Schlumberger

Company: **Lamont Doherty Earth Observatory**

Well: **Expedition 340, Site U1394B**
Field: **Lesser Antilles Volcanism and Landslides**
Rig: **JOIDES Resolution** Ocean: **Caribbean**

High Resolution Laterolog Array (HRLA)
Caliper
Hostile Natural Gamma Sonde (HNGS)

Rig: JOIDES Resolution
Field: Lesser Antilles Volcanism and La
Location: Latitude: N 16* 38.43'
Well: Expedition 340, Site U1394B
Company: Lamont Doherty Earth Observato

LOCATION

Latitude: N 16* 38.43'
Longitude: W 62* 2.29'

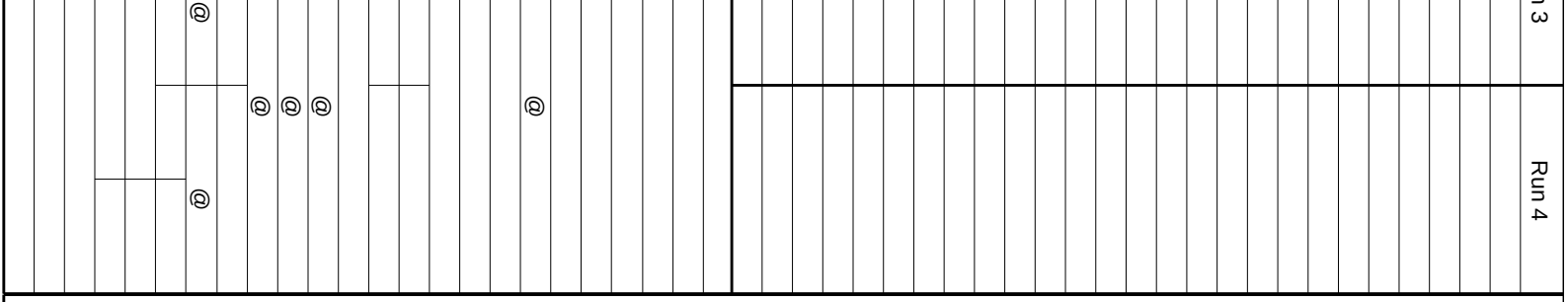
Elev.: K.B. −1125.00 m
G.L. 0.00 m
D.F. −1125.00 m

Permanent Datum: Sea Floor — Elev.: 0.00 m
Log Measured From: Sea Floor — 0.00 m above Perm. Datum
Drilling Measured From: Sea Floor

API Serial No.	Max. Hole Devi. 0 deg	Longitude W 62* 2.29	Latitude N 16* 38.43

	Run 1	Run 2	Run
Logging Date	12−Mar−2012		
Run Number	1		
Depth Driller	182 m		
Schlumberger Depth	180 m		
Bottom Log Interval	180 m		
Top Log Interval	0 m		
Casing Driller Size @ Depth	13.375 in @ 83 m	@	
Casing Schlumberger	80 m		
Bit Size	11.438 in		
Type Fluid In Hole	Seawater		
MUD Density / Viscosity	1.25 g/cm3		
MUD Fluid Loss / PH			
MUD Source Of Sample	N/A		
RM @ Measured Temperature	@	@	
RMF @ Measured Temperature	@	@	
RMC @ Measured Temperature	@	@	
Source RMF / RMC	N/A / N/A		
RM @ MRT / RMF @ MRT	@ 21 / @ 21	@ / @	
Maximum Recorded Temperatures	21 degC		
Circulation Stopped / Time	12−Mar−2012 / 12:00		
Logger On Bottom / Time	12−Mar−2012 / 21:05		
Unit Number / Location	625003 / Houston		
Recorded By	K. Swain		
Witnessed By	A. Slagle, S. Morgan		

	Run 1	Run 2	Run
Logging Date			
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth	@		
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
MUD Density / Viscosity			
MUD Fluid Loss / PH			
MUD 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			



DISCLAIMER

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

OTHER SERVICES1	OTHER SERVICES2
OS1: FMS	OS1:
OS2: MSS	OS2:
OS3: DSI	OS3:
OS4:	OS4:
OS5:	OS5:

REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole drilled with APC/XCB coring bit and bottom hole assembly (BHA).	
Lamont Magnetic Susceptability (MSS) tool run in combination with HRLA/HLDS/HNGS	
4 knuckle joints decouple the eccentered HLDS and HNGS from the centered HRLA	
and MSS.	
Density source not used in site U1394B. HLDS only run for caliper data.	
The density source was removed to limit risk of losing the source as	
hole A collapsed and required pipe recovery operations.	
The parameter GCSE is zoned for BS where the caliper is closed and LCAL where	
the caliper is open. This provides the best hole size input to the HRLA and	
HNGS tools for environmental corrections.	

RUN 1

SERVICE ORDER #:
PROGRAM VERSION: 19C0−187
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

RUN 2

SERVICE ORDER #:
PROGRAM VERSION:
FLUID LEVEL:

LOGGED INTERVAL	START	STOP

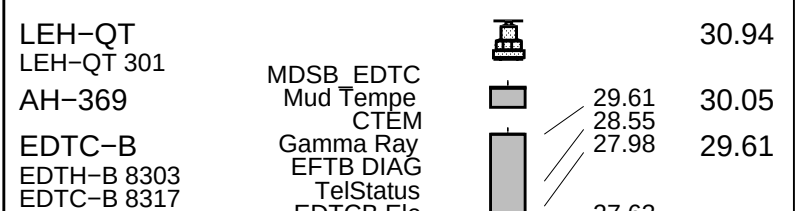
EQUIPMENT DESCRIPTION

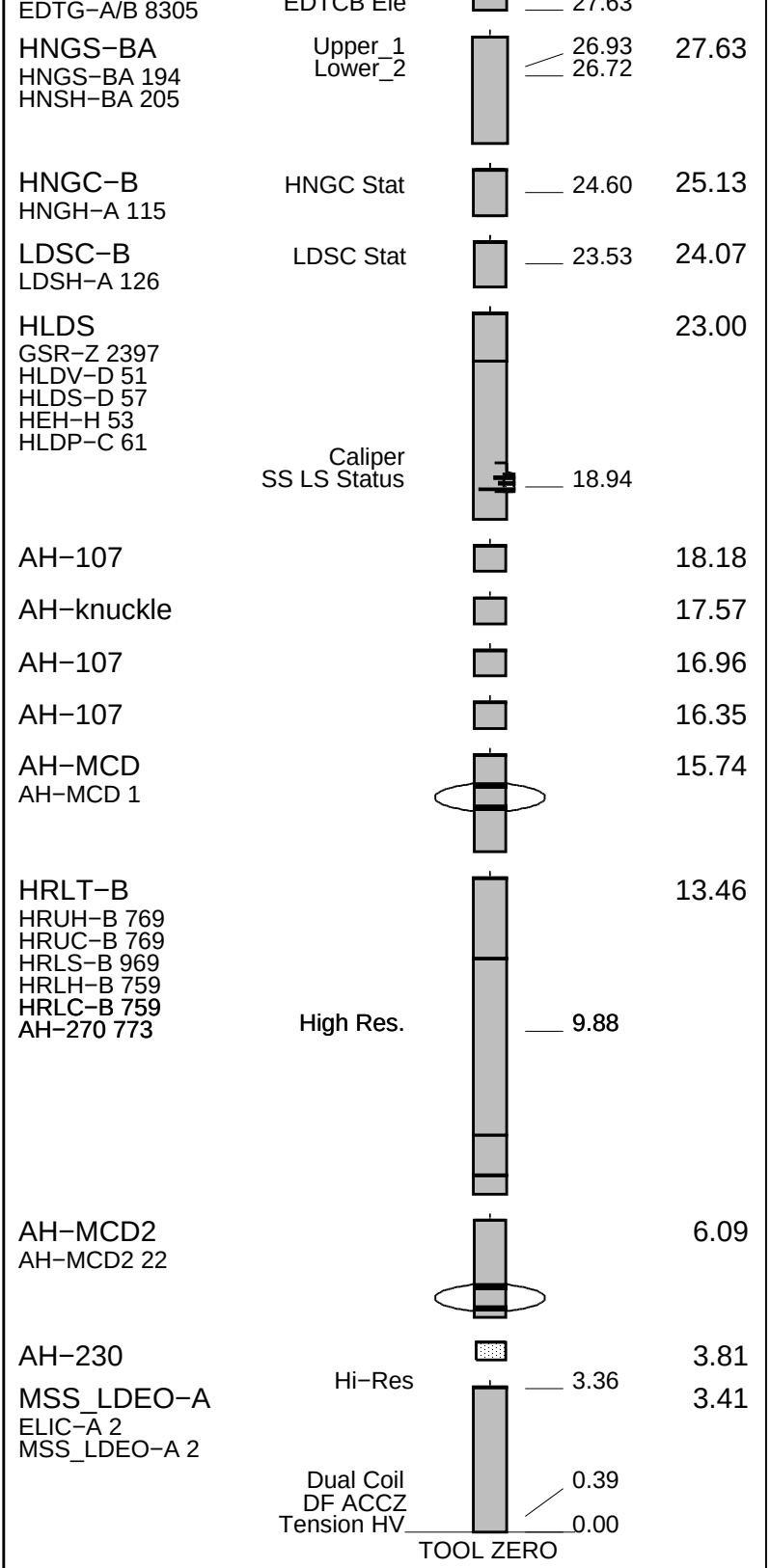
RUN 1 RUN 2

SURFACE EQUIPMENT

GSR−U 616008
WITM (EDTS)−A

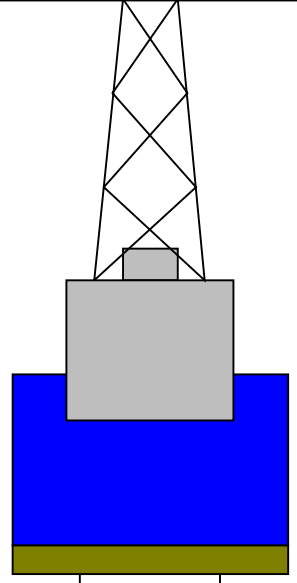
DOWNHOLE EQUIPMENT





MAXIMUM STRING DIAMETER 4.50 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN METERS

