



**DISCLAIMER**

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**OTHER SERVICES1**



- OS1: HNGS
- OS2: HLDS
- OS3: MSS
- OS4: DSI
- OS5: FMS

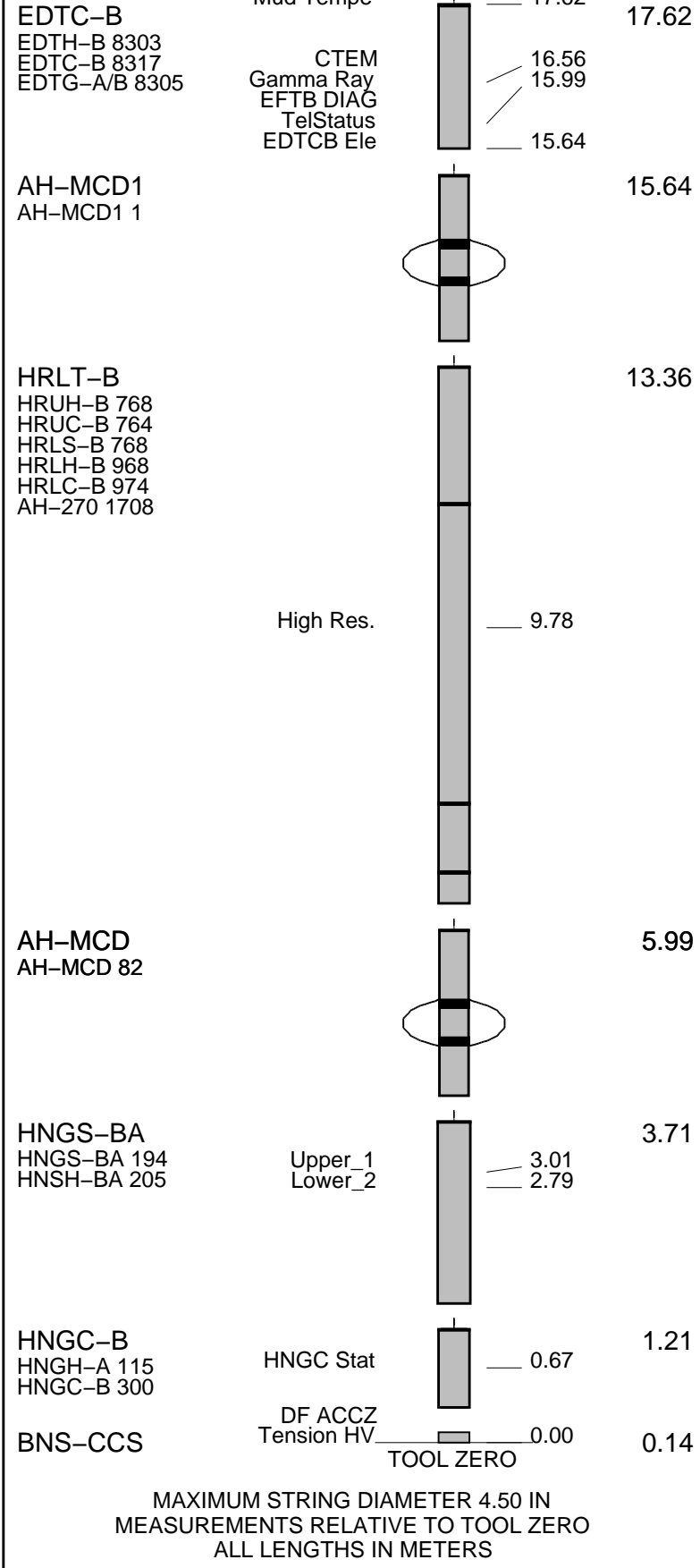
**REMARKS: RUN NUMBER 1**

Hole drilled and cored using APC/XCB coring system.  
 LfV Actuator (Go-Devil) run attached to bottom of MSS for LfV locking open / closed.  
 Logs recorded from drill floor (1082.9m above permanent datum) then shifted to zero at sea floor.  
 Hole drilled with sea water and then displaced with weighted water-based mud having a density of 1.259 g/cc (10.5ppg).  
 Barite corrections applied to nuclear logs.  
 Caliper closed at 85mbsf to facilitate pipe entry; AHC not used due to very low heave.  
 Toolstring centered using two MCD bowspring centralizers run above and below HRLA.

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

**EQUIPMENT DESCRIPTION**

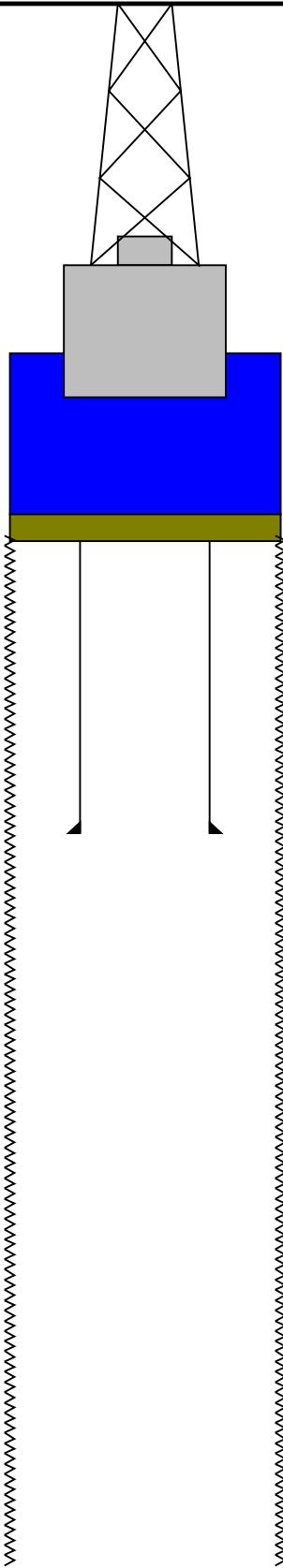
RUN 1		RUN 2	
<b>SURFACE EQUIPMENT</b>			
GSR-U 616008 WITM (EDTS)-A			
<b>DOWNHOLE EQUIPMENT</b>			
LEH-MT 101 LEH-MT 101 101			19.02
AH-369			18.06
MDSB_EDTC Mud Tempe			17.62



Production String	(in)	(m)	Well Schematic	(m)	(in)	Casing String
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Kelly Bushing Elevation  
Derrick Floor Elevation  
  
Mean Sea Level

0.0  
0.0  
  
11.0



1082.9 11.438 4.000

Sea Bed

1162.4 5.500 4.000

Bit

1357.9 11.438

TD - Driller

**Schlumberger**

**Downlog  
1:200 Scale**

MAXIS Field Log

Company: Lamont Doherty Earth Observatory

Well: Expedition 346, Site U1430B

**Input DLIS Files**

DEFAULT	Flip_NGS_HRLA_035LUP	PRODUCER	21-Sep-2013 11:25	1335.9 M	1042.4 M
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**Output DLIS Files**

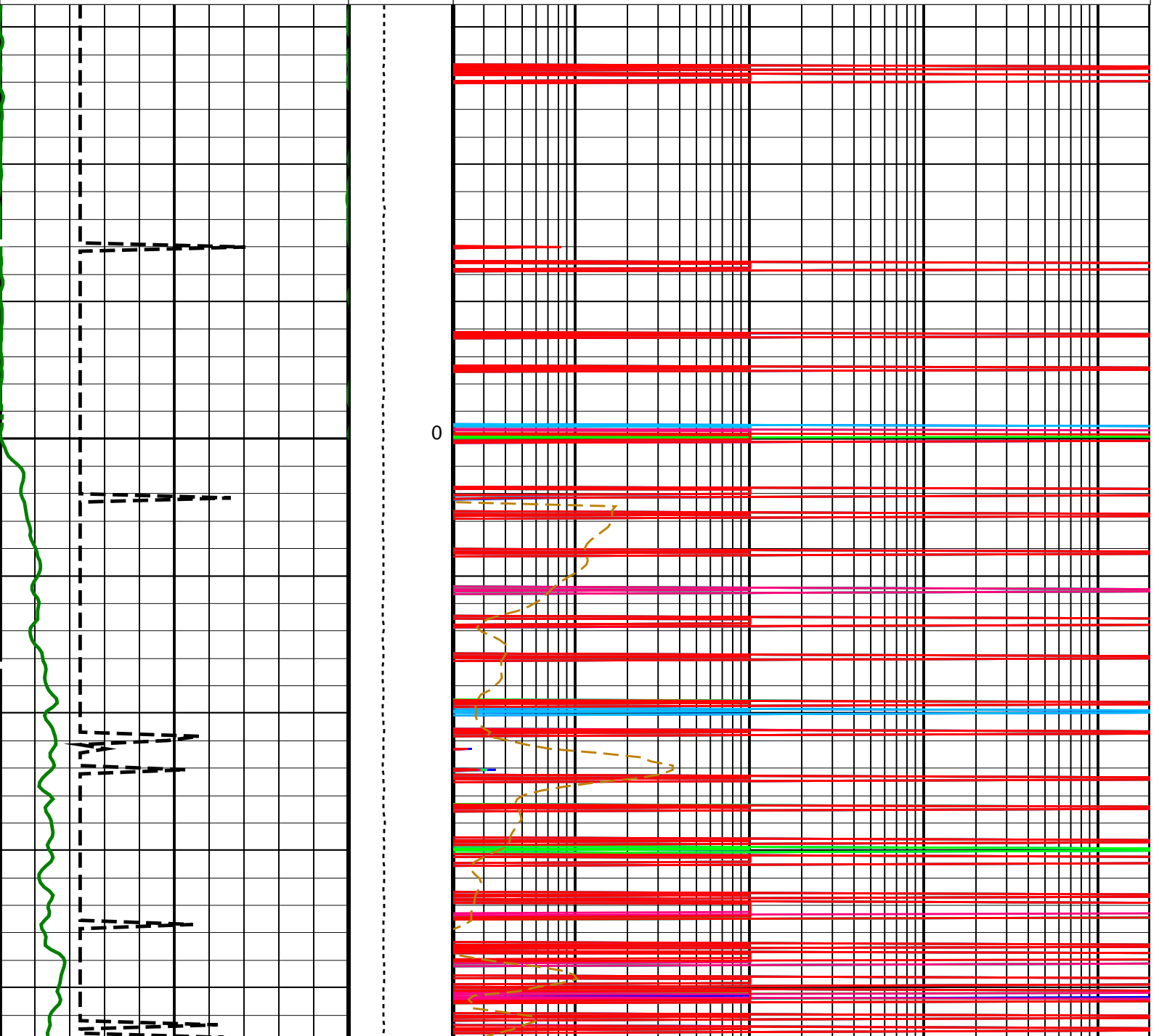
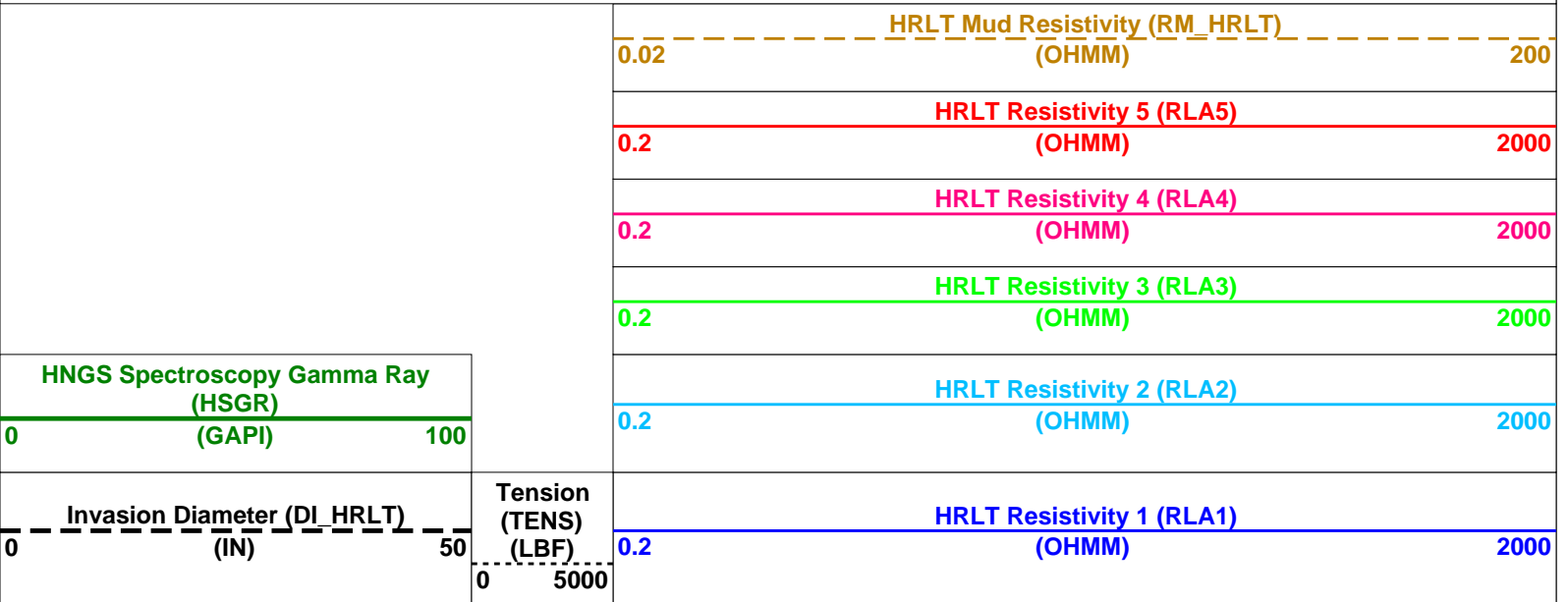
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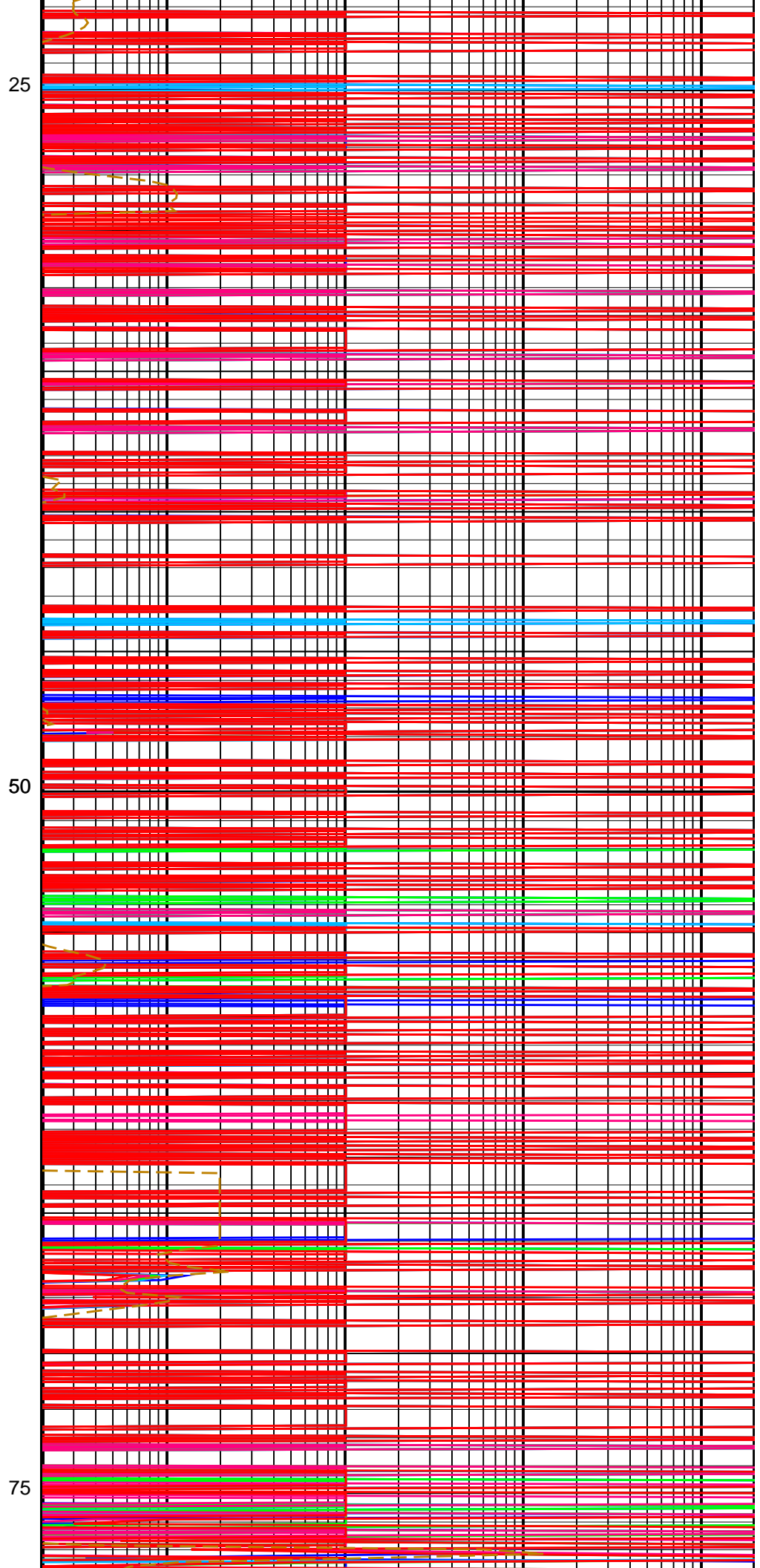
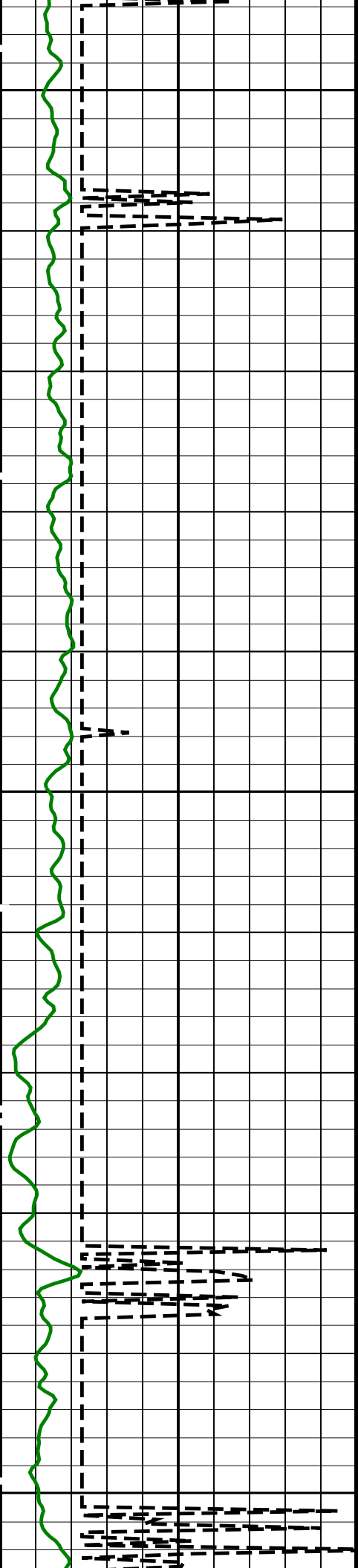
**OP System Version: 19C0-187**

