

Schlumberger

Company: **Lamont Doherty**

Well: **Expedition 339, Site U1389 GC-11A Hole A**

Field: **Mediterranean Outflow (Portugal)**

Rig: **JOIDES Resolution Ocean: Atlantic**

High Resolution Laterolog Array Log Quality Control Log

Rig: JOIDES Resolution
 Field: Mediterranean Outflow (Portugal)
 Location: Latitude: N 36° 25.517'
 Well: Expedition 339, Site U1389 GC-
 Company: Lamont Doherty

LOCATION		Latitude: N 36° 25.517'	Elev.: K.B. 11.00 m
		Longitude: W 7° 16.688'	G.L. -645.00 m
			D.F. 11.00 m
Permanent Datum:	Mean Sea Level	Elev.: 0.00 m	
Log Measured From:	Drill Floor	11.00 m	above Perm. Datum
Drilling Measured From:	Drill Floor		
API Serial No.	Max. Hole Devi. 0 deg	Longitude W 7.2781*	Latitude N 36.42528*

Logging Date	Run 1	Run 2	Run
Run Number			
Depth Driller			
Schlumberger Depth			
Bottom Log Interval			
Top Log Interval			
Casing Driller Size @ Depth			
Casing Schlumberger			
Bit Size			
Type Fluid In Hole			
Density			
Fluid Loss			
Source Of Sample			
RM @ Measured Temperature	@		
RMF @ Measured Temperature	@		
RMC @ Measured Temperature	@		
Source RMF			
RM @ MRT	@		
RMF @ MRT		@	
Maximum Recorded Temperatures			
Circulation Stopped			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

Logging Date	23-Dec-2011		
Run Number	1		
Depth Driller	356 m		
Schlumberger Depth	356 m		
Bottom Log Interval	356 m		
Top Log Interval	0 m		
Casing Driller Size @ Depth	10.750 in	@	86 m
Casing Schlumberger	85 m		
Bit Size	9.875 in		
Type Fluid In Hole	Seawater Gel		
Density	1.25 g/cm3		
Fluid Loss	PH		
Source Of Sample	N/A		
RM @ Measured Temperature		@	@
RMF @ Measured Temperature		@	@
RMC @ Measured Temperature		@	@
Source RMF	N/A	N/A	
RM @ MRT		@ 21	@ 21
RMF @ MRT			
Maximum Recorded Temperatures	21 degC		
Circulation Stopped	23-Dec-2011		21:00
Logger On Bottom	23-Dec-2011		23:35
Unit Number	625003	Houston	
Recorded By	K. Swain		
Witnessed By	T. Williams, J. Lofi		

DISCLAIMER
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OTHER SERVICES1
 OS1: FMS/DSI
 OS2: VSI
 OS3: HNGS/HLDS
 OS4:
 OS5:

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

REMARKS: RUN NUMBER 1
 Hole GC-11A Hole C was drilled with a 9 7/8" APC/XCB bit to TDD of 355 mbsf.
 This log originally acquired in measured depth from rig floor but played back with a depth offset of -656m to make the sea floor at 0m as requested by Lamont Doherty.
 A playback was produced and listed on the log for caliper input for hole size. The original logs were acquired with bit size as the hole size assumption. Barite mud ID was used in the playback and not on the original log. All logs recorded via wireline thru 5-5.5" drillpipe and APC/SCB coring BHA consisting of a bit release sub, Kinley sub, drill collars and lockable flapper valve. The bit is large enough to log through and not need to be released prior to logging.
 HRLA encountered spikes within 60m of drillpipe and does not repeat from passes. This indicates a possible hardware issue not identified in the LQC log at the depth of the spiking only. All other logged interval is normal for all curves.

REMARKS: RUN NUMBER 2

RUN 1		
SERVICE ORDER #:		
PROGRAM VERSION:	19C0-187	
FLUID LEVEL:		
LOGGED INTERVAL	START	STOP

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

EQUIPMENT DESCRIPTION




RUN 1

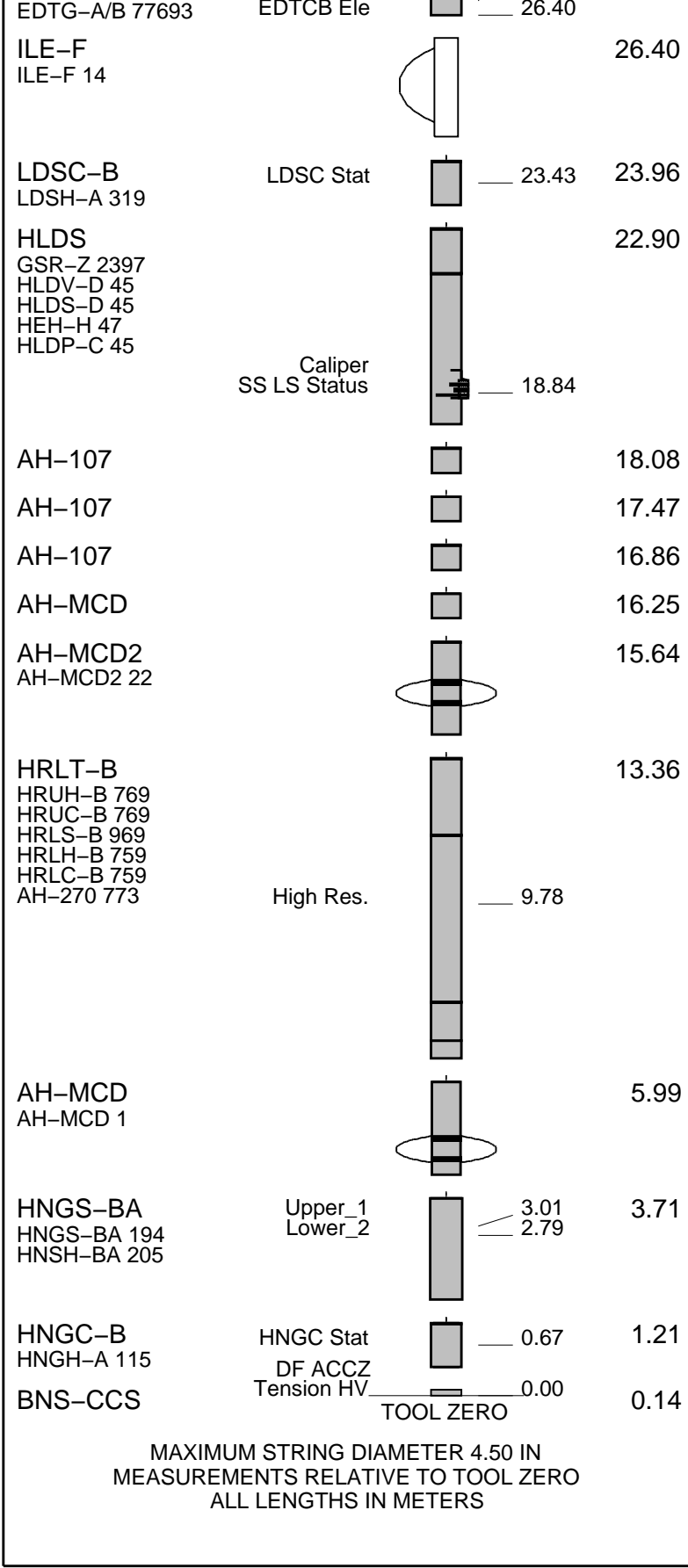
SURFACE EQUIPMENT

GSR-U 616008
 WITM (EDTS)-A 1

RUN 2

DOWNHOLE EQUIPMENT

LEH-QT				29.71
LEH-QT 301				
AH-369	MDSB_EDTC		28.38	28.82
	Mud Tempe		27.32	
	CTEM		26.75	28.38
EDTC-B	Gamma Ray			
EDTH-B 8528	EFTB DIAG			
EDTC-B 8529	TelStatus			



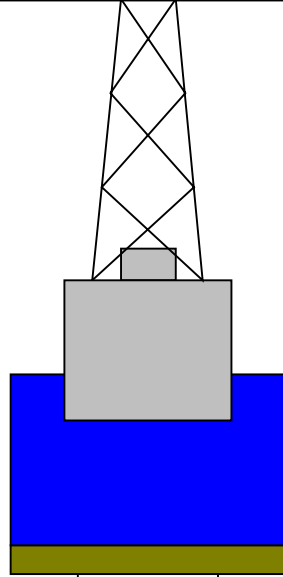
Production String	(in)	(M)	Well Schematic	(M)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation
Derrick Floor Elevation

