

Company: Lamont Doherty

Well: Expedition 339, Site U1389 GC-11A Hole E
Field: Mediterranean Outflow (Portugal)
Rig: JOIDES Resolution Ocean: Atlantic

**FMS Dual Axis Caliper
Gamma Ray**

| | | | |
|---|--|-------------------------------|--|
| Rig: JOIDES Resolution | | Elev.: K.B. 11.00 m | |
| Field: Mediterranean Outflow (Portugal) | | G.L. -644.00 m | |
| Location: Latitude: N 36° 25.517' | | D.F. 11.00 m | |
| Well: Expedition 339, Site U1389 GC-11A | | Elev.: 0.00 m | |
| Company: Lamont Doherty | | 11.00 m above Perm. Datum | |
| LOCATION | | | |
| Latitude: N 36° 25.517' | | Permanent Datum: _____ | |
| Longitude: W 7° 16.688' | | Mean Sea Level _____ | |
| API Serial No. _____ | | Drill Floor _____ | |
| Max. Hole Devi. 0 deg | | Drilling Measured From: _____ | |
| Longitude W 7.2781* | | Latitude N 36.42528* | |

| | | |
|-------------------------------|----------------------|--|
| Logging Date | 2-Jan-2012 | |
| Run Number | 1 | |
| Depth Driller | 990 m | |
| Schlumberger Depth | 557 m | |
| Bottom Log Interval | 557 m | |
| Top Log Interval | 0 m | |
| Casing Driller Size @ Depth | 10.750 in @ 102 m | |
| Casing Schlumberger | 102 m | |
| Bit Size | 9.875 in | |
| Type Fluid In Hole | Seawater Gel | |
| Density | 1.25 g/cm3 | |
| Fluid Loss | PH | |
| Source Of Sample | N/A | |
| RM @ Measured Temperature | @ | |
| RMF @ Measured Temperature | @ | |
| RMC @ Measured Temperature | @ | |
| Source RMF | RMC | |
| RM @ MRT | RMC @ MRT | |
| Maximum Recorded Temperatures | 21 degC @ 21 @ 21 | |
| Circulation Stopped | 1-Jan-2012 21:00 | |
| Logger On Bottom | 2-Jan-2012 2:30 | |
| Unit Number | 625003 Houston | |
| Recorded By | K. Swain | |
| Witnessed By | T. Williams, J. Lofi | |

| | | |
|-------------------------------|----------------------|--|
| Logging Date | 2-Jan-2012 | |
| Run Number | 1 | |
| Depth Driller | 990 m | |
| Schlumberger Depth | 557 m | |
| Bottom Log Interval | 557 m | |
| Top Log Interval | 0 m | |
| Casing Driller Size @ Depth | 10.750 in @ 102 m | |
| Casing Schlumberger | 102 m | |
| Bit Size | 9.875 in | |
| Type Fluid In Hole | Seawater Gel | |
| Density | 1.25 g/cm3 | |
| Fluid Loss | PH | |
| Source Of Sample | N/A | |
| RM @ Measured Temperature | @ | |
| RMF @ Measured Temperature | @ | |
| RMC @ Measured Temperature | @ | |
| Source RMF | RMC | |
| RM @ MRT | RMC @ MRT | |
| Maximum Recorded Temperatures | 21 degC @ 21 @ 21 | |
| Circulation Stopped | 1-Jan-2012 21:00 | |
| Logger On Bottom | 2-Jan-2012 2:30 | |
| Unit Number | 625003 Houston | |
| Recorded By | K. Swain | |
| Witnessed By | T. Williams, J. Lofi | |

| | | | | |
|-------------------------------|----------------------|--|-------|-------|
| Logging Date | 2-Jan-2012 | | Run 1 | Run 2 |
| Run Number | 1 | | | |
| Depth Driller | 990 m | | | |
| Schlumberger Depth | 557 m | | | |
| Bottom Log Interval | 557 m | | | |
| Top Log Interval | 0 m | | | |
| Casing Driller Size @ Depth | 10.750 in @ 102 m | | | |
| Casing Schlumberger | 102 m | | | |
| Bit Size | 9.875 in | | | |
| Type Fluid In Hole | Seawater Gel | | | |
| Density | 1.25 g/cm3 | | | |
| Fluid Loss | PH | | | |
| Source Of Sample | N/A | | | |
| RM @ Measured Temperature | @ | | | |
| RMF @ Measured Temperature | @ | | | |
| RMC @ Measured Temperature | @ | | | |
| Source RMF | RMC | | | |
| RM @ MRT | RMC @ MRT | | | |
| Maximum Recorded Temperatures | 21 degC @ 21 @ 21 | | | |
| Circulation Stopped | 1-Jan-2012 21:00 | | | |
| Logger On Bottom | 2-Jan-2012 2:30 | | | |
| Unit Number | 625003 Houston | | | |
| Recorded By | K. Swain | | | |
| Witnessed By | T. Williams, J. Lofi | | | |

| | | | | |
|-------------------------------|----------------------|--|-------|-------|
| Logging Date | 2-Jan-2012 | | Run 1 | Run 2 |
| Run Number | 1 | | | |
| Depth Driller | 990 m | | | |
| Schlumberger Depth | 557 m | | | |
| Bottom Log Interval | 557 m | | | |
| Top Log Interval | 0 m | | | |
| Casing Driller Size @ Depth | 10.750 in @ 102 m | | | |
| Casing Schlumberger | 102 m | | | |
| Bit Size | 9.875 in | | | |
| Type Fluid In Hole | Seawater Gel | | | |
| Density | 1.25 g/cm3 | | | |
| Fluid Loss | PH | | | |
| Source Of Sample | N/A | | | |
| RM @ Measured Temperature | @ | | | |
| RMF @ Measured Temperature | @ | | | |
| RMC @ Measured Temperature | @ | | | |
| Source RMF | RMC | | | |
| RM @ MRT | RMC @ MRT | | | |
| Maximum Recorded Temperatures | 21 degC @ 21 @ 21 | | | |
| Circulation Stopped | 1-Jan-2012 21:00 | | | |
| Logger On Bottom | 2-Jan-2012 2:30 | | | |
| Unit Number | 625003 Houston | | | |
| Recorded By | K. Swain | | | |
| Witnessed By | T. Williams, J. Lofi | | | |

DISCLAIMER

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 SERVICES1
 OS1: FMS/DSI
 OS2: APS/HNGS
 OS3: HLDS
 OS4: HRLA
 OS5:

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

REMARKS: RUN NUMBER 1

REMARKS: RUN NUMBER 2

Hole GC-11A Hole E was drilled with a 9 7/8" RCB bit to TDD of 990 mbsf.
 This log originally acquired in measured depth from rig floor but played back for sea floor reference.

A playback was produced and listed on the log for caliper input for hole size.
 The original logs were acquired with bit size as the hole size assumption.
 Barite mud ID was used in the playback and not on the original log.
 All logs recorded via wireline thru 5-5.5" drillpipe and RCB coring BHA consisting of a bit release sub, Kinley sub, drill collars. The bit was released prior to logging.

DSI using SAM1, SAM2 standard frequency for dipole shear transmitters.
 DSI using SAM4 standard frequency for monopole P&S compressional.

RUN 1
 SERVICE ORDER #: 19C0-187
 PROGRAM VERSION:
 FLUID LEVEL:

RUN 2
 SERVICE ORDER #:
 PROGRAM VERSION:
 FLUID LEVEL:

| LOGGED INTERVAL | START | STOP |
|-----------------|-------|------|
| | | |
| | | |
| | | |

| LOGGED INTERVAL | START | STOP |
|-----------------|-------|------|
| | | |
| | | |
| | | |

EQUIPMENT DESCRIPTION

RUN 1
SURFACE EQUIPMENT
 WITM (EDTS)-A

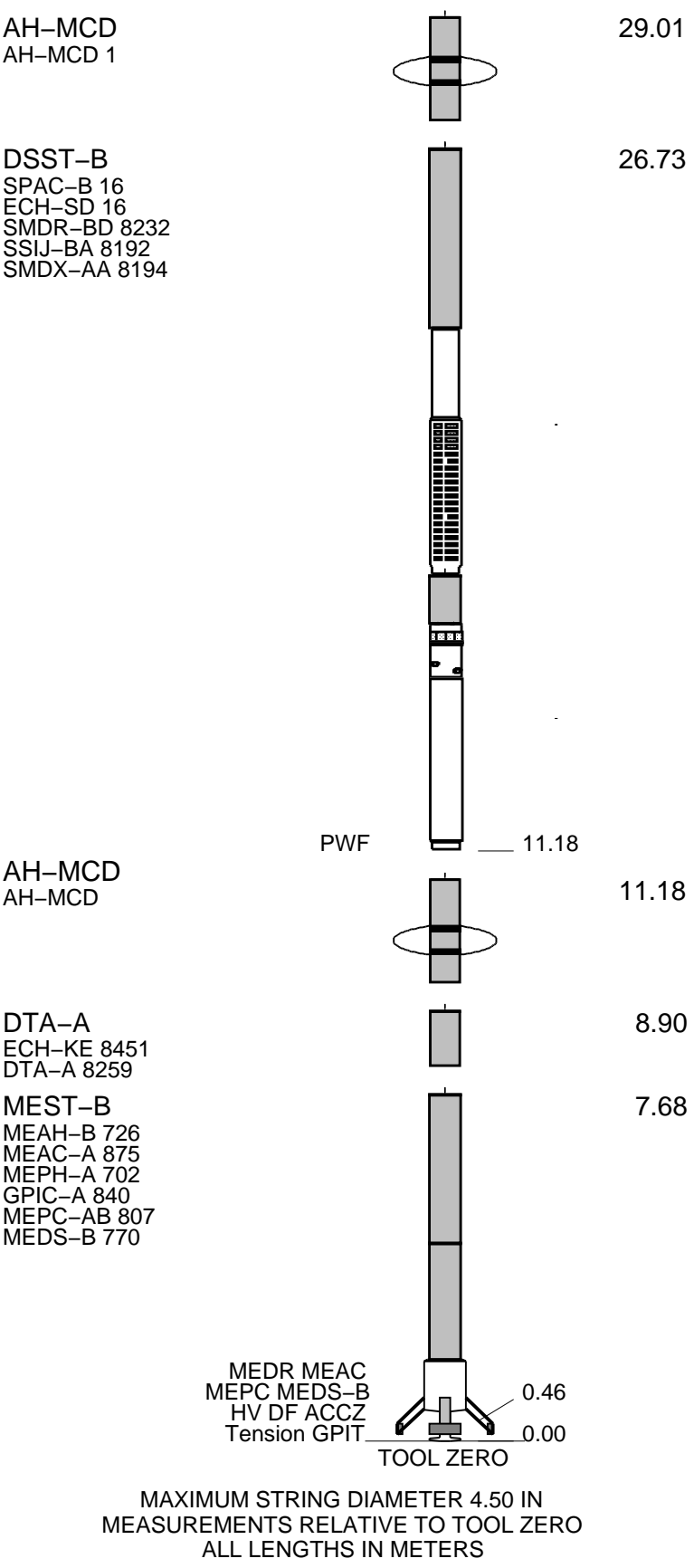
RUN 2

DOWNHOLE EQUIPMENT

LEH-QT 31.88
 LEH-QT 301
 EDTC-B 30.99
 EDTH-B 8303
 EDTC-B 8317
 EDTG-A/B 8305

MDSB_EDTC
 Mud Tempe
 CTEM
 Gamma Ray
 EFTB DIAG
 TelStatus
 EDTCB File

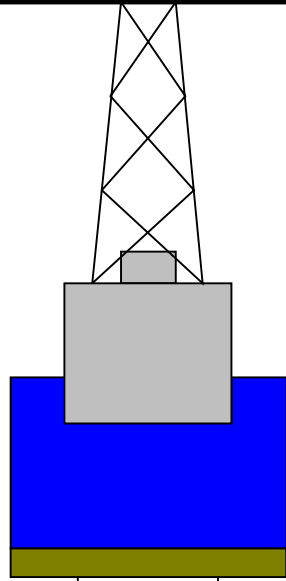
30.99
 29.92
 29.35
 29.01



| | | | | | | |
|-------------------|------|-----|----------------|-----|------|---------------|
| Production String | (in) | (M) | Well Schematic | (M) | (in) | Casing String |
| | OD | ID | | MD | MD | |