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



Kelly Bushing Elevation	−1125				
Derrick Floor Elevation	−1125				
Mean Sea Level	−1114				
				4.1	
		0	3.80		Sea Floor
		83	11.43		Open Hole
		182			Total Depth

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_006LUP	FN:7	PRODUCER	19−Mar−2012 18:20	1305.3 M	1109.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_043PUP	FN:14	PRODUCER	19−Mar−2012 21:45	181.4 M	−14.9 M

OP System Version: 19C0−187

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

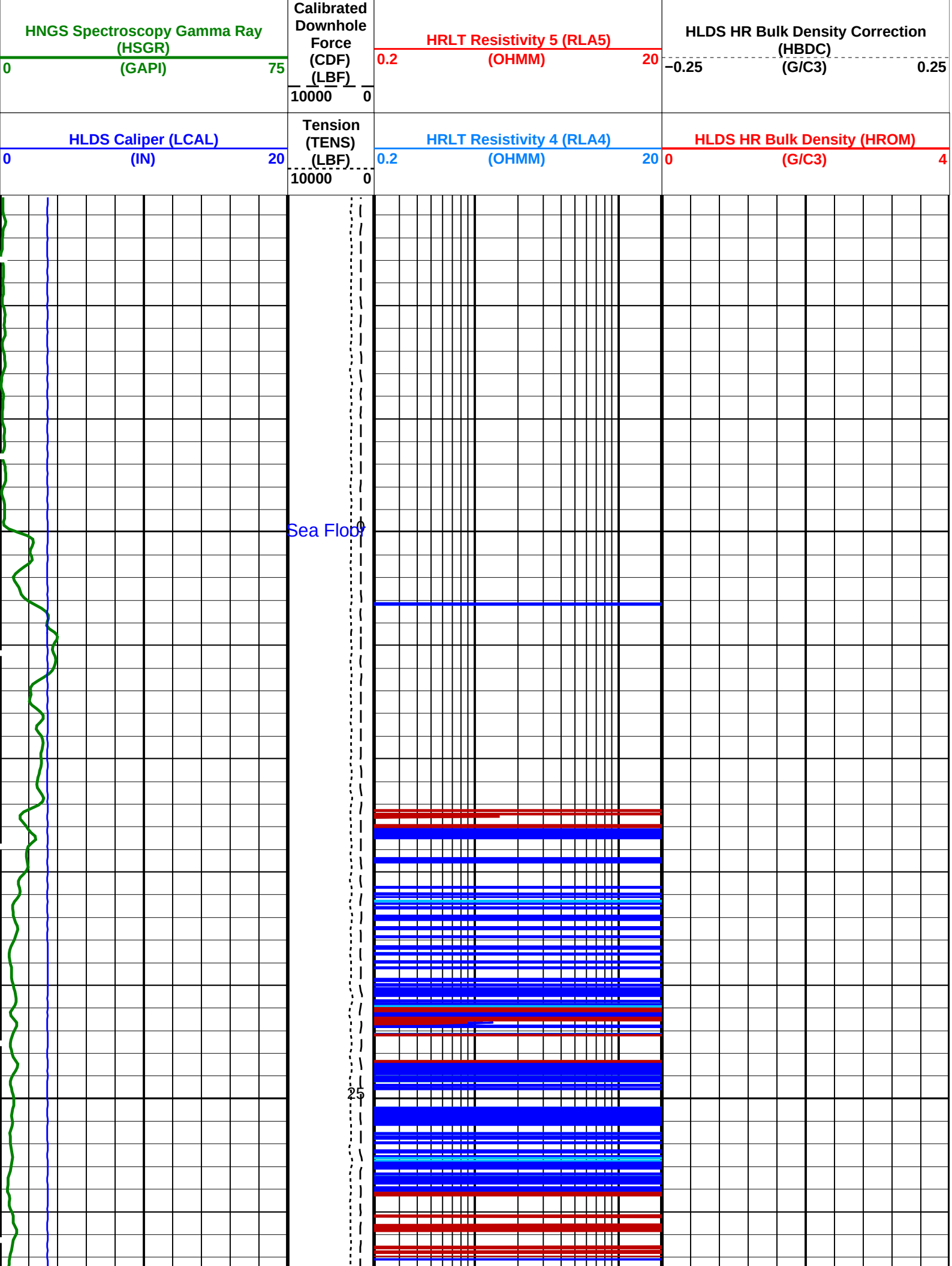
PIP SUMMARY

Time Mark Every 60 S

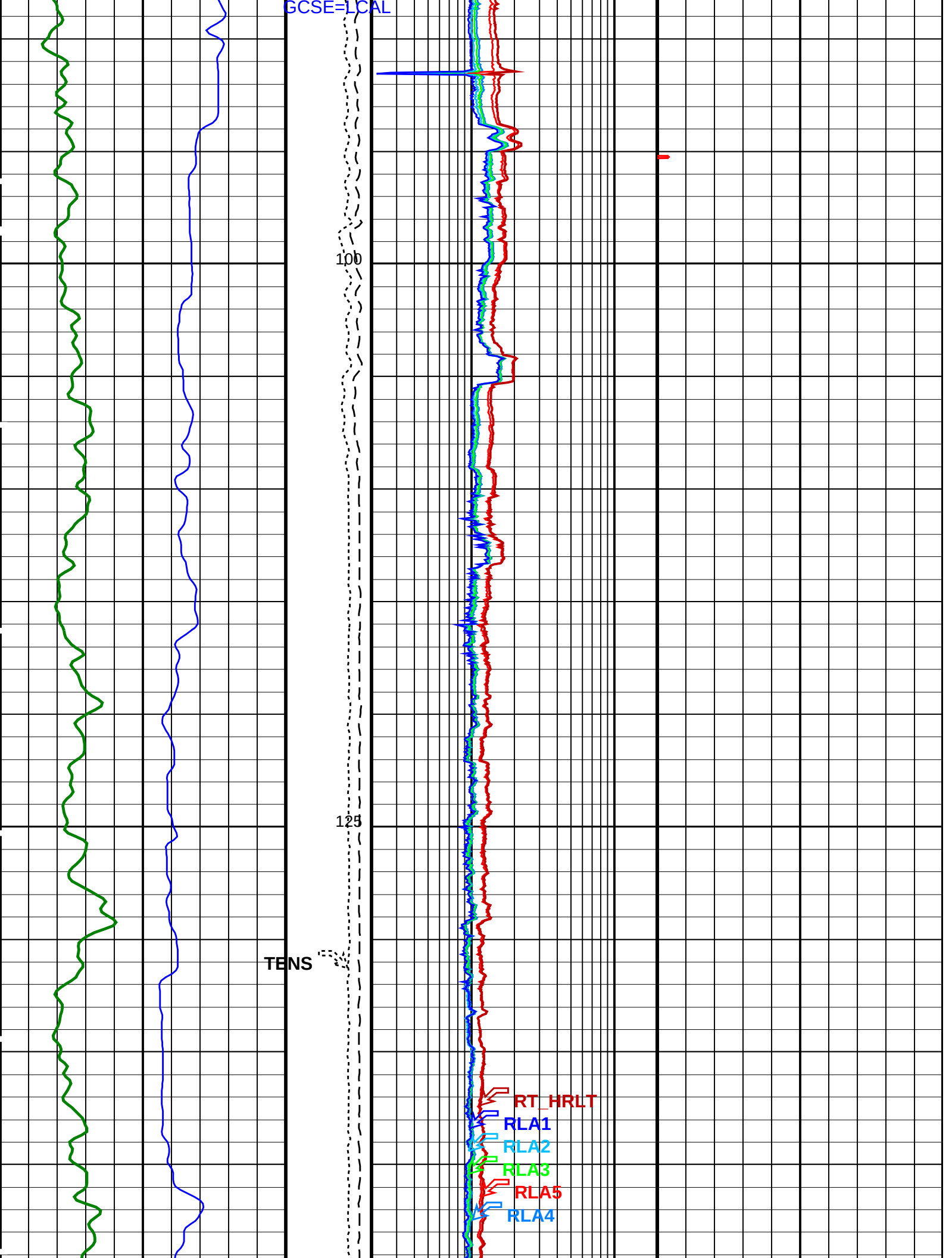
HRLT True Resistivity (RT_HRLT)	0.2 (OHMM) 20
HRLT Resistivity 1 (RLA1)	0.2 (OHMM) 20
HRLT Resistivity 2 (RLA2)	0.2 (OHMM) 20
HRLT Resistivity 3 (RLA3)	0.2 (OHMM) 20

