

|          |                                  |          |     |
|----------|----------------------------------|----------|-----|
| Company: | Lamont Doherty Earth Observatory |          |     |
| Well:    | Shell                            |          |     |
| Field:   | Expedition 344S, U0080A (USC80)  |          |     |
| Rig:     | Baffin Bay                       |          |     |
|          | JOIDES Resolution                | Country: | USA |

[illegible]

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

Run 4

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

OS1: MSS, HRLA, APS  
OS2: HLDS, DSI, FMS  
OS3: VSI

Site U0080, client designation USC 080, was cored for exploration using the RCB system.

\*\*\*This site is subcontracted to Shell from LDEO, not a standard USIO/IODP site!\*\*\*

Eccentralized tools run using inline bowspring type eccentralizers, as per tool sketch.

Centralized tools run using modified MCD chassis as inline centralizer, as per tool sketch.

Eccentered / Centered tools decoupled using knuckle joints with a through-wired spacer.

HLDS Caliper used for applicable hole size corrections.

Tools conveyed to hole on wireline through drill pipe, as is standard for this riser-less operation.

Logs recorded from Drill Floor, but played back with zero reference at sea bed for compatibility with core data

Original sea bed, as measured from drill floor, was 231.5m uncorrected measured depth below drill floor.

Heave compensation was not required due to exceptionally calm sea state and favorable weather during logging.

TD was not tagged in order to avoid potential sticking risk associated with dropped RCB bit.

Caliper closed 10m prior to entering drill pipe: pipe set at 265mbrf (31mbsf) for logging

APS Minitron switched off at 34.8m. prior to entering pipe to avoid GB contamination.

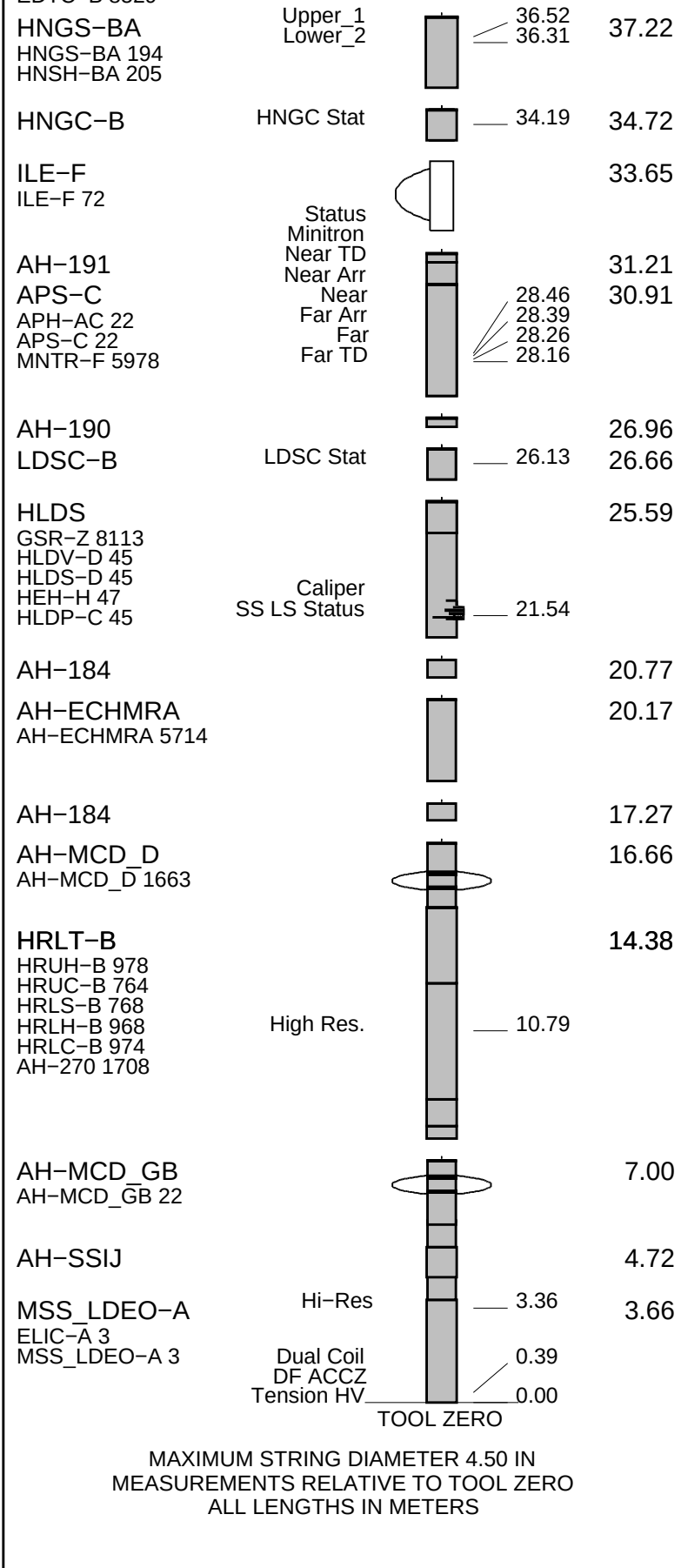
---

STOP

RUN 2

SFT-281 1  
SFT-178 1  
GSR-U 616008  
WITM (EDTS)-A

|             |           |                                                                                     |       |
|-------------|-----------|-------------------------------------------------------------------------------------|-------|
| LEH-MT      | MDSB_EDTC |  | 40.59 |
|             | Mud Tempe |                                                                                     | 39.20 |
| AH-369      | CTEM      |  | 38.13 |
|             | Gamma Ray |                                                                                     | 37.56 |
| EDTC-B      | EFTB DIAG |  | 39.20 |
| EDTH-B 8528 | TelStatus |                                                                                     |       |
| EDTC-B 8520 | EDTCB Ele |  | 37.22 |



| Production String | (in) | (m) | Well Schematic | (m) | (in) | Casing String |
|-------------------|------|-----|----------------|-----|------|---------------|
|                   |      |     |                |     |      |               |

|                             | CD | ID | MD     |  | MD    | CD    | ID |              |
|-----------------------------|----|----|--------|--|-------|-------|----|--------------|
| Kelly Bushing Elevation     |    |    | -234.0 |  |       |       |    |              |
| Derrick Floor Elevation     |    |    | -234.0 |  |       |       |    |              |
| Mean Sea Level              |    |    | -223.0 |  |       |       |    |              |
| Seismic Gun depth below MSL |    |    | 7.0    |  |       |       |    |              |
|                             |    |    |        |  | 0.0   |       |    | Sea Bed      |
|                             |    |    |        |  | 31.0  |       |    | Pipe         |
|                             |    |    |        |  | 358.5 | 9.875 |    | TD - Driller |



Main Log

MAXIS Field Log

Company: Lamont Doherty Earth Observatory

Well: Expedition 344S, U0080A (USC80)

Input DLIS Files

|         |                          |       |          |                   |         |         |
|---------|--------------------------|-------|----------|-------------------|---------|---------|
| DEFAULT | MSS_LDEO_HRLA_LDL_019LUP | FN:22 | PRODUCER | 21-Aug-2012 19:43 | 585.2 M | 224.2 M |
|---------|--------------------------|-------|----------|-------------------|---------|---------|

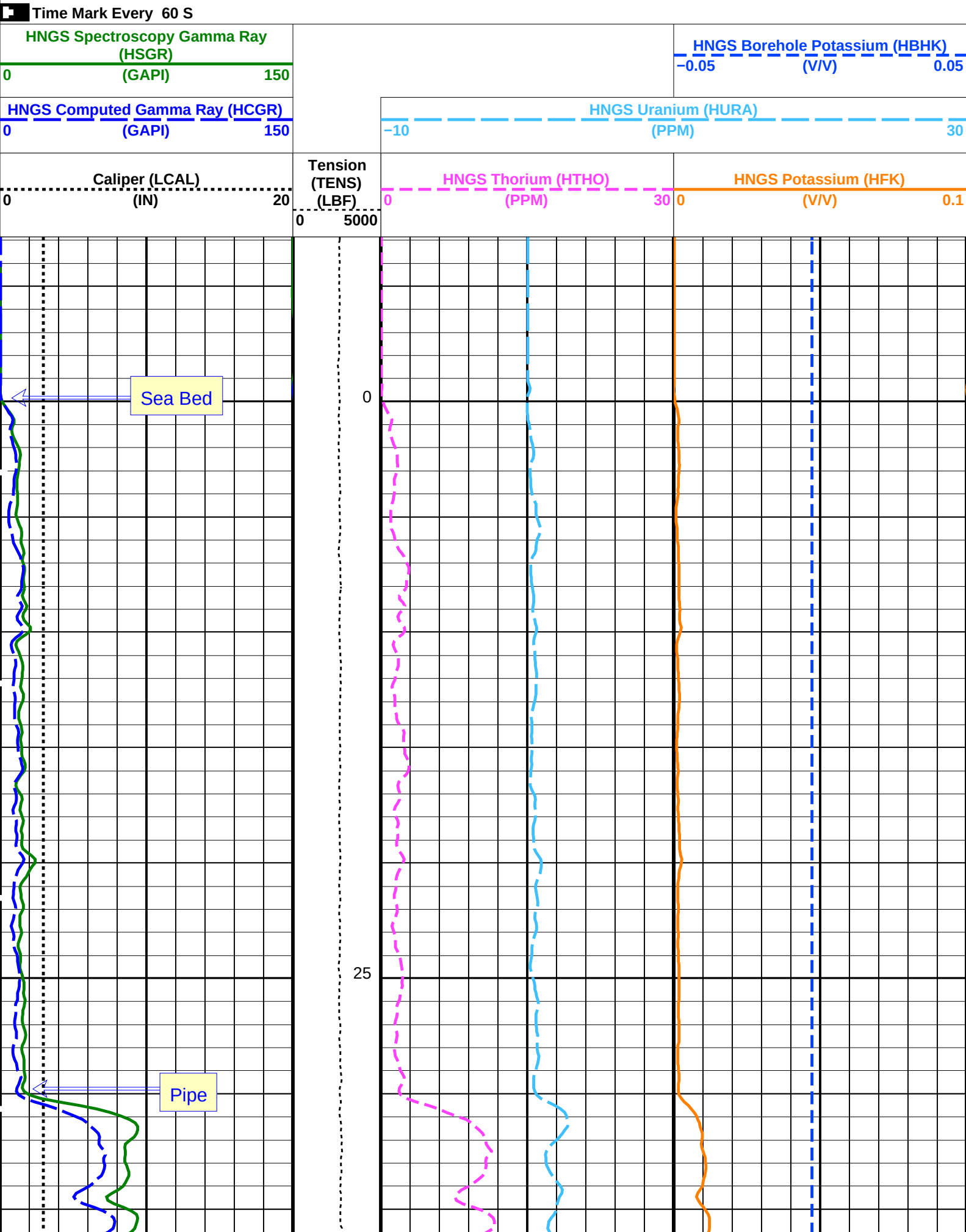
Output DLIS Files

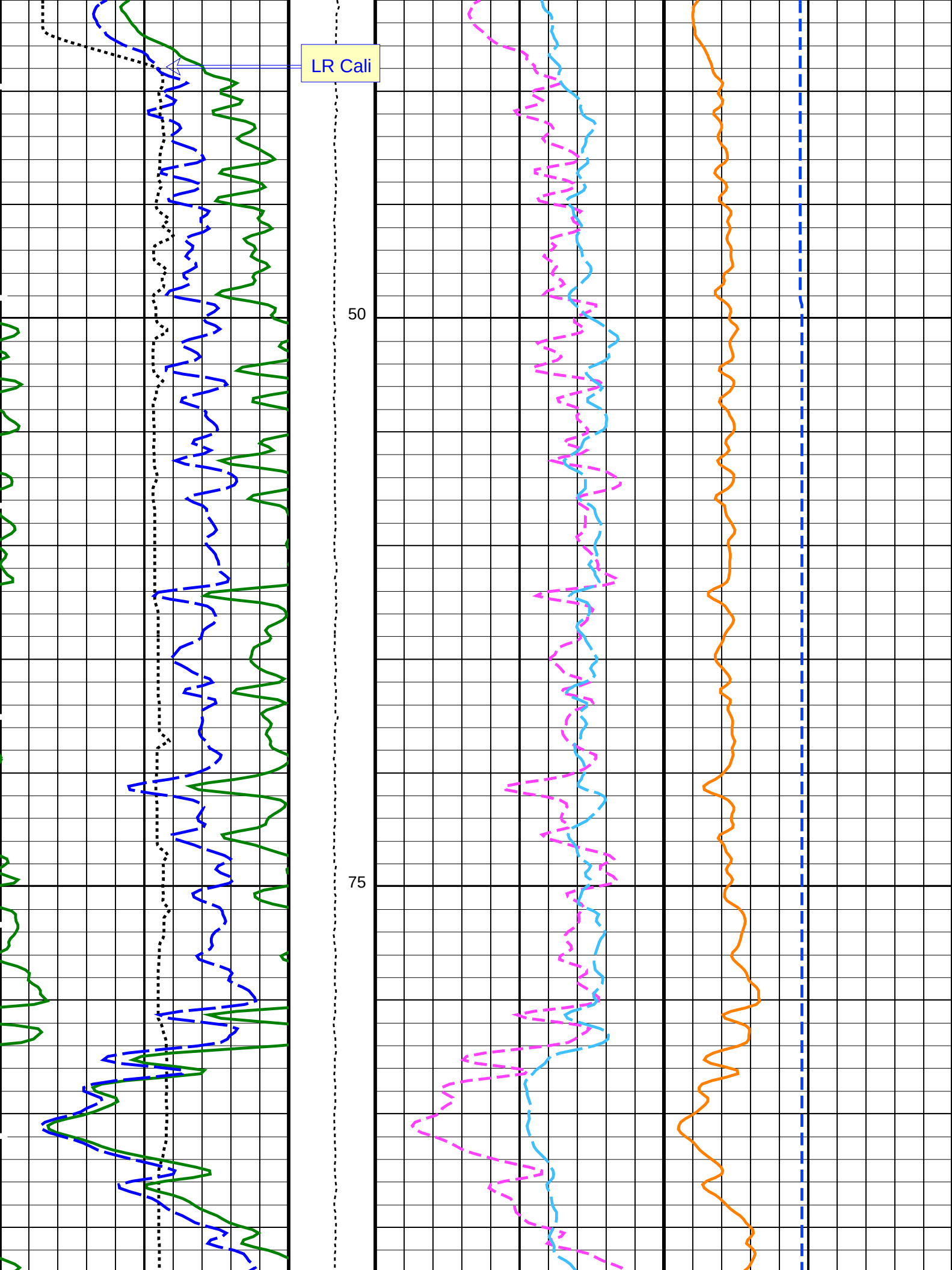
|         |                          |       |          |                   |         |        |
|---------|--------------------------|-------|----------|-------------------|---------|--------|
| DEFAULT | MSS_LDEO_HRLA_LDL_039PUP | FN:46 | PRODUCER | 24-Aug-2012 18:52 | 353.6 M | -7.2 M |
| CLIENT  | MSS_LDEO_HRLA_LDL_039PUC | FN:47 | CUSTOMER | 24-Aug-2012 18:52 | 353.6 M | -7.2 M |

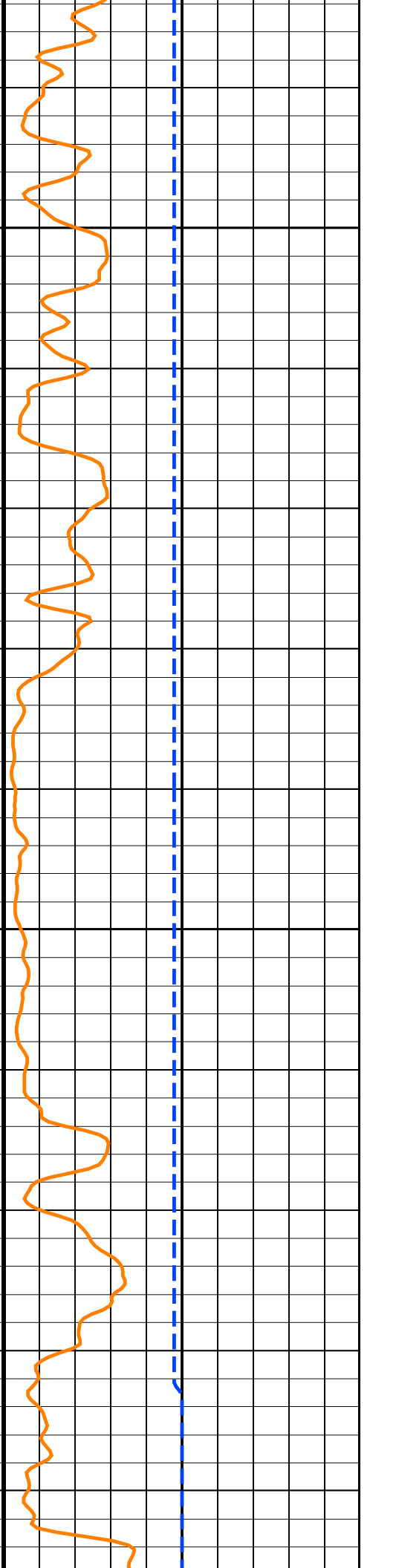
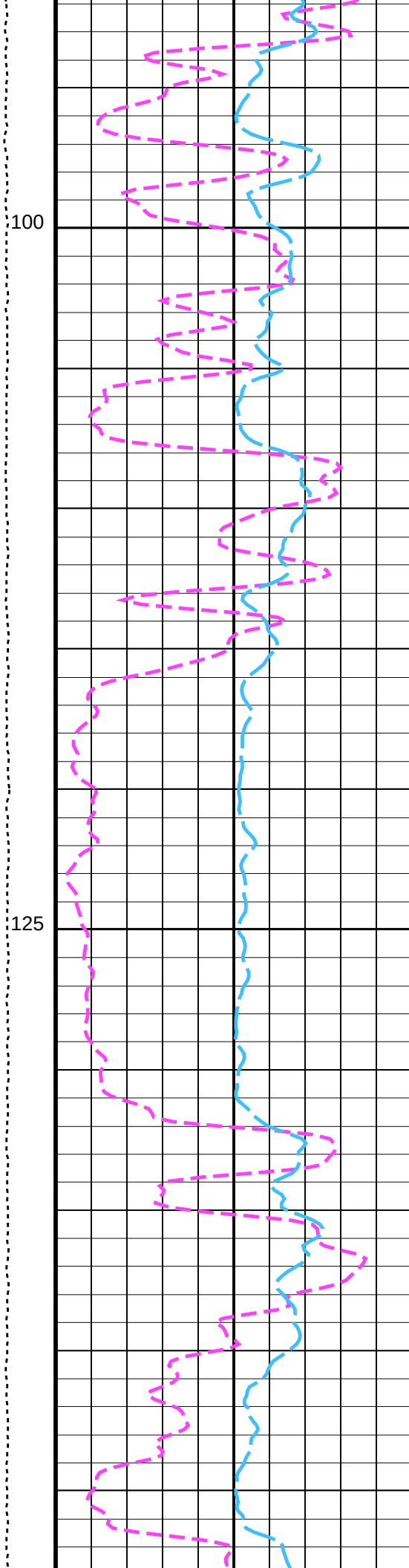
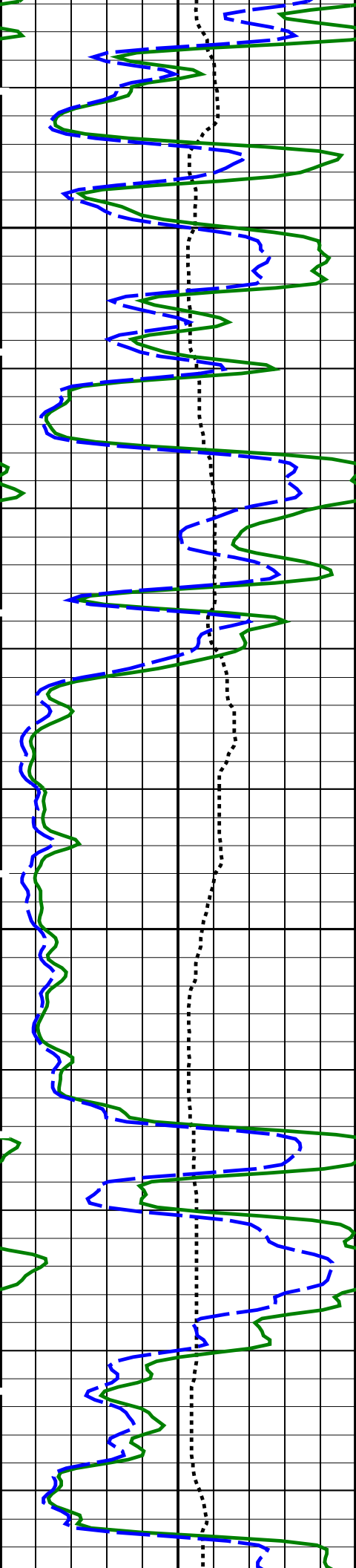
OP System Version: 19C0-187

|            |          |        |          |
|------------|----------|--------|----------|
| MSS_LDEO-A | 19C0-187 | HRLT-B | 19C0-187 |
| HLDS       | 19C0-187 | LDSC-B | 19C0-187 |
| APS-C      | 19C0-187 | HNGC-B | 19C0-187 |

