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**OTHER SERVICES1**  
 OS1: FMS  
 OS2: MSS  
 OS3: DSI  
 OS4:  
 OS5:

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

**REMARKS: RUN NUMBER 1**  
 Hole drilled with APC/XCB coring bit and bottom hole assembly (BHA) 11 7/16" bit  
 Lamont Magnetic Susceptibility (MSS) tool run in combination with HRLA/HLDS/HNGS  
 4 knuckle joints decouple the eccentered HLDS and HNGS from the centered HRLA and MSS.  
 MSS tool run but susceptibility data not available due to electronic problem.  
 Log played back using a zone parameter for GCSE using input for BS or LCAL.  
 BS is used where caliper is closing or closed. LCAL is used where caliper is valid.  
 Density data is valid only where the caliper is open.

**REMARKS: RUN NUMBER 2**

**RUN 1**

SERVICE ORDER #: \_\_\_\_\_  
 PROGRAM VERSION: 19C0-187  
 FLUID LEVEL: \_\_\_\_\_

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

**RUN 2**

SERVICE ORDER #: \_\_\_\_\_  
 PROGRAM VERSION: \_\_\_\_\_  
 FLUID LEVEL: \_\_\_\_\_

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

## EQUIPMENT DESCRIPTION




**RUN 1**

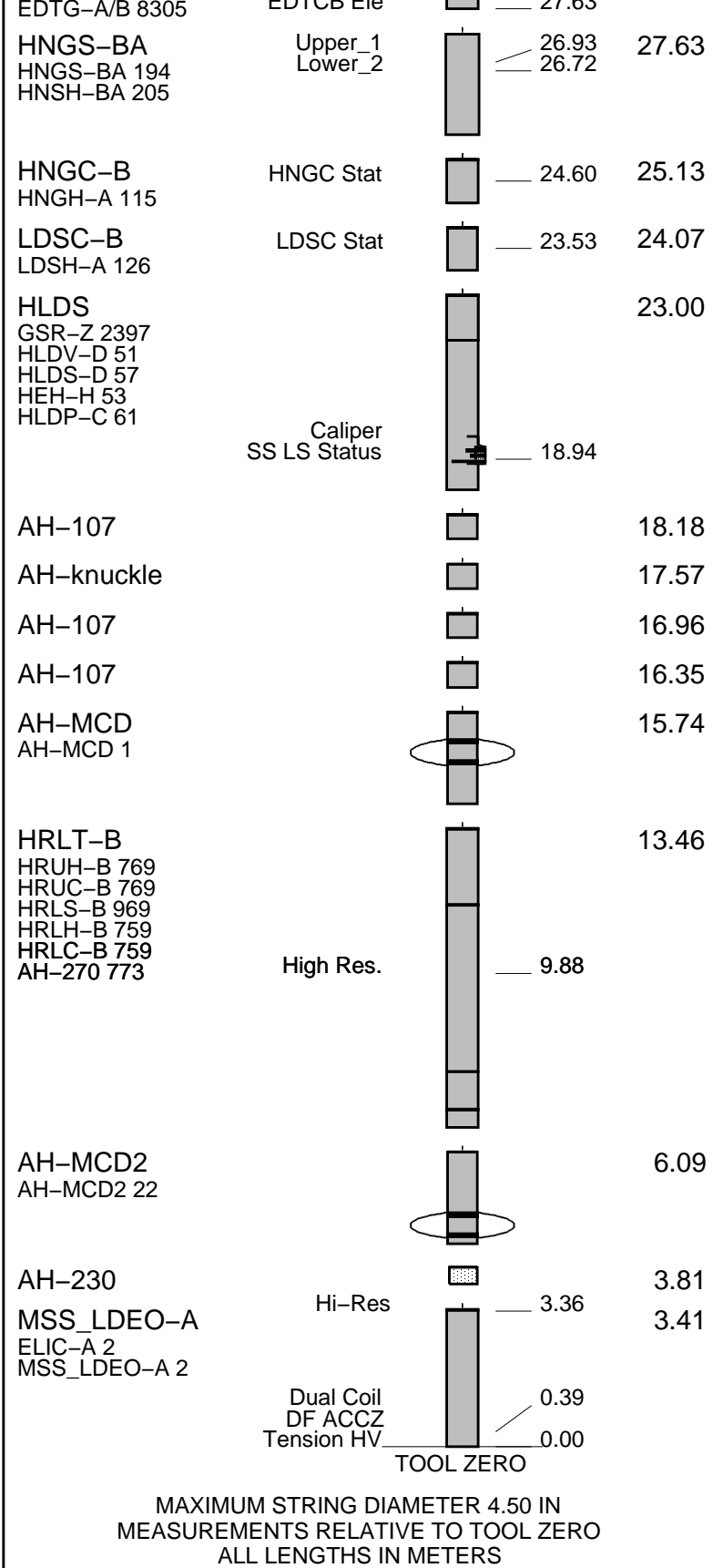
**SURFACE EQUIPMENT**

GSR-U 616008  
 WITM (EDTS)-A 1

**RUN 2**

**DOWNHOLE EQUIPMENT**

|             |           |   |       |
|-------------|-----------|---|-------|
| LEH-QT      |           |  | 30.94 |
| LEH-QT 301  |           |   |       |
| AH-369      | MDSB_EDTC |  | 29.61 |
|             | Mud Tempe |   | 30.05 |
|             | CTEM      |   | 28.55 |
| EDTC-B      | Gamma Ray |  | 27.98 |
| EDTH-B 8303 | EFTB DIAG |   | 29.61 |
| EDTC-B 8317 | TelStatus |   |       |
|             | EDTCB_Ele |   | 27.62 |



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

Kelly Bushing Elevation

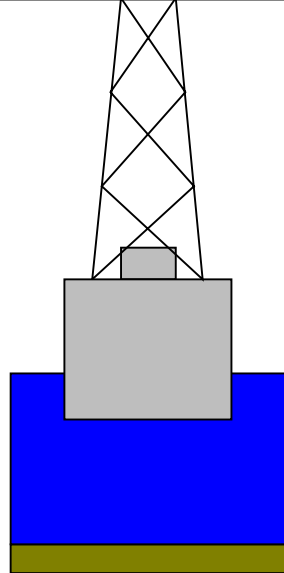
Derrick Floor Elevation

Mean Sea Level

-1211.6

-1211.6

-1200.6



4.1



0

3.80

Sea Floor

83

11.43

Open Hole

204

Total Depth

### Input DLIS Files

DEFAULT MSS\_LDEO\_HRLA\_LDL\_036PUP FN:50 PRODUCER 18-Mar-2012 15:05 1412.7 M 1191.5 M

### Output DLIS Files

DEFAULT MSS\_LDEO\_HRLA\_LDL\_038PUP FN:52 PRODUCER 18-Mar-2012 15:13 203.5 M -17.5 M

### OP System Version: 19C0-187

|            |                |         |          |
|------------|----------------|---------|----------|
| MSS_LDEO-A | 19C0-187       | HRLT-B  | 19C0-187 |
| HLDS       | 19C0-187       | LDSC-B  | 19C0-187 |
| HNGC-B     | 19C0-187       | HNGS-BA | 19C0-187 |
| EDTC-B     | SKK-5169-EDTCB |         |          |

### Changed Parameter Summary

| DLIS Name | New Value | Previous Value | Depth & Time   |
|-----------|-----------|----------------|----------------|
| GCSE      | BS        | BS             | 203.5 15:13:40 |

### PIP SUMMARY

Time Mark Every 60 S

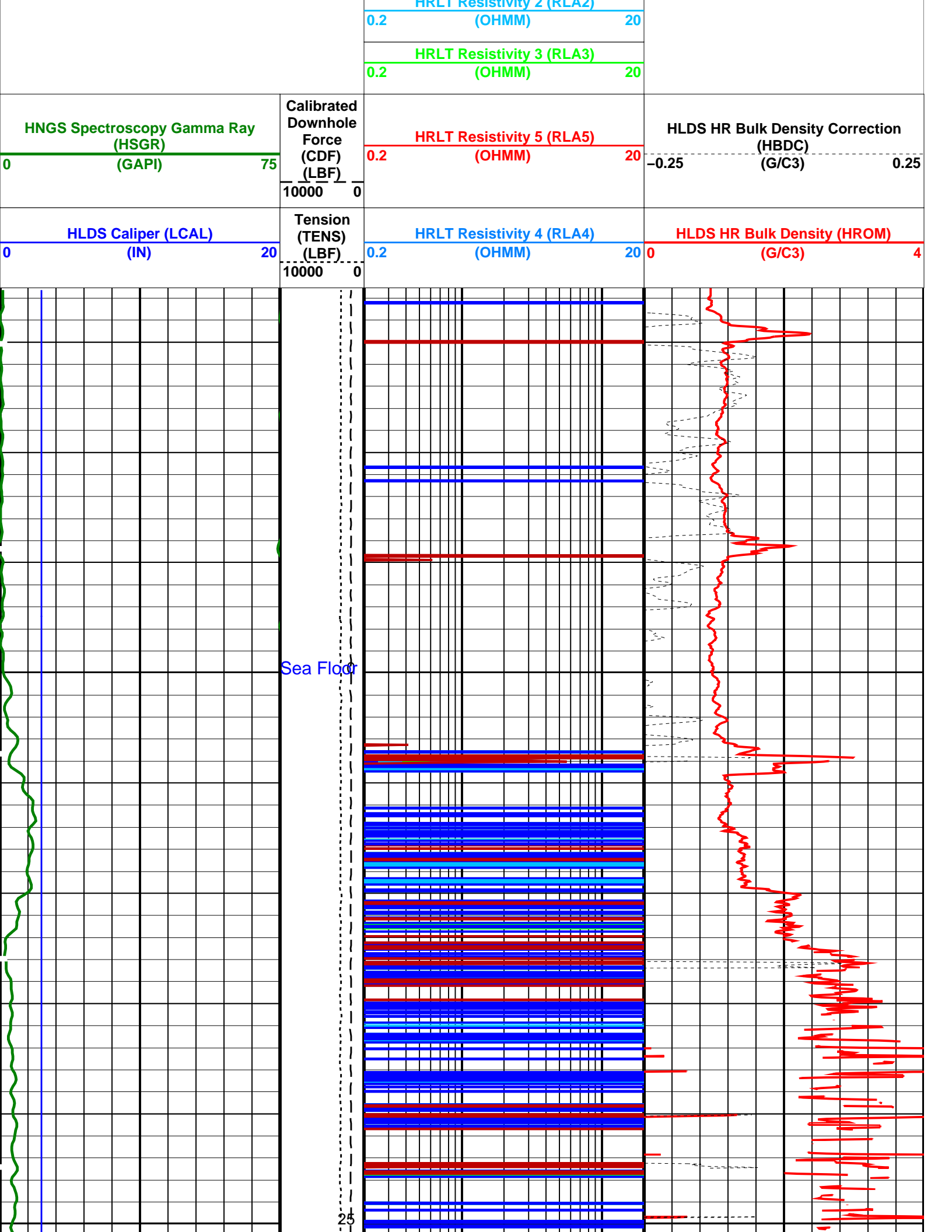
2nd Pass, Sea Floor Depth Reference

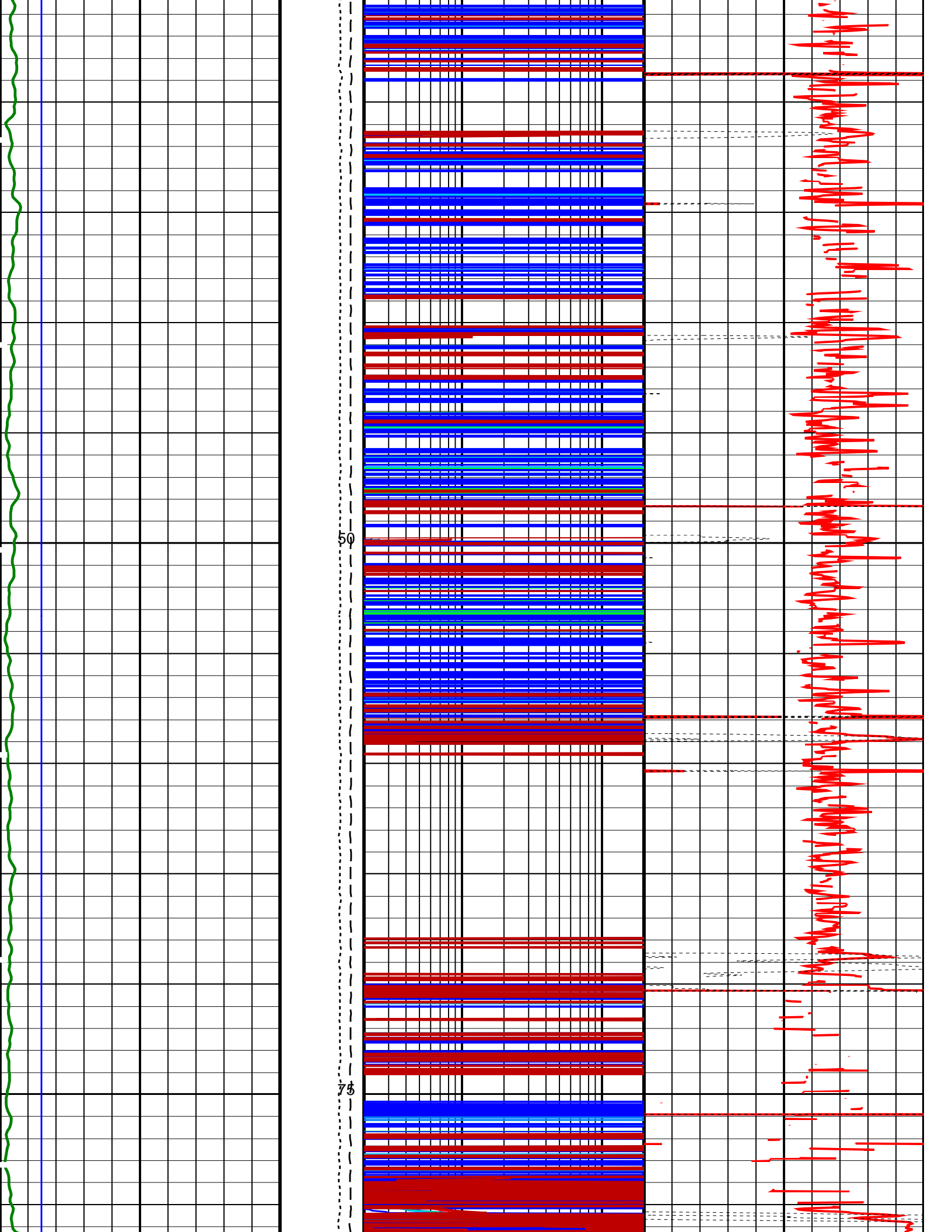
| HRLT True Resistivity (RT_HRLT) |        |    |
|---------------------------------|--------|----|
| 0.2                             | (OHMM) | 20 |