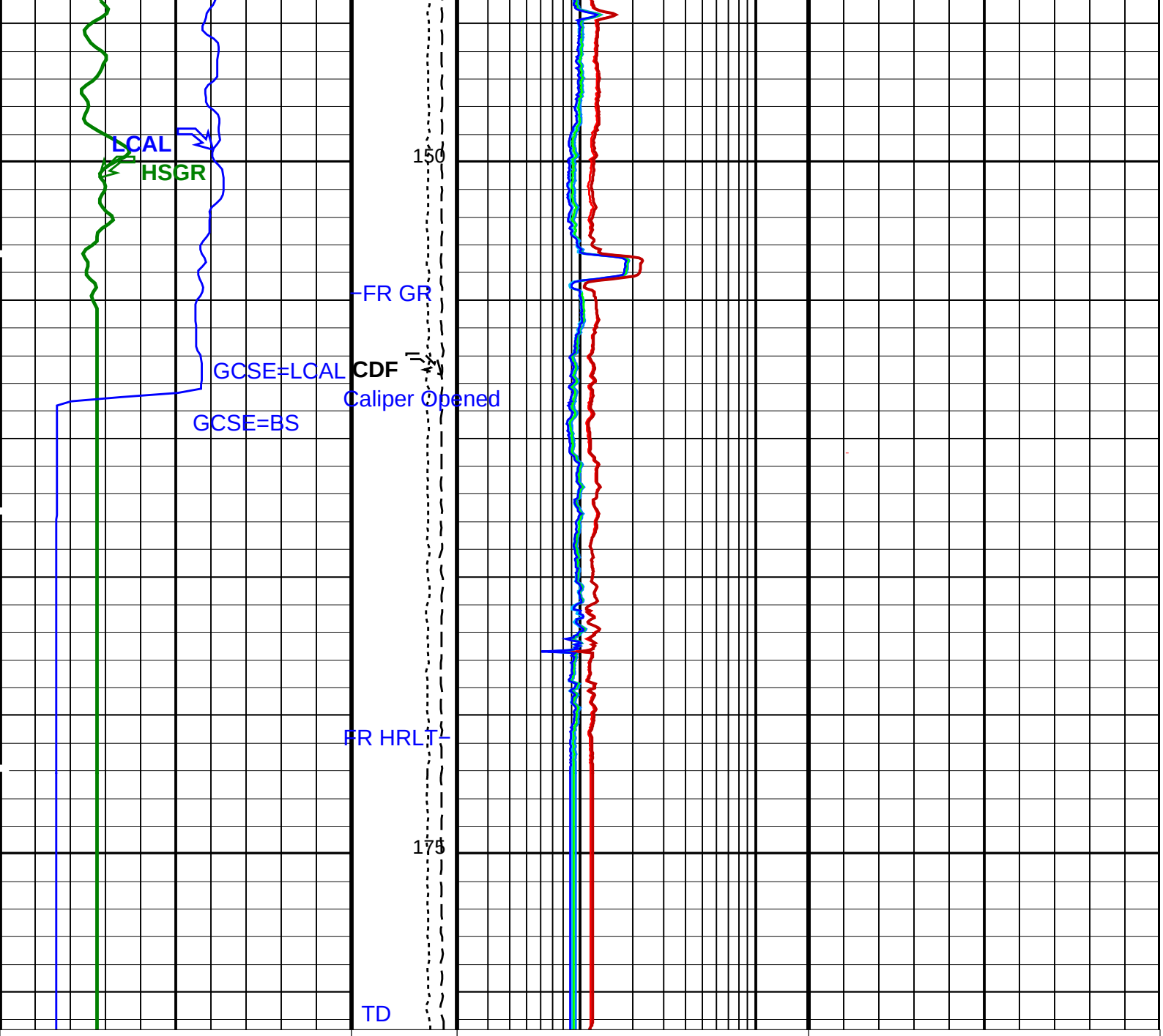
Playback with GCSE set as noted on log

2nd Pass, Sea Floor Depth Reference


HNGS Spectroscopy Gamma Ray (HSGR)
0
(GAPI)
75
Calibrated Downhole Force (CDF) (LBF)
10000
0
HRLT Resistivity 5 (RLA5)
0.2
(OHMM)
20
HLDS HR Bulk Density Correction (HBDC)
−0.25
(G/C3)
0.25
HLDS Caliper (LCAL)
0
(IN)
20
Tension (TENS) (LBF)
10000
0
HRLT Resistivity 4 (RLA4)
0.2
(OHMM)
20
HLDS HR Bulk Density (HROM)
0
(G/C3)
4
Sea Floor
0
25


50
75
Drill Pipe
GCSE=BS
Caliper Closed


GCSE=LCAL
100
125
TENS
RT_HRLT
RLA1
RLA2
RLA3
RLA5
RLA4



HLDS Caliper (LCAL)	Tension (TENS) (LBF)	HRLT Resistivity 4 (RLA4)	HLDS HR Bulk Density (HROM)
0 (IN) 20	10000 0	0.2 (OHMM) 20	0 (G/C3) 4
HNGS Spectroscopy Gamma Ray (HSGR)	**Calibrated Downhole Force (CDF) (LBF)**	**HRLT Resistivity 5 (RLA5)**	**HLDS HR Bulk Density Correction (HBDC)**
0 (GAPI) 75	10000 0	0.2 (OHMM) 20	−0.25 (G/C3) 0.25
		HRLT Resistivity 3 (RLA3)	
		0.2 (OHMM) 20	
		HRLT Resistivity 2 (RLA2)	
		0.2 (OHMM) 20	
		HRLT Resistivity 1 (RLA1)	
		0.2 (OHMM) 20	
		HRLT True Resistivity (RT_HRLT)	
		0.2 (OHMM) 20	

2nd Pass, Sea Floor Depth Reference

Playback with GCSE set as noted on log

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	27.2932	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
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	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
	HLDS: Hostile Litho−Density Sonde		
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.00194163	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	

HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.01392	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00254	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	13.375	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	−1124.3	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	−50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1330	M
TDD	Total Depth − Driller	1330.00	M
TDL	Total Depth − Logger	1330.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo **Vertical Scale: 1:200** **Graphics File Created: 19−Mar−2012 21:45**

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_006LUP	FN:7	PRODUCER	19−Mar−2012 18:20	1305.3 M	1109.3 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_043PUP	FN:14	PRODUCER	19−Mar−2012 21:45		

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_005LUP	FN:6	PRODUCER	19−Mar−2012 18:20	1305.3 M	1246.5 M