Kelly Bushing Elevation
 Derrick Floor Elevation
 Mean Sea Level

-655
 -655
 -645



4.1



0 3.80
 102.2 9.875
 990

Sea Floor
 Open Hole
 Total Depth

Input DLIS Files

DEFAULT FMS_DSI_037LUP FN:38 PRODUCER 02-Jan-2012 12:51 1180.2 M 643.9 M

Output DLIS Files

DEFAULT FMS_DSI_039PUP FN:42 PRODUCER 02-Jan-2012 14:15 527.2 M -9.1 M
 BACKUPDLIS FMS_DSI_039PUP FN:43 PRODUCER 02-Jan-2012 14:15 527.2 M -9.1 M

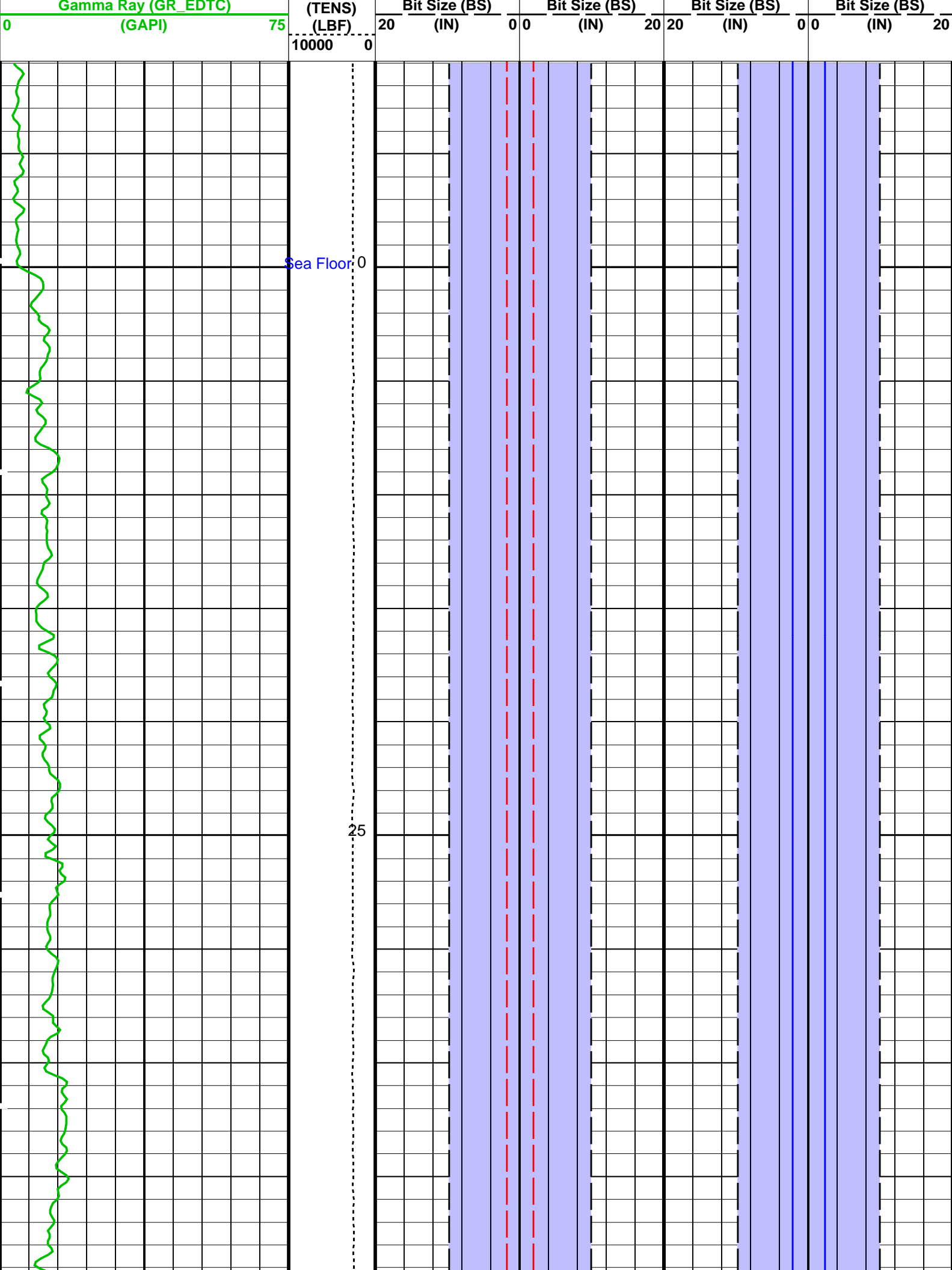
OP System Version: 19C0-187

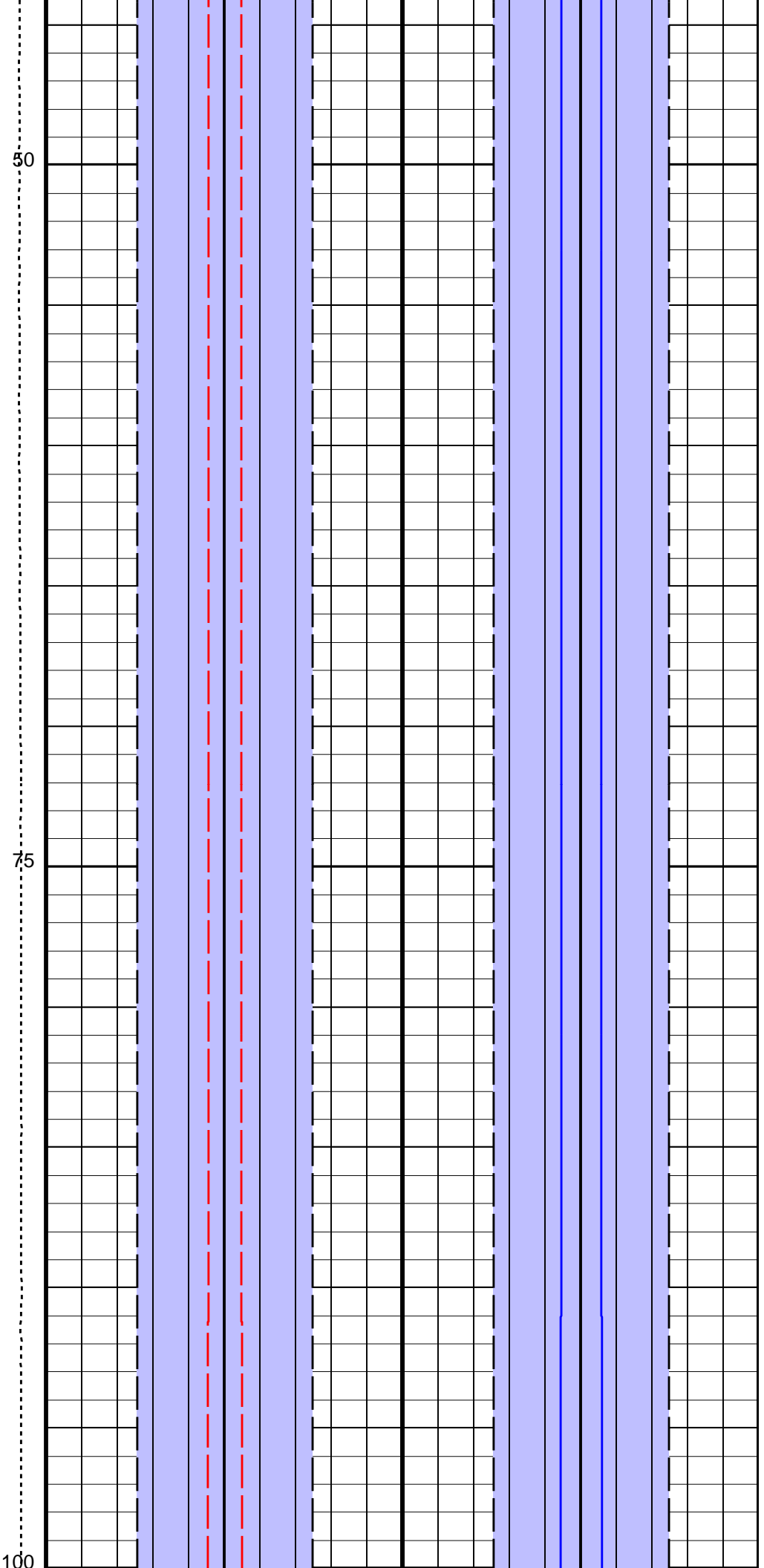
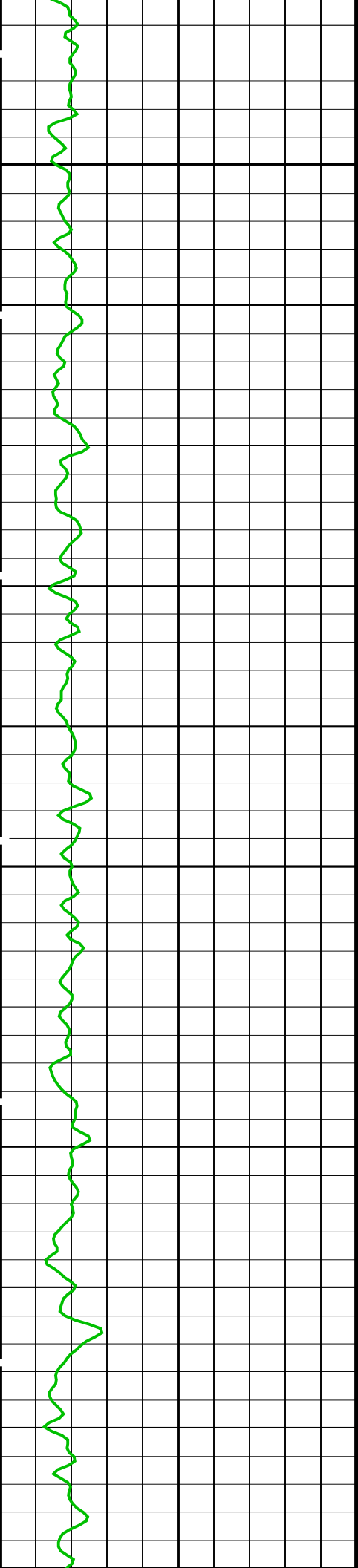
MEST-B 19C0-187 DTA-A 19C0-187
 DSST-B 19C0-187 EDTC-B 19C0-187

