

COMPANY: Lamont Doherty

WELL: ODP Leg 199, Site 1218 A (PAT-8C)

FIELD:

Ocean: Pacific

Schlumberger
 APS/HLDT Porosity Log
 Natural Gamma Ray

LAT: 8 DEG 53.089' N Elev.: K.B. 11.3 m
 LONG: 135 DEG 21.992' W G.L. -4837 m
 D.F. 11 m
 Permanent Datum: MSL Elev.: 0 m
 Log Measured From: RKB 11.3 m above Perm. Datum
 Drilling Measured From: RKB

Field: Location: LAT: 8 DEG 53.089' N
 Well: ODP Leg 199, Site 1218 A (PAT-8C)
 Company: Lamont Doherty

| LOCATION | | | |
|----------------------------------|--------------------------|-----------|----------|
| LAT: 8 DEG 53.089' N | Elev.: K.B. 11.3 m | | |
| LONG: 135 DEG 21.992' W | G.L. -4837 m | | |
| | D.F. 11 m | | |
| Permanent Datum: MSL | Elev.: 0 m | | |
| Log Measured From: RKB | 11.3 m above Perm. Datum | | |
| Drilling Measured From: RKB | | | |
| API Serial No. | Max. Hole Devi. 1 deg | Longitude | Latitude |

| | | | |
|-------------------------------|-----------------------------------|--|--|
| Logging Date | 16-Nov-2001 | | |
| Run Number | 1 | | |
| Depth Driller | 5114 m | | |
| Schlumberger Depth | 5112 m | | |
| Bottom Log Interval | 5098 m | | |
| Top Log Interval | 4837 m | | |
| Casing Driller Size @ Depth | 0.000 in @ 4917 m | | |
| Casing Schlumberger | 4915.5 m | | |
| Bit Size | 11.438 in | | |
| Type Fluid In Hole | Sepiolite/Saltwater | | |
| Density | 1.066 g/cm3 | | |
| Fluid Loss | PH | | |
| Source Of Sample | Mudpit | | |
| RM @ Measured Temperature | 0.253 ohm.m @ 32 degC | | |
| RMF @ Measured Temperature | | | |
| RMC @ Measured Temperature | | | |
| Source RMF | RMC none | | |
| RM @ MRT | 0.444 @ 9 @ 9 | | |
| Maximum Recorded Temperatures | 9 degC | | |
| Circulation Stopped | 16-Nov-2001 Time 11:00 | | |
| Logger On Bottom | 16-Nov-2001 Time 22:10 | | |
| Unit Number | 99 Location Houston, TX | | |
| Recorded By | Kerry M. Swain | | |
| Witnessed By | Phillippe Galliot, Brice Rea | | |

| | Run 1 | Run 2 | Run |
|-------------------------------|-------|-------|-----|
| Logging Date | | | |
| Run Number | | | |
| Depth Driller | | | |
| Schlumberger Depth | | | |
| Bottom Log Interval | | | |
| Top Log Interval | | | |
| Casing Driller Size @ Depth | | | |
| Casing Schlumberger | | | |
| Bit Size | | | |
| Type Fluid In Hole | | | |
| Density | | | |
| Fluid Loss | | | |
| Source Of Sample | | | |
| RM @ Measured Temperature | | | |
| RMF @ Measured Temperature | | | |
| RMC @ Measured Temperature | | | |
| Source RMF | | | |
| RM @ MRT | | | |
| Maximum Recorded Temperatures | | | |
| Circulation Stopped | | | |
| Logger On Bottom | | | |
| Unit Number | | | |
| Recorded By | | | |
| Witnessed By | | | |

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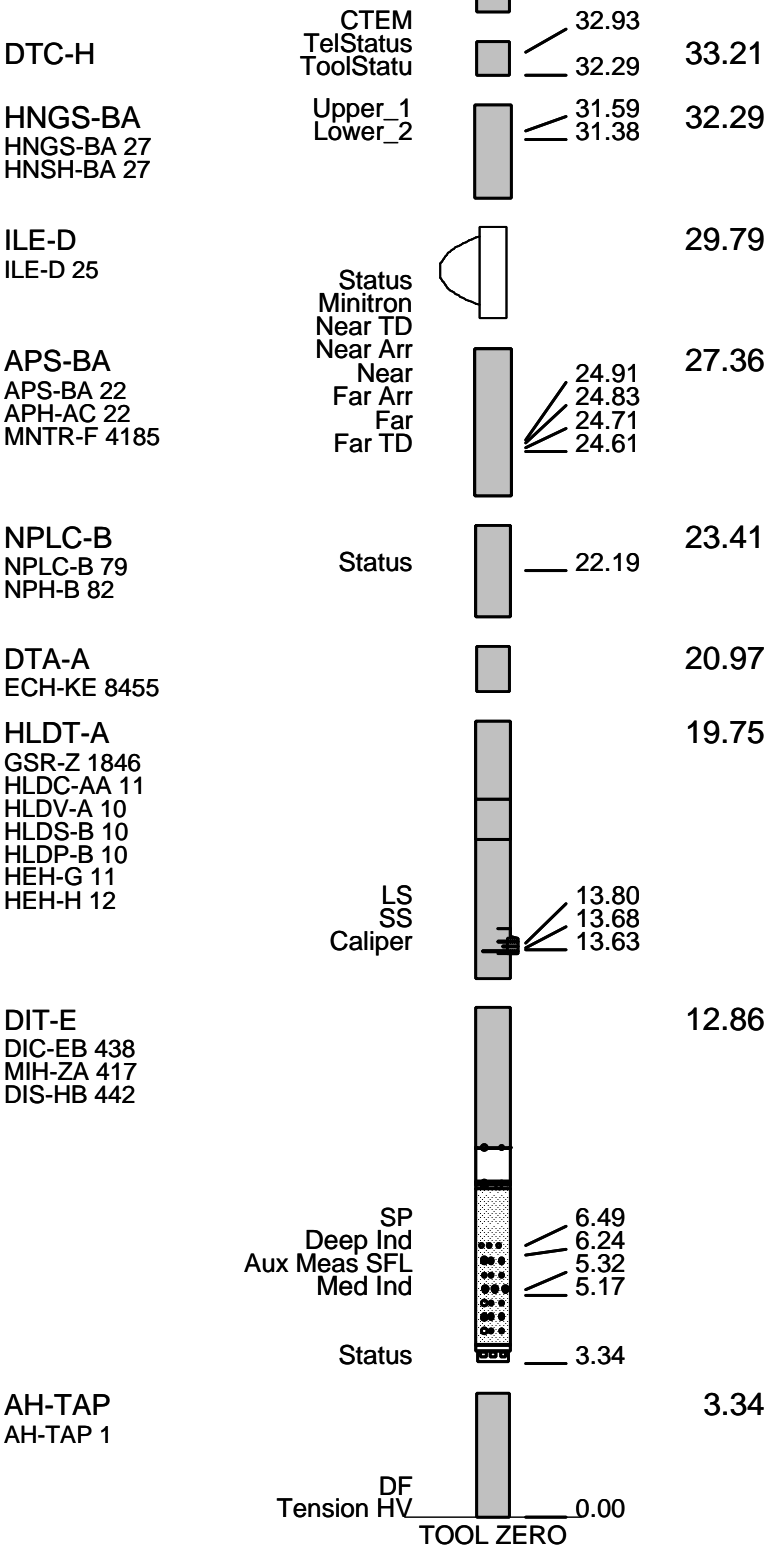
| | |
|--|---|
| OTHER SERVICES1 OS1: OS2: FMS/DSST OS3: OS4: OS5: | OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5: |
|--|---|

| | |
|---|-----------------------|
| REMARKS: RUN NUMBER 1 Hole cored with APC/XCB. Log presented in Meters Below Rig Floor (MBRF). Lamont Temperature tool (TAP) was run on Triple Combo, Run 1. Toolstring-TAP/DITE/HLDT/APS/HNGS/MGT Lamont Multi-Sensor Gamma Ray tool (MGT) was run on Triple Combo, Run 1. Wireline Heave Compensator (WHC) was used on all runs. Sepiolite mud was used to displace the hole during the wiper trip after drilling Drillers TD 5114 MBRF, Driller Pipe depth: 4917 MBRF. Schlumberger TD 5112 MBRF. Drill Pipe Schlumberger 4915.5 MBRF. | REMARKS: RUN NUMBER 2 |
|---|-----------------------|

| | | | | | |
|------------------|-------|---------|------------------|-------|------|
| RUN 1 | | | RUN 2 | | |
| SERVICE ORDER #: | | | SERVICE ORDER #: | | |
| PROGRAM VERSION: | | 9C2-303 | PROGRAM VERSION: | | |
| FLUID LEVEL: | | | FLUID LEVEL: | | |
| LOGGED INTERVAL | START | STOP | LOGGED INTERVAL | START | STOP |
| | | | | | |
| | | | | | |
| | | | | | |

EQUIPMENT DESCRIPTION

| | | | |
|--|---|-------|--|
| RUN 1 | | RUN 2 | |
| SURFACE EQUIPMENT | | | |
| SFT-281 24 SFT-178 4722 GSR-U 135 DTM-B | | | |
| DOWNHOLE EQUIPMENT | | | |
| LEH-QT |  | 39.75 | |
| AH-MGT |  | 38.86 | |
| AH-MGT | | | |



MAXIMUM STRING DIAMETER 3.88 IN
 MEASUREMENTS RELATIVE TO TOOL ZERO
 ALL LENGTHS IN METERS

Output DLIS Files

| | | | | | | |
|---------|------------------------|-------|----------|-------------------|----------|----------|
| DEFAULT | PI_LDL_APS_HNGS_008LUP | FN:11 | PRODUCER | 16-Nov-2001 22:09 | 5116.1 M | 4814.2 M |
| REDUCED | PI_LDL_APS_HNGS_008LUP | FN:12 | PRODUCER | 16-Nov-2001 22:09 | 5116.1 M | 4814.3 M |

OP System Version: 9C2-303 MCM

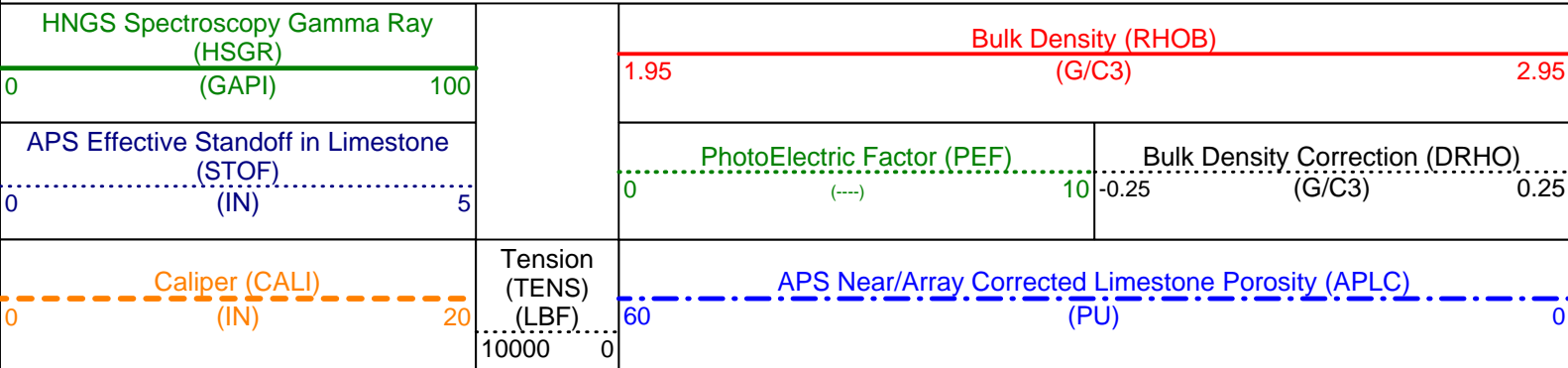
| | | | |
|--------|---------|---------|---------|
| DIT-E | 9C2-303 | HLDT-A | 9C2-303 |
| DTA-A | 9C2-303 | NPLC-B | 9C2-303 |
| APS-BA | 9C2-303 | HNGS-BA | 9C2-303 |
| DTC-H | 9C2-303 | | |

