



Company: **Integrated Ocean Discovery Program**

Well: **Expedition 355, Site U1456 C**

Field: **Arabian Sea Monsoon**

Rig: **JOIDES Resolution** Ocean: **Indian**

**HRLA Resistivity
Caliper / Natural Gamma Spectroscopy
Magnetic Susceptibility (MSS)**

Latitude: N16.621565983 Deg	Elev.: K.B. 3649.20 m
Longitude: E68.8389434 Deg	G.L. 0.00 m
	D.F. 3649.20 m
Permanent Datum: Sea Floor	Elev.: 0.00 m
Log Measured From: Sea Floor	3649.20 m above Perm. Datum
Drilling Measured From: Sea Floor	

API Serial No.

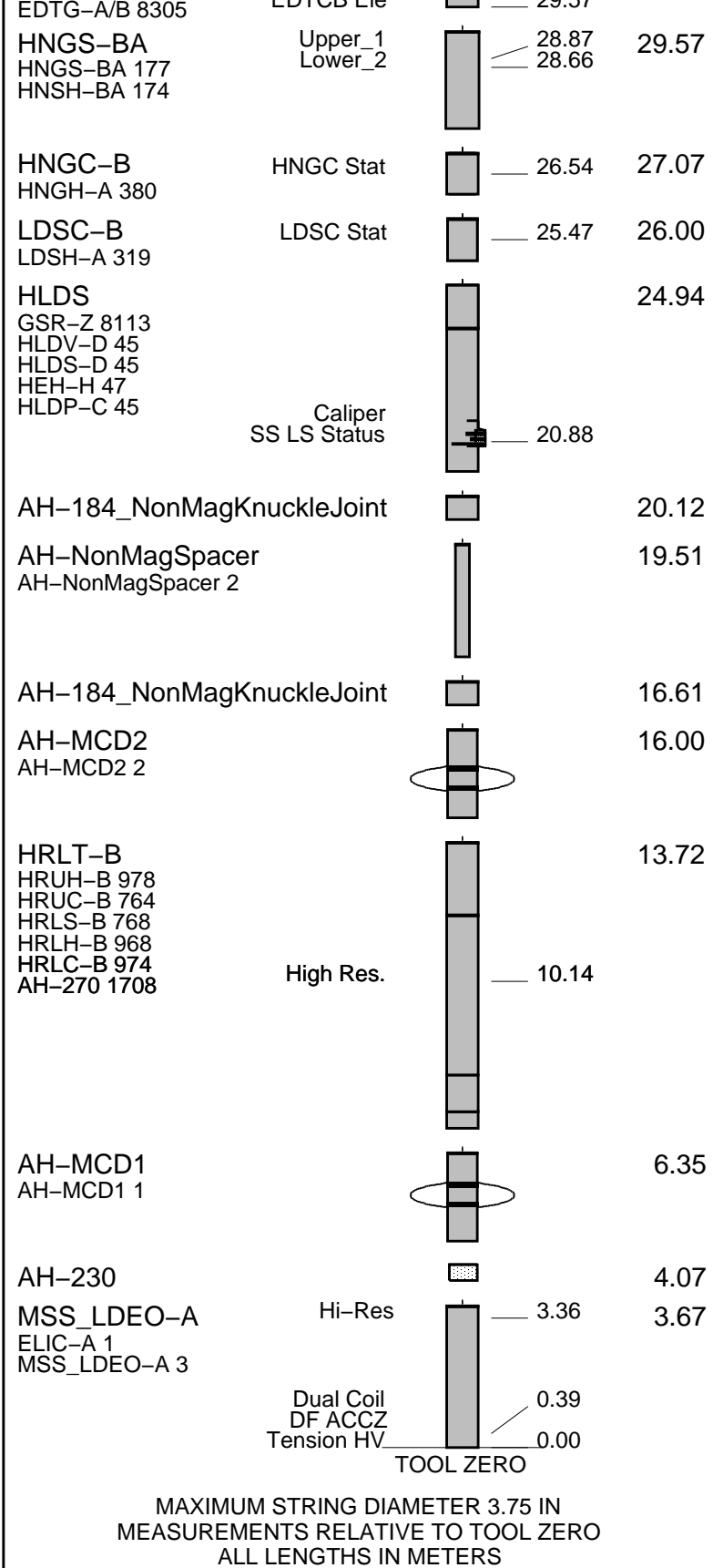
N16.621565983 *

E68.8389434 *

Rig: JOIDES Resolution
Field: Arabian Sea Monsoon
Location: Latitude: N16.621565983 Deg
Well: Expedition 355, Site U1456 C
Company: Integrated Ocean Discovery Program

Logging Date	17-Apr-2015		
Run Number	1		
Depth Driller	465.2 m		
Schlumberger Depth	464 m		
Bottom Log Interval	464 m		
Top Log Interval	0 m		
Casing Driller Size @ Depth	5.500 in	@	81.19 m
Casing Schlumberger	82 m		
Bit Size	11.438 in		
Type Fluid In Hole	Sepiolite with Barite		
Density	Viscosity	1.209 g/cm3	
Fluid Loss	PH	8.07	
Source Of Sample	Mudpit		
RM @ Measured Temperature	0.220 ohm.m	@	22 degC
RMF @ Measured Temperature		@	
RMC @ Measured Temperature		@	
Source RMF	RMC	N/A	
RM @ MRT	RMF @ MRT	0.271 @ 14	@ 14
Maximum Recorded Temperatures	10 degC	12	14
Circulation Stopped	Time	17-Apr-2015	10:30
Logger On Bottom	Time	17-Apr-2015	14:34
Unit Number	Location	627314 Houma, LA	
Recorded By	K. Swain		
Witnessed By	E. Griffith, R. Saxena		

	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			
Density			
Viscosity			
Fluid Loss			
PH			
Source Of Sample			
RM @ Measured Temperature		@	
RMF @ Measured Temperature		@	
RMC @ Measured Temperature		@	
Source RMF			
RMC			
RM @ MRT		@	@
RMF @ MRT			
Maximum Recorded Temperatures			
Circulation Stopped			
Time			
Logger On Bottom			
Time			
Unit Number			
Location			
Recorded By			
Witnessed By			



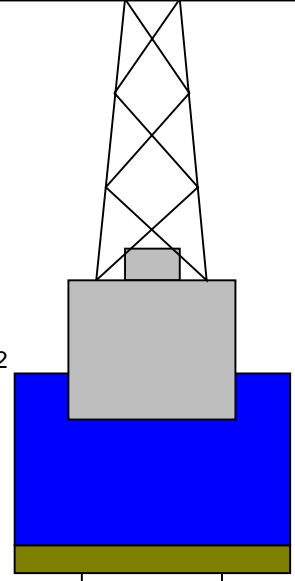
Production String	(in) (M) OD ID MD	Well Schematic	(M) (in) MD OD ID	Casing String
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Kelly Bushing Elevation
Derrick Floor Elevation

-3649.2
-3649.2

Mean Sea Level

-3638.2



4.1



0 4.1
81.19 9.875
465.2

Sea Floor

Open Hole

Total Depth

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:16	PRODUCER	17-Apr-2015 11:00	4112.5 M	3626.2 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_044PUP	FN:39	PRODUCER	24-Apr-2015 00:29	466.3 M	-19.8 M
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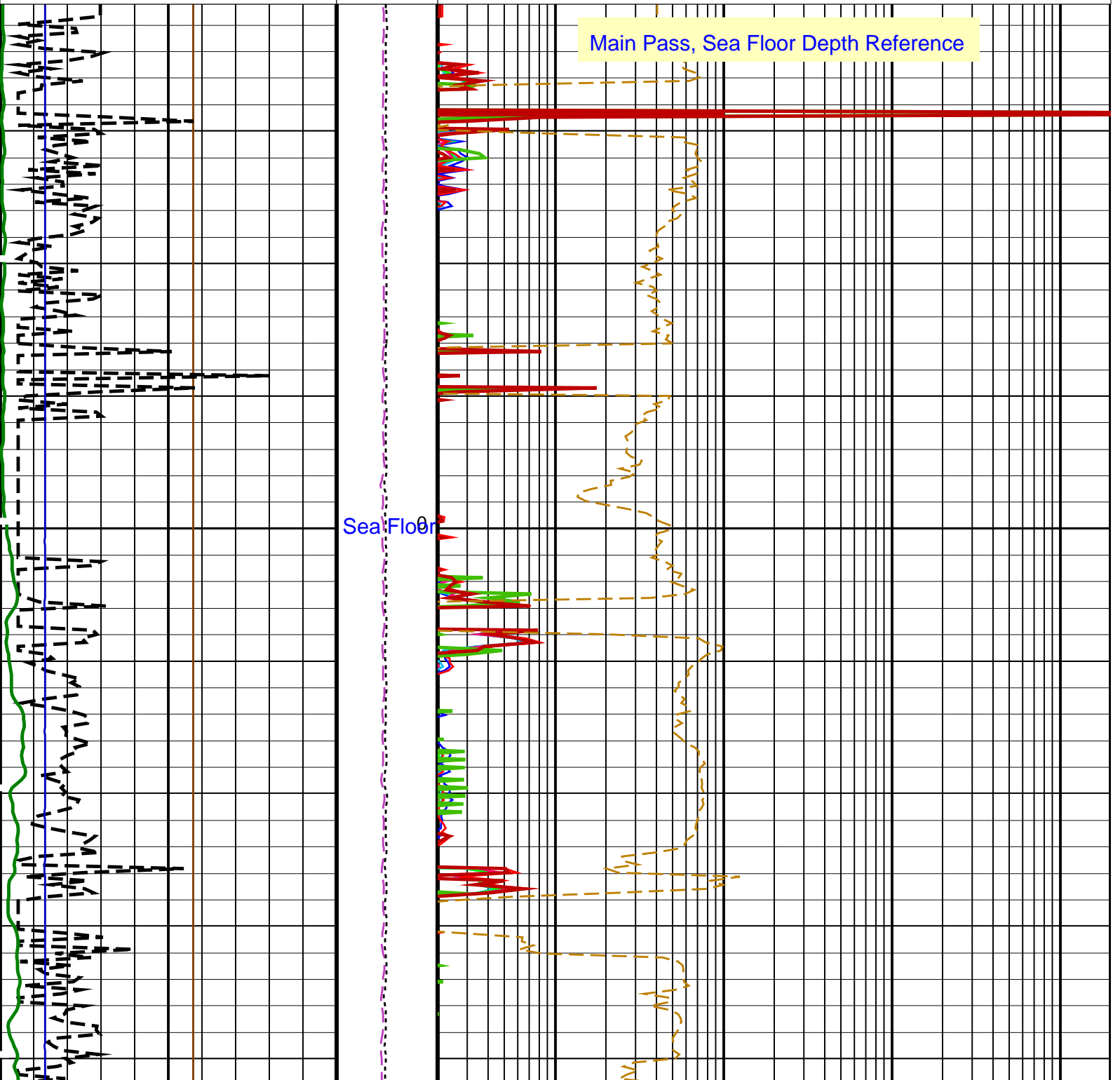
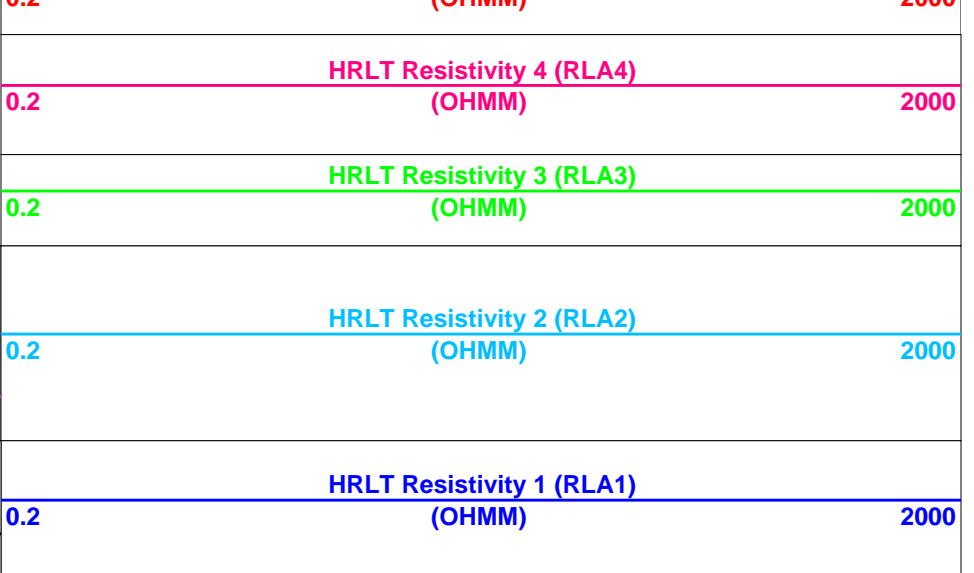
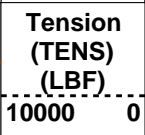
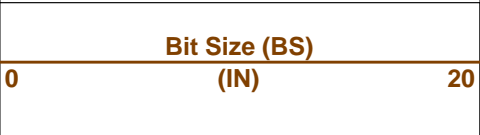
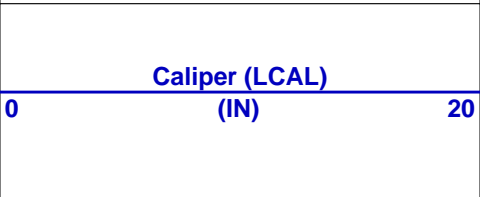
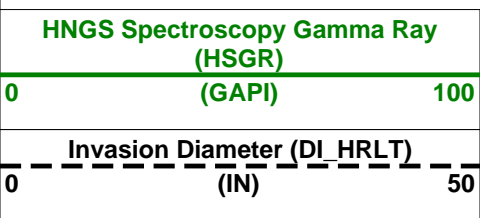
OP System Version: 19C0-187

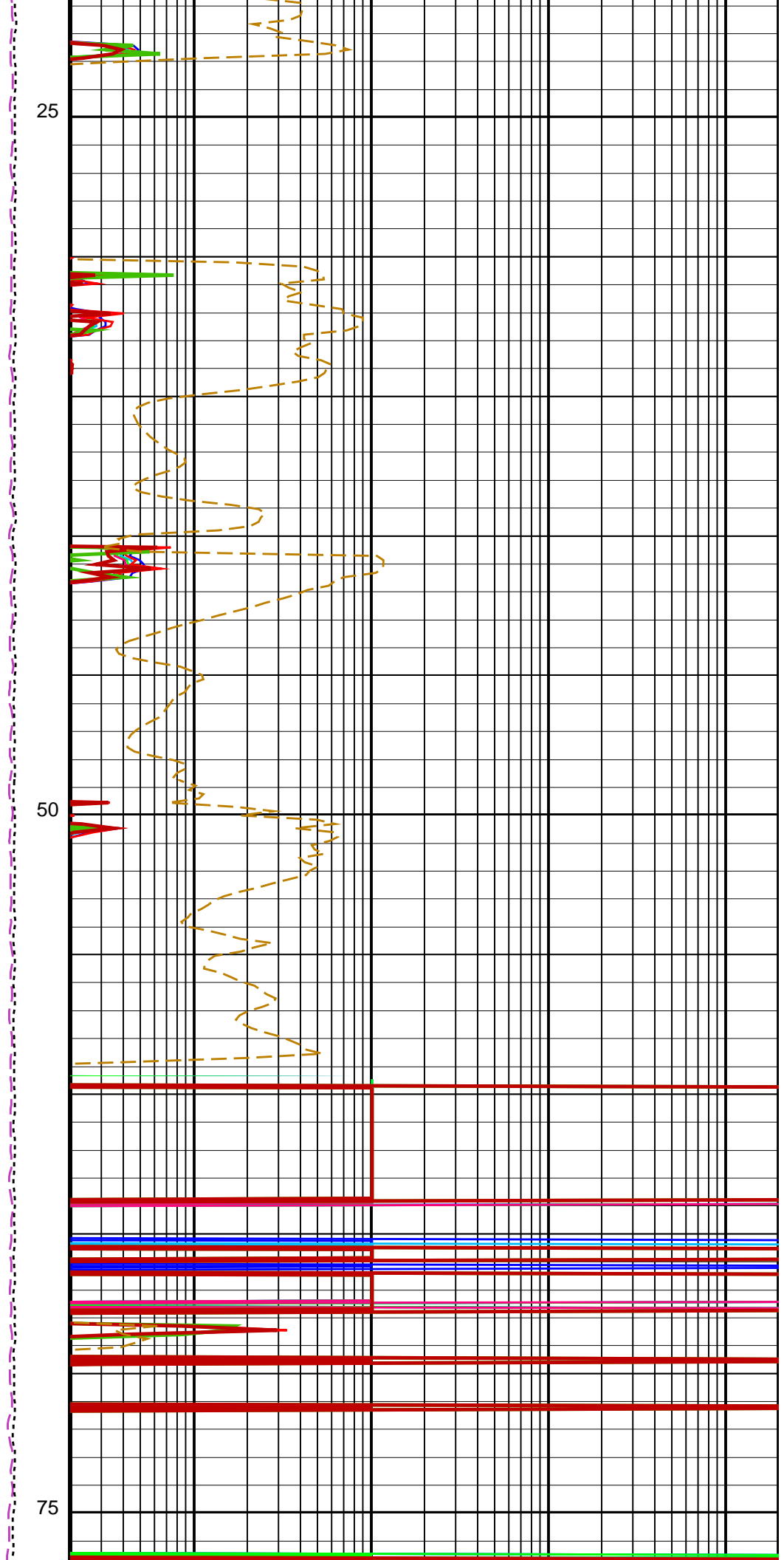
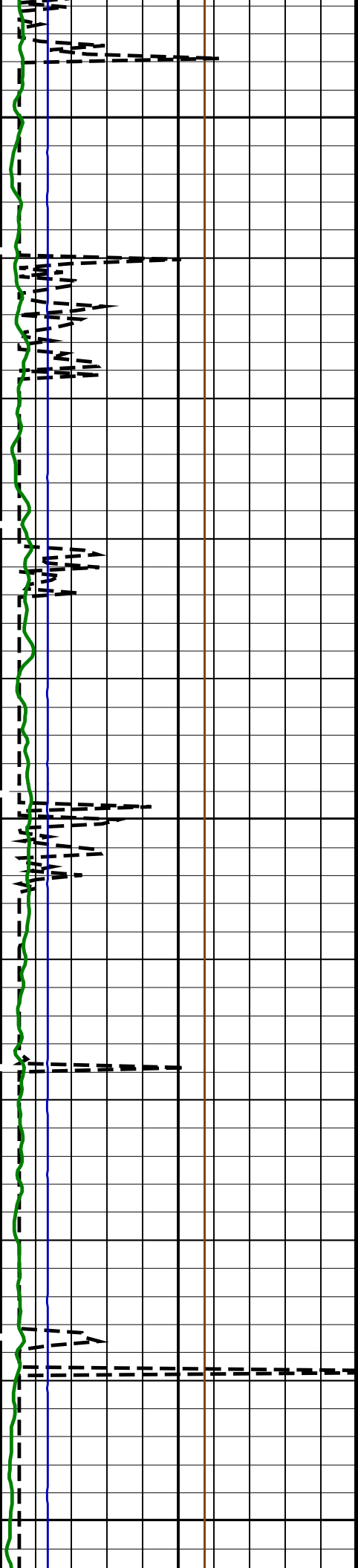
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HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

PIP SUMMARY

Time Mark Every 60 S

HRLT True Resistivity (RT_HRLT)		
0.2	(OHMM)	2000
Invaded Zone Resistivity (RXO_HRLT)		
0.2	(OHMM)	2000
HRLT Mud Resistivity (RM_HRLT)		
0.02	(OHMM)	200
HRLT Resistivity 5 (RLA5)		
0.2	(OHMM)	2000

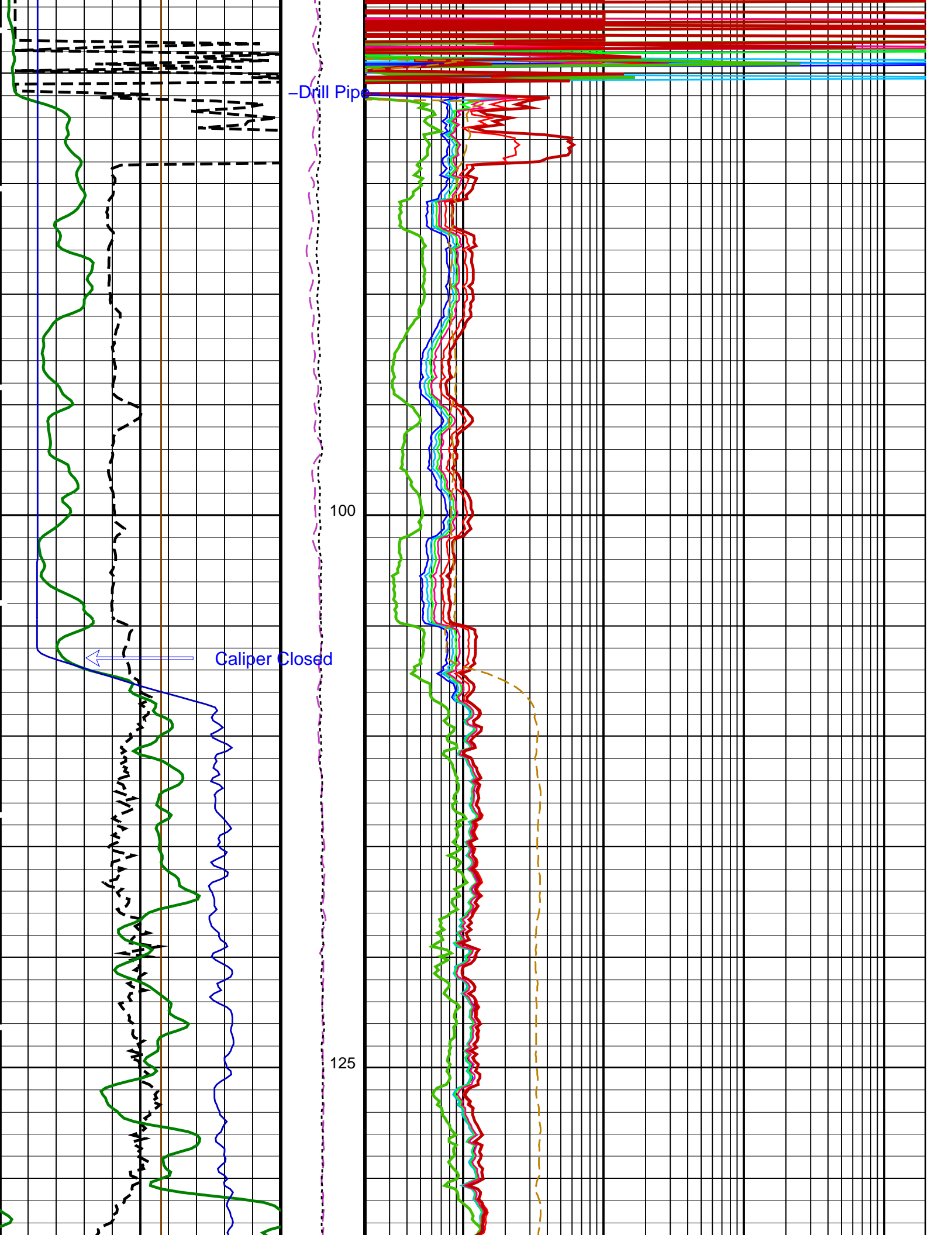


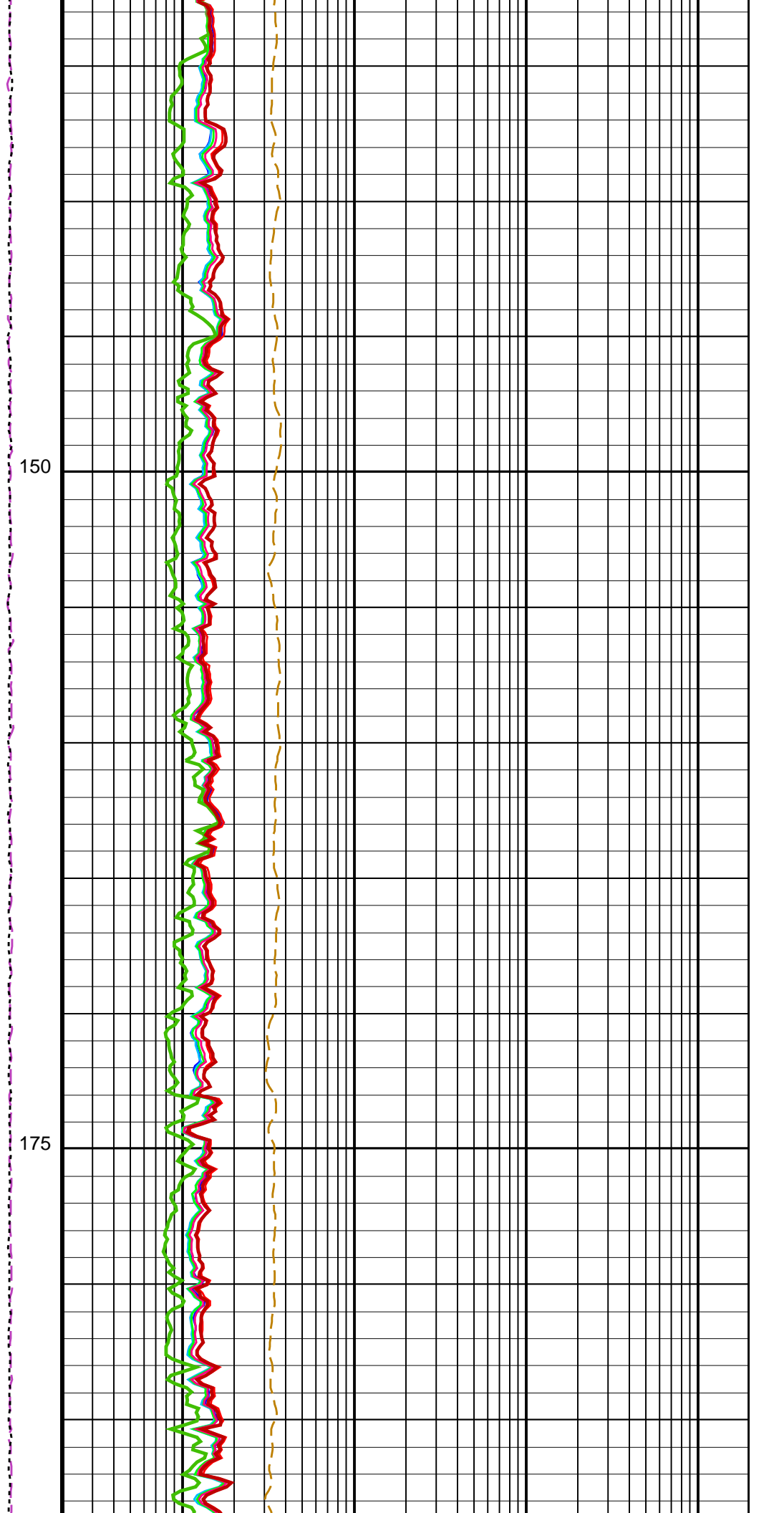
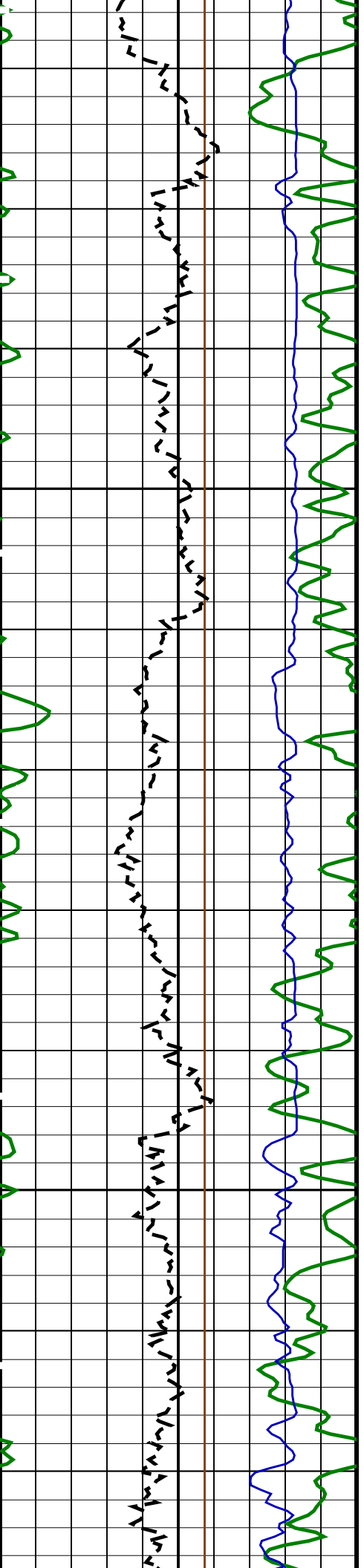


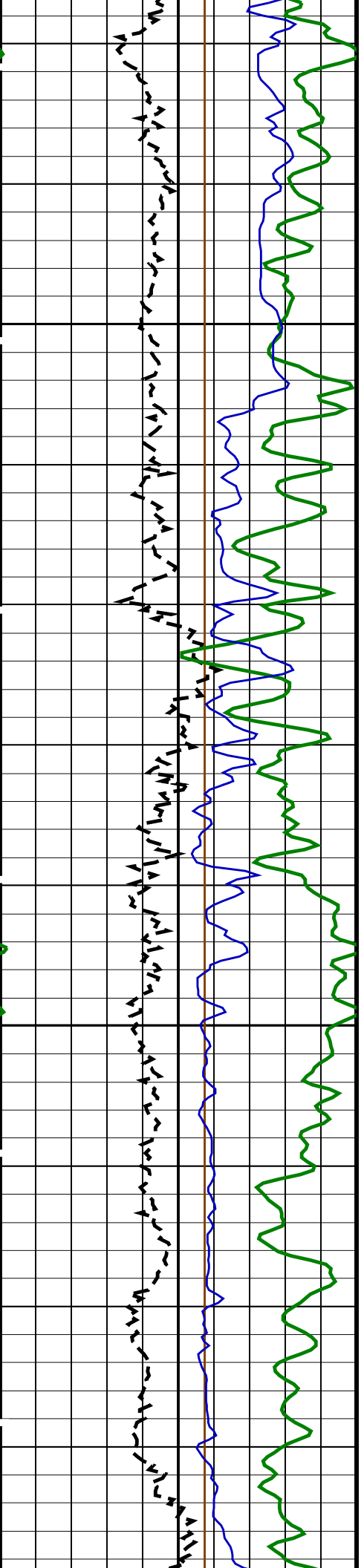
25

50

75

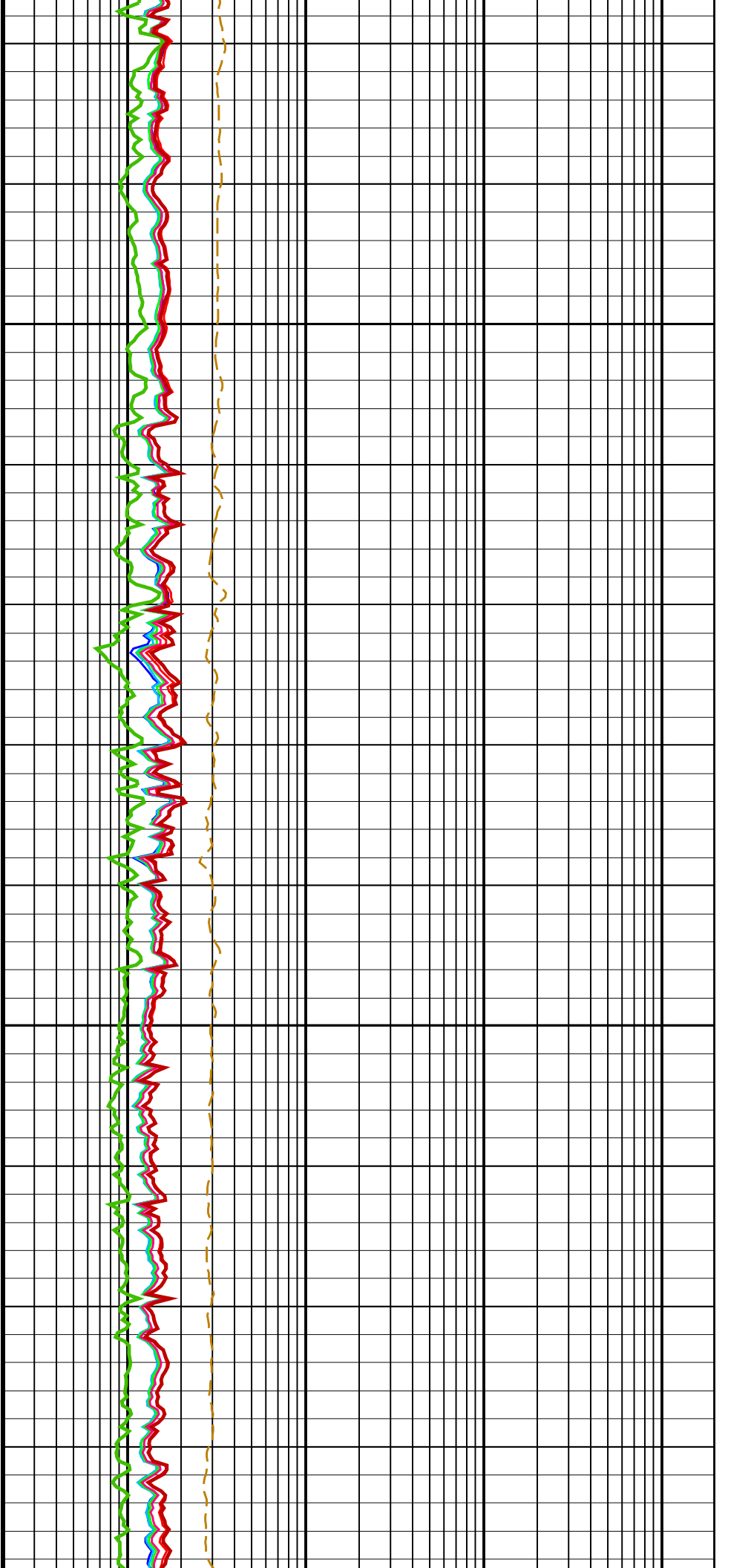


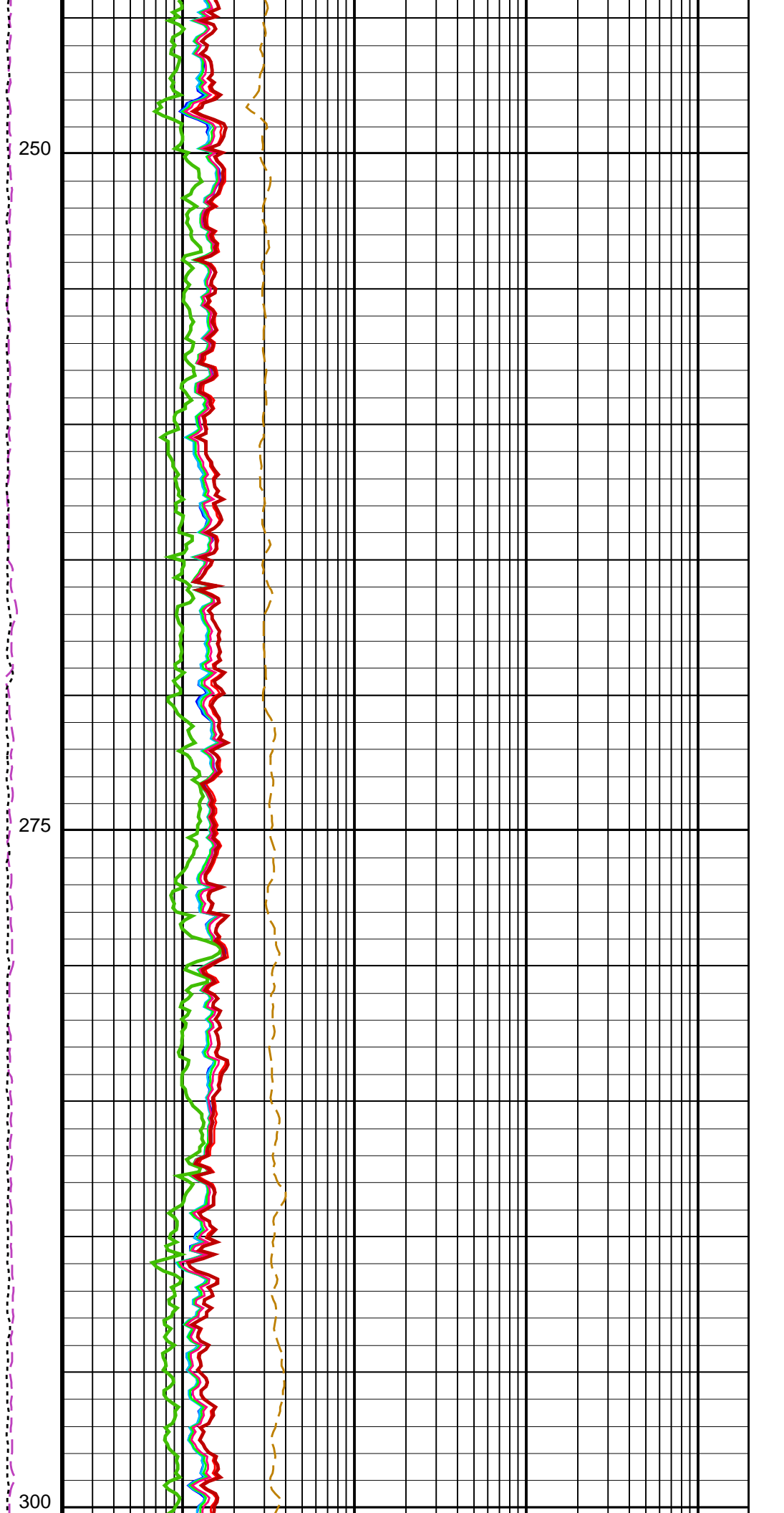
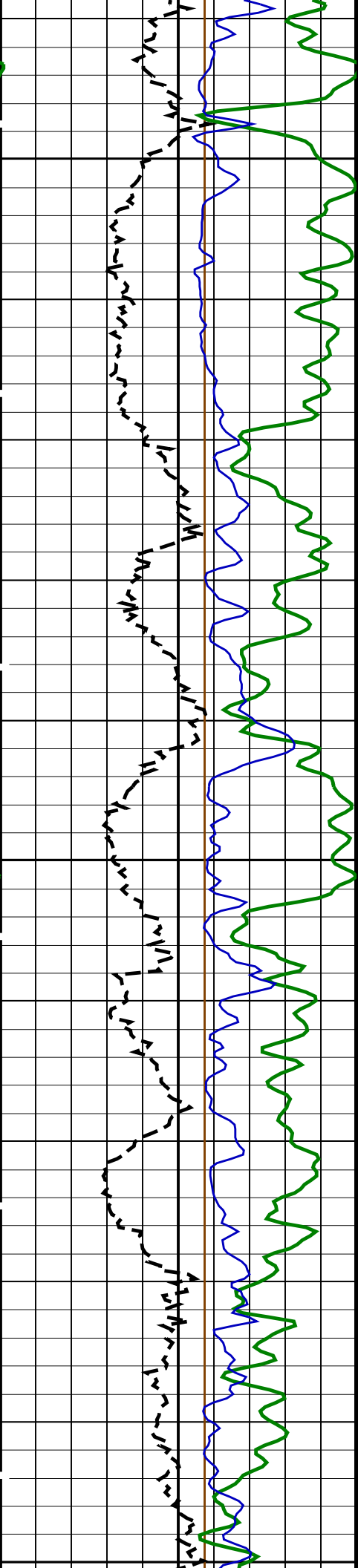


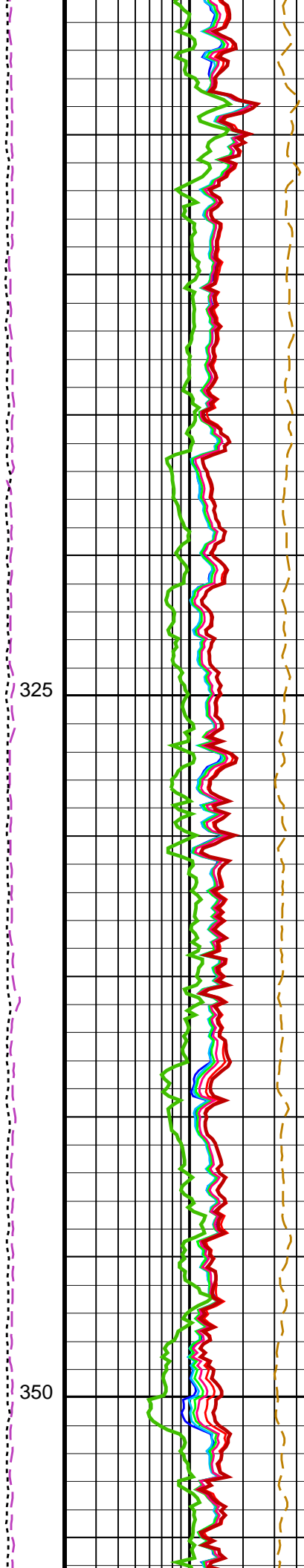
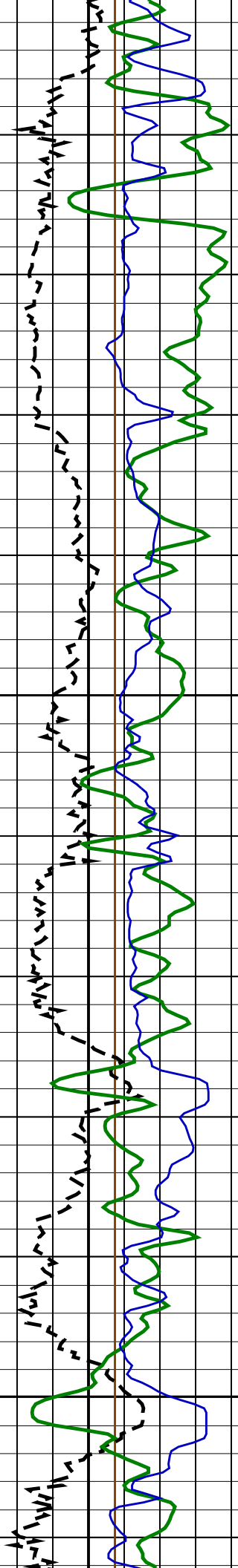


200

225

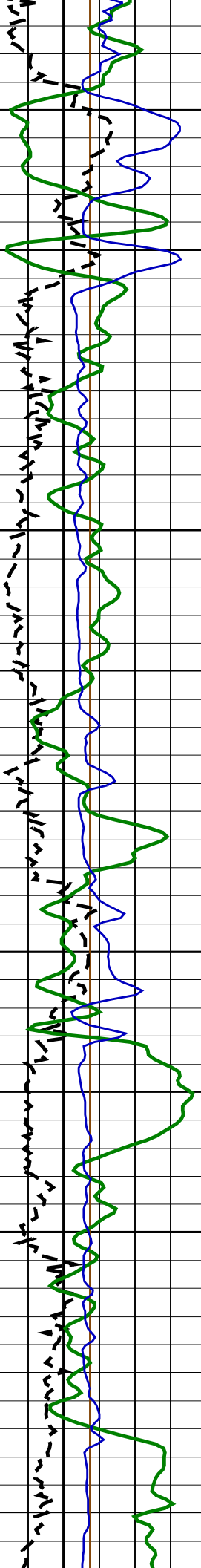






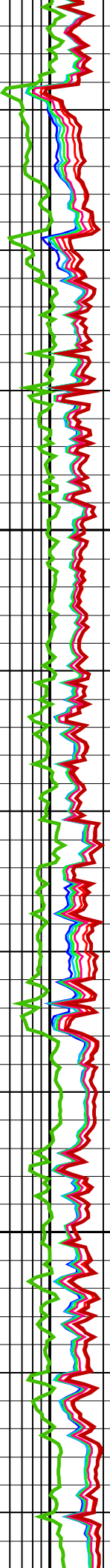
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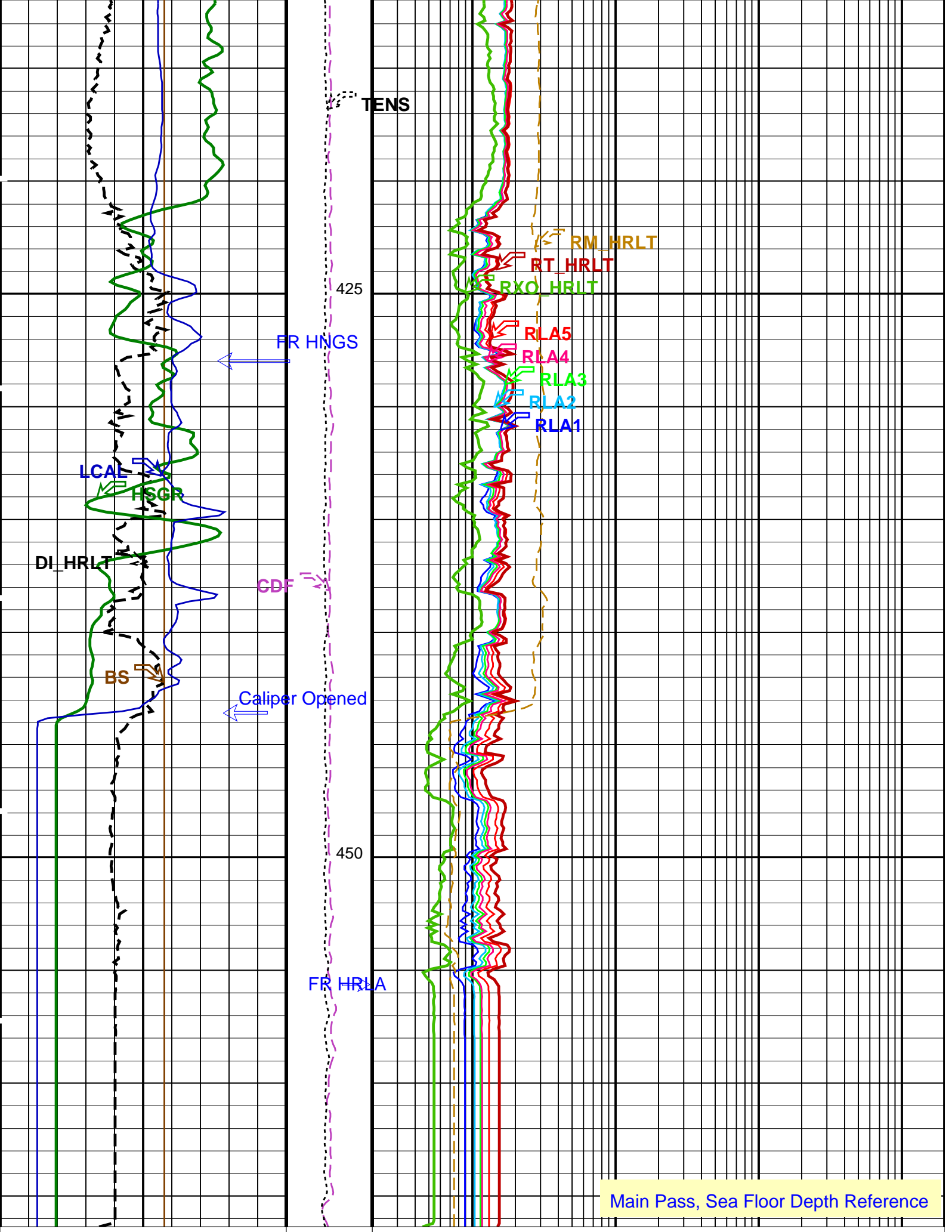
350



375

400





Bit Size (BS)

Tension (TENS)

HRLT Resistivity 1 (RLA1)

Main Pass, Sea Floor Depth Reference

0	(IN)	20	10000	0	0.2	(OHMM)	2000
Caliper (LCAL)			Calibrated Downhole Force (CDF) (LBF)	HRLT Resistivity 2 (RLA2)			
0	(IN)	20		0.2	(OHMM)	2000	
Invasion Diameter (DI_HRLT)			HRLT Resistivity 3 (RLA3)				
0	(IN)	50	0.2	(OHMM)	2000		
HNGS Spectroscopy Gamma Ray (HSGR)			HRLT Resistivity 4 (RLA4)				
0	(GAPI)	100	0.2	(OHMM)	2000		
			HRLT Resistivity 5 (RLA5)				
			0.2	(OHMM)	2000		
			HRLT Mud Resistivity (RM_HRLT)				
			0.02	(OHMM)	200		
			Invaded Zone Resistivity (RXO_HRLT)				
			0.2	(OHMM)	2000		
			HRLT True Resistivity (RT_HRLT)				
			0.2	(OHMM)	2000		

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
GCSE	Generalized Caliper Selection	LCAL
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
KFAC_HRLT	HRLT K Factor Option	SONDE
PROCINV	Inversion Selection	ON
PROCINF	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO
PROCMSO	Mechanical Standoff Fin Size	0 IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute
PROCSP0	Sonde Position	Centered
SHT	Surface Hole Temperature	20 DEGC
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	LCAL
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	-0.00265981
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	BARI
HNPE	HNGS Processing Enable	YES
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3 CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3 CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES
SHT	Surface Hole Temperature	20 DEGC
TPOS	Tool Position	ECCE
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.953116

VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	
EDTC-B: Enhanced DTS Cartridge			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
GCSE	Generalized Caliper Selection	LCAL	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	20	DEGC
System and Miscellaneous			
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
MST	Mud Sample Temperature	22.30	DEGC
PP	Playback Processing	NORMAL	
TD	Total Depth	466	M

Format: HRLT Vertical Scale: 1:200 Graphics File Created: 24-Apr-2015 00:29

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_010LUP	FN:16	PRODUCER	17-Apr-2015 11:00	4112.5 M	3626.2 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_044PUP	FN:39	PRODUCER	24-Apr-2015 00:29		
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Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:16	PRODUCER	17-Apr-2015 11:00	4112.5 M	3626.2 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_044PUP	FN:39	PRODUCER	24-Apr-2015 00:29	466.3 M	-19.8 M
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OP System Version: 19C0-187

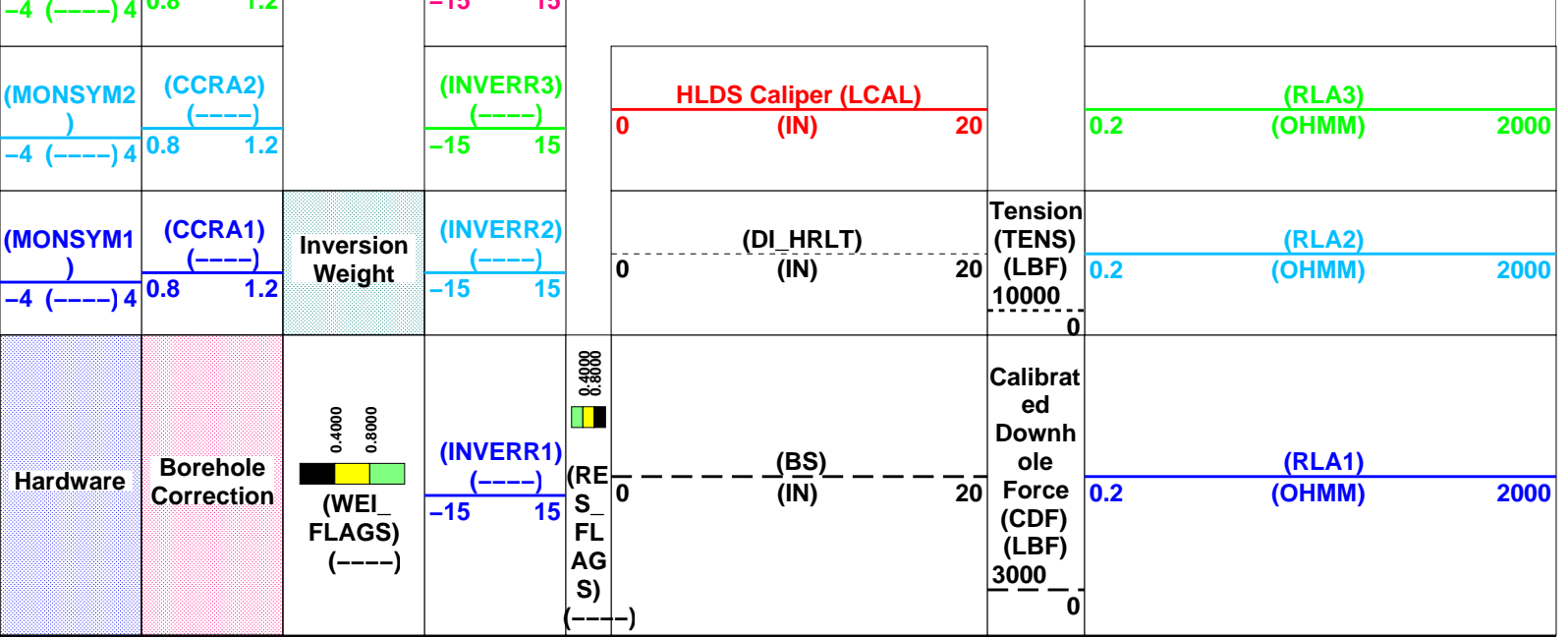
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

PIP SUMMARY

Time Mark Every 60 S

				(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) (----)
0.8 1.2	15 15	



*** 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

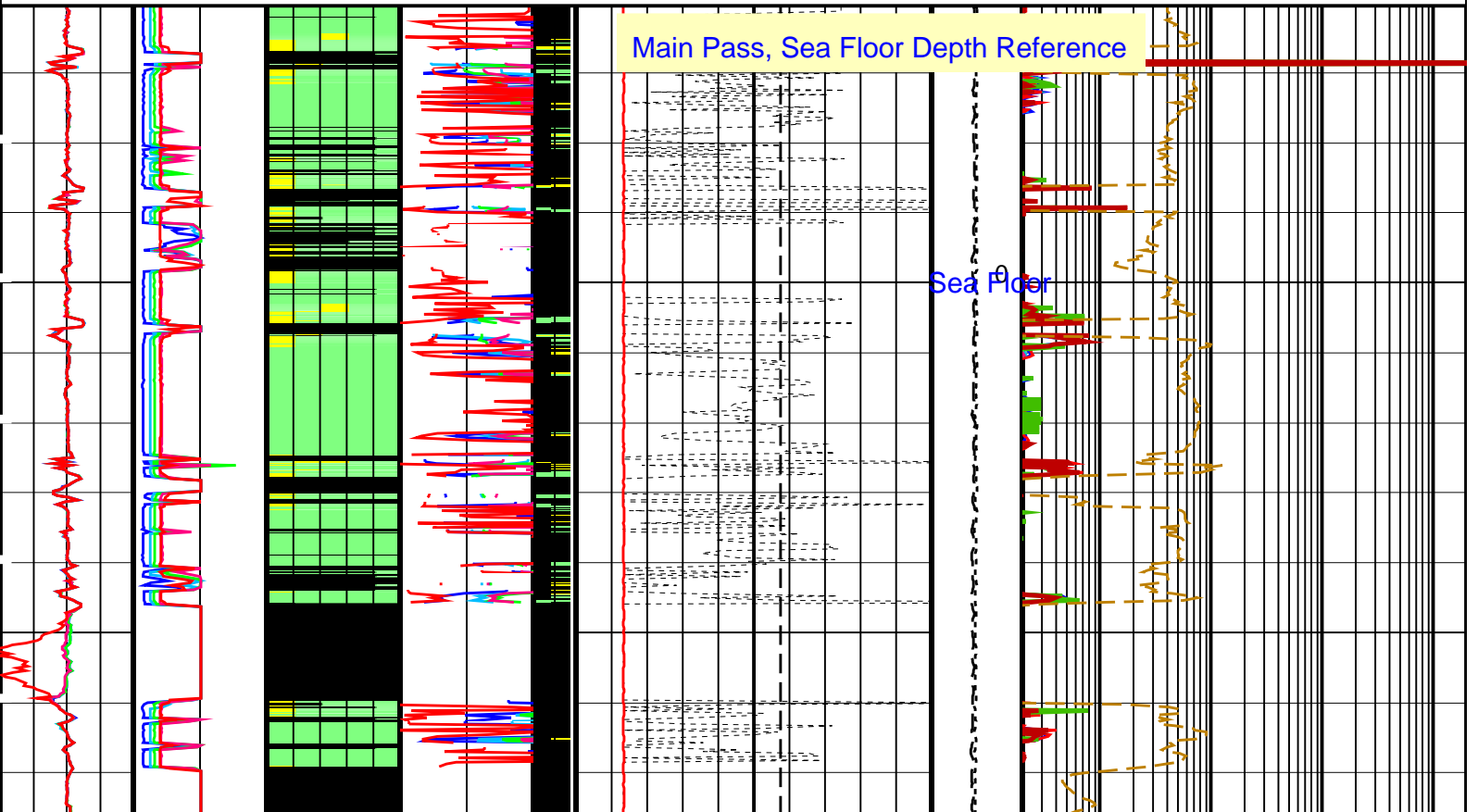
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

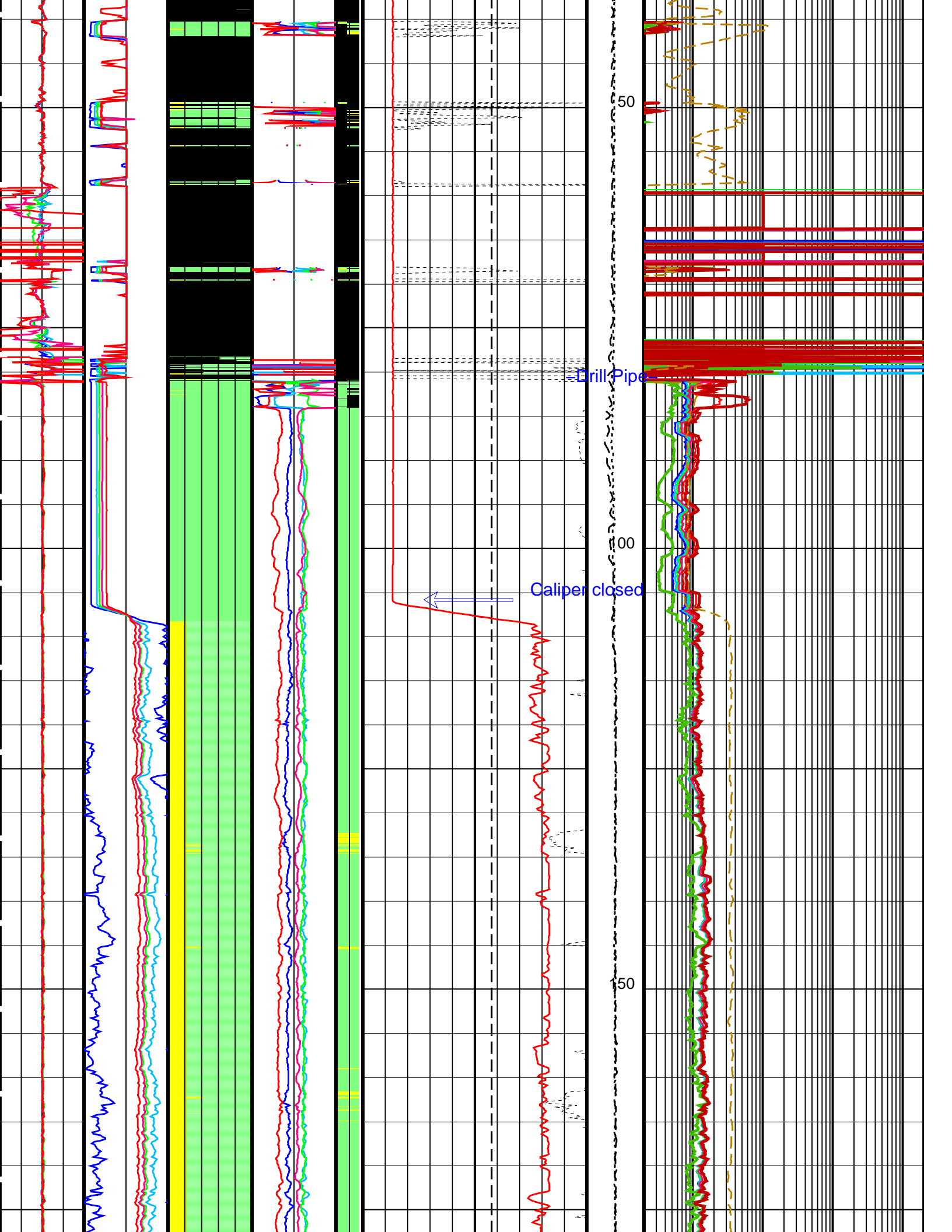
| RxoFlag | RTFlag |

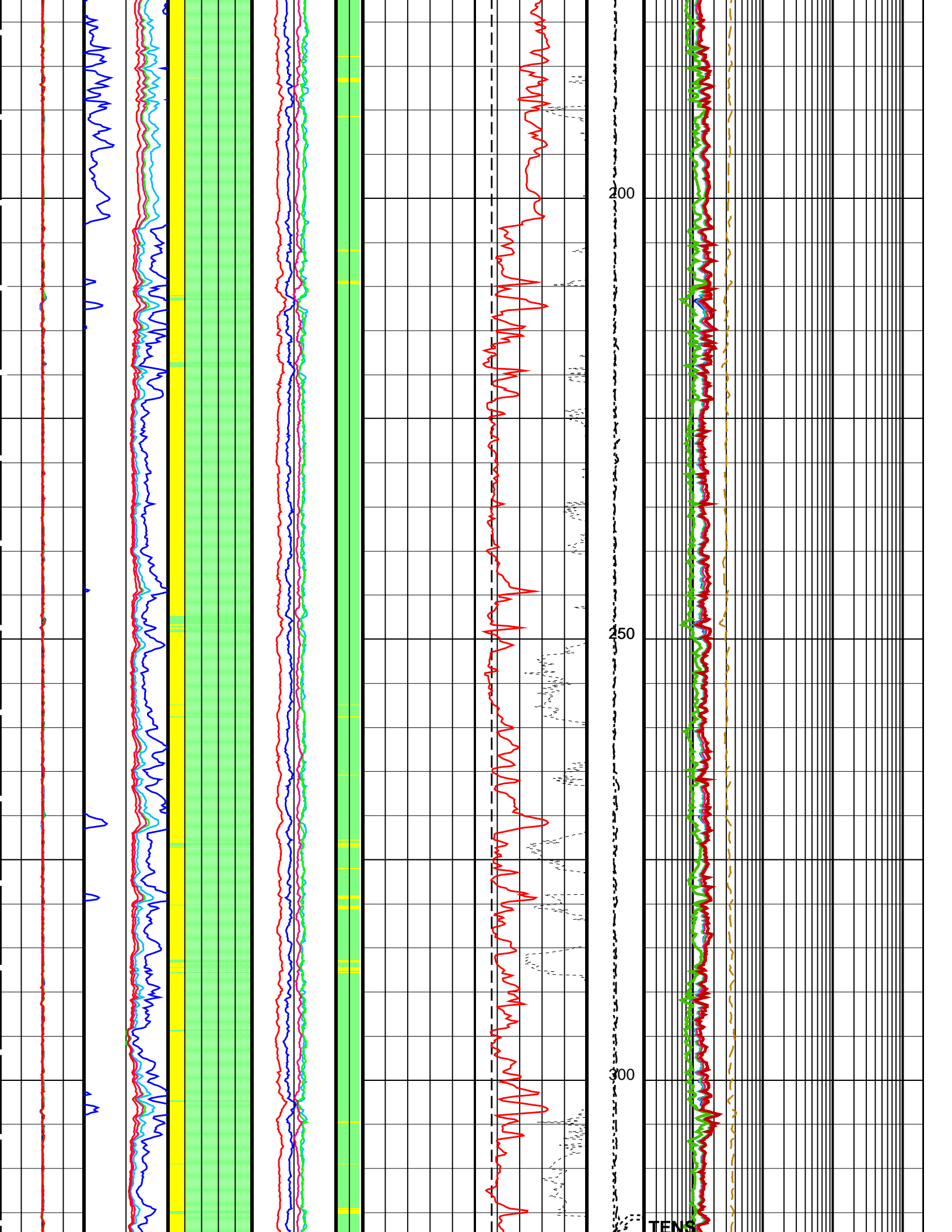
GREEN = OK

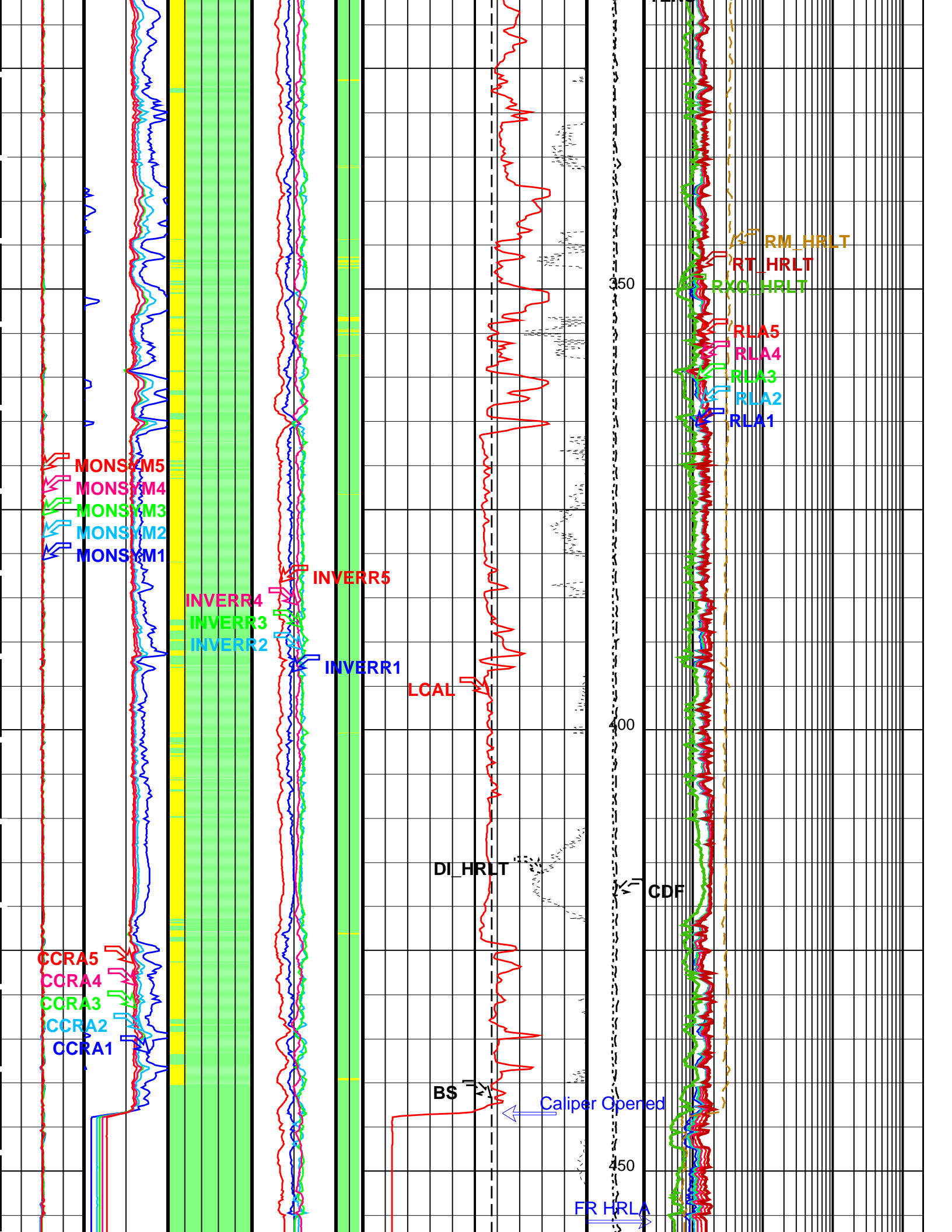
YELLOW = SHOULDER BED EFFECT

BLACK = NOK









*** HRLT FLAG TRACKS ***

BLACK areas show that the corresponding error flag is set.