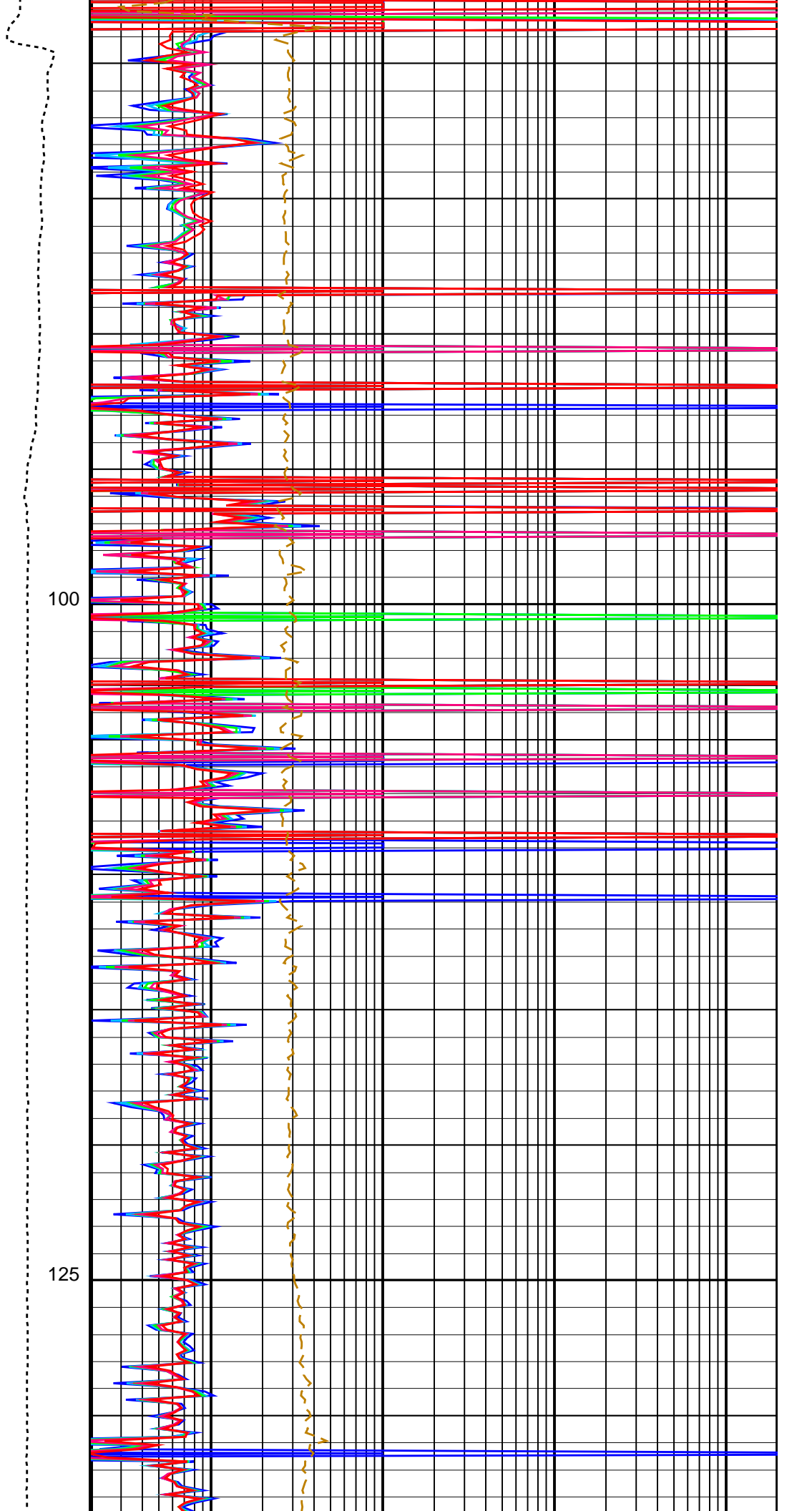
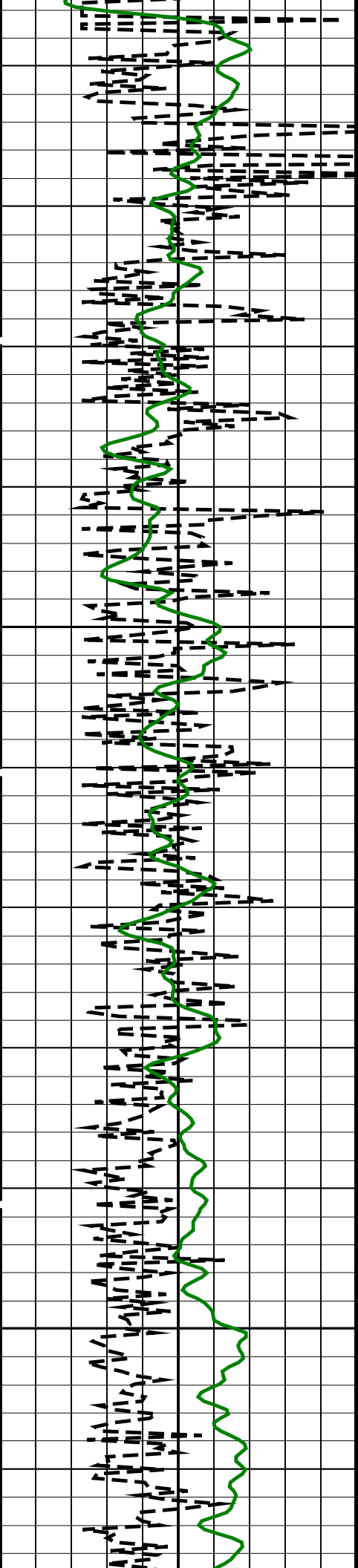
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	SKK-5169-EDTCB