Changed Parameter Summary

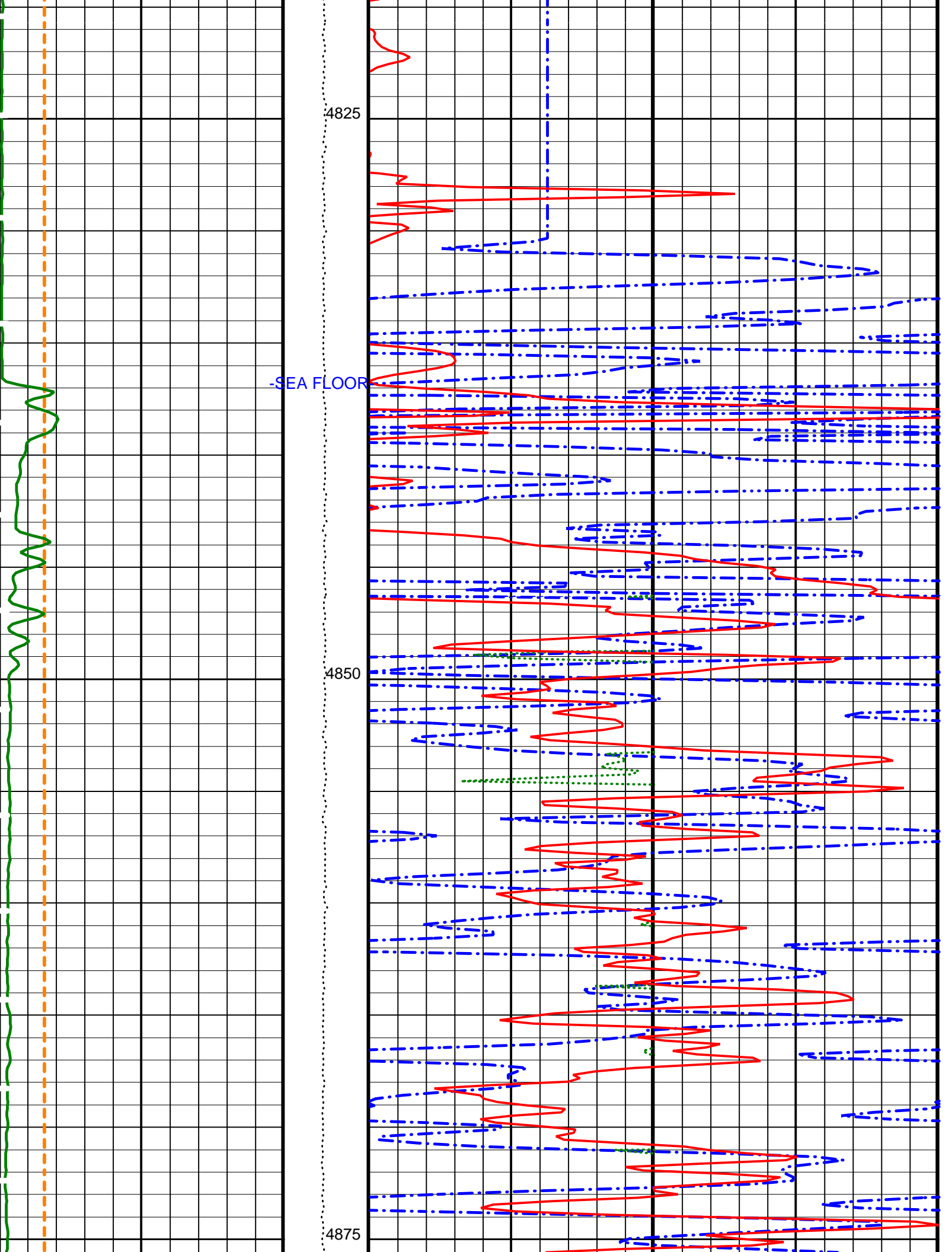
| DLIS Name | New Value | Previous Value | Depth & Time |
|-----------|-----------|----------------|-----------------|
| GCSE | CALI | BS | 5112.0 22:11:19 |