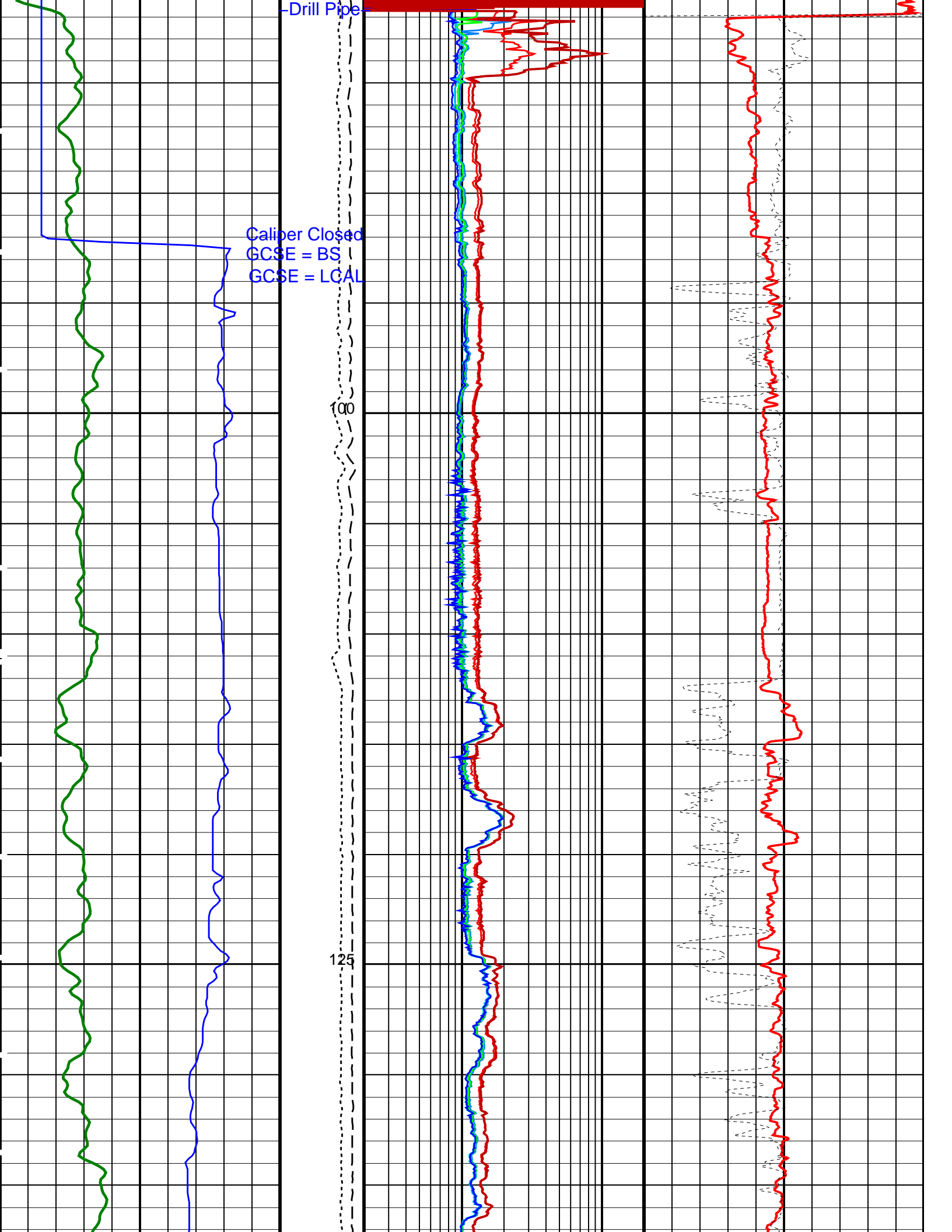
Playback for GCSE at noted depths

| HRLT Resistivity 1 (RLA1) |        |    |
|---------------------------|--------|----|
| 0.2                       | (OHMM) | 20 |

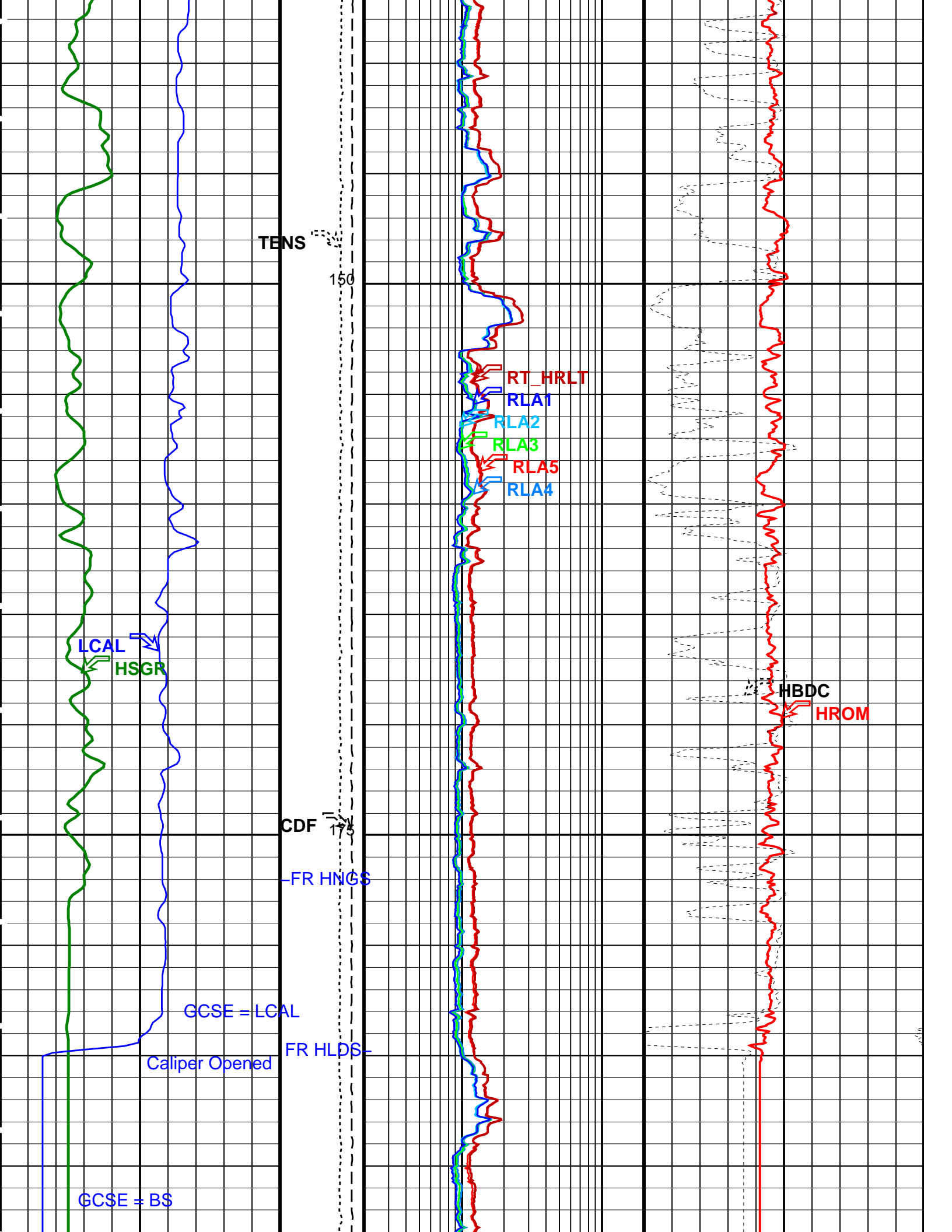
HRLT Resistivity 2 (RLA2)

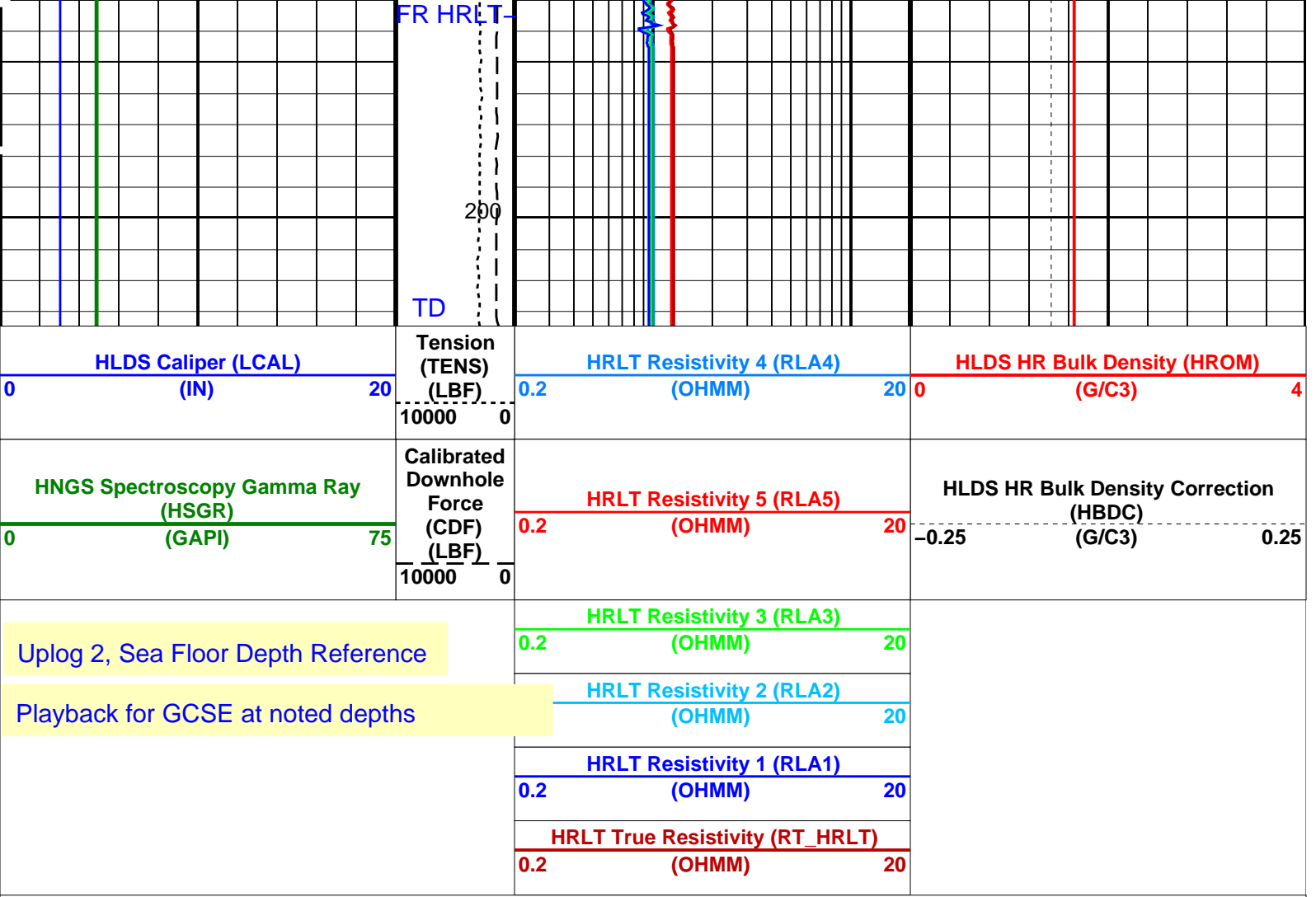












PIP SUMMARY

Time Mark Every 60 S

Parameters

| DLIS Name                                   | Description                                       | Value           |      |
|---|---|-----------------|------|
| HRLT-B: High Resolution Laterolog Array - B |   |                 |      |
| BHS   | Borehole Status                                   | OPEN            |      |
| BHT   | Bottom Hole Temperature (used in calculations)    | 21              | DEGC |
| CALSTAT                                     | HRLTB Calibration Status                          | SHALLOW_DONE    |      |
| CALTEMP                                     | HRLTB Calibration Temperature                     | 27.2932         | DEGC |
| FREQ0                                       | HRLT Frequency Index for Mode 0                   | 32              |      |
| FREQ1                                       | HRLT Frequency Index for Mode 1                   | 128             |      |
| FREQ2                                       | HRLT Frequency Index for Mode 2                   | 104             |      |
| FREQ3                                       | HRLT Frequency Index for Mode 3                   | 86              |      |
| FREQ4                                       | HRLT Frequency Index for Mode 4                   | 56              |      |
| FREQ5                                       | HRLT Frequency Index for Mode 5                   | 44              |      |
| FREQ6                                       | HRLT Frequency Index for Mode 6                   | 116             |      |
| 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 |      |
| ISSBAR                                      | Barite Mud Switch                                 | BARITE          |      |
| KFAC_HRLT                                   | HRLT K Factor Option                              | SONDE           |      |
| LOOPCOEF_S                                  | HRLT Loop Coefficient for Shallow Modes           | LOW             |      |
| LOOPMOD0                                    | HRLT Mode 0 Loop Mode                             | AUTO            |      |
| LOOPMOD1                                    | HRLT Mode 1 Loop Mode                             | AUTO            |      |
| LOOPMOD2                                    | HRLT Mode 2 Loop Mode                             | AUTO            |      |
| LOOPMOD3                                    | HRLT Mode 3 Loop Mode                             | AUTO            |      |
| LOOPMOD4                                    | HRLT Mode 4 Loop Mode                             | AUTO            |      |
| LOOPMOD5                                    | HRLT Mode 5 Loop Mode                             | AUTO            |      |
| LOOPMOD6                                    | HRLT Mode 6 Loop Mode                             | AUTO            |      |
| MATR  | Rock Matrix for Neutron Porosity Corrections      | LIMESTONE       |      |
| PROGINV                                     | Inversion Selection                               | ON              |      |
| PROCMFL                                     | Inversion Micro-Resistivity Selection             | NO_EXTERNAL_RXO |      |
| PROCMFO                                     | Mechanical Standoff Fin Size                      | 0               | IN   |
| PROCRM                                      | Processing Mud Resistivity Select                 | HRLT_Compute    |      |
| PROCRPO                                     | Crack Position                                    | Crack           |      |