Main 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		(INVERR1) (----) -15 15	(RES FLAGS) (----)	(BS) (IN) 0 20	Calibrated Downhole Force (CDF) (LBF) 3000 0	(RLA1) (OHMM) 0.2 2000
(MONSYM1) (----) -4 (----) 4	(CCRA1) (----) 0.8 1.2	Inversion Weight	(INVERR2) (----) -15 15		(DI_HRLT) (IN) 0 20	Tension (TENS) (LBF) 10000 0	(RLA2) (OHMM) 0.2 2000
(MONSYM2) (----) -4 (----) 4	(CCRA2) (----) 0.8 1.2		(INVERR3) (----) -15 15		HLDS Caliper (LCAL) (IN) 0 20		(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
							(RT_HRLT) (OHMM) 0.2 2000

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	12.1565	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	0.018227	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	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	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	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	2.6	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	LCAL	
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	-0.00265981	
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	0.953116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	
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	LCAL	
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	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	22.30	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	466	M
TDD	Total Depth - Driller	465.20	M
TDL	Total Depth - Logger	464.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLT_LQC Vertical Scale: 1:500 Graphics File Created: 24-Apr-2015 00:29

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_010LUP	FN:16	PRODUCER	17-Apr-2015 11:00	4112.5 M	3626.2 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_044PUP	FN:39	PRODUCER	24-Apr-2015 00:29		
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Company: Integrated Ocean Discovery Program Well: Expedition 355, Site U1456 C

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:16	PRODUCER	17-Apr-2015 11:00	4112.5 M	3626.2 M
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Output DLIS Files

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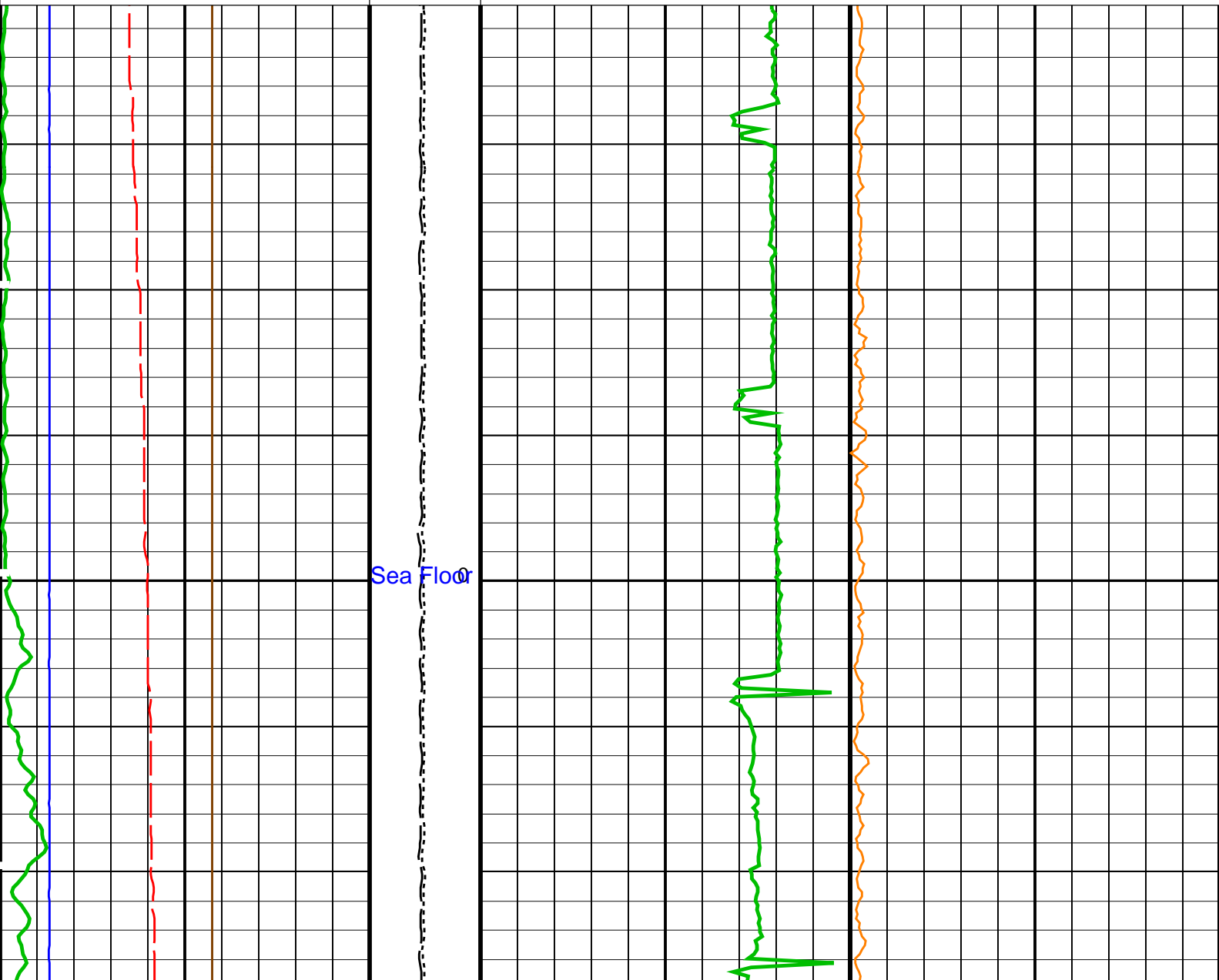
OP System Version: 19C0-187

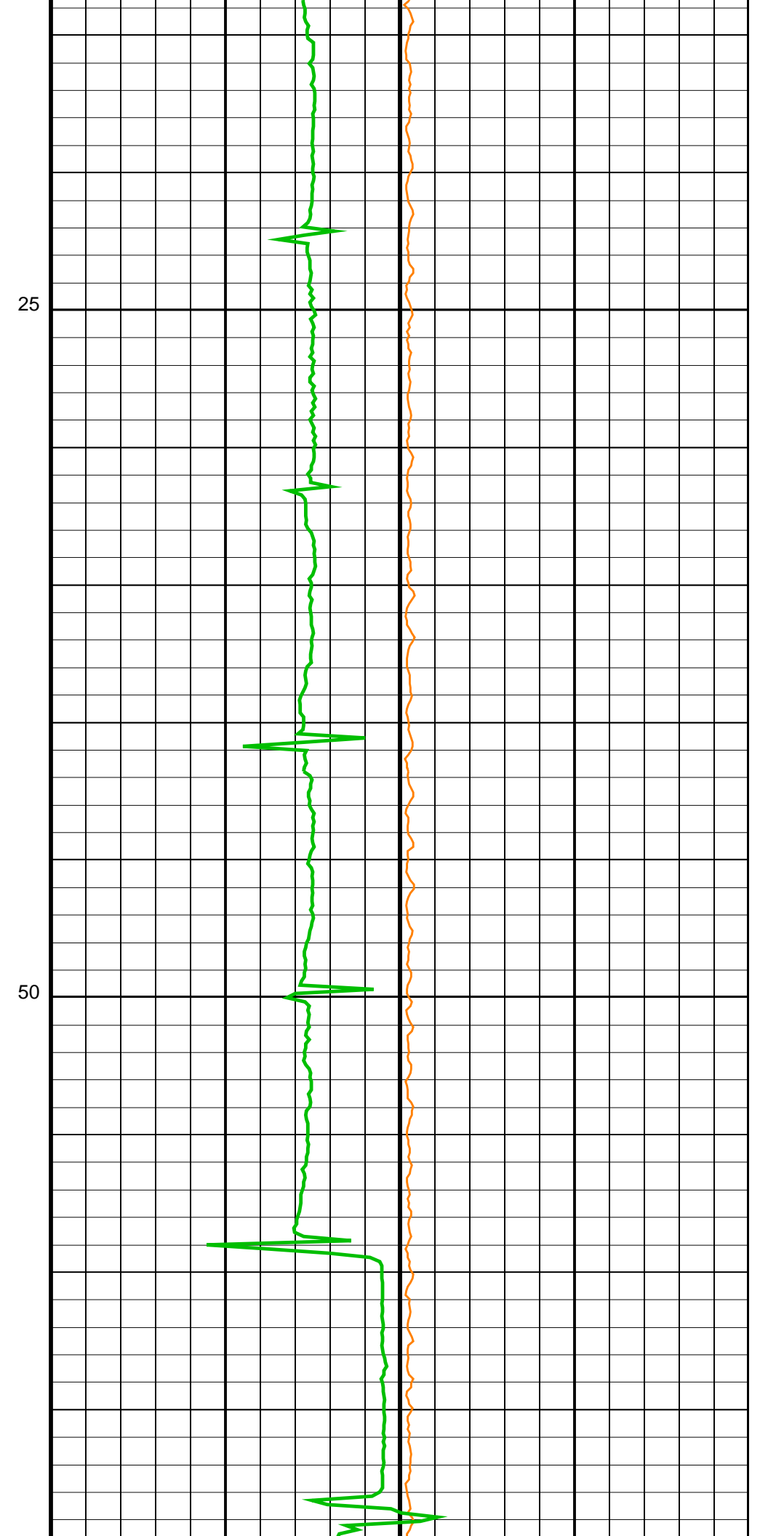
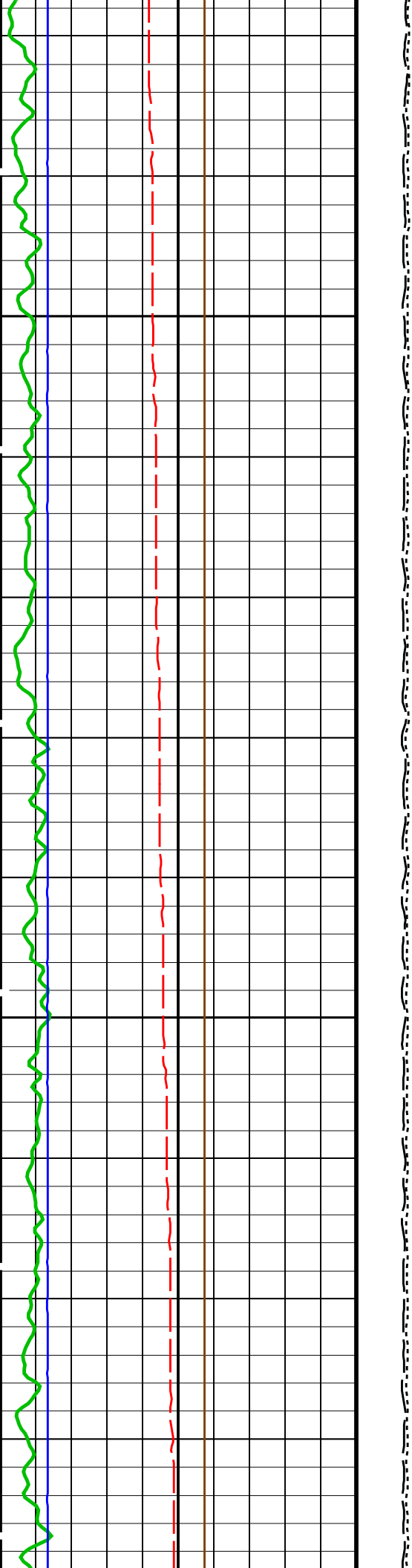
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HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

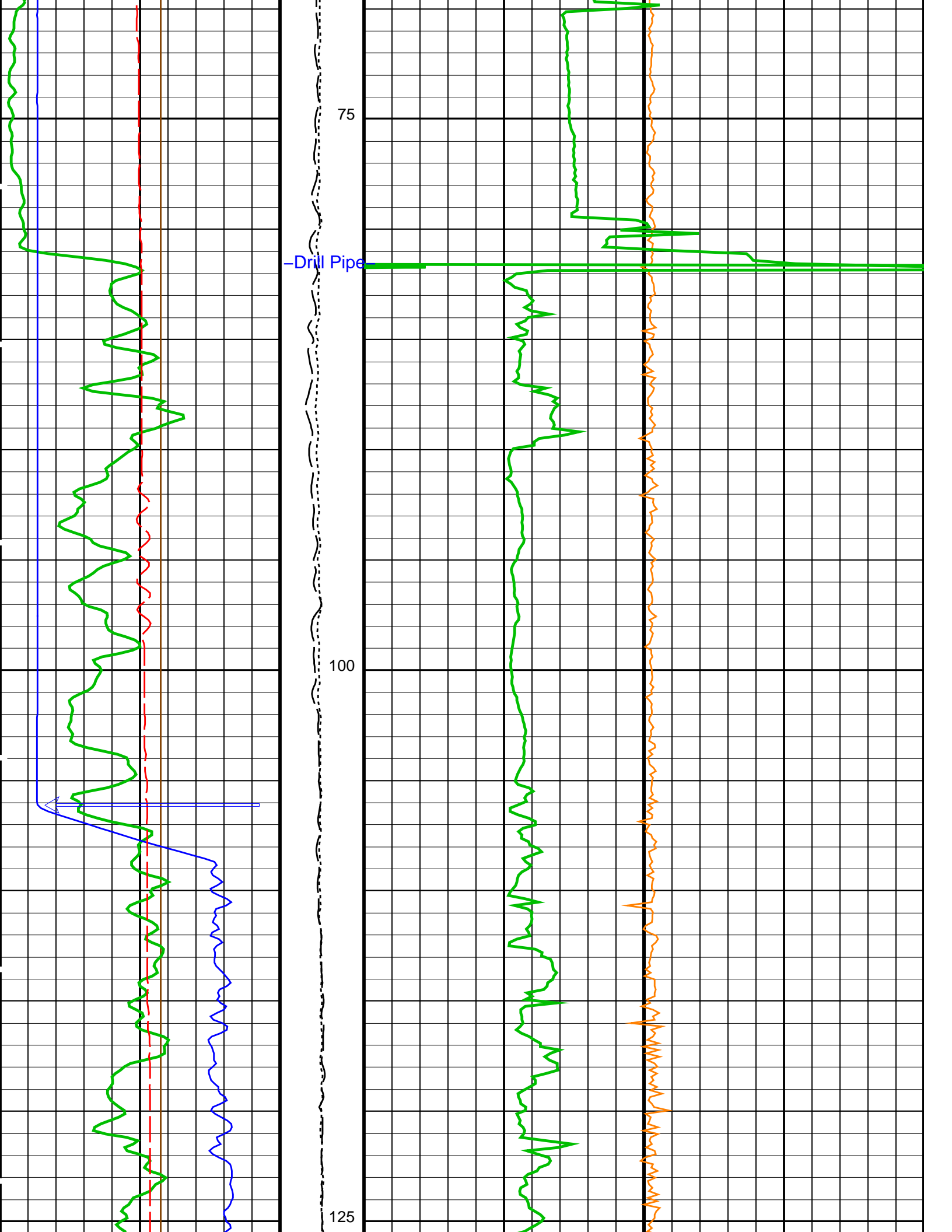
PIP SUMMARY

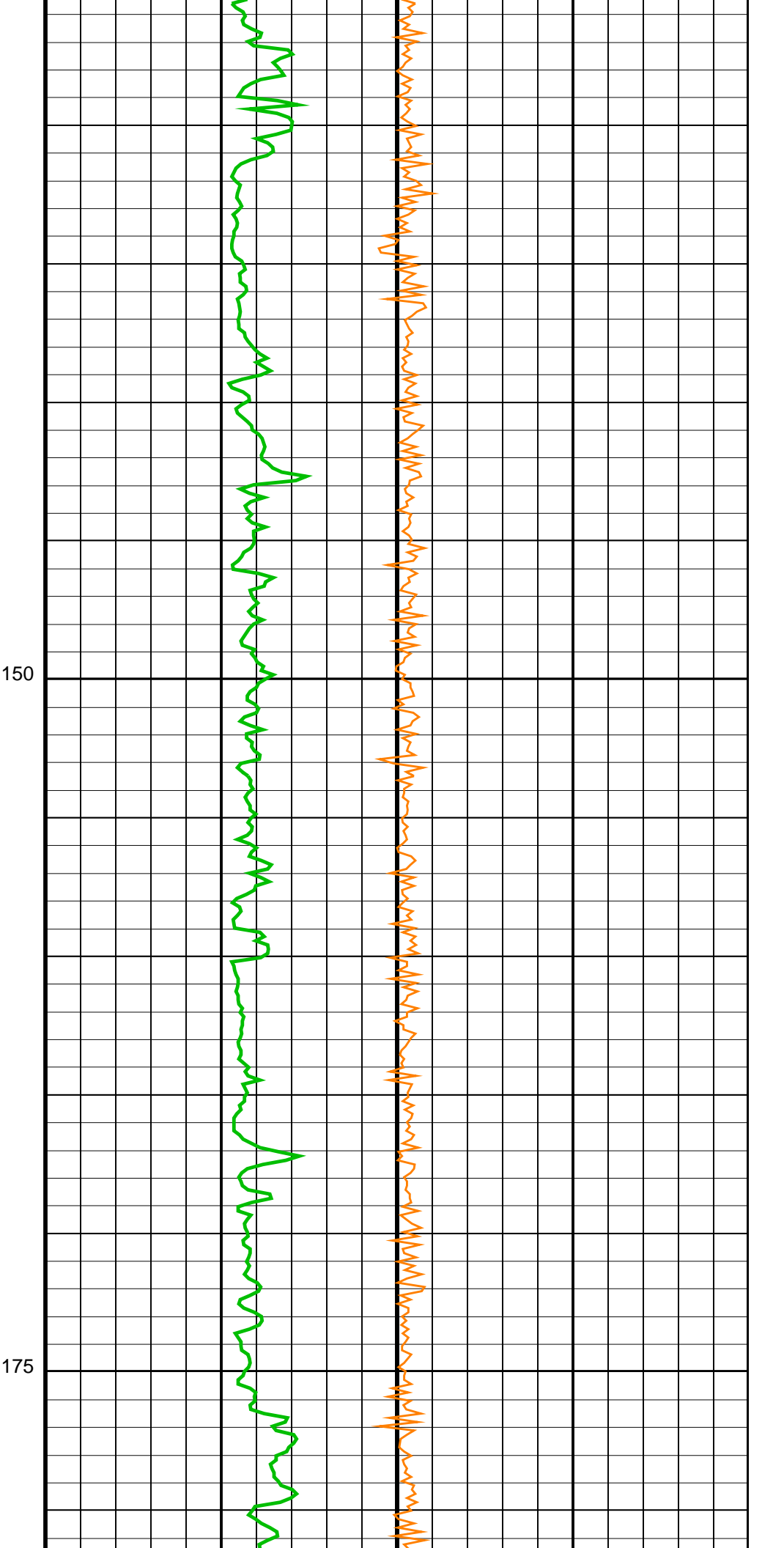
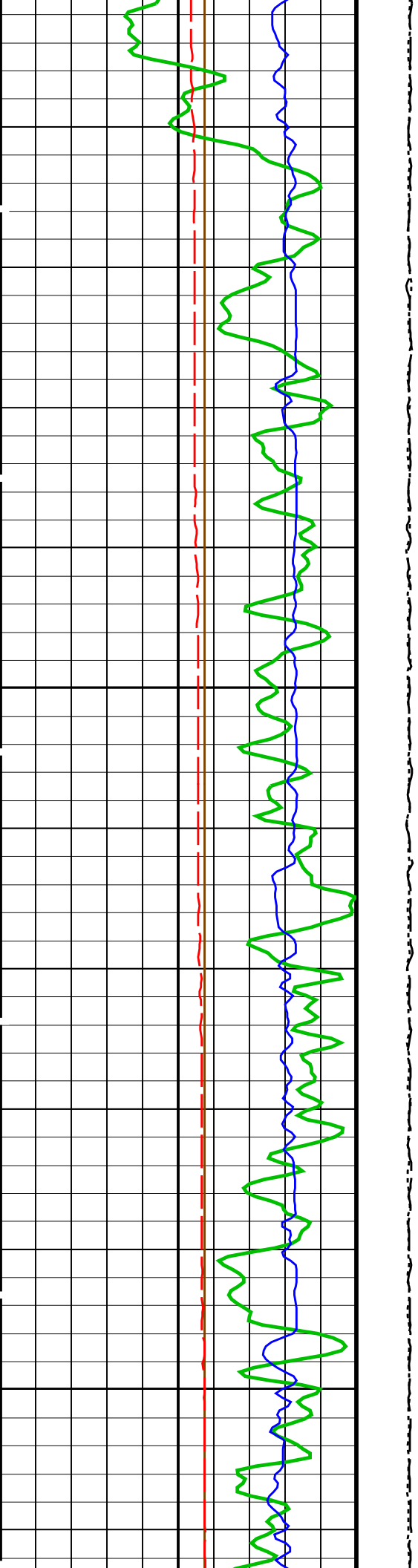
Time Mark Every 60 S

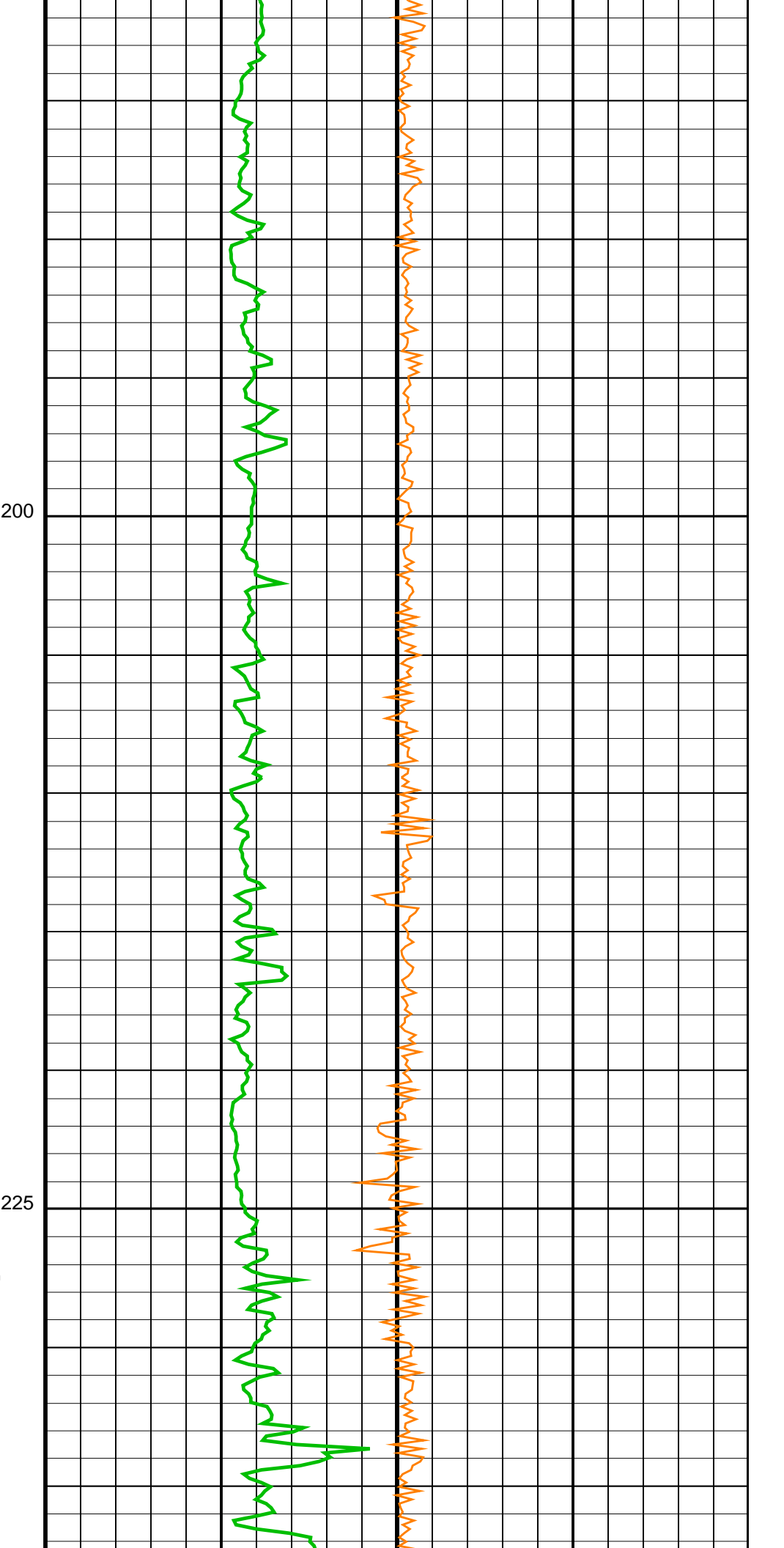
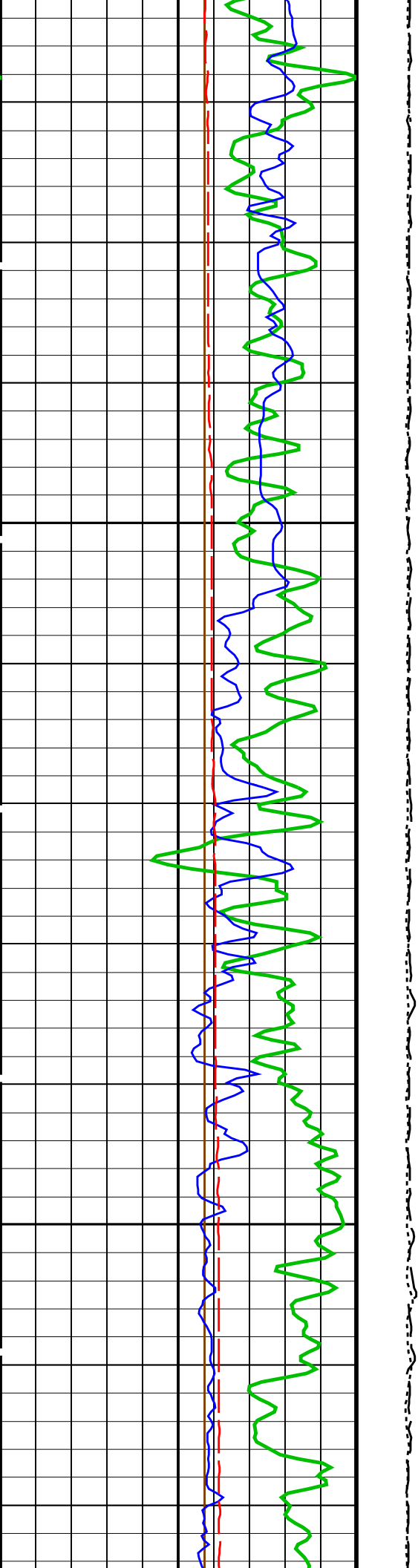
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<p style="color: red; text-align: center;">Mud temperature (MTEM)</p> <p style="text-align: center;">0 (DEGC) 15</p>	Main Pass, Sea Floor Depth Reference		
<p style="color: blue; text-align: center;">HLDS Caliper (LCAL)</p> <p style="text-align: center;">0 (IN) 20</p>	<p style="color: green; text-align: center;">Calibrated Downhole Force (CDF) (LBF)</p> <p style="text-align: center;">3000 0</p>	<p style="color: green; text-align: center;">Dual-Coil Susceptibility (MSSLSUS_LDEO)</p> <p style="text-align: center;">-7500 (PPM) 7500</p>	
<p style="color: brown; text-align: center;">Bit Size (BS)</p> <p style="text-align: center;">0 (IN) 20</p>	<p style="text-align: center;">Tension (TENS) (LBF)</p> <p style="text-align: center;">10000 0</p>	<p style="color: orange; text-align: center;">Axial Acceleration (MSSZACC_LDEO)</p> <p style="text-align: center;">0 (M/S²) 20</p>	

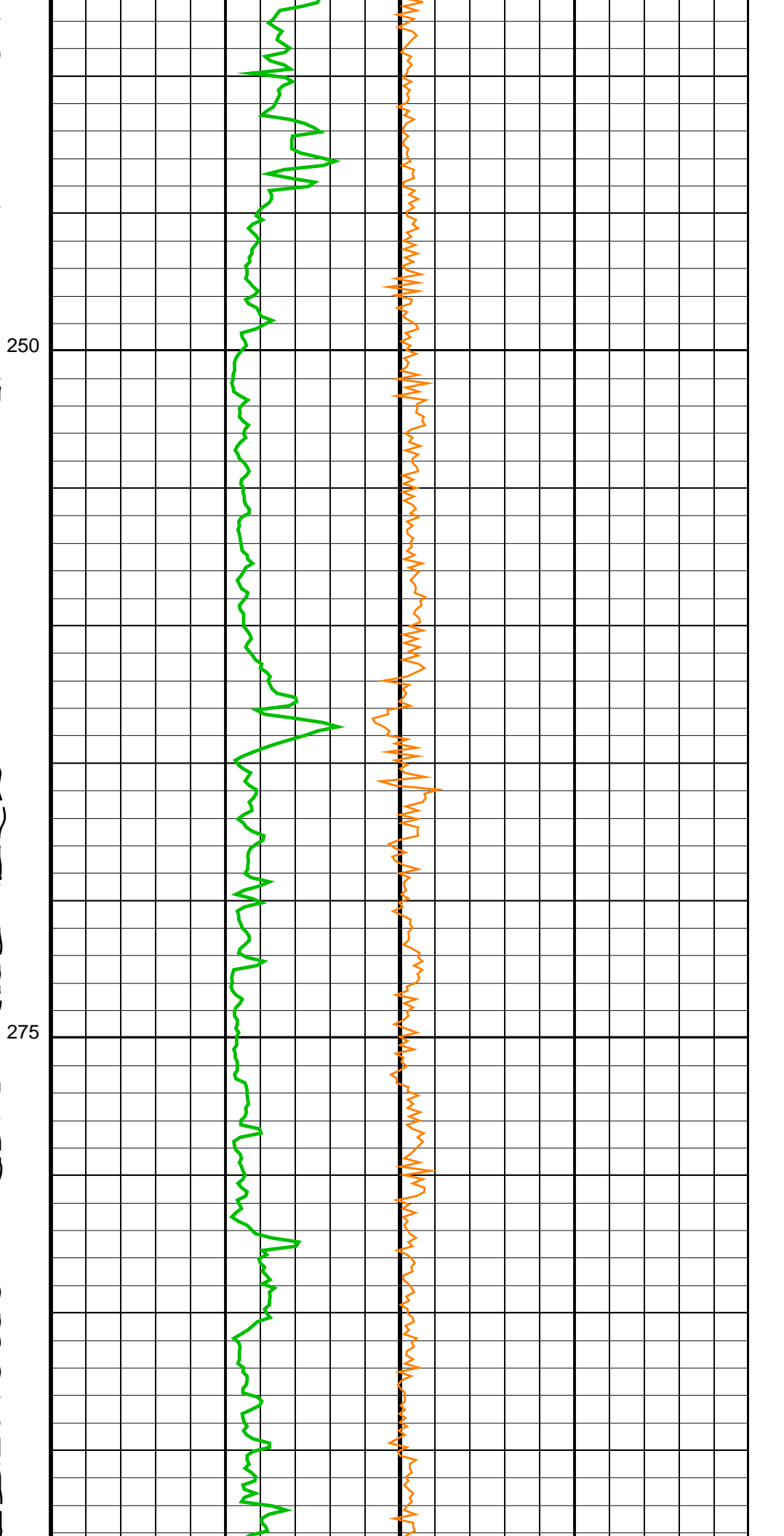
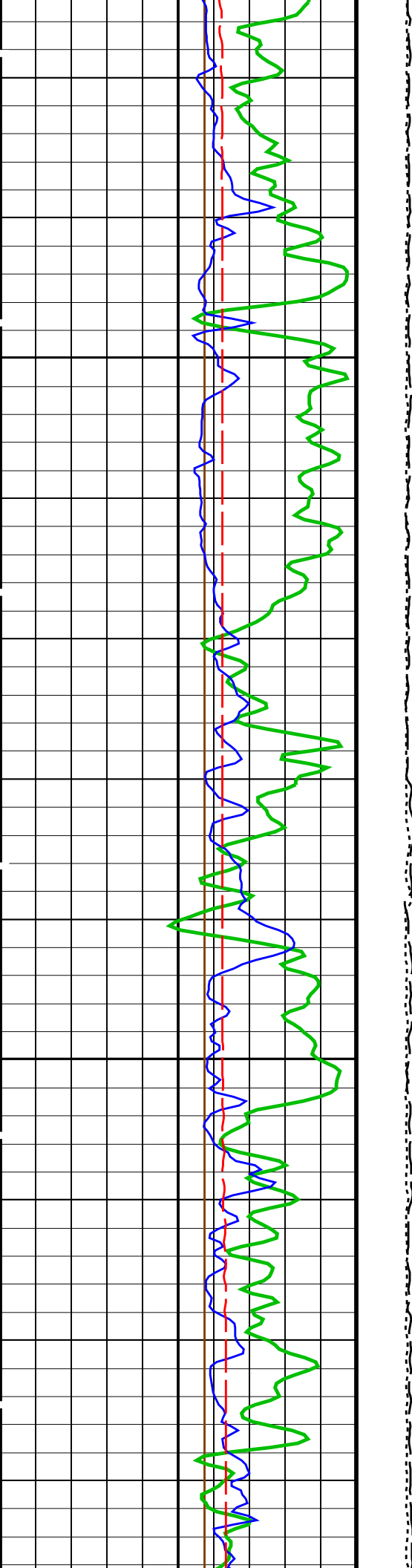


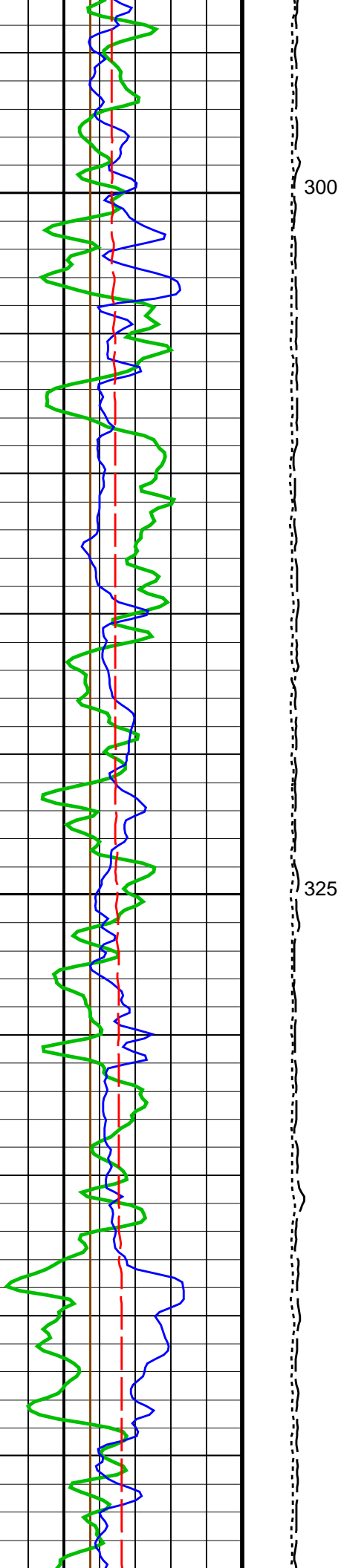


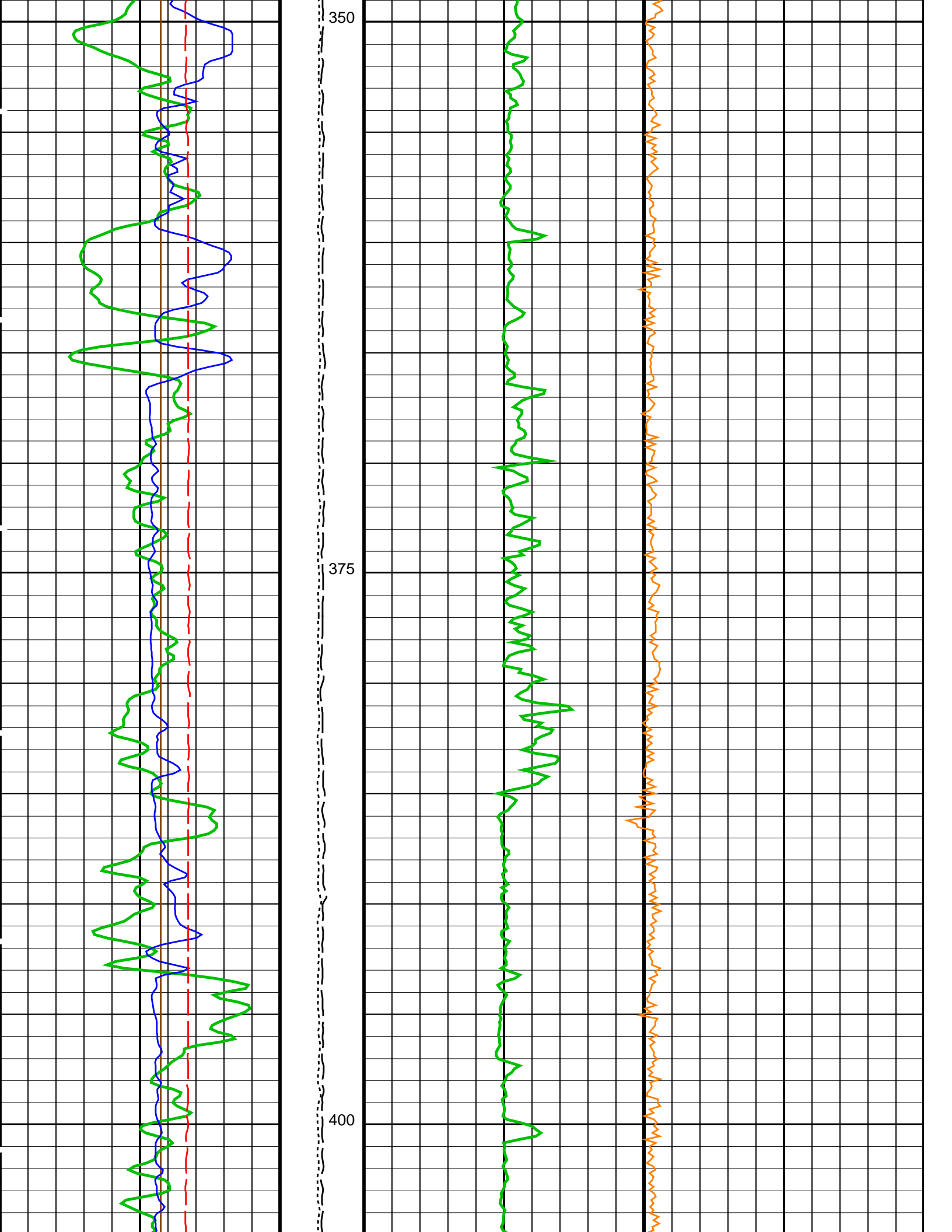


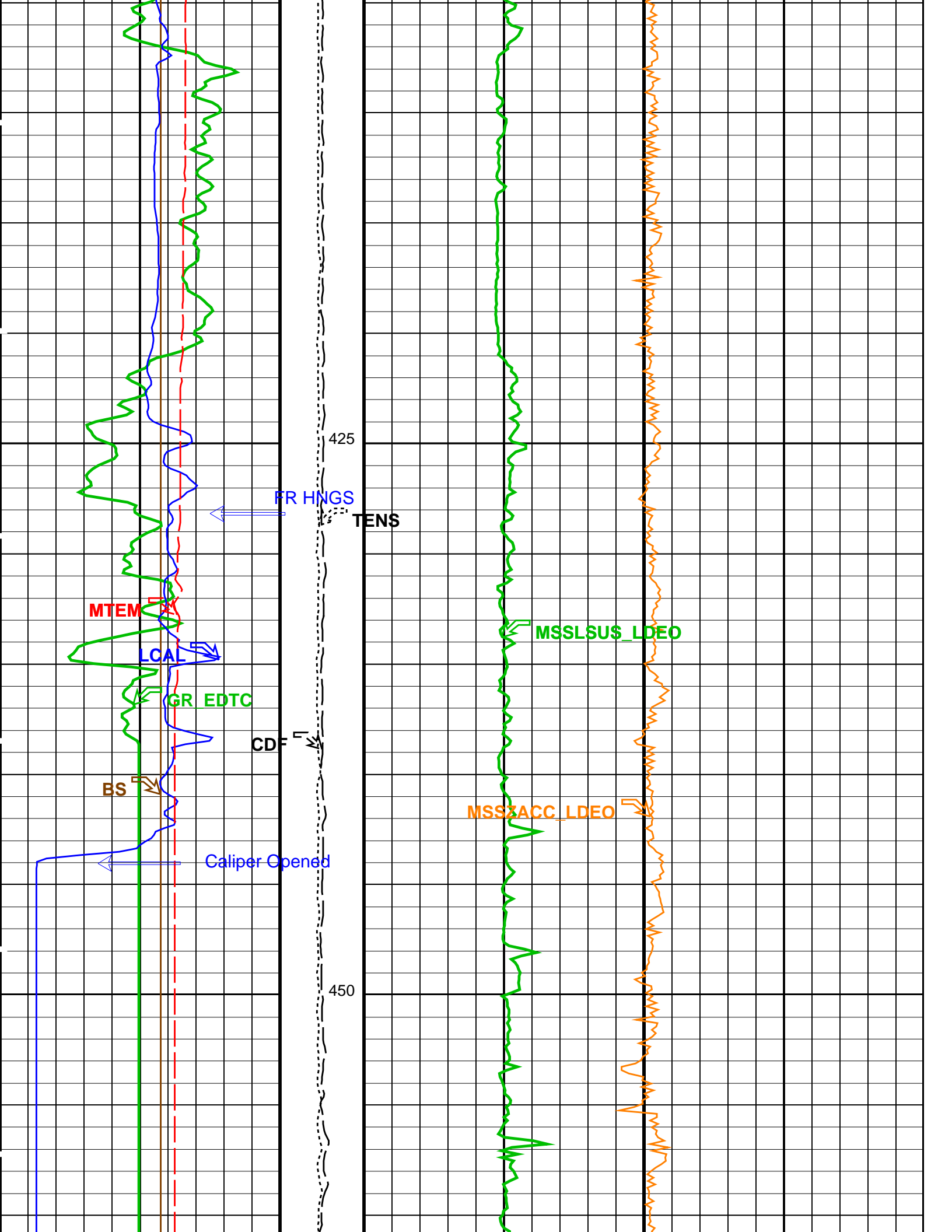


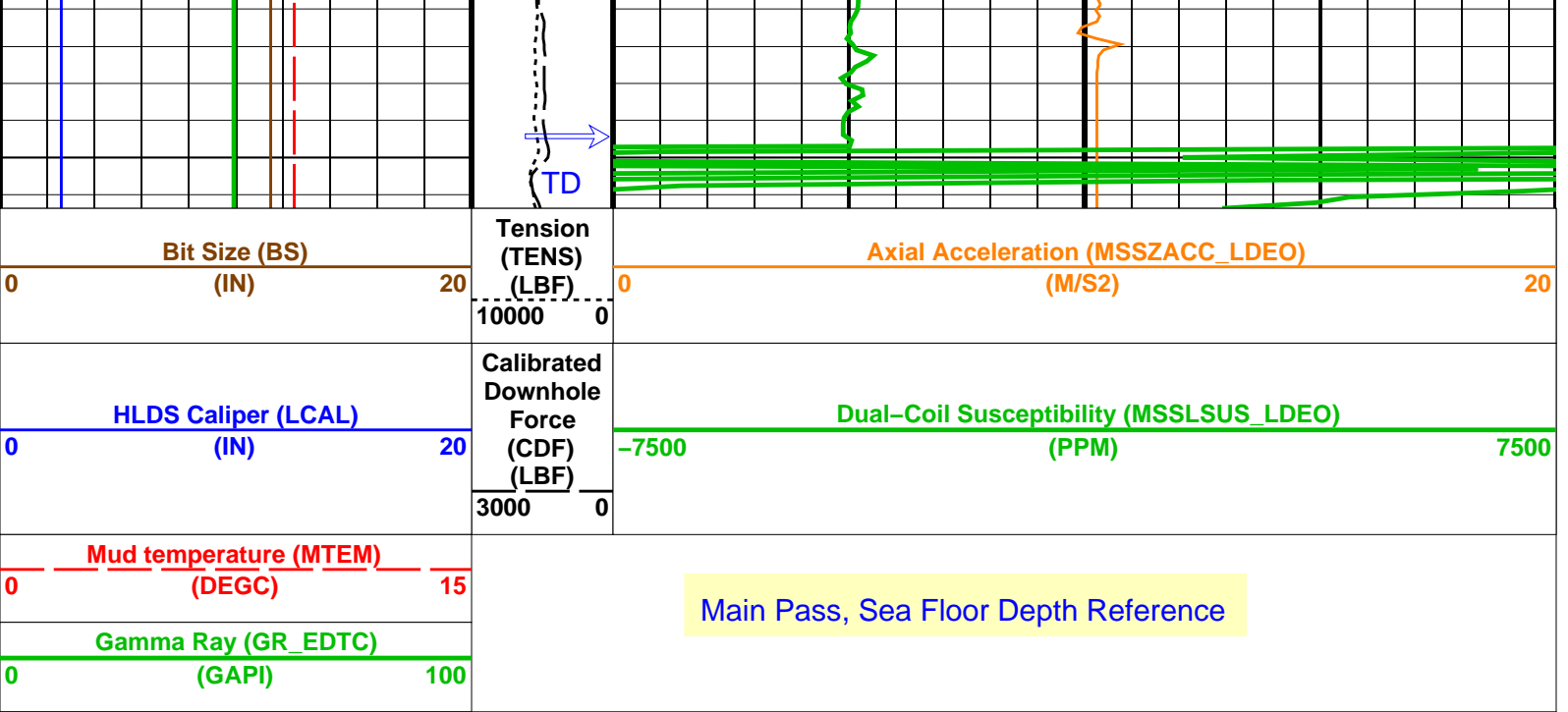












PIP SUMMARY

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	12.1565	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	0.018227	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	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	
PROCMFO	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	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	2.6	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	LCAL	
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	-0.00265981	
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	0.953116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	
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	LCAL	
GDEV	Average Angular Deviation of Borehole from Normal	0	DEG
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO	Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	NATU	
MWCO	Mud Weight Correction Option	NO	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	20	DEGC
SOCN	Standoff Distance	0.5	IN
SOCO	Standoff Correction Option	NO	
TPOS_EDTC	EDTC Tool Centered/Eccentered	Eccentered	
U-ETELM_EDTS	Telemetry Mode for eWAFE	Standard_EDTS	
U-TELM_EDTS	Telemetry Mode for WAFE	Standard_EDTS	
System and Miscellaneous			
ALTDPCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	22.30	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	466	M
TDD	Total Depth - Driller	465.20	M
TDL	Total Depth - Logger	464.00	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		

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:16	PRODUCER	17-Apr-2015 11:00	4112.5 M	3626.2 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_044PUP	FN:39	PRODUCER	24-Apr-2015 00:29		
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Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_010LUP	FN:16	PRODUCER	17-Apr-2015 11:00	4112.5 M	3626.2 M
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Output DLIS Files

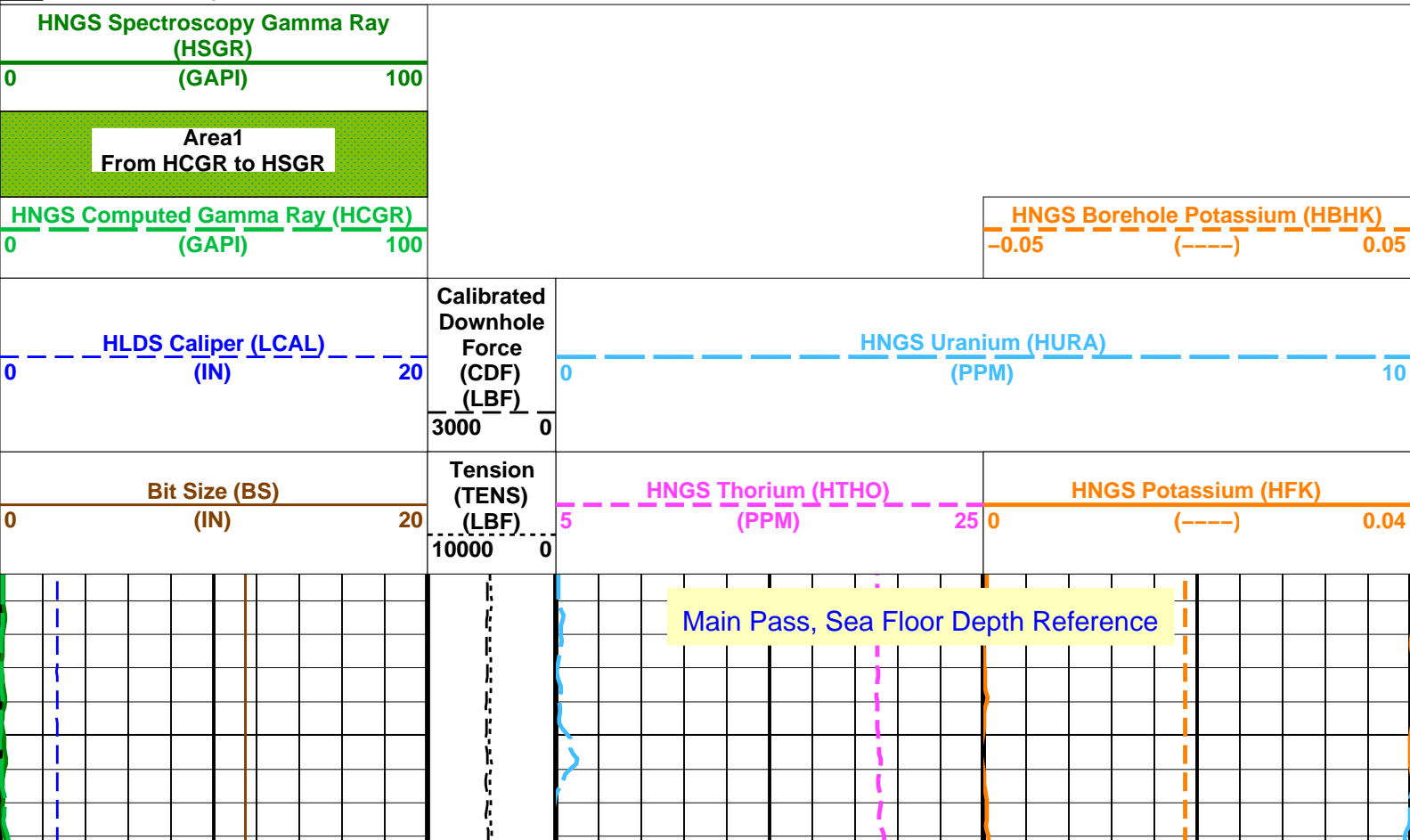
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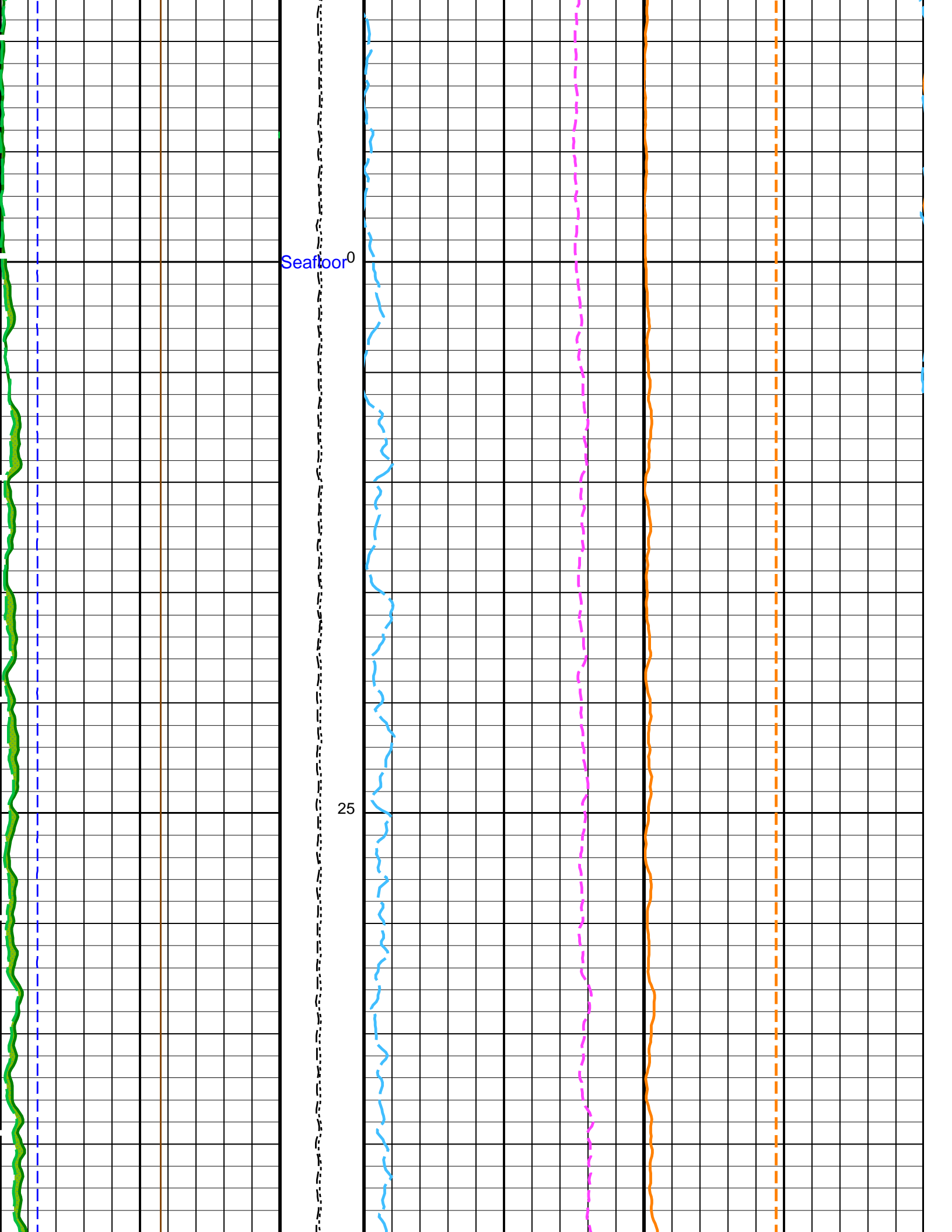
OP System Version: 19C0-187