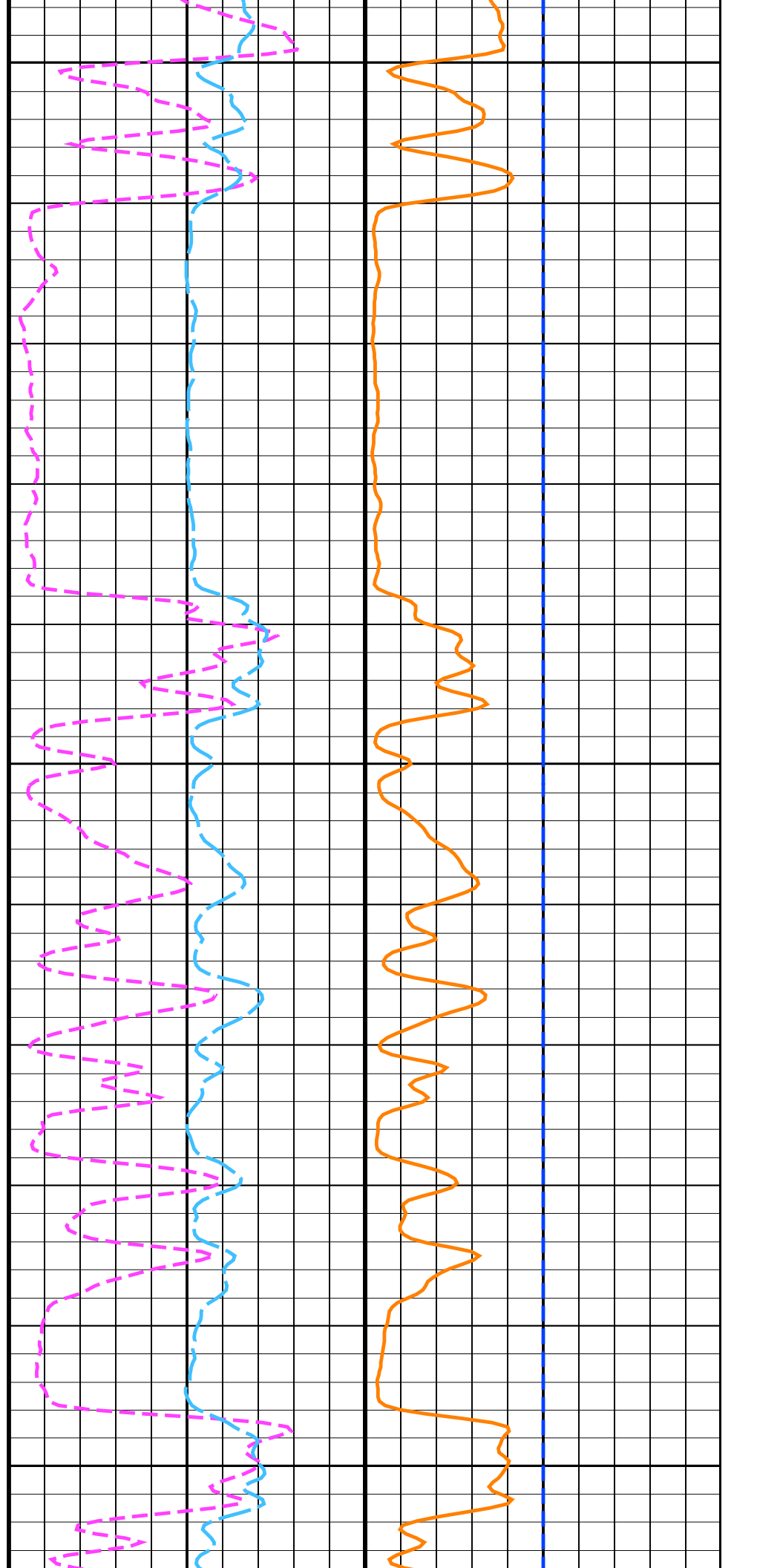
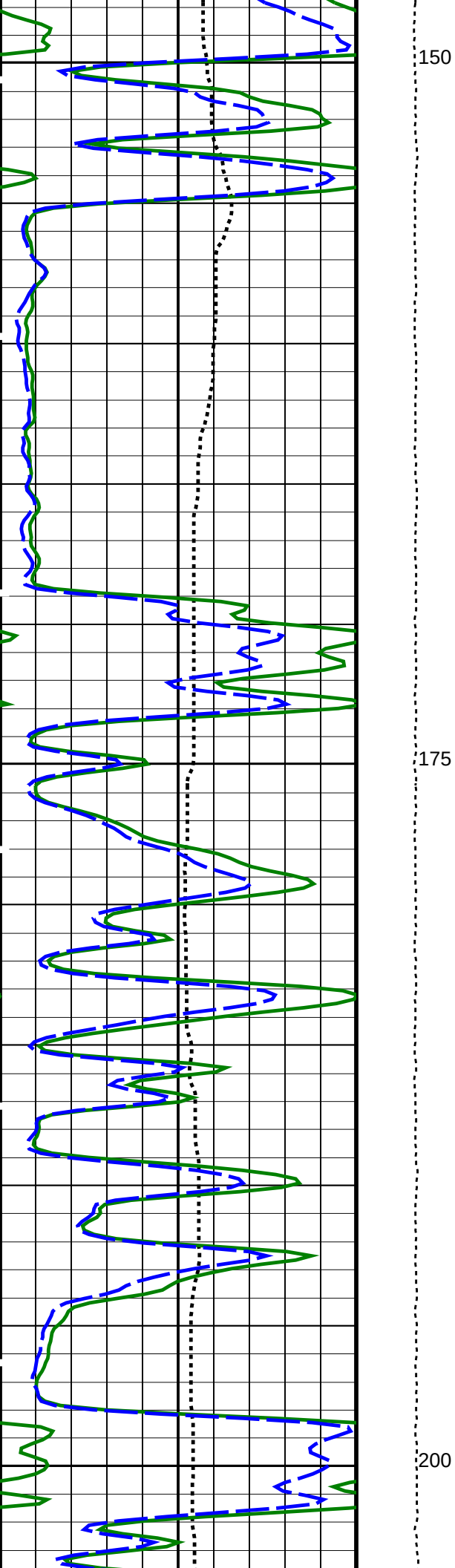
PIP SUMMARY

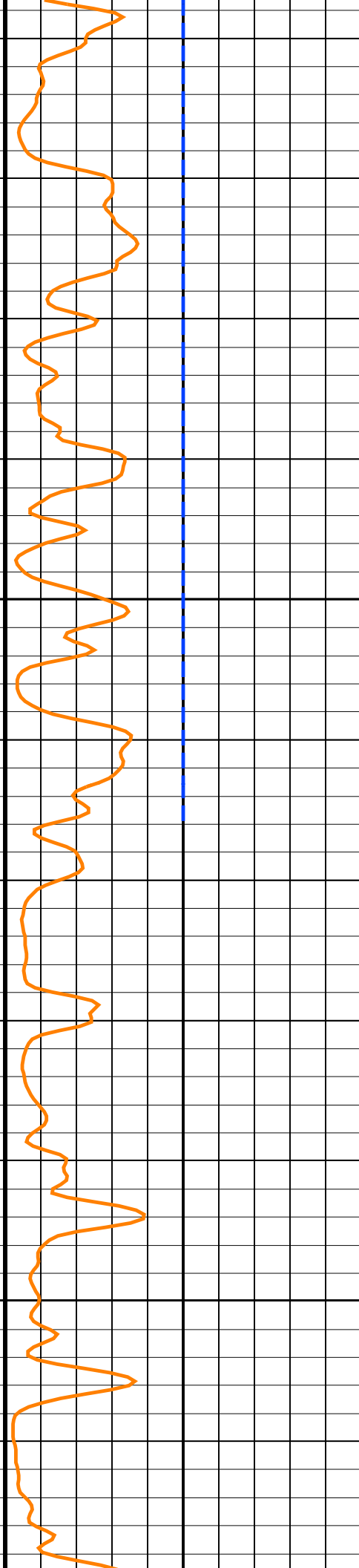
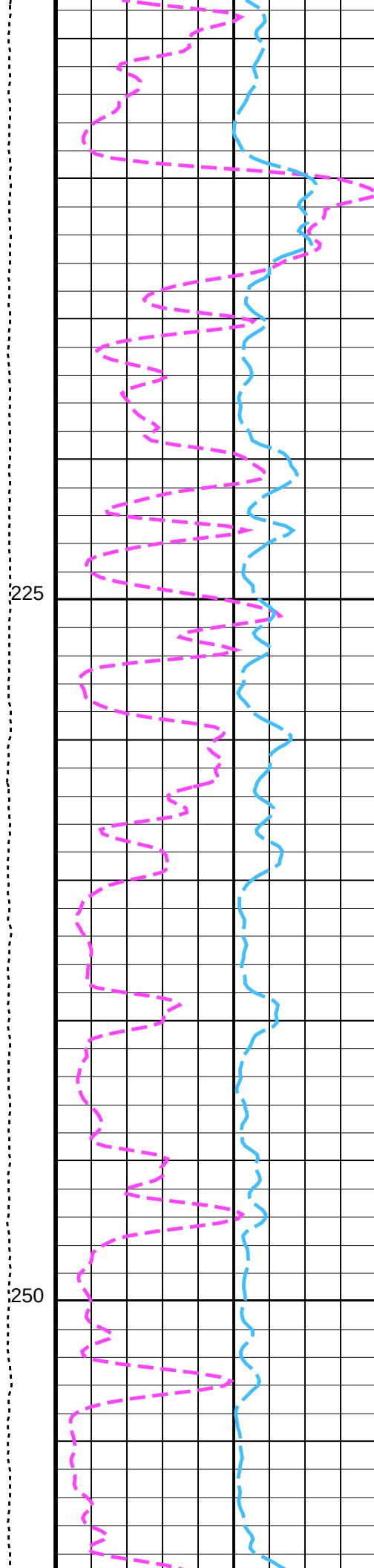
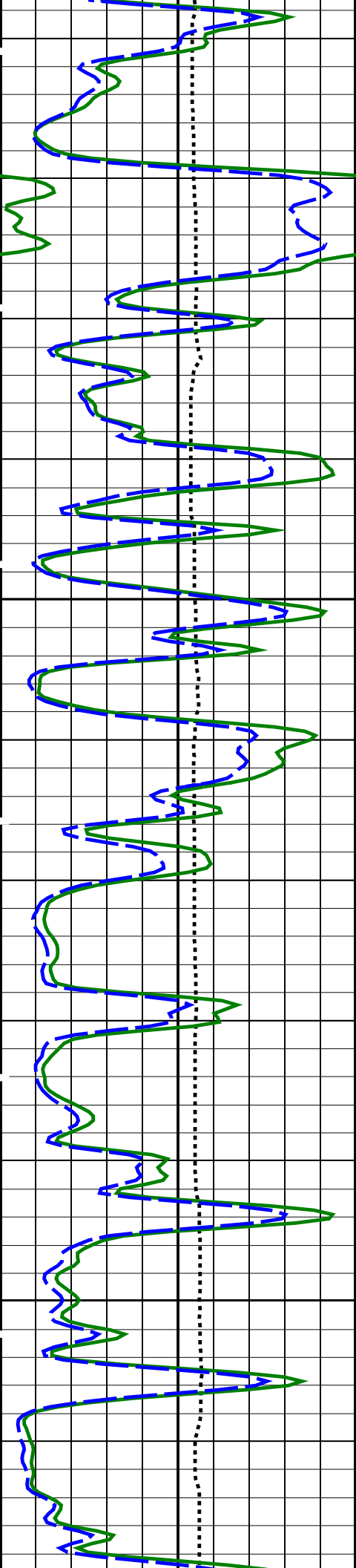


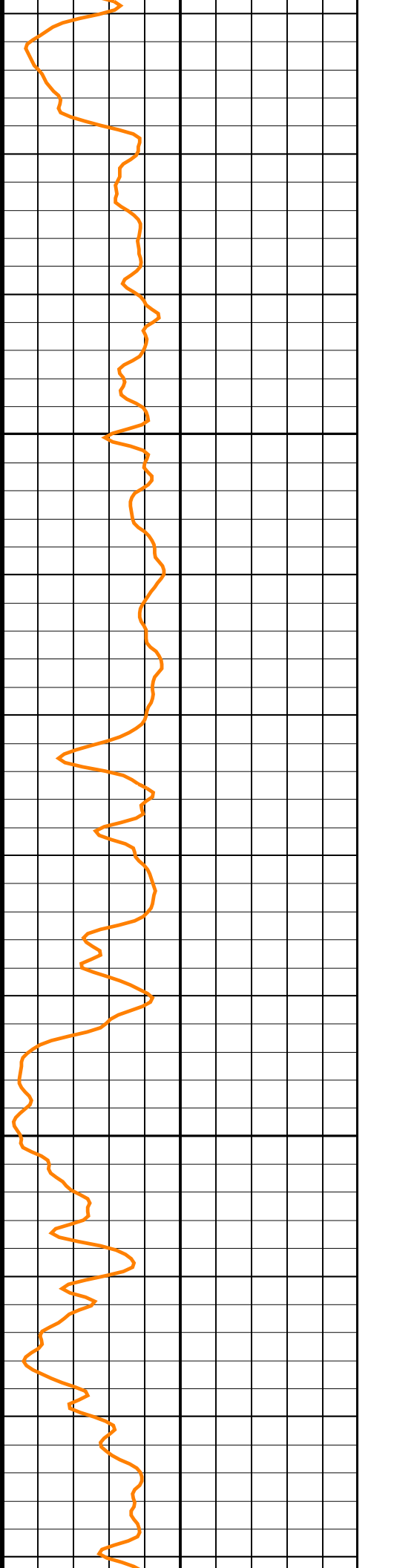
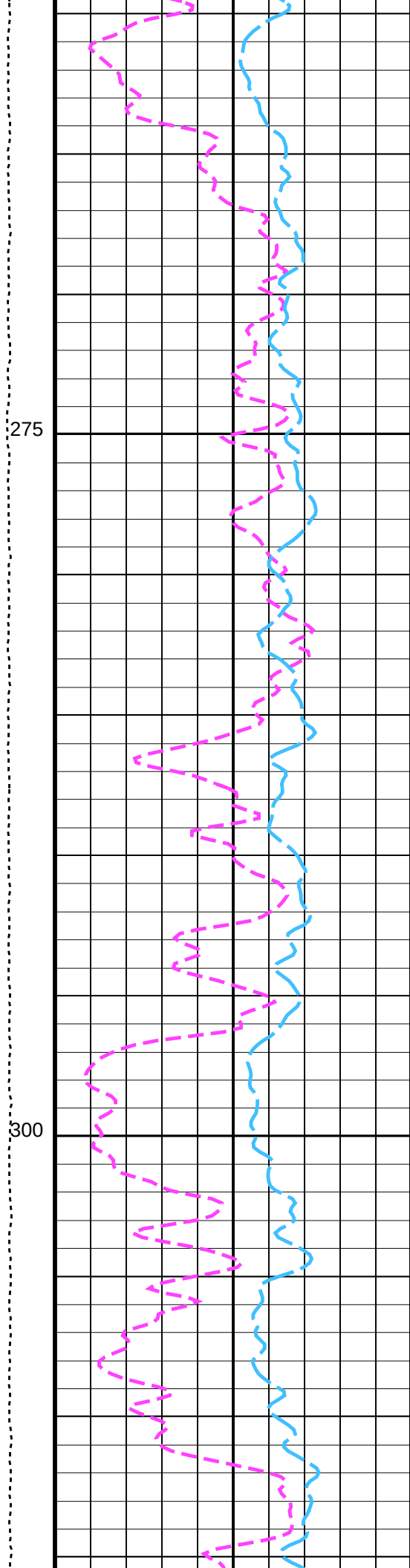
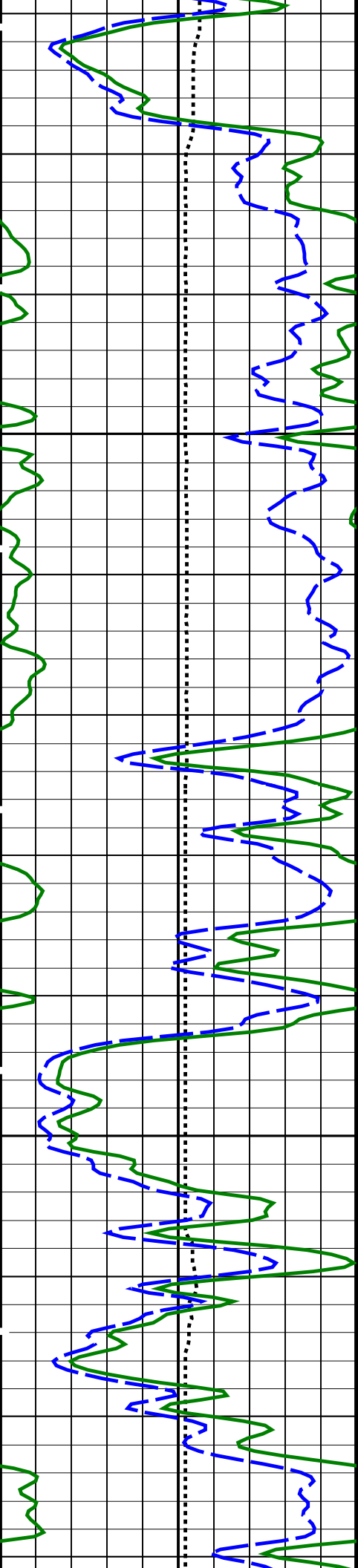