|              |  |                     |      |
|--------------|--|---------------------|------|
| PROCSPO      | Surface Position                                       | Centered            |      |
| SHT          | Surface Hole Temperature                               | 20                  | DEGC |
|              | HLDS: Hostile Litho-Density Sonde                      |                     |      |
| CLCL         | HLDS LS Control Loop Controller Mode                   | AUTO_DEFAULT        |      |
| CLCS         | HLDS SS Control Loop Controller Mode                   | AUTO_DEFAULT        |      |
| CLLS         | HLDS Mode Loop Long Spacing                            | AUTO                |      |
| CLSS         | HLDS Mode Loop Short Spacing                           | AUTO                |      |
| DHC          | Density Hole Correction                                | BS                  |      |
| DPPM         | Density Porosity Processing Mode                       | HIRS                |      |
| FD           | Fluid Density  | 1                   | G/C3 |
| LATC         | HLDS Activation Correction                             | ON                  |      |
| LLDL         | HLDS LS Low Level Discriminator DAC                    | 14000               |      |
| LLDS         | HLDS SS Low Level Discriminator DAC                    | 14000               |      |
| LLML         | HLDS LS Low Level Discriminator Mode                   | AUTO                |      |
| LLMS         | HLDS SS Low Level Discriminator Mode                   | AUTO                |      |
| MDEN         | Matrix Density   | 2.71                | G/C3 |
| PHVL         | HLDS Long Spacing High Voltage Setting                 | 1000                | V    |
| PHVS         | HLDS Short Spacing High Voltage Setting                | 1000                | V    |
| PSDL         | HLDS LS Pulse Shape Compensation DAC                   | 30000               |      |
| PSDS         | HLDS SS Pulse Shape Compensation DAC                   | 30000               |      |
| PSML         | HLDS LS Pulse Shape Compensation Mode                  | AUTO                |      |
| PSMS         | HLDS SS Pulse Shape Compensation Mode                  | AUTO                |      |
|              | HNGS-BA: Hostile Natural Gamma Ray Sonde               |                     |      |
| BAR1         | HNGS Detector 1 Barite Constant                        | 1                   |      |
| BAR2         | HNGS Detector 2 Barite Constant                        | 1                   |      |
| BHK          | HNGS Borehole Potassium Correction Concentration       | 0                   |      |
| BHS          | Borehole Status  | OPEN                |      |
| BHT          | Bottom Hole Temperature (used in calculations)         | 21                  | DEGC |
| CSD1         | Inner Casing Outer Diameter                            | 0                   | IN   |
| CSD2         | Outer Casing Outer Diameter                            | 0                   | IN   |
| CSW1         | Inner Casing Weight                                    | 0                   | LB/F |
| CSW2         | Outer Casing Weight                                    | 0                   | LB/F |
| DBCC         | HNGS Barite Constant Correction Flag                   | NONE                |      |
| 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                | -0.000814831        |      |
| HALF         | HNGS Alpha Filter Length                               | 60                  | IN   |
| HCRB         | HNGS Apply Borehole Potassium Correction               | NONE                |      |
| HMWM         | Mud Weighting Material                                 | BARI                |      |
| HNPE         | HNGS Processing Enable                                 | YES                 |      |
| ISSBAR       | Barite Mud Switch                                      | BARITE              |      |
| MATR         | Rock Matrix for Neutron Porosity Corrections           | LIMESTONE           |      |
| S1BI         | HNGS Detector 1 Calibration Bismuth Count Rate         | 1.3                 | CPS  |
| S2BI         | HNGS Detector 2 Calibration Bismuth Count Rate         | 1.3                 | CPS  |
| SGRC         | HNGS Standard Gamma-Ray Correction Flag                | YES                 |      |
| SHT          | Surface Hole Temperature                               | 20                  | DEGC |
| TPOS         | Tool Position  | ECCE                |      |
| VBA1         | HNGS Detector 1 Variable Barite Factor Running Average | 1.00364             |      |
| VBA2         | HNGS Detector 2 Variable Barite Factor Running Average | -0.376766           |      |
|              | EDTC-B: Enhanced DTS Cartridge                         |                     |      |
| BHFL         | Borehole Fluid Type                                    | WATER               |      |
| BHS          | Borehole Status  | OPEN                |      |
| BHT          | Bottom Hole Temperature (used in calculations)         | 21                  | DEGC |
| BSCO         | Borehole Salinity Correction Option                    | NO                  |      |
| CCCO         | Casing & Cement Thickness Correction Option            | NO                  |      |
| DPPM         | Density Porosity Processing Mode                       | HIRS                |      |
| FSAL         | Formation Salinity                                     | -50000              | PPM  |
| FSCO         | Formation Salinity Correction Option                   | NO                  |      |
| 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     |      |
| HSCO         | Hole Size Correction Option                            | YES                 |      |
| ISSBAR       | Barite Mud Switch                                      | BARITE              |      |
| ISSBAR_EDTC  | Nuclear Mud Type                                       | BARITE              |      |
| MATR         | Rock Matrix for Neutron Porosity Corrections           | LIMESTONE           |      |
| MCCO         | Mud Cake Correction Option                             | NO                  |      |
| MCOR         | Mud Correction   | BARI                |      |
| MWCO         | Mud Weight Correction Option                           | NO                  |      |
| PTCO         | Pressure/Temperature Correction Option                 | NO                  |      |
| SDAT         | Standoff Data Source                                   | SOCN                |      |
| SHT          | Surface Hole Temperature                               | 20                  | DEGC |
| SOCN         | Standoff Distance                                      | 0.5                 | IN   |
| SOCO         | Standoff Correction Option                             | NO                  |      |
| TPOS_EDTC    | EDTC Tool Centered/Eccentered                          | Eccentered          |      |
| U-ETELM_EDTS | Telemetry Mode for eWAFE                               | Standard_EDTS       |      |
| U-TELM_EDTS  | Telemetry Mode for WAFE                                | Standard_EDTS       |      |
|              | System and Miscellaneous                               |                     |      |
| ALTDPCHAN    | Name of alternate depth channel                        | SpeedCorrectedDepth |      |

|         |  |             |      |
|---------|--|-------------|------|
| BS      | Bit Size                                 | 11.438      | IN   |
| BSAL    | Borehole Salinity                        | -50000.00   | PPM  |
| CSIZ    | Current Casing Size                      | 13.375      | IN   |
| CWEI    | Casing Weight                            | 168.00      | LB/F |
| DFD     | Drilling Fluid Density                   | 1.25        | G/C3 |
| DO      | Depth Offset for Playback                | -1209.0     | M    |
| FLEV    | Fluid Level                              | -50000.00   | M    |
| MST     | Mud Sample Temperature                   | -50000.00   | DEGC |
| PBVSADP | Use alternate depth channel for playback | NO          |      |
| PP      | Playback Processing                      | OFF         |      |
| RMFS    | Resistivity of Mud Filtrate Sample       | -50000.0000 | OHMM |
| RW      | Resistivity of Connate Water             | 1.0000      | OHMM |
| TD      | Total Depth                              | 1430        | M    |
| TDD     | Total Depth - Driller                    | 1430.00     | M    |
| TDL     | Total Depth - Logger                     | 1430.00     | M    |
| TWS     | Temperature of Connate Water Sample      | 37.78       | DEGC |

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 18-Mar-2012 15:13

### OP System Version: 19C0-187

|            |                |         |          |
|------------|----------------|---------|----------|
| MSS_LDEO-A | 19C0-187       | HRLT-B  | 19C0-187 |
| HLDS       | 19C0-187       | LDSC-B  | 19C0-187 |
| HNGC-B     | 19C0-187       | HNGS-BA | 19C0-187 |
| EDTC-B     | SKK-5169-EDTCB |         |          |

### Input DLIS Files

|         |                          |       |          |                   |          |          |
|---------|--------------------------|-------|----------|-------------------|----------|----------|
| DEFAULT | MSS_LDEO_HRLA_LDL_036PUP | FN:50 | PRODUCER | 18-Mar-2012 15:05 | 1412.7 M | 1191.5 M |
|---------|--------------------------|-------|----------|-------------------|----------|----------|

### Output DLIS Files

|         |                          |       |          |                   |  |  |
|---------|--------------------------|-------|----------|-------------------|--|--|
| DEFAULT | MSS_LDEO_HRLA_LDL_038PUP | FN:52 | PRODUCER | 18-Mar-2012 15:13 |  |  |
|---------|--------------------------|-------|----------|-------------------|--|--|

### Input DLIS Files

|         |                          |       |          |                   |          |          |
|---------|--------------------------|-------|----------|-------------------|----------|----------|
| DEFAULT | MSS_LDEO_HRLA_LDL_035PUP | FN:49 | PRODUCER | 18-Mar-2012 15:04 | 1412.7 M | 1329.8 M |
|---------|--------------------------|-------|----------|-------------------|----------|----------|

### Output DLIS Files

|         |                          |       |          |                   |         |         |
|---------|--------------------------|-------|----------|-------------------|---------|---------|
| DEFAULT | MSS_LDEO_HRLA_LDL_037PUP | FN:51 | PRODUCER | 18-Mar-2012 15:12 | 203.5 M | 120.9 M |
|---------|--------------------------|-------|----------|-------------------|---------|---------|

### OP System Version: 19C0-187

|            |                |         |          |
|------------|----------------|---------|----------|
| MSS_LDEO-A | 19C0-187       | HRLT-B  | 19C0-187 |
| HLDS       | 19C0-187       | LDSC-B  | 19C0-187 |
| HNGC-B     | 19C0-187       | HNGS-BA | 19C0-187 |
| EDTC-B     | SKK-5169-EDTCB |         |          |

### Changed Parameter Summary

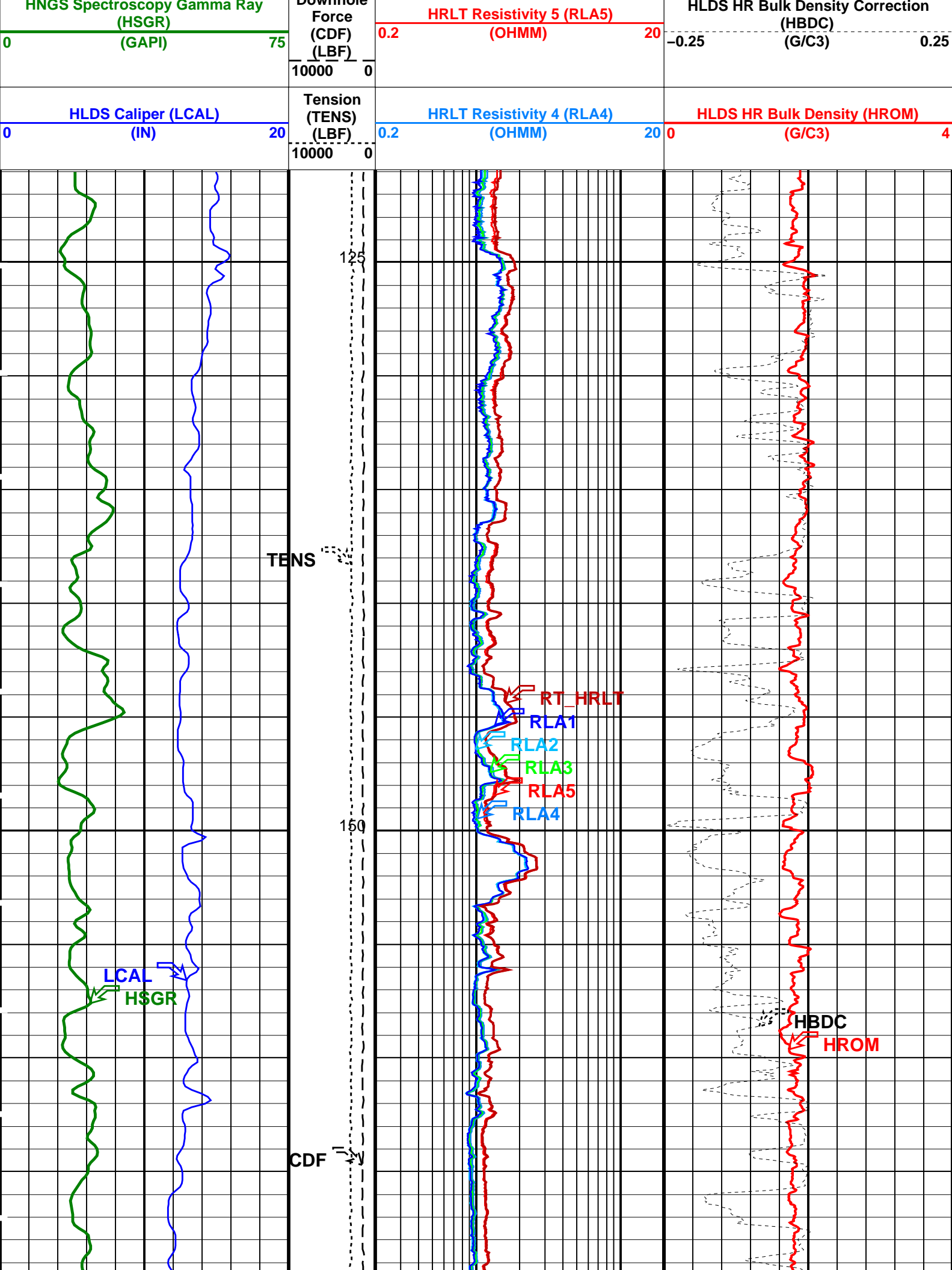
| DLIS Name | New Value | Previous Value | Depth & Time   |
|-----------|-----------|----------------|----------------|
| GCSE      | BS        | BS             | 203.5 15:12:40 |

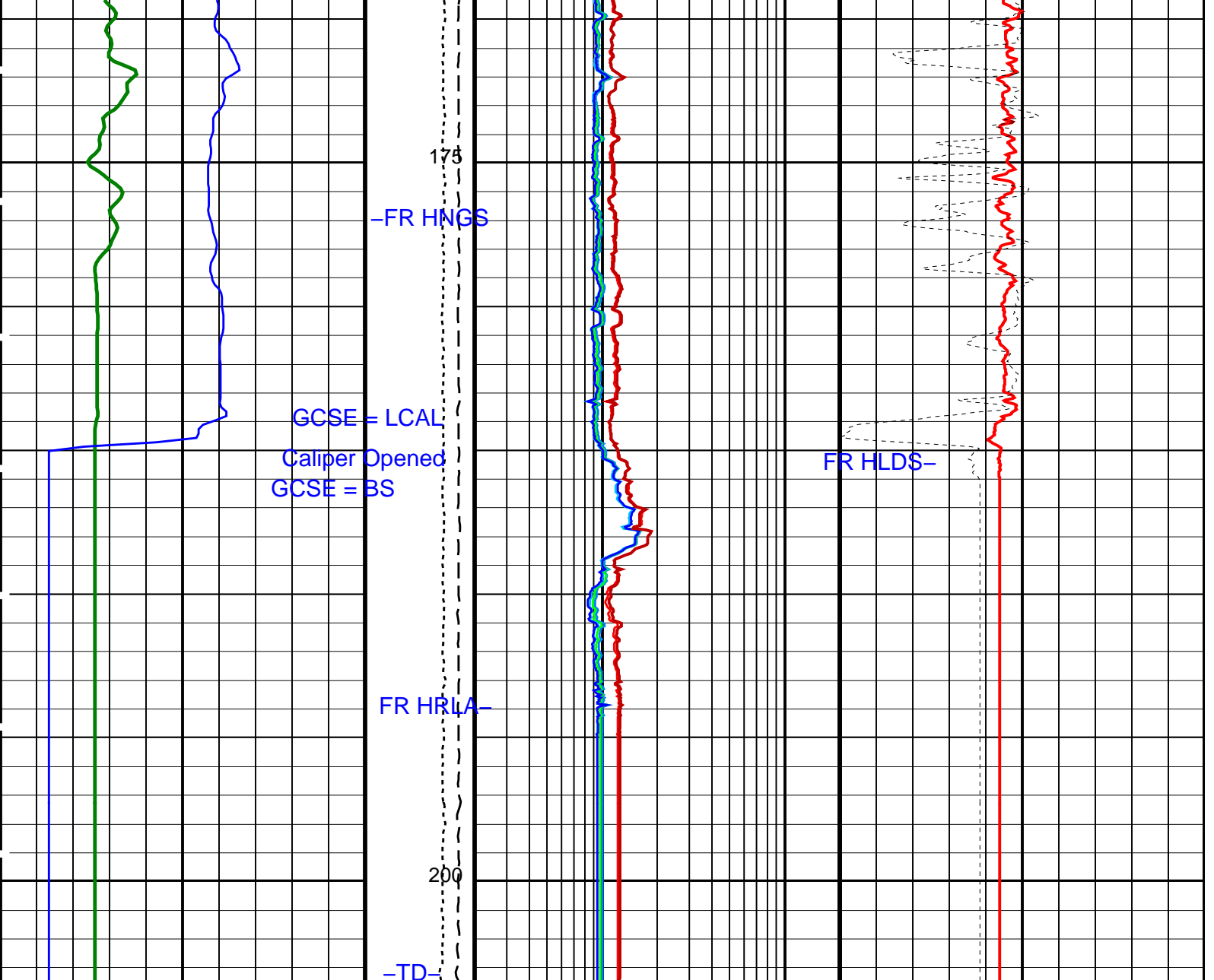
### PIP SUMMARY

Time Mark Every 60 S

|                                     |  |           |
|-------------------------------------|--|-----------|
| 1st Pass, Sea Floor Depth Reference | <b>HRLT True Resistivity (RT_HRLT)</b> |           |
|                                     | 0.2                                    | (OHMM) 20 |
|                                     | <b>HRLT Resistivity 1 (RLA1)</b>       |           |
|                                     | 0.2                                    | (OHMM) 20 |
|                                     | <b>HRLT Resistivity 2 (RLA2)</b>       |           |
| 0.2                                 | (OHMM) 20                              |           |
| <b>HRLT Resistivity 3 (RLA3)</b>    |  |           |
| 0.2                                 | (OHMM) 20                              |           |