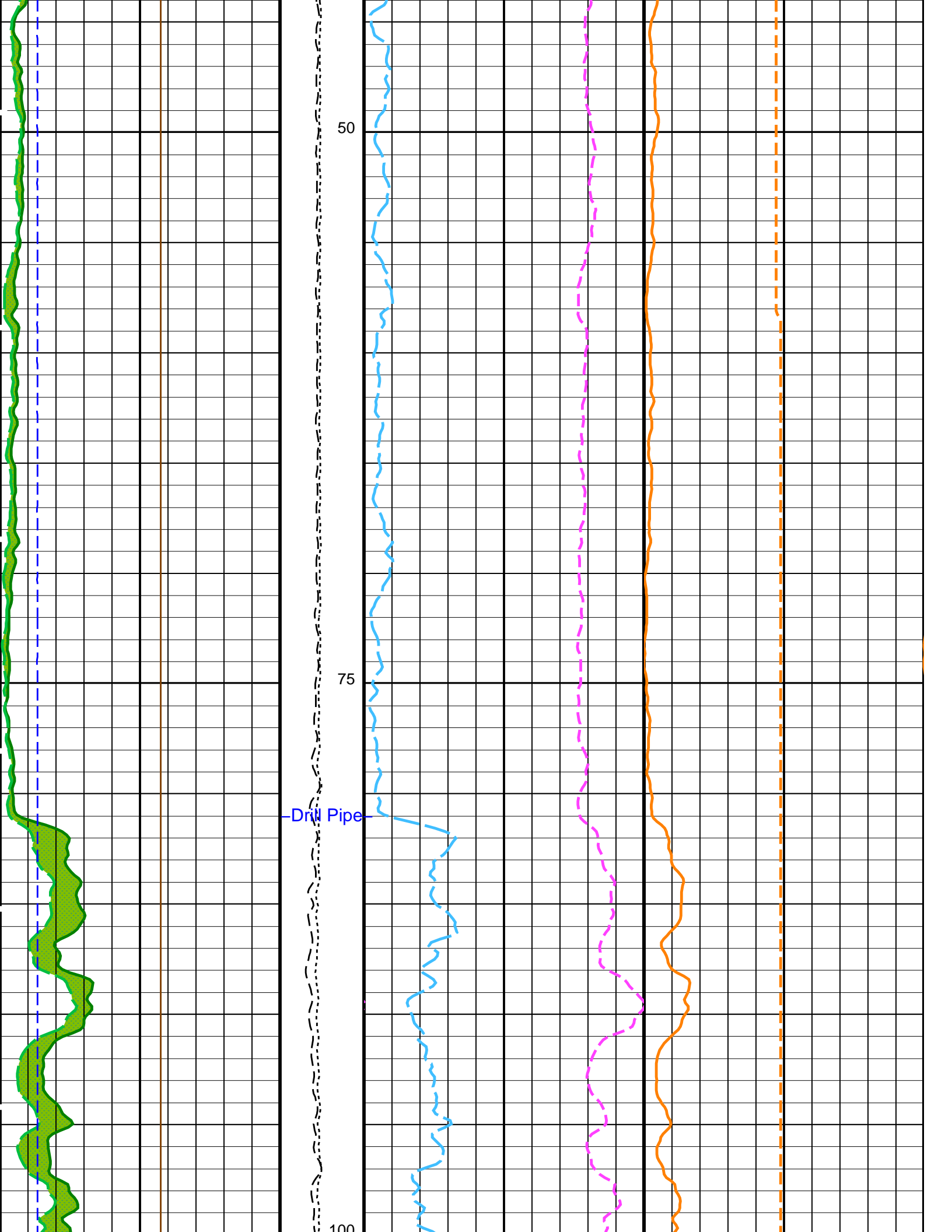
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EDTC-B	SKK-5169-EDTCB		

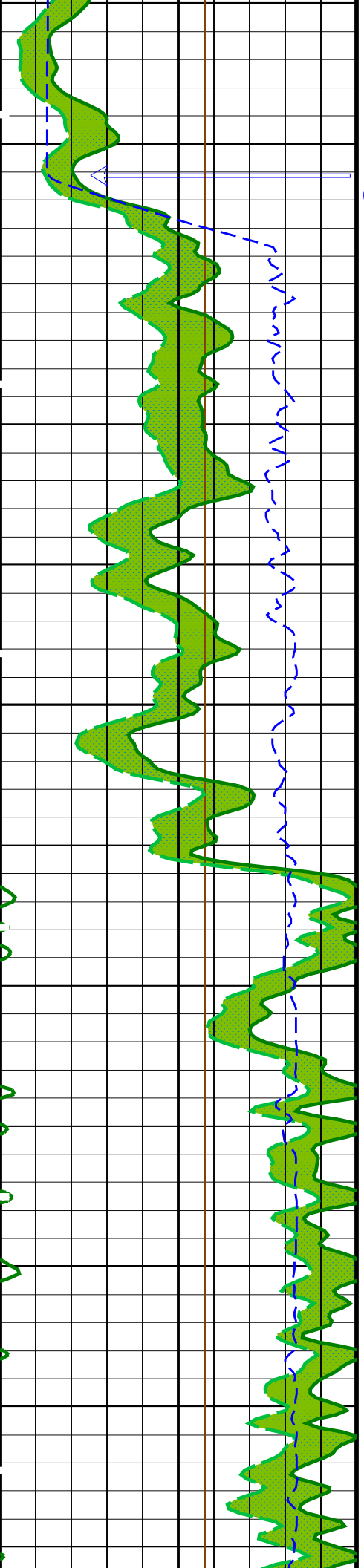
PIP SUMMARY

Time Mark Every 60 S

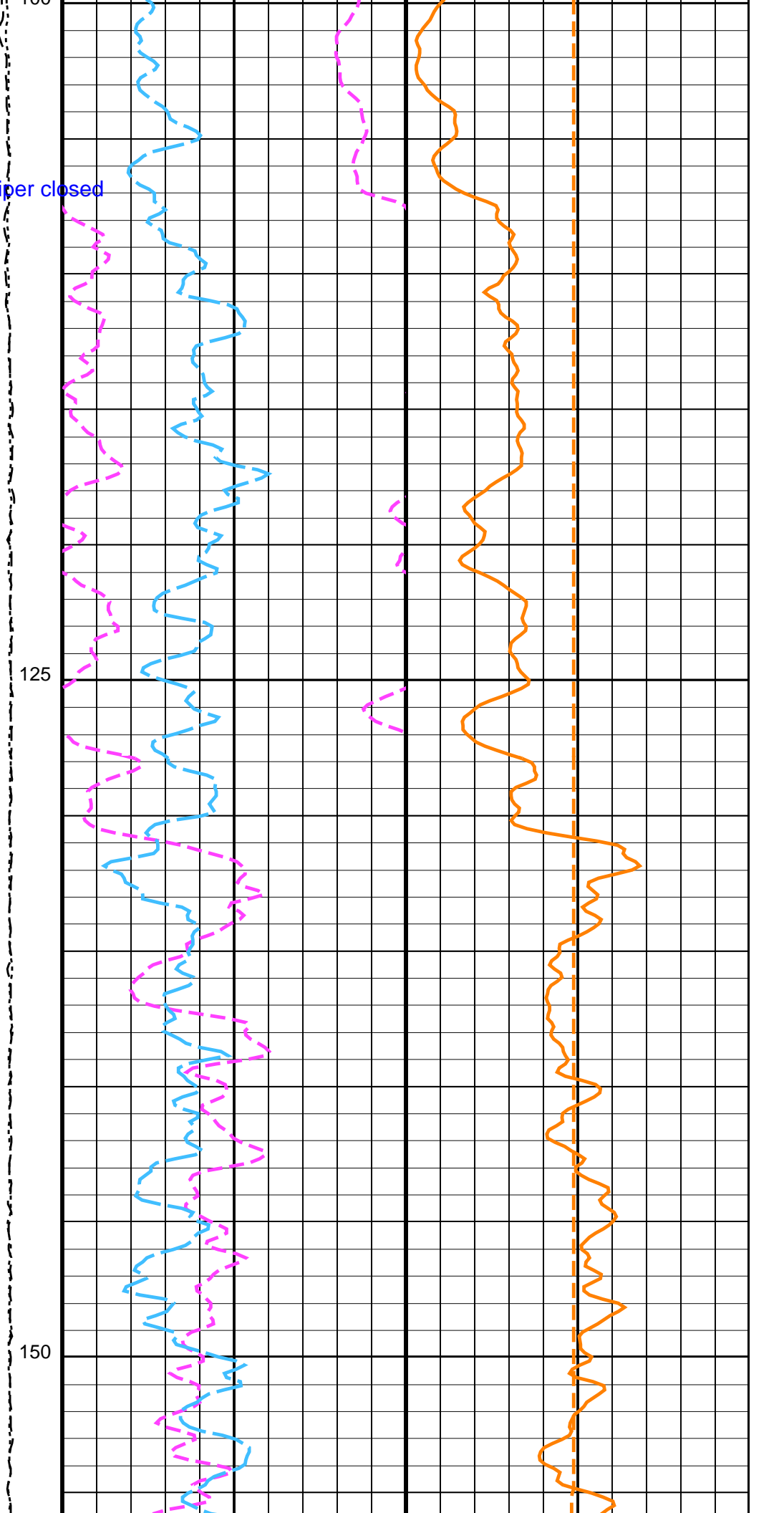


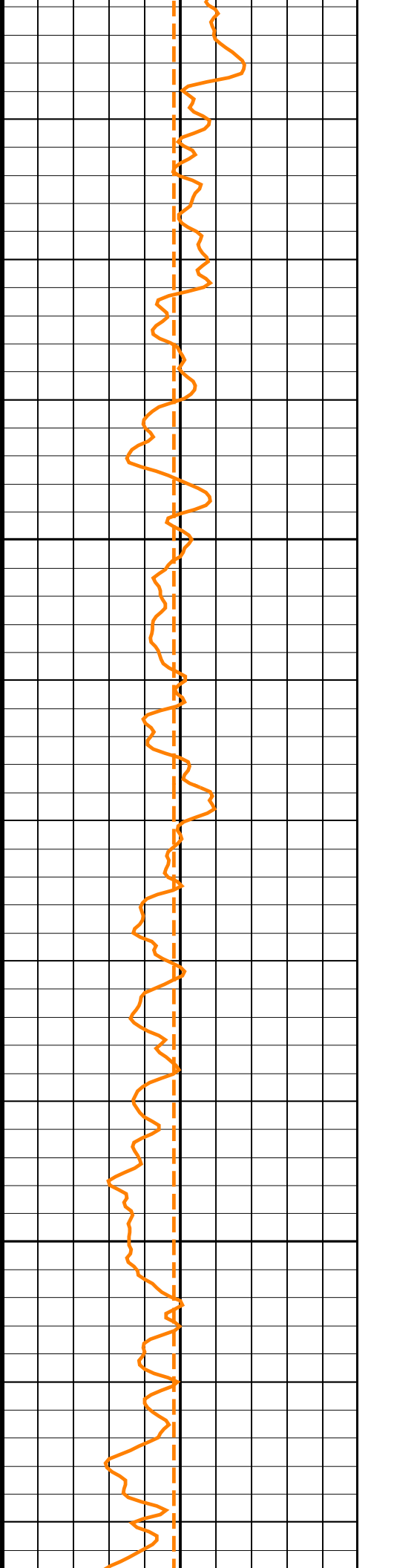
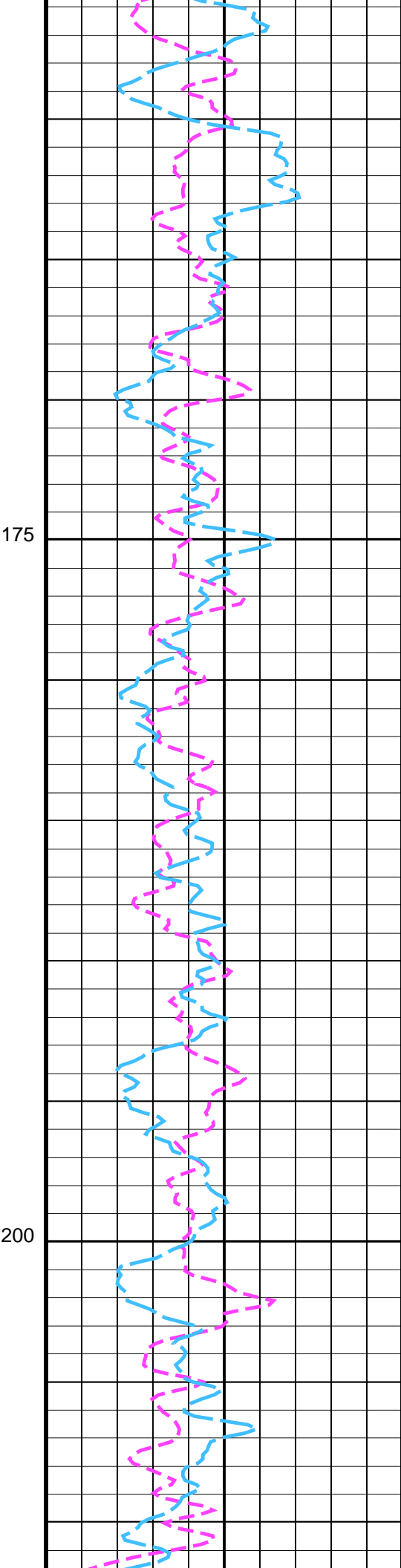
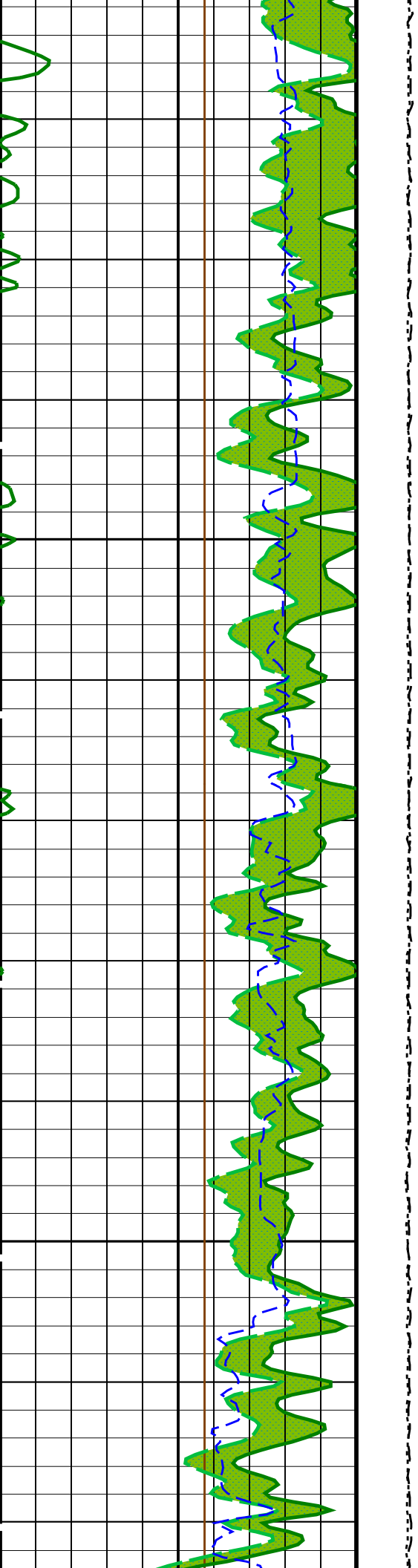


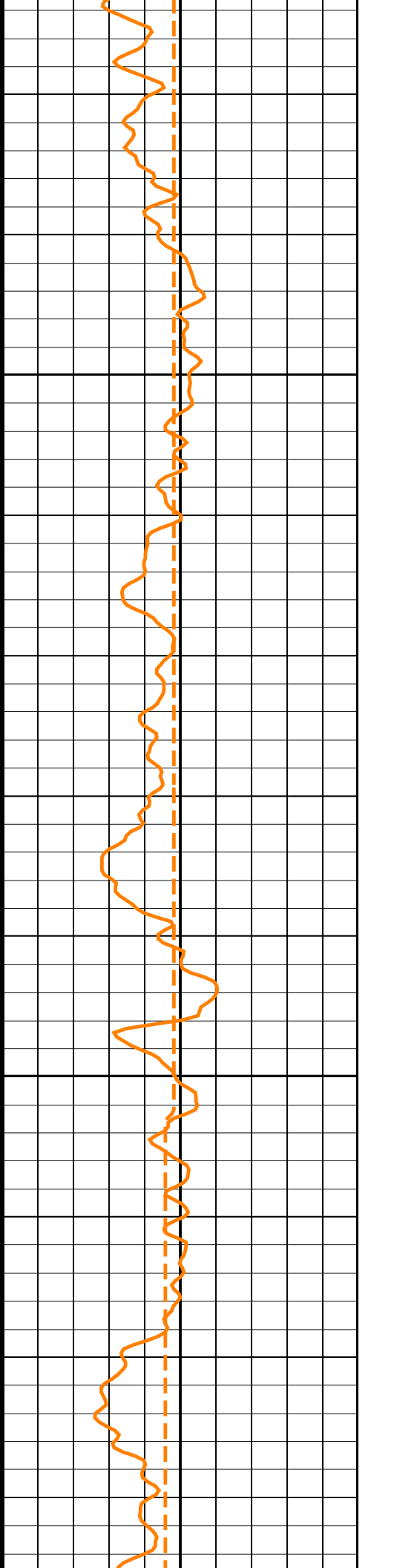
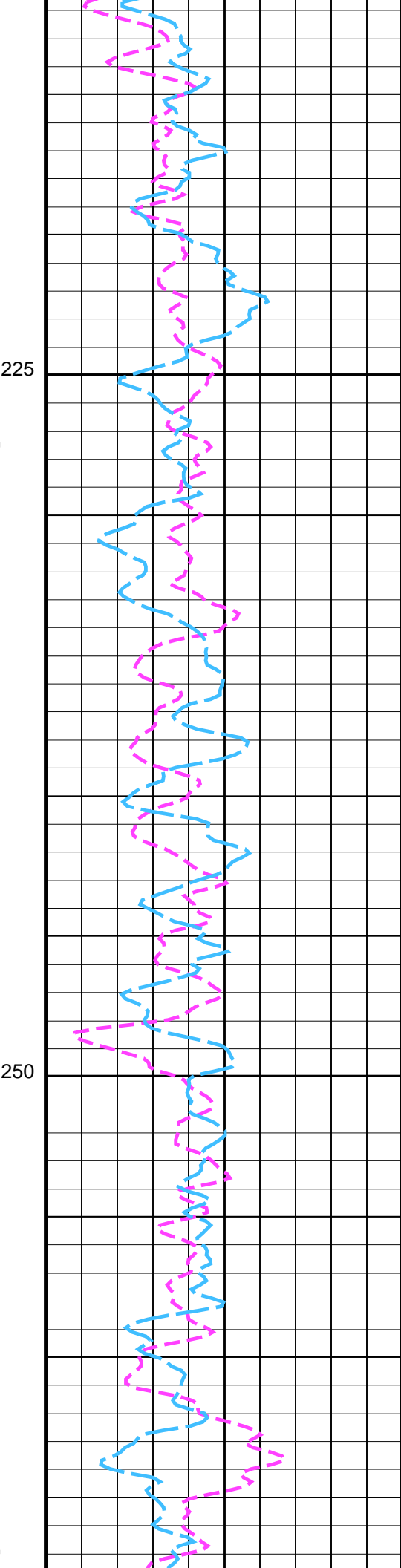
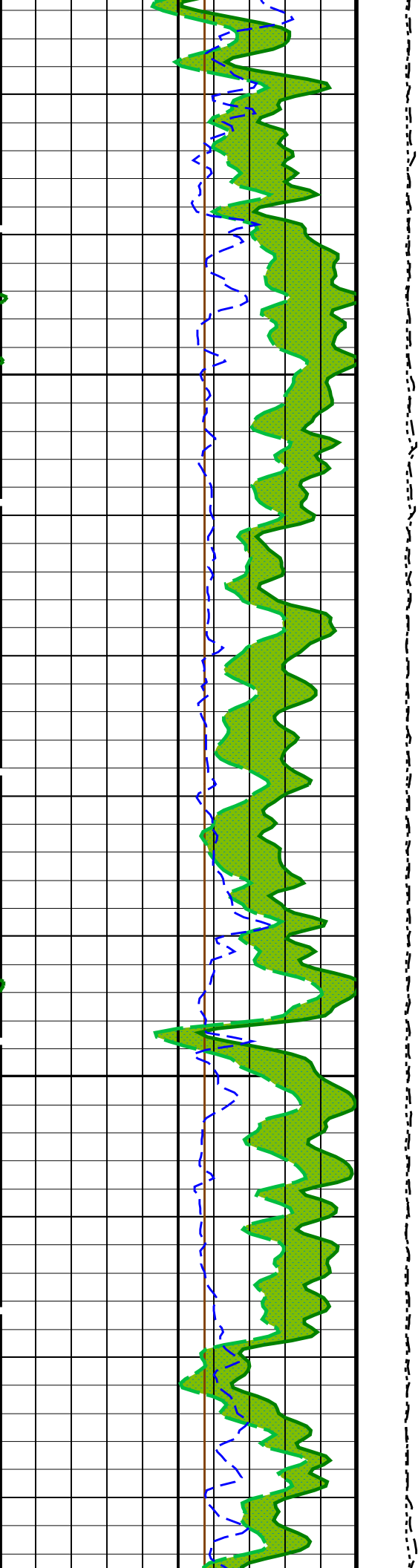


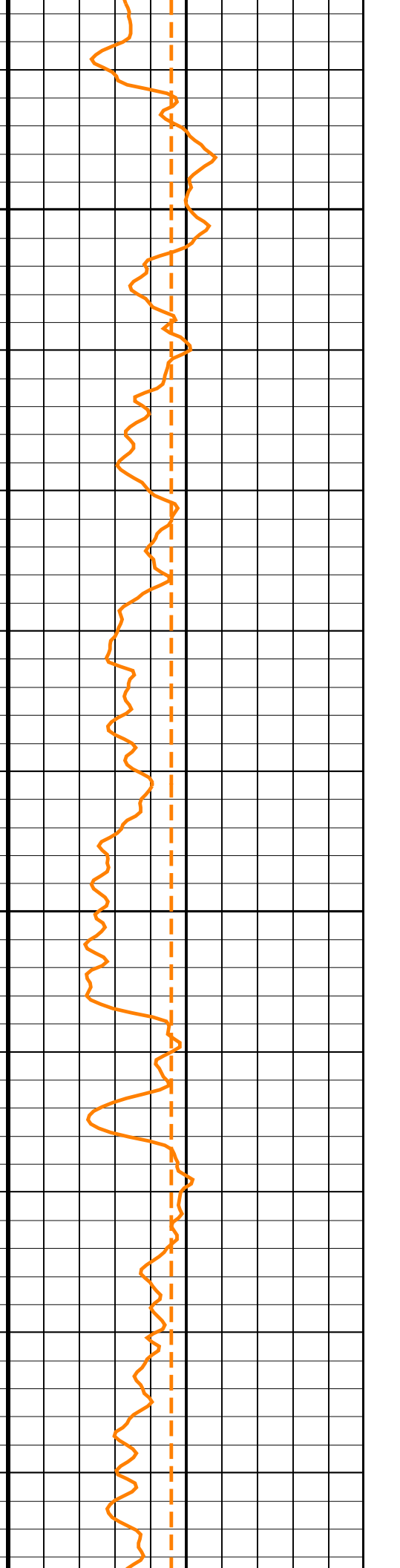
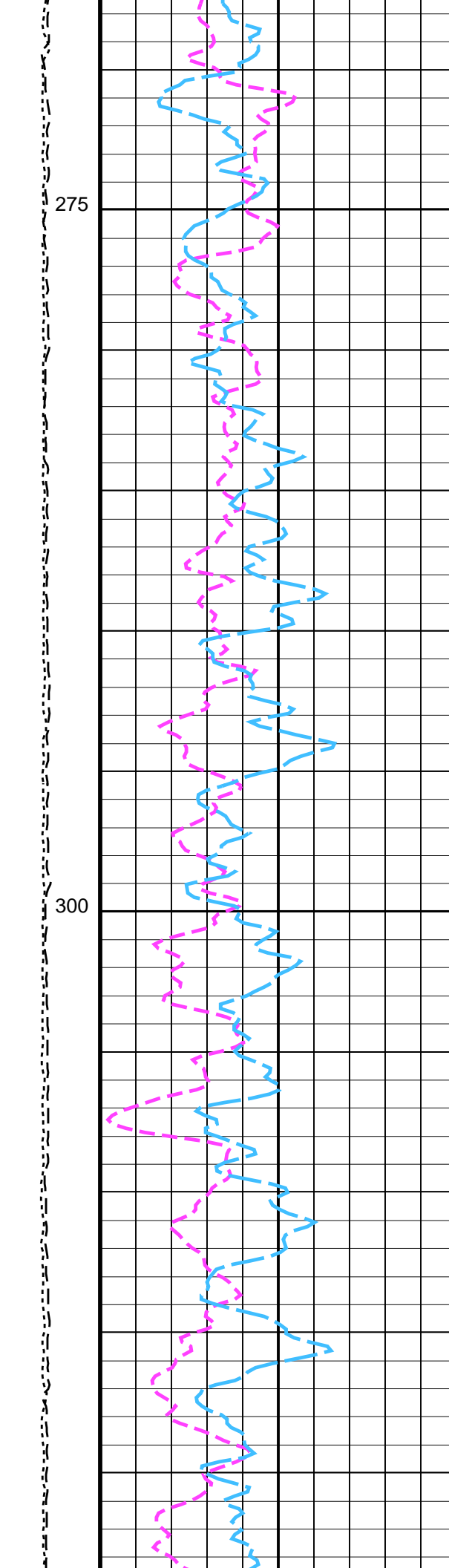
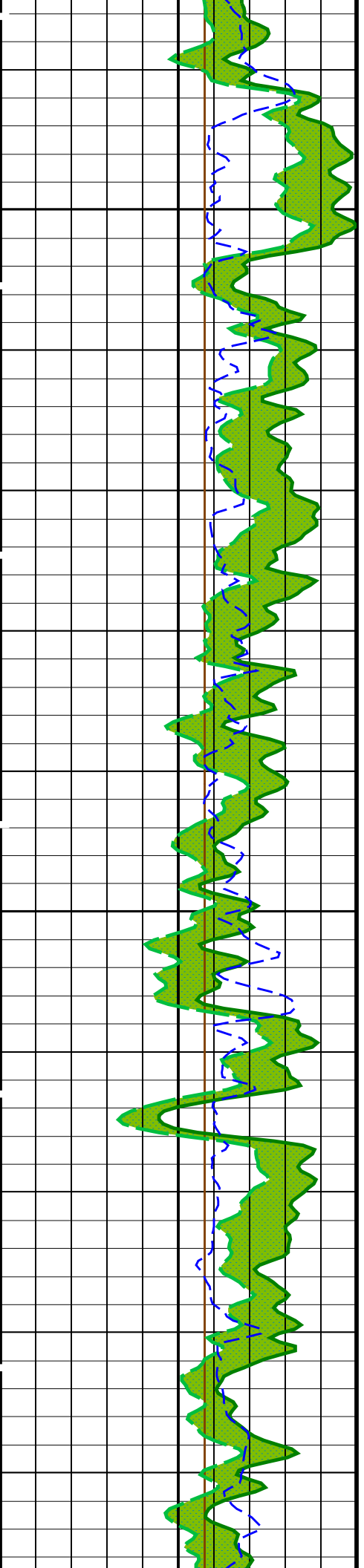


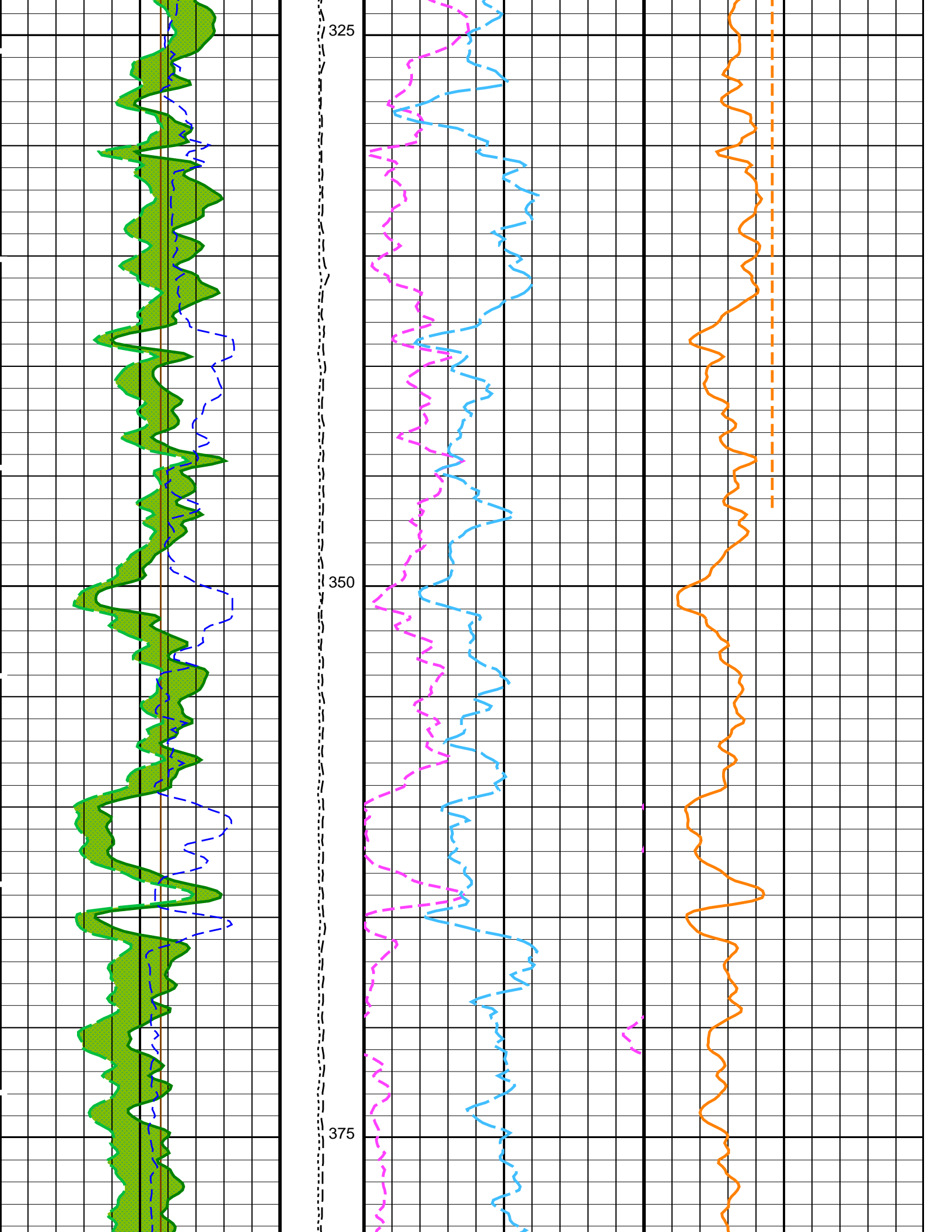
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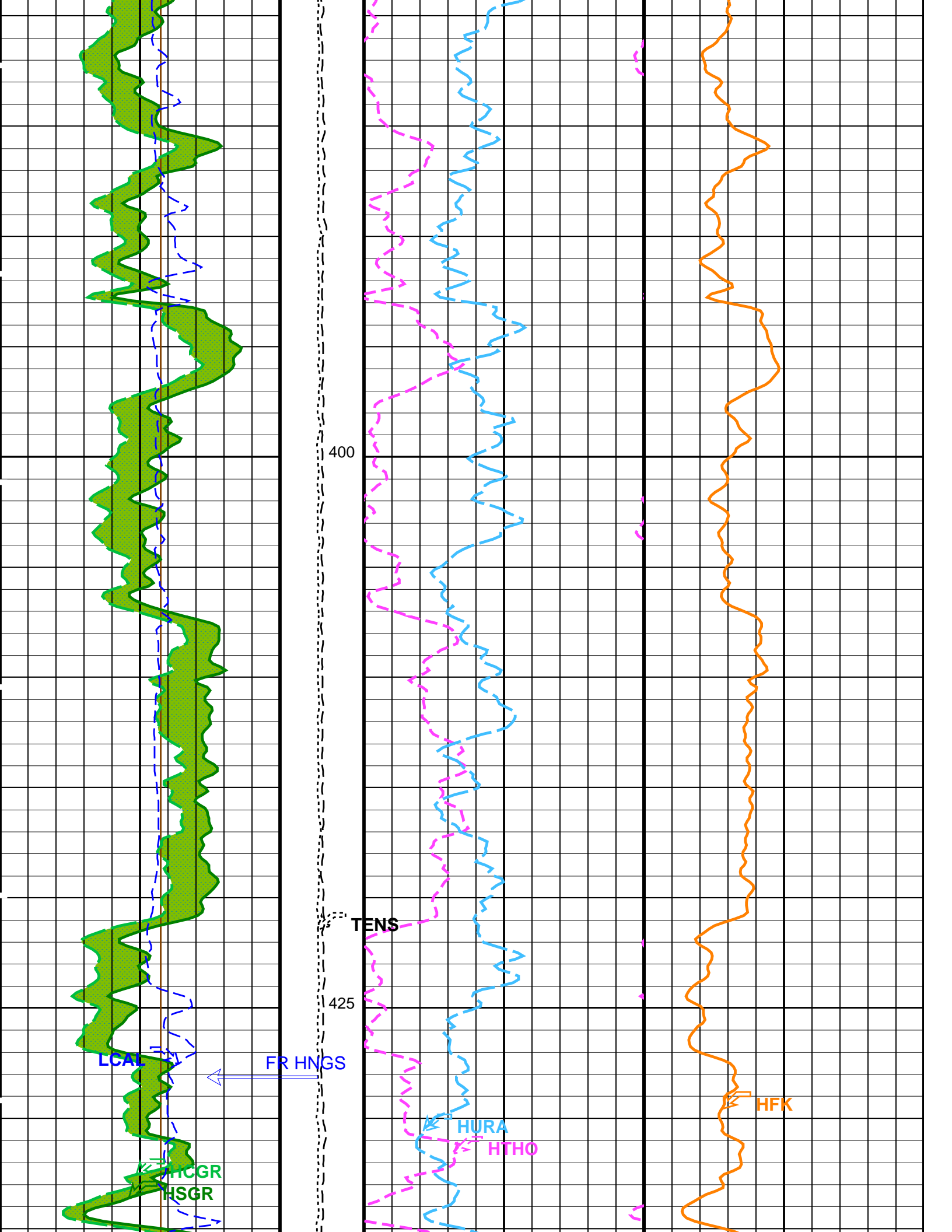


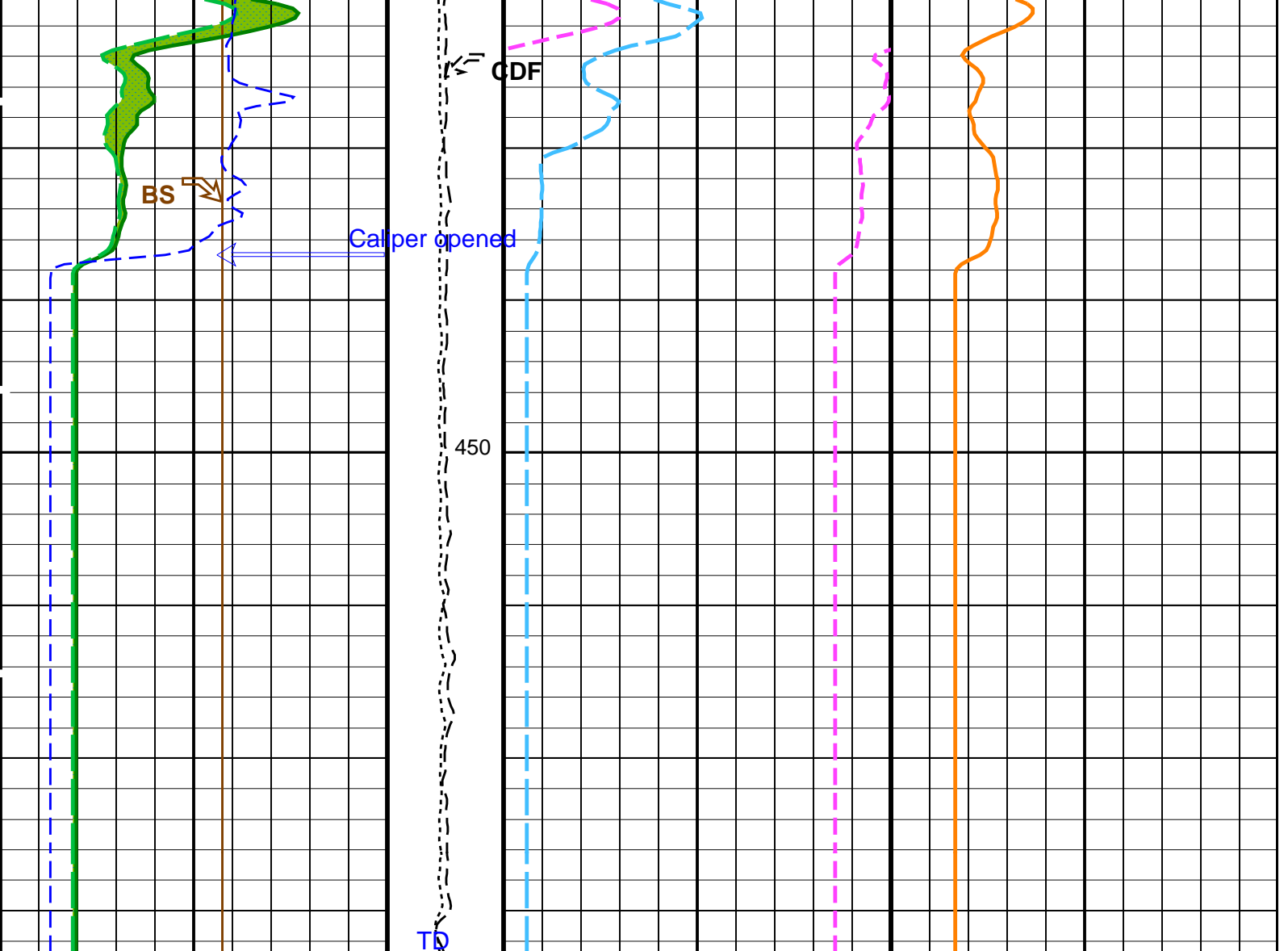












Bit Size (BS) 0 (IN) 20	Tension (TENS) (LBF) 10000 0	HNGS Thorium (HTHO) (PPM) 5 25	HNGS Potassium (HFK) (-----) 0 0.04
HLDS Caliper (LCAL) (IN) 0 20	Calibrated Downhole Force (CDF) (LBF) 3000 0	HNGS Uranium (HURA) (PPM) 0 10	
HNGS Computed Gamma Ray (HCGR) (GAPI) 0 100	Main Pass, Sea Floor Depth Reference		HNGS Borehole Potassium (HBHK) (-----) -0.05 0.05
Area1 From HCGR to HSGR			
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI) 0 100			

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
HRLT-B:	High Resolution Laterolog Array - B	
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	LCAL

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	
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	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00265981	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.953116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	
EDTC-B: Enhanced DTS Cartridge			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
System and Miscellaneous			
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
PP	Playback Processing	NORMAL	

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 24-Apr-2015 00:29

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_010LUP	FN:16	PRODUCER	17-Apr-2015 11:00	4112.5 M	3626.2 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_044PUP	FN:39	PRODUCER	24-Apr-2015 00:29		
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Company: Integrated Ocean Discovery Program Well: Expedition 355, Site U1456 C

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_039LUP		PRODUCER	23-Apr-2015 23:17	4113.6 M	3609.6 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_042PUP	FN:37	PRODUCER	23-Apr-2015 23:46	467.6 M	-36.4 M
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OP System Version: 19C0-187

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

PIP SUMMARY

Time Mark Every 60 S

HRLT True Resistivity (RT_HRLT)		
0.2	(OHMM)	2000

Invaded Zone Resistivity (RXO_HRLT)		
0.2	(OHMM)	2000

Downlog Sea Floor Depth Reference

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

Invasion Diameter (DI_HRLT)
0 (IN) 50

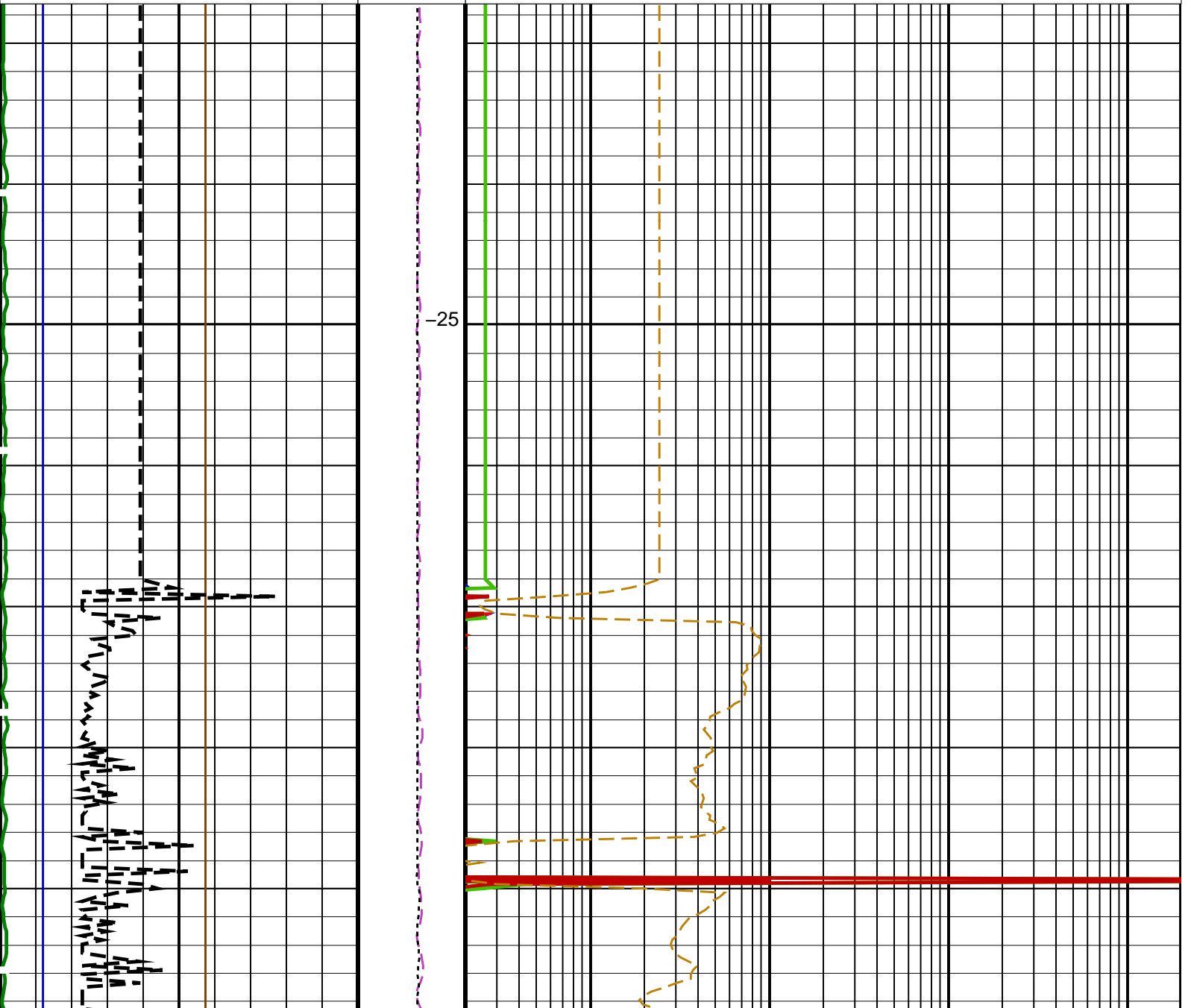
Caliper (LCAL)
0 (IN) 20

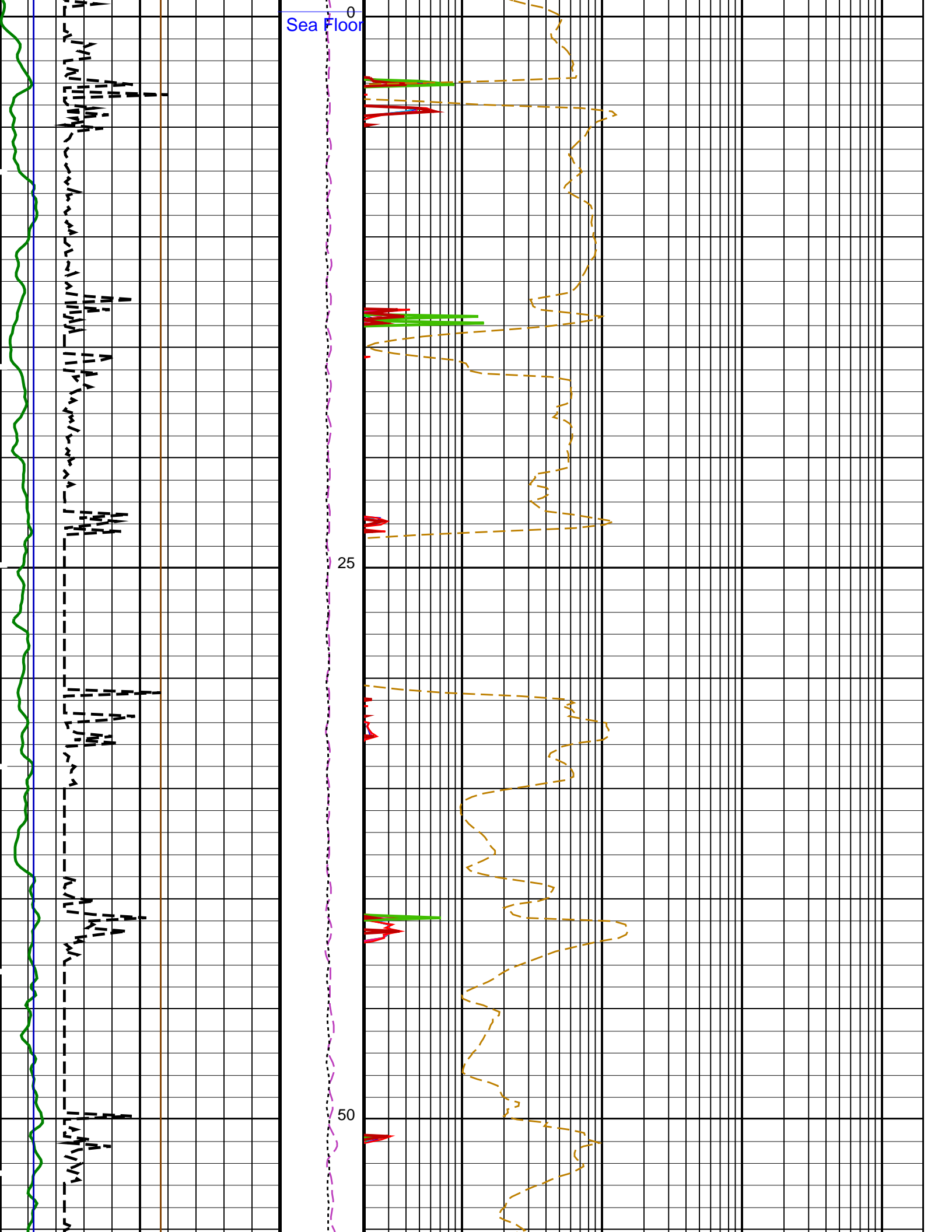
Bit Size (BS)
0 (IN) 20

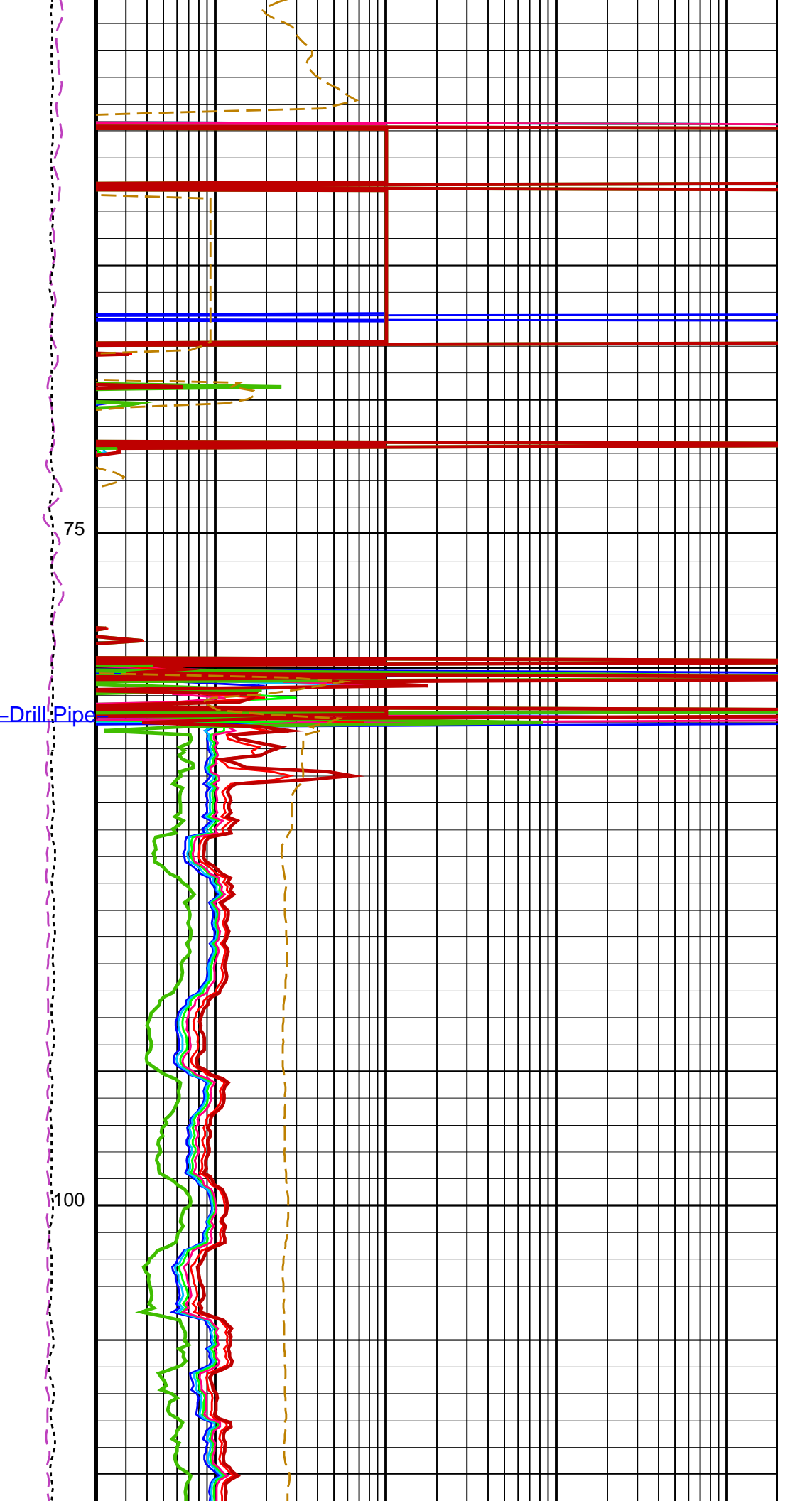
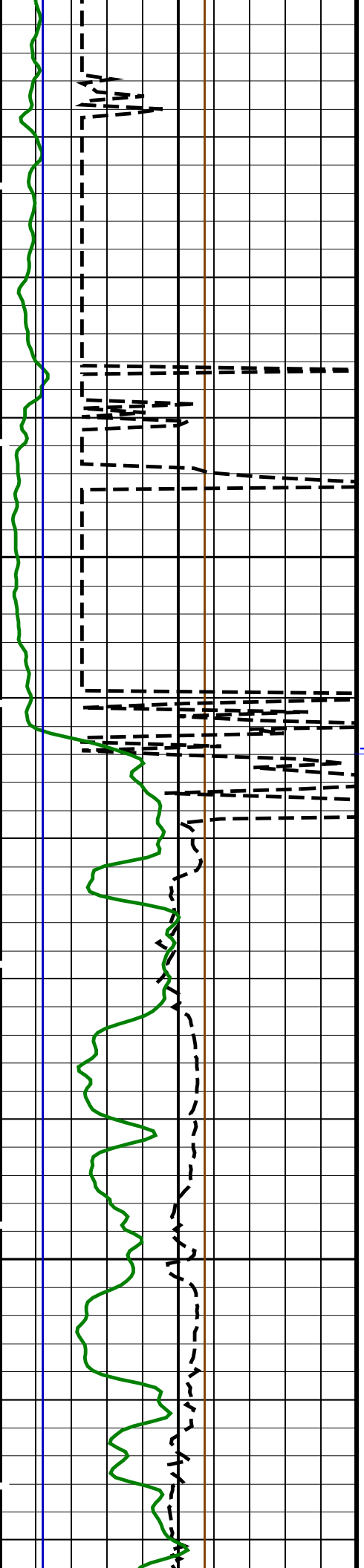
Calibrated
Downhole
Force
(CDF)
(LBF)
3000 0

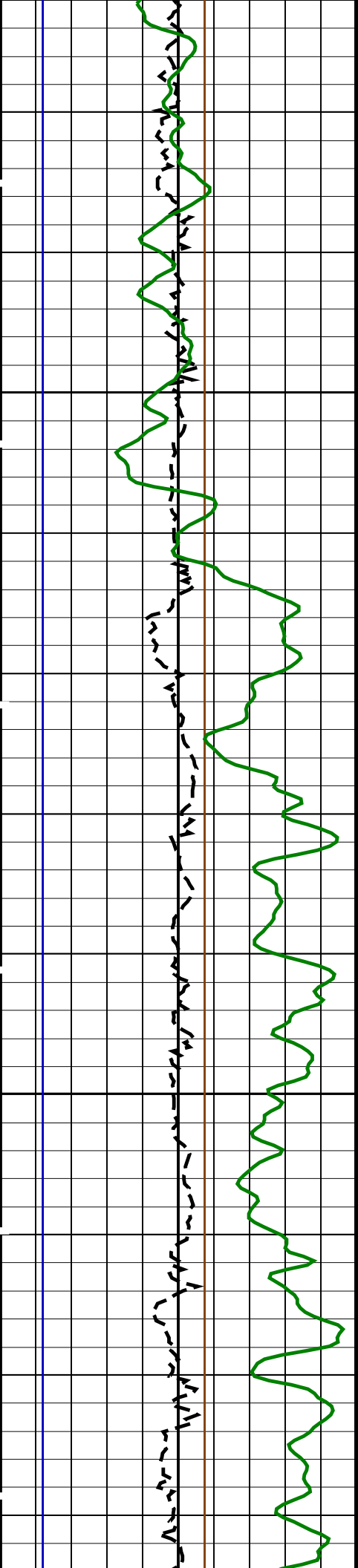
Tension
(TENS)
(LBF)
10000 0

0.2	(OHMM)	2000
0.02	HRLT Mud Resistivity (RM_HRLT) (OHMM)	200
0.2	HRLT Resistivity 5 (RLA5) (OHMM)	2000
0.2	HRLT Resistivity 4 (RLA4) (OHMM)	2000
0.2	HRLT Resistivity 3 (RLA3) (OHMM)	2000
0.2	HRLT Resistivity 2 (RLA2) (OHMM)	2000
0.2	HRLT Resistivity 1 (RLA1) (OHMM)	2000



