



Company: International Ocean Discovery Program

Well: **Expedition 356, Site U1462 C**

Field: Indonesian Throughflow

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

Rig: JOIDES Resolution Field: Indonesian Throughflow Location: Latitude: S 19.82127 Deg Well: Expedition 356, Site U1462 C Company: International Ocean Discovery Program	High Resolution Laterolog Array (HRLA) Density/Porosity (HLDS) (APS) Magnetic Susceptibility (MSS), (HNGS)							
	LOCATION	Latitude: S 19.82127 Deg Longitude: E 115.7103 Deg			Elev.: K.B. -98.00 m G.L. 0.00 m D.F. -98.00 m			
		Permanent Datum: Sea Floor			Elev.: 0.00 m			
		Log Measured From: Sea Floor			0.00 m above Perm. Datum			
		Drilling Measured From: Sea Floor						
API Serial No.			Max. Hole Devi. 0 deg		Longitude E 115.7103		Latitude S 19.82127	

Logging Date			10-Sep-2015					
Run Number			1					
Depth Driller			950 m					
Schlumberger Depth			875 m					
Bottom Log Interval			875 m					
Top Log Interval			0 m					
Casing Driller Size @ Depth			5.500 in @ 89 m			@		
Casing Schlumberger			88 m					
Bit Size			9.875 in					
Type Fluid In Hole			Sepiolite with Barite					
MUD	Density	Viscosity	1.318 g/cm3					
	Fluid Loss	PH		8.07				
	Source Of Sample		Mudpit					
	RM @ Measured Temperature		0.220 ohm.m @ 23 degC			@		
RMF @ Measured Temperature		@			@			
RMC @ Measured Temperature		@			@			
Source RMF	RMC	N/A	N/A					
RM @ MRT	RMF @ MRT	0.169 @ 36	@ 36	@	@	@		
Maximum Recorded Temperatures		36 degC						
Circulation Stopped		Time	10-Sep-2015		19:15			
Logger On Bottom		Time	11-Sep-2015		1:11			
Unit Number		Location	627314 Houma, LA					
Recorded By			K. Swain					
Witnessed By			M. Gurnis, Z. Mateo, D. Vleeschouwer					

[illegible]

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

<p style="text-align: center;">DISCLAIMER</p> <p>THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.</p>	
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REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
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Downlog run with corrections computed using bit size; uplogs corrected for actual hole size using caliper.

Fluid type was sepiolite+barite at 11 lbs/gal. Corrections for this applied.	
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Depth originally recorded from drill floor; played back with sea floor as reference zero.

All logs presented in measured depth below sea floor (MDBSF).

Maximum observed temperature on the MSS temperature was 36.4degC.

MSS appears to be affected by temperature.	
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What appears to be incorrect in this paragraph?	

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RUN 1	RUN 2

RUN 1		RUN 2	
SERVICE ORDER #:		SERVICE ORDER #:	

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

EQUIPMENT DESCRIPTION

	RUN 1	RUN 2
1	1	1
2	1	1
3	1	1
4	1	1
5	1	1
6	1	1
7	1	1
8	1	1
9	1	1
10	1	1
11	1	1
12	1	1
13	1	1
14	1	1
15	1	1
16	1	1
17	1	1
18	1	1
19	1	1
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90	1	1
91	1	1
92	1	1
93	1	1
94	1	1
95	1	1
96	1	1
97	1	1
98	1	1
99	1	1
100	1	1

R001		R002	
SURFACE EQUIPMENT			

SET 331.4	SURFACE EQUIPMENT	
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SFT-281 1	
SET-178 1	

GSR-U 616008


WITM (EDTS)-A	
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DOWNHOLE EQUIPMENT	
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DOWNHOLE EQUIPMENT	
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LEH-QT	MDSB_EDTC		39.87
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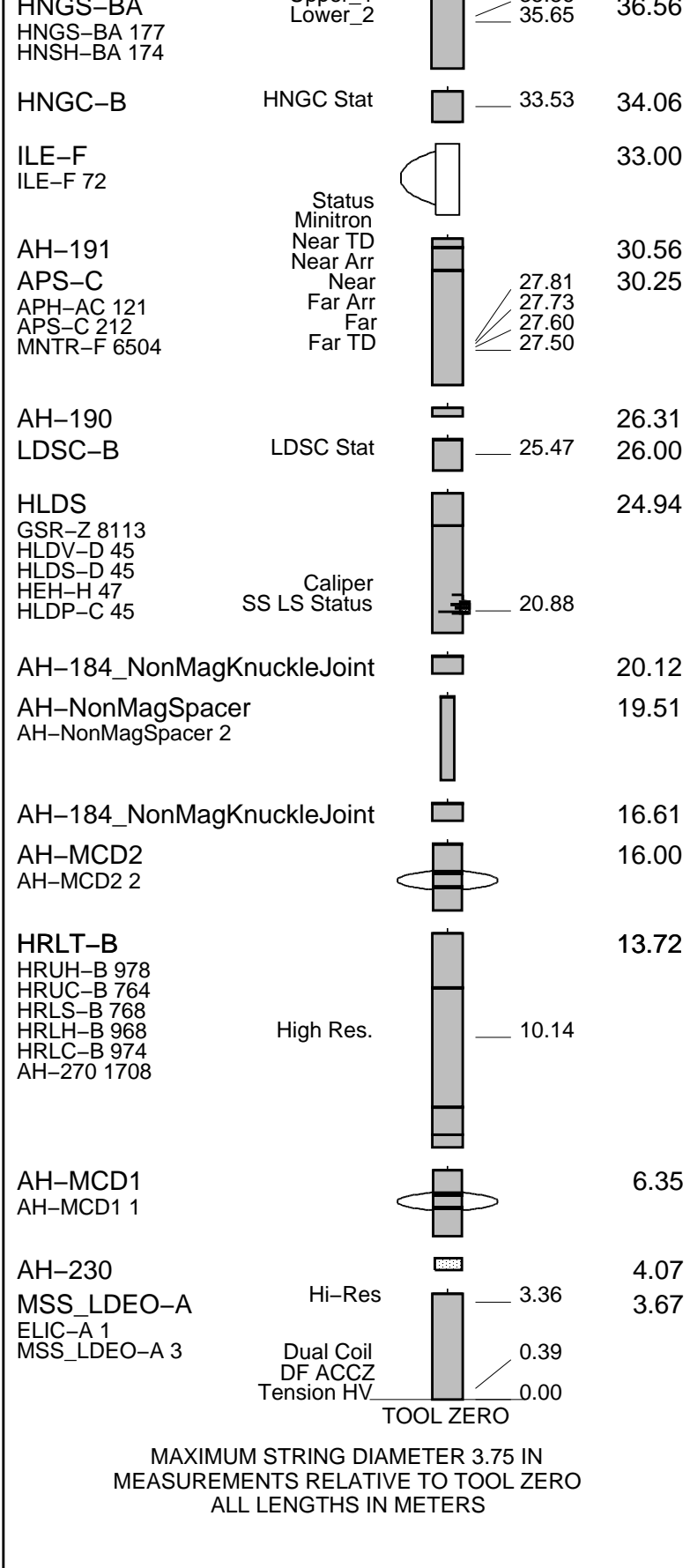
ALL 262	Mud Temp	38.54	
	CTEM	37.48	38.08

AF-369	STEM		37.13	38.98
	Gamma Ray		36.91	

EDTC-B	EFTB DIAG		38.54
EDTC-B	TelStatus		

EDTH-B 8303	EdStatus		
EDTC-B 8317	EDTCB Ele		36.56

EDTC-B 8317	Upper 1	35.86	39.52
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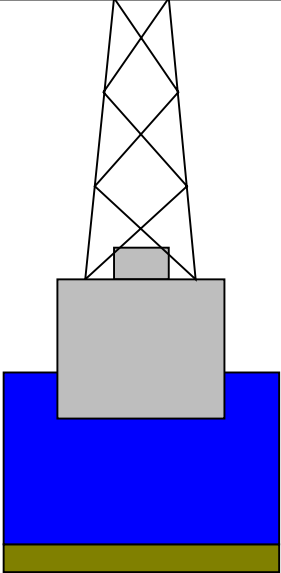
Production String	(in) (M) OD ID MD	Well Schematic	(M) (in) MD OD ID	Casing String
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Kelly Bushing Elevation
Derrick Floor Elevation

Mean Sea Level

-98
-98

-87



4.1



0
89

950

4.1
9.875

Sea Floor
Open Hole

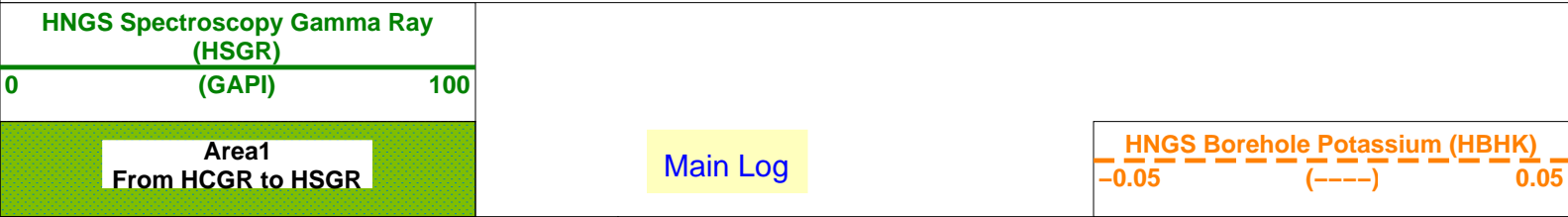
Total Depth

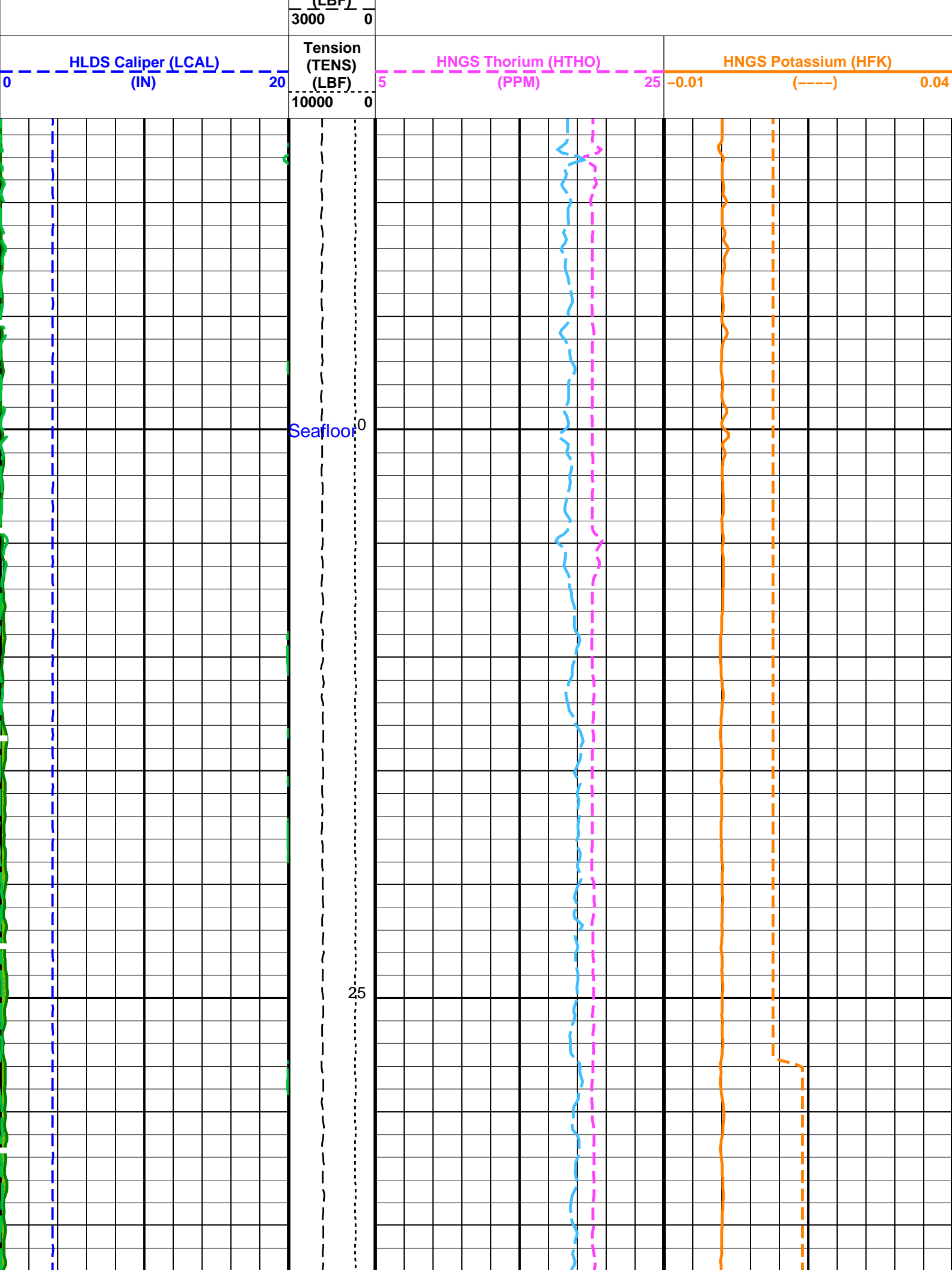


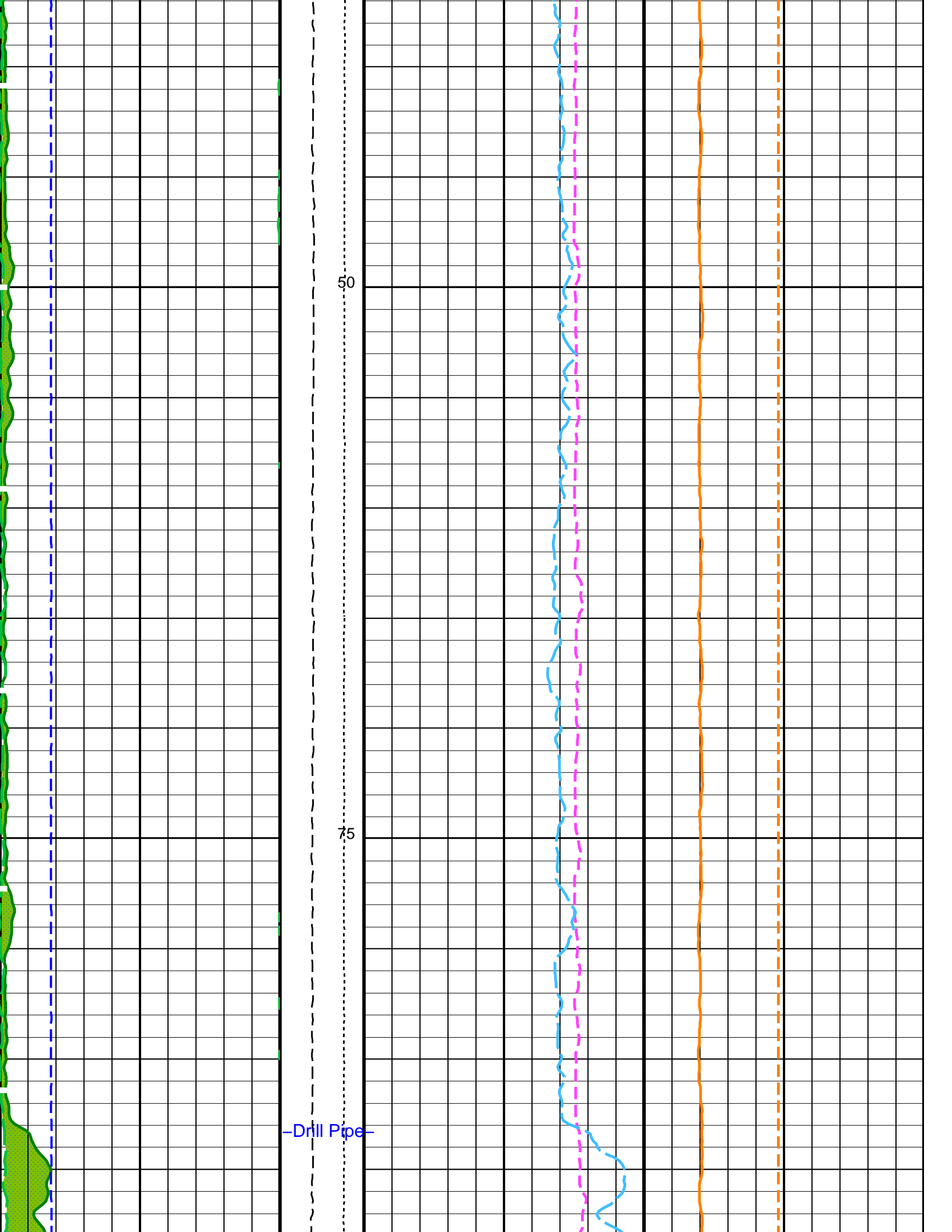
Input DLIS Files						
DEFAULT	MSS_LDEO_HRLA_LDL_029PUP	FN:45	PRODUCER	11-Sep-2015 22:56	973.8 M	83.8 M
Output DLIS Files						
DEFAULT	MSS_LDEO_HRLA_LDL_050PUP	FN:54	PRODUCER	18-Sep-2015 15:30	875.5 M	-13.7 M

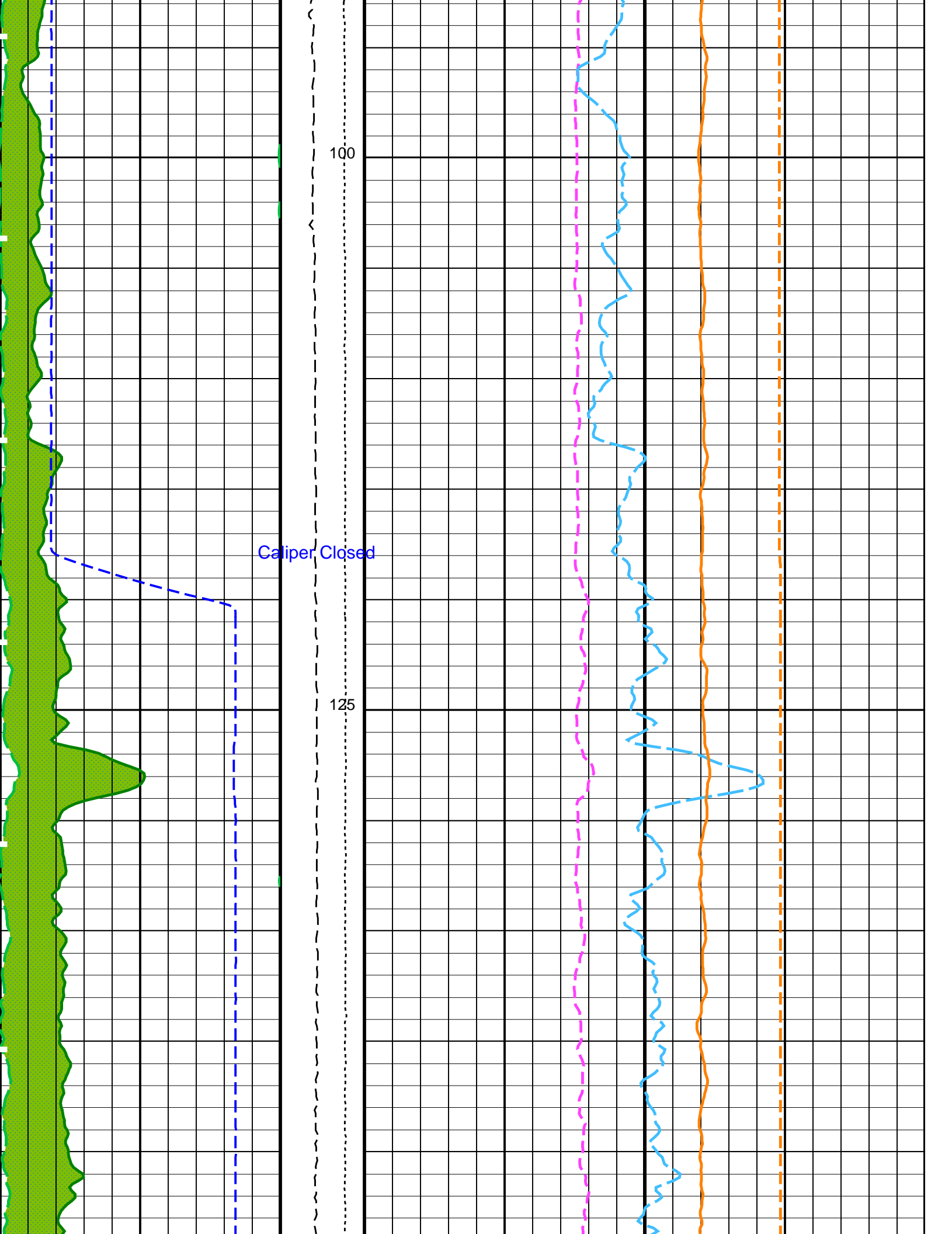
OP System Version: 19C0-187					
MSS_LDEO-A	19C0-187		HRLT-B	19C0-187	
HLDS	19C0-187		LDSC-B	19C0-187	
APS-C	19C0-187		HNGC-B	19C0-187	
HNGS-BA	19C0-187		EDTC-B	SKK-5169-EDTCB	

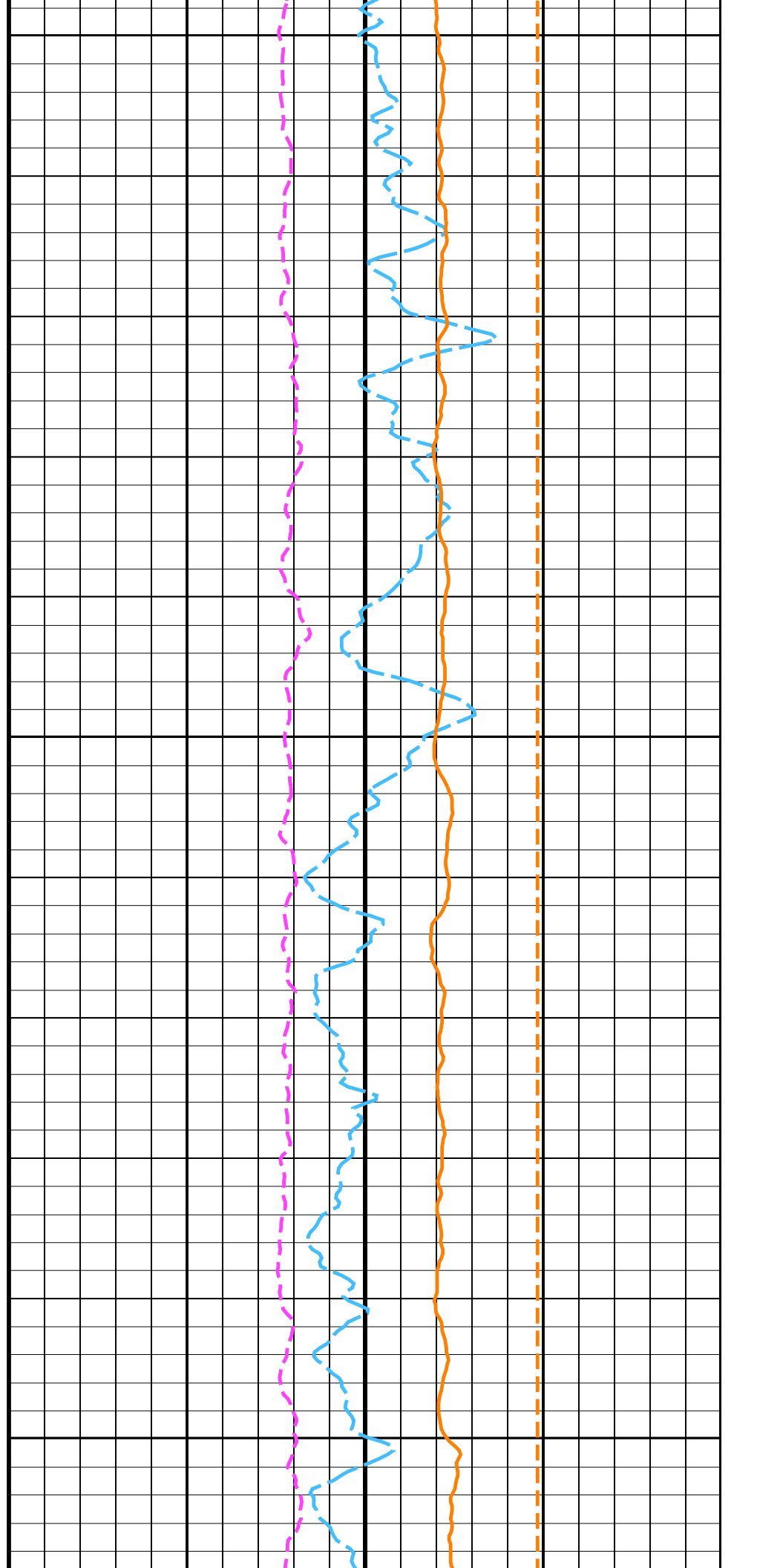
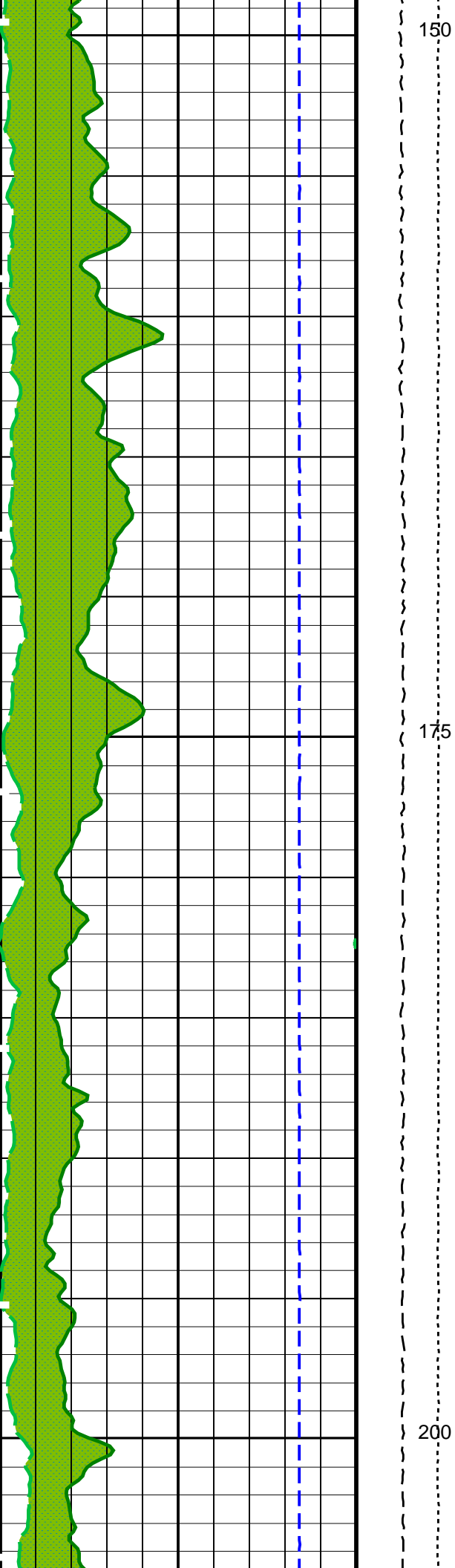
PIP SUMMARY	
 Time Mark Every 60 S	

