

Company: Lamont Doherty

Well: Expedition 339, Site U1386 GC-01A

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° 49.69'
 Well: Expedition 339, Site U1386 GC-01A
 Company: Lamont Doherty

LOCATION		Latitude: N 36° 49.69'	Elev.: K.B. 11.00 m
		Longitude: W 7° 45.33'	G.L. -562.20 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° 45.33'	Latitude N 36° 49.69'

Logging Date	7-Dec-2011	
Run Number	1	
Depth Driller	526 m	
Schlumberger Depth	523 m	
Bottom Log Interval	523 m	
Top Log Interval	0 m	
Casing Driller Size @ Depth	10.750 in	@ 102 m
Casing Schlumberger	100 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	RMC	
RM @ MRT	RMF @ MRT	
	@ 21	@ 21

Maximum Recorded Temperatures	21 degC		
Circulation Stopped	7-Dec-2011	Time	11:00
Logger On Bottom	7-Dec-2011	Time	21:30
Unit Number	625003	Location	Houston
Recorded By	K. Swain		
Witnessed By	T. Williams, J. Lofi		

Logging Date		Run 1	Run 2	Run 3
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		@		
		@		

Maximum Recorded Temperatures			
Circulation Stopped			
Logger On Bottom			
Unit Number			
Recorded By			
Witnessed By			

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

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

REMARKS: RUN NUMBER 1
 Hole GC-01A Hole C was drilled with a 9 7/8" RCB bit to TDD of 1099mbrf.
 Hole depth referenced from sea floor based on driller measurement is 526m.
 Logs played back with a depth offset to match sea floor at depth = 0m.
 HRLA run centralized with 2 MCD centralizers using 4 knuckle joints separating the HLDS and DITE below.
 HRLA and DITE run together as a test to compare resistivity tools.
 Large hole sizes will affect the shallow HRLA curves. The quality control log will indicate these areas.
 All logs recorded via wireline thru 5.5" drillpipe and RCB coring BHA. consisting of a bit release sub, Kinley sub, drill collars. The rotary coring bit was released on bottom prior to logging.
 HRLA curves are affected by drill pipe.

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

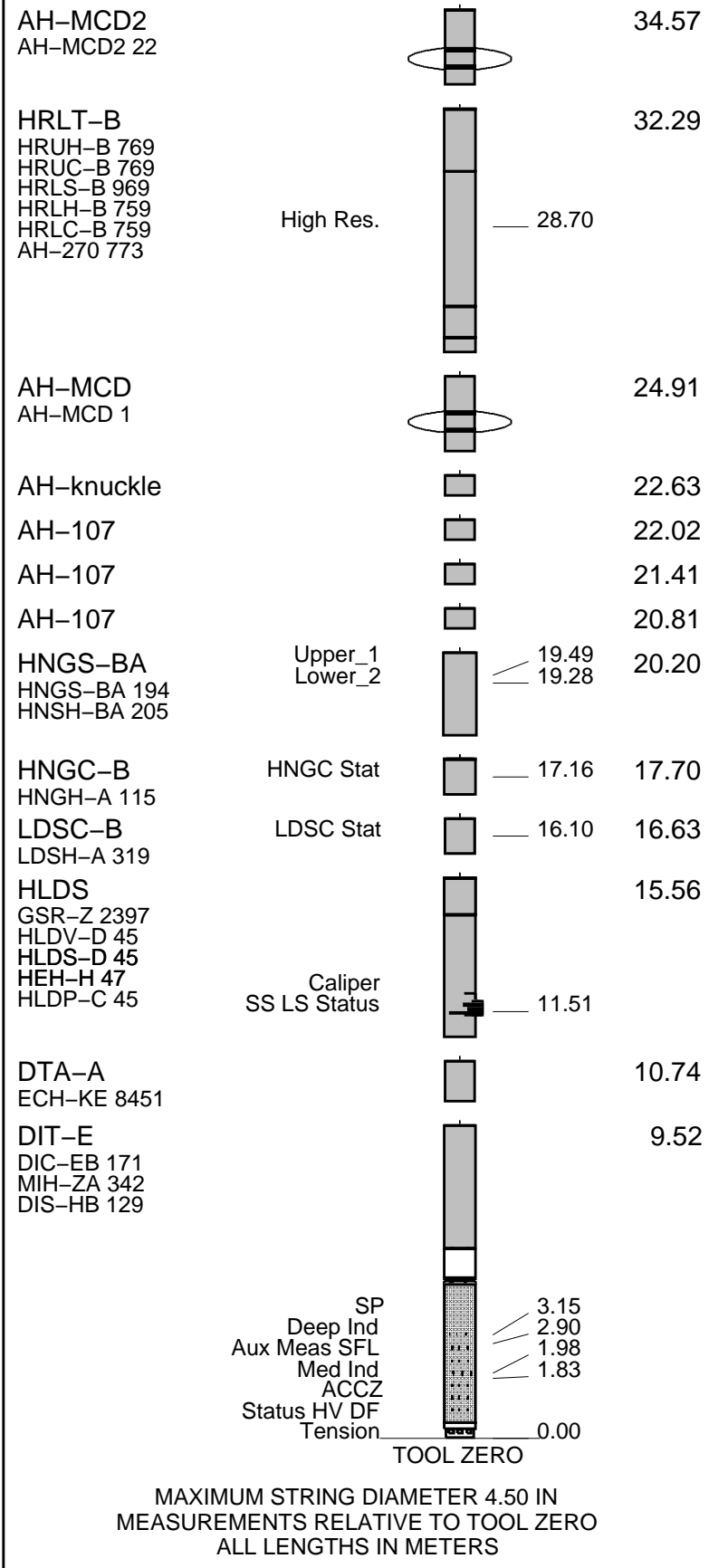
GSR-U 616008
 WITM (EDTS)-A

RUN 2

DOWNHOLE EQUIPMENT

LEH-QT	MDSB_EDTC			37.87
AH-369	Mud Tempe			
	CTEM		36.55	
EDTC-B	Gamma Ray		35.48	36.99
	EFTB DIAG		34.91	
EDTH-B 8528	TelStatus			
EDTC-B 8529	EDTCB Ele		34.57	

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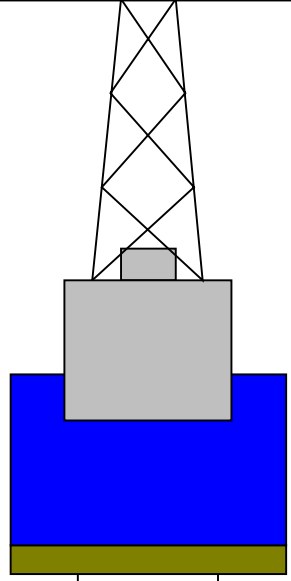


Production String	(in)	(M)	Well Schematic	(M)	(in)	Casing String
	OD	ID		MD	MD	

Kelly Bushing Elevation
Derrick Floor Elevation

Mean Sea Level

-573.2
-573.2
-562.2



4.1



0
102
526
3.80
9.875

Sea Floor
Open Hole
Total Depth

Input DLIS Files

DEFAULT PI_LDL_NGS_HRLA_038PUP FN:5 PRODUCER 31-Dec-2011 05:10 524.3 M -8.2 M

Output DLIS Files

DEFAULT PI_LDL_NGS_HRLA_045PUP FN:11 PRODUCER 31-Dec-2011 07:57 524.3 M -8.2 M

OP System Version: 19C0-187

DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

PIP SUMMARY

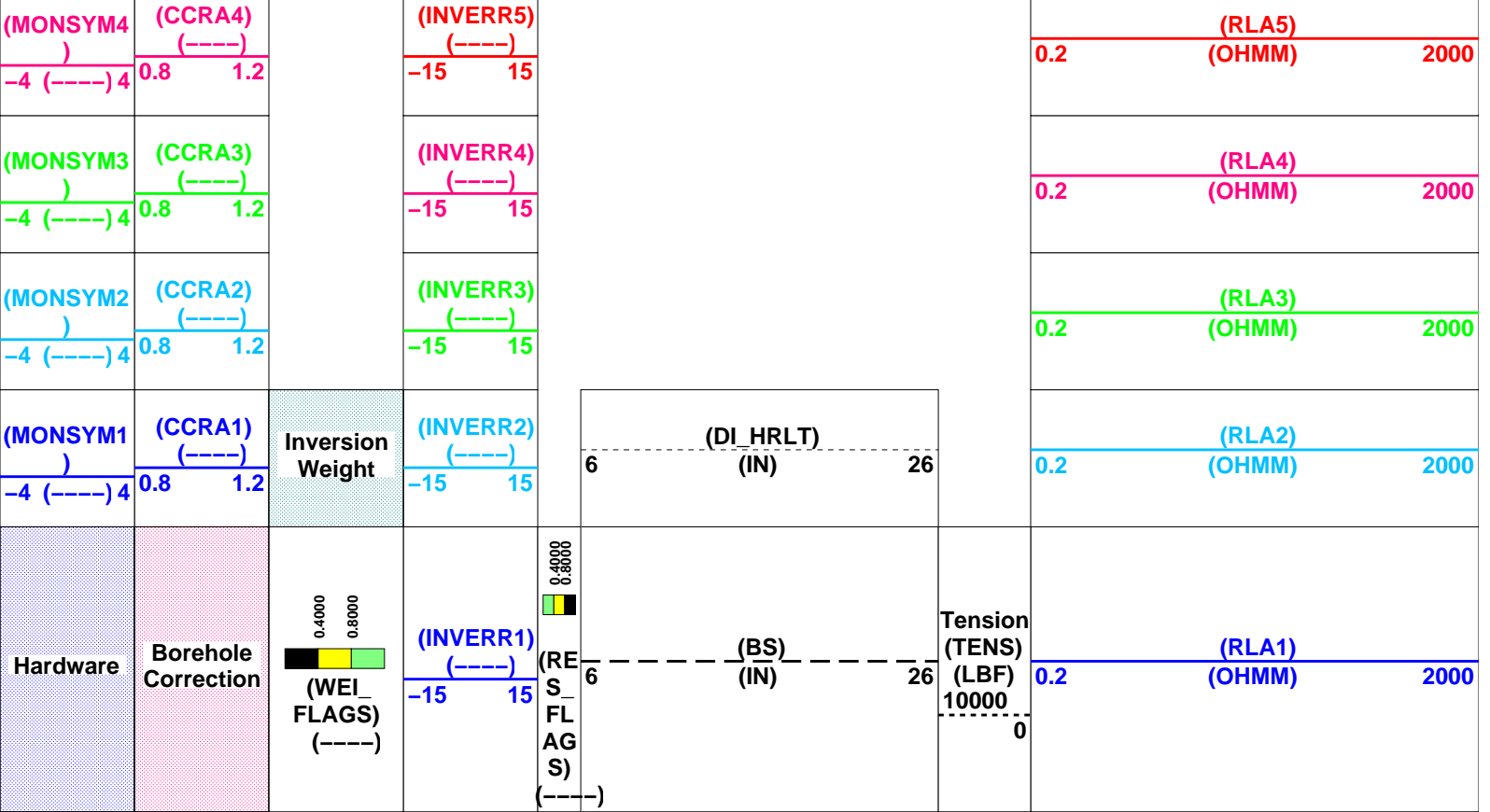
Time Mark Every 60 S

		(RT_HRLT)	
		0.2	2000
		(OHMM)	

		(RM_HRLT)	
		0.02	200
		(OHMM)	

		(RXO_HRLT)	
		0.2	2000
		(OHMM)	

(MONSYM5)	(CCRA5)	Inversion
-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

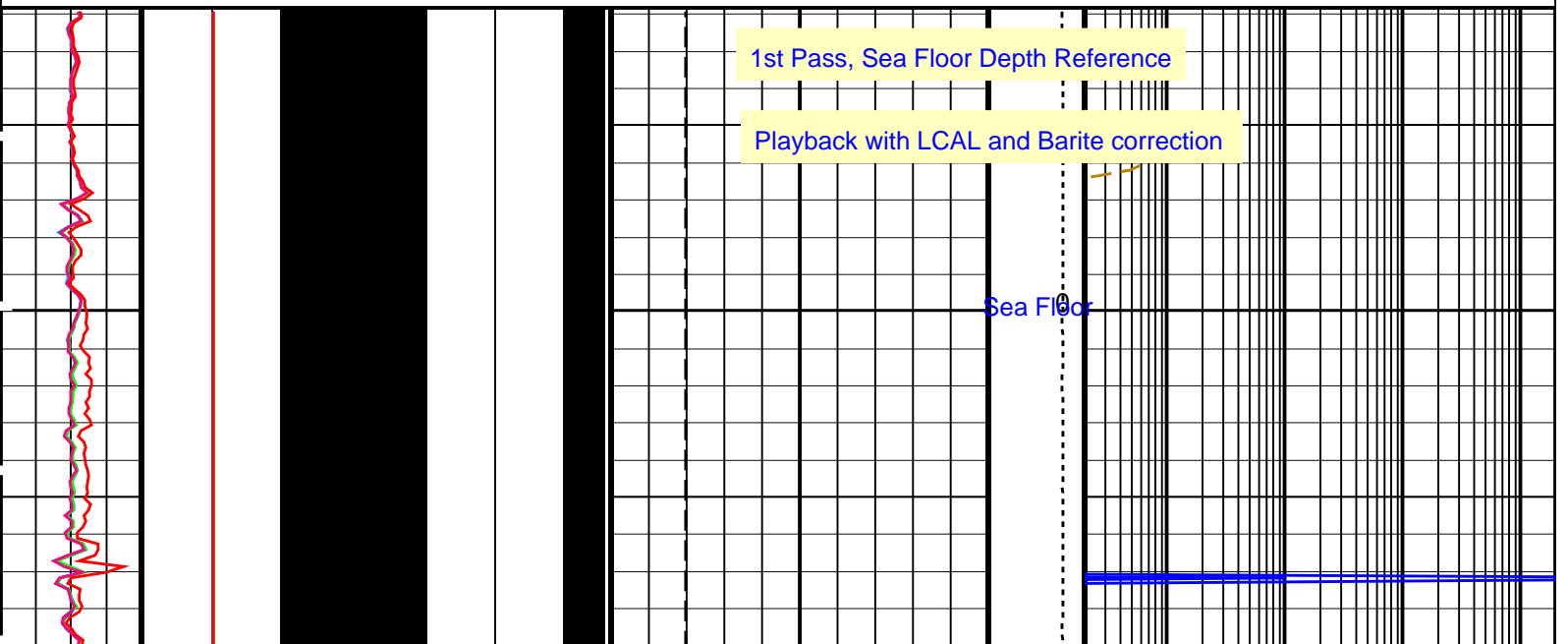
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

