

HALLIBURTON

DUAL SPACED NEUTRON SPECTRAL DENSITY MICROLOG

| | |
|-----------------|--------------------------------------|
| COMPANY | HERMAN LOEB |
| WELL | HENRY TAYLOR 3-28 |
| FIELD | MCKINNEY |
| COUNTY | MEADE |
| STATE | KANSAS |
| COMPANY | HERMAN LOEB |
| WELL | HENRY TAYLOR 3-28 |
| FIELD | MCKINNEY |
| COUNTY | MEADE |
| STATE | KANSAS |
| API No. | 15-119-21342 |
| Location | NW NW SE NW 1453' FNL & 1401' FWL |
| Sect. | 28 |
| Twp. | 34S |
| Rge. | 26W |
| Other Services: | SDL DSN MICROLOG ACRT |

| | | |
|------------------------|----|------------------|
| Permanent Datum | GL | Elev.: 2358.0 ft |
| Log measured from | KB | D.F. 2369.0 ft |
| Drilling measured from | KB | G.L. 2358.0 ft |

| | |
|--------------------------|---------------------------|
| Date | 11-Jul-13 |
| Run No. | ONE |
| Depth - Driller | 6600.00 ft |
| Depth - Logger | 6598.0 ft |
| Bottom - Logged Interval | 6583 ft |
| Top - Logged Interval | 1404 ft |
| Casing - Driller | 8.625 in @ 1404.0 ft |
| Casing - Logger | 1404.0 ft @ |
| Bit Size | 7.875 in @ |
| Type Fluid in Hole | WATER BASED |
| Density | 9.0 ppg @ 60.00 s/qt |
| PH | 10.00 pH @ 8.8 optm |
| Source of Sample | FLOW LINE |
| Rm @ Meas. Temperature | 0.800 ohmm @ 75.00 degF @ |
| Rmf @ Meas. Temperature | 0.70 ohmm @ 80.00 degF @ |
| Rmc @ Meas. Temperature | 0.900 ohmm @ 80.00 degF @ |
| Source Rmf | MEASURED @ MEASURED |
| Rm @ BHT | 0.55 ohmm @ 112.0 degF @ |
| Time Since Circulation | 8.0 hr |
| Time on Bottom | 11-Jul-13 03:53 |
| Max. Rec. Temperature | 112.0 degF @ 6596.0 ft @ |
| Equipment | 10549592 @ PVOK |
| Recorded By | CORY HANSSON |
| Witnessed By | J. CHRISTENSEN |

Fold here

| | | | | | | | |
|---|------------|------------------------------|--------|---|-----------------|---------------|-----------------|
| Service Ticket No.: 900572539 | | API Serial No.: 15-119-21342 | | PGM Version: WL INSITE R3.6.0 (Build 3) | | | |
| CHANGE IN MUD TYPE OR ADDITIONAL SAMPLE | | | | RESISTIVITY SCALE CHANGES | | | |
| Date | Sample No. | | | Type Log | Depth | Scale Up Hole | Scale Down Hole |
| Depth-Driller | | | | | | | |
| Type Fluid in Hole | | | | | | | |
| Density | Viscosity | | | | | | |
| Ph | Fluid Loss | | | | | | |
| Source of Sample | | | | RESISTIVITY EQUIPMENT DATA | | | |
| Rm @ Meas. Temp | @ | @ | | Run No. | Tool Type & No. | Pad Type | Tool Pos. |
| Rmf @ Meas. Temp. | @ | @ | | | | | |
| Rmc @ Meas. Temp. | @ | @ | | | | | |
| Source Rmf | Rmc | | | | | | |
| Rm @ BHT | @ | @ | | | | | |
| Rmf @ BHT | @ | @ | | | | | |
| Rmc @ BHT | @ | @ | | | | | |
| EQUIPMENT DATA | | | | | | | |
| GAMMA | | ACOUSTIC | | DENSITY | | NEUTRON | |
| Run No. | ONE | Run No. | | Run No. | ONE | Run No. | ONE |
| Serial No. | 11021138 | Serial No. | | Serial No. | 10865873 | Serial No. | 10993115 |
| Model No. | GTET | Model No. | BSAT-I | Model No. | SDLT-I | Model No. | DSNT-I |
| Diameter | 3.625" | No. of Cent. | 2 | Diameter | 4.5" | Diameter | 3.625" |
| Detector Model No. | T-102 | Spacing | 0.5" | Log Type | GAM-GAM | Log Type | NEU-NEU |
| Type | SCINT | | | Source Type | CS137 | Source Type | AM241 |
| Length | 8" | LSA [Y/N] | NO | Serial No. | 20791B | Serial No. | DSN382 |
| Distance to Source | N/A | FWDA [Y/N] | NO | Strength | 1.5 Ci | Strength | 15 Ci |
| LOGGING DATA | | | | | | | |
| GENERAL | | GAMMA | | ACOUSTIC | | DENSITY | |

| Run No. | GENERAL | | Speed ft/min | GAMMA | | ACOUSTIC | | Matrix | DENSITY | | Matrix | NEUTRON | | Matrix |
|---------|---------|-----|-----------------|-------|-----|----------|---|--------|---------|-----|--------|---------|-----|--------|
| | Depth | | | L | R | L | R | | Scale | | | L | R | |
| | From | To | | | | | | | L | R | | | | |
| ONE | TD | CSG | REC | 0 | 150 | | | | 30 | -10 | 2.71 | 30 | -10 | LIME |

DIRECTIONAL INFORMATION

Maximum Deviation @ _____ KOP @ _____

Remarks: ANNULAR HOLE VOLUME CALCULATED USING 5.5-IN CASING

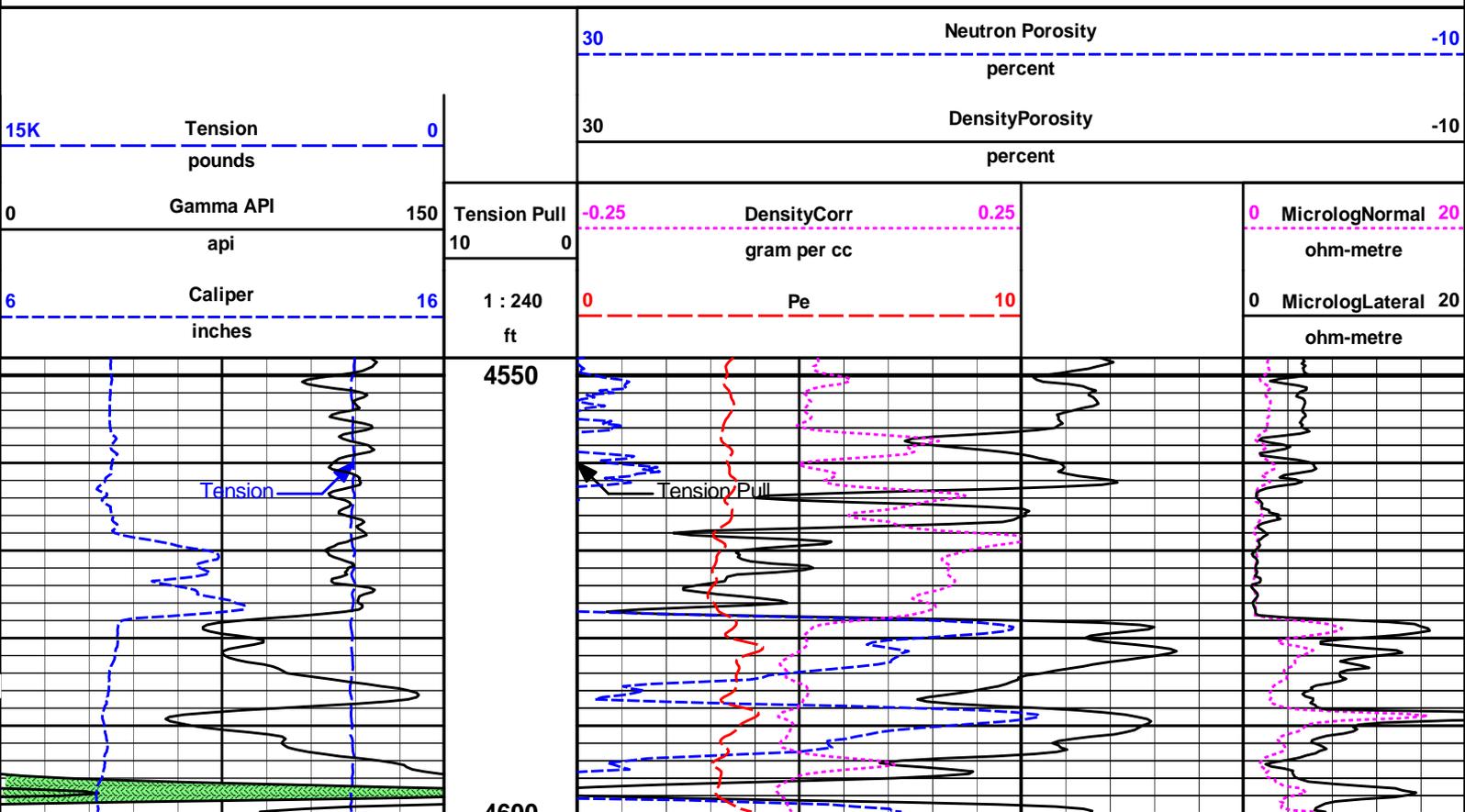
HALLIBURTON DOES NOT GUARANTEE THE ACCURACY OF ANY INTERPRETATION OF THE LOG DATA, CONVERSION OF LOG DATA TO PHYSICAL ROCK PARAMETERS OR RECOMMENDATIONS WHICH MAY BE GIVEN BY HALLIBURTON PERSONNEL OR WHICH APPEAR ON THE LOG OR IN ANY OTHER FORM. ANY USER OF SUCH DATA, INTERPRETATIONS, CONVERSIONS, OR RECOMMENDATIONS AGREES THAT HALLIBURTON IS NOT RESPONSIBLE EXCEPT WHERE DUE TO GROSS NEGLIGENCE OR WILLFUL MISCONDUCT, FOR ANY LOSS, DAMAGES, OR EXPENSES RESULTING FROM THE USE THEREOF.

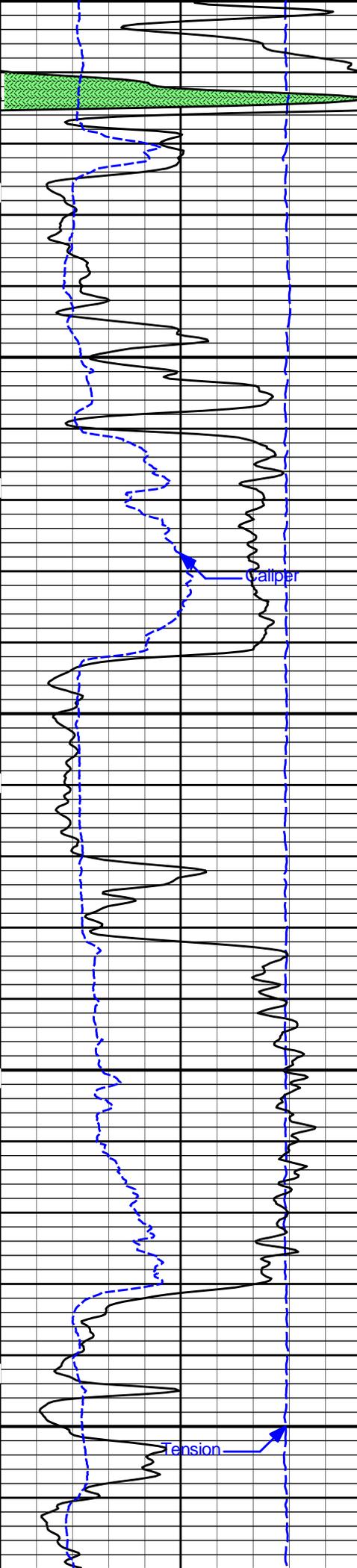
HALLIBURTON



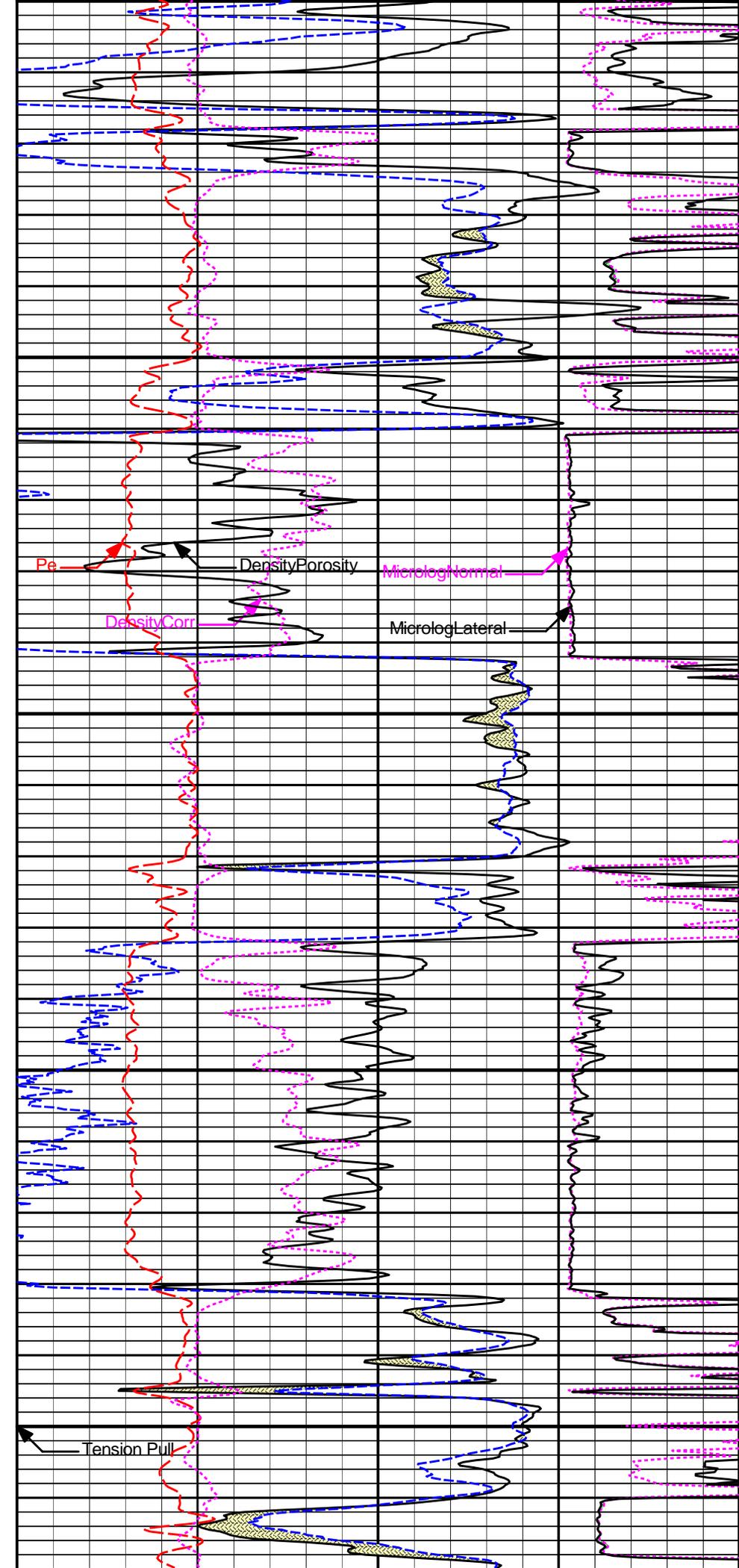
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 Plot File: \\PORO\1_PoroMicro_5_mainx