Mean Sea Level

-656
-656

-645



4.1



0

86

355

3.80

9.875

Sea Floor

Open Hole

Total Depth

Input DLIS Files

DEFAULT NGS_HRLA_LDL_037PUP FN:56 PRODUCER 25-Dec-2011 23:20 1012.7 M 648.2 M

Output DLIS Files

DEFAULT NGS_HRLA_LDL_038PUP FN:57 PRODUCER 27-Dec-2011 01:39 356.6 M -7.8 M

OP System Version: 19C0-187

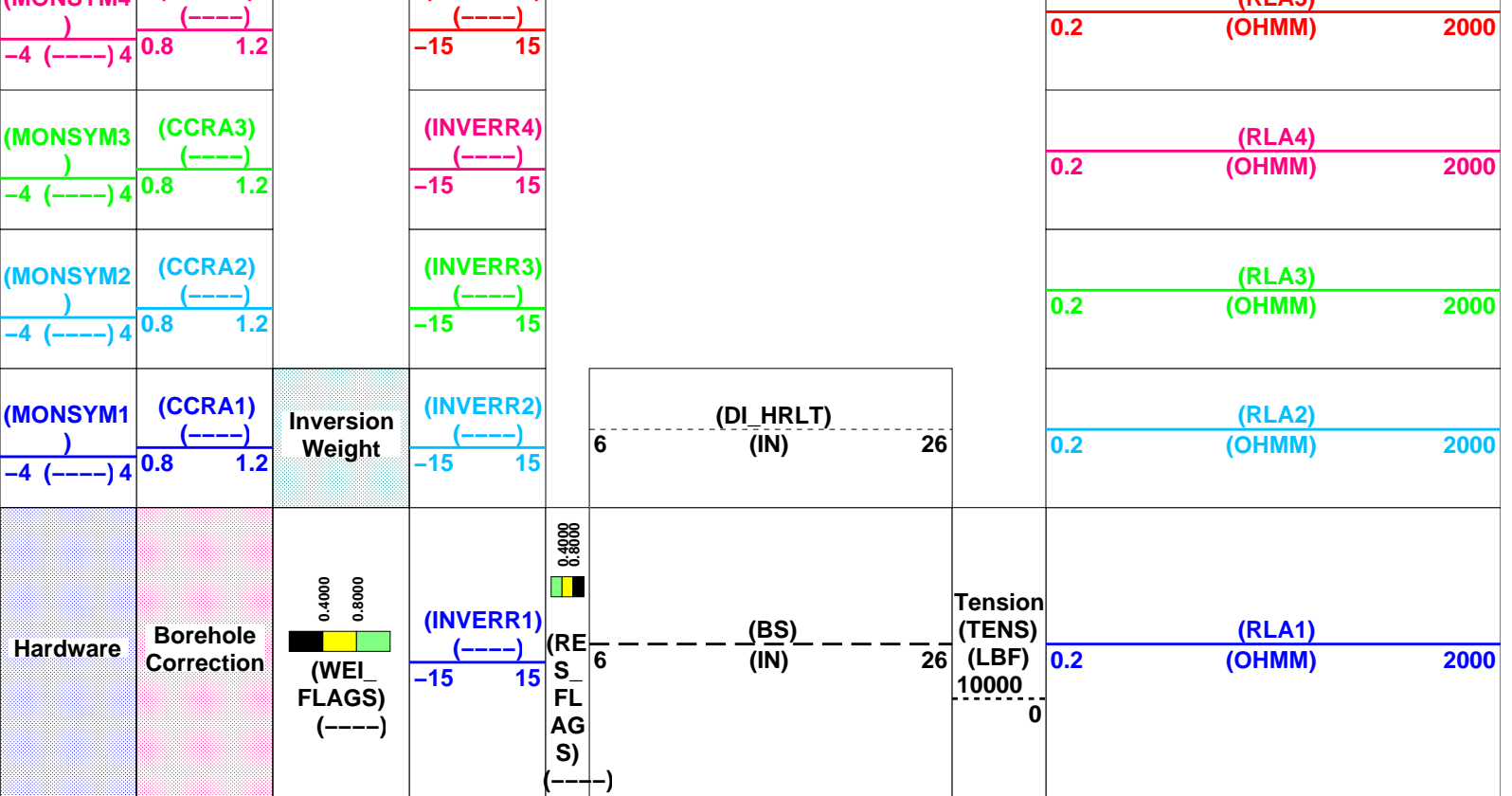
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	19C0-187

PIP SUMMARY

Time Mark Every 60 S

		(RT_HRLT)	
		0.2	2000
		(OHMM)	
		(RM_HRLT)	
		0.02	200
		(OHMM)	
		(RXO_HRLT)	
		0.2	2000
		(OHMM)	
		(PI A5)	

(MONSYM5)	(CCRA5)	Inversion
(-----)	(-----)	
-4 (-----) 4	0.8 1.2	
(MONSYM4)	(CCRA4)	(INVERR5)



*** 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

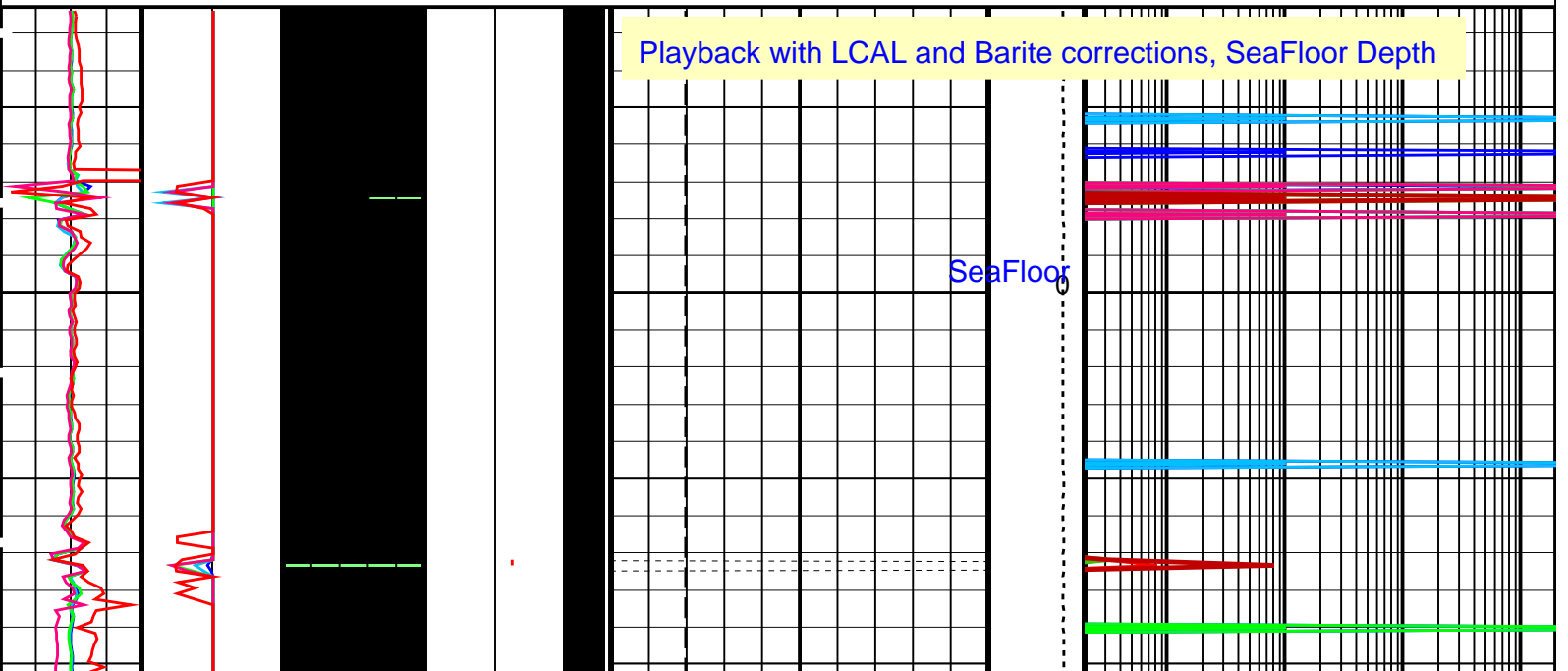
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