Output DLIS Files

DEFAULT MSS_LDEO_HRLA_LDL_042PUP FN:13 PRODUCER 19−Mar−2012 21:32 181.4 M 122.4 M

OP System Version: 19C0−187

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

PIP SUMMARY

Time Mark Every 60 S

1st Pass, Sea Floor Depth Reference

HRLT True Resistivity (RT_HRLT)
0.2 (OHMM) 20

HRLT Resistivity 1 (RLA1)
0.2 (OHMM) 20

HRLT Resistivity 2 (RLA2)
0.2 (OHMM) 20

HRLT Resistivity 3 (RLA3)
0.2 (OHMM) 20

HNGS Spectroscopy Gamma Ray (HSGR)
0 (GAPI) 75

Calibrated Downhole Force (CDF) (LBF)
10000 0

HRLT Resistivity 5 (RLA5)
0.2 (OHMM) 20

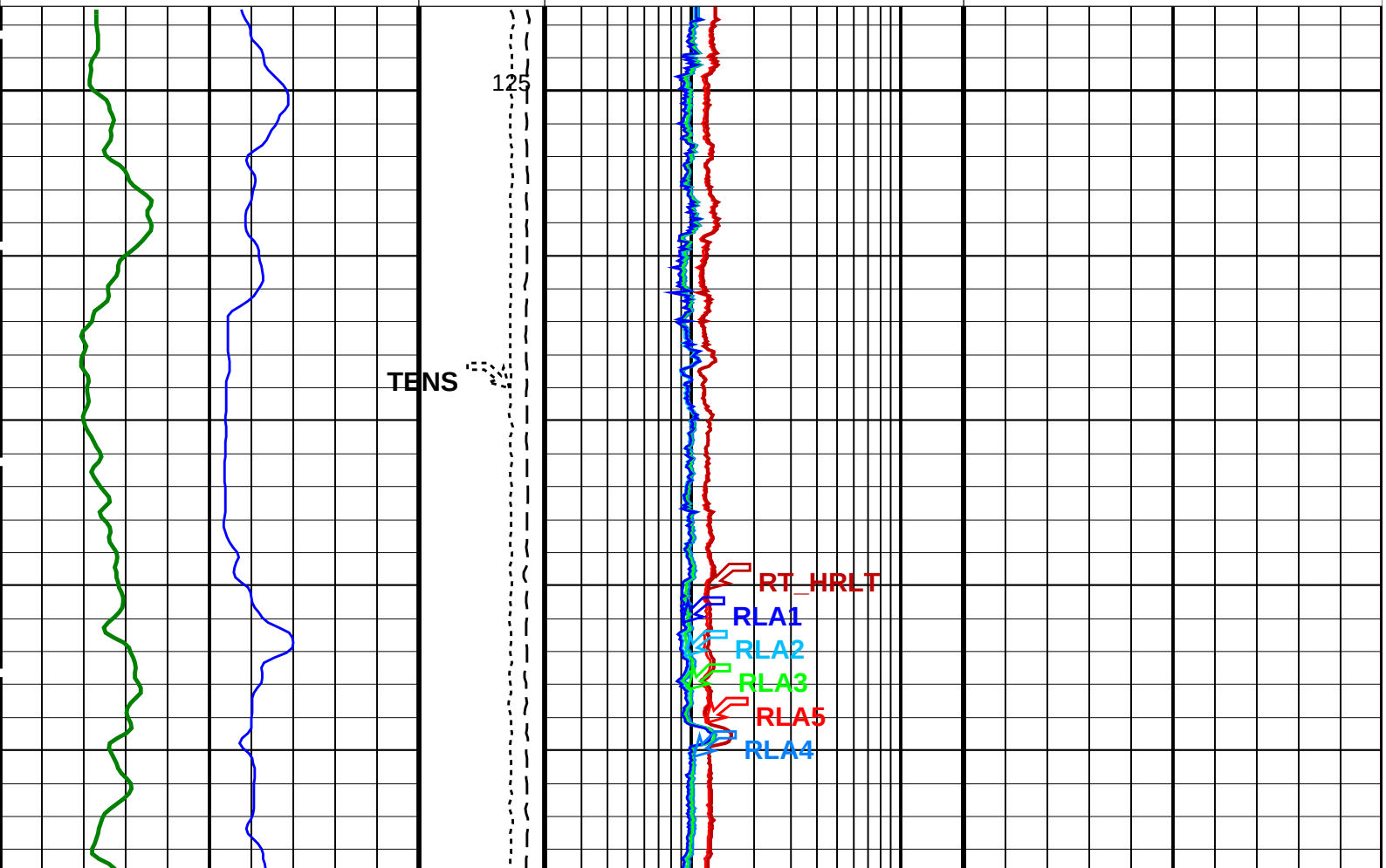
HLDS HR Bulk Density Correction (HBDC)
−0.25 (G/C3) 0.25

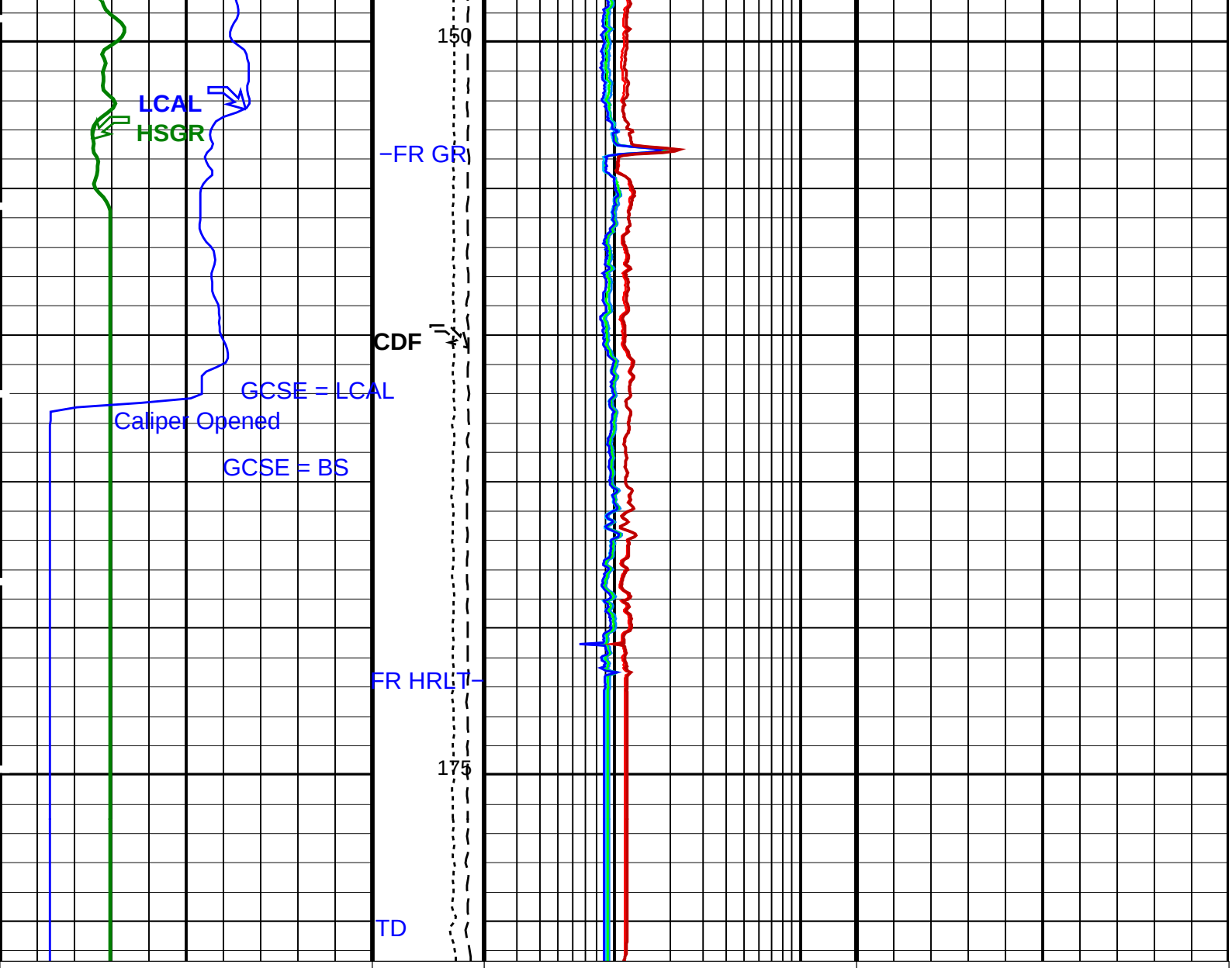
HLDS Caliper (LCAL)
0 (IN) 20

Tension (TENS) (LBF)
10000 0

HRLT Resistivity 4 (RLA4)
0.2 (OHMM) 20

HLDS HR Bulk Density (HROM)
0 (G/C3) 4





HLDS Caliper (LCAL)	Tension (TENS) (LBF)	HRLT Resistivity 4 (RLA4)	HLDS HR Bulk Density (HROM)
0 (IN) 20	10000 0	0.2 (OHMM) 20	0 (G/C3) 4
HNGS Spectroscopy Gamma Ray (HSGR)	**Calibrated Downhole Force (CDF) (LBF)**	**HRLT Resistivity 5 (RLA5)**	**HLDS HR Bulk Density Correction (HBDC)**
0 (GAPI) 75	10000 0	0.2 (OHMM) 20	−0.25 (G/C3) 0.25
		HRLT Resistivity 3 (RLA3)	
		0.2 (OHMM) 20	
		HRLT Resistivity 2 (RLA2)	
		0.2 (OHMM) 20	
		HRLT Resistivity 1 (RLA1)	
		0.2 (OHMM) 20	
		HRLT True Resistivity (RT_HRLT)	
		0.2 (OHMM) 20	

1st Pass, Sea Floor Depth Reference

Playback with GCSE as noted on log

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value

DLIS Name	Description	Value	
	HRLT−B: High Resolution Laterolog Array − B		
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	27.2932	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	NOBARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
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	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
	HLDS: Hostile Litho−Density Sonde		
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.71	G/C3
PHVL	HLDS Long Spacing High Voltage Setting	1000	V
PHVS	HLDS Short Spacing High Voltage Setting	1000	V
PSDL	HLDS LS Pulse Shape Compensation DAC	30000	
PSDS	HLDS SS Pulse Shape Compensation DAC	30000	
PSML	HLDS LS Pulse Shape Compensation Mode	AUTO	
PSMS	HLDS SS Pulse Shape Compensation Mode	AUTO	
	HNGS−BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	−0.00194163	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma−Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC

TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.01392	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	1.00254	
EDTC−B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
BSCO	Borehole Salinity Correction Option	NO	
CCCO	Casing & Cement Thickness Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
FSAL	Formation Salinity	−50000	PPM
FSCO	Formation Salinity Correction Option	NO	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U−ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U−TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	−50000.00	PPM
CSIZ	Current Casing Size	13.375	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	−1124.3	M
FLEV	Fluid Level	−50000.00	M
MST	Mud Sample Temperature	−50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	−50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	1330	M
TDD	Total Depth − Driller	1330.00	M
TDL	Total Depth − Logger	1330.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: TripleCombo **Vertical Scale: 1:200** **Graphics File Created: 19−Mar−2012 21:32**

OP System Version: 19C0−187

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

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_005LUP	FN:6	PRODUCER	19−Mar−2012 18:20	1305.3 M	1246.5 M

Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_042PUP	FN:13	PRODUCER	19−Mar−2012 21:32

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array − B Wellsite Calibration − HRLT M01							
Before: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03							
HRLT M0−M1 Voltage Plus − 0	0	N/A	−318.2	−318.0	0.2593	9.681	UV
HRLT M0−M1 Voltage Plus − 1	0	N/A	−324.6	−328.4	−3.742	9.681	UV

HRLT M0−M1 Voltage Plus − 1	0	N/A	−324.6	−328.4	−3.742	9.681	UV
HRLT M0−M1 Voltage Plus − 2	0	N/A	−328.1	−330.3	−2.258	9.681	UV
HRLT M0−M1 Voltage Plus − 3	0	N/A	−333.5	−334.7	−1.205	9.681	UV
HRLT M0−M1 Voltage Plus − 4	0	N/A	−324.1	−324.3	−0.1586	9.681	UV
HRLT M0−M1 Voltage Plus − 5	0	N/A	−320.8	−320.6	0.2338	9.681	UV
HRLT M0−M1 Voltage Plus − 6	0	N/A	317.3	320.1	2.795	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: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03

HRLT M1−M2 Voltage Plus − 0	0	N/A	1750	1750	0.01221	53.42	UV
HRLT M1−M2 Voltage Plus − 1	0	N/A	1784	1804	20.41	53.42	UV
HRLT M1−M2 Voltage Plus − 2	0	N/A	1798	1811	12.60	53.42	UV
HRLT M1−M2 Voltage Plus − 3	0	N/A	1828	1836	7.997	53.42	UV
HRLT M1−M2 Voltage Plus − 4	0	N/A	1779	1781	2.038	53.42	UV
HRLT M1−M2 Voltage Plus − 5	0	N/A	1762	1762	0.5415	53.42	UV
HRLT M1−M2 Voltage Plus − 6	0	N/A	−1751	−1766	−15.22	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: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03

HRLT M2−M3 Voltage Plus − 0	0	N/A	1736	1735	−0.9006	53.42	UV
HRLT M2−M3 Voltage Plus − 1	0	N/A	1783	1801	18.42	53.42	UV
HRLT M2−M3 Voltage Plus − 2	0	N/A	1798	1809	11.61	53.42	UV
HRLT M2−M3 Voltage Plus − 3	0	N/A	1831	1838	7.047	53.42	UV
HRLT M2−M3 Voltage Plus − 4	0	N/A	1775	1776	1.274	53.42	UV
HRLT M2−M3 Voltage Plus − 5	0	N/A	1760	1759	−0.4111	53.42	UV
HRLT M2−M3 Voltage Plus − 6	0	N/A	−1739	−1753	−13.05	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: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03

HRLT A3−A4 Voltage Plus − 0	0	N/A	68200	68260	53.31	2100	UV
HRLT A3−A4 Voltage Plus − 1	0	N/A	69800	70630	831.1	2100	UV
HRLT A3−A4 Voltage Plus − 2	0	N/A	70710	71240	523.3	2100	UV
HRLT A3−A4 Voltage Plus − 3	0	N/A	72290	72640	346.1	2100	UV
HRLT A3−A4 Voltage Plus − 4	0	N/A	70030	70170	130.4	2100	UV
HRLT A3−A4 Voltage Plus − 5	0	N/A	69440	69500	67.95	2100	UV
HRLT A3−A4 Voltage Plus − 6	0	N/A	−67150	−67740	−586.8	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: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03

HRLT A4−A5 Voltage Plus − 0	0	N/A	68470	68540	63.98	2100	UV
HRLT A4−A5 Voltage Plus − 1	0	N/A	70180	71040	856.8	2100	UV
HRLT A4−A5 Voltage Plus − 2	0	N/A	71080	71600	521.7	2100	UV
HRLT A4−A5 Voltage Plus − 3	0	N/A	72640	72990	349.1	2100	UV
HRLT A4−A5 Voltage Plus − 4	0	N/A	70330	70460	132.4	2100	UV
HRLT A4−A5 Voltage Plus − 5	0	N/A	69710	69770	64.72	2100	UV
HRLT A4−A5 Voltage Plus − 6	0	N/A	−67520	−68130	−602.4	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: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03

HRLT A5−A6 Voltage Plus − 0	0	N/A	68370	68430	64.61	2100	UV
HRLT A5−A6 Voltage Plus − 1	0	N/A	69910	70770	856.7	2100	UV
HRLT A5−A6 Voltage Plus − 2	0	N/A	70840	71370	528.3	2100	UV
HRLT A5−A6 Voltage Plus − 3	0	N/A	72420	72800	375.7	2100	UV
HRLT A5−A6 Voltage Plus − 4	0	N/A	70200	70330	139.0	2100	UV
HRLT A5−A6 Voltage Plus − 5	0	N/A	69600	69660	56.30	2100	UV
HRLT A5−A6 Voltage Plus − 6	0	N/A	−67240	−67840	−605.0	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: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03

HRLT Torpedo−M0 Voltage − 0	0	N/A	−68060	−68110	−50.32	2100	UV
HRLT Torpedo−M0 Voltage − 1	0	N/A	−70250	−71080	−832.8	2100	UV
HRLT Torpedo−M0 Voltage − 2	0	N/A	−71130	−71680	−544.3	2100	UV
HRLT Torpedo−M0 Voltage − 3	0	N/A	−72710	−73080	−361.7	2100	UV
HRLT Torpedo−M0 Voltage − 4	0	N/A	−70400	−70530	−130.8	2100	UV
HRLT Torpedo−M0 Voltage − 5	0	N/A	−69760	−69820	−58.12	2100	UV
HRLT Torpedo−M0 Voltage − 6	0	N/A	67520	68120	603.6	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: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03

HRLT Bridle#9−M0 Voltage − 0	0	N/A	−68050	−68110	−52.73	2100	UV
HRLT Bridle#9−M0 Voltage − 1	0	N/A	−70210	−71060	−849.3	2100	UV
HRLT Bridle#9−M0 Voltage − 2	0	N/A	−71110	−71660	−549.0	2100	UV
HRLT Bridle#9−M0 Voltage − 3	0	N/A	−72700	−73060	−365.3	2100	UV
HRLT Bridle#9−M0 Voltage − 4	0	N/A	−70380	−70520	−134.7	2100	UV
HRLT Bridle#9−M0 Voltage − 5	0	N/A	−69740	−69810	−69.86	2100	UV

HRLT Bridle#9−M0 Voltage − 6	0	N/A	67490	68090	602.8	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: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03

HRLT Source Current Plus − 0	0	N/A	283.8	284.1	0.2573	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: 12−Mar−2012 7:07 After: 12−Mar−2012 10:03

HRLT Vertical Voltage Pl − 0	0	N/A	−320.7	−320.6	0.1482	9.681	UV
HRLT Vertical Voltage Pl − 1	0	N/A	−319.0	−322.5	−3.503	9.681	UV
HRLT Vertical Voltage Pl − 2	0	N/A	−321.6	−323.7	−2.179	9.681	UV
HRLT Vertical Voltage Pl − 3	0	N/A	−325.3	−326.6	−1.297	9.681	UV
HRLT Vertical Voltage Pl − 4	0	N/A	−313.6	−313.9	−0.2887	9.681	UV
HRLT Vertical Voltage Pl − 5	0	N/A	−325.5	−325.5	0.07376	9.681	UV
HRLT Vertical Voltage Pl − 6	0	N/A	324.3	326.9	2.642	9.681	UV
HRLT Vertical Voltage Pl − 7	0	N/A	−322.7	−322.7	0	9.681	UV

Hostile Litho−Density Sonde Wellsite Calibration − Background Measurement
Master: 28−Feb−2012 2:19 Before: 28−Feb−2012 2:36 After: 12−Mar−2012 10:07