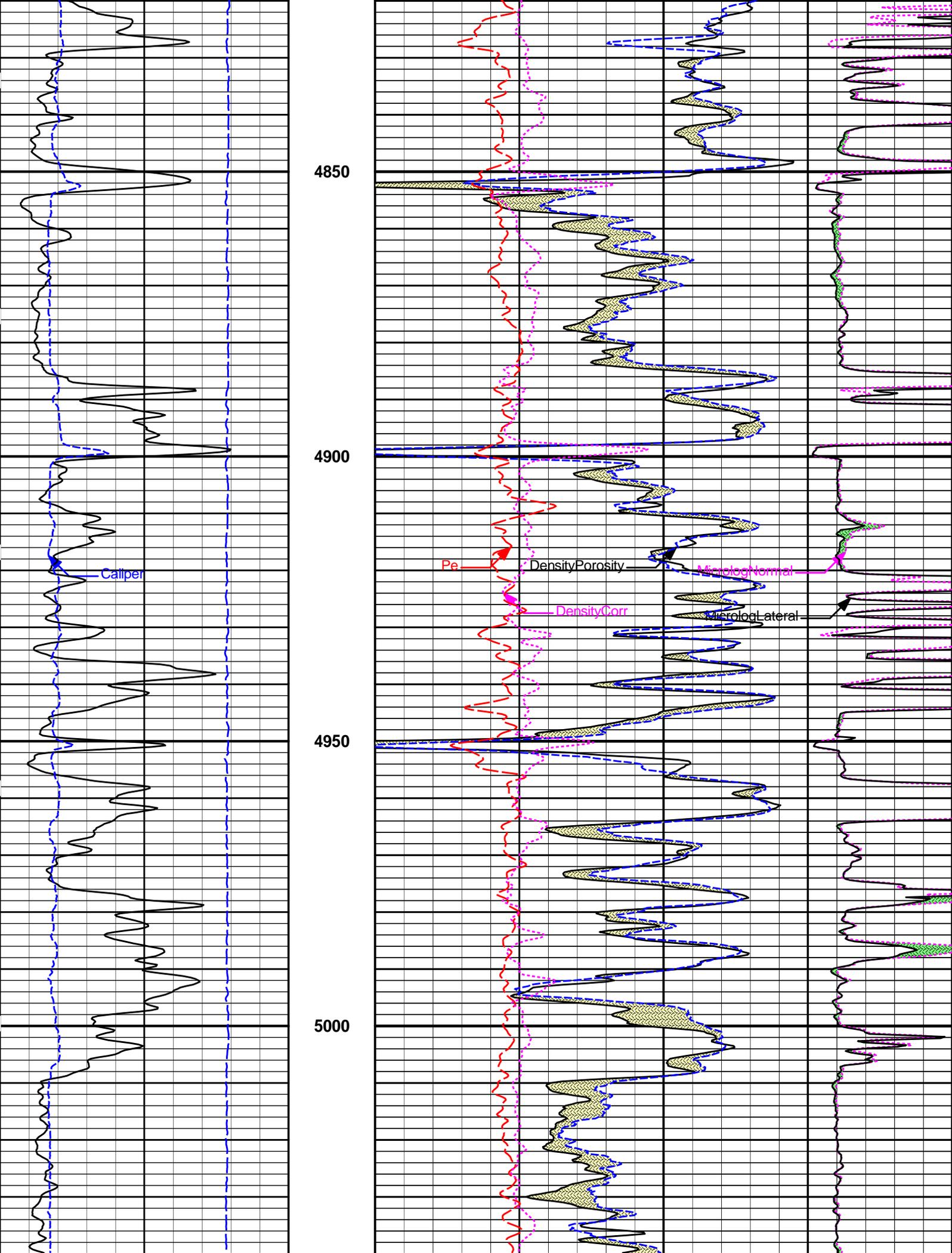
5 INCH MAIN LOG

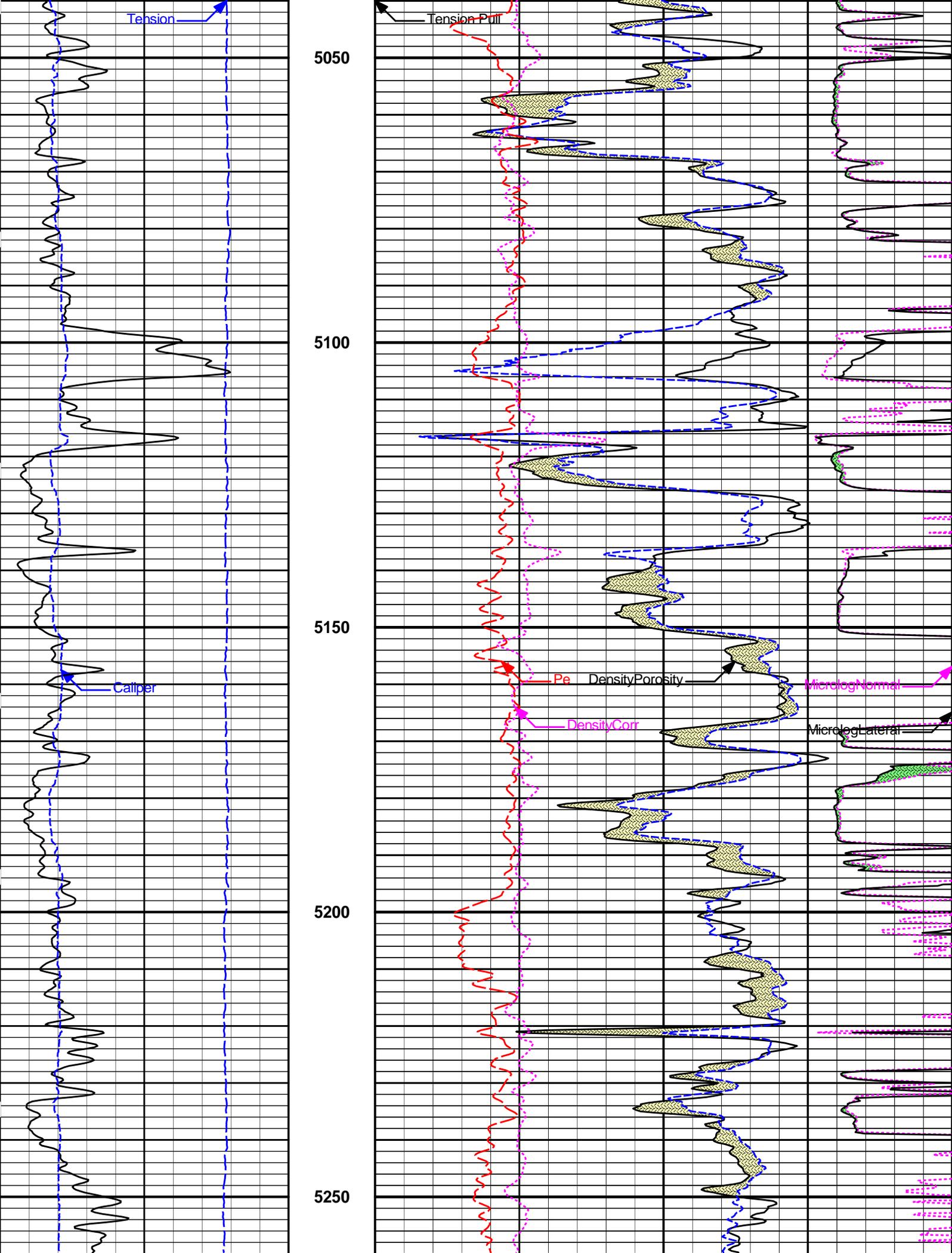


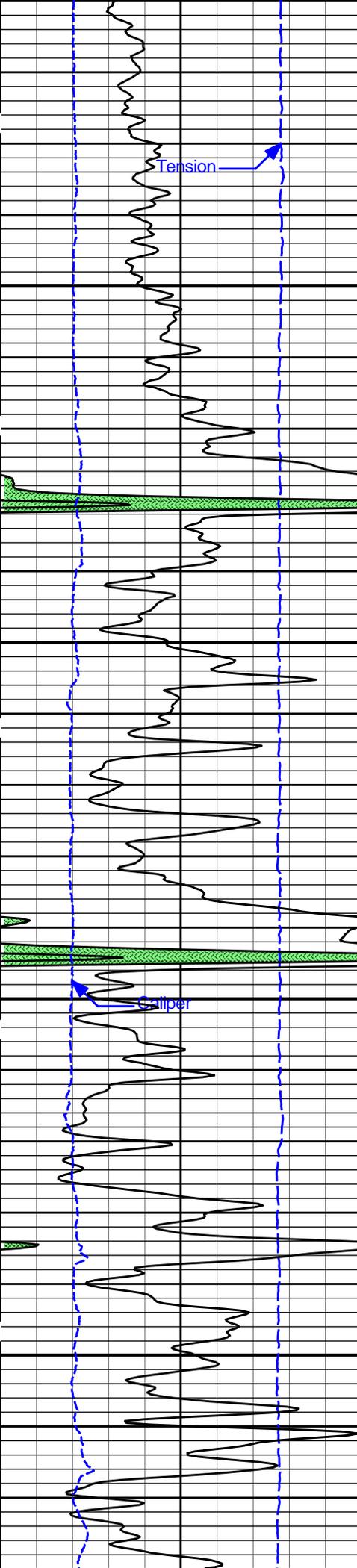


4600
4650
4700
4750
4800







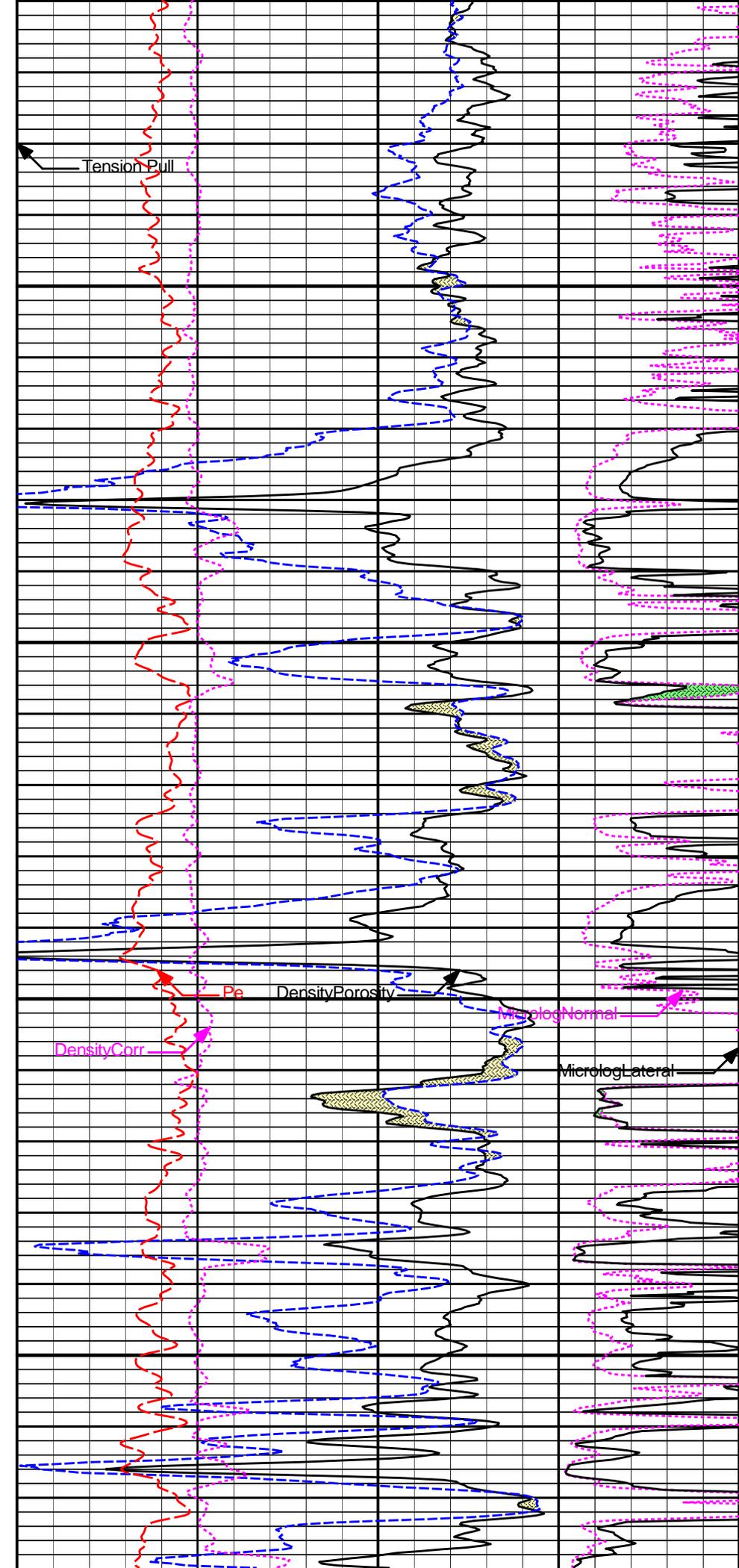


5300

5350

5400

5450



Tension Pull

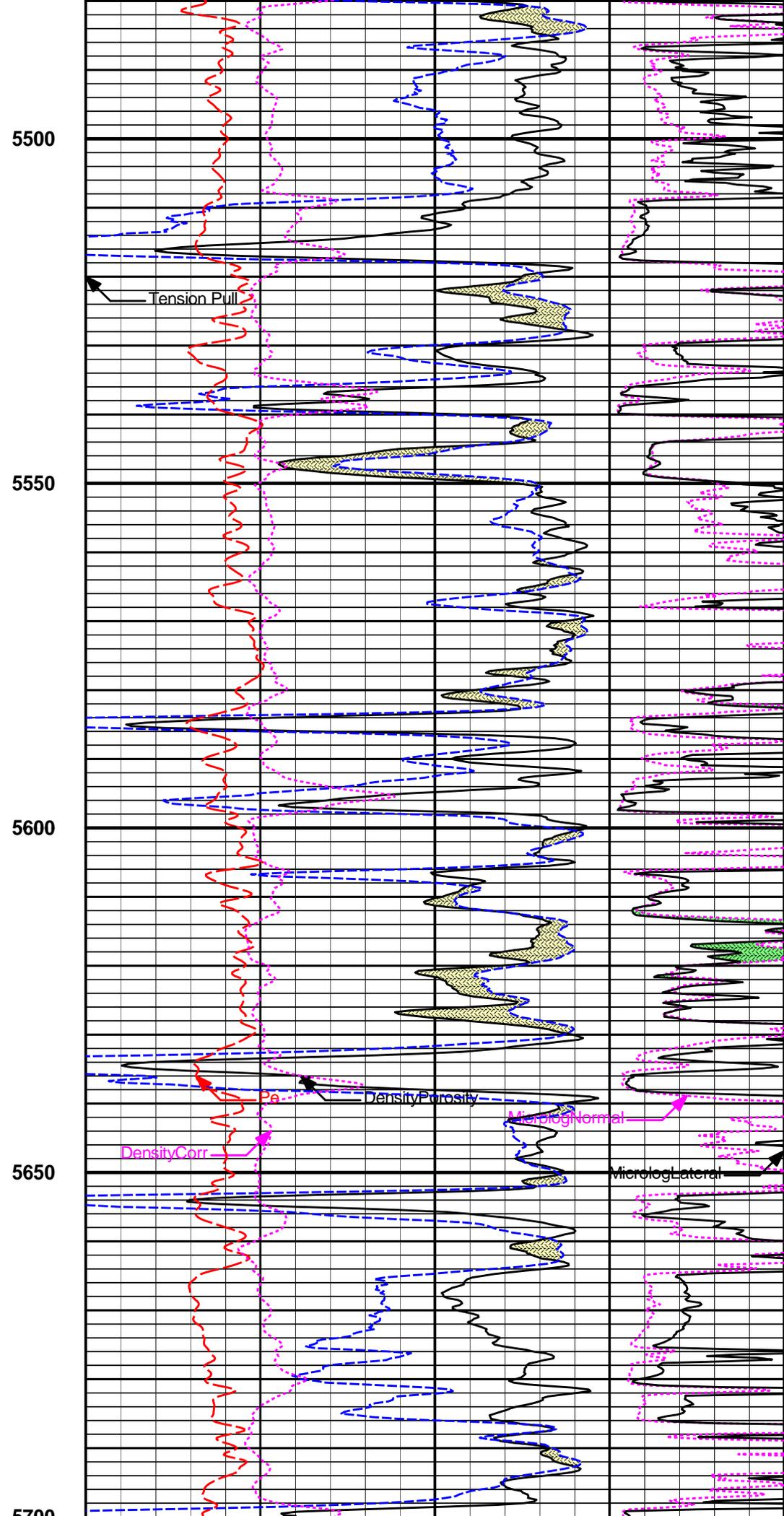
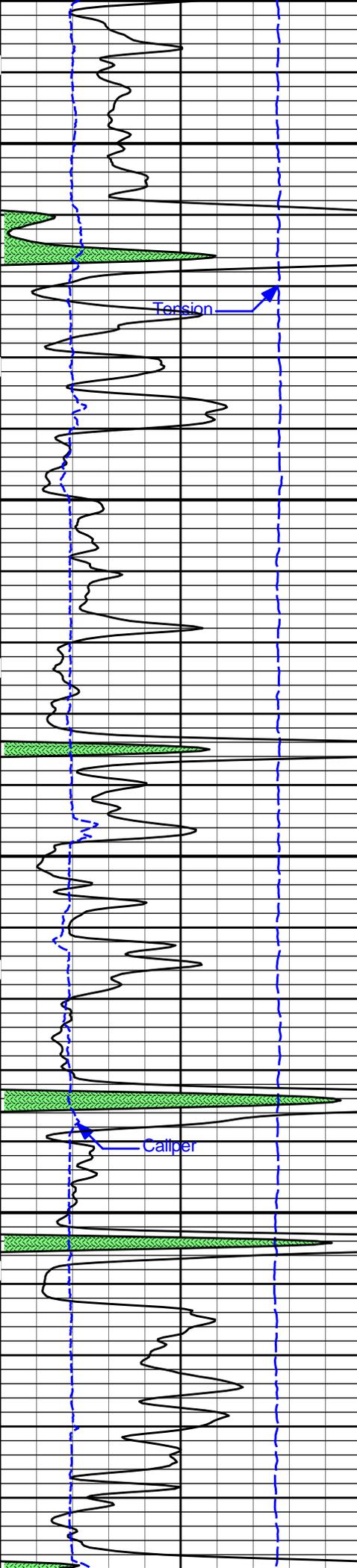
Density Porosity