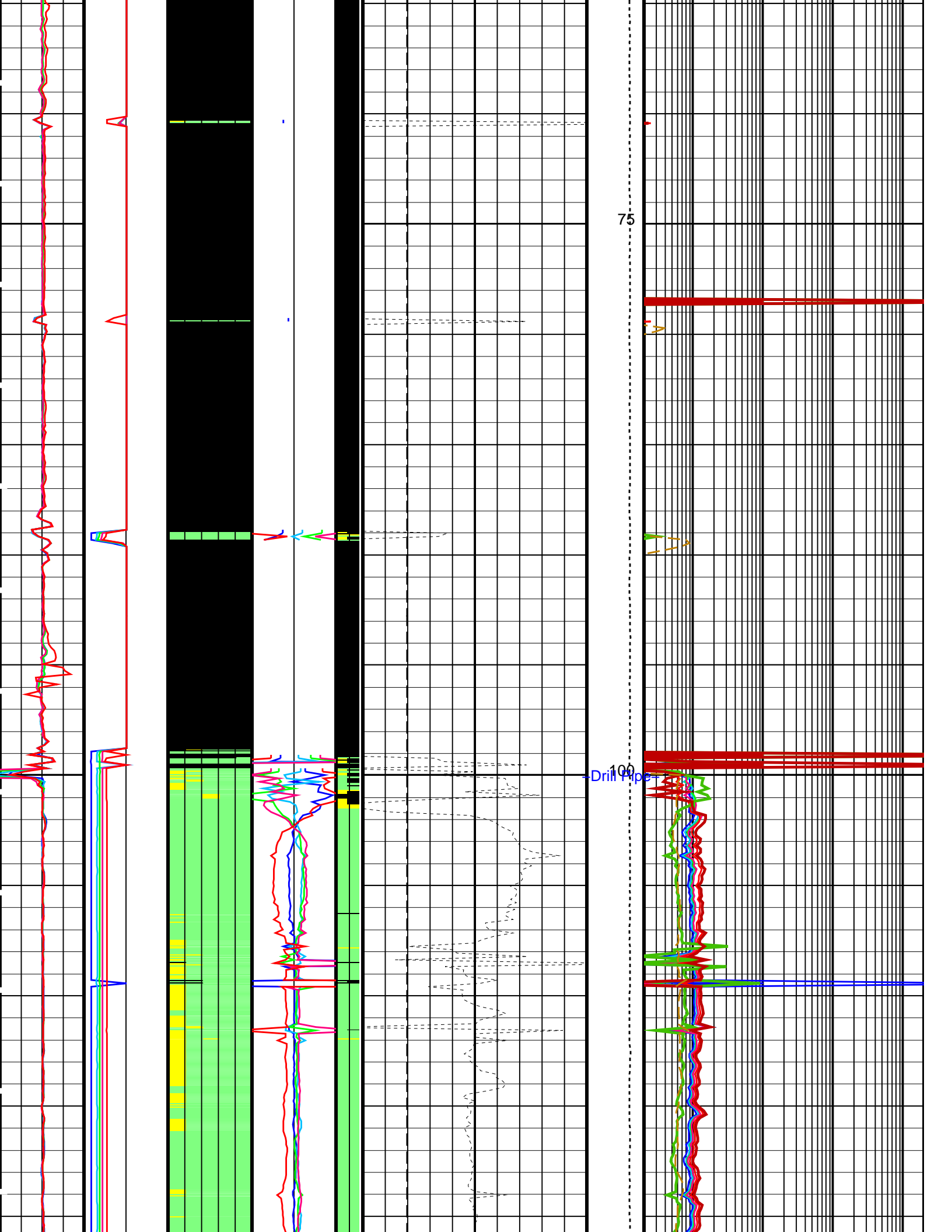
| RxoFlag | RTFlag |

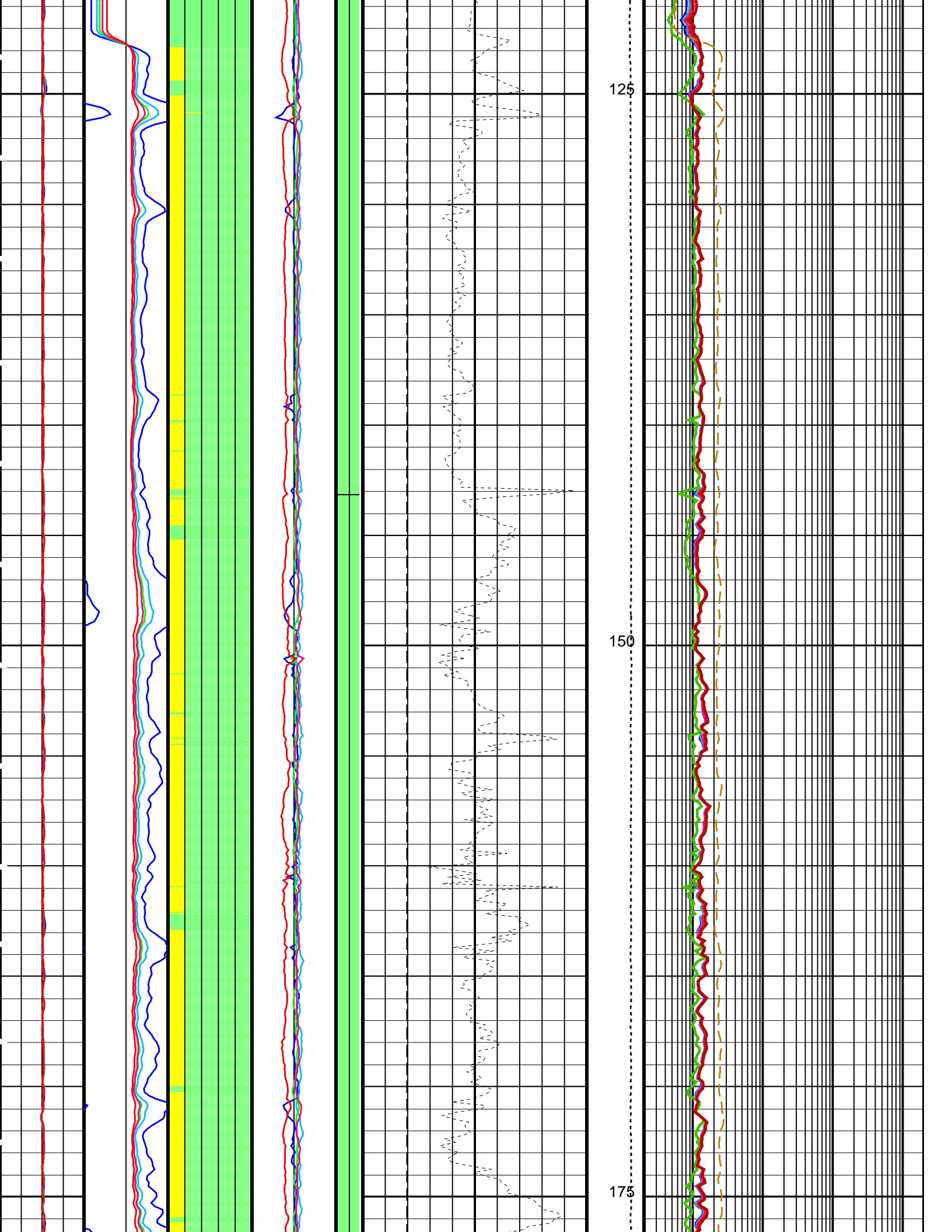
GREEN = OK

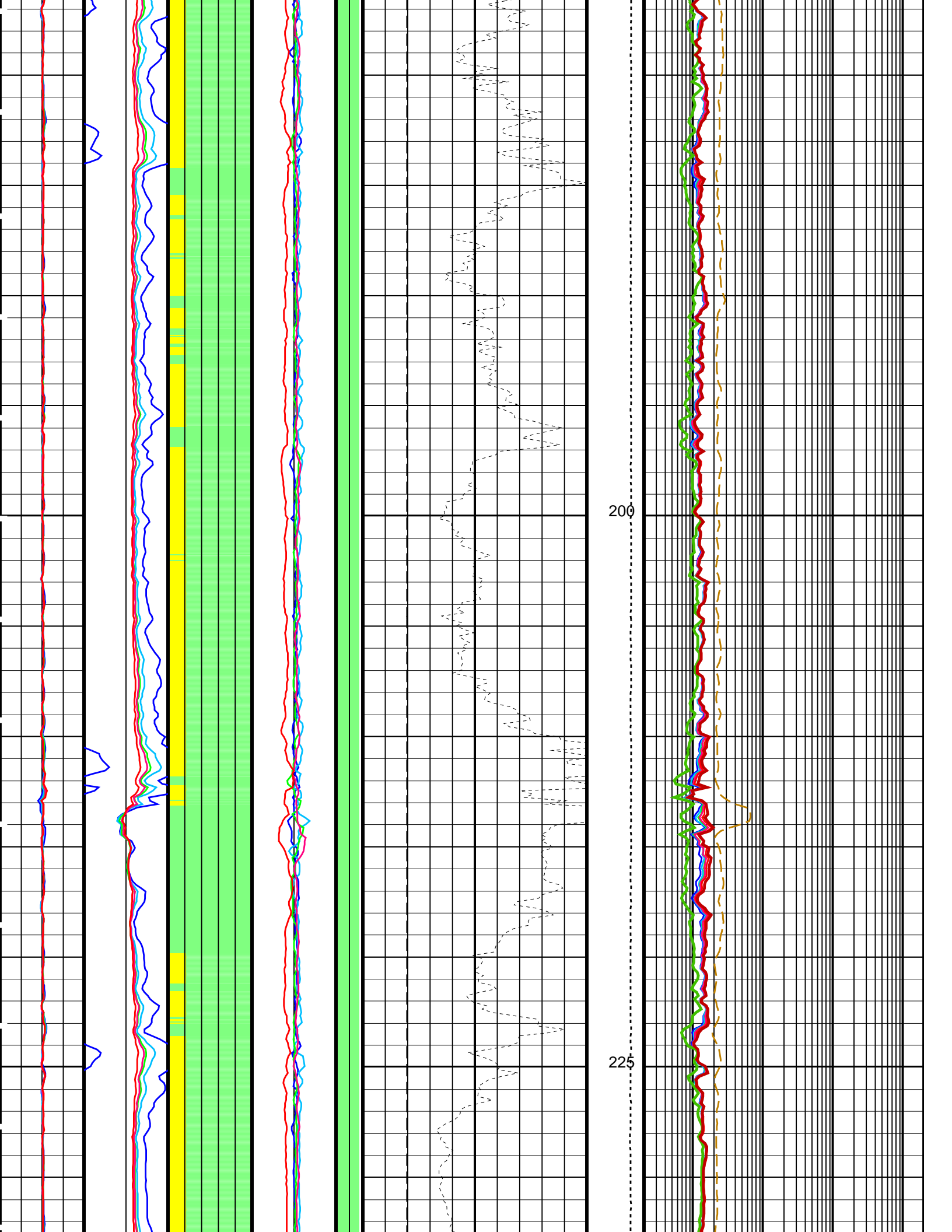
YELLOW = SHOULDER BED EFFECT

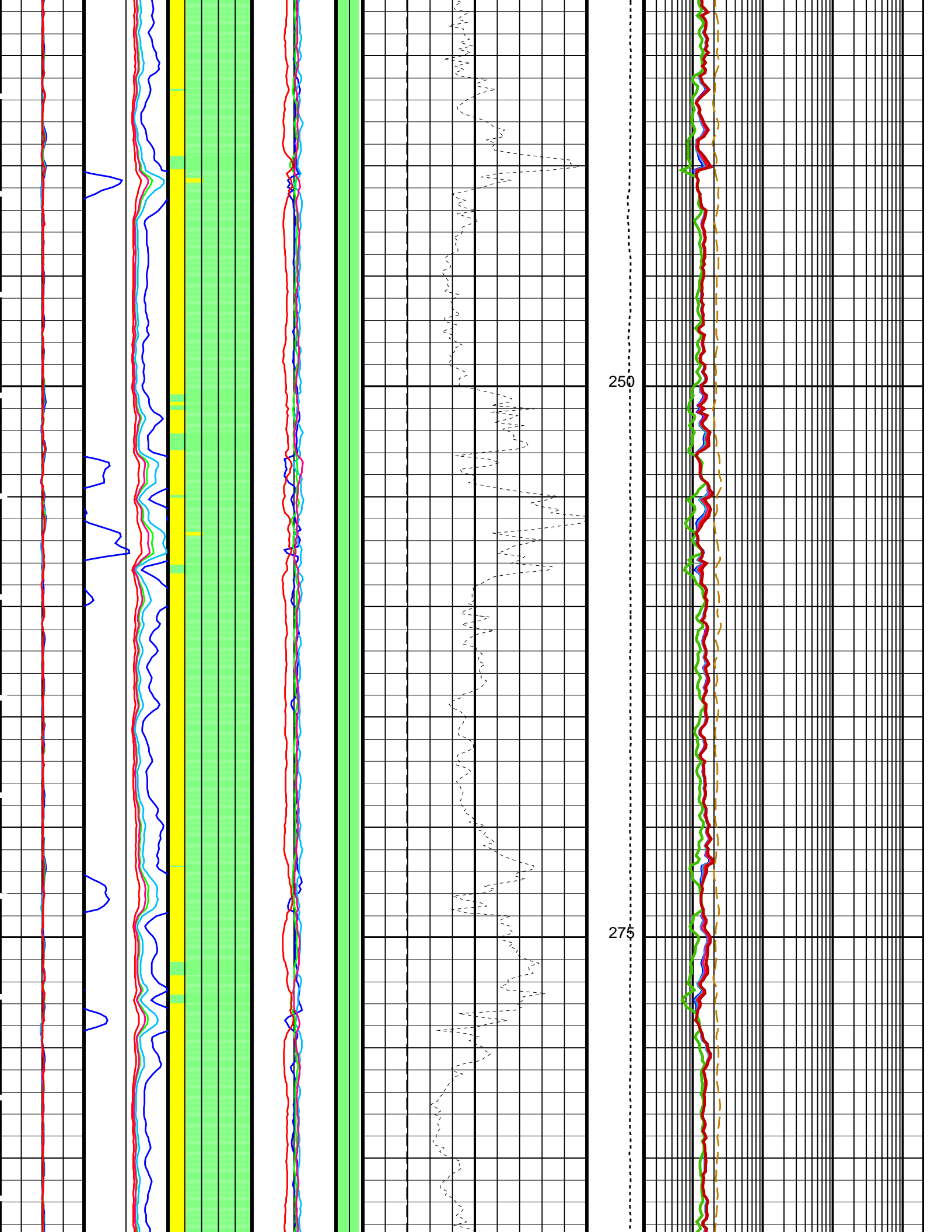
BLACK = NOK

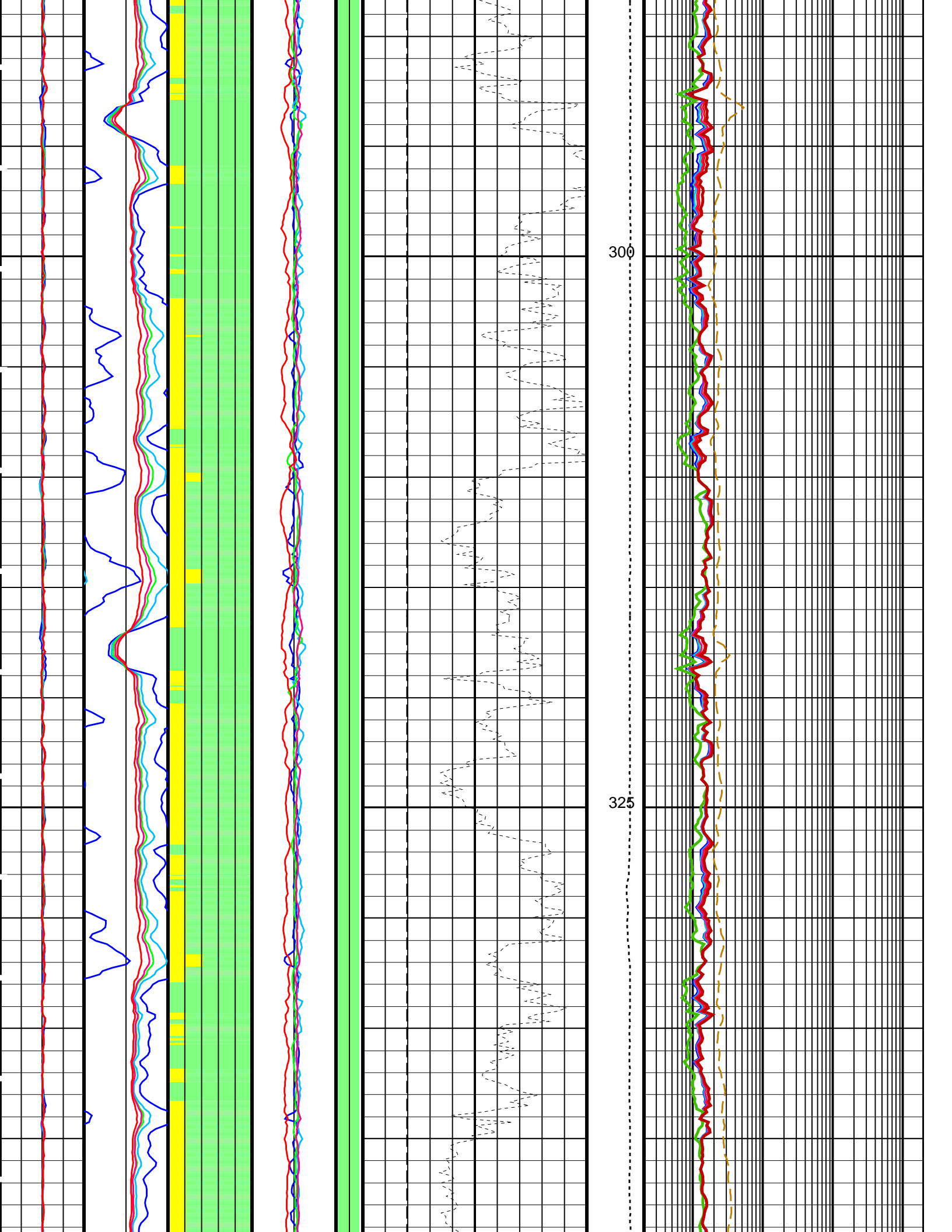


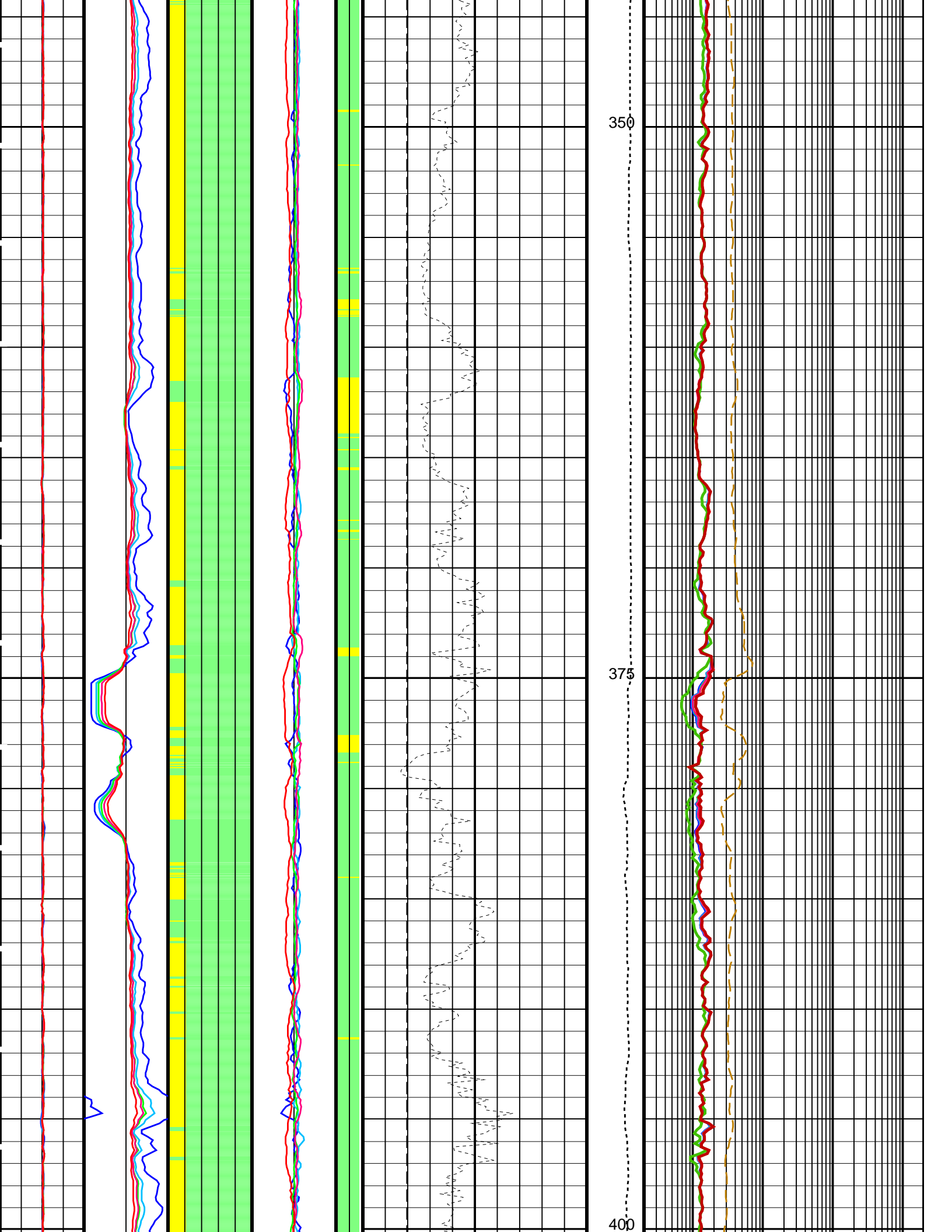


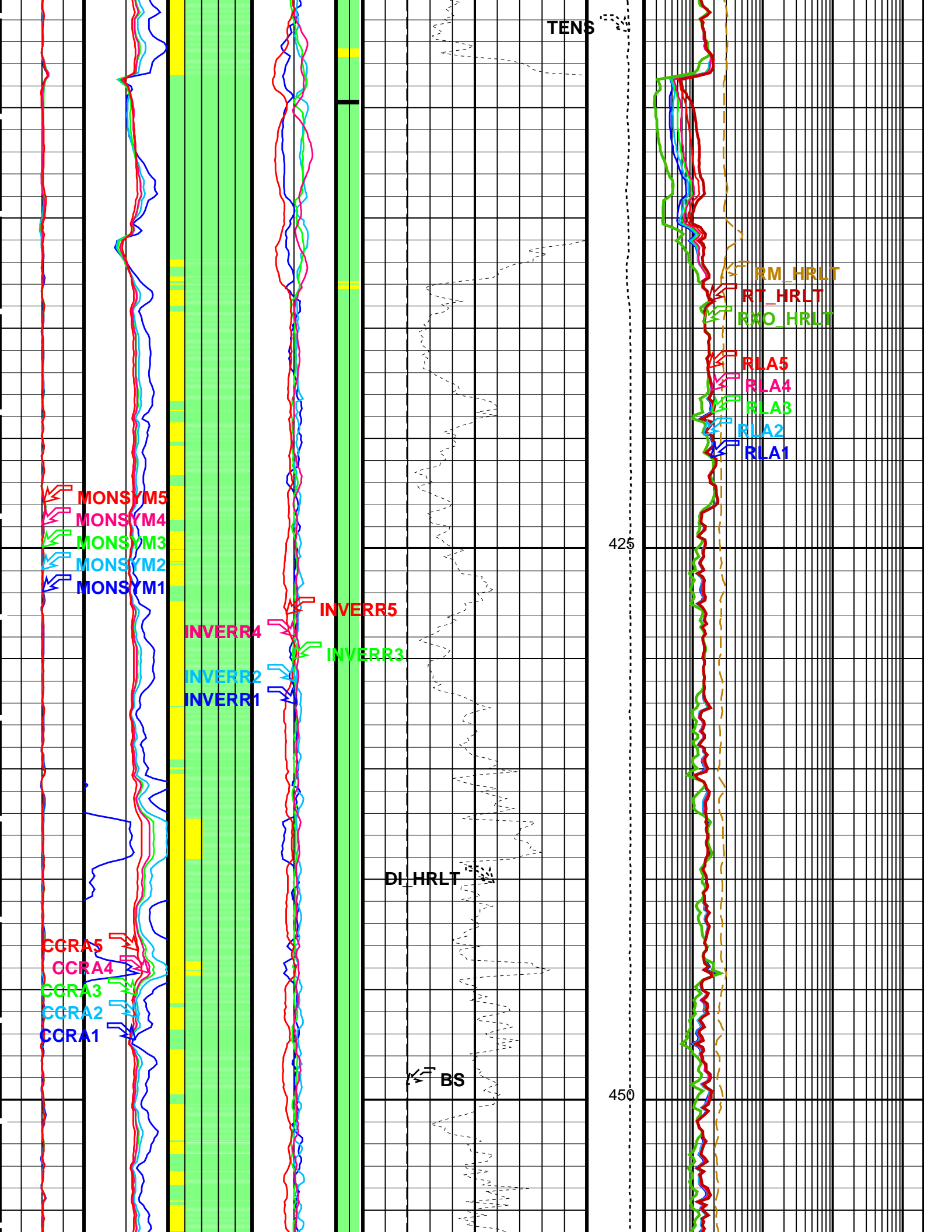


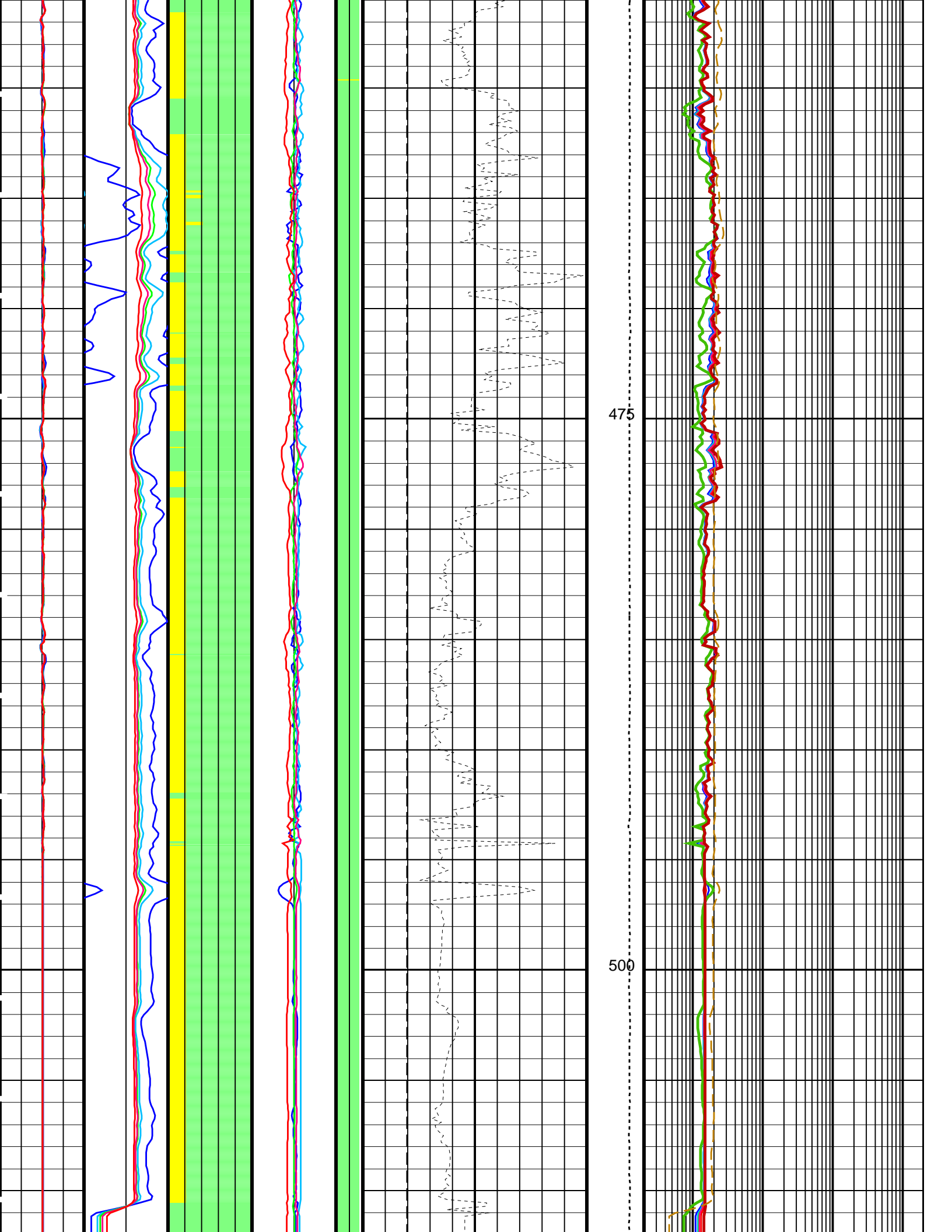












1st Pass, Sea Floor Depth Reference

Playback with LCAL and Barite correction

*** 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) (----)	(RE S FL AG S) (----)	(BS) (IN)	Tension (TENS) (LBF)	(RLA1) (OHMM)	2000
(MONSYM1) (-4 (----) 4)	(CCRA1) (0.8 1.2)	Inversion Weight	(INVERR2) (----)	(DI_HRLT) (IN)	(BS) (IN)	0.2	(RLA2) (OHMM)	2000
(MONSYM2) (-4 (----) 4)	(CCRA2) (0.8 1.2)		(INVERR3) (----)			0.2	(RLA3) (OHMM)	2000
(MONSYM3) (-4 (----) 4)	(CCRA3) (0.8 1.2)		(INVERR4) (----)			0.2	(RLA4) (OHMM)	2000
(MONSYM4) (-4 (----) 4)	(CCRA4) (0.8 1.2)		(INVERR5) (----)			0.2	(RLA5) (OHMM)	2000
(MONSYM5) (-4 (----) 4)	(CCRA5) (0.8 1.2)	Inversion				0.2	(RXO_HRLT) (OHMM)	2000