Calibrated Downhole





|   |  |  |   |
|---|--|--|---|
| <p><b>HLDS Caliper (LCAL)</b><br/>(IN)</p> <p>0 20</p>                  | <p><b>Tension (TENS)</b><br/>(LBF)</p> <p>10000 0</p>                  | <p><b>HRLT Resistivity 4 (RLA4)</b><br/>(OHMM)</p> <p>0.2 20</p> | <p><b>HLDS HR Bulk Density (HROM)</b><br/>(G/C3)</p> <p>0 4</p>                   |
| <p><b>HNGS Spectroscopy Gamma Ray (HSGR)</b><br/>(GAPI)</p> <p>0 75</p> | <p><b>Calibrated Downhole Force (CDF)</b><br/>(LBF)</p> <p>10000 0</p> | <p><b>HRLT Resistivity 5 (RLA5)</b><br/>(OHMM)</p> <p>0.2 20</p> | <p><b>HLDS HR Bulk Density Correction (HBDC)</b><br/>(G/C3)</p> <p>-0.25 0.25</p> |
| <p>1st Pass, Sea Floor Depth Reference</p>                              |  |  |   |
|   |  |  |   |
| <p><b>HRLT Resistivity 3 (RLA3)</b><br/>(OHMM)</p> <p>0.2 20</p>        |  |  |   |
| <p><b>HRLT Resistivity 2 (RLA2)</b><br/>(OHMM)</p> <p>0.2 20</p>        |  |  |   |
| <p><b>HRLT Resistivity 1 (RLA1)</b><br/>(OHMM)</p> <p>0.2 20</p>        |  |  |   |
| <p><b>HRLT True Resistivity (RT_HRLT)</b><br/>(OHMM)</p> <p>0.2 20</p>  |  |  |   |

PIP SUMMARY

Time Mark Every 60 S

Parameters

## DLIS Name

## Description

## Value

| DLIS Name                                   | Description                                       | Value           |      |
|---|---|-----------------|------|
| HRLT-B: High Resolution Laterolog Array - B |   |                 |      |
| BHS   | Borehole Status                                   | OPEN            |      |
| BHT   | Bottom Hole Temperature (used in calculations)    | 21              | DEGC |
| CALSTAT                                     | HRLTB Calibration Status                          | SHALLOW_DONE    |      |
| CALTEMP                                     | HRLTB Calibration Temperature                     | 27.2932         | DEGC |
| FREQ0                                       | HRLT Frequency Index for Mode 0                   | 32              |      |
| FREQ1                                       | HRLT Frequency Index for Mode 1                   | 128             |      |
| FREQ2                                       | HRLT Frequency Index for Mode 2                   | 104             |      |
| FREQ3                                       | HRLT Frequency Index for Mode 3                   | 86              |      |
| FREQ4                                       | HRLT Frequency Index for Mode 4                   | 56              |      |
| FREQ5                                       | HRLT Frequency Index for Mode 5                   | 44              |      |
| FREQ6                                       | HRLT Frequency Index for Mode 6                   | 116             |      |
| 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 |      |
| ISSBAR                                      | Barite Mud Switch                                 | BARITE          |      |
| KFAC_HRLT                                   | HRLT K Factor Option                              | SONDE           |      |
| LOOPCOEF_S                                  | HRLT Loop Coefficient for Shallow Modes           | LOW             |      |
| LOOPMOD0                                    | HRLT Mode 0 Loop Mode                             | AUTO            |      |
| LOOPMOD1                                    | HRLT Mode 1 Loop Mode                             | AUTO            |      |
| LOOPMOD2                                    | HRLT Mode 2 Loop Mode                             | AUTO            |      |
| LOOPMOD3                                    | HRLT Mode 3 Loop Mode                             | AUTO            |      |
| LOOPMOD4                                    | HRLT Mode 4 Loop Mode                             | AUTO            |      |
| LOOPMOD5                                    | HRLT Mode 5 Loop Mode                             | AUTO            |      |
| LOOPMOD6                                    | HRLT Mode 6 Loop Mode                             | AUTO            |      |
| MATR  | Rock Matrix for Neutron Porosity Corrections      | LIMESTONE       |      |
| PROGINV                                     | Inversion Selection                               | ON              |      |
| PROCIFL                                     | Inversion Micro-Resistivity Selection             | NO_EXTERNAL_RXO |      |
| PROCMSO                                     | Mechanical Standoff Fin Size                      | 0               | IN   |
| PROCRM                                      | Processing Mud Resistivity Select                 | HRLT_Compute    |      |
| PROCSP0                                     | Sonde Position                                    | Centered        |      |
| SHT   | Surface Hole Temperature                          | 20              | DEGC |
| HLDS: Hostile Litho-Density Sonde           |   |                 |      |
| CLCL  | HLDS LS Control Loop Controller Mode              | AUTO_DEFAULT    |      |
| CLCS  | HLDS SS Control Loop Controller Mode              | AUTO_DEFAULT    |      |
| CLLS  | HLDS Mode Loop Long Spacing                       | AUTO            |      |
| CLSS  | HLDS Mode Loop Short Spacing                      | AUTO            |      |
| DHC   | Density Hole Correction                           | BS              |      |
| DPPM  | Density Porosity Processing Mode                  | HIRS            |      |
| FD  | Fluid Density                                     | 1               | G/C3 |
| LATC  | HLDS Activation Correction                        | ON              |      |
| LLDL  | HLDS LS Low Level Discriminator DAC               | 14000           |      |
| LLDS  | HLDS SS Low Level Discriminator DAC               | 14000           |      |
| LLML  | HLDS LS Low Level Discriminator Mode              | AUTO            |      |
| LLMS  | HLDS SS Low Level Discriminator Mode              | AUTO            |      |
| MDEN  | Matrix Density                                    | 2.71            | G/C3 |
| PHVL  | HLDS Long Spacing High Voltage Setting            | 1000            | V    |
| PHVS  | HLDS Short Spacing High Voltage Setting           | 1000            | V    |
| PSDL  | HLDS LS Pulse Shape Compensation DAC              | 30000           |      |
| PSDS  | HLDS SS Pulse Shape Compensation DAC              | 30000           |      |
| PSML  | HLDS LS Pulse Shape Compensation Mode             | AUTO            |      |
| PSMS  | HLDS SS Pulse Shape Compensation Mode             | AUTO            |      |
| HNGS-BA: Hostile Natural Gamma Ray Sonde    |   |                 |      |
| BAR1  | HNGS Detector 1 Barite Constant                   | 1               |      |
| BAR2  | HNGS Detector 2 Barite Constant                   | 1               |      |
| BHK   | HNGS Borehole Potassium Correction Concentration  | 0               |      |
| BHS   | Borehole Status                                   | OPEN            |      |
| BHT   | Bottom Hole Temperature (used in calculations)    | 21              | DEGC |
| CSD1  | Inner Casing Outer Diameter                       | 0               | IN   |
| CSD2  | Outer Casing Outer Diameter                       | 0               | IN   |
| CSW1  | Inner Casing Weight                               | 0               | LB/F |
| CSW2  | Outer Casing Weight                               | 0               | LB/F |
| DBCC  | HNGS Barite Constant Correction Flag              | NONE            |      |
| 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           | -0.000814831    |      |
| HALF  | HNGS Alpha Filter Length                          | 60              | IN   |
| HCRB  | HNGS Apply Borehole Potassium Correction          | NONE            |      |
| HMWM  | Mud Weighting Material                            | BARI            |      |
| HNPE  | HNGS Processing Enable                            | YES             |      |
| ISSBAR                                      | Barite Mud Switch                                 | BARITE          |      |
| MATR  | Rock Matrix for Neutron Porosity Corrections      | LIMESTONE       |      |
| S1BI  | HNGS Detector 1 Calibration Bismuth Count Rate    | 1.3             | CPS  |
| S2BI  | HNGS Detector 2 Calibration Bismuth Count Rate    | 1.3             | CPS  |

|                                       |  |                     |      |
|---------------------------------------|--|---------------------|------|
| SGRC                                  | HNGS Standard Gamma-Ray Correction Flag                | YES                 |      |
| SHT                                   | Surface Hole Temperature                               | 20                  | DEGC |
| TPOS                                  | Tool Position  | ECCE                |      |
| VBA1                                  | HNGS Detector 1 Variable Barite Factor Running Average | 1.00364             |      |
| VBA2                                  | HNGS Detector 2 Variable Barite Factor Running Average | -0.376766           |      |
| <b>EDTC-B: Enhanced DTS Cartridge</b> |  |                     |      |
| BHFL                                  | Borehole Fluid Type                                    | WATER               |      |
| BHS                                   | Borehole Status  | OPEN                |      |
| BHT                                   | Bottom Hole Temperature (used in calculations)         | 21                  | DEGC |
| BSCO                                  | Borehole Salinity Correction Option                    | NO                  |      |
| CCCO                                  | Casing & Cement Thickness Correction Option            | NO                  |      |
| DPPM                                  | Density Porosity Processing Mode                       | HIRS                |      |
| FSAL                                  | Formation Salinity                                     | -50000              | PPM  |
| FSCO                                  | Formation Salinity Correction Option                   | NO                  |      |
| 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     |      |
| HSCO                                  | Hole Size Correction Option                            | YES                 |      |
| ISSBAR                                | Barite Mud Switch                                      | BARITE              |      |
| ISSBAR_EDTC                           | Nuclear Mud Type                                       | BARITE              |      |
| MATR                                  | Rock Matrix for Neutron Porosity Corrections           | LIMESTONE           |      |
| MCCO                                  | Mud Cake Correction Option                             | NO                  |      |
| MCOR                                  | Mud Correction   | BARI                |      |
| MWCO                                  | Mud Weight Correction Option                           | NO                  |      |
| PTCO                                  | Pressure/Temperature Correction Option                 | NO                  |      |
| SDAT                                  | Standoff Data Source                                   | SOCN                |      |
| SHT                                   | Surface Hole Temperature                               | 20                  | DEGC |
| SOCN                                  | Standoff Distance                                      | 0.5                 | IN   |
| SOCO                                  | Standoff Correction Option                             | NO                  |      |
| TPOS_EDTC                             | EDTC Tool Centered/Eccentered                          | Eccentered          |      |
| U-ETELM_EDTS                          | Telemetry Mode for eWAFE                               | Standard_EDTS       |      |
| U-TELM_EDTS                           | Telemetry Mode for WAFE                                | Standard_EDTS       |      |
| <b>System and Miscellaneous</b>       |  |                     |      |
| ALTDPCCHAN                            | Name of alternate depth channel                        | SpeedCorrectedDepth |      |
| BS                                    | Bit Size   | 11.438              | IN   |
| BSAL                                  | Borehole Salinity                                      | -50000.00           | PPM  |
| CSIZ                                  | Current Casing Size                                    | 13.375              | IN   |
| CWEI                                  | Casing Weight  | 168.00              | LB/F |
| DFD                                   | Drilling Fluid Density                                 | 1.25                | G/C3 |
| DO                                    | Depth Offset for Playback                              | -1209.0             | M    |
| FLEV                                  | Fluid Level  | -50000.00           | M    |
| MST                                   | Mud Sample Temperature                                 | -50000.00           | DEGC |
| PBVSADP                               | Use alternate depth channel for playback               | NO                  |      |
| PP                                    | Playback Processing                                    | OFF                 |      |
| RMFS                                  | Resistivity of Mud Filtrate Sample                     | -50000.0000         | OHMM |
| RW                                    | Resistivity of Connate Water                           | 1.0000              | OHMM |
| TD                                    | Total Depth  | 1430                | M    |
| TDD                                   | Total Depth - Driller                                  | 1430.00             | M    |
| TDL                                   | Total Depth - Logger                                   | 1430.00             | M    |
| TWS                                   | Temperature of Connate Water Sample                    | 37.78               | DEGC |

Format: TripleCombo Vertical Scale: 1:200 Graphics File Created: 18-Mar-2012 15:12

### OP System Version: 19C0-187

|            |                |         |          |
|------------|----------------|---------|----------|
| MSS_LDEO-A | 19C0-187       | HRLT-B  | 19C0-187 |
| HLDS       | 19C0-187       | LDSC-B  | 19C0-187 |
| HNGC-B     | 19C0-187       | HNGS-BA | 19C0-187 |
| EDTC-B     | SKK-5169-EDTCB |         |          |

### Input DLIS Files

|         |                          |       |          |                   |          |          |
|---------|--------------------------|-------|----------|-------------------|----------|----------|
| DEFAULT | MSS_LDEO_HRLA_LDL_035PUP | FN:49 | PRODUCER | 18-Mar-2012 15:04 | 1412.7 M | 1329.8 M |
|---------|--------------------------|-------|----------|-------------------|----------|----------|

### Output DLIS Files

|         |                          |       |          |                   |
|---------|--------------------------|-------|----------|-------------------|
| DEFAULT | MSS_LDEO_HRLA_LDL_037PUP | FN:51 | PRODUCER | 18-Mar-2012 15:12 |
|---------|--------------------------|-------|----------|-------------------|

