

COMPANY: Lamont Doherty

WELL: ODP Leg 193, Site 1189B (PCM-3A)

FIELD: Manus Basin, Roman Ruins

COUNTY: Offshore STATE: Bismarck Sea

| | | | |
|---------------------------------------------------------------------------------------|------------------------------------|--------------------------------------|----------------------------------|
| COUNTY: Offshore | | | |
| Field: Manus Basin, Roman Ruins | | | |
| Location: | | | |
| Well: ODP Leg 193, Site 1189B (PCM- | | | |
| Company: Lamont Doherty | | | |
| Schlumberger Dipole Sonic, Stonely and P&S Dipole Shear Gamma Ray | LOCATION | | |
| | Permanent Datum: _____ | MSL | Elev.: K.B. 11.3 m |
| | Log Measured From: _____ | Drill Floor | G.L. -1693 m |
| | Drilling Measured From: _____ | Drill Floor | D.F. 11 m |
| | Elev.: 0 m | 11.0 m above Perm. Datum | |
| API Serial No. | LATITUDE: 03° 43.2361' S | LONGITUDE: 151° 40.5081' E | RIG: JOIDES Resolution |

| | | | |
|-------------------------------|----------------------------------|-------------|-----------|
| Logging Date | 25-DEC-2000 | | |
| Run Number | 1 | | |
| Depth Driller | 1899 m | | |
| Schlumberger Depth | 1888 m | | |
| Bottom Log Interval | 1829 m | | |
| Top Log Interval | 1670 m | | |
| Casing Driller Size @ Depth | 0.000 in @ | | 1724 m @ |
| Casing Schlumberger | 1727 m | | |
| Bit Size | 7.250 in | | |
| Type Fluid In Hole | Seawater | | |
| Density | 1.1 g/cm3 | | |
| Fluid Loss | PH | | |
| Source Of Sample | Seawater | | |
| RM @ Measured Temperature | 0.180 ohm.m @ | | 30 degC @ |
| RMF @ Measured Temperature | 0.235 ohm.m @ | | @ @ |
| RMC @ Measured Temperature | @ @ | | |
| Source RMF | RMC | | |
| RM @ MRT | 0.105 @ 67 | | @ 67 |
| Maximum Recorded Temperatures | 67 degC | | |
| Circulation Stopped | 25-DEC-2000 | | 22:00 |
| Logger On Bottom | 26-DEC-2000 | | 7:00 |
| Unit Number | 99 | Houston ODP | |
| Recorded By | Kerry M. Swain | | |
| Witnessed By | Gerardo Iturrino, Anne Bartetzko | | |

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

Run 1 Run 2 Run

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
 OS2: TEMP
 OS3: HLDS/APS/DITE
 OS4:
 OS5:

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

REMARKS: RUN NUMBER 1
 HGTC (HighTemp/High Pressure Gamma Ray Telemetry Cartridge) used for Temperature with LEH-QO head and MTEM sensor.
 Log presented in meters below rig floor. Sea floor at 1652 mbrf.
 Wireline heave compensator used on all descents.
 Sea water used as mud in hole.
 Log TD at 1888 mbrf on first descent, 1850 on other descents there after.
 Maximum temperature recorded from DITE ITEM.
 Toolstring-MEST/NGTC/DTA/CMEAY/DSSTB/CMEAY/HGTC/LEHQO

REMARKS: RUN NUMBER 2
 for Temperature

PASS 1 UP: P&S, STONELY, CROSSED DIPOLE MODES, PICKUP AT 1840M.
 PASS 2 UP: P&S, STONELY, LOWER DIPOLE SHEAR, PICKUP AT 1835M.

| RUN 1 | | |
|------------------|---------|------|
| SERVICE ORDER #: | | |
| PROGRAM VERSION: | 9C1-303 | |
| FLUID LEVEL: | 0 m | |
| LOGGED INTERVAL | START | STOP |
| | | |
| | | |
| | | |

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

EQUIPMENT DESCRIPTION

RUN 1

SURFACE EQUIPMENT

GSR-U
 WITM (DTS)-A

RUN 2

DOWNHOLE EQUIPMENT

| | | |
|---------------|-----------|-------|
| LEH-MT | | 33.85 |
| LEH-MT 1 | | |
| HTGC-B | Mud Tempe | 32.89 |
| UDFH-KL 1062 | Gamma Ray | 31.86 |
| STGC0-A 8038 | CTEM | 30.99 |
| STGC1-BH 8038 | | |
| MTEM 1 | | |



TelStatus — 29.64

AH-CMEAY
AH-CMEAY 764

29.64

DSST-B
SPAC-B 18
ECH-SD 18
SMDR-BD 8070
SSIJ-BA 65
SMDX-AA 8026

28.35

PWF — 12.81

AH-CMEAY
AH-CMEAY 765

12.81

DTA-A
ECH-KE 8231

11.52

NGT-C
NGD-A 1720
NGH-B 1721
NGC-C 1731
NGCH-A 1733

Detector — 9.92

10.30

MEST-B
MEAH-B 701
MEAC-A 833
MEPH-A 701
GPIC-A 840
MEPC-AB 807
MEDS-B 702

7.68

MEDR MEAC
MEPC MEDS-B
ACCZ HV DF
Tension GPIT

0.46
0.00

TOOL ZERO

MAXIMUM STRING DIAMETER 3.75 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

Output DLIS Files

| | | | | | |
|---------|------------|----------------|-------------------|----------|----------|
| DEFAULT | MESTB .031 | FN:53 PRODUCER | 26-Dec-2000 14:30 | 1835.0 M | 1717.1 M |
| LAMONT | MESTB .031 | FN:54 PRODUCER | 26-Dec-2000 14:30 | 1835.0 M | 1717.0 M |