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

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
DIT-E: Dual Induction - E			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	50	DEGF
DGF1	Deep 10 kHz Gain Factor	0.983944	
DGF2	Deep 20 kHz Gain Factor	0.994954	
DGF4	Deep 40 kHz Gain Factor	1.00592	
DPH1	Deep 10 kHz Phase Shift	0.168276	DEG
DPH2	Deep 20 kHz Phase Shift	0.0121563	DEG
DPH4	Deep 40 kHz Phase Shift	-1.03419	DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	41.5527	MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.216	MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.26232	MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt	
DSR1	Deep Sigma Reference (10 kHz)	7637	MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843	MM/M
DSR4	Deep Sigma Reference (40 kHz)	405	MM/M
DSTA	DIT-E Transversal Standoff	0	IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	254.472	MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	139.586	MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	80.4475	MM/M
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	
IFRS	DIT-E Induction Frequency Selector	20	
IPHA	DIT-E Phasor Processing Mode	ALL	
IPRO	DIT-E Induction Processing Selector	PHASOR	
ISSBAR	Barite Mud Switch	BARITE	
ITEN	DIT-E Temperature Enable	ENABLE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MGF1	Medium 10 kHz Gain Factor	0.989571	
MGF2	Medium 20 kHz Gain Factor	0.993379	
MGF4	Medium 40 kHz Gain Factor	1.0135	
MPH1	Medium 10 kHz Phase Shift	-0.203288	DEG
MPH2	Medium 20 kHz Phase Shift	-0.886203	DEG
MPH4	Medium 40 kHz Phase Shift	-2.22812	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	30.326	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	9.52242	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	0.86266	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	345.689	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	182.2	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	117.66	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	68	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
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)	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	-0.00489121	
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	1.28118	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.991398	
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	18.9924	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	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCM50	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	68	DEGF
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	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	LIMESTONE	
MATR	Rock Matrix for Neutron Porosity Corrections	NO	
MCCO	Mud Cake Correction Option	BARI	
MCOR	Mud Correction	YES	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	SOCN	
SDAT	Standoff Data Source	68	DEGF
SHT	Surface Hole Temperature	0	IN
SOCN	Standoff Distance	NO	
SOCO	Standoff Correction Option	Centered	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Standard_EDTS	
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	0.0	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	RECOMPUTE	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	-50000	FT
TDD	Total Depth - Driller	526.00	M
TDL	Total Depth - Logger	523.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLT_LQC Vertical Scale: 1:200 Graphics File Created: 31-Dec-2011 07:57

OP System Version: 19C0-187

DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

DEFAULT	PI_LDL_NGS_HRLA_038PUP	FN:5	PRODUCER	31-Dec-2011 05:10	524.3 M	-8.2 M
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Output DLIS Files

DEFAULT	PI_LDL_NGS_HRLA_045PUP	FN:11	PRODUCER	31-Dec-2011 07:57
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Input DLIS Files

DEFAULT	PI_LDL_NGS_HRLA_011LUP	FN:13	PRODUCER	07-Dec-2011 21:40	1099.6 M	566.6 M
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Output DLIS Files

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OP System Version: 19C0-187

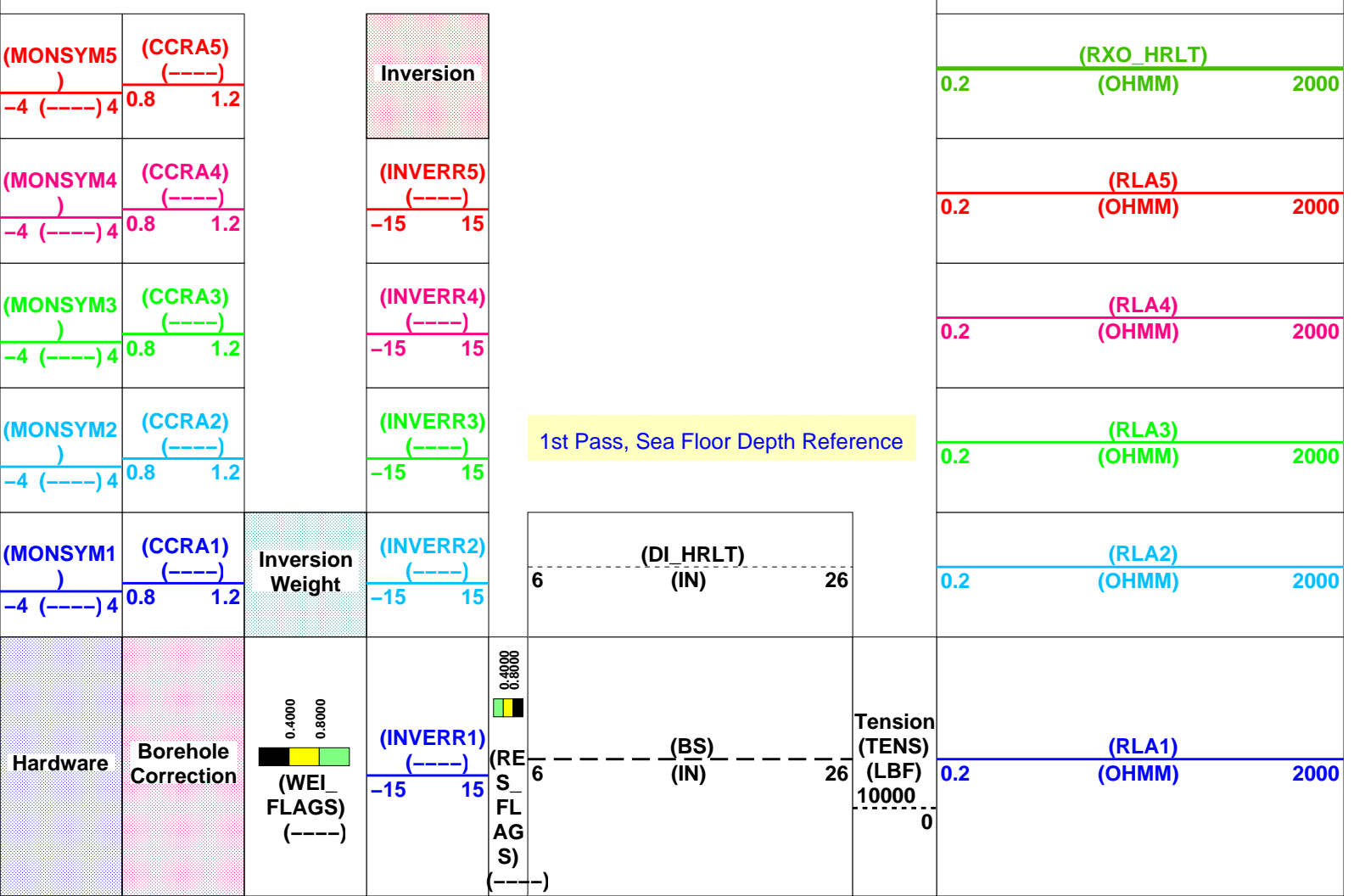
DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

PIP SUMMARY

Time Mark Every 60 S

(RT_HRLT)		
0.2	(OHMM)	2000

(RM_HRLT)		
0.02	(OHMM)	200



*** 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

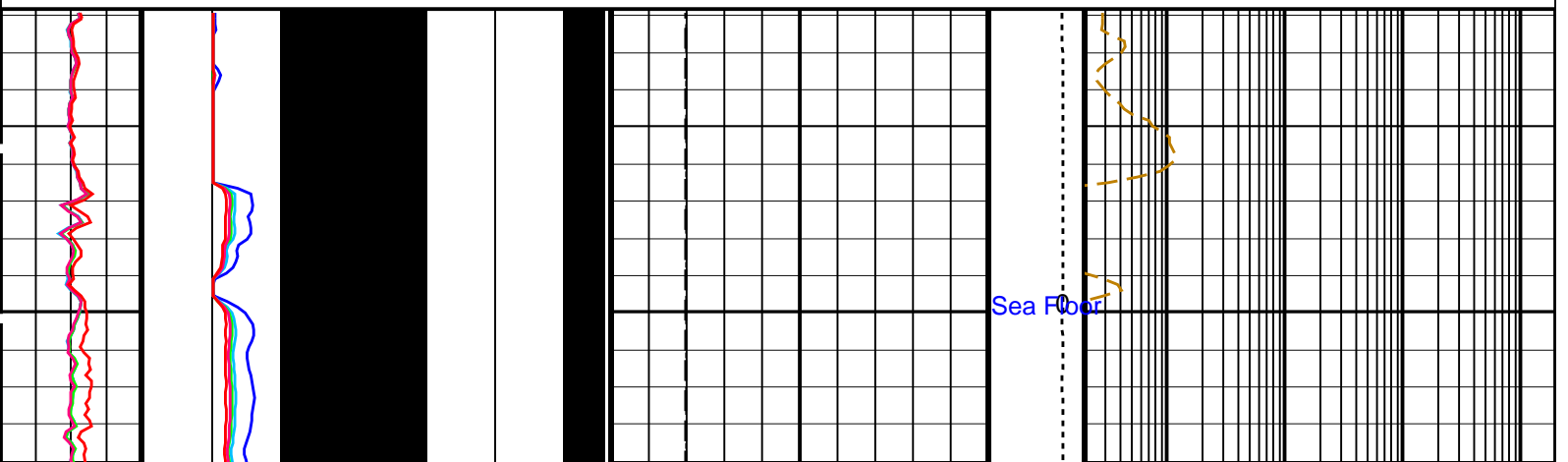
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