### Calibration and Check Summary

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

High Resolution Laterolog Array - B Wellsite Calibration - HRLT M01

Before: 16 Mar 2012 5:06 After: 16 Mar 2012 9:52



|   |                         |     |        |        |          |       |    |  |
|---|-------------------------|-----|--------|--------|----------|-------|----|--|
| Before: 16-Mar-2012 5:06  | After: 16-Mar-2012 9:52 |     |        |        |          |       |    |  |
| HRLT M0-M1 Voltage Plus - 0   | 0                       | N/A | -318.4 | -318.4 | 0.005524 | 9.681 | UV |  |
| HRLT M0-M1 Voltage Plus - 1   | 0                       | N/A | -325.5 | -325.6 | -0.08093 | 9.681 | UV |  |
| HRLT M0-M1 Voltage Plus - 2   | 0                       | N/A | -328.4 | -328.6 | -0.1485  | 9.681 | UV |  |
| HRLT M0-M1 Voltage Plus - 3   | 0                       | N/A | -333.7 | -333.7 | 0        | 9.681 | UV |  |
| HRLT M0-M1 Voltage Plus - 4   | 0                       | N/A | -324.3 | -324.2 | 0.03174  | 9.681 | UV |  |
| HRLT M0-M1 Voltage Plus - 5   | 0                       | N/A | -320.9 | -320.8 | 0.08734  | 9.681 | UV |  |
| HRLT M0-M1 Voltage Plus - 6   | 0                       | N/A | 317.5  | 317.6  | 0.09869  | 9.681 | UV |  |
| HRLT M0-M1 Voltage Plus - 7   | 0                       | N/A | -322.7 | -322.7 | 0        | 9.681 | UV |  |
| High Resolution Laterolog Array - B Wellsite Calibration - HRLT M12 |                         |     |        |        |          |       |    |  |
| Before: 16-Mar-2012 5:06 After: 16-Mar-2012 9:52                    |                         |     |        |        |          |       |    |  |
| HRLT M1-M2 Voltage Plus - 0   | 0                       | N/A | 1751   | 1751   | 0.3818   | 53.42 | UV |  |
| HRLT M1-M2 Voltage Plus - 1   | 0                       | N/A | 1788   | 1789   | 0.7792   | 53.42 | UV |  |
| HRLT M1-M2 Voltage Plus - 2   | 0                       | N/A | 1800   | 1801   | 1.259    | 53.42 | UV |  |
| HRLT M1-M2 Voltage Plus - 3   | 0                       | N/A | 1830   | 1830   | 0.5406   | 53.42 | UV |  |
| HRLT M1-M2 Voltage Plus - 4   | 0                       | N/A | 1779   | 1779   | 0.4772   | 53.42 | UV |  |
| HRLT M1-M2 Voltage Plus - 5   | 0                       | N/A | 1762   | 1762   | 0.2520   | 53.42 | UV |  |
| HRLT M1-M2 Voltage Plus - 6   | 0                       | N/A | -1752  | -1753  | -0.7925  | 53.42 | UV |  |
| HRLT M1-M2 Voltage Plus - 7   | 0                       | N/A | 1781   | 1781   | 0        | 53.42 | UV |  |
| High Resolution Laterolog Array - B Wellsite Calibration - HRLT M23 |                         |     |        |        |          |       |    |  |
| Before: 16-Mar-2012 5:06 After: 16-Mar-2012 9:52                    |                         |     |        |        |          |       |    |  |
| HRLT M2-M3 Voltage Plus - 0   | 0                       | N/A | 1737   | 1736   | -0.5146  | 53.42 | UV |  |
| HRLT M2-M3 Voltage Plus - 1   | 0                       | N/A | 1787   | 1786   | -0.7456  | 53.42 | UV |  |
| HRLT M2-M3 Voltage Plus - 2   | 0                       | N/A | 1800   | 1800   | -0.06702 | 53.42 | UV |  |
| HRLT M2-M3 Voltage Plus - 3   | 0                       | N/A | 1833   | 1832   | -0.4811  | 53.42 | UV |  |
| HRLT M2-M3 Voltage Plus - 4   | 0                       | N/A | 1776   | 1775   | -0.9590  | 53.42 | UV |  |
| HRLT M2-M3 Voltage Plus - 5   | 0                       | N/A | 1760   | 1759   | -0.7697  | 53.42 | UV |  |
| HRLT M2-M3 Voltage Plus - 6   | 0                       | N/A | -1740  | -1740  | 0.6014   | 53.42 | UV |  |
| HRLT M2-M3 Voltage Plus - 7   | 0                       | N/A | 1781   | 1781   | 0        | 53.42 | UV |  |
| High Resolution Laterolog Array - B Wellsite Calibration - HRLT V34 |                         |     |        |        |          |       |    |  |
| Before: 16-Mar-2012 5:06 After: 16-Mar-2012 9:52                    |                         |     |        |        |          |       |    |  |
| HRLT A3-A4 Voltage Plus - 0   | 0                       | N/A | 68230  | 68240  | 8.789    | 2100  | UV |  |
| HRLT A3-A4 Voltage Plus - 1   | 0                       | N/A | 69990  | 70010  | 24.23    | 2100  | UV |  |
| HRLT A3-A4 Voltage Plus - 2   | 0                       | N/A | 70800  | 70830  | 37.80    | 2100  | UV |  |
| HRLT A3-A4 Voltage Plus - 3   | 0                       | N/A | 72350  | 72380  | 20.48    | 2100  | UV |  |
| HRLT A3-A4 Voltage Plus - 4   | 0                       | N/A | 70080  | 70090  | 9.359    | 2100  | UV |  |
| HRLT A3-A4 Voltage Plus - 5   | 0                       | N/A | 69460  | 69460  | -0.6484  | 2100  | UV |  |
| HRLT A3-A4 Voltage Plus - 6   | 0                       | N/A | -67200 | -67220 | -20.80   | 2100  | UV |  |
| HRLT A3-A4 Voltage Plus - 7   | 0                       | N/A | 70000  | 70000  | 0        | 2100  | UV |  |
| High Resolution Laterolog Array - B Wellsite Calibration - HRLT V45 |                         |     |        |        |          |       |    |  |
| Before: 16-Mar-2012 5:06 After: 16-Mar-2012 9:52                    |                         |     |        |        |          |       |    |  |
| HRLT A4-A5 Voltage Plus - 0   | 0                       | N/A | 68510  | 68520  | 8.148    | 2100  | UV |  |
| HRLT A4-A5 Voltage Plus - 1   | 0                       | N/A | 70370  | 70420  | 50.27    | 2100  | UV |  |
| HRLT A4-A5 Voltage Plus - 2   | 0                       | N/A | 71140  | 71170  | 34.51    | 2100  | UV |  |
| HRLT A4-A5 Voltage Plus - 3   | 0                       | N/A | 72700  | 72720  | 18.21    | 2100  | UV |  |
| HRLT A4-A5 Voltage Plus - 4   | 0                       | N/A | 70380  | 70390  | 14.04    | 2100  | UV |  |
| HRLT A4-A5 Voltage Plus - 5   | 0                       | N/A | 69740  | 69740  | 3.234    | 2100  | UV |  |
| HRLT A4-A5 Voltage Plus - 6   | 0                       | N/A | -67550 | -67600 | -46.80   | 2100  | UV |  |
| HRLT A4-A5 Voltage Plus - 7   | 0                       | N/A | 70000  | 70000  | 0        | 2100  | UV |  |
| High Resolution Laterolog Array - B Wellsite Calibration - HRLT V56 |                         |     |        |        |          |       |    |  |
| Before: 16-Mar-2012 5:06 After: 16-Mar-2012 9:52                    |                         |     |        |        |          |       |    |  |
| HRLT A5-A6 Voltage Plus - 0   | 0                       | N/A | 68420  | 68420  | 7.523    | 2100  | UV |  |
| HRLT A5-A6 Voltage Plus - 1   | 0                       | N/A | 70100  | 70120  | 23.77    | 2100  | UV |  |
| HRLT A5-A6 Voltage Plus - 2   | 0                       | N/A | 70920  | 70950  | 36.16    | 2100  | UV |  |
| HRLT A5-A6 Voltage Plus - 3   | 0                       | N/A | 72500  | 72520  | 19.73    | 2100  | UV |  |
| HRLT A5-A6 Voltage Plus - 4   | 0                       | N/A | 70240  | 70250  | 8.016    | 2100  | UV |  |
| HRLT A5-A6 Voltage Plus - 5   | 0                       | N/A | 69620  | 69620  | 2.594    | 2100  | UV |  |
| HRLT A5-A6 Voltage Plus - 6   | 0                       | N/A | -67290 | -67320 | -31.20   | 2100  | UV |  |
| HRLT A5-A6 Voltage Plus - 7   | 0                       | N/A | 70000  | 70000  | 0        | 2100  | UV |  |
| High Resolution Laterolog Array - B Wellsite Calibration - HRLT VTP |                         |     |        |        |          |       |    |  |
| Before: 16-Mar-2012 5:06 After: 16-Mar-2012 9:52                    |                         |     |        |        |          |       |    |  |
| HRLT Torpedo-M0 Voltage - 0   | 0                       | N/A | -68090 | -68100 | -7.188   | 2100  | UV |  |
| HRLT Torpedo-M0 Voltage - 1   | 0                       | N/A | -70420 | -70440 | -20.00   | 2100  | UV |  |
| HRLT Torpedo-M0 Voltage - 2   | 0                       | N/A | -71200 | -71240 | -40.66   | 2100  | UV |  |
| HRLT Torpedo-M0 Voltage - 3   | 0                       | N/A | -72770 | -72790 | -22.43   | 2100  | UV |  |
| HRLT Torpedo-M0 Voltage - 4   | 0                       | N/A | -70430 | -70440 | -3.828   | 2100  | UV |  |
| HRLT Torpedo-M0 Voltage - 5   | 0                       | N/A | -69780 | -69770 | 6.797    | 2100  | UV |  |
| HRLT Torpedo-M0 Voltage - 6   | 0                       | N/A | 67550  | 67580  | 30.52    | 2100  | UV |  |
| HRLT Torpedo-M0 Voltage - 7   | 0                       | N/A | -70000 | -70000 | 0        | 2100  | UV |  |
| High Resolution Laterolog Array - B Wellsite Calibration - HRLT VBD |                         |     |        |        |          |       |    |  |
| Before: 16-Mar-2012 5:06 After: 16-Mar-2012 9:52                    |                         |     |        |        |          |       |    |  |
| HRLT Bridle#9-M0 Voltage - 0  | 0                       | N/A | -68080 | -68090 | -6.594   | 2100  | UV |  |
| HRLT Bridle#9-M0 Voltage - 1  | 0                       | N/A | -70400 | -70430 | -22.60   | 2100  | UV |  |
| HRLT Bridle#9-M0 Voltage - 2  | 0                       | N/A | -71180 | -71220 | -35.19   | 2100  | UV |  |
| HRLT Bridle#9-M0 Voltage - 3  | 0                       | N/A | -72760 | -72780 | -25.31   | 2100  | UV |  |

|                              |   |     |        |        |        |      |    |
|------------------------------|---|-----|--------|--------|--------|------|----|
| HRLT Bridle#9-M0 Voltage - 4 | 0 | N/A | -70420 | -70430 | -10.22 | 2100 | UV |
| HRLT Bridle#9-M0 Voltage - 5 | 0 | N/A | -69770 | -69770 | 0      | 2100 | UV |
| HRLT Bridle#9-M0 Voltage - 6 | 0 | N/A | 67540  | 67560  | 27.21  | 2100 | UV |
| HRLT Bridle#9-M0 Voltage - 7 | 0 | N/A | -70000 | -70000 | 0      | 2100 | UV |

High Resolution Laterolog Array - B Wellsite Calibration - HRLT ISO

Before: 16-Mar-2012 5:06 After: 16-Mar-2012 9:52

|                              |   |     |       |       |        |       |    |
|------------------------------|---|-----|-------|-------|--------|-------|----|
| HRLT Source Current Plus - 0 | 0 | N/A | 283.9 | 284.0 | 0.1208 | 8.520 | UA |
| HRLT Source Current Plus - 1 | 0 | N/A | 281.1 | 281.1 | 0      | 8.520 | UA |
| HRLT Source Current Plus - 2 | 0 | N/A | 281.1 | 281.1 | 0      | 8.520 | UA |
| HRLT Source Current Plus - 3 | 0 | N/A | 281.1 | 281.1 | 0      | 8.520 | UA |
| HRLT Source Current Plus - 4 | 0 | N/A | 281.1 | 281.1 | 0      | 8.520 | UA |
| HRLT Source Current Plus - 5 | 0 | N/A | 281.1 | 281.1 | 0      | 8.520 | UA |
| HRLT Source Current Plus - 6 | 0 | N/A | 281.1 | 281.1 | 0      | 8.520 | UA |
| HRLT Source Current Plus - 7 | 0 | N/A | 281.1 | 281.1 | 0      | 8.520 | UA |

High Resolution Laterolog Array - B Wellsite Calibration - HRLT MV

Before: 16-Mar-2012 5:06 After: 16-Mar-2012 9:52

|                              |   |     |        |        |         |       |    |
|------------------------------|---|-----|--------|--------|---------|-------|----|
| HRLT Vertical Voltage PI - 0 | 0 | N/A | -320.8 | -320.6 | 0.1819  | 9.681 | UV |
| HRLT Vertical Voltage PI - 1 | 0 | N/A | -319.8 | -319.7 | 0.1165  | 9.681 | UV |
| HRLT Vertical Voltage PI - 2 | 0 | N/A | -322.0 | -322.0 | 0.08130 | 9.681 | UV |
| HRLT Vertical Voltage PI - 3 | 0 | N/A | -325.6 | -325.4 | 0.1804  | 9.681 | UV |
| HRLT Vertical Voltage PI - 4 | 0 | N/A | -313.8 | -313.5 | 0.3025  | 9.681 | UV |
| HRLT Vertical Voltage PI - 5 | 0 | N/A | -325.6 | -325.3 | 0.2599  | 9.681 | UV |
| HRLT Vertical Voltage PI - 6 | 0 | N/A | 324.6  | 324.5  | -0.1247 | 9.681 | UV |
| HRLT Vertical Voltage PI - 7 | 0 | N/A | -322.7 | -322.7 | 0       | 9.681 | UV |

Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement

Master: 28-Feb-2012 2:19 Before: 28-Feb-2012 2:36 After: 16-Mar-2012 9:55

|                      |       |       |       |       |          |       |     |
|----------------------|-------|-------|-------|-------|----------|-------|-----|
| SS Cs Resolution Bkg | 9.000 | 8.563 | 8.511 | 8.515 | 0.004113 | 1.800 | %   |
| LS Cs Resolution Bkg | 9.000 | 8.637 | 8.632 | 8.614 | -0.01812 | 1.800 | %   |
| LSW1 Background      | 100.0 | 71.69 | 71.37 | 70.54 | -0.8282  | 3.000 | CPS |
| LSW2 Background      | 100.0 | 65.72 | 64.67 | 64.80 | 0.1281   | 3.000 | CPS |
| LSW3 Background      | 200.0 | 147.7 | 146.0 | 145.7 | -0.3243  | 6.000 | CPS |
| LSW4 Background      | 250.0 | 178.3 | 178.0 | 176.6 | -1.411   | 7.500 | CPS |
| LSW5 Background      | 600.0 | 402.3 | 401.7 | 405.1 | 3.367    | 18.00 | CPS |
| SSW1 Background      | 100.0 | 68.69 | 69.17 | 70.11 | 0.9393   | 3.000 | CPS |
| SSW2 Background      | 200.0 | 121.6 | 122.1 | 123.1 | 0.9534   | 6.000 | CPS |
| SSW3 Background      | 500.0 | 321.9 | 321.7 | 320.2 | -1.431   | 15.00 | CPS |
| SSW4 Background      | 270.0 | 172.2 | 173.0 | 171.5 | -1.533   | 8.100 | CPS |
| SSW5 Background      | 200.0 | 123.5 | 123.8 | 125.1 | 1.368    | 6.000 | CPS |

Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement

Master: 28-Feb-2012 2:19

|               |       |       |     |     |     |     |     |
|---------------|-------|-------|-----|-----|-----|-----|-----|
| LSW1 Aluminum | 600.0 | 521.9 | N/A | N/A | N/A | N/A | CPS |
| LSW2 Aluminum | 900.0 | 758.2 | N/A | N/A | N/A | N/A | CPS |
| LSW3 Aluminum | 1100  | 921.8 | N/A | N/A | N/A | N/A | CPS |
| LSW4 Aluminum | 580.0 | 463.1 | N/A | N/A | N/A | N/A | CPS |
| LSW5 Aluminum | 570.0 | 428.2 | N/A | N/A | N/A | N/A | CPS |
| SSW1 Aluminum | 2800  | 2229  | N/A | N/A | N/A | N/A | CPS |
| SSW2 Aluminum | 8000  | 6354  | N/A | N/A | N/A | N/A | CPS |
| SSW3 Aluminum | 11600 | 9261  | N/A | N/A | N/A | N/A | CPS |
| SSW4 Aluminum | 5000  | 3871  | N/A | N/A | N/A | N/A | CPS |
| SSW5 Aluminum | 660.0 | 518.3 | N/A | N/A | N/A | N/A | CPS |

Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement

Master: 28-Feb-2012 2:19

|           |       |       |     |     |     |     |     |
|-----------|-------|-------|-----|-----|-----|-----|-----|
| LSW1 Iron | 400.0 | 352.2 | N/A | N/A | N/A | N/A | CPS |
| LSW2 Iron | 730.0 | 613.7 | N/A | N/A | N/A | N/A | CPS |
| LSW3 Iron | 1000  | 811.4 | N/A | N/A | N/A | N/A | CPS |
| LSW4 Iron | 520.0 | 425.3 | N/A | N/A | N/A | N/A | CPS |
| LSW5 Iron | 470.0 | 389.1 | N/A | N/A | N/A | N/A | CPS |
| SSW1 Iron | 2100  | 1664  | N/A | N/A | N/A | N/A | CPS |
| SSW2 Iron | 6800  | 5327  | N/A | N/A | N/A | N/A | CPS |
| SSW3 Iron | 10800 | 8450  | N/A | N/A | N/A | N/A | CPS |
| SSW4 Iron | 4600  | 3532  | N/A | N/A | N/A | N/A | CPS |
| SSW5 Iron | 580.0 | 458.1 | N/A | N/A | N/A | N/A | CPS |

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration

Before: 28-Feb-2012 2:41

|                         |       |     |       |     |     |     |    |
|-------------------------|-------|-----|-------|-----|-----|-----|----|
| HLDS Caliper Small Ring | 12.00 | N/A | 13.84 | N/A | N/A | N/A | IN |
| HLDS Caliper Large Ring | 15.19 | N/A | 17.47 | N/A | N/A | N/A | IN |

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: 26-Feb-2012 20:15 Before: 6-Mar-2012 18:49 After: 16-Mar-2012 9:56

|                  |       |       |       |       |         |       |      |
|------------------|-------|-------|-------|-------|---------|-------|------|
| Na 511 Peak Loc  | 40.00 | 39.64 | 39.54 | 39.62 | 0.07774 | 1.000 |      |
| Na 511 Peak Res  | 15.50 | 14.75 | 15.72 | 16.19 | 0.4740  | 2.000 | %    |
| High Voltage     | 1150  | 1169  | 1182  | 1177  | -5.114  | N/A   | V    |
| Na 1785 Peak Loc | 142.6 | 141.6 | 141.5 | 141.9 | 0.4290  | 7.000 |      |
| Na 1785 Peak Res | 8.500 | 8.869 | 8.671 | 9.301 | 0.6298  | 2.000 | %    |
| Temperature      | 15.50 | 26.03 | 31.35 | 29.11 | -2.234  | N/A   | DEGC |
| Na Count Rate    | 45.00 | 49.34 | 49.64 | 49.04 | 0.6245  | 8.000 | CPS  |

| Na Count Rate  | 45.00 | 19.34  | 19.64  | 19.01  | -0.6243 | 8.000   | CPS  |
|--|-------|--------|--------|--------|---------|---------|------|
| Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check                  |       |        |        |        |         |         |      |
| Master: 26–Feb–2012 20:15 Before: 6–Mar–2012 18:49 After: 16–Mar–2012 9:56               |       |        |        |        |         |         |      |
| Na 511 Peak Loc  | 40.00 | 39.65  | 39.61  | 39.70  | 0.08602 | 1.000   |      |
| Na 511 Peak Res  | 15.50 | 16.96  | 15.84  | 15.58  | -0.2573 | 2.000   | %    |
| High Voltage   | 1150  | 1100   | 1109   | 1109   | -0.5347 | N/A     | V    |
| Na 1785 Peak Loc   | 142.6 | 142.2  | 141.4  | 141.9  | 0.4977  | 7.000   |      |
| Na 1785 Peak Res   | 8.500 | 7.801  | 8.832  | 8.220  | -0.6116 | 2.000   | %    |
| Temperature  | 15.50 | 26.16  | 31.73  | 30.66  | -1.068  | N/A     | DEGC |
| Na Count Rate  | 45.00 | 19.53  | 20.28  | 19.14  | -1.142  | 8.000   | CPS  |
| Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2 |       |        |        |        |         |         |      |
| Master: 26–Feb–2012 20:15 Before: 6–Mar–2012 18:49 After: 16–Mar–2012 9:56               |       |        |        |        |         |         |      |
| Coincidence Count Rate Ratio   | 1.000 | 0.9899 | 0.9701 | 0.9937 | 0.02364 | 0.05000 |      |
| Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration              |       |        |        |        |         |         |      |
| Master: 26–Feb–2012 20:03  |       |        |        |        |         |         |      |
| Na 511 Peak Set Point  | 40.00 | 41.00  | --     | --     | --      | --      |      |
| Th Peak Loc  | 209.6 | 210.0  | --     | --     | --      | --      |      |
| Th Peak Res  | 7.000 | 6.521  | --     | --     | --      | --      | %    |
| Background Count Rate  | 142.5 | 18.97  | --     | --     | --      | --      | CPS  |
| Gain Ratio   | 1.000 | 1.008  | --     | --     | --      | --      |      |
| Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration              |       |        |        |        |         |         |      |
| Master: 26–Feb–2012 20:03  |       |        |        |        |         |         |      |
| Na 511 Peak Set Point  | 40.00 | 41.00  | --     | --     | --      | --      |      |
| Th Peak Loc  | 209.6 | 207.8  | --     | --     | --      | --      |      |
| Th Peak Res  | 7.000 | 6.775  | --     | --     | --      | --      | %    |
| Background Count Rate  | 142.5 | 18.84  | --     | --     | --      | --      | CPS  |
| Gain Ratio   | 1.000 | 0.9969 | --     | --     | --      | --      |      |
| Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration             |       |        |        |        |         |         |      |
| Before: 16–Mar–2012 5:05   |       |        |        |        |         |         |      |
| EDTC Z–Axis Acceleration   | 9.810 | N/A    | 9.747  | N/A    | N/A     | N/A     | M/S2 |
| Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration                       |       |        |        |        |         |         |      |
| Before: 4–Mar–2012 17:35   |       |        |        |        |         |         |      |
| Gamma Ray (Jig – Bkg)  | 159.9 | N/A    | 159.9  | N/A    | N/A     | 14.53   | GAPI |
| Gamma Ray (Calibrated)   | 164.0 | N/A    | 164.0  | N/A    | N/A     | 15.00   | GAPI |

High Resolution Laterolog Array – B / Equipment Identification

|                      |          |     |
|----------------------|----------|-----|
| Primary Equipment:   |          |     |
| HRLT Sonde           | HRLS – B | 969 |
| Auxiliary Equipment: |          |     |
| HRLT lower Housing   | HRLH – B | 759 |
| HRLT Lower Cartridge | HRLC – B | 759 |
| HRLT upper Housing   | HRUH – B | 769 |
| HRLT Upper Cartridge | HRUC – B | 769 |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                            |        |         |         |         |  |
|--|--------|----------------------------|--------|---------|---------|---------|--|
| HRLT M01   |        |                            |        |         |         |         |  |
| Idx  | Phase  | HRLT M0–M1 Voltage Plus UV | Value  | Nominal | Maximum | Minimum |  |
| 0  | Before |                            | -318.4 | -322.7  | -280.7  | -379.7  |  |
|  | After  |                            | -318.4 |         |         |         |  |
| 1  | Before |                            | -325.5 | -322.7  | -280.7  | -379.7  |  |
|  | After  |                            | -325.6 |         |         |         |  |
| 2  | Before |                            | -328.4 | -322.7  | -280.7  | -379.7  |  |
|  | After  |                            | -328.6 |         |         |         |  |
| 3  | Before |                            | -333.7 | -322.7  | -280.7  | -379.7  |  |
|  | After  |                            | -333.7 |         |         |         |  |
| 4  | Before |                            | -324.3 | -322.7  | -280.7  | -379.7  |  |
|  | After  |                            | -324.2 |         |         |         |  |
| 5  | Before |                            | -320.9 | -322.7  | -280.7  | -379.7  |  |
|  | After  |                            | -320.8 |         |         |         |  |

|                               |        |  |        |        |        |        |
|-------------------------------|--------|--|--------|--------|--------|--------|
|                               | After  |  | -320.8 |        |        |        |
| 6                             | Before |  | 317.5  | 322.7  | 379.7  | 280.7  |
|                               | After  |  | 317.6  |        |        |        |
| 7                             | Before |  | -322.7 | -322.7 | -280.7 | -379.7 |
|                               | After  |  | -322.7 |        |        |        |
| (Minimum) (Nominal) (Maximum) |        |  |        |        |        |        |

Before: 16-Mar-2012 5:06  
After: 16-Mar-2012 9:52

| High Resolution Laterolog Array – B Wellsite Calibration |        |                            |       |         |         |         |
|--|--------|----------------------------|-------|---------|---------|---------|
| HRLT M12   |        |                            |       |         |         |         |
| Idx  | Phase  | HRLT M1–M2 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
| 0  | Before |                            | 1751  | 1781    | 2095    | 1549    |
|  | After  |                            | 1751  |         |         |         |
| 1  | Before |                            | 1788  | 1781    | 2095    | 1549    |
|  | After  |                            | 1789  |         |         |         |
| 2  | Before |                            | 1800  | 1781    | 2095    | 1549    |
|  | After  |                            | 1801  |         |         |         |
| 3  | Before |                            | 1830  | 1781    | 2095    | 1549    |
|  | After  |                            | 1830  |         |         |         |
| 4  | Before |                            | 1779  | 1781    | 2095    | 1549    |
|  | After  |                            | 1779  |         |         |         |
| 5  | Before |                            | 1762  | 1781    | 2095    | 1549    |
|  | After  |                            | 1762  |         |         |         |
| 6  | Before |                            | -1752 | -1781   | -1549   | -2095   |
|  | After  |                            | -1753 |         |         |         |
| 7  | Before |                            | 1781  | 1781    | 2095    | 1549    |
|  | After  |                            | 1781  |         |         |         |
| (Minimum) (Nominal) (Maximum)                            |        |                            |       |         |         |         |

Before: 16-Mar-2012 5:06  
After: 16-Mar-2012 9:52

| High Resolution Laterolog Array – B Wellsite Calibration |        |                            |       |         |         |         |
|--|--------|----------------------------|-------|---------|---------|---------|
| HRLT M23   |        |                            |       |         |         |         |
| Idx  | Phase  | HRLT M2–M3 Voltage Plus UV | Value | Nominal | Maximum | Minimum |
| 0  | Before |                            | 1737  | 1781    | 2095    | 1549    |
|  | After  |                            | 1736  |         |         |         |
| 1  | Before |                            | 1787  | 1781    | 2095    | 1549    |
|  | After  |                            | 1786  |         |         |         |
| 2  | Before |                            | 1800  | 1781    | 2095    | 1549    |
|  | After  |                            | 1800  |         |         |         |
| 3  | Before |                            | 1833  | 1781    | 2095    | 1549    |
|  | After  |                            | 1832  |         |         |         |
| 4  | Before |                            | 1776  | 1781    | 2095    | 1549    |
|  | After  |                            | 1775  |         |         |         |
| 5  | Before |                            | 1760  | 1781    | 2095    | 1549    |
|  | After  |                            | 1759  |         |         |         |
| 6  | Before |                            | -1740 | -1781   | -1549   | -2095   |
|  | After  |                            | -1740 |         |         |         |

|                          |        |                               |       |      |      |      |
|--------------------------|--------|-------------------------------|-------|------|------|------|
|                          | After  |                               | -1740 |      |      |      |
| 7                        | Before |                               | 1781  | 1781 | 2095 | 1549 |
|                          | After  |                               | 1781  |      |      |      |
|                          |        | (Minimum) (Nominal) (Maximum) |       |      |      |      |
| Before: 16-Mar-2012 5:06 |        |                               |       |      |      |      |
| After: 16-Mar-2012 9:52  |        |                               |       |      |      |      |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                               |        |         |         |         |
|--|--------|-------------------------------|--------|---------|---------|---------|
| HRLT V34   |        |                               |        |         |         |         |
| Idx  | Phase  | HRLT A3–A4 Voltage Plus UV    | Value  | Nominal | Maximum | Minimum |
| 0  | Before |                               | 68230  | 70000   | 82360   | 60900   |
|  | After  |                               | 68240  |         |         |         |
| 1  | Before |                               | 69990  | 70000   | 82360   | 60900   |
|  | After  |                               | 70010  |         |         |         |
| 2  | Before |                               | 70800  | 70000   | 82360   | 60900   |
|  | After  |                               | 70830  |         |         |         |
| 3  | Before |                               | 72350  | 70000   | 82360   | 60900   |
|  | After  |                               | 72380  |         |         |         |
| 4  | Before |                               | 70080  | 70000   | 82360   | 60900   |
|  | After  |                               | 70090  |         |         |         |
| 5  | Before |                               | 69460  | 70000   | 82360   | 60900   |
|  | After  |                               | 69460  |         |         |         |
| 6  | Before |                               | -67200 | -70000  | -60900  | -82360  |
|  | After  |                               | -67220 |         |         |         |
| 7  | Before |                               | 70000  | 70000   | 82360   | 60900   |
|  | After  |                               | 70000  |         |         |         |
|  |        | (Minimum) (Nominal) (Maximum) |        |         |         |         |
| Before: 16-Mar-2012 5:06                                 |        |                               |        |         |         |         |
| After: 16-Mar-2012 9:52                                  |        |                               |        |         |         |         |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                            |        |         |         |         |
|--|--------|----------------------------|--------|---------|---------|---------|
| HRLT V45   |        |                            |        |         |         |         |
| Idx  | Phase  | HRLT A4–A5 Voltage Plus UV | Value  | Nominal | Maximum | Minimum |
| 0  | Before |                            | 68510  | 70000   | 82360   | 60900   |
|  | After  |                            | 68520  |         |         |         |
| 1  | Before |                            | 70370  | 70000   | 82360   | 60900   |
|  | After  |                            | 70420  |         |         |         |
| 2  | Before |                            | 71140  | 70000   | 82360   | 60900   |
|  | After  |                            | 71170  |         |         |         |
| 3  | Before |                            | 72700  | 70000   | 82360   | 60900   |
|  | After  |                            | 72720  |         |         |         |
| 4  | Before |                            | 70380  | 70000   | 82360   | 60900   |
|  | After  |                            | 70390  |         |         |         |
| 5  | Before |                            | 69740  | 70000   | 82360   | 60900   |
|  | After  |                            | 69740  |         |         |         |
| 6  | Before |                            | -67550 | -70000  | -60900  | -82360  |
|  | After  |                            | -67600 |         |         |         |
| 7  | Before |                            | 70000  | 70000   | 82360   | 60900   |
|  | After  |                            | 70000  |         |         |         |