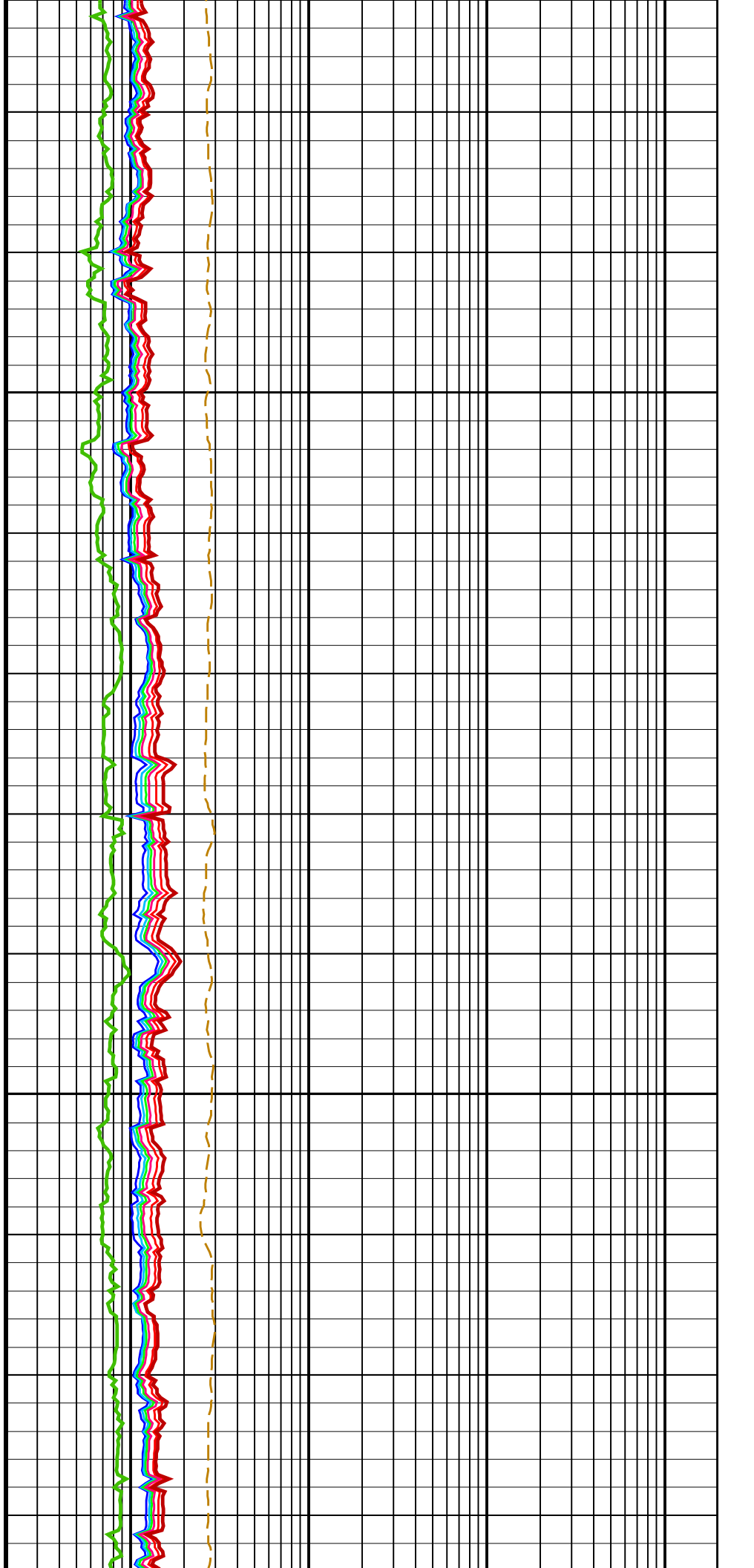


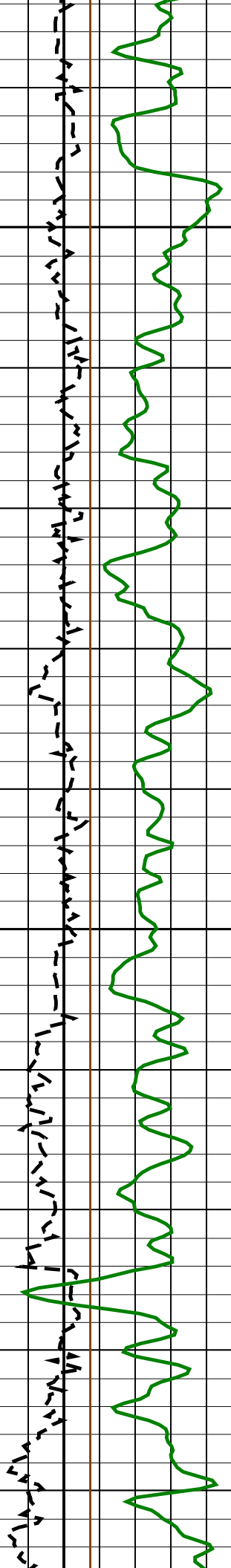




125

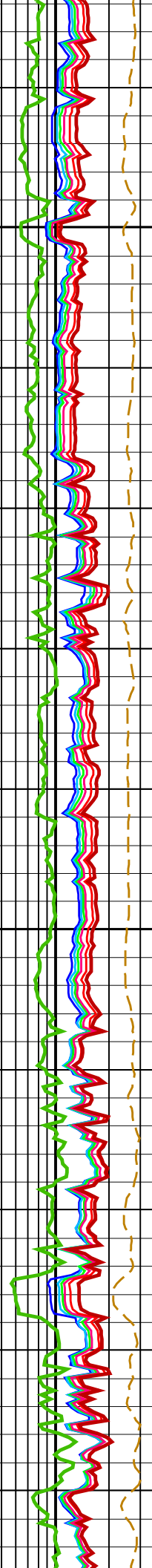
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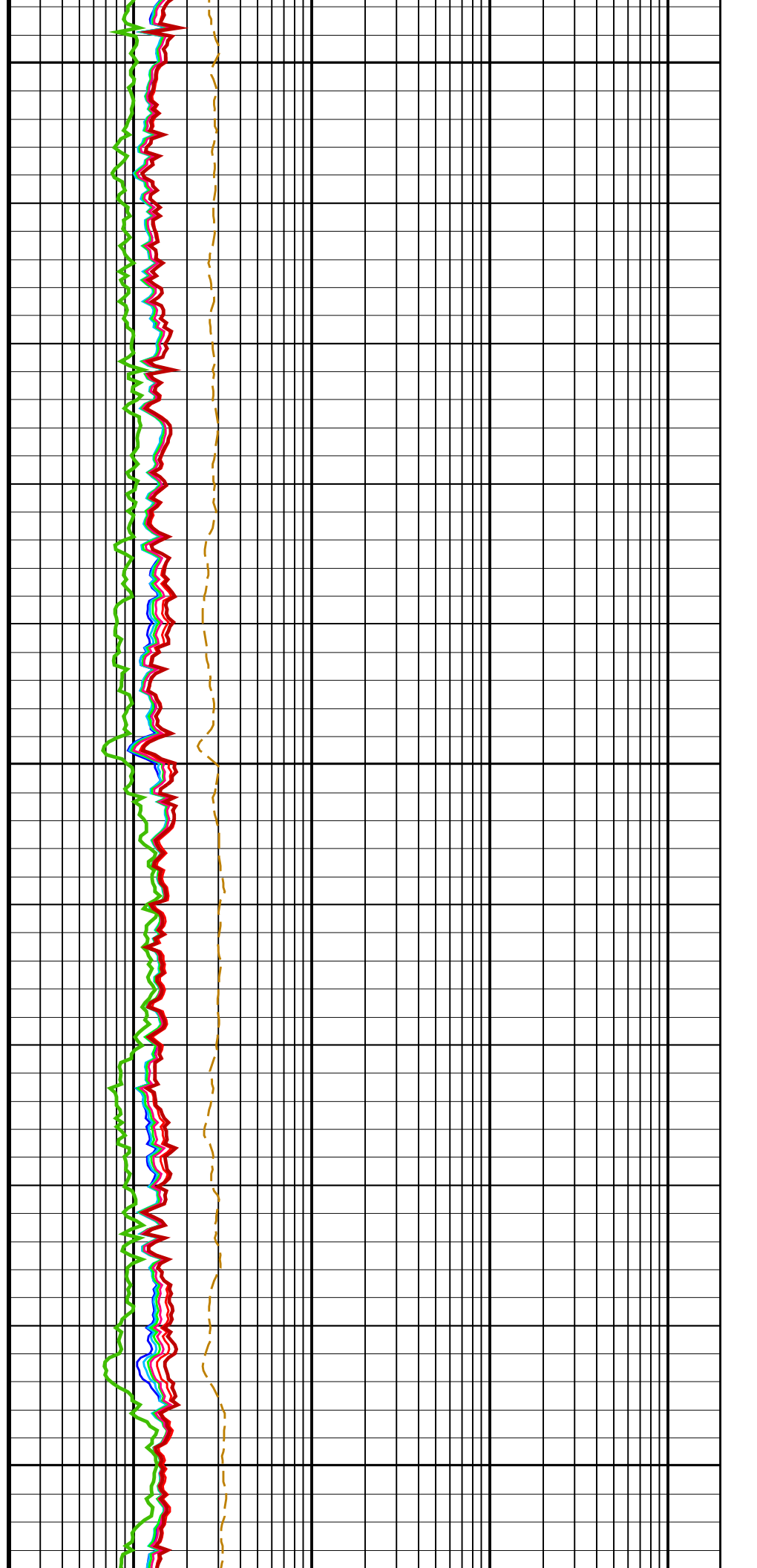
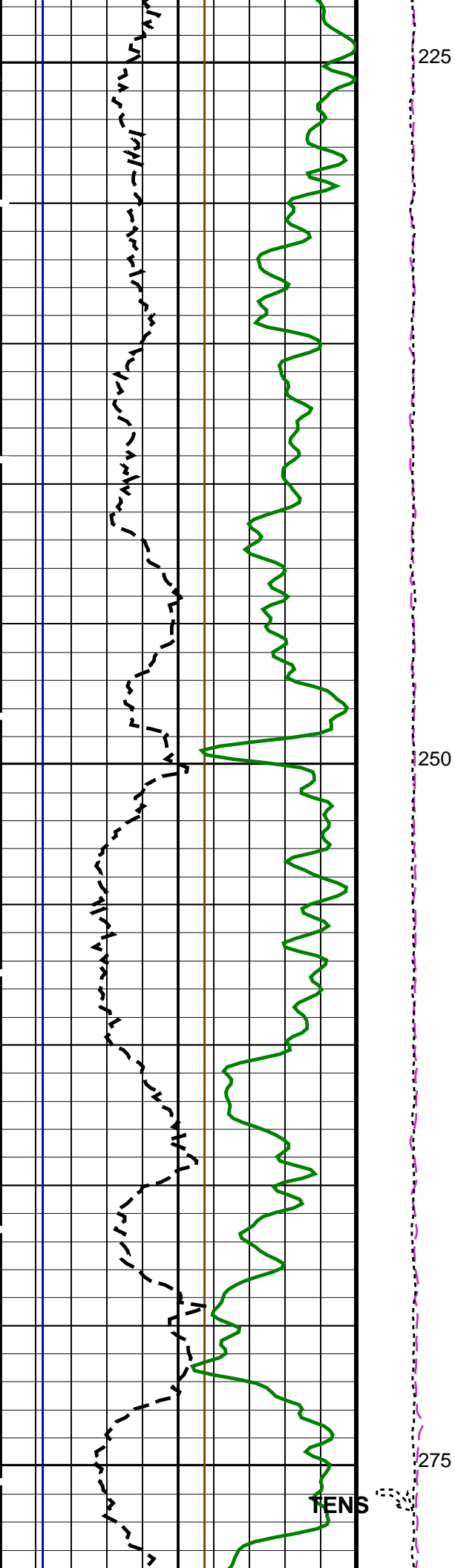


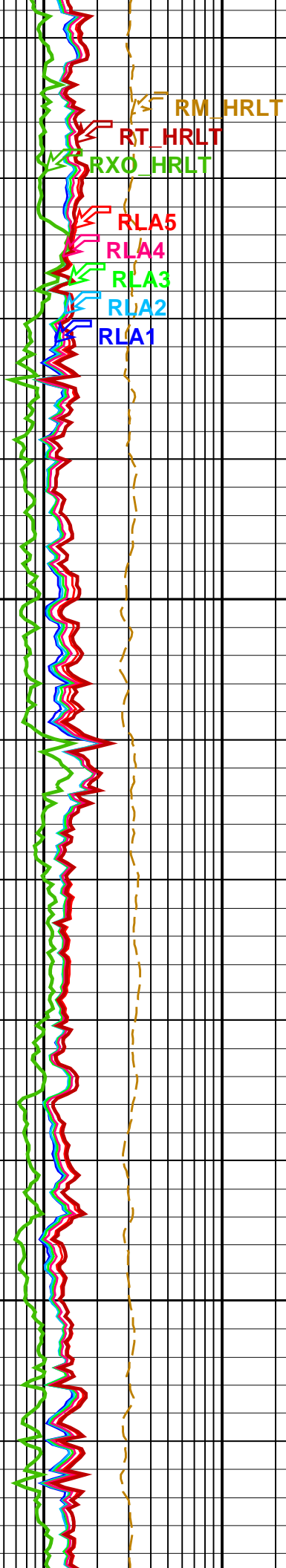
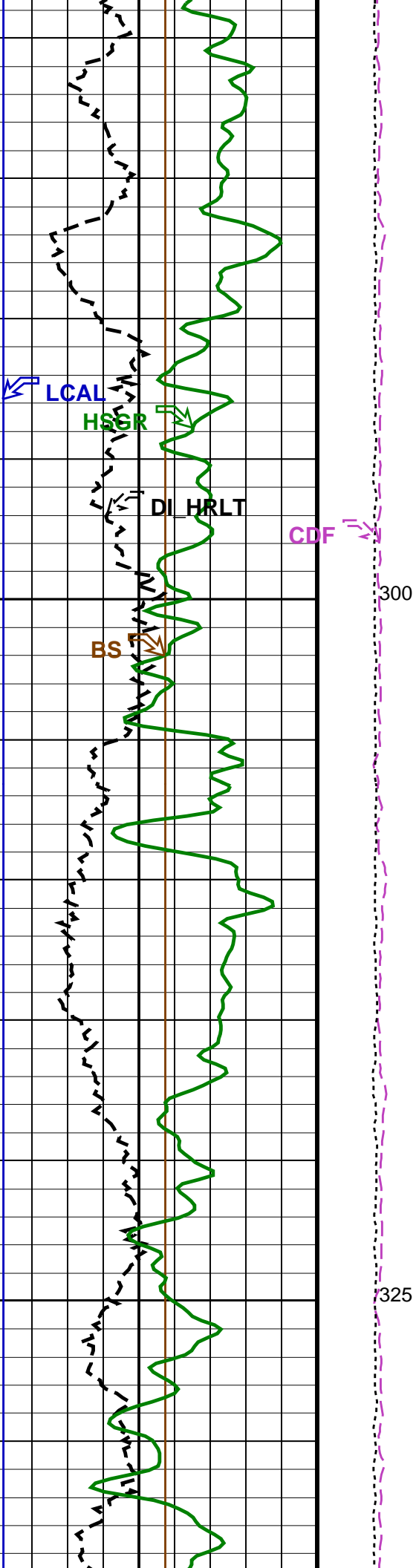


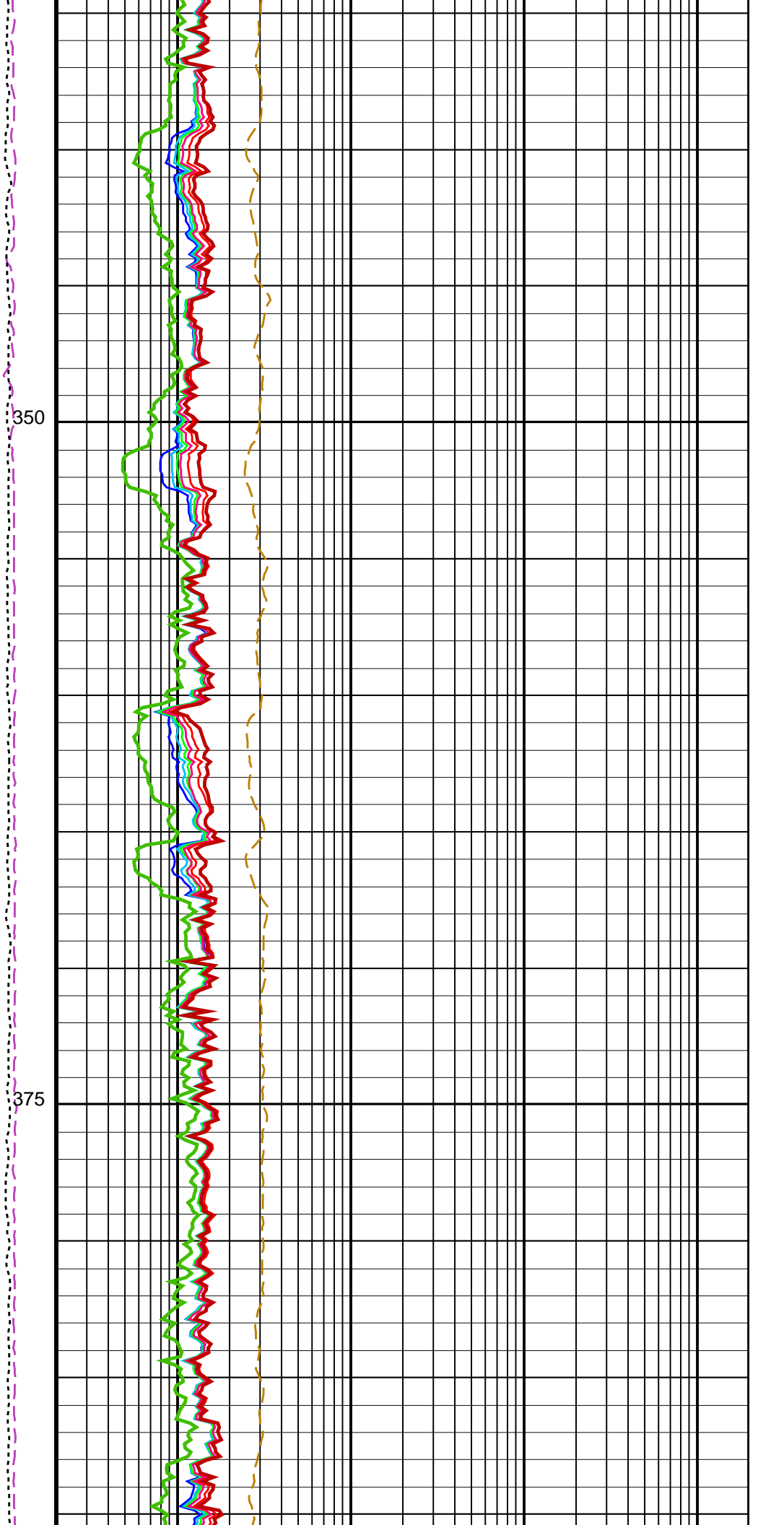
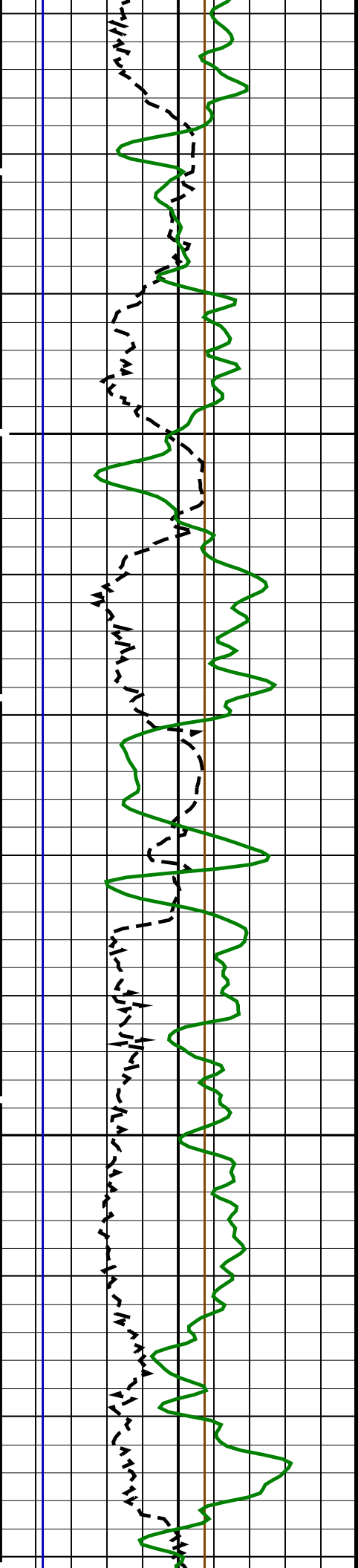
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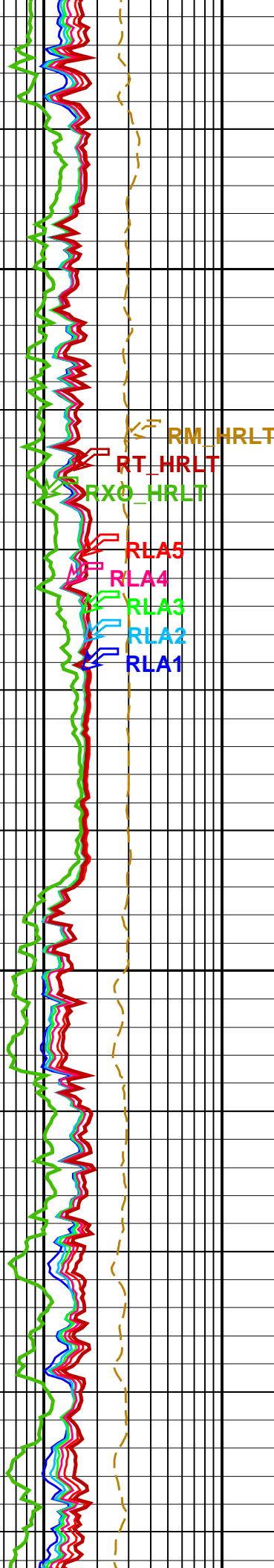
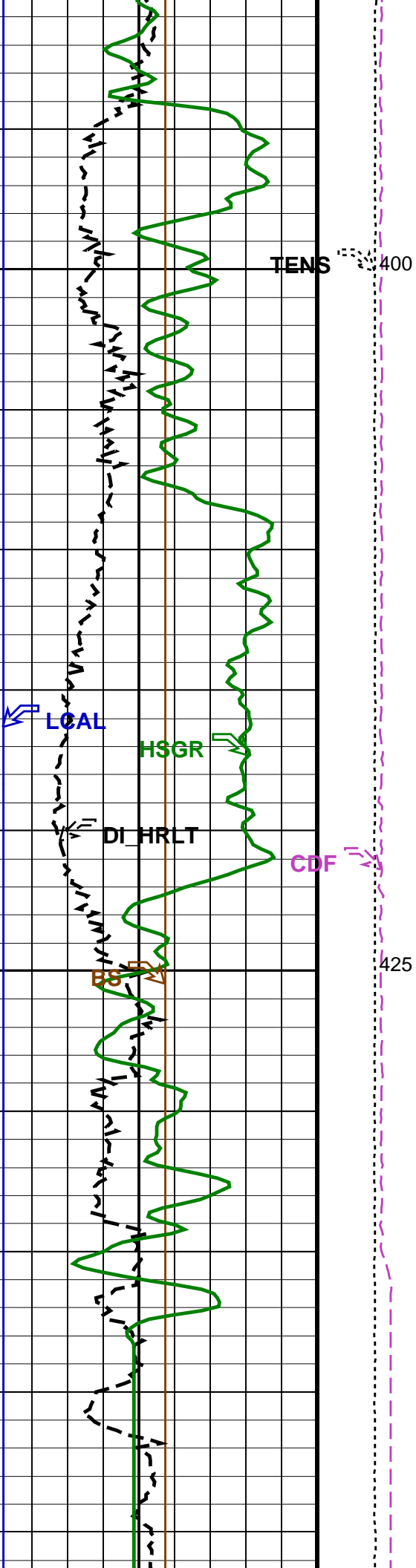
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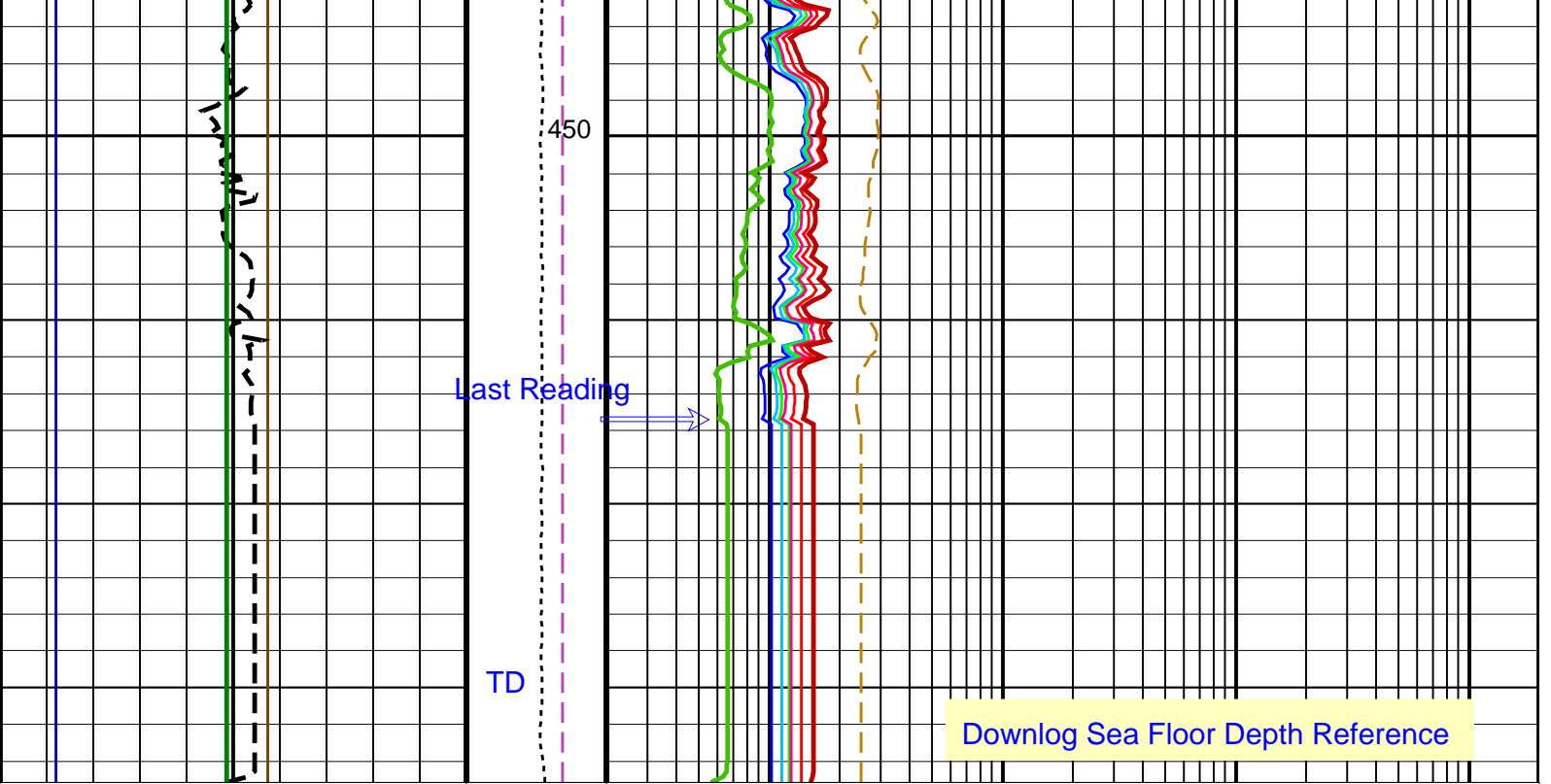












Bit Size (BS) (IN)	0 20	Tension (TENS) (LBF)	10000 0	HRLT Resistivity 1 (RLA1) (OHMM)	0.2 2000
Caliper (LCAL) (IN)	0 20	Calibrated Downhole Force (CDF) (LBF)	3000 0	HRLT Resistivity 2 (RLA2) (OHMM)	0.2 2000
Invasion Diameter (DI_HRLT) (IN)	0 50			HRLT Resistivity 3 (RLA3) (OHMM)	0.2 2000
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)	0 100			HRLT Resistivity 4 (RLA4) (OHMM)	0.2 2000
				HRLT Resistivity 5 (RLA5) (OHMM)	0.2 2000
				HRLT Mud Resistivity (RM_HRLT) (OHMM)	0.02 200
				Invaded Zone Resistivity (RXO_HRLT) (OHMM)	0.2 2000
				HRLT True Resistivity (RT_HRLT) (OHMM)	0.2 2000

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
GCSE	Generalized Caliper Selection	BS
GGRD	Geothermal Gradient	0.018227 DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN 9
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE
KEAC	UPRT K Factor Option	CONDE

KFAC_HRLT	HRLT K Factor Option	SONDE	ON	
PROCINV	Inversion Selection	NO_EXTERNAL_RXO		
PROCINFL	Inversion Micro-Resistivity Selection			
PROCMSO	Mechanical Standoff Fin Size		0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute		
PROCSPO	Sonde Position	Centered		
SHT	Surface Hole Temperature		20	DEGC
HNGS-BA: Hostile Natural Gamma Ray Sonde				
BAR1	HNGS Detector 1 Barite Constant		1	
BAR2	HNGS Detector 2 Barite Constant		1	
BHK	HNGS Borehole Potassium Correction Concentration		0	
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)		21	DEGC
CSD1	Inner Casing Outer Diameter		0	IN
CSD2	Outer Casing Outer Diameter		0	IN
CSW1	Inner Casing Weight		0	LB/F
CSW2	Outer Casing Weight		0	LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE		
GCSE	Generalized Caliper Selection	BS		
GGRD	Geothermal Gradient	0.018227		DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW		
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW		
HABK	HNGS Borehole Potassium Running Average	-0.00265981		
HALF	HNGS Alpha Filter Length	60		IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE		
HMWM	Mud Weighting Material	BARI		
HNPE	HNGS Processing Enable	YES		
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3		CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3		CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES		
SHT	Surface Hole Temperature		20	DEGC
TPOS	Tool Position	ECCE		
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.953116		
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581		
EDTC-B: Enhanced DTS Cartridge				
BHS	Borehole Status	OPEN		
BHT	Bottom Hole Temperature (used in calculations)		21	DEGC
GCSE	Generalized Caliper Selection	BS		
GGRD	Geothermal Gradient	0.018227		DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9		
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE		
SHT	Surface Hole Temperature		20	DEGC
System and Miscellaneous				
BS	Bit Size		11.438	IN
DFD	Drilling Fluid Density		1.21	G/C3
DO	Depth Offset for Playback		-3646.0	M
MST	Mud Sample Temperature		22.30	DEGC
PP	Playback Processing	NORMAL		
TD	Total Depth		466	M

Format: HRLT Vertical Scale: 1:200 Graphics File Created: 23-Apr-2015 23:46

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	Flip_MSS_LDEO_HRLA_039LUP	PRODUCER	23-Apr-2015 23:17	4113.6 M	3609.6 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_042PUP	FN:37	PRODUCER	23-Apr-2015 23:46	
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Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_039LUP	PRODUCER	23-Apr-2015 23:17	4113.6 M	3609.6 M
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Output DLIS Files

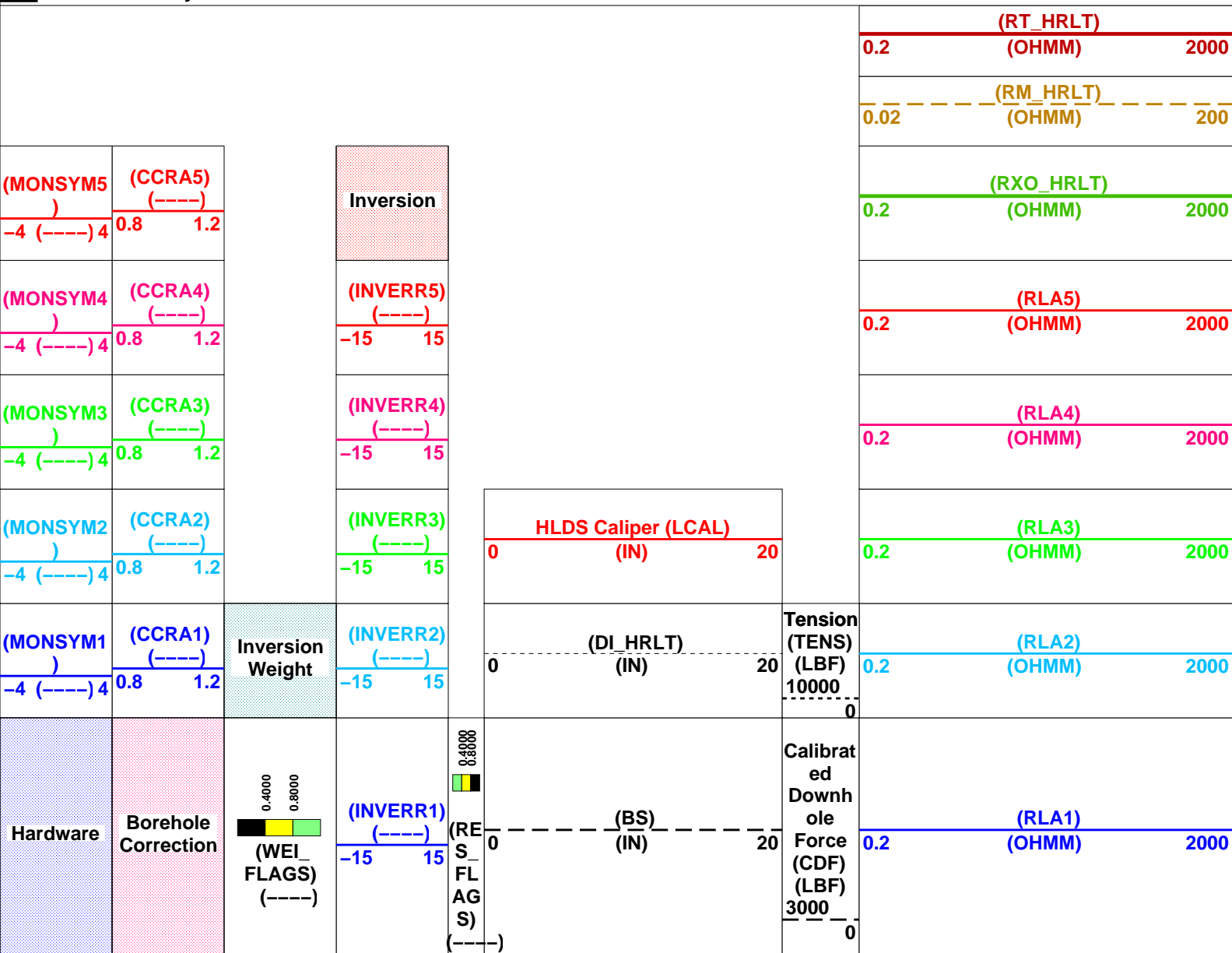
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OP System Version: 19C0-187

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

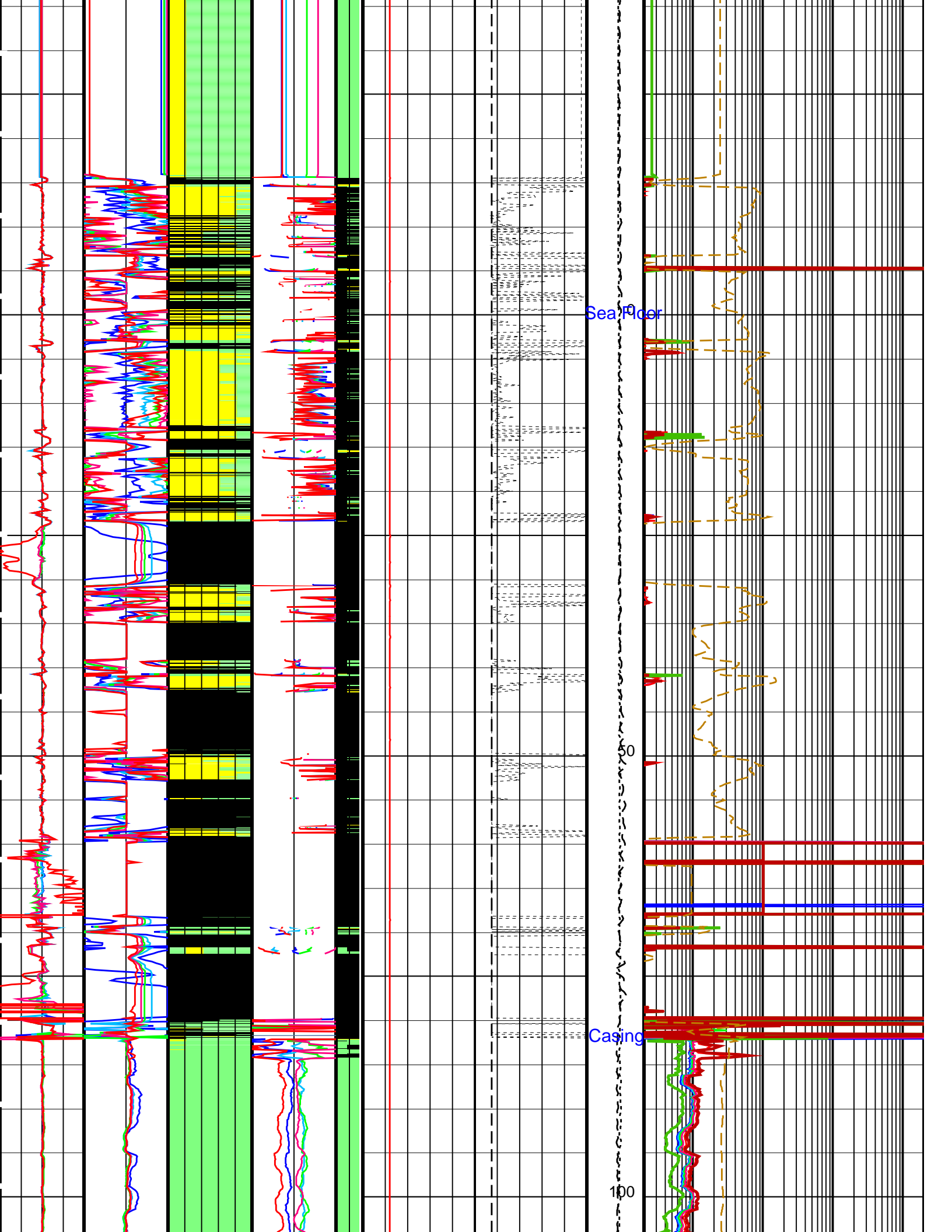
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

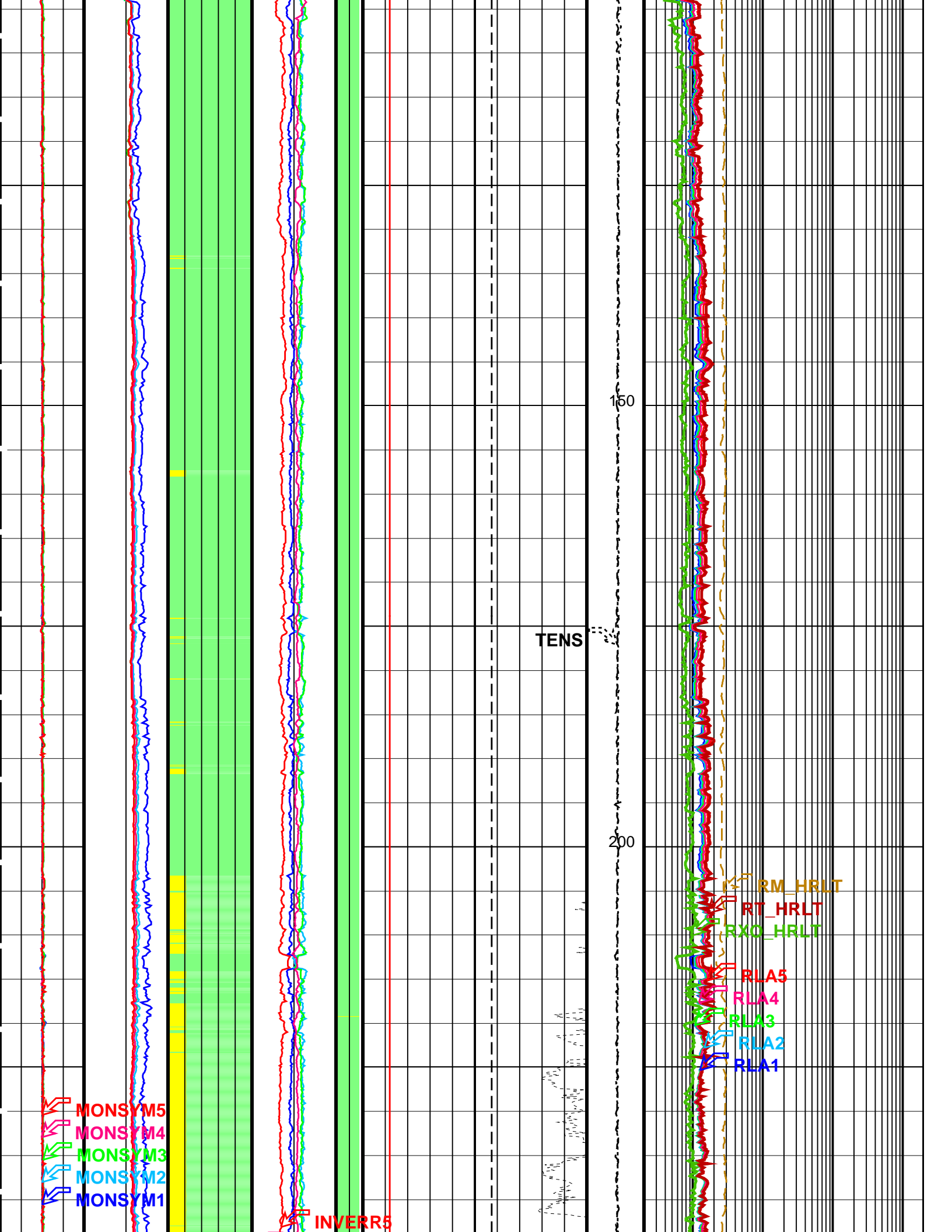
| RxoFlag | RTFlag |

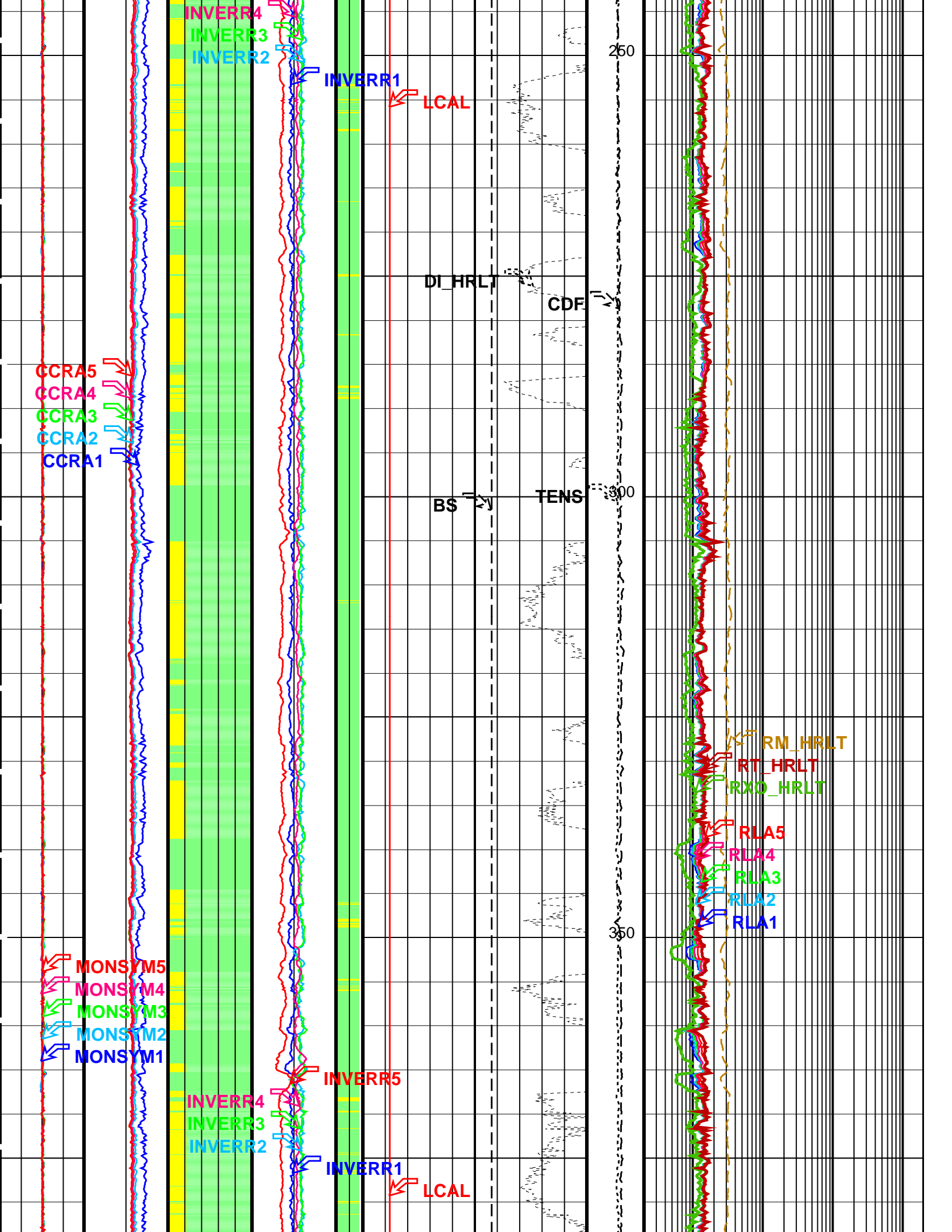
GREEN = OK

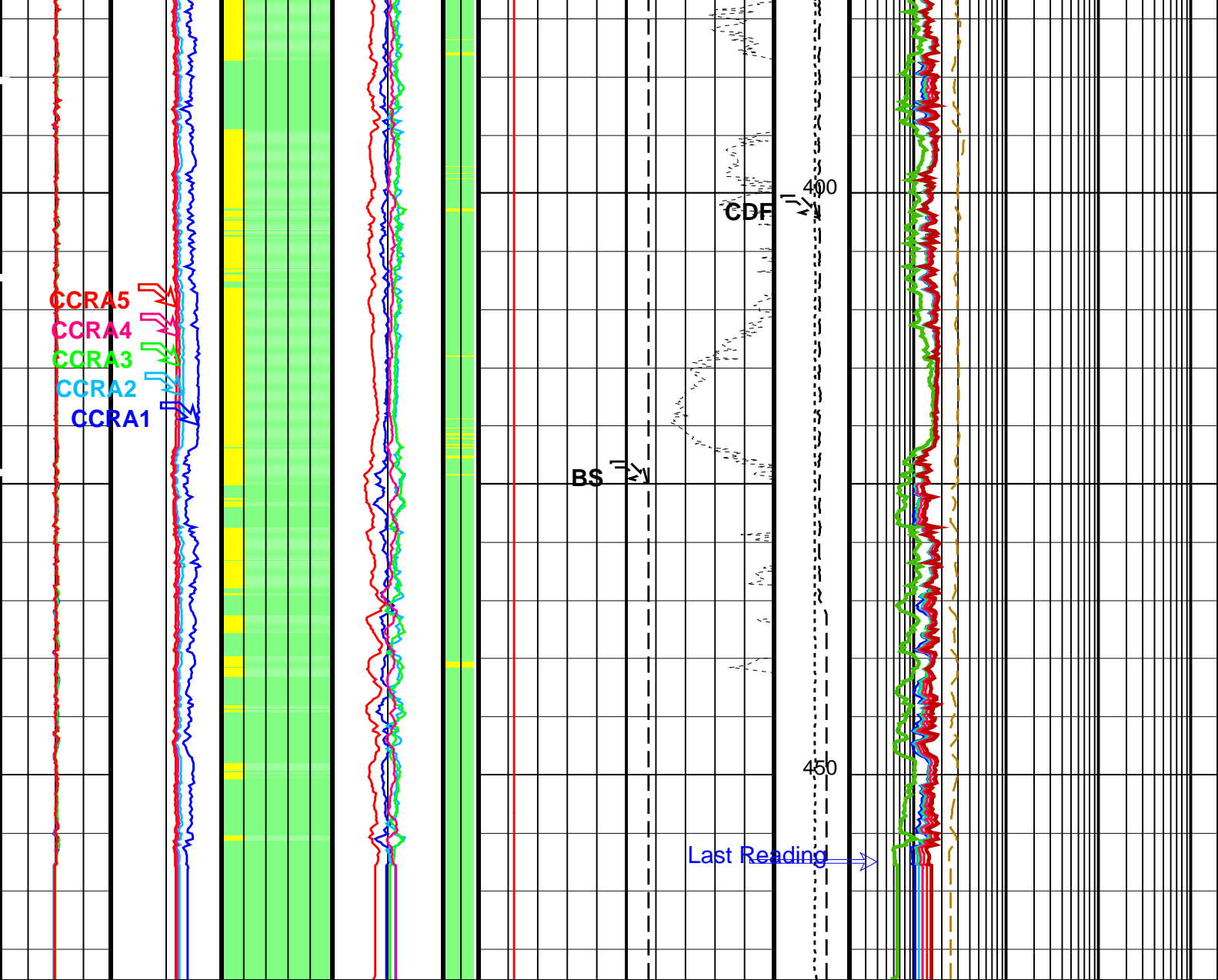
YELLOW = SHOULDER BED EFFECT

BLACK = NOK









*** HRLT FLAG TRACKS ***

BLACK areas show that the corresponding error flag is set.

Downlog Sea Floor Depth

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

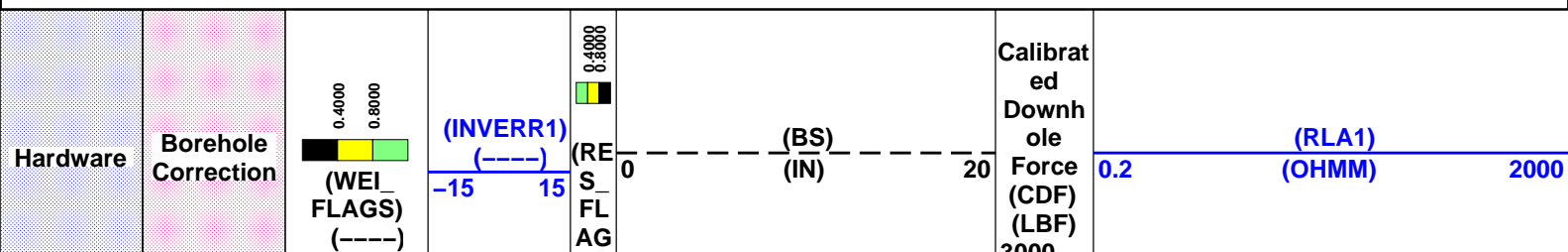
LQC flags on RXO_HRLT & RT_HRLT, and from left to right :

| RxoFlag | RTFlag |

GREEN = OK

YELLOW = SHOULDER BED EFFECT

BLACK = NOK



(MONSYM1)	(CCRA1)	Inversion Weight	(INVERR2)	(DI_HRLT)	Tension (TENS)	(RLA2)
-4 (-----) 4	0.8 1.2		(-----)	(IN)	(LBF)	(OHMM)
			-15 15	0 20	10000	2000
(MONSYM2)	(CCRA2)		(INVERR3)	HLDS Caliper (LCAL)		(RLA3)
-4 (-----) 4	0.8 1.2		(-----)	(IN)		(OHMM)
			-15 15	0 20		2000
(MONSYM3)	(CCRA3)		(INVERR4)			(RLA4)
-4 (-----) 4	0.8 1.2		(-----)			(OHMM)
			-15 15			2000
(MONSYM4)	(CCRA4)		(INVERR5)			(RLA5)
-4 (-----) 4	0.8 1.2		(-----)			(OHMM)
			-15 15			2000
(MONSYM5)	(CCRA5)	Inversion				(RXO_HRLT)
-4 (-----) 4	0.8 1.2					(OHMM)
						2000
						(RM_HRLT)
						(OHMM)
						200
						(RT_HRLT)
						(OHMM)
						2000

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	12.1565 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	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
PROCM50	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

CLS	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	2.6	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	
HNGB--BA: Hostile Natural Gamma Ray Sonde			
BAR1	HNGB Detector 1 Barite Constant	1	
BAR2	HNGB Detector 2 Barite Constant	1	
BHK	HNGB 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	HNGB 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	HNGB Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGB Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGB Borehole Potassium Running Average	-0.00265981	
HALF	HNGB Alpha Filter Length	60	IN
HCRB	HNGB Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGB Processing Enable	YES	
ISSBAR	Barite Mud Switch	NOBARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGB Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGB Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGB Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGB Detector 1 Variable Barite Factor Running Average	0.953116	
VBA2	HNGB Detector 2 Variable Barite Factor Running Average	0.961581	
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

ALTDCHAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAL	Borehole Salinity	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
CFD	Drilling Fluid Density	1.00	G/C3

DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	22.30	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	466	M
TDD	Total Depth - Driller	465.20	M
TDL	Total Depth - Logger	464.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLT_LQC Vertical Scale: 1:500 Graphics File Created: 23-Apr-2015 23:46

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	Flip_MSS_LDEO_HRLA_039LUP	PRODUCER	23-Apr-2015 23:17	4113.6 M	3609.6 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_042PUP	FN:37	PRODUCER	23-Apr-2015 23:46
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Company: Integrated Ocean Discovery Program Well: Expedition 355, Site U1456 C

Input DLIS Files

DEFAULT	Flip_MSS_LDEO_HRLA_039LUP	PRODUCER	23-Apr-2015 23:17	4113.6 M	3609.6 M
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Output DLIS Files

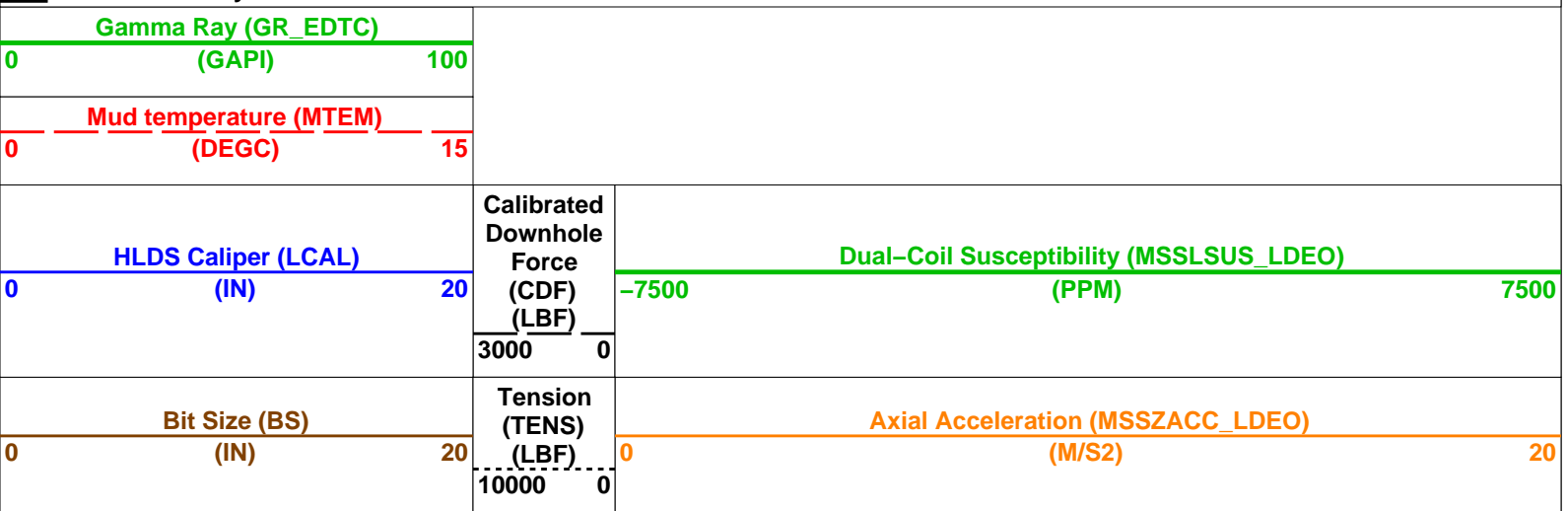
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OP System Version: 19C0-187

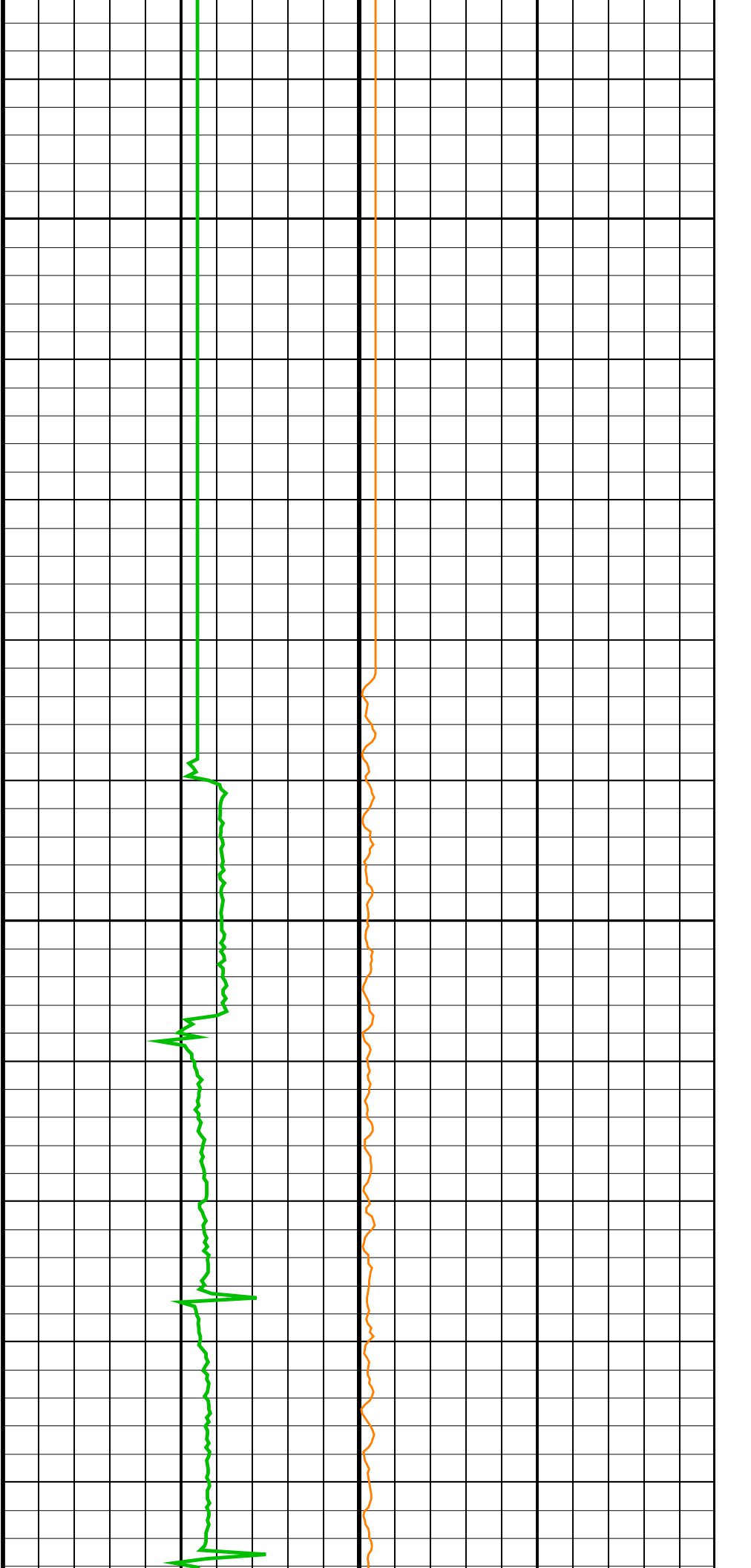
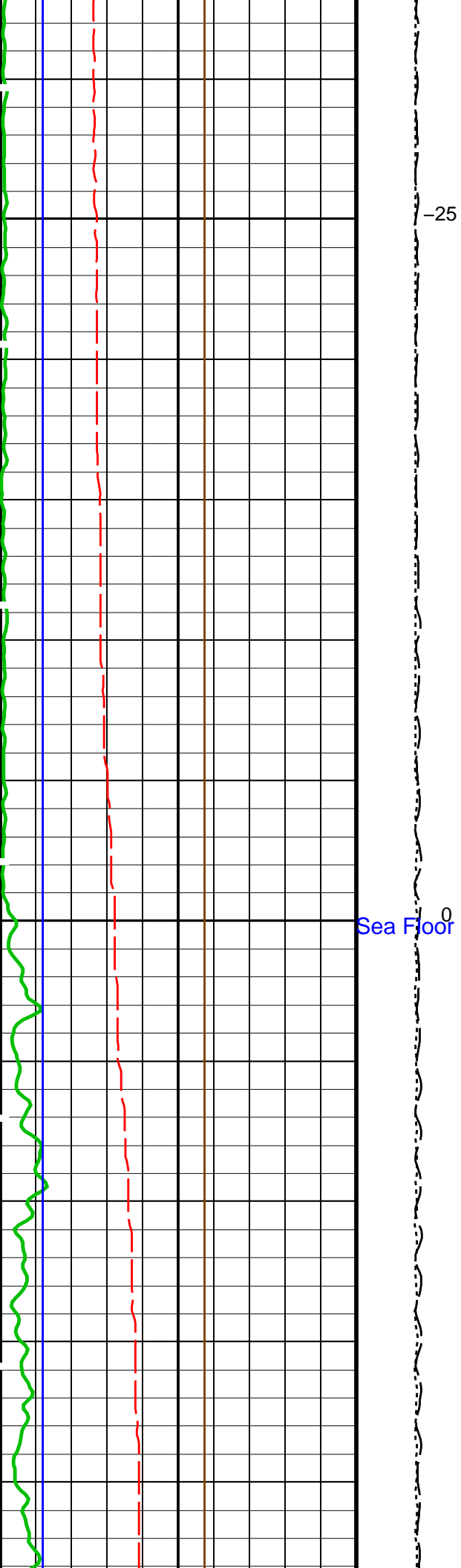
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