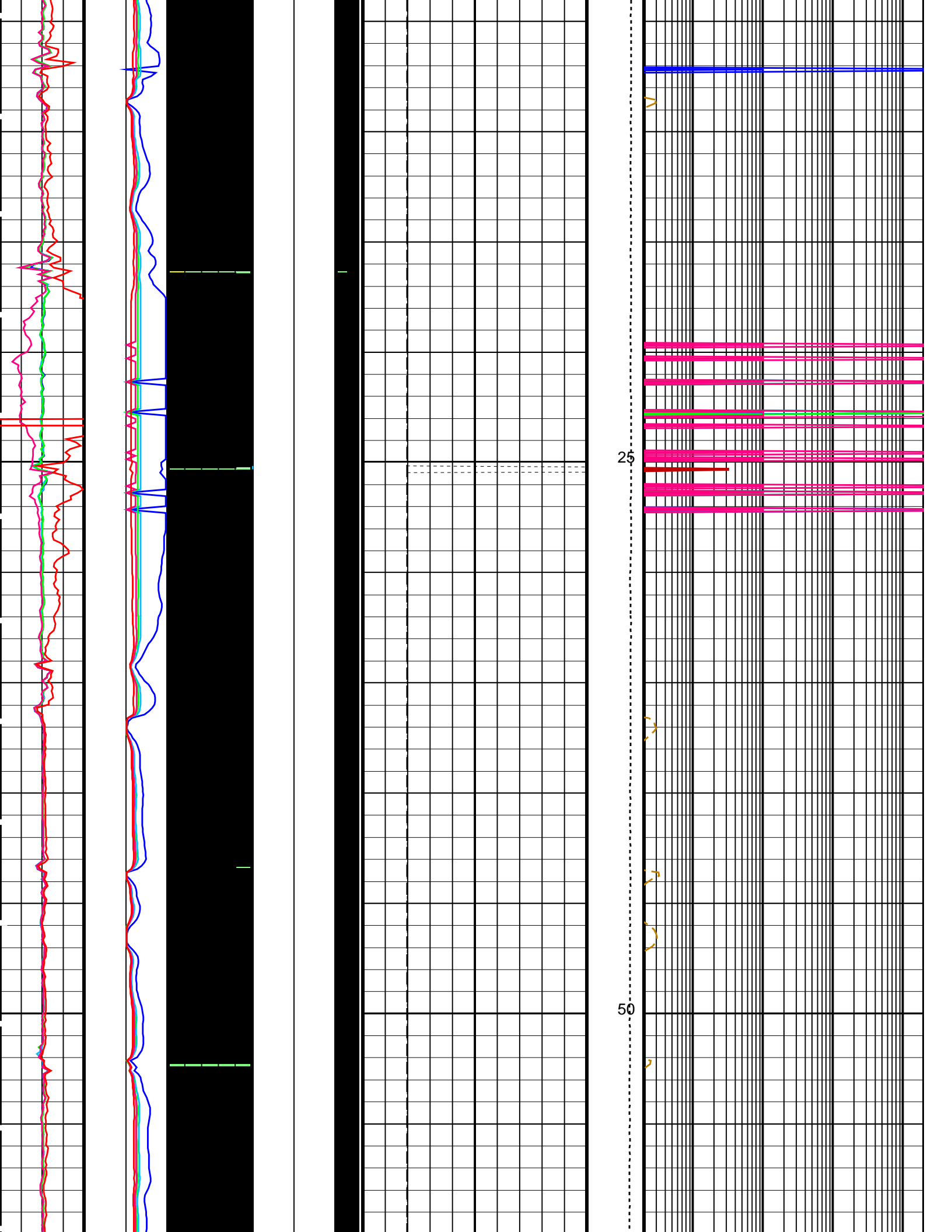
| RxoFlag | RTFlag |

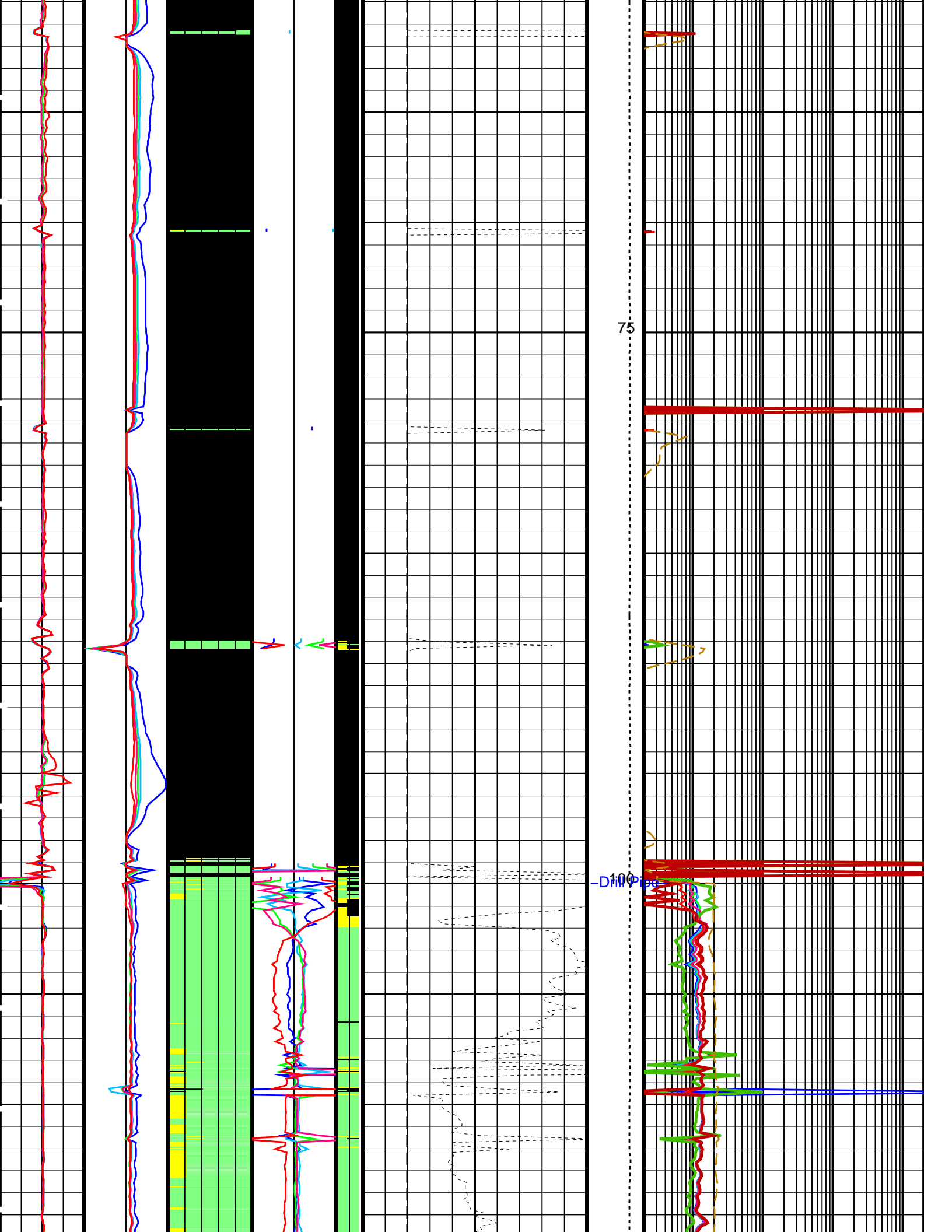
GREEN = OK

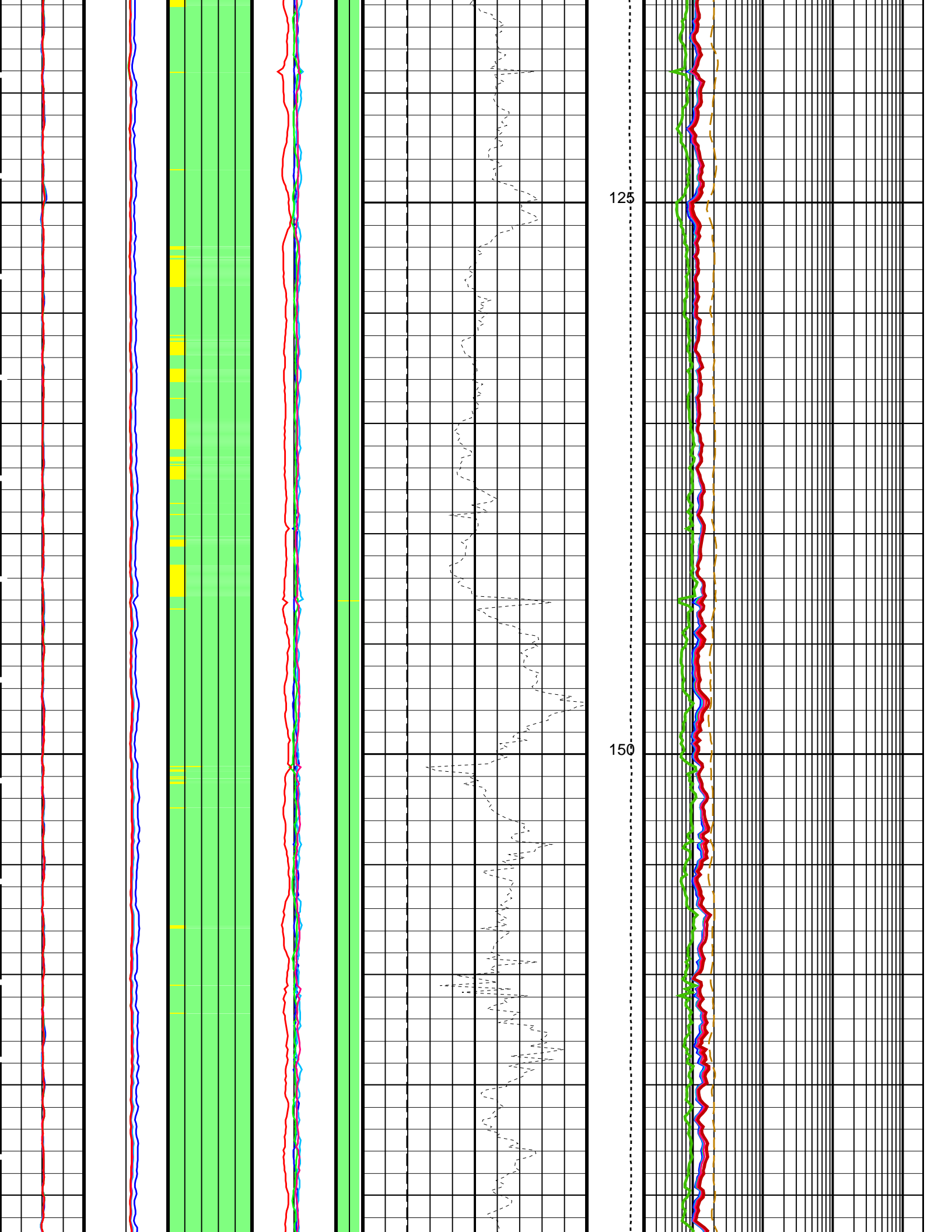
YELLOW = SHOULDER BED EFFECT

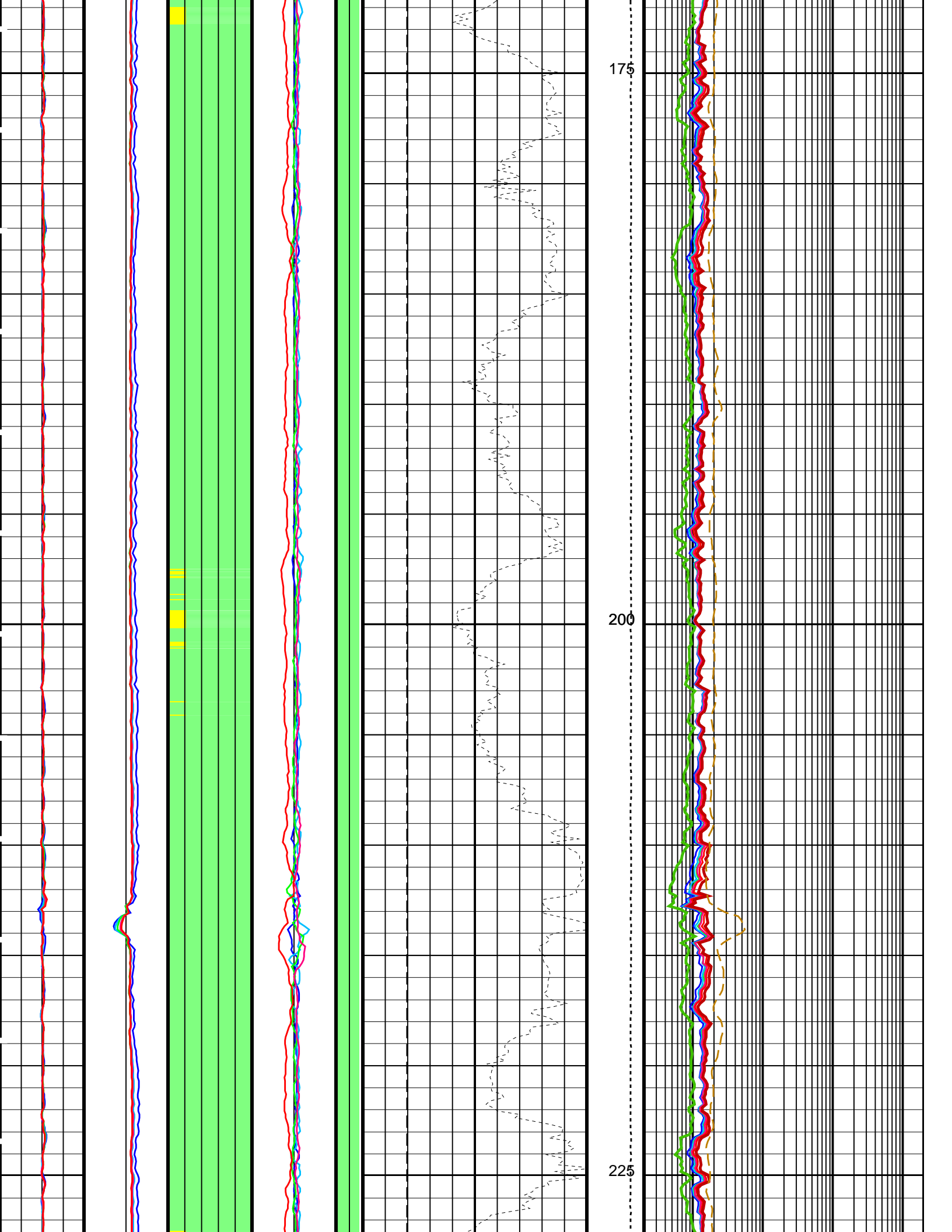
BLACK = NOK

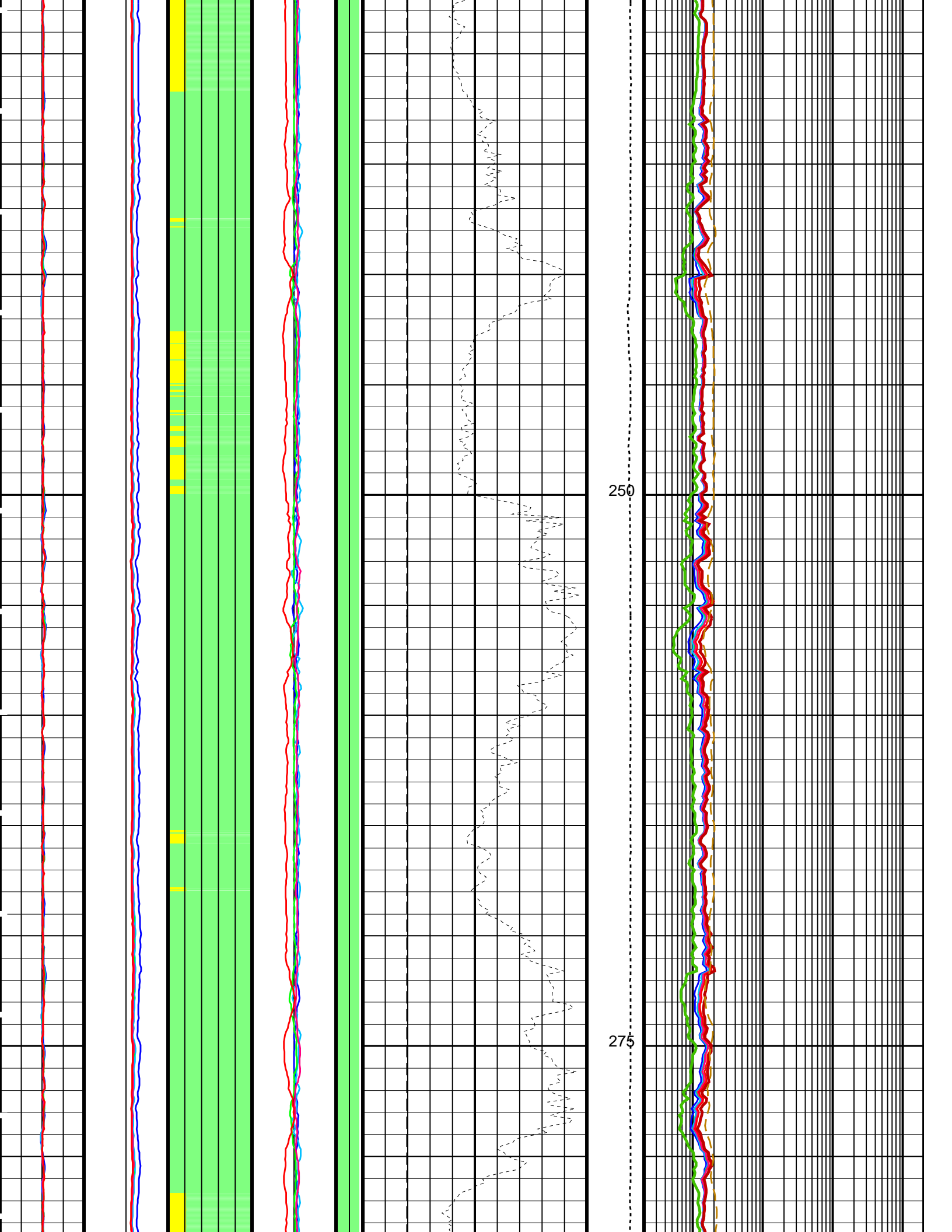


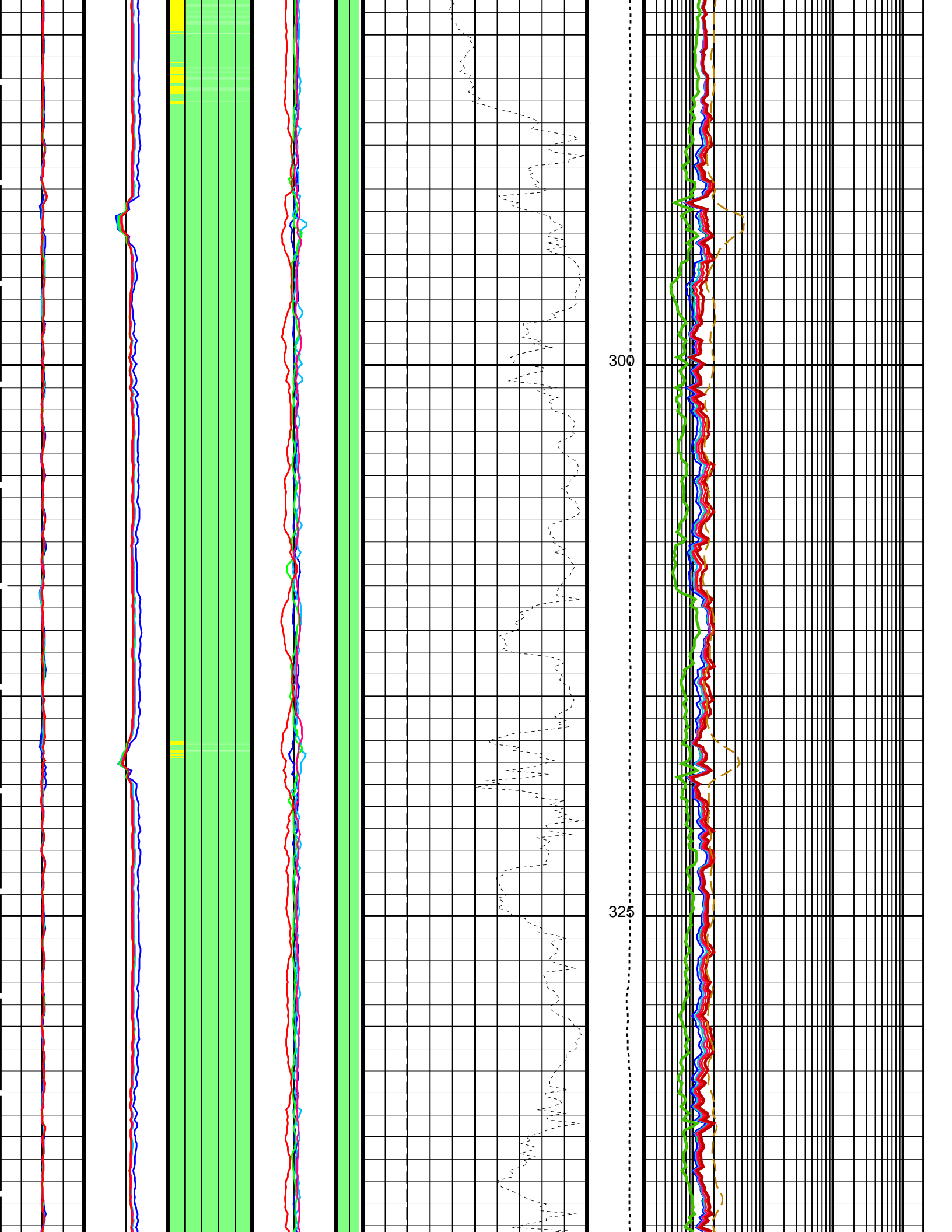


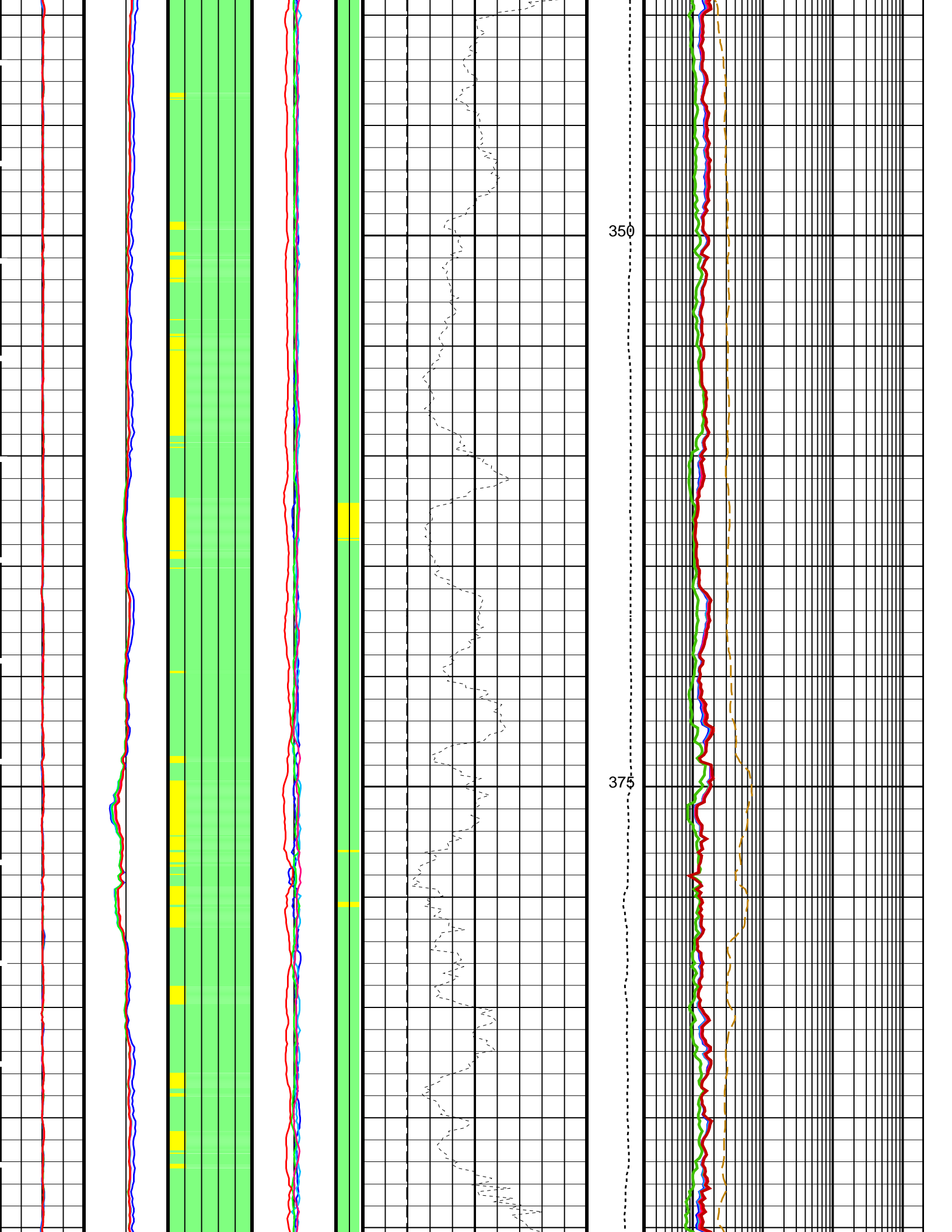


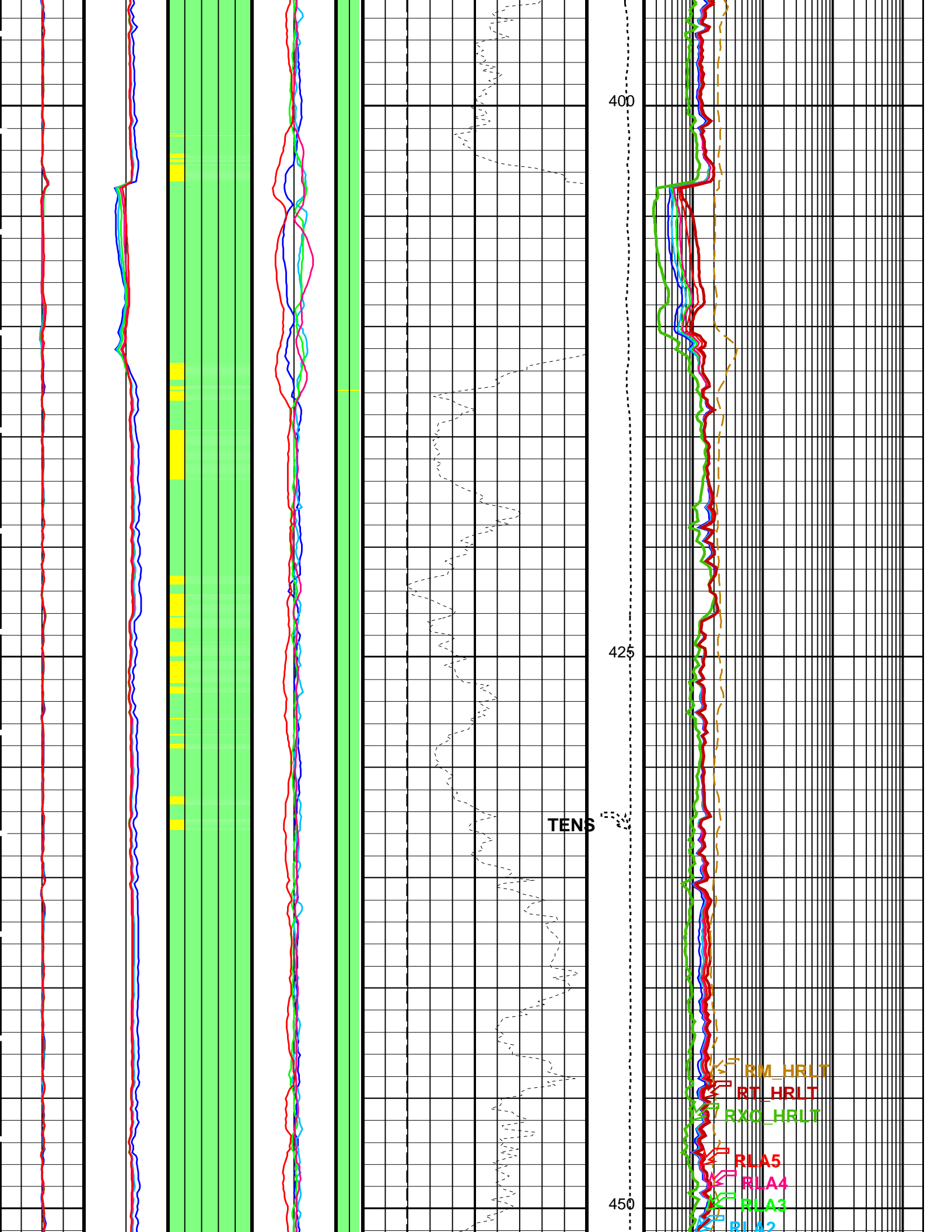












MONSYM5
MONSYM4
MONSYM3
MONSYM2
MONSYM1

INVERR4
INVERR3
INVERR2
INVERR1

CCRA5
CCRA4
CCRA3
CCRA2
CCRA1

INVERR5

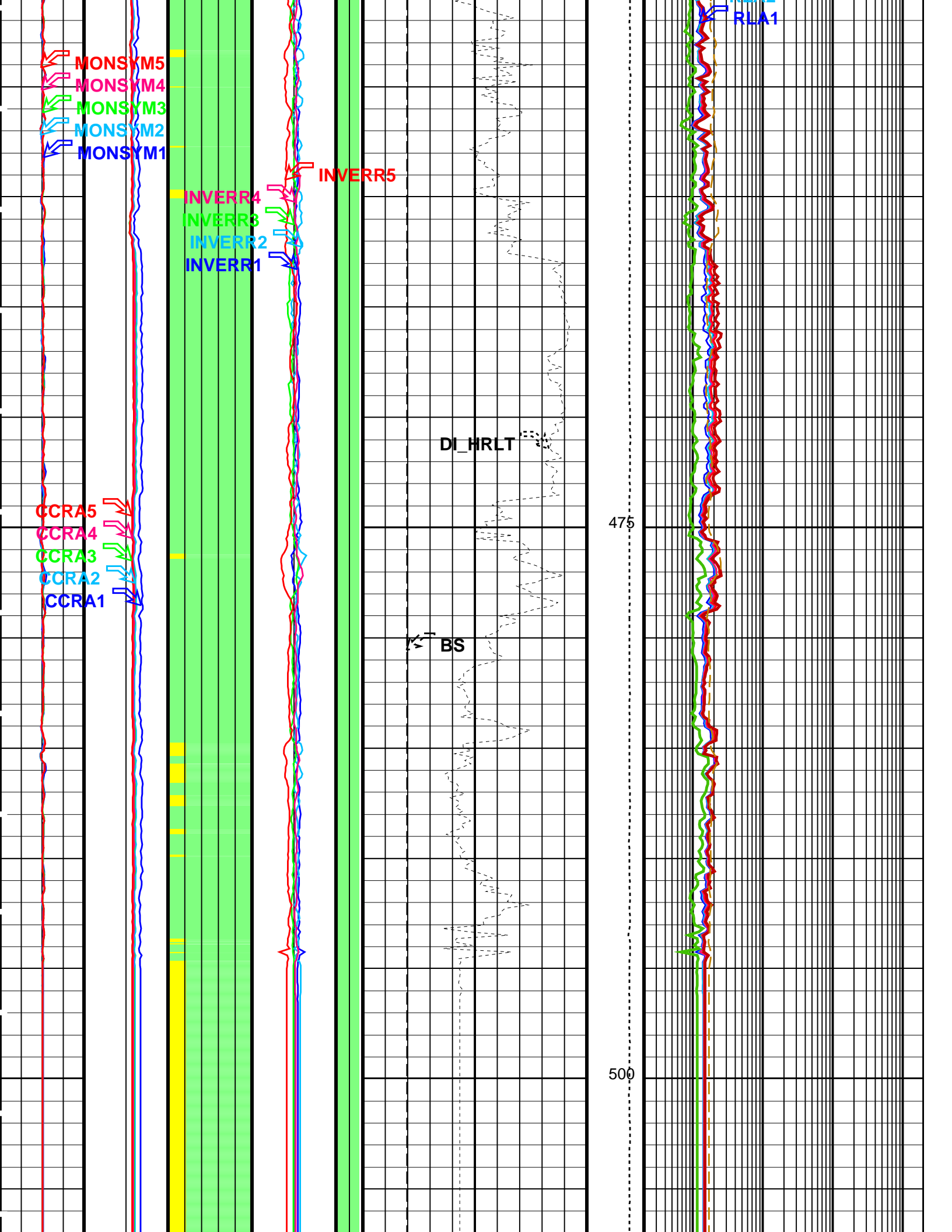
DI_HRLT

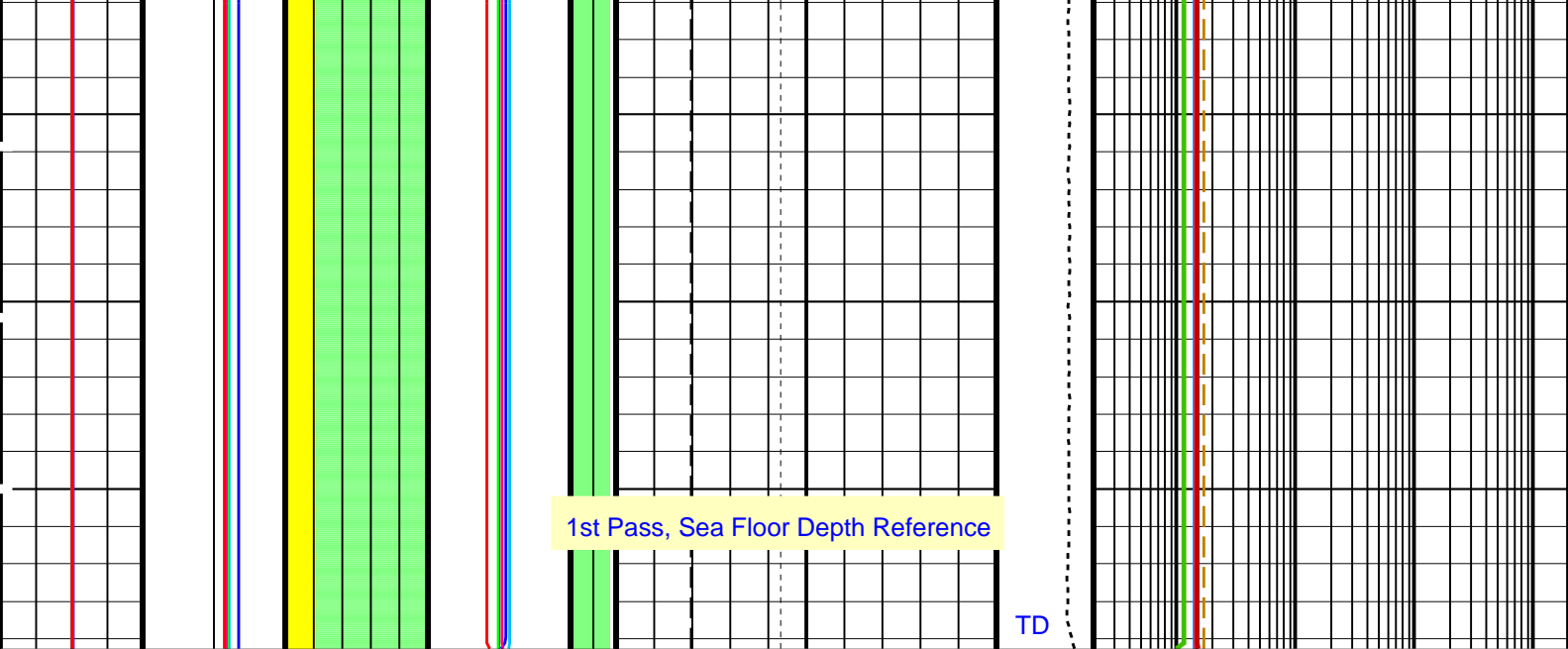
BS

RLA1

475

500





*** 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) (----)	(RE S FL AG S) (----)	(BS) (IN)	Tension (TENS) (LBF)	(RLA1) (OHMM)
(MONSYM1) (-4 (----) 4)	(CCRA1) (0.8 1.2)	Inversion Weight	(INVERR2) (----)	(DI_HRLT) (IN)	(BS) (IN)	0.2	(RLA1) (OHMM) 2000
(MONSYM2) (-4 (----) 4)	(CCRA2) (0.8 1.2)		(INVERR3) (----)			0.2	(RLA2) (OHMM) 2000
(MONSYM3) (-4 (----) 4)	(CCRA3) (0.8 1.2)		(INVERR4) (----)			0.2	(RLA3) (OHMM) 2000
(MONSYM4) (-4 (----) 4)	(CCRA4) (0.8 1.2)		(INVERR5) (----)			0.2	(RLA4) (OHMM) 2000
						0.2	(RLA5) (OHMM) 2000

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

Inversion

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

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	50 DEGF
DGF1	Deep 10 kHz Gain Factor	0.983944
DGF2	Deep 20 kHz Gain Factor	0.994954
DGF4	Deep 40 kHz Gain Factor	1.00592
DPH1	Deep 10 kHz Phase Shift	0.168276 DEG
DPH2	Deep 20 kHz Phase Shift	0.0121563 DEG
DPH4	Deep 40 kHz Phase Shift	-1.03419 DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	41.5527 MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.216 MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.26232 MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt
DSR1	Deep Sigma Reference (10 kHz)	7637 MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843 MM/M
DSR4	Deep Sigma Reference (40 kHz)	405 MM/M
DSTA	DIT-E Transversal Standoff	0 IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	254.472 MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	139.586 MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	80.4475 MM/M
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
IFRS	DIT-E Induction Frequency Selector	20
IPHA	DIT-E Phasor Processing Mode	ALL
IPRO	DIT-E Induction Processing Selector	PHASOR
ISSBAR	Barite Mud Switch	NOBARITE
ITEN	DIT-E Temperature Enable	ENABLE
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE
MGF1	Medium 10 kHz Gain Factor	0.989571
MGF2	Medium 20 kHz Gain Factor	0.993379
MGF4	Medium 40 kHz Gain Factor	1.0135
MPH1	Medium 10 kHz Phase Shift	-0.203288 DEG
MPH2	Medium 20 kHz Phase Shift	-0.886203 DEG
MPH4	Medium 40 kHz Phase Shift	-2.22812 DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	30.326 MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	9.52242 MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	0.86266 MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520 MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250 MM/M
MSR4	Medium Sigma Reference (40 kHz)	685 MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	345.689 MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	182.2 MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	117.66 MM/M
SBR	Shoulder Bed Resistivity Factor	1 OHMM
SFCR	SFL Channel Ratio	1000
SFLE	SFL Enable	ENABLE
SHT	Surface Hole Temperature	68 DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE
SPNV	SP Next Value	0 MV