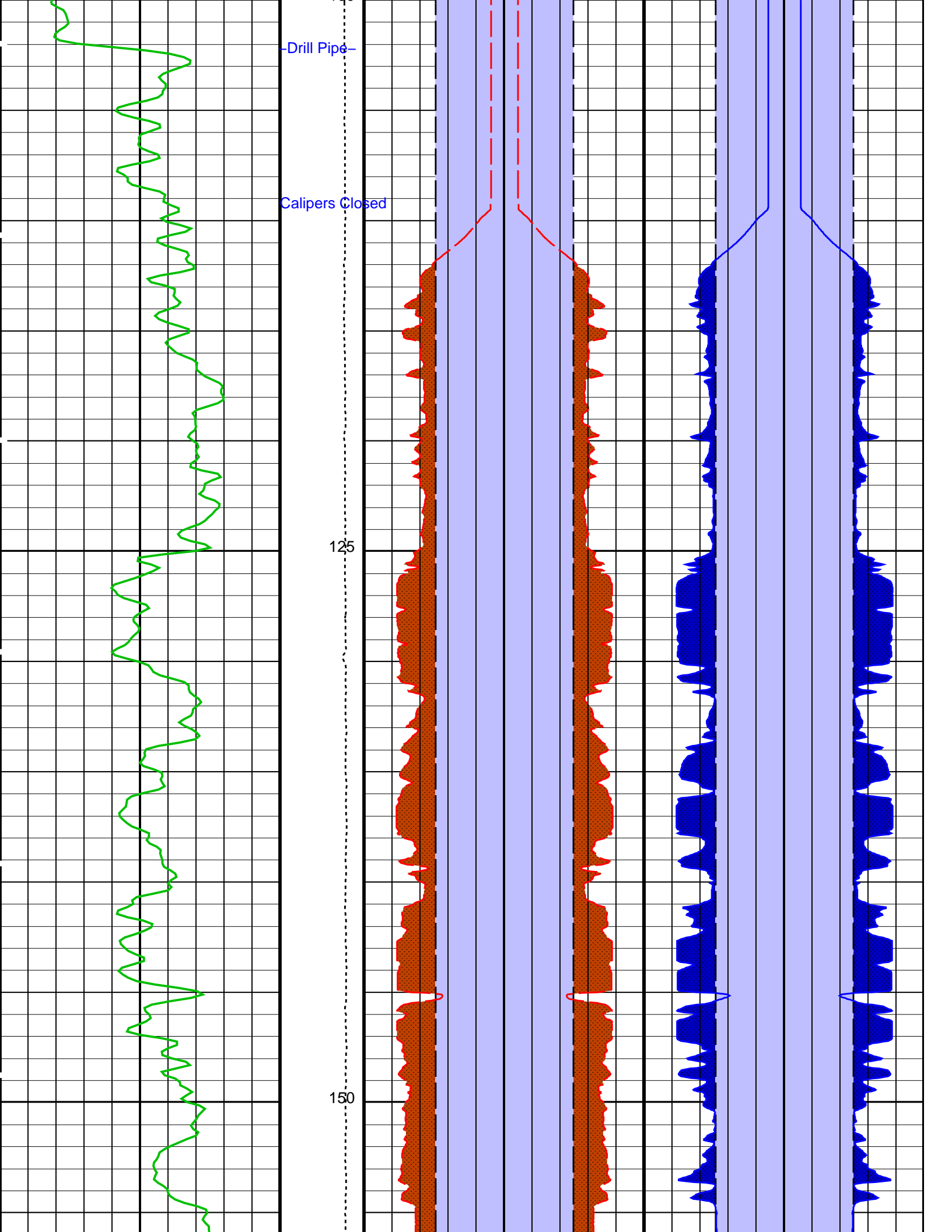
PIP SUMMARY

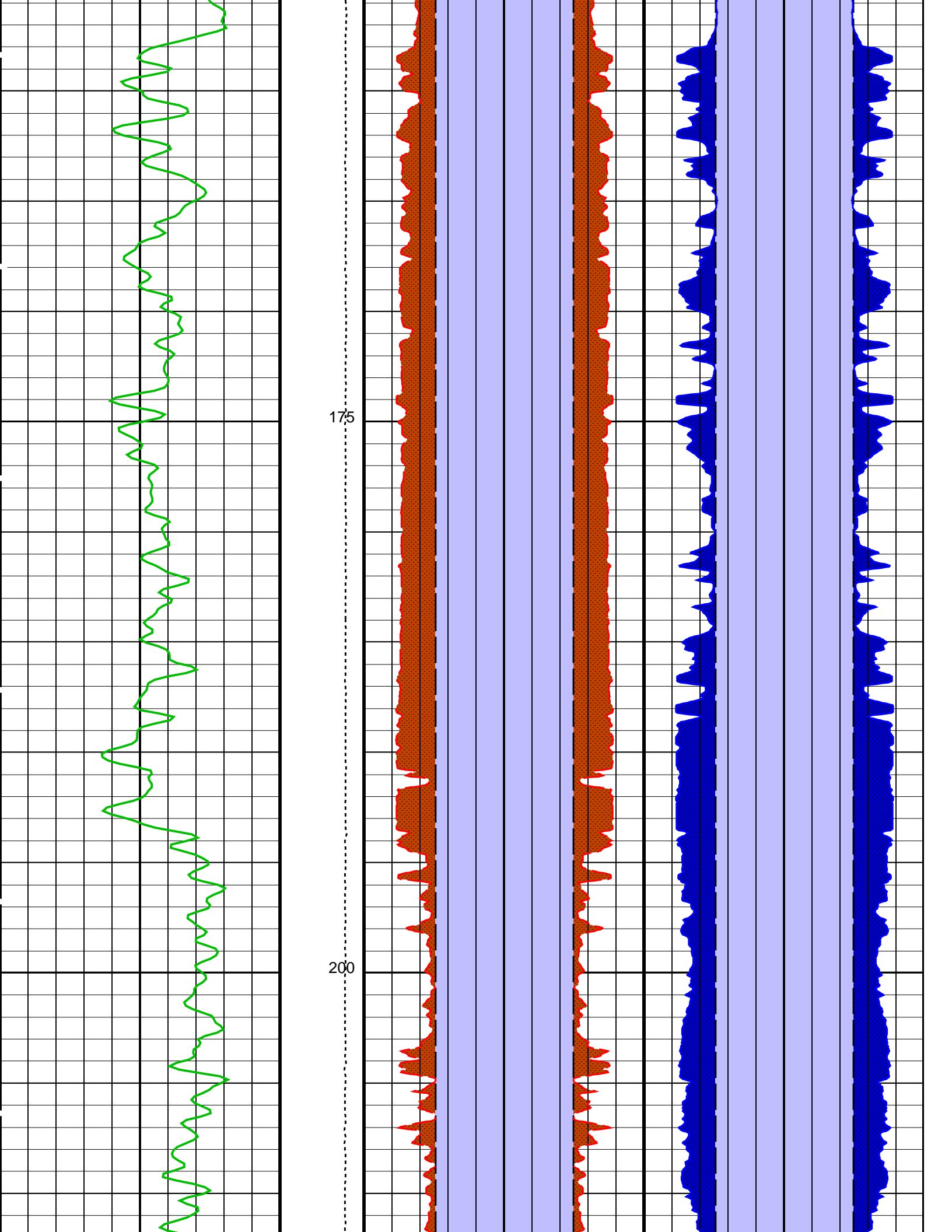
Time Mark Every 60 S

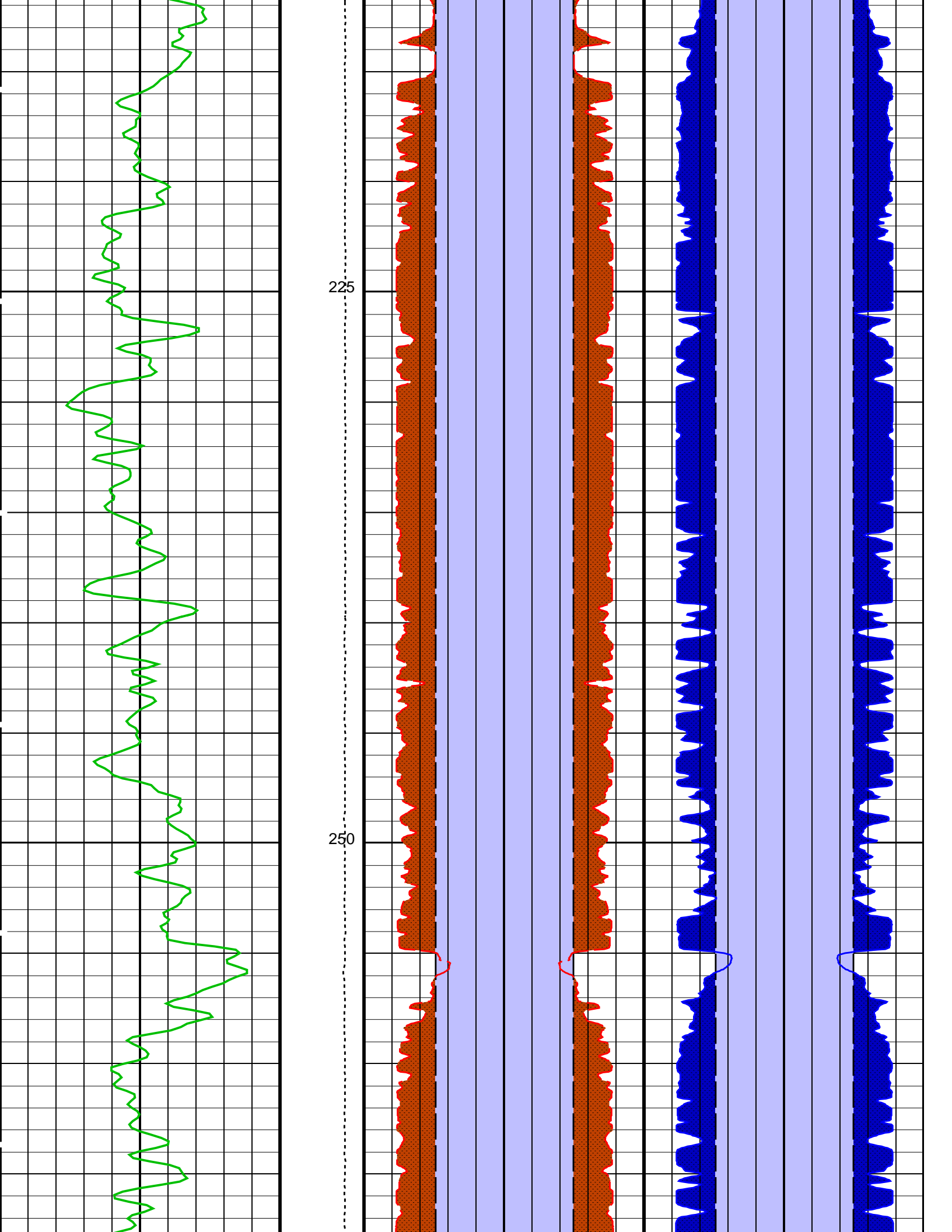
| | Area From BS to BS_1 | | Area From BS_3 to BS_2 | |
|-------------------------------------|----------------------|------------------------|------------------------|------------------------|
| | Area From C1 to BS | Area From BS_1 to C1_1 | Area From C2 to BS_3 | Area From BS_2 to C2_1 |
| | Caliper 1 (C1) | Caliper 1 (C1) | Caliper 2 (C2) | Caliper 2 (C2) |
| 2nd Pass, Sea Floor Depth Reference | 20 (IN) | 0 0 (IN) 20 | 20 (IN) | 0 0 (IN) 20 |
| Tension | | | | |