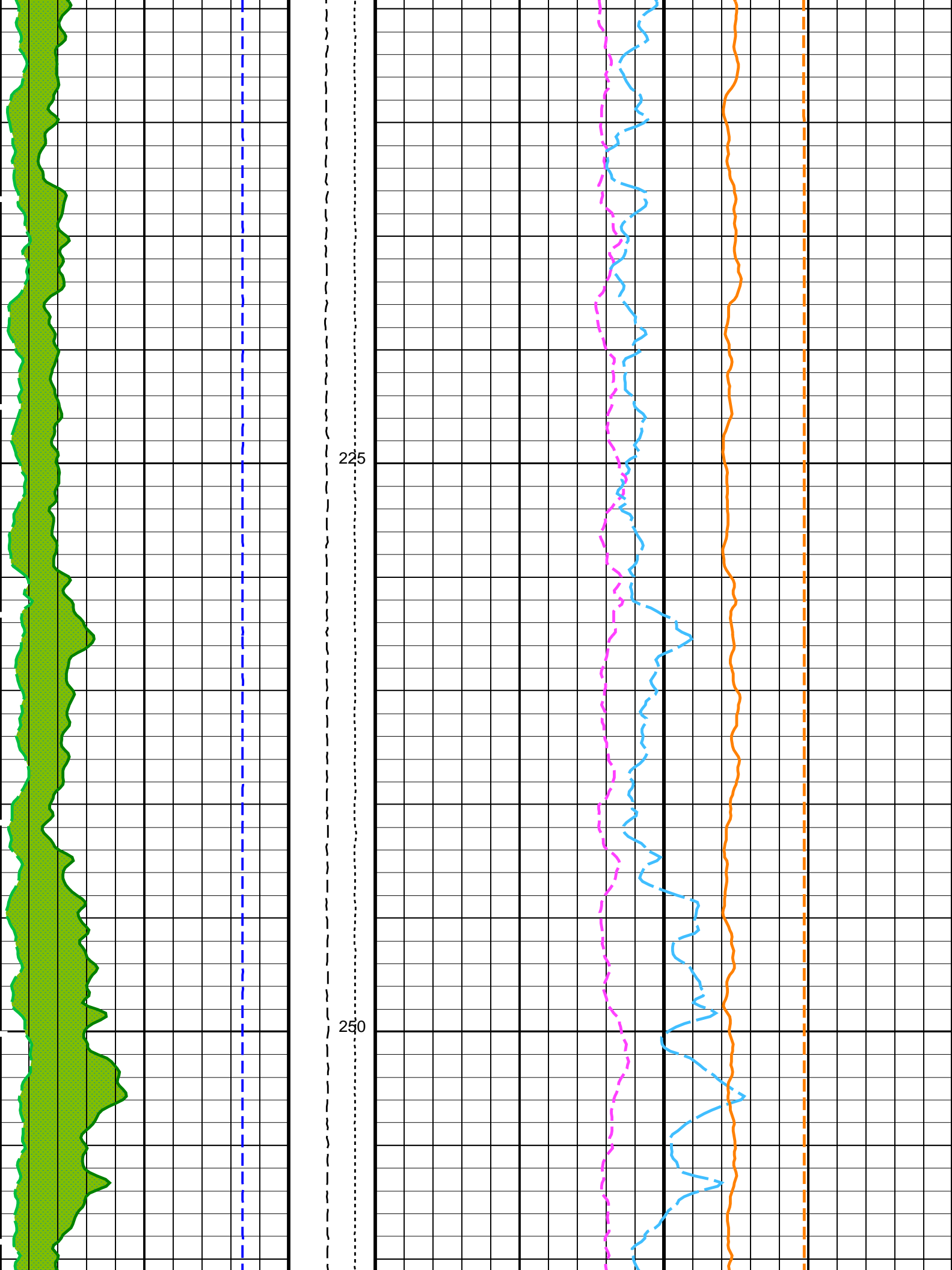


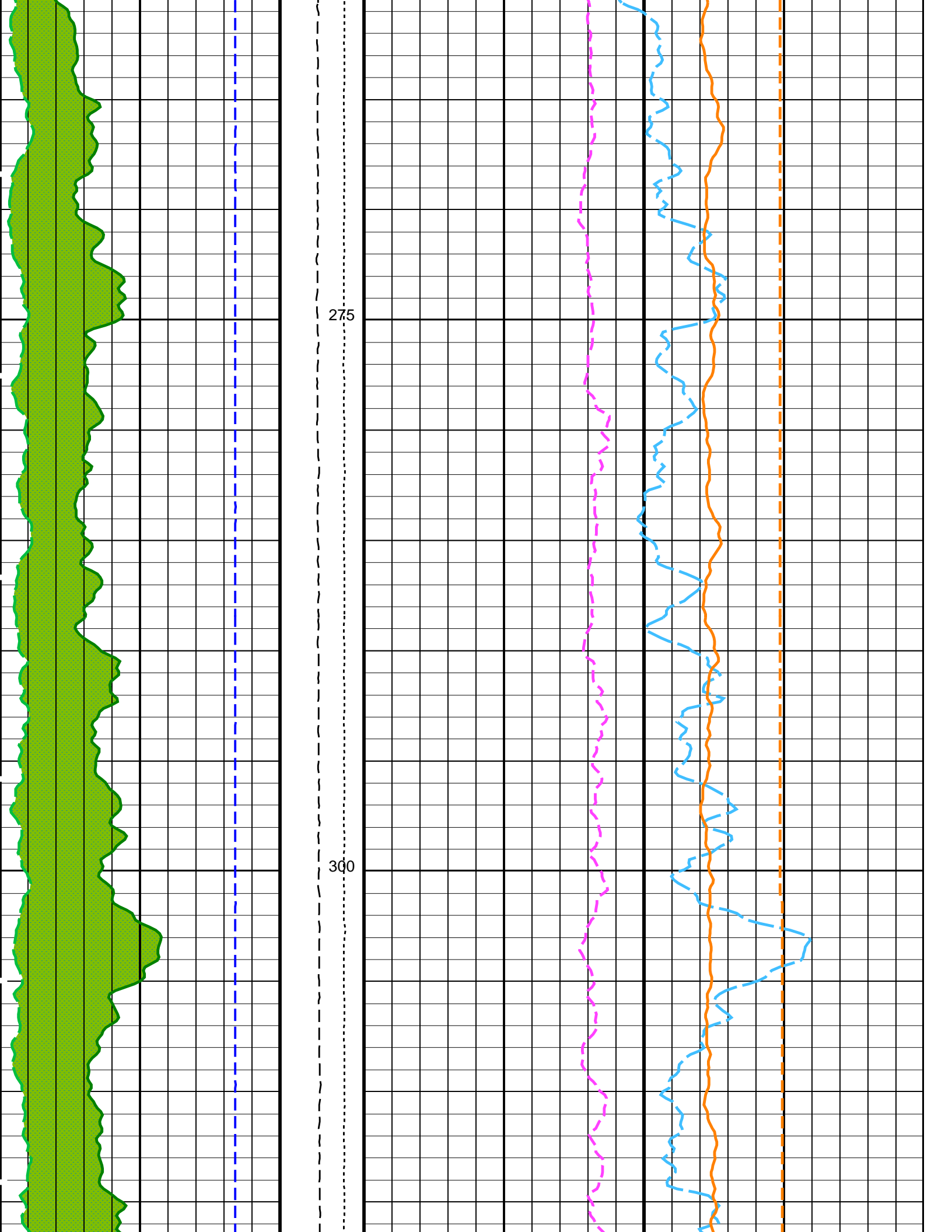


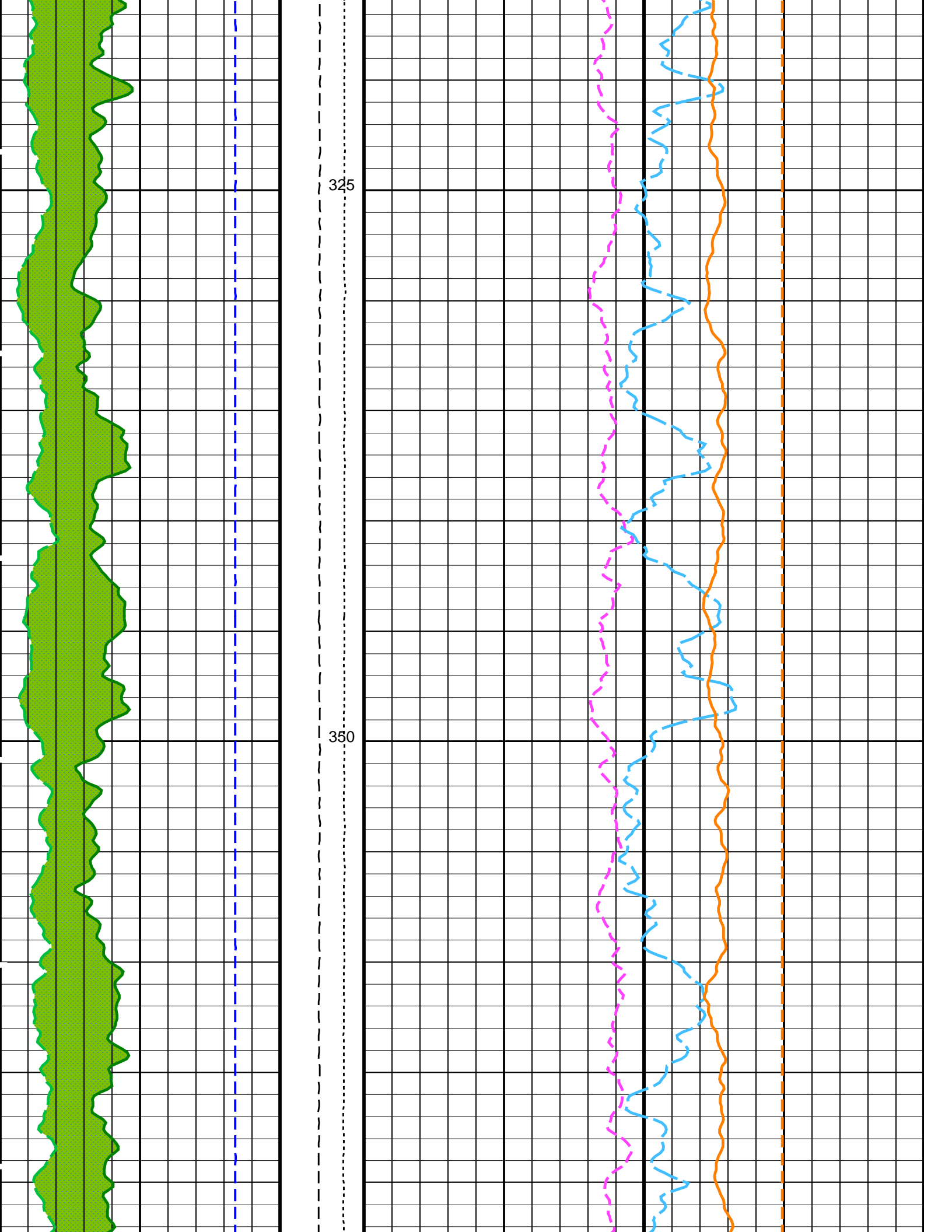


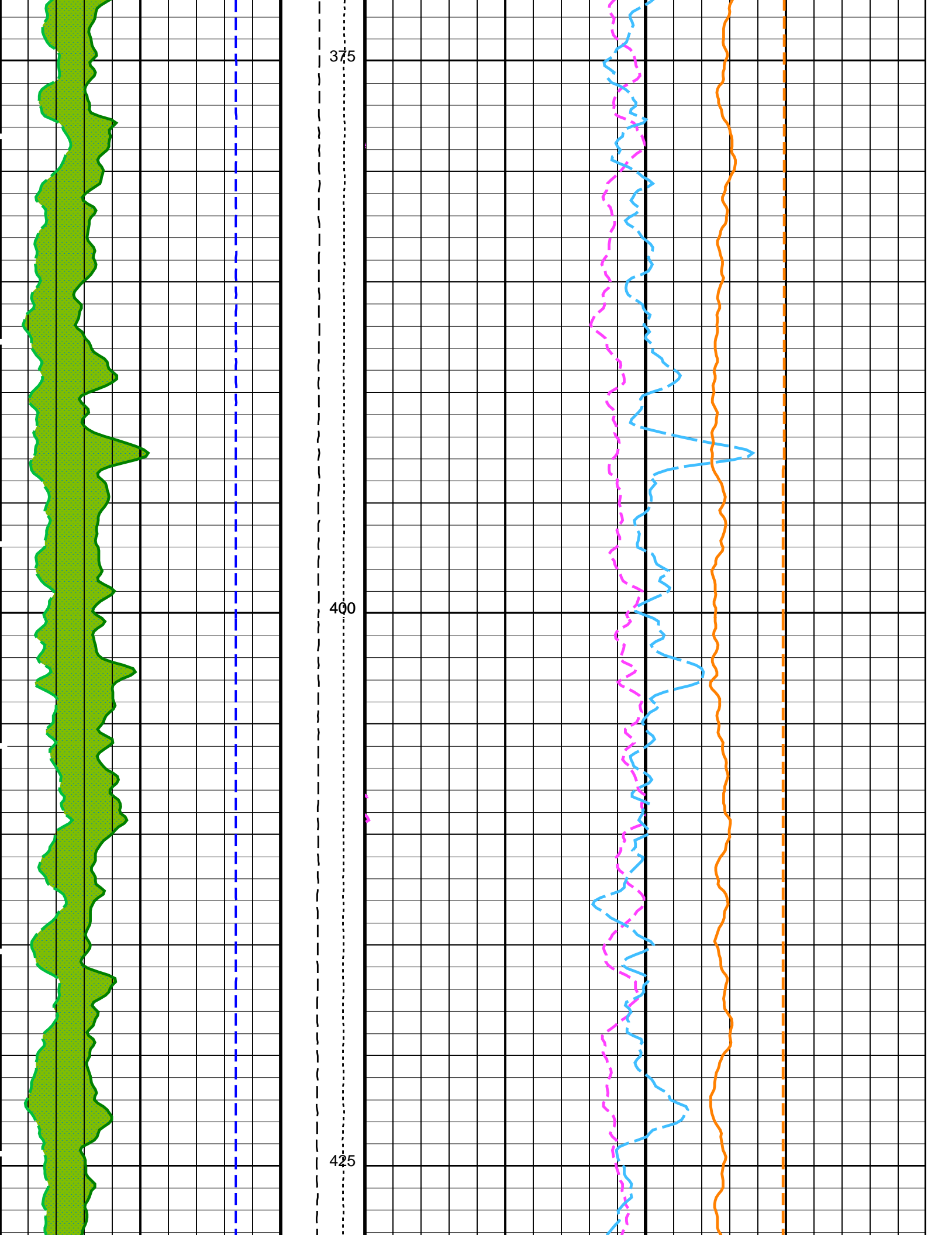


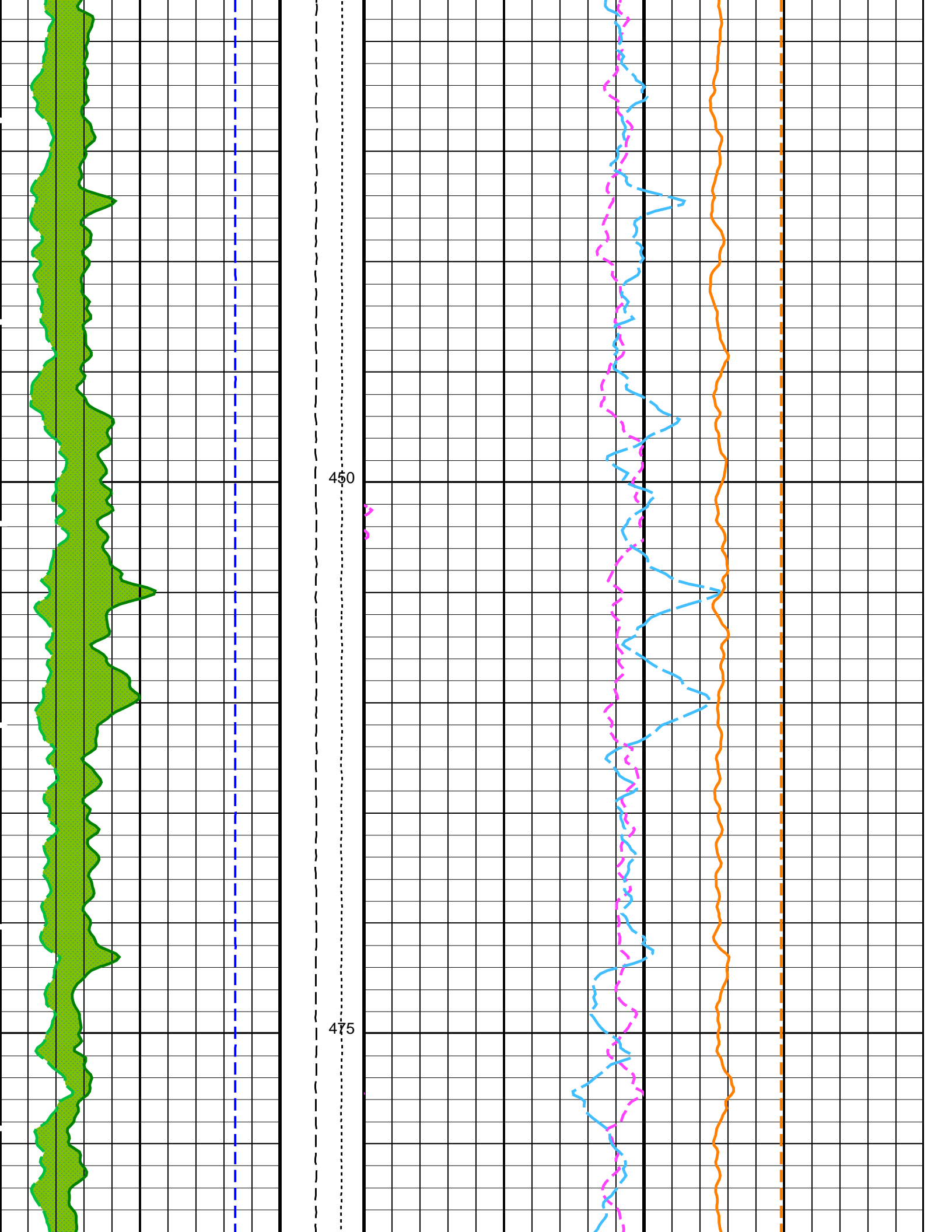


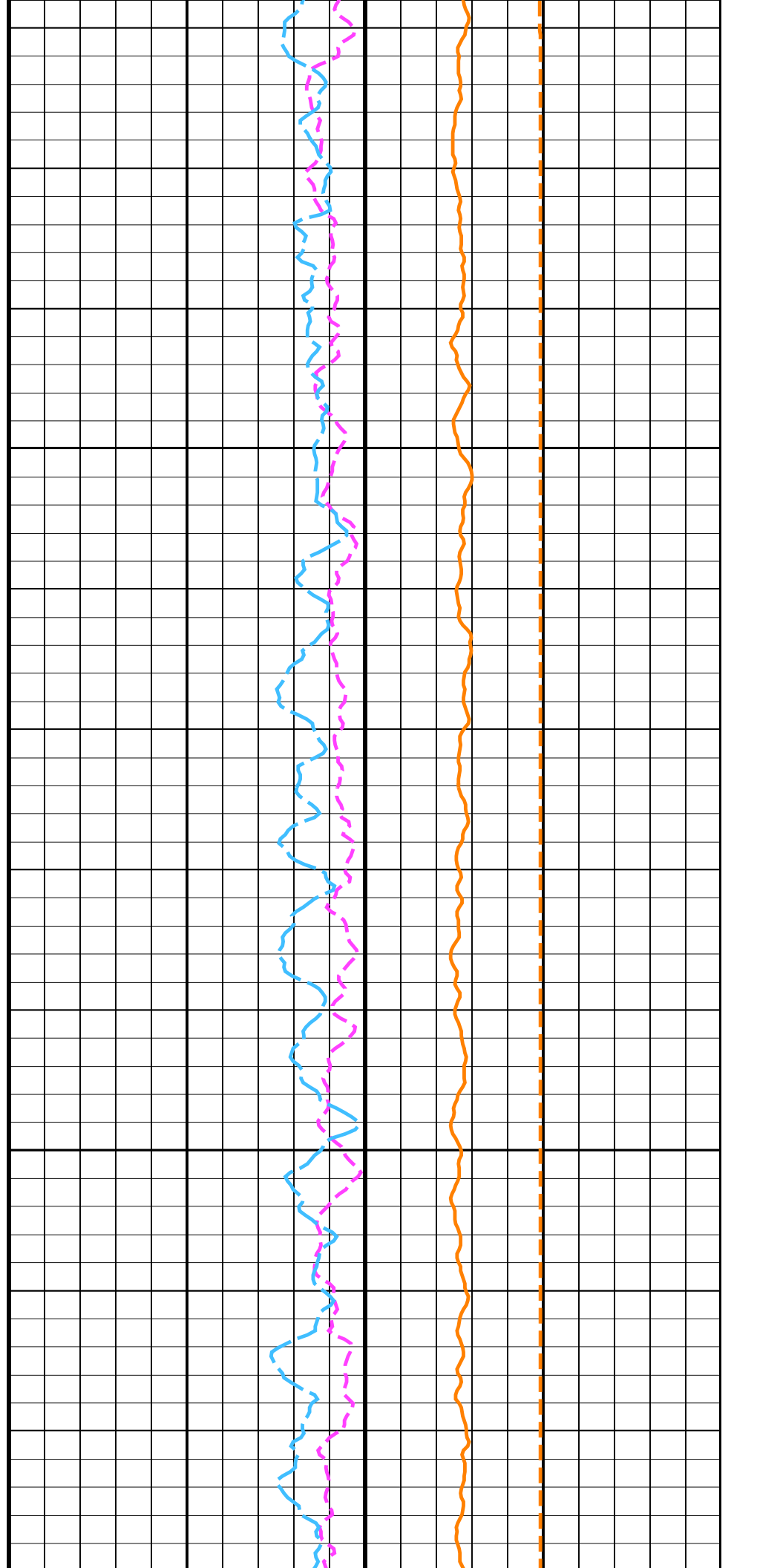
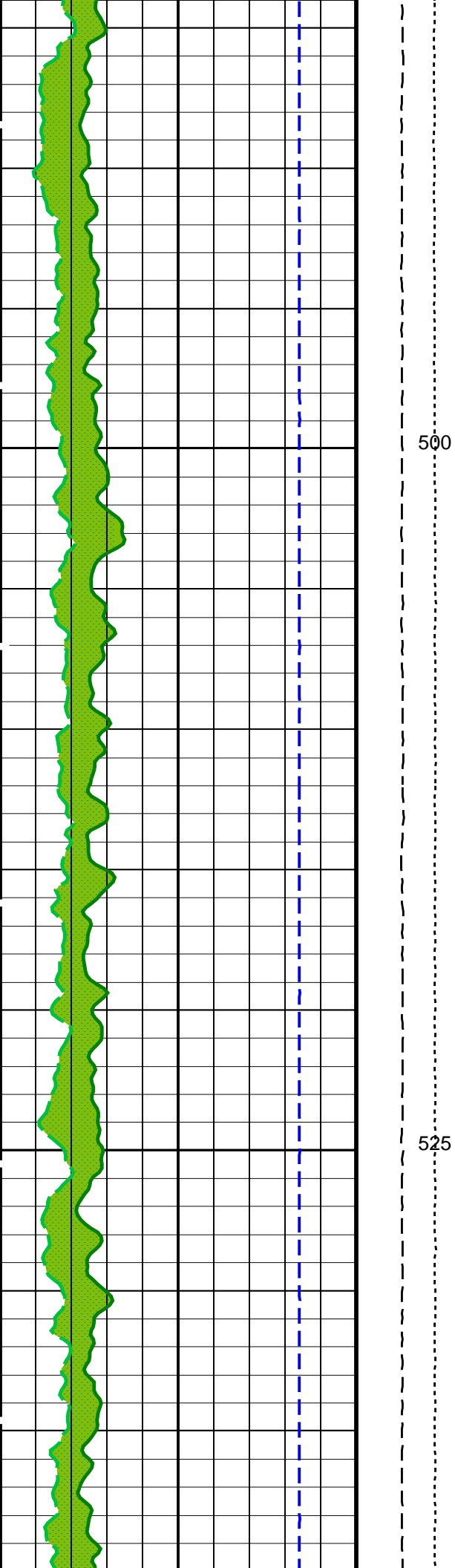


