

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)
Log Quality Control

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

LOCATION	Latitude: N 16° 38.43'	Elev.: K.B. -1125.00 m	
	Longitude: W 62° 2.29'	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

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	1.25 g/cm3	
MUD Viscosity		
MUD Fluid Loss	PH	
MUD Source Of Sample	N/A	
RM @ Measured Temperature	@	
RMF @ Measured Temperature	@	
RMC @ Measured Temperature	@	
Source RMF	RMC	
RM @ MRT	RMF @ MRT	
RM @ MRT	@ 21	@ 21
Maximum Recorded Temperatures	21 degC	
Circulation Stopped	Time	
Logger On Bottom	Time	
Unit Number	Location	
Recorded By	K. Swain	
Witnessed By	A. Slagle, S. Morgan	

	Run 1	Run 2	Run 3
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			
MUD Viscosity			
MUD Fluid Loss			
MUD Source Of Sample			
RM @ Measured Temperature		@	
RMF @ Measured Temperature		@	
RMC @ Measured Temperature		@	
Source RMF		RMC	
RM @ MRT		RMF @ MRT	
RM @ MRT		@	@
Maximum Recorded Temperatures			
Circulation Stopped		Time	
Logger On Bottom		Time	
Unit Number		Location	
Recorded By			
Witnessed By			

DISCLAIMER

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

OTHER SERVICES1 OS1: FMS OS2: MSS OS3: DSI OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
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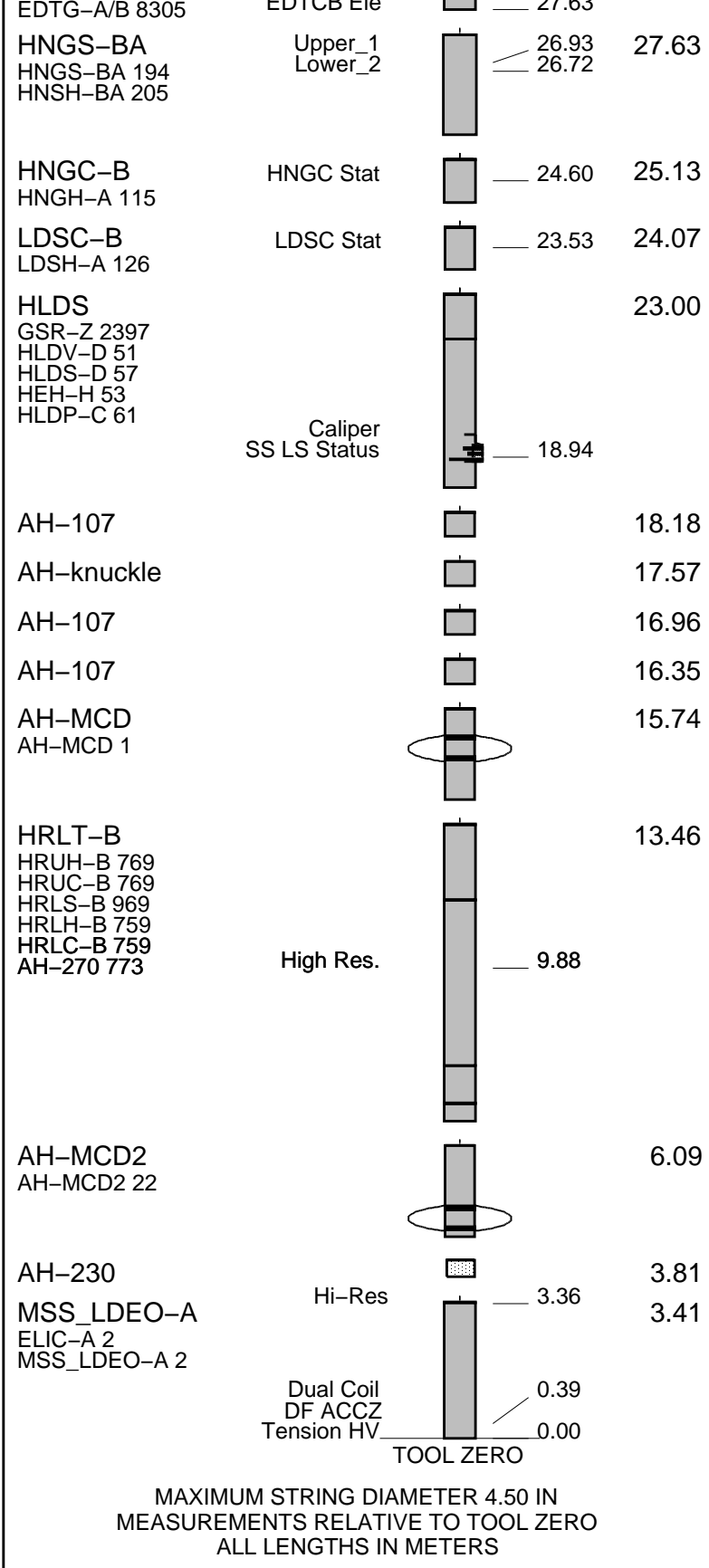
REMARKS: RUN NUMBER 1 Hole drilled with APC/XCB coring bit and bottom hole assembly (BHA). Lamont Magnetic Susceptibility (MSS) tool run in combination with HRLA/HLDS/HNGS 4 knuckle joints decouple the eccentered HLDS and HNGS from the centered HRLA and MSS.	REMARKS: RUN NUMBER 2
Density source not used 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			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:	19C0-187		PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION

RUN 1		RUN 2	
SURFACE EQUIPMENT			
GSR-U 616008 WITM (EDTS)-A			

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

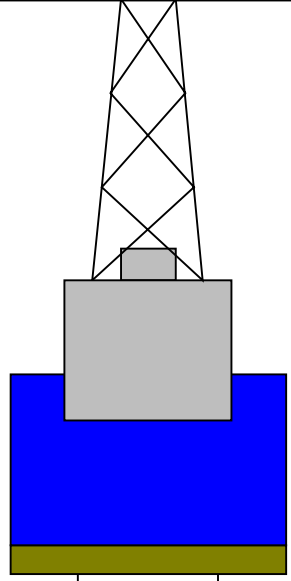


Production String	(in)	(M)	Well Schematic	(M)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation
Derrick Floor Elevation