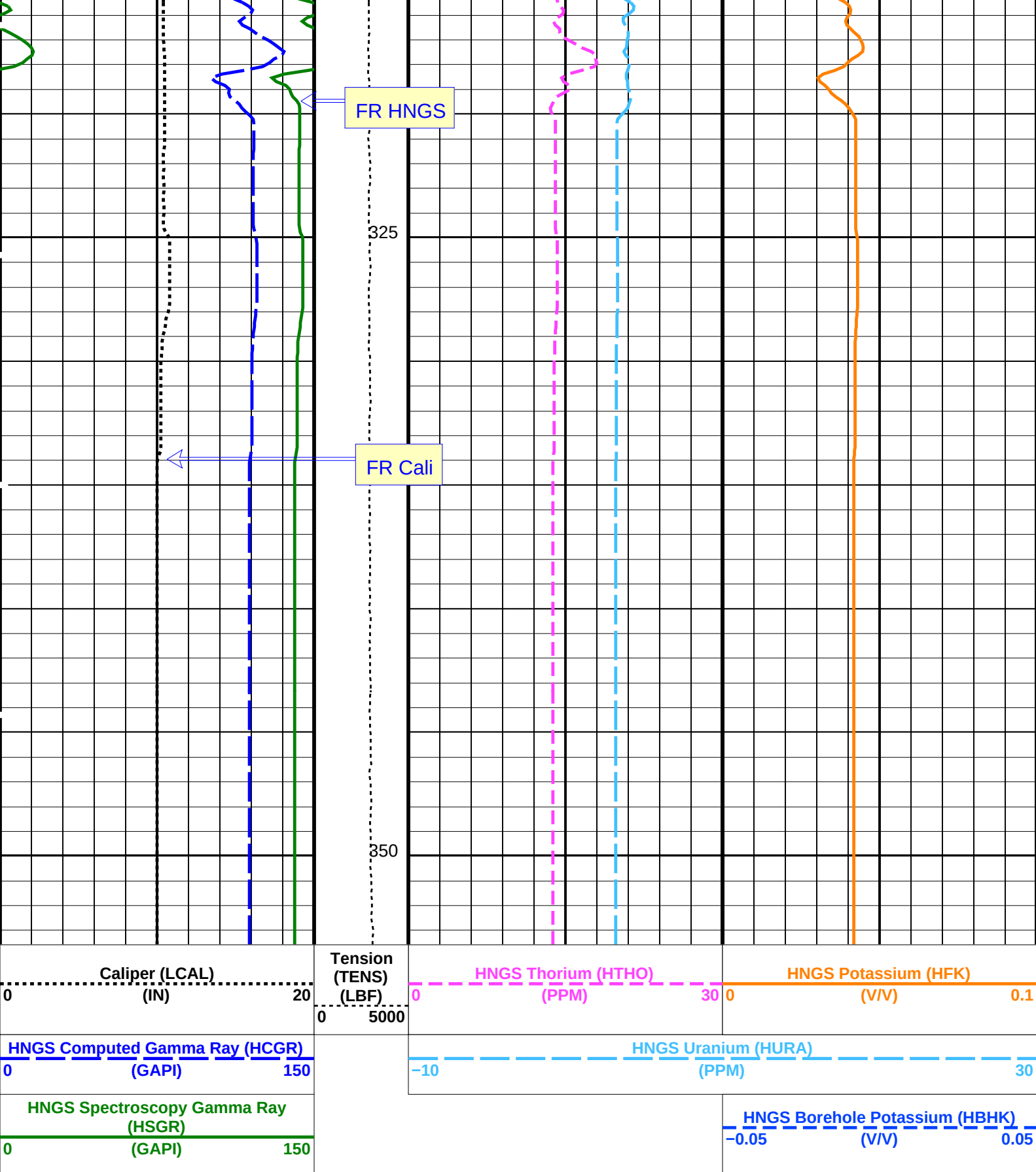












Time Mark Every 60 S

| Parameters |                                             |       |
|------------|---------------------------------------------|-------|
| DLIS Name  | Description                                 | Value |
| BHS        | HRLT-B: High Resolution Laterolog Array - B | OPEN  |
| GCSE       | Borehole Status                             | LCAL  |
|            | Generalized Caliper Selection               |       |
| APS-C      | APS-C: Accelerator-Porosity Tool            |       |

|                                          |                                                        |             |      |
|------------------------------------------|--------------------------------------------------------|-------------|------|
| BHS                                      | Borehole Status                                        | OPEN        |      |
| GCSE                                     | Generalized Caliper Selection                          | LCAL        |      |
| 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        |      |
| 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                          | LCAL        |      |
| H1P                                      | HNGS Detector 1 Allow/Disallow In Processing           | ALLOW       |      |
| H2P                                      | HNGS Detector 2 Allow/Disallow In Processing           | ALLOW       |      |
| HABK                                     | HNGS Borehole Potassium Running Average                | -0.00186494 |      |
| HALF                                     | HNGS Alpha Filter Length                               | 60          | IN   |
| HCRB                                     | HNGS Apply Borehole Potassium Correction               | NONE        |      |
| HMWM                                     | Mud Weighting Material                                 | NATU        |      |
| HNPE                                     | HNGS Processing Enable                                 | YES         |      |
| S1BI                                     | HNGS Detector 1 Calibration Bismuth Count Rate         | -999.25     | CPS  |
| S2BI                                     | HNGS Detector 2 Calibration Bismuth Count Rate         | -999.25     | CPS  |
| SGRC                                     | HNGS Standard Gamma-Ray Correction Flag                | YES         |      |
| TPOS                                     | Tool Position                                          | ECCE        |      |
| VBA1                                     | HNGS Detector 1 Variable Barite Factor Running Average | 1.01327     |      |
| VBA2                                     | HNGS Detector 2 Variable Barite Factor Running Average | 1.00569     |      |
| EDTC-B: Enhanced DTS Cartridge           |                                                        |             |      |
| BHS                                      | Borehole Status                                        | OPEN        |      |
| GCSE                                     | Generalized Caliper Selection                          | LCAL        |      |
| System and Miscellaneous                 |                                                        |             |      |
| BS                                       | Bit Size                                               | 9.875       | IN   |
| DFD                                      | Drilling Fluid Density                                 | 1.05        | G/C3 |
| DO                                       | Depth Offset for Playback                              | -231.5      | M    |
| PP                                       | Playback Processing                                    | NORMAL      |      |

Format: HNGSYields      Vertical Scale: 1:200      Graphics File Created: 24-Aug-2012 18:52

## OP System Version: 19C0-187

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

## Input DLIS Files

|         |                          |       |          |                   |         |         |
|---------|--------------------------|-------|----------|-------------------|---------|---------|
| DEFAULT | MSS_LDEO_HRLA_LDL_019LUP | FN:22 | PRODUCER | 21-Aug-2012 19:43 | 585.2 M | 224.2 M |
|---------|--------------------------|-------|----------|-------------------|---------|---------|

## Output DLIS Files

|         |                          |       |          |                   |  |  |
|---------|--------------------------|-------|----------|-------------------|--|--|
| DEFAULT | MSS_LDEO_HRLA_LDL_039PUP | FN:46 | PRODUCER | 24-Aug-2012 18:52 |  |  |
| CLIENT  | MSS_LDEO_HRLA_LDL_039PUC | FN:47 | CUSTOMER | 24-Aug-2012 18:52 |  |  |

**Schlumberger**

**Repeat Section**

MAXIS Field Log

Company: Lamont Doherty Earth Observatory      Well: Expedition 344S, U0080A (USC80)

## Input DLIS Files

|         |                          |       |          |                   |         |         |
|---------|--------------------------|-------|----------|-------------------|---------|---------|
| DEFAULT | MSS_LDEO_HRLA_LDL_018LUP | FN:20 | PRODUCER | 21-Aug-2012 19:13 | 585.2 M | 461.8 M |
|---------|--------------------------|-------|----------|-------------------|---------|---------|

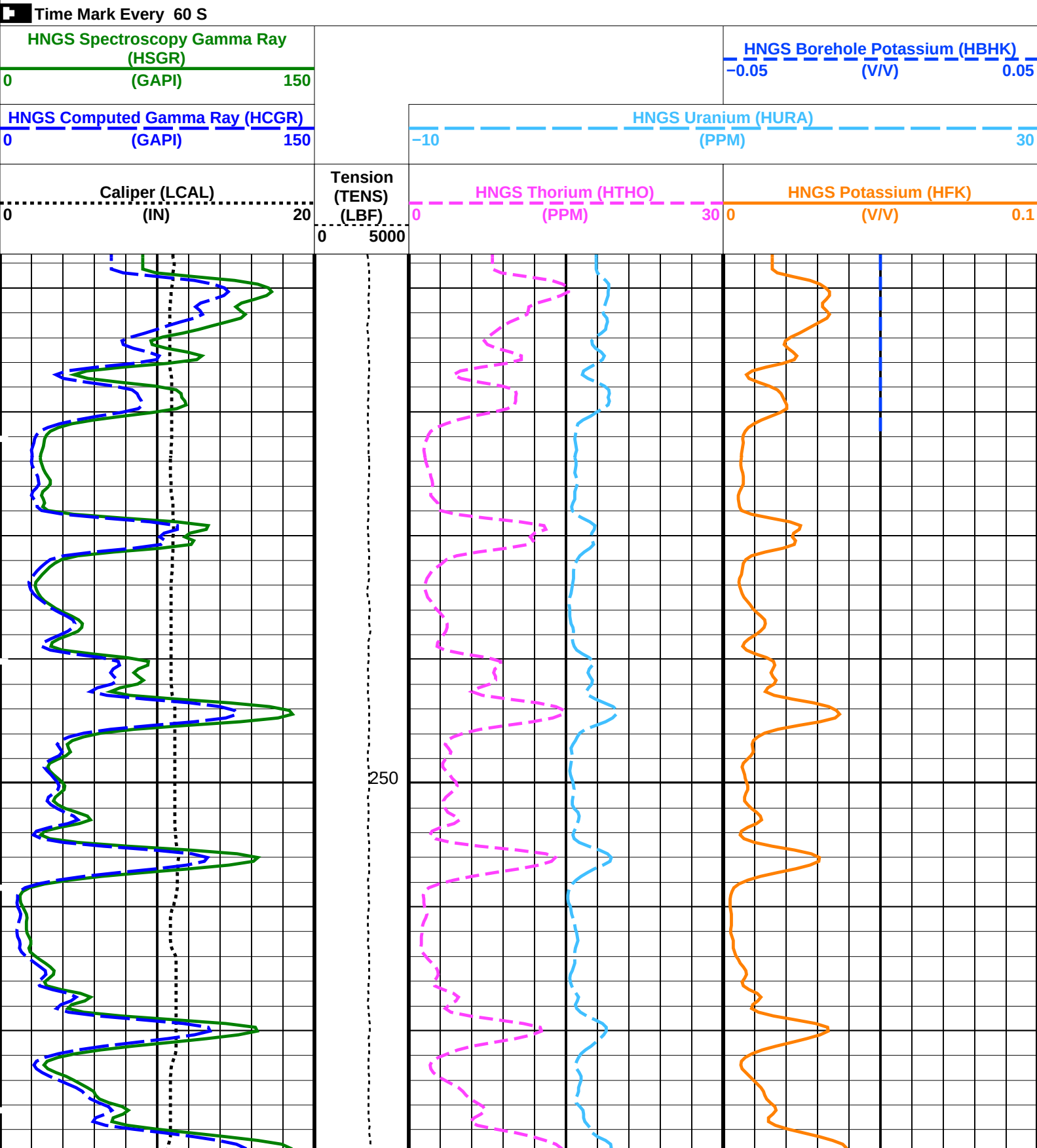
## Output DLIS Files

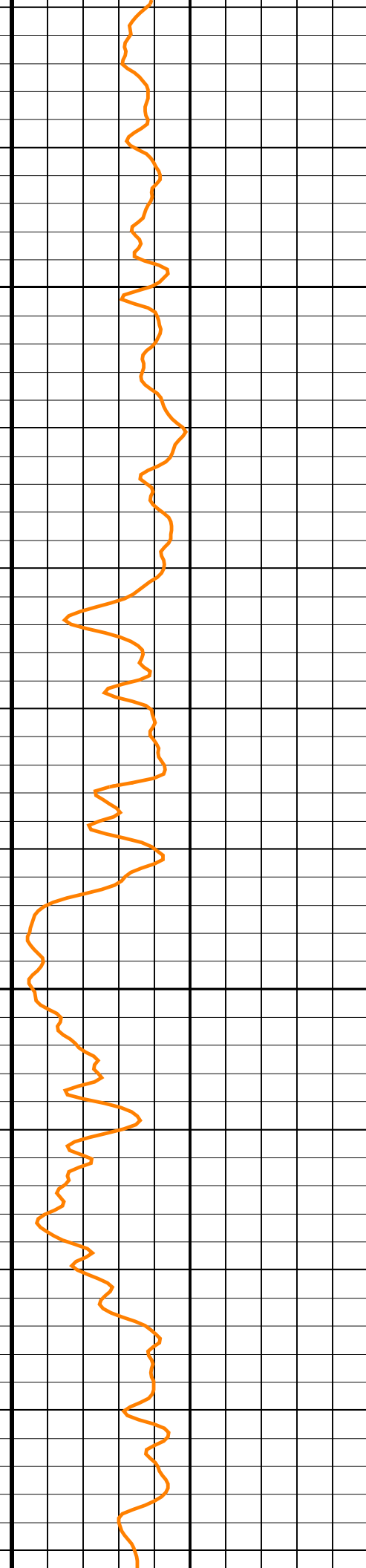
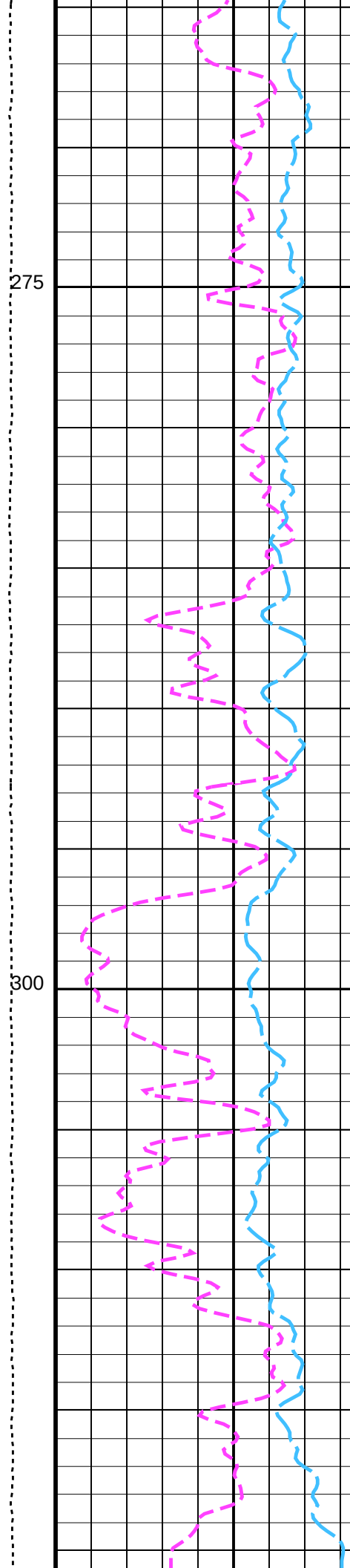
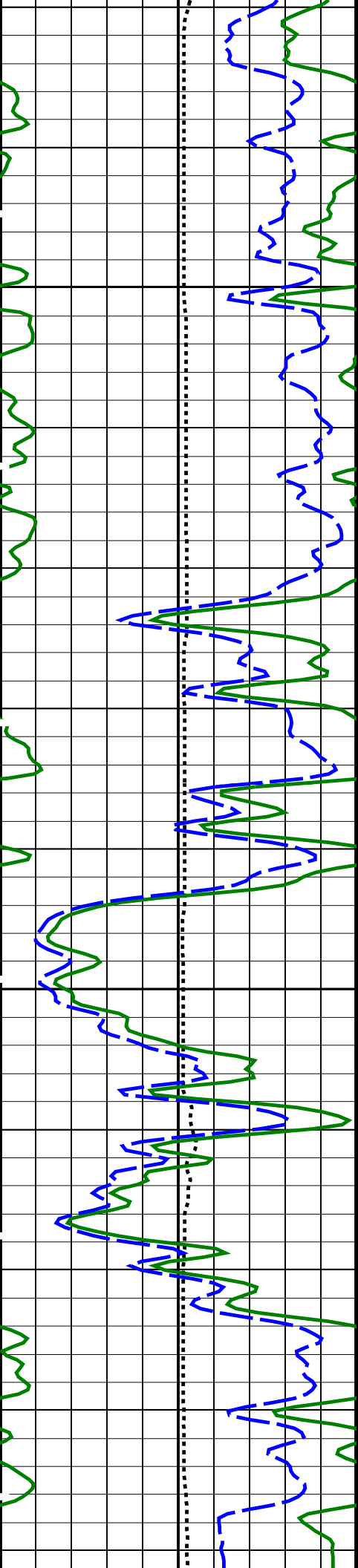
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|---------|--------------------------|-------|----------|-------------------|--|--|
| DEFAULT | MSS_LDEO_HRLA_LDL_018PUP | FN:46 | PRODUCER | 24-Aug-2012 18:52 |  |  |
| CLIENT  | MSS_LDEO_HRLA_LDL_018PUC | FN:47 | CUSTOMER | 24-Aug-2012 18:52 |  |  |

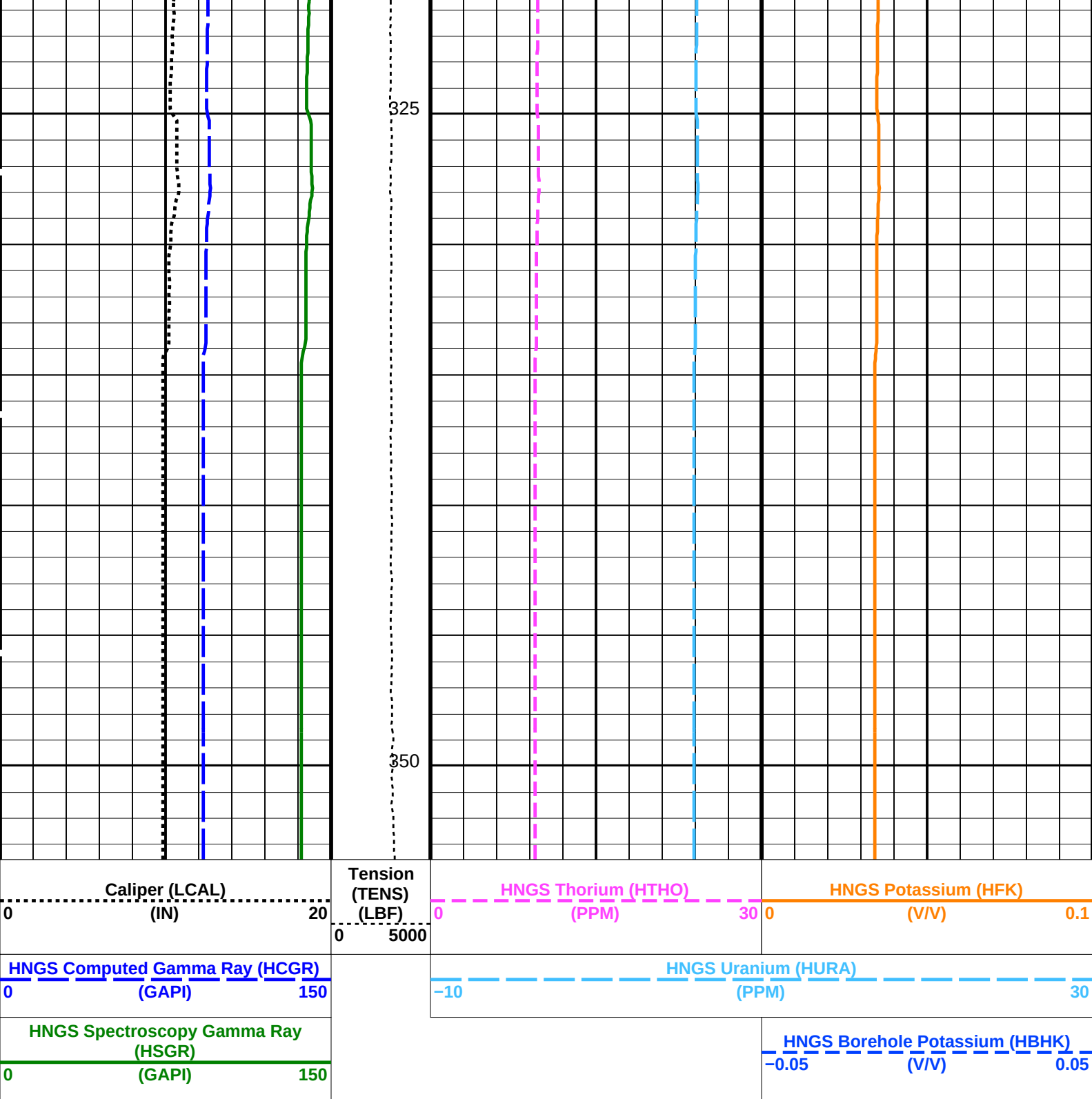
OP System Version: 19C0-187

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

PIP SUMMARY







PIP SUMMARY

Time Mark Every 60 S

| Parameters |                                                  |       |
|------------|--------------------------------------------------|-------|
| DLIS Name  | Description                                      | Value |
| BHS        | HRLT-B: High Resolution Laterolog Array - B      |       |
| GCSE       | Borehole Status                                  | OPEN  |
|            | Generalized Caliper Selection                    | LCAL  |
| BHS        | APS-C: Accelerator-Porosity Tool                 |       |
| GCSE       | Borehole Status                                  | OPEN  |
|            | Generalized Caliper Selection                    | LCAL  |
|            | 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  |
| 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                          | LCAL        |      |
| H1P                            | HNGS Detector 1 Allow/Disallow In Processing           | ALLOW       |      |
| H2P                            | HNGS Detector 2 Allow/Disallow In Processing           | ALLOW       |      |
| HABK                           | HNGS Borehole Potassium Running Average                | -0.00186494 |      |
| HALF                           | HNGS Alpha Filter Length                               | 60          | IN   |
| HCRB                           | HNGS Apply Borehole Potassium Correction               | NONE        |      |
| HMWM                           | Mud Weighting Material                                 | NATU        |      |
| HNPE                           | HNGS Processing Enable                                 | YES         |      |
| S1BI                           | HNGS Detector 1 Calibration Bismuth Count Rate         | -999.25     | CPS  |
| S2BI                           | HNGS Detector 2 Calibration Bismuth Count Rate         | -999.25     | CPS  |
| SGRC                           | HNGS Standard Gamma-Ray Correction Flag                | YES         |      |
| TPOS                           | Tool Position                                          | ECCE        |      |
| VBA1                           | HNGS Detector 1 Variable Barite Factor Running Average | 1.01327     |      |
| VBA2                           | HNGS Detector 2 Variable Barite Factor Running Average | 1.00569     |      |
| EDTC-B: Enhanced DTS Cartridge |                                                        |             |      |
| BHS                            | Borehole Status                                        | OPEN        |      |
| GCSE                           | Generalized Caliper Selection                          | LCAL        |      |
| System and Miscellaneous       |                                                        |             |      |
| BS                             | Bit Size                                               | 9.875       | IN   |
| DFD                            | Drilling Fluid Density                                 | 1.05        | G/C3 |
| DO                             | Depth Offset for Playback                              | -231.5      | M    |
| PP                             | Playback Processing                                    | NORMAL      |      |