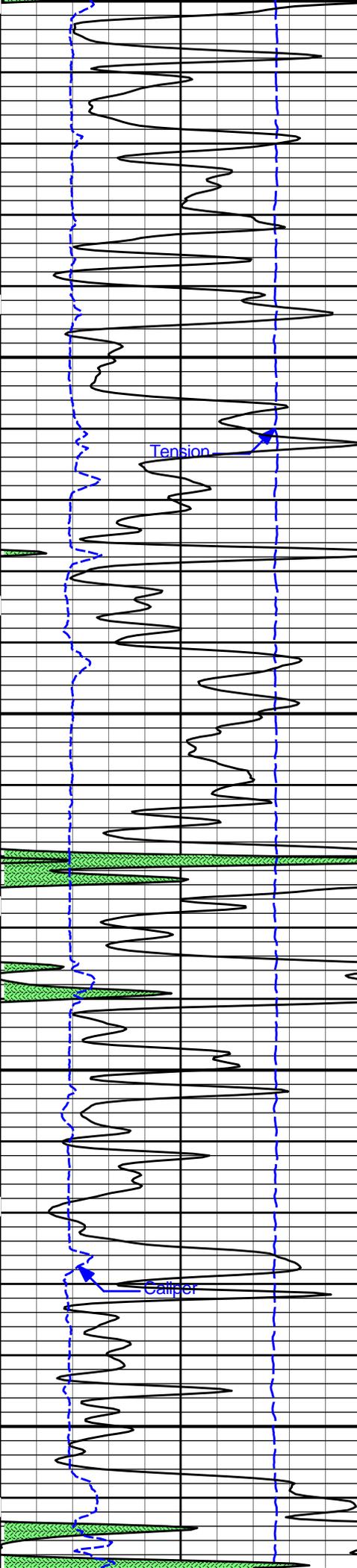
Density Corr

Microlog Normal

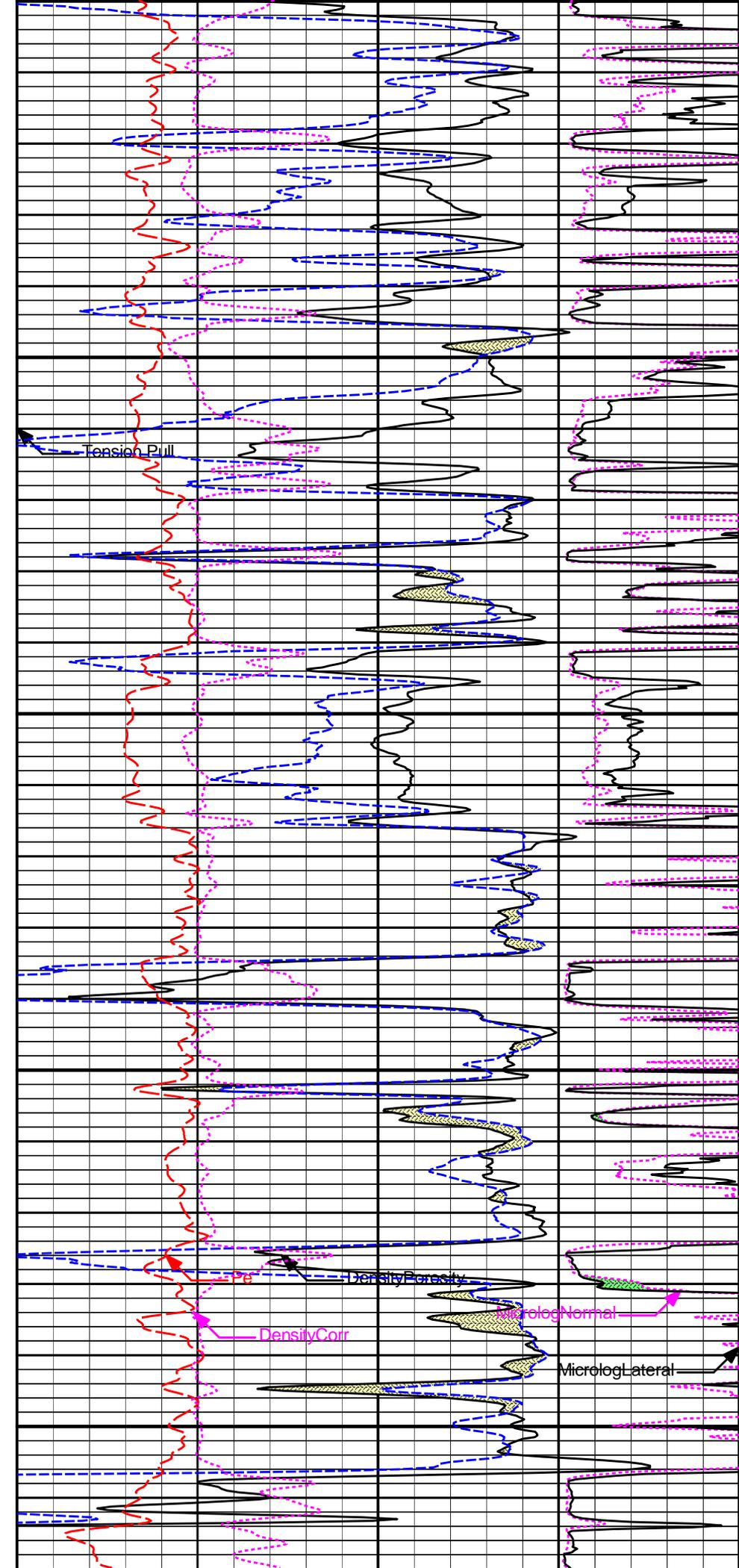
Microlog Lateral

Pe





5700
5750
5800
5850
5900



Tension

Tension Pull

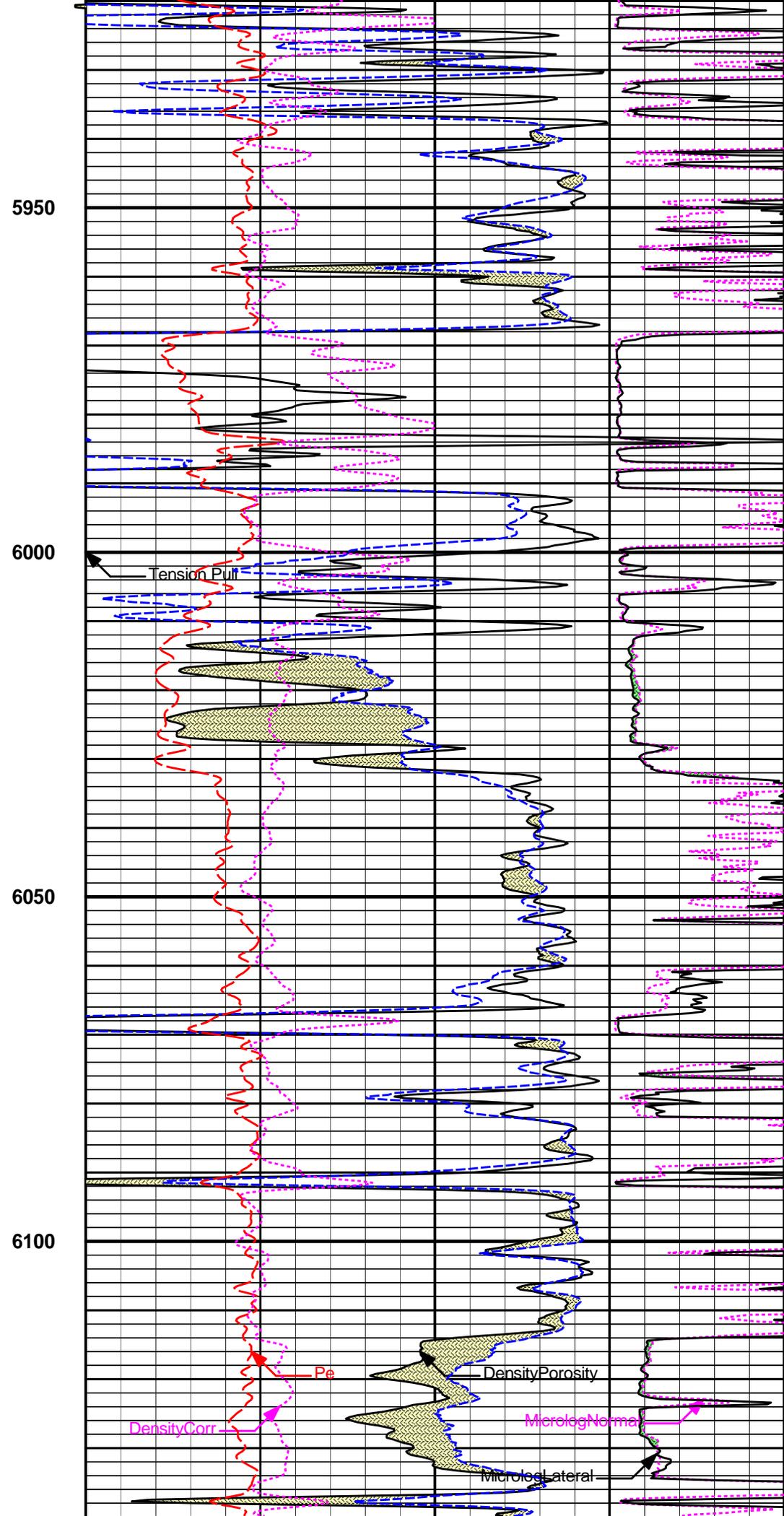
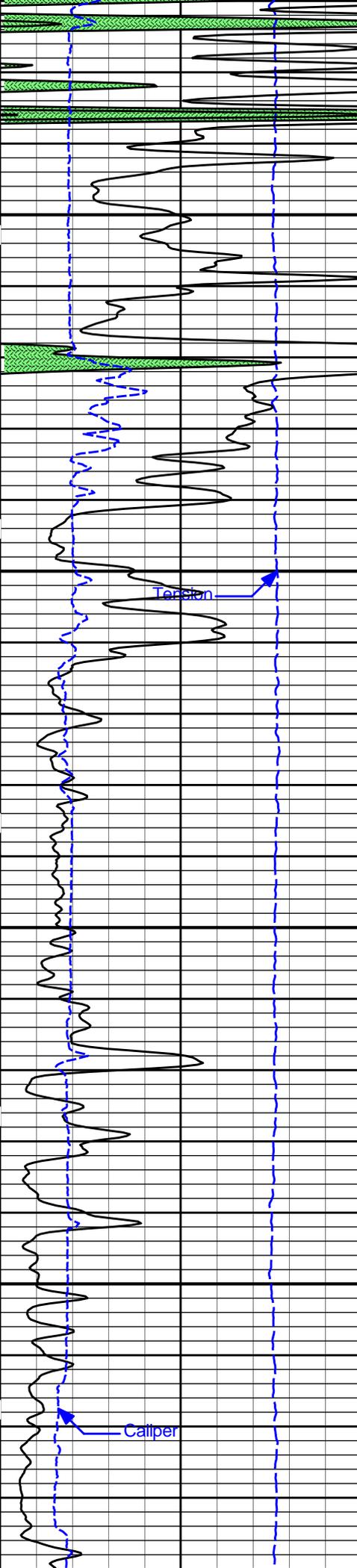
Caliper

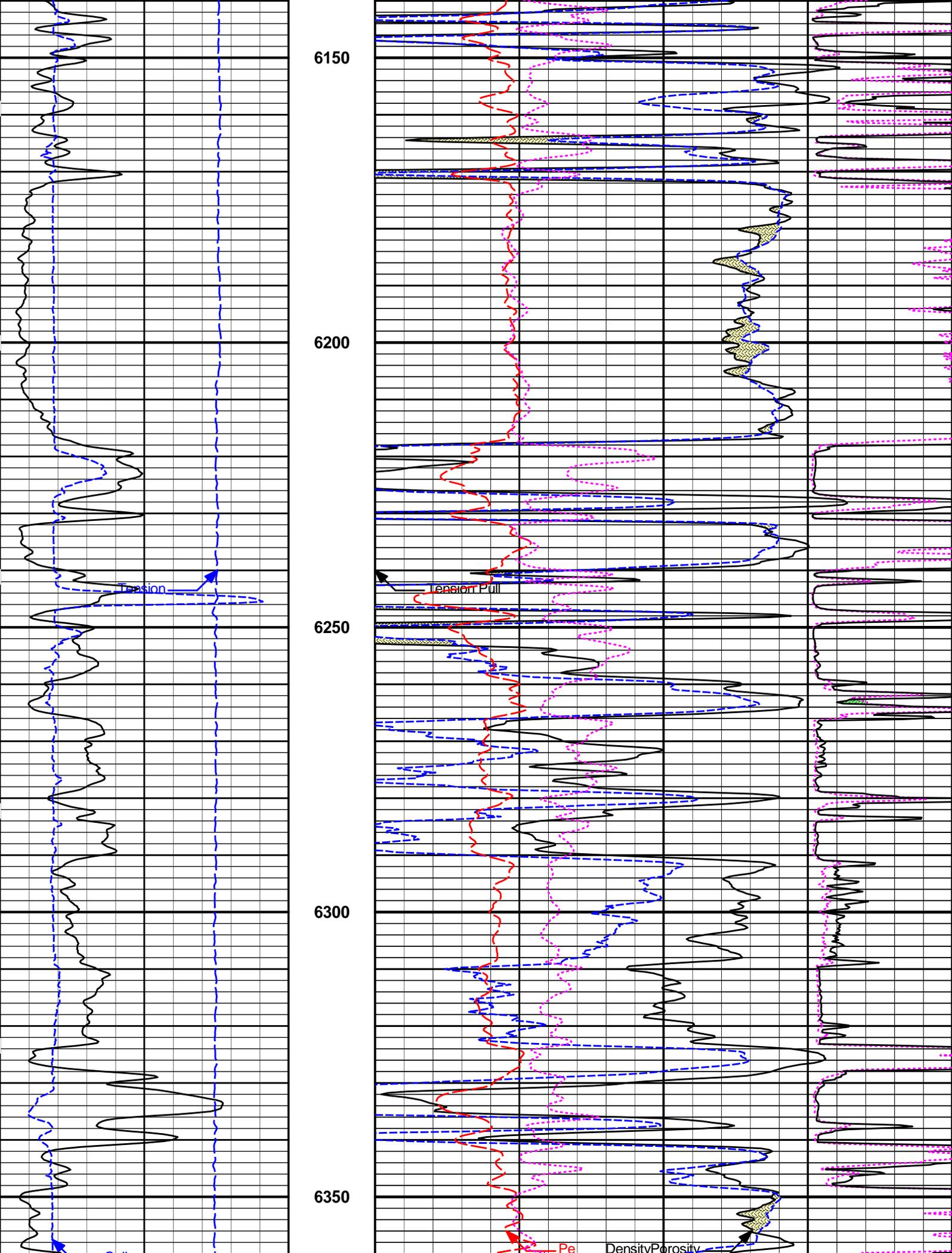
Density Porosity

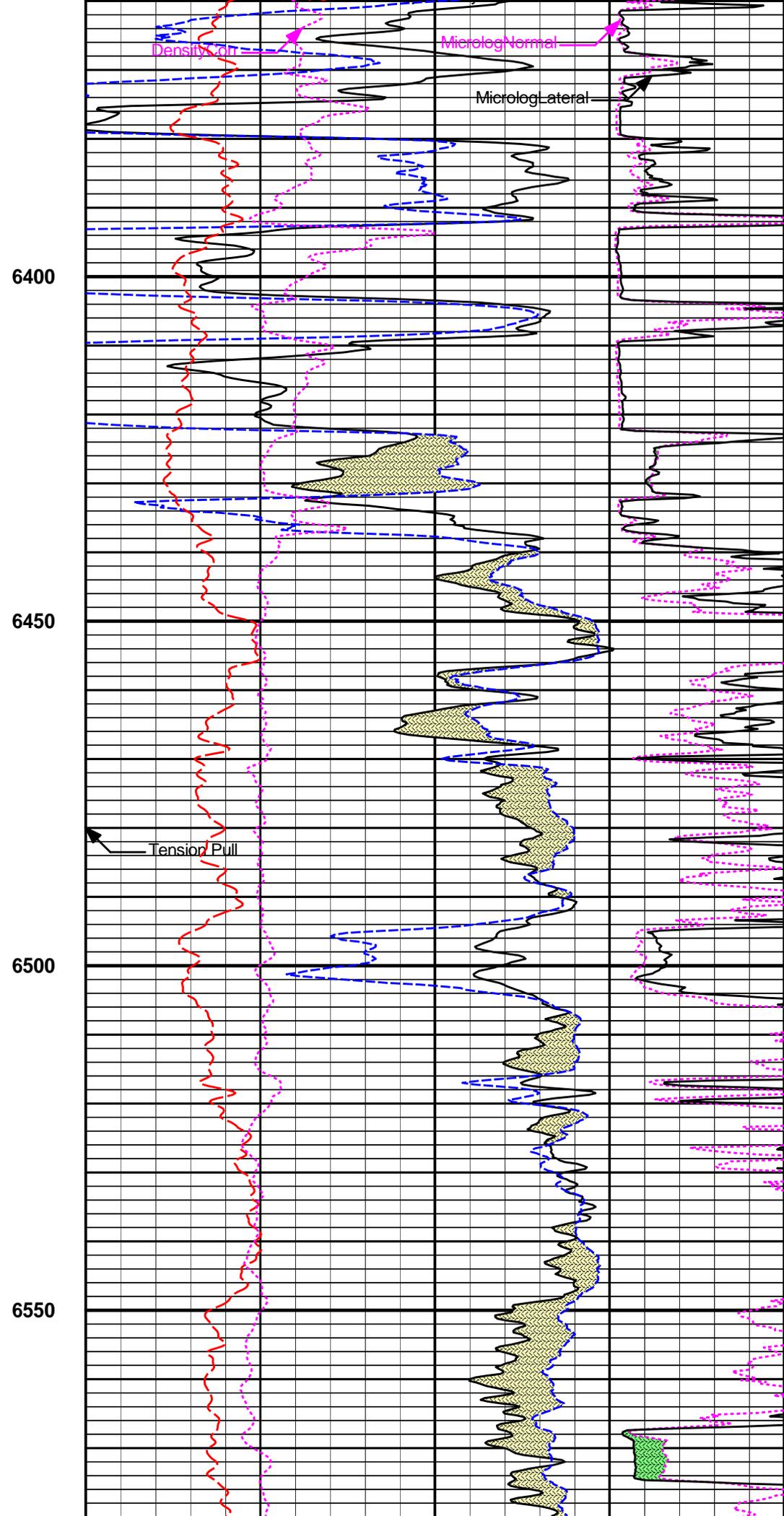
Density Corr

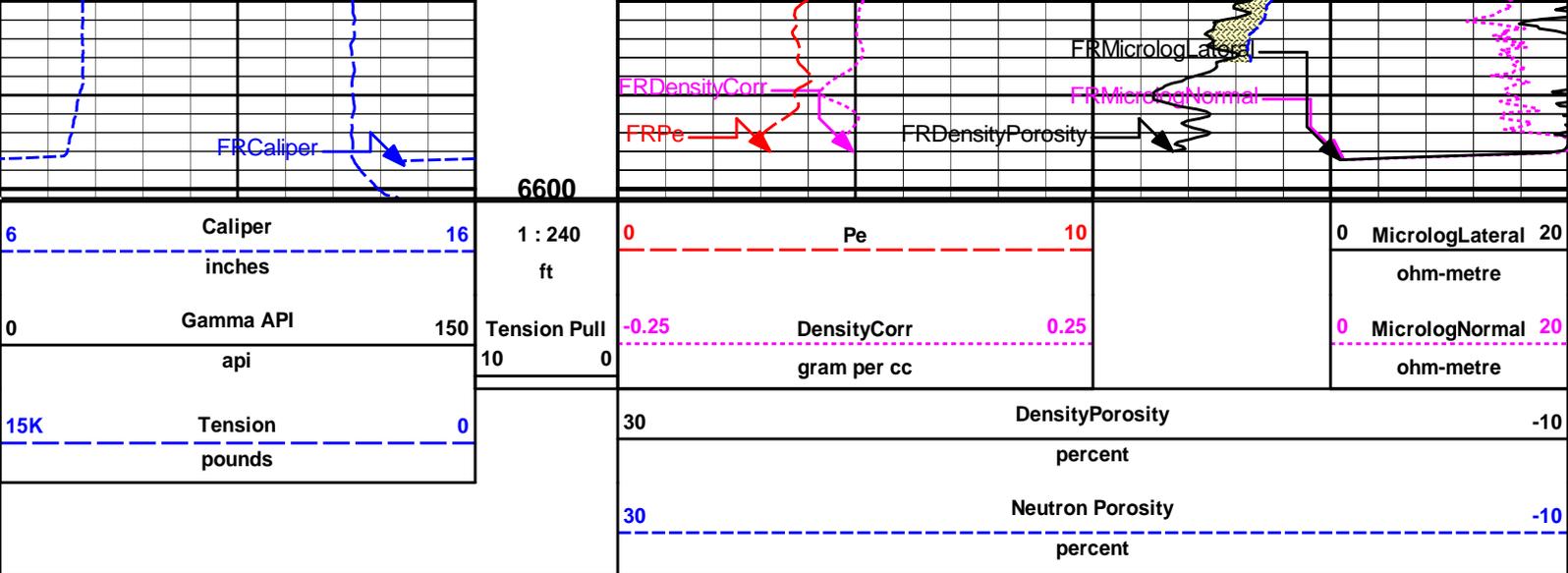
Microlog Normal

Microlog Lateral









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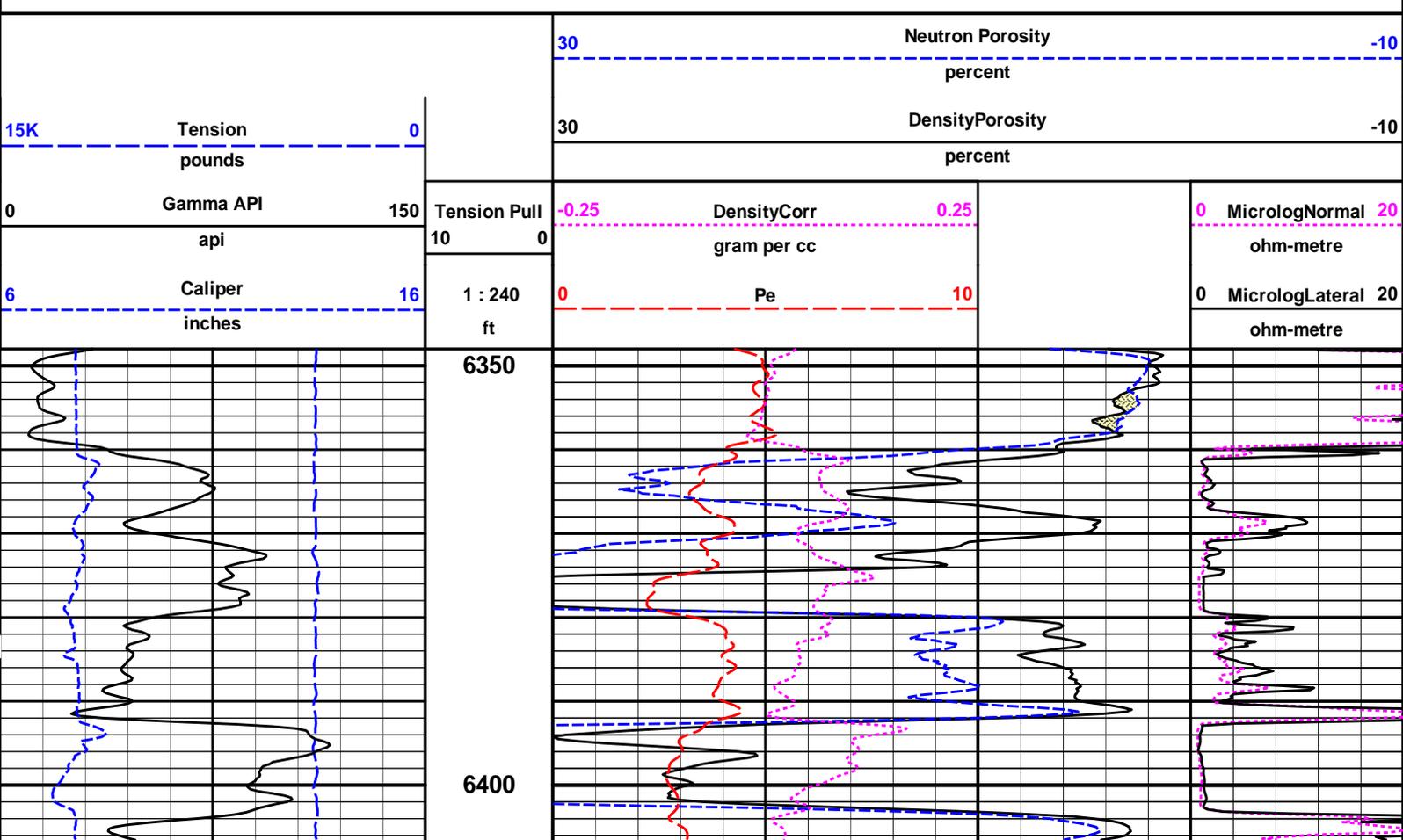
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 Plot File: \\PORO\1_PoroMicro_5_mainx