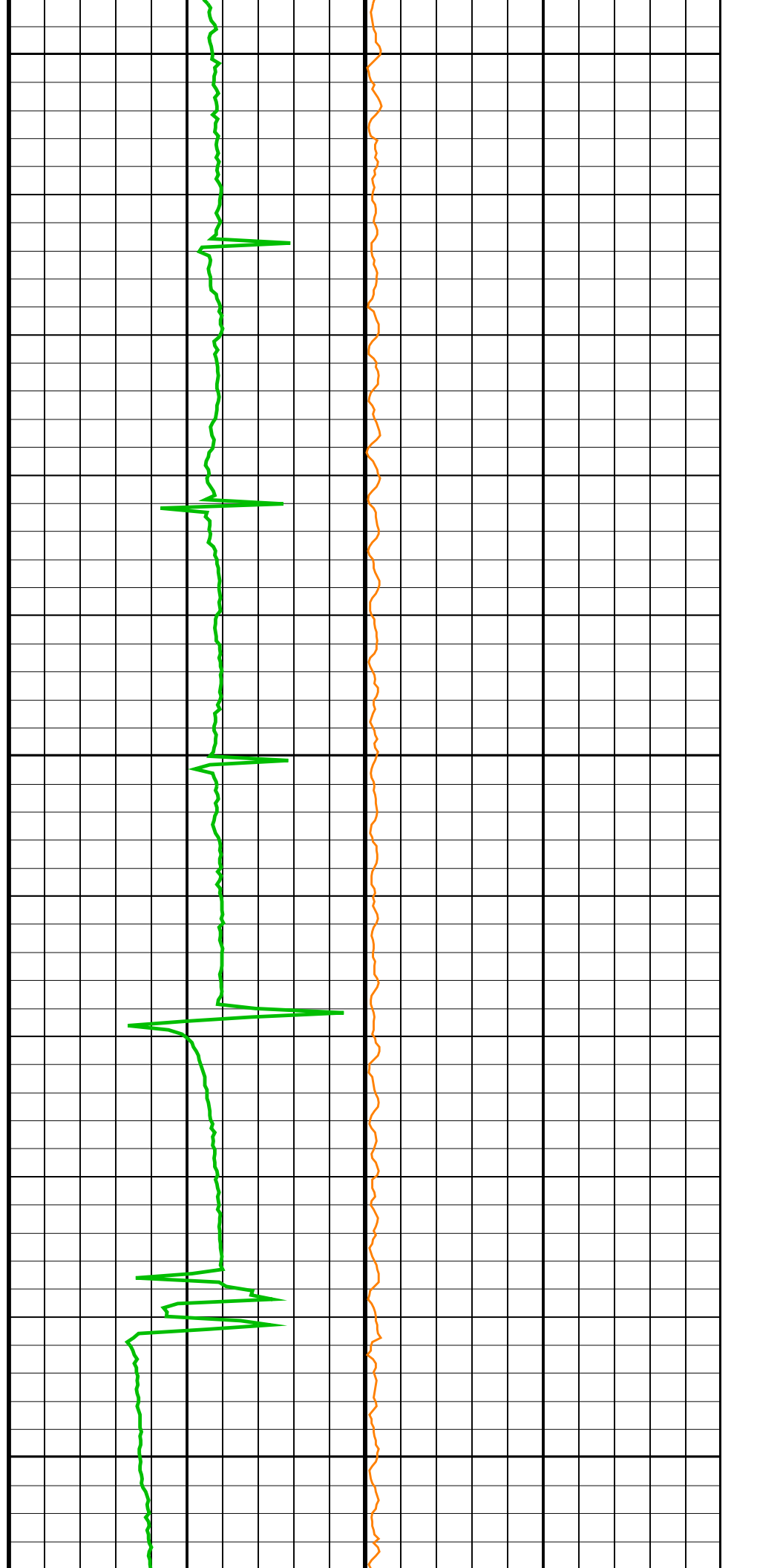
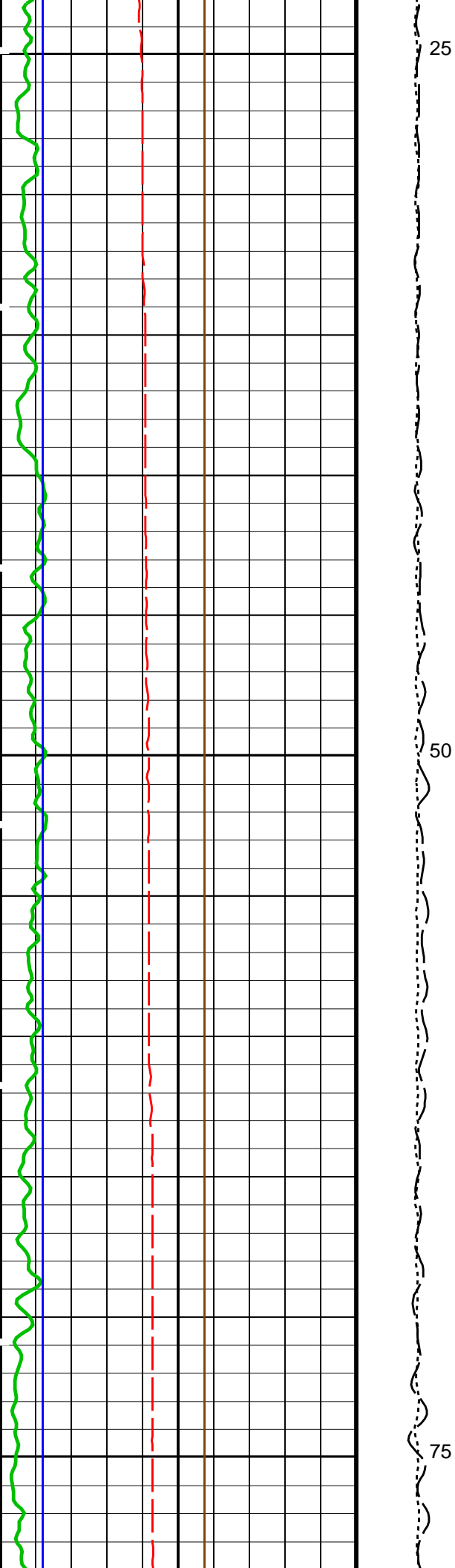
PIP SUMMARY

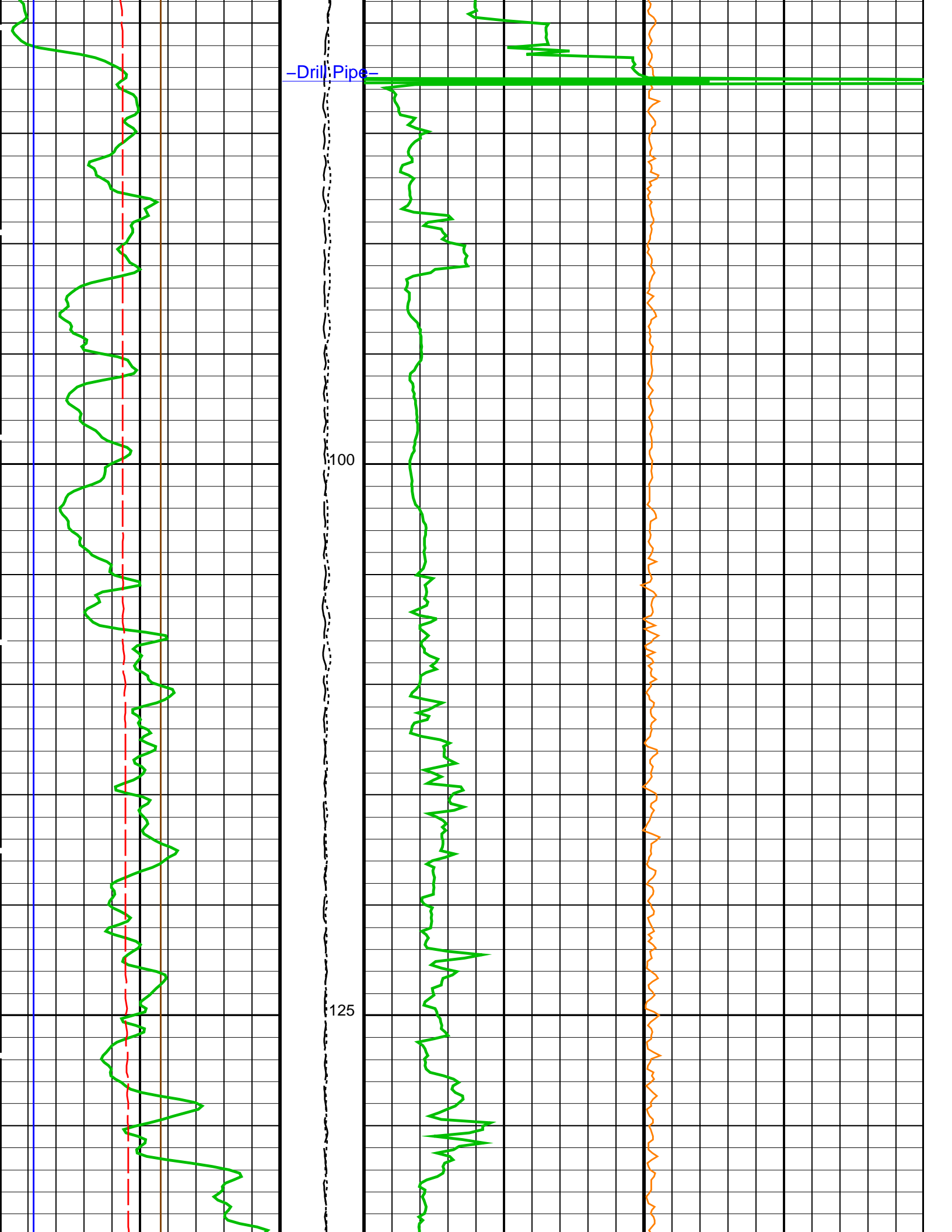
Time Mark Every 60 S

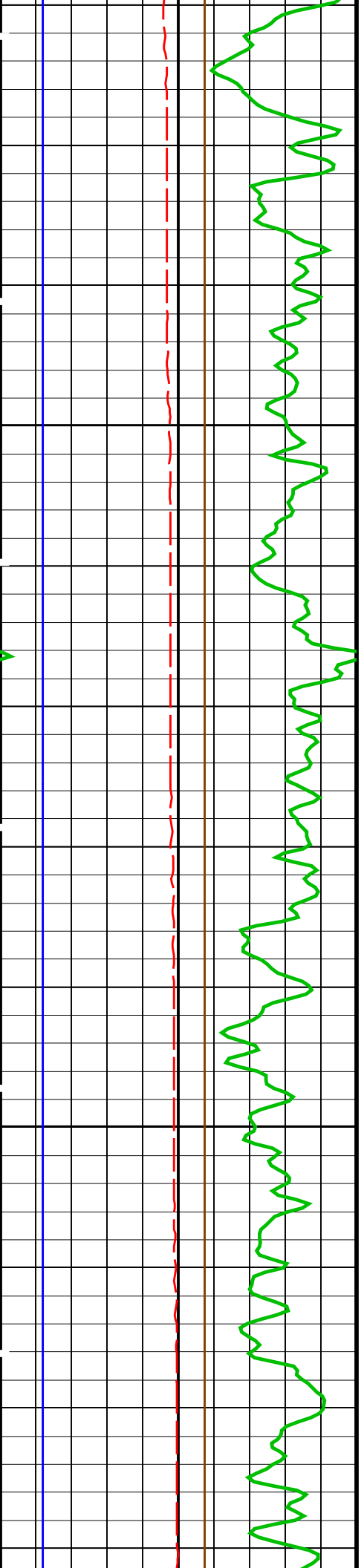


Downlog Sea Floor Depth

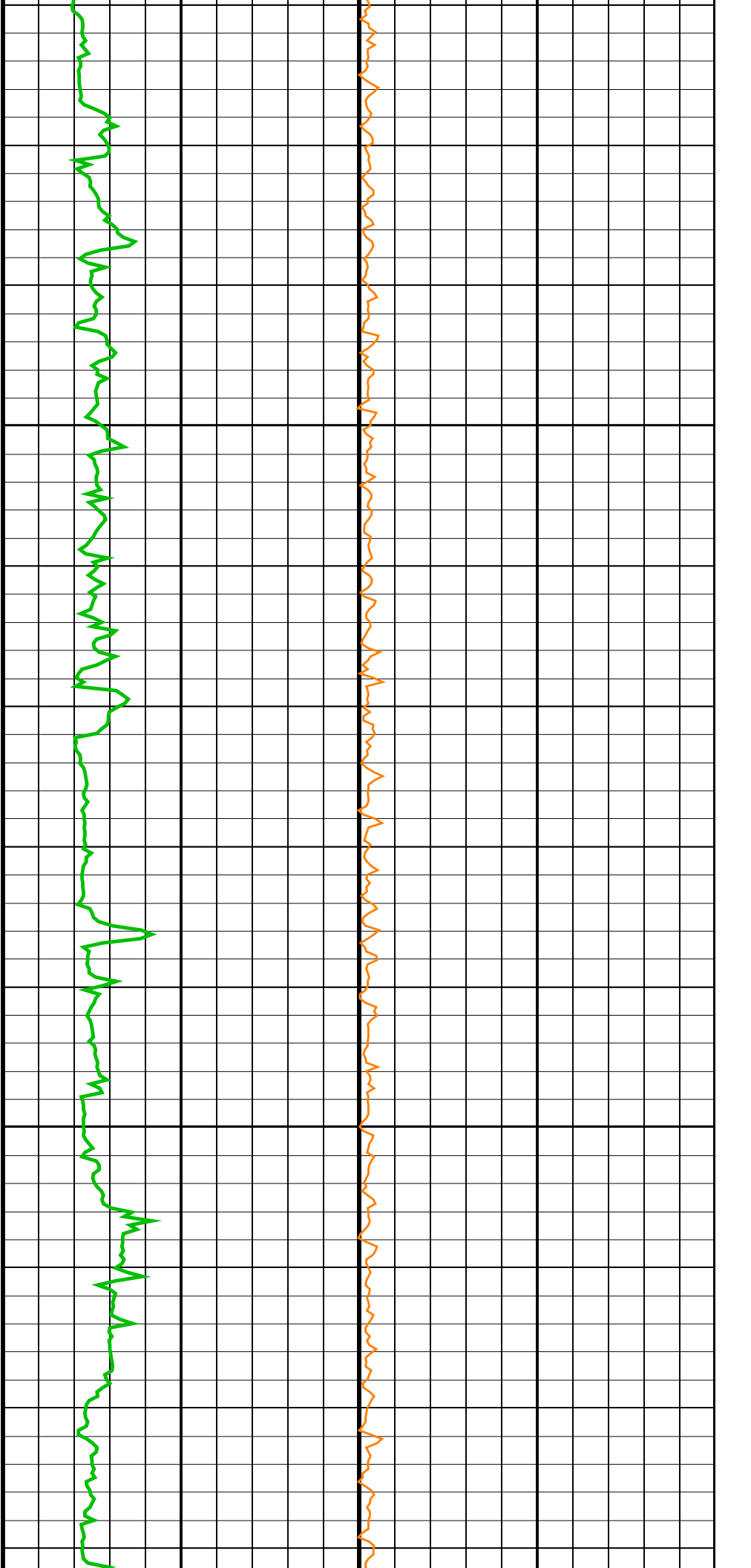


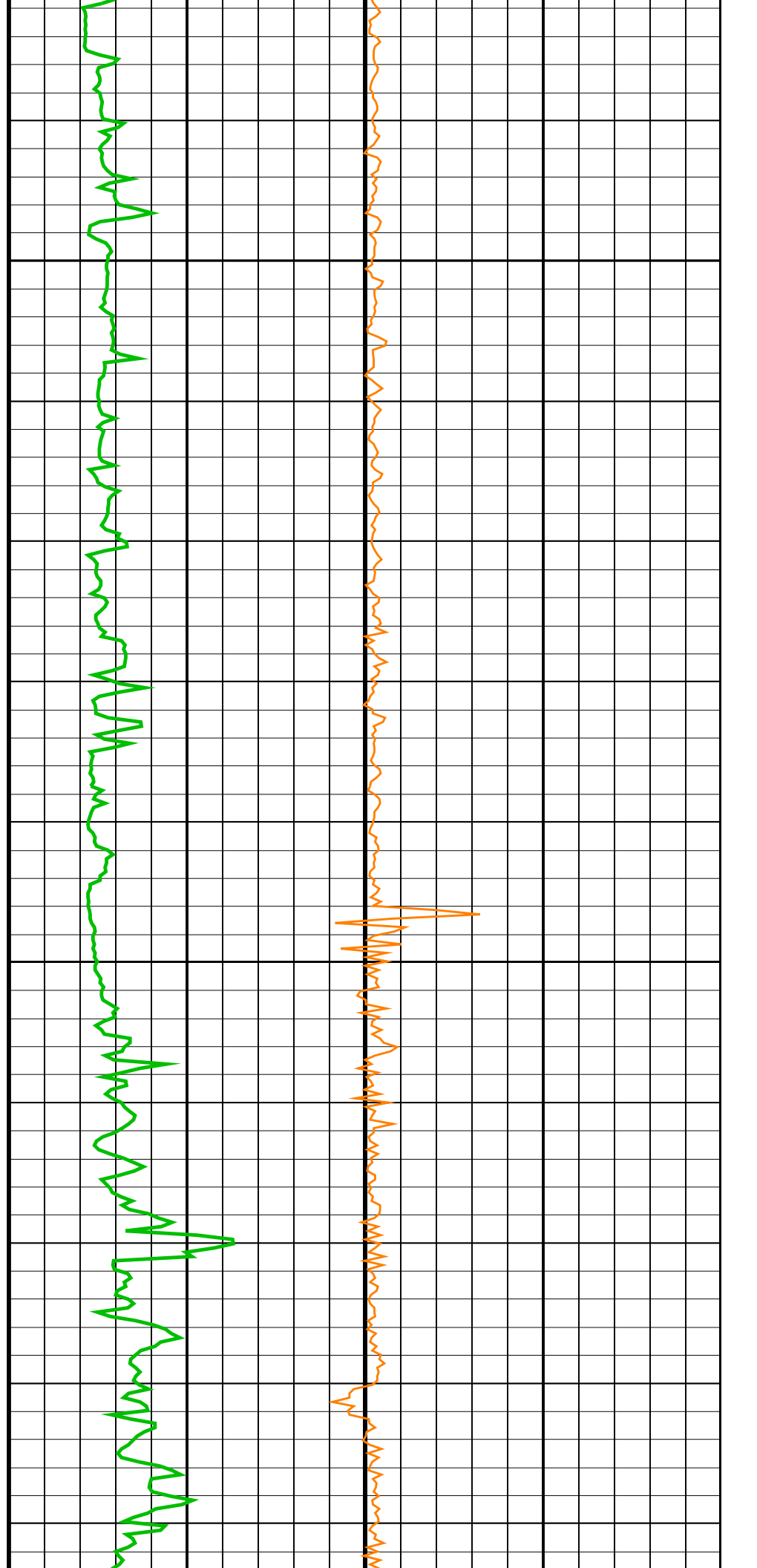
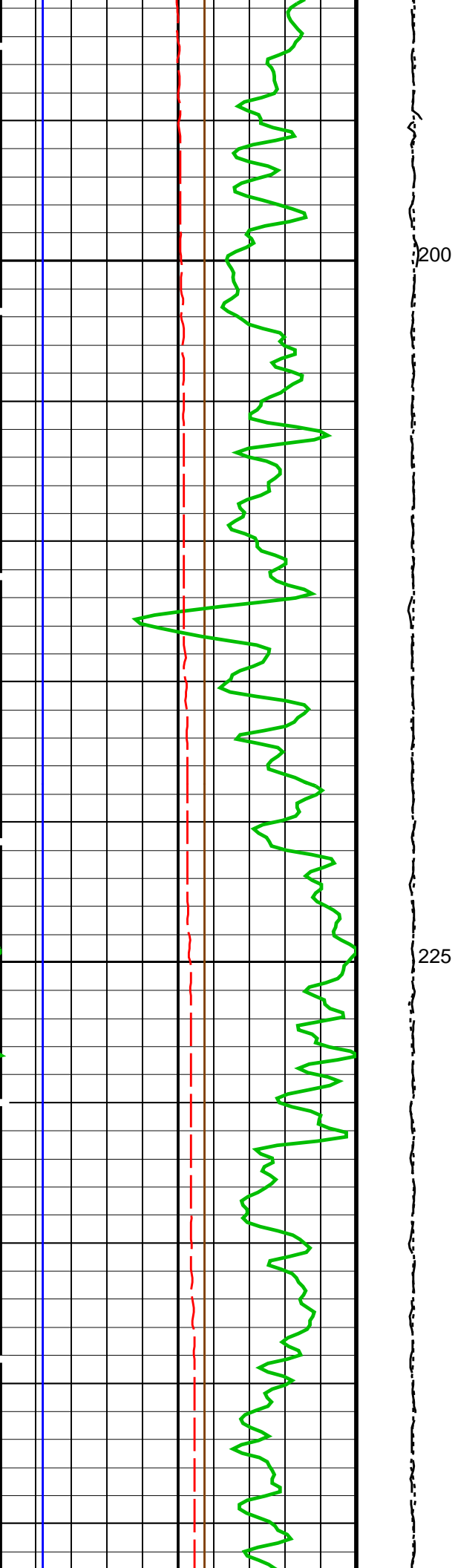


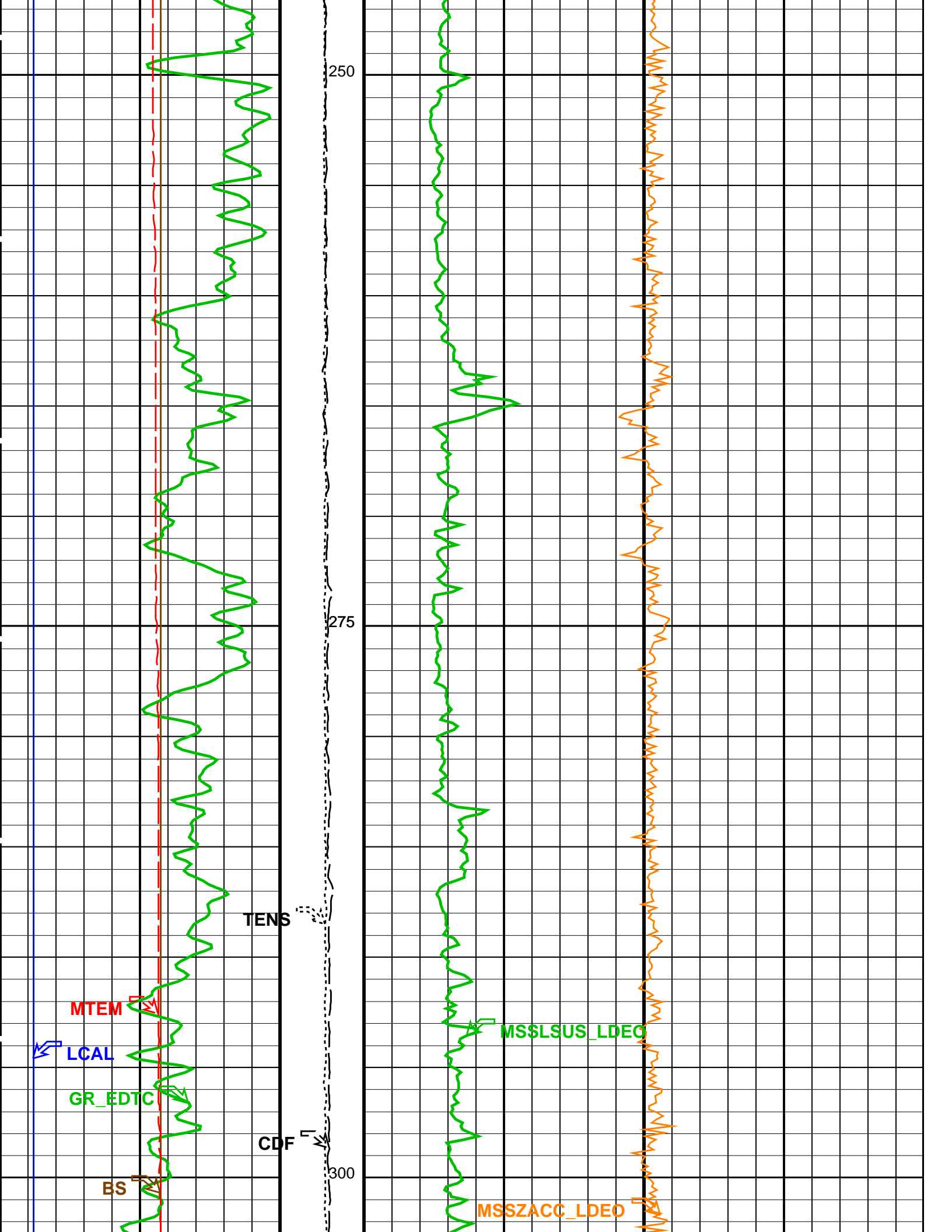


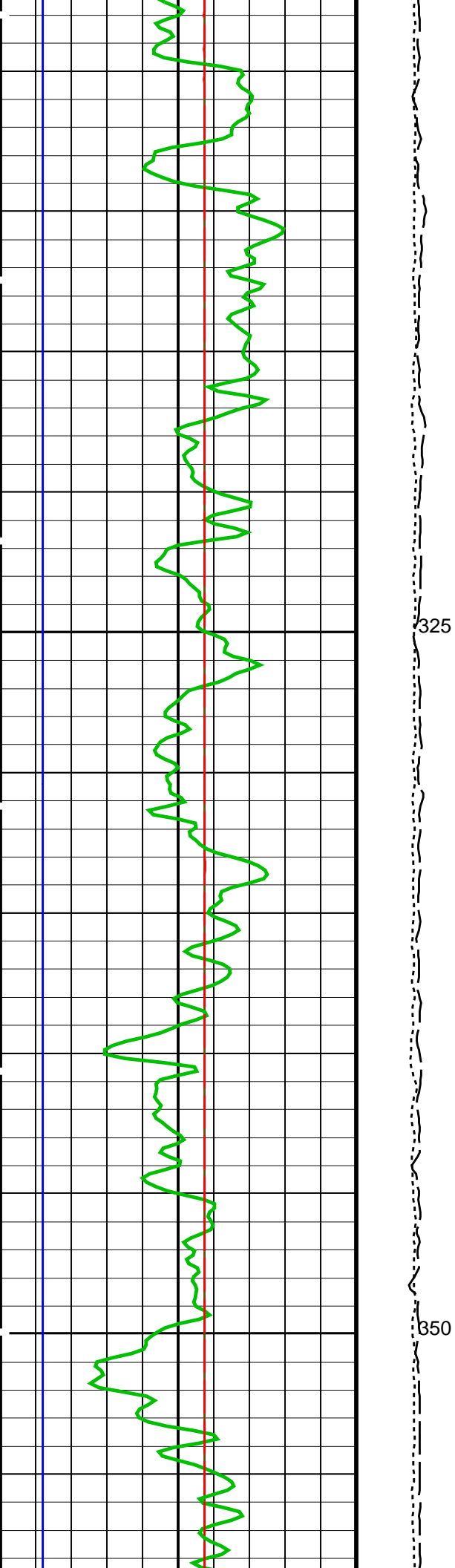


150
175



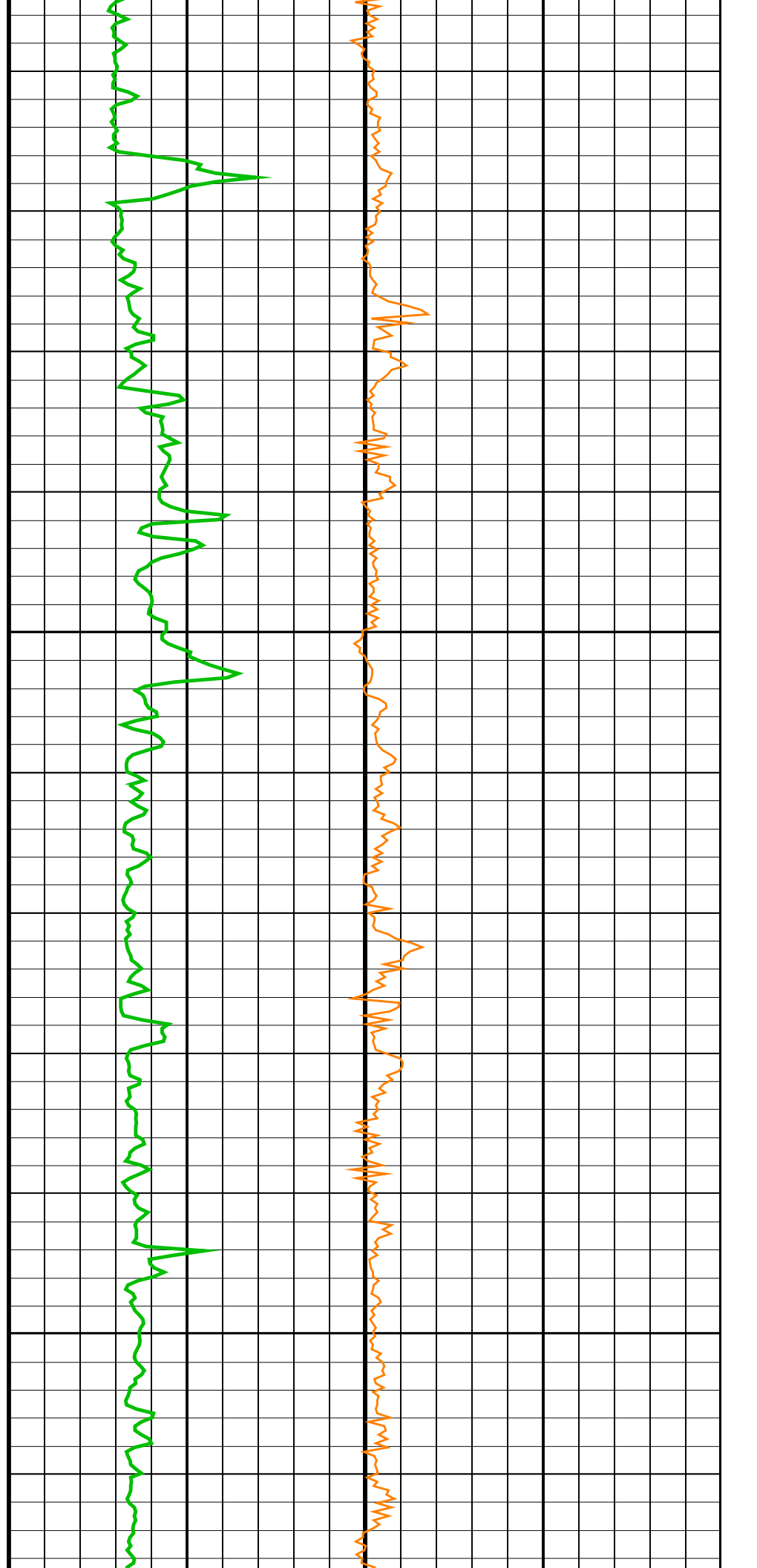


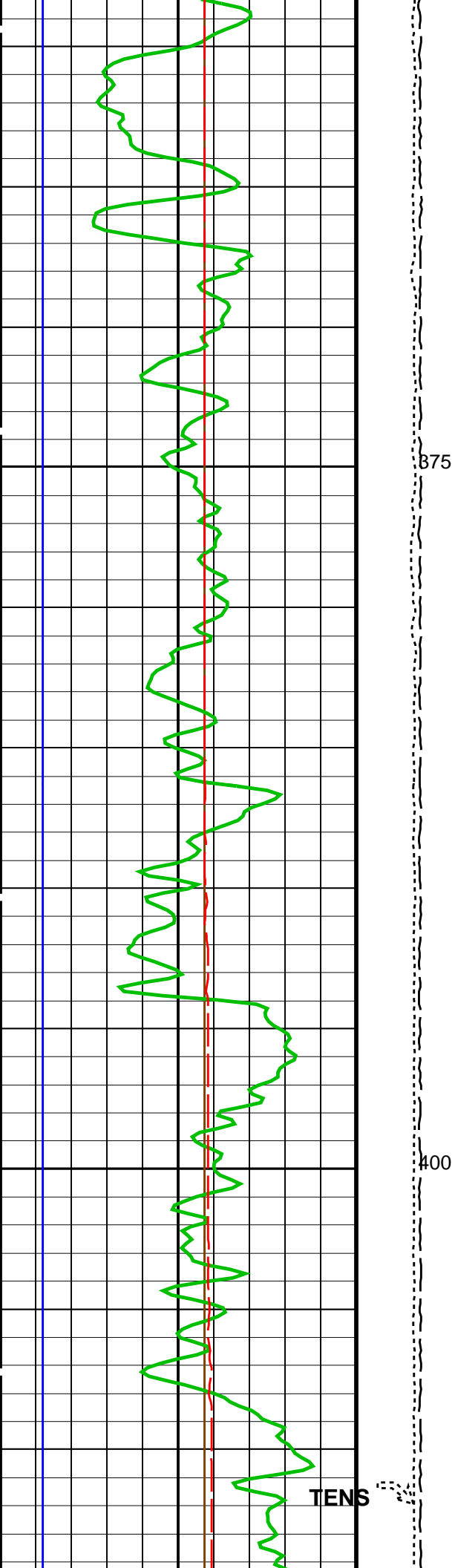




325

350

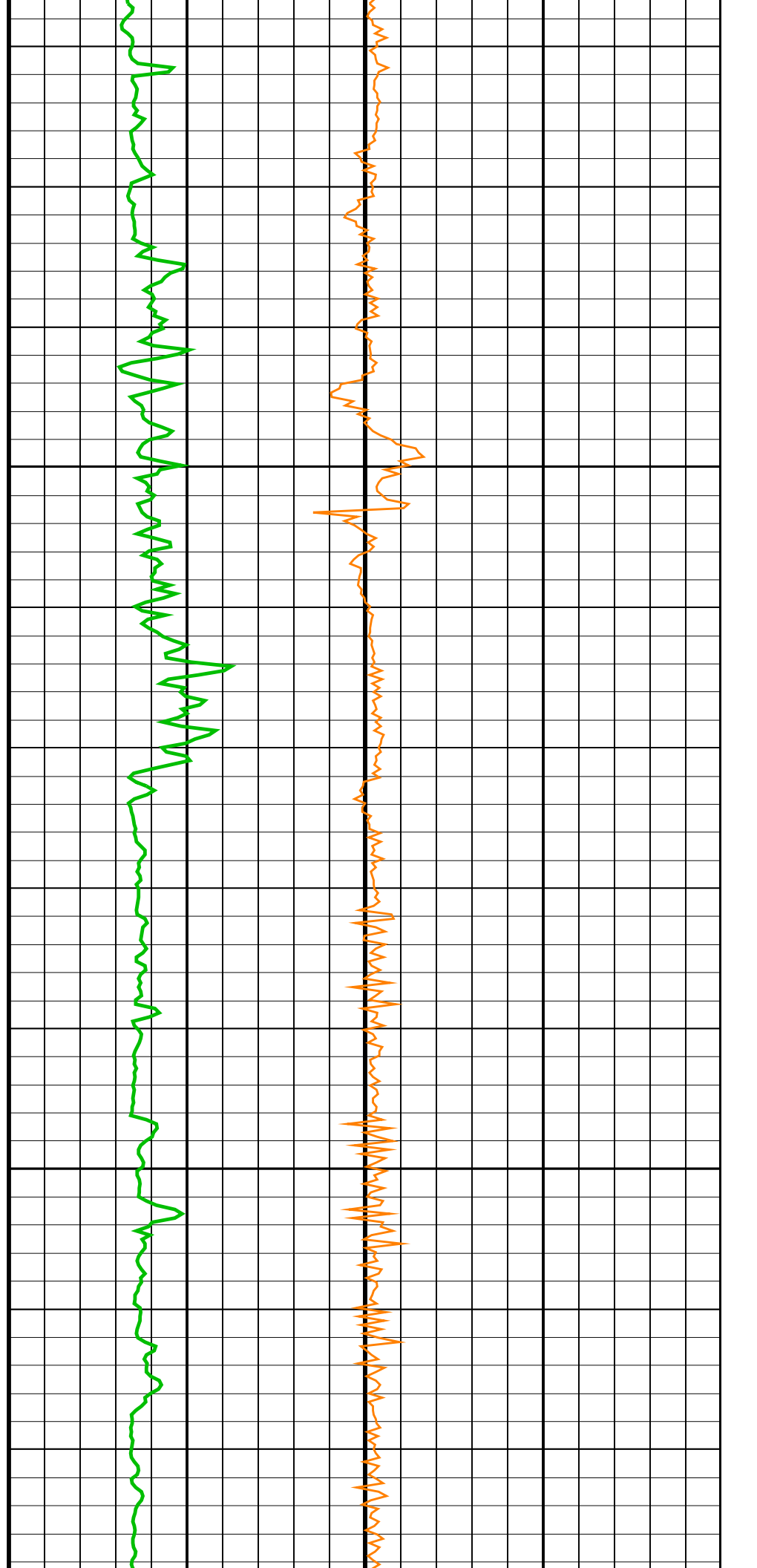


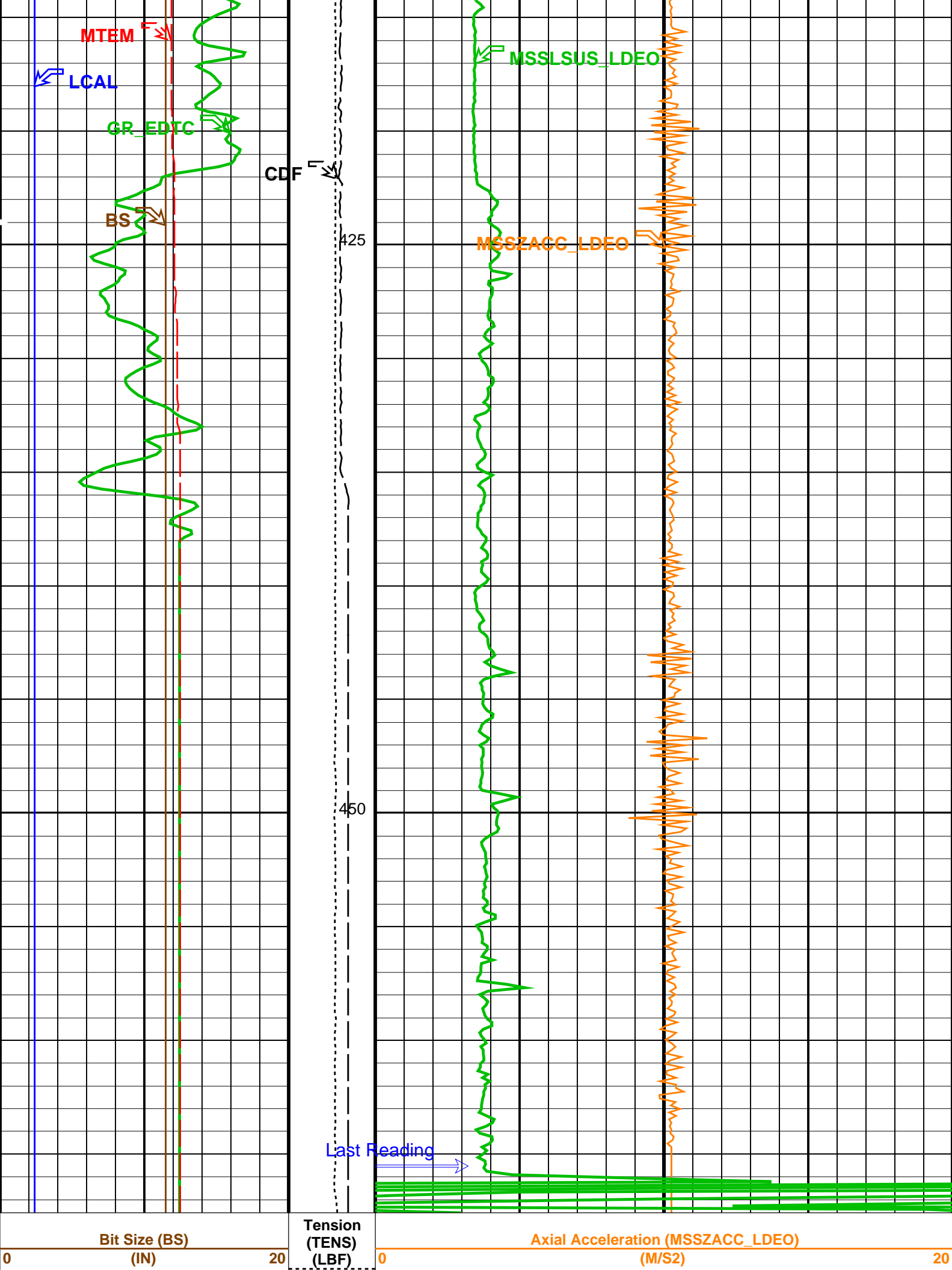


375

400

TENS





MTEM

LCAL

GR_EDTC

BS

MSSLSUS_LDEO

MSSZACC_LDEO

CDF

425

450

Last Reading

Bit Size (BS)
(IN)

Tension
(TENS)
(LBF)

Axial Acceleration (MSSZACC_LDEO)
(M/S2)

0

20

0

20

HLDS Caliper (LCAL) 0 (IN) 20		Calibrated Downhole Force (CDF) (LBF) 3000 0	Dual-Coil Susceptibility (MSSLSUS_LDEO) -7500 (PPM) 7500	
Mud temperature (MTEM) 0 (DEGC) 15		Downlog Sea Floor Depth		
Gamma Ray (GR_EDTC) 0 (GAPI) 100				

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	12.1565	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	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	
PROCINF	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	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	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	2.6	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	-0.00265981	
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	0.953116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	
	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	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	22.30	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	466	M
TDD	Total Depth - Driller	465.20	M
TDL	Total Depth - Logger	464.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: MSS_Logging

Vertical Scale: 1:200

Graphics File Created: 23-Apr-2015 23:46

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 Flip_MSS_LDEO_HRLA_039LUP PRODUCER 23-Apr-2015 23:17 4113.6 M 3609.6 M

Output DLIS Files

DEFAULT MSS_LDEO_HRLA_LDL_042PUP FN:37 PRODUCER 23-Apr-2015 23:46

Input DLIS Files

DEFAULT Flip_MSS_LDEO_HRLA_039LUP PRODUCER 23-Apr-2015 23:17 4113.6 M 3609.6 M

Output DLIS Files

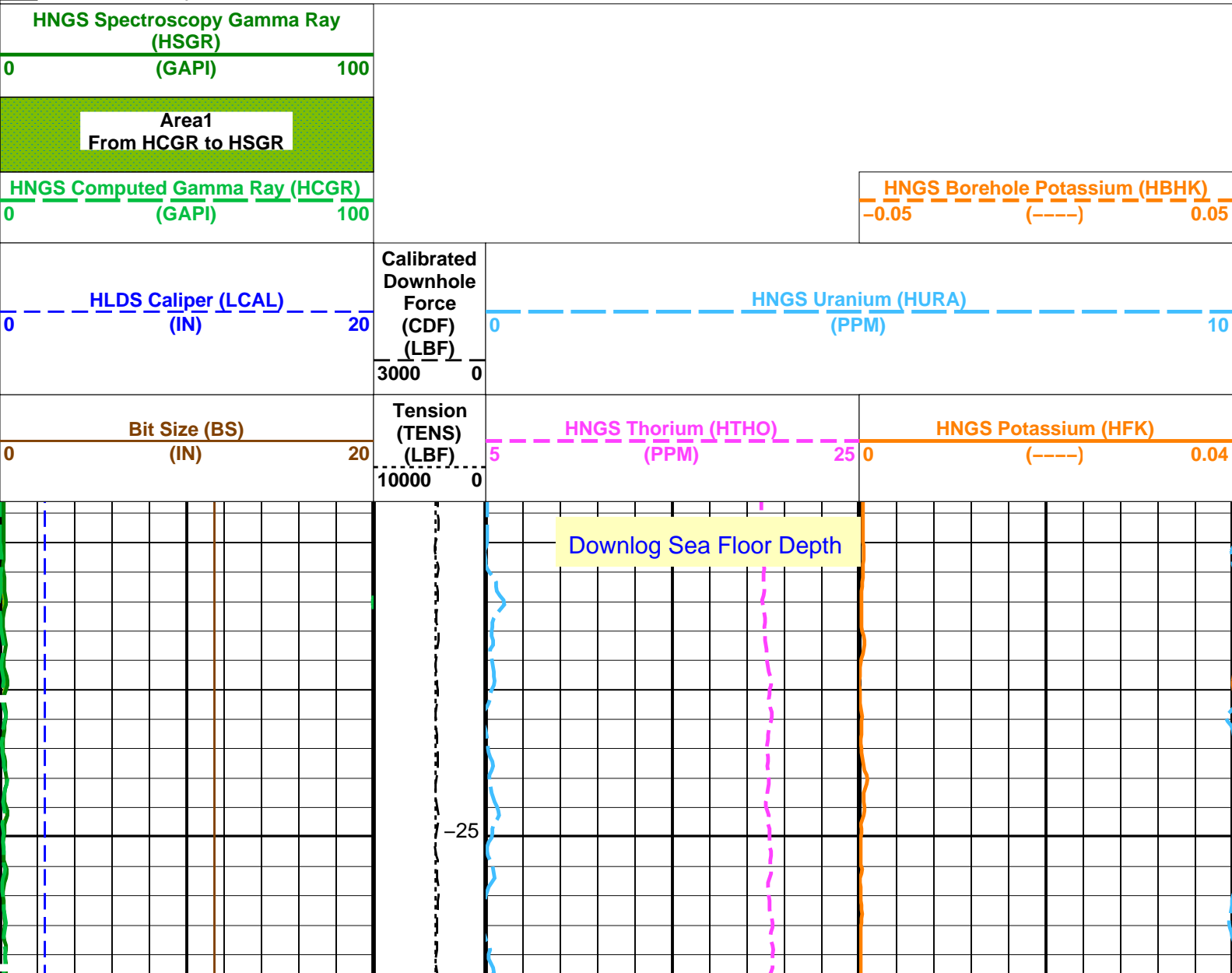
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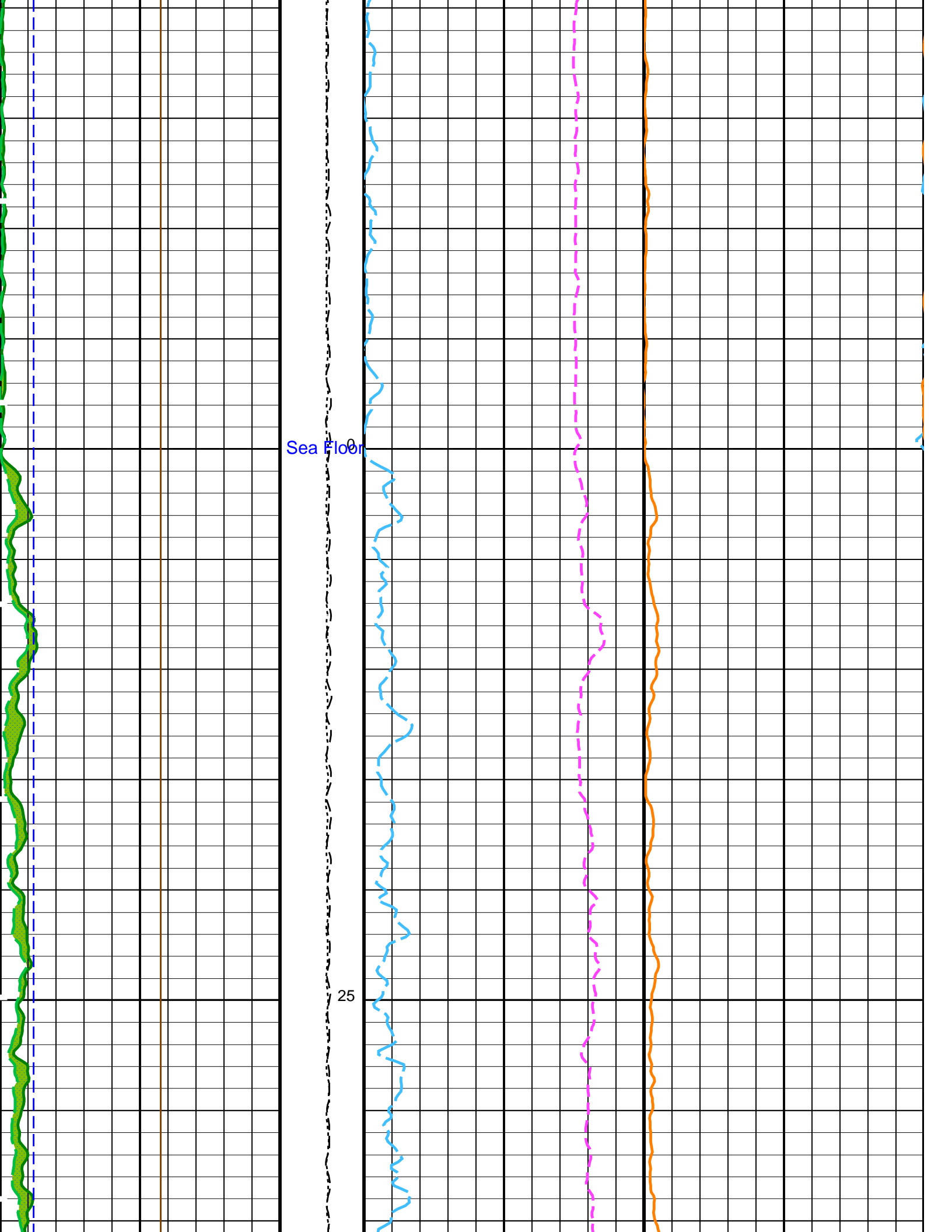
OP System Version: 19C0-187

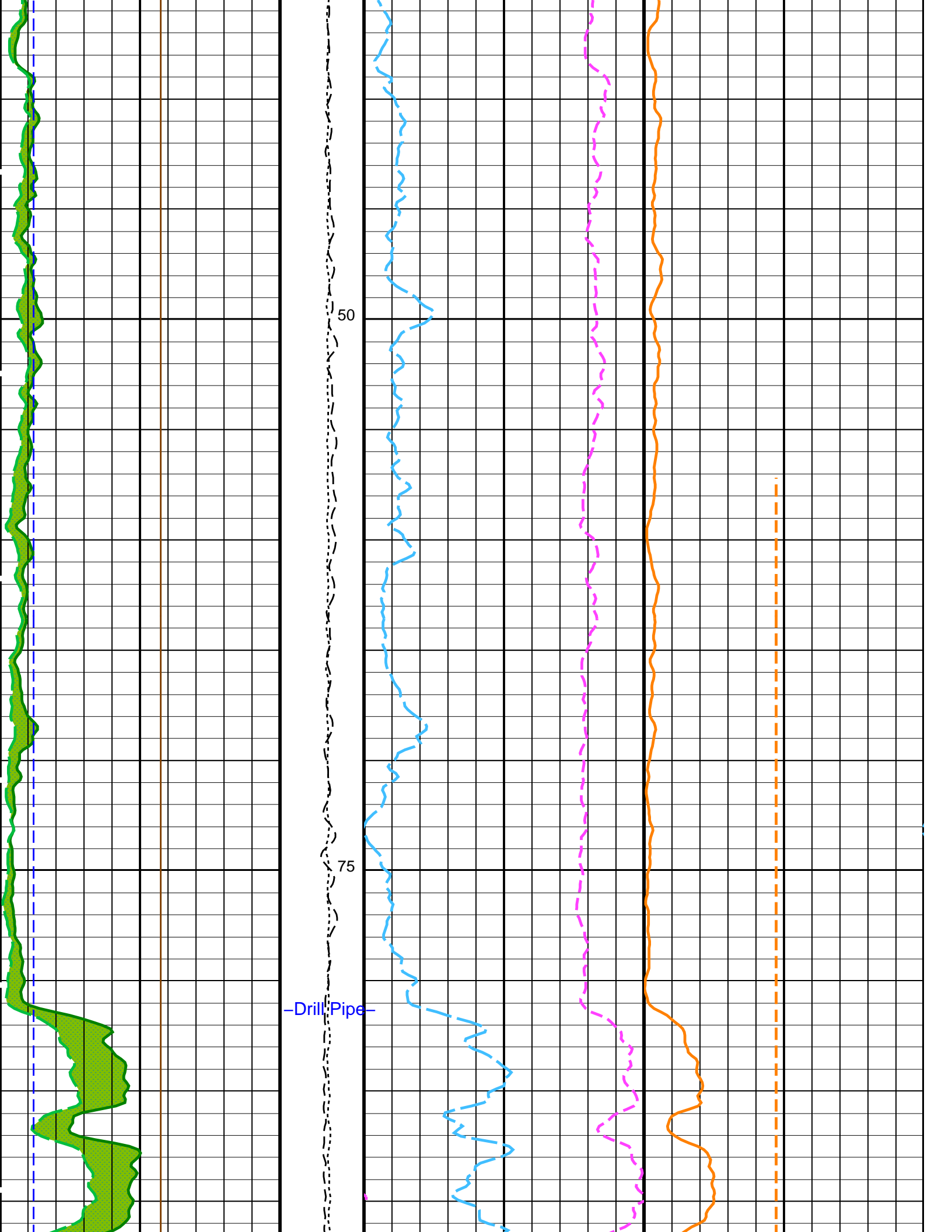
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HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

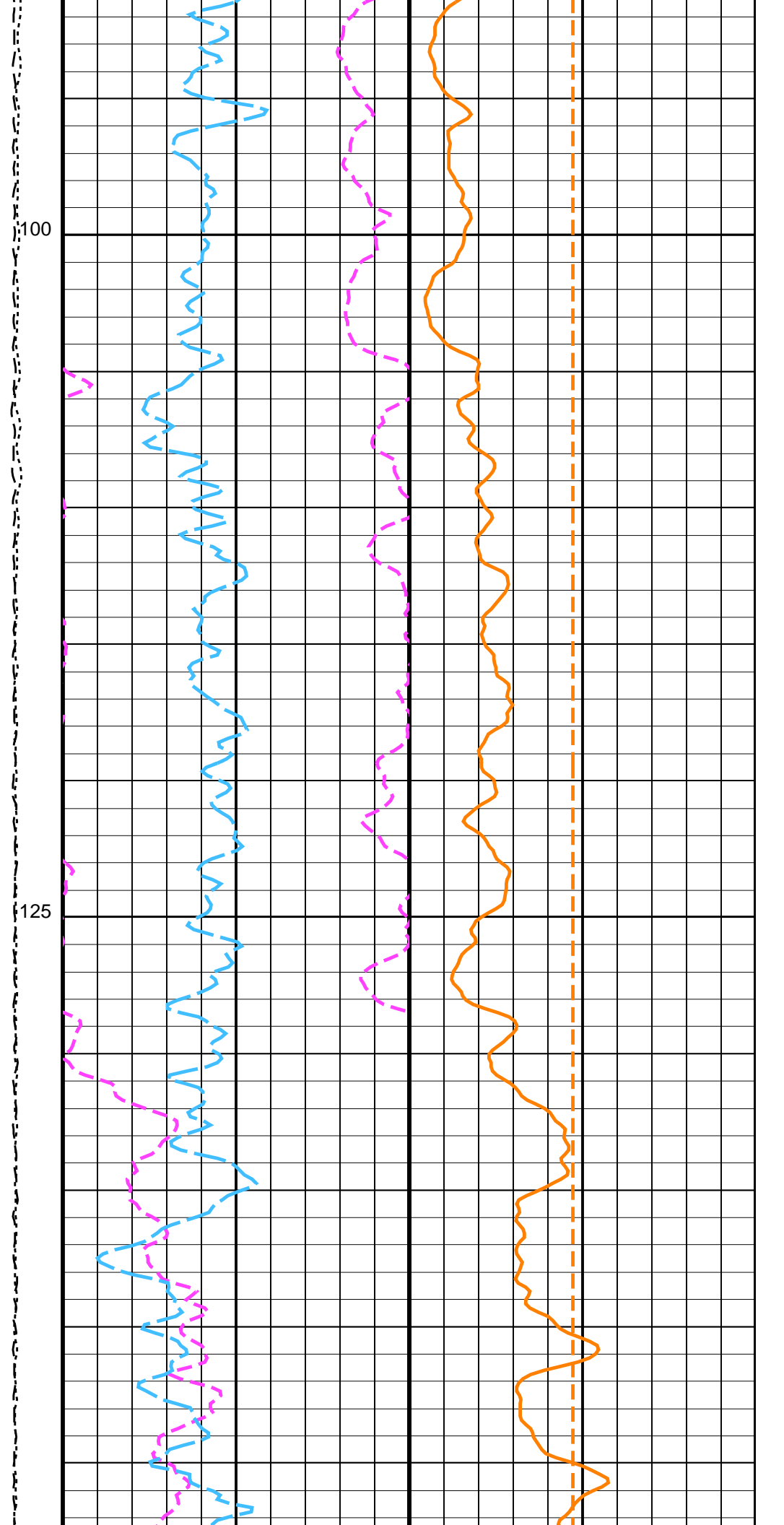
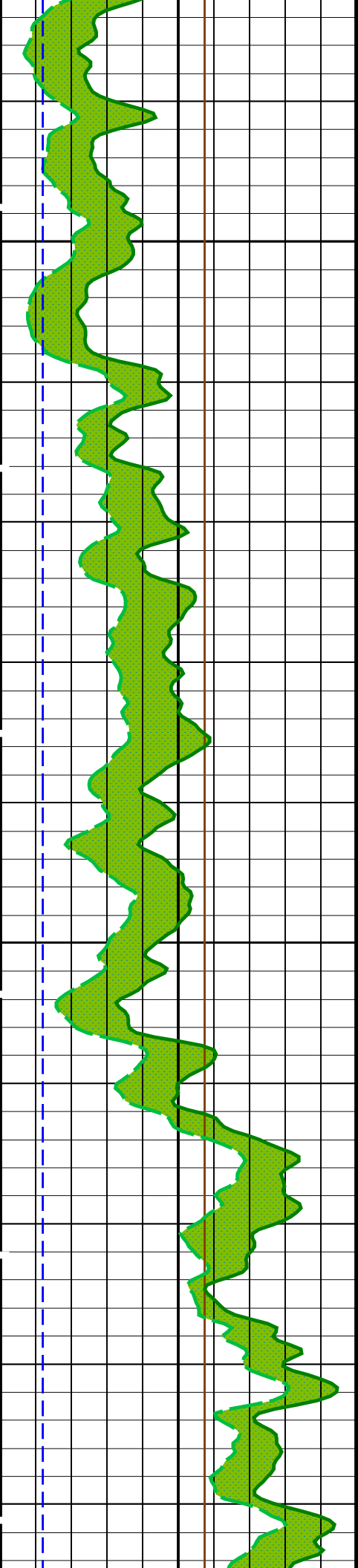
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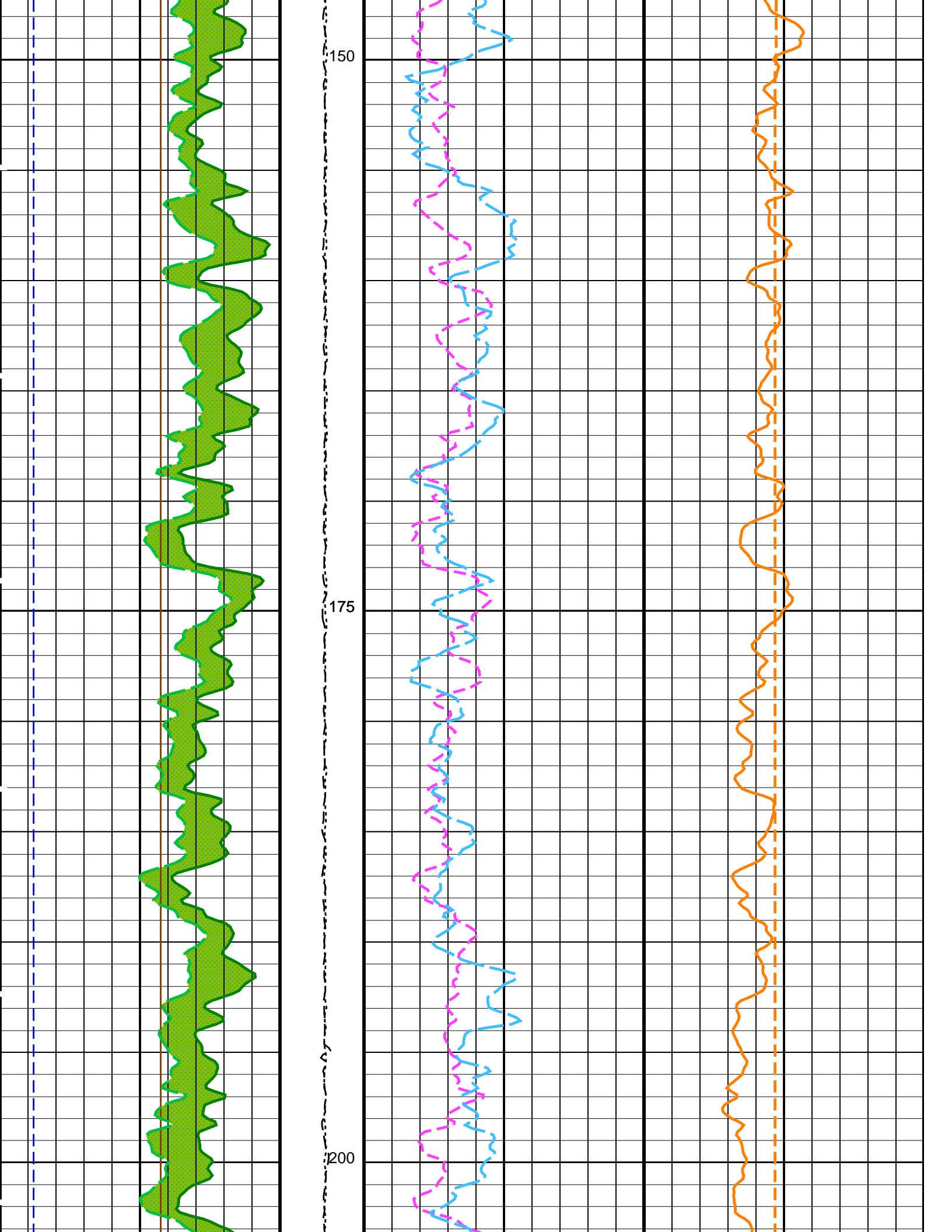
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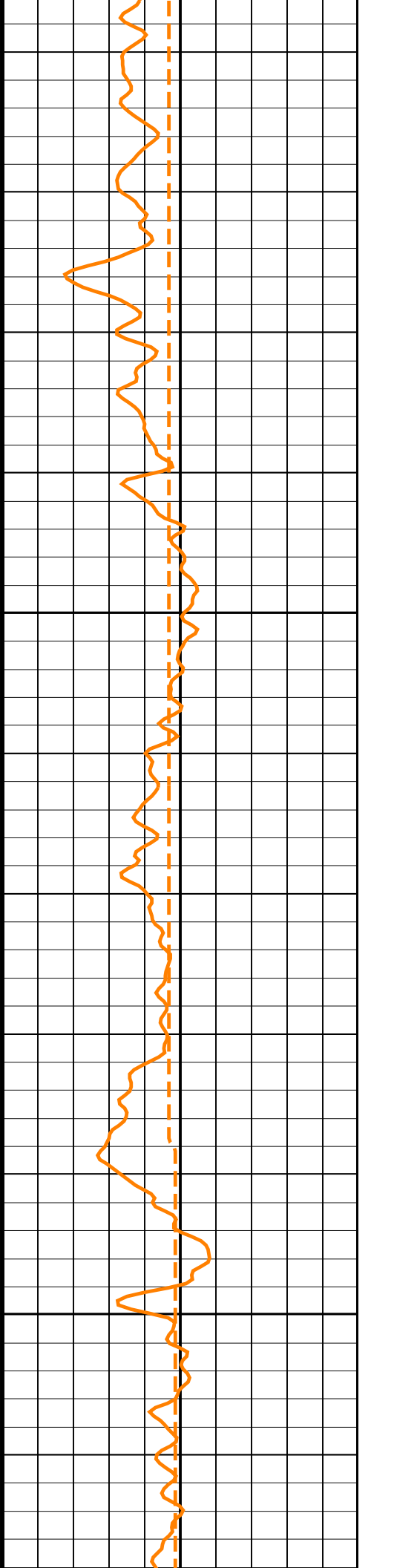
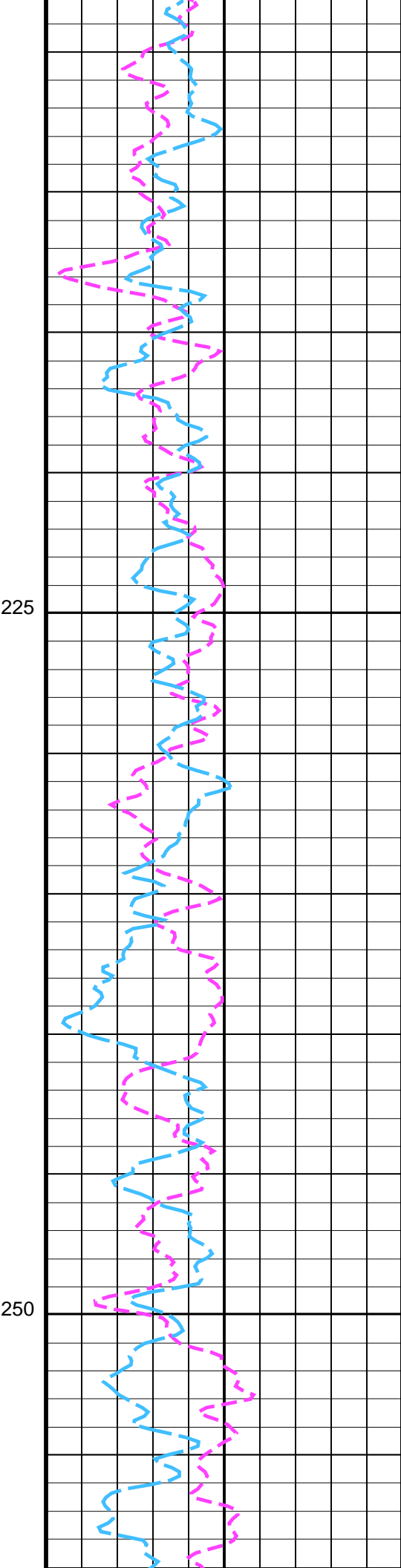
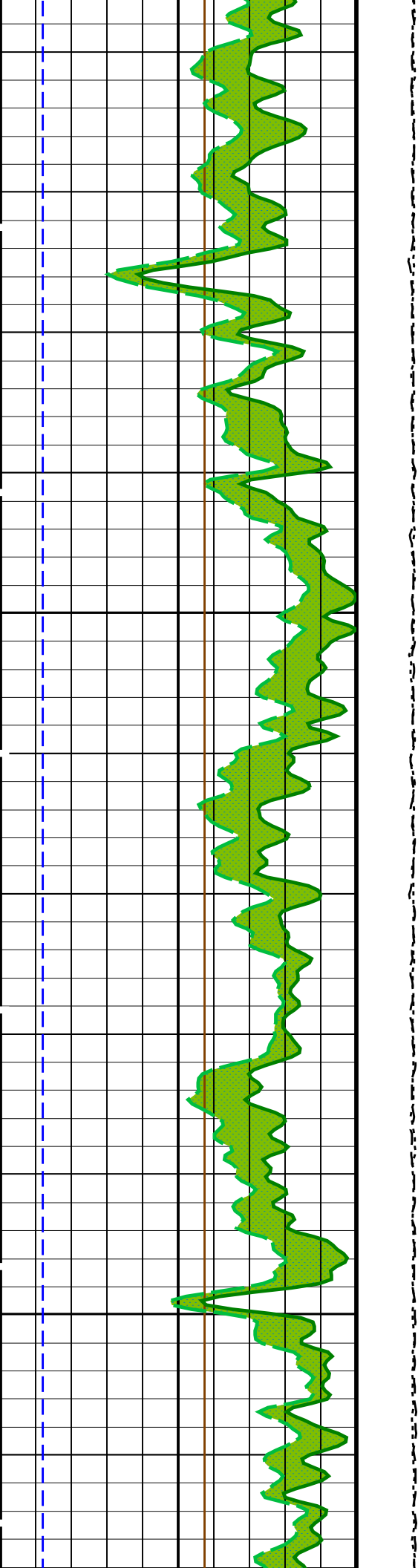