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

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)	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	-0.00489121	
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	1.28118	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.991398	

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	18.9924	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	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	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	68	DEGF

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	-575.0	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	-50000	FT
TDD	Total Depth - Driller	526.00	M
TDL	Total Depth - Logger	525.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLT_LQC Vertical Scale: 1:200 Graphics File Created: 31-Dec-2011 05:10

OP System Version: 19C0-187

DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

DEFAULT	PI_LDL_NGS_HRLA_011LUP	FN:13	PRODUCER	07-Dec-2011 21:40	1099.6 M	566.6 M
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Output DLIS Files

DEFAULT	PI_LDL_NGS_HRLA_038PUP	FN:5	PRODUCER	31-Dec-2011 05:10		
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Input DLIS Files

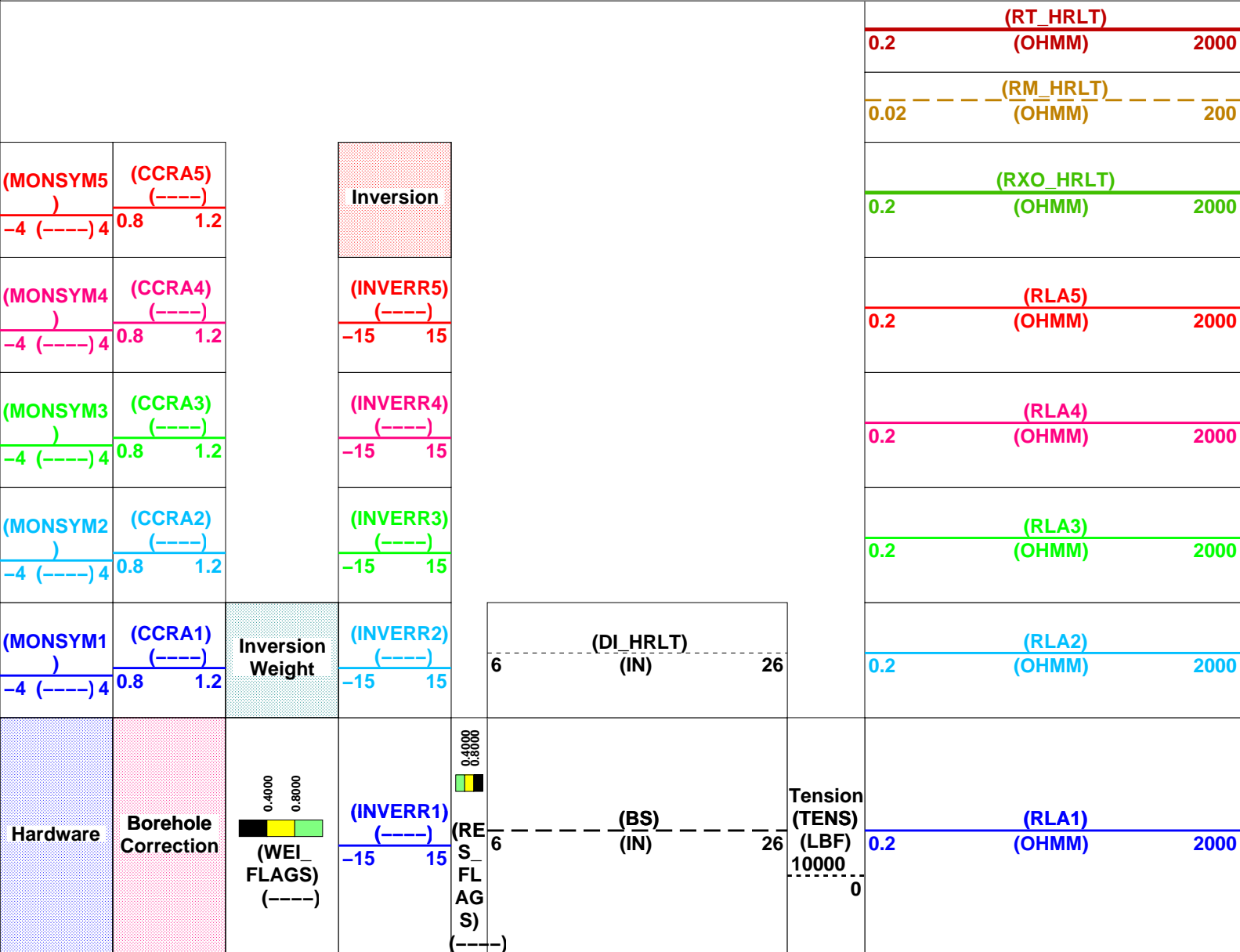
DEFAULT	PI_LDL_NGS_HRLA_012LUP	FN:15	PRODUCER	07-Dec-2011 23:47	811.5 M	656.7 M
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Output DLIS Files

DEFAULT	PI_LDL_NGS_HRLA_039PUP	FN:6	PRODUCER	31-Dec-2011 06:32	236.2 M	81.8 M
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OP System Version: 19C0-187

DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187



*** 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

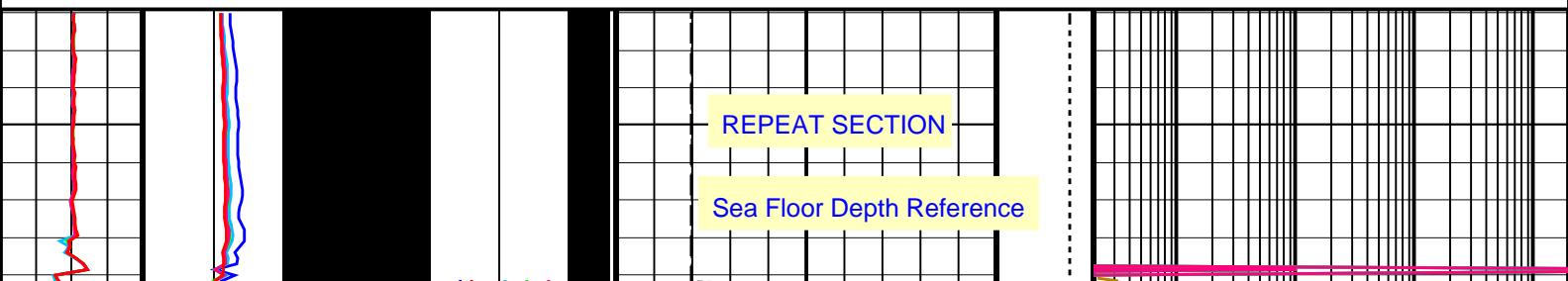
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