SS Cs Resolution Bkg	9.000	8.563	8.511	8.514	0.003472	1.800	%
LS Cs Resolution Bkg	9.000	8.637	8.632	8.675	0.04277	1.800	%
LSW1 Background	100.0	71.69	71.37	71.75	0.3806	3.000	CPS
LSW2 Background	100.0	65.72	64.67	64.93	0.2653	3.000	CPS
LSW3 Background	200.0	147.7	146.0	146.2	0.1911	6.000	CPS
LSW4 Background	250.0	178.3	178.0	178.2	0.1540	7.500	CPS
LSW5 Background	600.0	402.3	401.7	403.3	1.578	18.00	CPS
SSW1 Background	100.0	68.69	69.17	70.04	0.8604	3.000	CPS
SSW2 Background	200.0	121.6	122.1	122.8	0.6243	6.000	CPS
SSW3 Background	500.0	321.9	321.7	322.9	1.276	15.00	CPS
SSW4 Background	270.0	172.2	173.0	171.5	−1.459	8.100	CPS
SSW5 Background	200.0	123.5	123.8	123.7	−0.1024	6.000	CPS

Hostile Litho−Density Sonde Wellsite Calibration − Aluminum Measurement
Master: 28−Feb−2012 2:19

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

Hostile Litho−Density Sonde Wellsite Calibration − Lithology Measurement
Master: 28−Feb−2012 2:19

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

Hostile Litho−Density Sonde Wellsite Calibration − Caliper Calibration
Before: 28−Feb−2012 2:41

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

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 1 Check
Master: 26−Feb−2012 20:15 Before: 6−Mar−2012 18:49 After: 12−Mar−2012 10:50

Na 511 Peak Loc	40.00	39.64	39.54	39.64	0.1033	1.000	
Na 511 Peak Res	15.50	14.75	15.72	14.84	−0.8774	2.000	%
High Voltage	1150	1169	1182	1180	−2.496	N/A	V
Na 1785 Peak Loc	142.6	141.6	141.5	142.0	0.5286	7.000	
Na 1785 Peak Res	8.500	8.869	8.671	8.885	0.2140	2.000	%
Temperature	15.50	26.03	31.35	30.67	−0.6763	N/A	DEGC
Na Count Rate	45.00	19.34	19.64	19.09	−0.5459	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Detector 2 Check
Master: 26−Feb−2012 20:15 Before: 6−Mar−2012 18:49 After: 12−Mar−2012 10:50

Na 511 Peak Loc	40.00	39.65	39.61	39.65	0.03114	1.000	
Na 511 Peak Res	15.50	16.96	15.84	15.63	−0.2072	2.000	%
High Voltage	1150	1100	1109	1111	2.214	N/A	V
Na 1785 Peak Loc	142.6	142.2	141.4	141.9	0.4964	7.000	
Na 1785 Peak Res	8.500	7.801	8.832	8.590	−0.2414	2.000	%
Temperature	15.50	26.16	31.73	31.95	0.2260	N/A	DEGC
Na Count Rate	45.00	19.53	20.28	19.26	−1.015	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration − Ratio Of Detector 1 To Detector 2
Master: 26−Feb−2012 20:15 Before: 6−Mar−2012 18:49 After: 12−Mar−2012 10:50

Coincidence Count Rate Ratio	1.000	0.9899	0.9701	0.9893	0.01922	0.05000	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 1 Calibration
Master: 26−Feb−2012 20:03

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	210.0	−−	−−	−−	−−	
Th Peak Res	7.000	6.521	−−	−−	−−	−−	%
Background Count Rate	142.5	18.97	−−	−−	−−	−−	CPS
Gain Ratio	1.000	1.008	−−	−−	−−	−−	

Hostile Natural Gamma Ray Sonde Master Calibration − Detector 2 Calibration
Master: 26−Feb−2012 20:03

Na 511 Peak Set Point	40.00	41.00	−−	−−	−−	−−	
Th Peak Loc	209.6	207.8	−−	−−	−−	−−	
Th Peak Res	7.000	6.775	−−	−−	−−	−−	%
Background Count Rate	142.5	18.84	−−	−−	−−	−−	CPS
Gain Ratio	1.000	0.9969	−−	−−	−−	−−	

Enhanced DTS Cartridge Wellsite Calibration − EDTC Accelerometer Calibration
Before: 12−Mar−2012 7:07

EDTC Z−Axis Acceleration	9.810	N/A	9.743	N/A	N/A	N/A	M/S2

Enhanced DTS Cartridge Wellsite Calibration − Detector Calibration
Before: 4−Mar−2012 17:35

Gamma Ray (Jig − Bkg)	159.9	N/A	159.9	N/A	N/A	14.53	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	N/A	N/A	15.00	GAPI

High Resolution Laterolog Array − B / Equipment Identification

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

High Resolution Laterolog Array − B Wellsite Calibration
HRLT M01

Idx	Phase	HRLT M0−M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−318.2	−322.7	−280.7	−379.7
	After		−318.0			
1	Before		−324.6	−322.7	−280.7	−379.7
	After		−328.4			
2	Before		−328.1	−322.7	−280.7	−379.7
	After		−330.3			
3	Before		−333.5	−322.7	−280.7	−379.7
	After		−334.7			
4	Before		−324.1	−322.7	−280.7	−379.7
	After		−324.3			
5	Before		−320.8	−322.7	−280.7	−379.7
	After		−320.6			
	Before		317.3			

6	After	320.1	322.7	379.7	280.7
7	Before	−322.7	−322.7	−280.7	−379.7
	After	−322.7			
	(Minimum) (Nominal) (Maximum)				

Before: 12−Mar−2012 7:07
After: 12−Mar−2012 10:03

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M12

Idx	Phase	HRLT M1−M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1750	1781	2095	1549
	After		1750			
1	Before		1784	1781	2095	1549
	After		1804			
2	Before		1798	1781	2095	1549
	After		1811			
3	Before		1828	1781	2095	1549
	After		1836			
4	Before		1779	1781	2095	1549
	After		1781			
5	Before		1762	1781	2095	1549
	After		1762			
6	Before		−1751	−1781	−1549	−2095
	After		−1766			
7	Before		1781	1781	2095	1549
	After		1781			
	(Minimum) (Nominal) (Maximum)					

Before: 12−Mar−2012 7:07
After: 12−Mar−2012 10:03

High Resolution Laterolog Array − B Wellsite Calibration

HRLT M23

Idx	Phase	HRLT M2−M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1736	1781	2095	1549
	After		1735			
1	Before		1783	1781	2095	1549
	After		1801			
2	Before		1798	1781	2095	1549
	After		1809			
3	Before		1831	1781	2095	1549
	After		1838			
4	Before		1775	1781	2095	1549
	After		1776			
5	Before		1760	1781	2095	1549
	After		1759			
6	Before		−1739	−1781	−1549	−2095
	After		−1753			
	Before		1781			

	Before		1781			
7	After		1781	1781	2095	1549
	(Minimum)	(Nominal)	(Maximum)			

Before: 12−Mar−2012 7:07
After: 12−Mar−2012 10:03

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V34

Idx	Phase	HRLT A3−A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68200	70000	82360	60900
	After		68260			
1	Before		69800	70000	82360	60900
	After		70630			
2	Before		70710	70000	82360	60900
	After		71240			
3	Before		72290	70000	82360	60900
	After		72640			
4	Before		70030	70000	82360	60900
	After		70170			
5	Before		69440	70000	82360	60900
	After		69500			
6	Before		−67150	−70000	−60900	−82360
	After		−67740			
7	Before		70000	70000	82360	60900
	After		70000			
	(Minimum)	(Nominal)	(Maximum)			

Before: 12−Mar−2012 7:07
After: 12−Mar−2012 10:03

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V45

Idx	Phase	HRLT A4−A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68470	70000	82360	60900
	After		68540			
1	Before		70180	70000	82360	60900
	After		71040			
2	Before		71080	70000	82360	60900
	After		71600			
3	Before		72640	70000	82360	60900
	After		72990			
4	Before		70330	70000	82360	60900
	After		70460			
5	Before		69710	70000	82360	60900
	After		69770			
6	Before		−67520	−70000	−60900	−82360
	After		−68130			
7	Before		70000	70000	82360	60900
	After		70000			

		(Minimum)	(Nominal)	(Maximum)			

Before: 12−Mar−2012 7:07

After: 12−Mar−2012 10:03

High Resolution Laterolog Array − B Wellsite Calibration

HRLT V56

Idx	Phase	HRLT A5−A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68370	70000	82360	60900
	After		68430			
1	Before		69910	70000	82360	60900
	After		70770			
2	Before		70840	70000	82360	60900
	After		71370			
3	Before		72420	70000	82360	60900
	After		72800			
4	Before		70200	70000	82360	60900
	After		70330			
5	Before		69600	70000	82360	60900
	After		69660			
6	Before		−67240	−70000	−60900	−82360
	After		−67840			
7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				