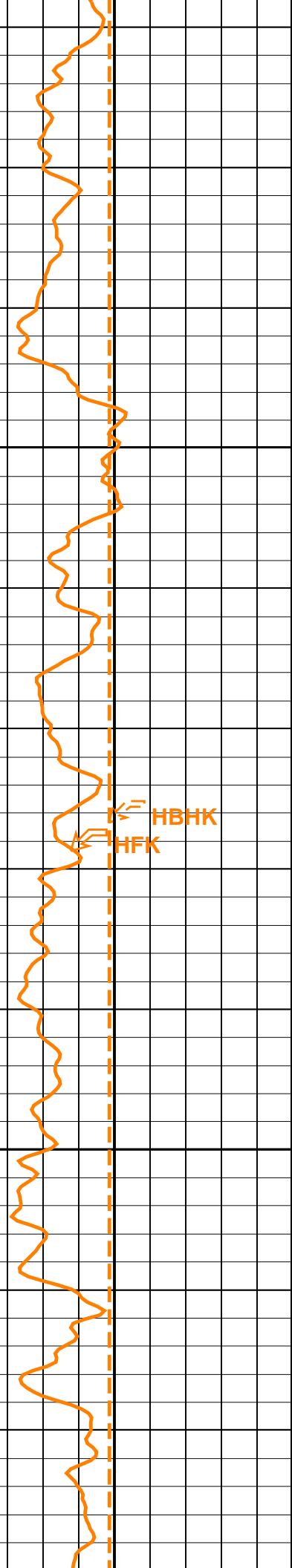
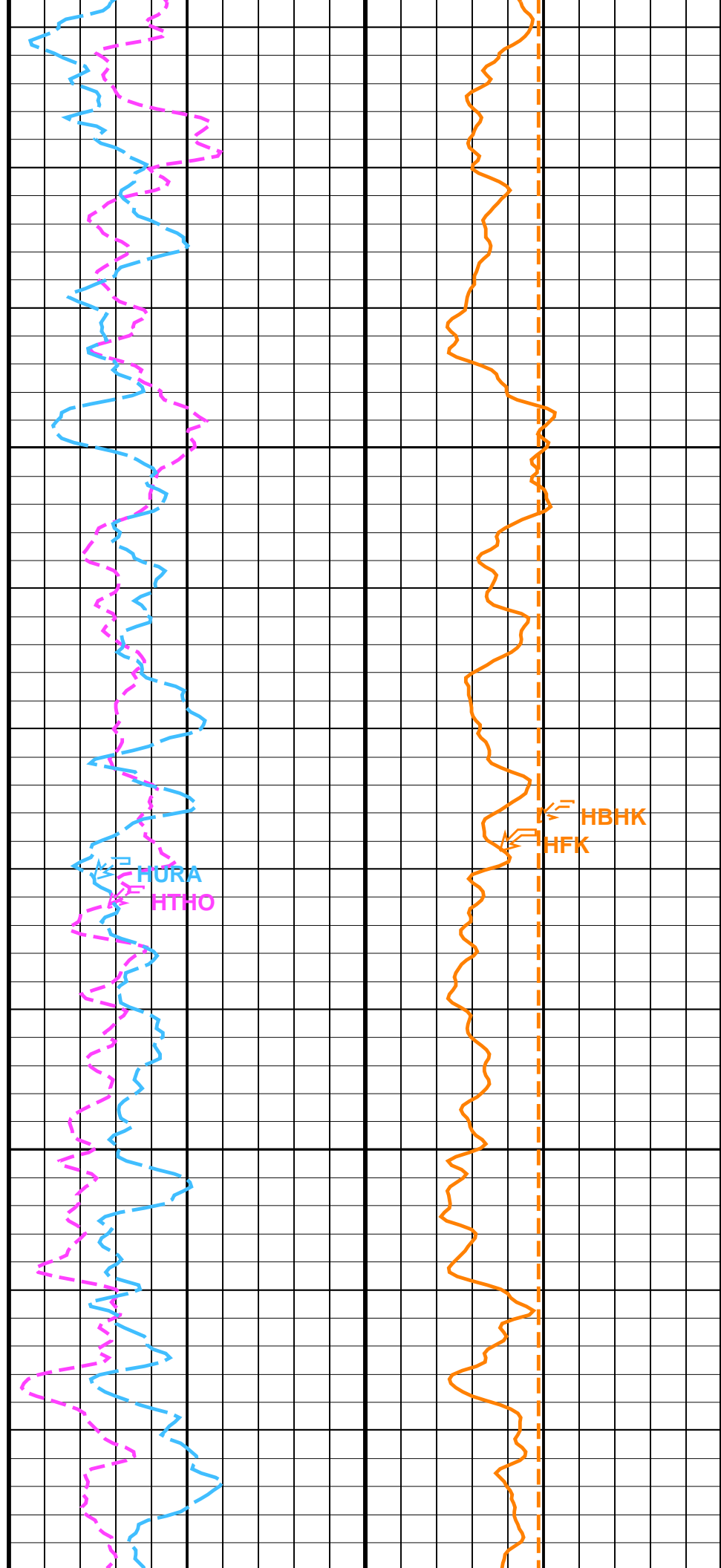
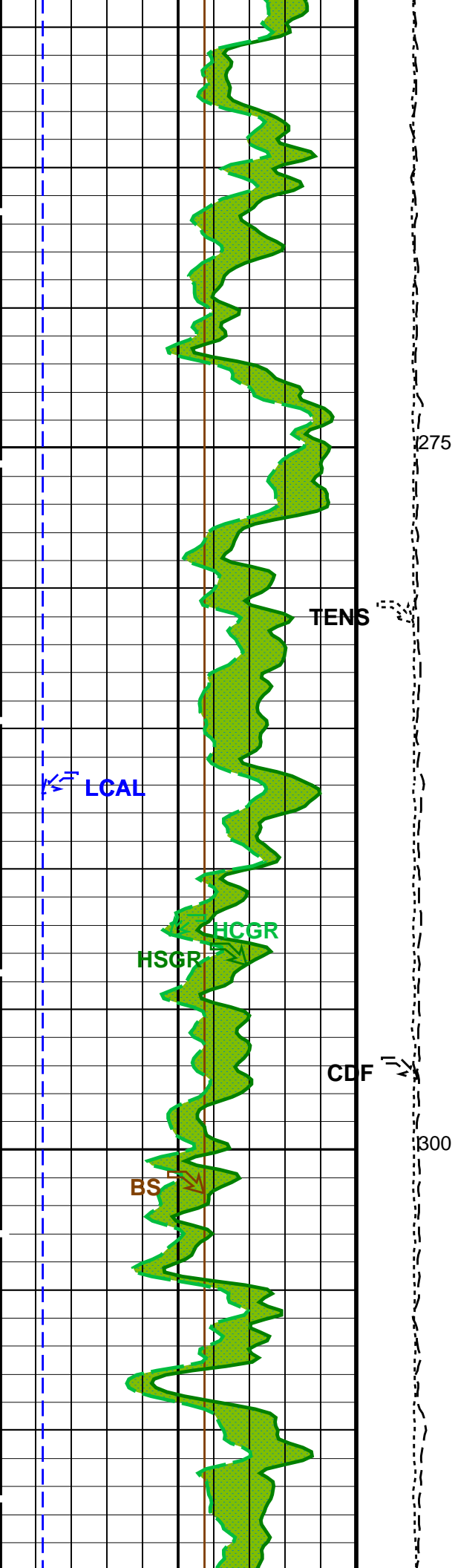


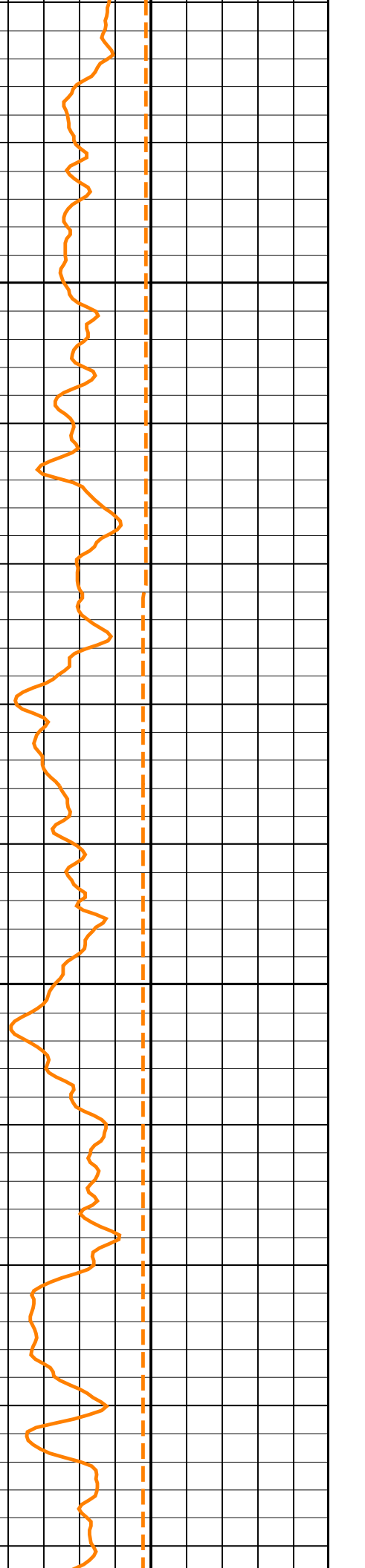
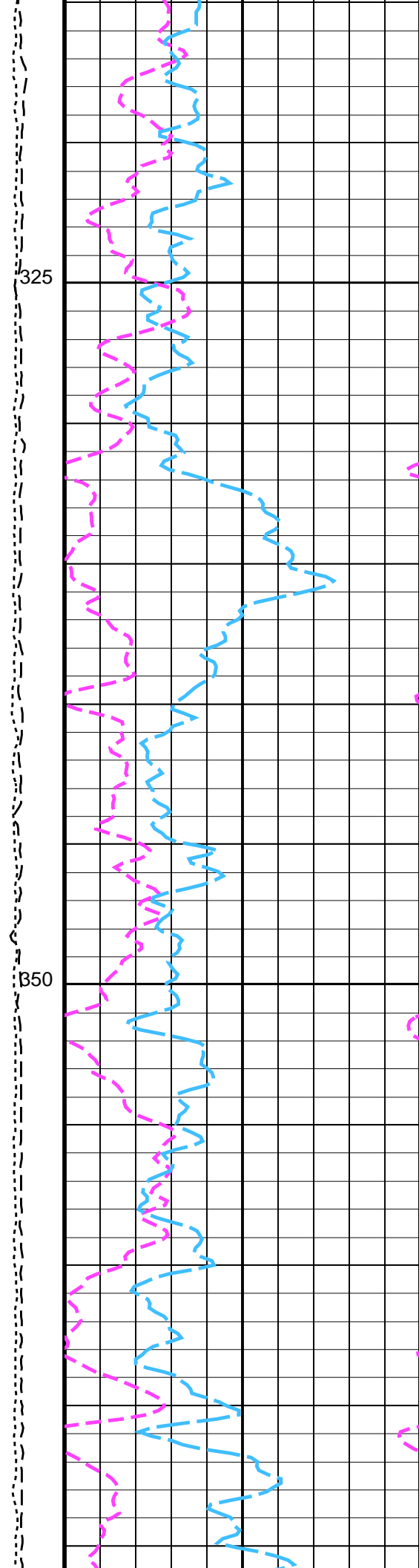
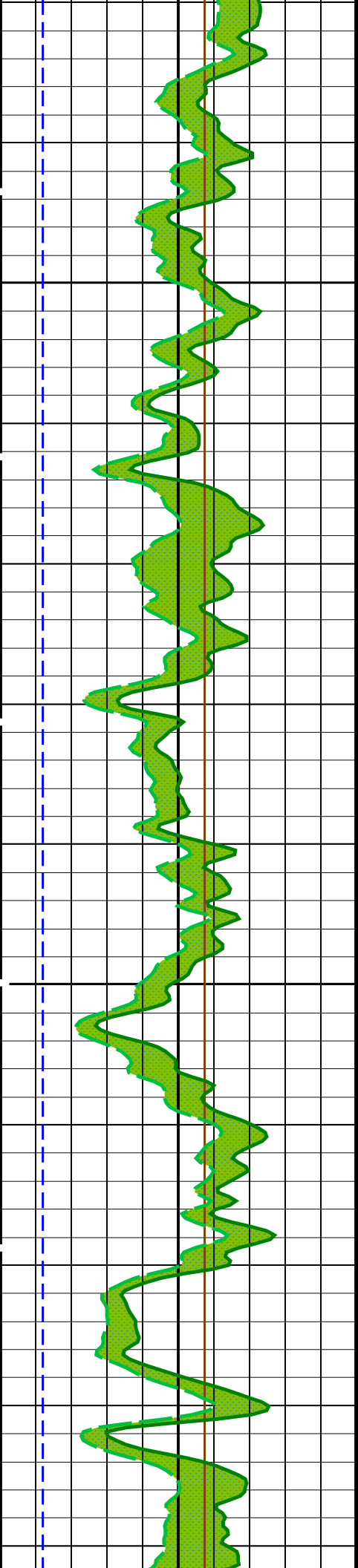


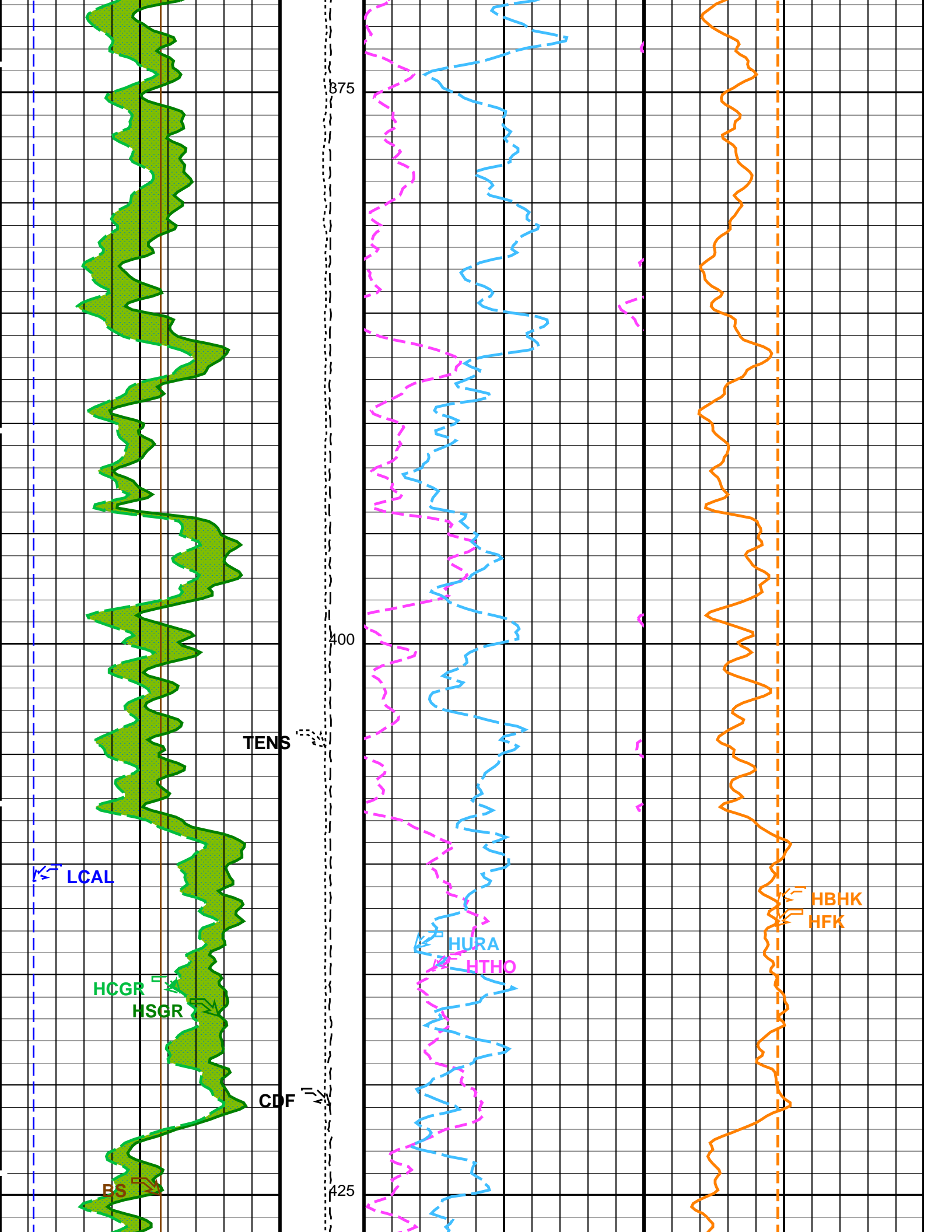


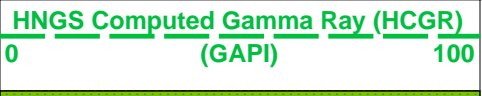
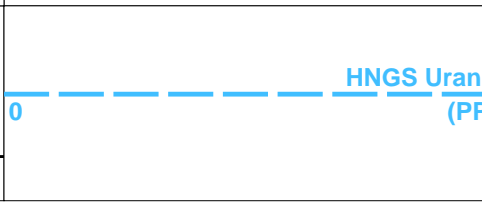
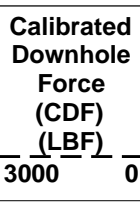
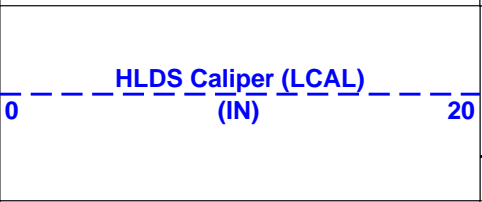
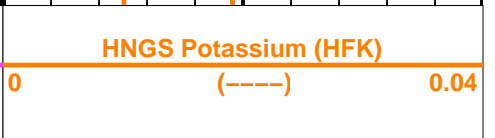
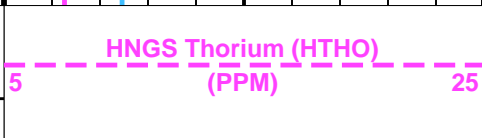
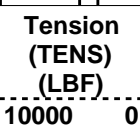
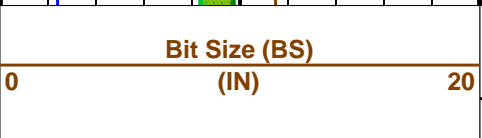
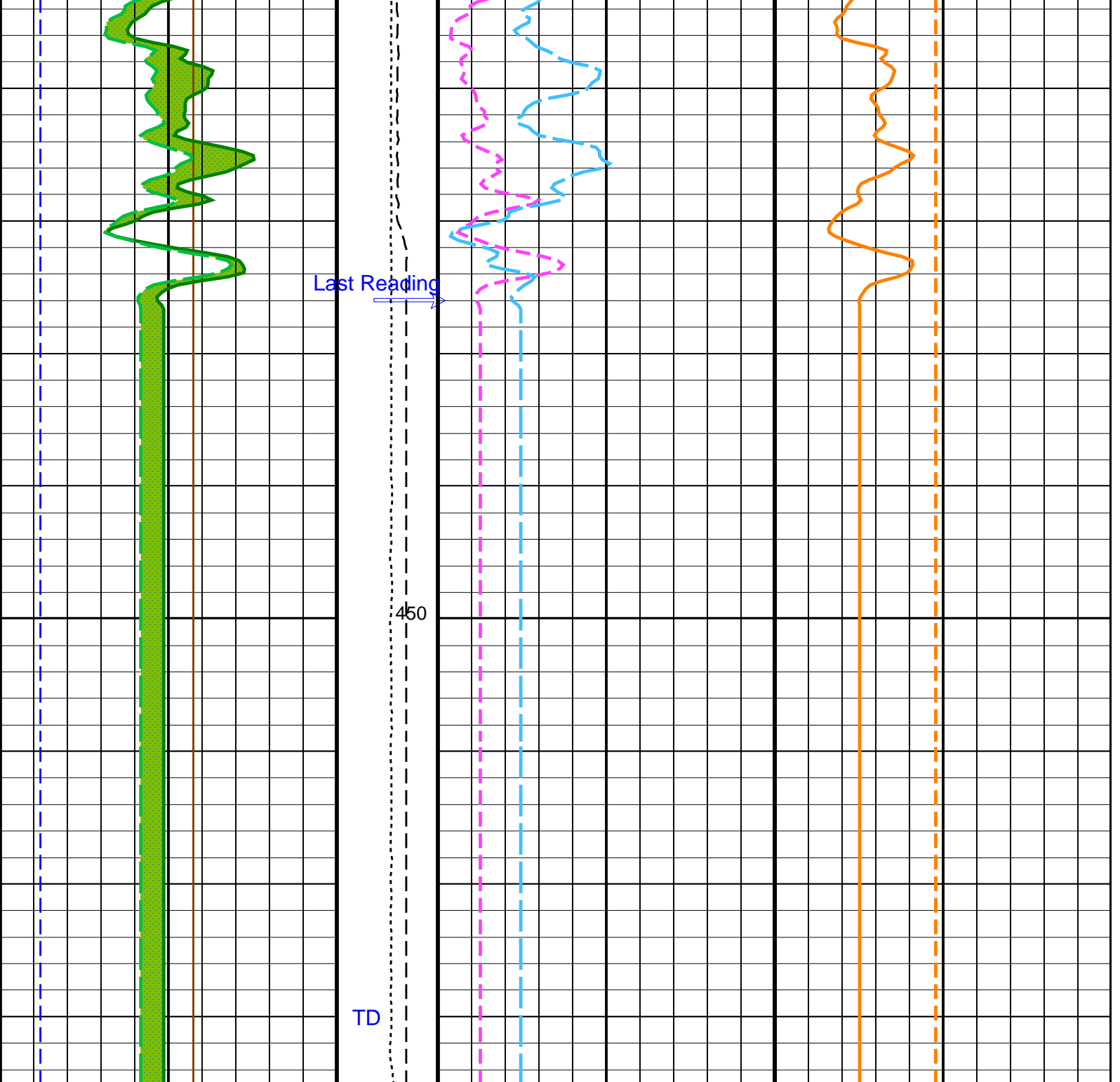












Downlog Sea Floor Depth



Area1
From HCGR to HSGR

HNGS Spectroscopy Gamma Ray (HSGR)

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HRLT-B: High Resolution Laterolog Array - B			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
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	
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	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00265981	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.953116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	
EDTC-B: Enhanced DTS Cartridge			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
System and Miscellaneous			
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
PP	Playback Processing	NORMAL	

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 23-Apr-2015 23:46

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	Flip_MSS_LDEO_HRLA_039LUP	PRODUCER	23-Apr-2015 23:17	4113.6 M	3609.6 M
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Output DLIS Files

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Input DLIS Files

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Output DLIS Files

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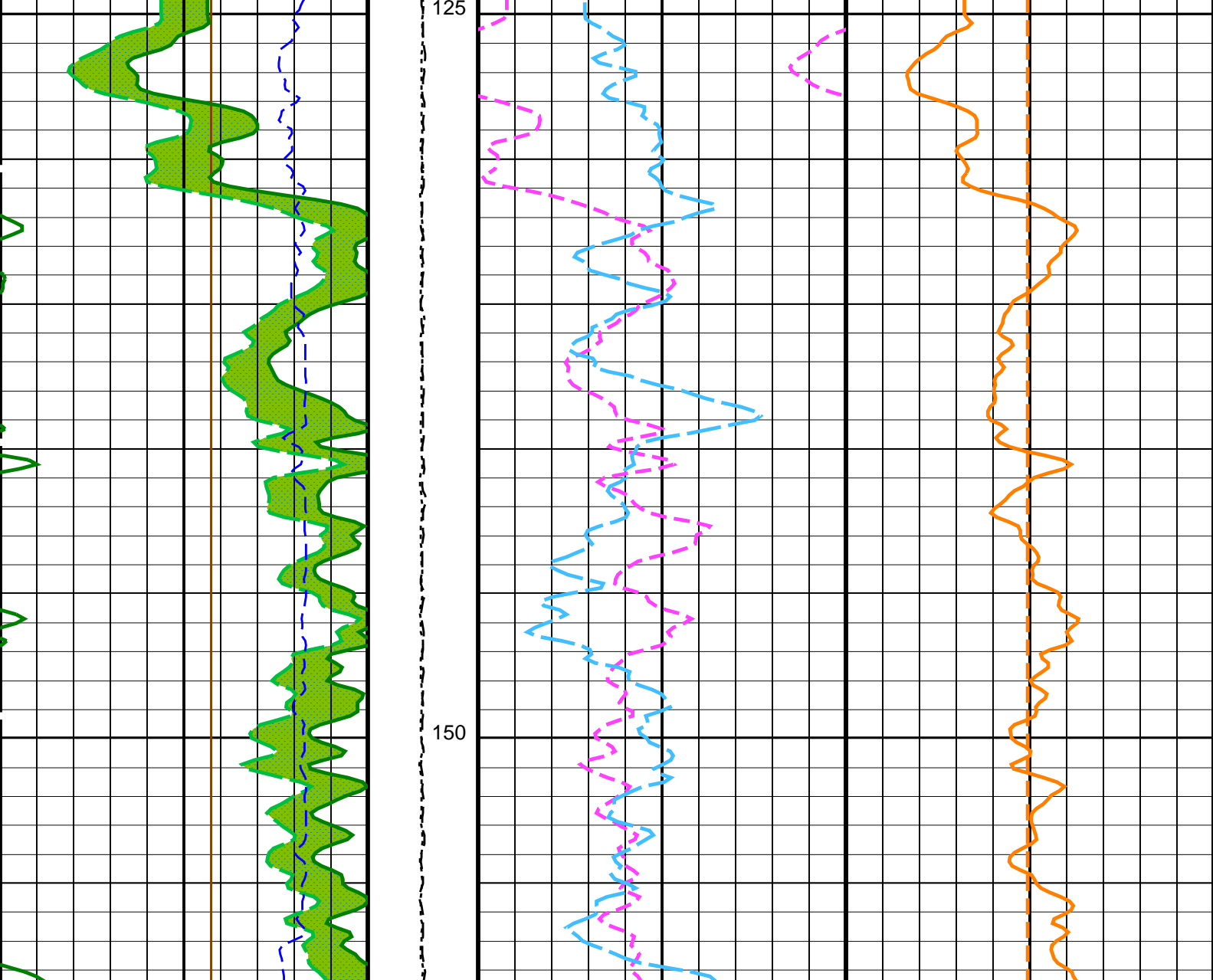
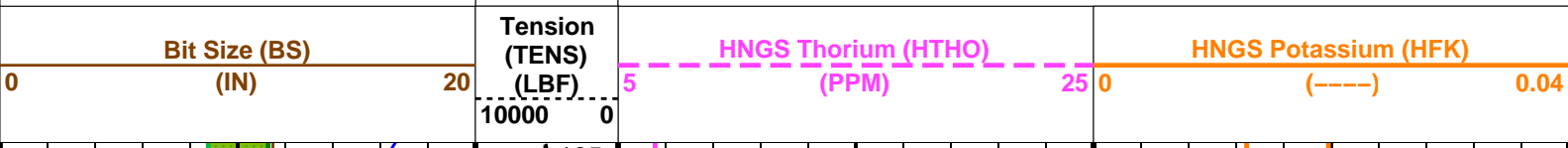
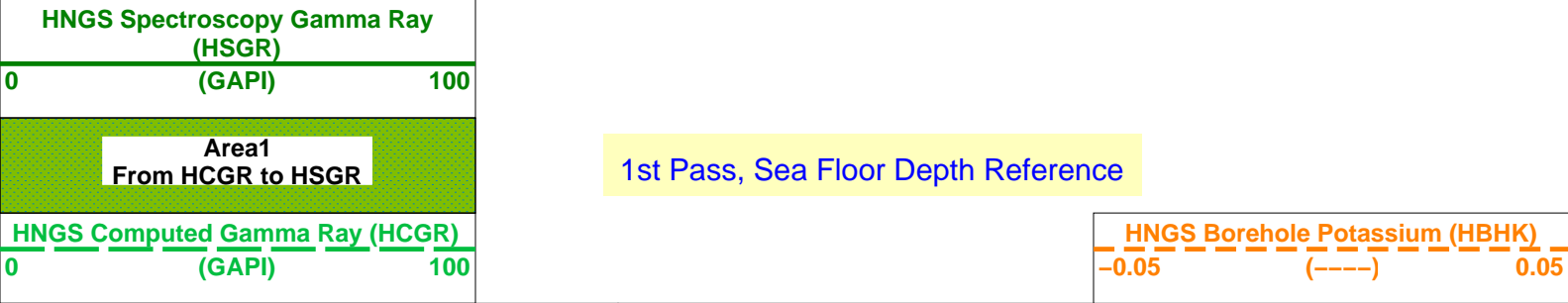
OP System Version: 19C0-187

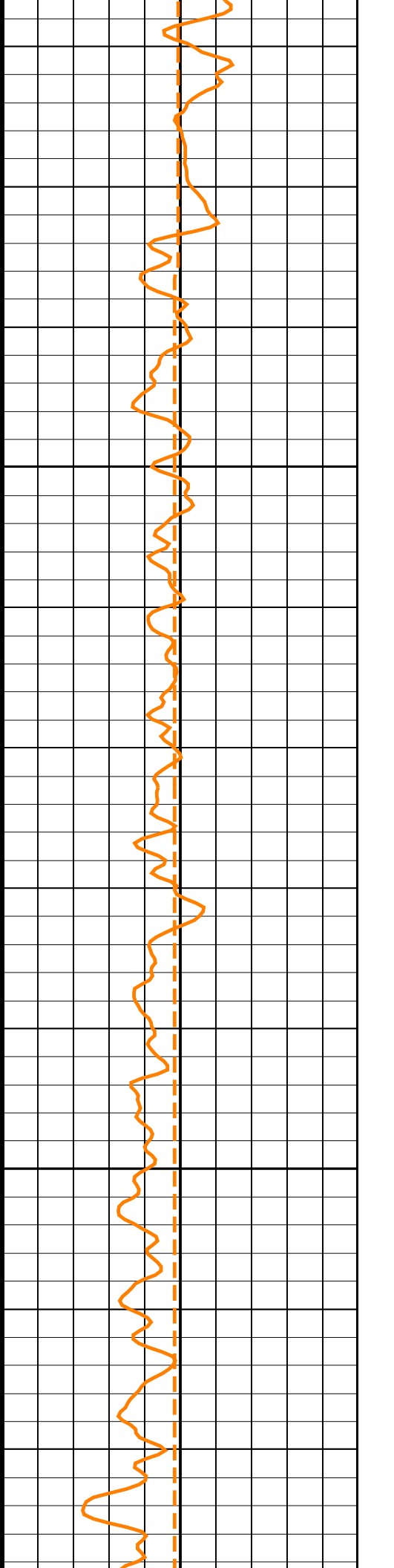
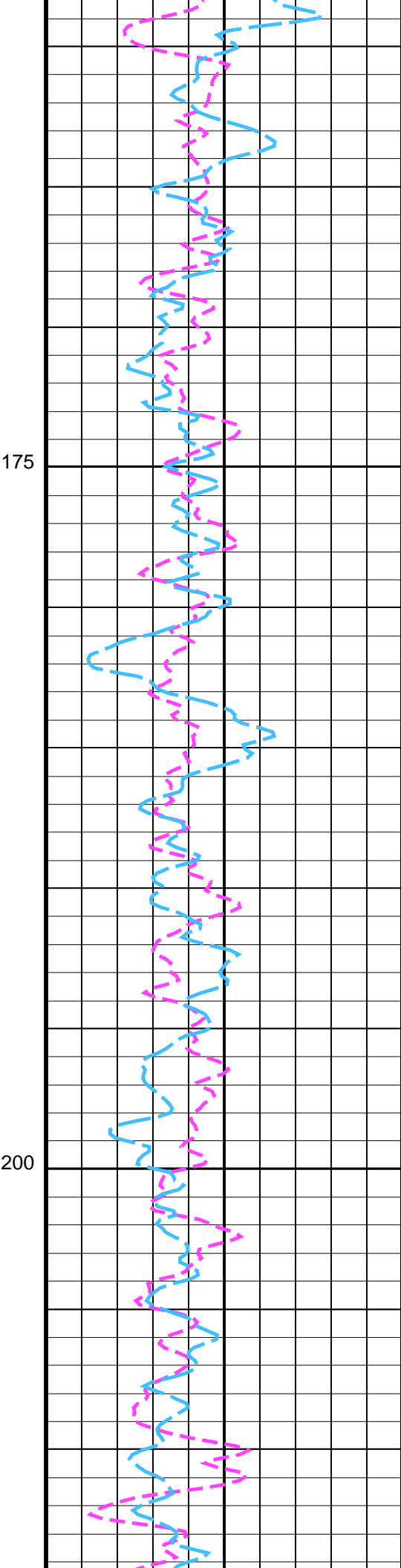
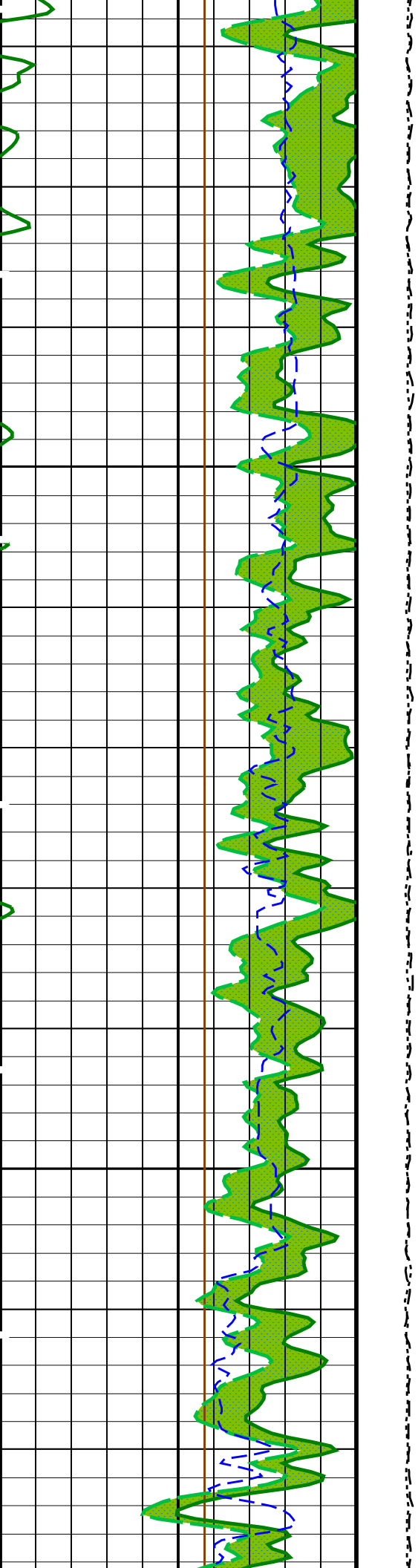
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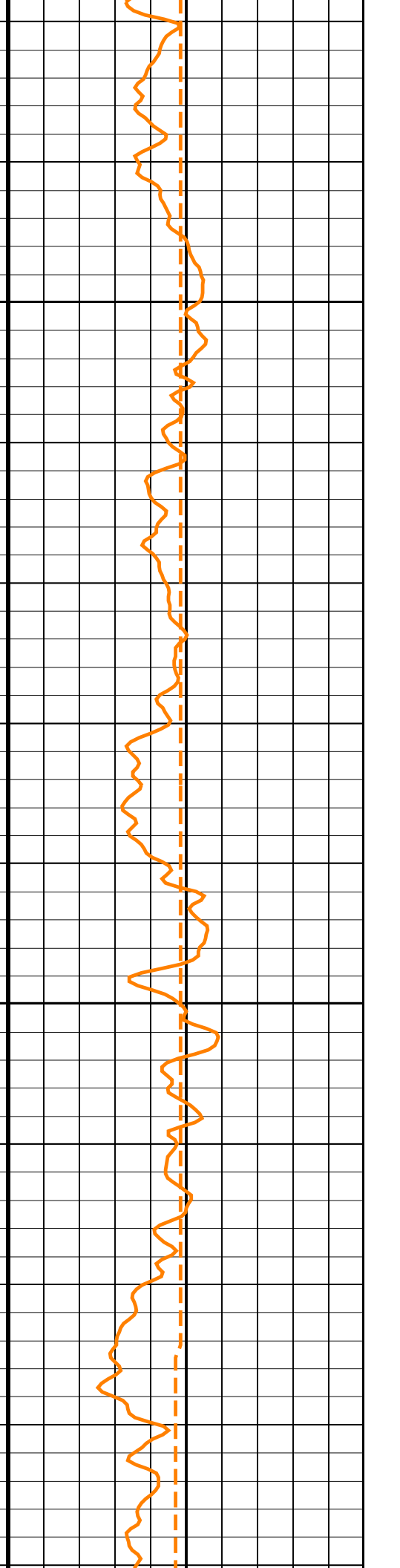
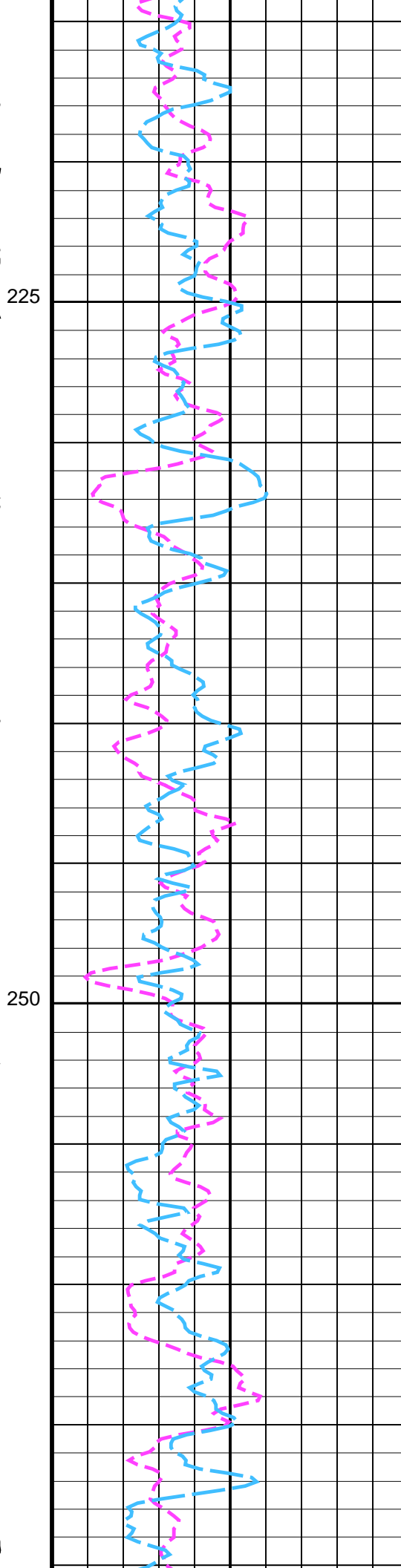
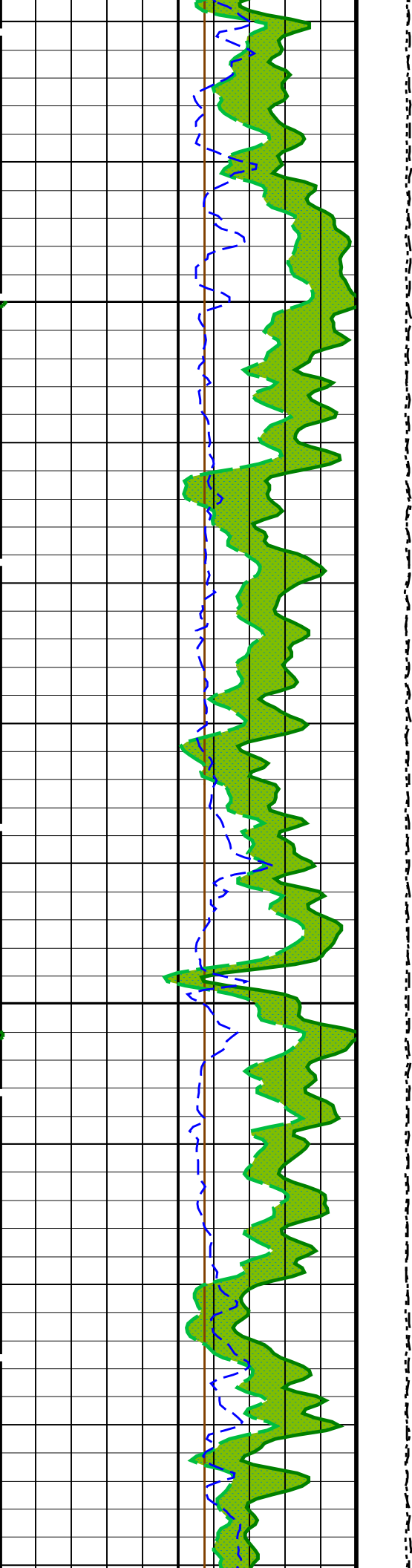
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HLDS	19C0-187	LDSC-B	19C0-187
HNGC-B	19C0-187	HNGS-BA	19C0-187
EDTC-B	SKK-5169-EDTCB		

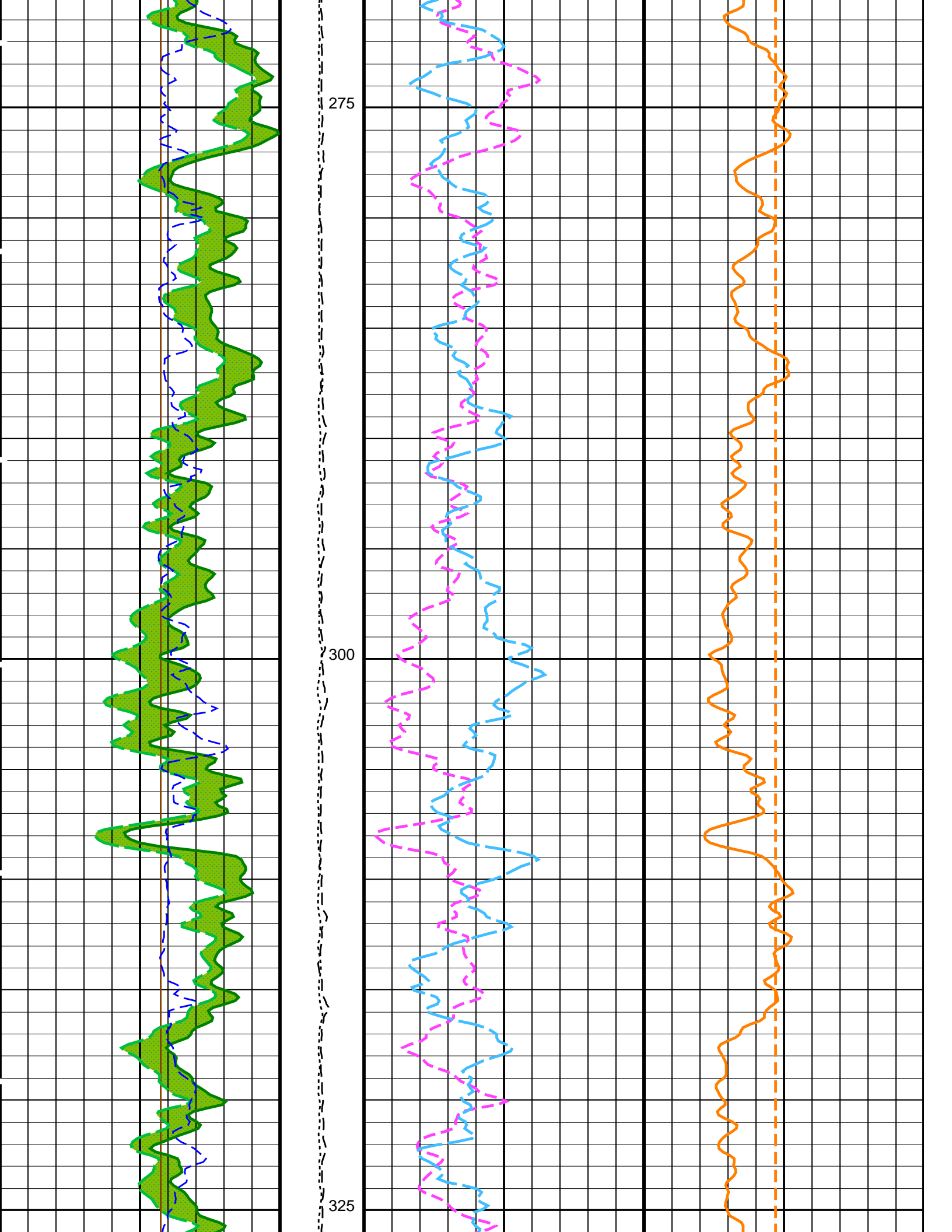
PIP SUMMARY

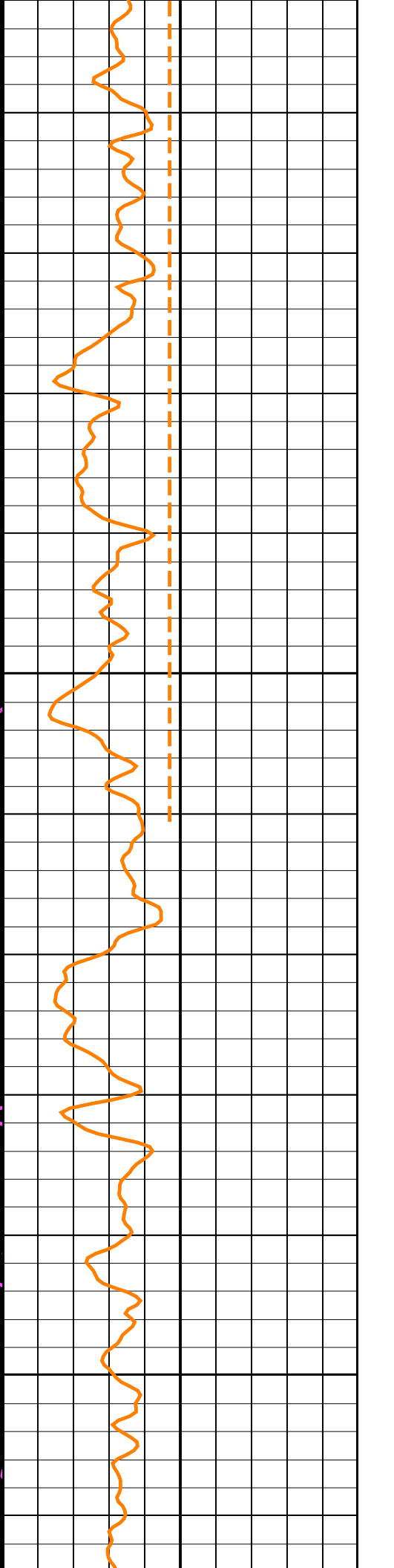
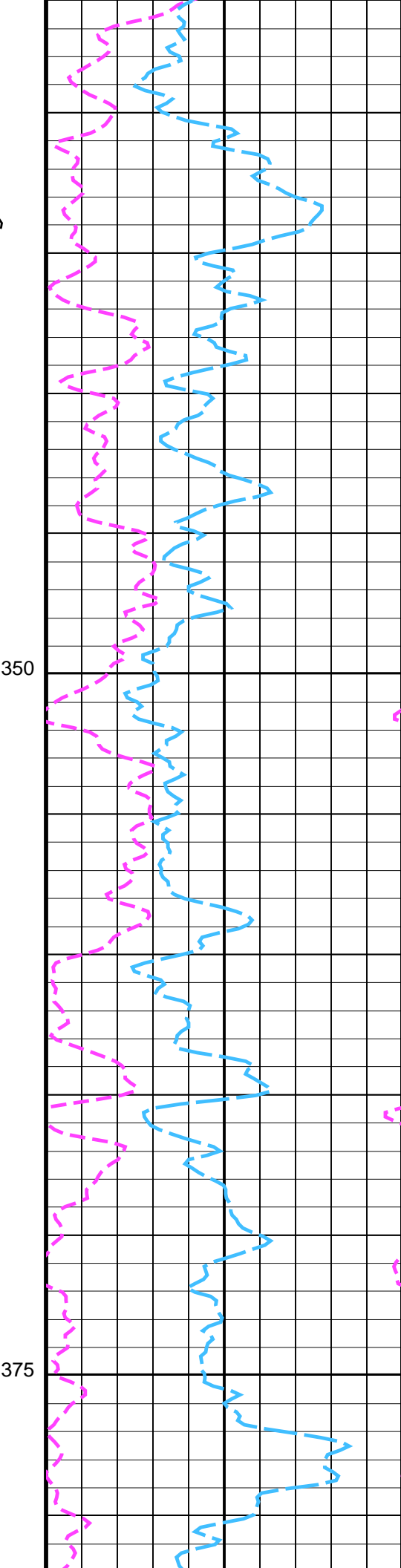
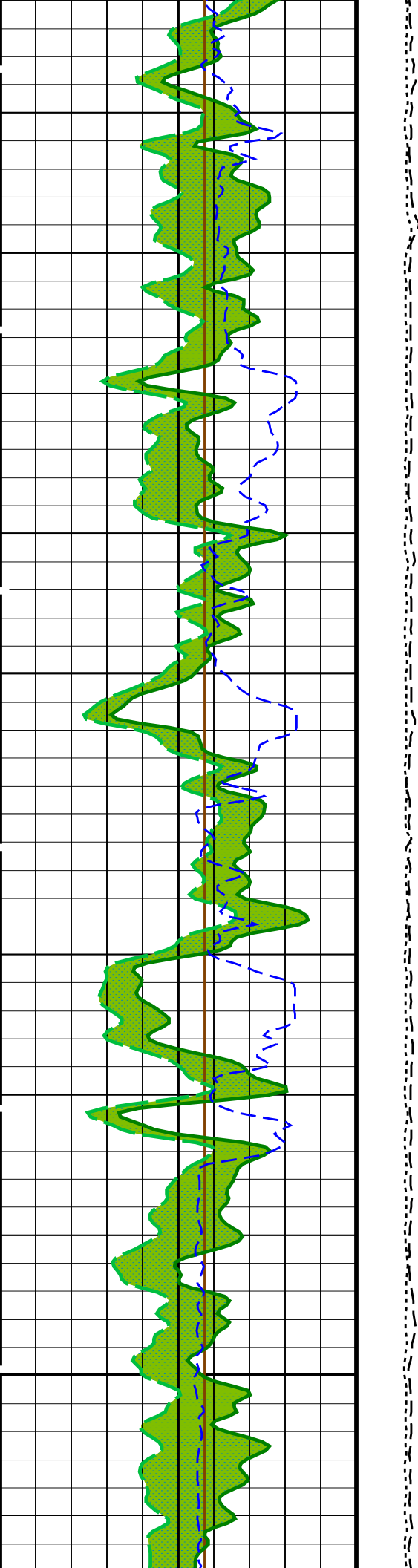
Time Mark Every 60 S