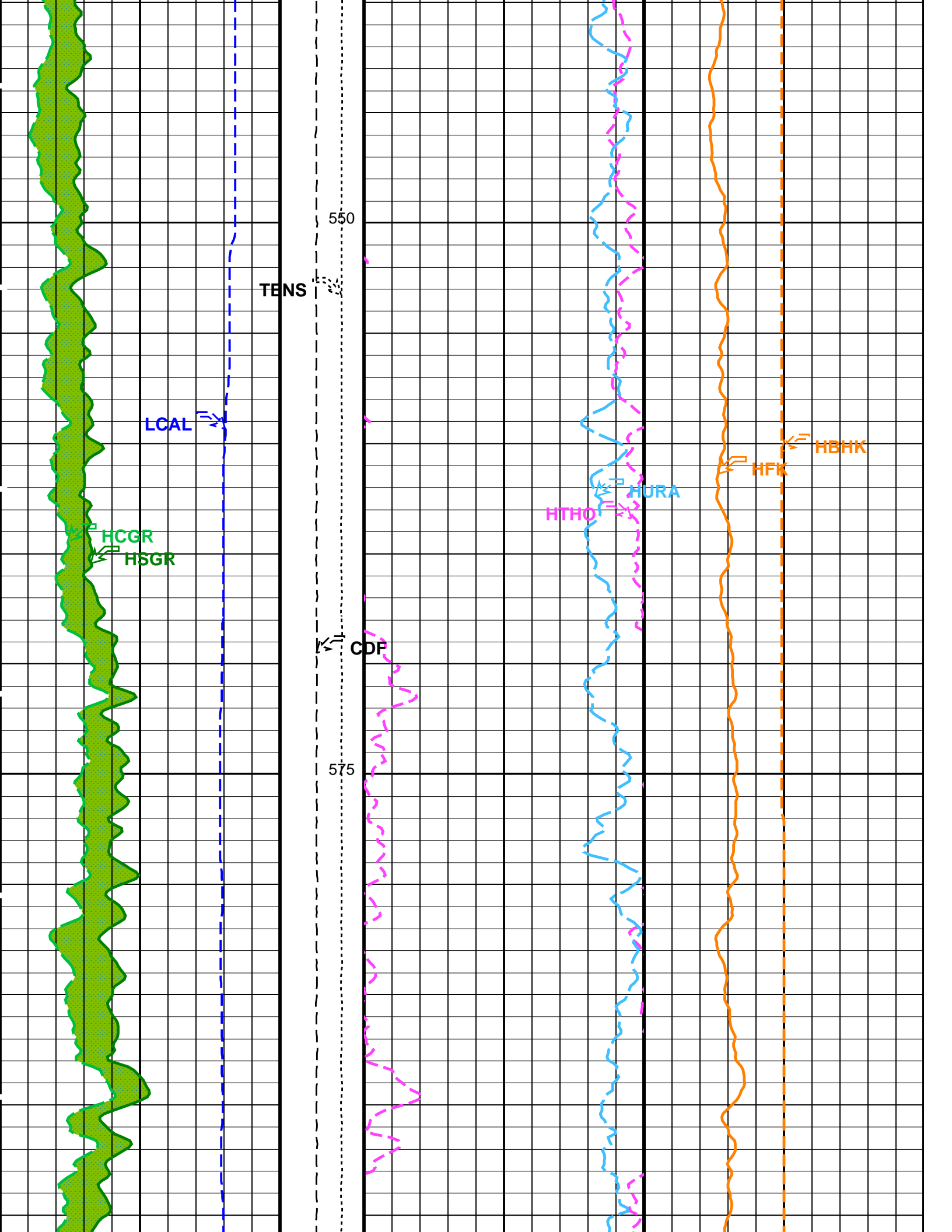


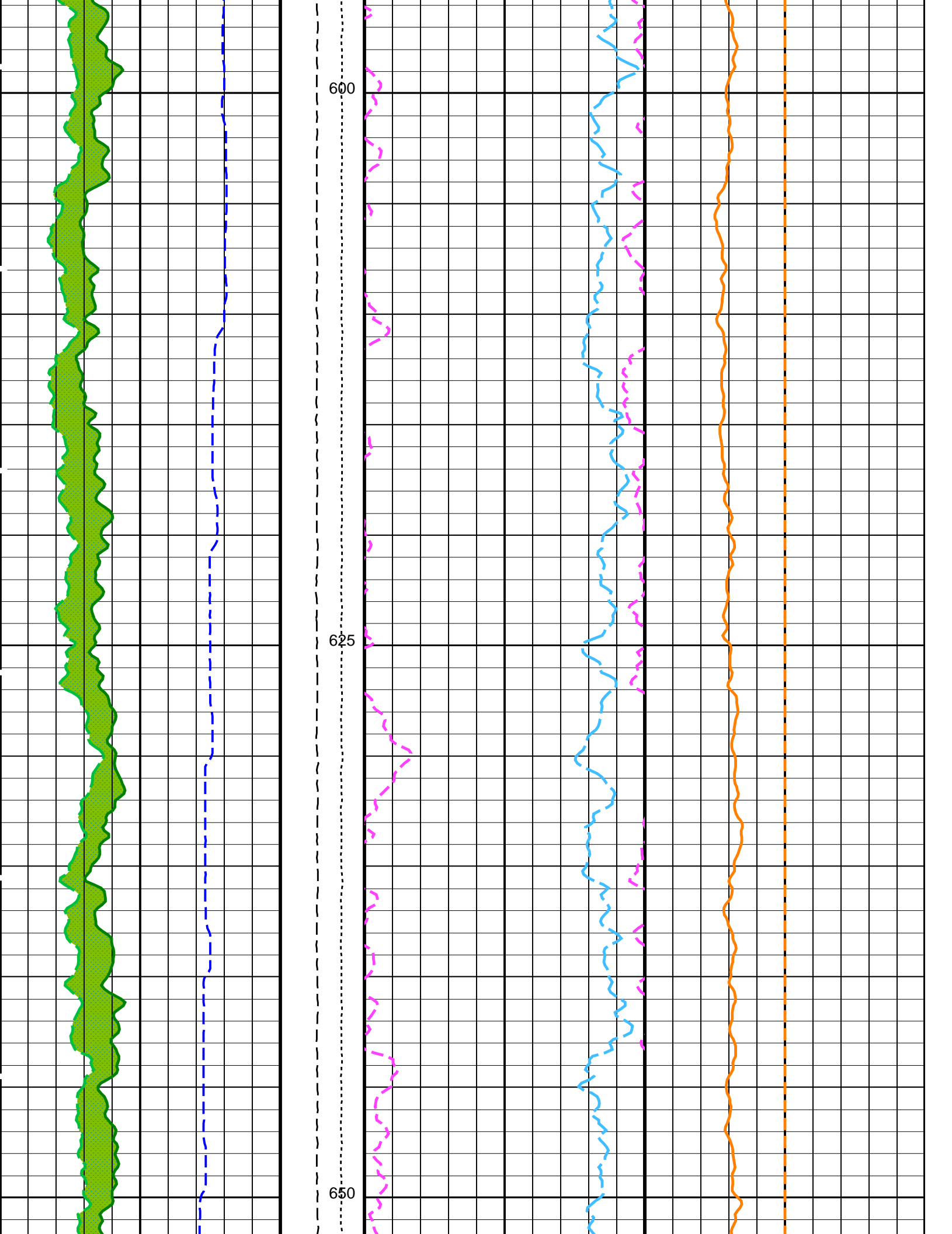


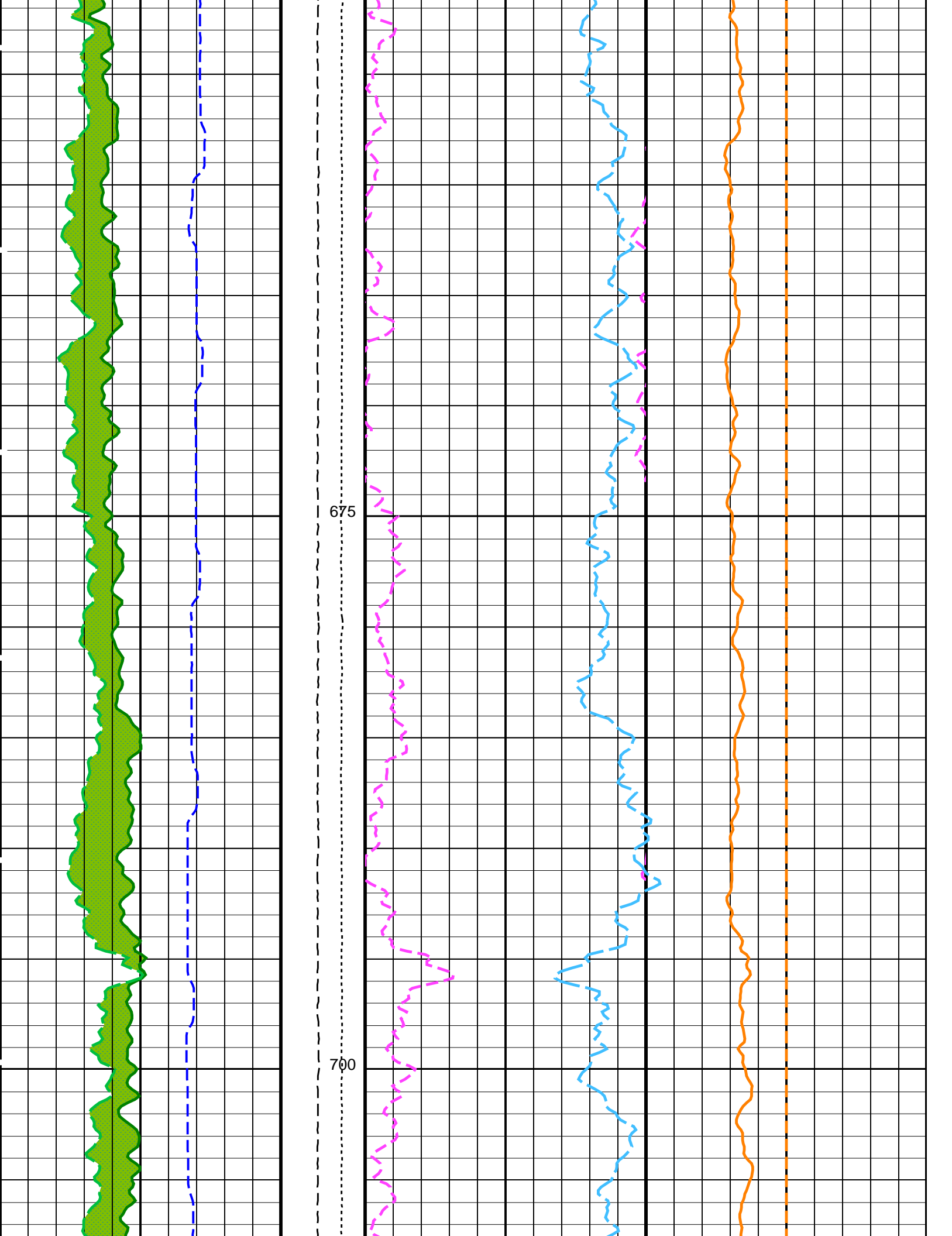


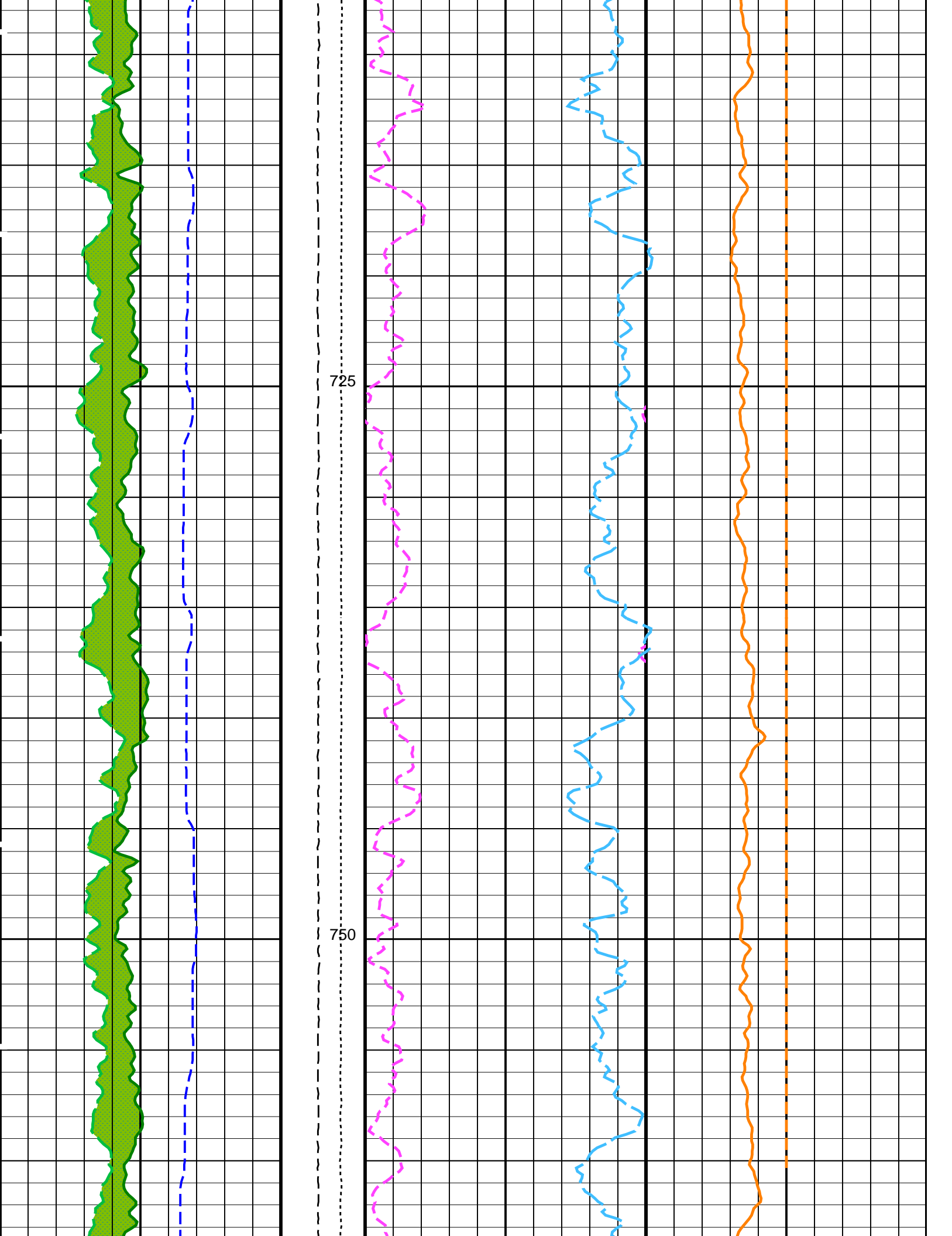


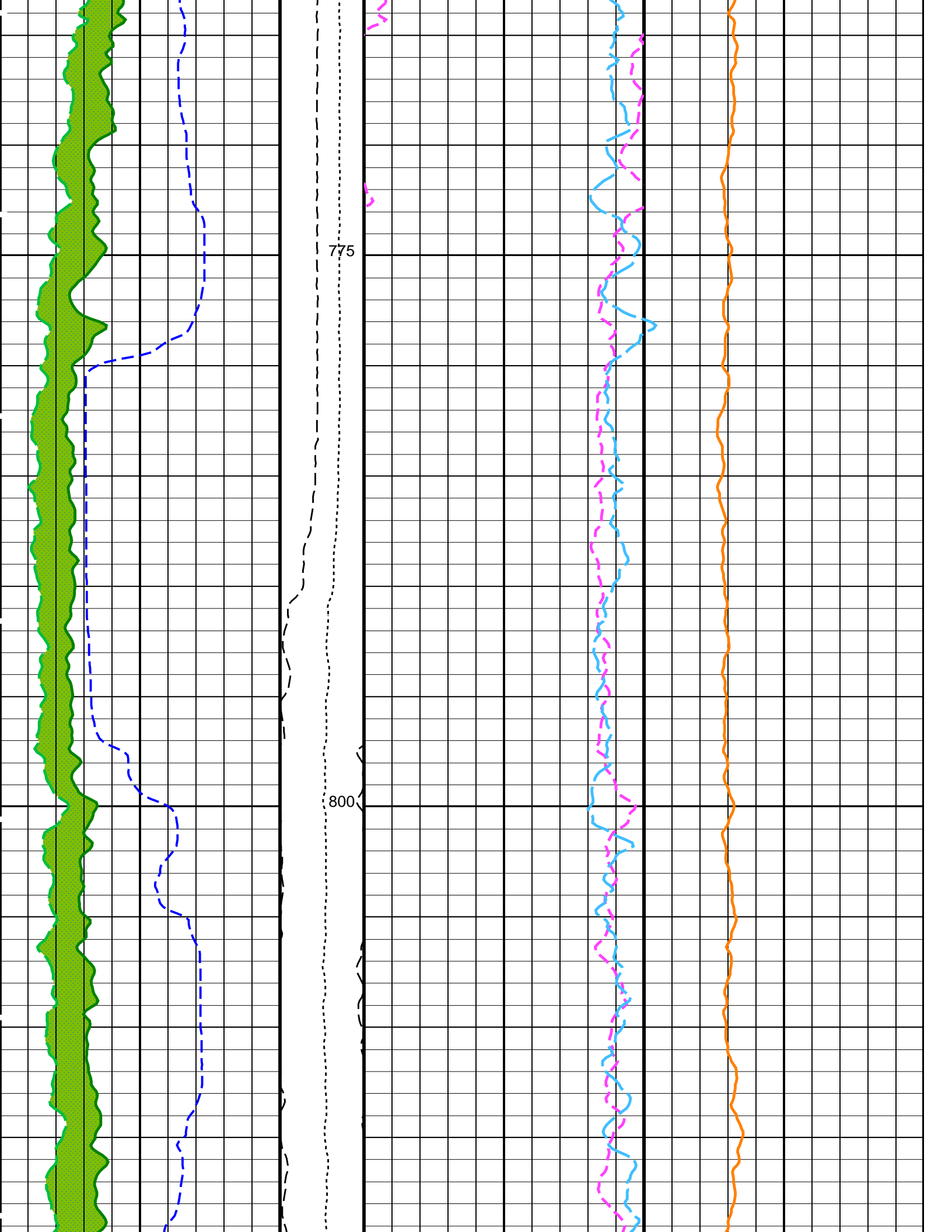


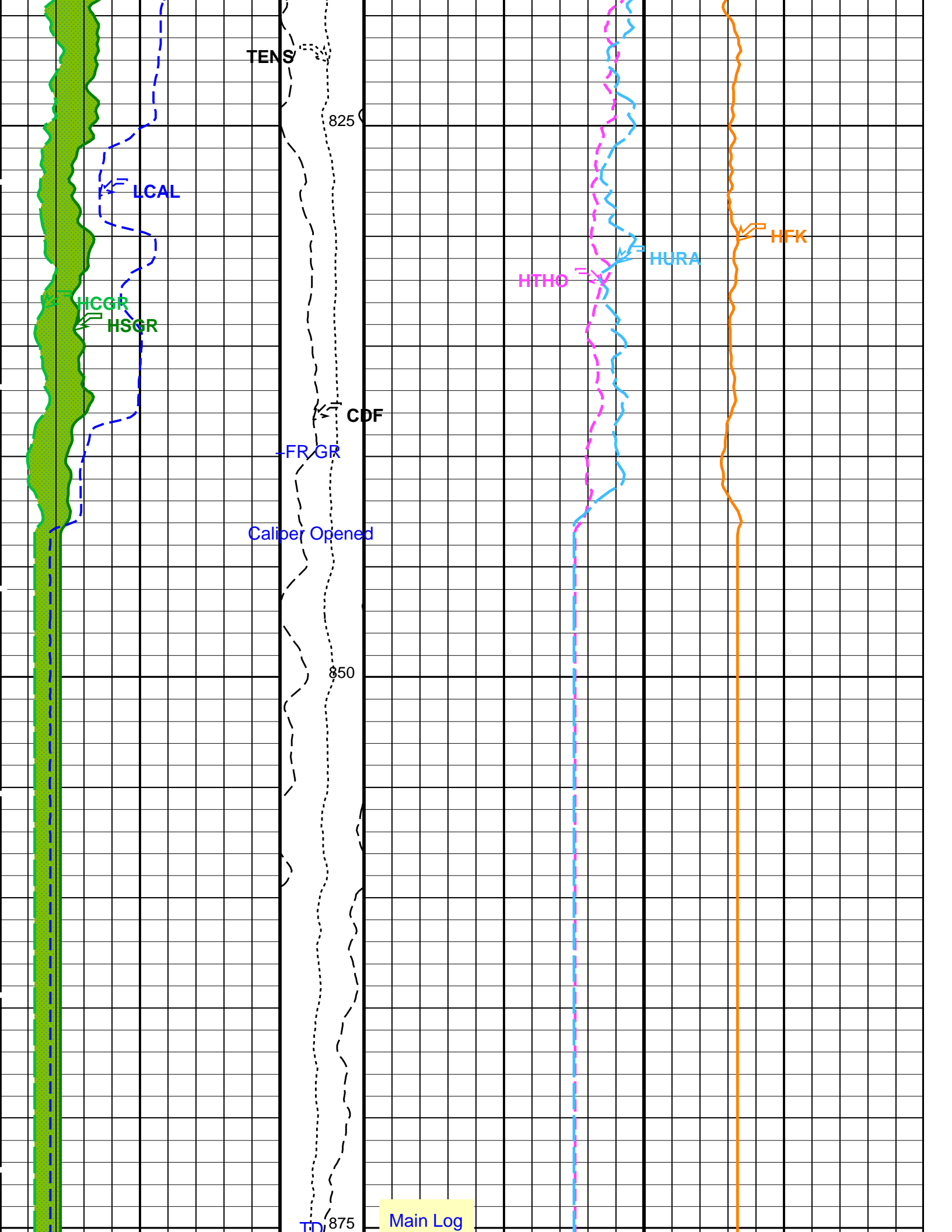


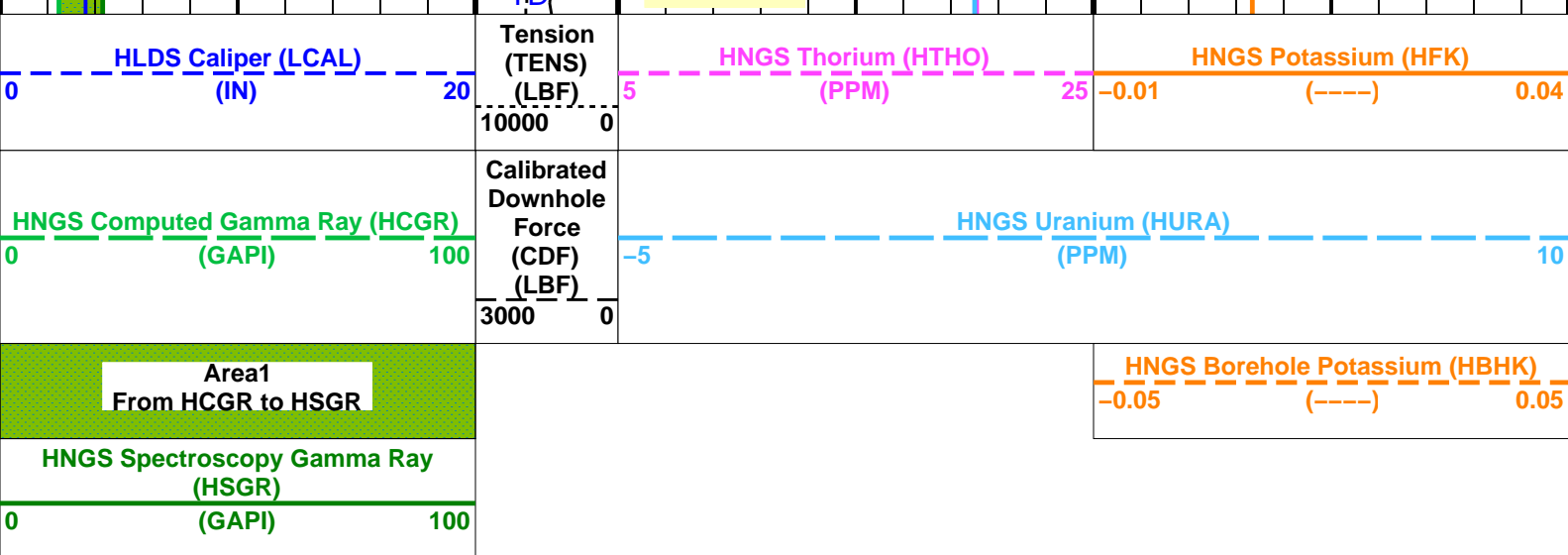












PIP SUMMARY

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
BHS	APS-C: Accelerator-Porosity Tool	
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
BHS	HNGS Borehole Potassium Correction Concentration	0
CSD1	Borehole Status	OPEN
CSD2	Inner Casing Outer Diameter	0 IN
CSW1	Outer Casing Outer Diameter	0 IN
CSW2	Inner Casing Weight	0 LB/F
DBCC	Outer Casing Weight	0 LB/F
GCSE	HNGS Barite Constant Correction Flag	NONE
H1P	Generalized Caliper Selection	LCAL
H2P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
HABK	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HALF	HNGS Borehole Potassium Running Average	-0.00112198
HCRB	HNGS Alpha Filter Length	60 IN
HMWM	HNGS Apply Borehole Potassium Correction	NONE
HNPE	Mud Weighting Material	BARI
S1BI	HNGS Processing Enable	YES
S2BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3 CPS
SGRC	HNGS Detector 2 Calibration Bismuth Count Rate	1.3 CPS
TPOS	HNGS Standard Gamma-Ray Correction Flag	YES
VBA1	Tool Position	ECCE
VBA2	HNGS Detector 1 Variable Barite Factor Running Average	1.12768
	HNGS Detector 2 Variable Barite Factor Running Average	0.999754
BHS	EDTC-B: Enhanced DTS Cartridge	
GCSE	Borehole Status	OPEN
	Generalized Caliper Selection	LCAL
BS	System and Miscellaneous	
DO	Bit Size	9.875 IN
PP	Depth Offset for Playback	-97.5 M
	Playback Processing	NORMAL