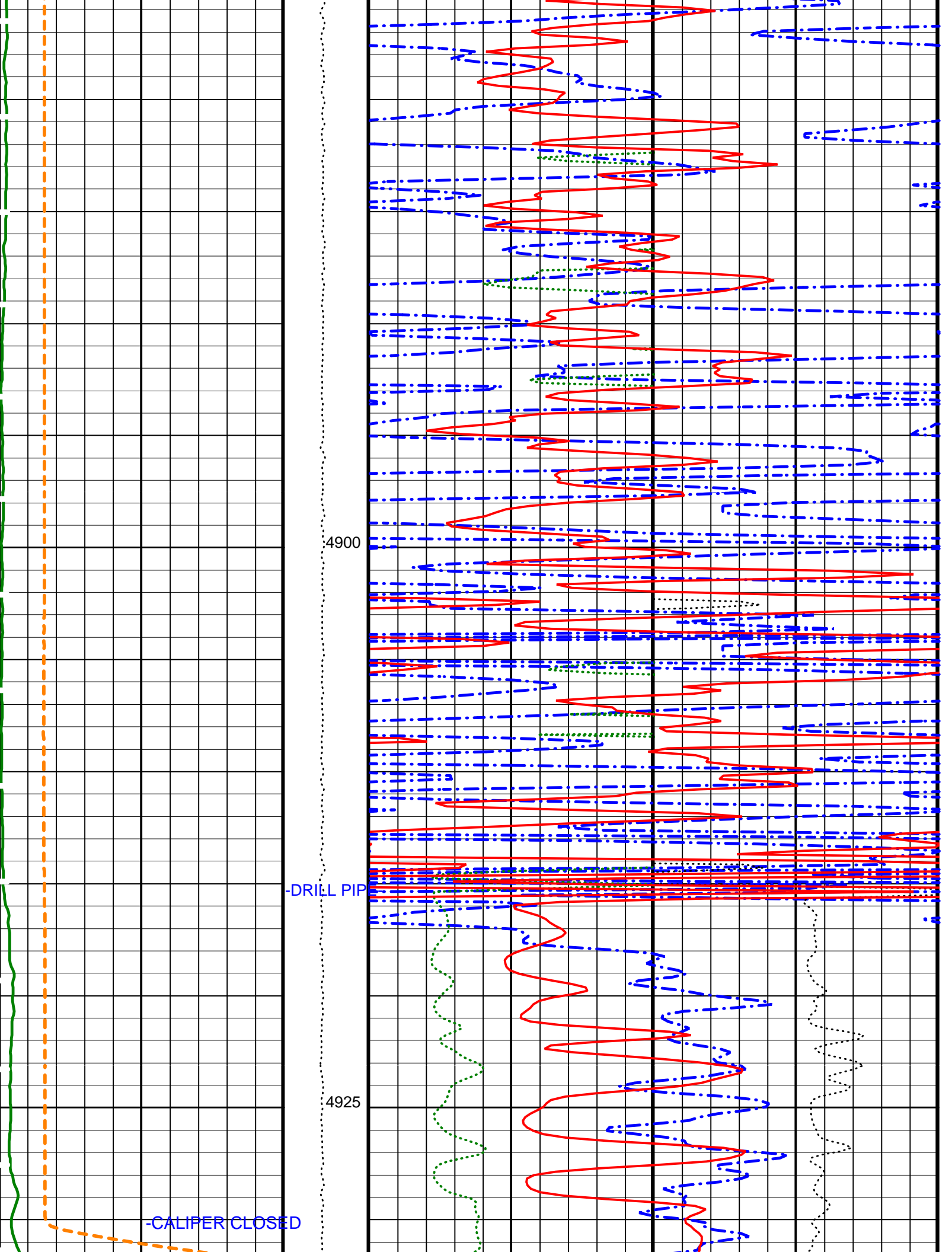
PIP SUMMARY

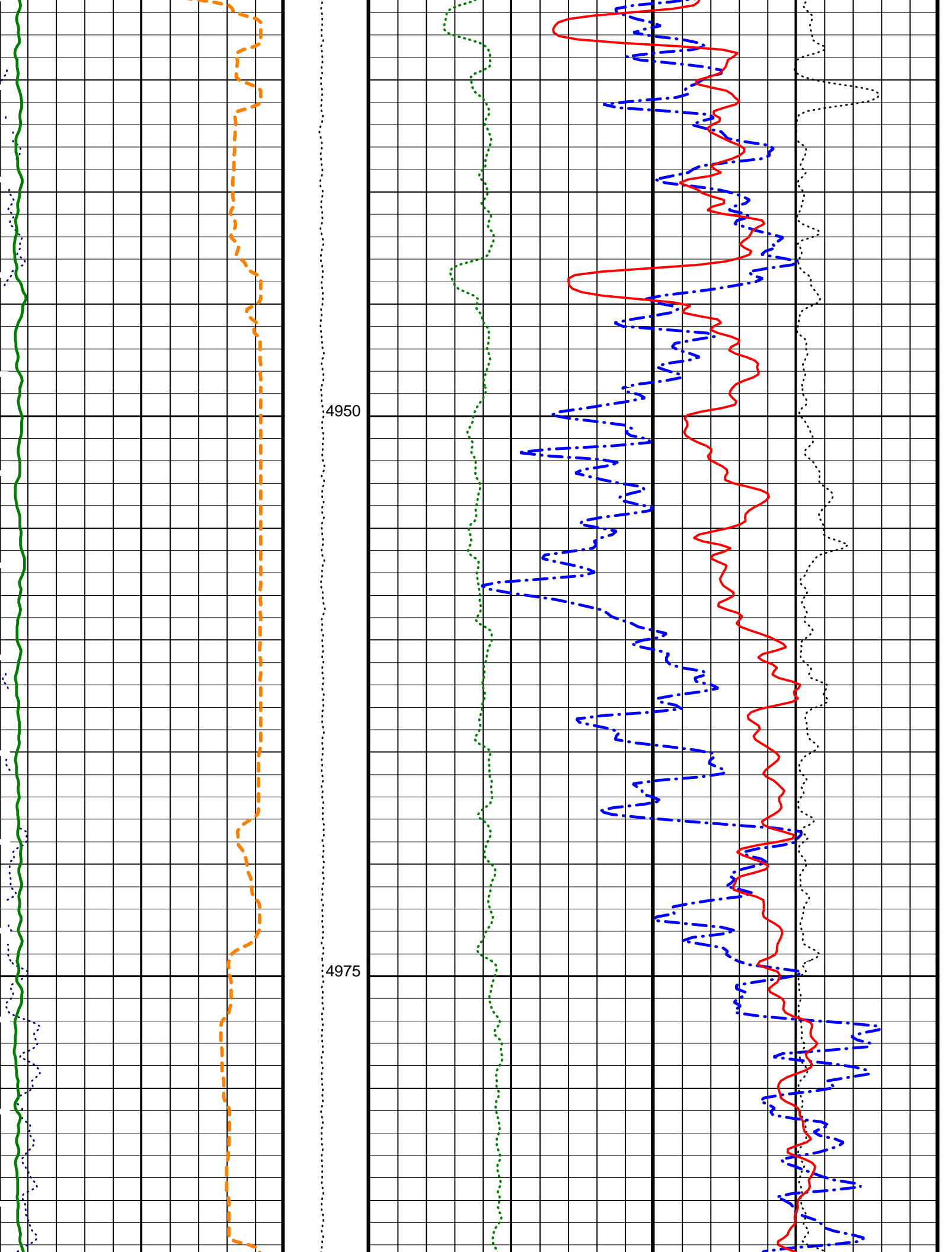
Time Mark Every 60 S

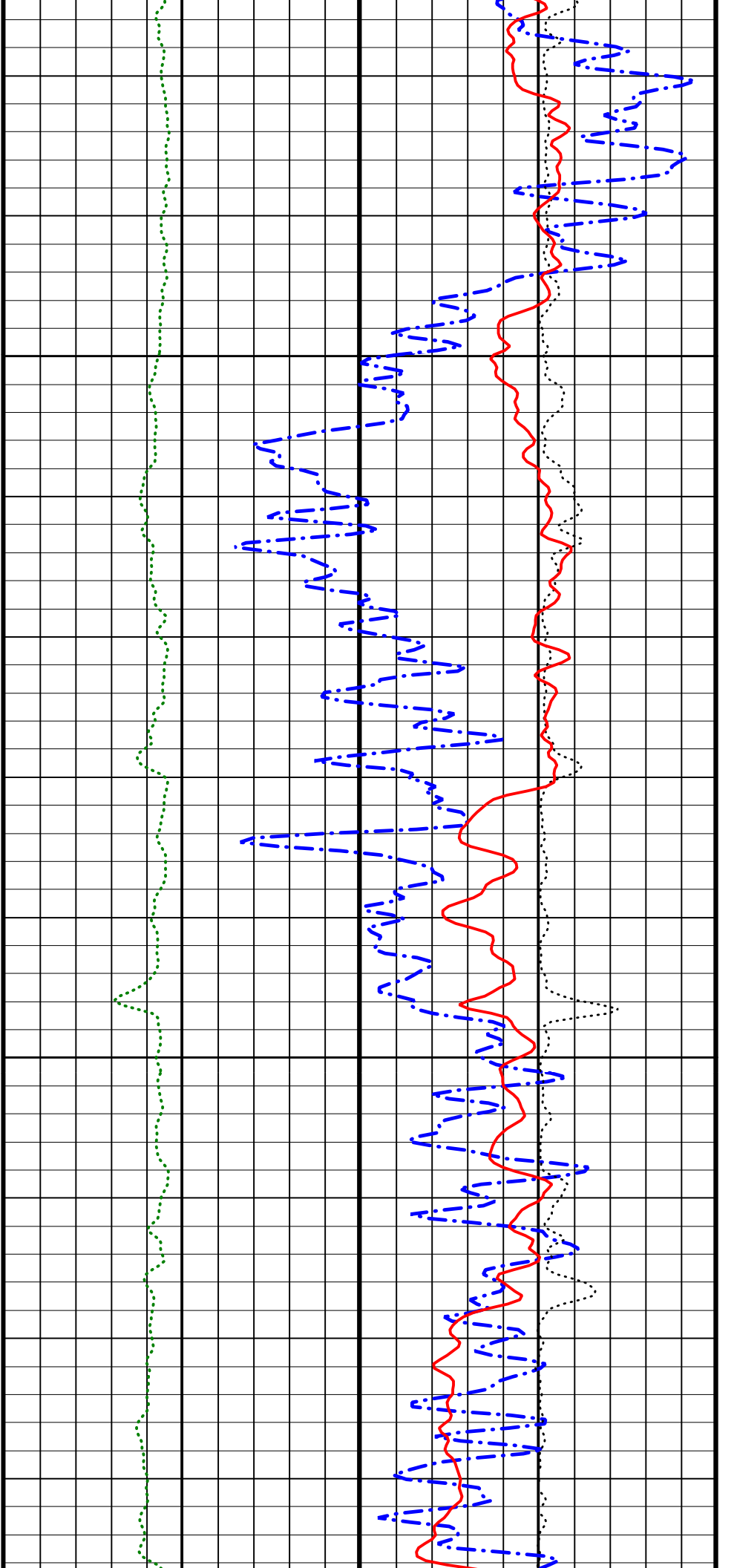
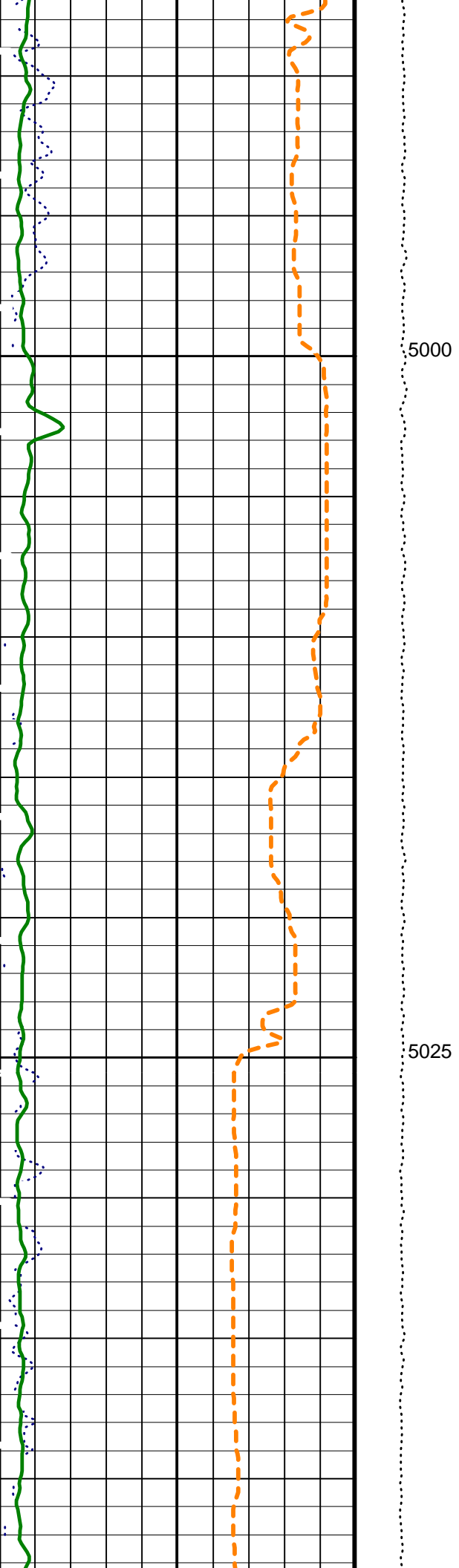


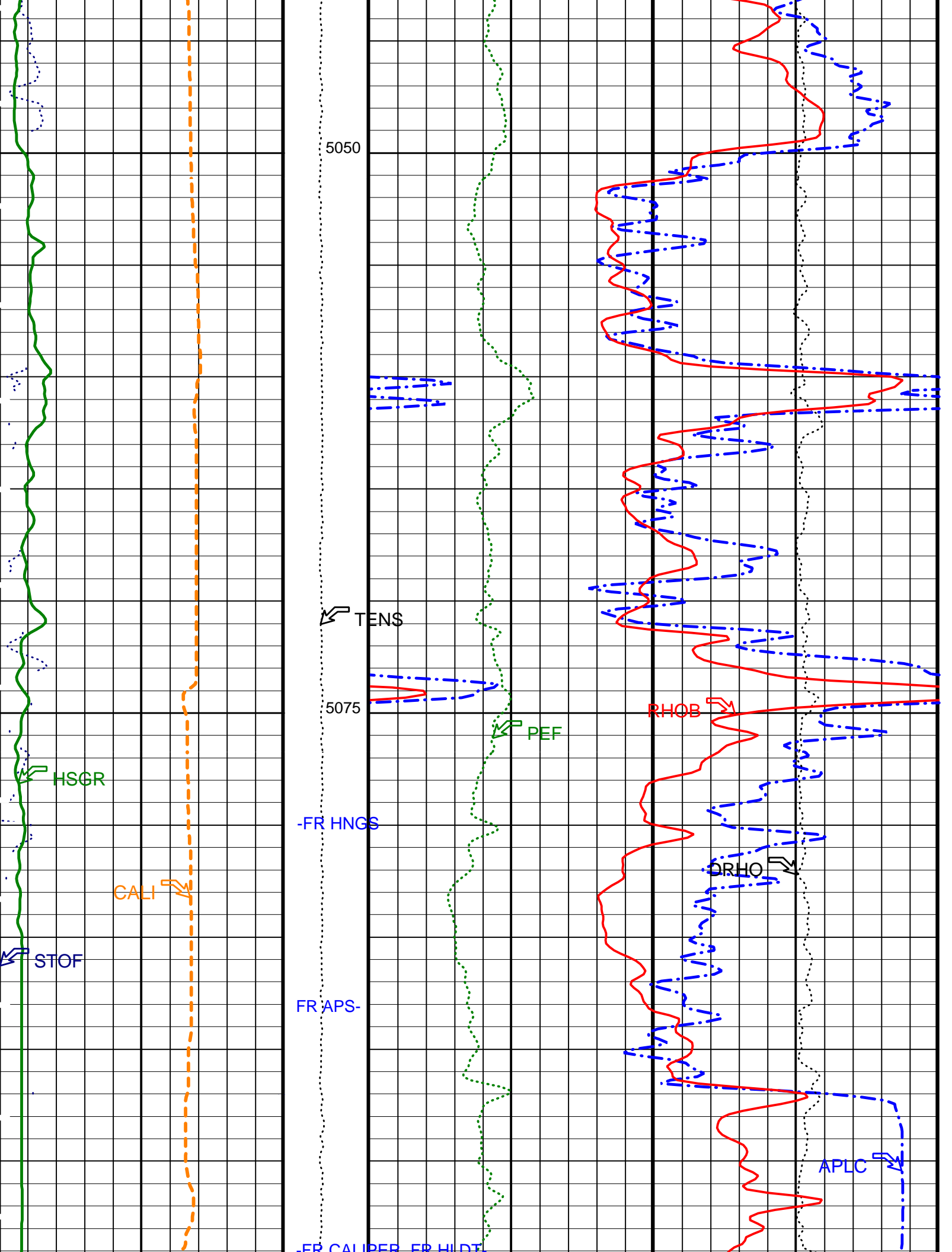
1st pass, Main Log

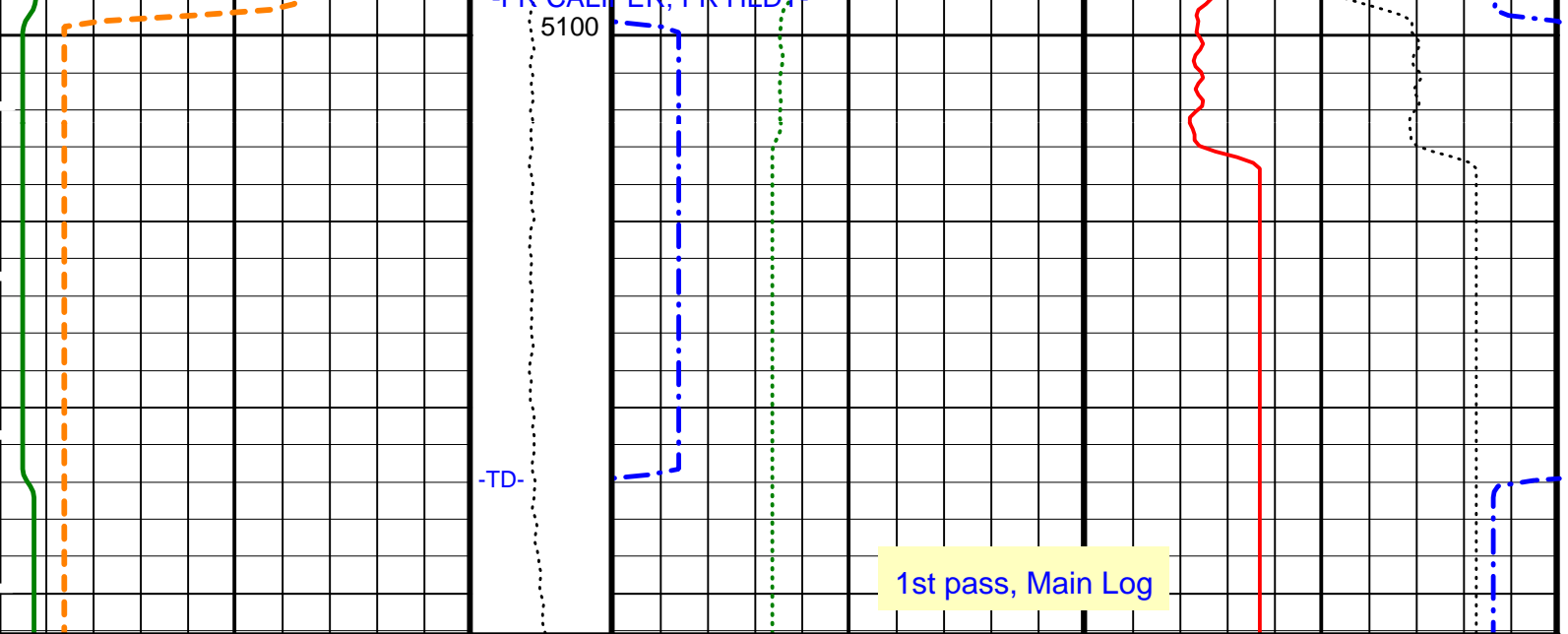












| | | | | | | | | |
|---|---|-----|----------------------------|------|------------------------------------|--|--|------|
| Caliper (CALI) (IN) | 0 | 20 | Tension (TENS) (LBF) | 60 | 0 | APS Near/Array Corrected Limestone Porosity (APLC) (PU) | 0 | |
| APS Effective Standoff in Limestone (STOF) (IN) | 0 | 5 | 10000 | 0 | PhotoElectric Factor (PEF) (--- | 10 | Bulk Density Correction (DRHO) (G/C3) | 0.25 |
| HNGS Spectroscopy Gamma Ray (HSGR) (GAPI) | 0 | 100 | | 1.95 | | Bulk Density (RHOB) (G/C3) | 2.95 | |

PIP SUMMARY

Time Mark Every 60 S

Parameters

| DLIS Name | Description | Value |
|-----------|--|---------------------|
| | APS Cement Thickness Source | COMPUTED |
| | Apparent Thickness of Cement | 0 IN |
| | APS Software Version | 5 |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1968.98 V |
| ABOS | APS Neutron Burst-Off Background Subtraction Switch | ON |
| ADSO | APS Array Detectors Data Source Switch | Both |
| AFSD | APS Far Detector High Voltage Setting | 2052.03 V |
| AHCS | APS Holesize Correction Source | GCSE |
| AHSS | APS Holesize Correction Switch | ON |
| ALTDPCHAN | Name of alternate depth channel | SpeedCorrectedDepth |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite |
| ANSD | APS Near Detector High Voltage Setting | 1748.3 V |
| AOTS | APS Old Temperature Sensor Switch | NO |
| ASOS | APS Standoff Correction Switch | ON |
| ATSS | APS Temperature-Pressure-Salinity Correction Switch | OFF |
| BAR1 | HNGS Detector 1 Barite Constant | 1 |
| BAR2 | HNGS Detector 2 Barite Constant | 1 |
| BFM | Borehole Fluid Medium | LIQUID |
| BHK | HNGS Borehole Potassium Correction Concentration | 0 |
| BHS | Borehole Status | OPEN |
| BHT | Bottom Hole Temperature (used in calculations) | 8 DEGC |
| BKSF | HNGS Borehole Fluid Excluder Sleeve Algorithm Factor | -1 |
| BKSH | HNGS Borehole Fluid Excluder Sleeve Algorithm High Channel | 245 |
| BKSL | HNGS Borehole Fluid Excluder Sleeve Algorithm Low Channel | 17 |
| BS | Bit Size | 11.438 IN |
| BSAL | Borehole Salinity | 32000.00 PPM |
| CSD1 | Inner Casing Outer Diameter | 0 IN |
| CSD2 | Outer Casing Outer Diameter | 0 IN |
| CSIZ | Current Casing Size | 0.000 IN |
| CSW1 | Inner Casing Weight | 0 LB/F |
| CSW2 | Outer Casing Weight | 0 LB/F |
| CWEI | Casing Weight | 0.00 LB/F |
| D1PR | HNGS Detector 1 Calibration Thorium Peak Resolution | 7.94455 % |
| D1TC | HNGS Detector 1 Calibration Temperature | 31.7278 DEGC |
| D1TL | HNGS Detector 1 Calibration Thorium Peak Location | 210.396 |