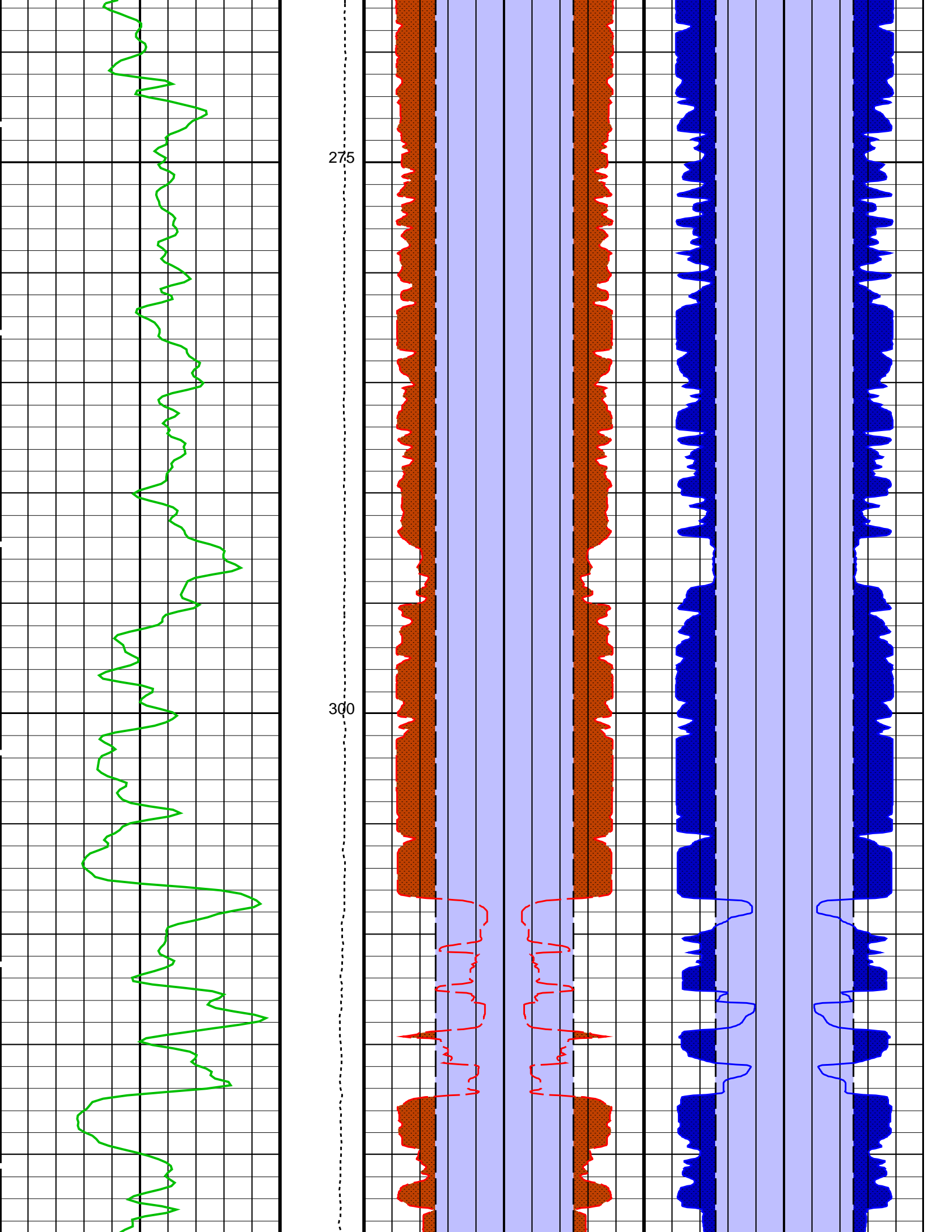


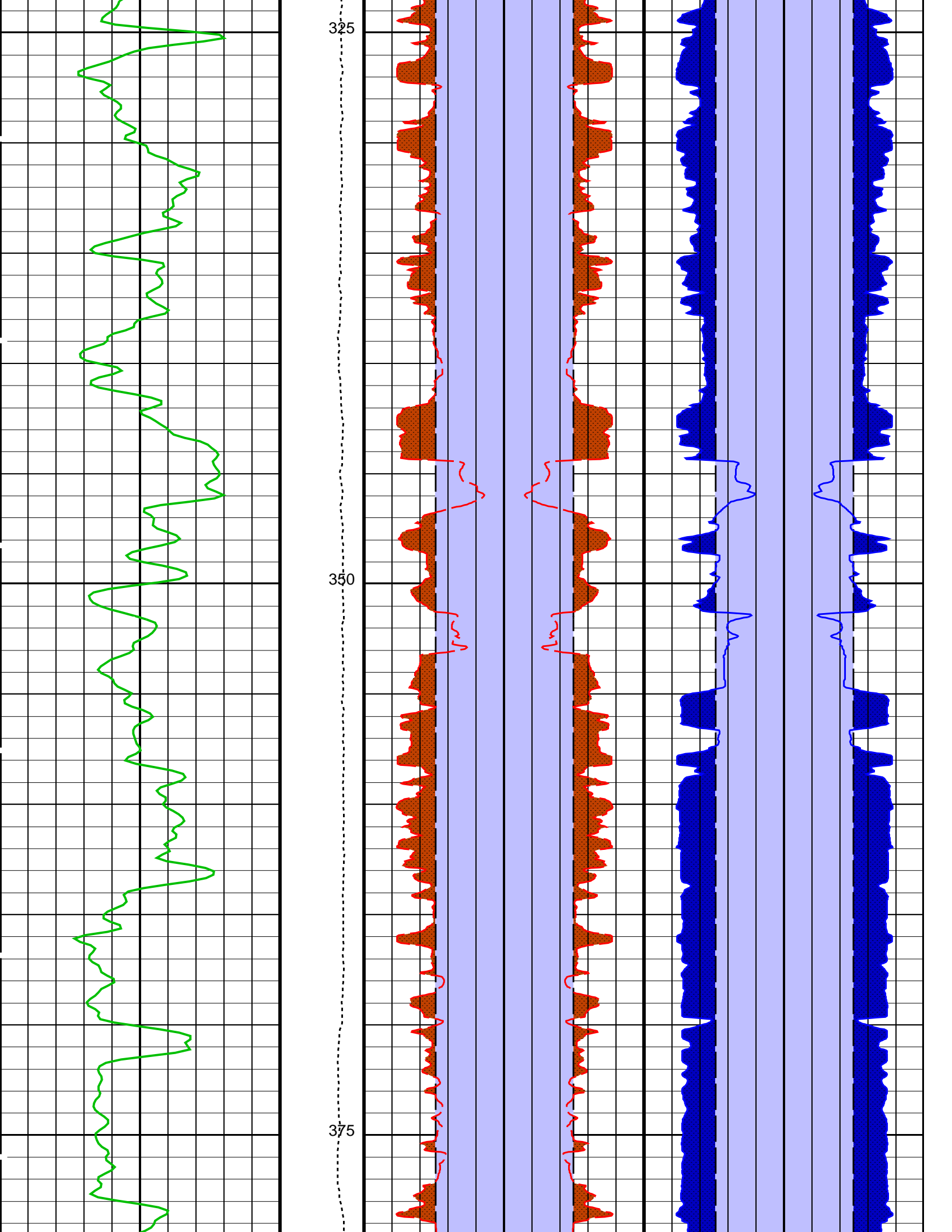


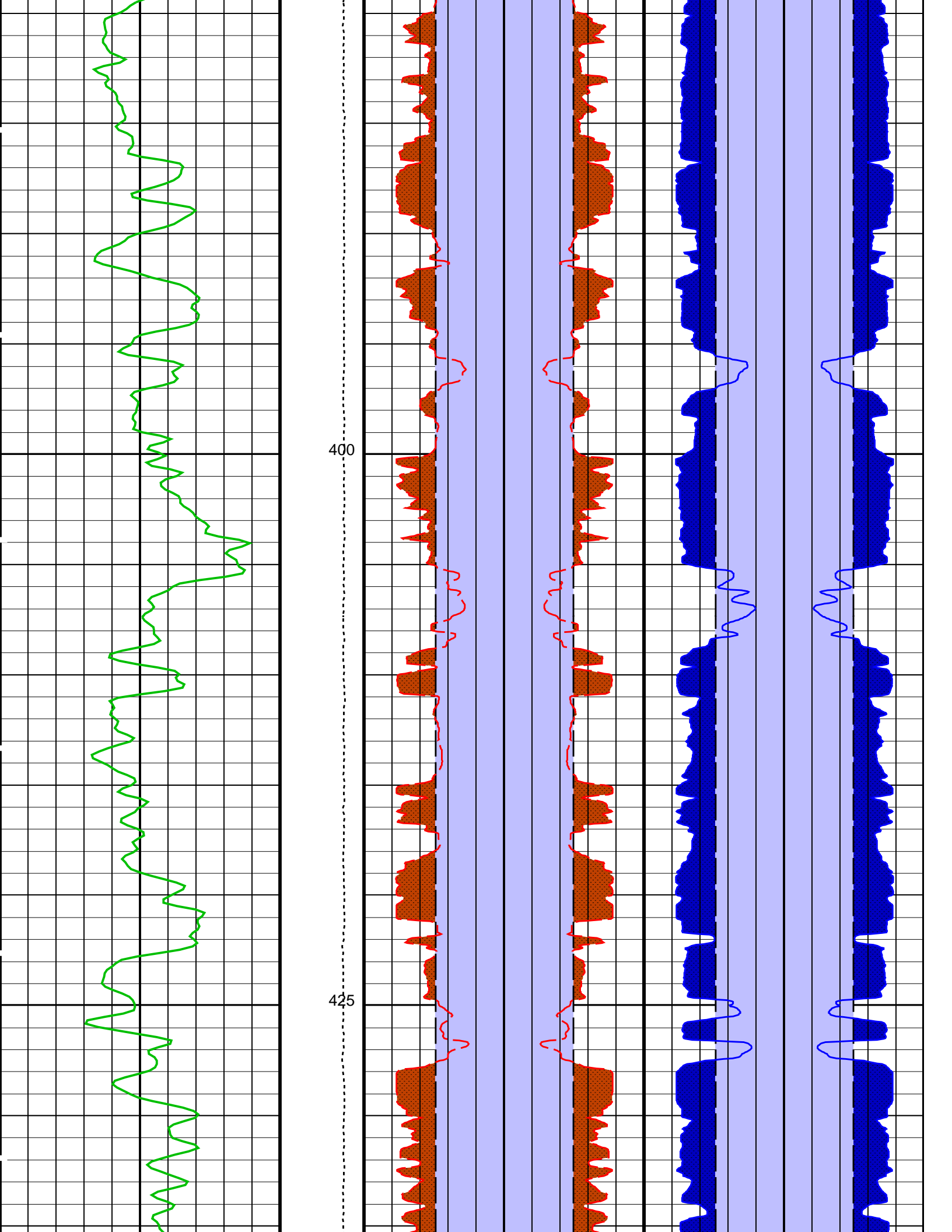


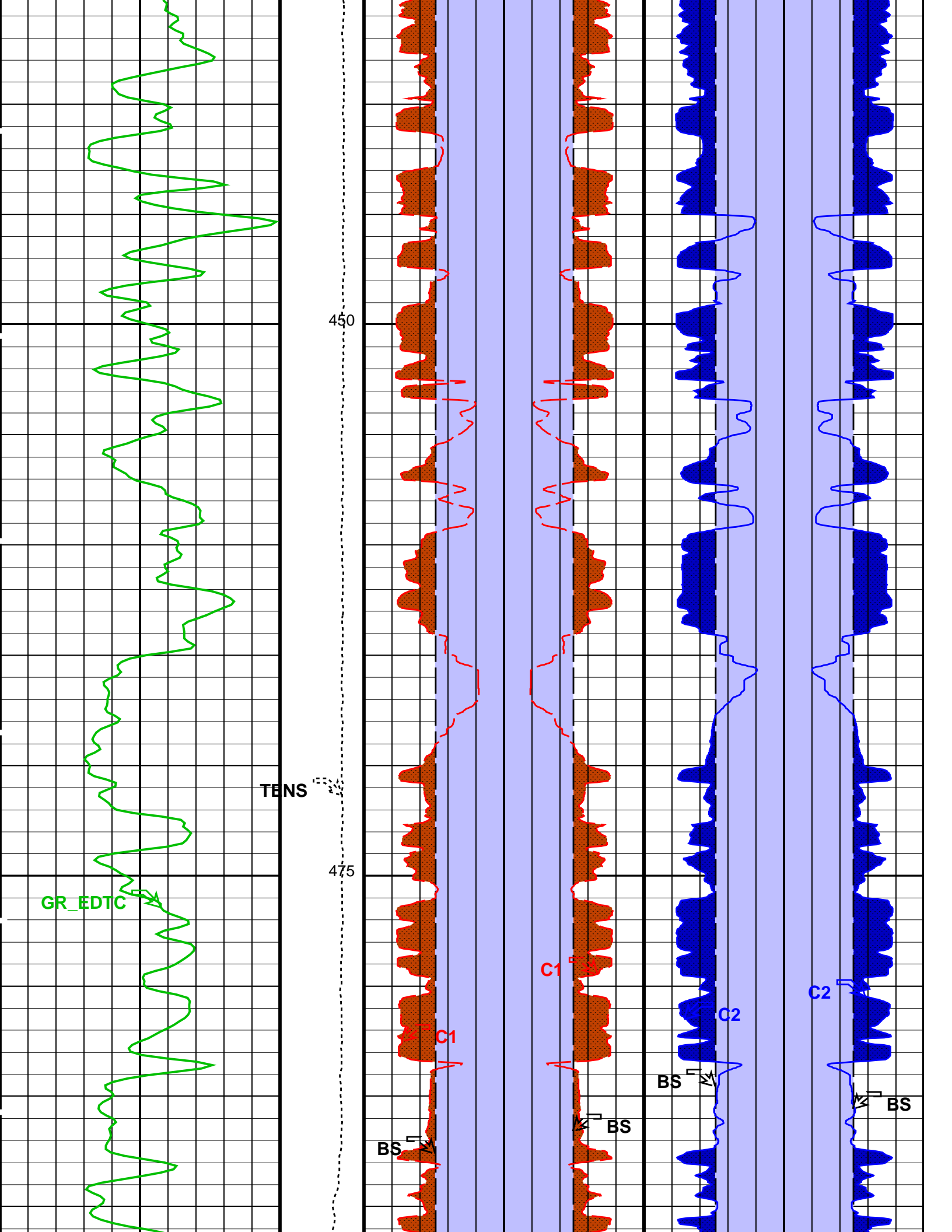


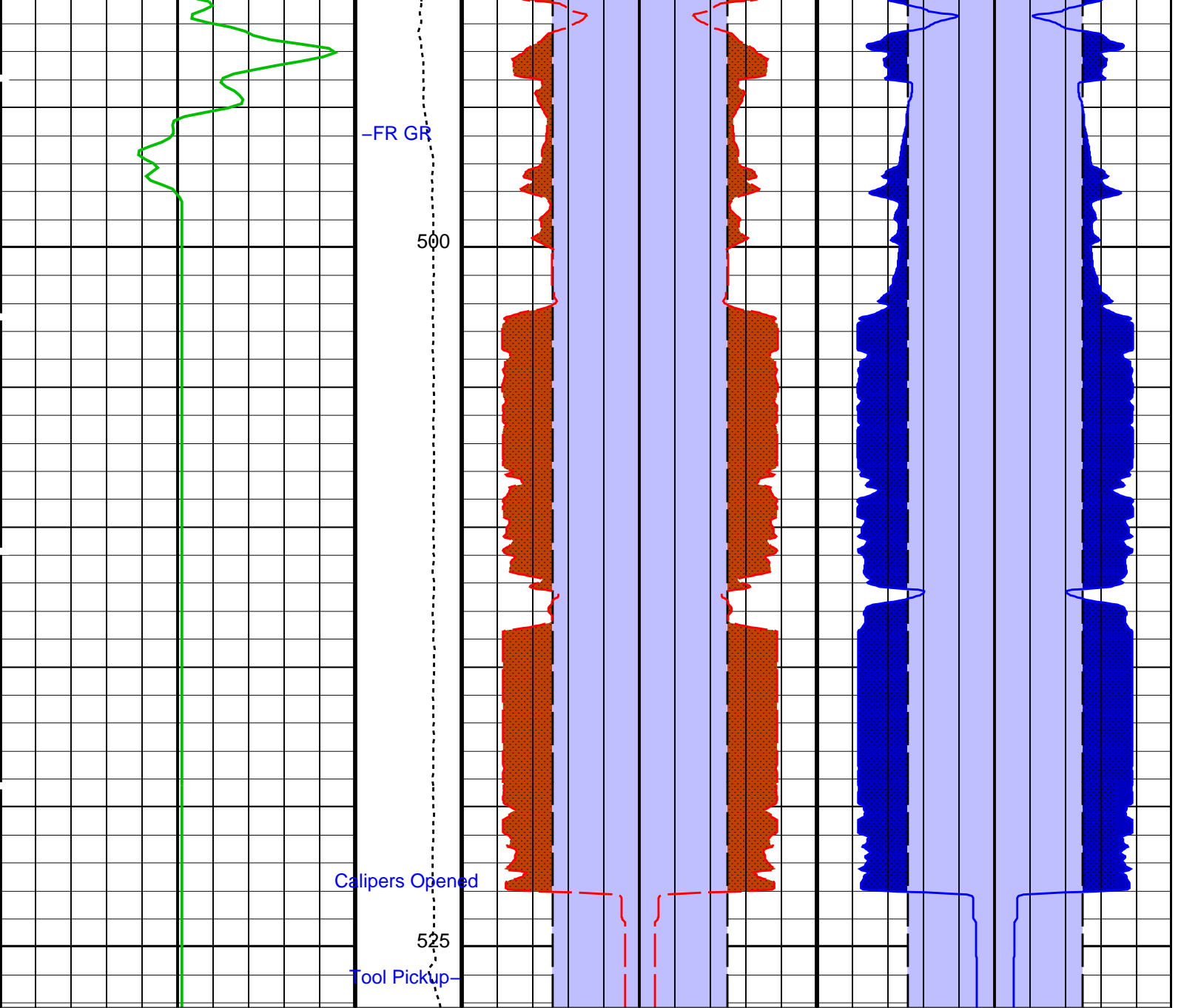












| | | | | | |
|-------------------------------------|----------------------------|-------------------------|------------------------------|---------------------------|------------------------------|
| Gamma Ray (GR_EDTC) (GAPI) | Tension (TENS) (LBF) | Bit Size (BS) (IN) | Bit Size (BS) (IN) | Bit Size (BS) (IN) | Bit Size (BS) (IN) |
| 0 75 | 10000 0 | 20 0 0 | 0 0 20 | 20 0 0 | 0 0 20 |
| 2nd Pass, Sea Floor Depth Reference | | Caliper 1 (C1) (IN) | Caliper 1 (C1) (IN) | Caliper 2 (C2) (IN) | Caliper 2 (C2) (IN) |
| | | 20 0 0 | 0 0 20 | 20 0 0 | 0 0 20 |
| | | Area From C1 to BS | Area From BS_1 to C1_1 | Area From C2 to BS_3 | Area From BS_2 to C2_1 |
| | | Area From BS to BS_1 | | Area From BS_3 to BS_2 | |

PIP SUMMARY

Time Mark Every 60 S

Parameters

| DLIS Name | Description | Value |
|--------------------------|---------------------------|----------|
| System and Miscellaneous | | |
| BS | Bit Size | 9.875 IN |
| DO | Depth Offset for Playback | -653.0 M |
| PP | Playback Processing | NORMAL |

OP System Version: 19C0-187

| | | | |
|--------|----------|--------|----------|