Mean Sea Level

-1125
-1125
-1114



4.1



0
83
182

3.80
11.43

Sea Floor
Open Hole
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

2nd Pass, Sea Floor Depth Reference

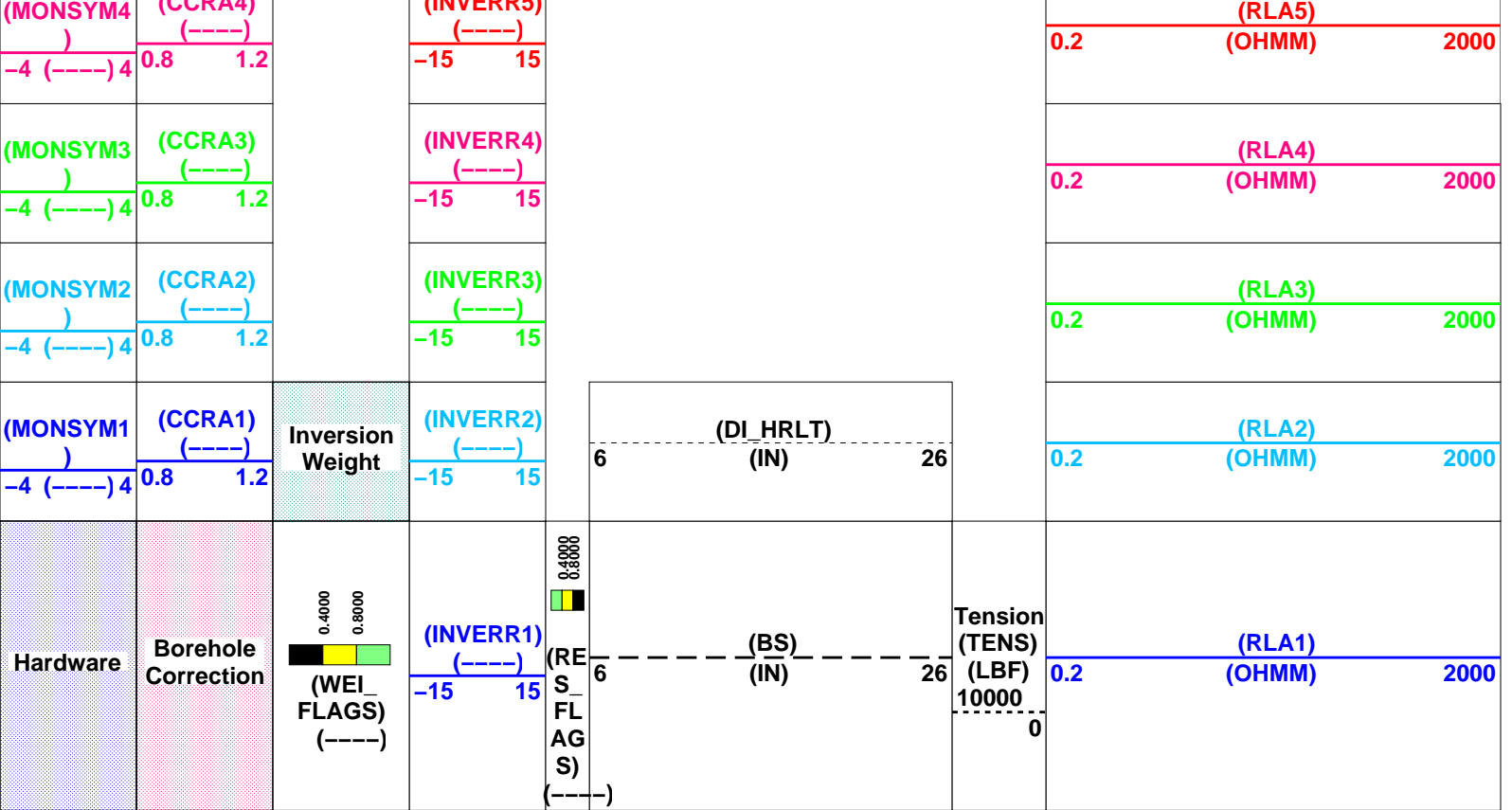
(MONSYM5)	(CCRA5) (----)
-4 (-----) 4	0.8 1.2

Inversion

(RT_HRLT)		
0.2	(OHMM)	2000
(RM_HRLT)		
0.02	(OHMM)	200
(RXO_HRLT)		
0.2	(OHMM)	2000

(CCRA4)

(INVERB5)



*** HRLT FLAG TRACKS ***

BLACK areas show that the corresponding error flag is set.

TRACK R3_LQC

INVERSION WEIGHT

Contribution from each hrlt channel in Inversion algorithm, and from left to right :

| Wei1 | Wei2 | Wei3 | Wei4 | Wei5 |

GREEN = OK

YELLOW = Contribution QUESTIONABLE

BLACK = Contribution UNRELIABLE

TRACK R5_LQC

RESISTIVITY QUALITY INDICATOR

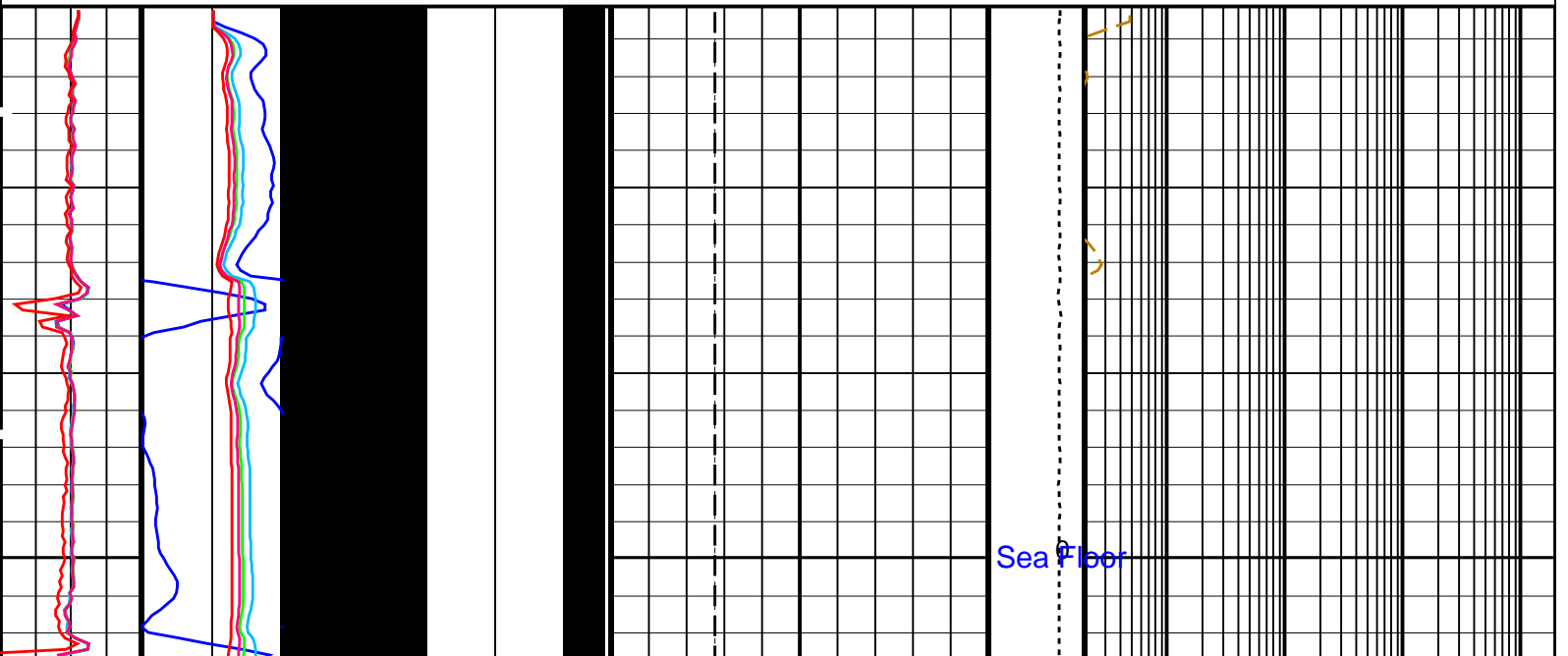
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