Before: 12−Mar−2012 7:07

After: 12−Mar−2012 10:03

High Resolution Laterolog Array − B Wellsite Calibration

HRLT VTP

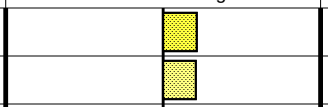
Idx	Phase	HRLT Torpedo−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68060	−70000	−60900	−82360
	After		−68110			
1	Before		−70250	−70000	−60900	−82360
	After		−71080			
2	Before		−71130	−70000	−60900	−82360
	After		−71680			
3	Before		−72710	−70000	−60900	−82360
	After		−73080			
4	Before		−70400	−70000	−60900	−82360
	After		−70530			
5	Before		−69760	−70000	−60900	−82360
	After		−69820			
6	Before		67520	70000	82360	60900
	After		68120			
7	Before		−70000	−70000	−60900	−82360
	After		−70000			
		(Minimum) (Nominal) (Maximum)				

Before: 12−Mar−2012 7:07

After: 12−Mar−2012 10:03

High Resolution Laterolog Array − B Wellsite Calibration

HRLT VBD

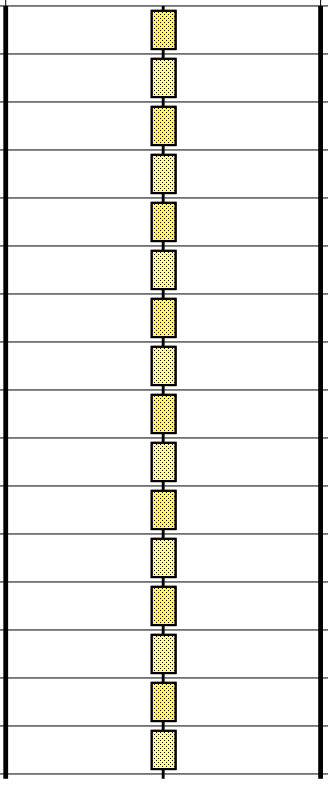
Idx	Phase	HRLT Bridle#9−M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−68050	−70000	−60900	−82360
	After		−68110			
1	Before		−70210	−70000	−60900	−82360
	After		−71060			
2	Before		−71110	−70000	−60900	−82360
	After		−71660			
3	Before		−72700	−70000	−60900	−82360
	After		−73060			
4	Before		−70380	−70000	−60900	−82360
	After		−70520			
5	Before		−69740	−70000	−60900	−82360
	After		−69810			
6	Before		67490	70000	82360	60900
	After		68090			
7	Before		−70000	−70000	−60900	−82360
	After		−70000			
		(Minimum) (Nominal) (Maximum)				

Before: 12−Mar−2012 7:07

After: 12−Mar−2012 10:03

High Resolution Laterolog Array − B Wellsite Calibration

HRLT ISO

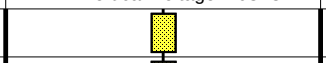
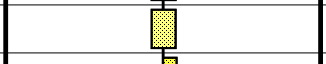
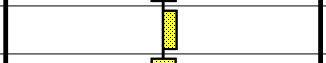
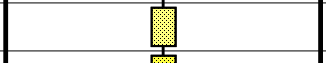
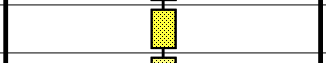
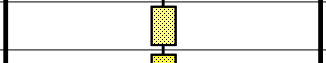
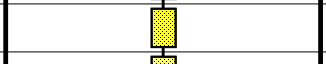
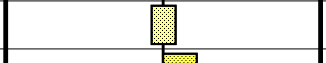
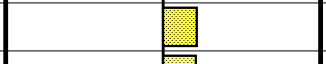
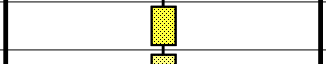
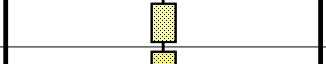
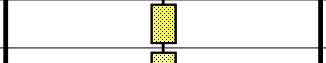
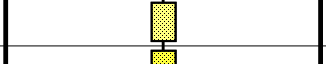
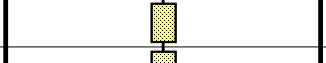
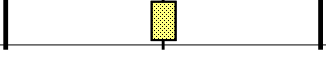
Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		283.8	284.0	334.1	247.0
	After		284.1			
1	Before		281.1	281.1	330.7	244.4
	After		281.1			
2	Before		281.1	281.1	330.7	244.4
	After		281.1			
3	Before		281.1	281.1	330.7	244.4
	After		281.1			
4	Before		281.1	281.1	330.7	244.4
	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: 12−Mar−2012 7:07

After: 12−Mar−2012 10:03

High Resolution Laterolog Array − B Wellsite Calibration

HRLT MV

Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		−320.7	−322.7	−280.7	−379.7
	After		−320.6			
1	Before		−319.0	−322.7	−280.7	−379.7
	After		−322.5			
2	Before		−321.6	−322.7	−280.7	−379.7
	After		−323.7			
3	Before		−325.3	−322.7	−280.7	−379.7
	After		−326.6			
4	Before		−313.6	−322.7	−280.7	−379.7
	After		−313.9			
5	Before		−325.5	−322.7	−280.7	−379.7
	After		−325.5			
6	Before		324.3	322.7	379.7	280.7
	After		326.9			
7	Before		−322.7	−322.7	−280.7	−379.7
	After		−322.7			
		(Minimum) (Nominal) (Maximum)				

Before: 12−Mar−2012 7:07

After: 12−Mar−2012 10:03

Hostile Litho−Density Sonde / Equipment Identification

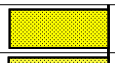
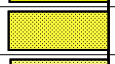
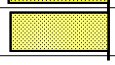
Primary Equipment:		
Hostile Litho Density Sonde	HLDS − D	57
Hostile Litho Density High Voltage	HLDV − D	51
Gamma Source Radioactive	GSR − Z	2397
Auxiliary Equipment:		
Hostile Litho Density Pad	HLDP − C	61
Hostile Litho Density High Voltage Housi	HEH − H	53

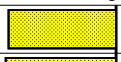
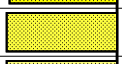
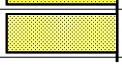
Hostile Litho−Density Sonde Wellsite Calibration

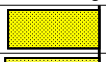
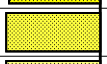
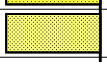
Background Measurement

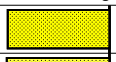
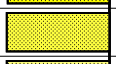
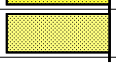
Phase	SS Cs Resolution Bkg %	Value
Master		8.563
Before		8.511
After		8.514
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

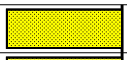
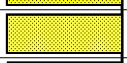
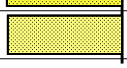
Phase	LS Cs Resolution Bkg %	Value
Master		8.637
Before		8.632
After		8.675
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

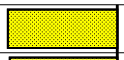
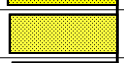
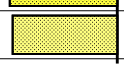
Phase	LSW1 Background CPS	Value
Master		71.69
Before		71.37
After		71.75
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	LSW2 Background CPS	Value
Master		65.72
Before		64.67
After		64.93
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)	

Phase	LSW3 Background CPS	Value
Master		147.7
Before		146.0
After		146.2
	110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value
Master		178.3
Before		178.0
After		178.2
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)	

Phase	LSW5 Background CPS	Value
Master		402.3
Before		401.7
After		403.3
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)	

Phase	SSW1 Background CPS	Value
Master		68.69
Before		69.17
After		70.04
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)	

Phase	SSW2 Background CPS	Value
Master		121.6
Before		122.1
After		122.8
	100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)	

Phase	SSW3 Background CPS	Value
Master		321.9

Phase	SSW4 Background CPS	Value
Master		172.2

Phase	SSW5 Background CPS	Value
Master		123.5

Before		321.7	Before		173.0	Before		123.8
After		322.9	After		171.5	After		123.7
	280.0 (Minimum)	500.0 (Nominal) 700.0 (Maximum)		150.0 (Minimum)	270.0 (Nominal) 380.0 (Maximum)		110.0 (Minimum)	200.0 (Nominal) 270.0 (Maximum)

Master: 28−Feb−2012 2:19 Before: 28−Feb−2012 2:36 After: 12−Mar−2012 10:07

Hostile Litho−Density Sonde Master Calibration

Detector Background Measurement

Phase	LSW1 Background CPS	Value	Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value
Master		71.69	Master		65.72	Master		147.7
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)			50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)	

Phase	LSW4 Background CPS	Value	Phase	LSW5 Background CPS	Value	Phase	LS Cs Resolution Bkg %	Value
Master		178.3	Master		402.3	Master		8.637
	140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)			330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	Phase	SSW3 Background CPS	Value
Master		68.69	Master		121.6	Master		321.9
	55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)			100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)			280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)	

Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value	Phase	SS Cs Resolution Bkg %	Value
Master		172.2	Master		123.5	Master		8.563
	150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)	

Master: 28−Feb−2012 2:19

Hostile Litho−Density Sonde Master Calibration

Detector Aluminum Measurement (bkgd−subtracted)