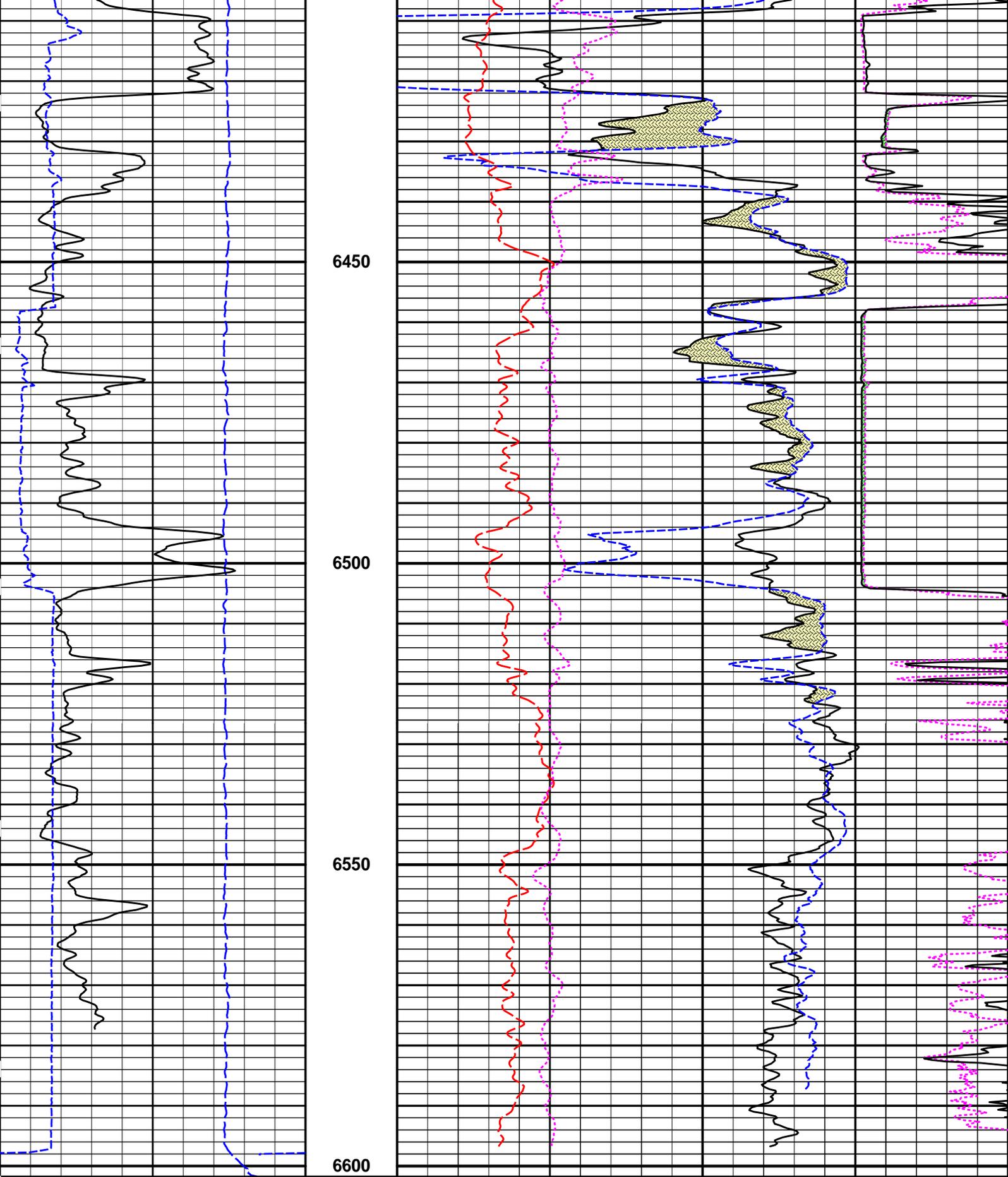
5 INCH MAIN LOG

HALLIBURTON

Plot Time: 11-Jul-13 08:48:28
 Plot Range: 6348 ft to 6601.75 ft
 Data: HENRY_TAYLOR328\Well Based\DAQ-0002-002\
 Plot File: \\PORO\1_PoroMicro_5_rptx

REPEAT SECTION





| | | | | | | | | | |
|-----|-----------|-----|--------------|-------|-----------------|------|---|-----------------|-----|
| 6 | Caliper | 16 | 1 : 240 | 0 | Pe | 10 | 0 | MicrologLateral | 20 |
| | inches | | ft | | | | | ohm-metre | |
| 0 | Gamma API | 150 | Tension Pull | -0.25 | DensityCorr | 0.25 | 0 | MicrologNormal | 20 |
| | api | | 10 0 | | gram per cc | | | ohm-metre | |
| 15K | Tension | 0 | | 30 | DensityPorosity | | | | -10 |

pounds

percent

30

Neutron Porosity

-10

percent

HALLIBURTON

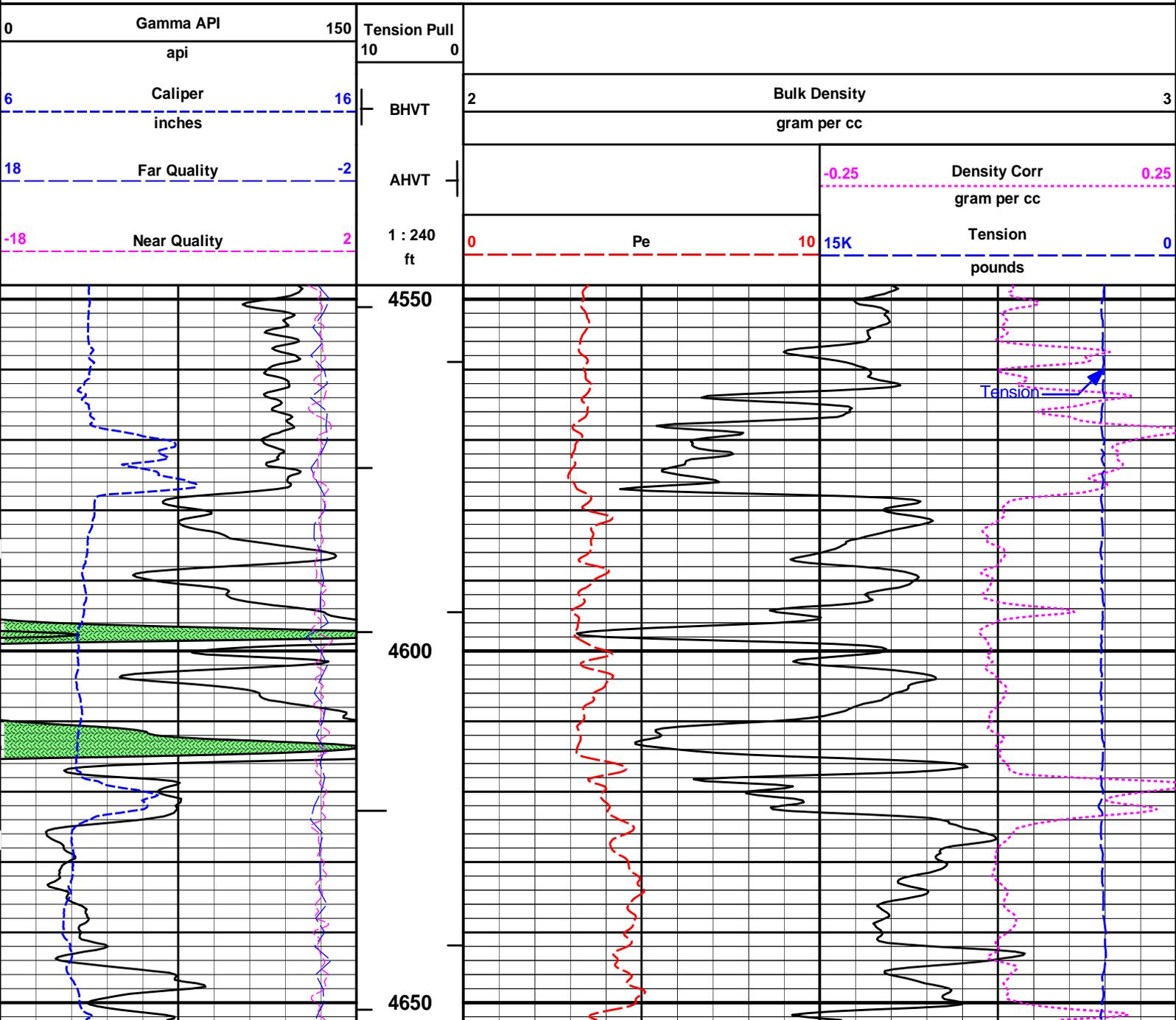
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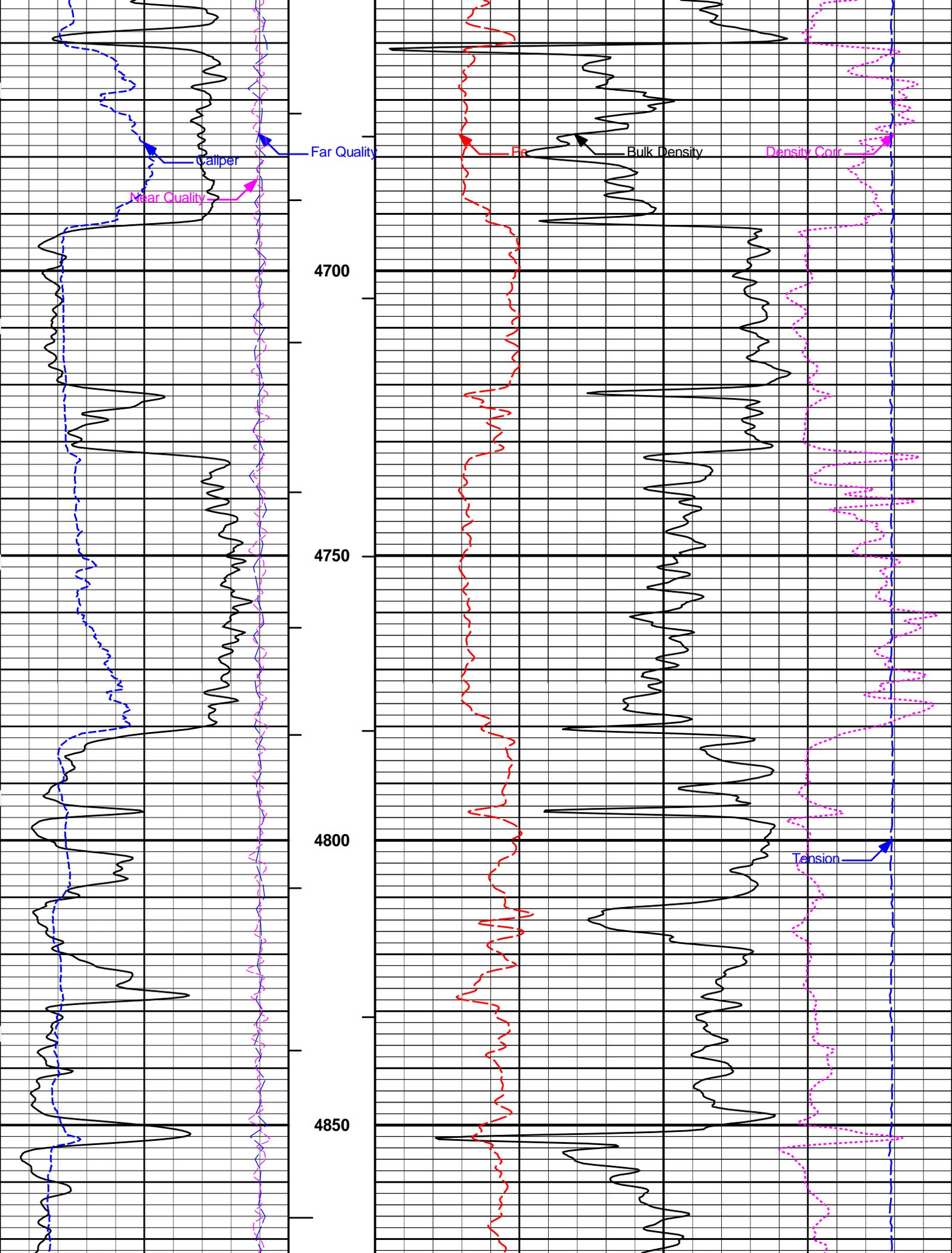
REPEAT SECTION