| | | | |
|------------|--|-----------------|------|
| D2PR | HNGS Detector 2 Calibration Thorium Peak Resolution | 7.23028 | % |
| D2TC | HNGS Detector 2 Calibration Temperature | 30.9207 | DEGC |
| D2TL | HNGS Detector 2 Calibration Thorium Peak Location | 209.461 | |
| DBCC | HNGS Barite Constant Correction Flag | NONE | |
| DFD | Drilling Fluid Density | 1.07 | G/C3 |
| DGF2 | Deep 20 kHz Gain Factor | 1.00789 | |
| DHC | Density Hole Correction | BS | |
| DPH2 | Deep 20 kHz Phase Shift | -0.152394 | DEG |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DRE2 | Deep Real 20 kHz Sonde Error Correction | 16.357 | MM/M |
| DSR2 | Deep Sigma Reference (20 kHz) | 1843 | MM/M |
| DXE2 | Deep Quad 20 kHz Sonde Error Correction | 64.6326 | MM/M |
| FD | Fluid Density | 1 | G/C3 |
| FSAL | Formation Salinity | 32000 | PPM |
| GCF1_START | HNGS Detector 1 GCF Constant | 1 | |
| GCF2_START | HNGS Detector 2 GCF Constant | 1 | |
| GCSE | Generalized Caliper Selection | BS | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | -0.0006672 | |
| HALF | HNGS Alpha Filter Length | 60 | IN |
| HATIM | HNGS Marquardt Accumulation Time | 600 | S |
| HCRB | HNGS Apply Borehole Potassium Correction | NONE | |
| HMWM | Mud Weighting Material | NATU | |
| HNPE | HNGS Processing Enable | YES | |
| HSLV | HNGS Borehole Fluid Excluder Sleeve Status | NO | |
| HSVN | HNGS Spectral Standards Version Number | 2.30388e-036 | |
| IFRS | DIT-E Induction Frequency Selector | 20 | |
| IPHA | DIT-E Phasor Processing Mode | ALL | |
| IPRO | DIT-E Induction Processing Selector | PHASOR | |
| ITEN | DIT-E Temperature Enable | ENABLE | |
| LSHC | LS Hardware Loop Control | DISALLOW | |
| MARQ_START | HNGS Marquardt Start-up Mode | INTERNAL | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| MGF2 | Medium 20 kHz Gain Factor | 1.02964 | |
| MPH2 | Medium 20 kHz Phase Shift | -0.933067 | DEG |
| MRE2 | Medium Real 20 kHz Sonde Error Correction | -1.78642 | MM/M |
| MSR2 | Medium Sigma Reference (20 kHz) | 3250 | MM/M |
| MST | Mud Sample Temperature | 32.00 | DEGC |
| MXE2 | Medium Quad 20 kHz Sonde Error Correction | -34.2041 | MM/M |
| NARC | APS Near/Array Calibration Ratio | 1.06266 | |
| NFRC | APS Near/Far Calibration Ratio | 0.900511 | |
| NOTS | NPLC Old Temperature Sensor | NO | |
| PBVSADP | Use alternate depth channel for playback | NO | |
| QPPS | Quicklook Processing Pe Select | PEFL | |
| RDF1_START | HNGS Detector 1 RDF Constant | 0 | |
| RDF2_START | HNGS Detector 2 RDF Constant | 0 | |
| RMFS | Resistivity of Mud Filtrate Sample | -50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| S1BI | HNGS Detector 1 Calibration Bismuth Count Rate | 1.3 | CPS |
| S1NA | HNGS Detector 1 Calibration Sodium Count Rate | 17.94 | CPS |
| S1NG | HNGS Detector 1 Calibration End-On / Side-On Gain Ratio | 0.986623 | |
| S2BI | HNGS Detector 2 Calibration Bismuth Count Rate | 1.3 | CPS |
| S2NA | HNGS Detector 2 Calibration Sodium Count Rate | 18.0888 | CPS |
| S2NG | HNGS Detector 2 Calibration End-On / Side-On Gain Ratio | 0.979243 | |
| SABK | HNGS Statistical Uncertainty in Borehole Potassium Running Average | 0.000254351 | |
| SBR | Shoulder Bed Resistivity Factor | 1 | OHMM |
| SFCR | SFL Channel Ratio | 1000 | |
| SFLE | SFL Enable | ENABLE | |
| SGRC | HNGS Standard Gamma-Ray Correction Flag | YES | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| SPAE | DIT-E SPARC Processing Enable | ENABLE | |
| SPNV | SP Next Value | 0 | MV |
| SSHC | SS Hardware Loop Control | DISALLOW | |
| TD | Total Depth | -50000 | M |
| TDD | Total Depth - Driller | 5114.00 | M |
| TDL | Total Depth - Logger | -50000.00 | M |
| TPOS | Tool Position | ECCE | |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |
| VBA1 | HNGS Detector 1 Variable Barite Factor Running Average | 1.23148 | |
| VBA2 | HNGS Detector 2 Variable Barite Factor Running Average | 1.01839 | |
| WMUD | Mud Weight | 0.994556 | G/C3 |

| | | | |
|--------|---------|---------|---------|
| DIT-E | 9C2-303 | HLDT-A | 9C2-303 |
| DTA-A | 9C2-303 | NPLC-B | 9C2-303 |
| APS-BA | 9C2-303 | HNGS-BA | 9C2-303 |
| DTC-H | 9C2-303 | | |

Output DLIS Files

| | | | | | | |
|---------|------------------------|-------|----------|-------------------|--|--|
| DEFAULT | PI_LDL_APS_HNGS_008LUP | FN:11 | PRODUCER | 16-Nov-2001 22:09 | | |
| REDUCED | PI_LDL_APS_HNGS_008LUP | FN:12 | PRODUCER | 16-Nov-2001 22:09 | | |

Output DLIS Files

| | | | | | | |
|---------|------------------------|-------|----------|-------------------|----------|----------|
| DEFAULT | PI_LDL_APS_HNGS_009LUP | FN:13 | PRODUCER | 16-Nov-2001 23:29 | 5113.8 M | 4898.0 M |
| REDUCED | PI_LDL_APS_HNGS_009LUP | FN:14 | PRODUCER | 16-Nov-2001 23:29 | 5113.8 M | 4898.0 M |

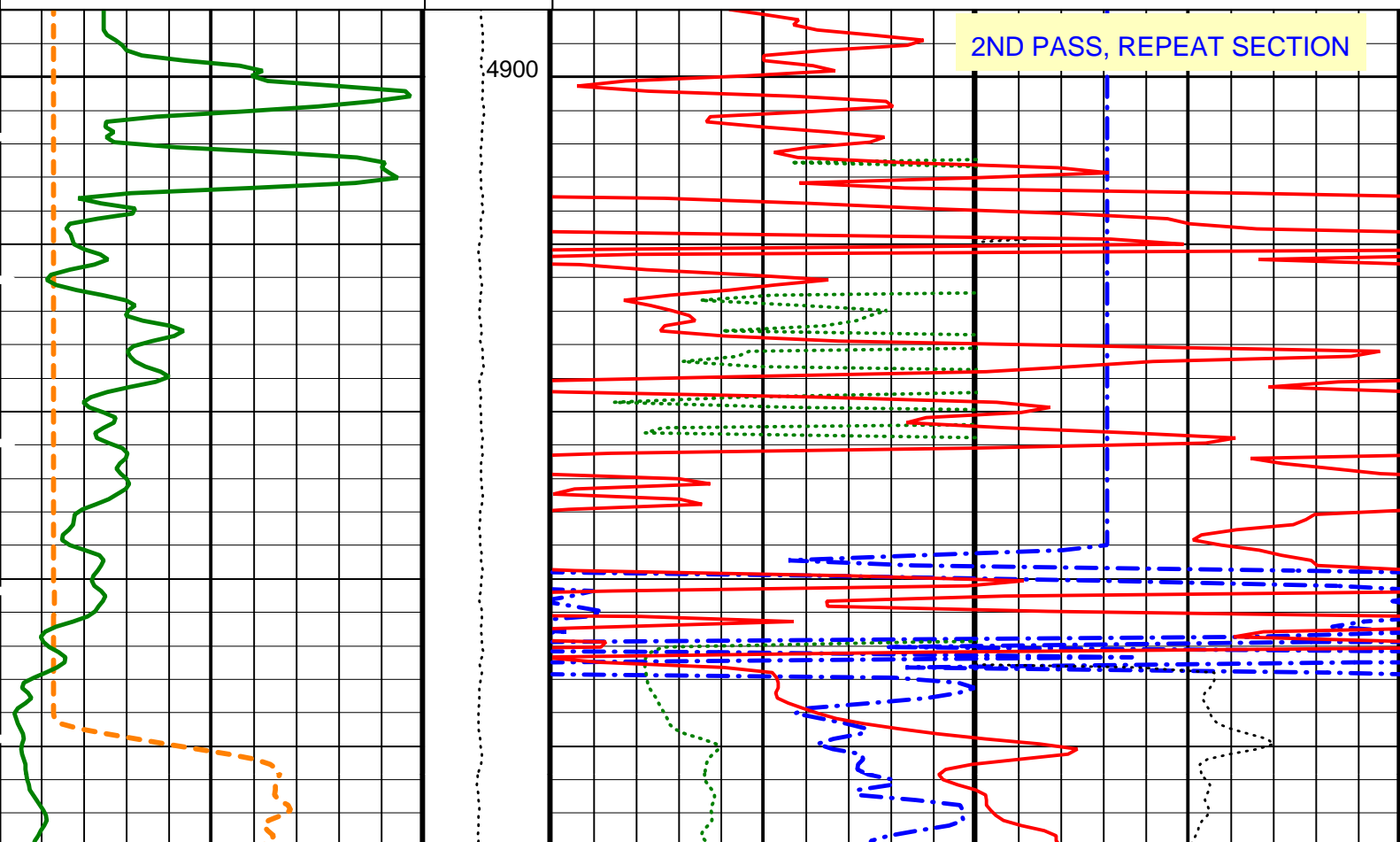
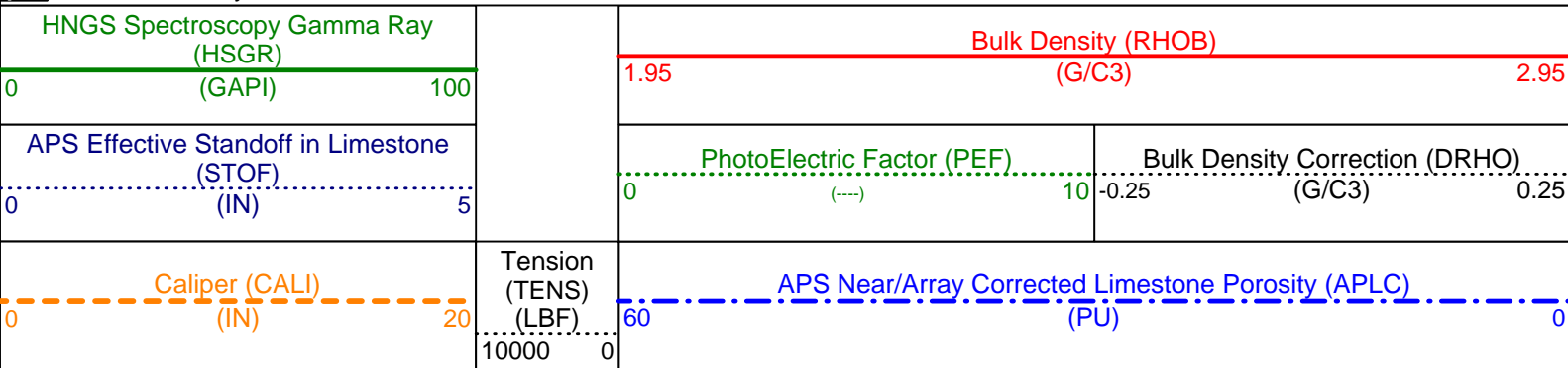
OP System Version: 9C2-303