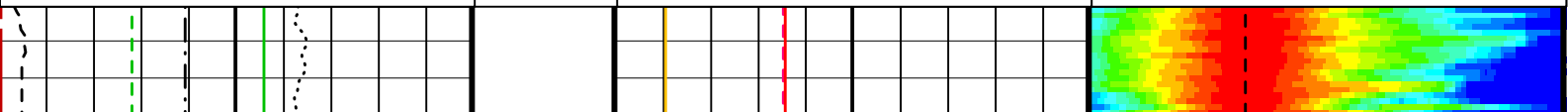
OP System Version: 9C1-303 MCM

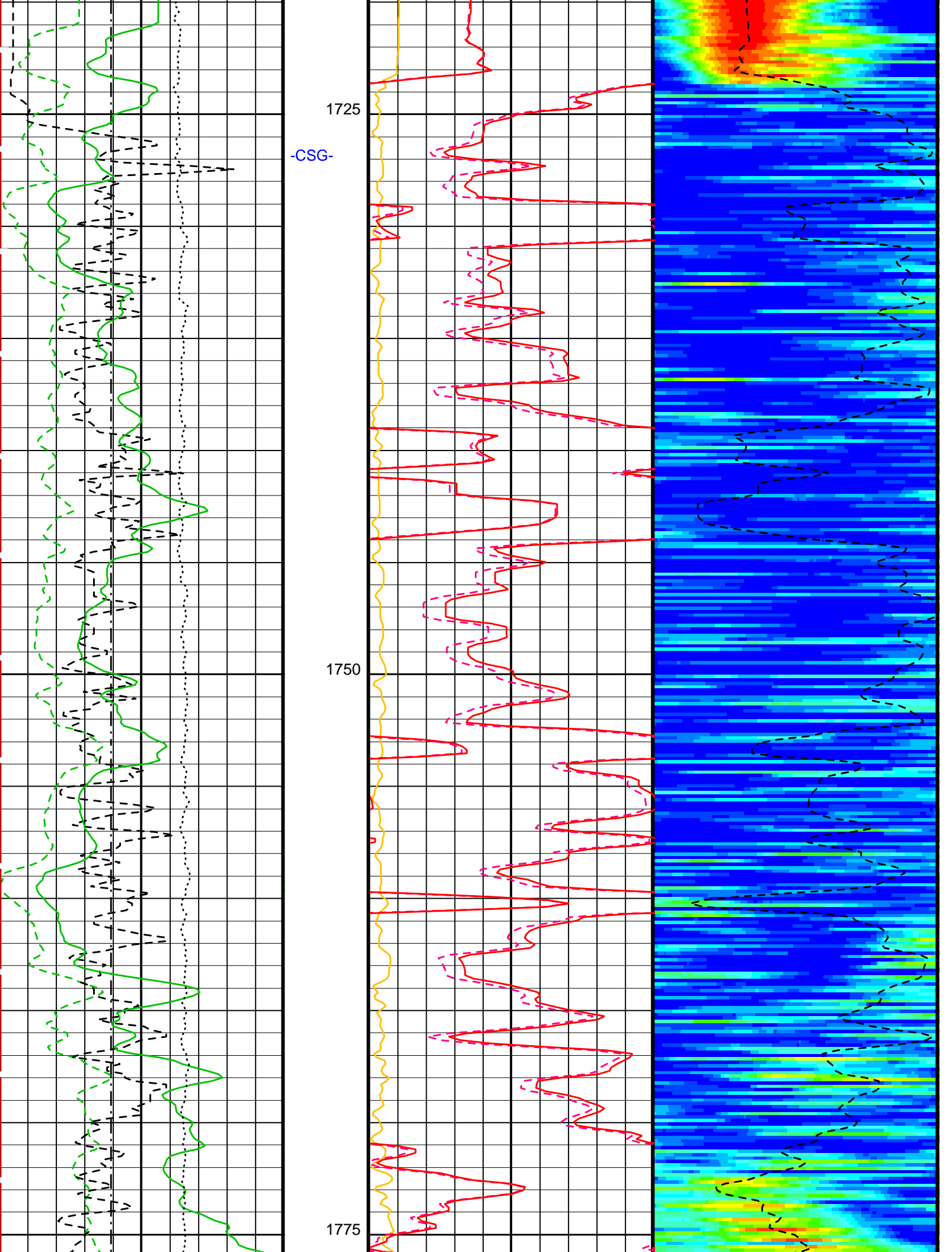
| | | | |
|--------|----------|--------|----------|
| MEST-B | OP91-kp2 | NGT-C | OP91-kp2 |
| DTA-A | OP91-kp2 | DSST-B | OP91-kp2 |
| HTGC-B | OP91-kp2 | | |