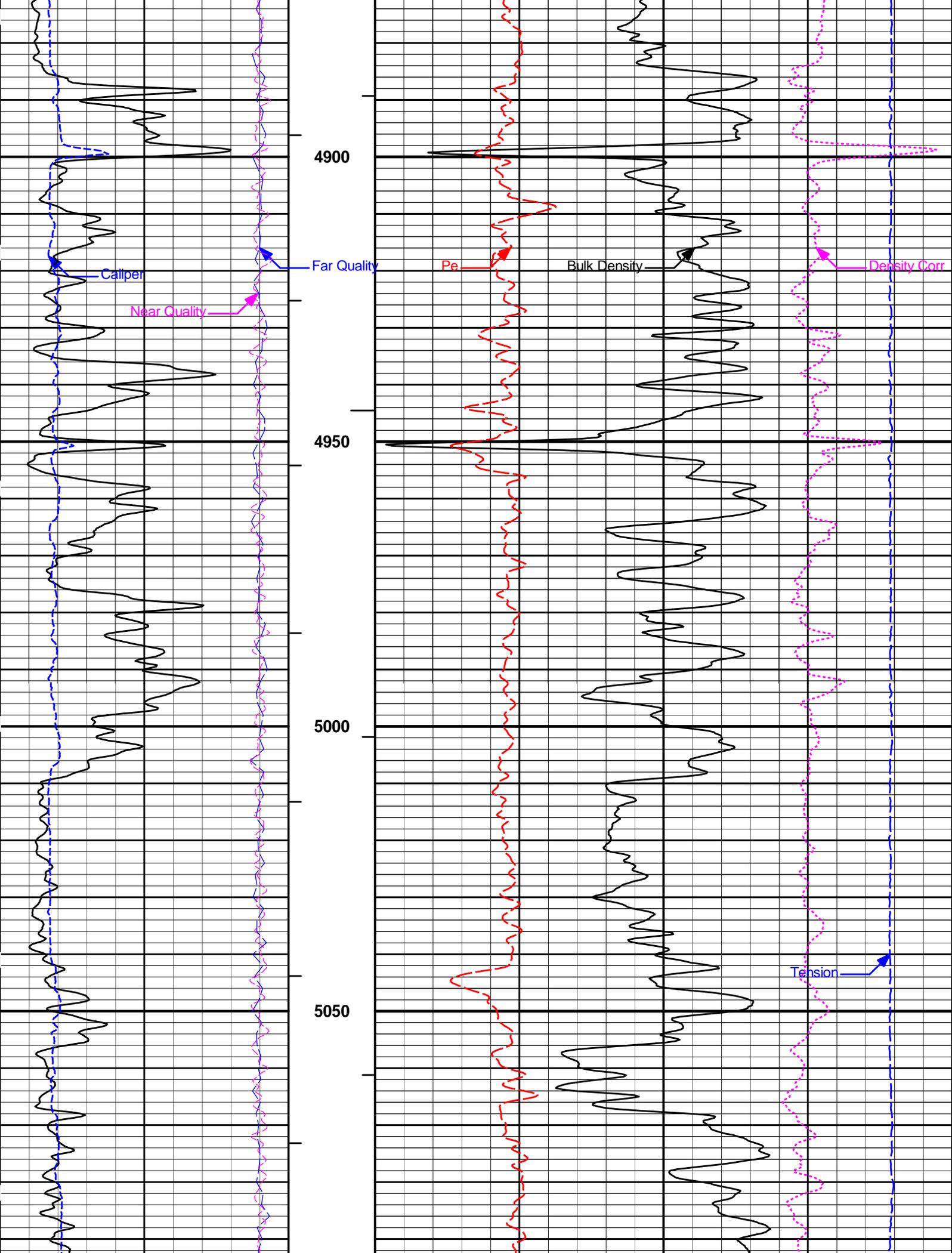
HALLIBURTON

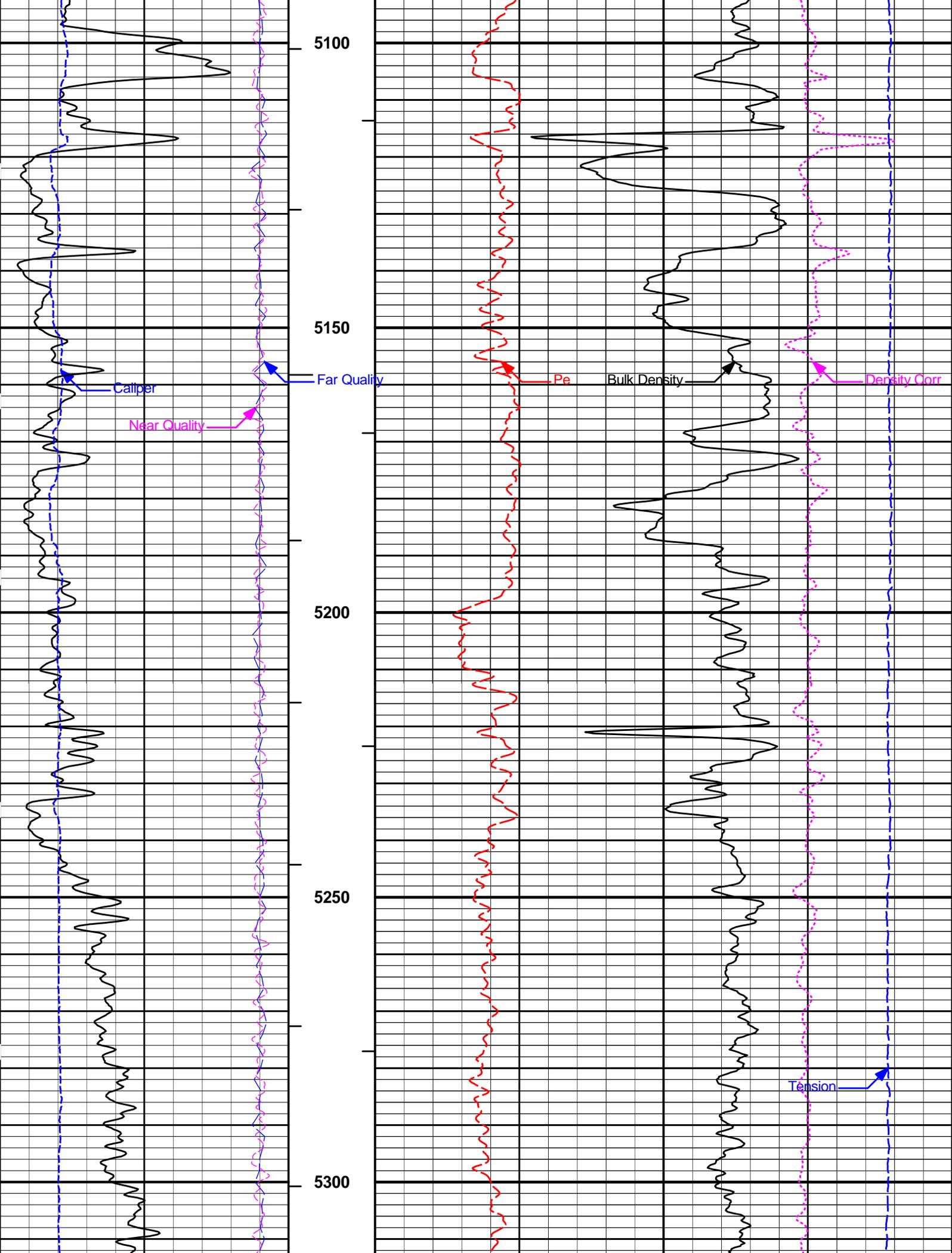
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Plot File: \\PORO\1_Bulk_5_mainx