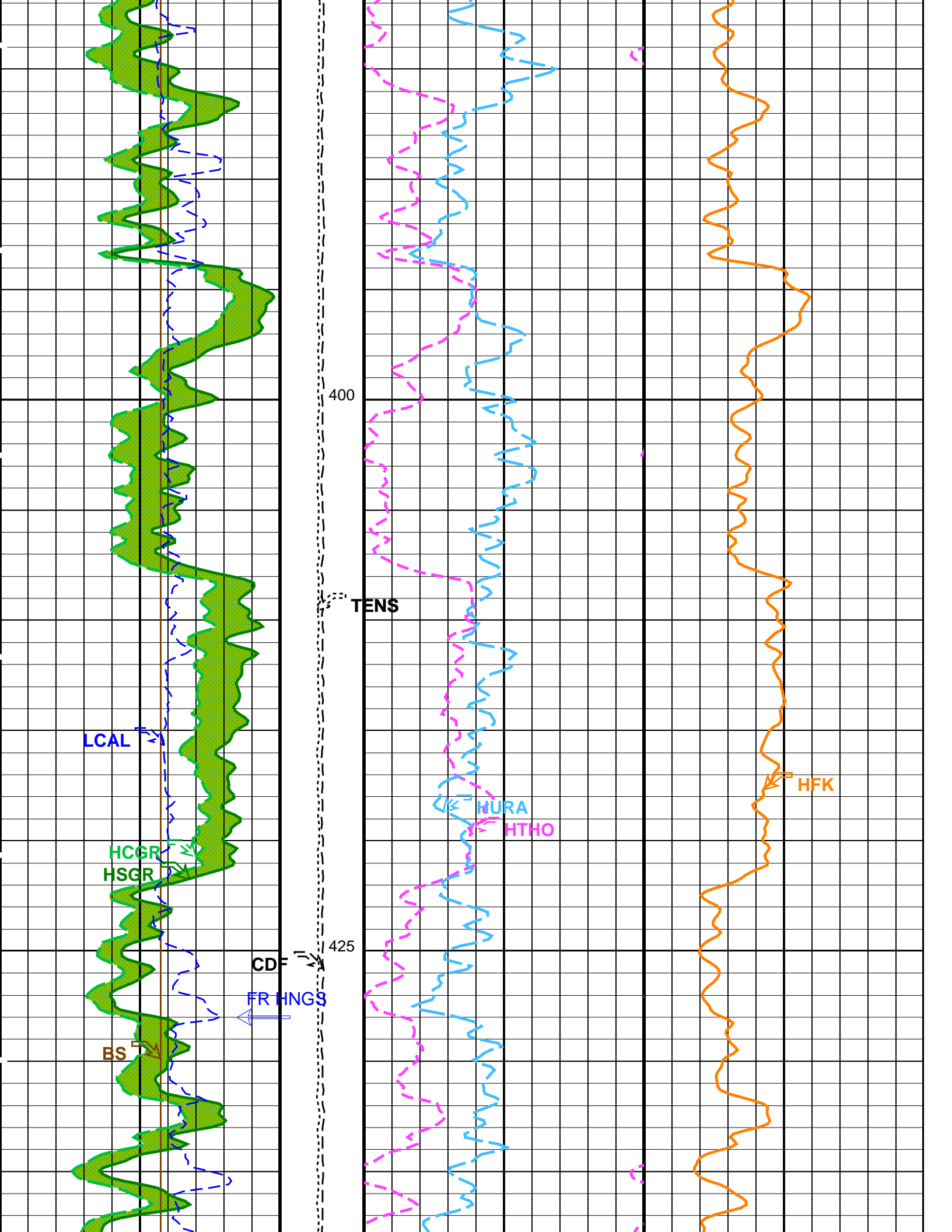


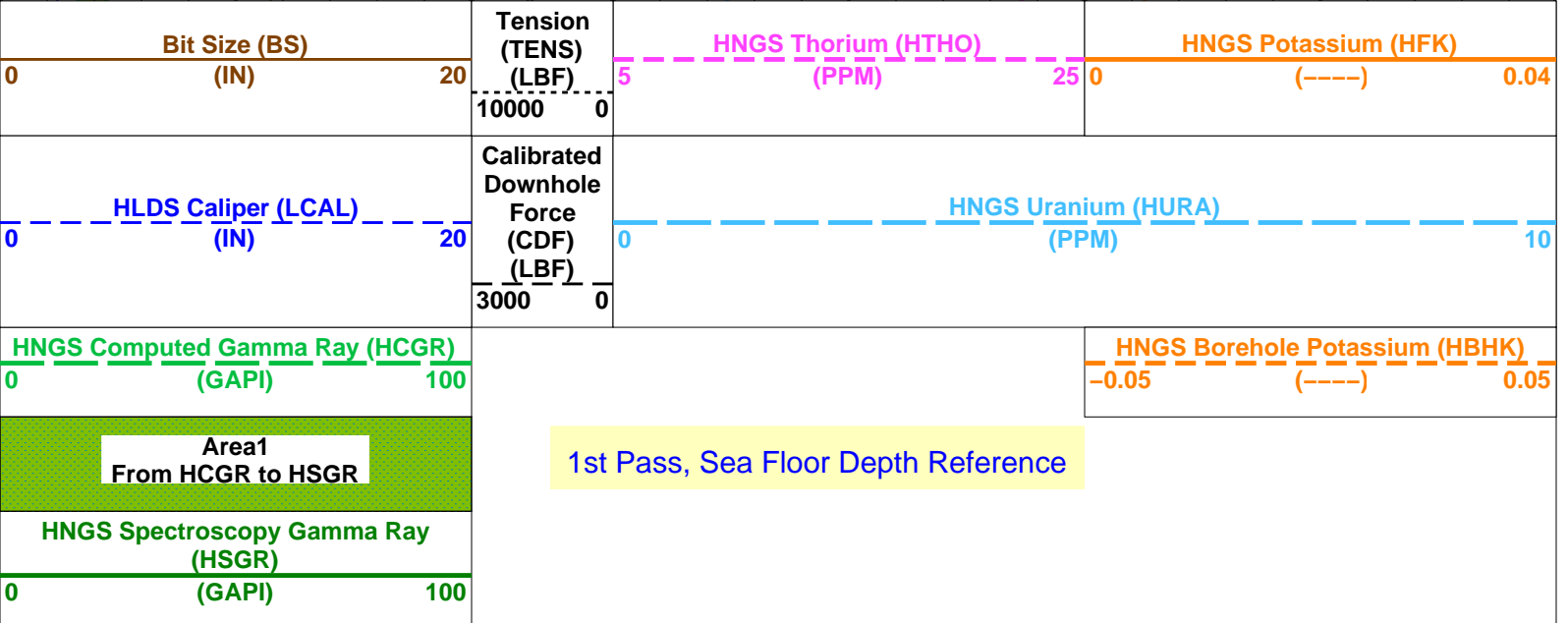
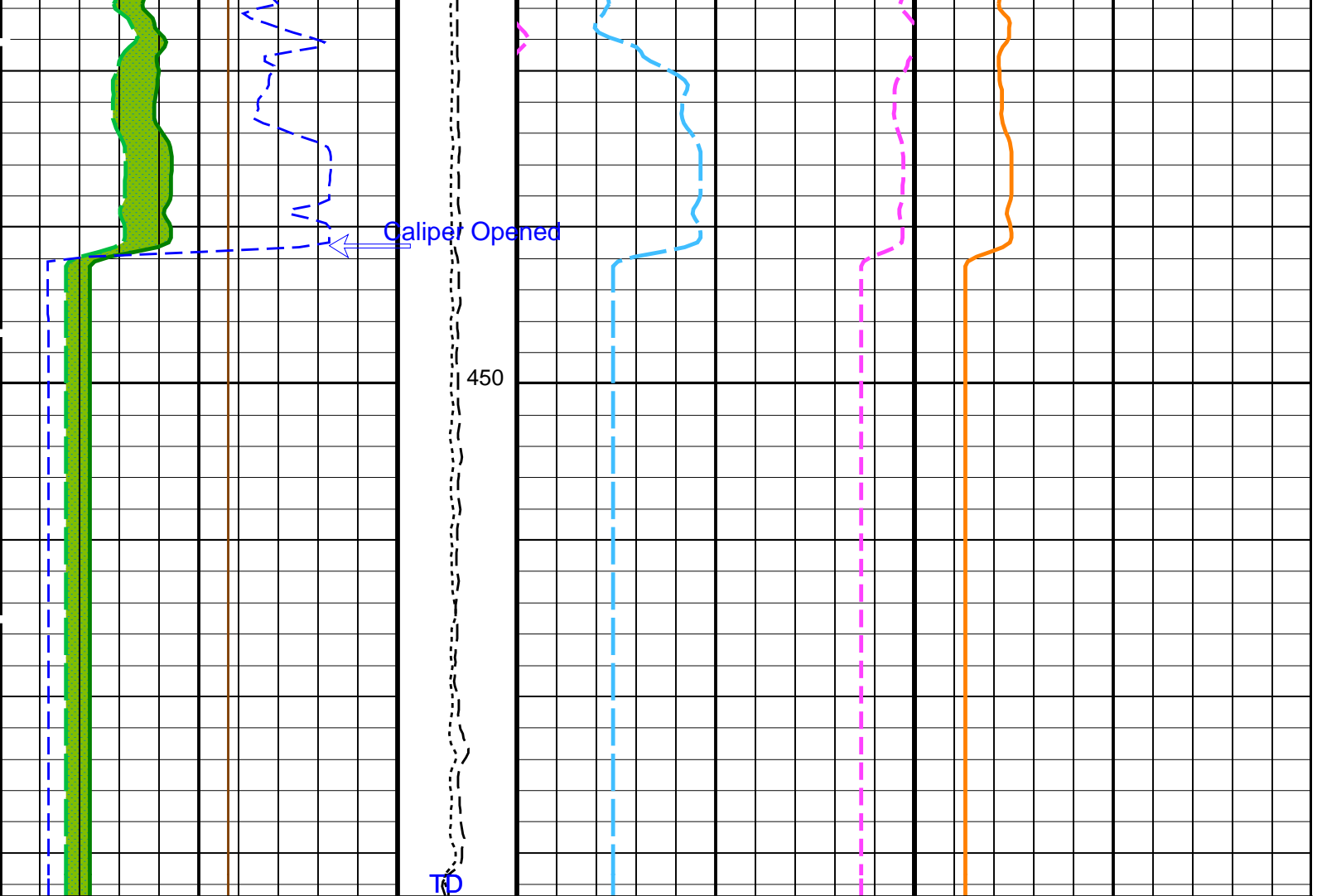












PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
BHS	HRLT-B: High Resolution Laterolog Array - B	
GCSE	Borehole Status	OPEN
	Generalized Caliper Selection	LCAL
BAR1	HNGS-BA: Hostile Natural Gamma Ray Sonde	
BAR2	HNGS Detector 1 Barite Constant	1
BHK	HNGS Detector 2 Barite Constant	1
	HNGS Borehole Potassium Correction Concentration	0

BHS	Borehole Status	OPEN	
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	
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW	
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW	
HABK	HNGS Borehole Potassium Running Average	-0.00265981	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.953116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	
EDTC-B: Enhanced DTS Cartridge			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
System and Miscellaneous			
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
PP	Playback Processing	NORMAL	

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 24-Apr-2015 00:13

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_009LUP	FN:14	PRODUCER	17-Apr-2015 10:04	4112.5 M	3770.4 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_043PUP	FN:38	PRODUCER	24-Apr-2015 00:13		
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Company: Integrated Ocean Discovery Program Well: Expedition 355, Site U1456 C

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_009LUP	FN:14	PRODUCER	17-Apr-2015 10:04	4112.5 M	3770.4 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_043PUP	FN:38	PRODUCER	24-Apr-2015 00:13	466.3 M	124.4 M
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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

Gamma Ray (GR_EDTC)	
0 (GAPI) 100	
Mud temperature (MTEM)	
0 (DEGC) 15	1st Pass, Sea Floor Depth Reference

Calibrated
Downhole

HLDS Caliper (LCAL)
(IN) 0 20

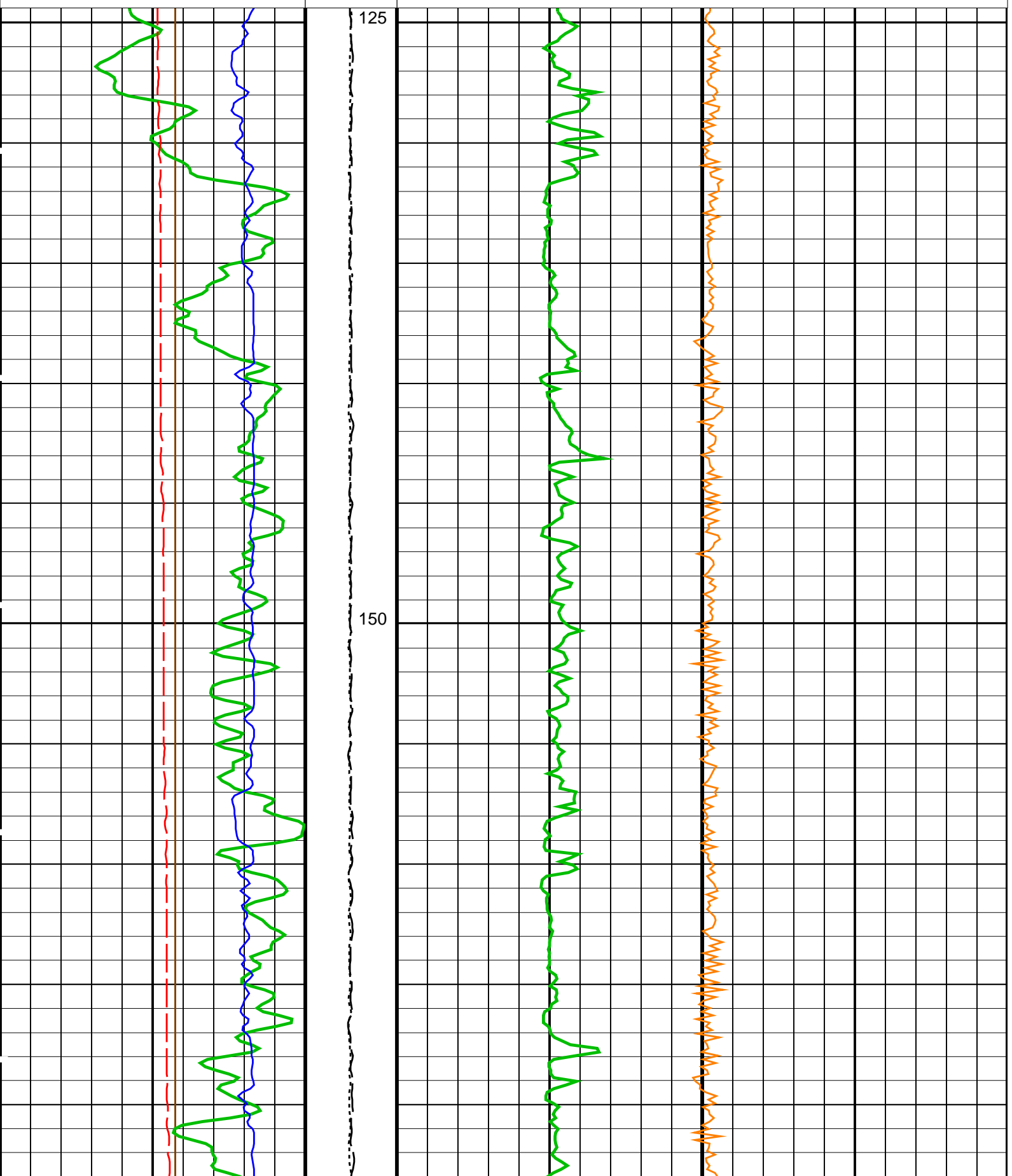
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(IN) 0 20

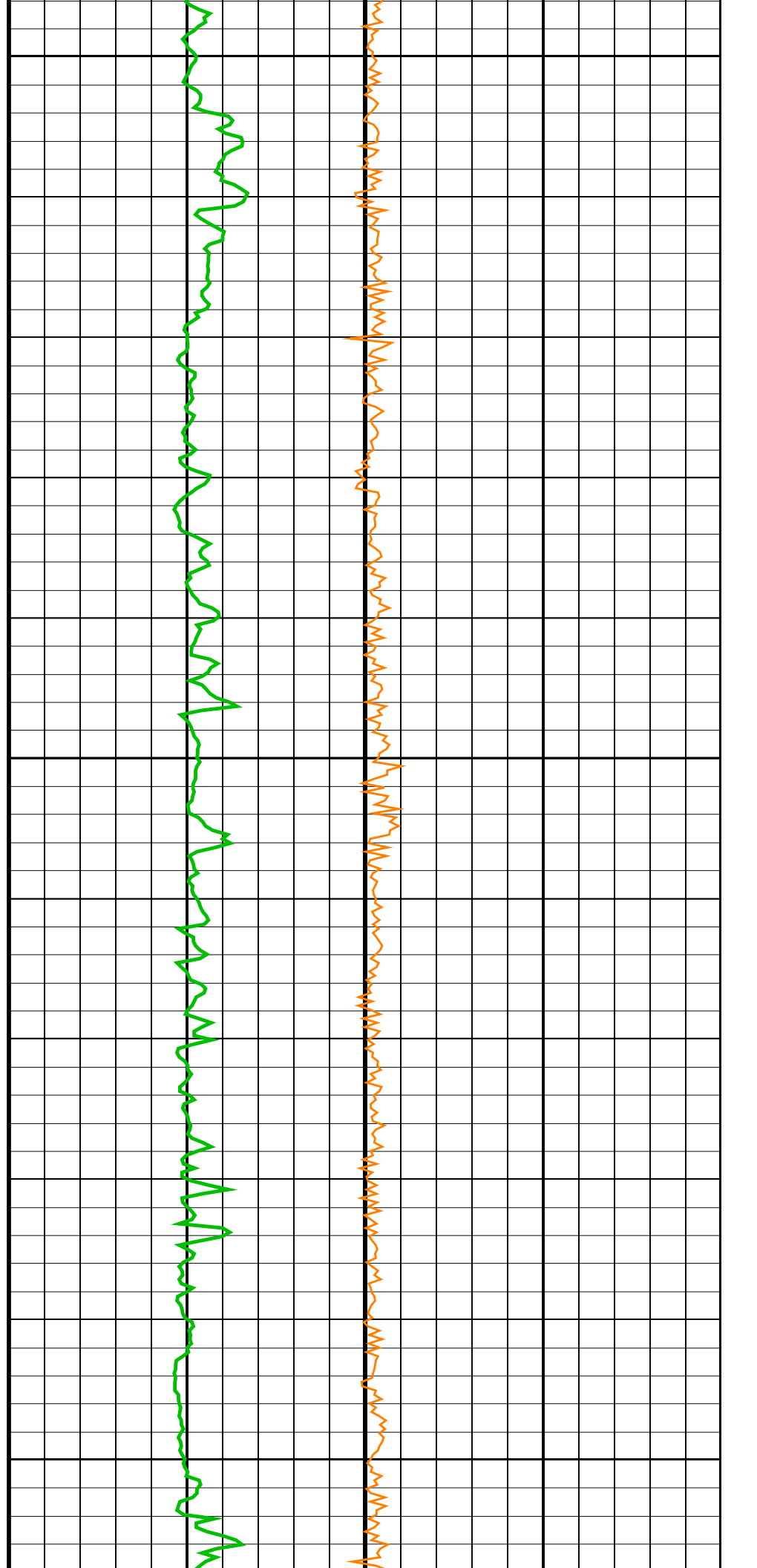
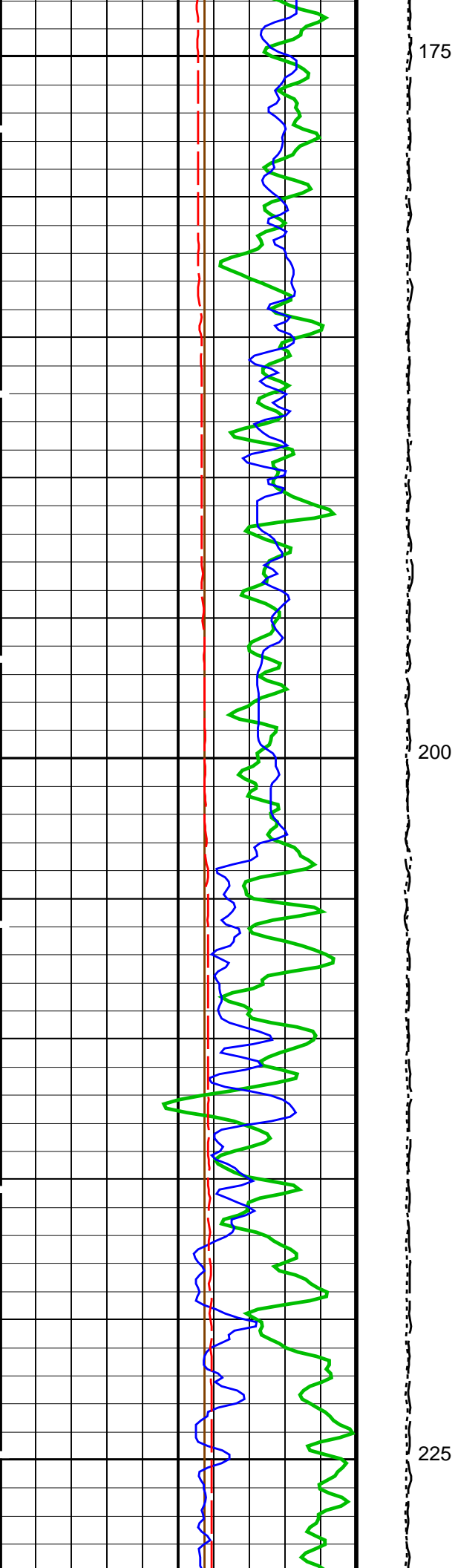
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(CDF)
(LBF) 3000 0

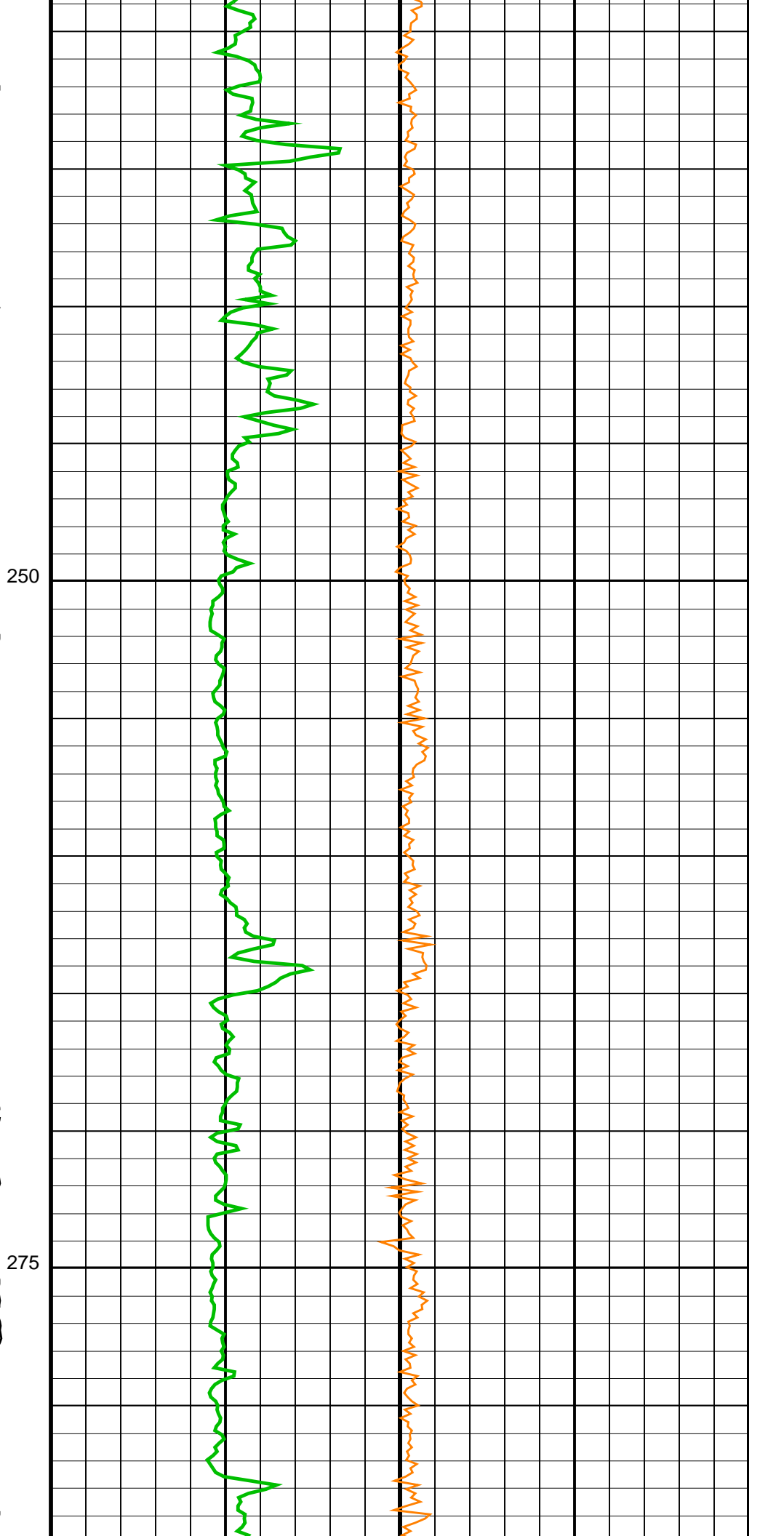
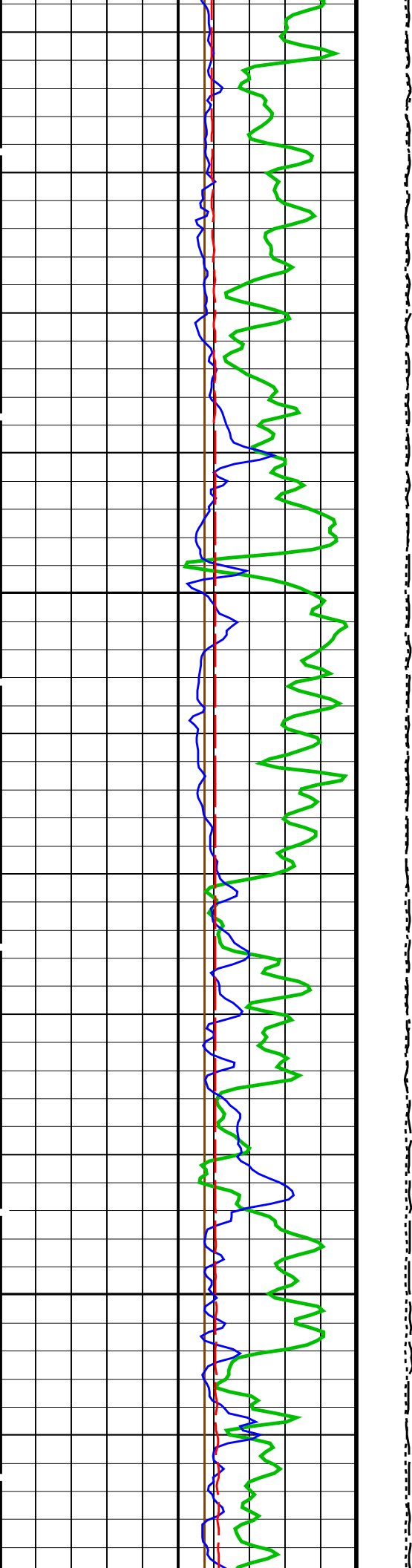
Tension
(TENS)
(LBF) 10000 0

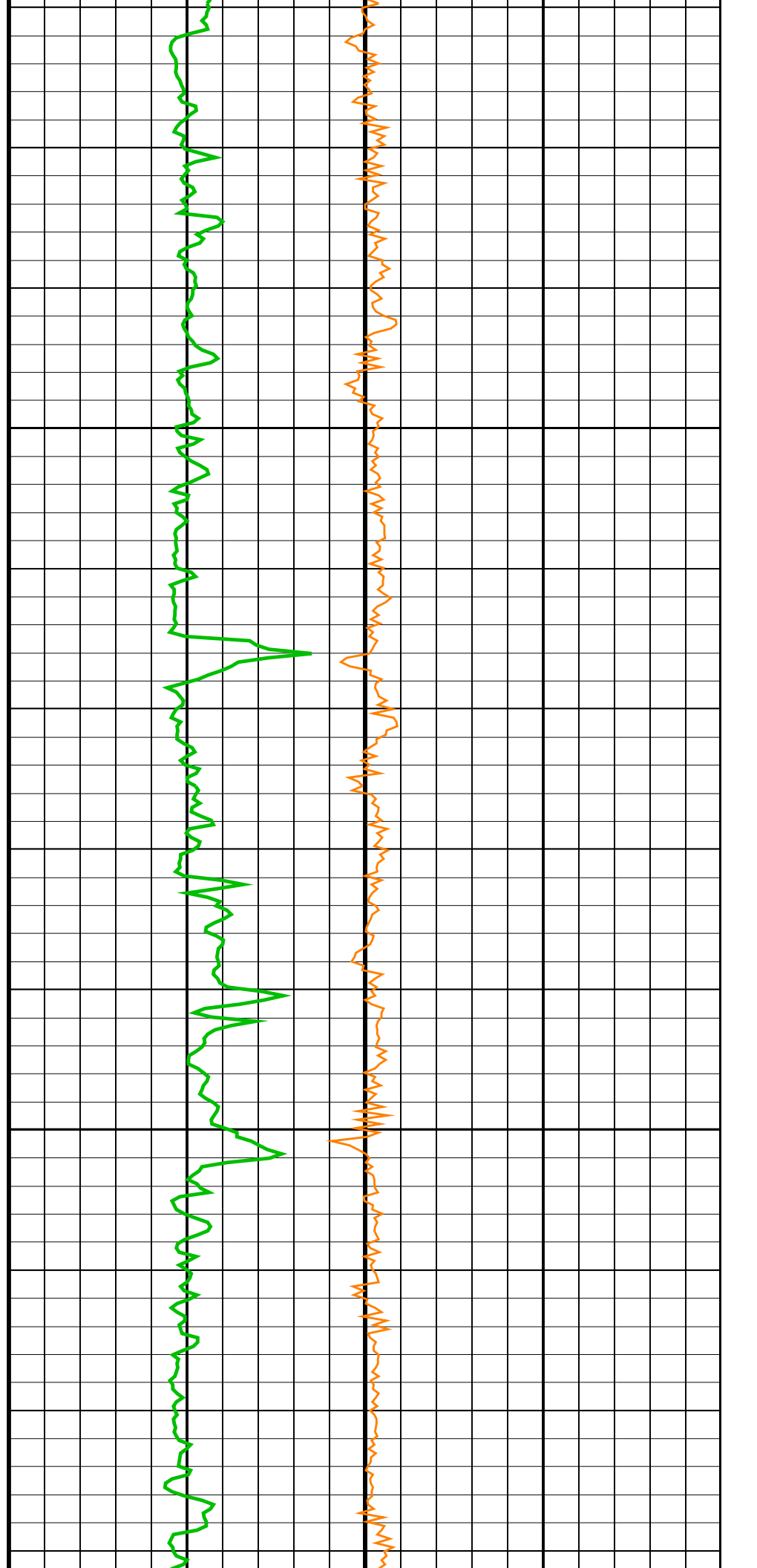
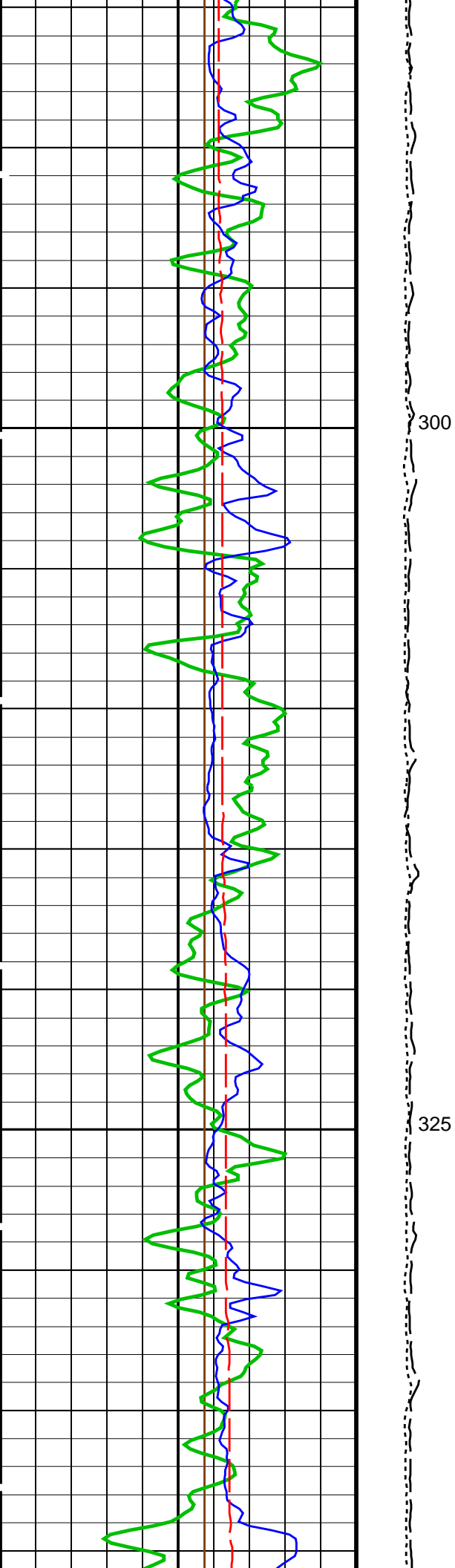
Dual-Coil Susceptibility (MSSL SUS_LDEO)
(PPM) -7500 7500

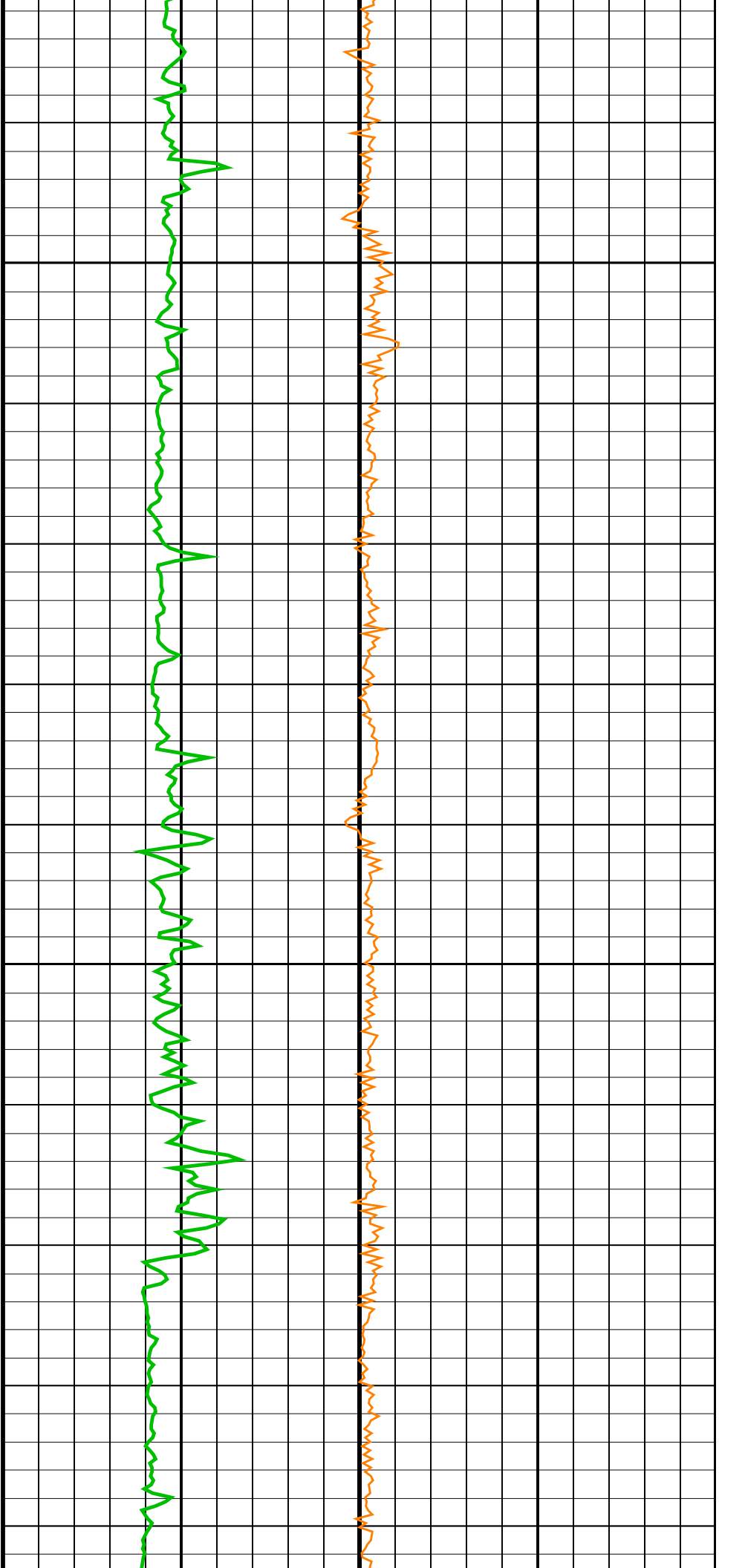
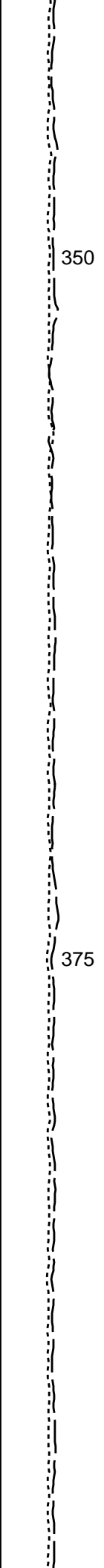
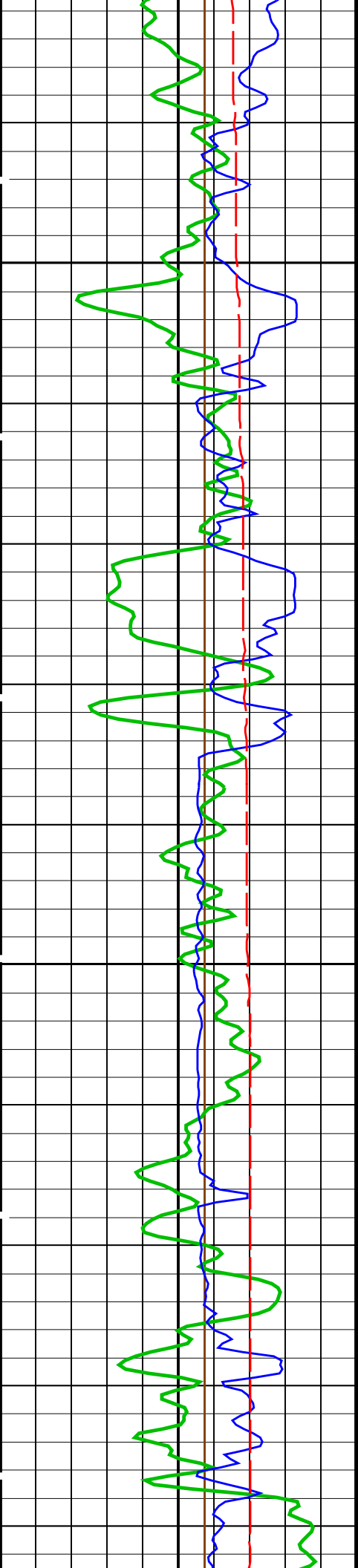
Axial Acceleration (MSSZACC_LDEO)
(M/S²) 0 20

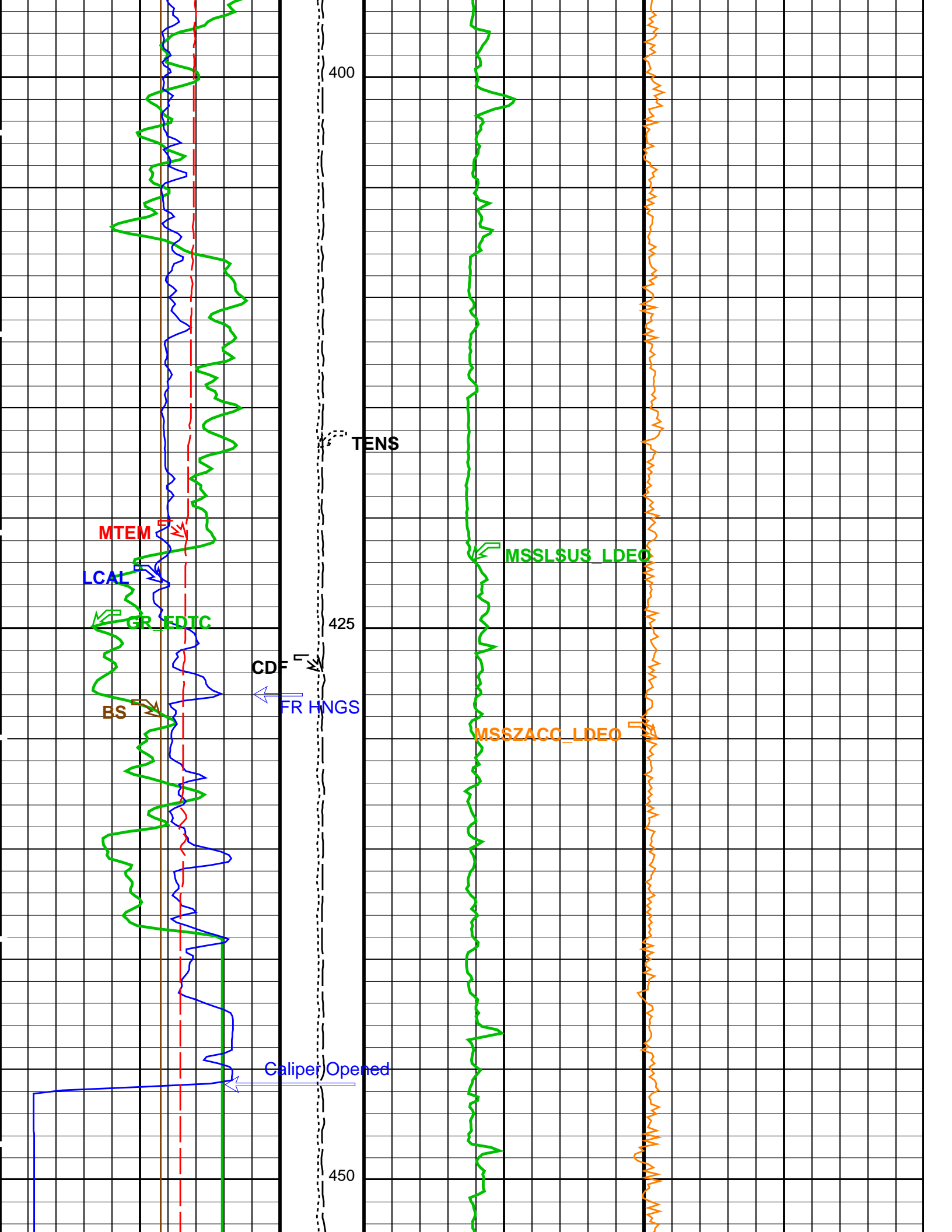


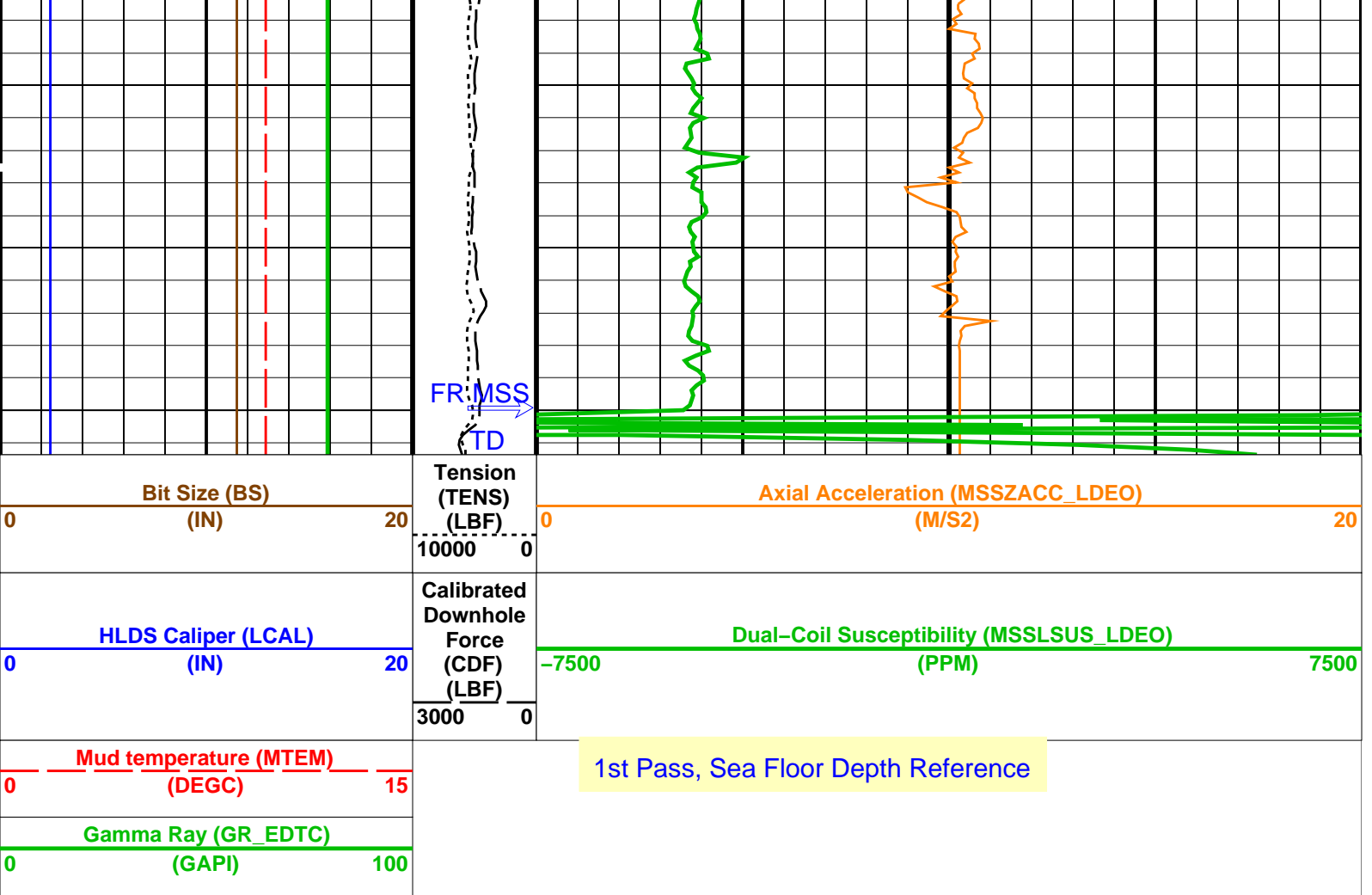












PIP SUMMARY

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	12.1565	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	0.018227	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	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	
PROCMFL	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	20	DEGC

Parameter	Description	Value	Units
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	2.6	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	LCAL	
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	-0.00265981	
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	0.953116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	
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	LCAL	
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			
ALTDPCAN	Name of alternate depth channel	SpeedCorrectedDepth	
BS	Bit Size	11.438	IN
BSAI	Borehole Salinity	38000.00	PPM

CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	22.30	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	466	M
TDD	Total Depth - Driller	465.20	M
TDL	Total Depth - Logger	464.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: MSS_Logging Vertical Scale: 1:200 Graphics File Created: 24-Apr-2015 00:13

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_009LUP	FN:14	PRODUCER	17-Apr-2015 10:04	4112.5 M	3770.4 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_043PUP	FN:38	PRODUCER	24-Apr-2015 00:13		
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Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_009LUP	FN:14	PRODUCER	17-Apr-2015 10:04	4112.5 M	3770.4 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_043PUP	FN:38	PRODUCER	24-Apr-2015 00:13	466.3 M	124.4 M
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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

				(RT_HRLT)	
				0.2	(OHMM) 2000
				(RM_HRLT)	
				0.02	(OHMM) 200
				(RXO_HRLT)	
				0.2	(OHMM) 2000
				(RLA5)	
				0.2	(OHMM) 2000
				(RLA4)	
				0.2	(OHMM) 2000

(MONSYM5) ()	(CCRA5) (----)	Inversion
-4 (----) 4	0.8 1.2	
(MONSYM4) ()	(CCRA4) (----)	(INVERR5) (----)
-4 (----) 4	0.8 1.2	-15 15
(MONSYM3) ()	(CCRA3) (----)	(INVERR4) (----)
-4 (----) 4	0.8 1.2	-15 15

(MONSYM2) (-----) -4 (-----) 4	(CCRA2) (-----) 0.8 1.2	(INVERR3) (-----) -15 15	HLDS Caliper (LCAL) (IN) 0 20	(RLA3) (OHMM) 0.2 2000
(MONSYM1) (-----) -4 (-----) 4	(CCRA1) (-----) 0.8 1.2	Inversion Weight (INVERR2) (-----) -15 15	(DI_HRLT) (IN) 0 20	Tension (TENS) (LBF) 10000 0.2 (RLA2) (OHMM) 2000
Hardware	Borehole Correction	(WEI_FLAGS) (-----) 0.4000 0.8000	(RE_S_FL_A_G_S) (BS) (IN) 0 20	Calibrated Downhole Force (CDF) (LBF) 3000 0.2 (RLA1) (OHMM) 2000

*** 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 :

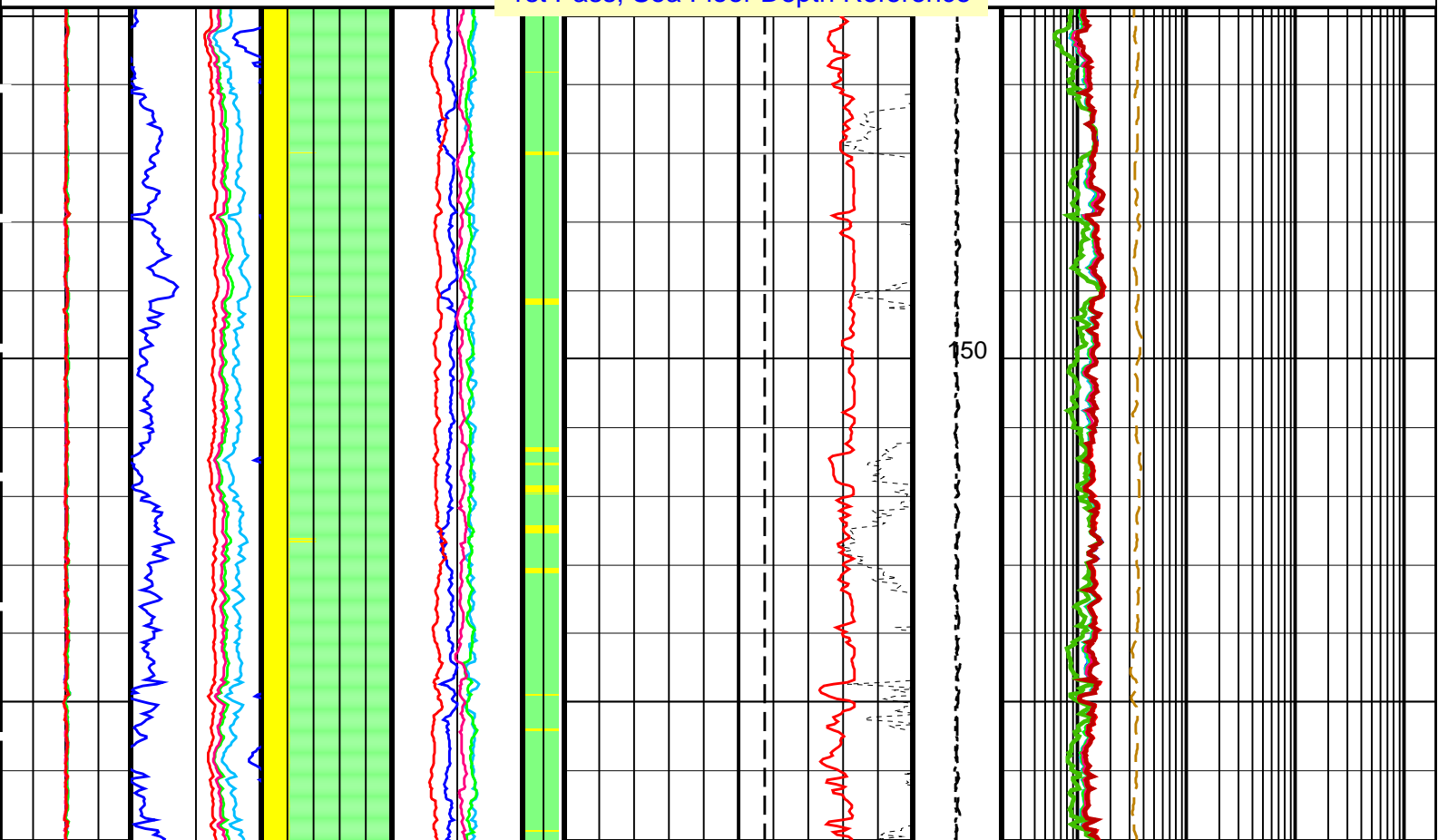
| RxoFlag | RTFlag |

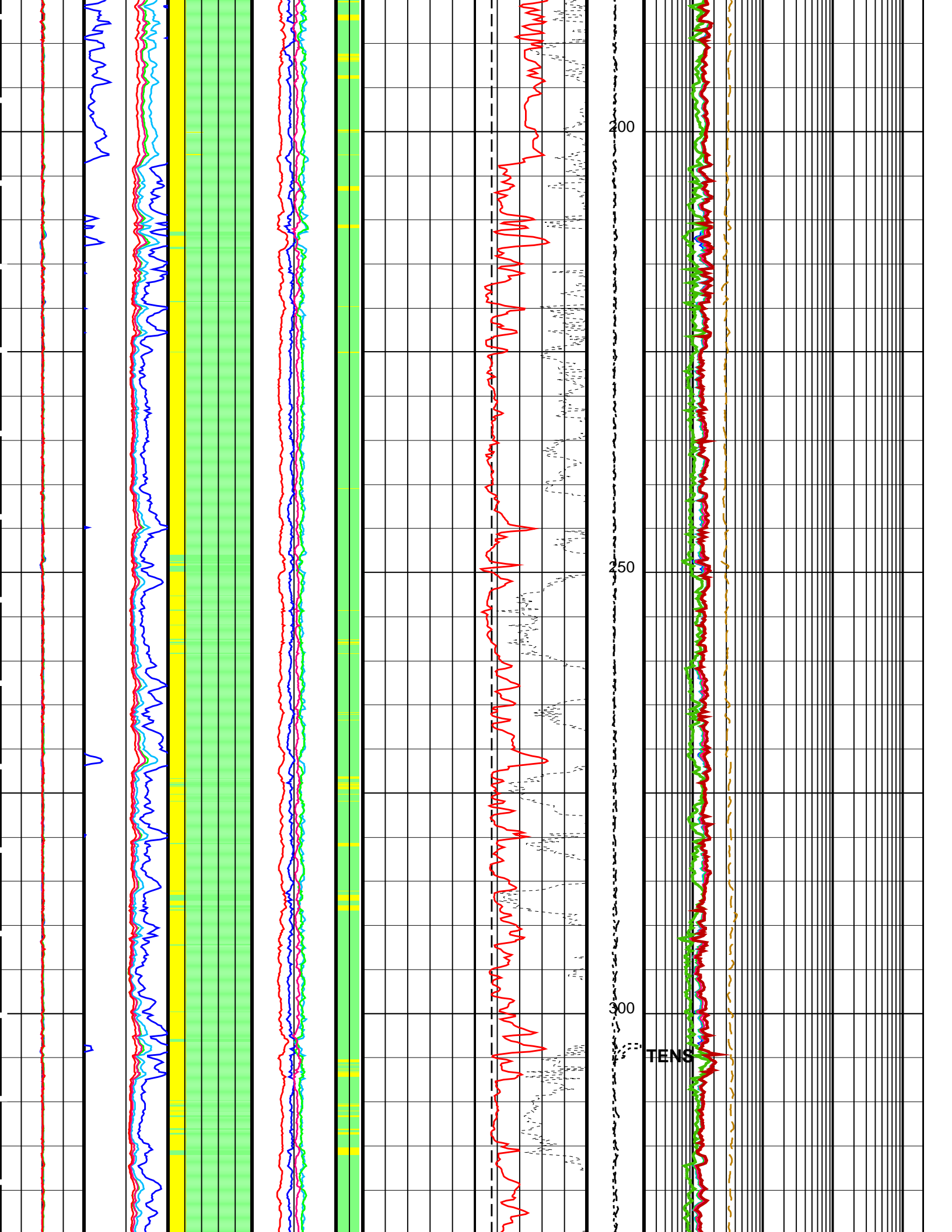
GREEN = OK

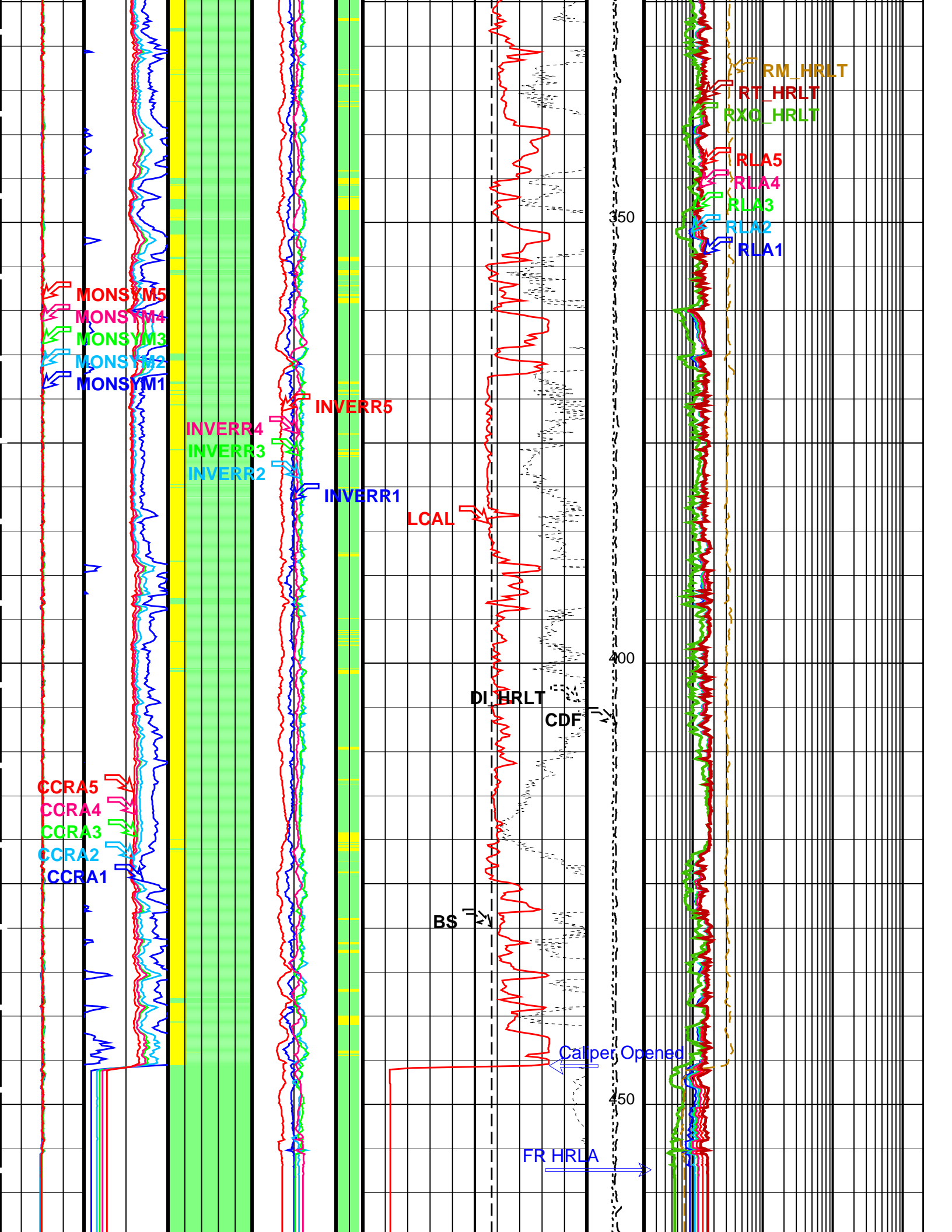
YELLOW = SHOULDER BED EFFECT

BLACK = NOK

1st Pass, Sea Floor Depth Reference







*** HRLT FLAG TRACKS ***

BLACK areas show that the corresponding error flag is set.