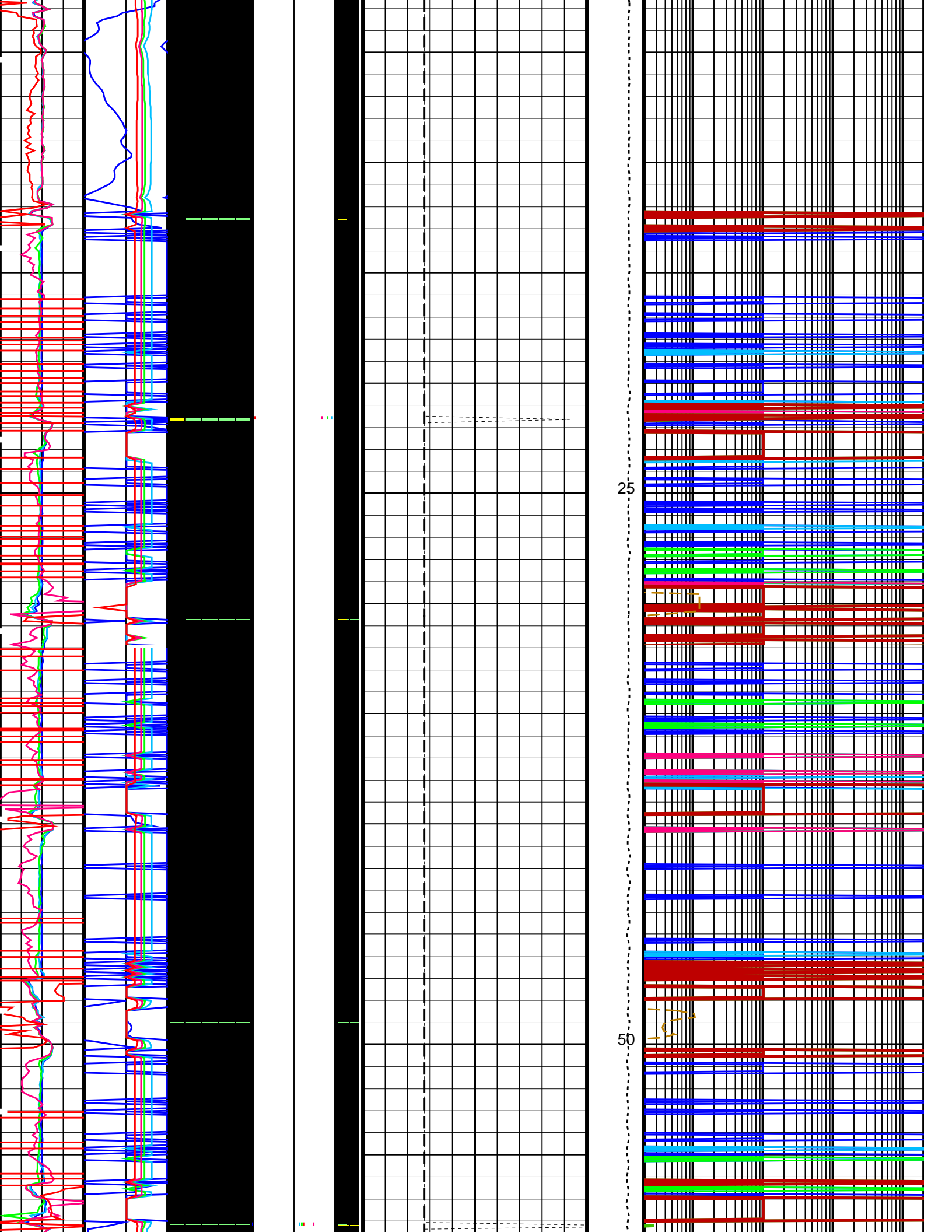
| RxoFlag | RTFlag |

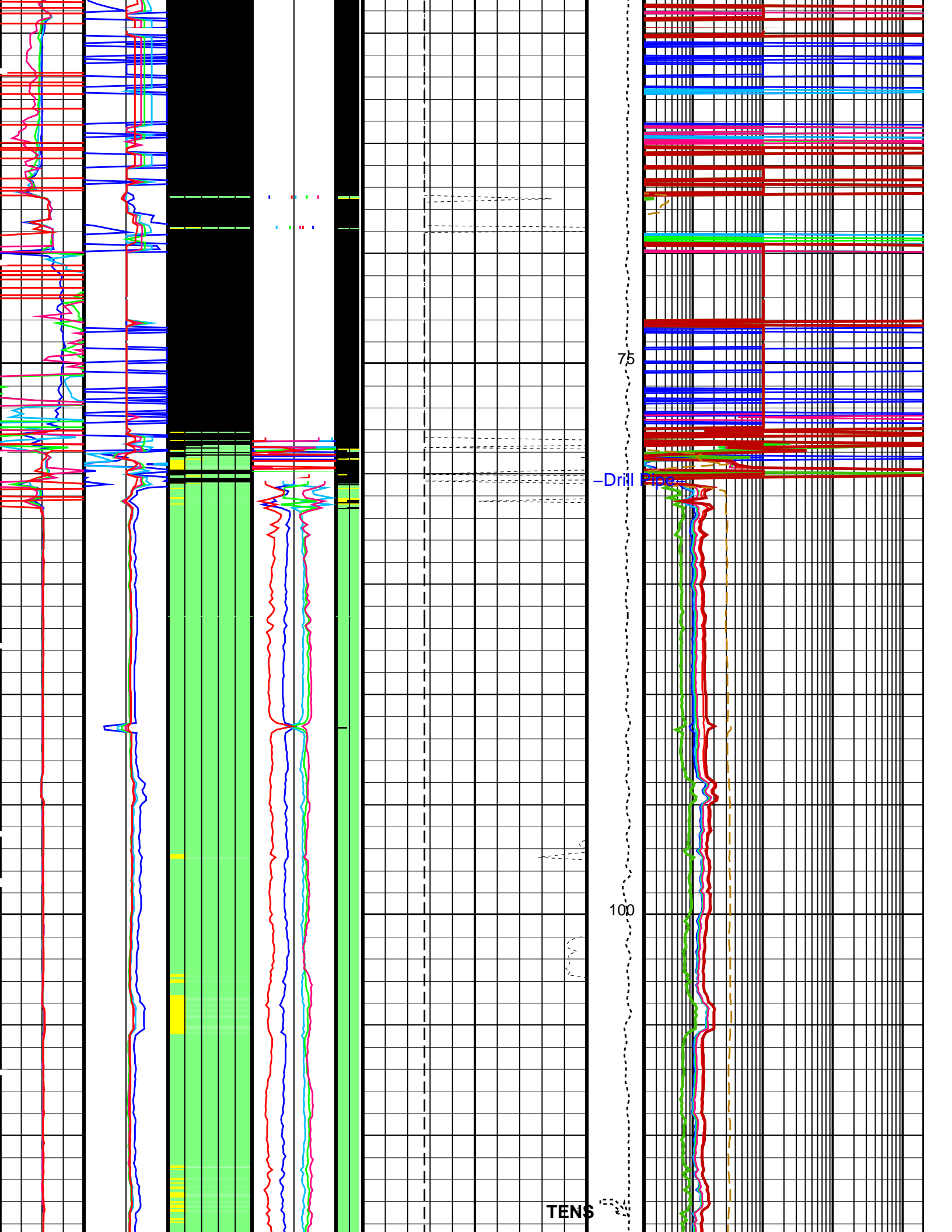
GREEN = OK

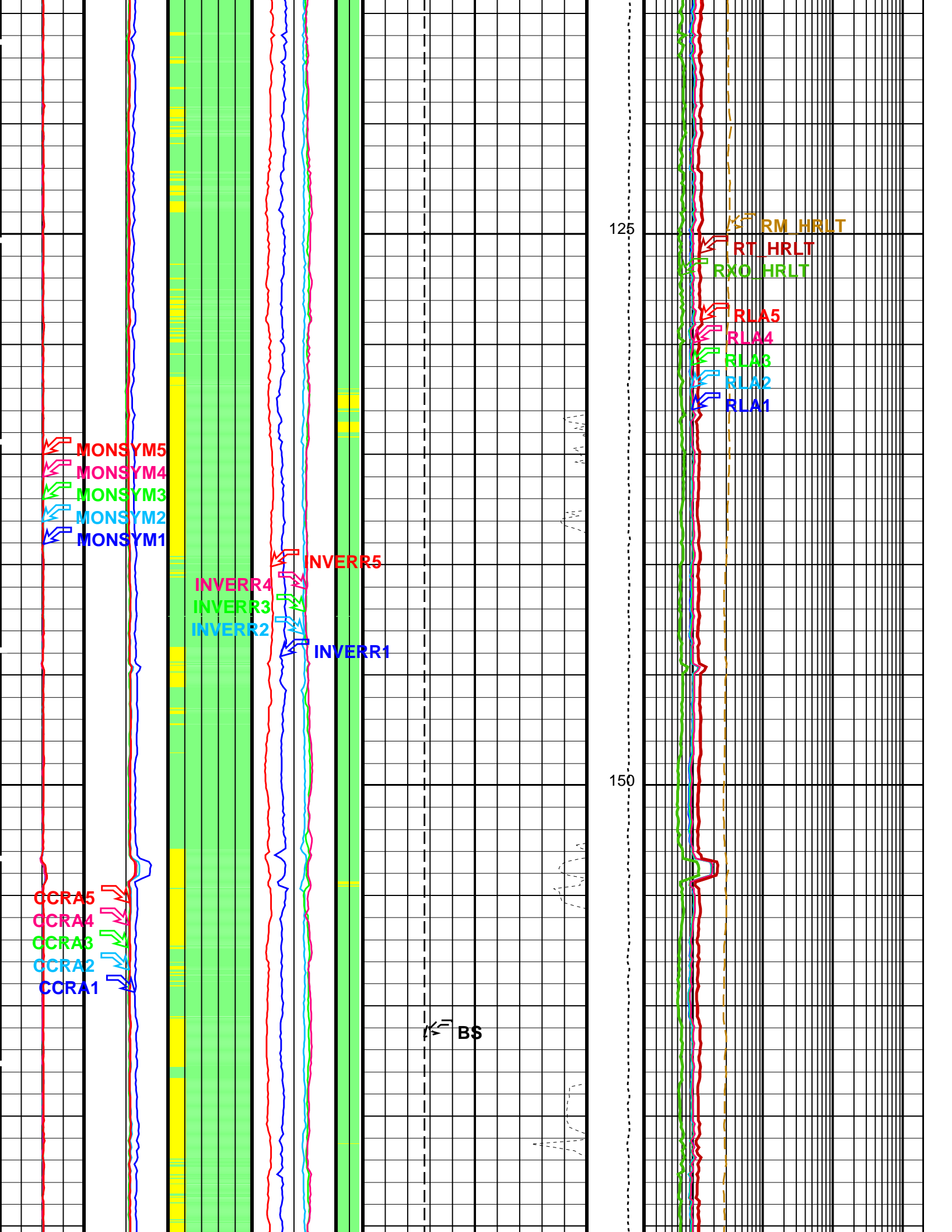