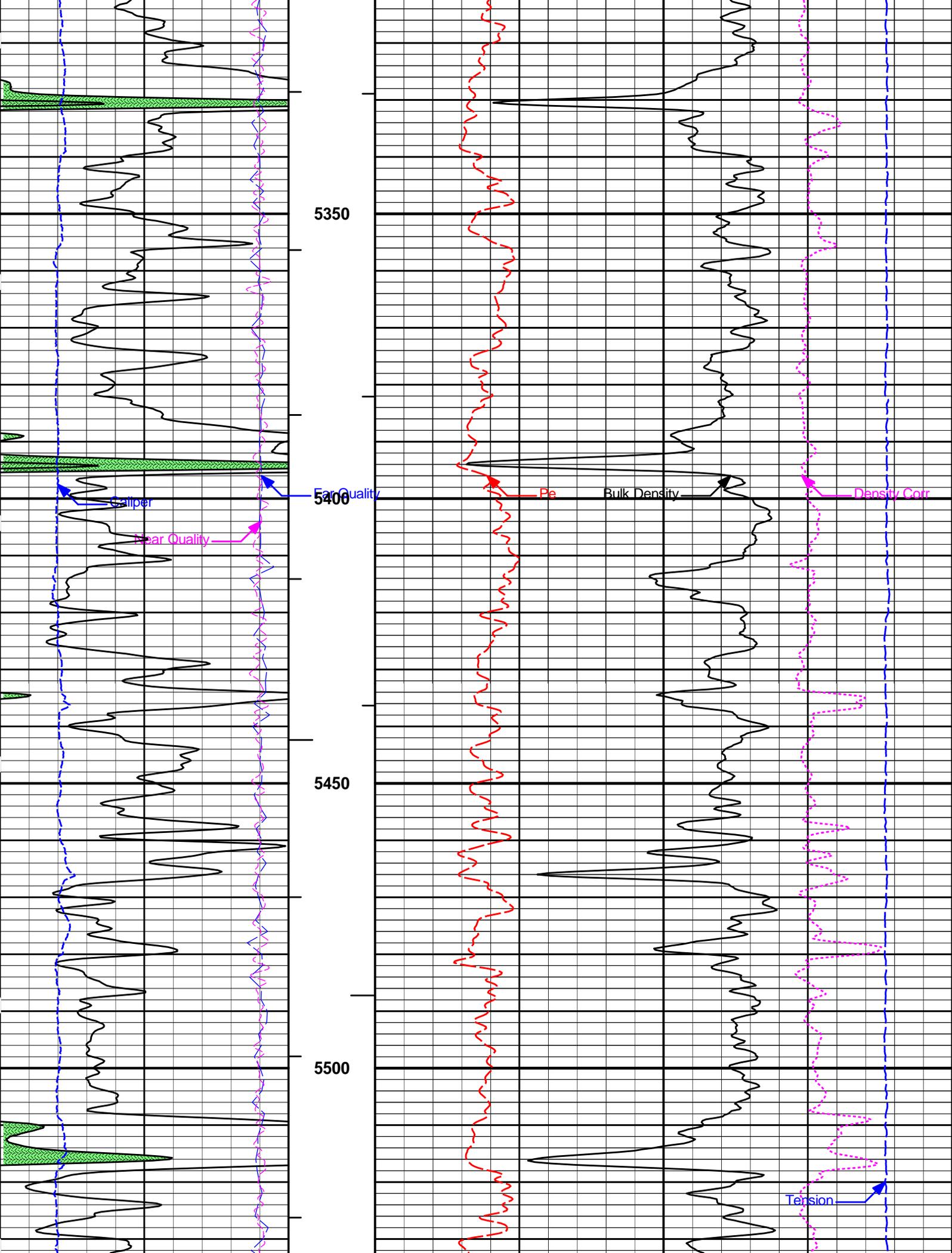
5 INCH MAIN LOG

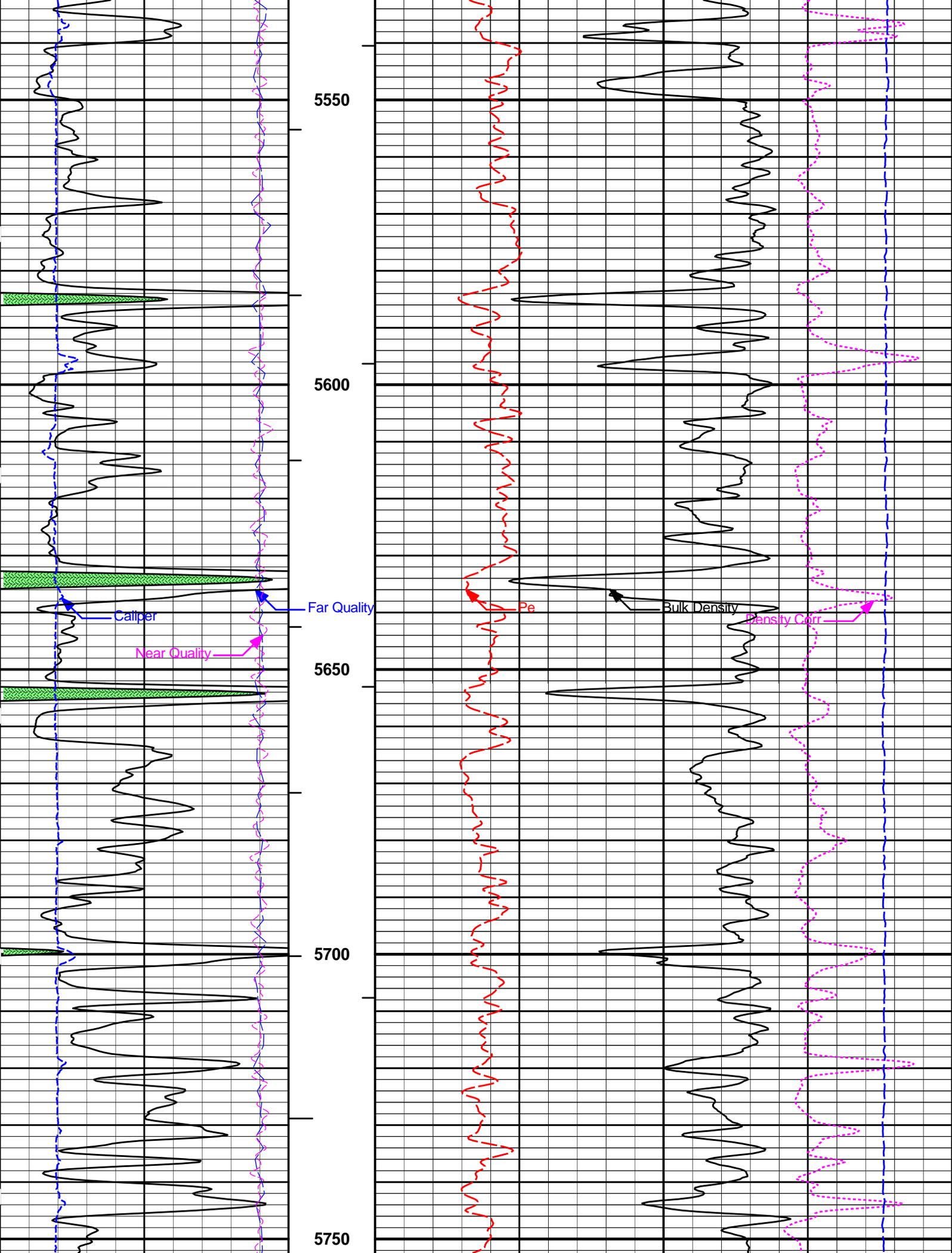


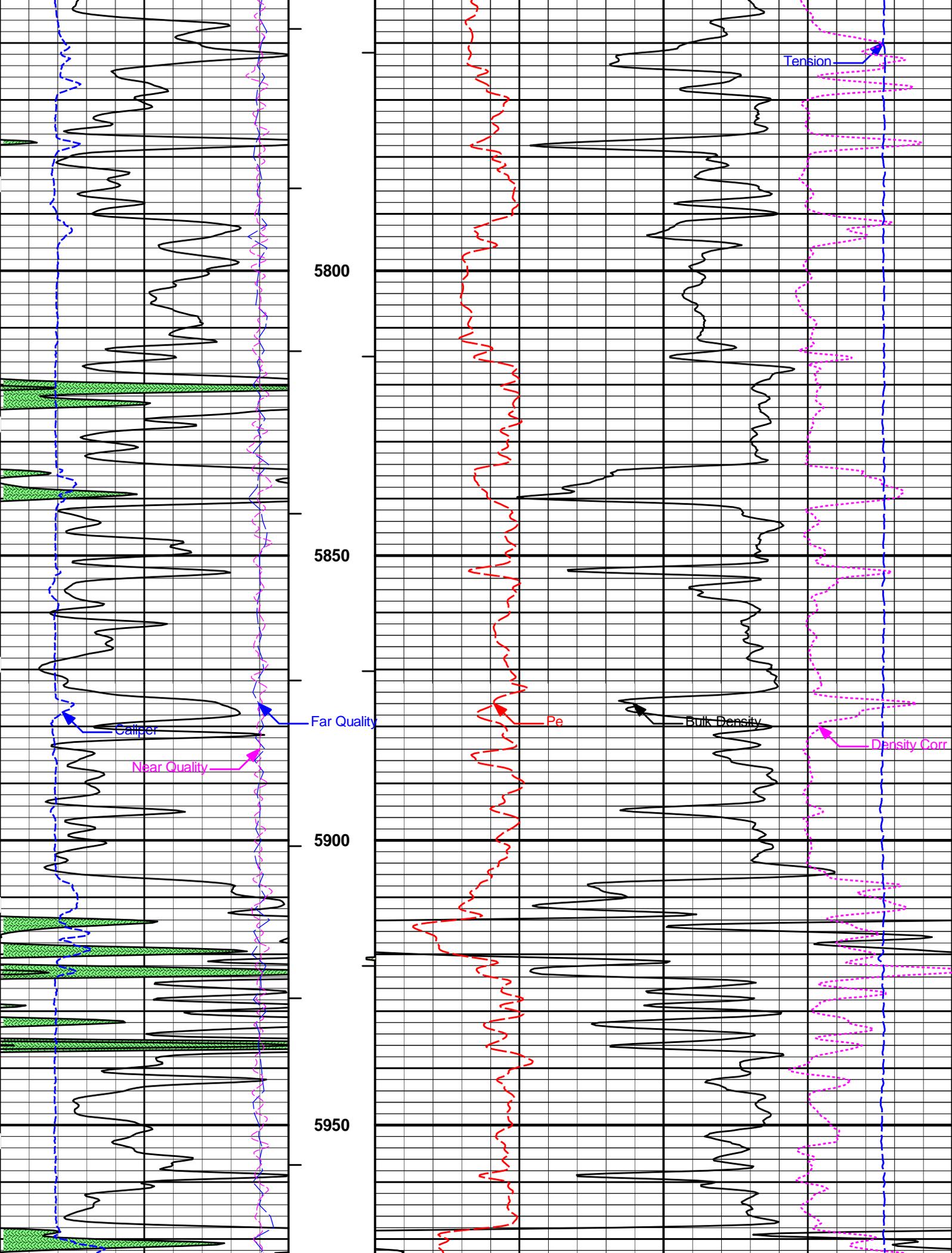


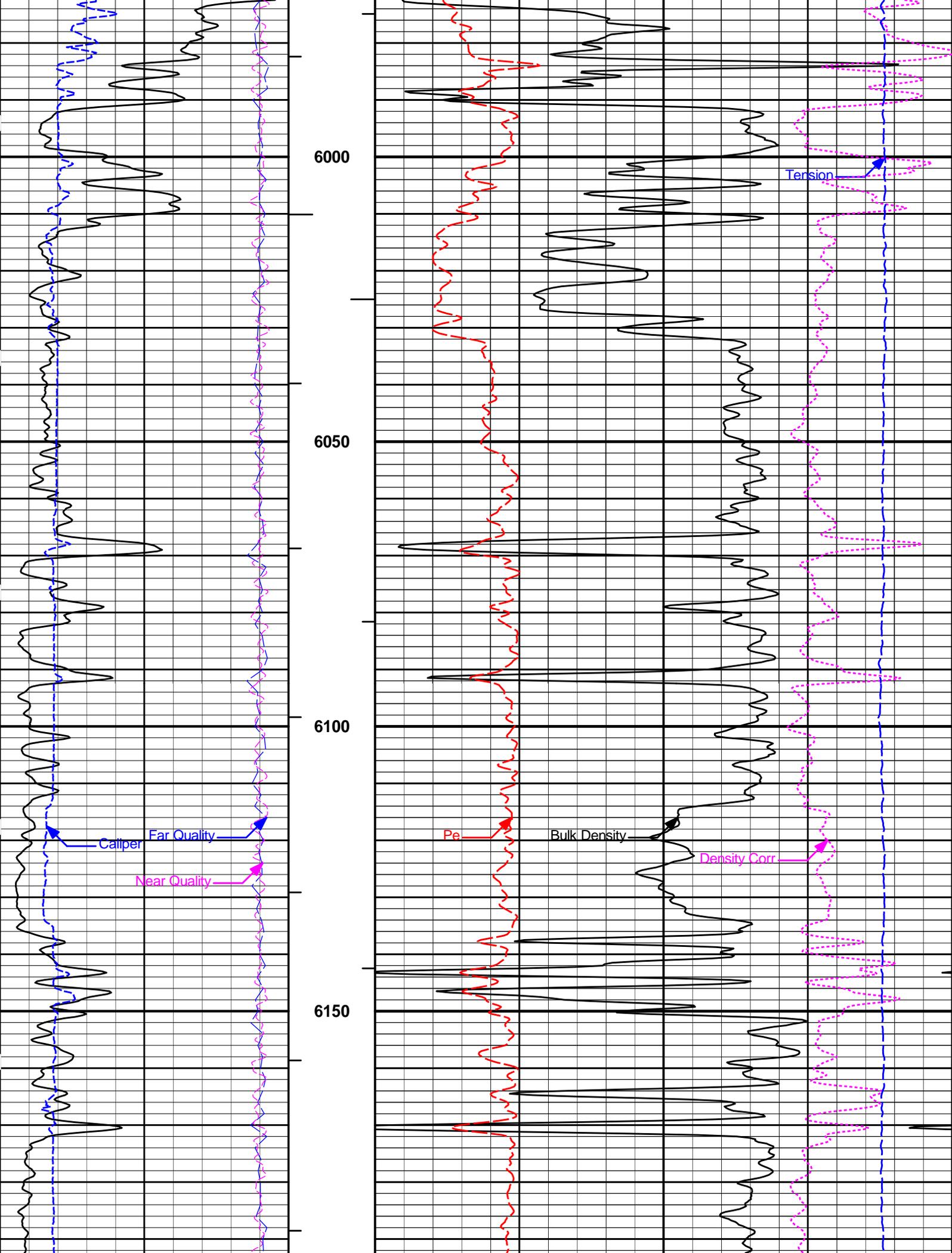


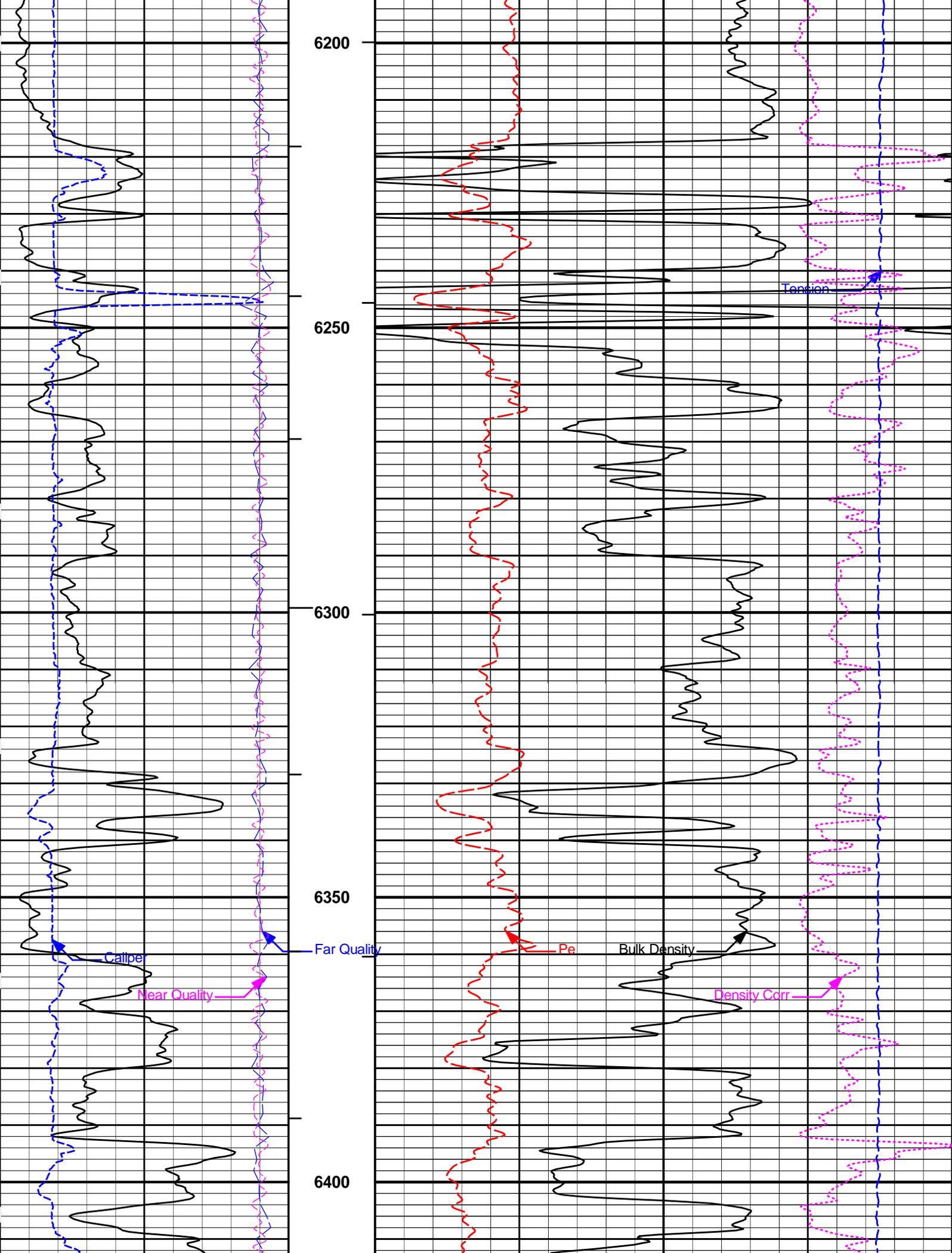


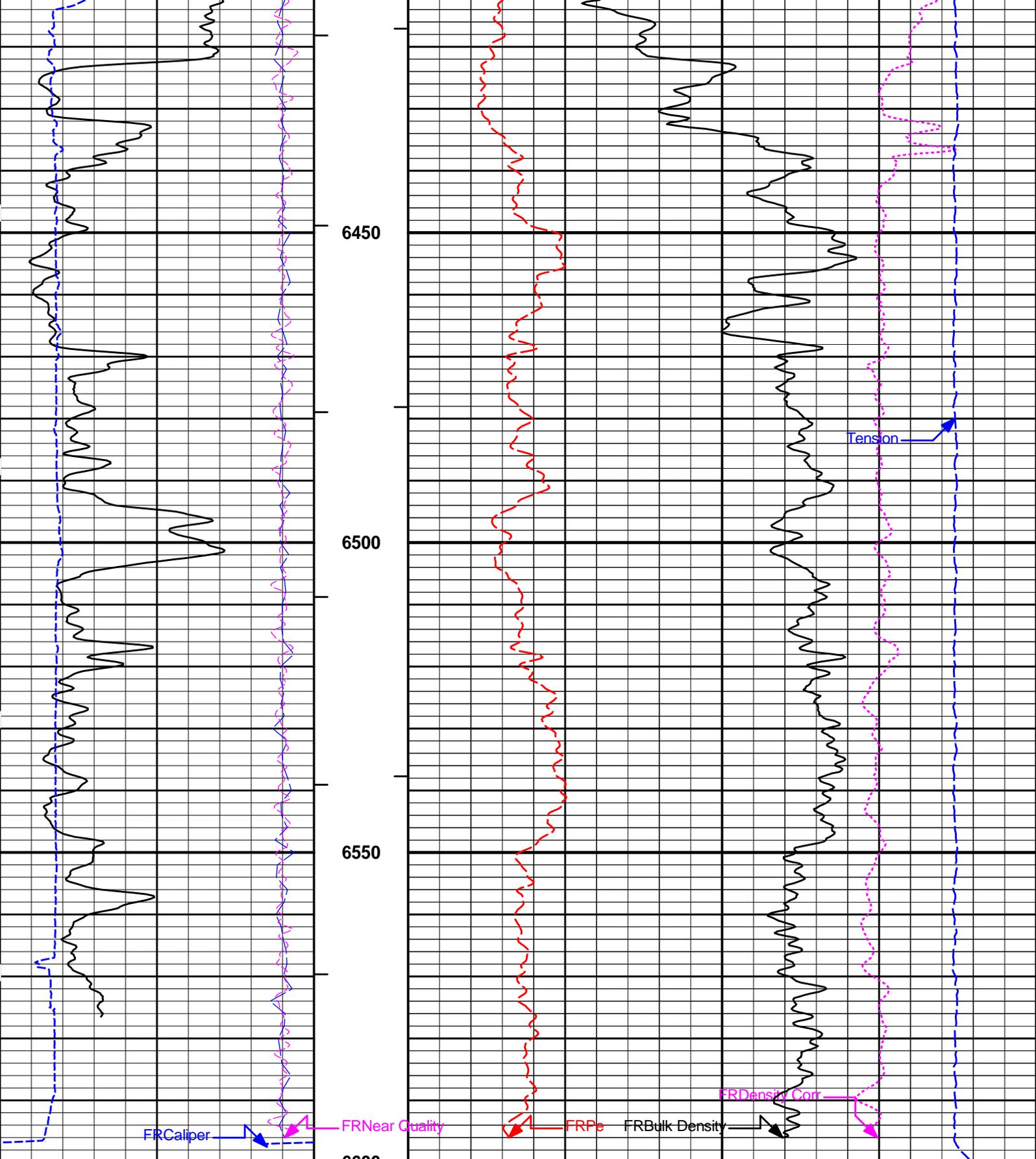












| | | | | | | | | | | |
|-----|--------------|----|---------------|--------|--------------|----|-----|-------------|--------------|------|
| -18 | Near Quality | 2 | 1 : 240 ft | 0 | Pe | 10 | 15K | Tension | 0 | |
| | | | | pounds | | | | | | |
| 18 | Far Quality | -2 | | AHVT | | | | -0.25 | Density Corr | 0.25 |
| | | | | | | | | gram per cc | | |
| 6 | Caliper | 16 | BHVT | 2 | Bulk Density | | | | | |
| | | | | | gram per cc | | | | | |
| | | | | | | | | | | |

| | | | | |
|---|-----------|-----|--------------|---|
| 0 | Gamma API | 150 | Tension Pull | |
| | api | | 10 | 0 |

HALLIBURTON

Plot Time: 11-Jul-13 08:48:32
 Plot Range: 4548 ft to 6601 ft
 Data: HENRY_TAYLOR328Well Based\MAIN_PORO\
 Plot File: \\PORO\1_Bulk_5_mainx

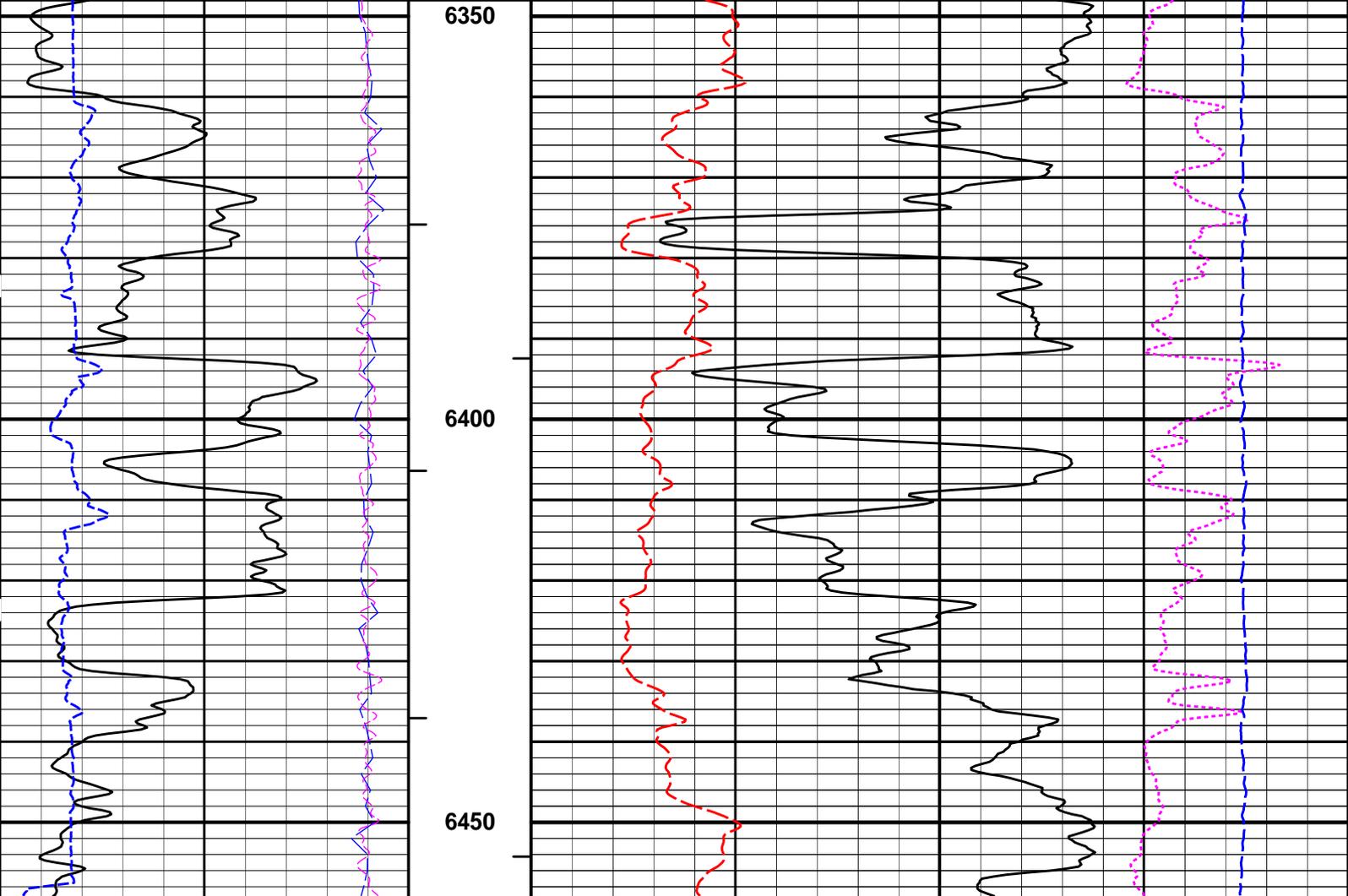
5 INCH MAIN LOG

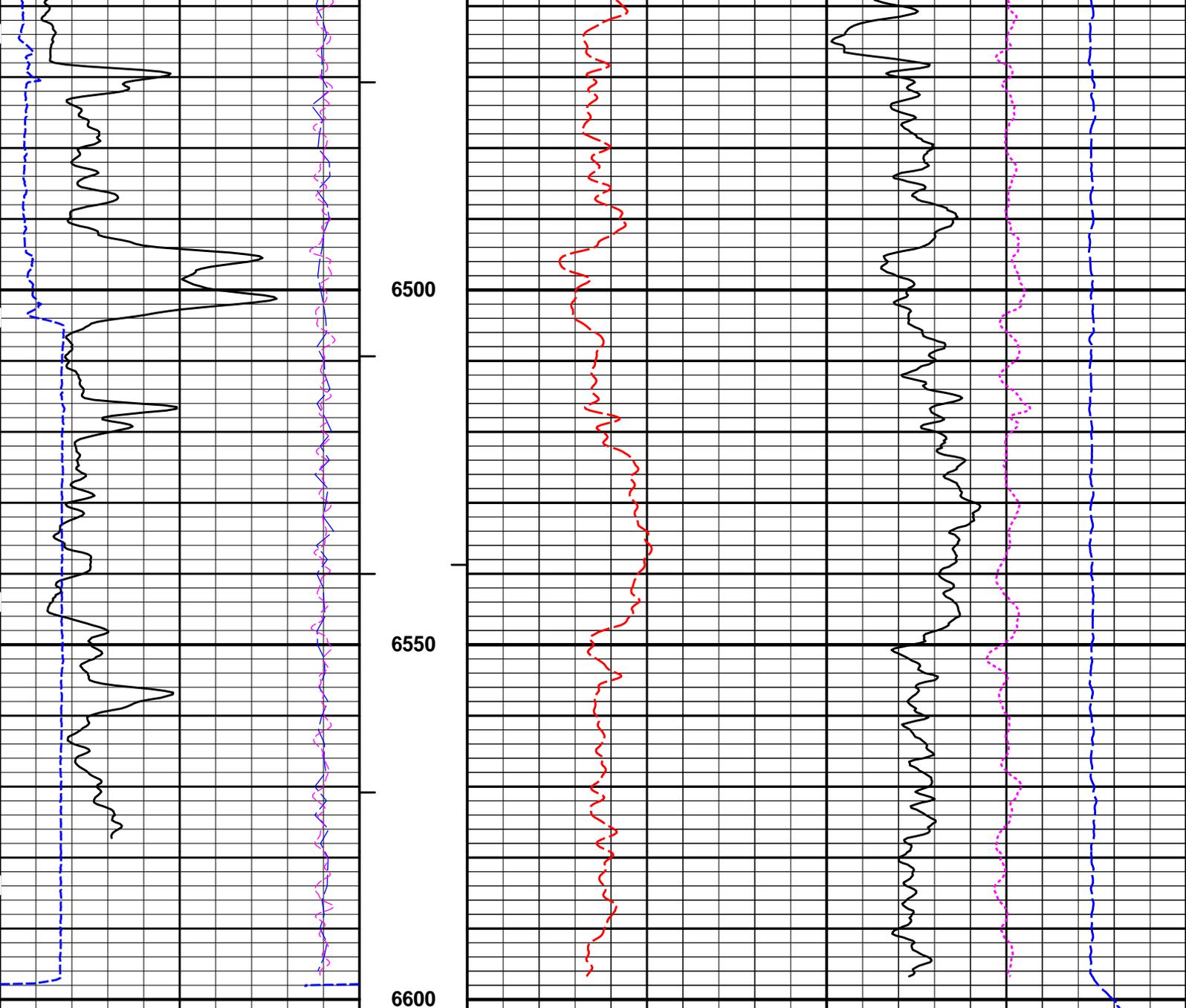
HALLIBURTON

Plot Time: 11-Jul-13 08:48:32
 Plot Range: 6348 ft to 6601.75 ft
 Data: HENRY_TAYLOR328Well Based\DAQ-0002-002\
 Plot File: \\PORO\1_Bulk_5_rptx

REPEAT SECTION

| | | | | |
|-----|--------------|-----|--------------|--------------|
| 0 | Gamma API | 150 | Tension Pull | |
| | api | | 10 | 0 |
| 6 | Caliper | 16 | BHVT | 2 |
| | inches | | | Bulk Density |
| | | | AHVT | gram per cc |
| 18 | Far Quality | -2 | 1 : 240 | -0.25 |
| | | | ft | Density Corr |
| | | | Pe | gram per cc |
| -18 | Near Quality | 2 | 10 | 0.25 |
| | | | 15K | Tension |
| | | | | pounds |





| | | | | | | | | | |
|-----|-------------------|-----|---------------|---|----|----|-----|--------------|------|
| -18 | Near Quality | 2 | 1 : 240 ft | 0 | Pe | 10 | 15K | Tension | 0 |
| 18 | Far Quality | -2 | AHVT | | | | | pounds | |
| 6 | Caliper inches | 16 | BHVT | 2 | | | | Density Corr | 0.25 |
| 0 | Gamma API api | 150 | Tension Pull | | | | | gram per cc | |
| | | | 10 | | | | | Bulk Density | 3 |
| | | | | | | | | gram per cc | |

HALLIBURTON

Plot Time: 11-Jul-13 08:48:34
 Plot Range: 6348 ft to 6601.75 ft
 Data: HENRY_TAYLOR328\Well Based\DAQ-0002-002\
 Plot File: \\PORO\1_Bulk_5_rptx