Phase	LSW1 Aluminum CPS	Value	Phase	LSW2 Aluminum CPS	Value	Phase	LSW3 Aluminum CPS	Value
Master		521.9	Master		758.2	Master		921.8
	420.0 (Minimum) 600.0 (Nominal) 770.0 (Maximum)			650.0 (Minimum) 900.0 (Nominal) 1150 (Maximum)			800.0 (Minimum) 1100 (Nominal) 1450 (Maximum)	

Phase	LSW4 Aluminum CPS	Value	Phase	LSW5 Aluminum CPS	Value	Phase	SSW1 Aluminum CPS	Value
Master		463.1	Master		428.2	Master		2229
	410.0 (Minimum) 580.0 (Nominal) 740.0 (Maximum)			410.0 (Minimum) 570.0 (Nominal) 740.0 (Maximum)			2000 (Minimum) 2800 (Nominal) 3200 (Maximum)	

Phase	SSW2 Aluminum CPS	Value	Phase	SSW3 Aluminum CPS	Value	Phase	SSW4 Aluminum CPS	Value
Master		6354	Master		9261	Master		3871
	5800 (Minimum) 8000 (Nominal) 9300 (Maximum)			8300 (Minimum) 11600 (Nominal) 13500 (Maximum)			3500 (Minimum) 5000 (Nominal) 5800 (Maximum)	

Phase	SSW5 Aluminum CPS	Value
Master		518.3
	430.0 (Minimum) 660.0 (Nominal) 770.0 (Maximum)	

Master: 28−Feb−2012 2:19

Hostile Litho−Density Sonde Master Calibration

Detector Litholog Measurement (bkgd−subtracted)

Phase	LSW1 Iron CPS	Value	Phase	LSW2 Iron CPS	Value	Phase	LSW3 Iron CPS	Value
Master		352.2	Master		613.7	Master		811.4
	290.0 (Minimum) 400.0 (Nominal) 560.0 (Maximum)			520.0 (Minimum) 730.0 (Nominal) 950.0 (Maximum)			720.0 (Minimum) 1000 (Nominal) 1350 (Maximum)	

Phase	LSW4 Iron CPS	Value	Phase	LSW5 Iron CPS	Value	Phase	SSW1 Iron CPS	Value
Master		425.3	Master		389.1	Master		1664
	370.0 (Minimum) 520.0 (Nominal) 700.0 (Maximum)			340.0 (Minimum) 470.0 (Nominal) 750.0 (Maximum)			1500 (Minimum) 2100 (Nominal) 2400 (Maximum)	

Phase	SSW2 Iron CPS	Value	Phase	SSW3 Iron CPS	Value	Phase	SSW4 Iron CPS	Value
Master		5327	Master		8450	Master		3532
	4900 (Minimum) 6800 (Nominal) 7900 (Maximum)			7800 (Minimum) 10800 (Nominal) 12600 (Maximum)			3300 (Minimum) 4600 (Nominal) 5400 (Maximum)	

Phase	SSW5 Iron CPS	Value
Master		458.1
	420.0 (Minimum) 580.0 (Nominal) 680.0 (Maximum)	

(Minimum) (Nominal) (Maximum)

Master: 28−Feb−2012 2:19

Hostile Litho−Density Sonde Master Calibration

Quality Ratios

Phase	AL CALIBRATION RATIO 1	Value
Master		1.034
	0.9000 (Minimum) 1.000 (Nominal) 1.100 (Maximum)	

Phase	AL CALIBRATION RATIO 2	Value
Master		2.110
	1.900 (Minimum) 2.100 (Nominal) 2.300 (Maximum)	

Phase	AL CALIBRATION RATIO 3	Value
Master		0.5856
	0.4500 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	AL CALIBRATION RATIO 4	Value
Master		0.5078
	0.4000 (Minimum) 0.5500 (Nominal) 0.6500 (Maximum)	

Phase	Pad−Wear SS Ratio	Value
Master		0.9947
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Wear LS Ratio	Value
Master		0.9873
	0.9800 (Minimum) 0.9880 (Nominal) 0.9960 (Maximum)	

Phase	Pad−Position SS Ratio	Value
Master		1.002
	0.9900 (Minimum) 0.9940 (Nominal) 1.015 (Maximum)	

Phase	Pad−Position LS Ratio	Value
Master		0.9860
	0.9850 (Minimum) 0.9940 (Nominal) 1.010 (Maximum)	

Master: 28−Feb−2012 2:19

Litho−Density Spectroscopy Cartridge − B / Equipment Identification

Primary Equipment:		
LDSC Cartridge	LDSC − B	366
Auxiliary Equipment:		
LDSC Housing	LDSH − A	126

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
Master		39.64
Before		39.54
After		39.64
	37.50 (Minimum) 40.00 (Nominal) 43.50 (Maximum)	

Phase	Na 511 Peak Res %	Value
Master		14.75
Before		15.72
After		14.84
	12.00 (Minimum) 15.50 (Nominal) 19.00 (Maximum)	

Phase	High Voltage V	Value
Master		1169
Before		1182
After		1180
	900.0 (Minimum) 1150 (Nominal) 1600 (Maximum)	

Phase	Na 1785 Peak Loc	Value
Master		141.6
Before		141.5
After		142.0
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)	

Phase	Na 1785 Peak Res %	Value
Master		8.869
Before		8.671
After		8.885
	7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)	

Phase	Temperature DEGC	Value
Master		26.03
Before		31.35
After		30.67
	−28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	

Phase	Na Count Rate CPS	Value
Master		19.34
Before		19.64

Before		19.04
After		19.09
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 26−Feb−2012 20:15 Before: 6−Mar−2012 18:49 After: 12−Mar−2012 10:50

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value
Master		39.65
Before		39.61
After		39.65
37.50 (Minimum)	40.00 (Nominal)	43.50 (Maximum)

Phase	Na 511 Peak Res %	Value
Master		16.96
Before		15.84
After		15.63
12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)

Phase	High Voltage V	Value
Master		1100
Before		1109
After		1111
900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)

Phase	Na 1785 Peak Loc	Value
Master		142.2
Before		141.4
After		141.9
135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)

Phase	Na 1785 Peak Res %	Value
Master		7.801
Before		8.832
After		8.590
7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)

Phase	Temperature DEGC	Value
Master		26.16
Before		31.73
After		31.95
−28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)

Phase	Na Count Rate CPS	Value
Master		19.53
Before		20.28
After		19.26
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)

Master: 26−Feb−2012 20:15 Before: 6−Mar−2012 18:49 After: 12−Mar−2012 10:50

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Ratio Of Detector 1 To Detector 2

Phase	Coincidence Count Rate Ratio	Value
Master		0.9899
Before		0.9701
After		0.9893
0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)

Master: 26−Feb−2012 20:15
Before: 6−Mar−2012 18:49
After: 12−Mar−2012 10:50

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 1 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00
38.00 (Minimum)	40.00 (Nominal)	43.00 (Maximum)

Phase	Th Peak Loc	Value
Master		210.0
201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)

Phase	Th Peak Res %	Value
Master		6.521
5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)

Phase	Background Count Rate CPS	Value
Master		18.97
10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)

Phase	Gain Ratio	Value
Master		1.008
0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)

Master: 26−Feb−2012 20:03

Hostile Natural Gamma Ray Sonde Master Calibration

Detector 2 Calibration

Phase	Na 511 Peak Set Point	Value
Master		41.00
38.00 (Minimum)	40.00 (Nominal)	43.00 (Maximum)

Phase	Th Peak Loc	Value
Master		207.8
201.0 (Minimum)	209.6 (Nominal)	218.3 (Maximum)

Phase	Th Peak Res %	Value
Master		6.775
5.000 (Minimum)	7.000 (Nominal)	9.000 (Maximum)

Phase	Background Count Rate CPS	Value
Master		18.84
10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)

Phase	Gain Ratio	Value
Master		0.9969
0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)

Master: 26−Feb−2012 20:03

Enhanced DTS Cartridge / Equipment Identification

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

Enhanced DTS Cartridge Wellsite Calibration

EDTC Accelerometer Calibration

Phase	EDTC Z−Axis Acceleration M/S2	Value
Before		9.743
9.610 (Minimum)	9.810 (Nominal)	10.01 (Maximum)

Before: 12−Mar−2012 7:07

Enhanced DTS Cartridge Wellsite Calibration

Detector Calibration

Phase	Gamma Ray Background GAPI	Value	Phase	Gamma Ray (Jig − Bkg) GAPI	Value	Phase	Gamma Ray (Calibrated) GAPI	Value
Before		7.622	Before		159.9	Before		164.0
0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)	145.3 (Minimum)	159.9 (Nominal)	174.4 (Maximum)	149.0 (Minimum)	164.0 (Nominal)	179.0 (Maximum)

Before: 4−Mar−2012 17:35

Company: **Lamont Doherty Earth Observatory**

Schlumberger

Well: **Expedition 340, Site U1394B**
Field: **Lesser Antilles Volcanism and Landslides**
Rig: **JOIDES Resolution**
Ocean: **Caribbean**

High Resolution Laterolog Array (HRLA)
Caliper
Hostile Natural Gamma Sonde (HNGS)