Format: HNGSYields Vertical Scale: 1:200 Graphics File Created: 18-Sep-2015 15:30

OP System Version: 19C0-187

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

Input DLIS Files

DEFAULT MSS_LDEO_HRLA_LDL_029PUP FN:45 PRODUCER 11-Sep-2015 22:56 973.8 M 83.8 M

Output DLIS Files

DEFAULT MSS_LDEO_HRLA_LDL_050PUP FN:54 PRODUCER 18-Sep-2015 15:30

Company: International Ocean Discovery Program Well: Expedition 356, Site U1462 C

Input DLIS Files

DEFAULT MSS_LDEO_HRLA_LDL_029PUP FN:45 PRODUCER 11-Sep-2015 22:56 973.8 M 83.8 M

Output DLIS Files

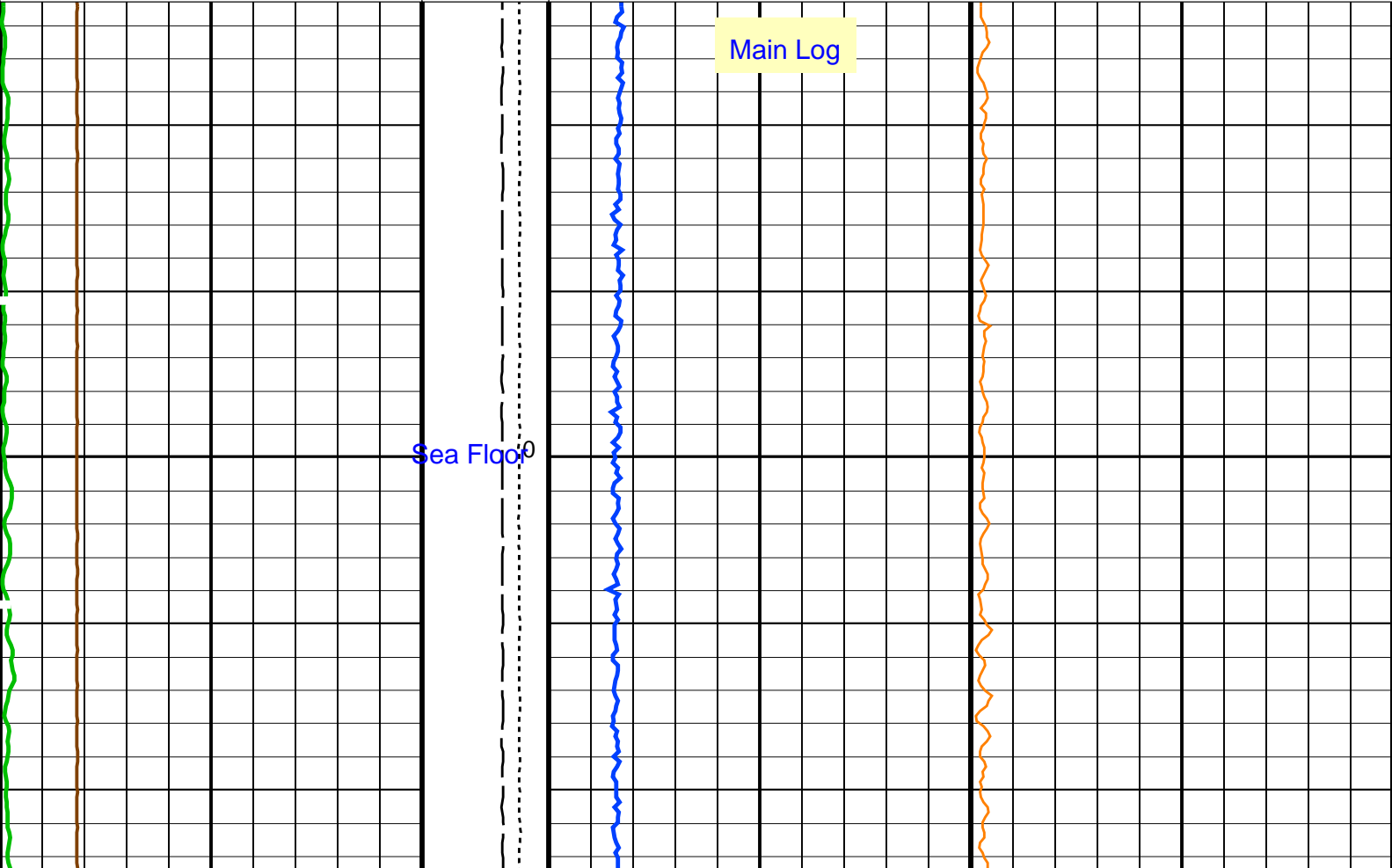
DEFAULT MSS_LDEO_HRLA_LDL_050PUP FN:54 PRODUCER 18-Sep-2015 15:30 875.5 M -13.7 M

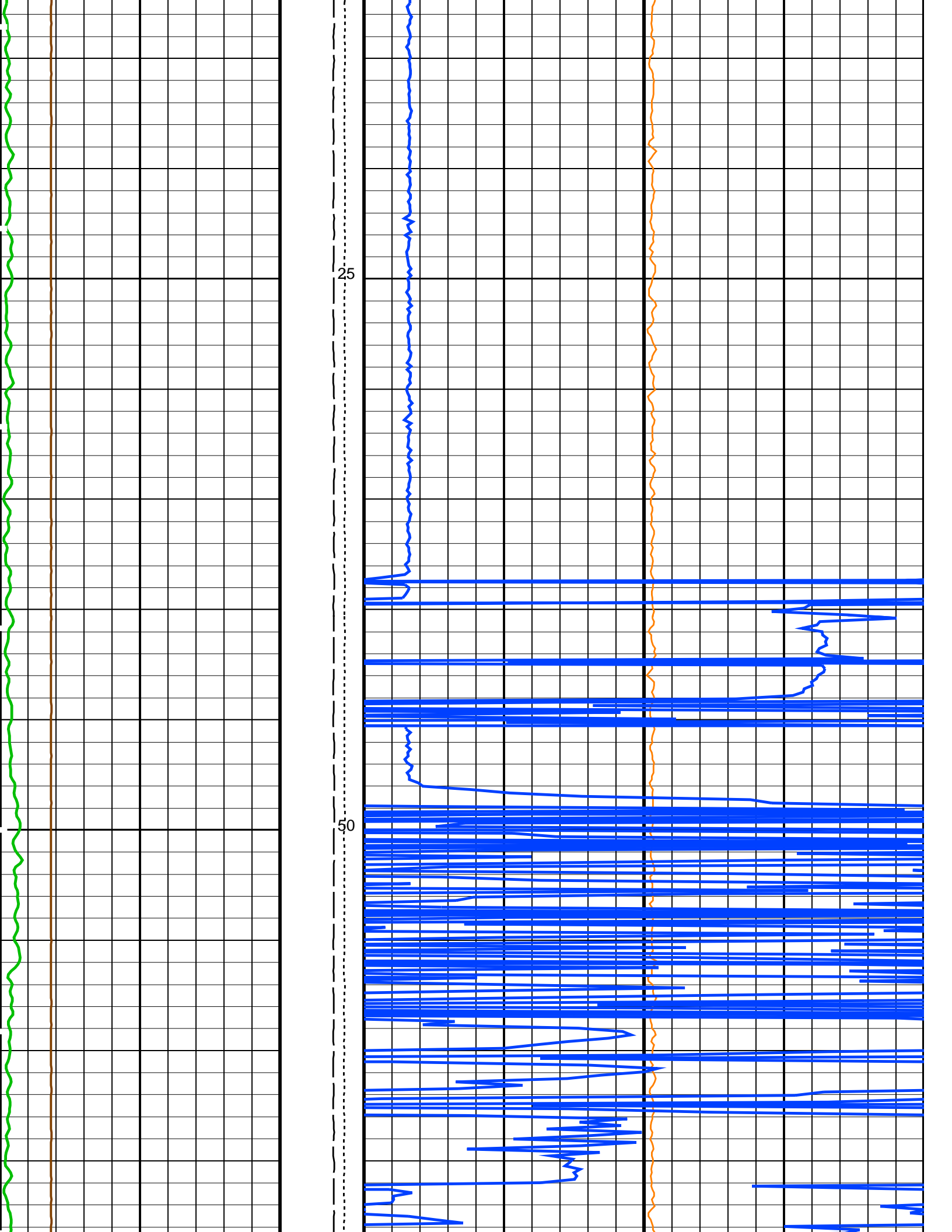
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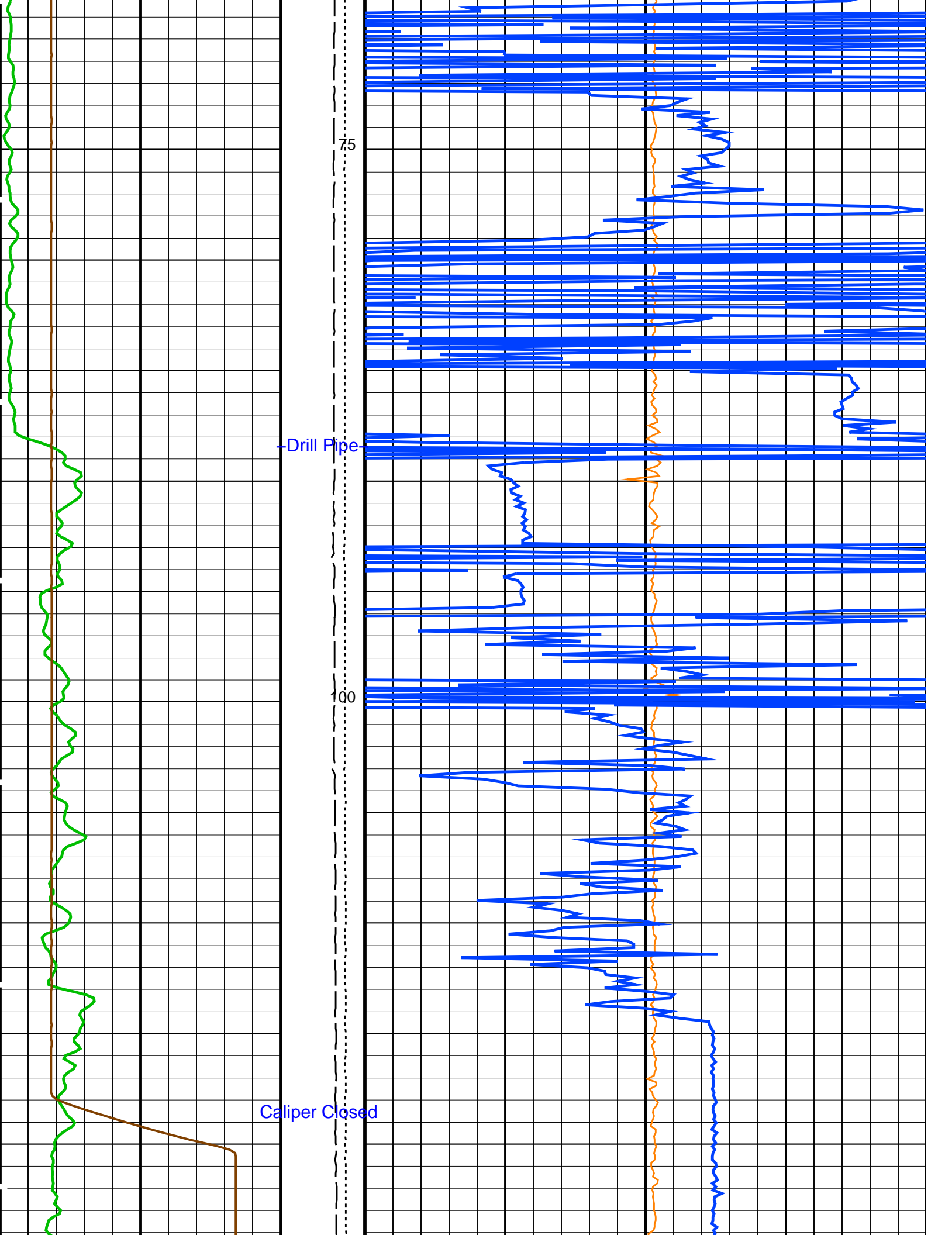
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
APS-C	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB

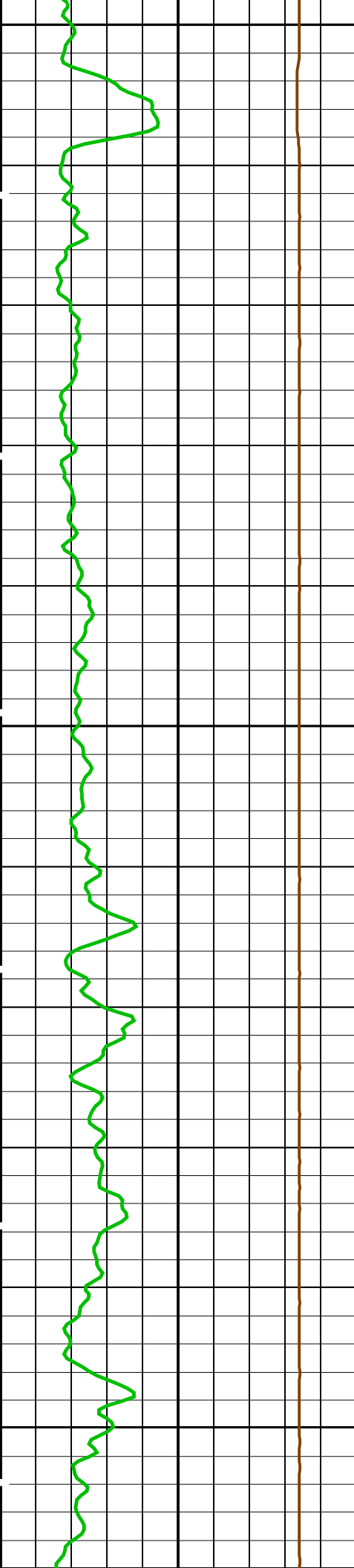
PIP SUMMARY

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Gamma Ray (GR_EDTC) (GAPI)		Calibrated Downhole Force (CDF) (LBF)	Dual-Coil Susceptibility (MSSL SUS_LDEO) (PPM)
0	100	5000 0	0 5000
HLDS Caliper (LCAL) (IN)		Tension (TENS) (LBF)	Axial Acceleration (MSSZACC_LDEO) (M/S2)
0	20	10000 0	0 20





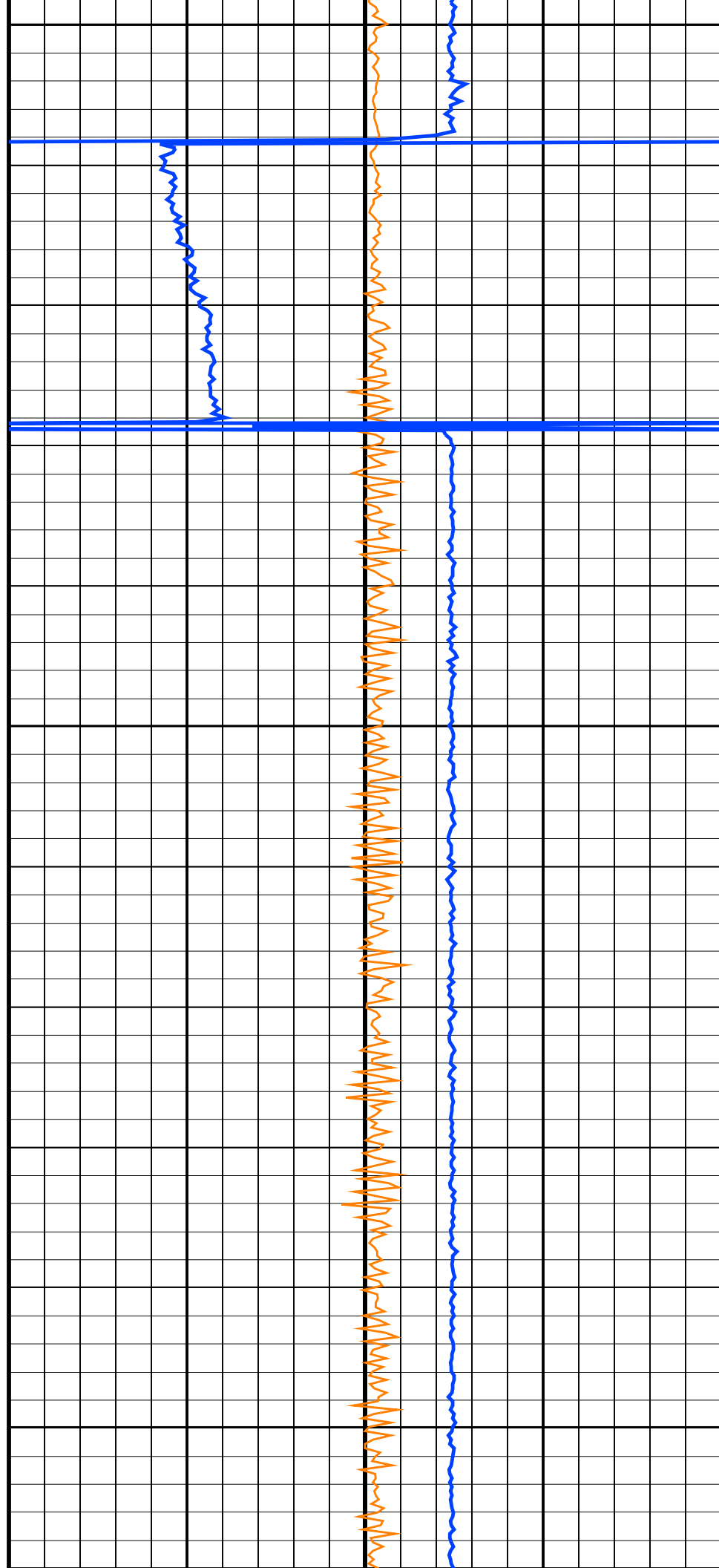


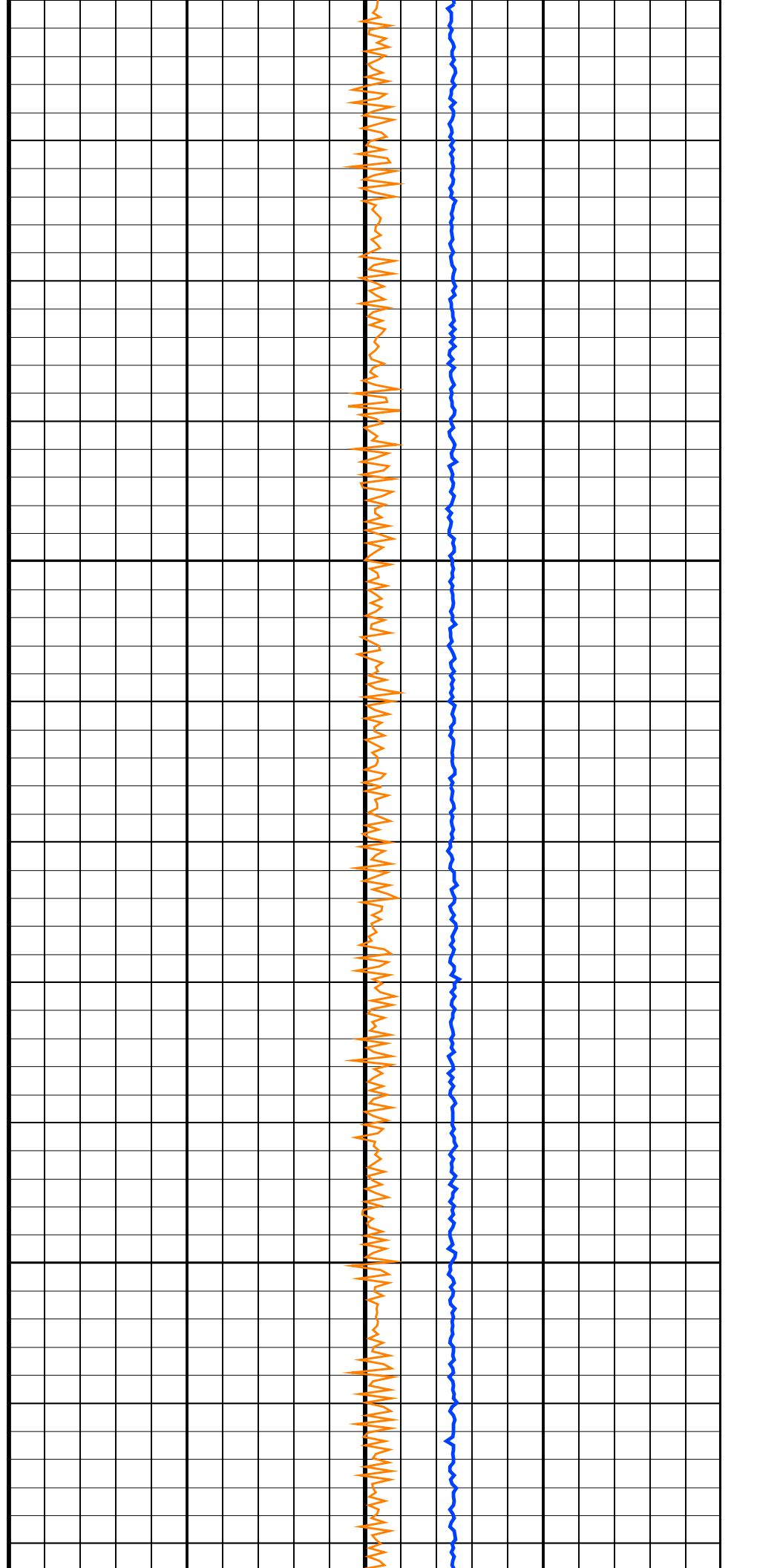
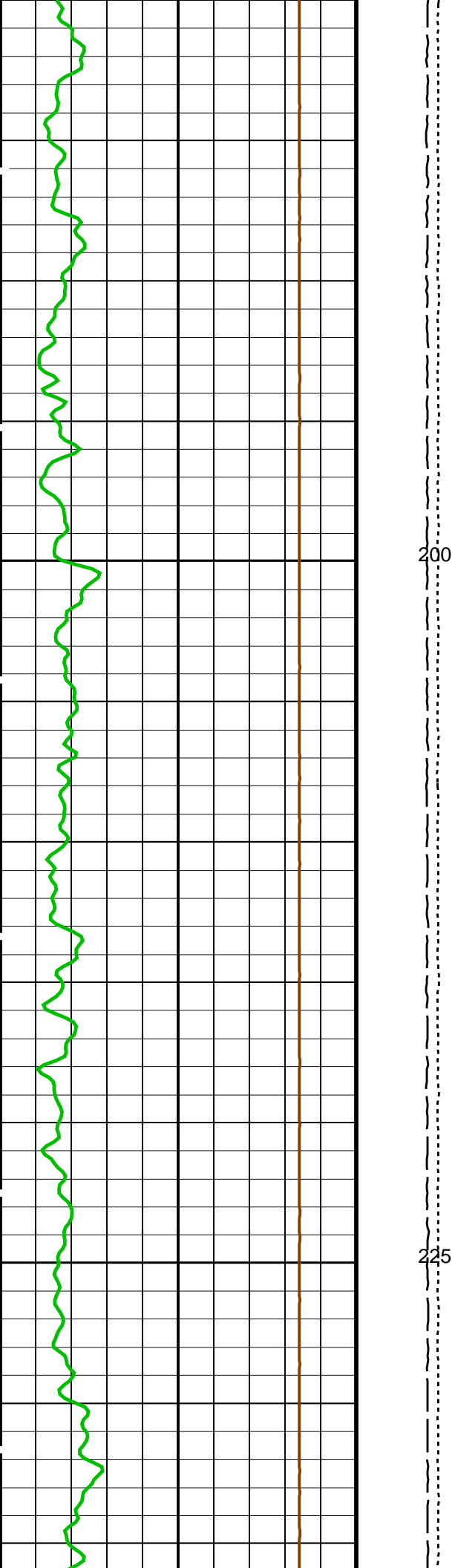