PIP SUMMARY

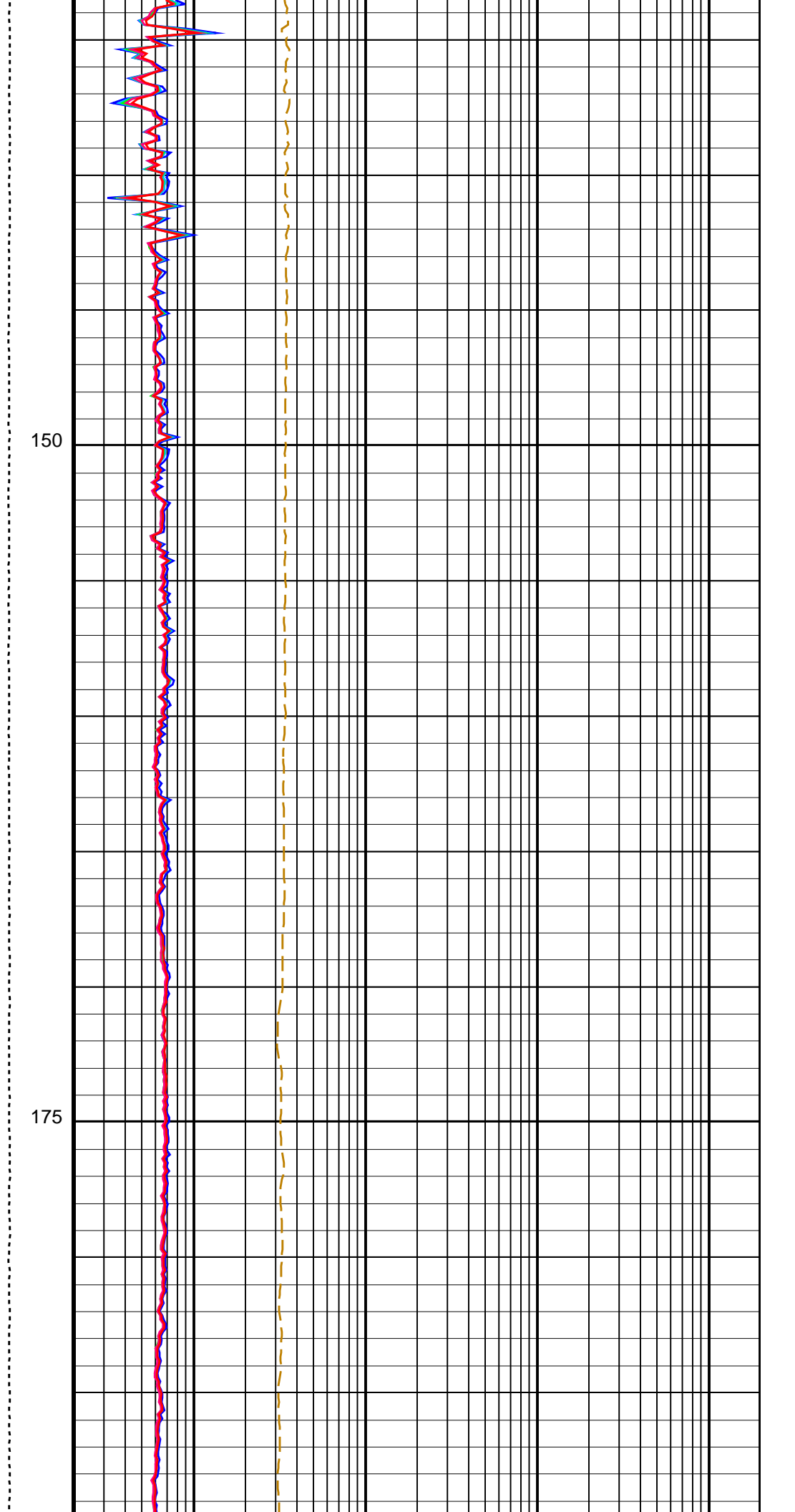
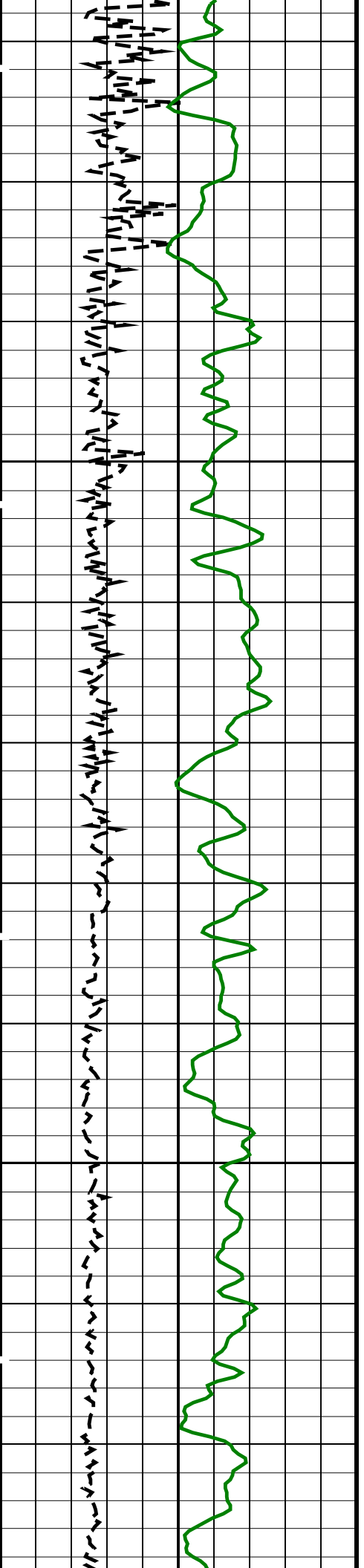
Time Mark Every 60 S





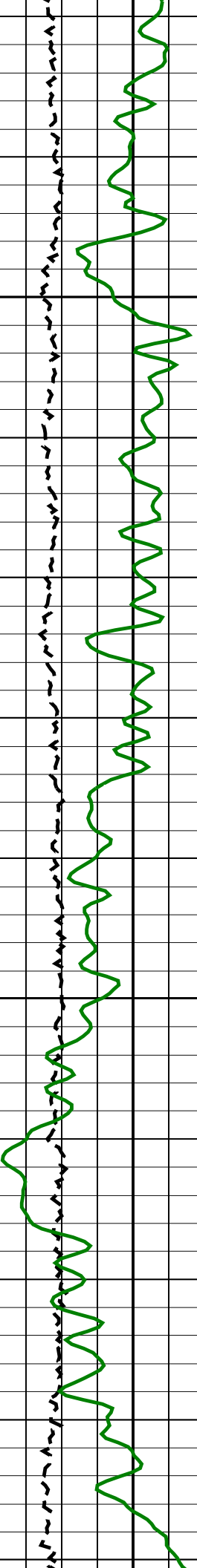






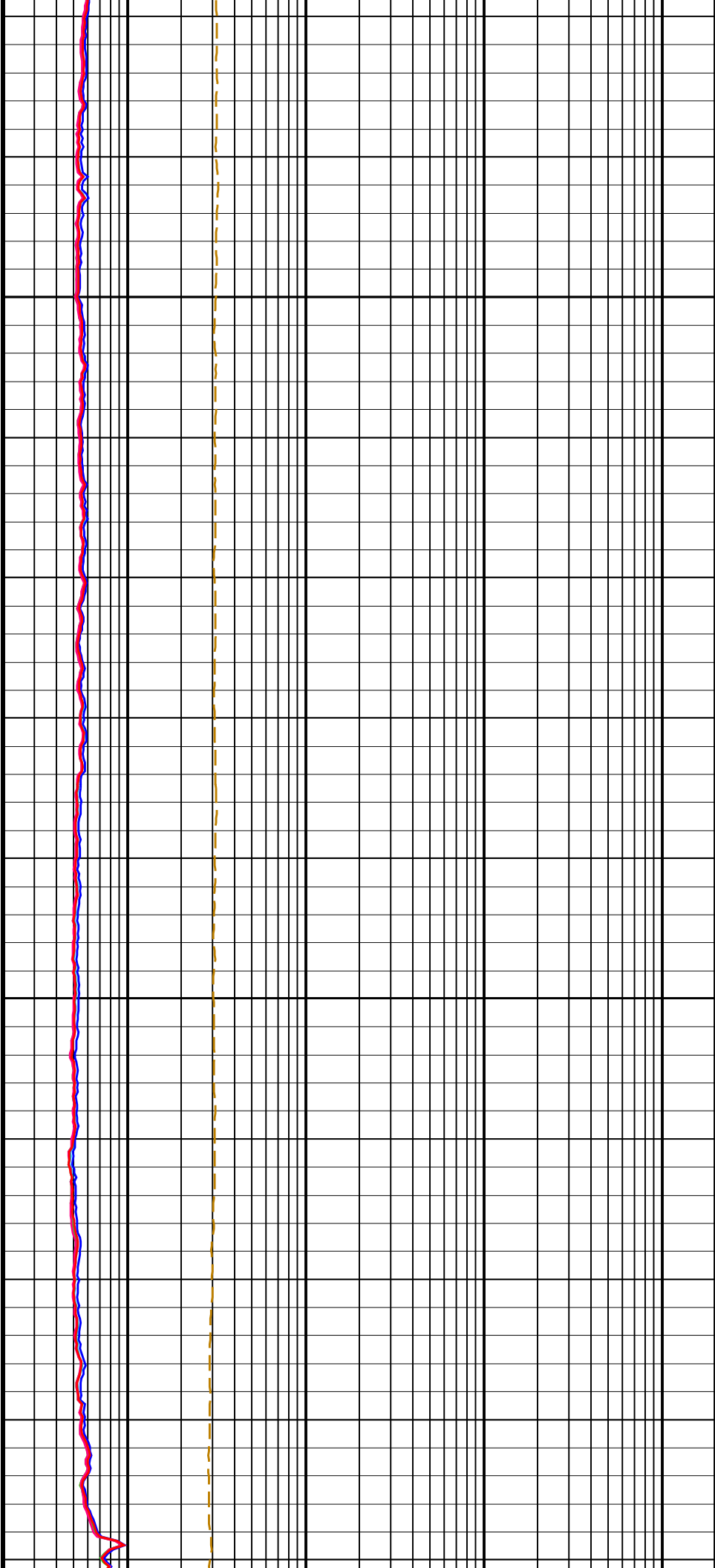
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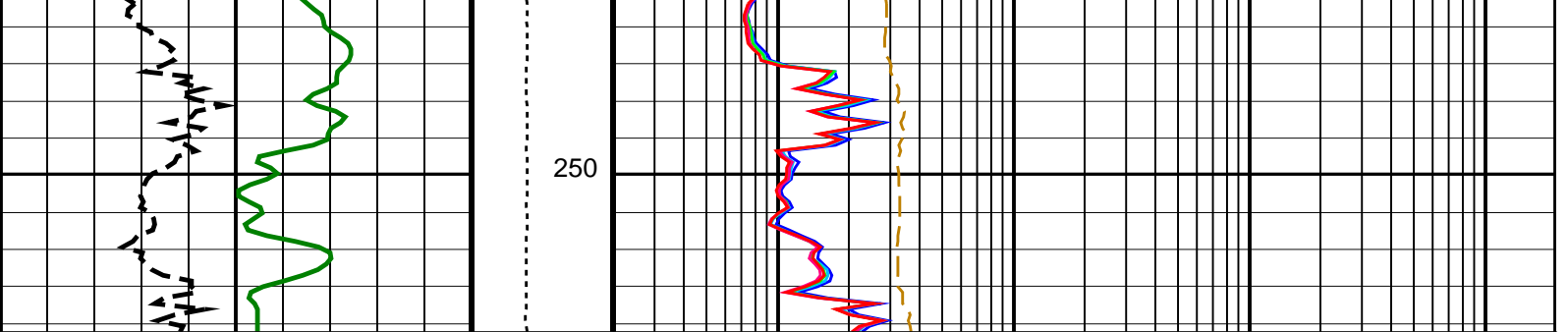
175



200

225





Invasion Diameter (DI_HRLT) (IN)	0	50	Tension (TENS) (LBF)	0	5000	HRLT Resistivity 1 (RLA1) (OHMM)	0.2	2000
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)	0	100				HRLT Resistivity 2 (RLA2) (OHMM)	0.2	2000
						HRLT Resistivity 3 (RLA3) (OHMM)	0.2	2000
						HRLT Resistivity 4 (RLA4) (OHMM)	0.2	2000
						HRLT Resistivity 5 (RLA5) (OHMM)	0.2	2000
						HRLT Mud Resistivity (RM_HRLT) (OHMM)	0.02	200

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HNGS-BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1
BAR2	HNGS Detector 2 Barite Constant	1
BHK	HNGS Borehole Potassium Correction Concentration	0
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	21 DEGC
CSD1	Inner Casing Outer Diameter	0 IN
CSD2	Outer Casing Outer Diameter	0 IN
CSW1	Inner Casing Weight	0 LB/F
CSW2	Outer Casing Weight	0 LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE
GCSE	Generalized Caliper Selection	BS
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGS Borehole Potassium Running Average	-0.00272245
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	BARI
HNPE	HNGS Processing Enable	YES
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3 CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3 CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES
SHT	Surface Hole Temperature	9 DEGC
TPOS	Tool Position	ECCE
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.948624
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.952768
HRLT-B: High Resolution Laterolog Array - B		
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	21 DEGC
GCSE	Generalized Caliper Selection	BS
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
KFAC_HRLT	HRLT K Factor Option	SONDE
PROCNV	Inversion Selection	ON

PROCMFL	Inversion Resistivity Selection	NO_EXTERNAL_RXO	0	IN
PROCMSO	Mechanical Standoff Fin Size			
PROCRM	Processing Mud Resistivity Select	HRLT_Compute		
PROCSPO	Sonde Position	Centered		
SHT	Surface Hole Temperature		9	DEGC
	EDTC-B: Enhanced DTS Cartridge			
BHS	Borehole Status		OPEN	
BHT	Bottom Hole Temperature (used in calculations)		21	DEGC
GCSE	Generalized Caliper Selection		BS	
GGRD	Geothermal Gradient		0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
SHT	Surface Hole Temperature		9	DEGC
	System and Miscellaneous			
BS	Bit Size		11.438	IN
DO	Depth Offset for Playback		-1081.8	M
PP	Playback Processing		NORMAL	
TD	Total Depth		885.7	M

Format: HRLT Vertical Scale: 1:200 Graphics File Created: 21-Sep-2013 11:35

### OP System Version: 19C0-187

HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	SKK-5169-EDTCB

#### Input DLIS Files

DEFAULT	Flip_NGS_HRLA_035LUP	PRODUCER	21-Sep-2013 11:25	1335.9 M	1042.4 M
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#### Output DLIS Files

DEFAULT	NGS_HRLA_039PUP	FN:44	PRODUCER	21-Sep-2013 11:35	
CLIENT	NGS_HRLA_039PUC	FN:45	CUSTOMER	21-Sep-2013 11:35	



**Repeat Pass  
1:200 Scale**

MAXIS Field Log

Company: Lamont Doherty Earth Observatory Well: Expedition 346, Site U1430B

#### Input DLIS Files

DEFAULT	NGS_HRLA_015LUP	FN:14	PRODUCER	19-Sep-2013 23:59	1353.3 M	1252.5 M
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#### Output DLIS Files

DEFAULT	NGS_HRLA_037PUP	FN:40	PRODUCER	21-Sep-2013 11:32	272.0 M	171.0 M
CLIENT	NGS_HRLA_037PUC	FN:41	CUSTOMER	21-Sep-2013 11:32	272.0 M	171.0 M