Format: HNGSYields      Vertical Scale: 1:200      Graphics File Created: 24-Aug-2012 19:00

## OP System Version: 19C0-187

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

## Input DLIS Files

|         |                          |       |          |                   |         |         |
|---------|--------------------------|-------|----------|-------------------|---------|---------|
| DEFAULT | MSS_LDEO_HRLA_LDL_018LUP | FN:20 | PRODUCER | 21-Aug-2012 19:13 | 585.2 M | 461.8 M |
|---------|--------------------------|-------|----------|-------------------|---------|---------|

## Output DLIS Files

|         |                          |       |          |                   |
|---------|--------------------------|-------|----------|-------------------|
| DEFAULT | MSS_LDEO_HRLA_LDL_040PUP | FN:48 | PRODUCER | 24-Aug-2012 19:00 |
| CLIENT  | MSS_LDEO_HRLA_LDL_040PUC | FN:49 | CUSTOMER | 24-Aug-2012 19:00 |

**Schlumberger**

**Downlog**

MAXIS Field Log

Company: Lamont Doherty Earth Observatory

Well: Expedition 344S, U0080A (USC80)

## Input DLIS Files

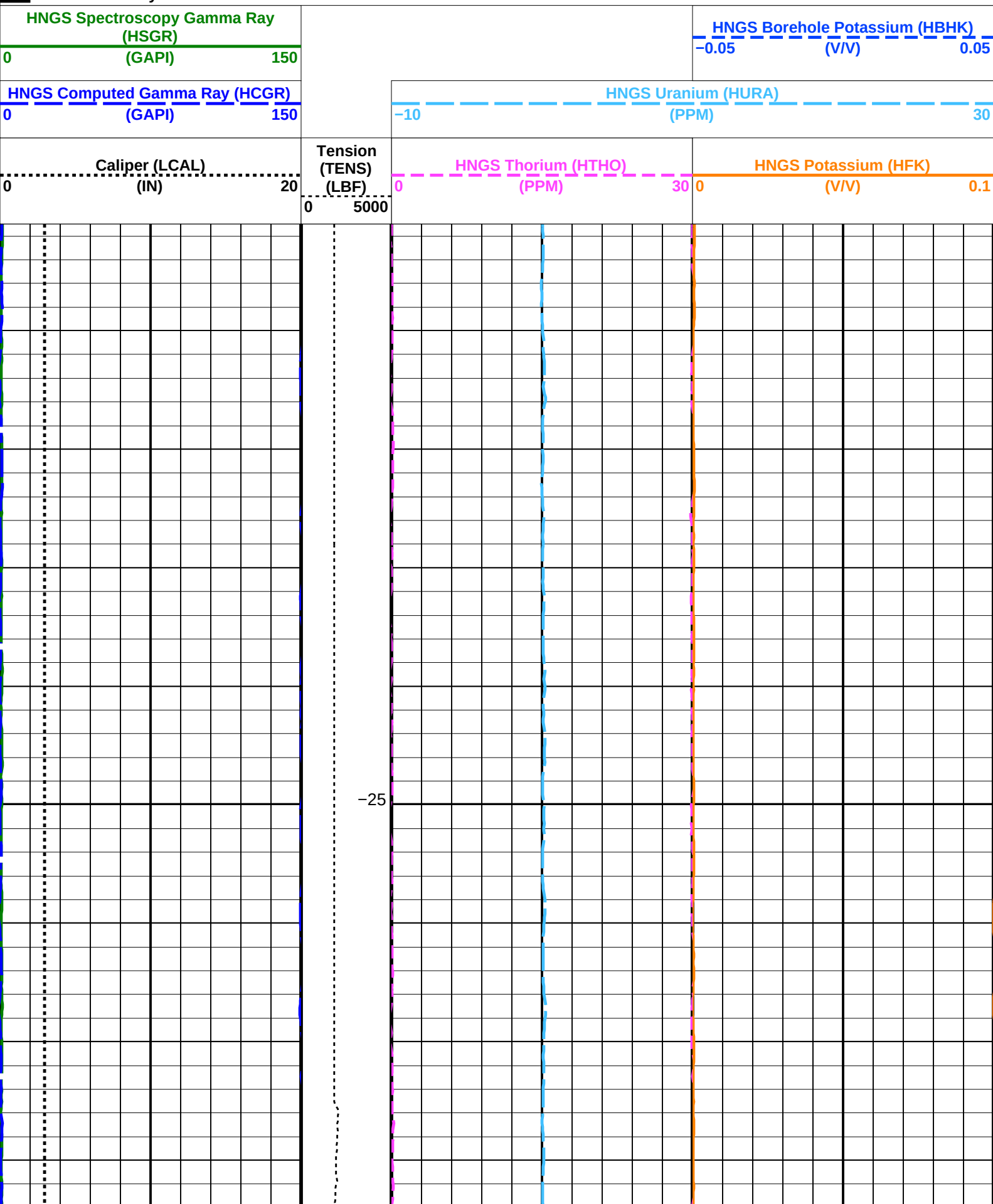
|         |                           |          |                   |         |         |
|---------|---------------------------|----------|-------------------|---------|---------|
| DEFAULT | Flip_MSS_LDEO_HRLA_047PUP | PRODUCER | 24-Aug-2012 19:26 | 354.0 M | -49.5 M |
|---------|---------------------------|----------|-------------------|---------|---------|

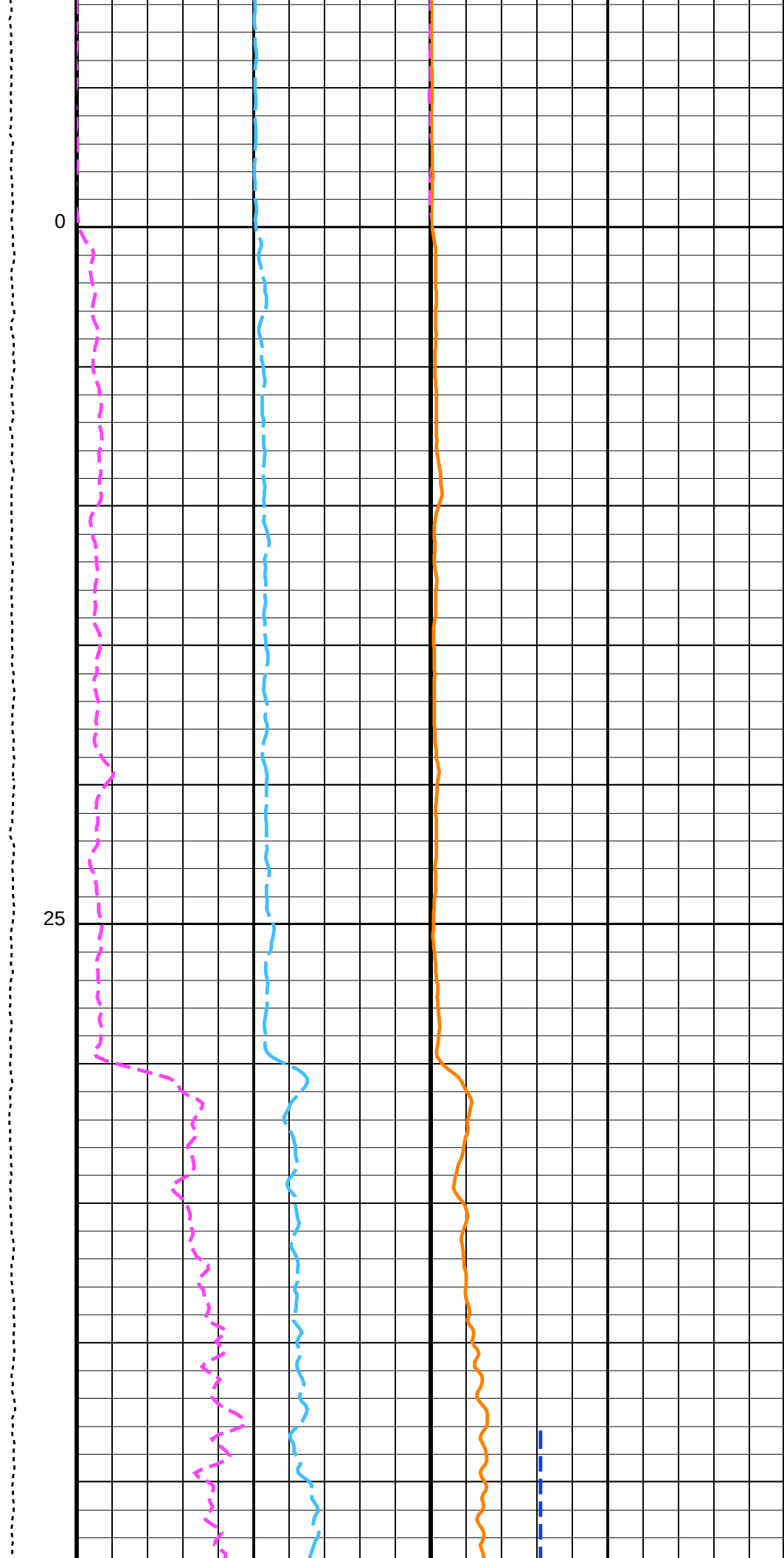
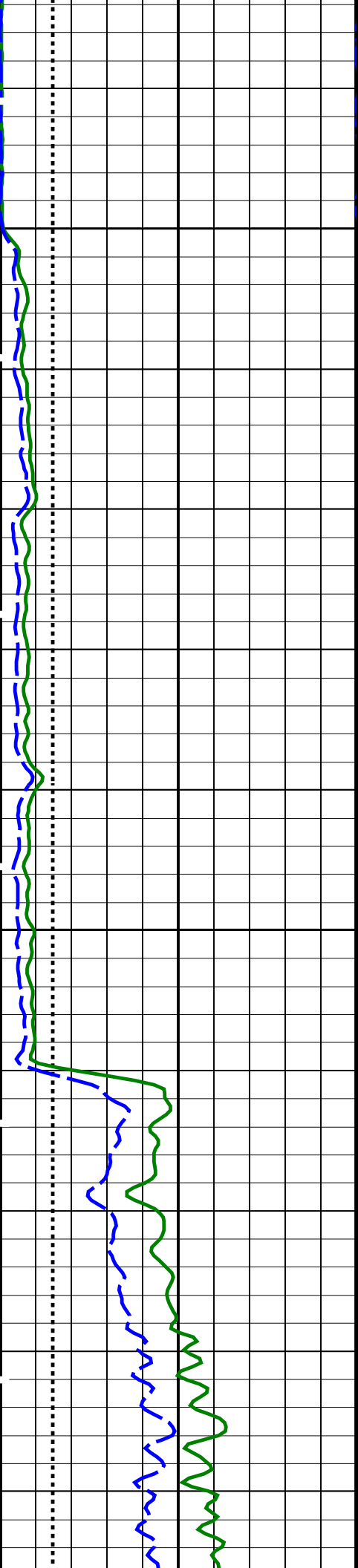
## Output DLIS Files

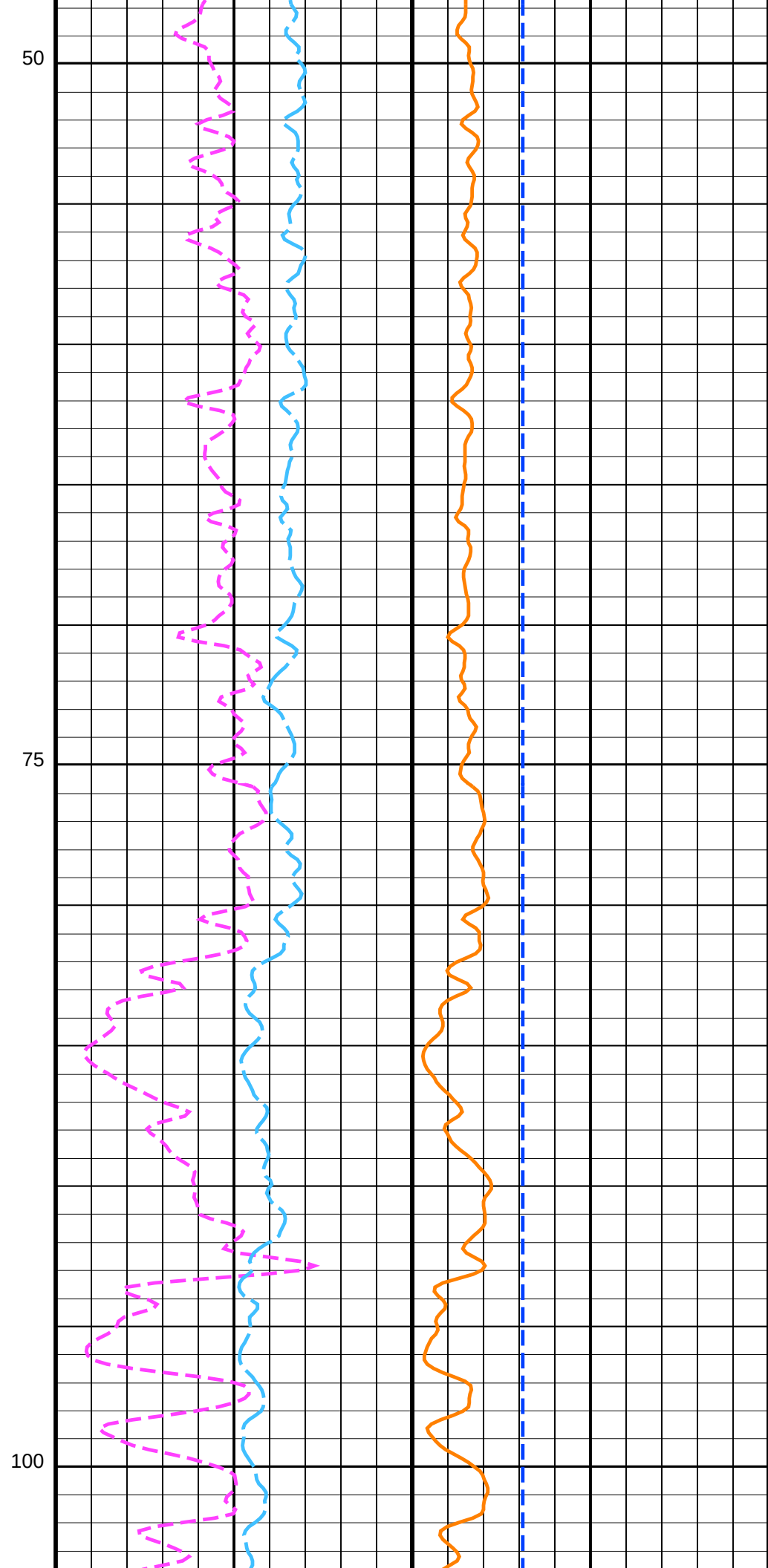
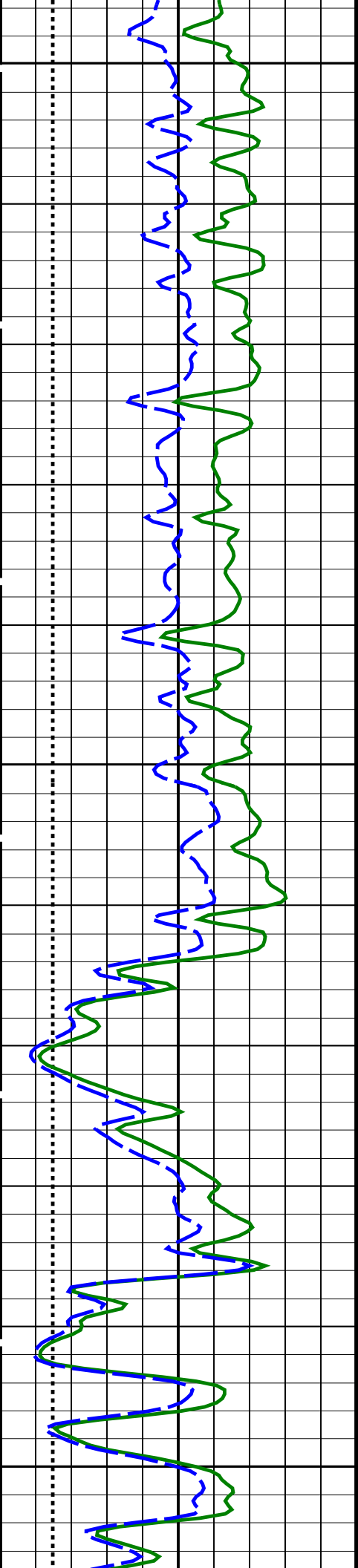
|         |                          |       |          |                   |         |         |
|---------|--------------------------|-------|----------|-------------------|---------|---------|
| DEFAULT | MSS_LDEO_HRLA_LDL_048PUP | FN:60 | PRODUCER | 24-Aug-2012 19:27 | 354.0 M | -49.5 M |
| CLIENT  | MSS_LDEO_HRLA_LDL_048PUC | FN:61 | CUSTOMER | 24-Aug-2012 19:27 | 354.0 M | -49.5 M |