1st 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) (----) -15 15	(RES FLAGS) (----)	(BS) (IN) 0 20	Calibrated Downhole Force (CDF) (LBF) 3000 0	(RLA1) (OHMM) 0.2 2000
(MONSYM1) (----) -4 (----) 4	(CCRA1) (----) 0.8 1.2	Inversion Weight	(INVERR2) (----) -15 15	(DI_HRLT) (IN) 0 20	HLDS Caliper (LCAL) (IN) 0 20	Tension (TENS) (LBF) 10000 0	(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
							(RT_HRLT) (OHMM) 0.2 2000

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name Description Value

BHS HRLT-B: High Resolution Laterolog Array – B Borehole Status OPEN

BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	12.1565	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	0.018227	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	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	
PROCFL	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	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	2.6	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	LCAL	
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	-0.00265981	
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	0.953116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	

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	LCAL	
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	38000.00	PPM
CSIZ	Current Casing Size	5.500	IN
CWEI	Casing Weight	168.00	LB/F
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	22.30	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	466	M
TDD	Total Depth - Driller	465.20	M
TDL	Total Depth - Logger	464.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: HRLT_LQC Vertical Scale: 1:500 Graphics File Created: 24-Apr-2015 00:13

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_009LUP	FN:14	PRODUCER	17-Apr-2015 10:04	4112.5 M	3770.4 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_043PUP	FN:38	PRODUCER	24-Apr-2015 00:13		
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Company: Integrated Ocean Discovery Program Well: Expedition 355, Site U1456 C

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_009LUP	FN:14	PRODUCER	17-Apr-2015 10:04	4112.5 M	3770.4 M
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Output DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_043PUP	FN:38	PRODUCER	24-Apr-2015 00:13	466.3 M	124.4 M
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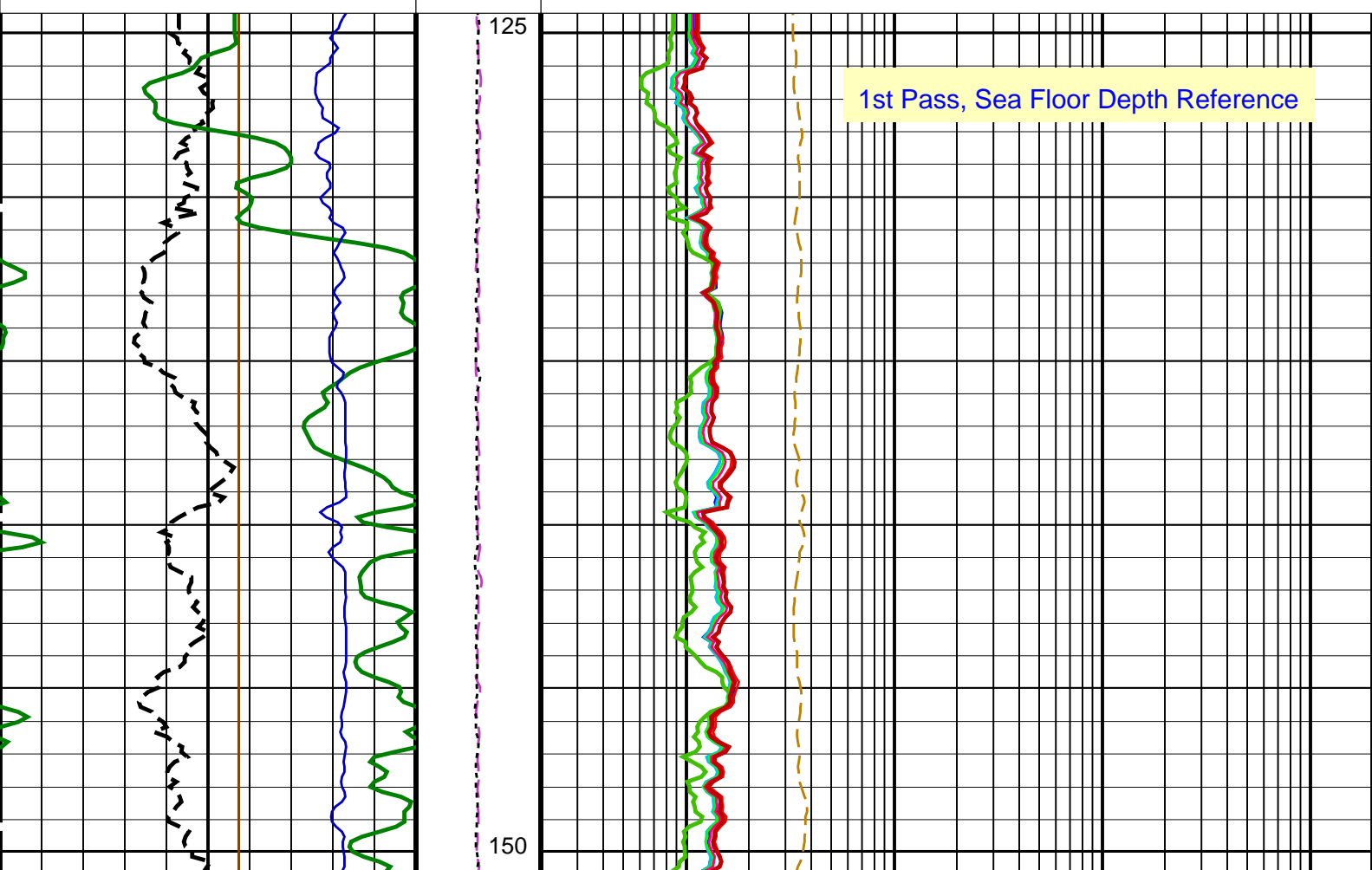
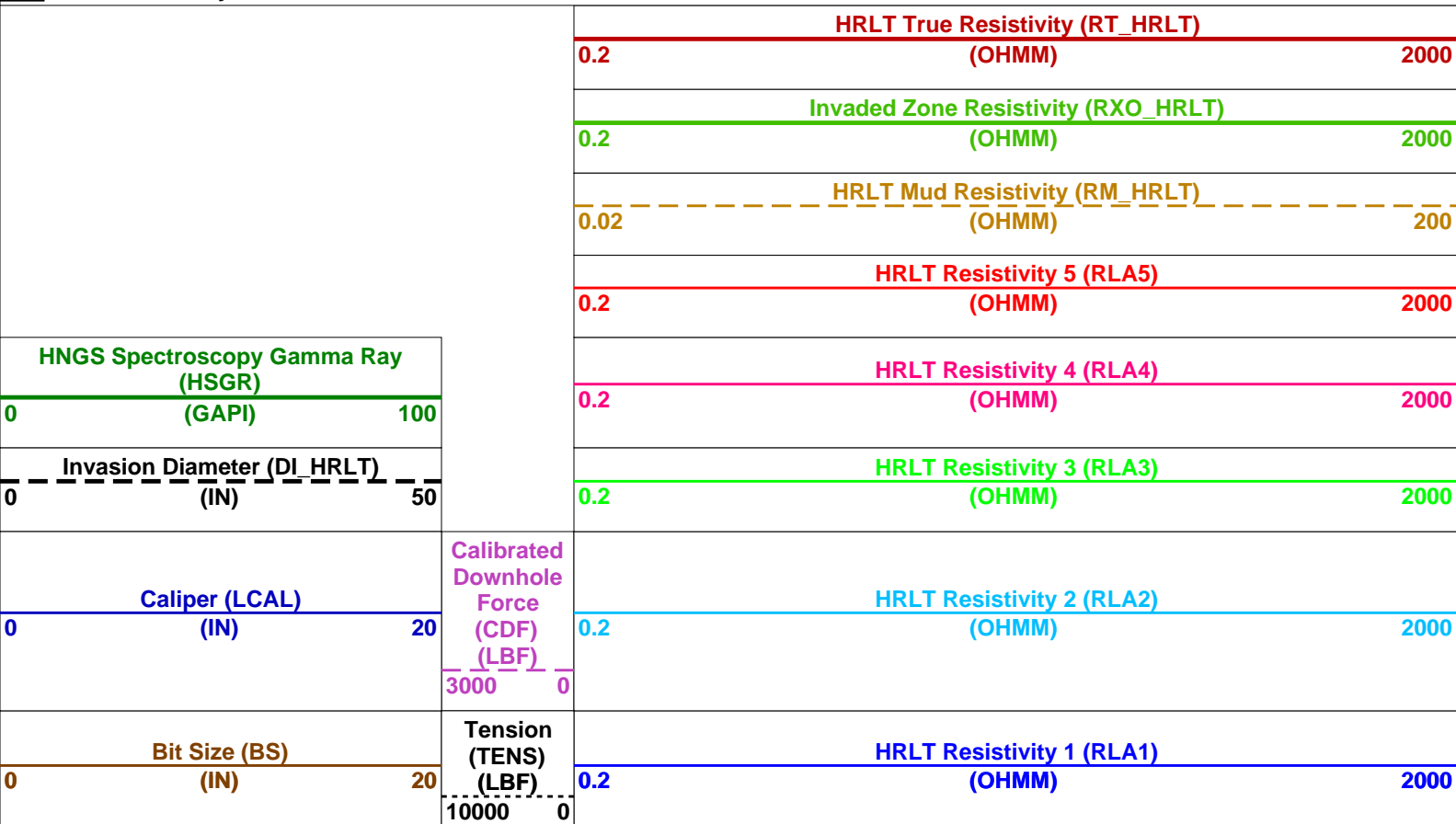
OP System Version: 19C0-187

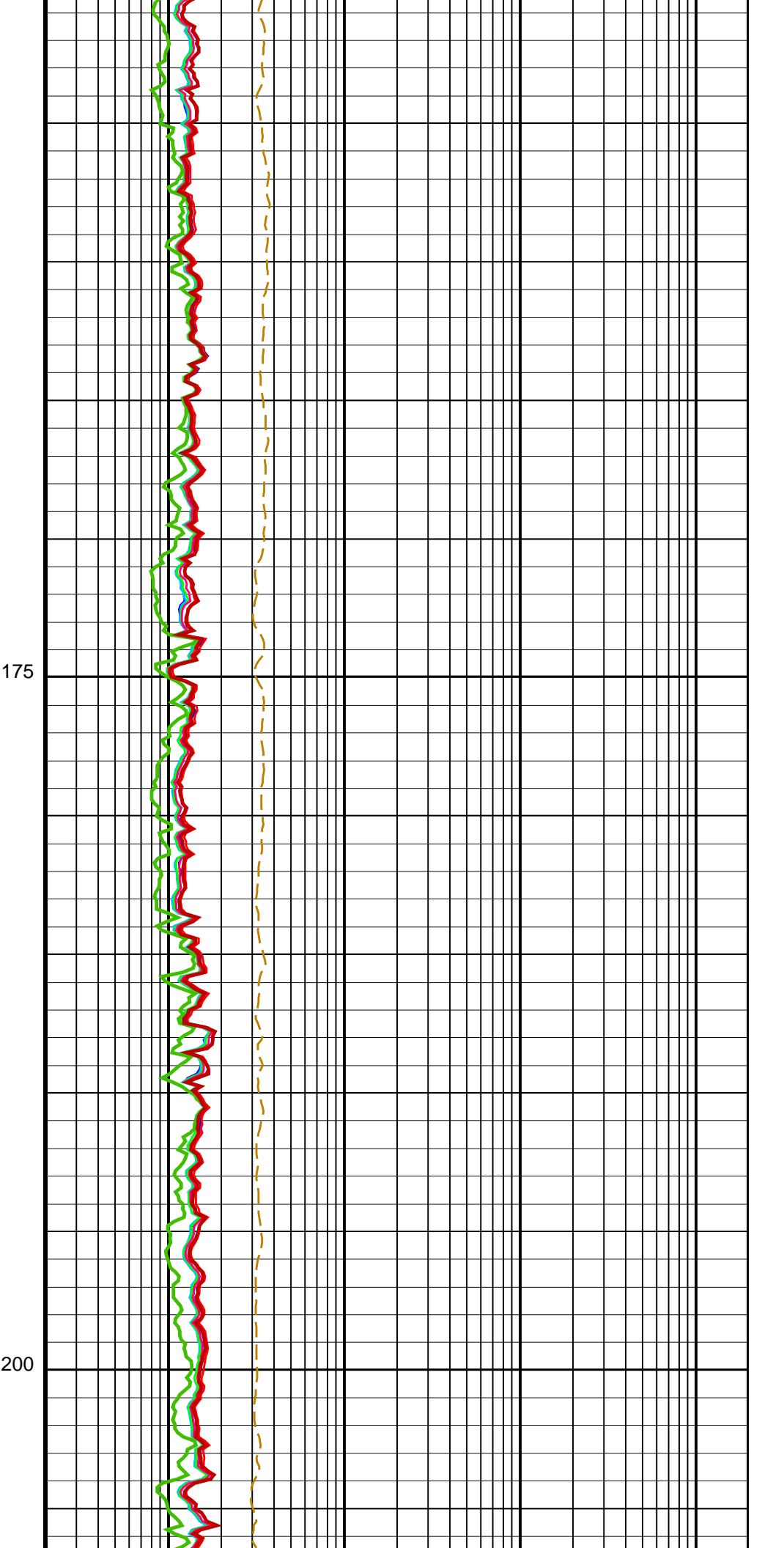
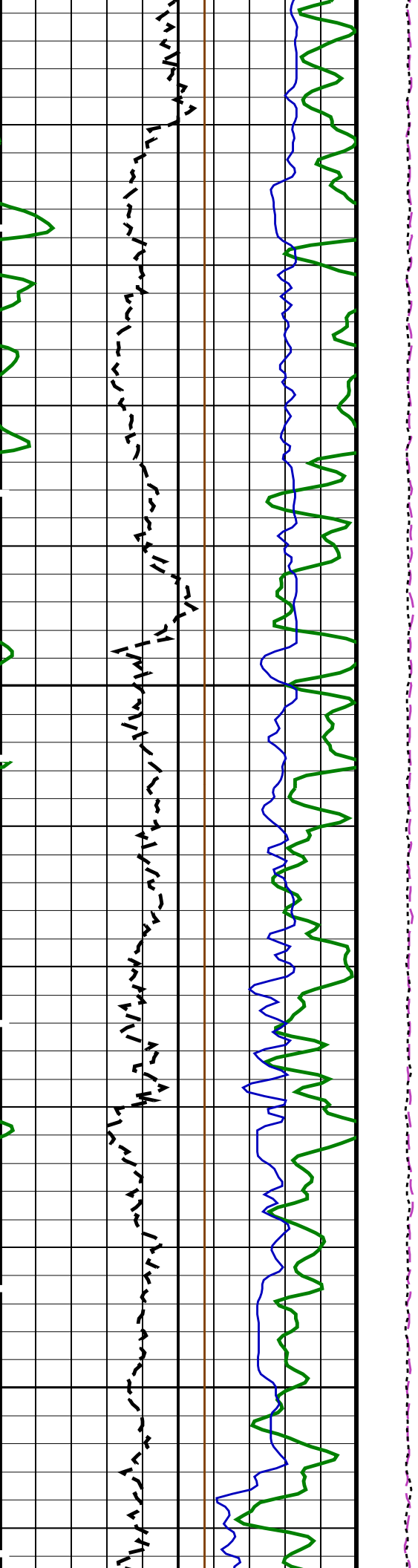
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 HLDS 19C0-187
 HNGC-B 19C0-187
 EDTC-B SKK-5169-EDTCB

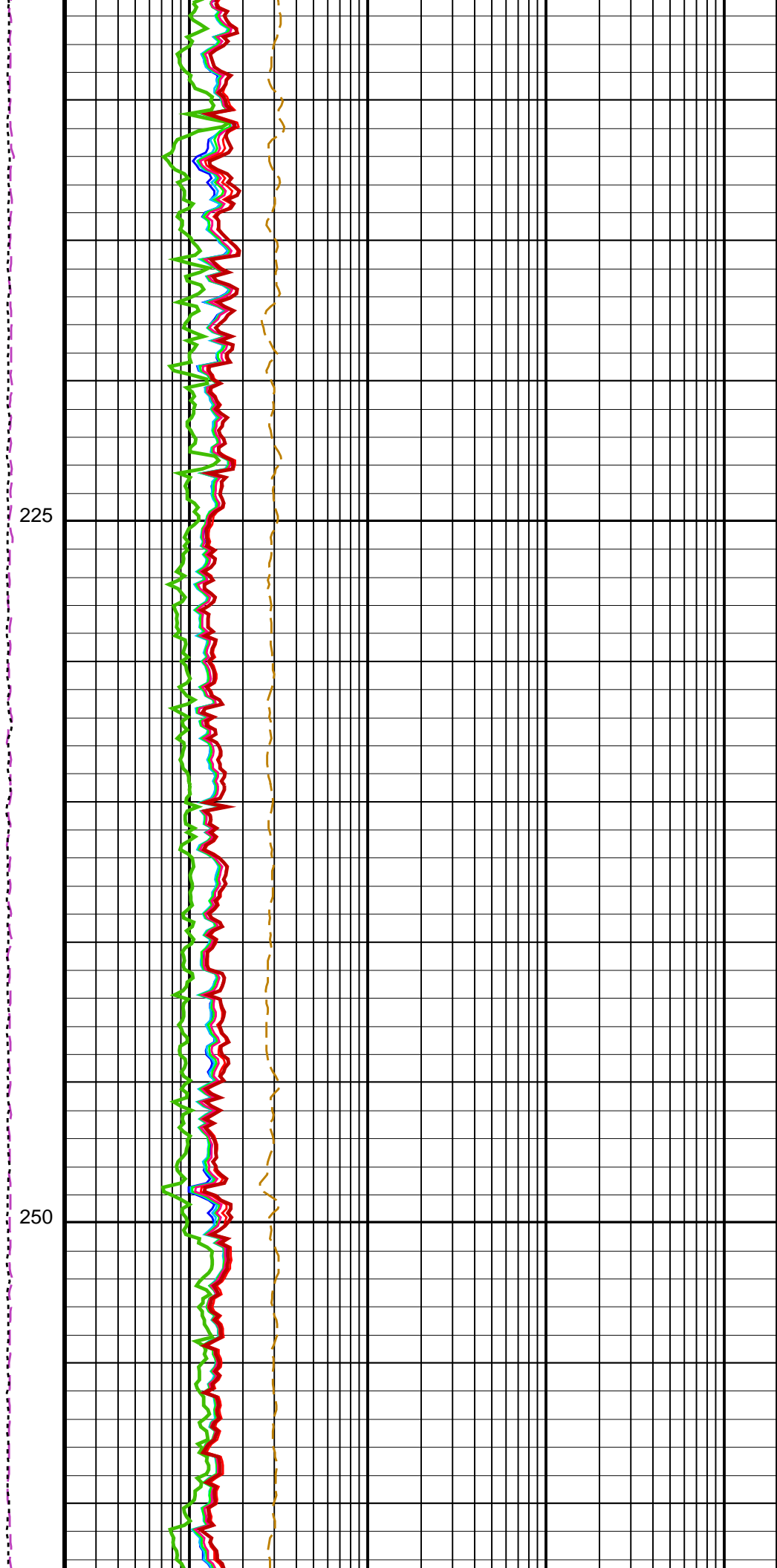
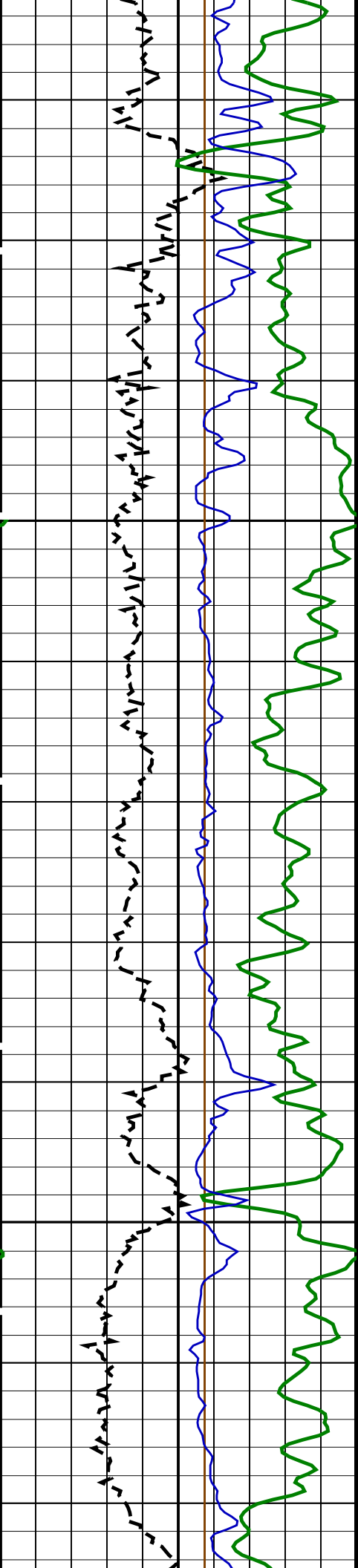
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 LDSC-B 19C0-187
 HNGS-BA 19C0-187

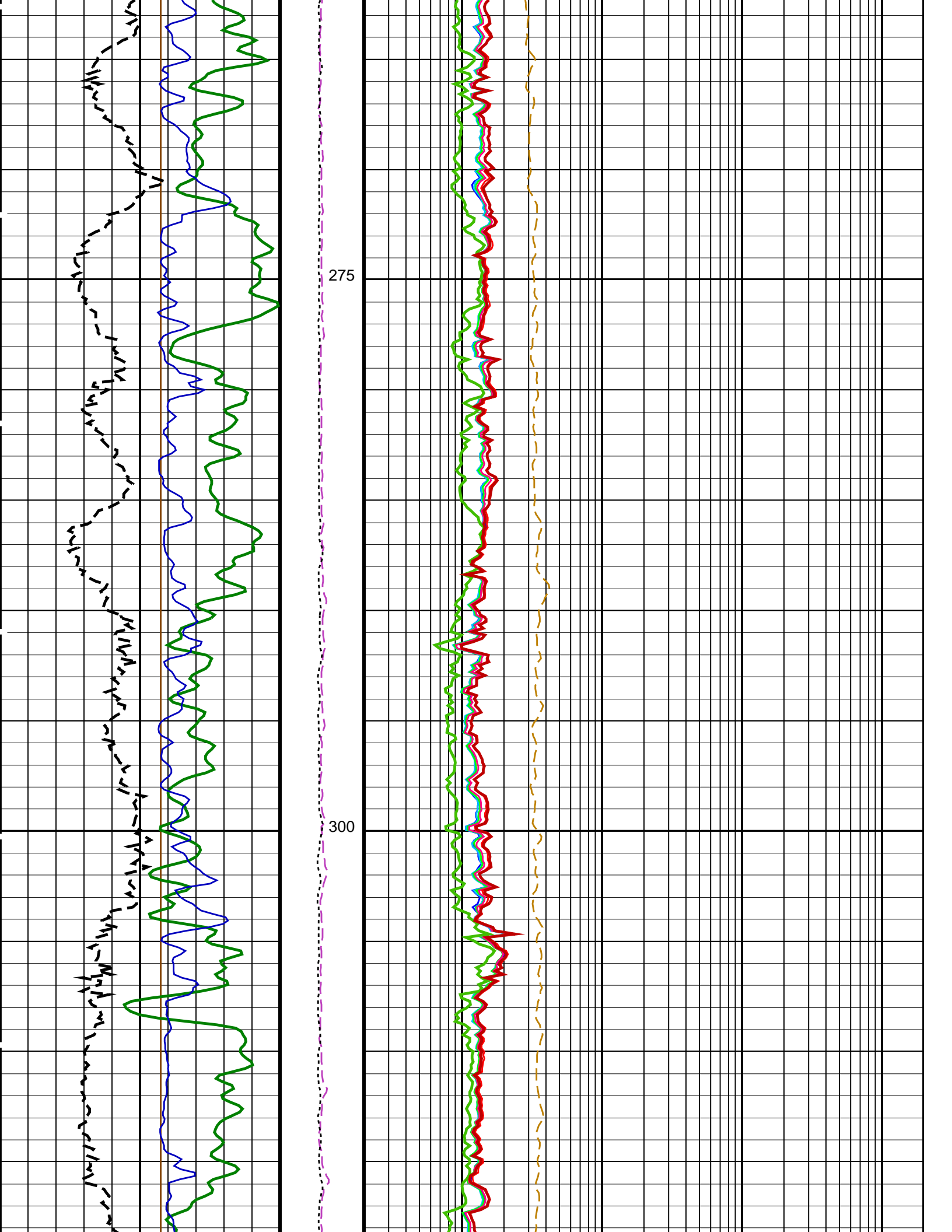
PIP SUMMARY

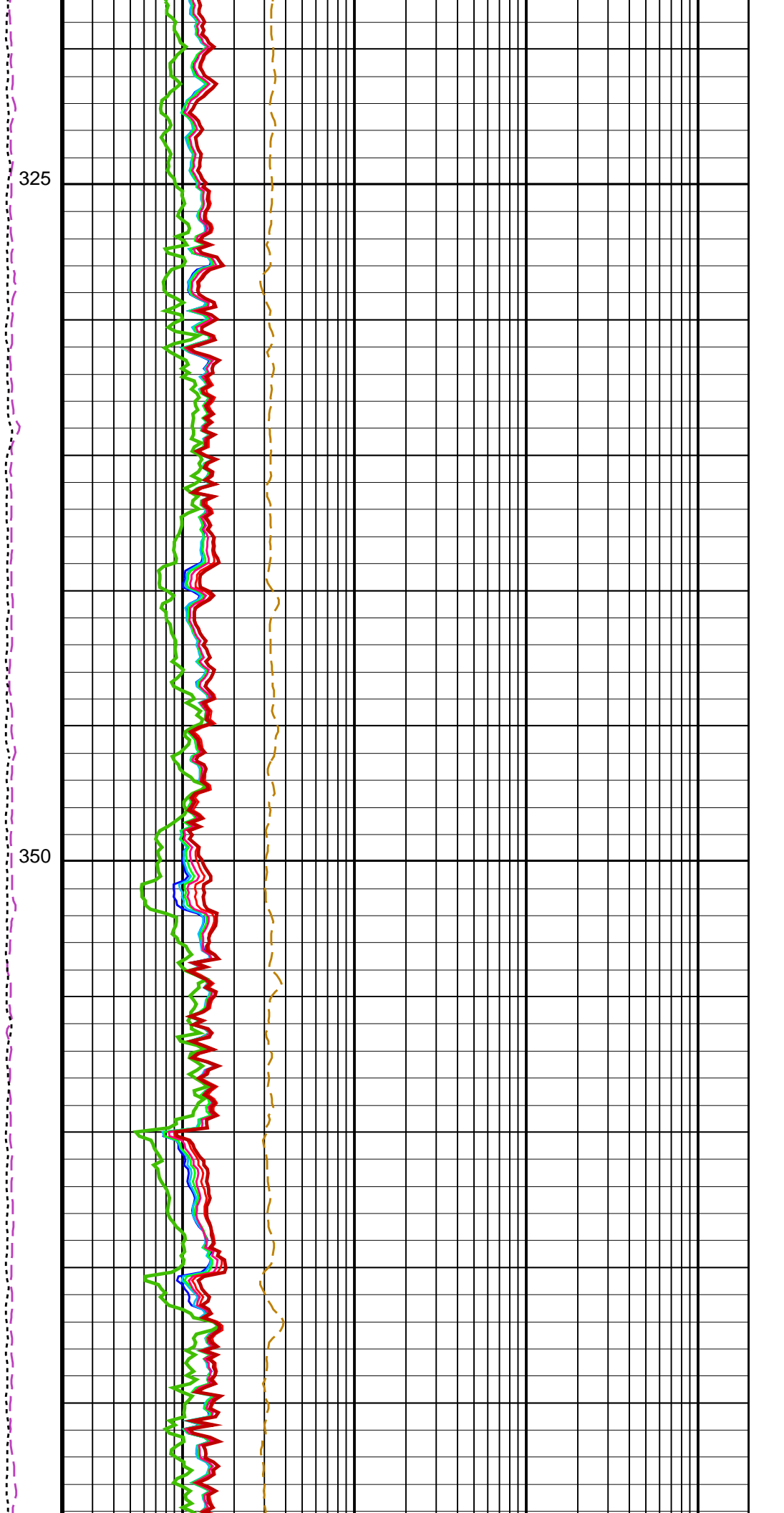
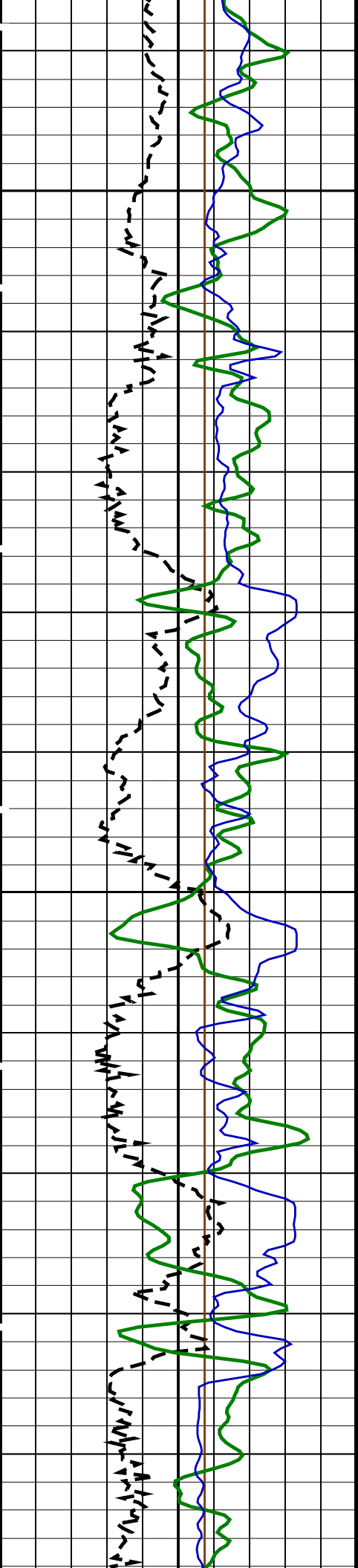
Time Mark Every 60 S





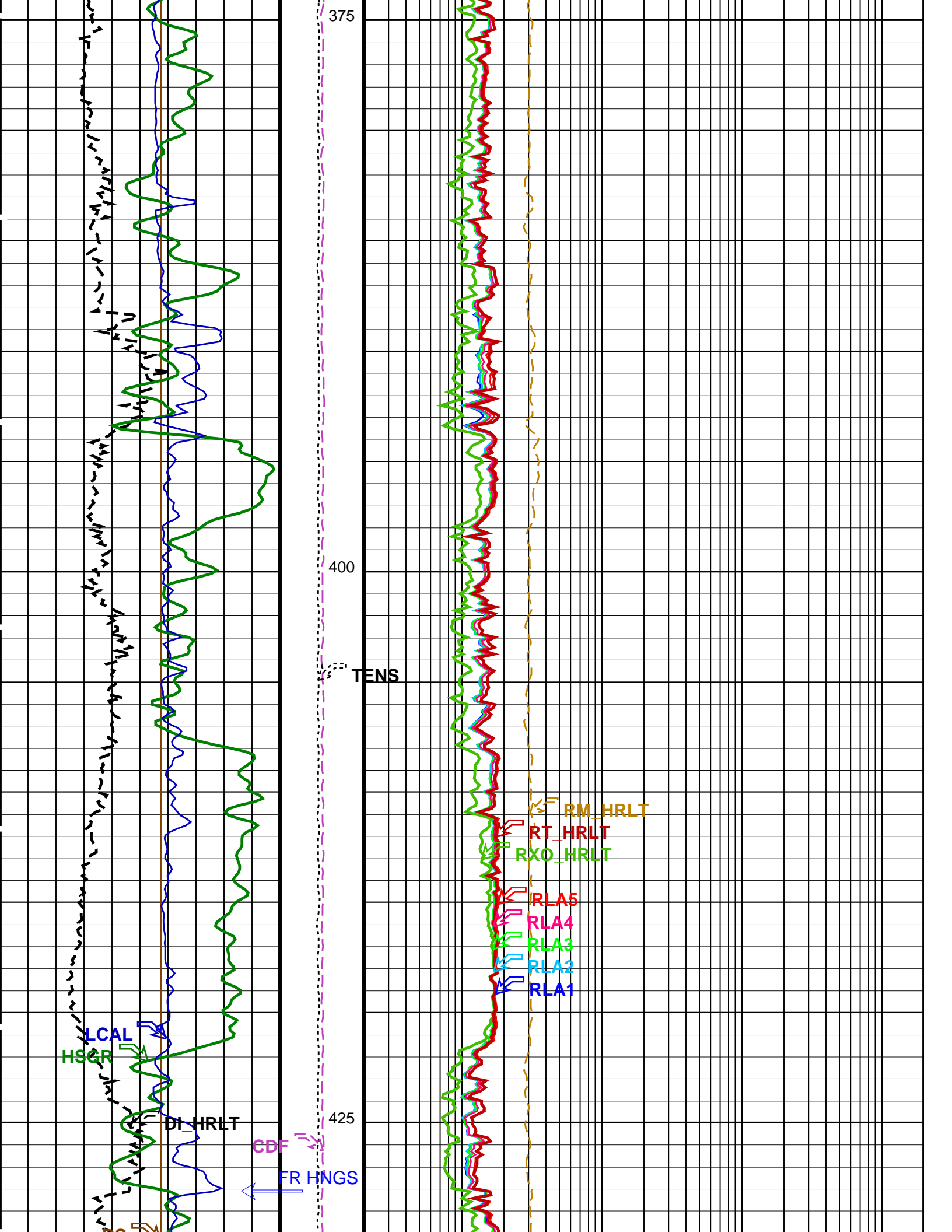


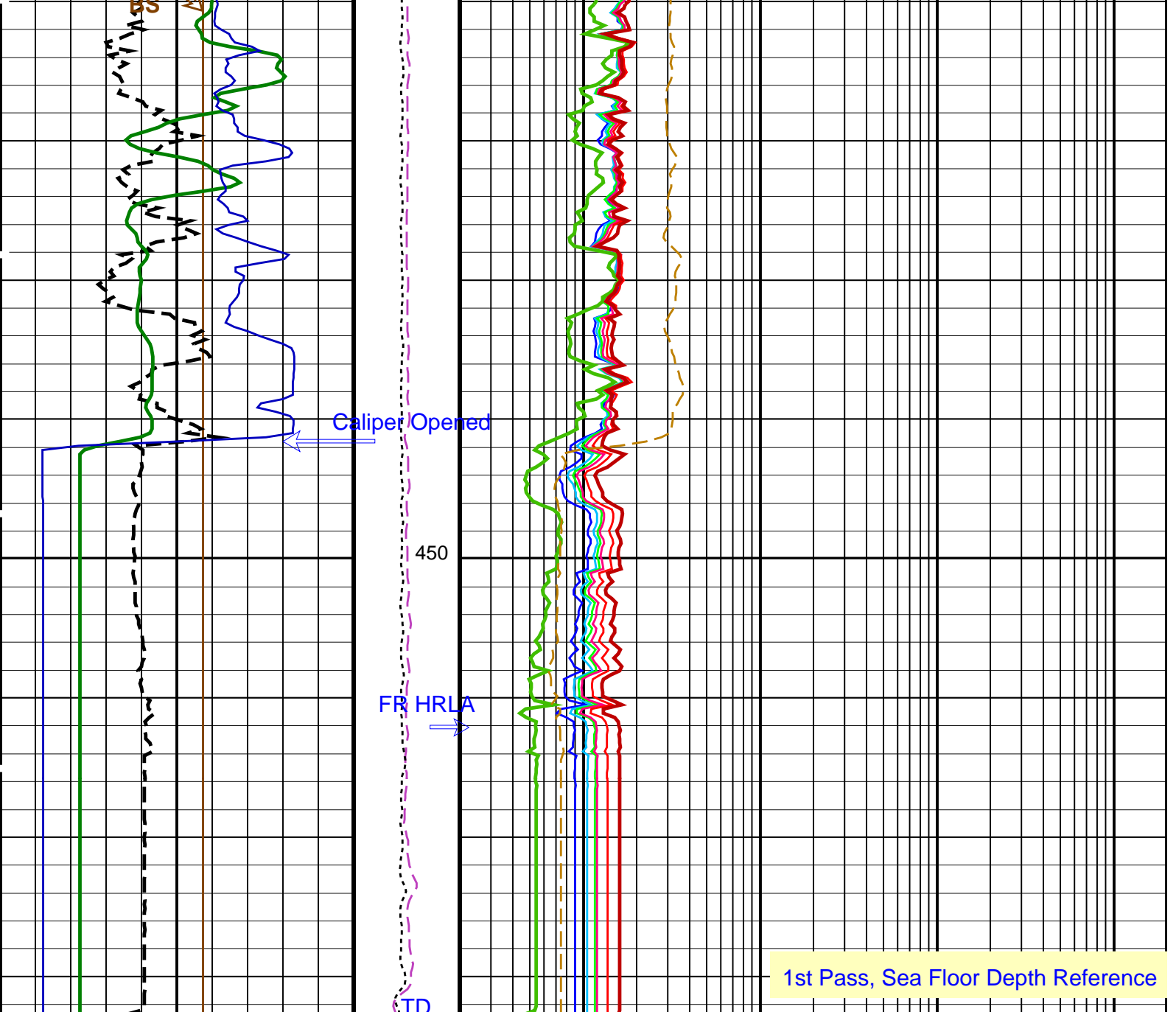




325

350





<p>Bit Size (BS) (IN) 0 20</p>	<p>Tension (TENS) (LBF) 10000 0</p>	<p>HRLT Resistivity 1 (RLA1) (OHMM) 0.2 2000</p>
<p>Caliper (LCAL) (IN) 0 20</p>	<p>Calibrated Downhole Force (CDF) (LBF) 3000 0</p>	<p>HRLT Resistivity 2 (RLA2) (OHMM) 0.2 2000</p>
<p>Invasion Diameter (DI_HRLT) (IN) 0 50</p>		<p>HRLT Resistivity 3 (RLA3) (OHMM) 0.2 2000</p>
<p>HNGS Spectroscopy Gamma Ray (HSGR) (GAPI) 0 100</p>		<p>HRLT Resistivity 4 (RLA4) (OHMM) 0.2 2000</p>
		<p>HRLT Resistivity 5 (RLA5) (OHMM) 0.2 2000</p>
		<p>HRLT Mud Resistivity (RM_HRLT) (OHMM) 0.02 200</p>

0.2	(OHMM)	2000
HRLT True Resistivity (RT_HRLT)		
0.2	(OHMM)	2000

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
GCSE	Generalized Caliper Selection	LCAL	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
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	LCAL	
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	-0.00265981	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.953116	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.961581	
EDTC-B: Enhanced DTS Cartridge			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	21	DEGC
GCSE	Generalized Caliper Selection	LCAL	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	20	DEGC
System and Miscellaneous			
BS	Bit Size	11.438	IN
DFD	Drilling Fluid Density	1.21	G/C3
DO	Depth Offset for Playback	-3646.0	M
MST	Mud Sample Temperature	22.30	DEGC
PP	Playback Processing	NORMAL	
TD	Total Depth	466	M

Format: HRLT Vertical Scale: 1:200

Graphics File Created: 24-Apr-2015 00:13

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_009LUP FN:14 PRODUCER 17-Apr-2015 10:04 4112.5 M 3770.4 M

Output DLIS Files

DEFAULT MSS_LDEO_HRLA_LDL_043PUP FN:38 PRODUCER 24-Apr-2015 00:13

Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M01							
Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06							
HRLT M0-M1 Voltage Plus – 0	0	N/A	-318.8	-318.1	0.6730	9.681	UV
HRLT M0-M1 Voltage Plus – 1	0	N/A	-332.8	-328.2	4.636	9.681	UV
HRLT M0-M1 Voltage Plus – 2	0	N/A	-340.5	-336.4	4.124	9.681	UV
HRLT M0-M1 Voltage Plus – 3	0	N/A	-330.6	-327.3	3.260	9.681	UV
HRLT M0-M1 Voltage Plus – 4	0	N/A	-320.1	-319.0	1.070	9.681	UV
HRLT M0-M1 Voltage Plus – 5	0	N/A	-322.1	-321.1	1.011	9.681	UV
HRLT M0-M1 Voltage Plus – 6	0	N/A	323.1	318.1	-4.935	9.681	UV
HRLT M0-M1 Voltage Plus – 7	0	N/A	-322.7	-322.7	0	9.681	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M12							
Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06							
HRLT M1-M2 Voltage Plus – 0	0	N/A	1744	1736	-7.944	53.42	UV
HRLT M1-M2 Voltage Plus – 1	0	N/A	1828	1798	-29.28	53.42	UV
HRLT M1-M2 Voltage Plus – 2	0	N/A	1863	1836	-26.97	53.42	UV
HRLT M1-M2 Voltage Plus – 3	0	N/A	1807	1785	-22.10	53.42	UV
HRLT M1-M2 Voltage Plus – 4	0	N/A	1748	1738	-9.959	53.42	UV
HRLT M1-M2 Voltage Plus – 5	0	N/A	1760	1750	-9.787	53.42	UV
HRLT M1-M2 Voltage Plus – 6	0	N/A	-1782	-1751	30.84	53.42	UV
HRLT M1-M2 Voltage Plus – 7	0	N/A	1781	1781	0	53.42	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M23							
Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06							
HRLT M2-M3 Voltage Plus – 0	0	N/A	1736	1729	-6.652	53.42	UV
HRLT M2-M3 Voltage Plus – 1	0	N/A	1830	1801	-29.41	53.42	UV
HRLT M2-M3 Voltage Plus – 2	0	N/A	1867	1840	-26.58	53.42	UV
HRLT M2-M3 Voltage Plus – 3	0	N/A	1814	1793	-21.19	53.42	UV
HRLT M2-M3 Voltage Plus – 4	0	N/A	1750	1741	-8.739	53.42	UV
HRLT M2-M3 Voltage Plus – 5	0	N/A	1763	1754	-8.863	53.42	UV
HRLT M2-M3 Voltage Plus – 6	0	N/A	-1773	-1743	30.09	53.42	UV
HRLT M2-M3 Voltage Plus – 7	0	N/A	1781	1781	0	53.42	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT V34							
Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06							
HRLT A3-A4 Voltage Plus – 0	0	N/A	68760	68500	-257.8	2100	UV
HRLT A3-A4 Voltage Plus – 1	0	N/A	72280	71170	-1109	2100	UV
HRLT A3-A4 Voltage Plus – 2	0	N/A	74010	73050	-961.2	2100	UV
HRLT A3-A4 Voltage Plus – 3	0	N/A	72230	71420	-804.6	2100	UV
HRLT A3-A4 Voltage Plus – 4	0	N/A	69630	69290	-340.3	2100	UV
HRLT A3-A4 Voltage Plus – 5	0	N/A	70140	69810	-328.1	2100	UV
HRLT A3-A4 Voltage Plus – 6	0	N/A	-69040	-67920	1127	2100	UV
HRLT A3-A4 Voltage Plus – 7	0	N/A	70000	70000	0	2100	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT V45							
Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06							
HRLT A4-A5 Voltage Plus – 0	0	N/A	68840	68590	-247.1	2100	UV
HRLT A4-A5 Voltage Plus – 1	0	N/A	72480	71380	-1106	2100	UV
HRLT A4-A5 Voltage Plus – 2	0	N/A	74190	73250	-948.1	2100	UV
HRLT A4-A5 Voltage Plus – 3	0	N/A	72380	71560	-820.5	2100	UV
HRLT A4-A5 Voltage Plus – 4	0	N/A	69740	69390	-347.6	2100	UV
HRLT A4-A5 Voltage Plus – 5	0	N/A	70240	69910	-324.9	2100	UV
HRLT A4-A5 Voltage Plus – 6	0	N/A	-69250	-68130	1114	2100	UV
HRLT A4-A5 Voltage Plus – 7	0	N/A	70000	70000	0	2100	UV
High Resolution Laterolog Array – B Wellsite Calibration – HRLT V56							
Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06							
HRLT A5-A6 Voltage Plus – 0	0	N/A	68690	68440	-245.3	2100	UV
HRLT A5-A6 Voltage Plus – 1	0	N/A	72330	71240	-1096	2100	UV
HRLT A5-A6 Voltage Plus – 2	0	N/A	74060	73080	-985.9	2100	UV
HRLT A5-A6 Voltage Plus – 3	0	N/A	72240	71440	-799.2	2100	UV
HRLT A5-A6 Voltage Plus – 4	0	N/A	69600	69270	-332.2	2100	UV

HRLT A5-A6 Voltage Plus - 5	0	N/A	69800	69800	-311.3	2100	UV
HRLT A5-A6 Voltage Plus - 6	0	N/A	-69090	-67970	1121	2100	UV
HRLT A5-A6 Voltage Plus - 7	0	N/A	70000	70000	0	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT VTP

Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06

HRLT Torpedo-M0 Voltage - 0	0	N/A	-68180	-67980	205.5	2100	UV
HRLT Torpedo-M0 Voltage - 1	0	N/A	-72120	-71060	1062	2100	UV
HRLT Torpedo-M0 Voltage - 2	0	N/A	-73890	-72930	962.7	2100	UV
HRLT Torpedo-M0 Voltage - 3	0	N/A	-72130	-71340	789.1	2100	UV
HRLT Torpedo-M0 Voltage - 4	0	N/A	-69530	-69230	301.3	2100	UV
HRLT Torpedo-M0 Voltage - 5	0	N/A	-70050	-69750	297.4	2100	UV
HRLT Torpedo-M0 Voltage - 6	0	N/A	68850	67750	-1104	2100	UV
HRLT Torpedo-M0 Voltage - 7	0	N/A	-70000	-70000	0	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT VBD

Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06

HRLT Bridle#9-M0 Voltage - 0	0	N/A	-68220	-68020	204.9	2100	UV
HRLT Bridle#9-M0 Voltage - 1	0	N/A	-72220	-71140	1077	2100	UV
HRLT Bridle#9-M0 Voltage - 2	0	N/A	-73980	-73020	955.7	2100	UV
HRLT Bridle#9-M0 Voltage - 3	0	N/A	-72210	-71410	794.2	2100	UV
HRLT Bridle#9-M0 Voltage - 4	0	N/A	-69590	-69280	313.4	2100	UV
HRLT Bridle#9-M0 Voltage - 5	0	N/A	-70090	-69790	302.3	2100	UV
HRLT Bridle#9-M0 Voltage - 6	0	N/A	68940	67830	-1112	2100	UV
HRLT Bridle#9-M0 Voltage - 7	0	N/A	-70000	-70000	0	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT ISO

Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06

HRLT Source Current Plus - 0	0	N/A	284.6	283.8	-0.8058	8.520	UA
HRLT Source Current Plus - 1	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 2	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 3	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 4	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 5	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 6	0	N/A	281.1	281.1	0	8.520	UA
HRLT Source Current Plus - 7	0	N/A	281.1	281.1	0	8.520	UA

High Resolution Laterolog Array - B Wellsite Calibration - HRLT MV

Before: 17-Apr-2015 7:23 After: 17-Apr-2015 13:06

HRLT Vertical Voltage PI - 0	0	N/A	-320.5	-320.0	0.4211	9.681	UV
HRLT Vertical Voltage PI - 1	0	N/A	-327.3	-323.1	4.270	9.681	UV
HRLT Vertical Voltage PI - 2	0	N/A	-333.8	-329.8	4.008	9.681	UV
HRLT Vertical Voltage PI - 3	0	N/A	-322.2	-319.2	2.959	9.681	UV
HRLT Vertical Voltage PI - 4	0	N/A	-309.0	-308.2	0.8319	9.681	UV
HRLT Vertical Voltage PI - 5	0	N/A	-325.9	-325.1	0.8395	9.681	UV
HRLT Vertical Voltage PI - 6	0	N/A	330.6	325.7	-4.912	9.681	UV
HRLT Vertical Voltage PI - 7	0	N/A	-322.7	-322.7	0	9.681	UV

Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement

Master: 30-Mar-2015 16:19 Before: 11-Apr-2015 3:34 After: 30-Mar-2015 17:23

SS Cs Resolution Bkg	9.000	8.036	8.060	8.051	-0.008831	1.800	%
LS Cs Resolution Bkg	9.000	8.174	8.153	8.226	0.07256	1.800	%
LSW1 Background	100.0	69.29	67.79	66.52	-1.277	0.03000	CPS
LSW2 Background	100.0	63.27	61.54	62.04	0.4981	0.03000	CPS
LSW3 Background	200.0	138.4	137.3	138.4	1.011	0.03000	CPS
LSW4 Background	250.0	170.3	166.4	167.6	1.237	0.03000	CPS
LSW5 Background	600.0	386.3	388.1	388.6	0.4585	0.03000	CPS
SSW1 Background	100.0	77.28	76.15	77.11	0.9534	0.03000	CPS
SSW2 Background	200.0	136.4	135.7	136.4	0.7706	0.03000	CPS
SSW3 Background	500.0	368.2	370.1	367.6	-2.539	0.03000	CPS
SSW4 Background	270.0	191.5	190.8	190.8	-0.04315	0.03000	CPS
SSW5 Background	200.0	137.6	136.4	139.2	2.766	0.03000	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement

Master: 30-Mar-2015 16:58

LSW1 Aluminum	600.0	519.6	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	745.4	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	900.9	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	451.4	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	419.2	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2400	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6451	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	8943	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3672	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	456.4	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement

Master: 30-Mar-2015 16:40

LSW1 Iron	400.0	402.6	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	672.2	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	877.7	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	448.6	N/A	N/A	N/A	N/A	CPS

LSW4 Iron	320.0	440.0	N/A	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	415.0	N/A	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1840	N/A	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5631	N/A	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8495	N/A	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3504	N/A	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	422.6	N/A	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration

Before: 30-Mar-2015 17:15

HLDS Caliper Small Ring	12.00	N/A	15.00	N/A	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	18.66	N/A	N/A	N/A	N/A	IN

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: 29-Mar-2015 13:32 Before: 11-Apr-2015 2:56 After: 30-Mar-2015 8:02

Na 511 Peak Loc	40.00	38.70	38.78	38.69	-0.09856	1.000	
Na 511 Peak Res	15.50	17.69	15.73	17.49	1.764	2.000	%
High Voltage	1150	1236	1230	1232	2.260	N/A	V
Na 1785 Peak Loc	142.6	140.4	139.4	140.2	0.7782	7.000	
Na 1785 Peak Res	8.500	9.516	10.20	9.362	-0.8329	2.000	%
Temperature	15.50	37.95	37.13	37.61	0.4763	N/A	DEGC
Na Count Rate	45.00	21.35	20.83	21.14	0.3081	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: 29-Mar-2015 13:32 Before: 11-Apr-2015 2:56 After: 30-Mar-2015 8:02

Na 511 Peak Loc	40.00	39.76	39.51	39.65	0.1403	1.000	
Na 511 Peak Res	15.50	17.06	16.29	17.05	0.7659	2.000	%
High Voltage	1150	1116	1110	1113	2.464	N/A	V
Na 1785 Peak Loc	142.6	143.1	141.9	142.6	0.6722	7.000	
Na 1785 Peak Res	8.500	8.404	8.844	9.434	0.5905	2.000	%
Temperature	15.50	37.73	37.05	36.91	-0.1431	N/A	DEGC
Na Count Rate	45.00	21.25	20.76	21.09	0.3293	8.000	CPS

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

Master: 29-Mar-2015 13:32 Before: 11-Apr-2015 2:56 After: 30-Mar-2015 8:02

Coincidence Count Rate Ratio	1.000	1.000	0.9996	1.002	0.002439	0.05000	
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Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration

Master: 29-Mar-2015 13:28

Na 511 Peak Set Point	40.00	40.00	--	--	--	--	
Th Peak Loc	209.6	211.8	--	--	--	--	
Th Peak Res	7.000	7.979	--	--	--	--	%
Background Count Rate	142.5	27.76	--	--	--	--	CPS
Gain Ratio	1.000	1.041	--	--	--	--	

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration

Master: 29-Mar-2015 13:28

Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.2	--	--	--	--	
Th Peak Res	7.000	7.951	--	--	--	--	%
Background Count Rate	142.5	26.71	--	--	--	--	CPS
Gain Ratio	1.000	1.010	--	--	--	--	

Enhanced DTS Cartridge Wellsite Calibration - EDTC Accelerometer Calibration

Before: 17-Apr-2015 7:18

EDTC Z-Axis Acceleration	9.810	N/A	9.750	N/A	N/A	N/A	M/S2
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Enhanced DTS Cartridge Wellsite Calibration - Detector Calibration

Before: 11-Apr-2015 3:47 After: 30-Mar-2015 7:59

Gamma Ray (Jig - Bkg)	150.3	N/A	150.3	154.6	4.255	13.67	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	168.6	4.642	15.00	GAPI

High Resolution Laterolog Array - B / Equipment Identification

Primary Equipment:

HRLT Sonde HRLS - B 768

Auxiliary Equipment:

HRLT lower Housing HRLH - B 968

HRLT Lower Cartridge HRLC - B 974

HRLT upper Housing HRLH - B 978

HRLT Upper Cartridge HRUC - B 764

High Resolution Laterolog Array - B Wellsite Calibration

HRLT M01

Idx	Phase	HRLT M0-M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
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Idx	Phase	HRLT M1-M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-318.8	-322.7	-280.7	-379.7
	After		-318.1			
1	Before		-332.8	-322.7	-280.7	-379.7
	After		-328.2			
2	Before		-340.5	-322.7	-280.7	-379.7
	After		-336.4			
3	Before		-330.6	-322.7	-280.7	-379.7
	After		-327.3			
4	Before		-320.1	-322.7	-280.7	-379.7
	After		-319.0			
5	Before		-322.1	-322.7	-280.7	-379.7
	After		-321.1			
6	Before		323.1	322.7	379.7	280.7
	After		318.1			
7	Before		-322.7	-322.7	-280.7	-379.7
	After		-322.7			
		(Minimum) (Nominal) (Maximum)				

Before: 17-Apr-2015 7:23
After: 17-Apr-2015 13:06

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M12						
Idx	Phase	HRLT M1-M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1744	1781	2095	1549
	After		1736			
1	Before		1828	1781	2095	1549
	After		1798			
2	Before		1863	1781	2095	1549
	After		1836			
3	Before		1807	1781	2095	1549
	After		1785			
4	Before		1748	1781	2095	1549
	After		1738			
5	Before		1760	1781	2095	1549
	After		1750			
6	Before		-1782	-1781	-1549	-2095
	After		-1751			
7	Before		1781	1781	2095	1549
	After		1781			
		(Minimum) (Nominal) (Maximum)				

Before: 17-Apr-2015 7:23
After: 17-Apr-2015 13:06

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M23						
Idx	Phase	HRLT M2-M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1736	1781	2095	1549
	After		1729			

1	Before		1830	1781	2095	1549
	After		1801			
2	Before		1867	1781	2095	1549
	After		1840			
3	Before		1814	1781	2095	1549
	After		1793			
4	Before		1750	1781	2095	1549
	After		1741			
5	Before		1763	1781	2095	1549
	After		1754			
6	Before		-1773	-1781	-1549	-2095
	After		-1743			
7	Before		1781	1781	2095	1549
	After		1781			
(Minimum) (Nominal) (Maximum)						

Before: 17-Apr-2015 7:23

After: 17-Apr-2015 13:06

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V34						
Idx	Phase	HRLT A3–A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68760	70000	82360	60900
	After		68500			
1	Before		72280	70000	82360	60900
	After		71170			
2	Before		74010	70000	82360	60900
	After		73050			
3	Before		72230	70000	82360	60900
	After		71420			
4	Before		69630	70000	82360	60900
	After		69290			
5	Before		70140	70000	82360	60900
	After		69810			
6	Before		-69040	-70000	-60900	-82360
	After		-67920			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum) (Nominal) (Maximum)						

Before: 17-Apr-2015 7:23

After: 17-Apr-2015 13:06

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V45						
Idx	Phase	HRLT A4–A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68840	70000	82360	60900
	After		68590			
1	Before		72480	70000	82360	60900
	After		71380			

2	Before		74190	70000	82360	60900
	After		73250			
3	Before		72380	70000	82360	60900
	After		71560			
4	Before		69740	70000	82360	60900
	After		69390			
5	Before		70240	70000	82360	60900
	After		69910			
6	Before		-69250	-70000	-60900	-82360
	After		-68130			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum) (Nominal) (Maximum)						

Before: 17-Apr-2015 7:23
After: 17-Apr-2015 13:06

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V56						
Idx	Phase	HRLT A5–A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68690	70000	82360	60900
	After		68440			
1	Before		72330	70000	82360	60900
	After		71240			
2	Before		74060	70000	82360	60900
	After		73080			
3	Before		72240	70000	82360	60900
	After		71440			
4	Before		69600	70000	82360	60900
	After		69270			
5	Before		70110	70000	82360	60900
	After		69800			
6	Before		-69090	-70000	-60900	-82360
	After		-67970			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum) (Nominal) (Maximum)						

Before: 17-Apr-2015 7:23
After: 17-Apr-2015 13:06

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT VTP						
Idx	Phase	HRLT Torpedo–M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68180	-70000	-60900	-82360
	After		-67980			
1	Before		-72120	-70000	-60900	-82360
	After		-71060			
2	Before		-73890	-70000	-60900	-82360
	After		-72930			

Idx	Phase	HRLT Voltage Plus UV	Value	Nominal	Maximum	Minimum
3	Before		-72130	-70000	-60900	-82360
	After		-71340			
4	Before		-69530	-70000	-60900	-82360
	After		-69230			
5	Before		-70050	-70000	-60900	-82360
	After		-69750			
6	Before		68850	70000	82360	60900
	After		67750			
7	Before		-70000	-70000	-60900	-82360
	After		-70000			
			(Minimum)	(Nominal)	(Maximum)	
Before: 17-Apr-2015 7:23						
After: 17-Apr-2015 13:06						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT VBD						
Idx	Phase	HRLT Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68220	-70000	-60900	-82360
	After		-68020			
1	Before		-72220	-70000	-60900	-82360
	After		-71140			
2	Before		-73980	-70000	-60900	-82360
	After		-73020			
3	Before		-72210	-70000	-60900	-82360
	After		-71410			
4	Before		-69590	-70000	-60900	-82360
	After		-69280			
5	Before		-70090	-70000	-60900	-82360
	After		-69790			
6	Before		68940	70000	82360	60900
	After		67830			
7	Before		-70000	-70000	-60900	-82360
	After		-70000			
			(Minimum)	(Nominal)	(Maximum)	
Before: 17-Apr-2015 7:23						
After: 17-Apr-2015 13:06						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT ISO						
Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		284.6	284.0	334.1	247.0
	After		283.8			
1	Before		281.1	281.1	330.7	244.4
	After		281.1			
2	Before		281.1	281.1	330.7	244.4
	After		281.1			
3	Before		281.1	281.1	330.7	244.4
	After		281.1			
			(Minimum)	(Nominal)	(Maximum)	

Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
4	Before		281.1	281.1	330.7	244.4
	After		281.1			
5	Before		281.1	281.1	330.7	244.4
	After		281.1			
6	Before		281.1	281.1	330.7	244.4
	After		281.1			
7	Before		281.1	281.1	330.7	244.4
	After		281.1			
(Minimum) (Nominal) (Maximum)						
Before: 17-Apr-2015 7:23						
After: 17-Apr-2015 13:06						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT MV						
Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-320.5	-322.7	-280.7	-379.7
	After		-320.0			
1	Before		-327.3	-322.7	-280.7	-379.7
	After		-323.1			
2	Before		-333.8	-322.7	-280.7	-379.7
	After		-329.8			
3	Before		-322.2	-322.7	-280.7	-379.7
	After		-319.2			
4	Before		-309.0	-322.7	-280.7	-379.7
	After		-308.2			
5	Before		-325.9	-322.7	-280.7	-379.7
	After		-325.1			
6	Before		330.6	322.7	379.7	280.7
	After		325.7			
7	Before		-322.7	-322.7	-280.7	-379.7
	After		-322.7			
(Minimum) (Nominal) (Maximum)						
Before: 17-Apr-2015 7:23						
After: 17-Apr-2015 13:06						

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:

Hostile Litho Density Sonde	HLDS – D	45
Hostile Litho Density High Voltage	HLDV – D	45
Gamma Source Radioactive	GSR – Z	8113

Auxiliary Equipment:

Hostile Litho Density Pad	HLDP – C	45
Hostile Litho Density High Voltage Housi	HEH – H	47

Litho-Density Spectroscopy Cartridge – B / Equipment Identification

Primary Equipment:

LDSC Cartridge	LDSC – B	521
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Auxiliary Equipment:

LDSC Housing	LDSH – A	319
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Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

Primary Equipment: HNGC Cartridge	HNGC – B	439
Auxiliary Equipment: HNGC Housing	HNGH – A	380

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment: HNGS Sonde	HNGS – BA	177
Auxiliary Equipment: HNGS Sonde Housing Gamma Source Radioactive	HNSH – BA GSR – U	174 616008

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 1 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value	
Master		38.70	Master		17.69	Master		1236	
Before		38.78	Before		15.73	Before		1230	
After		38.69	After		17.49	After		1232	
	37.50 (Minimum)	40.00 (Nominal)	43.50 (Maximum)	12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)	900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value	
Master		140.4	Master		9.516	Master		37.95	
Before		139.4	Before		10.20	Before		37.13	
After		140.2	After		9.362	After		37.61	
	135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)	7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)	-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)
Phase	Na Count Rate CPS	Value							
Master		21.35							
Before		20.83							
After		21.14							
	10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)						
Master: 29-Mar-2015 13:32			Before: 11-Apr-2015 2:56			After: 30-Mar-2015 8:02			

Hostile Natural Gamma Ray Sonde Wellsite Calibration

Detector 2 Check

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value	
Master		39.76	Master		17.06	Master		1116	
Before		39.51	Before		16.29	Before		1110	
After		39.65	After		17.05	After		1113	
	37.50 (Minimum)	40.00 (Nominal)	43.50 (Maximum)	12.00 (Minimum)	15.50 (Nominal)	19.00 (Maximum)	900.0 (Minimum)	1150 (Nominal)	1600 (Maximum)
Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value	
Master		143.1	Master		8.404	Master		37.73	
Before		141.9	Before		8.844	Before		37.05	
After		142.6	After		9.434	After		36.91	
	135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)	7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)	-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)
Phase	Na Count Rate CPS	Value							
Master		21.25							
Before		20.76							

After		21.09
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)	
Master: 29-Mar-2015 13:32 Before: 11-Apr-2015 2:56 After: 30-Mar-2015 8:02		

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		1.000
Before		0.9996
After		1.002
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)	
Master: 29-Mar-2015 13:32		
Before: 11-Apr-2015 2:56		
After: 30-Mar-2015 8:02		

Hostile Natural Gamma Ray Sonde Master Calibration								
Detector 1 Calibration								
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		40.00	Master		211.8	Master		7.979
	38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)			201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)			5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value			
Master		27.76	Master		1.041			
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)				
Master: 29-Mar-2015 13:28								

Hostile Natural Gamma Ray Sonde Master Calibration								
Detector 2 Calibration								
Phase	Na 511 Peak Set Point	Value	Phase	Th Peak Loc	Value	Phase	Th Peak Res %	Value
Master		41.00	Master		211.2	Master		7.951
	38.00 (Minimum) 40.00 (Nominal) 43.00 (Maximum)			201.0 (Minimum) 209.6 (Nominal) 218.3 (Maximum)			5.000 (Minimum) 7.000 (Nominal) 9.000 (Maximum)	
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value			
Master		26.71	Master		1.010			
	10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)			0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)				
Master: 29-Mar-2015 13:28								

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		9.750
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	
Before: 17-Apr-2015 7:18		

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		7.125	Before		150.3	Before		164.0
After		7.050	After		151.6	After		163.6

Alter			7.658	Alter		154.6	Alter		168.6	
	0 (Minimum)	30.00 (Nominal)	120.0 (Maximum)		136.7 (Minimum)	150.3 (Nominal)		149.0 (Minimum)	164.0 (Nominal)	179.0 (Maximum)
Before: 11-Apr-2015 3:47			After: 30-Mar-2015 7:59							

Company: Integrated Ocean Discovery Program

Schlumberger

Well: Expedition 355, Site U1456 C

Field: Arabian Sea Monsoon

Rig: JOIDES Resolution

Ocean: Indian

HRLA Resistivity
 Caliper / Natural Gamma Spectroscopy
 Magnetic Susceptibility (MSS)