### OP System Version: 19C0-187

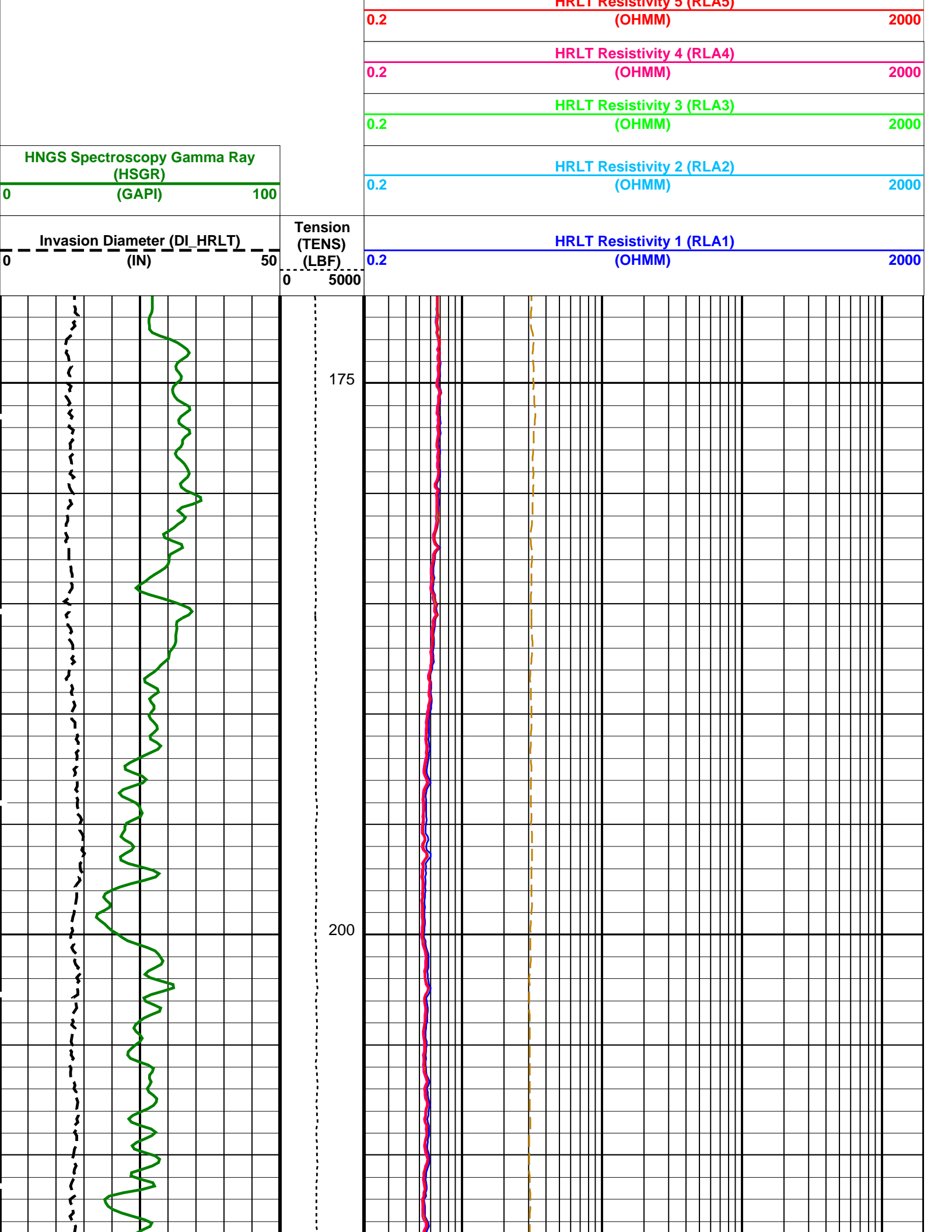
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HRLT-B	19C0-187	EDTC-B	SKK-5169-EDTCB

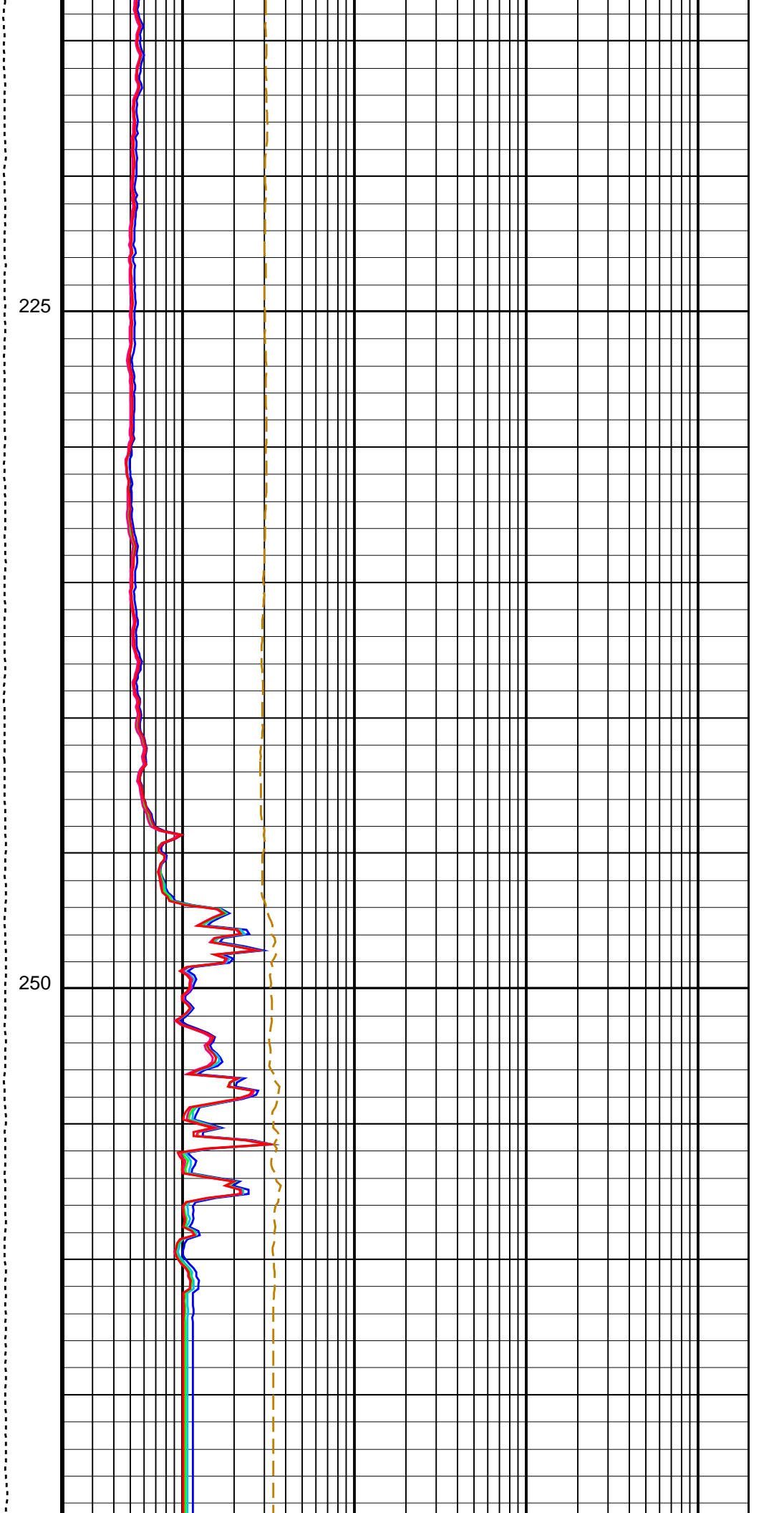
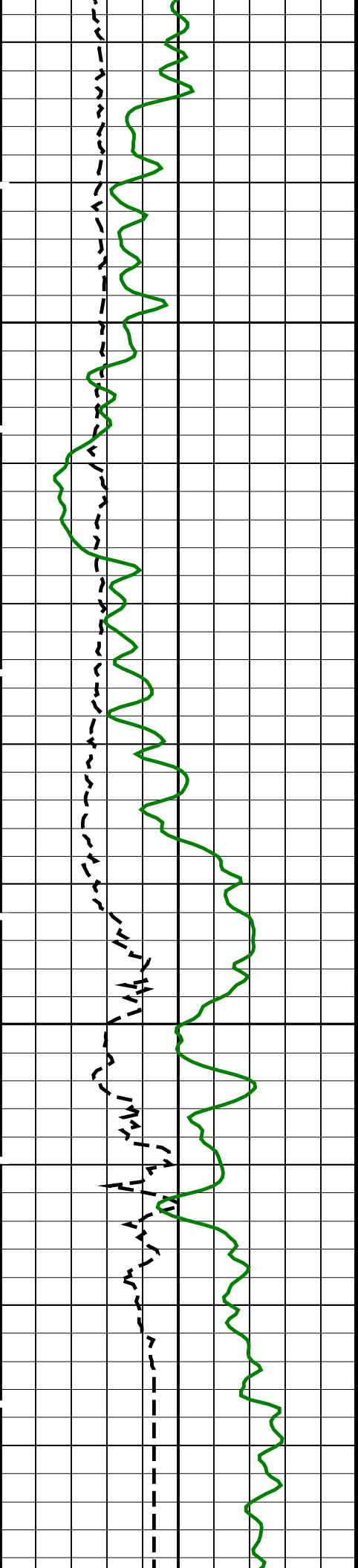
#### PIP SUMMARY

Time Mark Every 60 S



HRLT Resistivity: 5 (DL A5)





<b>Invasion Diameter (DI_HRLT)</b> (IN) 0 50	<b>Tension</b> (TENS) (LBF) 0 5000	<b>HRLT Resistivity 1 (RLA1)</b> (OHMM) 0.2 2000
<b>HNGS Spectroscopy Gamma Ray</b> (HSGR) (GAPI) 0 100		<b>HRLT Resistivity 2 (RLA2)</b> (OHMM) 0.2 2000
		<b>HRLT Resistivity 3 (RLA3)</b> (OHMM) 0.2 2000
		<b>HRLT Resistivity 4 (RLA4)</b> (OHMM) 0.2 2000
		<b>HRLT Resistivity 5 (RLA5)</b> (OHMM) 0.2 2000
		<b>HRLT Mud Resistivity (RM_HRLT)</b> (OHMM) 0.02 200

**PIP SUMMARY**

Time Mark Every 60 S

## Parameters

DLIS Name	Description	Value
<b>HNGS-BA: Hostile Natural Gamma Ray Sonde</b>		
BAR1	HNGS Detector 1 Barite Constant	1
BAR2	HNGS Detector 2 Barite Constant	1
BHK	HNGS Borehole Potassium Correction Concentration	0
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	21 DEGC
CSD1	Inner Casing Outer Diameter	0 IN
CSD2	Outer Casing Outer Diameter	0 IN
CSW1	Inner Casing Weight	0 LB/F
CSW2	Outer Casing Weight	0 LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE
GCSE	Generalized Caliper Selection	BS
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGS Borehole Potassium Running Average	-0.00272245
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	BARI
HNPE	HNGS Processing Enable	YES
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3 CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3 CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES
SHT	Surface Hole Temperature	9 DEGC
TPOS	Tool Position	ECCE
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.948624
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.952768
<b>HRLT-B: High Resolution Laterolog Array - B</b>		
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	21 DEGC
GCSE	Generalized Caliper Selection	BS
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
KFAC_HRLT	HRLT K Factor Option	SONDE
PROCINV	Inversion Selection	ON
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO
PROCMSO	Mechanical Standoff Fin Size	0 IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute
PROCSP0	Sonde Position	Centered
SHT	Surface Hole Temperature	9 DEGC
<b>EDTC-B: Enhanced DTS Cartridge</b>		
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	21 DEGC
GCSE	Generalized Caliper Selection	BS

GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	9	DEGC
System and Miscellaneous			
BS	Bit Size	11.438	IN
DO	Depth Offset for Playback	-1081.6	M
PP	Playback Processing	NORMAL	
TD	Total Depth	885.7	M

Format: HRLT    Vertical Scale: 1:200    Graphics File Created: 21-Sep-2013 11:32

### OP System Version: 19C0-187

HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	SKK-5169-EDTCB

#### Input DLIS Files

DEFAULT	NGS_HRLA_015LUP	FN:14	PRODUCER	19-Sep-2013 23:59	1353.3 M	1252.5 M
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#### Output DLIS Files

DEFAULT	NGS_HRLA_037PUP	FN:40	PRODUCER	21-Sep-2013 11:32		
CLIENT	NGS_HRLA_037PUC	FN:41	CUSTOMER	21-Sep-2013 11:32		



**Main Pass**  
**1:200 Scale**

MAXIS Field Log

Company: Lamont Doherty Earth Observatory    Well: Expedition 346, Site U1430B

#### Input DLIS Files

DEFAULT	NGS_HRLA_016LUP	FN:15	PRODUCER	20-Sep-2013 00:23	1351.0 M	1074.0 M
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#### Output DLIS Files

DEFAULT	NGS_HRLA_036PUP	FN:38	PRODUCER	21-Sep-2013 11:26	269.7 M	-7.5 M
CLIENT	NGS_HRLA_036PUC	FN:39	CUSTOMER	21-Sep-2013 11:26	269.7 M	-7.5 M