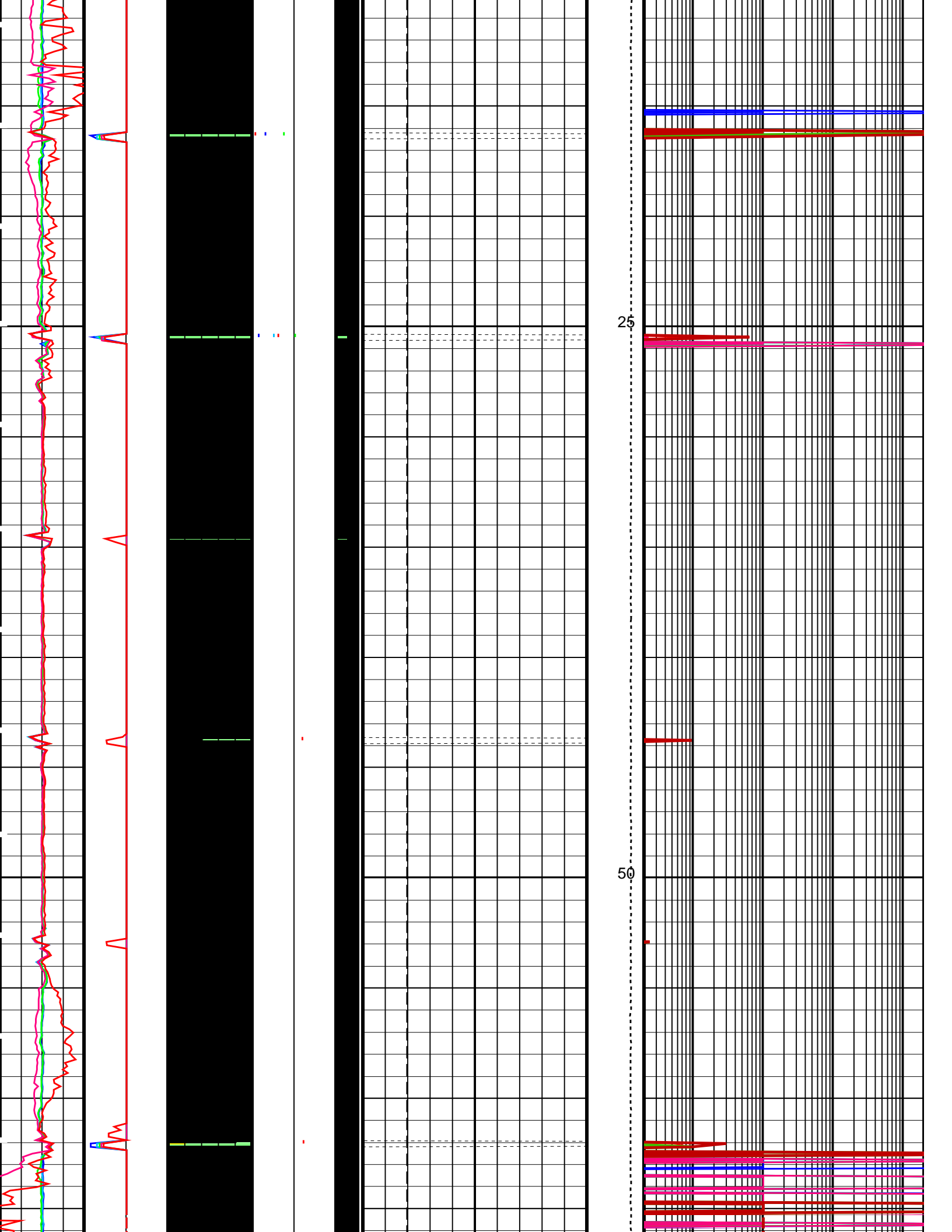
| RxoFlag | RTFlag |

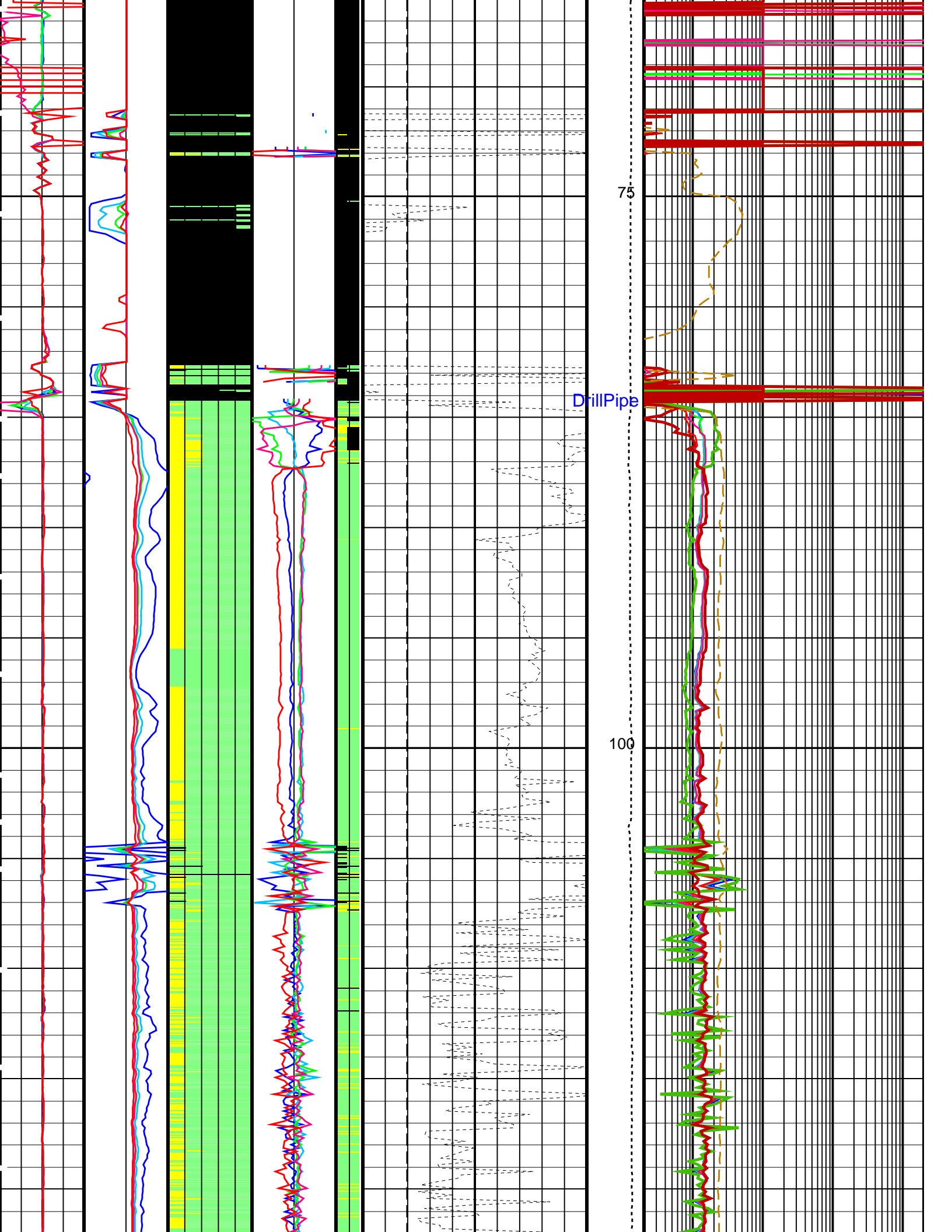
GREEN = OK

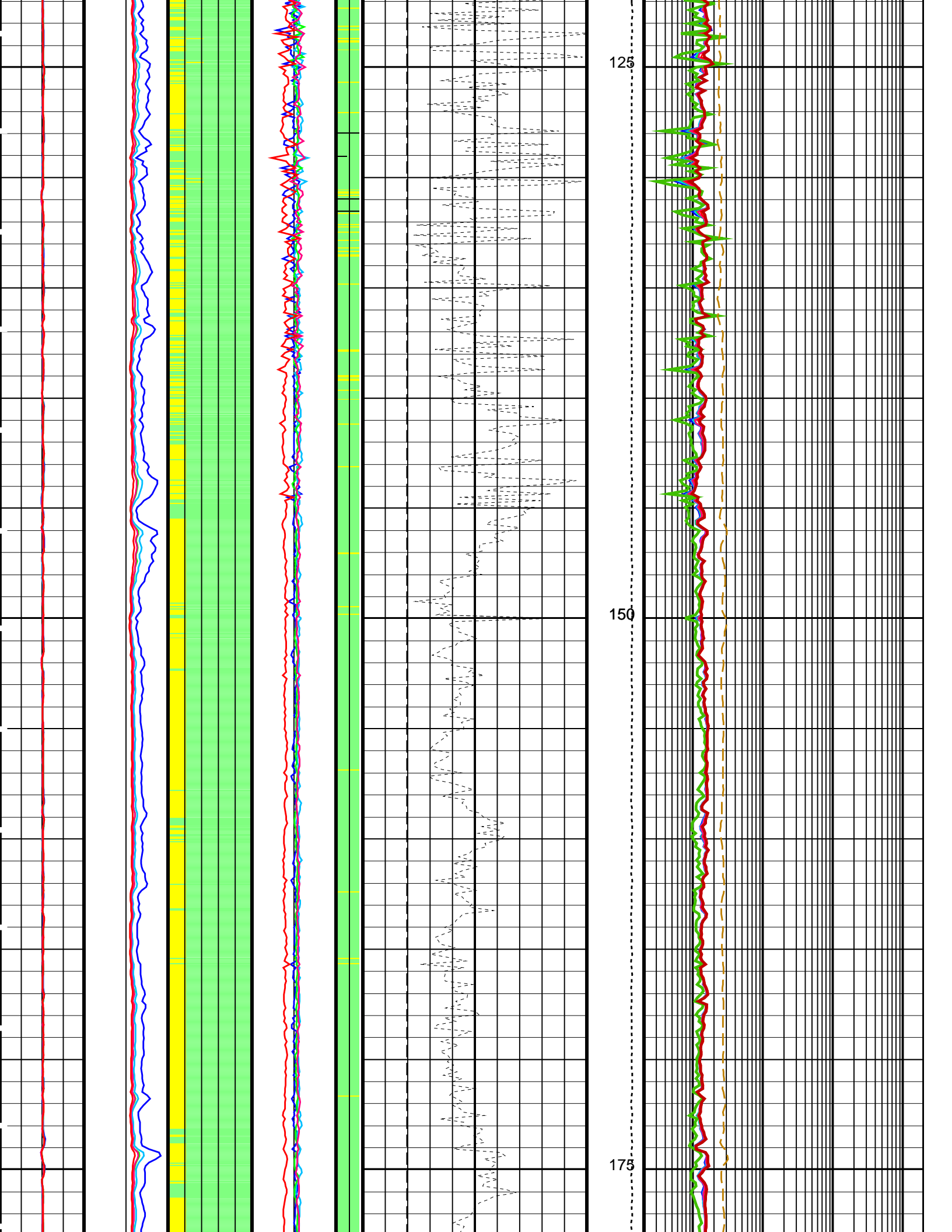
YELLOW = SHOULDER BED EFFECT

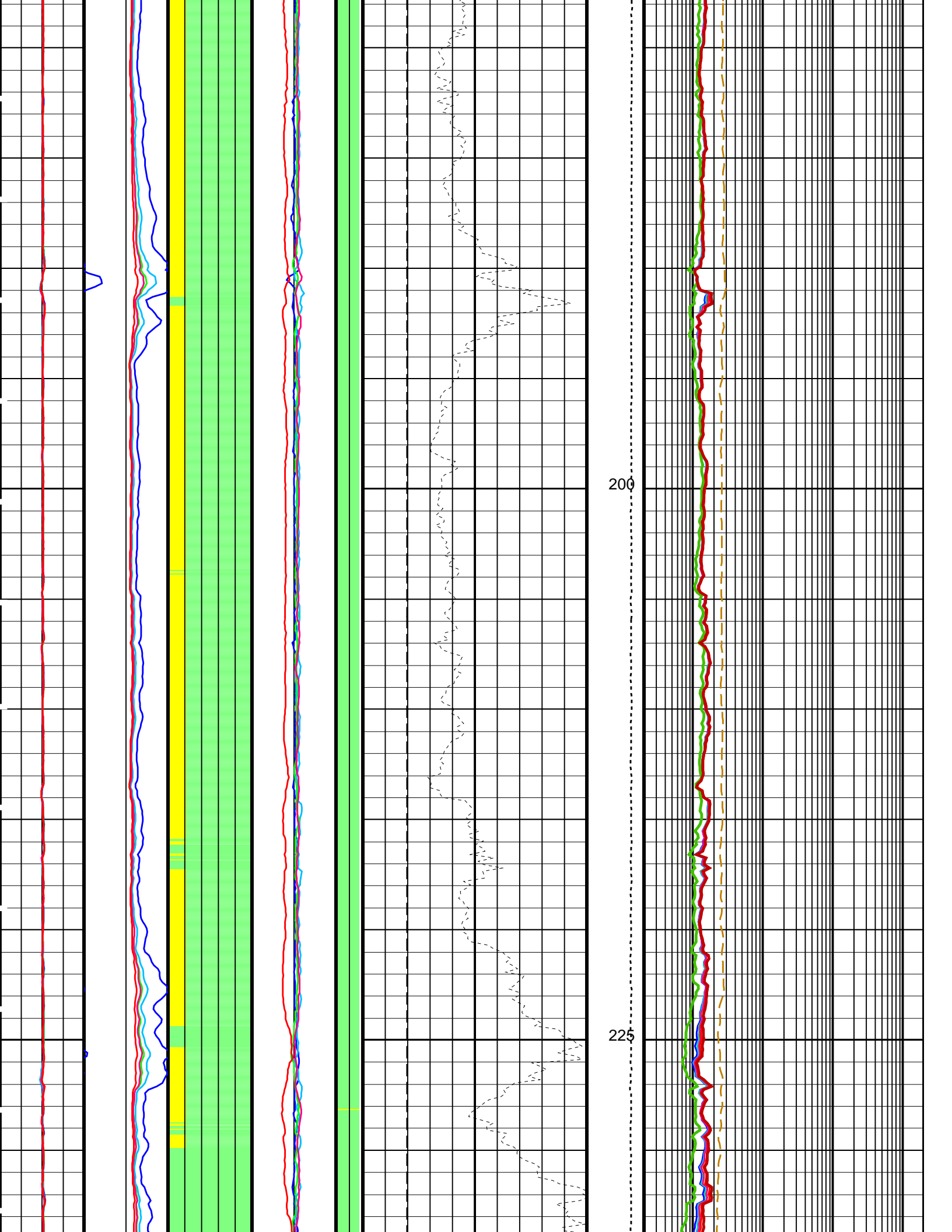
BLACK = NOK

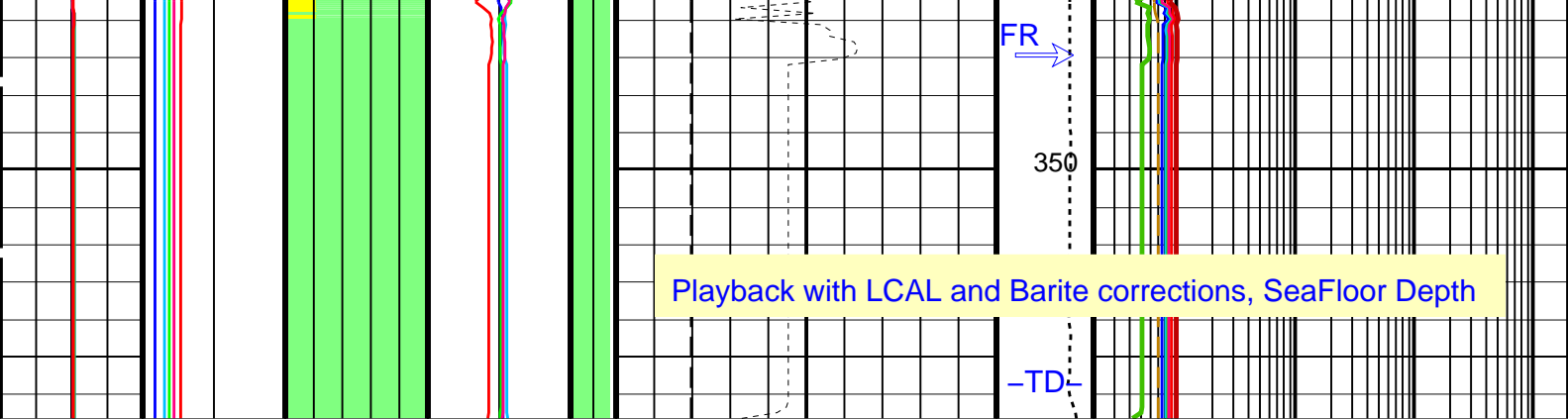












*** HRLT FLAG TRACKS ***

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 |

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

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HNGS-BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGS Detector 1 Barite Constant	1	
BAR2	HNGS Detector 2 Barite Constant	1	
BHK	HNGS Borehole Potassium Correction Concentration	0	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
CSD1	Inner Casing Outer Diameter	0	IN
CSD2	Outer Casing Outer Diameter	0	IN
CSW1	Inner Casing Weight	0	LB/F
CSW2	Outer Casing Weight	0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE	
GCSE	Generalized Caliper Selection	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
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	-0.00279021	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.960045	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.971544	
HRLT-B: High Resolution Laterolog Array - B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	17.0393	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	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
ISSBAR	Barite Mud Switch	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCVN	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMFO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	68	DEGF
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	OFF	
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	
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
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	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.01	DF/F
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	68	DEGF
SOCN	Standoff Distance	0	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	9.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	10.750	IN
CWEI	Casing Weight	43.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	-656.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3330	FT
TDD	Total Depth - Driller	991.00	M
TDL	Total Depth - Logger	991.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLT_LQC Vertical Scale: 1:200 Graphics File Created: 27-Dec-2011 01:39

OP System Version: 19C0-187

HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

DEFAULT	NGS_HRLA_LDL_037PUP	FN:56	PRODUCER	25-Dec-2011 23:20	1012.7 M	648.2 M
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Output DLIS Files

DEFAULT	NGS_HRLA_LDL_038PUP	FN:57	PRODUCER	27-Dec-2011 01:39
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Input DLIS Files