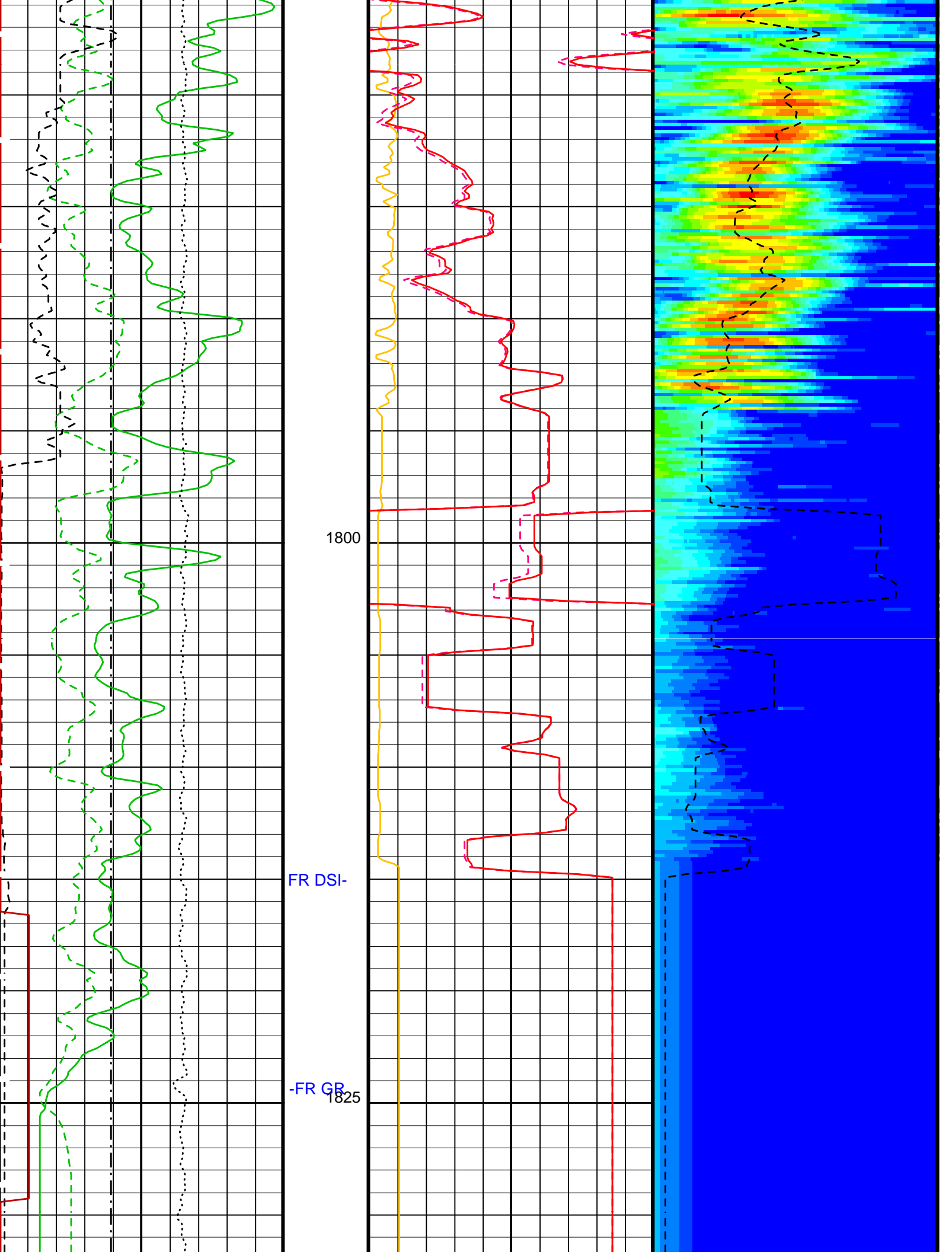
PIP SUMMARY

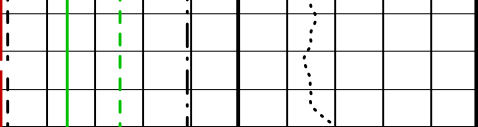

Time Mark Every 60 S

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| <p style="color: red; text-align: center;">Waveform Data Copy Indicator 1 - Lower Dipole (WC11)</p> <p style="text-align: center;">0 (---) 10</p> <hr style="border-top: 1px dashed black;"/> <p style="text-align: center;">Tension (TENS) (LBF)</p> <p style="text-align: center;">10000 0</p> <hr style="border-top: 1px dashed black;"/> <p style="color: green; text-align: center;">Spectroscopy Gamma Ray (SGR) (GAPI)</p> <p style="text-align: center;">0 200</p> <hr style="border-top: 1px dashed black;"/> <p style="text-align: center;">SAM1 Waveform Gain (WFG1) (---)</p> <p style="text-align: center;">0 1000</p> <hr style="border-top: 1px dashed black;"/> <p style="color: green; text-align: center;">Computed Gamma Ray (CGR) (GAPI)</p> <p style="text-align: center;">0 150</p> <hr style="border-top: 1px dashed black;"/> <p style="text-align: center;">Bit Size (BS) (IN)</p> <p style="text-align: center;">6 16</p> | <div style="background-color: yellow; padding: 5px; display: inline-block;">PASS 2, UP LOG</div> | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center; color: red;">Delta-T Shear - Lower Dipole (DT1)</td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> <td style="width: 20%;"></td> </tr> <tr> <td style="text-align: center; color: red;">440 (US/F) 40</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; color: magenta;">Delta-T Shear / RA - Lower Dipole (DT1R)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; color: magenta;">440 (US/F) 40</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; color: yellow;">Peak Coherence / RA - Lower Dipole (CHR1)</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td style="text-align: center; color: yellow;">0 (---) 10</td> <td></td> <td></td> <td></td> <td></td> </tr> </table> | Delta-T Shear - Lower Dipole (DT1) | | | | | 440 (US/F) 40 | | | | | Delta-T Shear / RA - Lower Dipole (DT1R) | | | | | 440 (US/F) 40 | | | | | Peak Coherence / RA - Lower Dipole (CHR1) | | | | | 0 (---) 10 | | | | |
| Delta-T Shear - Lower Dipole (DT1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 440 (US/F) 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Delta-T Shear / RA - Lower Dipole (DT1R) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 440 (US/F) 40 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Peak Coherence / RA - Lower Dipole (CHR1) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 0 (---) 10 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="text-align: center;">Min</td> <td style="text-align: center;">Amplitude</td> <td style="text-align: center;">Max</td> </tr> <tr> <td colspan="3" style="text-align: center;"> </td> </tr> <tr> <td colspan="3" style="text-align: center;">Rec.Array L.Dipole Slow Proj. CVDL (SPR1) (US/F)</td> </tr> <tr> <td style="text-align: center;">75</td> <td></td> <td style="text-align: center;">775</td> </tr> </table> | Min | Amplitude | Max | | | | Rec.Array L.Dipole Slow Proj. CVDL (SPR1) (US/F) | | | 75 | | 775 | | | | | | | | | | | | | | | | | | |
| Min | Amplitude | Max | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| Rec.Array L.Dipole Slow Proj. CVDL (SPR1) (US/F) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | | 775 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| | | <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td colspan="3" style="text-align: center;">Delta-T Shear / RA - Lower Dipole (DT1R) (US/F)</td> </tr> <tr> <td style="text-align: center;">75</td> <td></td> <td style="text-align: center;">775</td> </tr> </table> | Delta-T Shear / RA - Lower Dipole (DT1R) (US/F) | | | 75 | | 775 | | | | | | | | | | | | | | | | | | | | | | | | |
| Delta-T Shear / RA - Lower Dipole (DT1R) (US/F) | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 75 | | 775 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |







| | | | | | | |
|-------------------------------------------------------------------------------|------|----------------------------------------------|--------------------------------------------------------------------------------------------------|----------------------------------------------|-------------------------------------------------------------------------------------|--|
|  | | -TDL- | <div style="background-color: yellow; padding: 2px; display: inline-block;">PASS 2, UP LOG</div> | |  | |
| Bit Size (BS) (IN) | | Peak Coherence / RA - Lower Dipole (CHR1) | | Delta-T Shear / RA - Lower Dipole (DT1R) | | |
| 6 | 16 | 0 | 10 | 75 | 775 | |
| Computed Gamma Ray (CGR) (GAPI) | | Delta-T Shear / RA - Lower Dipole (DT1R) | | Rec.Array L.Dipole Slow Proj. CVDL (SPR1) | | |
| 0 | 150 | 440 | 40 | 75 | 775 | |
| SAM1 Waveform Gain (WFG1) (----) | | Delta-T Shear - Lower Dipole (DT1) (US/F) | | | | |
| 0 | 1000 | 440 | 40 | | | |
| Spectroscopy Gamma Ray (SGR) (GAPI) | | | | | | |
| 0 | 200 | | | | | |
| Tension (TENS) (LBF) | | | | | | |
| 10000 | 0 | | | | | |
| Waveform Data Copy Indicator 1 - Lower Dipole (WC11) | | | | | | |
| 0 | 10 | | | | | |