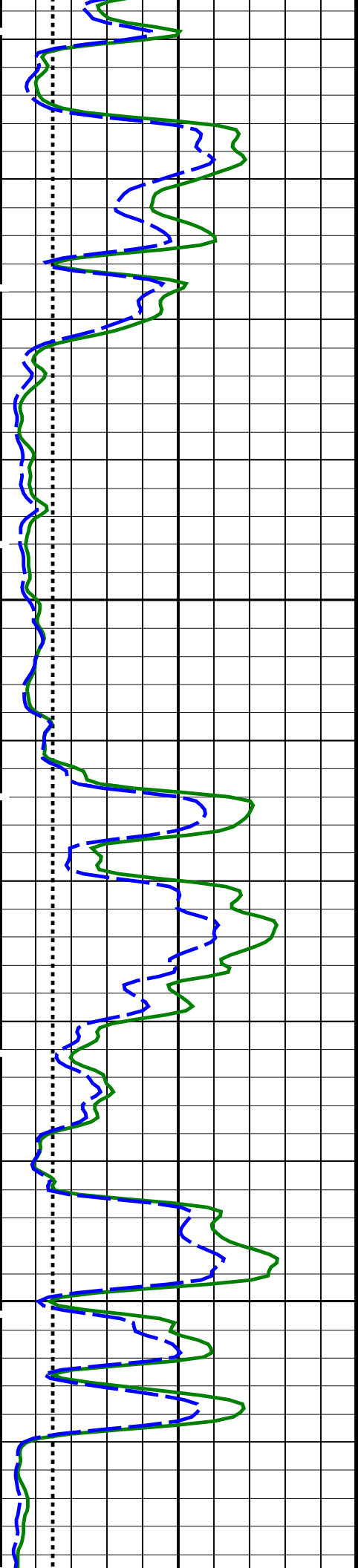
## OP System Version: 19C0-187

|            |          |        |          |
|------------|----------|--------|----------|
| MSS_LDEO-A | 19C0-187 | HRLT-B | 19C0-187 |
|------------|----------|--------|----------|



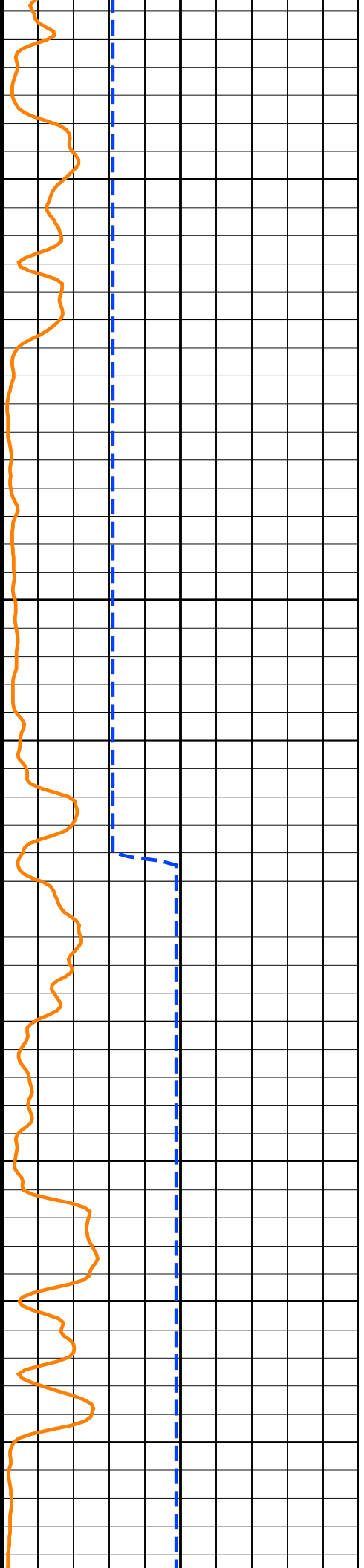
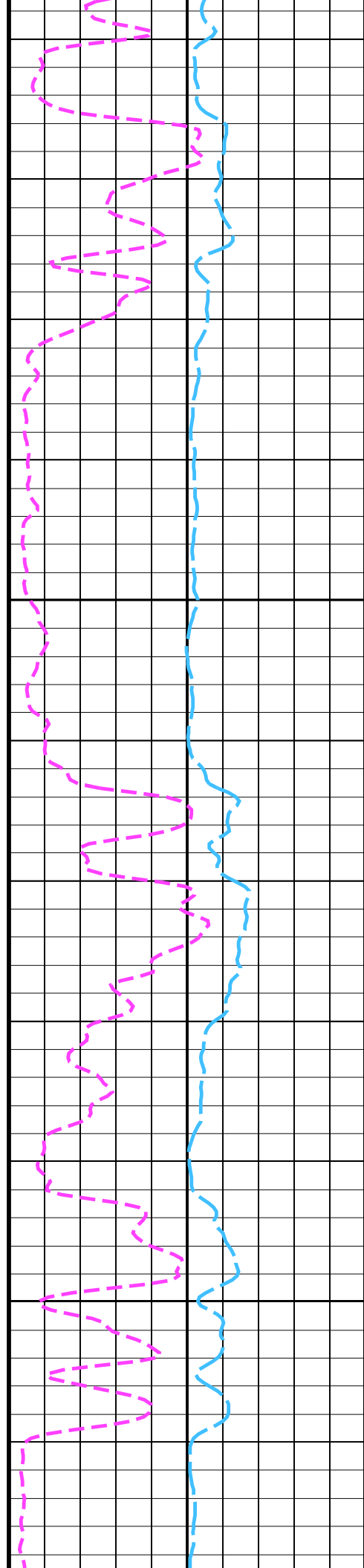


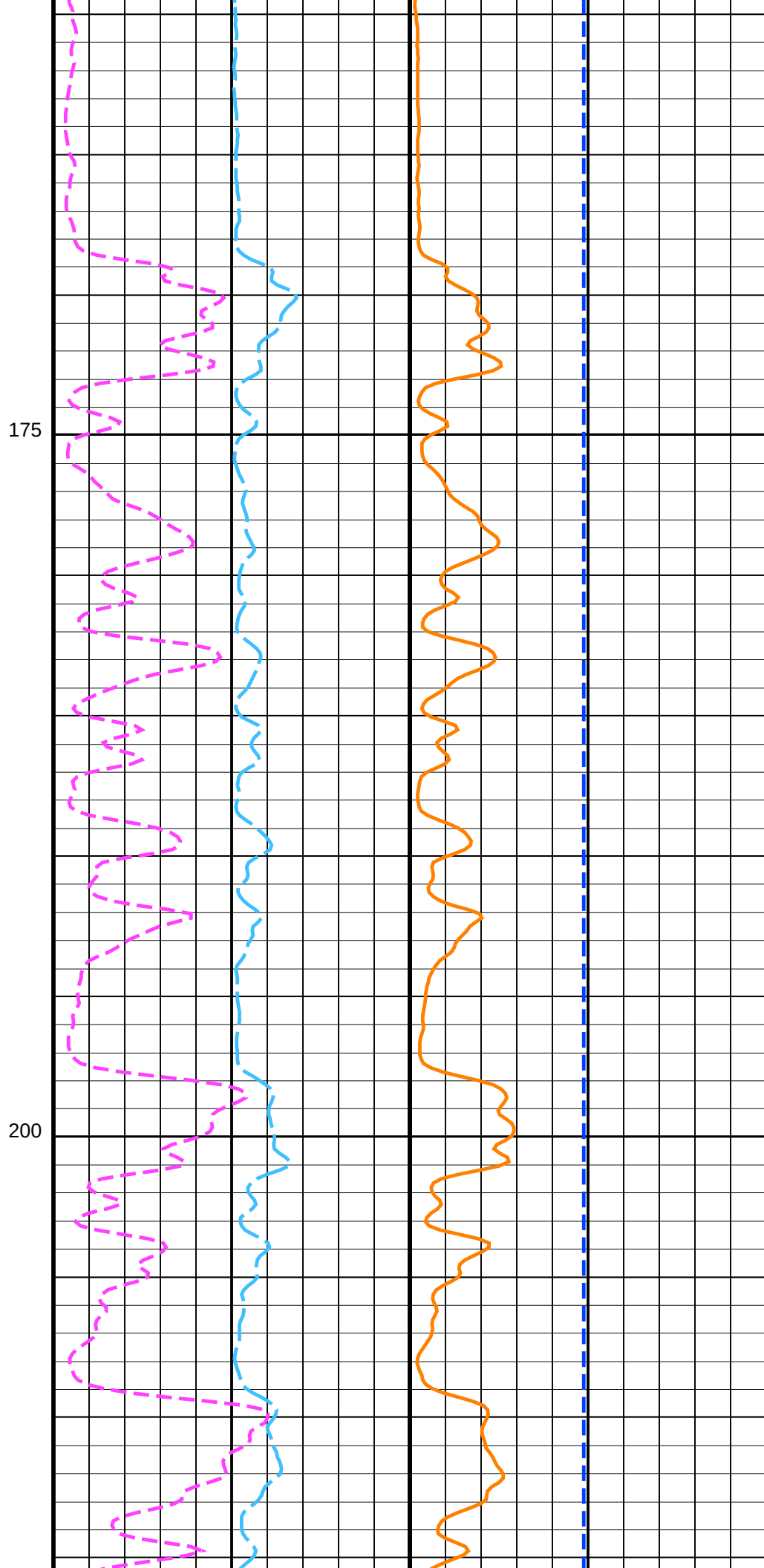
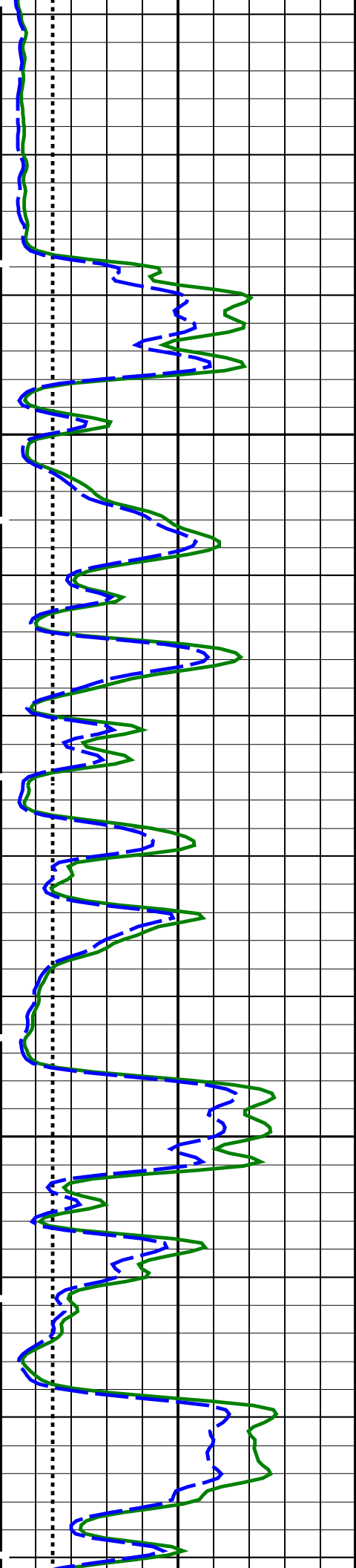


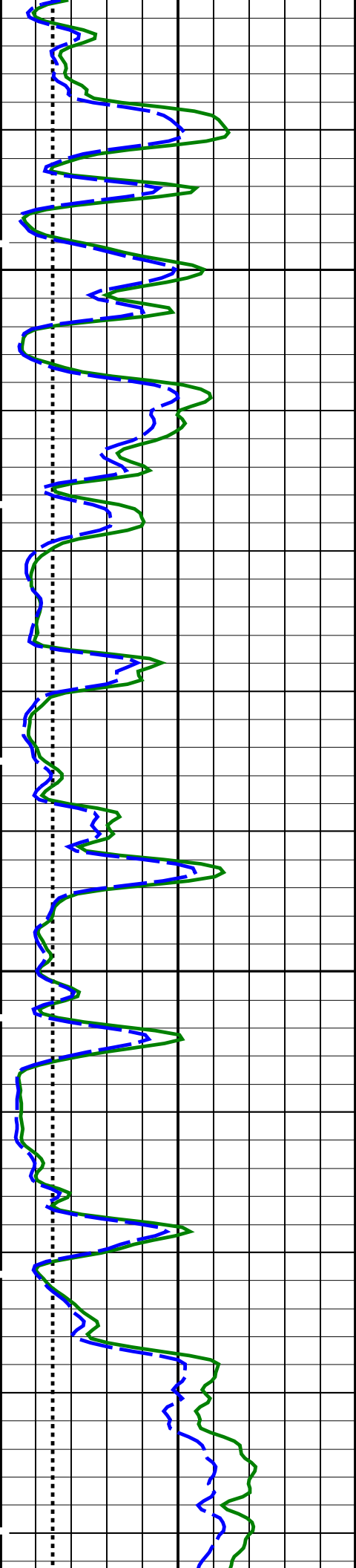


125

150

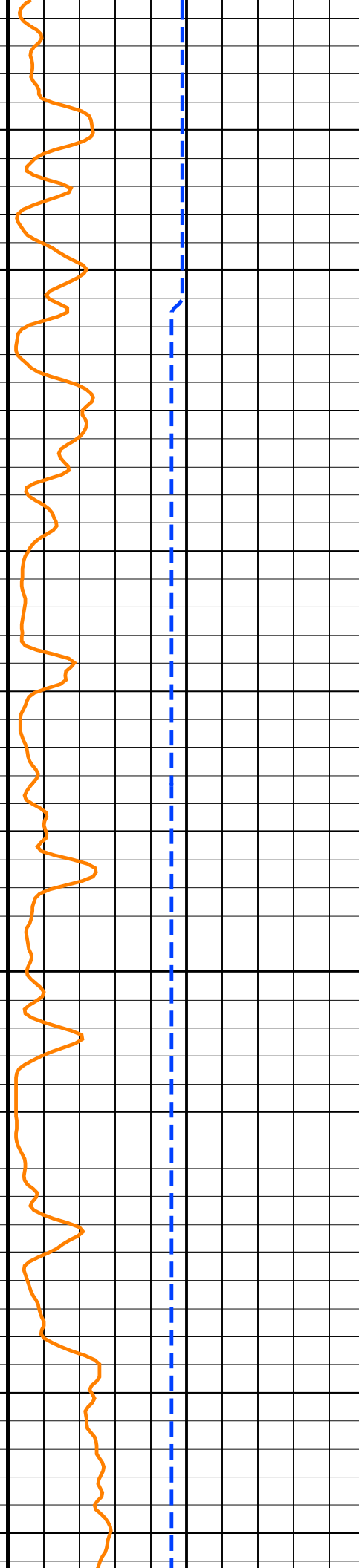
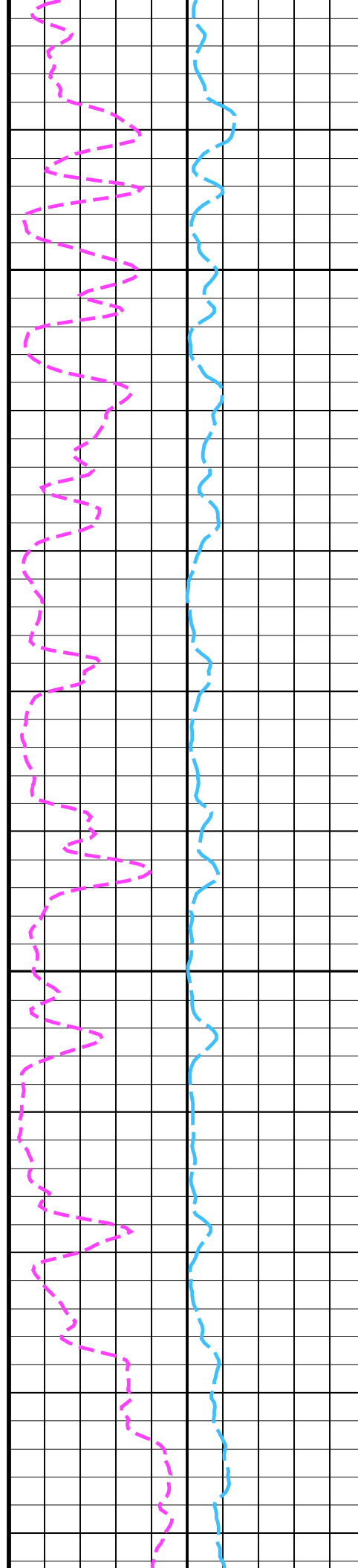