DEFAULT NGS_HRLA_LDL_013LUP FN:18 PRODUCER 23-Dec-2011 23:56 1012.7 M 648.2 M

Output DLIS Files

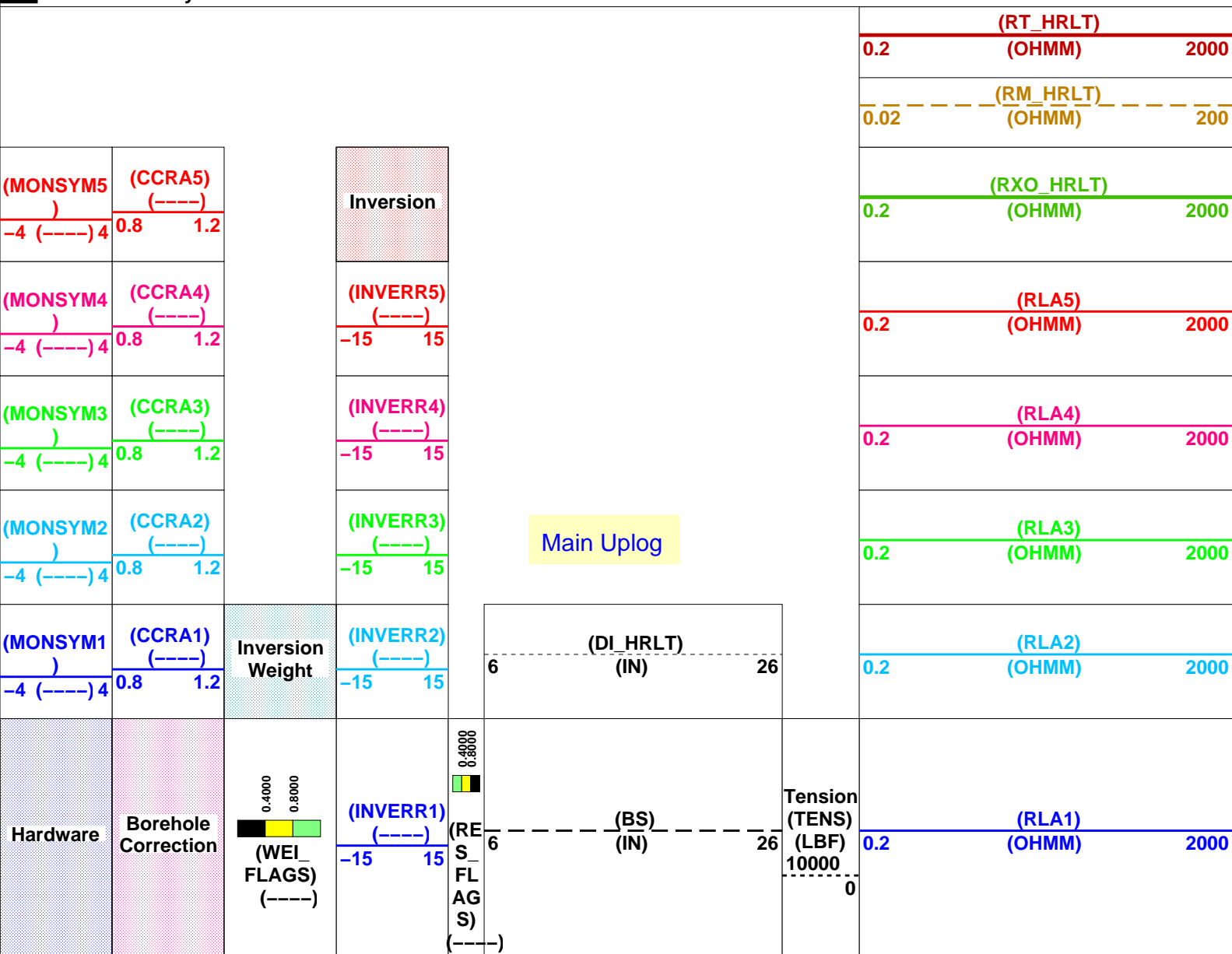
DEFAULT NGS_HRLA_LDL_014PUP FN:20 PRODUCER 24-Dec-2011 01:40 356.6 M -7.8 M
 BACKUPDLIS NGS_HRLA_LDL_014PUP FN:21 PRODUCER 24-Dec-2011 01:40 356.6 M -7.8 M

OP System Version: 19C0-187

HNGC-B 19C0-187 HNGS-BA 19C0-187
 HRLT-B 19C0-187 HLDS 19C0-187
 LDSC-B 19C0-187 EDTC-B 19C0-187

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

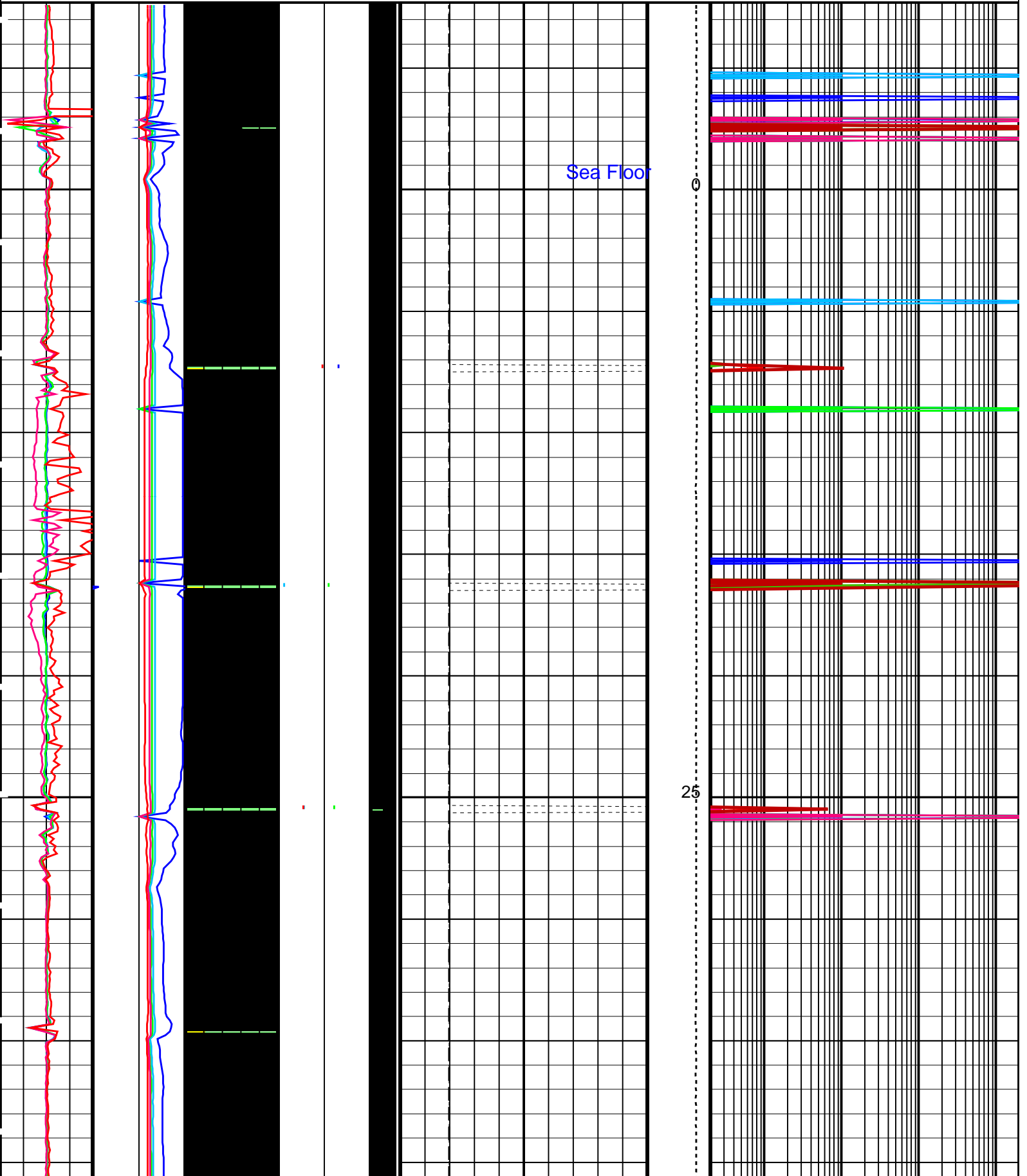
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