| MEST-B | 19C0-187 | DTA-A | 19C0-187 |
| DSST-B | 19C0-187 | EDTC-B | 19C0-187 |

Input DLIS Files

| | | | | | | |
|---------|----------------|-------|----------|-------------------|----------|---------|
| DEFAULT | FMS_DSI_037LUP | FN:38 | PRODUCER | 02-Jan-2012 12:51 | 1180.2 M | 643.9 M |
|---------|----------------|-------|----------|-------------------|----------|---------|

Output DLIS Files

| | | | | | | |
|------------|----------------|-------|----------|-------------------|--|--|
| DEFAULT | FMS_DSI_039PUP | FN:42 | PRODUCER | 02-Jan-2012 14:15 | | |
| BACKUPDLIS | FMS_DSI_039PUP | FN:43 | PRODUCER | 02-Jan-2012 14:15 | | |

Input DLIS Files

| | | | | | | |
|---------|----------------|-------|----------|-------------------|----------|---------|
| DEFAULT | FMS_DSI_036LUP | FN:36 | PRODUCER | 02-Jan-2012 10:40 | 1223.2 M | 795.1 M |
|---------|----------------|-------|----------|-------------------|----------|---------|

Output DLIS Files

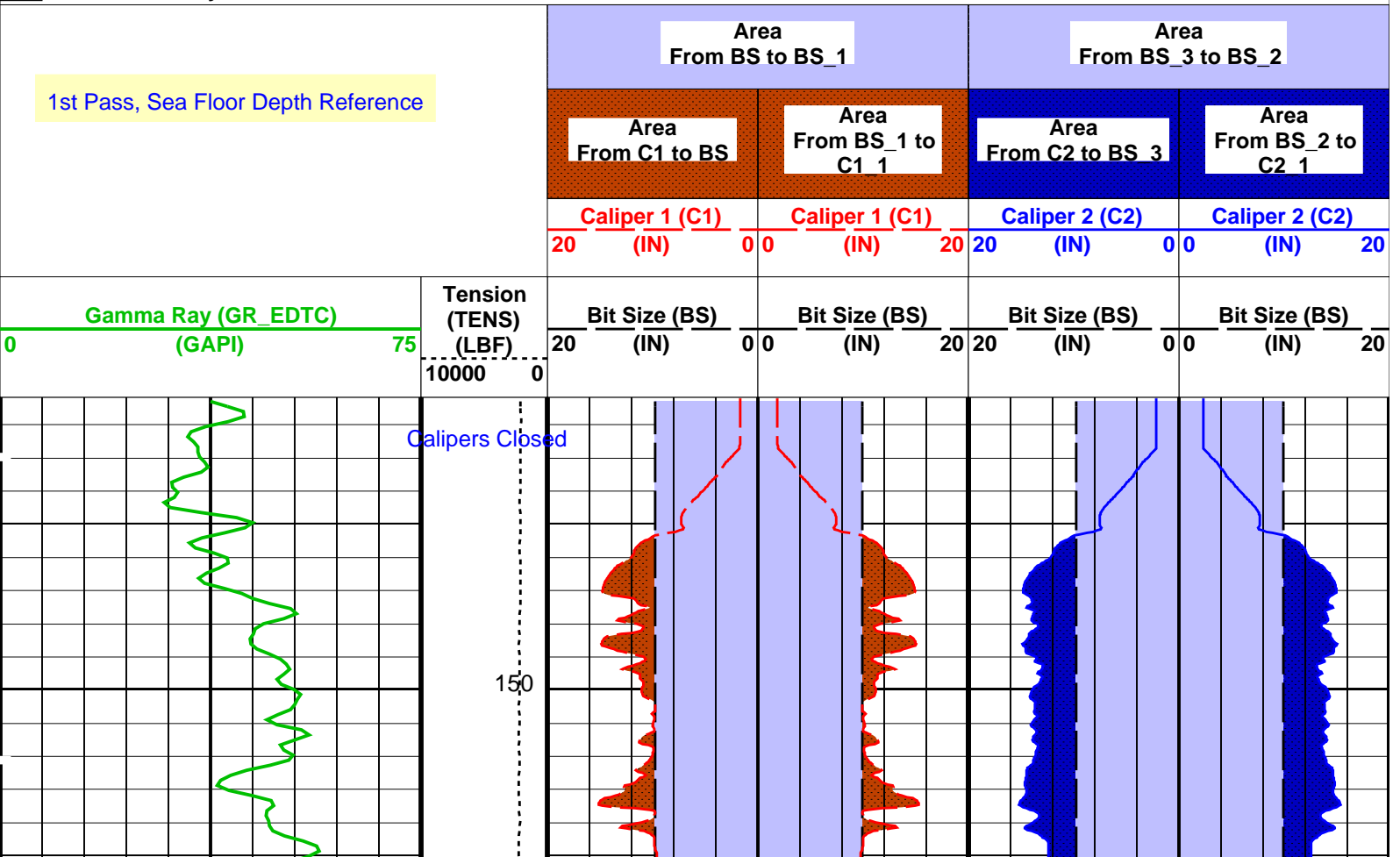
| | | | | | | |
|------------|----------------|-------|----------|-------------------|---------|---------|
| DEFAULT | FMS_DSI_038PUP | FN:40 | PRODUCER | 02-Jan-2012 14:08 | 569.2 M | 141.1 M |
| BACKUPDLIS | FMS_DSI_038PUP | FN:41 | PRODUCER | 02-Jan-2012 14:08 | 569.2 M | 141.1 M |