PIP SUMMARY

 Time Mark Every 60 S

Parameters

| DLIS Name | Description | Value | |
|-----------|--------------------------------------------------------------------------|------------|------|
| BS | Bit Size | 9.875 | IN |
| CBAR | Constant Barite | 1 | |
| CGMI | Spectro Computed Gamma Ray Minimum | 0 | GAPI |
| CGSH | Spectro Computed Gamma Ray Shale | 100 | GAPI |
| DDE1 | Digitizing Delay 1 | 0 | US |
| DDEX | Digitizing Delay X | 0 | US |
| DFD | Drilling Fluid Density | 1.02 | G/C3 |
| DLCS | Label Compressional Source - Dipole Shear | USE | |
| DSHL | Label Slowness Lower Limit - Dipole Shear | 75 | US/F |
| DSHU | Label Slowness Upper Limit - Dipole Shear | 775 | US/F |
| DSI1 | Digitizer Sample Interval 1 | 40 | US |
| DSIX | Digitizer Sample Interval X | 40 | US |
| DTCS | Compressional Delta-T Source for DTCO Channel | PS_COMP | |
| DWC1 | Digitizer Word Count 1 | 512 | |
| DWCX | Digitizer Word Count X | 512 | |
| KMIN | Potassium Minimum | 0 | |
| KSHA | Potassium Shale | 0.02 | |
| LTXG | Lower Dipole Transmitter Geometry | 156 | IN |
| NFO | NGT Filtering Option | KALMAN | |
| PMUD | Potassium Mud | 0 | % |
| RX1G | Receiver 1 Geometry | 294 | IN |
| RX2G | Receiver 2 Geometry | 300 | IN |
| RX3G | Receiver 3 Geometry | 306 | IN |
| RX4G | Receiver 4 Geometry | 312 | IN |
| RX5G | Receiver 5 Geometry | 318 | IN |
| RX6G | Receiver 6 Geometry | 324 | IN |
| RX7G | Receiver 7 Geometry | 330 | IN |
| RX8G | Receiver 8 Geometry | 336 | IN |
| SAM1 | DSST Sonic Acquisition Mode 1 - Lower Dipole Mode | LFD_EVEN | |
| SAMX | DSST Sonic Acquisition Mode X - Both Dipoles or Monopole Mode for Expert | OFF | |
| SAS1 | STC Sonic Array Status - Lower Dipole | 255 | |
| SBO1 | STC Search Band Offset - Lower Dipole | 3000 | US |
| SBW1 | STC Search Bandwidth - Lower Dipole | 8000 | US |
| SFC1 | STC Formation Character - Lower Dipole | SELECTABLE | |
| SFM1 | STC Filter - Lower Dipole | B.3-1.5K | |
| SGMI | Spectro Gamma Ray Minimum | 0 | GAPI |
| SGSH | Spectro Gamma Ray Shale | 100 | GAPI |
| SLL1 | STC Slowness Lower Limit - Lower Dipole | 75 | US/F |
| SST1 | STC Slowness Step - Lower Dipole | 4 | US/F |
| SSW1 | STC Source Waveform - Lower Dipole | WF_SAM1 | |
| SUL1 | STC Slowness Upper Limit - Lower Dipole | 775 | US/F |
| SWD1 | STC Slowness Width - Lower Dipole | 40 | US/F |
| TBF1 | STC Time for Baseline Fill - Lower Dipole | 0 | US |

| | | | |
|------|--------------------------------------------|---------|-----|
| TLL1 | STC Time Lower Limit - Lower Dipole | 600 | US |
| TMIN | Thorium Minimum | 0 | PPM |
| TSHA | Thorium Shale | 12 | PPM |
| TST1 | STC Time Step - Lower Dipole | 200 | US |
| TUL1 | STC Time Upper Limit - Lower Dipole | 15912.5 | US |
| TWD1 | STC Time Width - Lower Dipole | 2000 | US |
| TW11 | STC Integration Time Window - Lower Dipole | 1600 | US |
| TWSX | Transmitter Waveform Select X | 0 | |
| UMIN | Uranium Minimum | 0 | PPM |
| USHA | Uranium Shale | 3 | PPM |
| WFM1 | Waveform Mode 1 | W1 | |

Format: DSST_LOWER_DIPOLE_VDL_COLOR Vertical Scale: 1:200 Graphics File Created: 26-Dec-2000 14:31

OP System Version: 9C1-303
MCM

| | | | |
|--------|----------|--------|----------|
| MEST-B | OP91-kp2 | NGT-C | OP91-kp2 |
| DTA-A | OP91-kp2 | DSST-B | OP91-kp2 |
| HTGC-B | OP91-kp2 | | |

Output DLIS Files

| | | | | |
|---------|------------|-------|----------|-------------------|
| DEFAULT | MESTB .031 | FN:53 | PRODUCER | 26-Dec-2000 14:30 |
| LAMONT | MESTB .031 | FN:54 | PRODUCER | 26-Dec-2000 14:30 |

Output DLIS Files

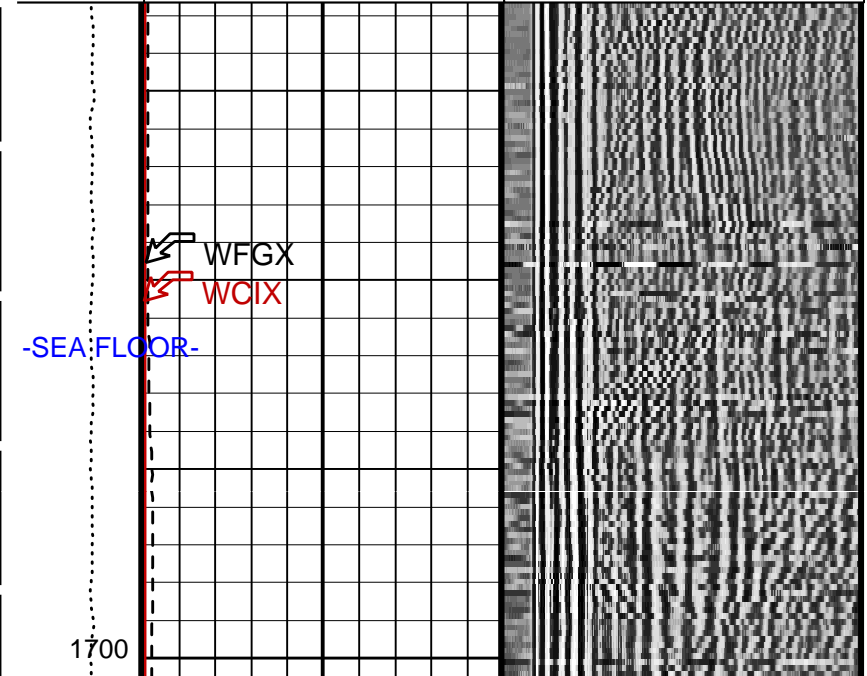
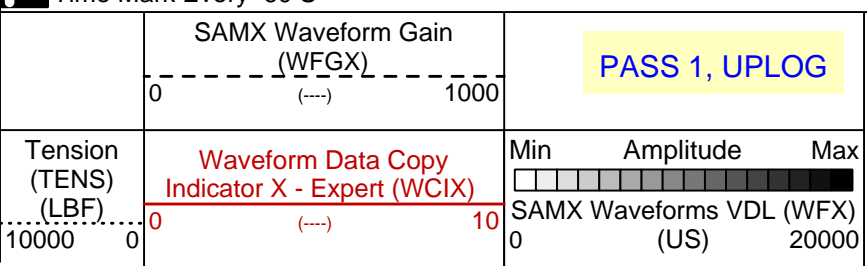
| | | | | | | |
|---------|------------|-------|----------|-------------------|----------|----------|
| DEFAULT | MESTB .030 | FN:51 | PRODUCER | 26-Dec-2000 13:36 | 1840.4 M | 1682.7 M |
| LAMONT | MESTB .030 | FN:52 | PRODUCER | 26-Dec-2000 13:36 | 1840.4 M | 1682.6 M |