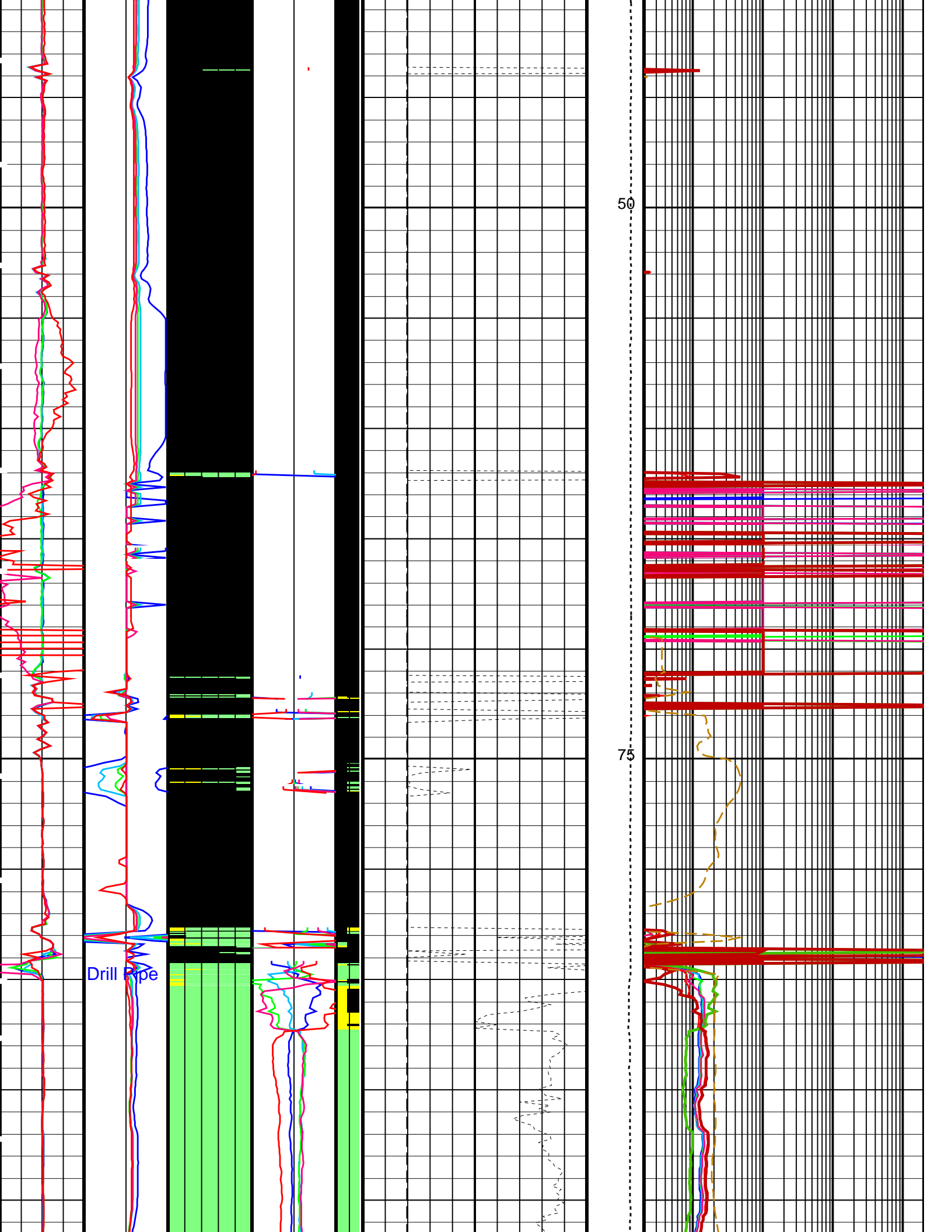
| RxoFlag | RTFlag |

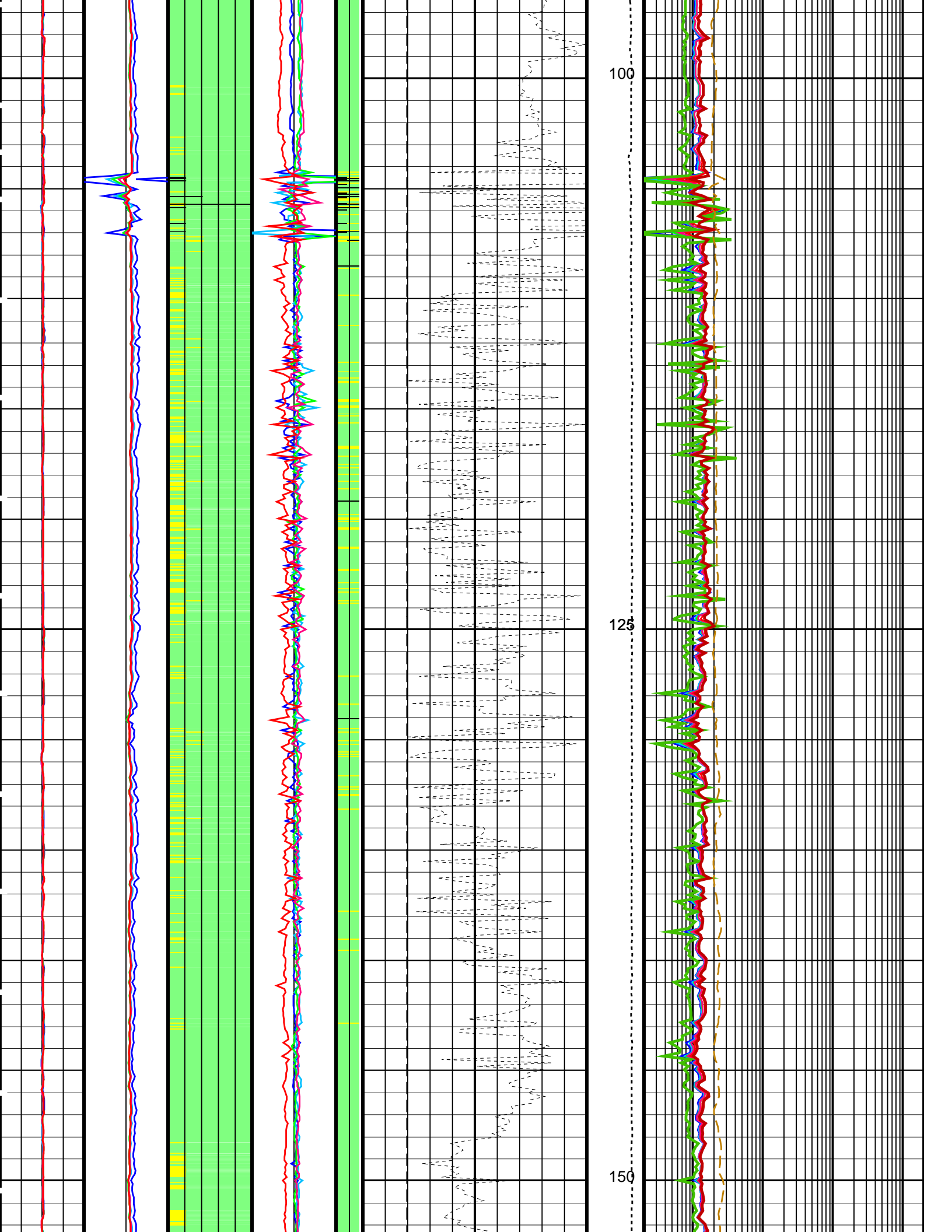
GREEN = OK

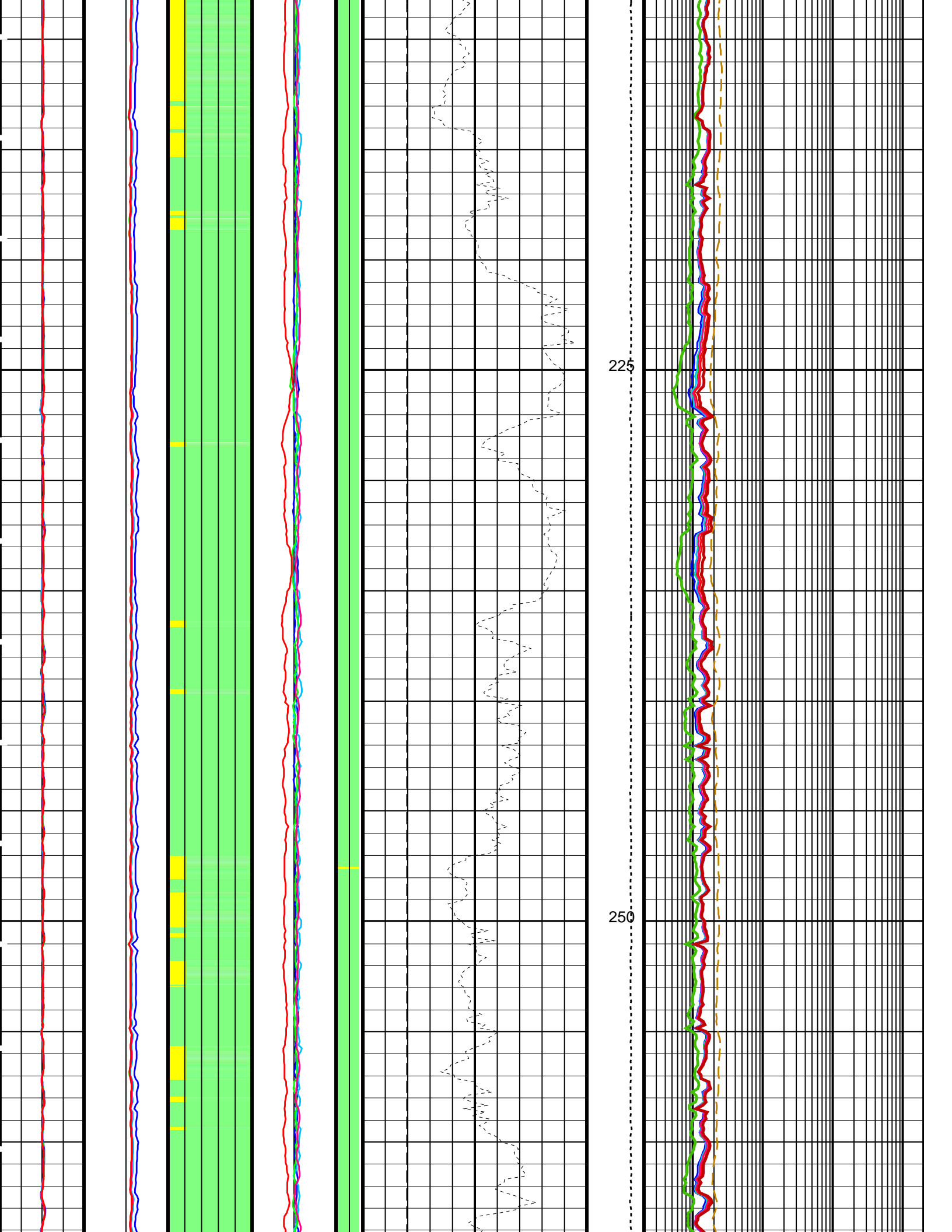
YELLOW = SHOULDER BED EFFECT

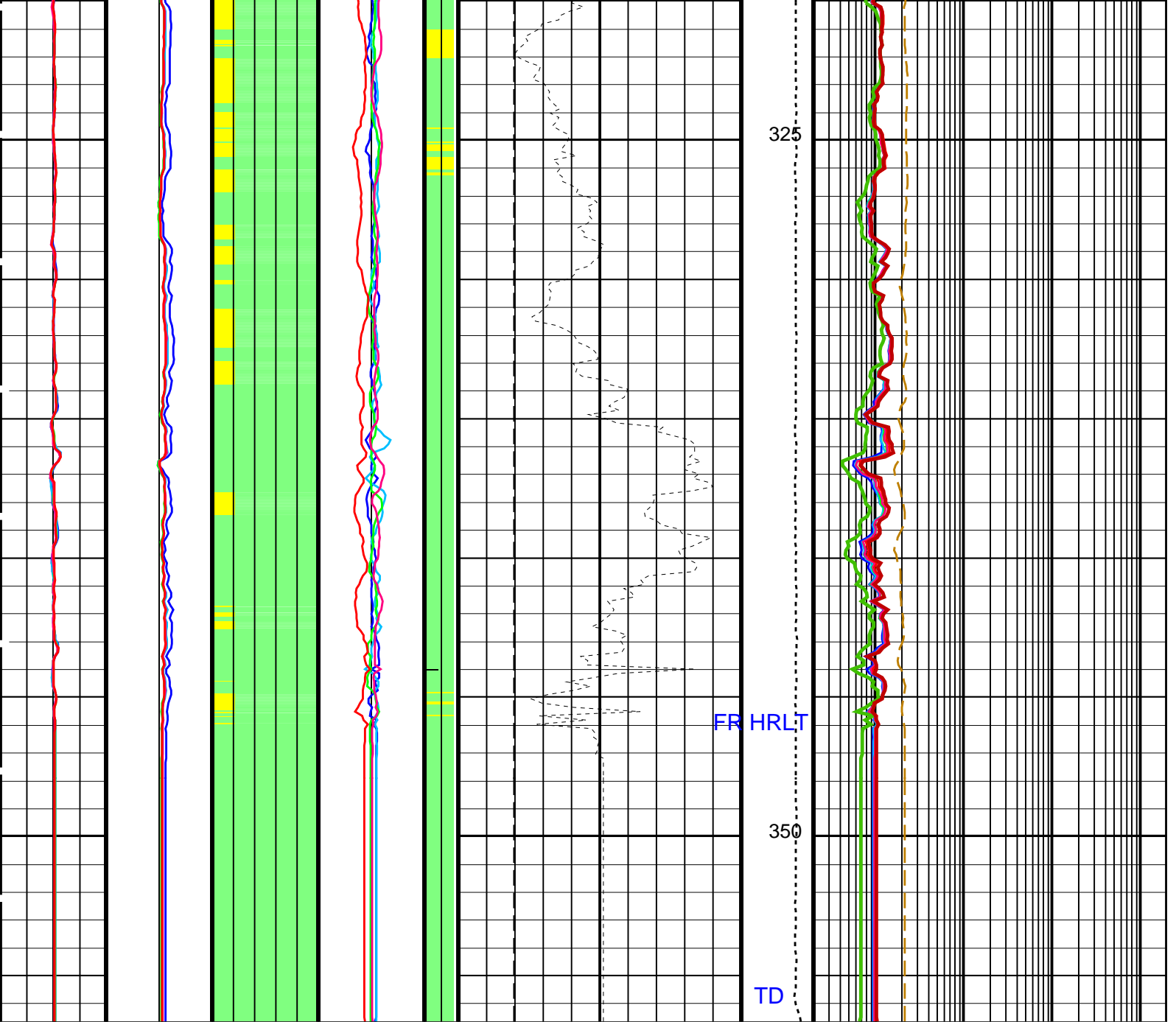
BLACK = NOK











***** HRLT FLAG TRACKS *****

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TRACK R3_LQC

INVERSION WEIGHT

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

| Wei1 | Wei2 | Wei3 | Wei4 | Wei5 |

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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	(WEL_FLAGS) (-----)	(RELS_FLAGS) (-----)	(BS) (IN)	(TENS) (LBF)	0.2	(RLA1) (OHMM)	2000
(MONSYM1)	(CCRA1)	Inversion Weight	(INVERR2)	(DI_HRLT)		0.2	(RLA2) (OHMM)	2000
-4 (-----) 4	0.8 1.2		-15 15	6	26			
(MONSYM2)	(CCRA2)		(INVERR3)			0.2	(RLA3) (OHMM)	2000
-4 (-----) 4	0.8 1.2		-15 15					
(MONSYM3)	(CCRA3)		(INVERR4)			0.2	(RLA4) (OHMM)	2000
-4 (-----) 4	0.8 1.2		-15 15					
(MONSYM4)	(CCRA4)		(INVERR5)			0.2	(RLA5) (OHMM)	2000
-4 (-----) 4	0.8 1.2		-15 15					
(MONSYM5)	(CCRA5)	Inversion				0.2	(RXO_HRLT) (OHMM)	2000
-4 (-----) 4	0.8 1.2							
						0.02	(RM_HRLT) (OHMM)	200
						0.2	(RT_HRLT) (OHMM)	2000

Main Uplog Sea Floor Depth

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HNGS-BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1
BAR2	HNGS Detector 2 Barite Constant	1
BHK	HNGS Borehole Potassium Correction Concentration	0
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	50 DEGF
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	0.01 DF/F
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	-0.00268293
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	NATU
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	68 DEGF
TPOS	Tool Position	ECCE
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.957535
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.956327

HRLT-B: High Resolution Laterolog Array - B

BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	17.0393	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	0.01	DF/F