|                          |           |           |  |  |
|--------------------------|-----------|-----------|--|--|
| After                    | 70000     |           |  |  |
| (Minimum)                | (Nominal) | (Maximum) |  |  |
| Before: 16-Mar-2012 5:06 |           |           |  |  |
| After: 16-Mar-2012 9:52  |           |           |  |  |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                               |        |         |         |         |
|--|--------|-------------------------------|--------|---------|---------|---------|
| HRLT V56   |        |                               |        |         |         |         |
| Idx  | Phase  | HRLT A5–A6 Voltage Plus UV    | Value  | Nominal | Maximum | Minimum |
| 0  | Before |                               | 68420  | 70000   | 82360   | 60900   |
|  | After  |                               | 68420  |         |         |         |
| 1  | Before |                               | 70100  | 70000   | 82360   | 60900   |
|  | After  |                               | 70120  |         |         |         |
| 2  | Before |                               | 70920  | 70000   | 82360   | 60900   |
|  | After  |                               | 70950  |         |         |         |
| 3  | Before |                               | 72500  | 70000   | 82360   | 60900   |
|  | After  |                               | 72520  |         |         |         |
| 4  | Before |                               | 70240  | 70000   | 82360   | 60900   |
|  | After  |                               | 70250  |         |         |         |
| 5  | Before |                               | 69620  | 70000   | 82360   | 60900   |
|  | After  |                               | 69620  |         |         |         |
| 6  | Before |                               | -67290 | -70000  | -60900  | -82360  |
|  | After  |                               | -67320 |         |         |         |
| 7  | Before |                               | 70000  | 70000   | 82360   | 60900   |
|  | After  |                               | 70000  |         |         |         |
|  |        | (Minimum) (Nominal) (Maximum) |        |         |         |         |
| Before: 16-Mar-2012 5:06                                 |        |                               |        |         |         |         |
| After: 16-Mar-2012 9:52                                  |        |                               |        |         |         |         |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                 |        |         |         |         |
|--|--------|---------------------------------|--------|---------|---------|---------|
| HRLT VTP   |        |                                 |        |         |         |         |
| Idx  | Phase  | HRLT Torpedo–M0 Voltage Plus UV | Value  | Nominal | Maximum | Minimum |
| 0  | Before |                                 | -68090 | -70000  | -60900  | -82360  |
|  | After  |                                 | -68100 |         |         |         |
| 1  | Before |                                 | -70420 | -70000  | -60900  | -82360  |
|  | After  |                                 | -70440 |         |         |         |
| 2  | Before |                                 | -71200 | -70000  | -60900  | -82360  |
|  | After  |                                 | -71240 |         |         |         |
| 3  | Before |                                 | -72770 | -70000  | -60900  | -82360  |
|  | After  |                                 | -72790 |         |         |         |
| 4  | Before |                                 | -70430 | -70000  | -60900  | -82360  |
|  | After  |                                 | -70440 |         |         |         |
| 5  | Before |                                 | -69780 | -70000  | -60900  | -82360  |
|  | After  |                                 | -69770 |         |         |         |
| 6  | Before |                                 | 67550  | 70000   | 82360   | 60900   |
|  | After  |                                 | 67580  |         |         |         |
| 7  | Before |                                 | -70000 | -70000  | -60900  | -82360  |
|  | After  |                                 | -70000 |         |         |         |
|  |        | (Minimum) (Nominal) (Maximum)   |        |         |         |         |
| Before: 16-Mar-2012 5:06                                 |        |                                 |        |         |         |         |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                  |        |         |         |         |  |
|--|--------|----------------------------------|--------|---------|---------|---------|--|
| HRLT VBD   |        |                                  |        |         |         |         |  |
| Idx  | Phase  | HRLT Bridle#9-M0 Voltage Plus UV | Value  | Nominal | Maximum | Minimum |  |
| 0  | Before |                                  | -68080 | -70000  | -60900  | -82360  |  |
|  | After  |                                  | -68090 |         |         |         |  |
| 1  | Before |                                  | -70400 | -70000  | -60900  | -82360  |  |
|  | After  |                                  | -70430 |         |         |         |  |
| 2  | Before |                                  | -71180 | -70000  | -60900  | -82360  |  |
|  | After  |                                  | -71220 |         |         |         |  |
| 3  | Before |                                  | -72760 | -70000  | -60900  | -82360  |  |
|  | After  |                                  | -72780 |         |         |         |  |
| 4  | Before |                                  | -70420 | -70000  | -60900  | -82360  |  |
|  | After  |                                  | -70430 |         |         |         |  |
| 5  | Before |                                  | -69770 | -70000  | -60900  | -82360  |  |
|  | After  |                                  | -69770 |         |         |         |  |
| 6  | Before |                                  | 67540  | 70000   | 82360   | 60900   |  |
|  | After  |                                  | 67560  |         |         |         |  |
| 7  | Before |                                  | -70000 | -70000  | -60900  | -82360  |  |
|  | After  |                                  | -70000 |         |         |         |  |
|  |        | (Minimum) (Nominal) (Maximum)    |        |         |         |         |  |
| Before: 16-Mar-2012 5:06                                 |        |                                  |        |         |         |         |  |
| After: 16-Mar-2012 9:52                                  |        |                                  |        |         |         |         |  |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                               |       |         |         |         |  |
|--|--------|-------------------------------|-------|---------|---------|---------|--|
| HRLT ISO   |        |                               |       |         |         |         |  |
| Idx  | Phase  | HRLT Source Current Plus UA   | Value | Nominal | Maximum | Minimum |  |
| 0  | Before |                               | 283.9 | 284.0   | 334.1   | 247.0   |  |
|  | After  |                               | 284.0 |         |         |         |  |
| 1  | Before |                               | 281.1 | 281.1   | 330.7   | 244.4   |  |
|  | After  |                               | 281.1 |         |         |         |  |
| 2  | Before |                               | 281.1 | 281.1   | 330.7   | 244.4   |  |
|  | After  |                               | 281.1 |         |         |         |  |
| 3  | Before |                               | 281.1 | 281.1   | 330.7   | 244.4   |  |
|  | After  |                               | 281.1 |         |         |         |  |
| 4  | Before |                               | 281.1 | 281.1   | 330.7   | 244.4   |  |
|  | After  |                               | 281.1 |         |         |         |  |
| 5  | Before |                               | 281.1 | 281.1   | 330.7   | 244.4   |  |
|  | After  |                               | 281.1 |         |         |         |  |
| 6  | Before |                               | 281.1 | 281.1   | 330.7   | 244.4   |  |
|  | After  |                               | 281.1 |         |         |         |  |
| 7  | Before |                               | 281.1 | 281.1   | 330.7   | 244.4   |  |
|  | After  |                               | 281.1 |         |         |         |  |
|  |        | (Minimum) (Nominal) (Maximum) |       |         |         |         |  |
| Before: 16-Mar-2012 5:06                                 |        |                               |       |         |         |         |  |
| After: 16-Mar-2012 9:52                                  |        |                               |       |         |         |         |  |

High Resolution Laterolog Array - B Wellsite Calibration

|                          |        | HRLT MV                       |        |         |         |         |
|--------------------------|--------|-------------------------------|--------|---------|---------|---------|
| Idx                      | Phase  | HRLT Vertical Voltage Plus UV | Value  | Nominal | Maximum | Minimum |
| 0                        | Before |                               | -320.8 | -322.7  | -280.7  | -379.7  |
|                          | After  |                               | -320.6 |         |         |         |
| 1                        | Before |                               | -319.8 | -322.7  | -280.7  | -379.7  |
|                          | After  |                               | -319.7 |         |         |         |
| 2                        | Before |                               | -322.0 | -322.7  | -280.7  | -379.7  |
|                          | After  |                               | -322.0 |         |         |         |
| 3                        | Before |                               | -325.6 | -322.7  | -280.7  | -379.7  |
|                          | After  |                               | -325.4 |         |         |         |
| 4                        | Before |                               | -313.8 | -322.7  | -280.7  | -379.7  |
|                          | After  |                               | -313.5 |         |         |         |
| 5                        | Before |                               | -325.6 | -322.7  | -280.7  | -379.7  |
|                          | After  |                               | -325.3 |         |         |         |
| 6                        | Before |                               | 324.6  | 322.7   | 379.7   | 280.7   |
|                          | After  |                               | 324.5  |         |         |         |
| 7                        | Before |                               | -322.7 | -322.7  | -280.7  | -379.7  |
|                          | After  |                               | -322.7 |         |         |         |
|                          |        | (Minimum) (Nominal) (Maximum) |        |         |         |         |
| Before: 16-Mar-2012 5:06 |        |                               |        |         |         |         |
| After: 16-Mar-2012 9:52  |        |                               |        |         |         |         |

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:

|                                    |          |      |
|------------------------------------|----------|------|
| Hostile Litho Density Sonde        | HLDS - D | 57   |
| Hostile Litho Density High Voltage | GLDV - D | 51   |
| Gamma Source Radioactive           | GSR - Z  | 2397 |

Auxiliary Equipment:

|  |          |    |
|--|----------|----|
| Hostile Litho Density Pad                | HLDP - C | 61 |
| Hostile Litho Density High Voltage Housi | HEH - H  | 53 |

Hostile Litho-Density Sonde Wellsite Calibration

Background Measurement

| Phase   | SS Cs Resolution Bkg % | Value | Phase   | LS Cs Resolution Bkg % | Value | Phase   | LSW1 Background CPS | Value |
|---|------------------------|-------|---|------------------------|-------|---|---------------------|-------|
| Master  |                        | 8.563 | Master  |                        | 8.637 | Master  |                     | 71.69 |
| Before  |                        | 8.511 | Before  |                        | 8.632 | Before  |                     | 71.37 |
| After   |                        | 8.515 | After   |                        | 8.614 | After   |                     | 70.54 |
| 7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum) |                        |       | 7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum) |                        |       | 55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum) |                     |       |
| Phase   | LSW2 Background CPS    | Value | Phase   | LSW3 Background CPS    | Value | Phase   | LSW4 Background CPS | Value |
| Master  |                        | 65.72 | Master  |                        | 147.7 | Master  |                     | 178.3 |
| Before  |                        | 64.67 | Before  |                        | 146.0 | Before  |                     | 178.0 |
| After   |                        | 64.80 | After   |                        | 145.7 | After   |                     | 176.6 |
| 50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum) |                        |       | 110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum) |                        |       | 140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum) |                     |       |
| Phase   | LSW5 Background CPS    | Value | Phase   | SSW1 Background CPS    | Value | Phase   | SSW2 Background CPS | Value |
| Master  |                        | 402.3 | Master  |                        | 68.69 | Master  |                     | 121.6 |
| Before  |                        | 401.7 | Before  |                        | 69.17 | Before  |                     | 122.1 |
| After   |                        | 405.1 | After   |                        | 70.11 | After   |                     | 123.1 |
| 330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum) |                        |       | 55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum) |                        |       | 100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum) |                     |       |



| Phase  | SSW3 Background CPS                             | Value | Phase  | SSW4 Background CPS                             | Value | Phase  | SSW5 Background CPS                             | Value |
|--------|---|-------|--------|---|-------|--------|---|-------|
| Master |   | 321.9 | Master |   | 172.2 | Master |   | 123.5 |
| Before |   | 321.7 | Before |   | 173.0 | Before |   | 123.8 |
| After  |   | 320.2 | After  |   | 171.5 | After  |   | 125.1 |
|        | 280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum) |       |        | 150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum) |       |        | 110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum) |       |

Master: 28-Feb-2012 2:19      Before: 28-Feb-2012 2:36      After: 16-Mar-2012 9:55

| Hostile Litho-Density Sonde Master Calibration |   |       |        |   |       |        |   |       |
|--|---|-------|--------|---|-------|--------|---|-------|
| Detector Background Measurement                |   |       |        |   |       |        |   |       |
| Phase  | LSW1 Background CPS                             | Value | Phase  | LSW2 Background CPS                             | Value | Phase  | LSW3 Background CPS                             | Value |
| Master   |   | 71.69 | Master |   | 65.72 | Master |   | 147.7 |
|  | 55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum) |       |        | 50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum) |       |        | 110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum) |       |
| Phase  | LSW4 Background CPS                             | Value | Phase  | LSW5 Background CPS                             | Value | Phase  | LS Cs Resolution Bkg %                          | Value |
| Master   |   | 178.3 | Master |   | 402.3 | Master |   | 8.637 |
|  | 140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum) |       |        | 330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum) |       |        | 7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum) |       |
| Phase  | SSW1 Background CPS                             | Value | Phase  | SSW2 Background CPS                             | Value | Phase  | SSW3 Background CPS                             | Value |
| Master   |   | 68.69 | Master |   | 121.6 | Master |   | 321.9 |
|  | 55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum) |       |        | 100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum) |       |        | 280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum) |       |
| Phase  | SSW4 Background CPS                             | Value | Phase  | SSW5 Background CPS                             | Value | Phase  | SS Cs Resolution Bkg %                          | Value |
| Master   |   | 172.2 | Master |   | 123.5 | Master |   | 8.563 |
|  | 150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum) |       |        | 110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum) |       |        | 7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum) |       |

Master: 28-Feb-2012 2:19

| Hostile Litho-Density Sonde Master Calibration  |   |       |        |   |       |        |   |       |
|---|---|-------|--------|---|-------|--------|---|-------|
| Detector Aluminum Measurement (bkgd-subtracted) |   |       |        |   |       |        |   |       |
| Phase   | LSW1 Aluminum CPS                               | Value | Phase  | LSW2 Aluminum CPS                               | Value | Phase  | LSW3 Aluminum CPS                             | Value |
| Master  |   | 521.9 | Master |   | 758.2 | Master |   | 921.8 |
|   | 420.0 (Minimum) 600.0 (Nominal) 770.0 (Maximum) |       |        | 650.0 (Minimum) 900.0 (Nominal) 1150 (Maximum)  |       |        | 800.0 (Minimum) 1100 (Nominal) 1450 (Maximum) |       |
| Phase   | LSW4 Aluminum CPS                               | Value | Phase  | LSW5 Aluminum CPS                               | Value | Phase  | SSW1 Aluminum CPS                             | Value |
| Master  |   | 463.1 | Master |   | 428.2 | Master |   | 2229  |
|   | 410.0 (Minimum) 580.0 (Nominal) 740.0 (Maximum) |       |        | 410.0 (Minimum) 570.0 (Nominal) 740.0 (Maximum) |       |        | 2000 (Minimum) 2800 (Nominal) 3200 (Maximum)  |       |
| Phase   | SSW2 Aluminum CPS                               | Value | Phase  | SSW3 Aluminum CPS                               | Value | Phase  | SSW4 Aluminum CPS                             | Value |
| Master  |   | 6354  | Master |   | 9261  | Master |   | 3871  |
|   | 5800 (Minimum) 8000 (Nominal) 9300 (Maximum)    |       |        | 8300 (Minimum) 11600 (Nominal) 13500 (Maximum)  |       |        | 3500 (Minimum) 5000 (Nominal) 5800 (Maximum)  |       |
| Phase   | SSW5 Aluminum CPS                               | Value |        |   |       |        |   |       |
| Master  |   | 518.3 |        |   |       |        |   |       |
|   | 430.0 (Minimum) 660.0 (Nominal) 770.0 (Maximum) |       |        |   |       |        |   |       |