### OP System Version: 19C0-187

HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	SKK-5169-EDTCB

#### PIP SUMMARY

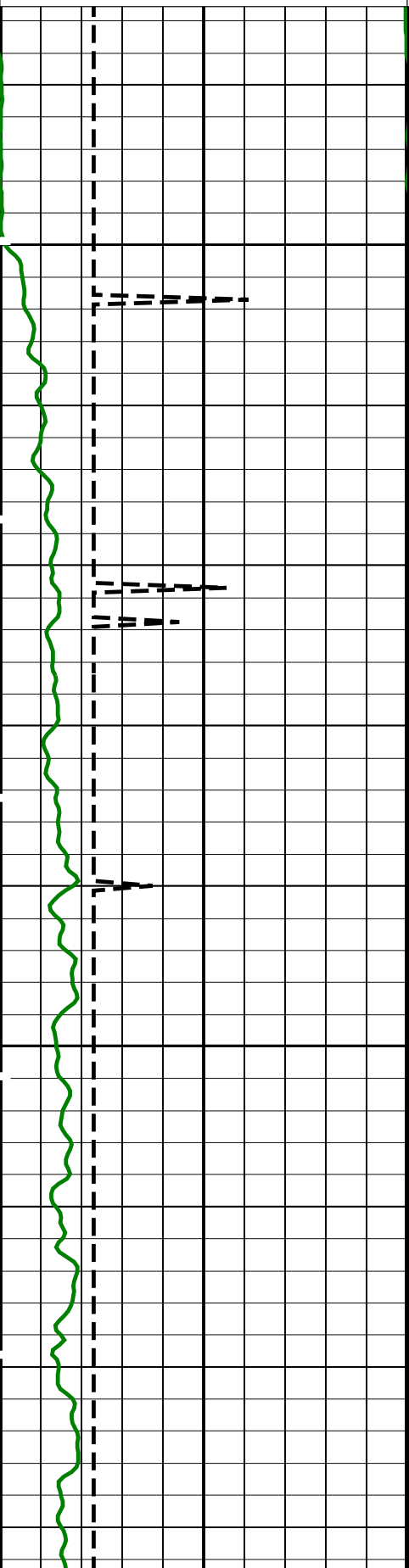
Time Mark Every 60 S

0.02	HRLT Mud Resistivity (RM_HRLT) (OHMM)	200
0.2	HRLT Resistivity 5 (RLA5) (OHMM)	2000
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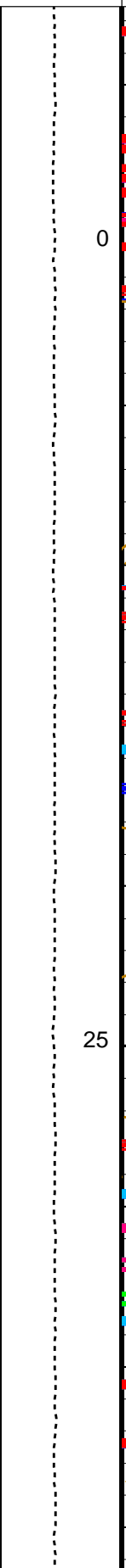


HNGS Spectroscopy Gamma Ray  
(HSGR)  
(GAPI) 0 100

Invasion Diameter (DI\_HRLT)  
(IN) 0 50

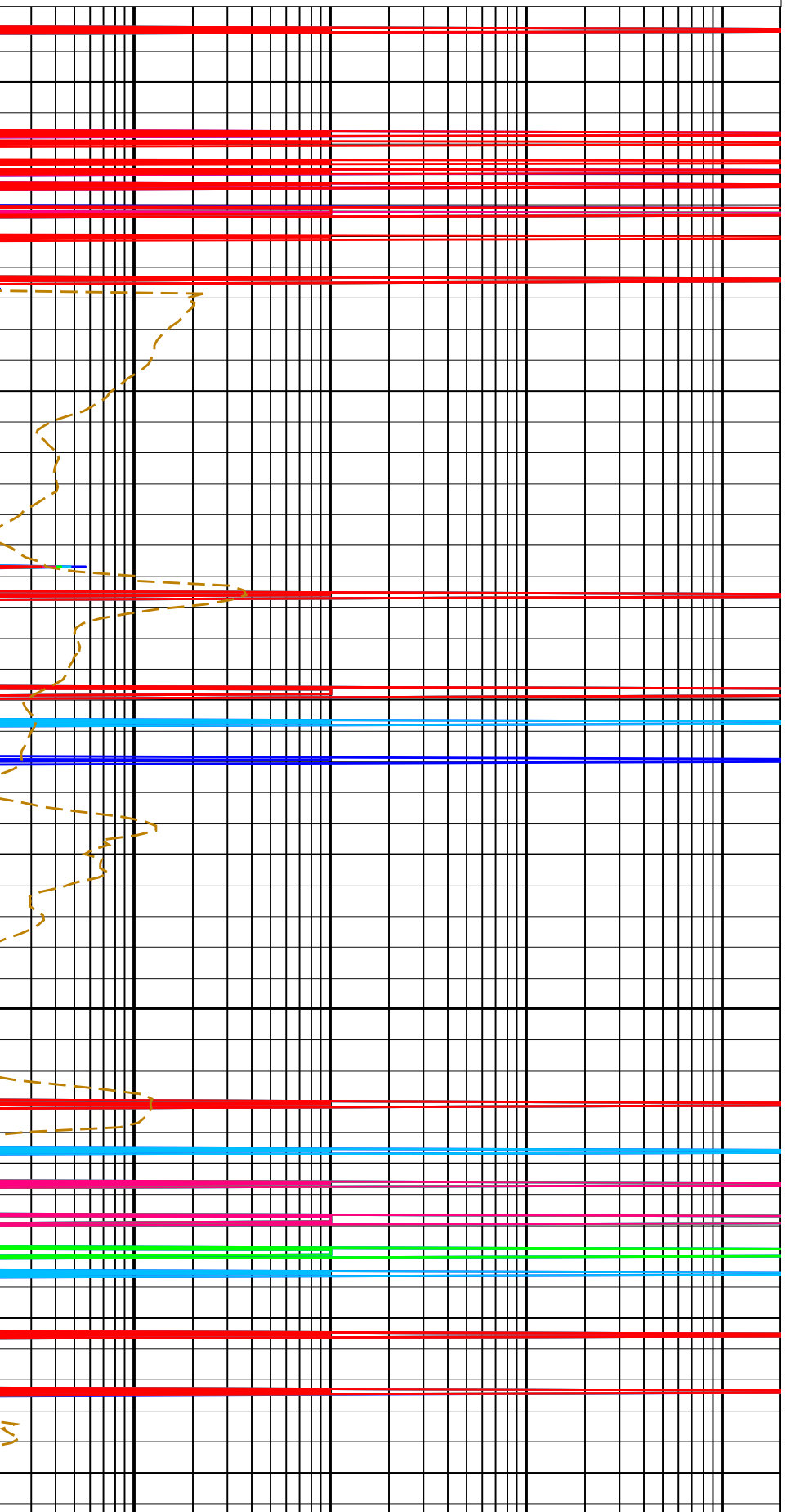


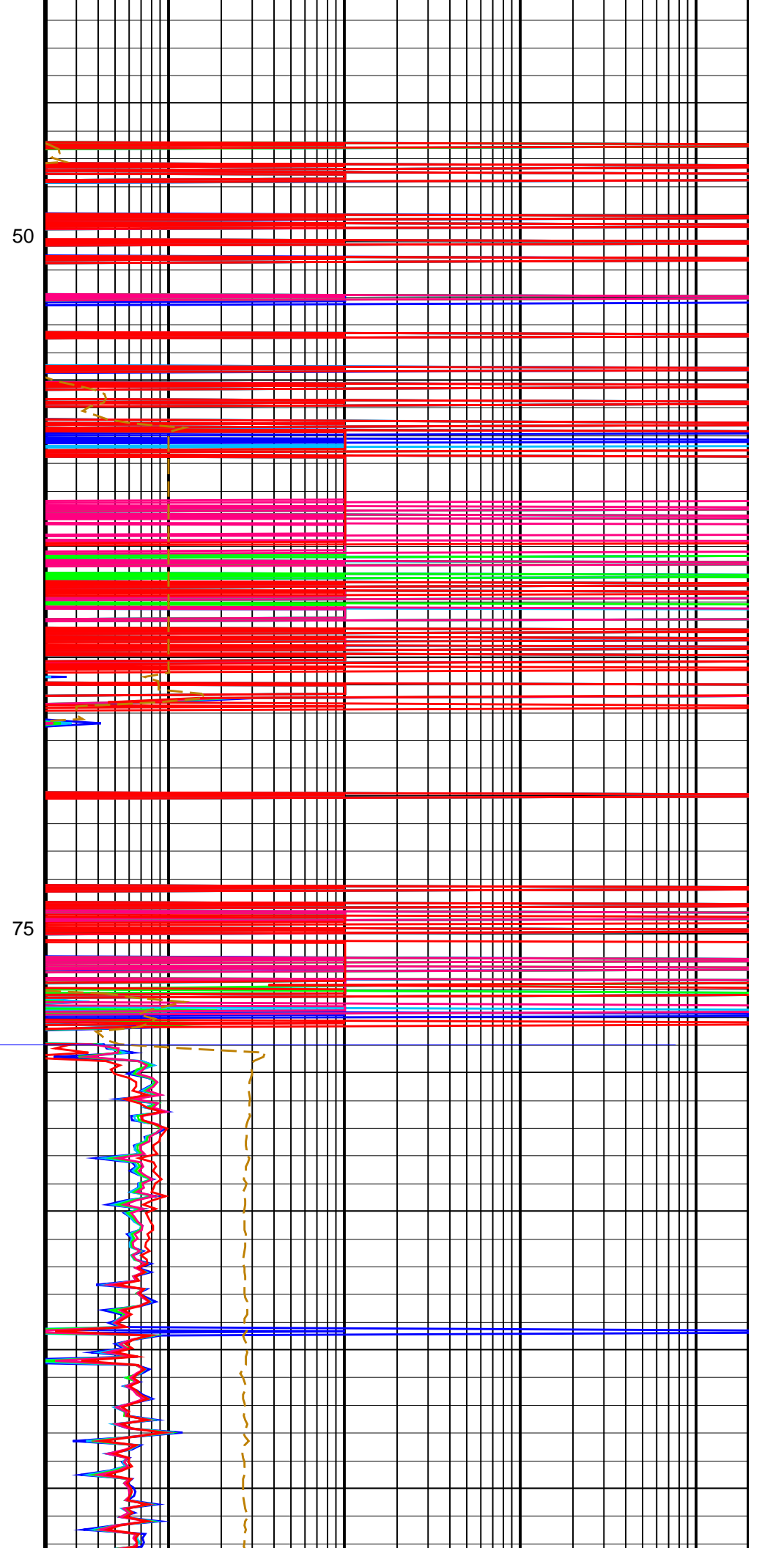
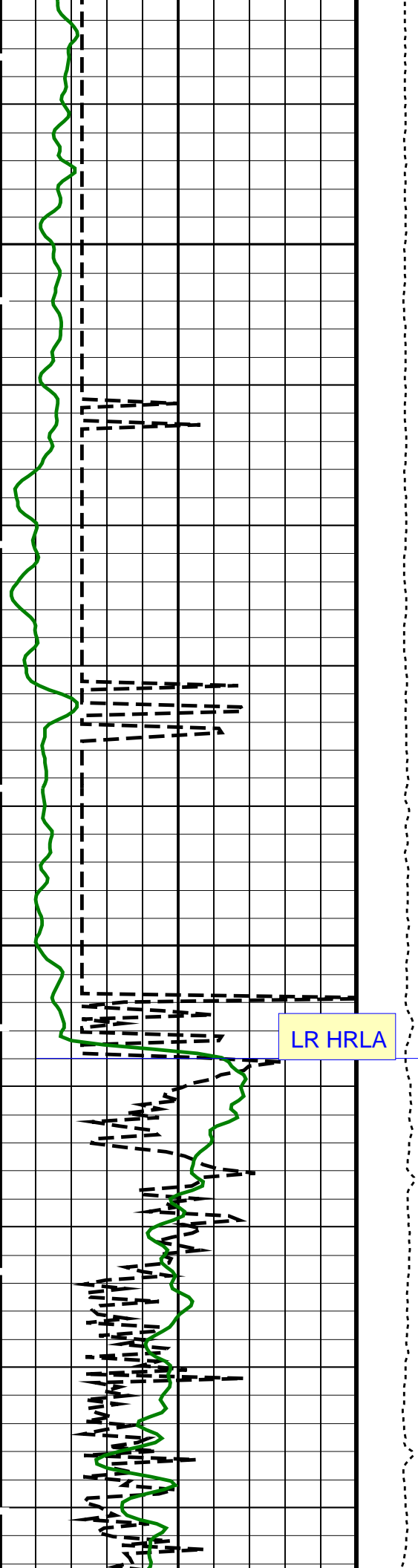
Tension  
(TENS)  
(LBF) 0 5000