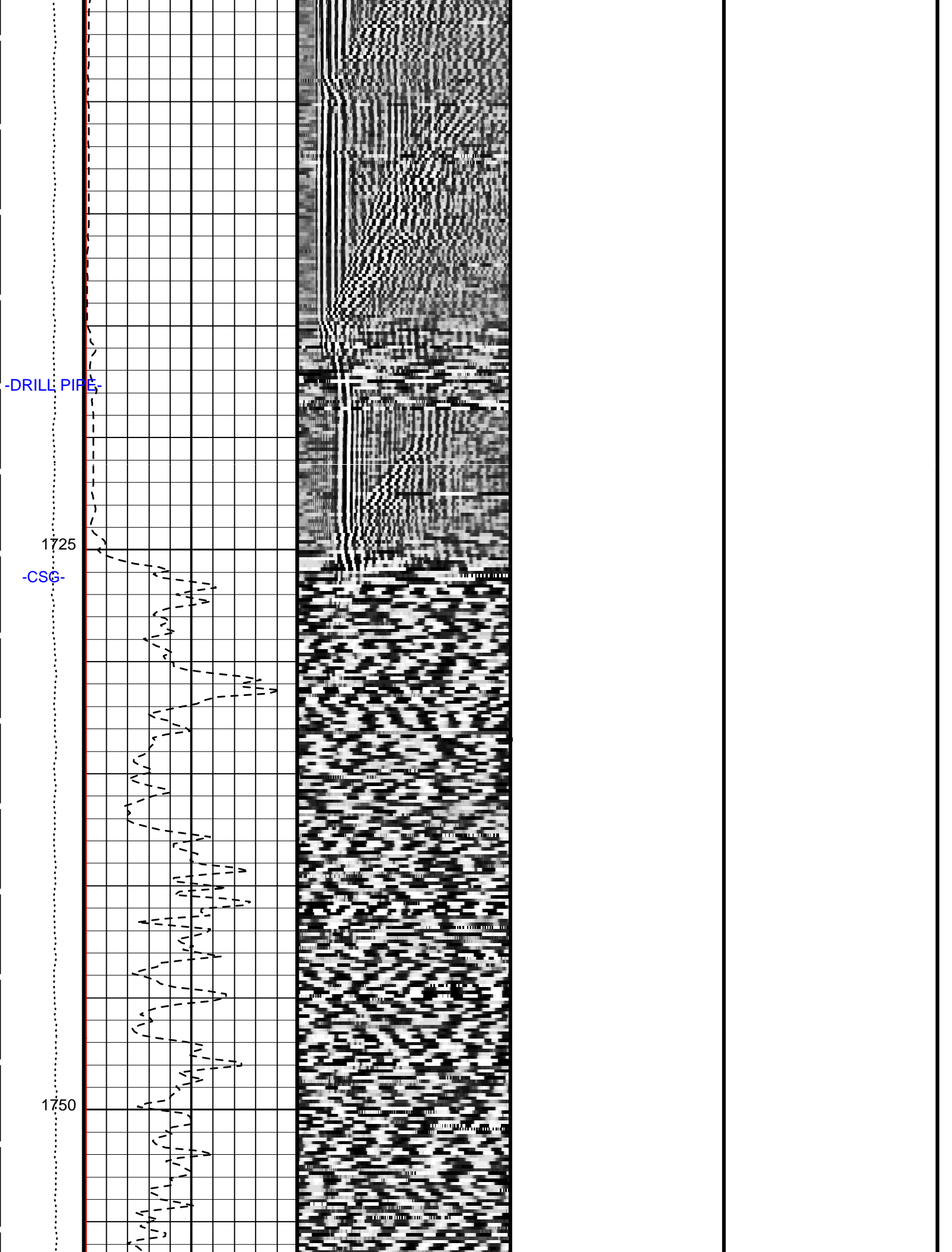
OP System Version: 9C1-303
MCM

| | | | |
|--------|----------|--------|----------|
| MEST-B | OP91-kp2 | NGT-C | OP91-kp2 |
| DTA-A | OP91-kp2 | DSST-B | OP91-kp2 |
| HTGC-B | OP91-kp2 | | |