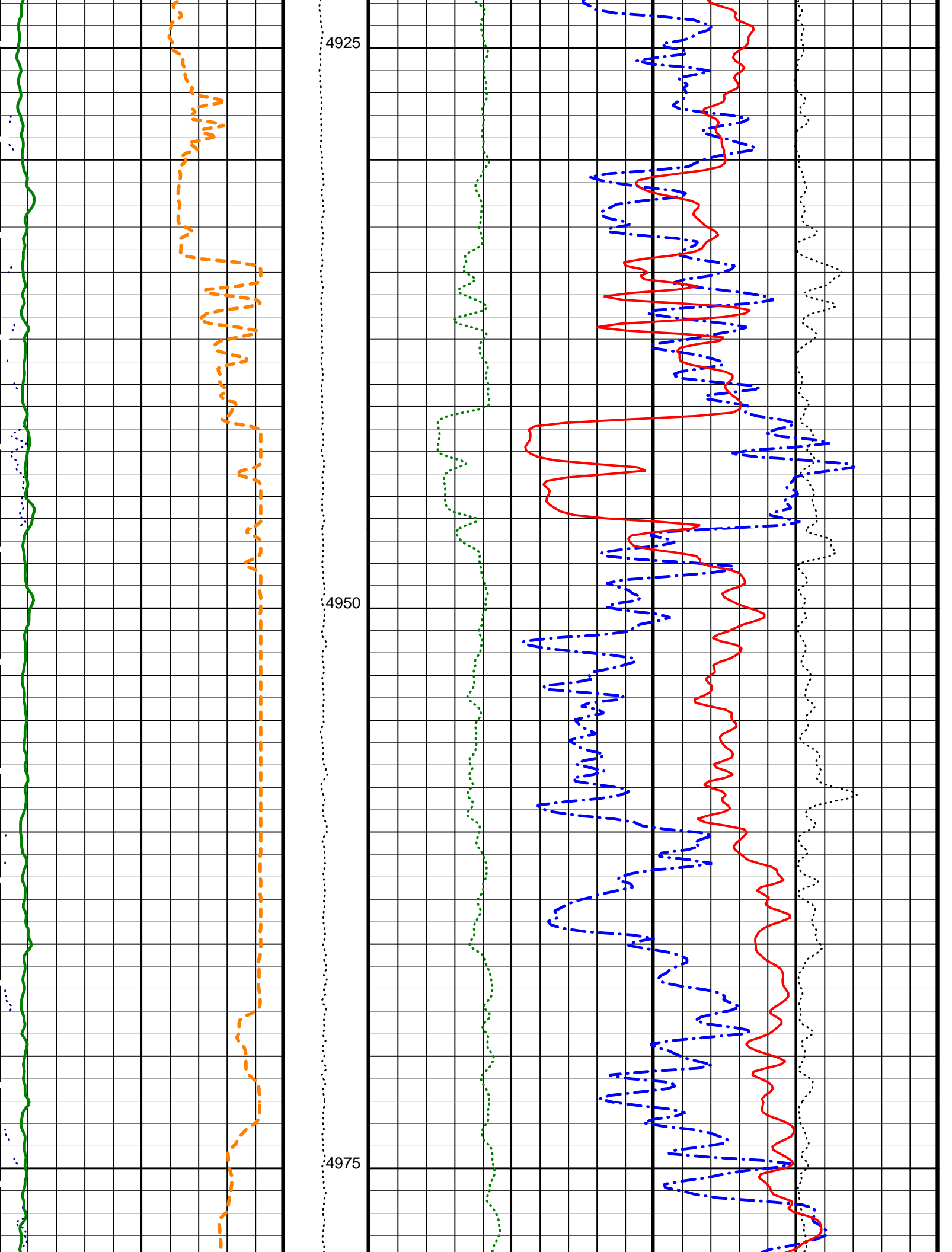
MCM

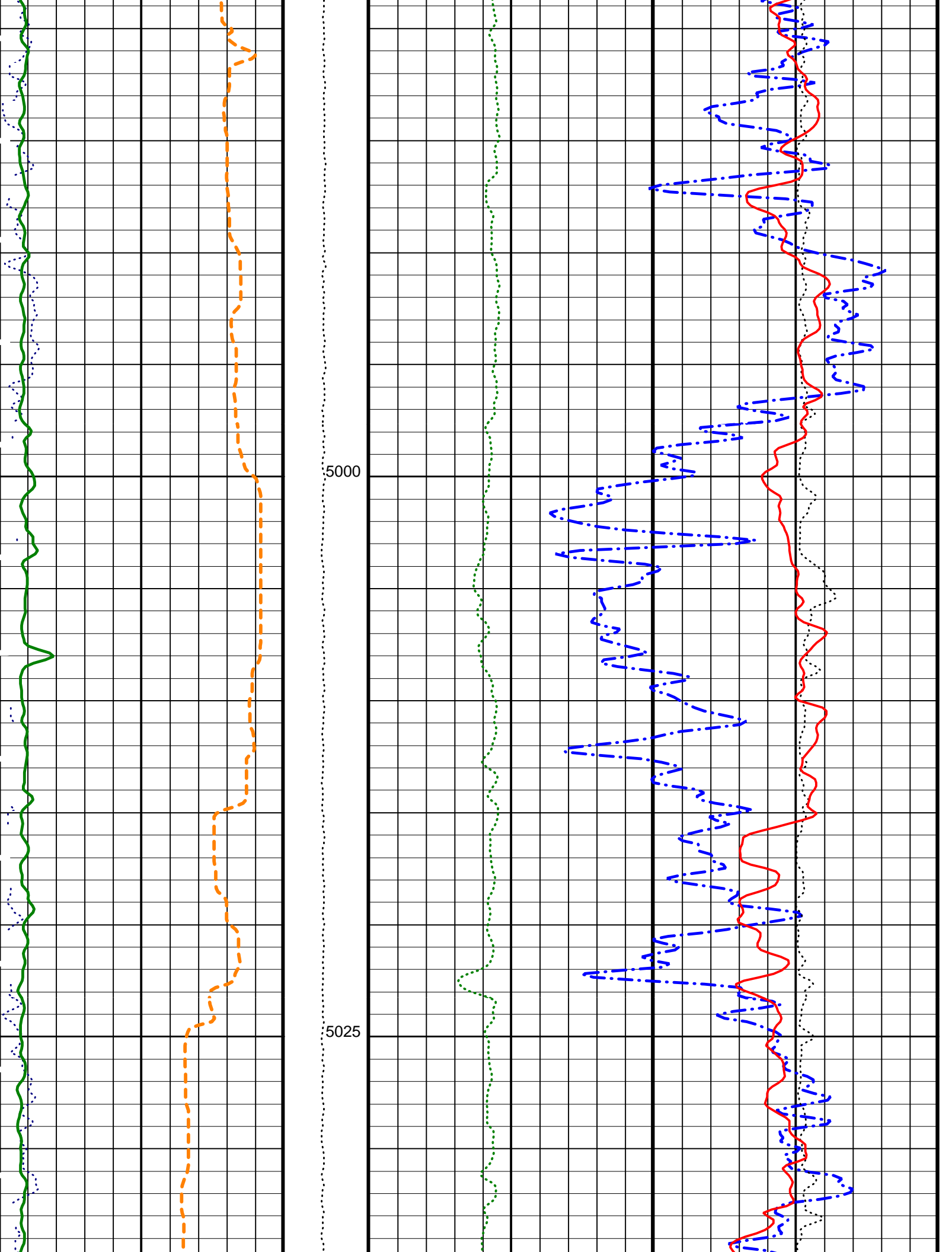
| | | | |
|--------|---------|---------|---------|
| DIT-E | 9C2-303 | HLDT-A | 9C2-303 |
| DTA-A | 9C2-303 | NPLC-B | 9C2-303 |
| APS-BA | 9C2-303 | HNGS-BA | 9C2-303 |
| DTC-H | 9C2-303 | | |

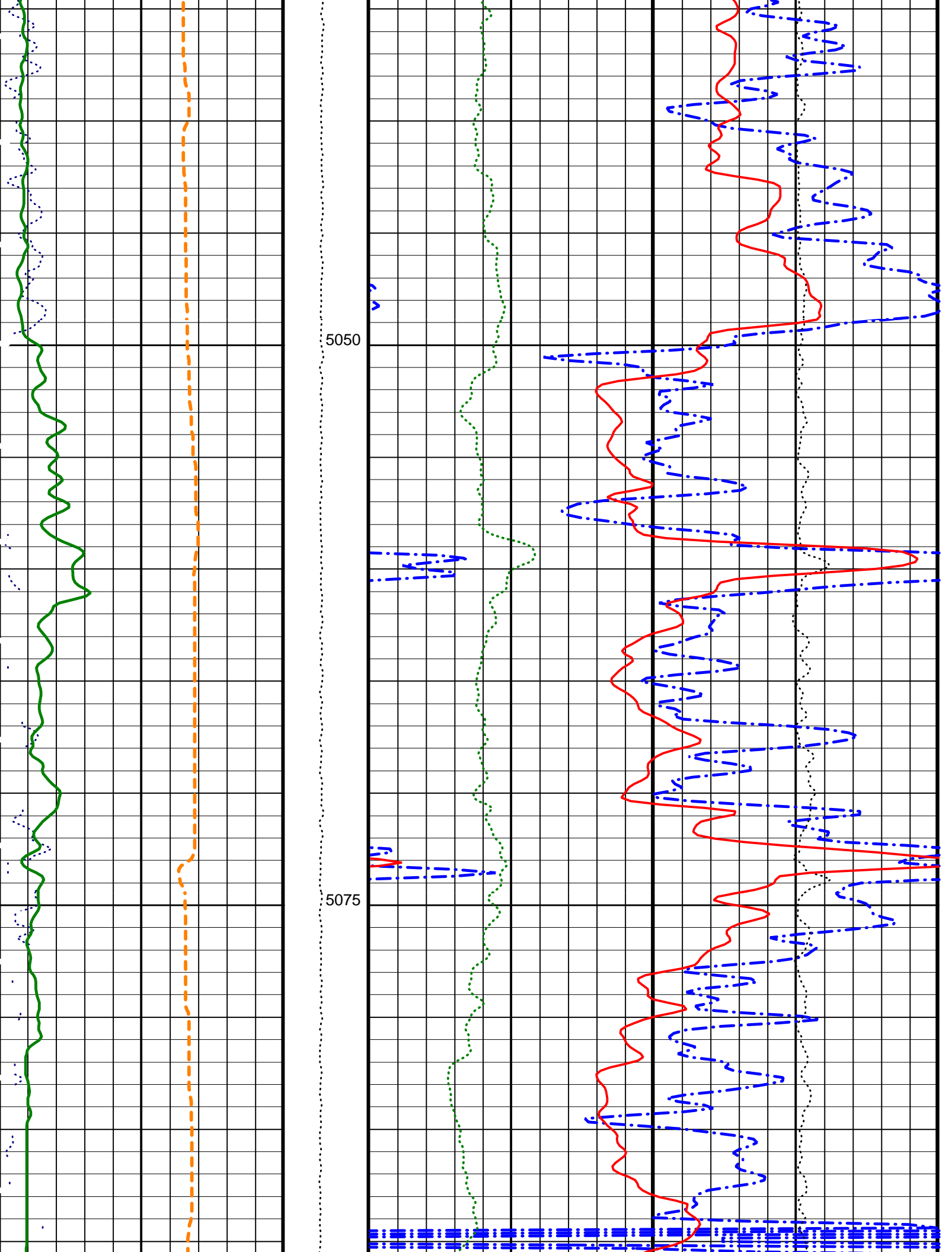
PIP SUMMARY

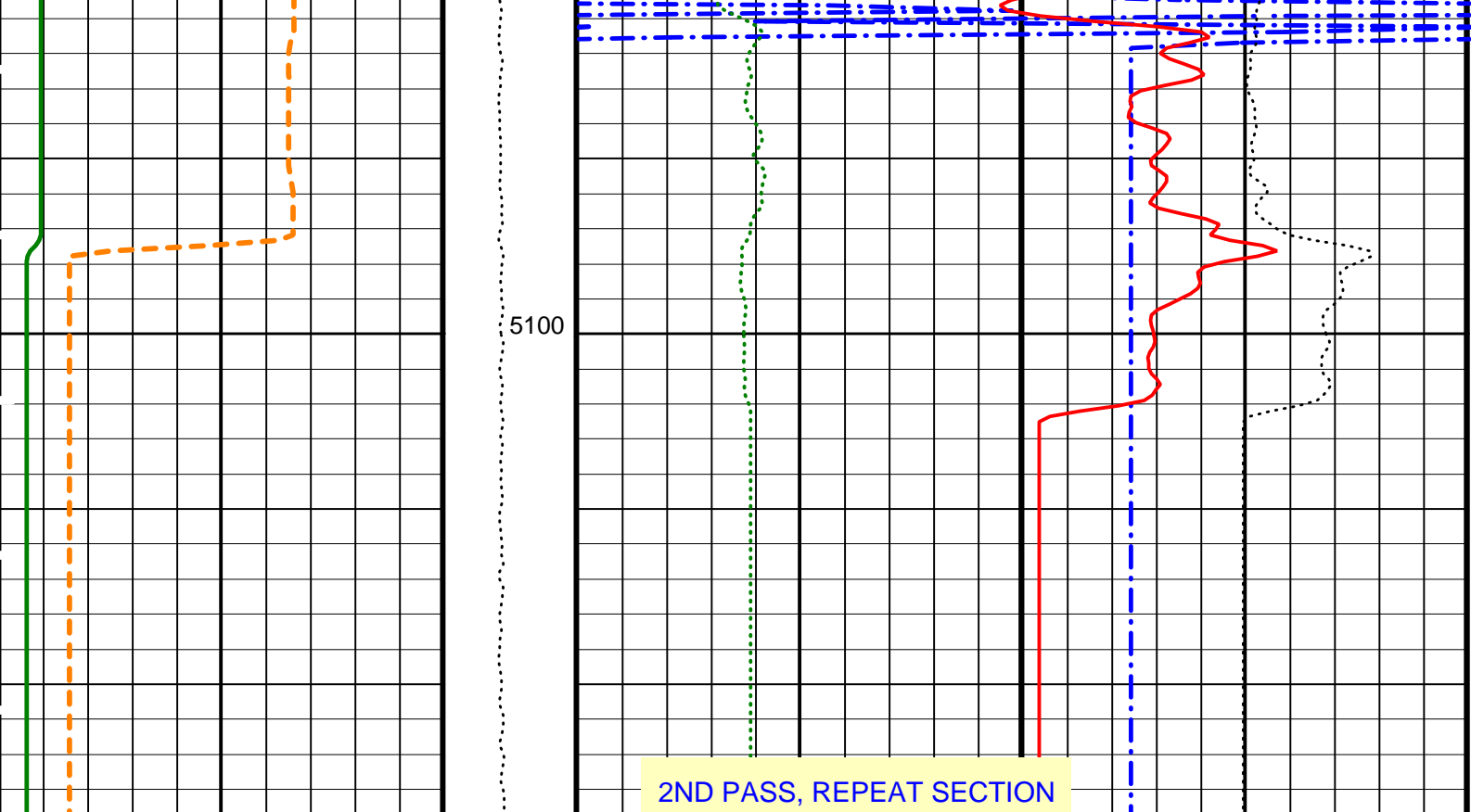
Time Mark Every 60 S











| | | |
|---|-------------------------------------|--|
| Caliper (CALI) (IN) | Tension (TENS) (LBF) | APS Near/Array Corrected Limestone Porosity (APLC) (PU) |
| 0 20 | 10000 0 | 60 0 |
| APS Effective Standoff in Limestone (STOF) (IN) | PhotoElectric Factor (PEF) (---) | Bulk Density Correction (DRHO) (G/C3) |
| 0 5 | 0 10 | -0.25 0.25 |
| HNGS Spectroscopy Gamma Ray (HSGR) (GAPI) | Bulk Density (RHOB) (G/C3) | |
| 0 100 | 1.95 2.95 | |