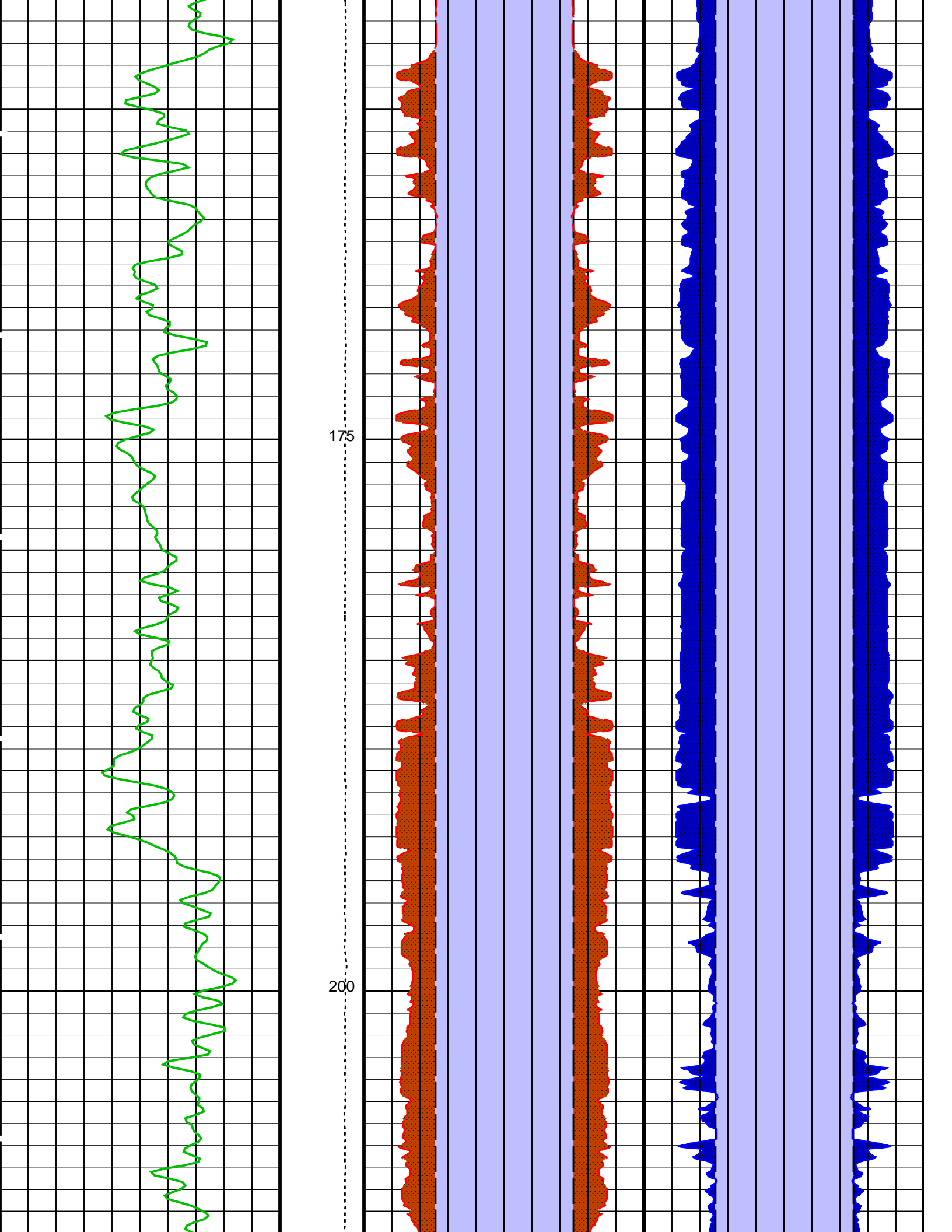
OP System Version: 19C0-187

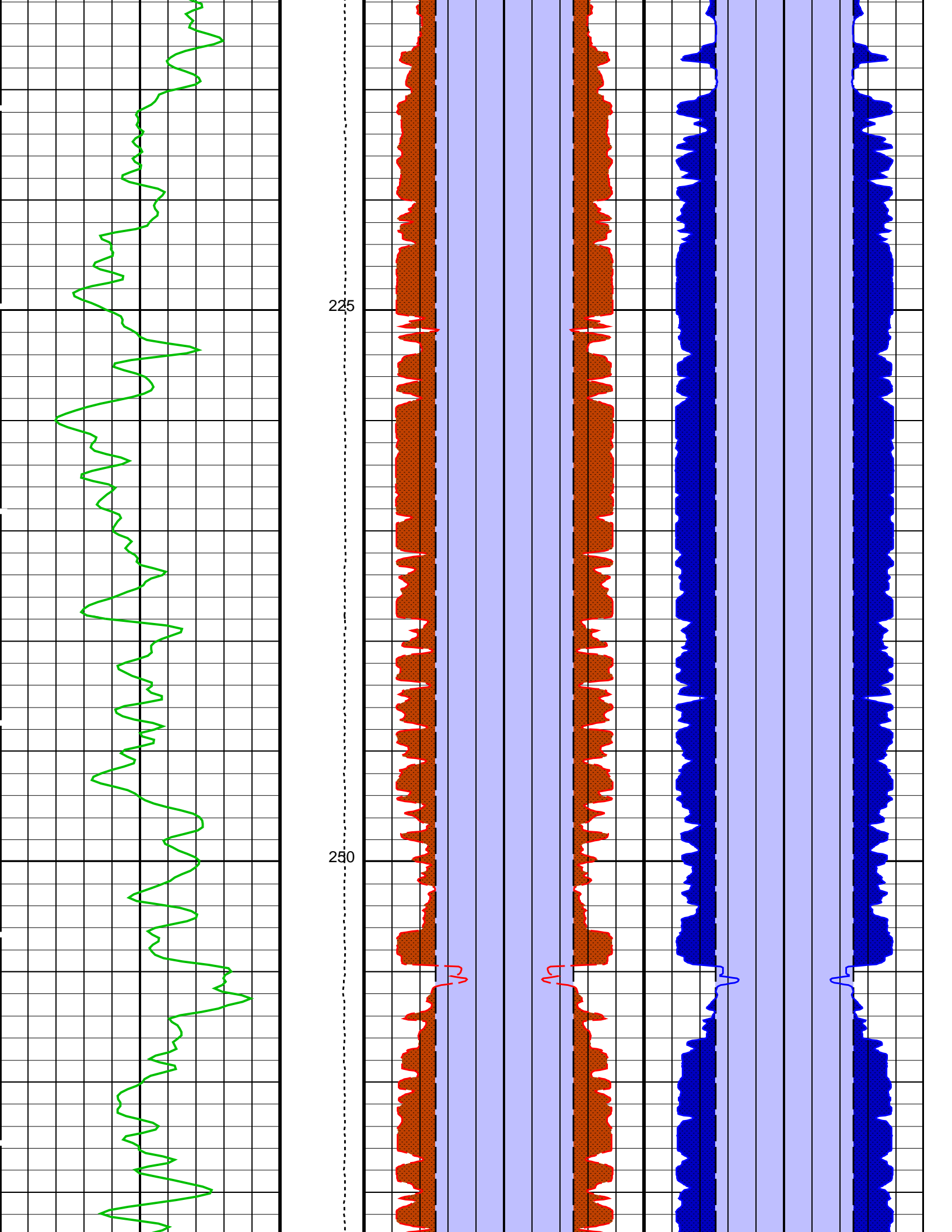
| | | | |
|--------|----------|--------|----------|
| MEST-B | 19C0-187 | DTA-A | 19C0-187 |
| DSST-B | 19C0-187 | EDTC-B | 19C0-187 |