PIP SUMMARY

Time Mark Every 60 S





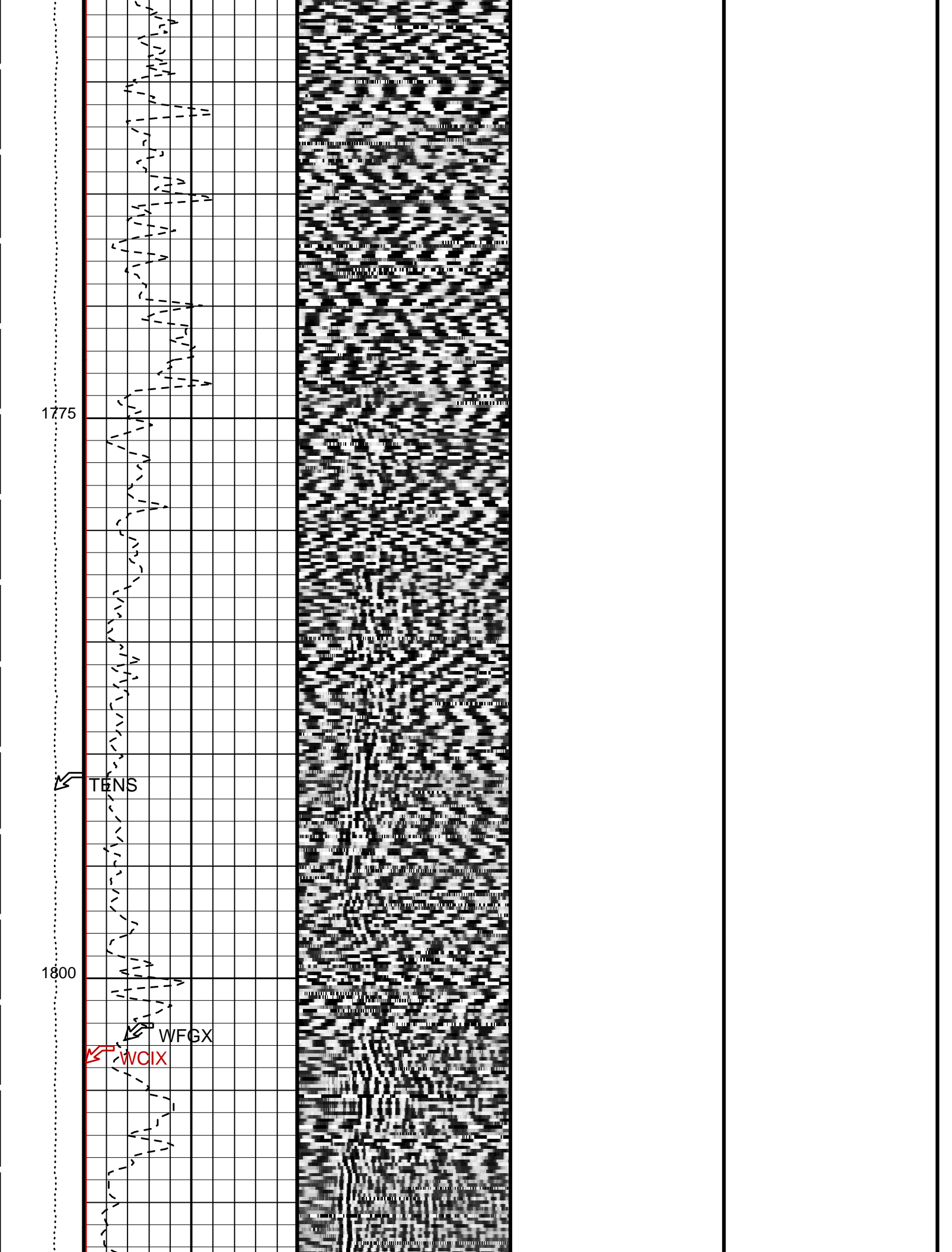
1775

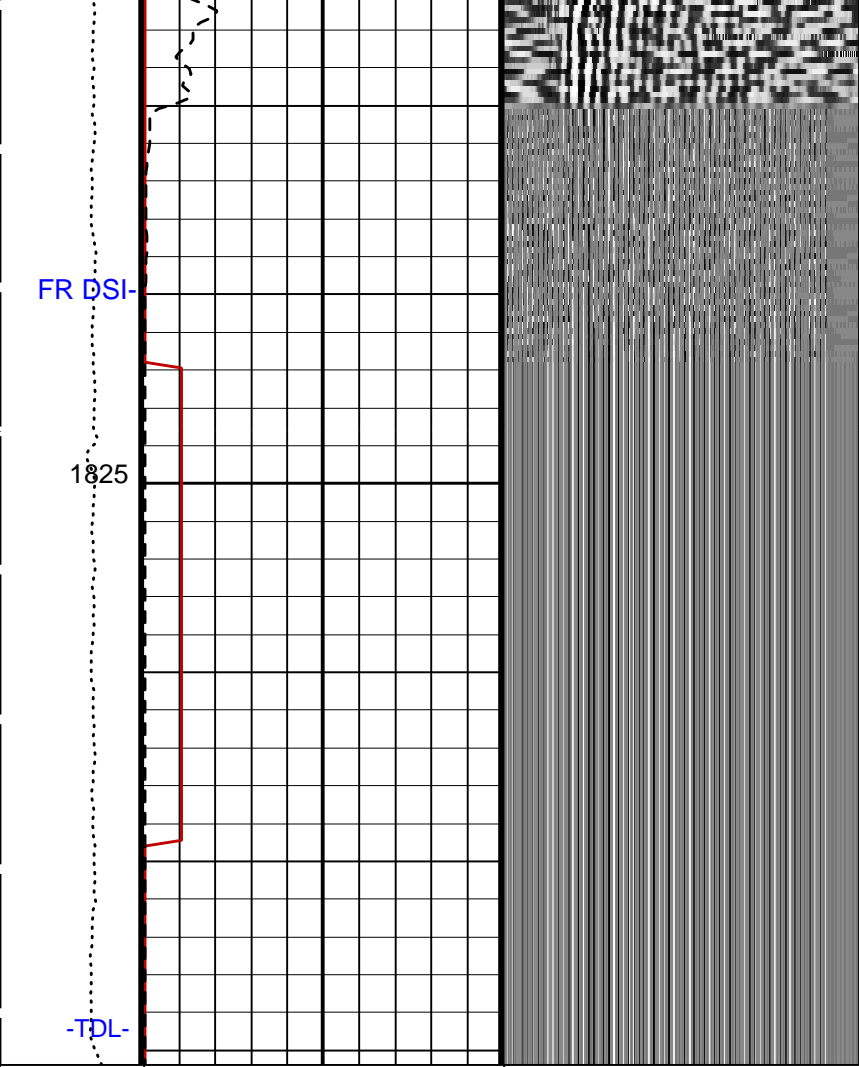
TENS

1800

WFGX

WCIX





| | | |
|----------------------|------------------------------------------------|-------------------|
| Tension (TENS) (LBF) | Waveform Data Copy Indicator X - Expert (WCIX) | Min Amplitude Max |
| 10000 0 | 0 (---) 10 | 0 20000 |
| | SAMX Waveform Gain (WFGX) | PASS 1, UPLOG |
| | 0 (---) 1000 | |

PIP SUMMARY

Time Mark Every 60 S

Parameters

| DLIS Name | Description | Value |
|-----------|--------------------------------------------------------------------------|--------|
| DWCX | Digitizer Word Count X | 512 |
| LTXG | Lower Dipole Transmitter Geometry | 156 IN |
| RX1G | Receiver 1 Geometry | 294 IN |
| RX2G | Receiver 2 Geometry | 300 IN |
| RX3G | Receiver 3 Geometry | 306 IN |
| RX4G | Receiver 4 Geometry | 312 IN |
| RX5G | Receiver 5 Geometry | 318 IN |
| RX6G | Receiver 6 Geometry | 324 IN |
| RX7G | Receiver 7 Geometry | 330 IN |
| RX8G | Receiver 8 Geometry | 336 IN |
| SAMX | DSST Sonic Acquisition Mode X - Both Dipoles or Monopole Mode for Expert | BCR |
| WFMX | Waveform Mode X | W1 |

Format: DSST_WFX_SPECTRUM Vertical Scale: 1:200 Graphics File Created: 26-Dec-2000 13:36

OP System Version: 9C1-303
MCM

| | | | |
|--------|----------|--------|----------|
| MEST-B | OP91-kp2 | NGT-C | OP91-kp2 |
| DTA-A | OP91-kp2 | DSST-B | OP91-kp2 |
| HTGC-B | OP91-kp2 | | |