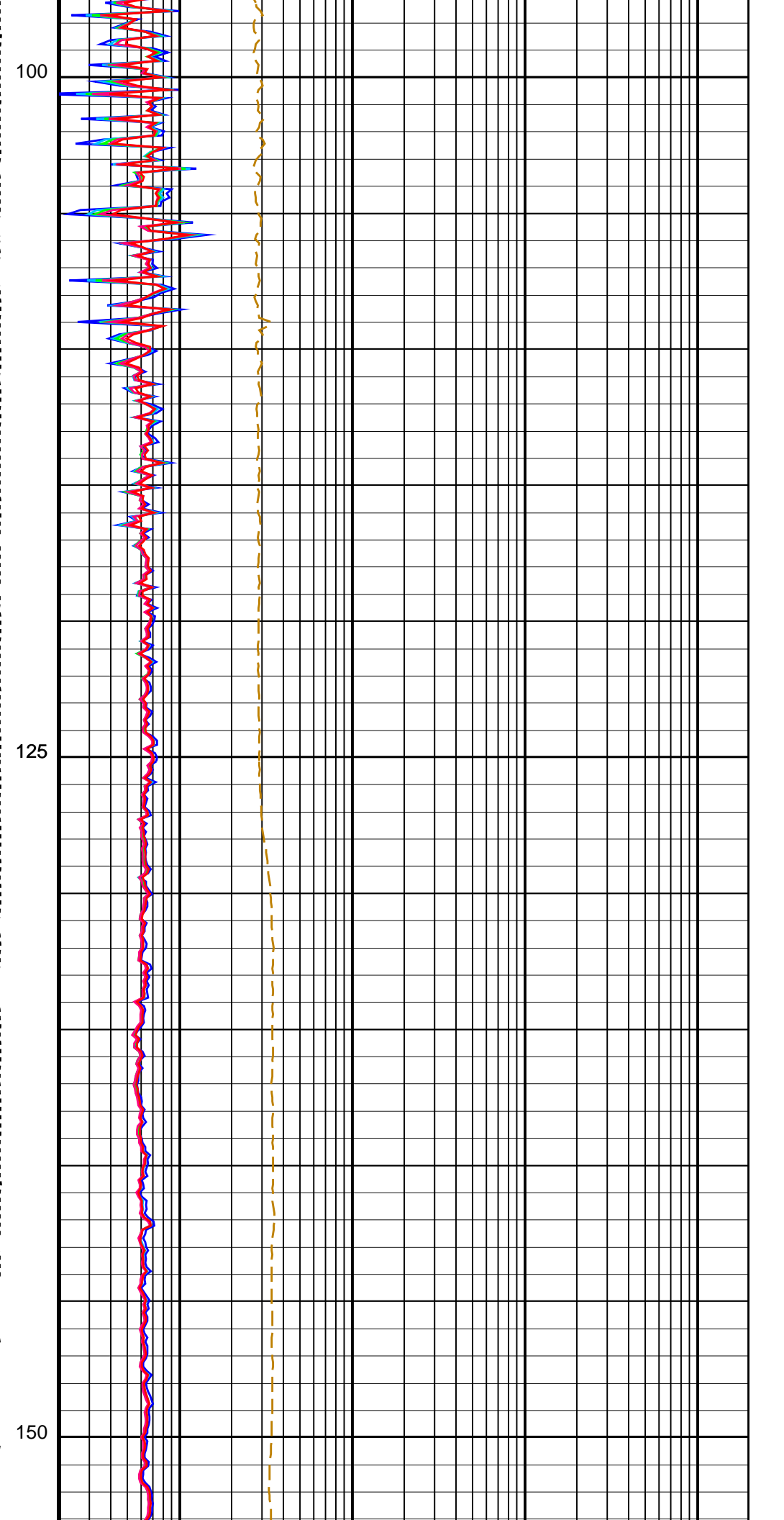
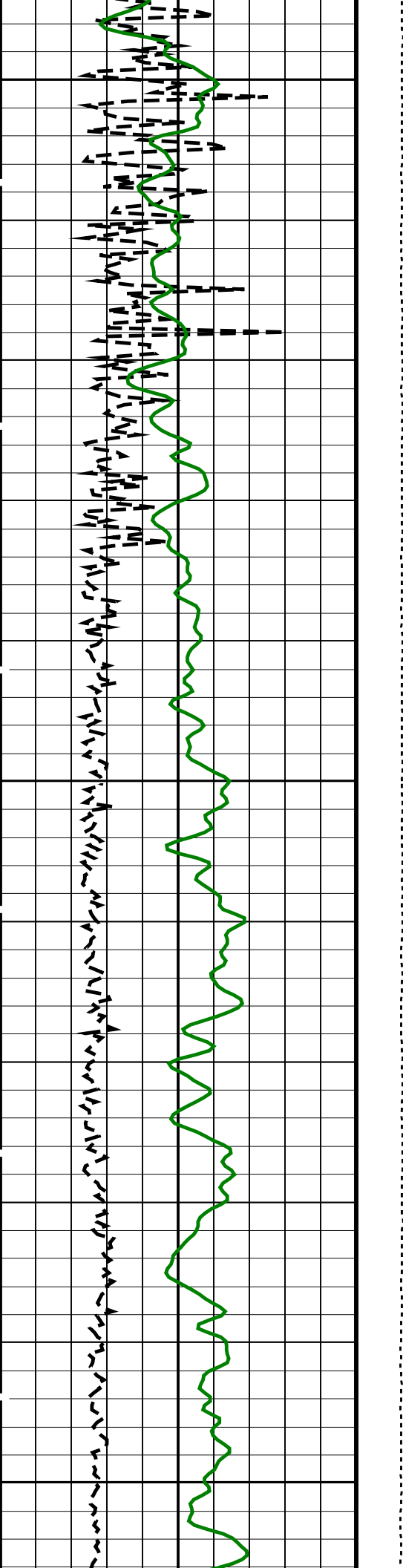


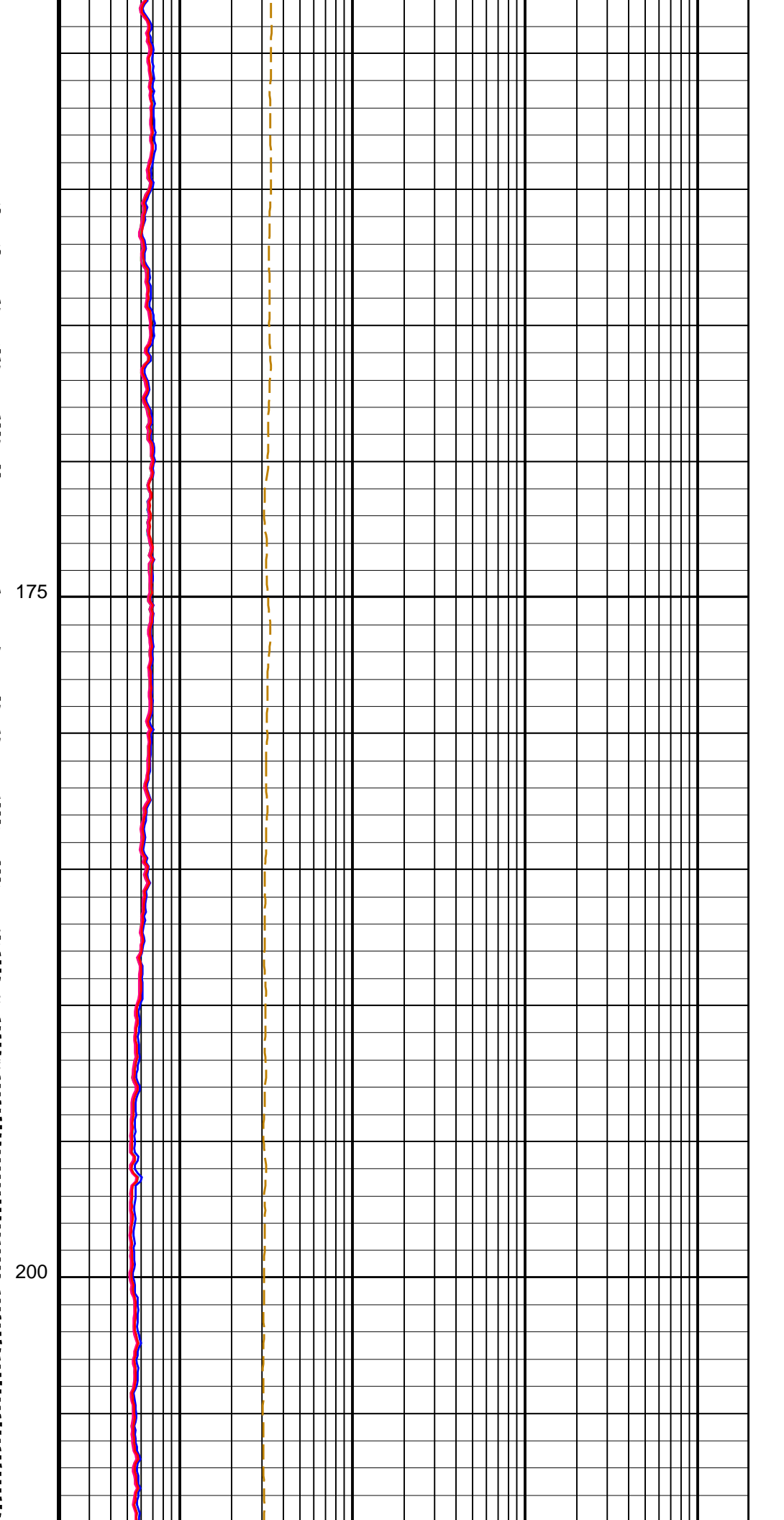
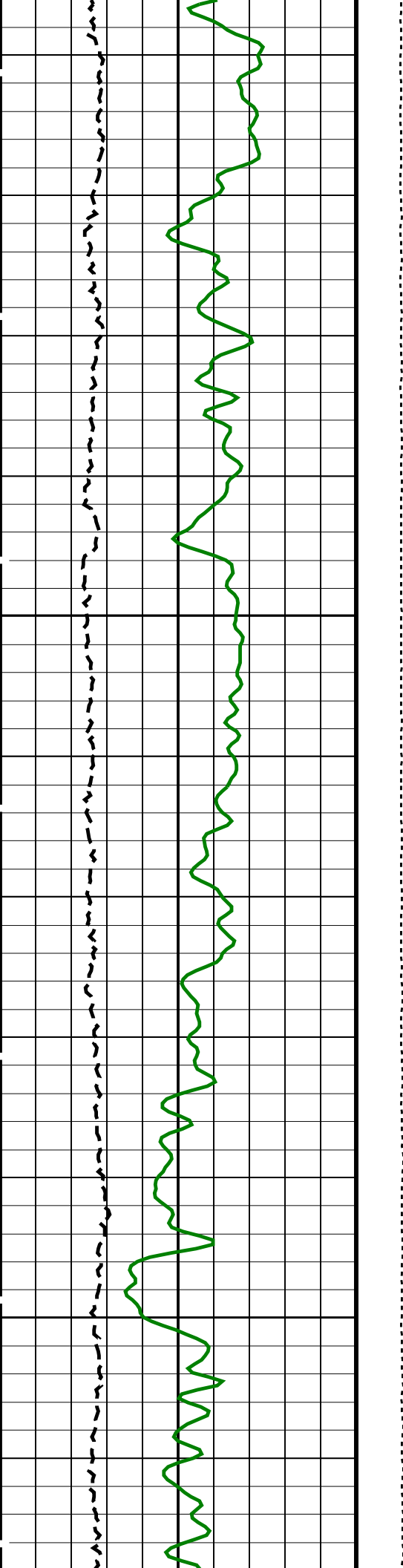
HRLT Resistivity 2 (RLA2)  
(OHMM) 0.2 2000

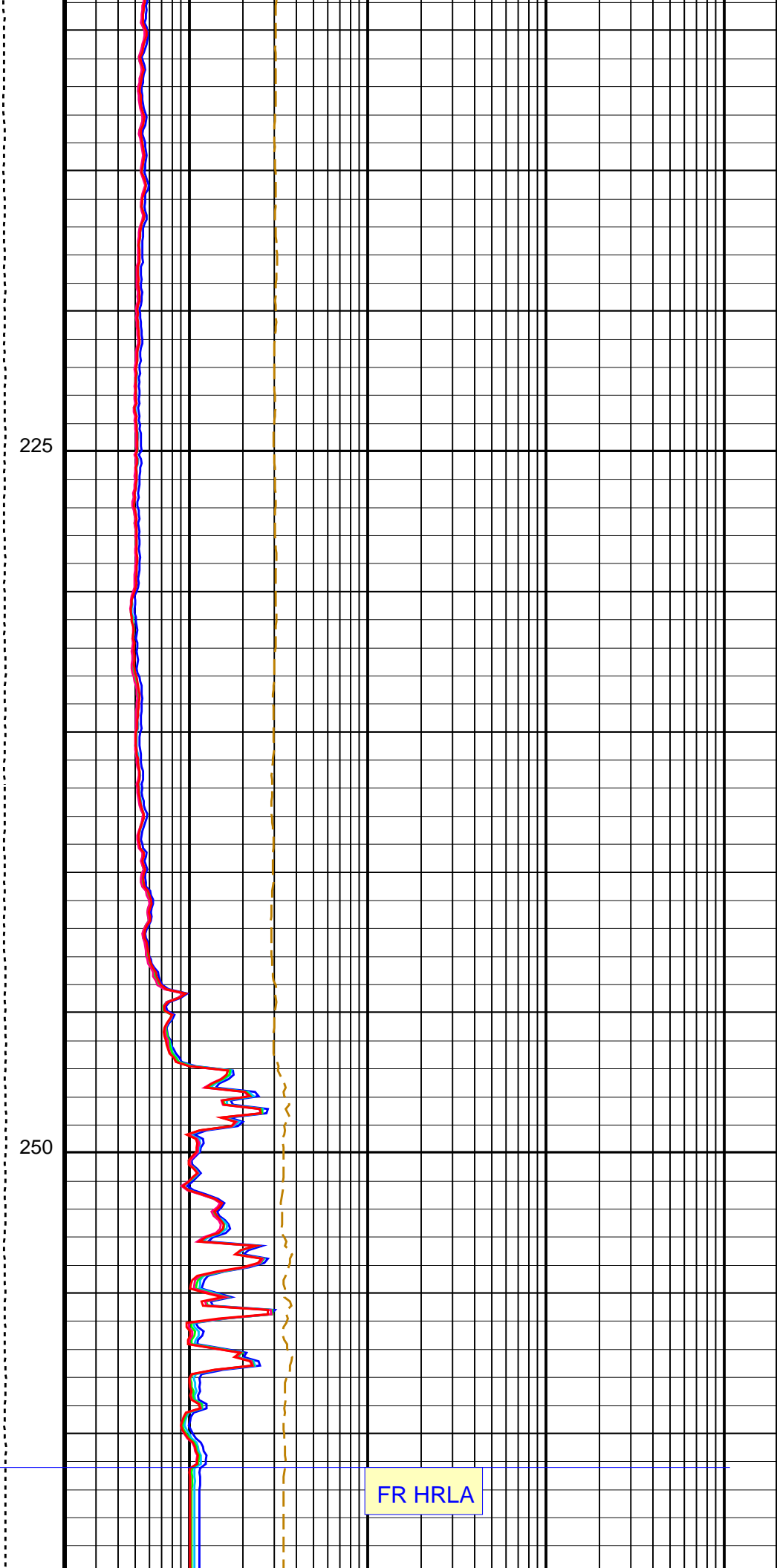
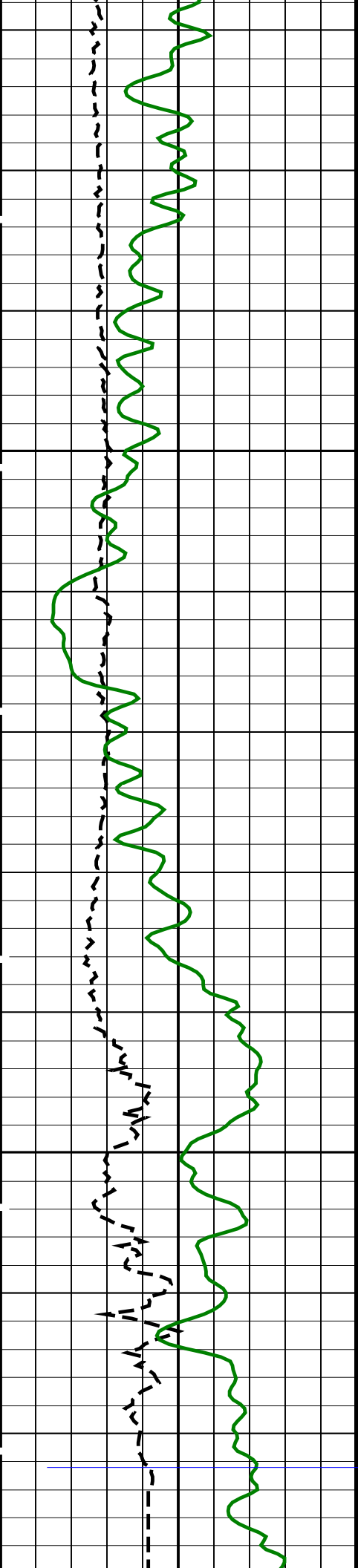
HRLT Resistivity 1 (RLA1)  
(OHMM) 0.2 2000