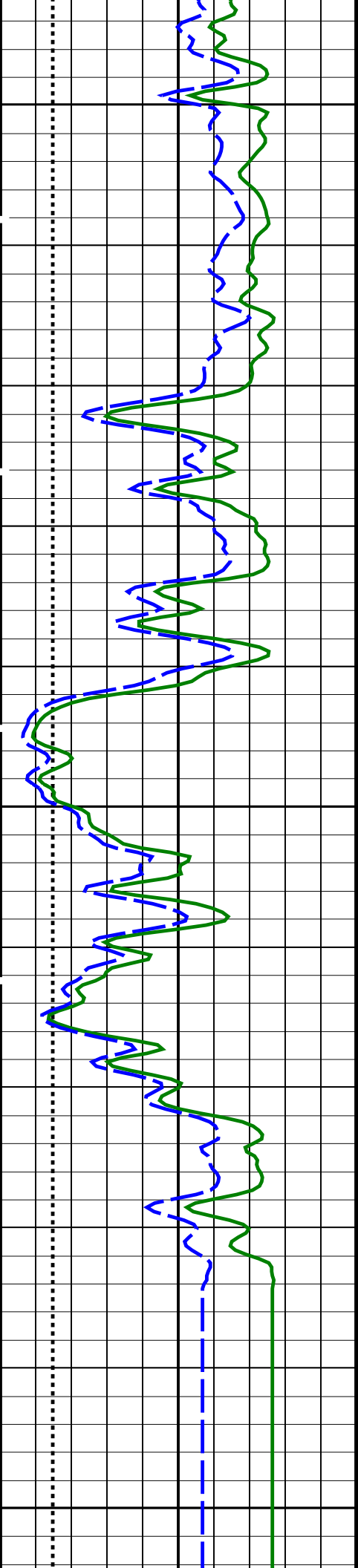




225

250

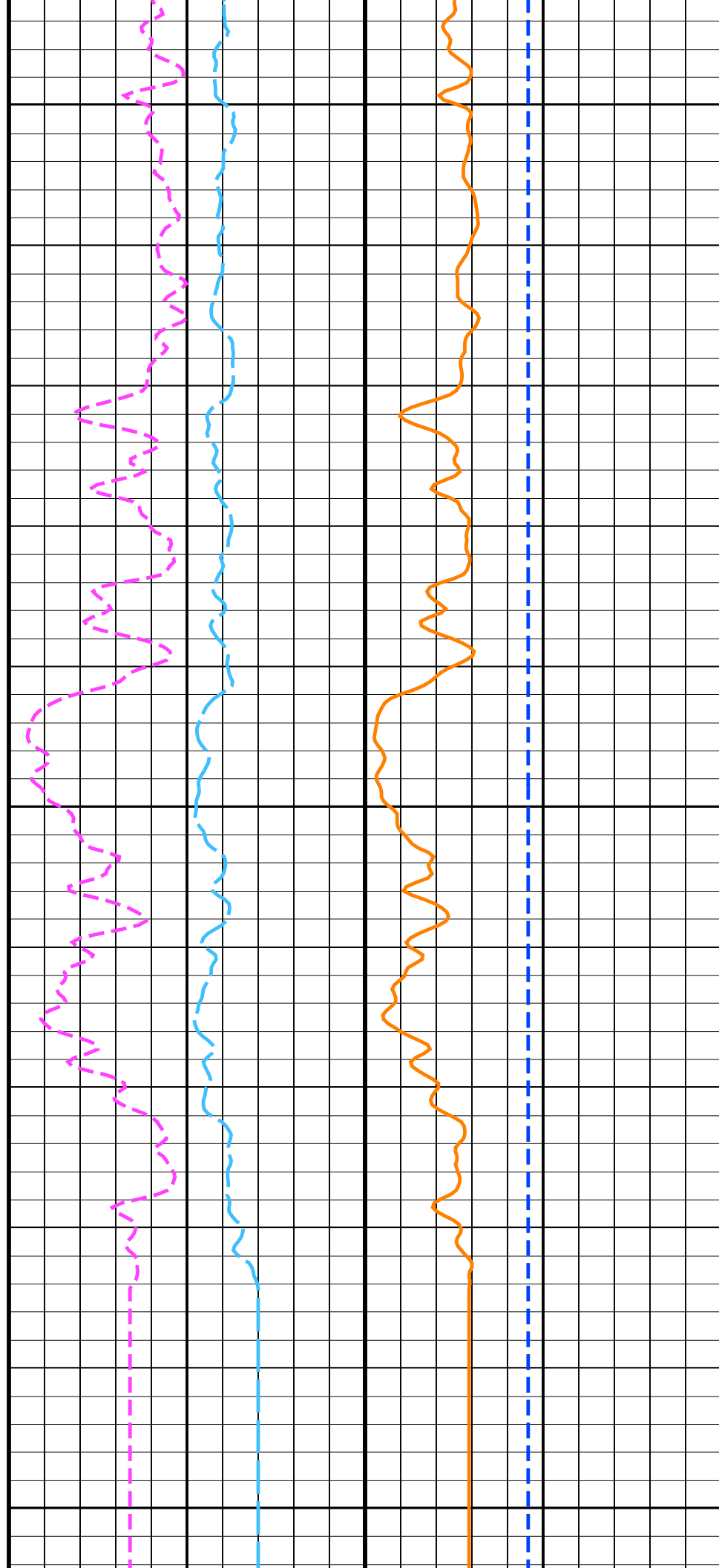




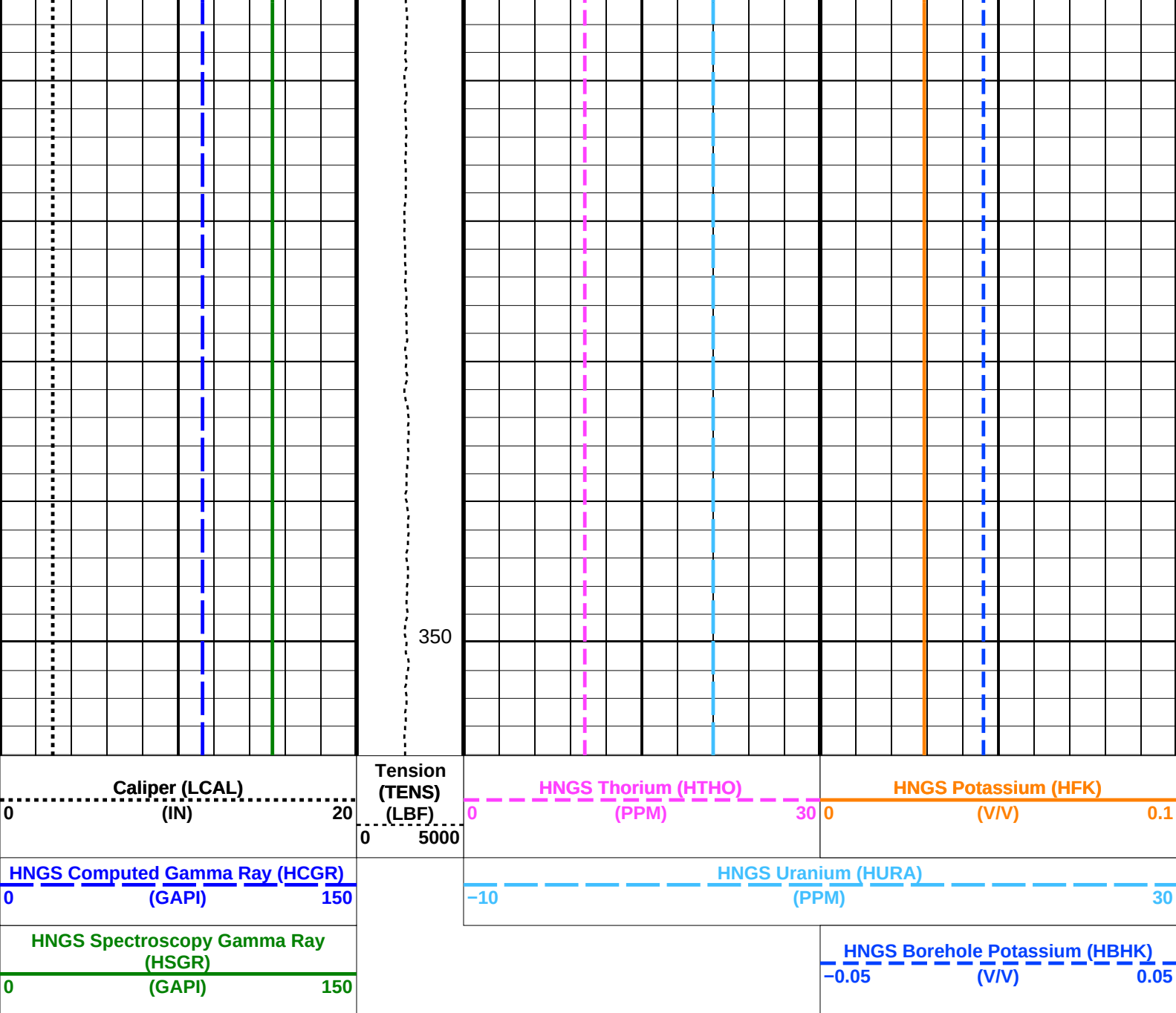
275

300

325







### PIP SUMMARY

Time Mark Every 60 S

## Parameters

| DLIS Name                                   |  | Description                                      | Value       |
|---------------------------------------------|--|--------------------------------------------------|-------------|
| HRLT-B: High Resolution Laterolog Array – B |  |                                                  |             |
| BHS                                         |  | Borehole Status                                  | OPEN        |
| GCSE                                        |  | Generalized Caliper Selection                    | LCAL        |
| APS-C: Accelerator-Porosity Tool            |  |                                                  |             |
| BHS                                         |  | Borehole Status                                  | OPEN        |
| GCSE                                        |  | Generalized Caliper Selection                    | LCAL        |
| 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        |
| CSD1                                        |  | Inner Casing Outer Diameter                      | 0           |
| CSD2                                        |  | Outer Casing Outer Diameter                      | 0           |
| CSW1                                        |  | Inner Casing Weight                              | 0           |
| CSW2                                        |  | Outer Casing Weight                              | 0           |
| DBCC                                        |  | HNGS Barite Constant Correction Flag             | NONE        |
| GCSE                                        |  | Generalized Caliper Selection                    | LCAL        |
| H1P                                         |  | HNGS Detector 1 Allow/Disallow In Processing     | ALLOW       |
| H2P                                         |  | HNGS Detector 2 Allow/Disallow In Processing     | ALLOW       |
| HABK                                        |  | HNGS Borehole Potassium Running Average          | -0.00186494 |
| HALF                                        |  | HNGS Alpha Filter Length                         | 60          |

|                                |                                                        |         |      |
|--------------------------------|--------------------------------------------------------|---------|------|
| HCRB                           | HNGS Apply Borehole Potassium Correction               | NONE    |      |
| HMWM                           | Mud Weighting Material                                 | NATU    |      |
| HNPE                           | HNGS Processing Enable                                 | YES     |      |
| S1BI                           | HNGS Detector 1 Calibration Bismuth Count Rate         | -999.25 | CPS  |
| S2BI                           | HNGS Detector 2 Calibration Bismuth Count Rate         | -999.25 | CPS  |
| SGRC                           | HNGS Standard Gamma-Ray Correction Flag                | YES     |      |
| TPOS                           | Tool Position                                          | ECCE    |      |
| VBA1                           | HNGS Detector 1 Variable Barite Factor Running Average | 1.01327 |      |
| VBA2                           | HNGS Detector 2 Variable Barite Factor Running Average | 1.00569 |      |
| EDTC-B: Enhanced DTS Cartridge |                                                        |         |      |
| BHS                            | Borehole Status                                        | OPEN    |      |
| GCSE                           | Generalized Caliper Selection                          | LCAL    |      |
| System and Miscellaneous       |                                                        |         |      |
| BS                             | Bit Size                                               | 9.875   | IN   |
| DFD                            | Drilling Fluid Density                                 | 1.05    | G/C3 |
| DO                             | Depth Offset for Playback                              | 0.0     | M    |
| PP                             | Playback Processing                                    | OFF     |      |

Format: HNGSYields      Vertical Scale: 1:200      Graphics File Created: 24-Aug-2012 19:27

## OP System Version: 19C0-187

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

### Input DLIS Files

|         |                           |          |                   |         |         |
|---------|---------------------------|----------|-------------------|---------|---------|
| DEFAULT | Flip_MSS_LDEO_HRLA_047PUP | PRODUCER | 24-Aug-2012 19:26 | 354.0 M | -49.5 M |
|---------|---------------------------|----------|-------------------|---------|---------|

### Output DLIS Files

|         |                          |       |          |                   |
|---------|--------------------------|-------|----------|-------------------|
| DEFAULT | MSS_LDEO_HRLA_LDL_048PUP | FN:60 | PRODUCER | 24-Aug-2012 19:27 |
| CLIENT  | MSS_LDEO_HRLA_LDL_048PUC | FN:61 | CUSTOMER | 24-Aug-2012 19:27 |



## Calibrations

### MAXIS Field Log

#### Calibration and Check Summary

| Measurement                                                         | Nominal | Master | Before | After  | Change  | Limit | Units |
|---------------------------------------------------------------------|---------|--------|--------|--------|---------|-------|-------|
| High Resolution Laterolog Array - B Wellsite Calibration - HRLT M01 |         |        |        |        |         |       |       |
| Before: 21-Aug-2012 17:43    After: 21-Aug-2012 20:35               |         |        |        |        |         |       |       |
| HRLT M0-M1 Voltage Plus - 0                                         | 0       | N/A    | -319.6 | -319.4 | 0.2041  | 9.681 | UV    |
| HRLT M0-M1 Voltage Plus - 1                                         | 0       | N/A    | -338.0 | -338.2 | -0.2024 | 9.681 | UV    |
| HRLT M0-M1 Voltage Plus - 2                                         | 0       | N/A    | -337.0 | -337.7 | -0.7527 | 9.681 | UV    |
| HRLT M0-M1 Voltage Plus - 3                                         | 0       | N/A    | -339.7 | -340.4 | -0.6500 | 9.681 | UV    |
| HRLT M0-M1 Voltage Plus - 4                                         | 0       | N/A    | -326.6 | -327.0 | -0.3691 | 9.681 | UV    |
| HRLT M0-M1 Voltage Plus - 5                                         | 0       | N/A    | -322.4 | -322.8 | -0.3436 | 9.681 | UV    |
| HRLT M0-M1 Voltage Plus - 6                                         | 0       | N/A    | 329.6  | 329.5  | -0.1481 | 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: 21-Aug-2012 17:43    After: 21-Aug-2012 20:35               |         |        |        |        |         |       |       |
| HRLT M1-M2 Voltage Plus - 0                                         | 0       | N/A    | 1756   | 1756   | -0.6158 | 53.42 | UV    |
| HRLT M1-M2 Voltage Plus - 1                                         | 0       | N/A    | 1856   | 1857   | 0.9617  | 53.42 | UV    |
| HRLT M1-M2 Voltage Plus - 2                                         | 0       | N/A    | 1846   | 1850   | 4.336   | 53.42 | UV    |
| HRLT M1-M2 Voltage Plus - 3                                         | 0       | N/A    | 1861   | 1865   | 3.586   | 53.42 | UV    |
| HRLT M1-M2 Voltage Plus - 4                                         | 0       | N/A    | 1792   | 1793   | 1.703   | 53.42 | UV    |
| HRLT M1-M2 Voltage Plus - 5                                         | 0       | N/A    | 1779   | 1771   | -8.0    | 53.42 | UV    |

|                             |   |     |       |       |        |       |    |
|-----------------------------|---|-----|-------|-------|--------|-------|----|
| HRLT M1-M2 Voltage Plus - 5 | 0 | N/A | 1770  | 1771  | 1.726  | 53.42 | UV |
| HRLT M1-M2 Voltage Plus - 6 | 0 | N/A | -1818 | -1817 | 0.3804 | 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: 21-Aug-2012 17:43 After: 21-Aug-2012 20:35

|                             |   |     |       |       |         |       |    |
|-----------------------------|---|-----|-------|-------|---------|-------|----|
| HRLT M2-M3 Voltage Plus - 0 | 0 | N/A | 1743  | 1741  | -1.801  | 53.42 | UV |
| HRLT M2-M3 Voltage Plus - 1 | 0 | N/A | 1855  | 1855  | 0.05615 | 53.42 | UV |
| HRLT M2-M3 Voltage Plus - 2 | 0 | N/A | 1846  | 1849  | 3.004   | 53.42 | UV |
| HRLT M2-M3 Voltage Plus - 3 | 0 | N/A | 1865  | 1867  | 2.499   | 53.42 | UV |
| HRLT M2-M3 Voltage Plus - 4 | 0 | N/A | 1788  | 1789  | 0.4794  | 53.42 | UV |
| HRLT M2-M3 Voltage Plus - 5 | 0 | N/A | 1767  | 1768  | 0.9688  | 53.42 | UV |
| HRLT M2-M3 Voltage Plus - 6 | 0 | N/A | -1805 | -1803 | 1.592   | 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: 21-Aug-2012 17:43 After: 21-Aug-2012 20:35

|                             |   |     |        |        |        |      |    |
|-----------------------------|---|-----|--------|--------|--------|------|----|
| HRLT A3-A4 Voltage Plus - 0 | 0 | N/A | 68490  | 68480  | -6.898 | 2100 | UV |
| HRLT A3-A4 Voltage Plus - 1 | 0 | N/A | 72670  | 72730  | 55.78  | 2100 | UV |
| HRLT A3-A4 Voltage Plus - 2 | 0 | N/A | 72620  | 72790  | 173.3  | 2100 | UV |
| HRLT A3-A4 Voltage Plus - 3 | 0 | N/A | 73650  | 73790  | 141.9  | 2100 | UV |
| HRLT A3-A4 Voltage Plus - 4 | 0 | N/A | 70590  | 70670  | 84.90  | 2100 | UV |
| HRLT A3-A4 Voltage Plus - 5 | 0 | N/A | 69790  | 69860  | 67.97  | 2100 | UV |
| HRLT A3-A4 Voltage Plus - 6 | 0 | N/A | -69690 | -69700 | -4.336 | 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: 21-Aug-2012 17:43 After: 21-Aug-2012 20:35

|                             |   |     |        |        |        |      |    |
|-----------------------------|---|-----|--------|--------|--------|------|----|
| HRLT A4-A5 Voltage Plus - 0 | 0 | N/A | 68770  | 68770  | -6.273 | 2100 | UV |
| HRLT A4-A5 Voltage Plus - 1 | 0 | N/A | 73080  | 73130  | 47.55  | 2100 | UV |
| HRLT A4-A5 Voltage Plus - 2 | 0 | N/A | 72990  | 73150  | 162.7  | 2100 | UV |
| HRLT A4-A5 Voltage Plus - 3 | 0 | N/A | 74000  | 74160  | 158.6  | 2100 | UV |
| HRLT A4-A5 Voltage Plus - 4 | 0 | N/A | 70890  | 70980  | 84.23  | 2100 | UV |
| HRLT A4-A5 Voltage Plus - 5 | 0 | N/A | 70070  | 70140  | 70.54  | 2100 | UV |
| HRLT A4-A5 Voltage Plus - 6 | 0 | N/A | -70090 | -70090 | 0.8594 | 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: 21-Aug-2012 17:43 After: 21-Aug-2012 20:35

|                             |   |     |        |        |        |      |    |
|-----------------------------|---|-----|--------|--------|--------|------|----|
| HRLT A5-A6 Voltage Plus - 0 | 0 | N/A | 68670  | 68670  | 1.883  | 2100 | UV |
| HRLT A5-A6 Voltage Plus - 1 | 0 | N/A | 72800  | 72850  | 57.60  | 2100 | UV |
| HRLT A5-A6 Voltage Plus - 2 | 0 | N/A | 72750  | 72920  | 164.3  | 2100 | UV |
| HRLT A5-A6 Voltage Plus - 3 | 0 | N/A | 73780  | 73950  | 167.0  | 2100 | UV |
| HRLT A5-A6 Voltage Plus - 4 | 0 | N/A | 70750  | 70840  | 94.93  | 2100 | UV |
| HRLT A5-A6 Voltage Plus - 5 | 0 | N/A | 69950  | 70040  | 95.79  | 2100 | UV |
| HRLT A5-A6 Voltage Plus - 6 | 0 | N/A | -69820 | -69820 | -2.602 | 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: 21-Aug-2012 17:43 After: 21-Aug-2012 20:35

|                             |   |     |        |        |        |      |    |
|-----------------------------|---|-----|--------|--------|--------|------|----|
| HRLT Torpedo-M0 Voltage - 0 | 0 | N/A | -68360 | -68350 | 8.391  | 2100 | UV |
| HRLT Torpedo-M0 Voltage - 1 | 0 | N/A | -73140 | -73190 | -48.68 | 2100 | UV |
| HRLT Torpedo-M0 Voltage - 2 | 0 | N/A | -73060 | -73230 | -169.7 | 2100 | UV |
| HRLT Torpedo-M0 Voltage - 3 | 0 | N/A | -74090 | -74240 | -149.0 | 2100 | UV |
| HRLT Torpedo-M0 Voltage - 4 | 0 | N/A | -70970 | -71050 | -78.51 | 2100 | UV |
| HRLT Torpedo-M0 Voltage - 5 | 0 | N/A | -70110 | -70190 | -76.04 | 2100 | UV |
| HRLT Torpedo-M0 Voltage - 6 | 0 | N/A | 70100  | 70100  | -3.305 | 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: 21-Aug-2012 17:43 After: 21-Aug-2012 20:35

|                              |   |     |        |        |        |      |    |
|------------------------------|---|-----|--------|--------|--------|------|----|
| HRLT Bridle#9-M0 Voltage - 0 | 0 | N/A | -68350 | -68340 | 11.38  | 2100 | UV |
| HRLT Bridle#9-M0 Voltage - 1 | 0 | N/A | -73100 | -73170 | -66.95 | 2100 | UV |
| HRLT Bridle#9-M0 Voltage - 2 | 0 | N/A | -73030 | -73210 | -177.5 | 2100 | UV |
| HRLT Bridle#9-M0 Voltage - 3 | 0 | N/A | -74060 | -74230 | -162.8 | 2100 | UV |
| HRLT Bridle#9-M0 Voltage - 4 | 0 | N/A | -70950 | -71030 | -87.45 | 2100 | UV |
| HRLT Bridle#9-M0 Voltage - 5 | 0 | N/A | -70110 | -70190 | -84.08 | 2100 | UV |
| HRLT Bridle#9-M0 Voltage - 6 | 0 | N/A | 70080  | 70080  | 0.8281 | 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: 21-Aug-2012 17:43 After: 21-Aug-2012 20:35

|                              |   |     |       |       |          |       |    |
|------------------------------|---|-----|-------|-------|----------|-------|----|
| HRLT Source Current Plus - 0 | 0 | N/A | 284.9 | 284.9 | -0.02887 | 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: 21-Aug-2012 17:43    After: 21-Aug-2012 20:35 |   |     |        |        |           |       |    |
| HRLT Vertical Voltage PI - 0                          | 0 | N/A | -321.9 | -321.5 | 0.4278    | 9.681 | UV |
| HRLT Vertical Voltage PI - 1                          | 0 | N/A | -332.0 | -332.0 | -0.006592 | 9.681 | UV |
| HRLT Vertical Voltage PI - 2                          | 0 | N/A | -330.2 | -330.8 | -0.5406   | 9.681 | UV |
| HRLT Vertical Voltage PI - 3                          | 0 | N/A | -331.3 | -331.8 | -0.4989   | 9.681 | UV |
| HRLT Vertical Voltage PI - 4                          | 0 | N/A | -316.0 | -316.1 | -0.08594  | 9.681 | UV |
| HRLT Vertical Voltage PI - 5                          | 0 | N/A | -327.0 | -327.2 | -0.1545   | 9.681 | UV |
| HRLT Vertical Voltage PI - 6                          | 0 | N/A | 336.8  | 336.4  | -0.3550   | 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: 3-Aug-2012 12:38 Before: 21-Aug-2012 17:46 After: 21-Aug-2012 20:59 |       |       |       |       |          |       |     |
| SS Cs Resolution Bkg                                                        | 9.000 | 7.952 | 8.041 | 7.929 | -0.1112  | 1.800 | %   |
| LS Cs Resolution Bkg                                                        | 9.000 | 8.109 | 8.122 | 8.094 | -0.02860 | 1.800 | %   |
| LSW1 Background                                                             | 100.0 | 71.68 | 71.83 | 71.86 | 0.02771  | 3.000 | CPS |
| LSW2 Background                                                             | 100.0 | 68.54 | 66.87 | 67.12 | 0.2519   | 3.000 | CPS |
| LSW3 Background                                                             | 200.0 | 146.7 | 147.7 | 146.2 | -1.504   | 6.000 | CPS |
| LSW4 Background                                                             | 250.0 | 177.8 | 177.9 | 178.8 | 0.8978   | 7.500 | CPS |
| LSW5 Background                                                             | 600.0 | 409.7 | 409.1 | 409.8 | 0.7755   | 18.00 | CPS |
| SSW1 Background                                                             | 100.0 | 81.22 | 80.95 | 80.92 | -0.03426 | 3.000 | CPS |
| SSW2 Background                                                             | 200.0 | 145.7 | 142.7 | 143.5 | 0.8675   | 6.000 | CPS |
| SSW3 Background                                                             | 500.0 | 389.5 | 386.1 | 386.2 | 0.1094   | 15.00 | CPS |
| SSW4 Background                                                             | 270.0 | 200.9 | 202.5 | 201.8 | -0.7112  | 8.100 | CPS |
| SSW5 Background                                                             | 200.0 | 146.3 | 145.8 | 144.3 | -1.516   | 6.000 | CPS |

Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement

|                          |       |       |     |     |     |     |     |
|--------------------------|-------|-------|-----|-----|-----|-----|-----|
| Master: 3-Aug-2012 13:08 |       |       |     |     |     |     |     |
| LSW1 Aluminum            | 600.0 | 531.2 | N/A | N/A | N/A | N/A | CPS |
| LSW2 Aluminum            | 900.0 | 759.6 | N/A | N/A | N/A | N/A | CPS |
| LSW3 Aluminum            | 1100  | 924.3 | N/A | N/A | N/A | N/A | CPS |
| LSW4 Aluminum            | 580.0 | 467.3 | N/A | N/A | N/A | N/A | CPS |
| LSW5 Aluminum            | 570.0 | 427.7 | N/A | N/A | N/A | N/A | CPS |
| SSW1 Aluminum            | 2800  | 2539  | N/A | N/A | N/A | N/A | CPS |
| SSW2 Aluminum            | 8000  | 6810  | N/A | N/A | N/A | N/A | CPS |
| SSW3 Aluminum            | 11600 | 9419  | N/A | N/A | N/A | N/A | CPS |
| SSW4 Aluminum            | 5000  | 3830  | N/A | N/A | N/A | N/A | CPS |
| SSW5 Aluminum            | 660.0 | 469.0 | N/A | N/A | N/A | N/A | CPS |

Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement

|                          |       |       |     |     |     |     |     |
|--------------------------|-------|-------|-----|-----|-----|-----|-----|
| Master: 3-Aug-2012 13:03 |       |       |     |     |     |     |     |
| LSW1 Iron                | 400.0 | 367.3 | N/A | N/A | N/A | N/A | CPS |
| LSW2 Iron                | 730.0 | 618.0 | N/A | N/A | N/A | N/A | CPS |
| LSW3 Iron                | 1000  | 815.0 | N/A | N/A | N/A | N/A | CPS |
| LSW4 Iron                | 520.0 | 424.5 | N/A | N/A | N/A | N/A | CPS |
| LSW5 Iron                | 470.0 | 392.6 | N/A | N/A | N/A | N/A | CPS |
| SSW1 Iron                | 2100  | 1845  | N/A | N/A | N/A | N/A | CPS |
| SSW2 Iron                | 6800  | 5678  | N/A | N/A | N/A | N/A | CPS |
| SSW3 Iron                | 10800 | 8586  | N/A | N/A | N/A | N/A | CPS |
| SSW4 Iron                | 4600  | 3500  | N/A | N/A | N/A | N/A | CPS |
| SSW5 Iron                | 580.0 | 417.1 | N/A | N/A | N/A | N/A | CPS |

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration

|                          |       |     |       |     |     |     |    |
|--------------------------|-------|-----|-------|-----|-----|-----|----|
| Before: 3-Aug-2012 13:28 |       |     |       |     |     |     |    |
| HLDS Caliper Small Ring  | 12.00 | N/A | 15.62 | N/A | N/A | N/A | IN |
| HLDS Caliper Large Ring  | 15.19 | N/A | 19.44 | N/A | N/A | N/A | IN |

Accelerator-Porosity Tool Wellsite Calibration - Detector Background

|                                                                                    |       |       |       |       |         |     |     |  |
|------------------------------------------------------------------------------------|-------|-------|-------|-------|---------|-----|-----|--|
| Master: 26-Jul-2012 12:44    Before: 21-Aug-2012 17:50    After: 21-Aug-2012 20:56 |       |       |       |       |         |     |     |  |
| Near Det Bkg Cntrate                                                               | 30.00 | 32.40 | 31.99 | 30.83 | -1.151  | N/A | CPS |  |
| Far Det Bkg Cntrate                                                                | 30.00 | 33.26 | 33.21 | 33.08 | -0.1335 | N/A | CPS |  |
| Array-1 Det Bkg Cntrate                                                            | 30.00 | 29.98 | 29.85 | 28.78 | -1.068  | N/A | CPS |  |
| Array-2 Det Bkg Cntrate                                                            | 30.00 | 29.00 | 29.26 | 29.63 | 0.3670  | N/A | CPS |  |
| Array Therm Det Bkg Cntrate                                                        | 30.00 | 32.46 | 30.67 | 33.62 | 2.949   | N/A | CPS |  |

Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios

|                              |        |        |     |     |     |     |
|------------------------------|--------|--------|-----|-----|-----|-----|
| Master: 26-Jul-2012 12:45    |        |        |     |     |     |     |
| Near/Far Calibration Ratio   | 0.9250 | 0.8878 | N/A | N/A | N/A | N/A |
| Near/Array Calibration Ratio | 1.030  | 1.065  | N/A | N/A | N/A | N/A |
| Near/Array Cal Ratio Up/Down | 1.000  | 1.018  | N/A | N/A | N/A | N/A |

Accelerator-Porosity Tool Wellsite Calibration - Tank Check

|                           |       |        |     |     |     |     |    |  |
|---------------------------|-------|--------|-----|-----|-----|-----|----|--|
| Master: 26-Jul-2012 12:45 |       |        |     |     |     |     |    |  |
| Array-1 Standoff Porosity | 11.75 | 10.57  | N/A | N/A | N/A | N/A | PU |  |
| Array-2 Standoff Porosity | 11.75 | 10.16  | N/A | N/A | N/A | N/A | PU |  |
| Average Slowing Down Time | 6.000 | 6.071  | N/A | N/A | N/A | N/A | US |  |
| Array-1 SDT Ratio Up/Down | 1.000 | 0.9785 | N/A | N/A | N/A | N/A |    |  |
| Array-2 SDT Ratio Up/Down | 1.000 | 0.9681 | N/A | N/A | N/A | N/A |    |  |
| Sigma Formation           | 27.50 | 28.31  | N/A | N/A | N/A | N/A | CU |  |

Accelerator-Porosity Tool Wellsite Calibration - CCR7 signal boxes

|                           |      |      |     |     |     |     |   |  |
|---------------------------|------|------|-----|-----|-----|-----|---|--|
| Master: 26-Jul-2012 12:07 |      |      |     |     |     |     |   |  |
| Near Detector Bkg Cntrate | 1050 | 1705 | N/A | N/A | N/A | N/A | Y |  |

|                                                                                          |        |        |        |        |          |         |      |
|------------------------------------------------------------------------------------------|--------|--------|--------|--------|----------|---------|------|
| Near Detector Plateau Setting                                                            | 1650   | 1735   | N/A    | N/A    | N/A      | N/A     | V    |
| Far Detector Plateau Setting                                                             | 2000   | 2080   | N/A    | N/A    | N/A      | N/A     | V    |
| Array Detector Plateau Setting                                                           | 2000   | 1966   | N/A    | N/A    | N/A      | N/A     | V    |
| Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check                  |        |        |        |        |          |         |      |
| Master: 15-Jul-2012 1:37 Before: 21-Aug-2012 17:48 After: 21-Aug-2012 21:00              |        |        |        |        |          |         |      |
| Na 511 Peak Loc                                                                          | 40.00  | 39.55  | 39.72  | 39.70  | -0.01978 | 1.000   |      |
| Na 511 Peak Res                                                                          | 15.50  | 15.74  | 15.19  | 14.31  | -0.8807  | 2.000   | %    |
| High Voltage                                                                             | 1150   | 1192   | 1137   | 1140   | 3.181    | N/A     | V    |
| Na 1785 Peak Loc                                                                         | 142.6  | 141.9  | 142.9  | 142.4  | -0.5346  | 7.000   |      |
| Na 1785 Peak Res                                                                         | 8.500  | 8.399  | 8.027  | 8.850  | 0.8229   | 2.000   | %    |
| Temperature                                                                              | 15.50  | 30.02  | 10.49  | 10.59  | 0.09754  | N/A     | DEGC |
| Na Count Rate                                                                            | 45.00  | 18.00  | 16.36  | 17.10  | 0.7449   | 8.000   | CPS  |
| Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check                  |        |        |        |        |          |         |      |
| Master: 15-Jul-2012 1:37 Before: 21-Aug-2012 17:48 After: 21-Aug-2012 21:00              |        |        |        |        |          |         |      |
| Na 511 Peak Loc                                                                          | 40.00  | 39.55  | 39.73  | 39.56  | -0.1735  | 1.000   |      |
| Na 511 Peak Res                                                                          | 15.50  | 16.74  | 14.78  | 14.73  | -0.05517 | 2.000   | %    |
| High Voltage                                                                             | 1150   | 1112   | 1075   | 1075   | -0.2274  | N/A     | V    |
| Na 1785 Peak Loc                                                                         | 142.6  | 142.2  | 143.4  | 141.5  | -1.892   | 7.000   |      |
| Na 1785 Peak Res                                                                         | 8.500  | 9.140  | 7.340  | 9.782  | 2.442    | 2.000   | %    |
| Temperature                                                                              | 15.50  | 30.92  | 10.72  | 11.80  | 1.089    | N/A     | DEGC |
| Na Count Rate                                                                            | 45.00  | 18.43  | 16.45  | 17.17  | 0.7161   | 8.000   | CPS  |
| Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2 |        |        |        |        |          |         |      |
| Master: 15-Jul-2012 1:37 Before: 21-Aug-2012 17:48 After: 21-Aug-2012 21:00              |        |        |        |        |          |         |      |
| Coincidence Count Rate Ratio                                                             | 1.000  | 0.9742 | 0.9958 | 0.9997 | 0.003894 | 0.05000 |      |
| Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration             |        |        |        |        |          |         |      |
| Before: 21-Aug-2012 17:57                                                                |        |        |        |        |          |         |      |
| EDTC Z-Axis Acceleration                                                                 | 9.810  | N/A    | 9.859  | N/A    | N/A      | N/A     | M/S2 |
| Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration                       |        |        |        |        |          |         |      |
| Before: 21-Aug-2012 17:45 After: 21-Aug-2012 20:57                                       |        |        |        |        |          |         |      |
| Gamma Ray (Jig – Bkg)                                                                    | 163.2  | N/A    | 163.2  | 162.5  | -0.6715  | 14.83   | GAPI |
| Gamma Ray (Calibrated)                                                                   | 165.0  | N/A    | 165.0  | 164.3  | -0.6790  | 15.00   | GAPI |
| Accelerator-Porosity Tool – Detector Plateau Settings :                                  |        |        |        |        |          |         |      |
| Near Detector Plateau Setting                                                            | 1735 V |        |        |        |          |         |      |
| Far Detector Plateau Setting                                                             | 2080 V |        |        |        |          |         |      |
| Array Detector Plateau Setting                                                           | 1966 V |        |        |        |          |         |      |

| High Resolution Laterolog Array – B / Equipment Identification |          |     |
|----------------------------------------------------------------|----------|-----|
| Primary Equipment:                                             |          |     |
| HRLT Sonde                                                     | HRLS – B | 768 |
| Auxiliary Equipment:                                           |          |     |
| HRLT lower Housing                                             | HRLH – B | 968 |
| HRLT Lower Cartridge                                           | HRLC – B | 974 |
| HRLT upper Housing                                             | HRUH – B | 978 |
| HRLT Upper Cartridge                                           | HRUC – B | 764 |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                            |        |         |         |         |
|----------------------------------------------------------|--------|----------------------------|--------|---------|---------|---------|
| HRLT M01                                                 |        |                            |        |         |         |         |
| Idx                                                      | Phase  | HRLT M0-M1 Voltage Plus UV | Value  | Nominal | Maximum | Minimum |
| 0                                                        | Before |                            | -319.6 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |                            | -319.4 |         |         |         |
| 1                                                        | Before |                            | -338.0 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |                            | -338.2 |         |         |         |
| 2                                                        | Before |                            | -337.0 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |                            | -337.7 |         |         |         |
| 3                                                        | Before |                            | -339.7 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |                            | -340.4 |         |         |         |
| 4                                                        | Before |                            | -326.6 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |                            | -326.6 |         |         |         |

|                               |        |                                                                                   |        |        |        |        |
|-------------------------------|--------|-----------------------------------------------------------------------------------|--------|--------|--------|--------|
| 5                             | After  |     | -327.0 | -322.7 | -280.7 | -379.7 |
|                               | Before |    | -322.4 |        |        |        |
| 6                             | After  |    | -322.8 | 322.7  | 379.7  | 280.7  |
|                               | Before |   | 329.6  |        |        |        |
| 7                             | After  |  | 329.5  | -322.7 | -280.7 | -379.7 |
|                               | Before |  | -322.7 |        |        |        |
| (Minimum) (Nominal) (Maximum) |        |                                                                                   |        |        |        |        |
| Before: 21-Aug-2012 17:43     |        |                                                                                   |        |        |        |        |
| After: 21-Aug-2012 20:35      |        |                                                                                   |        |        |        |        |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                                                                     |       |         |         |         |
|----------------------------------------------------------|--------|-------------------------------------------------------------------------------------|-------|---------|---------|---------|
| HRLT M12                                                 |        |                                                                                     |       |         |         |         |
| Idx                                                      | Phase  | HRLT M1-M2 Voltage Plus UV                                                          | Value | Nominal | Maximum | Minimum |
| 0                                                        | Before |    | 1756  | 1781    | 2095    | 1549    |
|                                                          | After  |    | 1756  |         |         |         |
| 1                                                        | Before |    | 1856  | 1781    | 2095    | 1549    |
|                                                          | After  |    | 1857  |         |         |         |
| 2                                                        | Before |    | 1846  | 1781    | 2095    | 1549    |
|                                                          | After  |    | 1850  |         |         |         |
| 3                                                        | Before |    | 1861  | 1781    | 2095    | 1549    |
|                                                          | After  |    | 1865  |         |         |         |
| 4                                                        | Before |    | 1792  | 1781    | 2095    | 1549    |
|                                                          | After  |    | 1793  |         |         |         |
| 5                                                        | Before |    | 1770  | 1781    | 2095    | 1549    |
|                                                          | After  |    | 1771  |         |         |         |
| 6                                                        | Before |    | -1818 | -1781   | -1549   | -2095   |
|                                                          | After  |    | -1817 |         |         |         |
| 7                                                        | Before |   | 1781  | 1781    | 2095    | 1549    |
|                                                          | After  |  | 1781  |         |         |         |
| (Minimum) (Nominal) (Maximum)                            |        |                                                                                     |       |         |         |         |
| Before: 21-Aug-2012 17:43                                |        |                                                                                     |       |         |         |         |
| After: 21-Aug-2012 20:35                                 |        |                                                                                     |       |         |         |         |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                                                                     |       |         |         |         |
|----------------------------------------------------------|--------|-------------------------------------------------------------------------------------|-------|---------|---------|---------|
| HRLT M23                                                 |        |                                                                                     |       |         |         |         |
| Idx                                                      | Phase  | HRLT M2-M3 Voltage Plus UV                                                          | Value | Nominal | Maximum | Minimum |
| 0                                                        | Before |  | 1743  | 1781    | 2095    | 1549    |
|                                                          | After  |  | 1741  |         |         |         |
| 1                                                        | Before |  | 1855  | 1781    | 2095    | 1549    |
|                                                          | After  |  | 1855  |         |         |         |
| 2                                                        | Before |  | 1846  | 1781    | 2095    | 1549    |
|                                                          | After  |  | 1849  |         |         |         |
| 3                                                        | Before |  | 1865  | 1781    | 2095    | 1549    |
|                                                          | After  |  | 1867  |         |         |         |
| 4                                                        | Before |  | 1788  | 1781    | 2095    | 1549    |
|                                                          | After  |  | 1789  |         |         |         |
| 5                                                        | Before |  | 1767  | 1781    | 2095    | 1549    |
|                                                          | After  |  |       |         |         |         |

|                               |        |                                                                                  |       |       |       |       |
|-------------------------------|--------|----------------------------------------------------------------------------------|-------|-------|-------|-------|
| 6                             | After  |    | 1768  | -1781 | -1549 | -2095 |
|                               | Before |   | -1805 |       |       |       |
| 7                             | After  |   | -1803 | 1781  | 2095  | 1549  |
|                               | Before |  | 1781  |       |       |       |
| (Minimum) (Nominal) (Maximum) |        |                                                                                  |       |       |       |       |
| Before: 21-Aug-2012 17:43     |        |                                                                                  |       |       |       |       |
| After: 21-Aug-2012 20:35      |        |                                                                                  |       |       |       |       |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                                                                     |        |         |         |         |
|----------------------------------------------------------|--------|-------------------------------------------------------------------------------------|--------|---------|---------|---------|
| HRLT V34                                                 |        |                                                                                     |        |         |         |         |
| Idx                                                      | Phase  | HRLT A3–A4 Voltage Plus UV                                                          | Value  | Nominal | Maximum | Minimum |
| 0                                                        | Before |    | 68490  | 70000   | 82360   | 60900   |
|                                                          | After  |    | 68480  |         |         |         |
| 1                                                        | Before |    | 72670  | 70000   | 82360   | 60900   |
|                                                          | After  |    | 72730  |         |         |         |
| 2                                                        | Before |    | 72620  | 70000   | 82360   | 60900   |
|                                                          | After  |    | 72790  |         |         |         |
| 3                                                        | Before |    | 73650  | 70000   | 82360   | 60900   |
|                                                          | After  |    | 73790  |         |         |         |
| 4                                                        | Before |    | 70590  | 70000   | 82360   | 60900   |
|                                                          | After  |    | 70670  |         |         |         |
| 5                                                        | Before |    | 69790  | 70000   | 82360   | 60900   |
|                                                          | After  |   | 69860  |         |         |         |
| 6                                                        | Before |  | -69690 | -70000  | -60900  | -82360  |
|                                                          | After  |  | -69700 |         |         |         |
| 7                                                        | Before |  | 70000  | 70000   | 82360   | 60900   |
|                                                          | After  |  | 70000  |         |         |         |
| (Minimum) (Nominal) (Maximum)                            |        |                                                                                     |        |         |         |         |
| Before: 21-Aug-2012 17:43                                |        |                                                                                     |        |         |         |         |
| After: 21-Aug-2012 20:35                                 |        |                                                                                     |        |         |         |         |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                                                                     |        |         |         |         |
|----------------------------------------------------------|--------|-------------------------------------------------------------------------------------|--------|---------|---------|---------|
| HRLT V45                                                 |        |                                                                                     |        |         |         |         |
| Idx                                                      | Phase  | HRLT A4–A5 Voltage Plus UV                                                          | Value  | Nominal | Maximum | Minimum |
| 0                                                        | Before |  | 68770  | 70000   | 82360   | 60900   |
|                                                          | After  |  | 68770  |         |         |         |
| 1                                                        | Before |  | 73080  | 70000   | 82360   | 60900   |
|                                                          | After  |  | 73130  |         |         |         |
| 2                                                        | Before |  | 72990  | 70000   | 82360   | 60900   |
|                                                          | After  |  | 73150  |         |         |         |
| 3                                                        | Before |  | 74000  | 70000   | 82360   | 60900   |
|                                                          | After  |  | 74160  |         |         |         |
| 4                                                        | Before |  | 70890  | 70000   | 82360   | 60900   |
|                                                          | After  |  | 70980  |         |         |         |
| 5                                                        | Before |  | 70070  | 70000   | 82360   | 60900   |
|                                                          | After  |  | 70140  |         |         |         |
| 6                                                        | Before |  | -70090 | -70000  | -60900  | -82360  |
|                                                          | After  |  | -70090 |         |         |         |