PIP SUMMARY

Time Mark Every 60 S

Parameters

| DLIS Name | Description | Value |
|------------|--|---------------------|
| | APS Cement Thickness Source | COMPUTED |
| | Apparent Thickness of Cement | 0 IN |
| | APS Software Version | 5 |
| AASD | APS Thermal and Array Detectors High Voltage Setting | 1968.98 V |
| ABOS | APS Neutron Burst-Off Background Subtraction Switch | ON |
| ADSO | APS Array Detectors Data Source Switch | Both |
| AFSD | APS Far Detector High Voltage Setting | 2052.03 V |
| AHCS | APS Holesize Correction Source | GCSE |
| AHSS | APS Holesize Correction Switch | ON |
| ALTDPCCHAN | Name of alternate depth channel | SpeedCorrectedDepth |
| AMTY | APS Environmental Corrections Mud Type | WaterBaseBarite |
| ANSD | APS Near Detector High Voltage Setting | 1748.3 V |
| AOTS | APS Old Temperature Sensor Switch | NO |
| ASOS | APS Standoff Correction Switch | ON |
| ATSS | APS Temperature-Pressure-Salinity Correction Switch | OFF |
| BAR1 | HNGS Detector 1 Barite Constant | 1 |
| BAR2 | HNGS Detector 2 Barite Constant | 1 |
| BFM | Borehole Fluid Medium | LIQUID |
| BHK | HNGS Borehole Potassium Correction Concentration | 0 |
| BHS | Borehole Status | OPEN |
| BHT | Bottom Hole Temperature (used in calculations) | 8 DEGC |
| BKSF | HNGS Borehole Fluid Excluder Sleeve Algorithm Factor | 1 |
| BKSH | HNGS Borehole Fluid Excluder Sleeve Algorithm High Channel | 245 |
| BKSL | HNGS Borehole Fluid Excluder Sleeve Algorithm Low Channel | 17 |
| BS | Bit Size | 11.438 IN |
| BSAL | Borehole Salinity | 22000.00 RBM |

| | | | |
|------------|--|-----------------|------|
| B3AL | Borehole Salinity | 32000.00 | PPM |
| CSD1 | Inner Casing Outer Diameter | 0 | IN |
| CSD2 | Outer Casing Outer Diameter | 0 | IN |
| CSIZ | Current Casing Size | 0.000 | IN |
| CSW1 | Inner Casing Weight | 0 | LB/F |
| CSW2 | Outer Casing Weight | 0 | LB/F |
| CWEI | Casing Weight | 0.00 | LB/F |
| D1PR | HNGS Detector 1 Calibration Thorium Peak Resolution | 7.94455 | % |
| D1TC | HNGS Detector 1 Calibration Temperature | 31.7278 | DEGC |
| D1TL | HNGS Detector 1 Calibration Thorium Peak Location | 210.396 | |
| D2PR | HNGS Detector 2 Calibration Thorium Peak Resolution | 7.23028 | % |
| D2TC | HNGS Detector 2 Calibration Temperature | 30.9207 | DEGC |
| D2TL | HNGS Detector 2 Calibration Thorium Peak Location | 209.461 | |
| DBCC | HNGS Barite Constant Correction Flag | NONE | |
| DFD | Drilling Fluid Density | 1.07 | G/C3 |
| DGF2 | Deep 20 kHz Gain Factor | 1.00789 | |
| DHC | Density Hole Correction | BS | |
| DPH2 | Deep 20 kHz Phase Shift | -0.152394 | DEG |
| DPPM | Density Porosity Processing Mode | HIRS | |
| DRE2 | Deep Real 20 kHz Sonde Error Correction | 16.357 | MM/M |
| DSR2 | Deep Sigma Reference (20 kHz) | 1843 | MM/M |
| DXE2 | Deep Quad 20 kHz Sonde Error Correction | 64.6326 | MM/M |
| FD | Fluid Density | 1 | G/C3 |
| FSAL | Formation Salinity | 32000 | PPM |
| GCF1_START | HNGS Detector 1 GCF Constant | 1 | |
| GCF2_START | HNGS Detector 2 GCF Constant | 1 | |
| GCSE | Generalized Caliper Selection | CALI | |
| GDEV | Average Angular Deviation of Borehole from Normal | 0 | DEG |
| GGRD | Geothermal Gradient | 0.018227 | DC/M |
| GRSE | Generalized Mud Resistivity Selection | CHART_GEN_9 | |
| GTSE | Generalized Temperature Selection | LINEAR_ESTIMATE | |
| H1P | HNGS Detector 1 Allow/Disallow In Processing | ALLOW | |
| H2P | HNGS Detector 2 Allow/Disallow In Processing | ALLOW | |
| HABK | HNGS Borehole Potassium Running Average | -0.00482433 | |
| HALF | HNGS Alpha Filter Length | 60 | IN |
| HATIM | HNGS Marquardt Accumulation Time | 600 | S |
| HCRB | HNGS Apply Borehole Potassium Correction | NONE | |
| HMWM | Mud Weighting Material | NATU | |
| HNPE | HNGS Processing Enable | YES | |
| HSLV | HNGS Borehole Fluid Excluder Sleeve Status | NO | |
| HSVN | HNGS Spectral Standards Version Number | 6.44008e-031 | |
| IFRS | DIT-E Induction Frequency Selector | 20 | |
| IPHA | DIT-E Phasor Processing Mode | ALL | |
| IPRO | DIT-E Induction Processing Selector | PHASOR | |
| ITEN | DIT-E Temperature Enable | ENABLE | |
| LSHC | LS Hardware Loop Control | DISALLOW | |
| MARQ_START | HNGS Marquardt Start-up Mode | INTERNAL | |
| MATR | Rock Matrix for Neutron Porosity Corrections | LIMESTONE | |
| MDEN | Matrix Density | 2.71 | G/C3 |
| MGF2 | Medium 20 kHz Gain Factor | 1.02964 | |
| MPH2 | Medium 20 kHz Phase Shift | -0.933067 | DEG |
| MRE2 | Medium Real 20 kHz Sonde Error Correction | -1.78642 | MM/M |
| MSR2 | Medium Sigma Reference (20 kHz) | 3250 | MM/M |
| MST | Mud Sample Temperature | 32.00 | DEGC |
| MXE2 | Medium Quad 20 kHz Sonde Error Correction | -34.2041 | MM/M |
| NARC | APS Near/Array Calibration Ratio | 1.06266 | |
| NFRC | APS Near/Far Calibration Ratio | 0.900511 | |
| NOTS | NPLC Old Temperature Sensor | NO | |
| PBVSADP | Use alternate depth channel for playback | NO | |
| QPPS | Quicklook Processing Pe Select | PEFL | |
| RDF1_START | HNGS Detector 1 RDF Constant | 0 | |
| RDF2_START | HNGS Detector 2 RDF Constant | 0 | |
| RMFS | Resistivity of Mud Filtrate Sample | -50000.0000 | OHMM |
| RW | Resistivity of Connate Water | 1.0000 | OHMM |
| S1BI | HNGS Detector 1 Calibration Bismuth Count Rate | 1.3 | CPS |
| S1NA | HNGS Detector 1 Calibration Sodium Count Rate | 17.94 | CPS |
| S1NG | HNGS Detector 1 Calibration End-On / Side-On Gain Ratio | 0.986623 | |
| S2BI | HNGS Detector 2 Calibration Bismuth Count Rate | 1.3 | CPS |
| S2NA | HNGS Detector 2 Calibration Sodium Count Rate | 18.0888 | CPS |
| S2NG | HNGS Detector 2 Calibration End-On / Side-On Gain Ratio | 0.979243 | |
| SABK | HNGS Statistical Uncertainty in Borehole Potassium Running Average | 0.000416327 | |
| SBR | Shoulder Bed Resistivity Factor | 1 | OHMM |
| SFCR | SFL Channel Ratio | 1000 | |
| SFLE | SFL Enable | ENABLE | |
| SGRC | HNGS Standard Gamma-Ray Correction Flag | YES | |
| SHT | Surface Hole Temperature | 20 | DEGC |
| SPAE | DIT-E SPARC Processing Enable | ENABLE | |
| SPNV | SP Next Value | 0 | MV |
| SSHC | SS Hardware Loop Control | DISALLOW | |
| TD | Total Depth | 5114 | M |
| TDD | Total Depth - Driller | 5114.00 | M |
| TDL | Total Depth - Logger | -50000.00 | M |
| TPOS | Tool Position | ECCE | |
| TWS | Temperature of Connate Water Sample | 37.78 | DEGC |

OP System Version: 9C2-303

MCM

| | | | |
|--------|---------|---------|---------|
| DIT-E | 9C2-303 | HLDT-A | 9C2-303 |
| DTA-A | 9C2-303 | NPLC-B | 9C2-303 |
| APS-BA | 9C2-303 | HNGS-BA | 9C2-303 |
| DTC-H | 9C2-303 | | |

Output DLIS Files

| | | | | |
|---------|------------------------|-------|----------|-------------------|
| DEFAULT | PI_LDL_APS_HNGS_009LUP | FN:13 | PRODUCER | 16-Nov-2001 23:29 |
| REDUCED | PI_LDL_APS_HNGS_009LUP | FN:14 | PRODUCER | 16-Nov-2001 23:29 |