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	OFF	
LOOPMOD1	HRLT Mode 1 Loop Mode	OFF	
LOOPMOD2	HRLT Mode 2 Loop Mode	OFF	
LOOPMOD3	HRLT Mode 3 Loop Mode	OFF	
LOOPMOD4	HRLT Mode 4 Loop Mode	OFF	
LOOPMOD5	HRLT Mode 5 Loop Mode	OFF	
LOOPMOD6	HRLT Mode 6 Loop Mode	OFF	
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	68	DEGF
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	OFF	
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	
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
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	0.01	DF/F
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	NOBARITE	
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	68	DEGF
SOCN	Standoff Distance	0	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	
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BS	Bit Size	9.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	10.750	IN
CWEI	Casing Weight	43.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	-656.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3330	FT
TDD	Total Depth - Driller	991.00	M
TDL	Total Depth - Logger	991.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLT_LQC Vertical Scale: 1:200 Graphics File Created: 24-Dec-2011 01:40

OP System Version: 19C0-187

HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

DEFAULT	NGS_HRLA_LDL_013LUP	FN:18	PRODUCER	23-Dec-2011 23:56	1012.7 M	648.2 M
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Output DLIS Files

DEFAULT	NGS_HRLA_LDL_014PUP	FN:20	PRODUCER	24-Dec-2011 01:40		
BACKUPDLIS	NGS_HRLA_LDL_014PUP	FN:21	PRODUCER	24-Dec-2011 01:40		

Input DLIS Files

DEFAULT	NGS_HRLA_LDL_012LUP	FN:16	PRODUCER	23-Dec-2011 23:36	1005.8 M	933.8 M
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Output DLIS Files

DEFAULT	NGS_HRLA_LDL_034PUP	FN:53	PRODUCER	25-Dec-2011 04:16	349.8 M	277.8 M
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OP System Version: 19C0-187

HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	19C0-187

PIP SUMMARY

Time Mark Every 60 S

				(RT_HRLT)	
				0.2	2000
				(OHMM)	