Master: 28-Feb-2012 2:19

| Hostile Litho-Density Sonde Master Calibration  |   |       |        |   |       |        |   |       |
|---|---|-------|--------|---|-------|--------|---|-------|
| Detector Litholog Measurement (bkgd-subtracted) |   |       |        |   |       |        |   |       |
| Phase   | LSW1 Iron CPS                                   | Value | Phase  | LSW2 Iron CPS                                   | Value | Phase  | LSW3 Iron CPS                                 | Value |
| Master  |   | 352.2 | Master |   | 613.7 | Master |   | 811.4 |
|   | 290.0 (Minimum) 400.0 (Nominal) 560.0 (Maximum) |       |        | 520.0 (Minimum) 730.0 (Nominal) 950.0 (Maximum) |       |        | 720.0 (Minimum) 1000 (Nominal) 1350 (Maximum) |       |
| Phase   | LSW4 Iron CPS                                   | Value | Phase  | LSW5 Iron CPS                                   | Value | Phase  | SSW1 Iron CPS                                 | Value |
| Master  |   | 425.3 | Master |   | 389.1 | Master |   | 1664  |
|   | 370.0 (Minimum) 520.0 (Nominal) 700.0 (Maximum) |       |        | 340.0 (Minimum) 470.0 (Nominal) 750.0 (Maximum) |       |        | 1500 (Minimum) 2100 (Nominal) 2400 (Maximum)  |       |
| Phase   | SSW2 Iron CPS                                   | Value | Phase  | SSW3 Iron CPS                                   | Value | Phase  | SSW4 Iron CPS                                 | Value |
| Master  |   | 5327  | Master |   | 8450  | Master |   | 3532  |
|   | 4900 (Minimum) 6800 (Nominal) 7900 (Maximum)    |       |        | 7800 (Minimum) 10800 (Nominal) 12600 (Maximum)  |       |        | 3300 (Minimum) 4600 (Nominal) 5400 (Maximum)  |       |
| Phase   | SSW5 Iron CPS                                   | Value |        |   |       |        |   |       |
| Master  |   | 458.1 |        |   |       |        |   |       |

|                    |                    |                    |
|--------------------|--------------------|--------------------|
| 420.0<br>(Minimum) | 580.0<br>(Nominal) | 680.0<br>(Maximum) |
|--------------------|--------------------|--------------------|

Master: 28-Feb-2012 2:19

| Hostile Litho-Density Sonde Master Calibration |                        |                     |                     |        |                        |                     |                     |        |                        |                     |                     |
|--|------------------------|---------------------|---------------------|--------|------------------------|---------------------|---------------------|--------|------------------------|---------------------|---------------------|
| Quality Ratios                                 |                        |                     |                     |        |                        |                     |                     |        |                        |                     |                     |
| Phase  | AL CALIBRATION RATIO 1 |                     | Value               | Phase  | AL CALIBRATION RATIO 2 |                     | Value               | Phase  | AL CALIBRATION RATIO 3 |                     | Value               |
| Master   |                        |                     | 1.034               | Master |                        |                     | 2.110               | Master |                        |                     | 0.5856              |
|  | 0.9000<br>(Minimum)    | 1.000<br>(Nominal)  | 1.100<br>(Maximum)  |        | 1.900<br>(Minimum)     | 2.100<br>(Nominal)  | 2.300<br>(Maximum)  |        | 0.4500<br>(Minimum)    | 0.5500<br>(Nominal) | 0.6500<br>(Maximum) |
| Phase  | AL CALIBRATION RATIO 4 |                     | Value               | Phase  | Pad-Wear SS Ratio      |                     | Value               | Phase  | Pad-Wear LS Ratio      |                     | Value               |
| Master   |                        |                     | 0.5078              | Master |                        |                     | 0.9947              | Master |                        |                     | 0.9873              |
|  | 0.4000<br>(Minimum)    | 0.5500<br>(Nominal) | 0.6500<br>(Maximum) |        | 0.9800<br>(Minimum)    | 0.9880<br>(Nominal) | 0.9960<br>(Maximum) |        | 0.9800<br>(Minimum)    | 0.9880<br>(Nominal) | 0.9960<br>(Maximum) |
| Phase  | Pad-Position SS Ratio  |                     | Value               | Phase  | Pad-Position LS Ratio  |                     | Value               |        |                        |                     |                     |
| Master   |                        |                     | 1.002               | Master |                        |                     | 0.9860              |        |                        |                     |                     |
|  | 0.9900<br>(Minimum)    | 0.9940<br>(Nominal) | 1.015<br>(Maximum)  |        | 0.9850<br>(Minimum)    | 0.9940<br>(Nominal) | 1.010<br>(Maximum)  |        |                        |                     |                     |

Master: 28-Feb-2012 2:19

| Litho-Density Spectroscopy Cartridge - B / Equipment Identification |          |     |
|---|----------|-----|
| Primary Equipment:<br>LDSC Cartridge                                | LDSC - B | 366 |
| Auxiliary Equipment:<br>LDSC Housing                                | LDSH - A | 126 |

| Hostile Natural Gamma Ray Cartridge - B / Equipment Identification |          |     |
|--|----------|-----|
| Primary Equipment:<br>HNGC Cartridge                               | HNGC - B | 300 |
| Auxiliary Equipment:<br>HNGC Housing                               | HNGH - A | 115 |

| Hostile Natural Gamma Ray Sonde / Equipment Identification             |                      |               |
|--|----------------------|---------------|
| Primary Equipment:<br>HNGS Sonde                                       | HNGS - BA            | 194           |
| Auxiliary Equipment:<br>HNGS Sonde Housing<br>Gamma Source Radioactive | HNSH - BA<br>GSR - U | 205<br>616008 |

| Hostile Natural Gamma Ray Sonde Wellsite Calibration |                    |                    |                    |        |                    |                    |                    |        |                     |                    |                    |
|--|--------------------|--------------------|--------------------|--------|--------------------|--------------------|--------------------|--------|---------------------|--------------------|--------------------|
| Detector 1 Check                                     |                    |                    |                    |        |                    |                    |                    |        |                     |                    |                    |
| Phase  | Na 511 Peak Loc    |                    | Value              | Phase  | Na 511 Peak Res %  |                    | Value              | Phase  | High Voltage V      |                    | Value              |
| Master   |                    |                    | 39.64              | Master |                    |                    | 14.75              | Master |                     |                    | 1169               |
| Before   |                    |                    | 39.54              | Before |                    |                    | 15.72              | Before |                     |                    | 1182               |
| After  |                    |                    | 39.62              | After  |                    |                    | 16.19              | After  |                     |                    | 1177               |
|  | 37.50<br>(Minimum) | 40.00<br>(Nominal) | 43.50<br>(Maximum) |        | 12.00<br>(Minimum) | 15.50<br>(Nominal) | 19.00<br>(Maximum) |        | 900.0<br>(Minimum)  | 1150<br>(Nominal)  | 1600<br>(Maximum)  |
| Phase  | Na 1785 Peak Loc   |                    | Value              | Phase  | Na 1785 Peak Res % |                    | Value              | Phase  | Temperature DEGC    |                    | Value              |
| Master   |                    |                    | 141.6              | Master |                    |                    | 8.869              | Master |                     |                    | 26.03              |
| Before   |                    |                    | 141.5              | Before |                    |                    | 8.671              | Before |                     |                    | 31.35              |
| After  |                    |                    | 141.9              | After  |                    |                    | 9.301              | After  |                     |                    | 29.11              |
|  | 135.0<br>(Minimum) | 142.6<br>(Nominal) | 150.3<br>(Maximum) |        | 7.000<br>(Minimum) | 8.500<br>(Nominal) | 11.00<br>(Maximum) |        | -28.89<br>(Minimum) | 15.50<br>(Nominal) | 60.00<br>(Maximum) |
| Phase  | Na Count Rate CPS  |                    | Value              |        |                    |                    |                    |        |                     |                    |                    |
| Master   |                    |                    | 10.24              |        |                    |                    |                    |        |                     |                    |                    |

|  |   |       |
|--|---|-------|
| Master   |   | 19.34 |
| Before   |   | 19.64 |
| After  |   | 19.01 |
|  | 10.00 (Minimum)      45.00 (Nominal)      100.0 (Maximum) |       |
| Master: 26-Feb-2012 20:15      Before: 6-Mar-2012 18:49      After: 16-Mar-2012 9:56 |   |       |

| Hostile Natural Gamma Ray Sonde Wellsite Calibration                                 |   |       |        |   |       |        |  |       |
|--|---|-------|--------|---|-------|--------|--|-------|
| Detector 2 Check   |   |       |        |   |       |        |  |       |
| Phase  | Na 511 Peak Loc   | Value | Phase  | Na 511 Peak Res %   | Value | Phase  | High Voltage V   | Value |
| Master   |   | 39.65 | Master |   | 16.96 | Master |  | 1100  |
| Before   |   | 39.61 | Before |   | 15.84 | Before |  | 1109  |
| After  |   | 39.70 | After  |   | 15.58 | After  |  | 1109  |
|  | 37.50 (Minimum)      40.00 (Nominal)      43.50 (Maximum) |       |        | 12.00 (Minimum)      15.50 (Nominal)      19.00 (Maximum) |       |        | 900.0 (Minimum)      1150 (Nominal)      1600 (Maximum)    |       |
| Phase  | Na 1785 Peak Loc  | Value | Phase  | Na 1785 Peak Res %  | Value | Phase  | Temperature DEGC   | Value |
| Master   |   | 142.2 | Master |   | 7.801 | Master |  | 26.16 |
| Before   |   | 141.4 | Before |   | 8.832 | Before |  | 31.73 |
| After  |   | 141.9 | After  |   | 8.220 | After  |  | 30.66 |
|  | 135.0 (Minimum)      142.6 (Nominal)      150.3 (Maximum) |       |        | 7.000 (Minimum)      8.500 (Nominal)      11.00 (Maximum) |       |        | -28.89 (Minimum)      15.50 (Nominal)      60.00 (Maximum) |       |
| Phase  | Na Count Rate CPS   | Value |        |   |       |        |  |       |
| Master   |   | 19.53 |        |   |       |        |  |       |
| Before   |   | 20.28 |        |   |       |        |  |       |
| After  |   | 19.14 |        |   |       |        |  |       |
|  | 10.00 (Minimum)      45.00 (Nominal)      100.0 (Maximum) |       |        |   |       |        |  |       |
| Master: 26-Feb-2012 20:15      Before: 6-Mar-2012 18:49      After: 16-Mar-2012 9:56 |   |       |        |   |       |        |  |       |

| Hostile Natural Gamma Ray Sonde Wellsite Calibration |  |        |
|--|--|--------|
| Ratio Of Detector 1 To Detector 2                    |  |        |
| Phase  | Coincidence Count Rate Ratio                               | Value  |
| Master   |  | 0.9899 |
| Before   |  | 0.9701 |
| After  |  | 0.9937 |
|  | 0.9500 (Minimum)      1.000 (Nominal)      1.050 (Maximum) |        |
| Master: 26-Feb-2012 20:15                            |  |        |
| Before: 6-Mar-2012 18:49                             |  |        |
| After: 16-Mar-2012 9:56                              |  |        |

| Hostile Natural Gamma Ray Sonde Master Calibration |   |       |        |  |       |        |   |       |
|--|---|-------|--------|--|-------|--------|---|-------|
| Detector 1 Calibration                             |   |       |        |  |       |        |   |       |
| Phase  | Na 511 Peak Set Point                                     | Value | Phase  | Th Peak Loc  | Value | Phase  | Th Peak Res %   | Value |
| Master   |   | 41.00 | Master |  | 210.0 | Master |   | 6.521 |
|  | 38.00 (Minimum)      40.00 (Nominal)      43.00 (Maximum) |       |        | 201.0 (Minimum)      209.6 (Nominal)      218.3 (Maximum)  |       |        | 5.000 (Minimum)      7.000 (Nominal)      9.000 (Maximum) |       |
| Phase  | Background Count Rate CPS                                 | Value | Phase  | Gain Ratio   | Value |        |   |       |
| Master   |   | 18.97 | Master |  | 1.008 |        |   |       |
|  | 10.00 (Minimum)      142.5 (Nominal)      265.0 (Maximum) |       |        | 0.9400 (Minimum)      1.000 (Nominal)      1.060 (Maximum) |       |        |   |       |
| Master: 26-Feb-2012 20:03                          |   |       |        |  |       |        |   |       |


| Hostile Natural Gamma Ray Sonde Master Calibration |   |       |        |   |        |        |   |       |
|--|---|-------|--------|---|--------|--------|---|-------|
| Detector 2 Calibration                             |   |       |        |   |        |        |   |       |
| Phase  | Na 511 Peak Set Point                                     | Value | Phase  | Th Peak Loc   | Value  | Phase  | Th Peak Res %   | Value |
| Master   |   | 41.00 | Master |   | 207.8  | Master |   | 6.775 |
|  | 38.00 (Minimum)      40.00 (Nominal)      43.00 (Maximum) |       |        | 201.0 (Minimum)      209.6 (Nominal)      218.3 (Maximum) |        |        | 5.000 (Minimum)      7.000 (Nominal)      9.000 (Maximum) |       |
| Phase  | Background Count Rate CPS                                 | Value | Phase  | Gain Ratio  | Value  |        |   |       |
| Master   |   | 18.84 | Master |   | 0.9969 |        |   |       |




|                    |                    |                    |                     |                    |                    |
|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|
| 10.00<br>(Minimum) | 142.5<br>(Nominal) | 265.0<br>(Maximum) | 0.9400<br>(Minimum) | 1.000<br>(Nominal) | 1.060<br>(Maximum) |
|--------------------|--------------------|--------------------|---------------------|--------------------|--------------------|

Master: 26-Feb-2012 20:03

Enhanced DTS Cartridge / Equipment Identification

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

|   |   |       |
|---|---|-------|
| Enhanced DTS Cartridge Wellsite Calibration |   |       |
| EDTC Accelerometer Calibration              |   |       |
| Phase                                       | EDTC Z-Axis Acceleration M/S2   | Value |
| Before                                      |  | 9.747 |
|   | 9.610 (Minimum)      9.810 (Nominal)      10.01 (Maximum)                         |       |
| Before: 16-Mar-2012 5:05                    |   |       |

|   |   |       |        |   |       |        |   |       |  |
|---|---|-------|--------|---|-------|--------|---|-------|--|
| Enhanced DTS Cartridge Wellsite Calibration |   |       |        |   |       |        |   |       |  |
| Detector Calibration                        |   |       |        |   |       |        |   |       |  |
| Phase                                       | Gamma Ray Background GAPI   | Value | Phase  | Gamma Ray (Jig - Bkg) GAPI  | Value | Phase  | Gamma Ray (Calibrated) GAPI   | Value |  |
| Before                                      |  | 7.622 | Before |  | 159.9 | Before |  | 164.0 |  |
|   | 0 (Minimum)      30.00 (Nominal)      120.0 (Maximum)                             |       |        | 145.3 (Minimum)      159.9 (Nominal)      174.4 (Maximum)                         |       |        | 149.0 (Minimum)      164.0 (Nominal)      179.0 (Maximum)                           |       |  |
| Before: 4-Mar-2012 17:35                    |   |       |        |   |       |        |   |       |  |

Company: **Lamont Doherty Earth Observatory**



Well: **Expedition 340, Site U1395B**

Field: **Lesser Antilles Volcanism and Landslides**

Rig: **JOIDES Resolution**

Ocean: **Caribbean**

High Resolution Laterolog Array (HRLA)  
 Hostile Litho Density (HLDS)  
 Hostile Natural Gamma Sonde (HNGS)