REPEAT SECTION

HALLIBURTON

PARAMETERS REPORT

| Depth (ft) | Tool Name | Mnemonic | Description | Value | Units |
|------------|-----------------|----------|---|------------|-------|
| TOP | | | | | |
| | SHARED | BS | Bit Size | 7.875 | in |
| | SHARED | UBS | Use Bit Size instead of Caliper for all applications. | No | |
| | SHARED | MDBS | Mud Base | Water | |
| | SHARED | MDWT | Borehole Fluid Weight | 9.000 | ppg |
| | SHARED | WAGT | Weighting Agent | Natural | |
| | SHARED | BSAL | Borehole salinity | 5100.00 | ppm |
| | SHARED | FSAL | Formation Salinity NaCl | 0.00 | ppm |
| | SHARED | KPCT | Percent K in Mud by Weight? | 0.00 | % |
| | SHARED | RMUD | Mud Resistivity | 0.700 | ohmm |
| | SHARED | TRM | Temperature of Mud | 75.0 | degF |
| | SHARED | CSD | Logging Interval is Cased? | No | |
| | SHARED | ICOD | AHV Casing OD | 5.500 | in |
| | SHARED | ST | Surface Temperature | 75.0 | degF |
| | SHARED | TD | Total Well Depth | 6600.00 | ft |
| | SHARED | BHT | Bottom Hole Temperature | 112.0 | degF |
| | SHARED | SVTM | Navigation and Survey Master Tool | NONE | |
| | SHARED | AZTM | High Res Z Accelerometer Master Tool | GTET | |
| | SHARED | TEMM | Temperature Master Tool | NONE | |
| | SHARED | BHSM | Borehole Size Master Tool | NONE | |
| | Rwa / CrossPlot | XPOK | Process Crossplot? | Yes | |
| | Rwa / CrossPlot | FCHO | Select Source of F | Automatic | |
| | Rwa / CrossPlot | AFAC | Archie A factor | 0.6200 | |
| | Rwa / CrossPlot | MFAC | Archie M factor | 2.1500 | |
| | Rwa / CrossPlot | RMFR | Rmf Reference | 0.10 | ohmm |
| | Rwa / CrossPlot | TMFR | Rmf Ref Temp | 75.00 | degF |
| | Rwa / CrossPlot | RWA | Resistivity of Formation Water | 0.05 | ohmm |
| | Rwa / CrossPlot | ADP | Use Air Porosity to calculate CrossplotPhi | No | |
| | GTET | GROK | Process Gamma Ray? | Yes | |
| | GTET | GRSO | Gamma Tool Standoff | 0.000 | in |
| | GTET | GEOK | Process Gamma Ray EVR? | No | |
| | GTET | TPOS | Tool Position for Gamma Ray Tools. | Eccentered | |
| | DSNT | DNOK | Process DSN? | Yes | |
| | DSNT | DEOK | Process DSN EVR? | No | |
| | DSNT | NLIT | Neutron Lithology | Limestone | |
| | DSNT | DNSO | DSN Standoff - 0.25 in (6.35 mm) Recommended | 0.250 | in |
| | DSNT | DNTP | Temperature Correction Type | None | |
| | DSNT | DPRS | DSN Pressure Correction Type | None | |
| | DSNT | SHCO | View More Correction Options | No | |
| | DSNT | UTVD | Use TVD for Gradient Corrections? | No | |
| | DSNT | LHWT | Logging Horizontal Water Tank? | No | |
| | SDLT | CLOK | Process Caliper Outputs? | Yes | |
| | SDLT Pad | DNOK | Process Density? | Yes | |
| | SDLT Pad | DNOK | Process Density EVR? | No | |
| | SDLT Pad | CB | Logging Calibration Blocks? | No | |
| | SDLT Pad | SPVT | SDLT Pad Temperature Valid? | Yes | |
| | SDLT Pad | DTWN | Disable temperature warning | No | |

| | | | |
|--------------|-------|-----------------------------|------------|
| SDLT Pad | DTWIN | Disable temperature warning | NO |
| SDLT Pad | DMA | Formation Density Matrix | 2.710 g/cc |
| SDLT Pad | DFL | Formation Density Fluid | 1.000 g/cc |
| Microlog Pad | MLOK | Process MicroLog Outputs? | Yes |

BOTTOM_____

Data: HENRY_TAYLOR328\0002 BLACK_SDL_DSNIDLE Date: 11-Jul-13 07:53:20

HALLIBURTON

CALIBRATION REPORT

NATURAL GAMMA RAY TOOL SHOP CALIBRATION

Tool Name: GTET - 11021138 **Reference Calibration Date:** 03-Mar-13 22:17:26
Engineer: JEREMY COTHREN **Calibration Date:** 08-Mar-13 19:09:21
Software Version: WL INSITE R3.6.0 (Build 3) **Calibration Version:** 1

Calibrator Source S/N: 150
 Calibrator API Reference:225.00 api
 Equivalent Calibrator API Reference:228.9 api

| Measurement | Measured | Calibrated | Units |
|-------------------------|----------|------------|-------|
| Background | 36.3 | 33.9 | api |
| Background + Calibrator | 276.8 | 258.9 | api |
| Calibrator | 222.7 | 225.0 | api |

NATURAL GAMMA RAY TOOL FIELD CALIBRATION

Tool Name: GTET - 11021138 **Reference Calibration Date:** 08-Mar-13 19:09:21
Engineer: JEREMY COTHREN **Calibration Date:** 04-Jul-13 13:06:45
Software Version: WL INSITE R3.6.0 (Build 3) **Calibration Version:** 1

Calibrator Source S/N: 150
 Calibrator API Reference:225.00 api
 Equivalent Calibrator API Reference:228.9 api

| Field Verification | Shop | Field | Units |
|-------------------------|-------|-------|-------|
| Background | 33.9 | 34.0 | api |
| Background + Calibrator | 258.9 | 257.7 | api |
| Calibrator | 225.0 | 223.7 | api |

| Shop | Field | Difference | Tolerance |
|-------|-------|------------|-----------|
| 225.0 | 223.7 | 1.3 | +/- 9.00 |

DUAL SPACED NEUTRON SHOP CALIBRATION

Tool Name: DSNT - 10993115 **Reference Calibration Date:** 19-Apr-13 09:57:10
Engineer: JEREMY COTHREN **Calibration Date:** 14-Jun-13 13:25:15
Software Version: WL INSITE R3.6.0 (Build 3) **Calibration Version:** 1

Logging Source S/N: DSN 382
 Tank Serial Number: PV
 Reference value assigned to Tank: 56.100
 Snow Block S/N: 592
 Calibration Tank Water Temperature: 50 degF
 Min. Tool Housing Outside Diameter: 3.625 in

| CALIBRATION CONSTANTS | | | |
|-----------------------|-------------|-----------|----------------------|
| Measurement | Prev. Value | New Value | Control Limit On New |
| | | | |

| Measurement | Prev Value | New Value | Value |
|-------------|------------|-----------|---------------|
| Gain: | 0.995 | 0.995 | 0.900 - 1.100 |

| WATER TANK SUMMARY (Horizontal Water Tank) | | | | |
|--|----------------------------------|------------------------|--------|-------------------------|
| Measurement | Current Reading (Previous Coef.) | Calibrated (New Coef.) | Change | Control Limit On Change |
| Porosity (decp): | 0.2358 | 0.2358 | 0.0000 | +/- 0.0020 |
| Calibrated Ratio: | 10.56 | 10.56 | 0.001 | +/- 0.050 |

| VERIFIER | | |
|-----------------------------|--------|-------------------|
| Measurement | Value | Control Limit |
| Snow-Block Porosity (decp): | 0.0752 | 0.02000 - 0.09000 |

| PASS/FAIL SUMMARY | |
|-------------------|--------|
| Background Check: | Passed |
| Gain-Range Check: | Passed |
| Snow-Block Check: | Passed |

DUAL SPACED NEUTRON FIELD CALIBRATION

| | |
|---|---|
| Tool Name: DSNT - 10993115 | Reference Calibration Date: 14-Jun-13 13:25:15 |
| Engineer: CORY HANSON | Calibration Date: 10-Jul-13 12:28:59 |
| Software Version: WL INSITE R3.6.0 (Build 3) | Calibration Version: 1 |

Logging Source S/N: DSN 382
Snow Block S/N: 592

| NEUTRON FIELD-CHECK SUMMARY | | | | |
|-----------------------------|--------|--------|------------|-------------------------|
| | Shop | Field | Difference | Control Limit On Change |
| Snow-Block Porosity (decp): | 0.0752 | 0.0666 | -0.0086 | +/- 0.0150 |

| PASS/FAIL SUMMARY | |
|------------------------|--------|
| Block Change Check: | Passed |
| Snow Block Stat Check: | Passed |
| Temperature Check: | Passed |

DENSITY CALIPER SHOP CALIBRATION

| | |
|---|---|
| Tool Name: SDLT - 10960494 | Reference Calibration Date: 10-Apr-13 14:06:08 |
| Engineer: CORY HANSON | Calibration Date: 10-Apr-13 14:07:36 |
| Software Version: WL INSITE R3.6.0 (Build 3) | Calibration Version: 1 |
| Host Tool Name: DSNT - 10993115 | |

| CALIBRATION COEFFICIENTS | | | |
|--------------------------|----------------|--------------|----------------------------|
| Measurement | Previous Value | New Value | Control Limit On New Value |
| Pad Offset | -3074.26 | -3038.52 | -7000.00 - -1000.00 |
| Pad Gain | 0.0003797 | 0.0003765 | 0.000200 - 0.000600 |
| Arm Offset | -722.38 | -772.81 | -5000.00 - 3000.00 |
| Arm Gain | 0.0005114 | 0.0005132 | 0.000300 - 0.000700 |
| Arm Power | -0.000004650 | -0.000004767 | -0.000010000 - 0.000010000 |

The ring diameter is computed from: $DIAMETER = PAD\ EXTENSION + ARM\ EXTENSION + TOOL\ DIAMETER$
Tool Diameter: 4.50 in

| CALIBRATION RINGS | | | | |
|-------------------|-----------------------------------|-------------------------|--------|----------------------------|
| Measurement | Current Reading (Previous Coeff.) | Calibrated (New Coeff.) | Change | Control Limit On New Value |

PAD EXTENSION:

| | | | | |
|------------------|------|------|-------|----------|
| Small Ring (in) | 2.00 | 2.00 | 0.00 | +/- 0.20 |
| Medium Ring (in) | 3.77 | 3.75 | -0.02 | +/- 0.20 |

RING DIAMETER:

| | | | | |
|------------------|-------|-------|------|----------|
| Small Ring (in) | 6.50 | 6.50 | 0.00 | +/- 0.20 |
| Medium Ring (in) | 8.25 | 8.25 | 0.00 | +/- 0.20 |
| Large Ring (in) | 15.00 | 15.00 | 0.00 | +/- 0.20 |

PASS/FAIL SUMMARY

| | |
|---------------------------------------|--------|
| Calibration-Coefficients Range Check: | Passed |
| Ring-Measurement Check: | Passed |

PASS/FAIL SUMMARY

| | |
|---------------------------------------|--------|
| Calibration-Coefficients Range Check: | Passed |
|---------------------------------------|--------|

SPECTRAL DENSITY SHOP CALIBRATION

| | | | |
|--------------------------|-----------------------------------|------------------------------------|---------------------------|
| Tool Name: | SDLT Pad - 10865873 | Reference Calibration Date: | 23-Jan-13 11:36:30 |
| Engineer: | JEREMY COTHREN | Calibration Date: | 14-Jun-13 13:15:57 |
| Software Version: | WL INSITE R3.6.0 (Build 3) | Calibration Version: | 1 |

Logging Source S/N: 20791B

Aluminum Block S/N: pv

Density: 2.584g/cc

Pe: 3.140

Magnesium Block S/N: PV

Density: 1.683g/cc

Pe: 2.594

DENSITY CALIBRATION SUMMARY

| Measurement | Previous Value | New Value | Control Limit |
|----------------------|----------------|-----------|---------------|
| Near Bar Gain | 0.9827 | 0.9826 | 0.90 - 1.10 |
| Near Dens Gain | 0.9895 | 0.9890 | 0.90 - 1.10 |
| Near Peak Gain | 0.9714 | 0.9722 | 0.90 - 1.10 |
| Near Lith Gain | 0.9506 | 0.9498 | 0.90 - 1.10 |
| Far Bar Gain | 0.9925 | 0.9925 | 0.90 - 1.10 |
| Far Dens Gain | 0.9836 | 0.9837 | 0.90 - 1.10 |
| Far Peak Gain | 0.9789 | 0.9786 | 0.90 - 1.10 |
| Far Lith Gain | 0.9653 | 0.9656 | 0.90 - 1.10 |
| <hr/> | | | |
| Near Bar Offset | 0.3137 | 0.3142 | NONE |
| Near Dens Offset | 0.2340 | 0.2385 | NONE |
| Near Peak Offset | 0.3585 | 0.3510 | NONE |
| Near Lith Offset | 0.5200 | 0.5267 | NONE |
| Far Bar Offset | 0.1705 | 0.1699 | NONE |
| Far Dens Offset | 0.2418 | 0.2408 | NONE |
| Far Peak Offset | 0.2586 | 0.2608 | NONE |
| Far Lith Offset | 0.3481 | 0.3460 | NONE |
| <hr/> | | | |
| Near Bar Background | 929.32 | 929.07 | 700 - 1450 |
| Near Dens Background | 303.08 | 303.12 | 230 - 480 |
| Near Peak Background | 132.56 | 132.62 | 100 - 210 |
| Near Lith Background | 162.70 | 162.67 | 125 - 260 |
| Far Bar Background | 523.03 | 522.97 | 450 - 900 |
| Far Dens Background | 206.47 | 206.54 | 175 - 345 |
| Far Peak Background | 82.40 | 82.28 | 70 - 140 |
| Far Lith Background | 83.85 | 83.82 | 75 - 145 |

CALIBRATION BLOCK SUMMARY

| Measurement | Current Reading | Calibrated (New Coef) | Change | Control Limit On Change |
|-------------|-----------------|-----------------------|--------|-------------------------|
|-------------|-----------------|-----------------------|--------|-------------------------|

| | (Previous Coef) | (New Coef) | On Change | |
|------------------|-----------------|------------|-----------|-------------|
| MAGNESIUM | | | | |
| Density (g/cc) | 1.683 | 1.683 | -0.000 | +/- 0.015 |
| Pe | 2.545 | 2.545 | 0.000 | +/- 0.150 |
| ALUMINUM | | | | |
| Density (g/cc) | 2.584 | 2.584 | -0.000 | +/- 0.01500 |
| Pe | 3.090 | 3.089 | -0.001 | +/- 0.150 |

| TOOL SUMMARY | | | | |
|----------------------------|---------------|----------------|--------------|----------------|
| Measurement | Near Detector | | Far Detector | |
| | Value | Control Limits | Value | Control Limits |
| QUALITY | | | | |
| Background | -0.0008 | +/- 0.0110 | -0.0006 | +/- 0.0140 |
| Magnesium Block | 0.0005 | +/- 0.0110 | -0.0024 | +/- 0.0140 |
| Aluminum Block | 0.0009 | +/- 0.0110 | -0.0001 | +/- 0.0140 |
| Resolution | 10.11 | 6.00 - 11.50 | 8.84 | 6.00 - 11.50 |
| Internal Verifier(B+D+P+L) | 1527 | 1200 - 2700 | 896 | 800 - 1700 |

| PASS/FAIL SUMMARY | |
|--------------------------------|--------|
| Background Quality Check: | Passed |
| Background Range Check: | Passed |
| Background Resolution Check: | Passed |
| Background Verification Check: | Passed |
| Magnesium Quality Check: | Passed |
| Aluminum Quality Check: | Passed |
| Gains Check: | Passed |
| Changes in Calibration Blocks: | Passed |

| SPECTRAL DENSITY FIELD CHECK | | | |
|-------------------------------------|-----------------------------------|------------------------------------|---------------------------|
| Tool Name: | SDLT Pad - 10865873 | Reference Calibration Date: | 14-Jun-13 13:15:57 |
| Engineer: | CORY HANSON | Calibration Date: | 10-Jul-13 12:33:24 |
| Software Version: | WL INSITE R3.6.0 (Build 3) | Calibration Version: | 1 |

Pad Temperature: 54.1 degF

| DENSITY FIELD CALIBRATION SUMMARY | | | | |
|--|----------|----------|--------|-------------------|
| Measurement | Shop | Field | Change | Control Limit +/- |
| Near (B+D+P+L) cps | 1527.479 | 1525.956 | -1.523 | 15.739 |
| Far (B+D+P+L) cps | 895.607 | 895.818 | 0.211 | 16.286 |
| Near Resolution | 10.11 | 10.05 | -0.060 | 0.50 |
| Far Resolution | 8.84 | 8.86 | 0.020 | 1.00 |

| PASS/FAIL SUMMARY | |
|--------------------------|--------|
| Bkg Quality Check: | Passed |
| Bkg Resolution Check: | Passed |
| Bkg Verification Check: | Passed |

| MICRO LOG SHOP CALIBRATION | | | |
|-----------------------------------|-----------------------------------|------------------------------------|---------------------------|
| Tool Name: | Microlog Pad - I15M94P73 | Reference Calibration Date: | 18-Sep-12 14:11:58 |
| Engineer: | HOFKAMP | Calibration Date: | 19-Dec-12 12:55:57 |
| Software Version: | WL INSITE R3.6.0 (Build 3) | Calibration Version: | 1 |
| Host Tool Name: | DSNT - 10993115 | | |

CALIBRATION COEFFICIENT SUMMARY

CALIBRATION COEFFICIENT SUMMARY

| Measurement | Micro Log Normal | | Micro Log Lateral | | Units |
|----------------------|------------------|------------|-------------------|------------|-------|
| | Measured | Calibrated | Measured | Calibrated | |
| Tool Zero | -0.04 | -0.13 | -0.02 | -0.01 | ohmm |
| Calibration Point #1 | 0.09 | 0.00 | -0.01 | 0.00 | ohmm |
| Calibration Point #2 | 20.00 | 20.00 | 19.93 | 20.00 | ohmm |
| Internal Reference | 19.90 | 19.90 | 19.92 | 20.00 | ohmm |

| Measurement | Micro Log Normal Tool Value | | Micro Log Lateral Tool Value | | Units |
|----------------------|-----------------------------|---------|------------------------------|---------|-------|
| | Tool Zero | | 0.95 | | |
| Calibration Point #1 | | 35.34 | | 1.96 | V |
| Calibration Point #2 | | 5315.32 | | 6890.13 | V |
| Internal Reference | | 5288.52 | | 6888.50 | V |

MICRO LOG FIELD CHECK

Tool Name: Microlog Pad - I15M94P73 **Reference Calibration Date:** 19-Dec-12 12:55:57
Engineer: CORY HANSON **Calibration Date:** 10-Jul-13 12:34:15
Software Version: WL INSITE R3.6.0 (Build 3) **Calibration Version:** 1

| Measurement | Micro Log Normal | | Micro Log Lateral | | Units |
|--------------------|------------------|-------|-------------------|-------|-------|
| | Shop | Field | Shop | Field | |
| Tool Zero | -0.13 | -0.13 | -0.01 | -0.02 | ohmm |
| Internal Reference | 19.90 | 20.05 | 20.00 | 20.24 | ohmm |

| Summary | | | | |
|------------------|-------|-------|------------|-----------|
| Signal | Shop | Field | Difference | Tolerance |
| Microlog Normal | 19.90 | 20.05 | -0.15 | +/- 0.80 |
| Microlog Lateral | 20.00 | 20.24 | -0.24 | +/- 0.80 |

SDLT CALIPER FIELD CALIBRATION

Tool Name: SDLT - 10960494 **Reference Calibration Date:** 10-Apr-13 14:07:36
Engineer: CORY HANSON **Calibration Date:** 10-Jul-13 12:35:26
Software Version: WL INSITE R3.6.0 (Build 3) **Calibration Version:** 1

| MEASURED CALIPER VALUES | | | | |
|-------------------------|------|-------|--------|----------------------------|
| Measurement | Shop | Field | Change | Control Limit On New Value |
| Pad Extension | 3.75 | 3.70 | -0.05 | +/- 0.10 |
| Ring Diameter | 8.25 | 8.19 | -0.06 | +/- 0.15 |

| PASS/FAIL SUMMARY | |
|----------------------|--------|
| Pad Extension Check: | Passed |
| Diameter Check: | Passed |