YELLOW = SHOULDER BED EFFECT

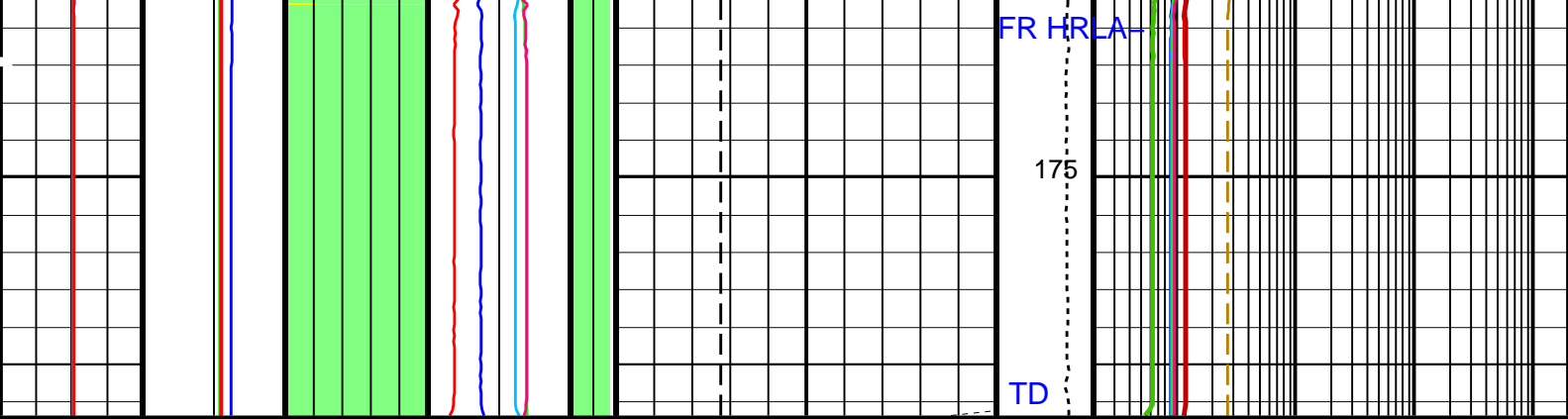
BLACK = NOK











*** HRLT FLAG TRACKS ***

BLACK areas show that the corresponding error flag is set.