Calibration and Check Summary

| Measurement | Nominal | Master | Before | After | Change | Limit | Units |
|---|---------|--------|--------|-------|--------|-------|-------|
| Hostile Environment Litho Density - A Wellsite Calibration - Background Measurement | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 8:07 Before: 9-Nov-2001 3:27 | | | | | | | |
| LSW1 Background | 100.0 | 89.07 | 89.07 | N/A | N/A | 3.000 | CPS |
| LSW2 Background | 105.0 | 94.00 | 91.57 | N/A | N/A | 3.150 | CPS |
| LSW3 Background | 210.0 | 182.5 | 178.1 | N/A | N/A | 6.300 | CPS |
| LSW4 Background | 290.0 | 241.3 | 239.4 | N/A | N/A | 8.700 | CPS |
| LSW5 Background | 610.0 | 530.0 | 528.2 | N/A | N/A | 18.30 | CPS |
| SSW1 Background | 100.0 | 86.93 | 86.14 | N/A | N/A | 3.000 | CPS |
| SSW2 Background | 200.0 | 169.9 | 168.4 | N/A | N/A | 6.000 | CPS |
| SSW3 Background | 530.0 | 449.6 | 448.8 | N/A | N/A | 15.90 | CPS |
| SSW4 Background | 280.0 | 236.6 | 238.4 | N/A | N/A | 8.400 | CPS |
| SSW5 Background | 205.0 | 177.0 | 177.1 | N/A | N/A | 6.150 | CPS |
| Hostile Environment Litho Density - A Wellsite Calibration - Tool Quality Control Information High Voltage | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 8:07 Before: 9-Nov-2001 3:27 | | | | | | | |
| LS Bkg. High Voltage | 1134 | 1134 | 1131 | N/A | N/A | N/A | V |
| SS Bkg. High Voltage | 1180 | 1180 | 1178 | N/A | N/A | N/A | V |
| Hostile Environment Litho Density - A Wellsite Calibration - Detectors Resolution From BKG Measurements | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 8:07 Before: 9-Nov-2001 3:27 | | | | | | | |
| LS Background Resolution | 1.000 | 1.029 | 1.047 | N/A | N/A | N/A | |
| SS Background Resolution | 1.000 | 0.9496 | 0.9487 | N/A | N/A | N/A | |
| Hostile Environment Litho Density - A Wellsite Calibration - Caliper Calibration | | | | | | | |
| Before: 9-Nov-2001 3:19 | | | | | | | |
| Caliper Small Ring | 12.00 | N/A | 15.92 | N/A | N/A | N/A | IN |
| Caliper Large Ring | 18.25 | N/A | 23.86 | N/A | N/A | N/A | IN |
| Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 8:23 | | | | | | | |
| LSW1 Aluminum | 648.4 | 592.4 | -- | -- | -- | -- | CPS |
| LSW2 Aluminum | 1018 | 936.8 | -- | -- | -- | -- | CPS |
| LSW3 Aluminum | 1105 | 972.2 | -- | -- | -- | -- | CPS |
| LSW4 Aluminum | 609.5 | 537.9 | -- | -- | -- | -- | CPS |
| LSW5 Aluminum | 533.8 | 479.4 | -- | -- | -- | -- | CPS |
| SSW1 Aluminum | 2664 | 2454 | -- | -- | -- | -- | CPS |
| SSW2 Aluminum | 7731 | 7177 | -- | -- | -- | -- | CPS |
| SSW3 Aluminum | 10380 | 9660 | -- | -- | -- | -- | CPS |
| SSW4 Aluminum | 4574 | 4186 | -- | -- | -- | -- | CPS |
| SSW5 Aluminum | 745.2 | 676.8 | -- | -- | -- | -- | CPS |
| Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 8:23 | | | | | | | |
| LS Alum. High Voltage | 1134 | 1134 | -- | -- | -- | -- | V |
| SS Alum. High Voltage | 1180 | 1169 | -- | -- | -- | -- | V |
| Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Aluminum Measurement | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 8:23 | | | | | | | |
| LS Aluminum Resolution | 1.000 | 1.049 | -- | -- | -- | -- | |
| SS Aluminum Resolution | 1.000 | 1.035 | -- | -- | -- | -- | |
| Hostile Environment Litho Density - A Master Calibration - Aluminum Measurement (Window Ratios) | | | | | | | |

| | | | | | | | |
|--|--------|--------|----|----|----|----|--|
| Master: Calibration out of date 15-Aug-2001 8:23 | | | | | | | |
| LSW1/(LSW4 + LSW5) Calc. | 0.5400 | 0.5824 | -- | -- | -- | -- | |
| LSW3/(LSW4 + LSW5) Calc. | 0.9600 | 0.9557 | -- | -- | -- | -- | |
| SSW1/(SSW4 + SSW5) Calc. | 0.4600 | 0.5047 | -- | -- | -- | -- | |
| SSW3/(SSW4 + SSW5) Calc. | 1.900 | 1.987 | -- | -- | -- | -- | |

| | | | | | | | |
|---|-------|-------|----|----|----|----|-----|
| Hostile Environment Litho Density - A Master Calibration - Litholog Measurement | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 9:13 | | | | | | | |
| LSW1 Iron | 410.0 | 404.8 | -- | -- | -- | -- | CPS |
| LSW2 Iron | 870.0 | 765.5 | -- | -- | -- | -- | CPS |
| LSW3 Iron | 1030 | 888.8 | -- | -- | -- | -- | CPS |
| LSW4 Iron | 590.0 | 509.7 | -- | -- | -- | -- | CPS |
| LSW5 Iron | 530.0 | 449.7 | -- | -- | -- | -- | CPS |
| SSW1 Iron | 1850 | 1842 | -- | -- | -- | -- | CPS |
| SSW2 Iron | 6500 | 6221 | -- | -- | -- | -- | CPS |
| SSW3 Iron | 10000 | 9124 | -- | -- | -- | -- | CPS |
| SSW4 Iron | 4500 | 3968 | -- | -- | -- | -- | CPS |
| SSW5 Iron | 750.0 | 622.7 | -- | -- | -- | -- | CPS |

| | | | | | | | |
|---|------|------|----|----|----|----|---|
| Hostile Environment Litho Density - A Master Calibration - Tool Quality Control Information: High Voltage | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 9:13 | | | | | | | |
| LS Lith High Voltage | 1134 | 1134 | -- | -- | -- | -- | V |
| SS Lith High Voltage | 1180 | 1169 | -- | -- | -- | -- | V |

| | | | | | | | |
|---|-------|-------|----|----|----|----|--|
| Hostile Environment Litho Density - A Master Calibration - Detectors Resolution From Litholog Measurement | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 9:13 | | | | | | | |
| LS Lith Resolution | 1.000 | 1.040 | -- | -- | -- | -- | |
| SS Lith Resolution | 1.000 | 1.024 | -- | -- | -- | -- | |

| | | | | | | | |
|---|-------|-------|-------|-----|-----|-----|-----|
| Accelerator-Porosity Tool Wellsite Calibration - Detector Background | | | | | | | |
| Master: Calibration out of date 5-Aug-2001 8:26 Before: 16-Nov-2001 19:13 | | | | | | | |
| Near Det Bkg Cntrate | 30.00 | 31.20 | 33.51 | N/A | N/A | N/A | CPS |
| Far Det Bkg Cntrate | 30.00 | 34.55 | 33.45 | N/A | N/A | N/A | CPS |
| Array-1 Det Bkg Cntrate | 30.00 | 30.79 | 28.66 | N/A | N/A | N/A | CPS |
| Array-2 Det Bkg Cntrate | 30.00 | 29.57 | 30.31 | N/A | N/A | N/A | CPS |
| Array Therm Det Bkg Cntrate | 30.00 | 31.99 | 33.69 | N/A | N/A | N/A | CPS |

| | | | | | | | |
|---|--------|--------|-----|-----|-----|-----|--|
| Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios | | | | | | | |
| Master: Calibration out of date 5-Aug-2001 8:26 | | | | | | | |
| Near/Far Calibration Ratio | 0.9250 | 0.9005 | N/A | N/A | N/A | N/A | |
| Near/Array Calibration Ratio | 1.030 | 1.063 | N/A | N/A | N/A | N/A | |

| | | | | | | | |
|---|-------|-------|----|----|----|----|----|
| Accelerator-Porosity Tool Master Calibration - Tank Check | | | | | | | |
| Master: Calibration out of date 5-Aug-2001 8:26 | | | | | | | |
| Array-1 Standoff Porosity | 10.25 | 11.51 | -- | -- | -- | -- | PU |
| Array-2 Standoff Porosity | 10.25 | 11.32 | -- | -- | -- | -- | PU |
| Sigma Formation | 27.50 | 27.95 | -- | -- | -- | -- | CU |

| | | | | | | | |
|---|-------|-------|-------|-----|-----|-------|------|
| Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check | | | | | | | |
| Master: 9-Nov-2001 19:27 Before: 9-Nov-2001 19:46 After: Calibration not done | | | | | | | |
| Na 511 Peak Loc | 40.00 | 40.57 | 40.58 | N/A | N/A | 1.000 | |
| Na 511 Peak Res | 15.50 | 16.90 | 17.01 | N/A | N/A | 2.000 | % |
| High Voltage | 1150 | 1100 | 1100 | N/A | N/A | 30.00 | V |
| Na 1785 Peak Loc | 142.6 | 145.1 | 145.5 | N/A | N/A | 7.000 | |
| Na 1785 Peak Res | 8.500 | 10.15 | 10.15 | N/A | N/A | 2.000 | % |
| Temperature | 15.50 | 31.73 | 31.73 | N/A | N/A | N/A | DEGC |
| Na Count Rate | 45.00 | 17.94 | 17.88 | N/A | N/A | 8.000 | CPS |

| | | | | | | | |
|---|-------|-------|-------|-----|-----|-------|------|
| Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check | | | | | | | |
| Master: 9-Nov-2001 19:27 Before: 9-Nov-2001 19:46 After: Calibration not done | | | | | | | |
| Na 511 Peak Loc | 40.00 | 40.70 | 40.97 | N/A | N/A | 1.000 | |
| Na 511 Peak Res | 15.50 | 15.14 | 15.10 | N/A | N/A | 2.000 | % |
| High Voltage | 1150 | 1188 | 1189 | N/A | N/A | 30.00 | V |
| Na 1785 Peak Loc | 142.6 | 144.5 | 145.9 | N/A | N/A | 7.000 | |
| Na 1785 Peak Res | 8.500 | 7.999 | 7.706 | N/A | N/A | 2.000 | % |
| Temperature | 15.50 | 30.93 | 31.02 | N/A | N/A | N/A | DEGC |
| Na Count Rate | 45.00 | 18.09 | 18.05 | N/A | N/A | 8.000 | CPS |

| | | | | | | | |
|--|-------|--------|--------|-----|-----|---------|--|
| Hostile Natural Gamma Ray Sonde Wellsite Calibration - Ratio Of Detector 1 To Detector 2 | | | | | | | |
| Master: 9-Nov-2001 19:27 Before: 9-Nov-2001 19:46 After: Calibration not done | | | | | | | |
| Coincidence Count Rate Ratio | 1.000 | 0.9912 | 0.9922 | N/A | N/A | 0.05000 | |

| | | | | | | | |
|---|-------|--------|----|----|----|----|-----|
| Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration | | | | | | | |
| Master: 9-Nov-2001 19:20 | | | | | | | |
| Na 511 Peak Set Point | 40.00 | 41.00 | -- | -- | -- | -- | |
| Th Peak Loc | 209.6 | 210.4 | -- | -- | -- | -- | |
| Th Peak Res | 7.000 | 7.945 | -- | -- | -- | -- | % |
| Background Count Rate | 142.5 | 15.50 | -- | -- | -- | -- | CPS |
| Gain Ratio | 1.000 | 0.9866 | -- | -- | -- | -- | |

| | | | | | | | |
|---|--|--|--|--|--|--|--|
| Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration | | | | | | | |
| Master: 9-Nov-2001 19:20 | | | | | | | |

| | | | | | | | | |
|--------------------------|-----------------------|-------|--------|----|----|----|----|-----|
| Master: 9-NOV-2001 19:20 | Na 511 Peak Set Point | 40.00 | 41.00 | -- | -- | -- | -- | -- |
| | Th Peak Loc | 209.6 | 209.5 | -- | -- | -- | -- | -- |
| | Th Peak Res | 7.000 | 7.230 | -- | -- | -- | -- | % |
| | Background Count Rate | 142.5 | 17.01 | -- | -- | -- | -- | CPS |
| | Gain Ratio | 1.000 | 0.9792 | -- | -- | -- | -- | |

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1748 V
Far Detector Plateau Setting 2052 V
Array Detector Plateau Setting 1969 V

| Dual Induction - E / Equipment Identification | | |
|---|----------|-----|
| Primary Equipment: | | |
| Dual Induction Sonde | DIS - HB | 442 |
| Dual Induction Cartridge | DIC - EB | 438 |
| Auxiliary Equipment: | | |
| Mass Isolated Housing | MIH - ZA | 417 |

| Hostile Environment Litho Density - A / Equipment Identification | | |
|--|-----------|------|
| Primary Equipment: | | |
| HOSTILE ENVIRONMENT LITHO DENSITY HIGH V | HLDV - A | 10 |
| HOSTILE ENVIRONMENT LITHO DENSITY CARTRI | HLDC - AA | 11 |
| Gamma Source Radioactive | GSR - Z | 1846 |
| Auxiliary Equipment: | | |
| HOSTILE ENVIRONMENT LITHO DENSITY SONDE | HLDS - B | 10 |
| HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG | HEH - H | 12 |
| HOSTILE ENVIRONMENT ELECTRONICS CARTRIDG | HEH - G | 11 |
| HOSTILE ENVIRONMENT LITHO DENSITY PAD | HLDP - B | 10 |

| Hostile Environment Litho Density - A Wellsite Calibration | | | | | | | | | | | |
|--|---------------------|-----------------|-----------------|--------|---------------------|-----------------|-----------------|--------|---------------------|-----------------|-----------------|
| Background Measurement | | | | | | | | | | | |
| Phase | LSW1 Background CPS | | Value | Phase | LSW2 Background CPS | | Value | Phase | LSW3 Background CPS | | Value |
| Master | | | 89.07 | Master | | | 94.00 | Master | | | 182.5 |
| Before | | | 89.07 | Before | | | 91.57 | Before | | | 178.1 |
| | 65.00 (Minimum) | 100.0 (Nominal) | 125.0 (Maximum) | | 70.00 (Minimum) | 105.0 (Nominal) | 130.0 (Maximum) | | 150.0 (Minimum) | 210.0 (Nominal) | 250.0 (Maximum) |
| Phase | LSW4 Background CPS | | Value | Phase | LSW5 Background CPS | | Value | Phase | SSW1 Background CPS | | Value |
| Master | | | 241.3 | Master | | | 530.0 | Master | | | 86.93 |
| Before | | | 239.4 | Before | | | 528.2 | Before | | | 86.14 |
| | 220.0 (Minimum) | 290.0 (Nominal) | 330.0 (Maximum) | | 430.0 (Minimum) | 610.0 (Nominal) | 730.0 (Maximum) | | 70.00 (Minimum) | 100.0 (Nominal) | 120.0 (Maximum) |
| Phase | SSW2 Background CPS | | Value | Phase | SSW3 Background CPS | | Value | Phase | SSW4 Background CPS | | Value |
| Master | | | 169.9 | Master | | | 449.6 | Master | | | 236.6 |
| Before | | | 168.4 | Before | | | 448.8 | Before | | | 238.4 |
| | 140.0 (Minimum) | 200.0 (Nominal) | 240.0 (Maximum) | | 380.0 (Minimum) | 530.0 (Nominal) | 630.0 (Maximum) | | 190.0 (Minimum) | 280.0 (Nominal) | 340.0 (Maximum) |
| Phase | SSW5 Background CPS | | Value | | | | | | | | |
| Master | | | 177.0 | | | | | | | | |
| Before | | | 177.1 | | | | | | | | |
| | 140.0 (Minimum) | 205.0 (Nominal) | 250.0 (Maximum) | | | | | | | | |
| Master: Calibration out of date 15-Aug-2001 8:07 Before: 9-Nov-2001 3:27 | | | | | | | | | | | |

| Hostile Environment Litho Density - A Wellsite Calibration | | | | | | | |
|--|--------------------------|--|-------|-------|--------------------------|--|-------|
| Detectors Resolution From BKG Measurements | | | | | | | |
| Phase | LS Background Resolution | | Value | Phase | SS Background Resolution | | Value |
| | | | | | | | |

| | | | | | |
|------------------|--|-----------------|-----------------|--|--------|
| Master | | 1.029 | Master | | 0.9496 |
| Before | | 1.047 | Before | | 0.9487 |
| 0.7000 (Minimum) | | 1.000 (Nominal) | 1.111 (Maximum) | | |
| 0.7000 (Minimum) | | 1.000 (Nominal) | 1.111 (Maximum) | | |