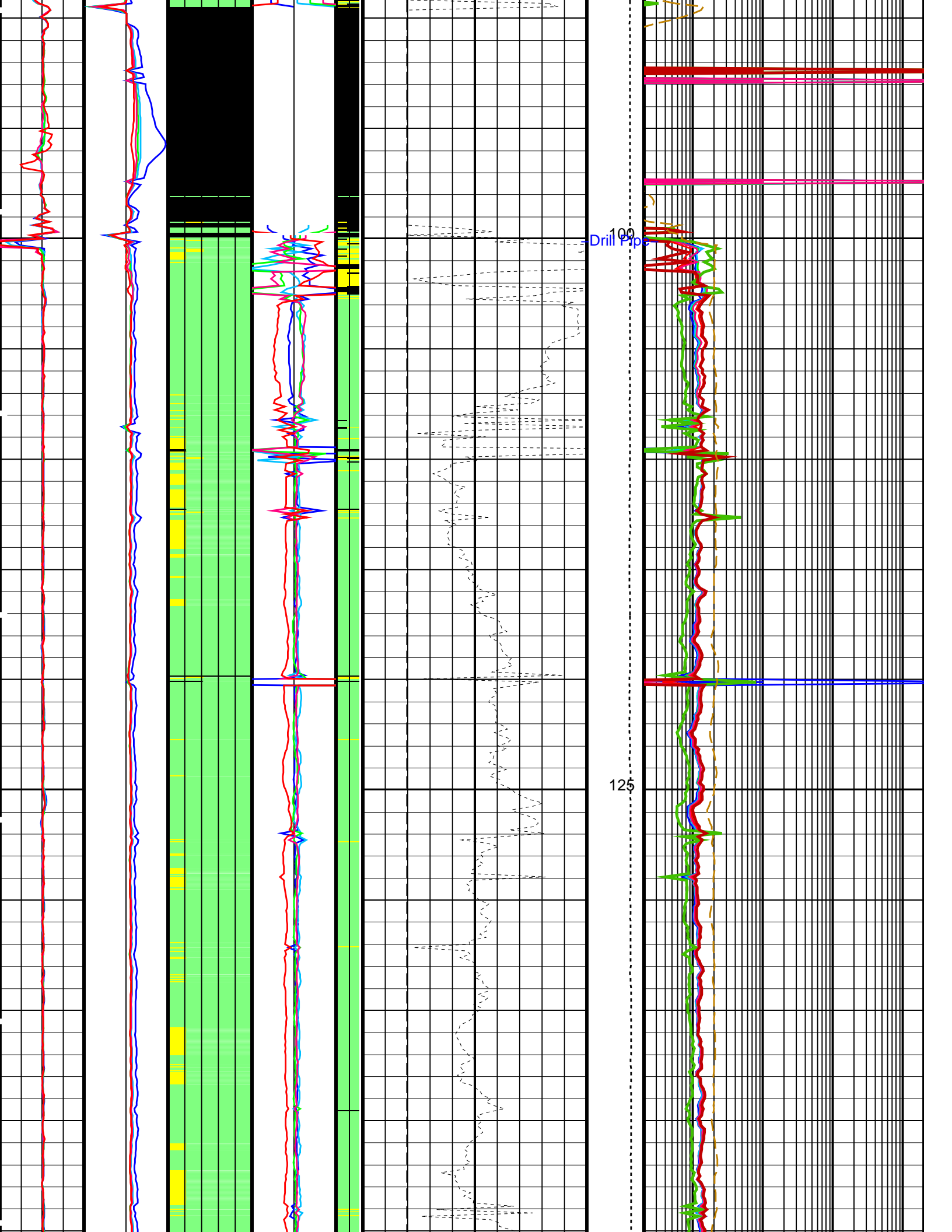
| RxoFlag | RTFlag |

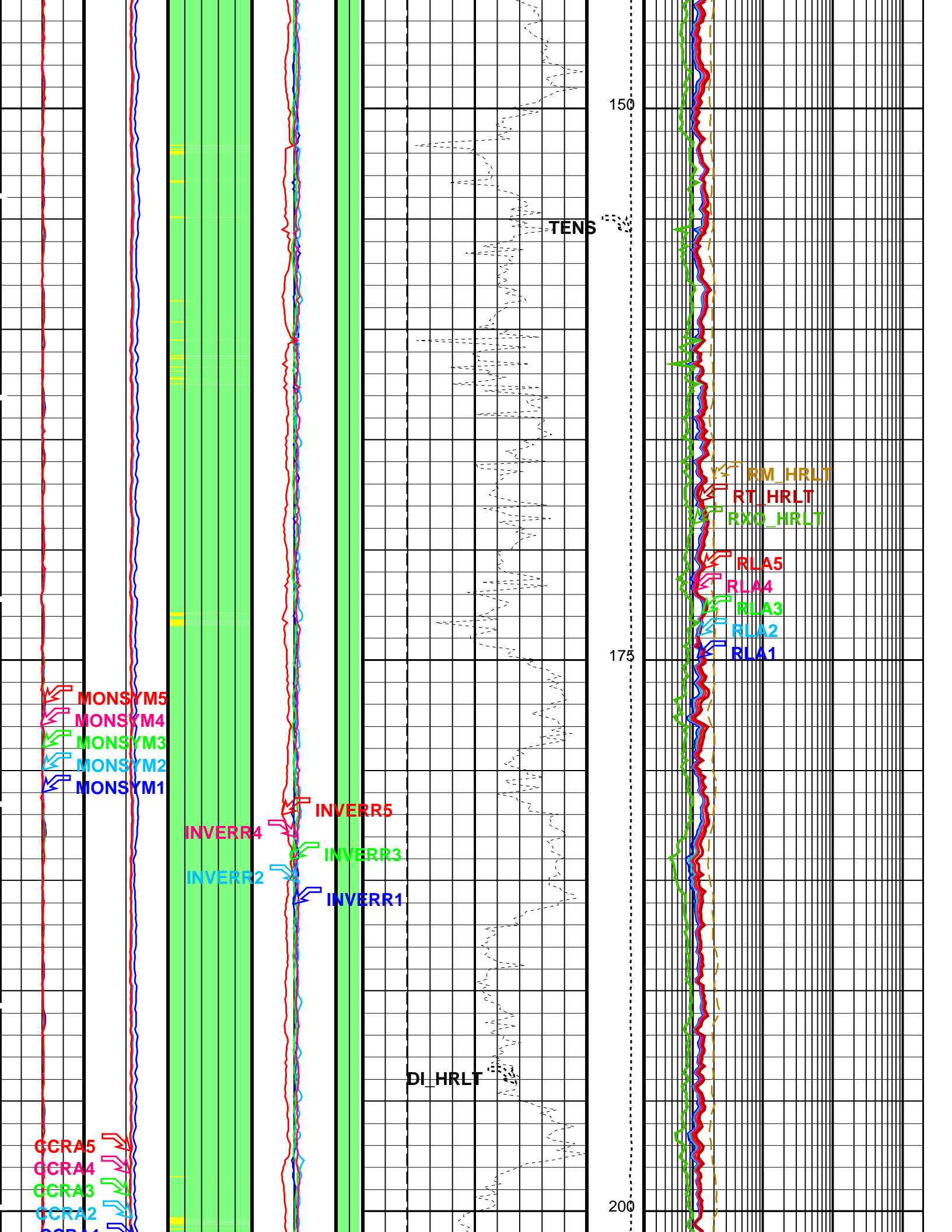
GREEN = OK

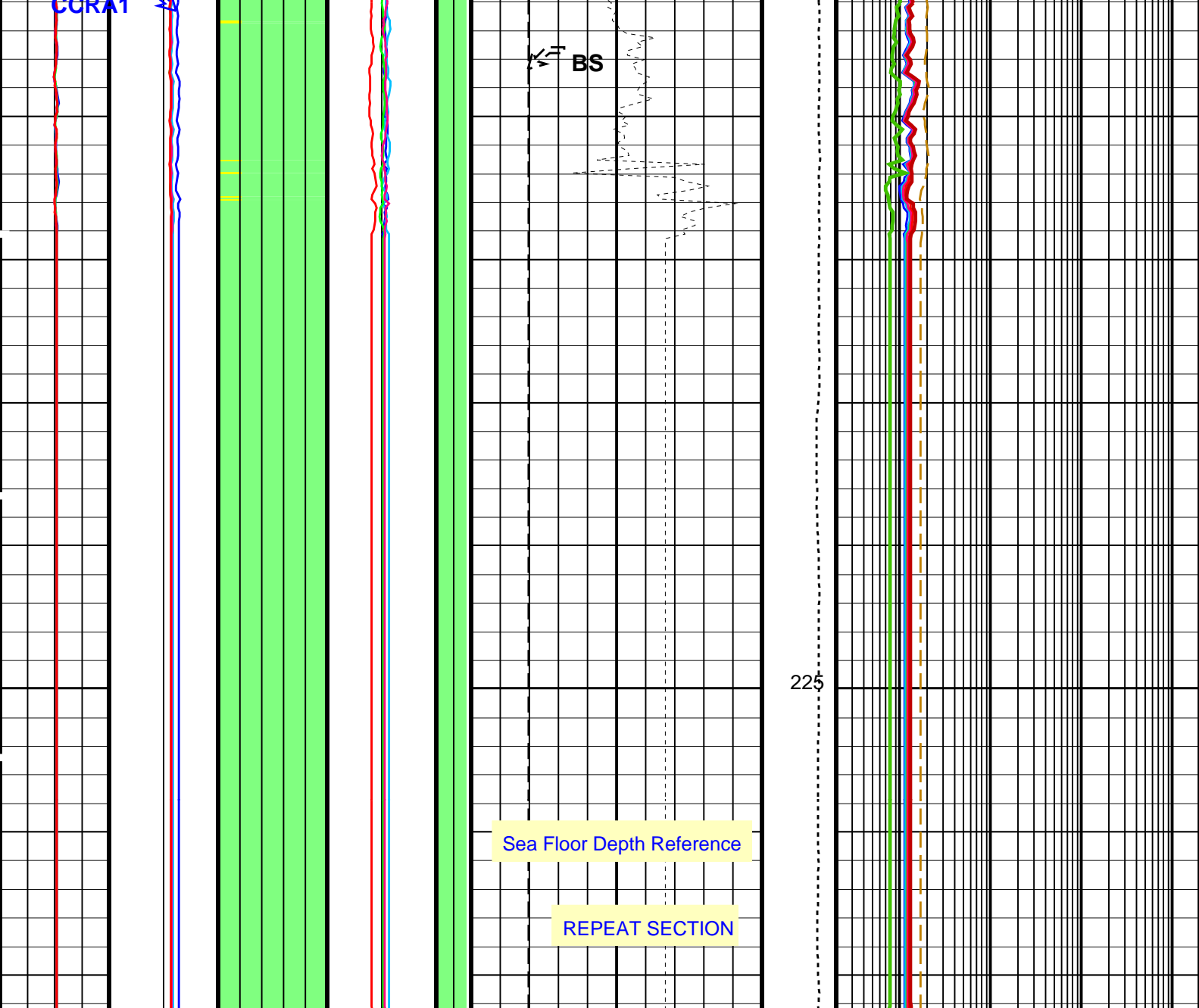
YELLOW = SHOULDER BED EFFECT

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

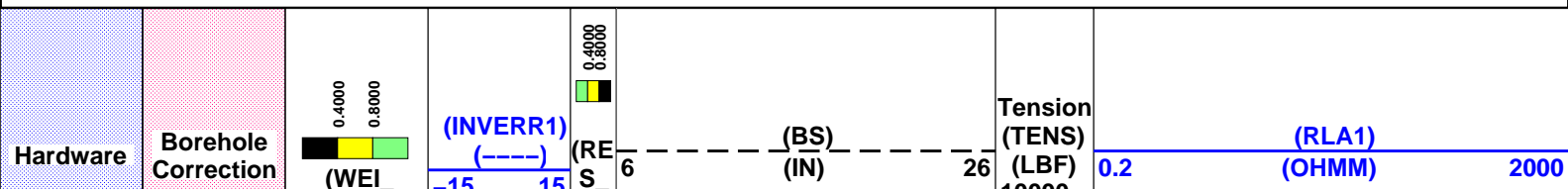
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

| RxoFlag | RTFlag |

GREEN = OK

YELLOW = SHOULDER BED EFFECT

BLACK = NOK



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

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DIT-E: Dual Induction - E		
BHS	Borehole Status	OPEN
BHT	Bottom Hole Temperature (used in calculations)	50 DEGF
DGF1	Deep 10 kHz Gain Factor	0.983944
DGF2	Deep 20 kHz Gain Factor	0.994954
DGF4	Deep 40 kHz Gain Factor	1.00592
DPH1	Deep 10 kHz Phase Shift	0.168276 DEG
DPH2	Deep 20 kHz Phase Shift	0.0121563 DEG
DPH4	Deep 40 kHz Phase Shift	-1.03419 DEG
DRE1	Deep Real 10 kHz Sonde Error Correction	41.5527 MM/M
DRE2	Deep Real 20 kHz Sonde Error Correction	17.216 MM/M
DRE4	Deep Real 40 kHz Sonde Error Correction	5.26232 MM/M
DRIM	DIT-E Radial Invasion Mode	Rxo>Rt
DSR1	Deep Sigma Reference (10 kHz)	7637 MM/M
DSR2	Deep Sigma Reference (20 kHz)	1843 MM/M
DSR4	Deep Sigma Reference (40 kHz)	405 MM/M
DSTA	DIT-E Transversal Standoff	0 IN
DXE1	Deep Quad 10 kHz Sonde Error Correction	254.472 MM/M
DXE2	Deep Quad 20 kHz Sonde Error Correction	139.586 MM/M
DXE4	Deep Quad 40 kHz Sonde Error Correction	80.4475 MM/M
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
IFRS	DIT-E Induction Frequency Selector	20
IPHA	DIT-E Phasor Processing Mode	ALL
IPRO	DIT-E Induction Processing Selector	PHASOR
ISSBAR	Barite Mud Switch	NOBARITE
ITEN	DIT-E Temperature Enable	ENABLE
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE
MGF1	Medium 10 kHz Gain Factor	0.989571
MGF2	Medium 20 kHz Gain Factor	0.993379
MGF4	Medium 40 kHz Gain Factor	1.0135

MPH1	Medium 10 kHz Phase Shift	-0.203288	DEG
MPH2	Medium 20 kHz Phase Shift	-0.886203	DEG
MPH4	Medium 40 kHz Phase Shift	-2.22812	DEG
MRE1	Medium Real 10 kHz Sonde Error Correction	30.326	MM/M
MRE2	Medium Real 20 kHz Sonde Error Correction	9.52242	MM/M
MRE4	Medium Real 40 kHz Sonde Error Correction	0.86266	MM/M
MSR1	Medium Sigma Reference (10 kHz)	13520	MM/M
MSR2	Medium Sigma Reference (20 kHz)	3250	MM/M
MSR4	Medium Sigma Reference (40 kHz)	685	MM/M
MXE1	Medium Quad 10 kHz Sonde Error Correction	345.689	MM/M
MXE2	Medium Quad 20 kHz Sonde Error Correction	182.2	MM/M
MXE4	Medium Quad 40 kHz Sonde Error Correction	117.66	MM/M
SBR	Shoulder Bed Resistivity Factor	1	OHMM
SFCR	SFL Channel Ratio	1000	
SFLE	SFL Enable	ENABLE	
SHT	Surface Hole Temperature	68	DEGF
SPAE	DIT-E SPARC Processing Enable	ENABLE	
SPNV	SP Next Value	0	MV
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)	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	-0.00489121	
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	1.28118	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.991398	
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	18.9924	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	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	
PROCMFO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	68	DEGF
	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		
ALTDPCAN	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	-575.0	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	-50000	FT
TDD	Total Depth - Driller	526.00	M
TDL	Total Depth - Logger	525.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLT_LQC Vertical Scale: 1:200 Graphics File Created: 31-Dec-2011 06:32

OP System Version: 19C0-187

DIT-E	19C0-187	DTA-A	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	EDTC-B	19C0-187

Input DLIS Files

DEFAULT	PI_LDL_NGS_HRLA_012LUP	FN:15	PRODUCER	07-Dec-2011 23:47	811.5 M	656.7 M
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Output DLIS Files

Company: **Lamont Doherty**



Well: **Expedition 339, Site U1386 GC-01A**

Field: **Mediterranean Outflow (Portugal)**

Rig: **JOIDES Resolution**

Ocean: **Atlantic**

High Resolution Laterolog Array
Log Quality Control Log