Value |
| Master |  | | | 2.600 | Master |  | | | 1.689 |
| | 2.586 (Minimum) | 2.596 (Nominal) | 2.606 (Maximum) | | | 1.676 (Minimum) | 1.686 (Nominal) | 1.696 (Maximum) | |
| Phase | Pe Aluminum | | | Value | Phase | Pe Magnesium | | | Value |
| Master |  | | | 2.536 | Master |  | | | 2.630 |
| | 2.470 (Minimum) | 2.570 (Nominal) | 2.670 (Maximum) | | | 2.550 (Minimum) | 2.650 (Nominal) | 2.750 (Maximum) | |

| High resolution Integrated Logging Tool-DTS Master Calibration | | | | | | | | | | | | | | |
|--|------------------------|----------------|---------------------|--------|---------------------|------------------------|--------------------|--|--------|---------------------|------------------------|--------------------|--|--------|
| Deviation Summary | | | | | | | | | | | | | | |
| Phase | BS Average Deviation % | | | Value | Phase | SS Average Deviation % | | | Value | Phase | LS Average Deviation % | | | Value |
| Master | <div><div></div></div> | | | 0.3690 | Master | <div><div></div></div> | | | 0.3737 | Master | <div><div></div></div> | | | 0.5129 |
| | -0.6000 (Minimum) | 0 (Nominal) | 0.6000 (Maximum) | | -1.000 (Minimum) | 0 (Nominal) | 1.000 (Maximum) | | | -1.500 (Minimum) | 0 (Nominal) | 1.500 (Maximum) | | |
| Phase | BS Max Deviation % | | | Value | Phase | SS Max Deviation % | | | Value | Phase | LS Max Deviation % | | | Value |
| Master | <div><div></div></div> | | | 0.6436 | Master | <div><div></div></div> | | | 1.617 | Master | <div><div></div></div> | | | 1.805 |
| | -1.600 (Minimum) | 0 (Nominal) | 1.600 (Maximum) | | -2.500 (Minimum) | 0 (Nominal) | 2.500 (Maximum) | | | -3.500 (Minimum) | 0 (Nominal) | 3.500 (Maximum) | | |
| Master: 20-Dec-2009 17:11 | | | | | | | | | | | | | | |

Master: 20-Dec-2009 17:11

| High resolution Integrated Logging Tool—DTS Master Calibration | | | | | | | | | |
|--|---|--------------------|--------------------|-------|--------|---|--------------------|--------------------|-------|
| Zero Measurement | | | | | | | | | |
| Phase | CNTC Background CPS | | | Value | Phase | CFTC Background CPS | | | Value |
| Master |  | | | 26.74 | Master |  | | | 26.83 |
| | 5.000 (Minimum) | 26.74 (Nominal) | 40.00 (Maximum) | | | 5.000 (Minimum) | 26.83 (Nominal) | 40.00 (Maximum) | |
| Master: 10—Jan—2010 18:05 | | | | | | | | | |

Master: 10-Jan-2010 18:05

| High resolution Integrated Logging Tool-DTS Master Calibration | | | | | | | | | | | | | | |
|--|---|-------------------|-------------------|-------|-------------------|---|-------------------|--|--------------------|--------------------|---|--|--|-------|
| Tank Measurement | | | | | | | | | | | | | | |
| Phase | Thermal Near Corr. (Tank) CPS | | | Value | Phase | Thermal Far Corr. (Tank) CPS | | | Value | Phase | CNTC/CFTC (Tank) | | | Value |
| Master |  | | | 5204 | Master |  | | | 2196 | Master |  | | | 2.370 |
| | 4700 (Minimum) | 5800 (Nominal) | 6900 (Maximum) | | 1900 (Minimum) | 2400 (Nominal) | 2900 (Maximum) | | 2.120 (Minimum) | 2.159 (Nominal) | 2.540 (Maximum) | | | |
| Master: 10-Jan-2010 18:05 | | | | | | | | | | | | | | |

Master: 10-Jan-2010 18:05

DTS Telemetry Tool / Equipment Identification

Primary Equipment:

DTC-H Auxiliary Cartridge
DTC-H Telemetry Cartridge

DTCH - A
DTCH - A

Auxiliary Equipment:

DTCH Telemetry Cartridge Housing

ECH - KC

Company: **Kerr McGee Oil and Gas Onshore, LP****Schlumberger**Well: **P Ville Federal 5-7**Field: **Wattenberg**County: **Weld**State: **Colorado**

Platform Express
Micro Log