CALIBRATION SUMMARY

| Sensor | Shop | Field | Post | Difference | Tolerance | Units |
|----------------------|--------|--------|-------|------------|------------|-------|
| GTET-11021138 | | | | | | |
| Gamma Ray Calibrator | 225.0 | 223.7 | ----- | 1.3 | +/- 9.00 | api |
| DSNT-10993115 | | | | | | |
| Snow-Block Porosity | 0.0752 | 0.0666 | ----- | 0.0086 | +/- 0.0150 | decg |
| SDLT-10960494 | | | | | | |
| Pad Extension | 3.75 | 3.70 | ----- | 0.05 | +/-0.10 | in |
| Ring Diameter | 8.25 | 8.19 | ----- | 0.06 | +/-0.15 | in |

SDLT Pad-10865873

| | | | | | | |
|-------------------------------|----------|----------|-------|--------|-----------|------|
| Near(B+D+P+L) | 1527.479 | 1525.956 | ----- | 1.523 | +/-15.739 | cps |
| Far(B+D+P+L) | 895.607 | 895.818 | ----- | -0.211 | +/-16.286 | cps |
| Microlog Pad-I15M94P73 | | | | | | |
| MicroLog Normal | 19.90 | 20.05 | ----- | -0.15 | +/-0.80 | ohmm |
| MicroLog Lateral | 20.00 | 20.24 | ----- | -0.24 | +/-0.80 | ohmm |

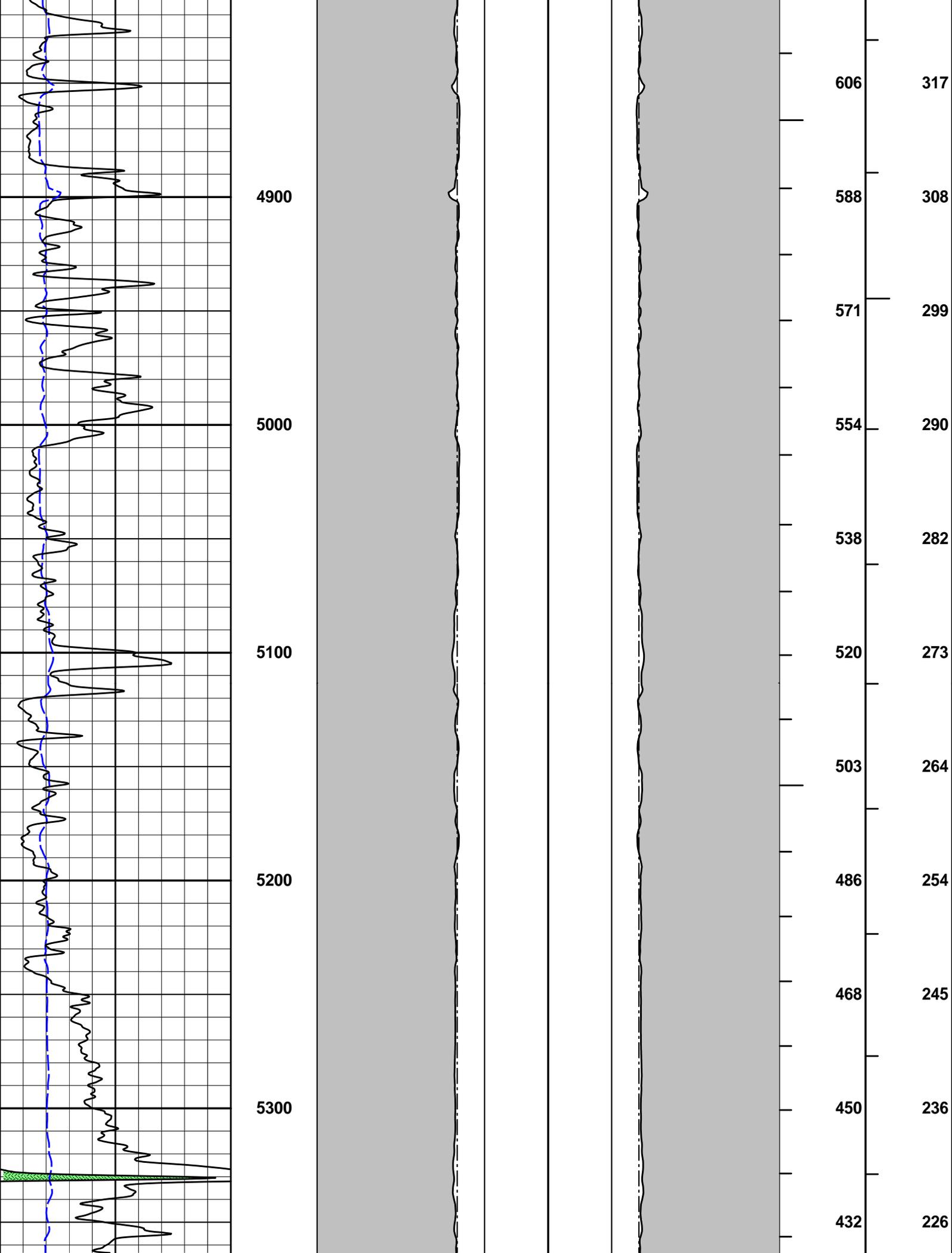
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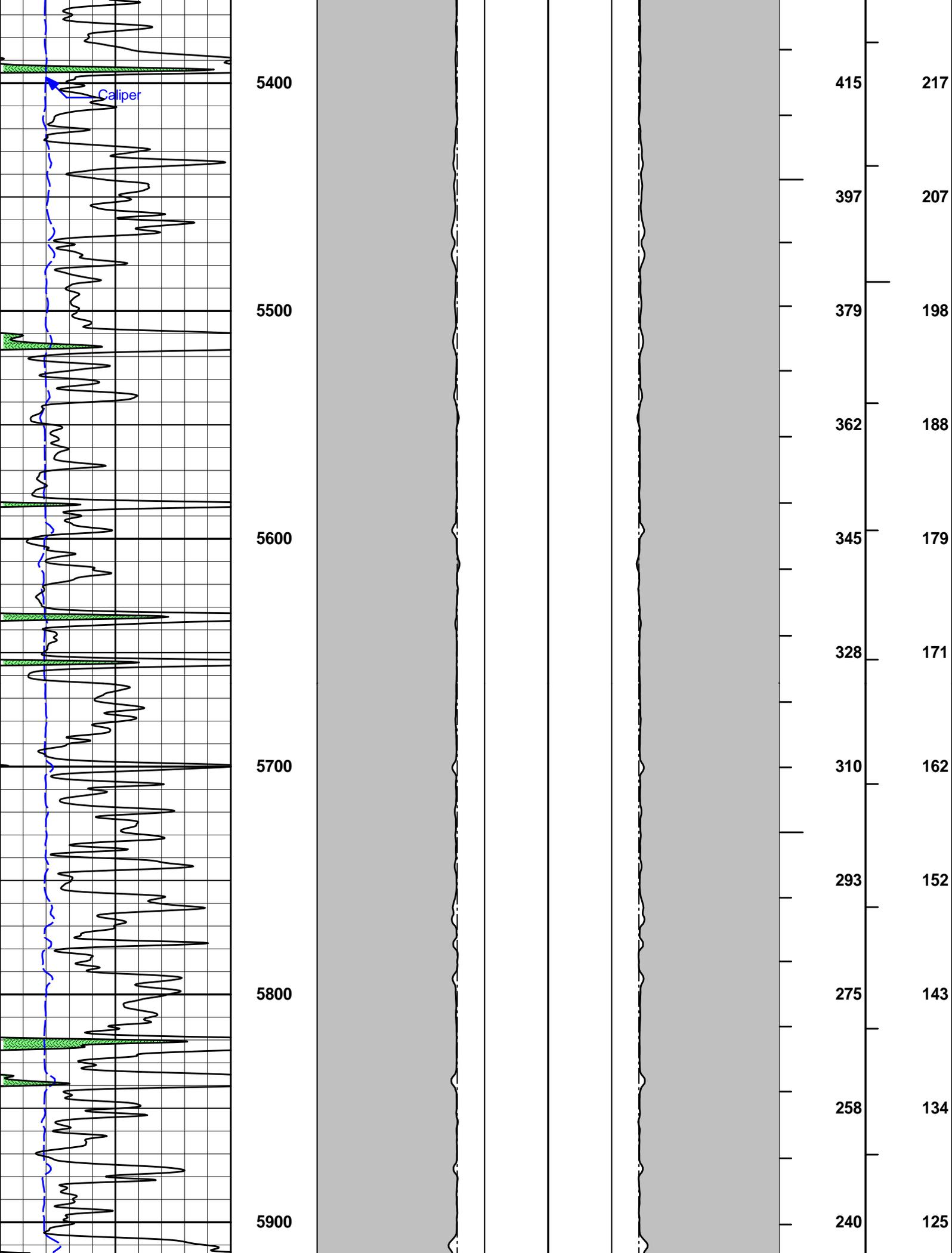


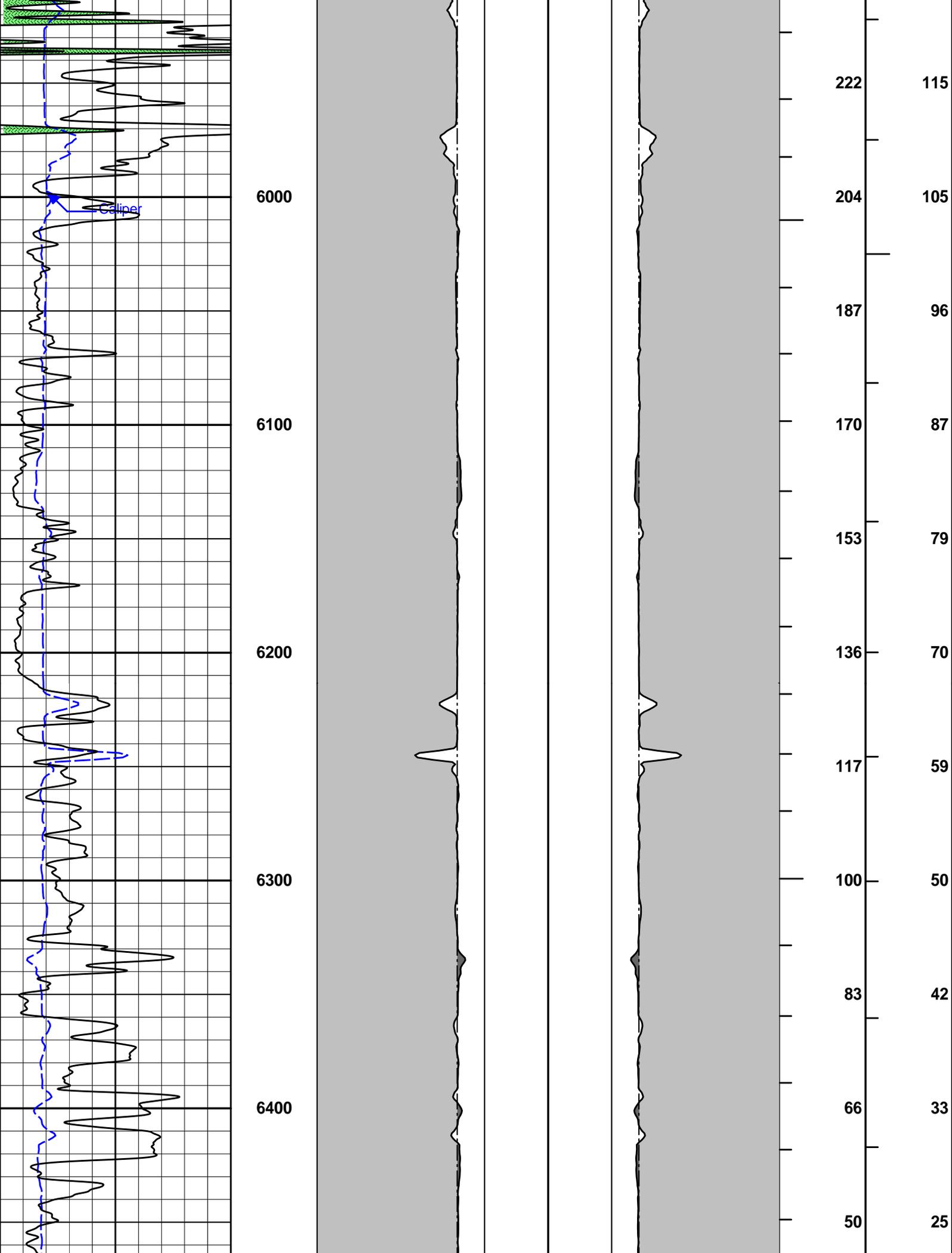
TOOL STRING DIAGRAM REPORT

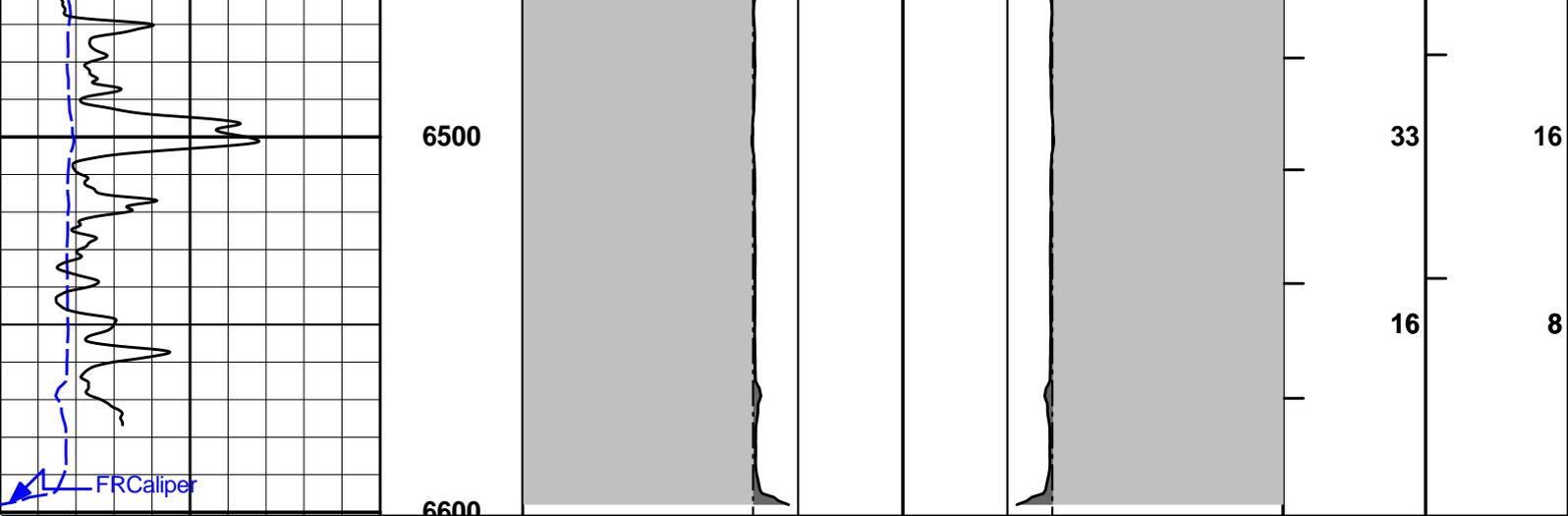
| Description | Overbody Description | O.D. | Diagram | Sensors @ Delays | Length | Accumulated Length |
|------------------------------|--|--|---------|--|----------|--------------------|
| CH_HOS-590_RED 37.50 lbs | | Ø 2.750 in → | | ← Temperature @ 32.55 ft | 3.03 ft | 33.58 ft |
| XOHD-01 20.00 lbs | | Ø 2.750 in → Ø 3.625 in → | | | 0.95 ft | 30.55 ft |
| GTET-11021138 165.00 lbs | | Ø 3.625 in → | | ← GammaRay @ 23.54 ft | 8.52 ft | 29.60 ft |
| DSNT-10993115 174.00 lbs | | Ø 3.625 in → | | ← DSN Far @ 14.14 ft ← DSN Near @ 13.39 ft | 9.69 ft | 21.08 ft |
| SDLT-10960494 360.00 lbs | SDLT Pad-10865873 65.00 lbs Microlog Pad-I15M94P73 8.00 lbs | Ø 4.500 in → Ø 4.750 in* → Ø 4.750 in* → | | Microlog @ 3.58 ft SDL Caliper @ 3.40 ft SDL @ 3.39 ft | 10.81 ft | 11.39 ft |
| Cabbage Head-01 10.00 lbs | | Ø 3.625 in → Ø 6.000 in → | | | 0.58 ft | 0.58 ft |
| | | | | | | 0.00 ft |

| Mnemonic | Tool Name | Serial Number | Weight (lbs) | Length (ft) | Accumulated Length (ft) | Max.Log. Speed (fpm) |
|----------|-----------------------------------|---------------|--------------|-------------|-------------------------|----------------------|
| CH_HOS | Hostile Cable Head with Load Cell | 590_RED | 37.50 | 3.03 | 30.55 | 300.00 |
| XOHD | Hostile to Dits Cross Over | 01 | 20.00 | 0.95 | 29.60 | 300.00 |
| GTET | Gamma Telemetry Tool | 11021138 | 165.00 | 8.52 | 21.08 | 60.00 |









| | | | | | | | | | | | | | | | |
|--|--------------------|-----------|-----|--------|--|--|---|-----------|-----|-----|--|--|---------------|---------------------|-----------|
| <table border="1"> <tr> <td>6</td> <td>CALI</td> <td>16</td> </tr> <tr> <td colspan="3">inches</td> </tr> <tr> <td>0</td> <td>Gamma API</td> <td>150</td> </tr> <tr> <td colspan="3">api</td> </tr> </table> | 6 | CALI | 16 | inches | | | 0 | Gamma API | 150 | api | | | 1 : 600 ft | 20 Casing OD 0 0 20 | BHVT AHVT |
| | 6 | CALI | 16 | | | | | | | | | | | | |
| | inches | | | | | | | | | | | | | | |
| | 0 | Gamma API | 150 | | | | | | | | | | | | |
| api | | | | | | | | | | | | | | | |
| 20 inches CALI 0 0 20 | inches CALI 20 | | | | | | | | | | | | | | |
| 20 inches Bit Size 0 0 20 | inches Bit Size 20 | | | | | | | | | | | | | | |
| MUDCAKE | | | | | | | | | | | | | | | |

HALLIBURTON

Plot Time: 11-Jul-13 08:48:36
 Plot Range: 4548 ft to 6601 ft
 Data: HENRY_TAYLOR328\Well Based\MAIN_PORO\
 Plot File: \\-LOCAL-HENRY_TAYLOR328\0002 BLACK_SDL_DSNPORO1_AHV Plot_x

ANNULAR HOLE VOLUME PLOT

| | | | |
|---------|-------------------|-------|--------|
| COMPANY | HERMAN LOEB | | |
| WELL | HENRY TAYLOR 3-28 | | |
| FIELD | MCKINNEY | | |
| COUNTY | MEADE | STATE | KANSAS |

HALLIBURTON

DUAL SPACED NEUTRON
SPECTRAL DENSITY
MICROLOG