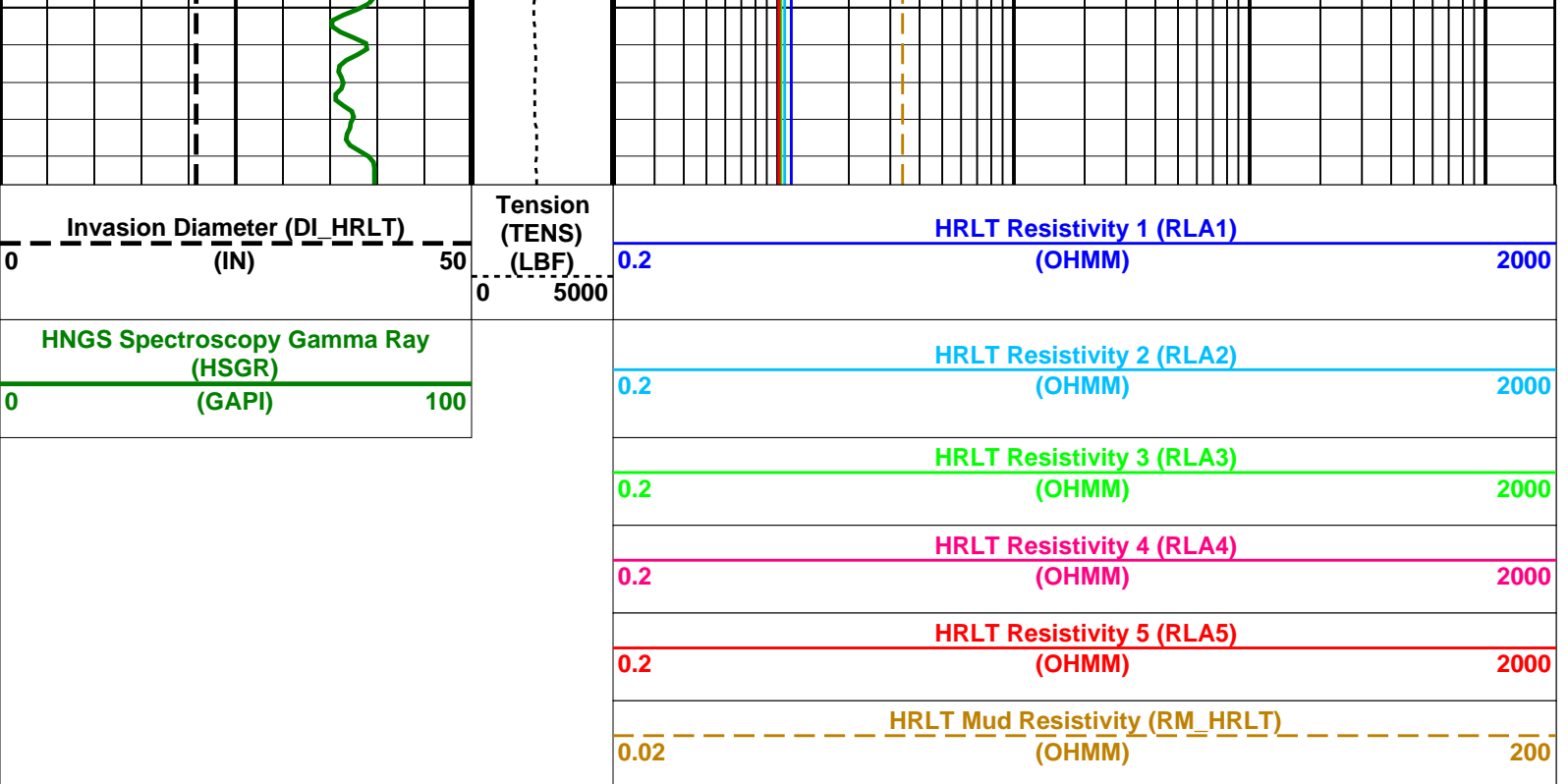




225

250

FR HRLA



PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
<b>HNGS-BA: Hostile Natural Gamma Ray Sonde</b>			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00272245	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	9	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.948624	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.952768	
<b>HRLT-B: High Resolution Laterolog Array - B</b>			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
GCSE	Generalized Caliper Selection	BS	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
PROCINV	Inversion Selection	ON	
PROCINF	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	9	DEGC
<b>EDTC-B: Enhanced DTS Cartridge</b>			

BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
GCSE	Generalized Caliper Selection	BS	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	9	DEGC
<b>System and Miscellaneous</b>			
BS	Bit Size	11.438	IN
DO	Depth Offset for Playback	-1081.6	M
PP	Playback Processing	NORMAL	
TD	Total Depth	885.7	M

Format: HRLT    Vertical Scale: 1:200    Graphics File Created: 21-Sep-2013 11:26

## OP System Version: 19C0-187

HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	SKK-5169-EDTCB

### Input DLIS Files

DEFAULT	NGS_HRLA_016LUP	FN:15	PRODUCER	20-Sep-2013 00:23	1351.0 M	1074.0 M
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### Output DLIS Files

DEFAULT	NGS_HRLA_036PUP	FN:38	PRODUCER	21-Sep-2013 11:26
CLIENT	NGS_HRLA_036PUC	FN:39	CUSTOMER	21-Sep-2013 11:26



# Calibrations

MAXIS Field Log

### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
<b>Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check</b>							
Master: 29-Jul-2013 20:46    Before: 19-Sep-2013 18:19    After: 19-Sep-2013 22:02							
Na 511 Peak Loc	40.00	39.74	39.66	39.56	-0.09800	1.000	
Na 511 Peak Res	15.50	15.31	15.17	16.33	1.168	2.000	%
High Voltage	1150	1168	1176	1177	0.3591	N/A	V
Na 1785 Peak Loc	142.6	142.6	142.6	141.8	-0.8471	7.000	
Na 1785 Peak Res	8.500	9.002	8.753	9.095	0.3424	2.000	%
Temperature	15.50	21.46	30.57	29.49	-1.081	N/A	DEGC
Na Count Rate	45.00	15.10	13.57	12.85	-0.7143	8.000	CPS
<b>Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check</b>							
Master: 29-Jul-2013 20:46    Before: 19-Sep-2013 18:19    After: 19-Sep-2013 22:02							
Na 511 Peak Loc	40.00	39.58	39.77	39.66	-0.1100	1.000	
Na 511 Peak Res	15.50	16.04	16.03	15.80	-0.2308	2.000	%
High Voltage	1150	1093	1110	1111	1.164	N/A	V
Na 1785 Peak Loc	142.6	141.7	140.4	142.4	2.014	7.000	
Na 1785 Peak Res	8.500	9.499	9.518	8.749	-0.7685	2.000	%
Temperature	15.50	21.65	31.21	31.20	-0.01138	N/A	DEGC
Na Count Rate	45.00	14.93	13.61	12.82	-0.7925	8.000	CPS
<b>Hostile Natural Gamma Ray Sonde Wellsite Calibration – Ratio Of Detector 1 To Detector 2</b>							
Master: 29-Jul-2013 20:46    Before: 19-Sep-2013 18:19    After: 19-Sep-2013 22:02							
Coincidence Count Rate Ratio	1.000	1.015	0.9964	1.002	0.005705	0.05000	

High Resolution Laterolog Array – B Wellsite Calibration – HRLT M01

Before: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT M0-M1 Voltage Plus - 0	0	N/A	-318.7	-319.1	-0.3917	9.681	UV
HRLT M0-M1 Voltage Plus - 1	0	N/A	-333.1	-333.7	-0.6034	9.681	UV
HRLT M0-M1 Voltage Plus - 2	0	N/A	-333.9	-334.4	-0.4557	9.681	UV
HRLT M0-M1 Voltage Plus - 3	0	N/A	-337.7	-338.2	-0.5042	9.681	UV
HRLT M0-M1 Voltage Plus - 4	0	N/A	-326.1	-326.4	-0.3287	9.681	UV
HRLT M0-M1 Voltage Plus - 5	0	N/A	-322.1	-322.6	-0.4394	9.681	UV
HRLT M0-M1 Voltage Plus - 6	0	N/A	323.8	325.5	1.699	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: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT M1-M2 Voltage Plus - 0	0	N/A	1752	1755	2.611	53.42	UV
HRLT M1-M2 Voltage Plus - 1	0	N/A	1834	1838	4.427	53.42	UV
HRLT M1-M2 Voltage Plus - 2	0	N/A	1832	1836	3.427	53.42	UV
HRLT M1-M2 Voltage Plus - 3	0	N/A	1851	1855	3.643	53.42	UV
HRLT M1-M2 Voltage Plus - 4	0	N/A	1787	1789	2.335	53.42	UV
HRLT M1-M2 Voltage Plus - 5	0	N/A	1766	1769	3.073	53.42	UV
HRLT M1-M2 Voltage Plus - 6	0	N/A	-1792	-1802	-10.71	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: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT M2-M3 Voltage Plus - 0	0	N/A	1738	1740	2.625	53.42	UV
HRLT M2-M3 Voltage Plus - 1	0	N/A	1831	1836	4.865	53.42	UV
HRLT M2-M3 Voltage Plus - 2	0	N/A	1831	1835	3.725	53.42	UV
HRLT M2-M3 Voltage Plus - 3	0	N/A	1854	1857	3.570	53.42	UV
HRLT M2-M3 Voltage Plus - 4	0	N/A	1783	1785	2.671	53.42	UV
HRLT M2-M3 Voltage Plus - 5	0	N/A	1762	1766	3.437	53.42	UV
HRLT M2-M3 Voltage Plus - 6	0	N/A	-1778	-1789	-10.77	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: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT A3-A4 Voltage Plus - 0	0	N/A	68350	68450	104.1	2100	UV
HRLT A3-A4 Voltage Plus - 1	0	N/A	71820	71990	170.1	2100	UV
HRLT A3-A4 Voltage Plus - 2	0	N/A	72090	72220	124.1	2100	UV
HRLT A3-A4 Voltage Plus - 3	0	N/A	73270	73390	123.7	2100	UV
HRLT A3-A4 Voltage Plus - 4	0	N/A	70430	70520	89.58	2100	UV
HRLT A3-A4 Voltage Plus - 5	0	N/A	69650	69760	106.8	2100	UV
HRLT A3-A4 Voltage Plus - 6	0	N/A	-68720	-69140	-427.3	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: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT A4-A5 Voltage Plus - 0	0	N/A	68630	68730	104.8	2100	UV
HRLT A4-A5 Voltage Plus - 1	0	N/A	72210	72390	179.2	2100	UV
HRLT A4-A5 Voltage Plus - 2	0	N/A	72460	72590	124.9	2100	UV
HRLT A4-A5 Voltage Plus - 3	0	N/A	73610	73740	136.6	2100	UV
HRLT A4-A5 Voltage Plus - 4	0	N/A	70740	70830	88.23	2100	UV
HRLT A4-A5 Voltage Plus - 5	0	N/A	69940	70050	104.9	2100	UV
HRLT A4-A5 Voltage Plus - 6	0	N/A	-69110	-69510	-409.1	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: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT A5-A6 Voltage Plus - 0	0	N/A	68530	68630	101.6	2100	UV
HRLT A5-A6 Voltage Plus - 1	0	N/A	71940	72120	178.3	2100	UV
HRLT A5-A6 Voltage Plus - 2	0	N/A	72220	72340	122.4	2100	UV
HRLT A5-A6 Voltage Plus - 3	0	N/A	73420	73550	129.8	2100	UV
HRLT A5-A6 Voltage Plus - 4	0	N/A	70590	70690	90.91	2100	UV
HRLT A5-A6 Voltage Plus - 5	0	N/A	69810	69930	118.5	2100	UV
HRLT A5-A6 Voltage Plus - 6	0	N/A	-68840	-69240	-402.2	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: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT Torpedo-M0 Voltage - 0	0	N/A	-68220	-68300	-77.28	2100	UV
HRLT Torpedo-M0 Voltage - 1	0	N/A	-72280	-72430	-141.7	2100	UV
HRLT Torpedo-M0 Voltage - 2	0	N/A	-72540	-72650	-114.2	2100	UV
HRLT Torpedo-M0 Voltage - 3	0	N/A	-73700	-73840	-136.7	2100	UV
HRLT Torpedo-M0 Voltage - 4	0	N/A	-70810	-70880	-78.50	2100	UV
HRLT Torpedo-M0 Voltage - 5	0	N/A	-69980	-70080	-103.2	2100	UV
HRLT Torpedo-M0 Voltage - 6	0	N/A	69120	69520	402.4	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: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT Bridle#9-M0 Voltage - 0	0	N/A	-68200	-68290	-90.45	2100	UV
HRLT Bridle#9-M0 Voltage - 1	0	N/A	-72240	-72420	-174.7	2100	UV
HRLT Bridle#9-M0 Voltage - 2	0	N/A	-72510	-72630	-112.6	2100	UV
HRLT Bridle#9-M0 Voltage - 3	0	N/A	-73680	-73800	-112.2	2100	UV