Output DLIS Files

| | | | |
|---------|------------|----------------|-------------------|
| DEFAULT | MESTB .030 | FN:51 PRODUCER | 26-Dec-2000 13:36 |
| LAMONT | MESTB .030 | FN:52 PRODUCER | 26-Dec-2000 13:36 |

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 21-NOV-2000 6:10 | | | | | | | |
| Caliper 1 Zero Measurement | 8.000 | N/A | 8.682 | N/A | N/A | N/A | IN |
| Caliper 2 Zero Measurement | 8.000 | N/A | 8.539 | N/A | N/A | N/A | IN |
| Caliper 1 Plus Measurement | 12.00 | N/A | 12.76 | N/A | N/A | N/A | IN |
| Caliper 2 Plus Measurement | 12.00 | N/A | 12.63 | N/A | N/A | N/A | IN |

| | | | | | | | |
|----------------------------------------------------------------------------------------------------------------------|-----|-----|-----|-----|-----|-----|------|
| Micro Electrical Scanner - B (Slim) Wellsite Calibration - CROUZET ACCELEROMETER PROM HAS BEEN READ CORRECTLY | | | | | | | |
| Before: 26-DEC-2000 12:49 | | | | | | | |
| 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: 26-DEC-2000 12:49 | | | | | | | |
| TEMPERATURE REFERENCE : | N/A | N/A | 25 | N/A | N/A | N/A | DEGC |
| YEAR OF CALIBRATION : | N/A | N/A | 91 | N/A | N/A | N/A | |
| MONTH OF CALIBRATION : | N/A | N/A | 5 | N/A | N/A | N/A | |
| SERIAL NUMBER : | N/A | N/A | 98 | N/A | N/A | N/A | |

| | | | | | | | |
|-------------------------------------------------------------------------------------|-------|--------|--------|-----|-----|-------|------|
| Natural Gamma Spectroscopy - C Wellsite Calibration - Background Measurement | | | | | | | |
| Master: 5-OCT-2000 20:21 Before: Calibration out of date 28-JUN-2000 2:48 | | | | | | | |
| WINDOW 1 Background | 100.0 | 14.35 | 16.12 | N/A | N/A | 100.0 | CPS |
| WINDOW 2 Background | 50.00 | 3.155 | 3.974 | N/A | N/A | 50.00 | CPS |
| WINDOW 3 Background | 10.00 | 0.8061 | 1.099 | N/A | N/A | 10.00 | CPS |
| WINDOW 4 Background | 6.000 | 0.3135 | 0.3730 | N/A | N/A | 6.000 | CPS |
| WINDOW 5 Background | 10.00 | 0.3433 | 0.3781 | N/A | N/A | 10.00 | CPS |
| SGR Background | 30.00 | 4.963 | 5.740 | N/A | N/A | N/A | GAPI |

| | | | | | | | |
|-----------------------------------------------------------------------------------------|-------|-------|-------|-----|-----|-------|------|
| Natural Gamma Spectroscopy - C Wellsite Calibration - Normalized Jig Measurement | | | | | | | |
| Master: 5-OCT-2000 18:29 Before: Calibration out of date 28-JUN-2000 2:53 | | | | | | | |
| WINDOW 1 Jig | 376.0 | 380.2 | 377.1 | N/A | N/A | 22.56 | CPS |
| WINDOW 2 Jig | 167.0 | 170.9 | 168.9 | N/A | N/A | 10.02 | CPS |
| WINDOW 3 Jig | 24.00 | 23.52 | 23.45 | N/A | N/A | 1.440 | CPS |
| WINDOW 4 Jig | 14.00 | 13.38 | 13.92 | N/A | N/A | 2.800 | CPS |
| WINDOW 5 Jig | 22.50 | 22.75 | 22.81 | N/A | N/A | 4.500 | CPS |
| SGR Jig | 160.0 | 160.0 | 158.8 | N/A | N/A | 7.000 | GAPI |

| | | | | | | | |
|------------------------------------------------------------------------------------------|-------|-------|----|----|----|----|-----|
| Natural Gamma Spectroscopy - C Master Calibration - Master Quality Control Values | | | | | | | |
| Master: 5-OCT-2000 18:22 | | | | | | | |
| Photomultiplier Res. CARC3 | 8.000 | 8.906 | -- | -- | -- | -- | |
| APU WINDOW Jig | 1350 | 1183 | -- | -- | -- | -- | CPS |
| APL WINDOW Jig | 1350 | 1182 | -- | -- | -- | -- | CPS |

| | | | | | | | |
|-------------------------------------------------------------------------------------------|-------|-----|-------|-----|-----|-------|------|
| HPHT Telemetry Gamma-ray Cartridge - B Wellsite Calibration - Detector Calibration | | | | | | | |
| Before: Calibration out of date 21-NOV-2000 6:07 | | | | | | | |
| Gamma Ray (Jig - Bkg) | 151.2 | N/A | 151.2 | N/A | N/A | 13.75 | GAPI |
| Gamma Ray (Calibrated) | 160.1 | N/A | 160.1 | N/A | N/A | 15.00 | GAPI |

The NGT PCSL Value is set to -110.553 KEV

Micro Electrical Scanner - B (Slim) / Equipment Identification

| | | |
|----------------------------------|-----------|-----|
| Primary Equipment: | | |
| MEST Sonde - B | MEDS - B | 702 |
| MEST Preamplifier Cartridge - AB | MEPC - AB | 807 |
| GPIT Cartridge - A | GPIC - A | 719 |
| MEST Acquisition Cartridge - A | MEAC - A | 833 |

Auxiliary Equipment:
 MEST-B Preamplifier Cartridge Housing
 MEST Acquisition Cartridge Housing (Slim)

MEPH - A 701
 MEAH - B 701

Natural Gamma Spectroscopy - C / Equipment Identification

Primary Equipment:

NGT Cartridge NGC - C 1731
 NGT Sonde NGD - A 1720

Auxiliary Equipment:

NGT Cartridge Housing NGCH - A 1733
 NGT Sonde Housing NGH - B 1721
 Gamma Source Radioactive GSR - U

| Natural Gamma Spectroscopy - C Wellsite Calibration | | | | | | | | |
|-----------------------------------------------------|---------------------------------------------|--------|--------------------------------------------------|---------------------------------------------|--------|--------|---------------------------------------------|--------|
| Background Measurement | | | | | | | | |
| Phase | WINDOW 1 Background CPS | Value | Phase | WINDOW 2 Background CPS | Value | Phase | WINDOW 3 Background CPS | Value |
| Master | | 14.35 | Master | | 3.155 | Master | | 0.8061 |
| Before | | 16.12 | Before | | 3.974 | Before | | 1.099 |
| | 0 (Minimum) 100.0 (Nominal) 400.0 (Maximum) | | | 0 (Minimum) 50.00 (Nominal) 200.0 (Maximum) | | | 0 (Minimum) 10.00 (Nominal) 40.00 (Maximum) | |
| Phase | WINDOW 4 Background CPS | Value | Phase | WINDOW 5 Background CPS | Value | Phase | SGR Background GAPI | Value |
| Master | | 0.3135 | Master | | 0.3433 | Master | | 4.963 |
| Before | | 0.3730 | Before | | 0.3781 | Before | | 5.740 |
| | 0 (Minimum) 6.000 (Nominal) 24.00 (Maximum) | | | 0 (Minimum) 10.00 (Nominal) 40.00 (Maximum) | | | 0 (Minimum) 30.00 (Nominal) 120.0 (Maximum) | |
| Master: 5-OCT-2000 20:21 | | | Before: Calibration out of date 28-JUN-2000 2:48 | | | | | |

| Natural Gamma Spectroscopy - C Wellsite Calibration | | | | | | | | |
|-----------------------------------------------------|-------------------------------------------------|-------|--------------------------------------------------|-------------------------------------------------|-------|--------|-------------------------------------------------|-------|
| Normalized Jig Measurement | | | | | | | | |
| Phase | WINDOW 1 Jig CPS | Value | Phase | WINDOW 2 Jig CPS | Value | Phase | WINDOW 3 Jig CPS | Value |
| Master | | 380.2 | Master | | 170.9 | Master | | 23.52 |
| Before | | 377.1 | Before | | 168.9 | Before | | 23.45 |
| | 354.0 (Minimum) 376.0 (Nominal) 398.0 (Maximum) | | | 155.0 (Minimum) 167.0 (Nominal) 179.0 (Maximum) | | | 21.50 (Minimum) 24.00 (Nominal) 26.50 (Maximum) | |
| Phase | WINDOW 4 Jig CPS | Value | Phase | WINDOW 5 Jig CPS | Value | Phase | SGR Jig GAPI | Value |
| Master | | 13.38 | Master | | 22.75 | Master | | 160.0 |
| Before | | 13.92 | Before | | 22.81 | Before | | 158.8 |
| | 12.50 (Minimum) 14.00 (Nominal) 15.50 (Maximum) | | | 20.00 (Minimum) 22.50 (Nominal) 25.00 (Maximum) | | | 148.0 (Minimum) 160.0 (Nominal) 172.0 (Maximum) | |
| Master: 5-OCT-2000 18:29 | | | Before: Calibration out of date 28-JUN-2000 2:53 | | | | | |

| Natural Gamma Spectroscopy - C Wellsite Calibration | | | | | |
|-----------------------------------------------------|----------------------------------------------|-------|--------------------------------------------------|-------------------------------------------------|-------|
| Quality Control Values | | | | | |
| Phase | DHVF Jig V | Value | Phase | Quality Windows Ratio Jig | Value |
| Master | | 1331 | Master | | 2.224 |
| Before | | 1324 | Before | | 2.232 |
| | 1088 (Minimum) 1450 (Nominal) 1813 (Maximum) | | | 2.150 (Minimum) 2.240 (Nominal) 2.330 (Maximum) | |
| Master: 5-OCT-2000 18:29 | | | Before: Calibration out of date 28-JUN-2000 2:53 | | |

| Natural Gamma Spectroscopy - C Wellsite Calibration | | |
|-----------------------------------------------------|------------------------------------------------|----------|
| Quality Control Values Check | | |
| Phase | Thorium peak Form Factor Jig | Value |
| Before | | -0.02155 |
| | -0.2000 (Minimum) 0 (Nominal) 0.2000 (Maximum) | |
| Before: Calibration out of date 28-JUN-2000 2:53 | | |

| Natural Gamma Spectroscopy - C Master Calibration | | | | | | | | |
|---------------------------------------------------|--|--|--|--|--|--|--|--|
| Master Quality Control Values | | | | | | | | |

| | | | | | | | | | |
|--------------------------|------------------------------|--------------------|---------------------|--------------------|-------------------|-------------------|--------------------|-------------------|-------------------|
| Phase | Photomultiplier Res. CARC3 | Value | Phase | APU WINDOW Jig CPS | Value | Phase | APL WINDOW Jig CPS | Value | |
| Master | | 8.906 | Master | | 1183 | Master | | 1182 | |
| | 4.500 (Minimum) | 8.000 (Nominal) | 11.50 (Maximum) | 700.0 (Minimum) | 1350 (Nominal) | 1600 (Maximum) | 700.0 (Minimum) | 1350 (Nominal) | 1600 (Maximum) |
| Phase | Thorium peak Form Factor Jig | | Value | | | | | | |
| Master | | -0.02958 | | | | | | | |
| | -0.1000 (Minimum) | 0 (Nominal) | 0.1000 (Maximum) | | | | | | |
| Master: 5-OCT-2000 18:22 | | | | | | | | | |

HPHT Telemetry Gamma-ray Cartridge - B / Equipment Identification

Primary Equipment:

| | | |
|------------------------------------------|-----------|------|
| STGC Gamma-ray & Accelerometer Cartridge | STGC - BH | 8038 |
| Mud Temperature Sensor | MTEM - | 1 |
| STGC Telemetry Cartridge | STGC - A | 8038 |

Auxiliary Equipment:

| | | |
|-------------------------------|-----------|------|
| HPHT/STGC Dewar Flask Housing | UDFH - KL | 1062 |
|-------------------------------|-----------|------|

HPHT Telemetry Gamma-ray Cartridge - B Wellsite Calibration

Detector Calibration

| Phase | Gamma Ray Background GAPI | Value | Phase | Gamma Ray (Jig - Bkg) GAPI | Value | Phase | Gamma Ray (Calibrated) GAPI | Value | |
|--------|---------------------------|--------------------|--------------------|----------------------------|--------------------|--------------------|-----------------------------|--------------------|--------------------|
| Before | | 5.682 | Before | | 151.2 | Before | | 160.1 | |
| | 0 (Minimum) | 30.00 (Nominal) | 120.0 (Maximum) | 137.5 (Minimum) | 151.2 (Nominal) | 165.0 (Maximum) | 145.1 (Minimum) | 160.1 (Nominal) | 175.1 (Maximum) |

Before: Calibration out of date 21-NOV-2000 6:07

COMPANY: Lamont Doherty

WELL: ODP Leg 193, Site 1189B (PCM-3A)

FIELD: Manus Basin, Roman Ruins

COUNTY: Offshore

STATE: Bismarck Sea

BOTTOM LOG INTERVAL 1829 m

SCHLUMBERGER DEPTH 1888 m

DEPTH DRILLER 1899 m

KELLY BUSHING 11.3 m

DRILL FLOOR 11 m

GROUND LEVEL -1693 m

Schlumberger

Dipole Sonic, Stonely and P&S
Dipole Shear
Gamma Ray