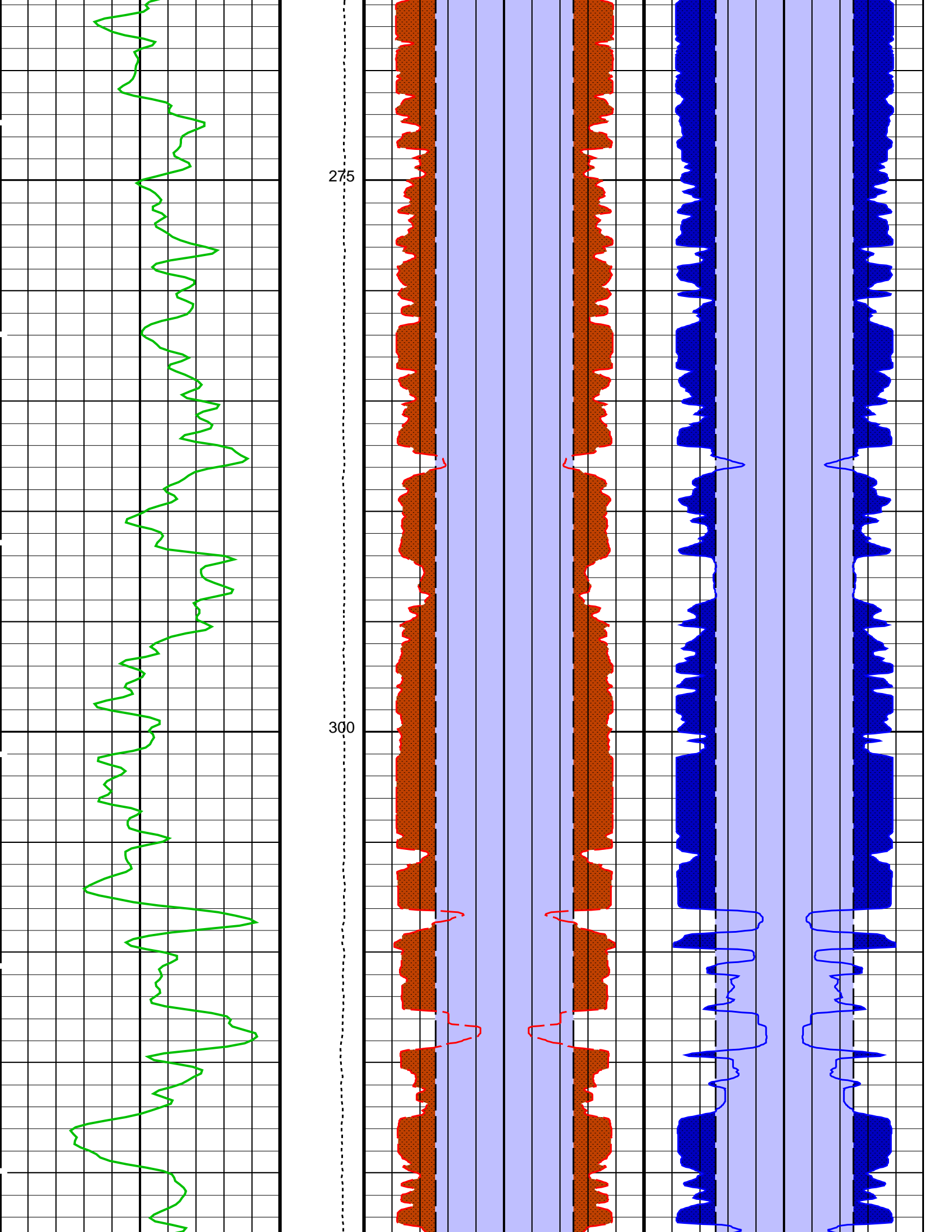
PIP SUMMARY

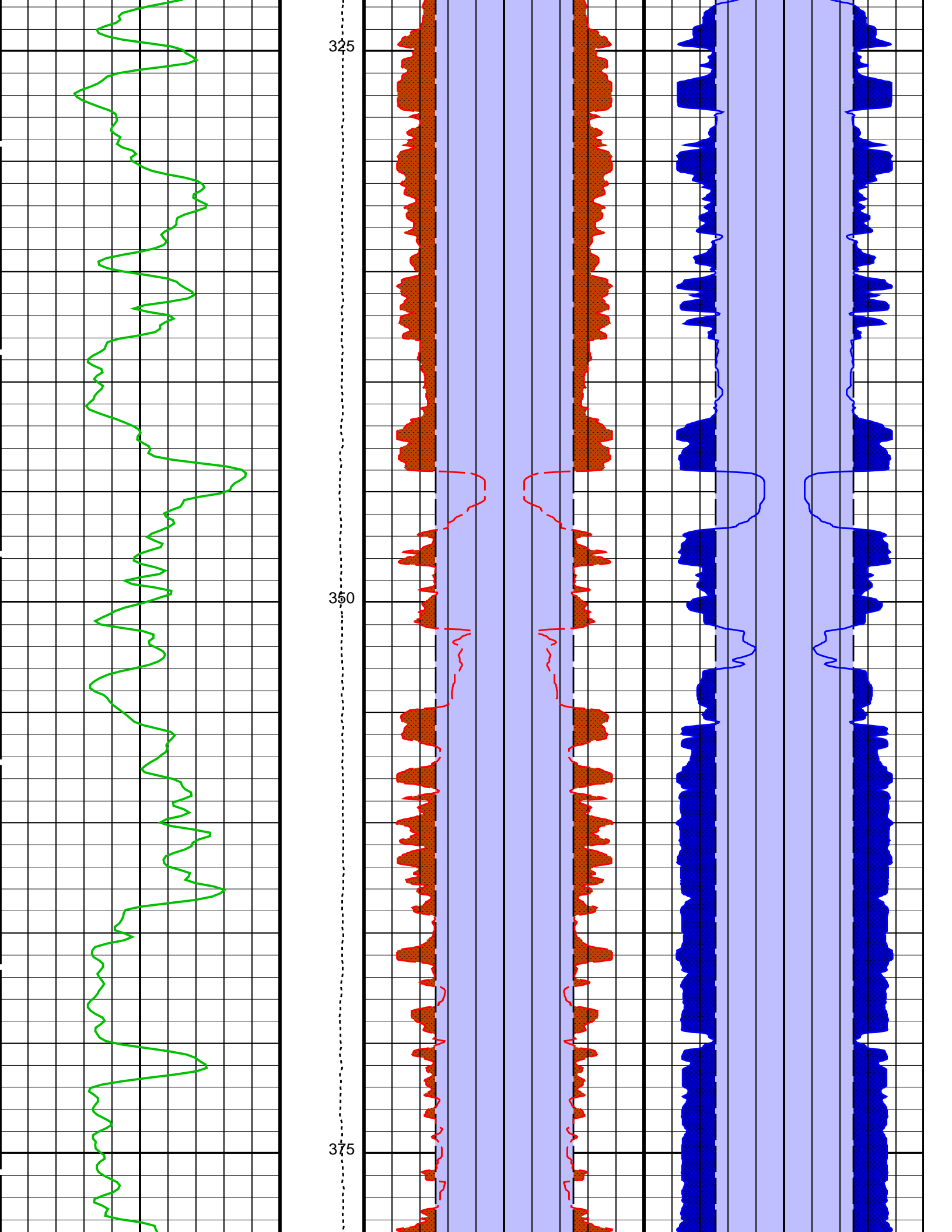
Time Mark Every 60 S

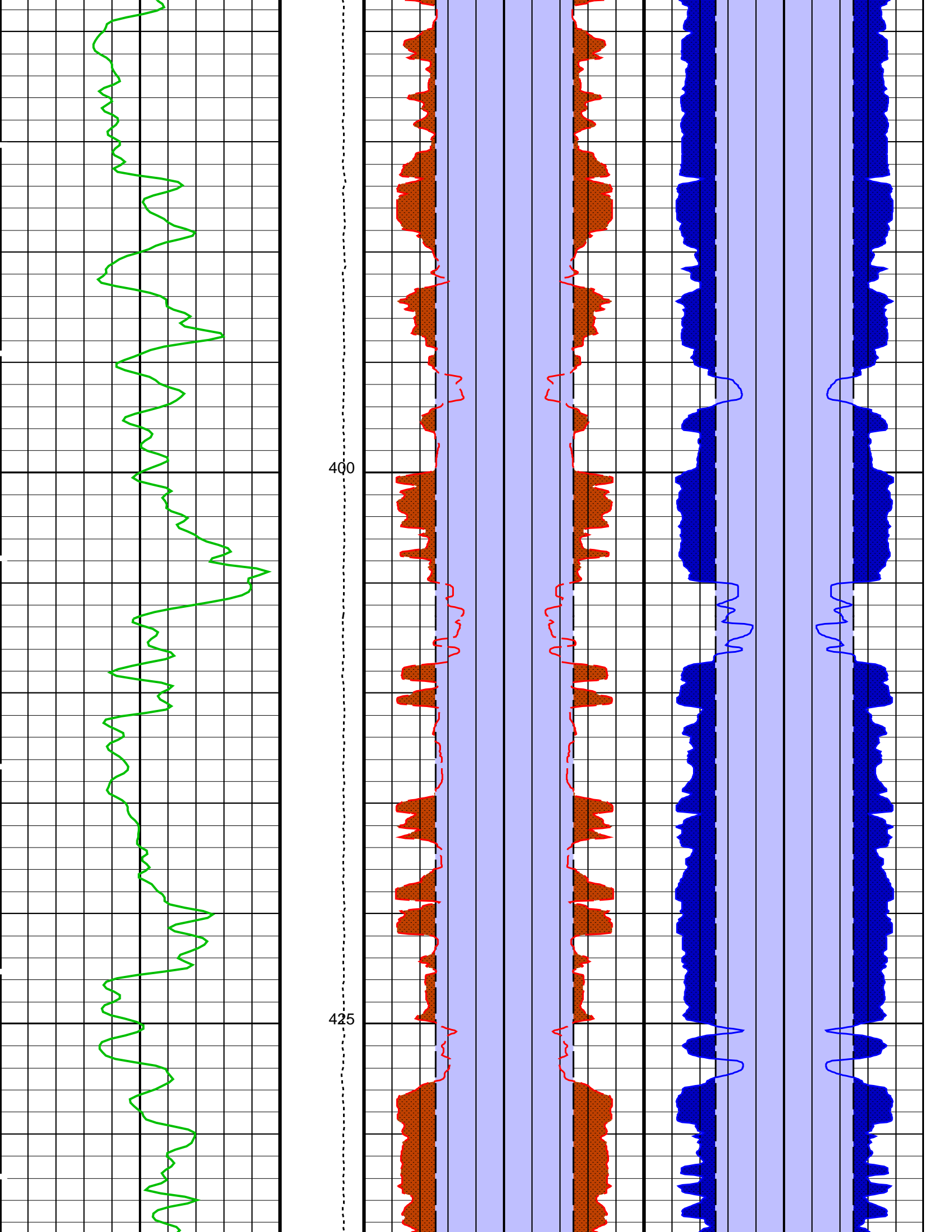


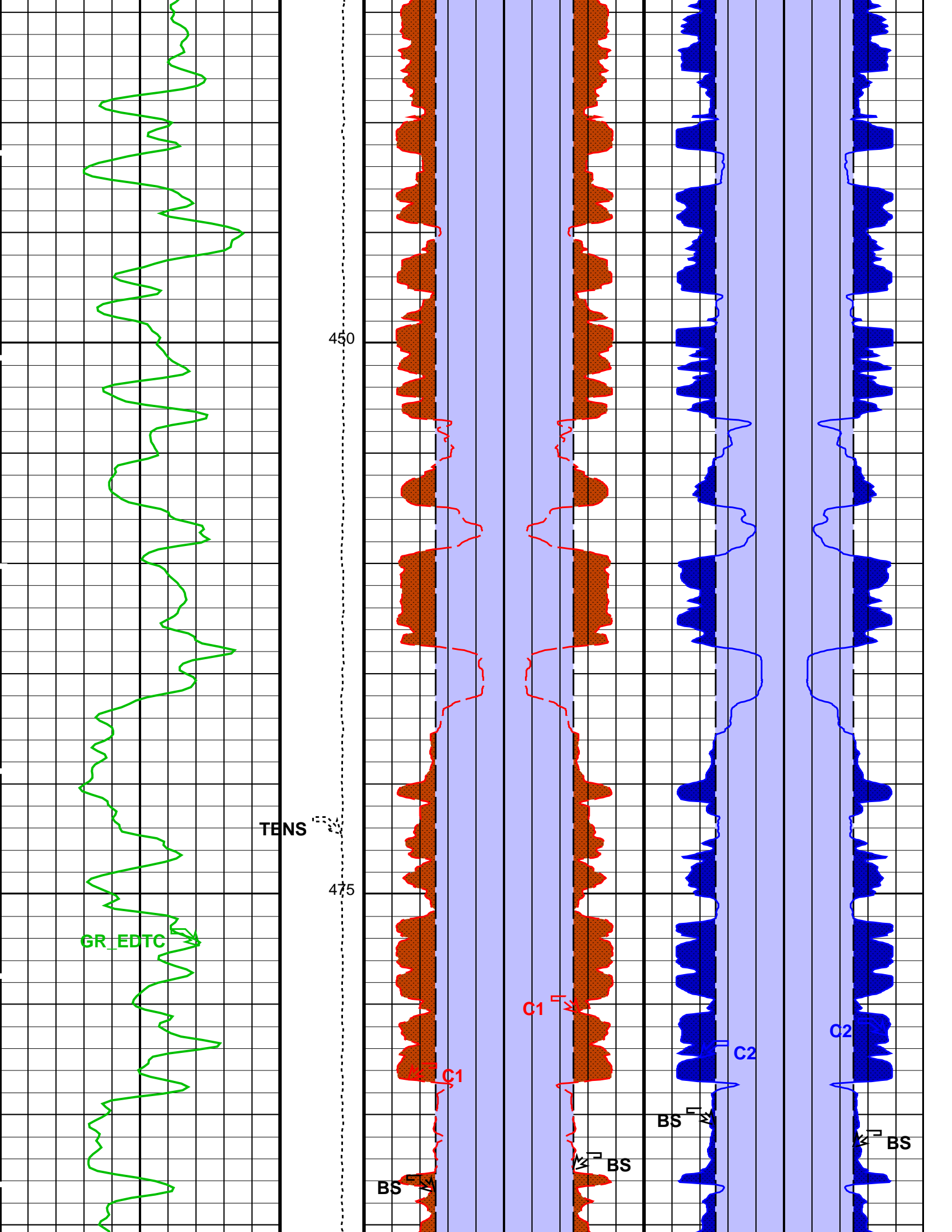


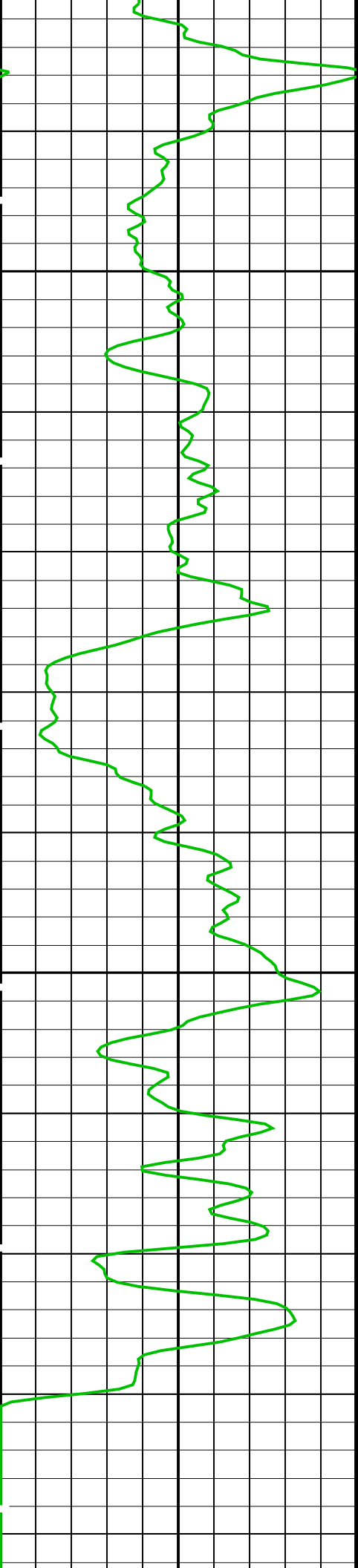








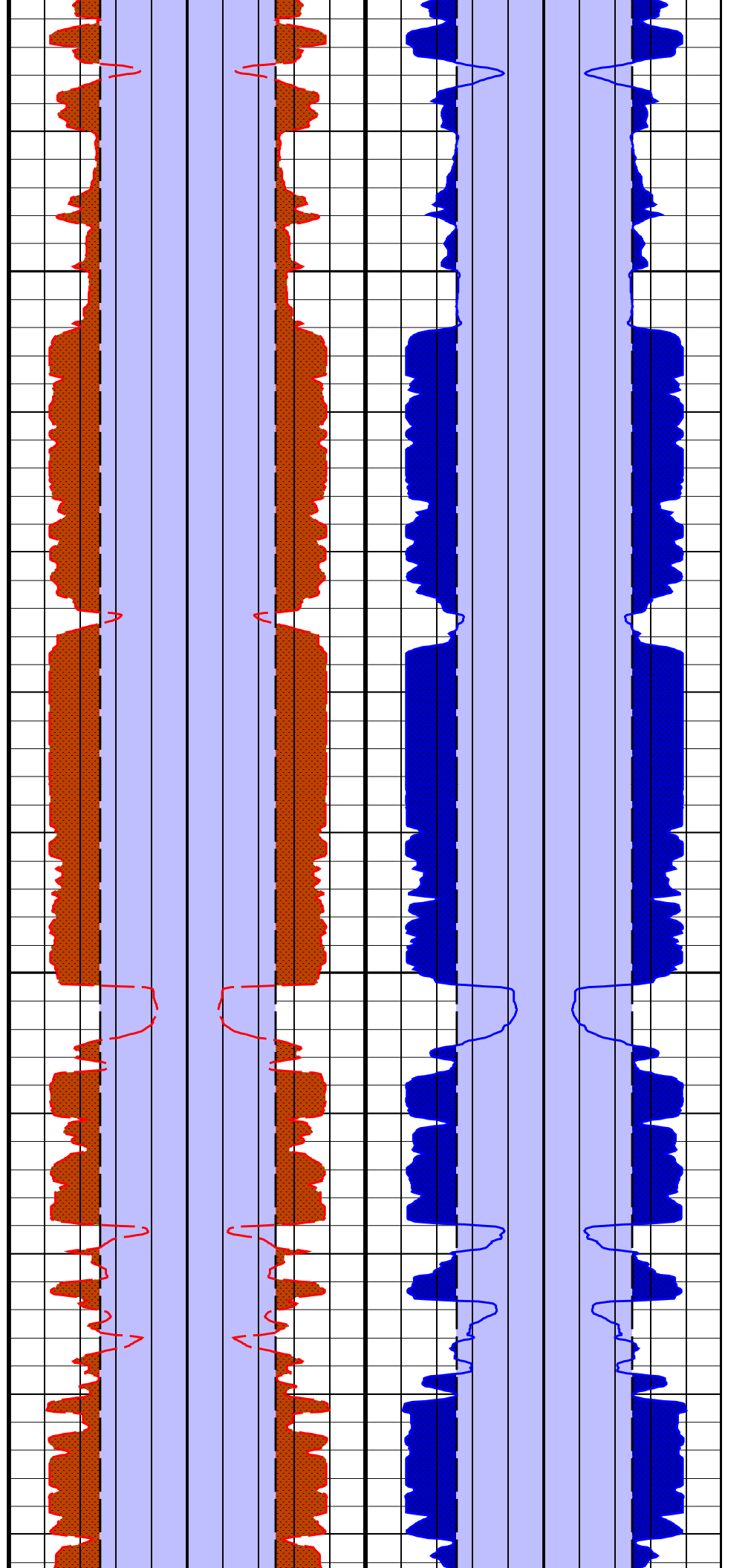


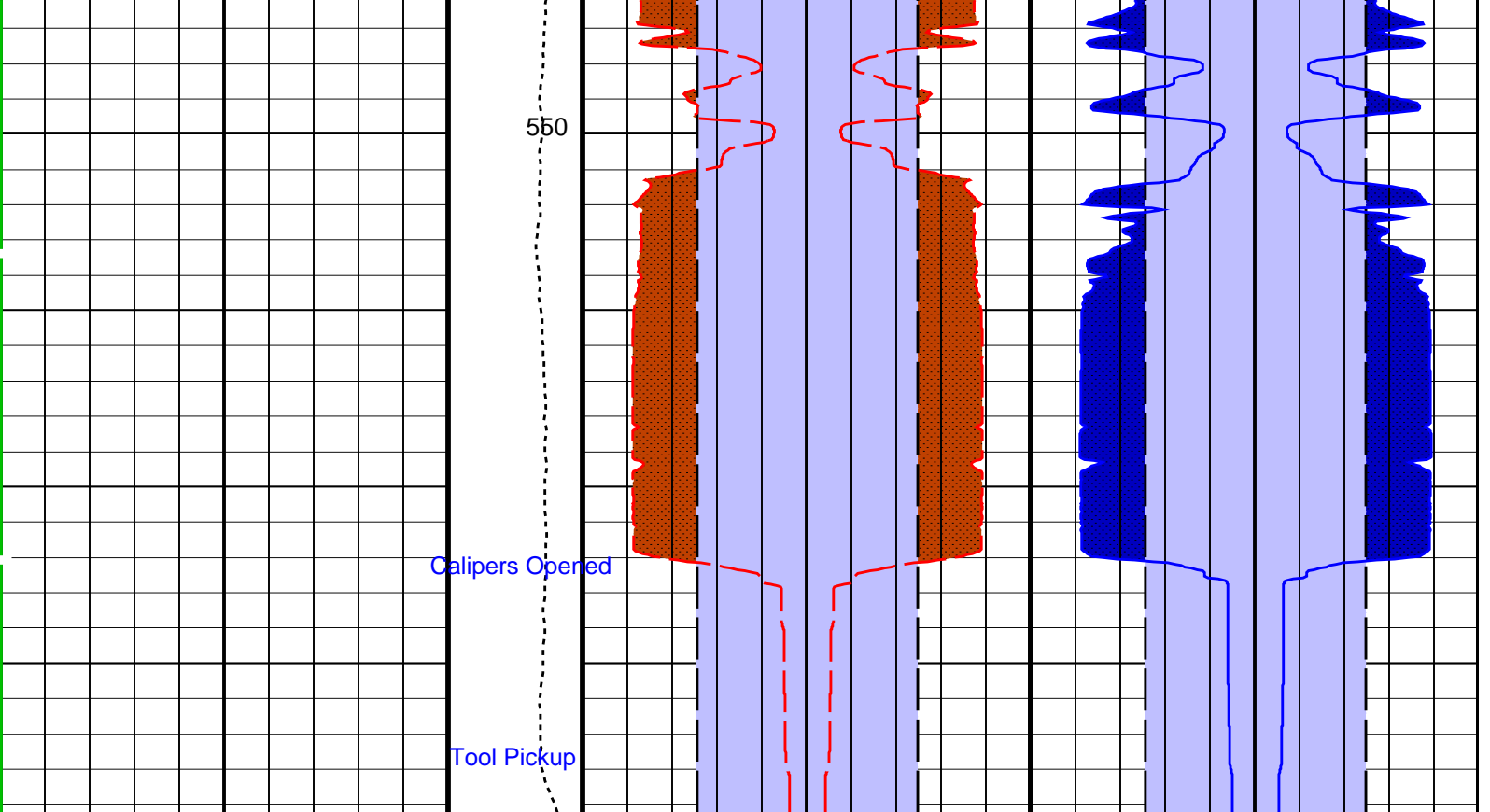


-FR GR

500

525





| | | | | | |
|-------------------------------------|----------------------------|-------------------------|------------------------------|---------------------------|------------------------------|
| Gamma Ray (GR_EDTC) (GAPI) | Tension (TENS) (LBF) | Bit Size (BS) (IN) | Bit Size (BS) (IN) | Bit Size (BS) (IN) | Bit Size (BS) (IN) |
| 0 75 | 10000 0 | 20 0 0 20 | 0 0 20 | 20 0 0 20 | 0 0 20 |
| 1st Pass, Sea Floor Depth Reference | | Caliper 1 (C1) (IN) | Caliper 1 (C1) (IN) | Caliper 2 (C2) (IN) | Caliper 2 (C2) (IN) |
| | | 20 0 0 20 | 0 0 20 | 20 0 0 20 | 0 0 20 |
| | | Area From C1 to BS | Area From BS_1 to C1_1 | Area From C2 to BS_3 | Area From BS_2 to C2_1 |
| | | Area From BS to BS_1 | | Area From BS_3 to BS_2 | |

PIP SUMMARY

Time Mark Every 60 S

Parameters

| DLIS Name | Description | Value |
|--------------------------|---------------------------|----------|
| System and Miscellaneous | | |
| BS | Bit Size | 9.875 IN |
| DO | Depth Offset for Playback | -654.0 M |
| PP | Playback Processing | NORMAL |

Format: BHP Vertical Scale: 1:200 Graphics File Created: 02-Jan-2012 14:08

OP System Version: 19C0-187

| | | | |
|--------|----------|--------|----------|
| MEST-B | 19C0-187 | DTA-A | 19C0-187 |
| DSST-B | 19C0-187 | EDTC-B | 19C0-187 |

Input DLIS Files

| | | | | | | |
|---------|----------------|-------|----------|-------------------|----------|---------|
| DEFAULT | FMS_DSI_036LUP | FN:36 | PRODUCER | 02-Jan-2012 10:40 | 1223.2 M | 795.1 M |
|---------|----------------|-------|----------|-------------------|----------|---------|

Output DLIS Files

| | | | | |
|---------|----------------|-------|----------|-------------------|
| DEFAULT | FMS_DSI_038PUP | FN:40 | PRODUCER | 02-Jan-2012 14:08 |
|---------|----------------|-------|----------|-------------------|

Calibration and Check Summary

| Measurement | Nominal | Master | Before | After | Change | Limit | Units |
|--|---------|--------|--------|-------|--------|-------|-------|
| Micro Electrical Scanner – B (Slim) Wellsite Calibration – Caliper Calibration | | | | | | | |
| Before: Calibration out of date 27-Nov-2011 1:38 | | | | | | | |
| Caliper 1 Zero Measurement | 11.88 | N/A | 11.99 | N/A | N/A | N/A | IN |
| Caliper 2 Zero Measurement | 11.88 | N/A | 12.02 | N/A | N/A | N/A | IN |
| Caliper 1 Plus Measurement | 15.19 | N/A | 15.16 | N/A | N/A | N/A | IN |
| Caliper 2 Plus Measurement | 15.19 | N/A | 15.32 | N/A | N/A | N/A | IN |

| | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|------|
| Micro Electrical Scanner – B (Slim) Wellsite Calibration – CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY | | | | | | | |
| Before: 2-Jan-2012 9:06 | | | | | | | |