HRLT Bridle#9-M0 Voltage - 3	0	N/A	-73680	-73620	-145.2	2100	UV
HRLT Bridle#9-M0 Voltage - 4	0	N/A	-70790	-70880	-88.72	2100	UV
HRLT Bridle#9-M0 Voltage - 5	0	N/A	-69970	-70080	-112.5	2100	UV
HRLT Bridle#9-M0 Voltage - 6	0	N/A	69090	69510	416.4	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: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT Source Current Plus - 0	0	N/A	284.4	284.8	0.4856	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: 19-Sep-2013 23:58 After: 30-Aug-2013 9:47

HRLT Vertical Voltage PI - 0	0	N/A	-321.3	-321.5	-0.1954	9.681	UV
HRLT Vertical Voltage PI - 1	0	N/A	-328.3	-328.8	-0.4508	9.681	UV
HRLT Vertical Voltage PI - 2	0	N/A	-328.0	-328.4	-0.3455	9.681	UV
HRLT Vertical Voltage PI - 3	0	N/A	-329.8	-330.1	-0.2610	9.681	UV
HRLT Vertical Voltage PI - 4	0	N/A	-315.5	-315.6	-0.06531	9.681	UV
HRLT Vertical Voltage PI - 5	0	N/A	-326.6	-326.8	-0.1862	9.681	UV
HRLT Vertical Voltage PI - 6	0	N/A	332.1	333.8	1.619	9.681	UV
HRLT Vertical Voltage PI - 7	0	N/A	-322.7	-322.7	0	9.681	UV

Enhanced DTS Cartridge Wellsite Calibration - EDTC Accelerometer Calibration

Before: 19-Sep-2013 18:19

EDTC Z-Axis Acceleration	9.810	N/A	9.759	N/A	N/A	N/A	M/S2
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Enhanced DTS Cartridge Wellsite Calibration - Detector Calibration

Before: 19-Sep-2013 18:15 After: 19-Sep-2013 21:58

Gamma Ray (Jig - Bkg)	154.9	N/A	154.9	157.4	2.498	14.08	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	167.7	2.660	15.00	GAPI

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 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		39.74	Master		15.31	Master		1168
Before		39.66	Before		15.17	Before		1176
After		39.56	After		16.33	After		1177
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)			12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)			900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		142.6	Master		9.002	Master		21.46
Before		142.6	Before		8.753	Before		30.57
After		141.8	After		9.095	After		29.49
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		15.10
Before		13.57
After		12.85
	10.00 (Minimum)    45.00 (Nominal)    100.0 (Maximum)	

Master: 29-Jul-2013 20:46                      Before: 19-Sep-2013 18:19                      After: 19-Sep-2013 22:02

**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		39.58	Master		16.04	Master		1093
Before		39.77	Before		16.03	Before		1110
After		39.66	After		15.80	After		1111
	37.50 (Minimum)    40.00 (Nominal)    43.50 (Maximum)			12.00 (Minimum)    15.50 (Nominal)    19.00 (Maximum)			900.0 (Minimum)    1150 (Nominal)    1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		141.7	Master		9.499	Master		21.65
Before		140.4	Before		9.518	Before		31.21
After		142.4	After		8.749	After		31.20
	135.0 (Minimum)    142.6 (Nominal)    150.3 (Maximum)			7.000 (Minimum)    8.500 (Nominal)    11.00 (Maximum)			-28.89 (Minimum)    15.50 (Nominal)    60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		14.93
Before		13.61
After		12.82
	10.00 (Minimum)    45.00 (Nominal)    100.0 (Maximum)	

Master: 29-Jul-2013 20:46                      Before: 19-Sep-2013 18:19                      After: 19-Sep-2013 22:02

**Hostile Natural Gamma Ray Sonde Wellsite Calibration**  
**Ratio Of Detector 1 To Detector 2**

Phase	Coincidence Count Rate Ratio	Value
Master		1.015
Before		0.9964
After		1.002
	0.9500 (Minimum)    1.000 (Nominal)    1.050 (Maximum)	

Master: 29-Jul-2013 20:46

Before: 19-Sep-2013 18:19

After: 19-Sep-2013 22:02

**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	768
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		-318.7	-322.7	-280.7	-379.7
	After		-319.1			
	Before		-333.1			

	After		-333.7	-322.7	-280.7	-379.7
2	Before		-333.9	-322.7	-280.7	-379.7
	After		-334.4			
3	Before		-337.7	-322.7	-280.7	-379.7
	After		-338.2			
4	Before		-326.1	-322.7	-280.7	-379.7
	After		-326.4			
5	Before		-322.1	-322.7	-280.7	-379.7
	After		-322.6			
6	Before		323.8	322.7	379.7	280.7
	After		325.5			
7	Before		-322.7	-322.7	-280.7	-379.7
	After		-322.7			
			(Minimum)	(Nominal)	(Maximum)	

Before: 19-Sep-2013 23:58  
After: 30-Aug-2013 9:47

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M12						
Idx	Phase	HRLT M1–M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1752	1781	2095	1549
	After		1755			
1	Before		1834	1781	2095	1549
	After		1838			
2	Before		1832	1781	2095	1549
	After		1836			
3	Before		1851	1781	2095	1549
	After		1855			
4	Before		1787	1781	2095	1549
	After		1789			
5	Before		1766	1781	2095	1549
	After		1769			
6	Before		-1792	-1781	-1549	-2095
	After		-1802			
7	Before		1781	1781	2095	1549
	After		1781			
			(Minimum)	(Nominal)	(Maximum)	

Before: 19-Sep-2013 23:58  
After: 30-Aug-2013 9:47

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M23						
Idx	Phase	HRLT M2–M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1738	1781	2095	1549
	After		1740			
1	Before		1831	1781	2095	1549
	After		1836			
2	Before		1831			

2	After		1835	1781	2095	1549
3	Before		1854	1781	2095	1549
	After		1857			
4	Before		1783	1781	2095	1549
	After		1785			
5	Before		1762	1781	2095	1549
	After		1766			
6	Before		-1778	-1781	-1549	-2095
	After		-1789			
7	Before		1781	1781	2095	1549
	After		1781			
(Minimum)                      (Nominal)                      (Maximum)						

Before: 19-Sep-2013 23:58  
 After: 30-Aug-2013 9:47

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V34						
Idx	Phase	HRLT A3–A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68350	70000	82360	60900
	After		68450			
1	Before		71820	70000	82360	60900
	After		71990			
2	Before		72090	70000	82360	60900
	After		72220			
3	Before		73270	70000	82360	60900
	After		73390			
4	Before		70430	70000	82360	60900
	After		70520			
5	Before		69650	70000	82360	60900
	After		69760			
6	Before		-68720	-70000	-60900	-82360
	After		-69140			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum)                      (Nominal)                      (Maximum)						

Before: 19-Sep-2013 23:58  
 After: 30-Aug-2013 9:47

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V45						
Idx	Phase	HRLT A4–A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68630	70000	82360	60900
	After		68730			
1	Before		72210	70000	82360	60900
	After		72390			
2	Before		72460	70000	82360	60900
	After		72590			
3	Before		73610			

3	After		73740	70000	82360	60900
4	Before		70740	70000	82360	60900
	After		70830			
5	Before		69940	70000	82360	60900
	After		70050			
6	Before		-69110	-70000	-60900	-82360
	After		-69510			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum) (Nominal) (Maximum)						
Before: 19-Sep-2013 23:58						
After: 30-Aug-2013 9:47						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V56						
Idx	Phase	HRLT A5–A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68530	70000	82360	60900
	After		68630			
1	Before		71940	70000	82360	60900
	After		72120			
2	Before		72220	70000	82360	60900
	After		72340			
3	Before		73420	70000	82360	60900
	After		73550			
4	Before		70590	70000	82360	60900
	After		70690			
5	Before		69810	70000	82360	60900
	After		69930			
6	Before		-68840	-70000	-60900	-82360
	After		-69240			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum) (Nominal) (Maximum)						
Before: 19-Sep-2013 23:58						
After: 30-Aug-2013 9:47						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT VTP						
Idx	Phase	HRLT Torpedo–M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68220	-70000	-60900	-82360
	After		-68300			
1	Before		-72280	-70000	-60900	-82360
	After		-72430			
2	Before		-72540	-70000	-60900	-82360
	After		-72650			
3	Before		-73700	-70000	-60900	-82360
	After		-73840			
	Before		-70810			

4	After		-70880	-70000	-60900	-82360
5	Before		-69980	-70000	-60900	-82360
	After		-70080			
6	Before		69120	70000	82360	60900
	After		69520			
7	Before		-70000	-70000	-60900	-82360
	After		-70000			
			(Minimum)	(Nominal)	(Maximum)	

Before: 19-Sep-2013 23:58  
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High Resolution Laterolog Array – B Wellsite Calibration							
HRLT VBD							
Idx	Phase	HRLT Bridle#9-M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum	
0	Before		-68200	-70000	-60900	-82360	
	After		-68290				
1	Before		-72240	-70000	-60900	-82360	
	After		-72420				
2	Before		-72510	-70000	-60900	-82360	
	After		-72630				
3	Before		-73680	-70000	-60900	-82360	
	After		-73820				
4	Before		-70790	-70000	-60900	-82360	
	After		-70880				
5	Before		-69970	-70000	-60900	-82360	
	After		-70080				
6	Before		69090	70000	82360	60900	
	After		69510				
7	Before		-70000	-70000	-60900	-82360	
	After		-70000				
			(Minimum)	(Nominal)	(Maximum)		

Before: 19-Sep-2013 23:58  
After: 30-Aug-2013 9:47

High Resolution Laterolog Array – B Wellsite Calibration							
HRLT ISO							
Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum	
0	Before		284.4	284.0	334.1	247.0	
	After		284.8				
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				

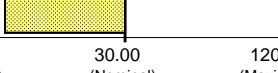

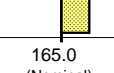
5	After		281.1	281.1	330.7	244.4
6	Before		281.1	281.1	330.7	244.4
	After		281.1			
7	Before		281.1	281.1	330.7	244.4
	After		281.1			
			(Minimum)	(Nominal)	(Maximum)	
Before: 19-Sep-2013 23:58						
After: 30-Aug-2013 9:47						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT MV						
Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-321.3	-322.7	-280.7	-379.7
	After		-321.5			
1	Before		-328.3	-322.7	-280.7	-379.7
	After		-328.8			
2	Before		-328.0	-322.7	-280.7	-379.7
	After		-328.4			
3	Before		-329.8	-322.7	-280.7	-379.7
	After		-330.1			
4	Before		-315.5	-322.7	-280.7	-379.7
	After		-315.6			
5	Before		-326.6	-322.7	-280.7	-379.7
	After		-326.8			
6	Before		332.1	322.7	379.7	280.7
	After		333.8			
7	Before		-322.7	-322.7	-280.7	-379.7
	After		-322.7			
			(Minimum)	(Nominal)	(Maximum)	
Before: 19-Sep-2013 23:58						
After: 30-Aug-2013 9:47						

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

Enhanced DTS Cartridge Wellsite Calibration		
EDTC Accelerometer Calibration		
Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		9.759
9.610 (Minimum)      9.810 (Nominal)      10.01 (Maximum)		
Before: 19-Sep-2013 18:19		

Enhanced DTS Cartridge Wellsite Calibration									
Detector Calibration									
Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig – Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value	
Before		7.622	Before		154.9	Before		165.0	

After		7.111	After		157.4	After		167.7
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	140.8 (Minimum)	154.9 (Nominal)	169.0 (Maximum)	150.0 (Minimum)	165.0 (Nominal)	180.0 (Maximum)
Before: 19-Sep-2013 18:15			After: 19-Sep-2013 21:58					

Company: **Lamont Doherty Earth Observatory**

**Schlumberger**

Well: **Expedition 346, Site U1430B**

Field: **Asian Monsoon**

Rig: **JOIDES Resolution**

Country: **USA**

HLRA Resistivity