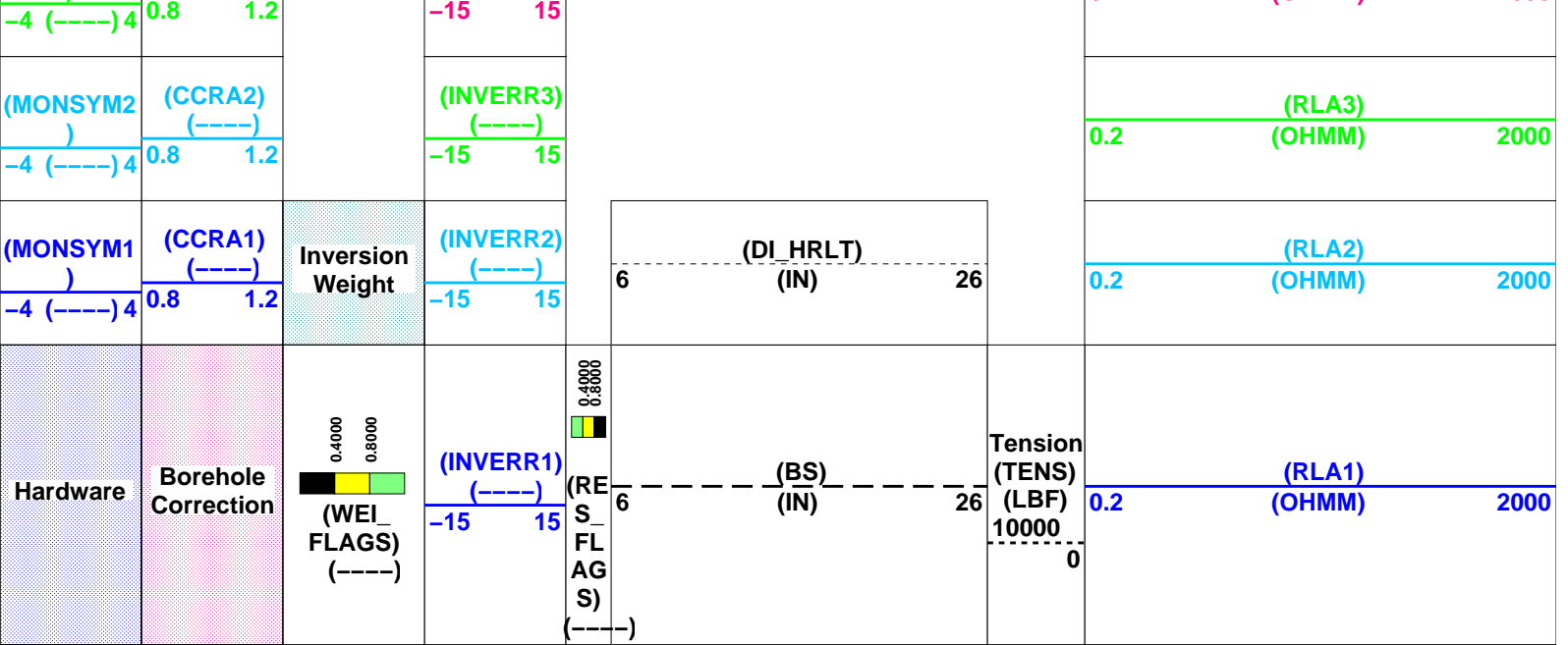
				(RM_HRLT)	
				0.02	200
				(OHMM)	

				(RXO_HRLT)	
				0.2	2000
				(OHMM)	

				(RLA5)	
				0.2	2000
				(OHMM)	

				(RLA4)	
				0.2	2000
				(OHMM)	

(MONSYM5) ()	(CCRA5) (-----)	Inversion
-4 (-----) 4	0.8 1.2	
(MONSYM4) ()	(CCRA4) (-----)	(INVERR5) (-----)
-4 (-----) 4	0.8 1.2	
(MONSYM3) ()	(CCRA3) (-----)	(INVERR4) (-----)
-4 (-----) 4	0.8 1.2	



*** 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 :

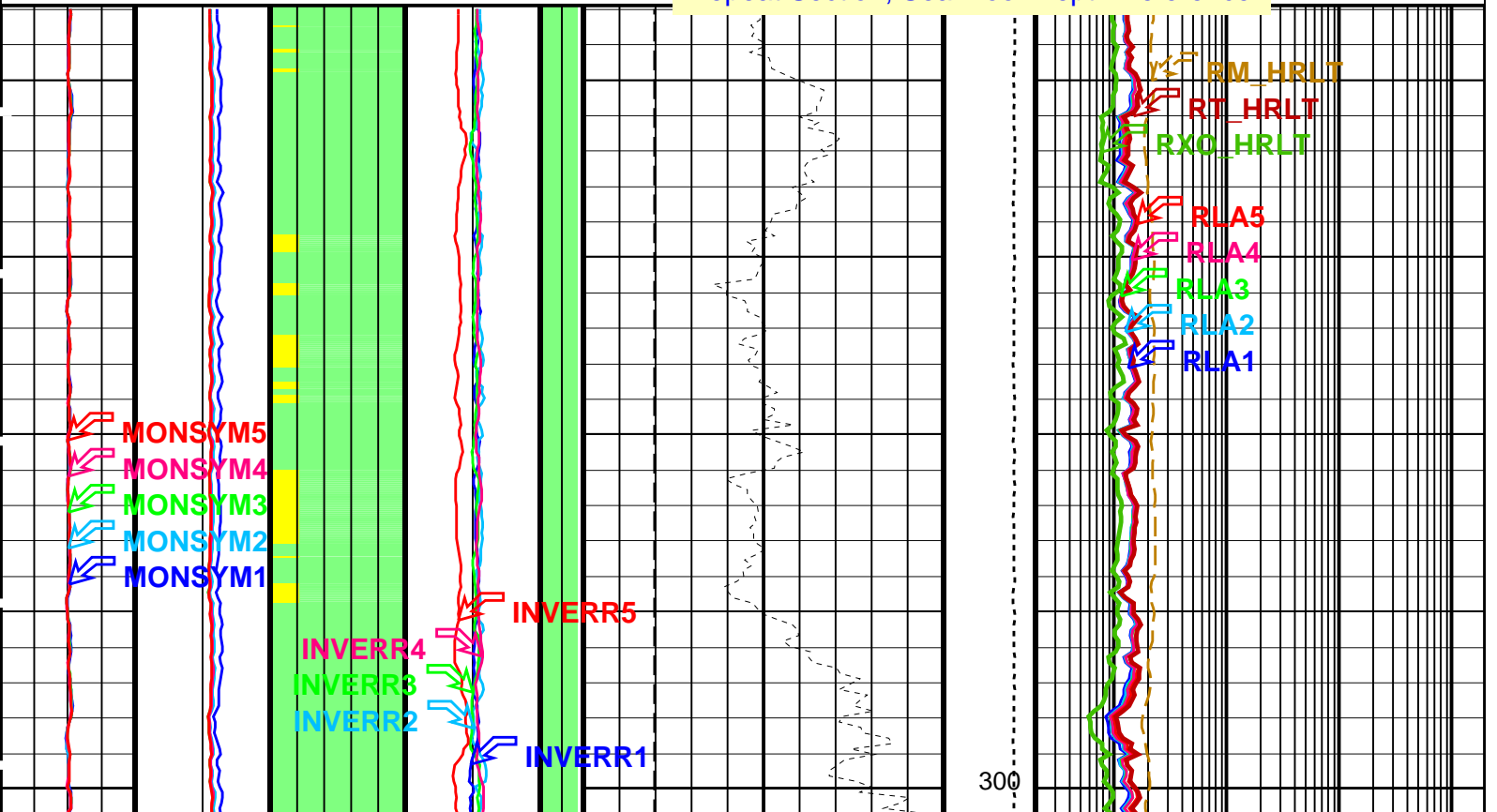
| RxoFlag | RTFlag |

GREEN = OK

YELLOW = SHOULDER BED EFFECT

BLACK = NOK

Repeat Section, Sea Floor Depth Reference



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

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name

Description

Value

HNGS-BA: Hostile Natural Gamma Ray Sonde

BAR1	HNGS Detector 1 Barite Constant	1
BAR2	HNGS Detector 2 Barite Constant	1
BHK	HNGS Borehole Potassium Correction Concentration	0
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	50 DEG F
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
GRPD	Geothermal Gradient	0.01 DEG/F

GGRD	Geothermal Gradient	0.01	DF/F
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	-0.00268293	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	NATU	
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	68	DEGF
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.957535	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.956327	
HRLT-B: High Resolution Laterolog Array - B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	17.0393	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	0.01	DF/F
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	OFF	
LOOPMOD1	HRLT Mode 1 Loop Mode	OFF	
LOOPMOD2	HRLT Mode 2 Loop Mode	OFF	
LOOPMOD3	HRLT Mode 3 Loop Mode	OFF	
LOOPMOD4	HRLT Mode 4 Loop Mode	OFF	
LOOPMOD5	HRLT Mode 5 Loop Mode	OFF	
LOOPMOD6	HRLT Mode 6 Loop Mode	OFF	
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	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	68	DEGF
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	OFF	
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	
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
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	0.01	DF/F

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	NOBARITE	
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	68	DEGF
SOCN	Standoff Distance	0	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	9.875	IN
BSAL	Borehole Salinity	-50000.00	PPM
CSIZ	Current Casing Size	10.750	IN
CWEI	Casing Weight	43.00	LB/F
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	-656.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	-50000.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	3330	FT
TDD	Total Depth - Driller	991.00	M
TDL	Total Depth - Logger	991.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLT_LQC Vertical Scale: 1:200 Graphics File Created: 25-Dec-2011 04:16

OP System Version: 19C0-187

HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

DEFAULT	NGS_HRLA_LDL_012LUP	FN:16	PRODUCER	23-Dec-2011 23:36	1005.8 M	933.8 M
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Output DLIS Files

DEFAULT	NGS_HRLA_LDL_034PUP	FN:53	PRODUCER	25-Dec-2011 04:16
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Company:	Lamont Doherty	Schlumberger
Well:	Expedition 339, Site U1389 GC-11A Hole A	
Field:	Mediterranean Outflow (Portugal)	
Rig:	JOIDES Resolution	
Ocean:	Atlantic	

High Resolution Laterolog Array
Log Quality Control Log