| TEMPERATURE REFERENCE : | N/A | N/A | 20 | N/A | N/A | N/A | DEGC |
| YEAR OF CALIBRATION : | N/A | N/A | 99 | N/A | N/A | N/A | |
| MONTH OF CALIBRATION : | N/A | N/A | 3 | N/A | N/A | N/A | |
| SERIAL NUMBER : | N/A | N/A | 743 | N/A | N/A | N/A | |

| | | | | | | | |
|--|-----|-----|-----|-----|-----|-----|------|
| Micro Electrical Scanner – B (Slim) Wellsite Calibration – CROUZET MAGNETOMETER PROM HAS BEEN READ CORRECTLY | | | | | | | |
| Before: 2-Jan-2012 9:06 | | | | | | | |
| TEMPERATURE REFERENCE : | N/A | N/A | 23 | N/A | N/A | N/A | DEGC |
| YEAR OF CALIBRATION : | N/A | N/A | 3 | N/A | N/A | N/A | |
| MONTH OF CALIBRATION : | N/A | N/A | 9 | N/A | N/A | N/A | |
| SERIAL NUMBER : | N/A | N/A | 507 | N/A | N/A | N/A | |

| | | | | | | | |
|--|-------|-----|-------|-----|-----|-----|------|
| Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration | | | | | | | |
| Before: 2-Jan-2012 1:11 | | | | | | | |
| EDTC Z-Axis Acceleration | 9.810 | N/A | 9.755 | N/A | N/A | N/A | M/S2 |

| | | | | | | | |
|--|-------|-----|-------|-----|-----|-------|------|
| Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration | | | | | | | |
| Before: 27-Dec-2011 9:12 | | | | | | | |
| Gamma Ray (Jig – Bkg) | 160.1 | N/A | 160.1 | N/A | N/A | 14.56 | GAPI |
| Gamma Ray (Calibrated) | 164.0 | N/A | 164.0 | N/A | N/A | 15.00 | GAPI |

Micro Electrical Scanner – B (Slim) / Equipment Identification

| | | | |
|---|--|-----------|-----|
| Primary Equipment: | | | |
| MEST Sonde – B | | MEDS – B | 770 |
| MEST Preamplifier Cartridge – AB | | MEPC – AB | 807 |
| GPIT Cartridge – A | | GPIC – A | 840 |
| MEST Acquisition Cartridge – A | | MEAC – A | 875 |
| Auxiliary Equipment: | | | |
| MEST-B Preamplifier Cartridge Housing | | MEPH – A | 702 |
| MEST Acquisition Cartridge Housing (Slim) | | MEAH – B | 726 |

Enhanced DTS Cartridge / Equipment Identification

| | | | |
|-------------------------|--|------------|------|
| Primary Equipment: | | | |
| EDTC Gamma Ray Detector | | EDTG – A/B | 8305 |
| Enhanced DTS Cartridge | | EDTC – B | 8317 |
| Auxiliary Equipment: | | | |
| EDTC Housing | | EDTH – B | 8303 |

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

| Phase | EDTC Z-Axis Acceleration M/S2 | Value |
|--------|-------------------------------|-----------|
| Before | | 9.755 |
| | 9.610 | 10.01 |
| | (Minimum) | (Maximum) |
| | 9.810 | |
| | (Nominal) | |

Before: 2-Jan-2012 1:11

Detector Calibration

| Phase | Gamma Ray Background GAPI | Value | Phase | Gamma Ray (Jig - Bkg) GAPI | Value | Phase | Gamma Ray (Calibrated) GAPI | Value |
|--------|--|-------|--------|--|-------|--------|--|-------|
| Before | | 6.619 | Before | | 160.1 | Before | | 164.0 |
| | 0 (Minimum) 30.00 (Nominal) 120.0 (Maximum) | | | 145.6 (Minimum) 160.1 (Nominal) 174.7 (Maximum) | | | 149.0 (Minimum) 164.0 (Nominal) 179.0 (Maximum) | |

Before: 27-Dec-2011 9:12

Company: **Lamont Doherty**

Schlumberger

Well: **Expedition 339, Site U1389 GC-11A Hole E**

Field: **Mediterranean Outflow (Portugal)**

Rig: **JOIDES Resolution**

Ocean: **Atlantic**

FMS Dual Axis Caliper
Gamma Ray