2nd Pass, Sea Floor Depth Reference

TRACK R3_LQC

INVERSION WEIGHT

Contribution from each hrlt channel in Inversion algorithm, and from left to right :

| Wei1 | Wei2 | Wei3 | Wei4 | Wei5 |

GREEN = OK

YELLOW = Contribution QUESTIONABLE

BLACK = Contribution UNRELIABLE

TRACK R5_LQC

RESISTIVITY QUALITY INDICATOR

LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

| RxoFlag | RTFlag |

GREEN = OK

YELLOW = SHOULDER BED EFFECT

BLACK = NOK

Hardware	Borehole Correction	(WEI FLAGS) (----)	(INVERR1) (----)	(RES FL AGS) (----)	(BS) (IN)	Tension (TENS) (LBF)	(RLA1) (OHMM)
		0.4000 0.8000	-15 15	6 26	6 26	0.2 10000 0 2000	0.2 (OHMM) 2000
(MONSYM1)	(CCRA1)	Inversion Weight	(INVERR2) (----)	(DI_HRLT) (IN)	(DI_HRLT) (IN)	6 26	(RLA2) (OHMM) 2000
-4 (----) 4	0.8 1.2		-15 15				0.2 (OHMM) 2000
(MONSYM2)	(CCRA2)		(INVERR3) (----)				(RLA3) (OHMM) 2000
-4 (----) 4	0.8 1.2		-15 15				0.2 (OHMM) 2000
(MONSYM3)	(CCRA3)		(INVERR4) (----)				(RLA4) (OHMM) 2000
-4 (----) 4	0.8 1.2		-15 15				0.2 (OHMM) 2000
(MONSYM4)	(CCRA4)		(INVERR5) (----)				(RLA5) (OHMM) 2000
-4 (----) 4	0.8 1.2		-15 15				0.2 (OHMM) 2000
(MONSYM5)	(CCRA5)	Inversion					(RXO_HRLT) (OHMM) 2000
-4 (----) 4	0.8 1.2						0.2 (OHMM) 2000
							(RM_HRLT) (OHMM) 200
							0.02 (OHMM) 200

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HRLT-B: High Resolution Laterolog Array - B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	27.2932	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	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	
PROCNFL	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			
ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	13.375	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	-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: HRLT_LQC 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
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Output DLIS Files

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

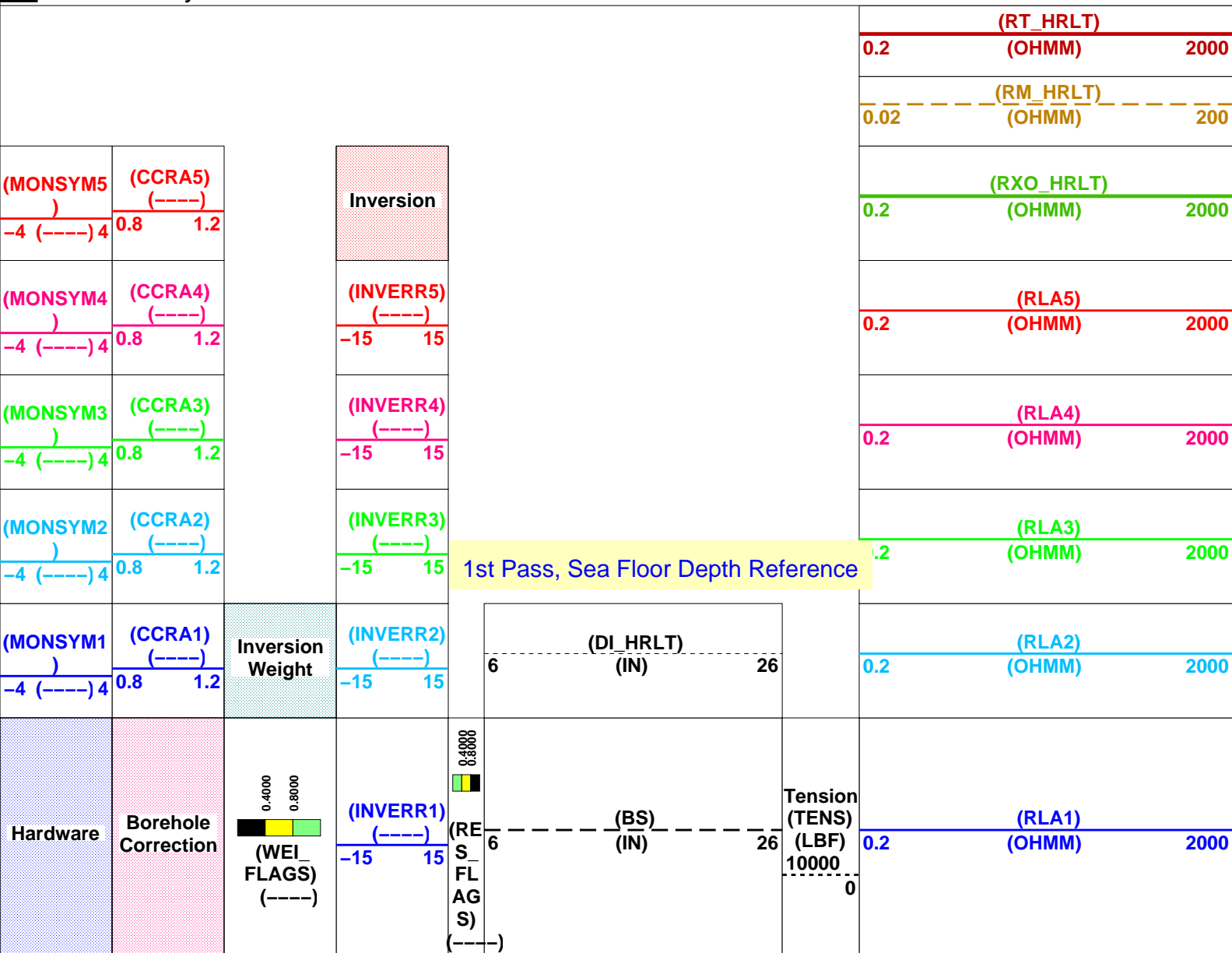
DEFAULT MSS_LDEO_HRLA_LDL_042PUP FN:13 PRODUCER 19-Mar-2012 21:32 181.4 M 122.4 M

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



*** HRLT FLAG TRACKS ***

BLACK areas show that the corresponding error flag is set.