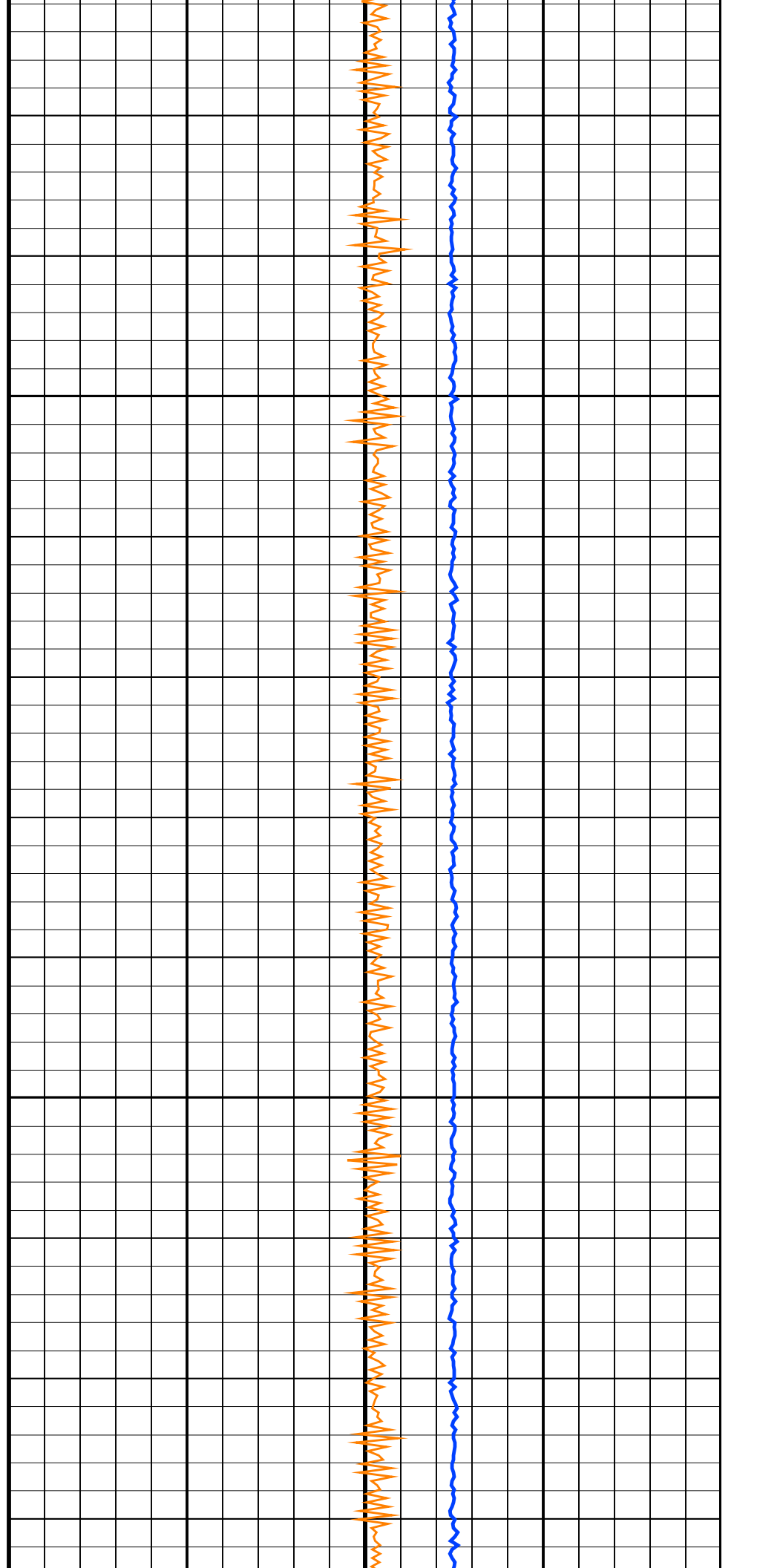
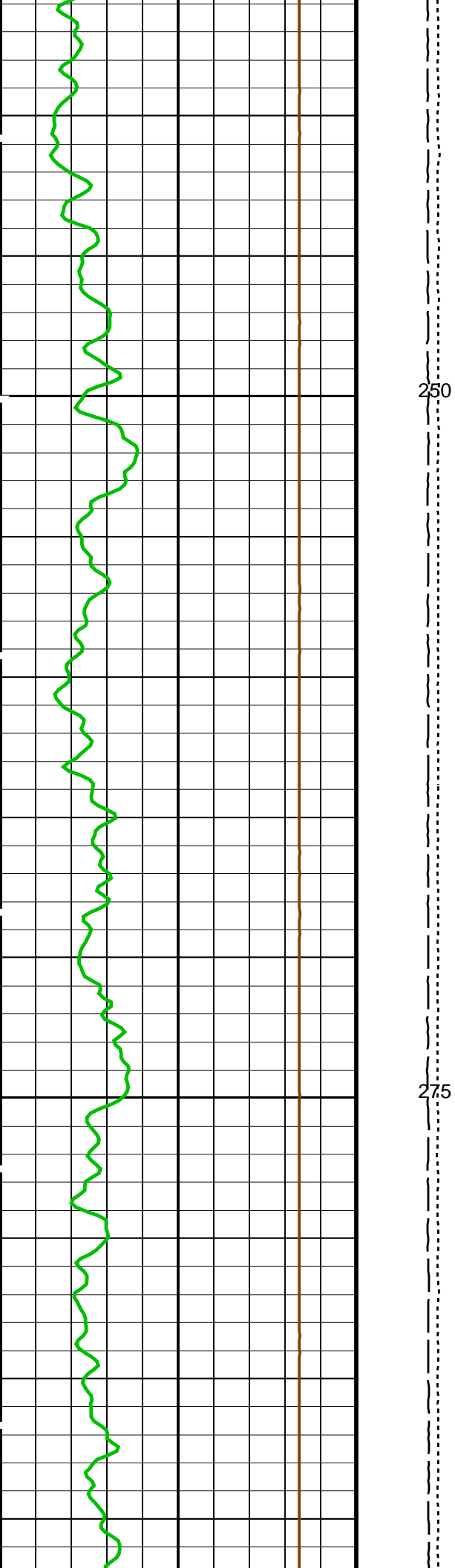
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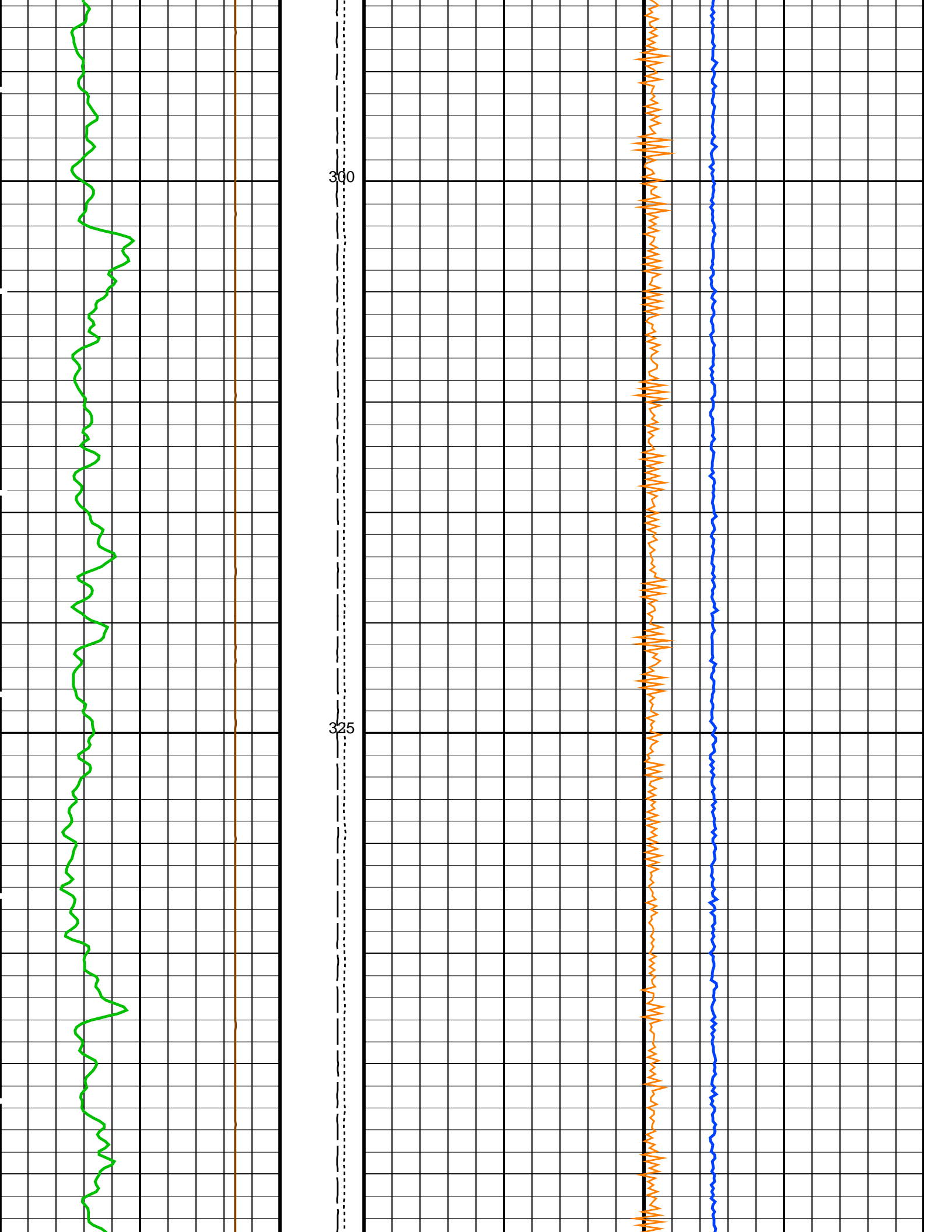
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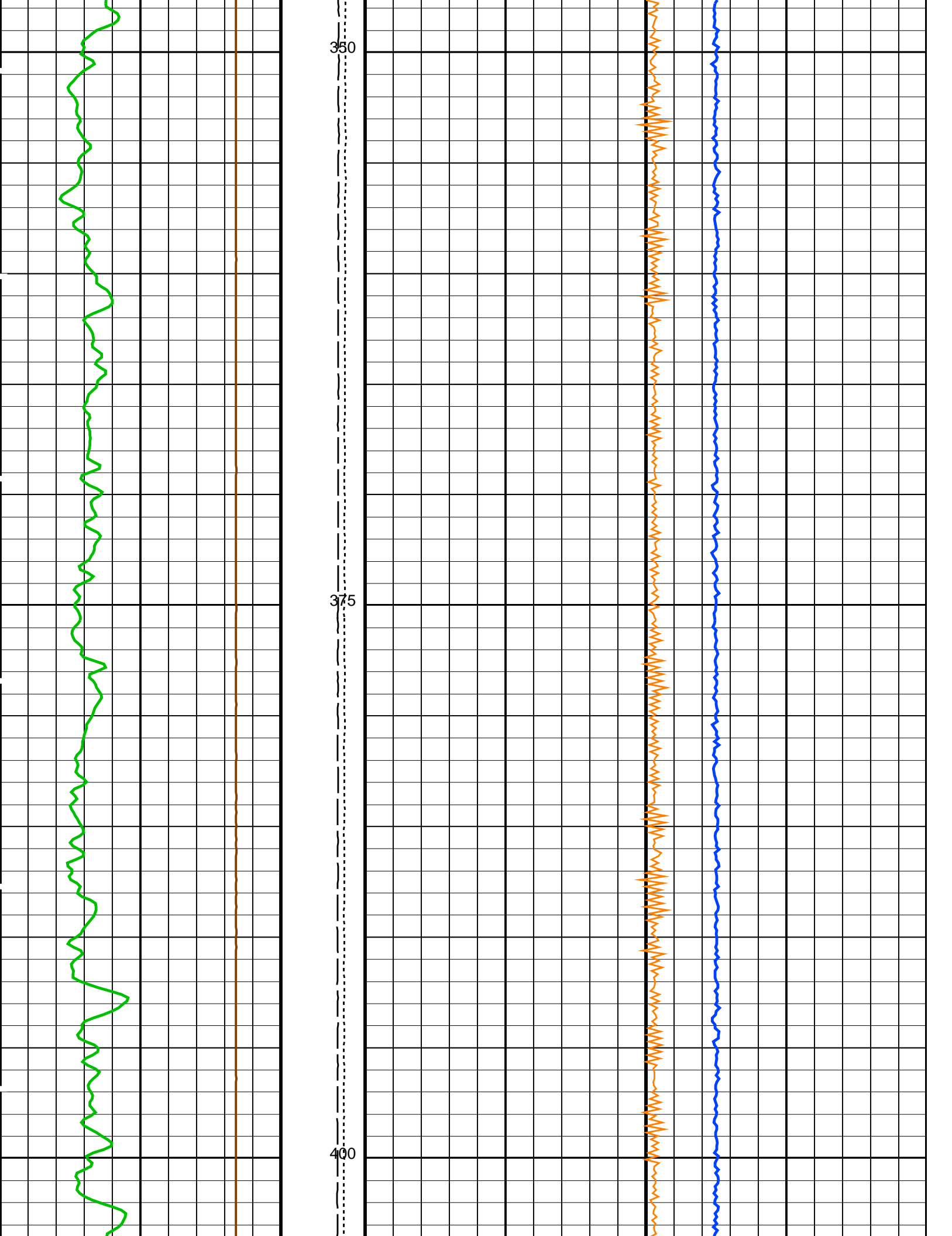
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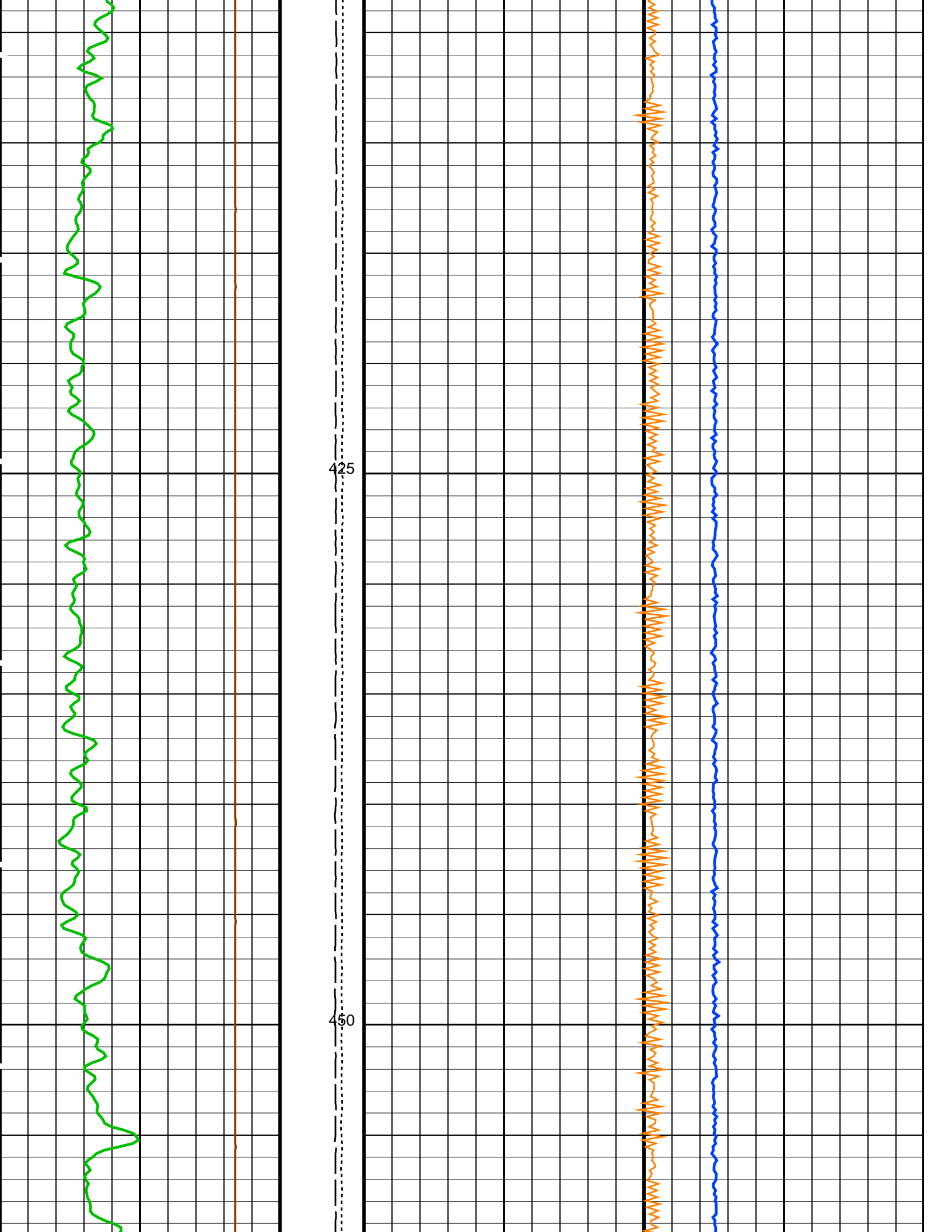