Master: Calibration out of date 15-Aug-2001 8:07 Before: 9-Nov-2001 3:27

| Hostile Environment Litho Density - A Master Calibration | | | | | |
|--|-------------------|-----------------|-----------------|-------------------|-----------------|
| Aluminum Measurement | | | | | |
| Phase | LSW1 Aluminum CPS | Value | Phase | LSW2 Aluminum CPS | Value |
| Master | | 592.4 | Master | | 936.8 |
| 440.0 (Minimum) | | 648.4 (Nominal) | 840.0 (Minimum) | | 1018 (Nominal) |
| 440.0 (Minimum) | | 648.4 (Nominal) | 840.0 (Minimum) | | 1018 (Nominal) |
| Phase | LSW4 Aluminum CPS | Value | Phase | LSW5 Aluminum CPS | Value |
| Master | | 537.9 | Master | | 479.4 |
| 520.0 (Minimum) | | 609.5 (Nominal) | 450.0 (Minimum) | | 533.8 (Nominal) |
| 520.0 (Minimum) | | 609.5 (Nominal) | 450.0 (Minimum) | | 533.8 (Nominal) |
| Phase | SSW1 Aluminum CPS | Value | Phase | SSW2 Aluminum CPS | Value |
| Master | | 2454 | Master | | 7177 |
| 1850 (Minimum) | | 2664 (Nominal) | 6200 (Minimum) | | 7731 (Nominal) |
| 1850 (Minimum) | | 2664 (Nominal) | 6200 (Minimum) | | 7731 (Nominal) |
| Phase | SSW3 Aluminum CPS | Value | Phase | SSW4 Aluminum CPS | Value |
| Master | | 9660 | Master | | 4186 |
| 8750 (Minimum) | | 10380 (Nominal) | 4000 (Minimum) | | 4574 (Nominal) |
| 8750 (Minimum) | | 10380 (Nominal) | 4000 (Minimum) | | 4574 (Nominal) |
| Phase | SSW5 Aluminum CPS | Value | | | |
| Master | | 676.8 | | | |
| 570.0 (Minimum) | | 745.2 (Nominal) | | | |
| 570.0 (Minimum) | | 745.2 (Nominal) | | | |

Master: Calibration out of date 15-Aug-2001 8:23

| Hostile Environment Litho Density - A Master Calibration | | | | | |
|--|------------------------|-----------------|------------------|------------------------|-----------------|
| Detectors Resolution From Aluminum Measurement | | | | | |
| Phase | LS Aluminum Resolution | Value | Phase | SS Aluminum Resolution | Value |
| Master | | 1.049 | Master | | 1.035 |
| 0.7000 (Minimum) | | 1.000 (Nominal) | 0.7000 (Minimum) | | 1.111 (Maximum) |
| 0.7000 (Minimum) | | 1.000 (Nominal) | 0.7000 (Minimum) | | 1.111 (Maximum) |

Master: Calibration out of date 15-Aug-2001 8:23

| Hostile Environment Litho Density - A Master Calibration | | | | | |
|--|--------------------------|------------------|------------------|--------------------------|------------------|
| Aluminum Measurement (Window Ratios) | | | | | |
| Phase | LSW1/(LSW4 + LSW5) Calc. | Value | Phase | LSW3/(LSW4 + LSW5) Calc. | Value |
| Master | | 0.5824 | Master | | 0.9557 |
| 0.3400 (Minimum) | | 0.5400 (Nominal) | 0.7600 (Minimum) | | 0.9600 (Nominal) |
| 0.3400 (Minimum) | | 0.5400 (Nominal) | 0.7600 (Minimum) | | 0.9600 (Nominal) |
| Phase | SSW1/(SSW4 + SSW5) Calc. | Value | Phase | SSW3/(SSW4 + SSW5) Calc. | Value |
| Master | | 0.5047 | Master | | 1.987 |
| 0.3600 (Minimum) | | 0.4600 (Nominal) | 1.700 (Minimum) | | 1.900 (Nominal) |
| 0.3600 (Minimum) | | 0.4600 (Nominal) | 1.700 (Minimum) | | 1.900 (Nominal) |

Master: Calibration out of date 15-Aug-2001 8:23

| Hostile Environment Litho Density - A Master Calibration | | | | | |
|--|---------------|-----------------|-----------------|---------------|-----------------|
| Litholog Measurement | | | | | |
| Phase | LSW1 Iron CPS | Value | Phase | LSW2 Iron CPS | Value |
| Master | | 404.8 | Master | | 765.5 |
| 310.0 (Minimum) | | 410.0 (Nominal) | 660.0 (Minimum) | | 870.0 (Nominal) |
| 310.0 (Minimum) | | 410.0 (Nominal) | 660.0 (Minimum) | | 870.0 (Nominal) |
| Phase | LSW4 Iron CPS | Value | Phase | LSW5 Iron CPS | Value |
| Master | | 509.7 | Master | | 449.7 |
| 470.0 (Minimum) | | 590.0 (Nominal) | 400.0 (Minimum) | | 530.0 (Nominal) |
| 470.0 (Minimum) | | 590.0 (Nominal) | 400.0 (Minimum) | | 530.0 (Nominal) |
| Phase | SSW1 Iron CPS | Value | Phase | SSW2 Iron CPS | Value |
| Master | | 1842 | Master | | 6221 |
| 1400 (Minimum) | | 1850 (Nominal) | 5170 (Minimum) | | 6500 (Nominal) |
| 1400 (Minimum) | | 1850 (Nominal) | 5170 (Minimum) | | 6500 (Nominal) |
| Phase | SSW3 Iron CPS | Value | Phase | SSW4 Iron CPS | Value |
| Master | | 9124 | Master | | 3968 |
| 8100 (Minimum) | | 10000 (Nominal) | 3620 (Minimum) | | 4500 (Nominal) |
| 8100 (Minimum) | | 10000 (Nominal) | 3620 (Minimum) | | 4500 (Nominal) |
| Phase | SSW5 Iron CPS | Value | | | |
| Master | | 622.7 | | | |
| 470.0 (Minimum) | | 750.0 (Nominal) | | | |
| 470.0 (Minimum) | | 750.0 (Nominal) | | | |

Master: Calibration out of date 15-Aug-2001 9:13

| Hostile Environment Litho Density - A Master Calibration | | | | | | | |
|--|---------------------|--------------------|--------------------|--------|---------------------|--------------------|--------------------|
| Detectors Resolution From Litholog Measurement | | | | | | | |
| Phase | LS Lith Resolution | | Value | Phase | SS Lith Resolution | | Value |
| Master | | | 1.040 | Master | | | 1.024 |
| | 0.7000 (Minimum) | 1.000 (Nominal) | 1.111 (Maximum) | | 0.7000 (Minimum) | 1.000 (Nominal) | 1.111 (Maximum) |

Master: Calibration out of date 15-Aug-2001 9:13

| Nuclear Porosity Lithology Cartridge - B / Equipment Identification | | |
|---|----------|----|
| Primary Equipment: NPLC Cartridge | NPLC - B | 79 |
| Auxiliary Equipment: NPLC Housing | NPH - B | 82 |

| Accelerator-Porosity Tool / Equipment Identification | | |
|---|------------------------------------|------------------|
| Primary Equipment: Accelerator-Porosity Sonde APS Minitron | APS - BA MNTR - F | 22 4185 |
| Auxiliary Equipment: Accelerator-Porosity Housing APS Calibration Water Tank APS Aluminium Calibrator Sleeve | APH - AC SFT - 178 SFT - 281 | 22 4722 24 |

| Accelerator-Porosity Tool Wellsite Calibration | | | | | | | | |
|--|-----------------------------|--------------------|--------------------|---------------------------------|----------------|--------------------|-----------------------------|-------|
| Detector Background | | | | | | | | |
| Phase | Near Det Bkg Cntrate CPS | Value | Phase | Far Det Bkg Cntrate CPS | Value | Phase | Array-1 Det Bkg Cntrate CPS | Value |
| Master | | 31.20 | Master | | 34.55 | Master | | 30.79 |
| Before | | 33.51 | Before | | 33.45 | Before | | 28.66 |
| | 0 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) | | 0 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) | |
| Phase | Array-2 Det Bkg Cntrate CPS | Value | Phase | Array Therm Det Bkg Cntrate CPS | Value | | | |
| Master | | 29.57 | Master | | 31.99 | | | |
| Before | | 30.31 | Before | | 33.69 | | | |
| | 0 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) | | 0 (Minimum) | 30.00 (Nominal) | 50.00 (Maximum) | |

Master: Calibration out of date 5-Aug-2001 8:26 Before: 16-Nov-2001 19:13

| Accelerator-Porosity Tool Wellsite Calibration | | | | | | | |
|--|----------------------------|---------------------|--------------------|------------------------------|---------------------|--------------------|--------------------|
| Calibration Ratios | | | | | | | |
| Phase | Near/Far Calibration Ratio | Value | Phase | Near/Array Calibration Ratio | Value | | |
| Master | | 0.9005 | Master | | 1.063 | | |
| | 0.8000 (Minimum) | 0.9250 (Nominal) | 1.050 (Maximum) | | 0.9000 (Minimum) | 1.030 (Nominal) | 1.150 (Maximum) |

Master: Calibration out of date 5-Aug-2001 8:26

| Accelerator-Porosity Tool Master Calibration | | | | | | | |
|--|----------------------------|---------------------|--------------------|------------------------------|---------------------|--------------------|--------------------|
| Detector Calibration | | | | | | | |
| Phase | Near/Far Calibration Ratio | Value | Phase | Near/Array Calibration Ratio | Value | | |
| Master | | 0.9005 | Master | | 1.063 | | |
| | 0.8000 (Minimum) | 0.9250 (Nominal) | 1.050 (Maximum) | | 0.9000 (Minimum) | 1.030 (Nominal) | 1.150 (Maximum) |

Master: Calibration out of date 5-Aug-2001 8:26

| Accelerator-Porosity Tool Master Calibration | | | | | | | | |
|--|------------------------------|--------------------|--------------------|------------------------------|--------------------|--------------------|--------------------|-------|
| Tank Check | | | | | | | | |
| Phase | Array-1 Standoff Porosity PU | Value | Phase | Array-2 Standoff Porosity PU | Value | Phase | Sigma Formation CU | Value |
| Master | | 11.51 | Master | | 11.32 | Master | | 27.95 |
| | 5.500 (Minimum) | 10.25 (Nominal) | 15.00 (Maximum) | | 5.500 (Minimum) | 10.25 (Nominal) | 15.00 (Maximum) | |

Hostile Natural Gamma Ray Sonde / Equipment Identification

| | | |
|--------------------------|-----------|-----|
| Primary Equipment: | | |
| HNGS Sonde | HNGS - BA | 27 |
| Auxiliary Equipment: | | |
| HNGS Sonde Housing | HNSH - BA | 27 |
| Gamma Source Radioactive | GSR - U | 135 |

| | | |
|--|----------------------------|---------|
| COMPANY: Lamont Doherty WELL: ODP Leg 199, Site 1218 A (PAT-8C) FIELD: Ocean: Pacific | BOTTOM LOG INTERVAL | 5098 m |
| | SCHLUMBERGER DEPTH | 5112 m |
| | DEPTH DRILLER | 5114 m |
| | KELLY BUSHING | 11.3 m |
| | DRILL FLOOR | 11 m |
| | GROUND LEVEL | -4837 m |



APS/HLDT Porosity Log
Natural Gamma Ray