TRACK R3_LQC

INVERSION WEIGHT

Contribution from each hrlt channel in Inversion algorithm, and from left to right :

| Wei1 | Wei2 | Wei3 | Wei4 | Wei5 |

GREEN = OK

YELLOW = Contribution QUESTIONABLE

BLACK = Contribution UNRELIABLE

TRACK R5_LQC

RESISTIVITY QUALITY INDICATOR

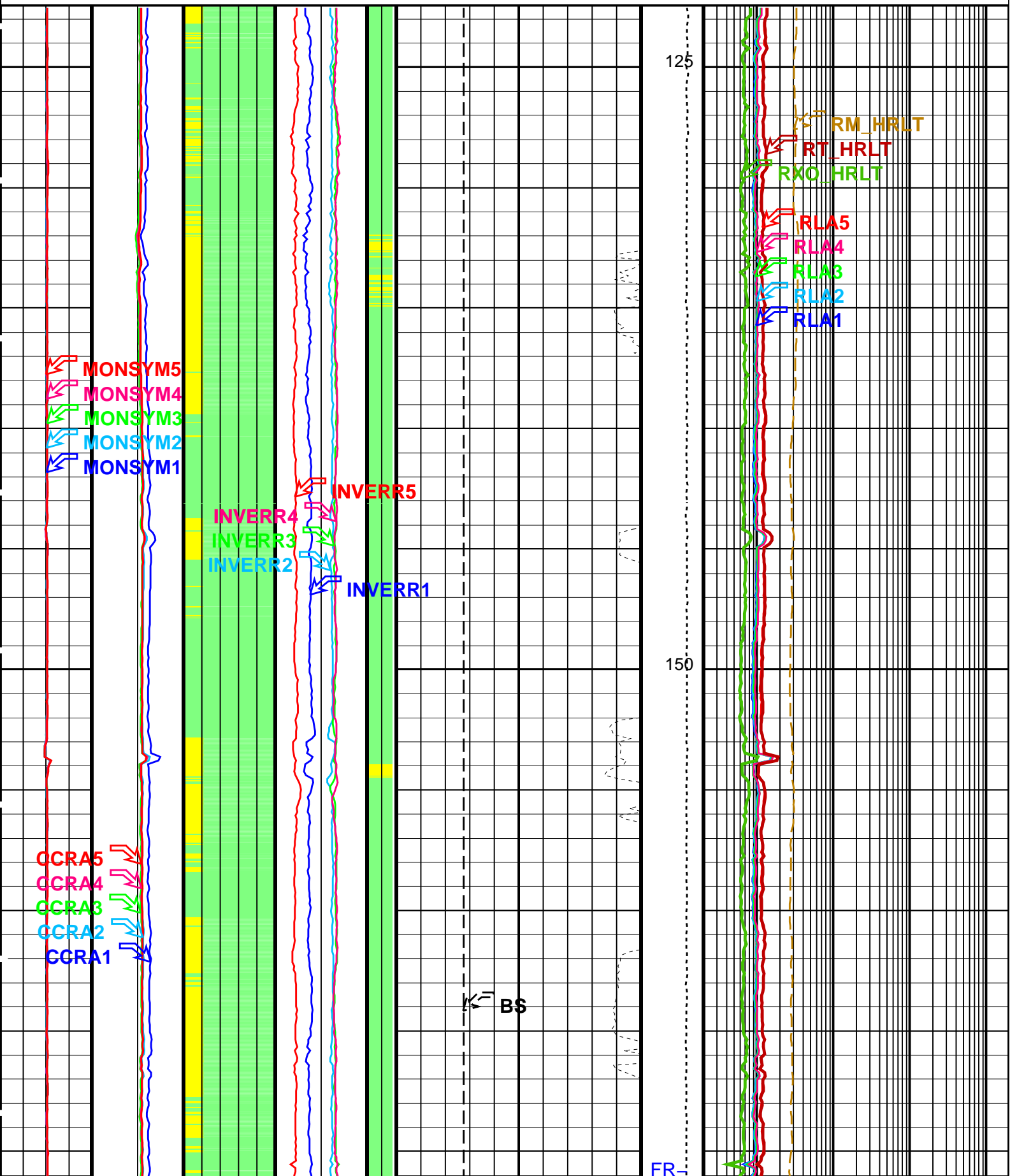
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

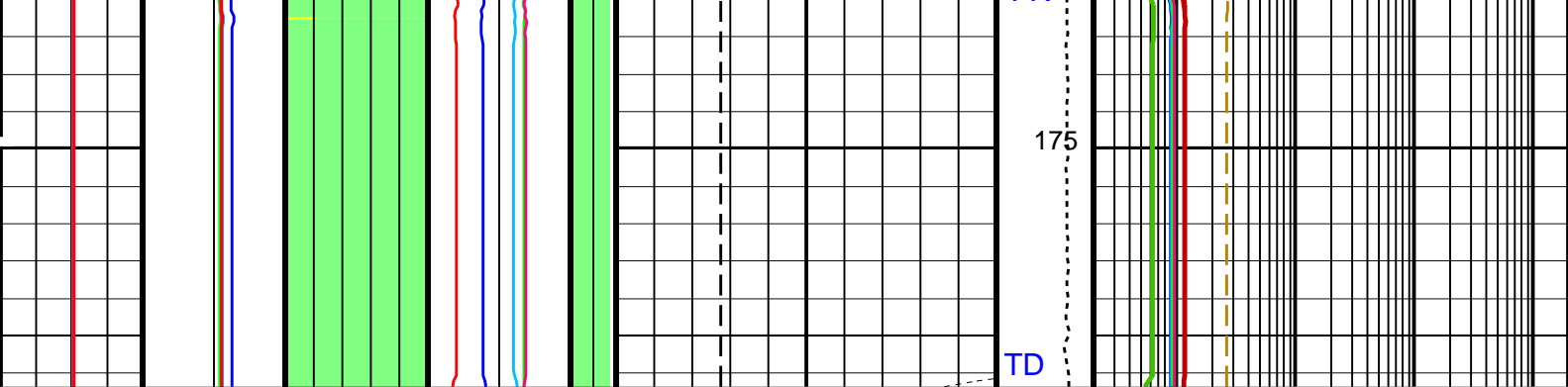
| RxoFlag | RTFlag |

GREEN = OK

YELLOW = SHOULDER BED EFFECT

BLACK = NOK





*** HRLT FLAG TRACKS ***

BLACK areas show that the corresponding error flag is set.