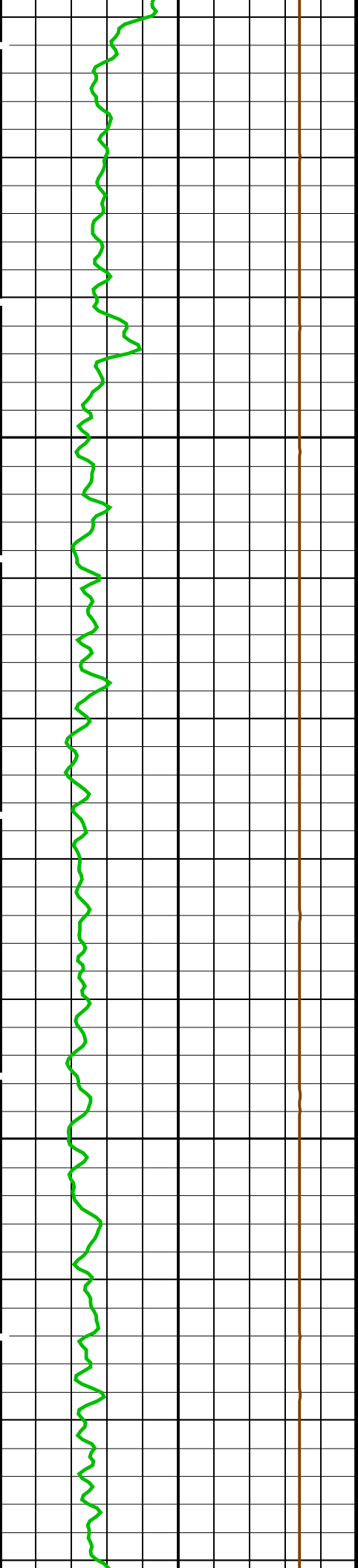






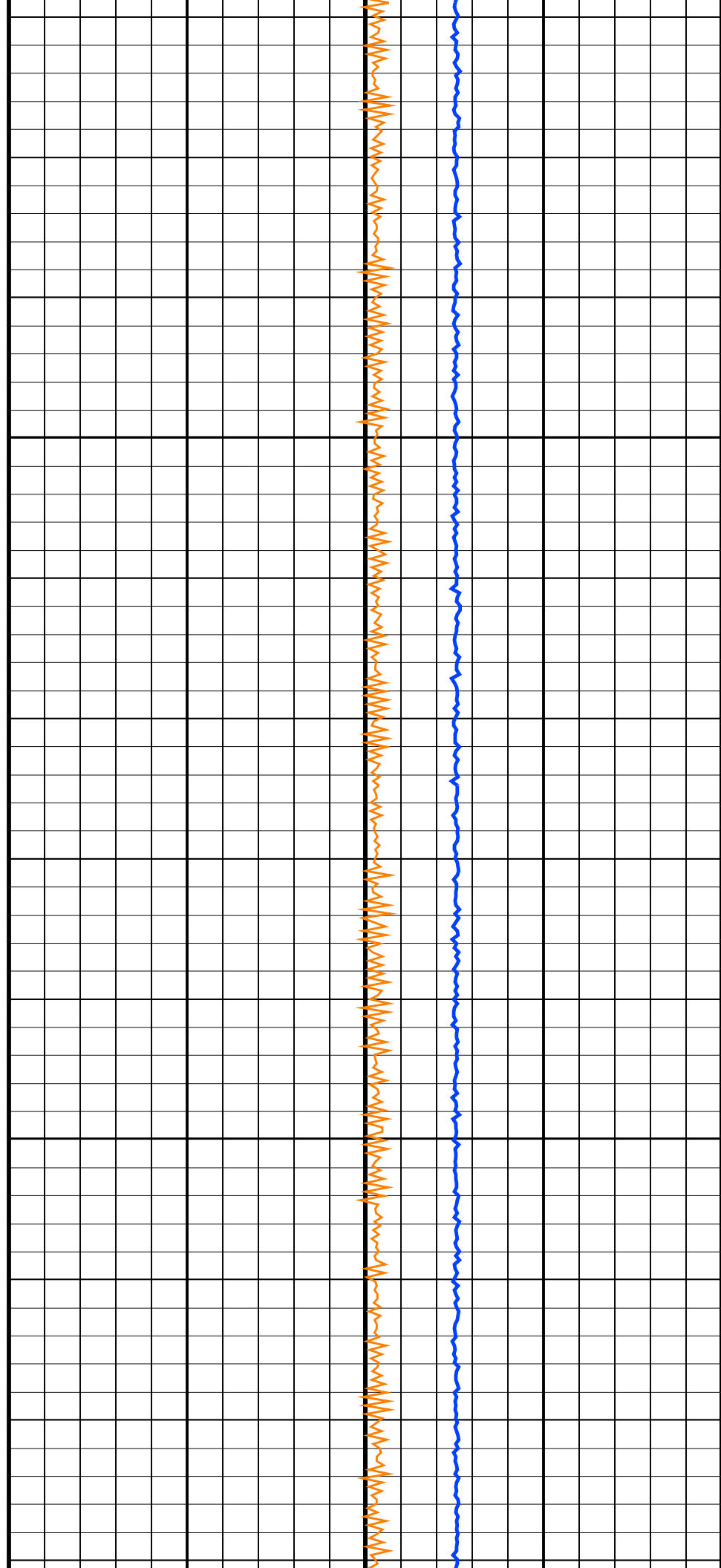


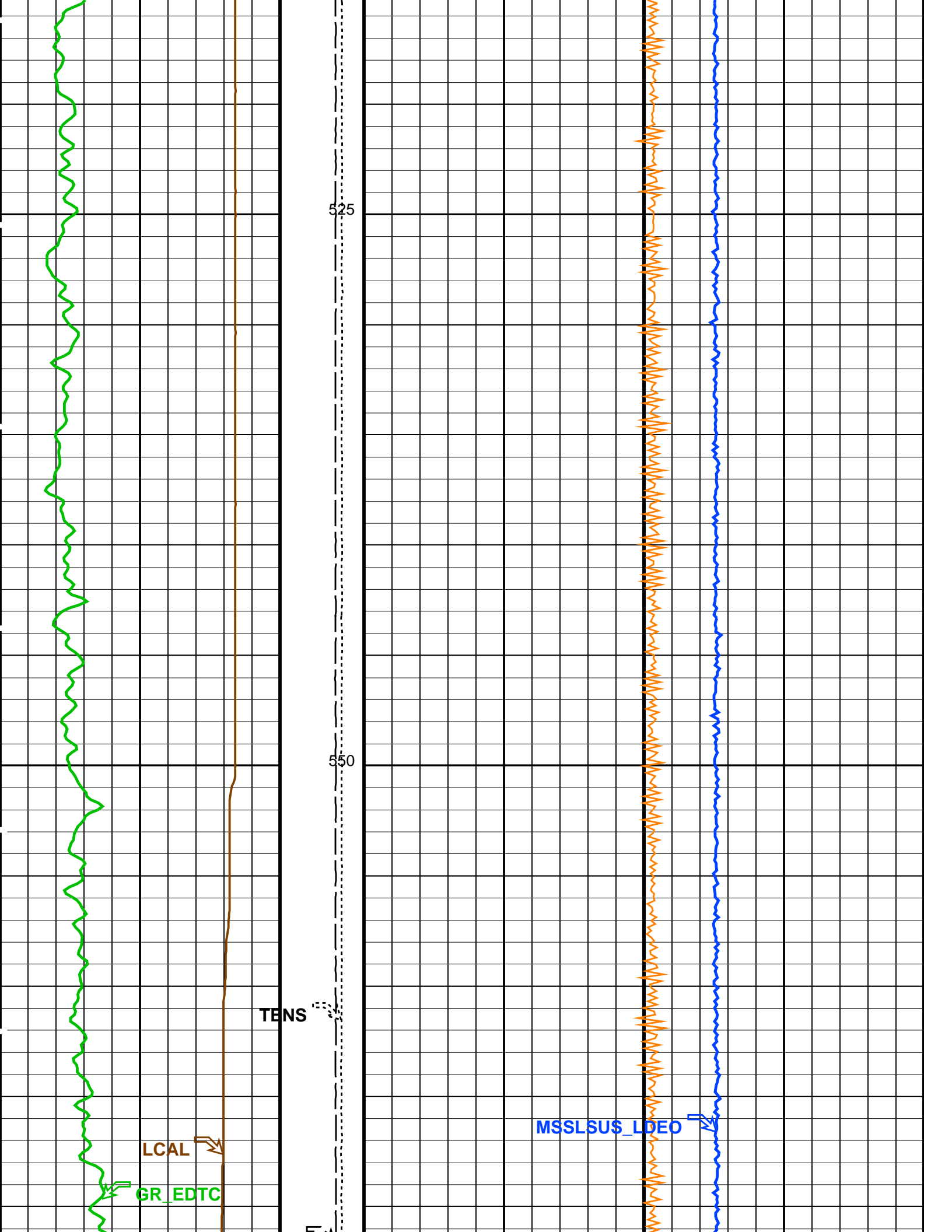


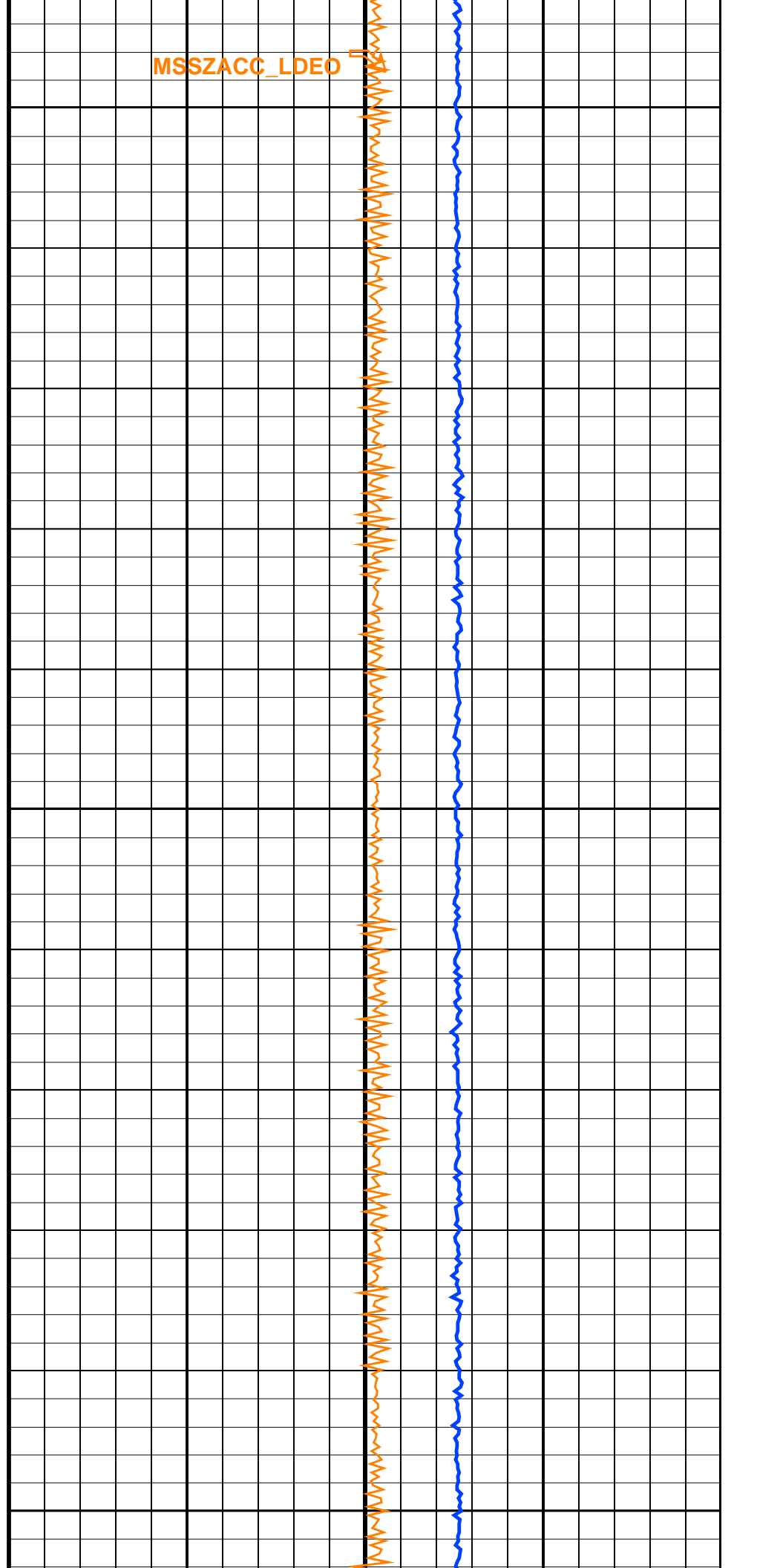
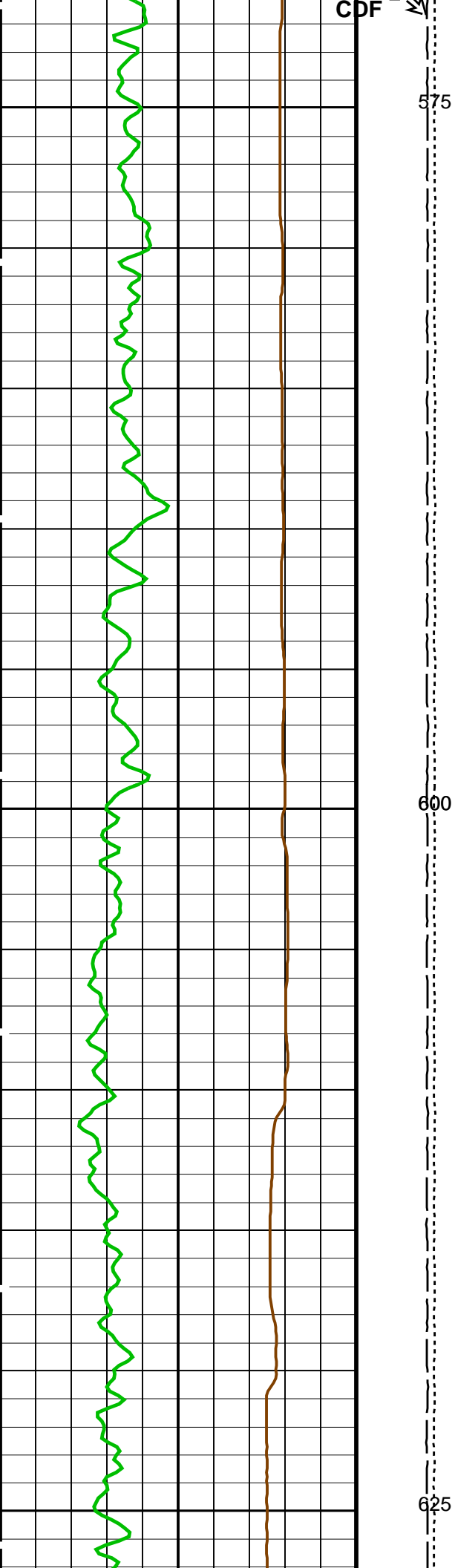


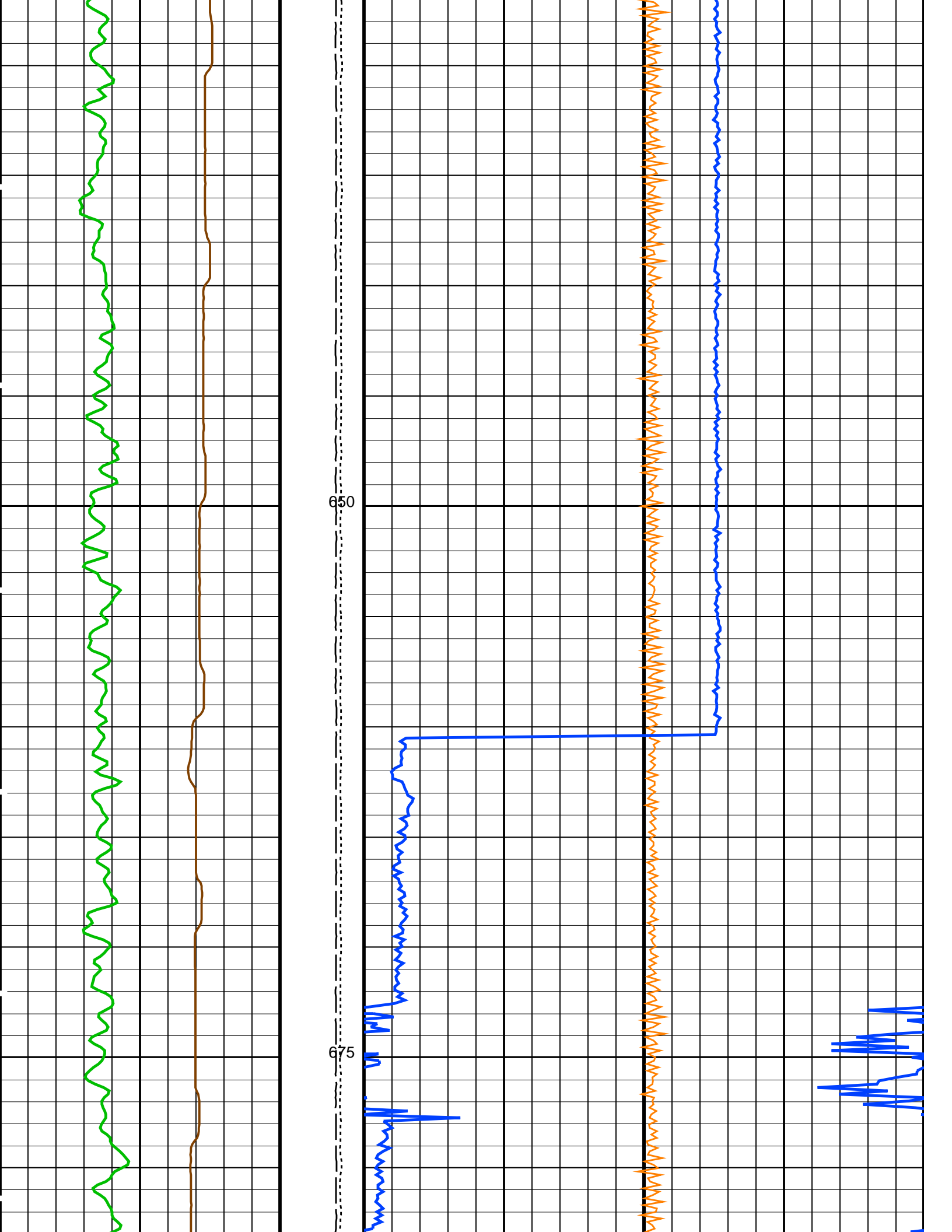
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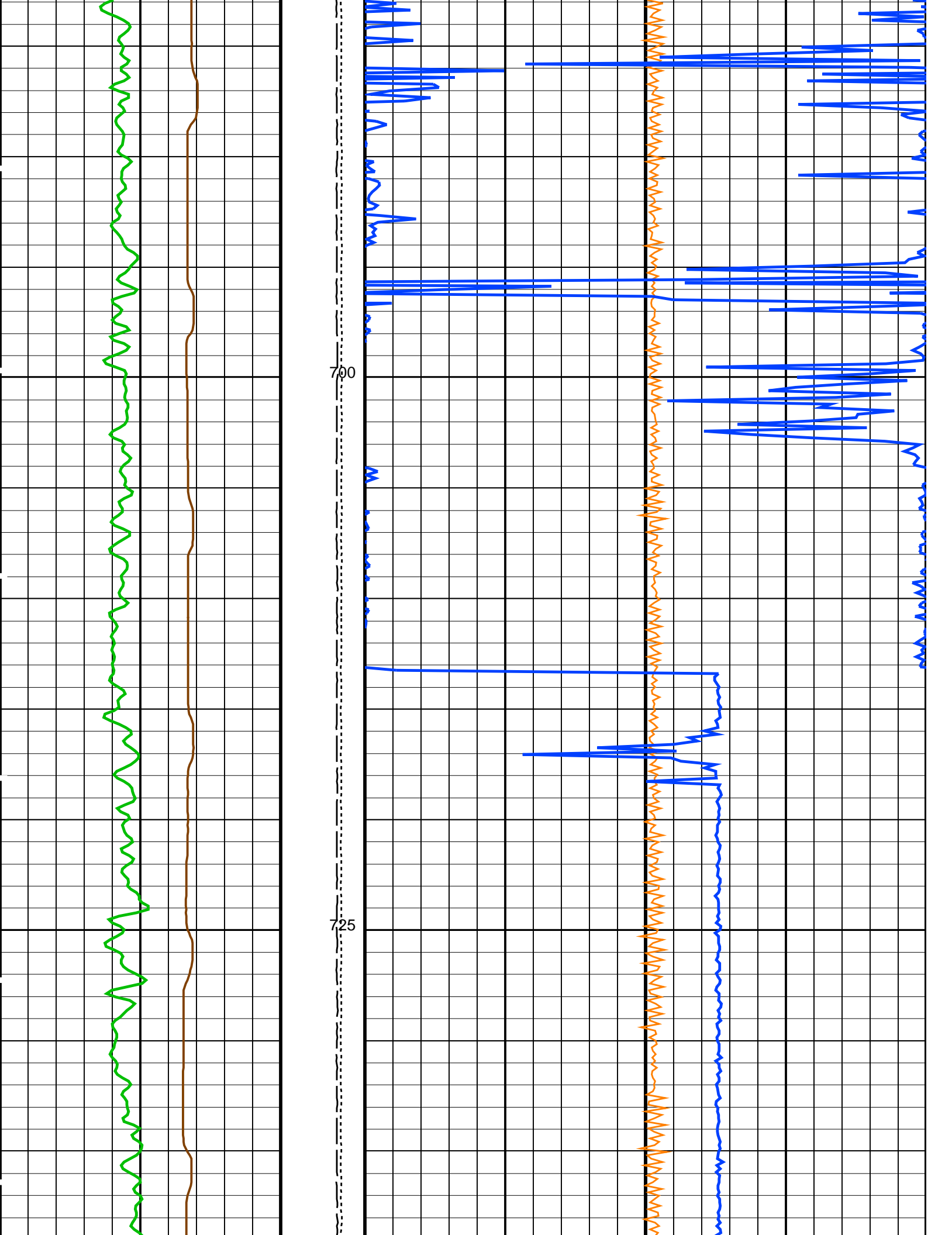
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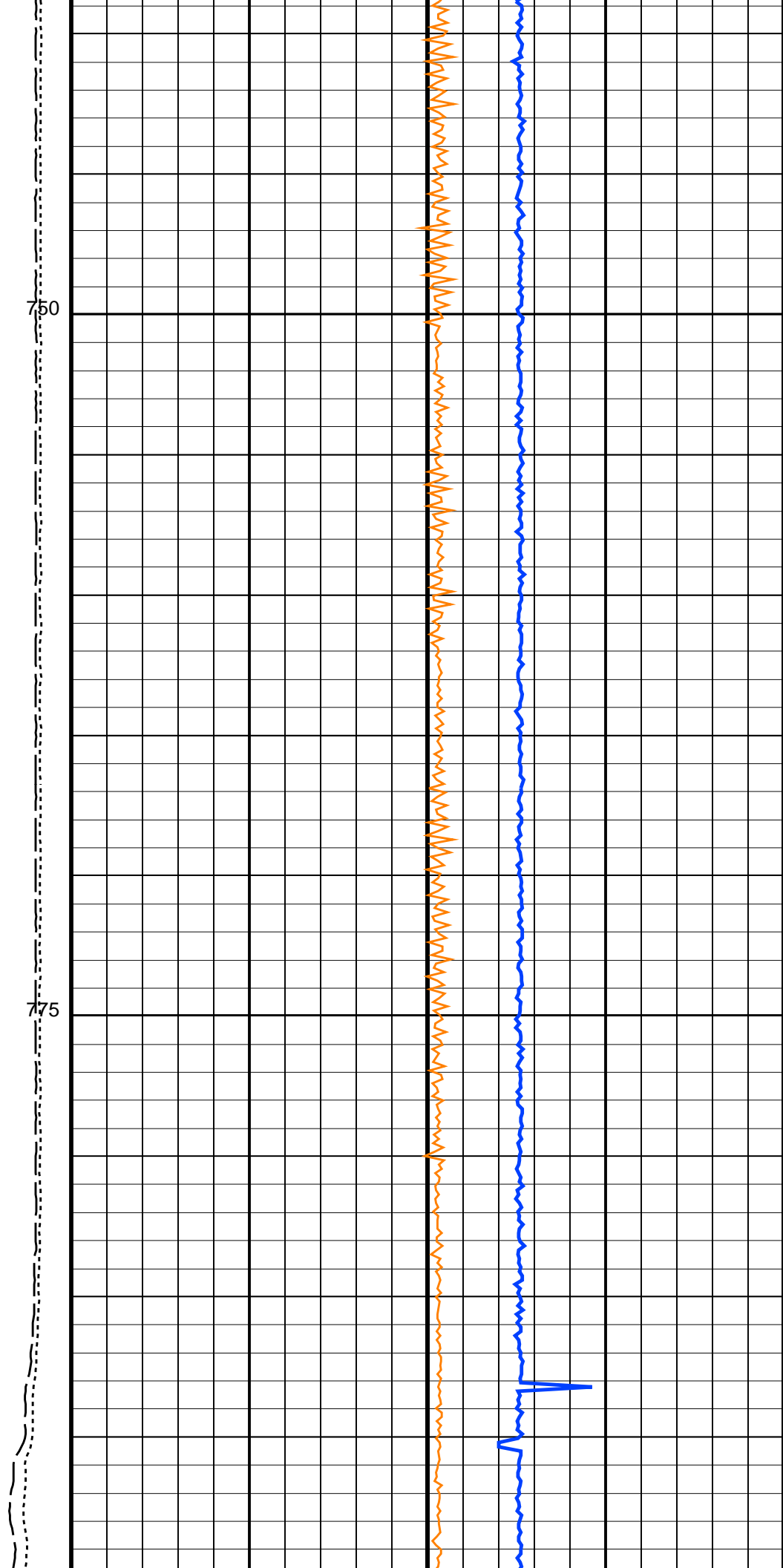
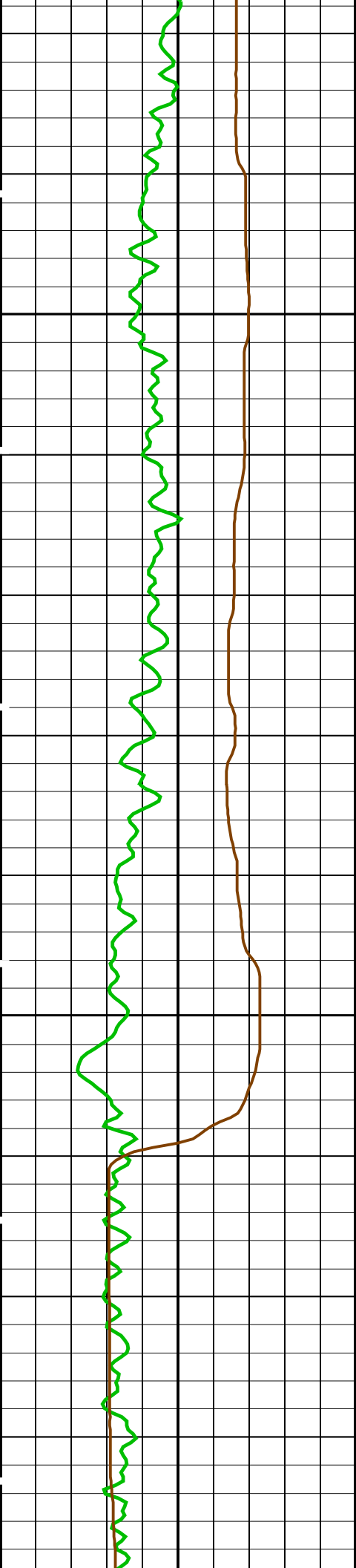


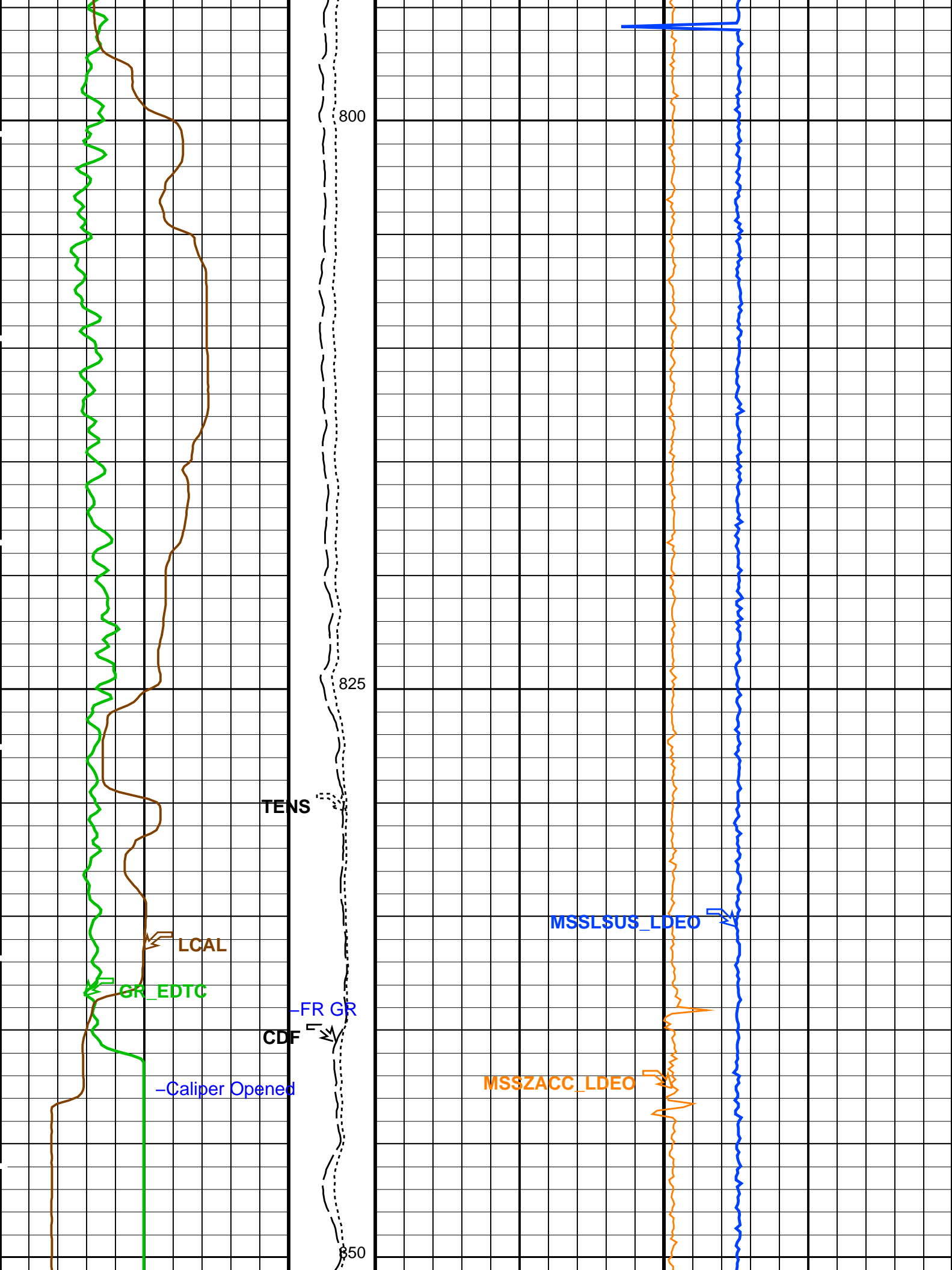


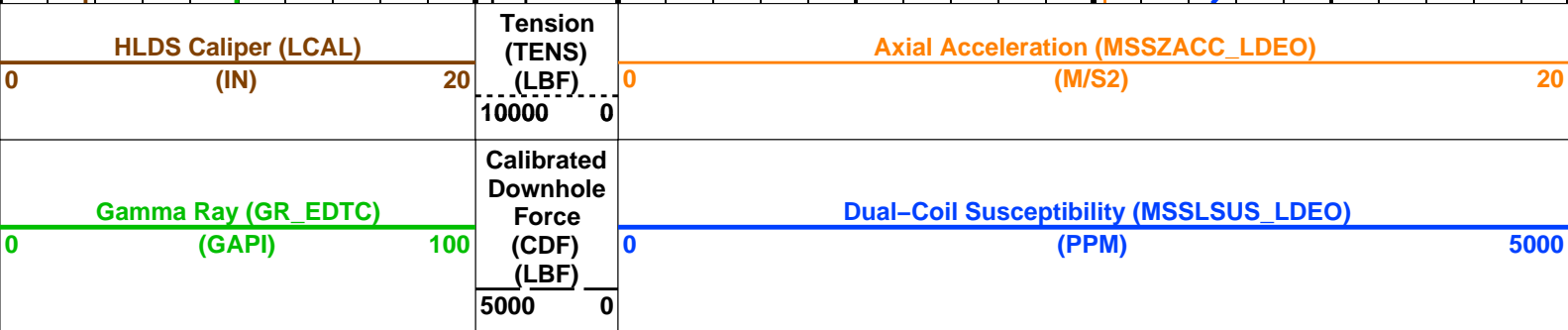
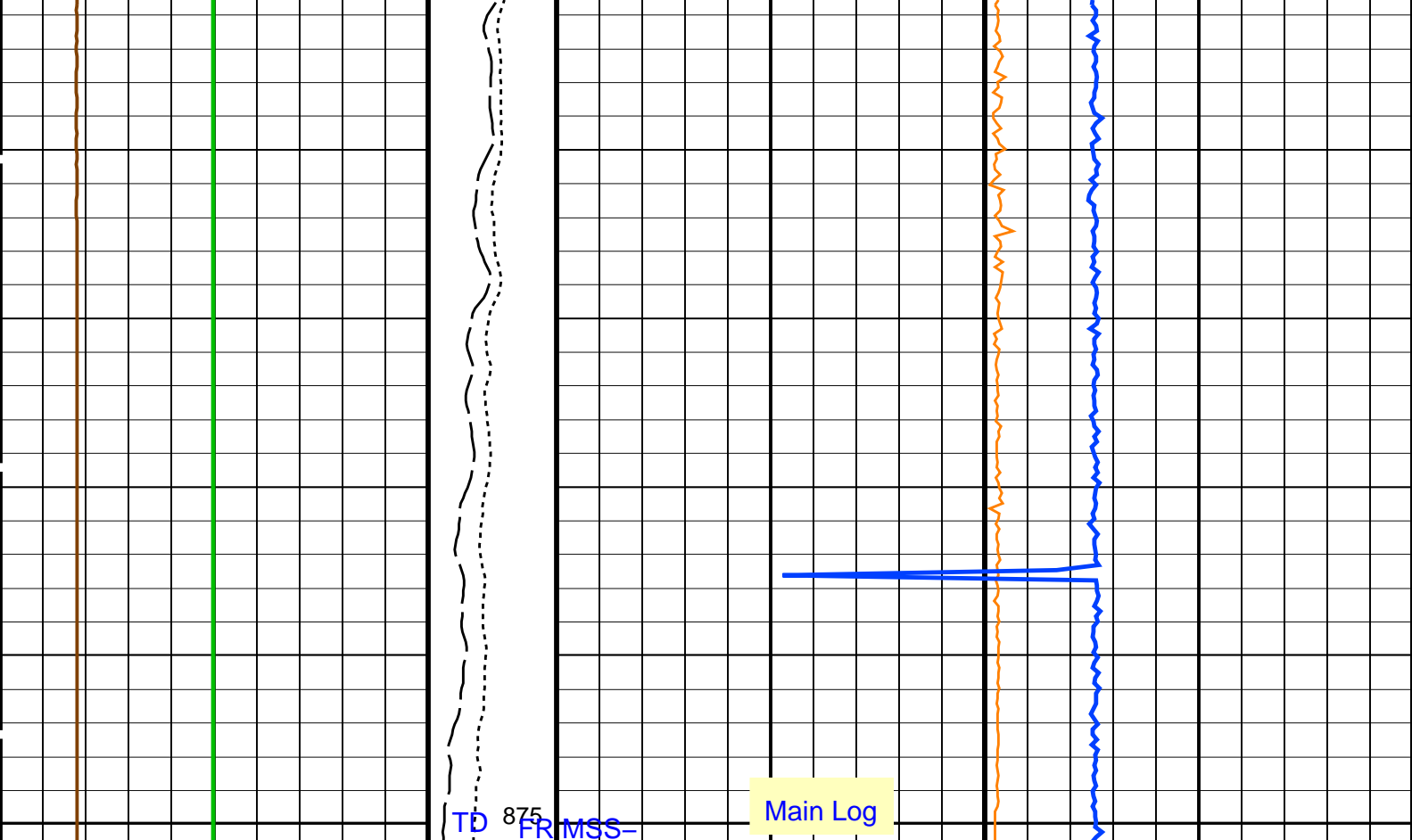