|                           |                                                                         |                                                                                 |        |       |       |       |
|---------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------------|--------|-------|-------|-------|
|                           | After                                                                   |   | -70090 |       |       |       |
| 7                         | Before                                                                  |  | 70000  | 70000 | 82360 | 60900 |
|                           | After                                                                   |  | 70000  |       |       |       |
|                           | <div><div>(Minimum)</div><div>(Nominal)</div><div>(Maximum)</div></div> |                                                                                 |        |       |       |       |
| Before: 21-Aug-2012 17:43 |                                                                         |                                                                                 |        |       |       |       |
| After: 21-Aug-2012 20:35  |                                                                         |                                                                                 |        |       |       |       |

| High Resolution Laterolog Array – B Wellsite Calibration |                               |                                                                                   |        |         |         |         |
|----------------------------------------------------------|-------------------------------|-----------------------------------------------------------------------------------|--------|---------|---------|---------|
| HRLT V56                                                 |                               |                                                                                   |        |         |         |         |
| Idx                                                      | Phase                         | HRLT A5–A6 Voltage Plus UV                                                        | Value  | Nominal | Maximum | Minimum |
| 0                                                        | Before                        |  | 68670  | 70000   | 82360   | 60900   |
|                                                          | After                         |  | 68670  |         |         |         |
| 1                                                        | Before                        |  | 72800  | 70000   | 82360   | 60900   |
|                                                          | After                         |  | 72850  |         |         |         |
| 2                                                        | Before                        |  | 72750  | 70000   | 82360   | 60900   |
|                                                          | After                         |  | 72920  |         |         |         |
| 3                                                        | Before                        |  | 73780  | 70000   | 82360   | 60900   |
|                                                          | After                         |  | 73950  |         |         |         |
| 4                                                        | Before                        |  | 70750  | 70000   | 82360   | 60900   |
|                                                          | After                         |  | 70840  |         |         |         |
| 5                                                        | Before                        |  | 69950  | 70000   | 82360   | 60900   |
|                                                          | After                         |  | 70040  |         |         |         |
| 6                                                        | Before                        |  | -69820 | -70000  | -60900  | -82360  |
|                                                          | After                         |  | -69820 |         |         |         |
| 7                                                        | Before                        |  | 70000  | 70000   | 82360   | 60900   |
|                                                          | After                         |  | 70000  |         |         |         |
|                                                          | (Minimum) (Nominal) (Maximum) |                                                                                   |        |         |         |         |
| Before: 21-Aug-2012 17:43                                |                               |                                                                                   |        |         |         |         |
| After: 21-Aug-2012 20:35                                 |                               |                                                                                   |        |         |         |         |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                                                                     |        |         |         |         |
|----------------------------------------------------------|--------|-------------------------------------------------------------------------------------|--------|---------|---------|---------|
| HRLT VTP                                                 |        |                                                                                     |        |         |         |         |
| Idx                                                      | Phase  | HRLT Torpedo–M0 Voltage Plus UV                                                     | Value  | Nominal | Maximum | Minimum |
| 0                                                        | Before |  | -68360 | -70000  | -60900  | -82360  |
|                                                          | After  |  | -68350 |         |         |         |
| 1                                                        | Before |  | -73140 | -70000  | -60900  | -82360  |
|                                                          | After  |  | -73190 |         |         |         |
| 2                                                        | Before |  | -73060 | -70000  | -60900  | -82360  |
|                                                          | After  |  | -73230 |         |         |         |
| 3                                                        | Before |  | -74090 | -70000  | -60900  | -82360  |
|                                                          | After  |  | -74240 |         |         |         |
| 4                                                        | Before |  | -70970 | -70000  | -60900  | -82360  |
|                                                          | After  |  | -71050 |         |         |         |
| 5                                                        | Before |  | -70110 | -70000  | -60900  | -82360  |
|                                                          | After  |  | -70190 |         |         |         |
| 6                                                        | Before |  | 70100  | 70000   | 82360   | 60900   |
|                                                          | After  |  | 70100  |         |         |         |
| 7                                                        | Before |  | -70000 | -70000  | -60900  | -82360  |



|                           |       |                                                                                |        |  |  |  |
|---------------------------|-------|--------------------------------------------------------------------------------|--------|--|--|--|
|                           | After |  | -70000 |  |  |  |
|                           |       | (Minimum) (Nominal) (Maximum)                                                  |        |  |  |  |
| Before: 21-Aug-2012 17:43 |       |                                                                                |        |  |  |  |
| After: 21-Aug-2012 20:35  |       |                                                                                |        |  |  |  |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                                                                     |        |         |         |         |  |
|----------------------------------------------------------|--------|-------------------------------------------------------------------------------------|--------|---------|---------|---------|--|
| HRLT VBD                                                 |        |                                                                                     |        |         |         |         |  |
| Idx                                                      | Phase  | HRLT Bridle#9-M0 Voltage Plus UV                                                    | Value  | Nominal | Maximum | Minimum |  |
| 0                                                        | Before |    | -68350 | -70000  | -60900  | -82360  |  |
|                                                          | After  |    | -68340 |         |         |         |  |
| 1                                                        | Before |    | -73100 | -70000  | -60900  | -82360  |  |
|                                                          | After  |    | -73170 |         |         |         |  |
| 2                                                        | Before |    | -73030 | -70000  | -60900  | -82360  |  |
|                                                          | After  |    | -73210 |         |         |         |  |
| 3                                                        | Before |    | -74060 | -70000  | -60900  | -82360  |  |
|                                                          | After  |    | -74230 |         |         |         |  |
| 4                                                        | Before |    | -70950 | -70000  | -60900  | -82360  |  |
|                                                          | After  |    | -71030 |         |         |         |  |
| 5                                                        | Before |    | -70110 | -70000  | -60900  | -82360  |  |
|                                                          | After  |    | -70190 |         |         |         |  |
| 6                                                        | Before |    | 70080  | 70000   | 82360   | 60900   |  |
|                                                          | After  |    | 70080  |         |         |         |  |
| 7                                                        | Before |  | -70000 | -70000  | -60900  | -82360  |  |
|                                                          | After  |  | -70000 |         |         |         |  |
|                                                          |        | (Minimum) (Nominal) (Maximum)                                                       |        |         |         |         |  |
| Before: 21-Aug-2012 17:43                                |        |                                                                                     |        |         |         |         |  |
| After: 21-Aug-2012 20:35                                 |        |                                                                                     |        |         |         |         |  |

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                                                                     |       |         |         |         |  |
|----------------------------------------------------------|--------|-------------------------------------------------------------------------------------|-------|---------|---------|---------|--|
| HRLT ISO                                                 |        |                                                                                     |       |         |         |         |  |
| Idx                                                      | Phase  | HRLT Source Current Plus UA                                                         | Value | Nominal | Maximum | Minimum |  |
| 0                                                        | Before |  | 284.9 | 284.0   | 334.1   | 247.0   |  |
|                                                          | After  |  | 284.9 |         |         |         |  |
| 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: 21-Aug-2012 17:43

After: 21-Aug-2012 20:35

| High Resolution Laterolog Array – B Wellsite Calibration |        |                                                                                   |        |         |         |         |
|----------------------------------------------------------|--------|-----------------------------------------------------------------------------------|--------|---------|---------|---------|
| HRLT MV                                                  |        |                                                                                   |        |         |         |         |
| Idx                                                      | Phase  | HRLT Vertical Voltage Plus UV                                                     | Value  | Nominal | Maximum | Minimum |
| 0                                                        | Before |  | -321.9 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |  | -321.5 |         |         |         |
| 1                                                        | Before |  | -332.0 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |  | -332.0 |         |         |         |
| 2                                                        | Before |  | -330.2 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |  | -330.8 |         |         |         |
| 3                                                        | Before |  | -331.3 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |  | -331.8 |         |         |         |
| 4                                                        | Before |  | -316.0 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |  | -316.1 |         |         |         |
| 5                                                        | Before |  | -327.0 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |  | -327.2 |         |         |         |
| 6                                                        | Before |  | 336.8  | 322.7   | 379.7   | 280.7   |
|                                                          | After  |  | 336.4  |         |         |         |
| 7                                                        | Before |  | -322.7 | -322.7  | -280.7  | -379.7  |
|                                                          | After  |  | -322.7 |         |         |         |
| (Minimum) (Nominal) (Maximum)                            |        |                                                                                   |        |         |         |         |

Before: 21-Aug-2012 17:43

After: 21-Aug-2012 20:35

## Hostile Litho-Density Sonde / Equipment Identification

## Primary Equipment:

Hostile Litho Density Sonde  
 Hostile Litho Density High Voltage  
 Gamma Source Radioactive

HLDS – D 45  
 HLDV – D 45  
 GSR – Z 8113

## Auxiliary Equipment:

Hostile Litho Density Pad  
 Hostile Litho Density High Voltage Housi

HLDP – C 45  
 HEH – H 47

| 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                                           |  | 7.952 | Master                                          |  | 8.109 | Master                                          |  | 71.68 |
| Before                                           |  | 8.041 | Before                                          |  | 8.122 | Before                                          |  | 71.83 |
| After                                            |  | 7.929 | After                                           |  | 8.094 | After                                           |  | 71.86 |
| 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                                           |  | 68.54 | Master                                          |  | 146.7 | Master                                          |  | 177.8 |
| Before                                           |  | 66.87 | Before                                          |  | 147.7 | Before                                          |  | 177.9 |
| After                                            |  | 67.12 | After                                           |  | 146.2 | After                                           |  | 178.8 |
| 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                                           |  | 409.7 | Master                                          |  | 81.22 | Master                                          |  | 145.7 |
| Before                                           |  | 409.1 | Before                                          |  | 80.95 | Before                                          |  | 142.7 |

|                          |                     |                    |                           |                     |                    |                          |                     |                    |
|--------------------------|---------------------|--------------------|---------------------------|---------------------|--------------------|--------------------------|---------------------|--------------------|
| After                    |                     | 409.8              | After                     |                     | 80.92              | After                    |                     | 143.5              |
| 330.0<br>(Minimum)       | 600.0<br>(Nominal)  | 830.0<br>(Maximum) | 55.00<br>(Minimum)        | 100.0<br>(Nominal)  | 150.0<br>(Maximum) | 100.0<br>(Minimum)       | 200.0<br>(Nominal)  | 260.0<br>(Maximum) |
| Phase                    | SSW3 Background CPS | Value              | Phase                     | SSW4 Background CPS | Value              | Phase                    | SSW5 Background CPS | Value              |
| Master                   |                     | 389.5              | Master                    |                     | 200.9              | Master                   |                     | 146.3              |
| Before                   |                     | 386.1              | Before                    |                     | 202.5              | Before                   |                     | 145.8              |
| After                    |                     | 386.2              | After                     |                     | 201.8              | After                    |                     | 144.3              |
| 280.0<br>(Minimum)       | 500.0<br>(Nominal)  | 700.0<br>(Maximum) | 150.0<br>(Minimum)        | 270.0<br>(Nominal)  | 380.0<br>(Maximum) | 110.0<br>(Minimum)       | 200.0<br>(Nominal)  | 270.0<br>(Maximum) |
| Master: 3-Aug-2012 12:38 |                     |                    | Before: 21-Aug-2012 17:46 |                     |                    | After: 21-Aug-2012 20:59 |                     |                    |

#### Litho-Density Spectroscopy Cartridge – B / Equipment Identification

Primary Equipment:  
LDSC Cartridge

LDSC – B 521

Auxiliary Equipment:  
LDSC Housing

LDSH – A 319

#### Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:  
Accelerator-Porosity Sonde  
APS Minitron

APS – C 22  
MNTR – F 5978

Auxiliary Equipment:  
Accelerator-Porosity Housing  
APS Calibration Water Tank  
APS Aluminum Calibrator Sleeve

APH – AC 22  
SFT – 178 1  
SFT – 281 1

#### Accelerator-Porosity Tool Wellsite Calibration

##### Detector Background

|                    |                             |                    |                    |                                 |                    |                    |                             |                    |
|--------------------|-----------------------------|--------------------|--------------------|---------------------------------|--------------------|--------------------|-----------------------------|--------------------|
| Phase              | Near Det Bkg Cntrate CPS    | Value              | Phase              | Far Det Bkg Cntrate CPS         | Value              | Phase              | Array-1 Det Bkg Cntrate CPS | Value              |
| Master             |                             | 32.40              | Master             |                                 | 33.26              | Master             |                             | 29.98              |
| Before             |                             | 31.99              | Before             |                                 | 33.21              | Before             |                             | 29.85              |
| After              |                             | 30.83              | After              |                                 | 33.08              | After              |                             | 28.78              |
| 1.000<br>(Minimum) | 30.00<br>(Nominal)          | 50.00<br>(Maximum) | 1.000<br>(Minimum) | 30.00<br>(Nominal)              | 50.00<br>(Maximum) | 1.000<br>(Minimum) | 30.00<br>(Nominal)          | 50.00<br>(Maximum) |
| Phase              | Array-2 Det Bkg Cntrate CPS | Value              | Phase              | Array Therm Det Bkg Cntrate CPS | Value              |                    |                             |                    |
| Master             |                             | 29.00              | Master             |                                 | 32.46              |                    |                             |                    |
| Before             |                             | 29.26              | Before             |                                 | 30.67              |                    |                             |                    |
| After              |                             | 29.63              | After              |                                 | 33.62              |                    |                             |                    |
| 1.000<br>(Minimum) | 30.00<br>(Nominal)          | 50.00<br>(Maximum) | 1.000<br>(Minimum) | 30.00<br>(Nominal)              | 50.00<br>(Maximum) |                    |                             |                    |

Master: 26-Jul-2012 12:44

Before: 21-Aug-2012 17:50

After: 21-Aug-2012 20:56

#### Accelerator-Porosity Tool Wellsite Calibration

##### Calibration Ratios

|                     |                            |                    |                     |                              |                    |                     |                              |                    |
|---------------------|----------------------------|--------------------|---------------------|------------------------------|--------------------|---------------------|------------------------------|--------------------|
| Phase               | Near/Far Calibration Ratio | Value              | Phase               | Near/Array Calibration Ratio | Value              | Phase               | Near/Array Cal Ratio Up/Down | Value              |
| Master              |                            | 0.8878             | Master              |                              | 1.065              | Master              |                              | 1.018              |
| 0.8000<br>(Minimum) | 0.9250<br>(Nominal)        | 1.050<br>(Maximum) | 0.9000<br>(Minimum) | 1.030<br>(Nominal)           | 1.170<br>(Maximum) | 0.9700<br>(Minimum) | 1.000<br>(Nominal)           | 1.030<br>(Maximum) |

Master: 26-Jul-2012 12:45

#### Accelerator-Porosity Tool Wellsite Calibration

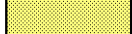
##### Tank Check

|                    |                              |                    |                    |                              |                    |                    |                              |                    |
|--------------------|------------------------------|--------------------|--------------------|------------------------------|--------------------|--------------------|------------------------------|--------------------|
| Phase              | Array-1 Standoff Porosity PU | Value              | Phase              | Array-2 Standoff Porosity PU | Value              | Phase              | Average Slowing Down Time US | Value              |
| Master             |                              | 10.57              | Master             |                              | 10.16              | Master             |                              | 6.071              |
| 9.900<br>(Minimum) | 11.75<br>(Nominal)           | 13.60<br>(Maximum) | 9.900<br>(Minimum) | 11.75<br>(Nominal)           | 13.60<br>(Maximum) | 5.500<br>(Minimum) | 6.000<br>(Nominal)           | 6.250<br>(Maximum) |
| Phase              | Array-1 SDT Ratio Up/Down    | Value              | Phase              | Array-2 SDT Ratio Up/Down    | Value              | Phase              | Sigma Formation CU           | Value              |

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

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

| 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                                               |                   |  | 39.55              | Master             |                    |                    | 16.74              | Master |                  |                    | 1112               |  |
| Before                                               |                   |  | 39.73              | Before             |                    |                    | 14.78              | Before |                  |                    | 1075               |  |
| After                                                |                   |  | 39.56              | After              |                    |                    | 14.73              | After  |                  |                    | 1075               |  |
| 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                                               |                   |  | 142.2              | Master             |                    |                    | 9.140              | Master |                  |                    | 30.92              |  |
| Before                                               |                   |  | 143.4              | Before             |                    |                    | 7.340              | Before |                  |                    | 10.72              |  |
| After                                                |                   |  | 141.5              | After              |                    |                    | 9.782              | After  |                  |                    | 11.80              |  |
| 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                                                                                |    | 18.43 |
| Before                                                                                |    | 16.45 |
| After                                                                                 |  | 17.17 |
| 10.00 (Minimum)      45.00 (Nominal)      100.0 (Maximum)                             |                                                                                   |       |
| Master: 15-Jul-2012 1:37      Before: 21-Aug-2012 17:48      After: 21-Aug-2012 21:00 |                                                                                   |       |

| Hostile Natural Gamma Ray Sonde Wellsite Calibration       |                                                                                   |        |
|------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|
| Ratio Of Detector 1 To Detector 2                          |                                                                                   |        |
| Phase                                                      | Coincidence Count Rate Ratio                                                      | Value  |
| Master                                                     |  | 0.9742 |
| Before                                                     |  | 0.9958 |
| After                                                      |  | 0.9997 |
| 0.9500 (Minimum)      1.000 (Nominal)      1.050 (Maximum) |                                                                                   |        |
| Master: 15-Jul-2012 1:37                                   |                                                                                   |        |
| Before: 21-Aug-2012 17:48                                  |                                                                                   |        |
| After: 21-Aug-2012 21:00                                   |                                                                                   |        |

| Enhanced DTS Cartridge / Equipment Identification |            |       |  |
|---------------------------------------------------|------------|-------|--|
| Primary Equipment:                                |            |       |  |
| EDTC Gamma Ray Detector                           | EDTG – A/B | 77693 |  |
| Enhanced DTS Cartridge                            | EDTC – B   | 8529  |  |
| Auxiliary Equipment:                              |            |       |  |
| EDTC Housing                                      | EDTH – B   | 8528  |  |

| Enhanced DTS Cartridge Wellsite Calibration               |                                                                                     |       |
|-----------------------------------------------------------|-------------------------------------------------------------------------------------|-------|
| EDTC Accelerometer Calibration                            |                                                                                     |       |
| Phase                                                     | EDTC Z-Axis Acceleration M/S2                                                       | Value |
| Before                                                    |  | 9.859 |
| 9.610 (Minimum)      9.810 (Nominal)      10.01 (Maximum) |                                                                                     |       |
| Before: 21-Aug-2012 17:57                                 |                                                                                     |       |

| 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                                      |  |  | 1.756 | Before                   |  |  | 163.2 | Before          |  |  | 165.0 |
| After                                       |  |  | 4.001 | After                    |  |  | 162.5 | After           |  |  | 164.3 |
| 0 (Minimum)                                 |                                                                                    |  |       | 148.3 (Minimum)          |                                                                                     |  |       | 150.0 (Minimum) |                                                                                       |  |       |
| 30.00 (Nominal)                             |                                                                                    |  |       | 163.2 (Nominal)          |                                                                                     |  |       | 165.0 (Nominal) |                                                                                       |  |       |
| 120.0 (Maximum)                             |                                                                                    |  |       | 178.0 (Maximum)          |                                                                                     |  |       | 180.0 (Maximum) |                                                                                       |  |       |
| Before: 21-Aug-2012 17:45                   |                                                                                    |  |       | After: 21-Aug-2012 20:57 |                                                                                     |  |       |                 |                                                                                       |  |       |

Company: **Lamont Doherty Earth Observatory**  
**Shell**  
 Well: **Expedition 344S, U0080A (USC80)**  
 Field: **Baffin Bay**  
 Rig: **JOIDES Resolution**  
 Country: **USA**

**Schlumberger**