TRACK R3_LQC

INVERSION WEIGHT

Contribution from each hrlt channel in Inversion algorithm, and from left to right :

| Wei1 | Wei2 | Wei3 | Wei4 | Wei5 |

GREEN = OK

YELLOW = Contribution QUESTIONABLE

BLACK = Contribution UNRELIABLE

TRACK R5_LQC

RESISTIVITY QUALITY INDICATOR

LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

| RxoFlag | RTFlag |

GREEN = OK

YELLOW = SHOULDER BED EFFECT

BLACK = NOK

Hardware	Borehole Correction	 (WEI_FLAGS) (----)	(INVERR1) (----) -15 15	(RE S FL AG S) (----)	(BS) (IN) 6 26	Tension (TENS) (LBF) 10000 0	(RLA1) (OHMM) 0.2 2000		
			(MONSYM1) (----) -4 (----) 4		(CCRA1) (----) 0.8 1.2		(INVERR2) (----) -15 15	(DI_HRLT) (IN) 6 26	(RLA2) (OHMM) 0.2 2000
			(MONSYM2) (----) -4 (----) 4		(CCRA2) (----) 0.8 1.2		(INVERR3) (----) -15 15		(RLA3) (OHMM) 0.2 2000
			(MONSYM3) (----) -4 (----) 4		(CCRA3) (----) 0.8 1.2		(INVERR4) (----) -15 15		(RLA4) (OHMM) 0.2 2000
			(MONSYM4) (----) -4 (----) 4		(CCRA4) (----) 0.8 1.2		(INVERR5) (----) -15 15		(RLA5) (OHMM) 0.2 2000
			(MONSYM5) (----) -4 (----) 4		(CCRA5) (----) 0.8 1.2		Inversion		(RXO_HRLT) (OHMM) 0.2 2000
							(RM_HRLT) (OHMM) 0.02 200		

1st Pass, Sea Floor Depth Reference

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HRLT-B: High Resolution Laterolog Array - B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	27.2932	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
FREQ1	HRLT Frequency Index for Mode 1	128	
FREQ2	HRLT Frequency Index for Mode 2	104	
FREQ3	HRLT Frequency Index for Mode 3	86	
FREQ4	HRLT Frequency Index for Mode 4	56	
FREQ5	HRLT Frequency Index for Mode 5	44	
FREQ6	HRLT Frequency Index for Mode 6	116	
GCSE	Generalized Caliper Selection	BS	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	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	
PROGINV	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	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 Correction	-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

ALTDPCCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	13.375	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	-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: HRLT_LQC 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
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_042PUP	FN:13	PRODUCER	19-Mar-2012 21:32		
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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							
HRLT M0–M1 Voltage Plus – 0	0	N/A	-318.2	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 1	0	N/A	-324.6	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 2	0	N/A	-328.1	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 3	0	N/A	-333.5	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 4	0	N/A	-324.1	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 5	0	N/A	-320.8	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 6	0	N/A	317.3	N/A	N/A	9.681	UV
HRLT M0–M1 Voltage Plus – 7	0	N/A	-322.7	N/A	N/A	9.681	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M12							
Before: 12–Mar–2012 7:07							
HRLT M1–M2 Voltage Plus – 0	0	N/A	1750	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 1	0	N/A	1784	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 2	0	N/A	1798	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 3	0	N/A	1828	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 4	0	N/A	1779	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 5	0	N/A	1762	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 6	0	N/A	-1751	N/A	N/A	53.42	UV
HRLT M1–M2 Voltage Plus – 7	0	N/A	1781	N/A	N/A	53.42	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M23							
Before: 12–Mar–2012 7:07							
HRLT M2–M3 Voltage Plus – 0	0	N/A	1736	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 1	0	N/A	1783	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 2	0	N/A	1798	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 3	0	N/A	1831	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 4	0	N/A	1775	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 5	0	N/A	1760	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 6	0	N/A	-1739	N/A	N/A	53.42	UV
HRLT M2–M3 Voltage Plus – 7	0	N/A	1781	N/A	N/A	53.42	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT V34							
Before: 12–Mar–2012 7:07							
HRLT A3–A4 Voltage Plus – 0	0	N/A	68200	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 1	0	N/A	69800	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 2	0	N/A	70710	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 3	0	N/A	72290	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 4	0	N/A	70030	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 5	0	N/A	69440	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 6	0	N/A	-67150	N/A	N/A	2100	UV
HRLT A3–A4 Voltage Plus – 7	0	N/A	70000	N/A	N/A	2100	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT V45							
Before: 12–Mar–2012 7:07							
HRLT A4–A5 Voltage Plus – 0	0	N/A	68470	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 1	0	N/A	70180	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 2	0	N/A	71080	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 3	0	N/A	72640	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 4	0	N/A	70330	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 5	0	N/A	69710	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 6	0	N/A	-67520	N/A	N/A	2100	UV
HRLT A4–A5 Voltage Plus – 7	0	N/A	70000	N/A	N/A	2100	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT V56							
Before: 12–Mar–2012 7:07							
HRLT A5–A6 Voltage Plus – 0	0	N/A	68370	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 1	0	N/A	69910	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 2	0	N/A	70840	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 3	0	N/A	72420	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 4	0	N/A	70200	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 5	0	N/A	69600	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 6	0	N/A	-67240	N/A	N/A	2100	UV
HRLT A5–A6 Voltage Plus – 7	0	N/A	70000	N/A	N/A	2100	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT VTP							
Before: 12–Mar–2012 7:07							
HRLT Torpedo–M0 Voltage – 0	0	N/A	-68060	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 1	0	N/A	-70250	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 2	0	N/A	-71130	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 3	0	N/A	-72710	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 4	0	N/A	-70400	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 5	0	N/A	-69760	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 6	0	N/A	-67520	N/A	N/A	2100	UV
HRLT Torpedo–M0 Voltage – 7	0	N/A	70000	N/A	N/A	2100	UV

HRLT Torpedo-M0 Voltage - 6	0	N/A	67520	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 7	0	N/A	-70000	N/A	N/A	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT VBD

Before: 12-Mar-2012 7:07

HRLT Bridle#9-M0 Voltage - 0	0	N/A	-68050	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 1	0	N/A	-70210	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 2	0	N/A	-71110	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 3	0	N/A	-72700	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 4	0	N/A	-70380	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 5	0	N/A	-69740	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 6	0	N/A	67490	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 7	0	N/A	-70000	N/A	N/A	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT ISO

Before: 12-Mar-2012 7:07

HRLT Source Current Plus - 0	0	N/A	283.8	N/A	N/A	8.520	UA
HRLT Source Current Plus - 1	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 2	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 3	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 4	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 5	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 6	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 7	0	N/A	281.1	N/A	N/A	8.520	UA

High Resolution Laterolog Array - B Wellsite Calibration - HRLT MV

Before: 12-Mar-2012 7:07

HRLT Vertical Voltage PI - 0	0	N/A	-320.7	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 1	0	N/A	-319.0	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 2	0	N/A	-321.6	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 3	0	N/A	-325.3	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 4	0	N/A	-313.6	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 5	0	N/A	-325.5	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 6	0	N/A	324.3	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 7	0	N/A	-322.7	N/A	N/A	9.681	UV

Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement

Master: 28-Feb-2012 2:19 Before: 28-Feb-2012 2:36

SS Cs Resolution Bkg	9.000	8.563	8.511	N/A	N/A	1.800	%
LS Cs Resolution Bkg	9.000	8.637	8.632	N/A	N/A	1.800	%
LSW1 Background	100.0	71.69	71.37	N/A	N/A	0.03000	CPS
LSW2 Background	100.0	65.72	64.67	N/A	N/A	0.03000	CPS
LSW3 Background	200.0	147.7	146.0	N/A	N/A	0.03000	CPS
LSW4 Background	250.0	178.3	178.0	N/A	N/A	0.03000	CPS
LSW5 Background	600.0	402.3	401.7	N/A	N/A	0.03000	CPS
SSW1 Background	100.0	68.69	69.17	N/A	N/A	0.03000	CPS
SSW2 Background	200.0	121.6	122.1	N/A	N/A	0.03000	CPS
SSW3 Background	500.0	321.9	321.7	N/A	N/A	0.03000	CPS
SSW4 Background	270.0	172.2	173.0	N/A	N/A	0.03000	CPS
SSW5 Background	200.0	123.5	123.8	N/A	N/A	0.03000	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