PIP SUMMARY

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)	40	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	24.3635	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	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	

LOOPMOD5	HRLT Mode 5 Loop Mode		
LOOPMOD6	HRLT Mode 6 Loop Mode		
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROGINV	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSP0	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.6	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	
APS-C: Accelerator-Porosity Tool			
AASD	APS Software Version	0	
ADSO	APS Thermal and Array Detectors High Voltage Setting	1938.41	V
AFSD	APS Array Detectors Data Source Switch	Both	
AHCS	APS Far Detector High Voltage Setting	2034.64	V
AHSS	APS Holesize Correction Source	GCSE	
AMTY	APS Holesize Correction Switch	ON	
ANSD	APS Environmental Corrections Mud Type	WaterBaseBarite	
ASOS	APS Near Detector High Voltage Setting	1700.34	V
ATSS	APS Standoff Correction Switch	ON	
BHFL_APS	APS Temperature-Pressure-Salinity Correction Switch	OFF	
BHS	APS TNPH Borehole Fluid Type	WATER	
BHT	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
FSAL	Formation Salinity	-50000	PPM
FSCO_APS	APS TNPH 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_APS	APS TNPH Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	40	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	-0.00112198	
HALF	HNGS Alpha Filter Length	60	IN
HORB	HNGS Borehole Potassium Correction	NONE	

HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.12768	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.999754	
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	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	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	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	9.875	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	1.32	G/C3
DO	Depth Offset for Playback	-97.5	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	900	M
TDD	Total Depth - Driller	950.00	M
TDL	Total Depth - Logger	950.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

Format: MSS_Logging Vertical Scale: 1:200 Graphics File Created: 18-Sep-2015 15:30

OP System Version: 19C0-187

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

Input DLIS Files

DEFAULT	MSS_LDEO_HRLA_LDL_029PUP	FN:45	PRODUCER	11-Sep-2015 22:56	973.8 M	83.8 M
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Output DLIS Files

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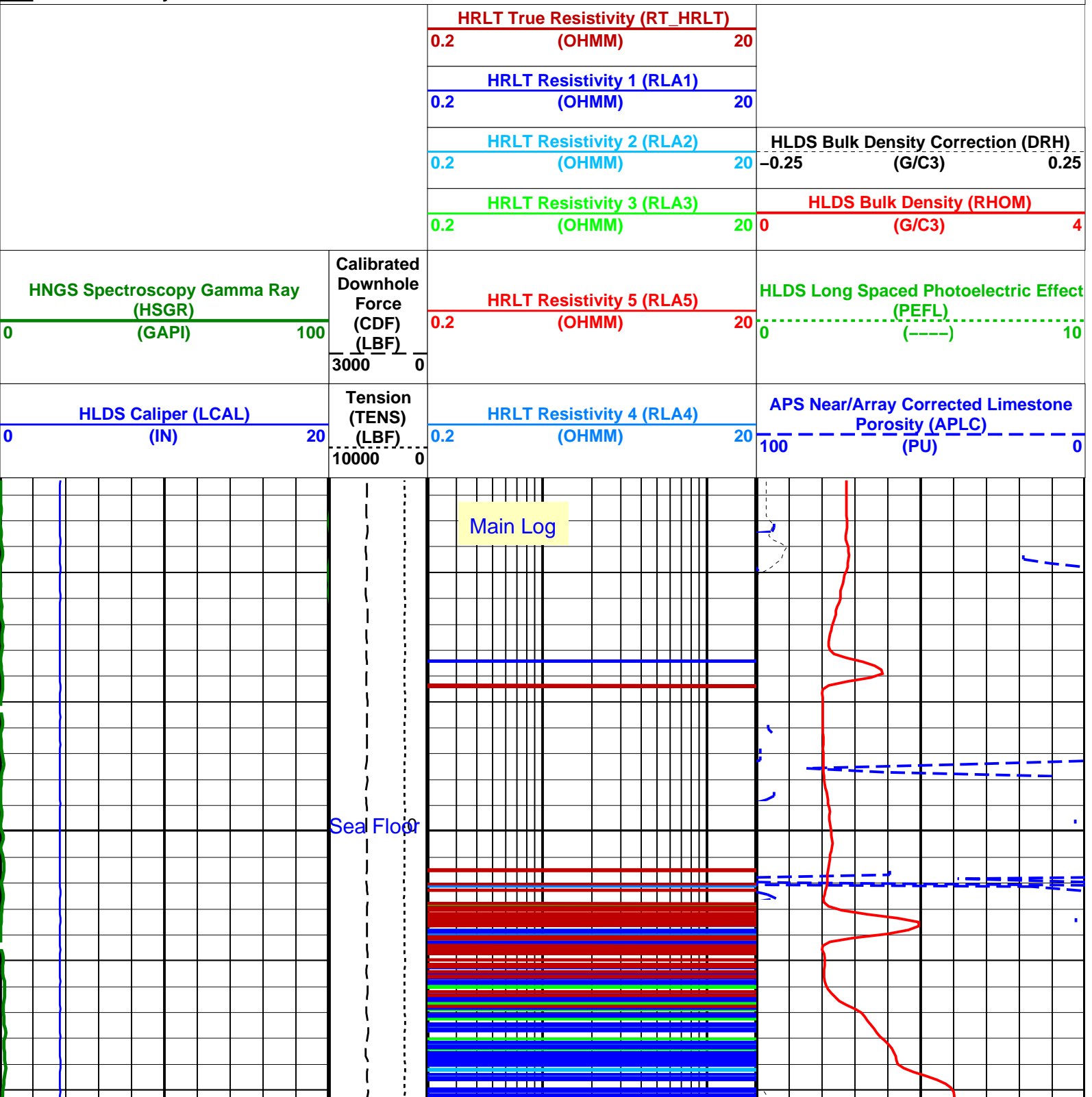
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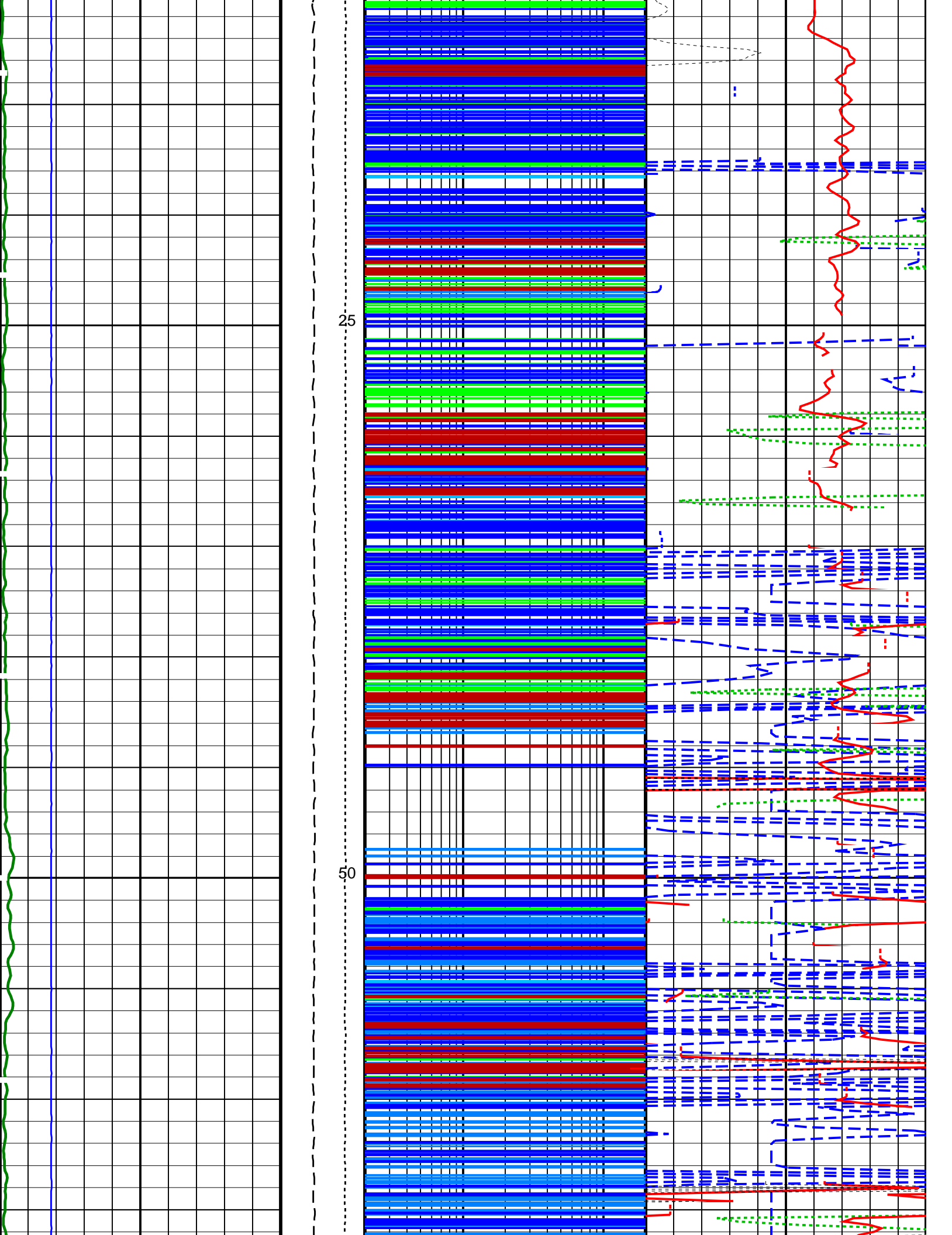
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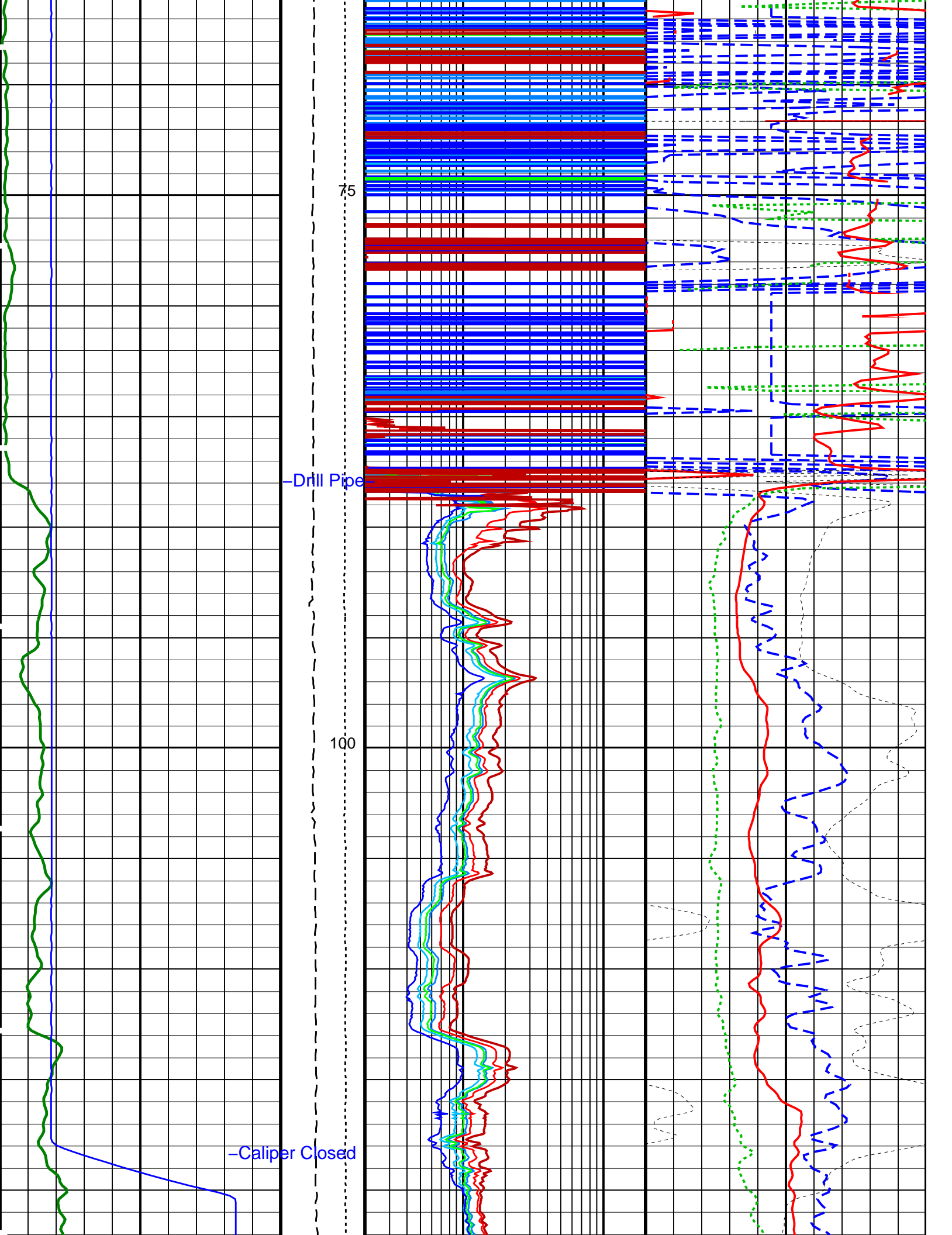
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HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB

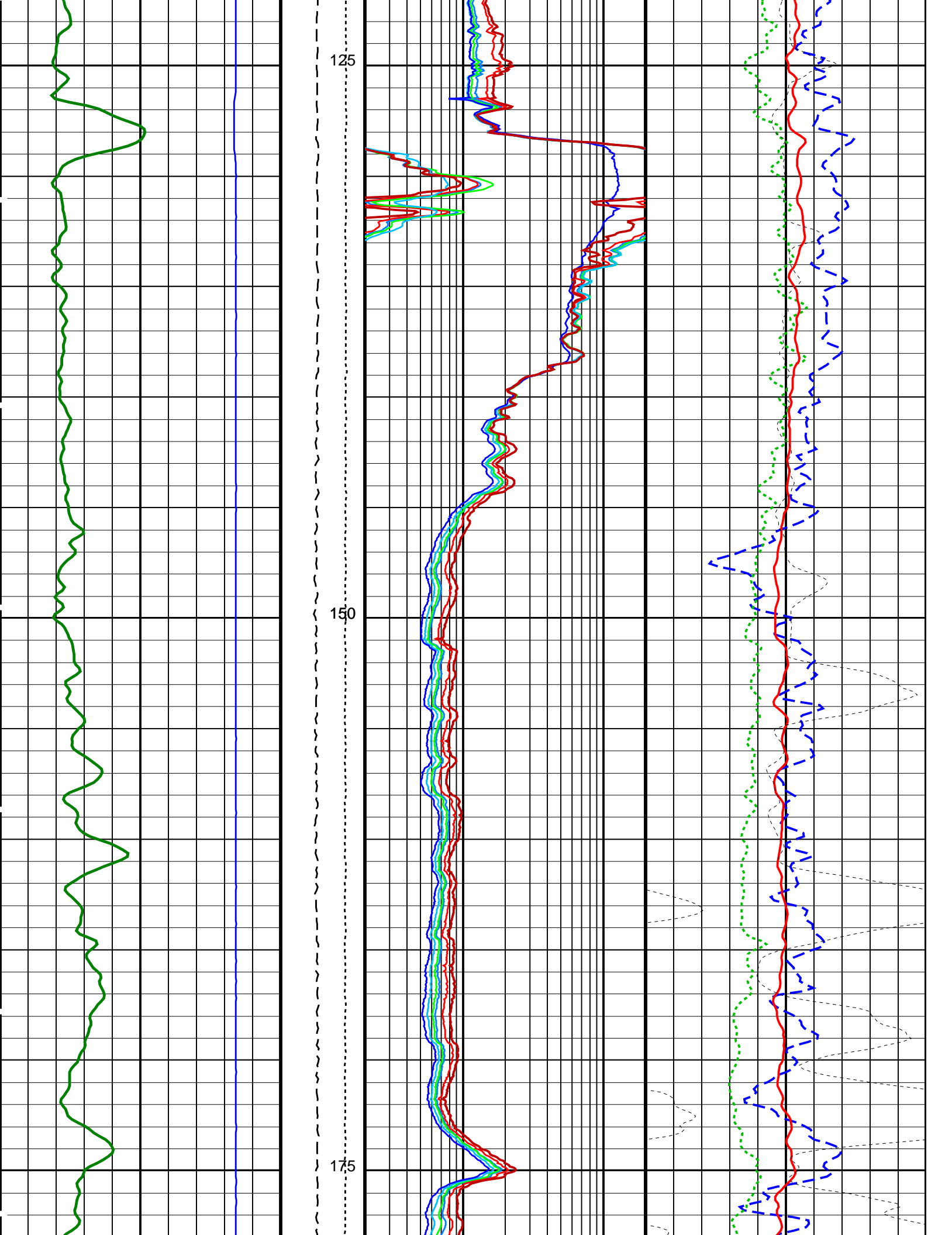
PIP SUMMARY

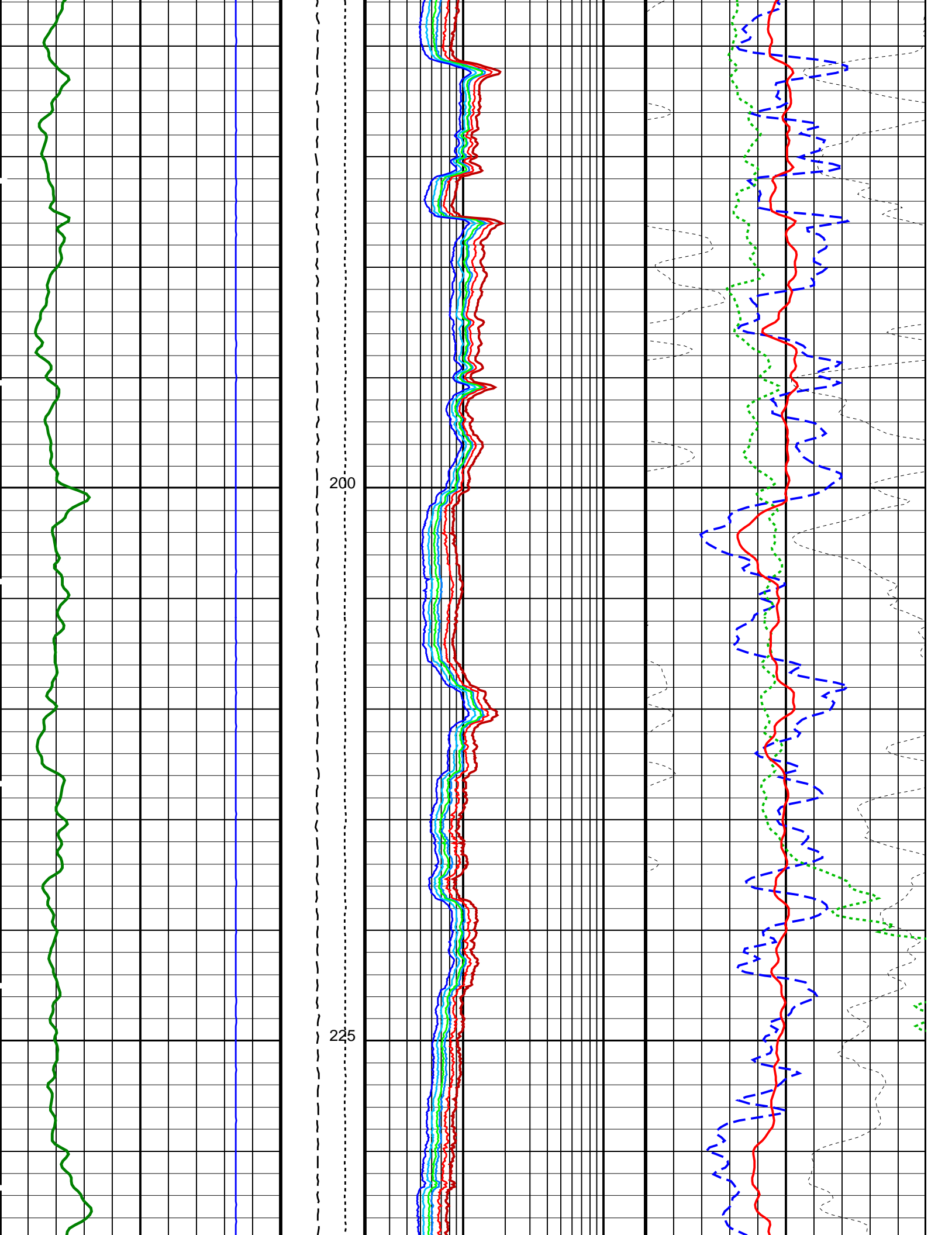
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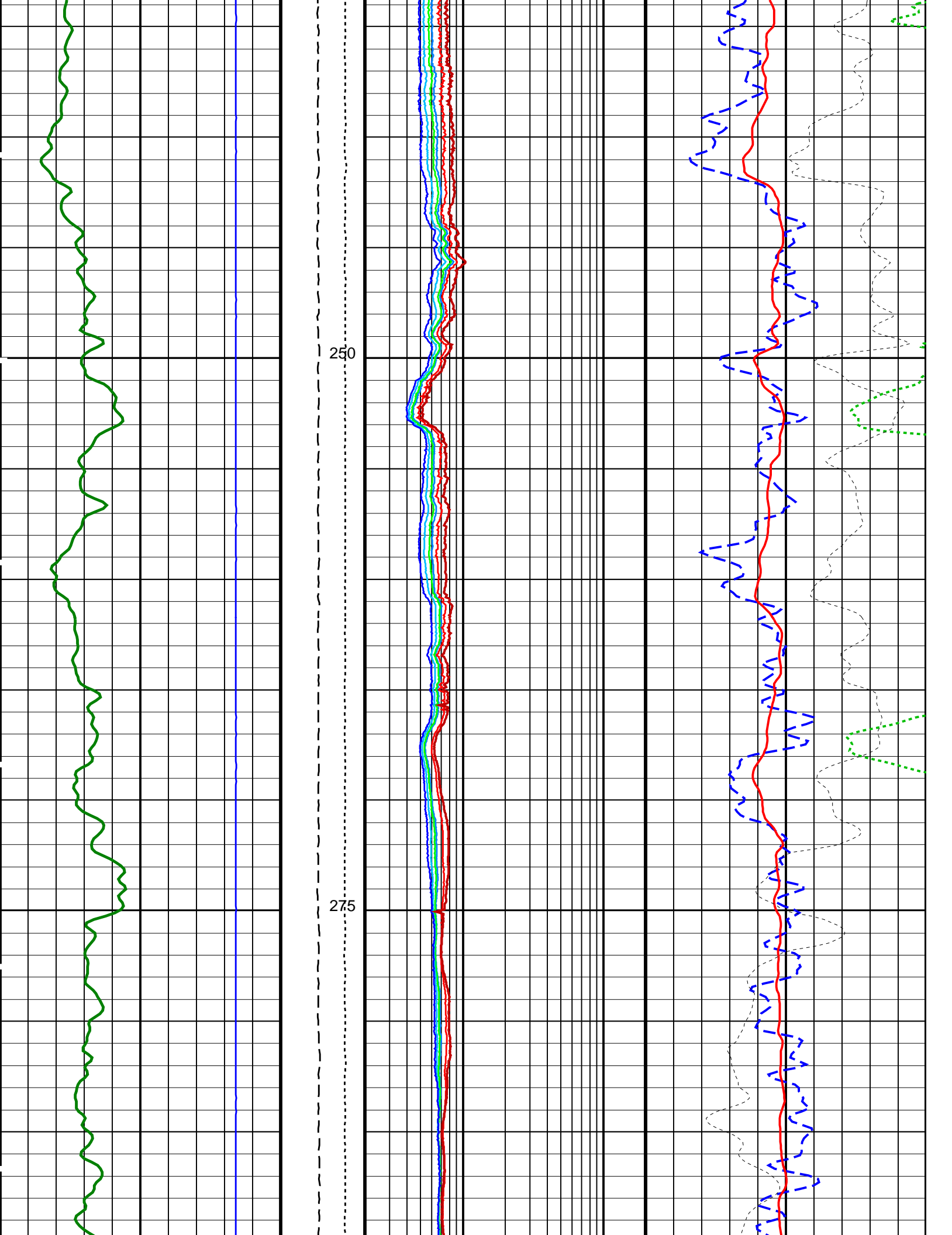