Na 511 Peak Loc	40.00	39.64	39.54	N/A	N/A	1.000	
Na 511 Peak Res	15.50	14.75	15.72	N/A	N/A	2.000	%
High Voltage	1150	1169	1182	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	141.6	141.5	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	8.869	8.671	N/A	N/A	2.000	%
Temperature	15.50	26.03	31.35	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	19.34	19.64	N/A	N/A	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check

Master: 26–Feb–2012 20:15 Before: 6–Mar–2012 18:49

Na 511 Peak Loc	40.00	39.65	39.61	N/A	N/A	1.000	
Na 511 Peak Res	15.50	16.96	15.84	N/A	N/A	2.000	%
High Voltage	1150	1100	1109	N/A	N/A	N/A	V
Na 1785 Peak Loc	142.6	142.2	141.4	N/A	N/A	7.000	
Na 1785 Peak Res	8.500	7.801	8.832	N/A	N/A	2.000	%
Temperature	15.50	26.16	31.73	N/A	N/A	N/A	DEGC
Na Count Rate	45.00	19.53	20.28	N/A	N/A	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

Coincidence Count Rate Ratio	1.000	0.9899	0.9701	N/A	N/A	0.05000	
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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
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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 HRLH – 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
1	Before		-324.6	-322.7	-280.7	-379.7
2	Before		-328.1	-322.7	-280.7	-379.7
3	Before		-333.5	-322.7	-280.7	-379.7
4	Before		-324.1	-322.7	-280.7	-379.7
5	Before		-320.8	-322.7	-280.7	-379.7
6	Before		317.3	322.7	379.7	280.7
7	Before		-322.7	-322.7	-280.7	-379.7

(Minimum) (Nominal) (Maximum)

Before: 12–Mar–2012 7:07

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
1	Before		1784	1781	2095	1549
2	Before		1798	1781	2095	1549

Idx	Phase	HRLT M2-M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
3	Before		1828	1781	2095	1549
4	Before		1779	1781	2095	1549
5	Before		1762	1781	2095	1549
6	Before		-1751	-1781	-1549	-2095
7	Before		1781	1781	2095	1549
			(Minimum)	(Nominal)	(Maximum)	

Before: 12-Mar-2012 7:07

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
1	Before		1783	1781	2095	1549
2	Before		1798	1781	2095	1549
3	Before		1831	1781	2095	1549
4	Before		1775	1781	2095	1549
5	Before		1760	1781	2095	1549
6	Before		-1739	-1781	-1549	-2095
7	Before		1781	1781	2095	1549
			(Minimum)	(Nominal)	(Maximum)	

Before: 12-Mar-2012 7:07

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
1	Before		69800	70000	82360	60900
2	Before		70710	70000	82360	60900
3	Before		72290	70000	82360	60900
4	Before		70030	70000	82360	60900
5	Before		69440	70000	82360	60900
6	Before		-67150	-70000	-60900	-82360
7	Before		70000	70000	82360	60900
			(Minimum)	(Nominal)	(Maximum)	

Before: 12-Mar-2012 7:07

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
1	Before		70180	70000	82360	60900
2	Before		71080	70000	82360	60900
3	Before		72640	70000	82360	60900
4	Before		70330	70000	82360	60900
5	Before		69710	70000	82360	60900
6	Before		-67520	-70000	-60900	-82360
7	Before		70000	70000	82360	60900
			(Minimum)	(Nominal)	(Maximum)	

Before: 12-Mar-2012 7:07

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
1	Before		69910	70000	82360	60900
2	Before		70840	70000	82360	60900
3	Before		72420	70000	82360	60900
4	Before		70200	70000	82360	60900
5	Before		69600	70000	82360	60900
6	Before		-67240	-70000	-60900	-82360
7	Before		70000	70000	82360	60900
		(Minimum) (Nominal) (Maximum)				

Before: 12–Mar–2012 7:07

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
1	Before		-70250	-70000	-60900	-82360
2	Before		-71130	-70000	-60900	-82360
3	Before		-72710	-70000	-60900	-82360
4	Before		-70400	-70000	-60900	-82360
5	Before		-69760	-70000	-60900	-82360
6	Before		67520	70000	82360	60900
7	Before		-70000	-70000	-60900	-82360
		(Minimum) (Nominal) (Maximum)				

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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		-68050	-70000	-60900	-82360
1	Before		-70210	-70000	-60900	-82360
2	Before		-71110	-70000	-60900	-82360
3	Before		-72700	-70000	-60900	-82360
4	Before		-70380	-70000	-60900	-82360
5	Before		-69740	-70000	-60900	-82360
6	Before		67490	70000	82360	60900
7	Before		-70000	-70000	-60900	-82360
		(Minimum) (Nominal) (Maximum)				

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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
1	Before		281.1	281.1	330.7	244.4
2	Before		281.1	281.1	330.7	244.4
3	Before		281.1	281.1	330.7	244.4

4	Before		281.1	281.1	330.7	244.4
5	Before		281.1	281.1	330.7	244.4
6	Before		281.1	281.1	330.7	244.4
7	Before		281.1	281.1	330.7	244.4
		(Minimum) (Nominal) (Maximum)				

Before: 12-Mar-2012 7:07

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
1	Before		-319.0	-322.7	-280.7	-379.7
2	Before		-321.6	-322.7	-280.7	-379.7
3	Before		-325.3	-322.7	-280.7	-379.7
4	Before		-313.6	-322.7	-280.7	-379.7
5	Before		-325.5	-322.7	-280.7	-379.7
6	Before		324.3	322.7	379.7	280.7
7	Before		-322.7	-322.7	-280.7	-379.7
		(Minimum) (Nominal) (Maximum)				

Before: 12-Mar-2012 7:07

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

Litho-Density Spectroscopy Cartridge – B / Equipment Identification

Primary Equipment:

LDSC Cartridge	LDSC – B	366
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Auxiliary Equipment:

LDSC Housing	LDSH – A	126
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Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

Primary Equipment:

HNGC Cartridge	HNGC – B	300
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Auxiliary Equipment:

HNGC Housing	HNGH – A	115
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Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment:


HNGS Sonde	HNGS – BA	194
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Auxiliary Equipment:

HNGS Sonde Housing	HNSH – BA	205
Gamma Source Radioactive	GSR – U	616008

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	9.810	10.01
	(Minimum)	(Nominal)	(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	30.00	120.0		145.3	159.9	174.4		149.0	164.0	179.0
	(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(Maximum)		(Minimum)	(Nominal)	(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)

Log Quality Control