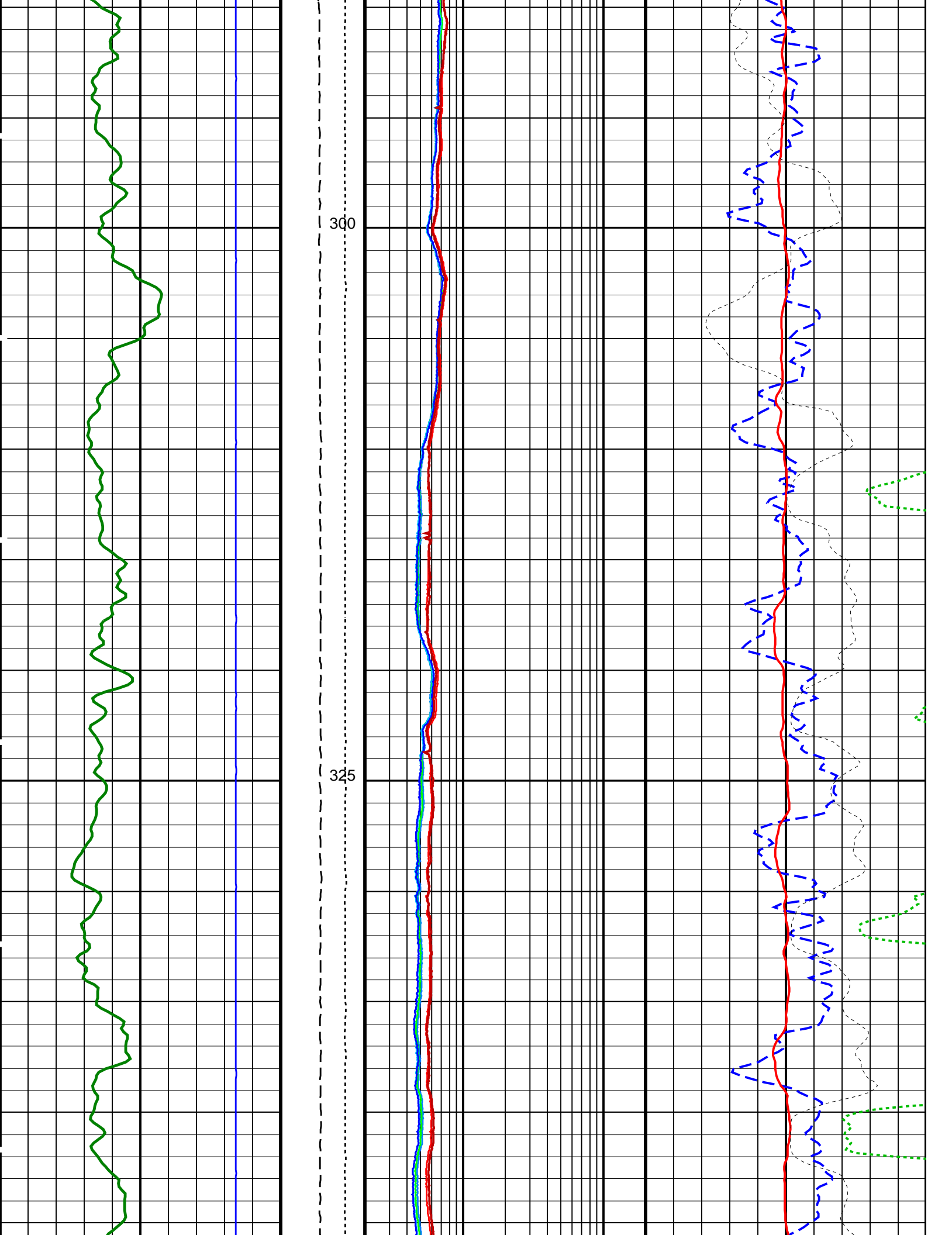


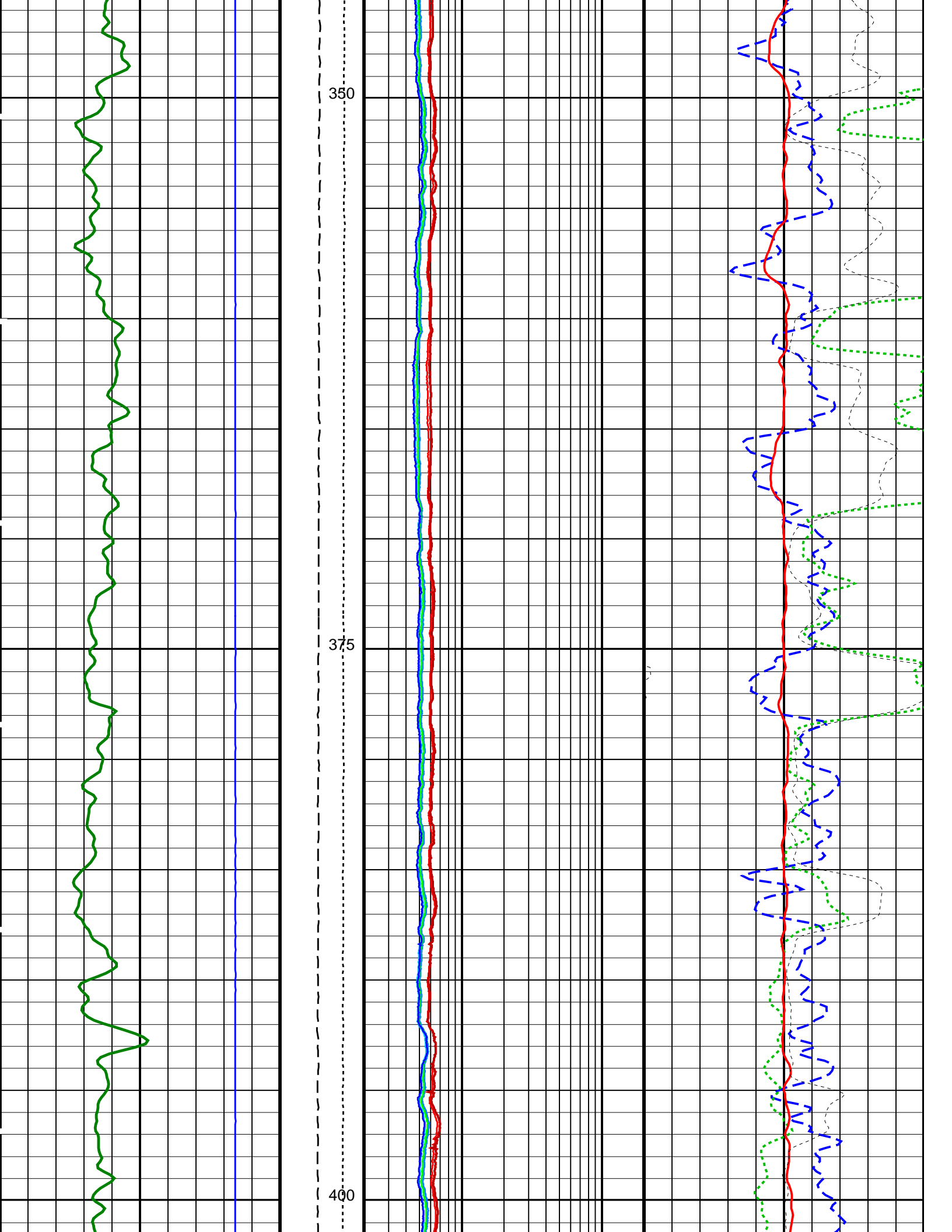


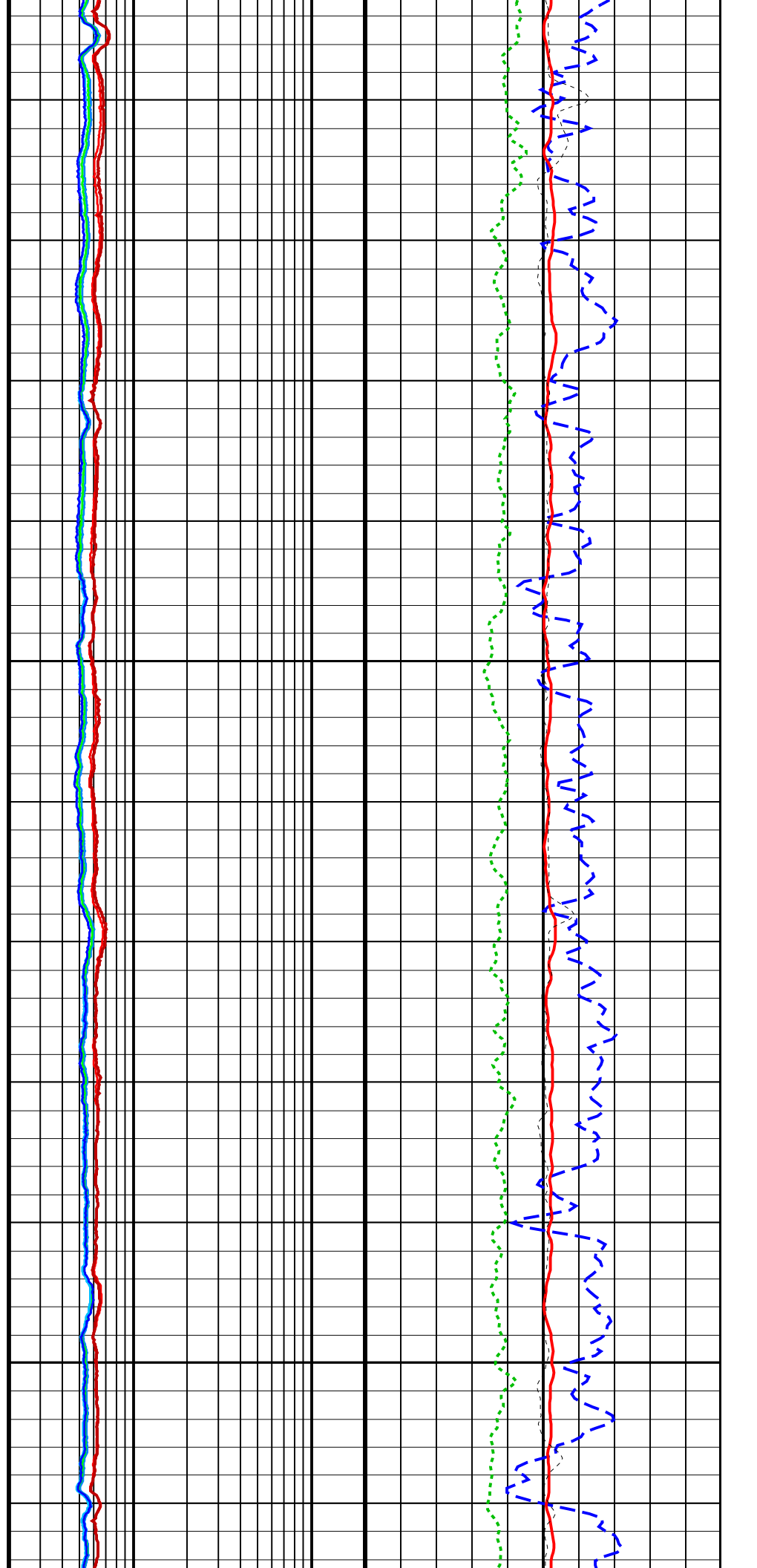
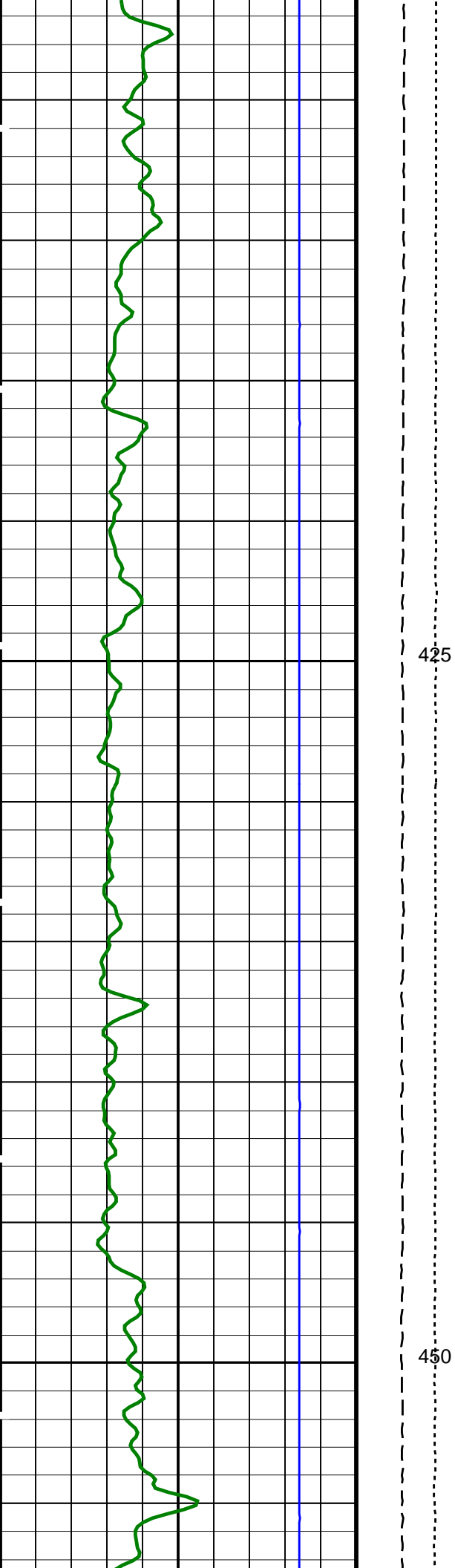


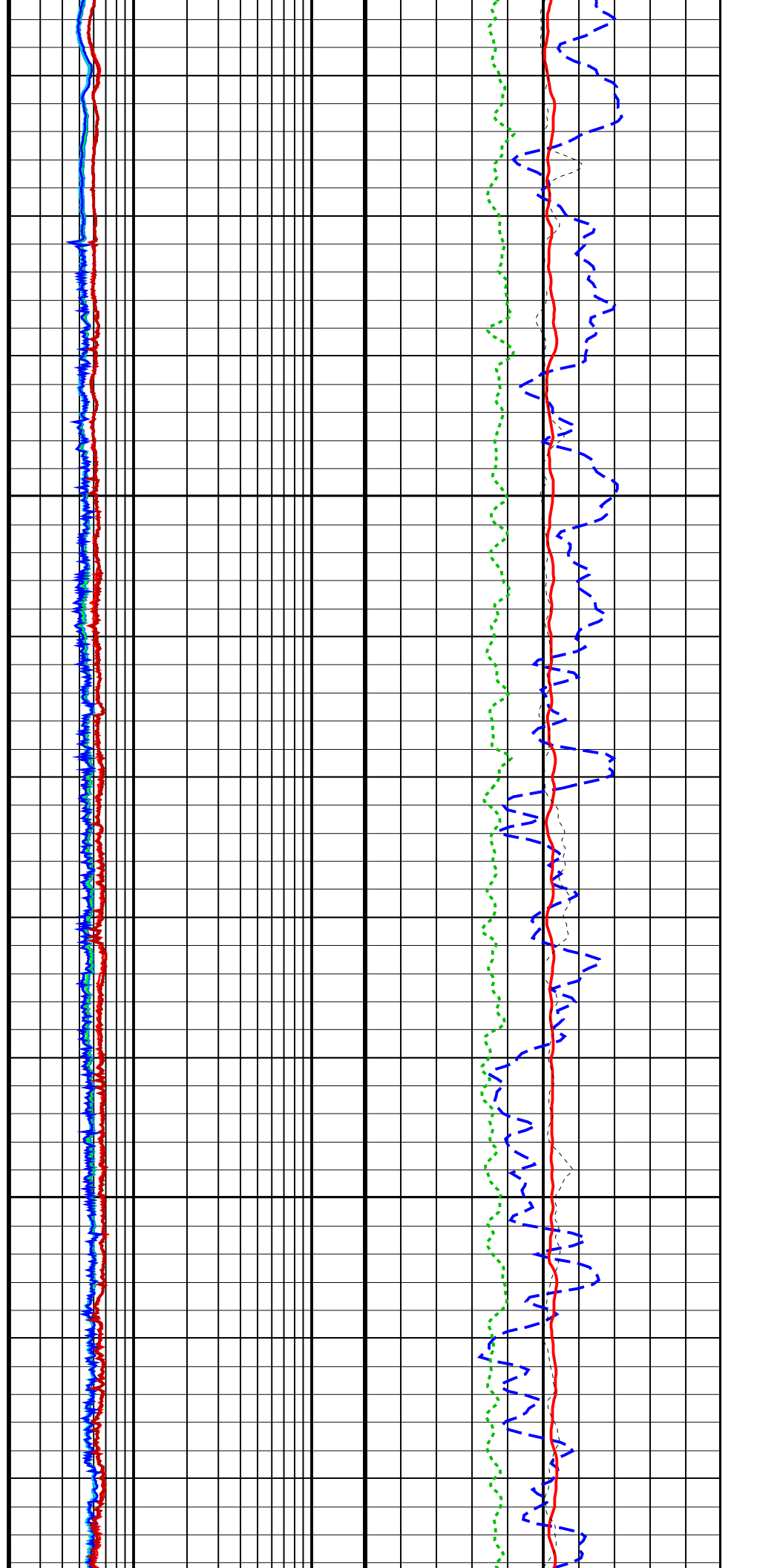
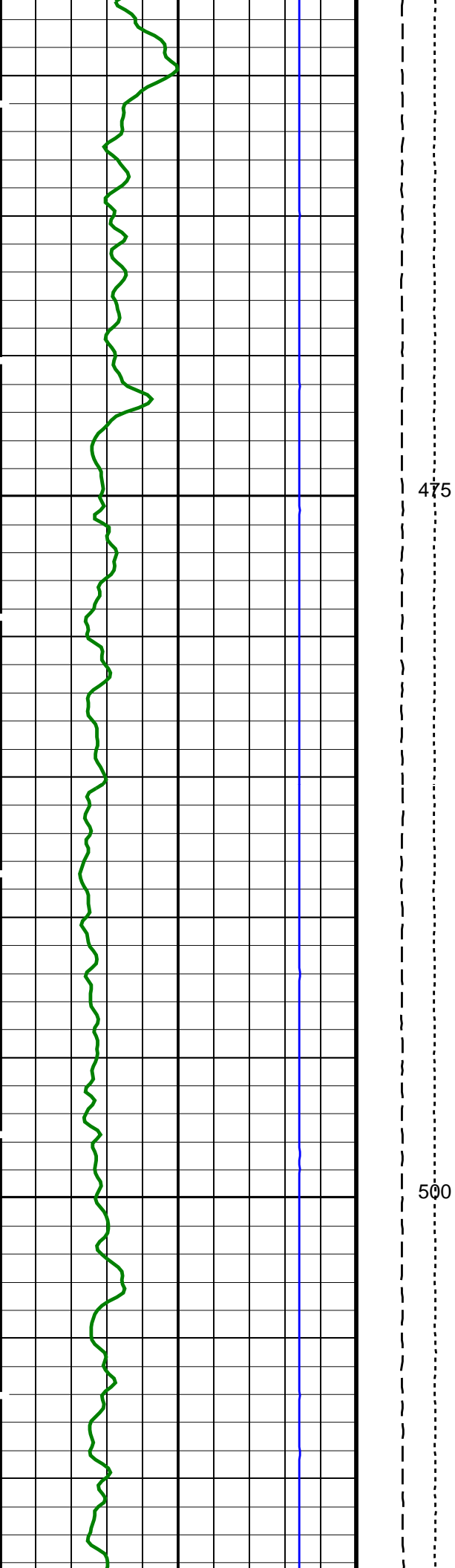


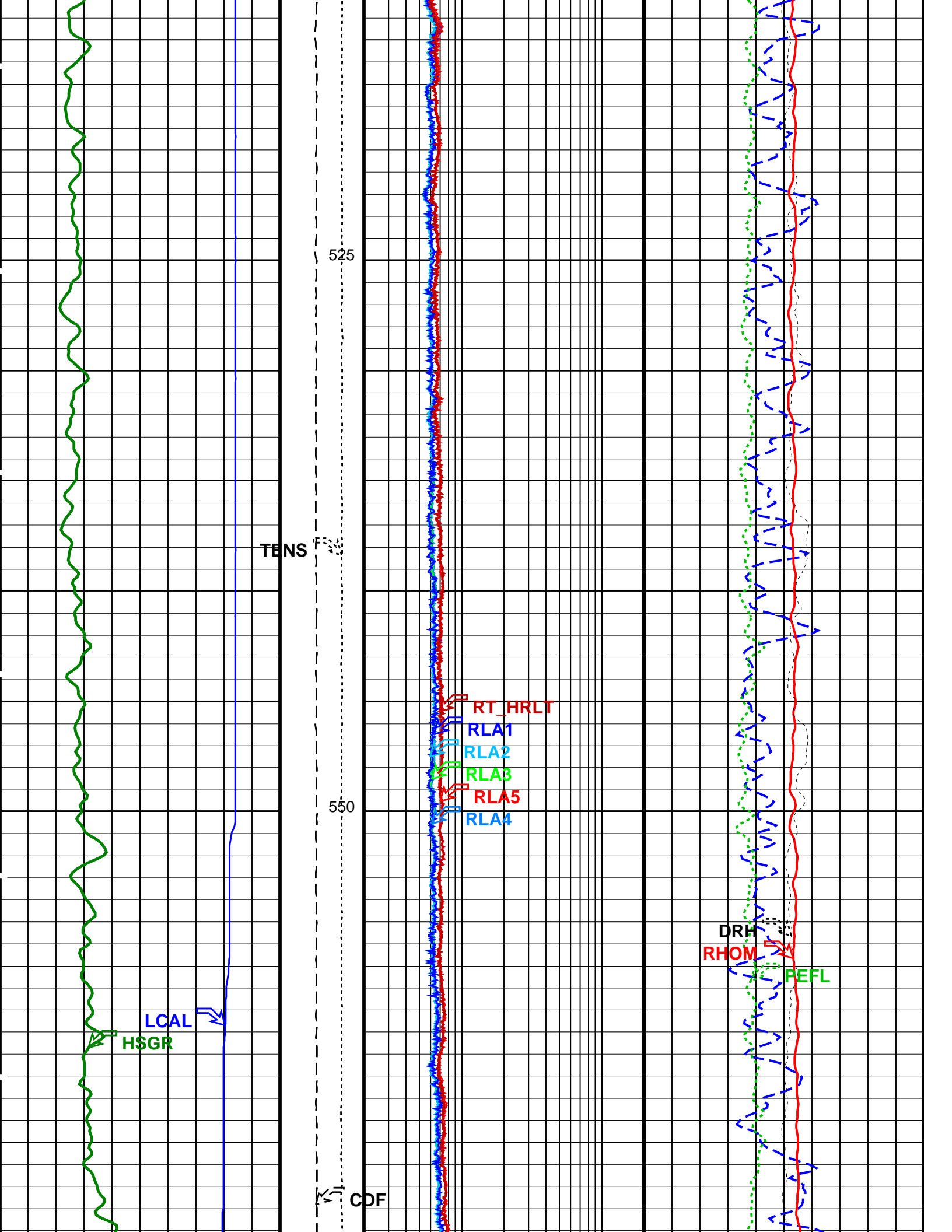


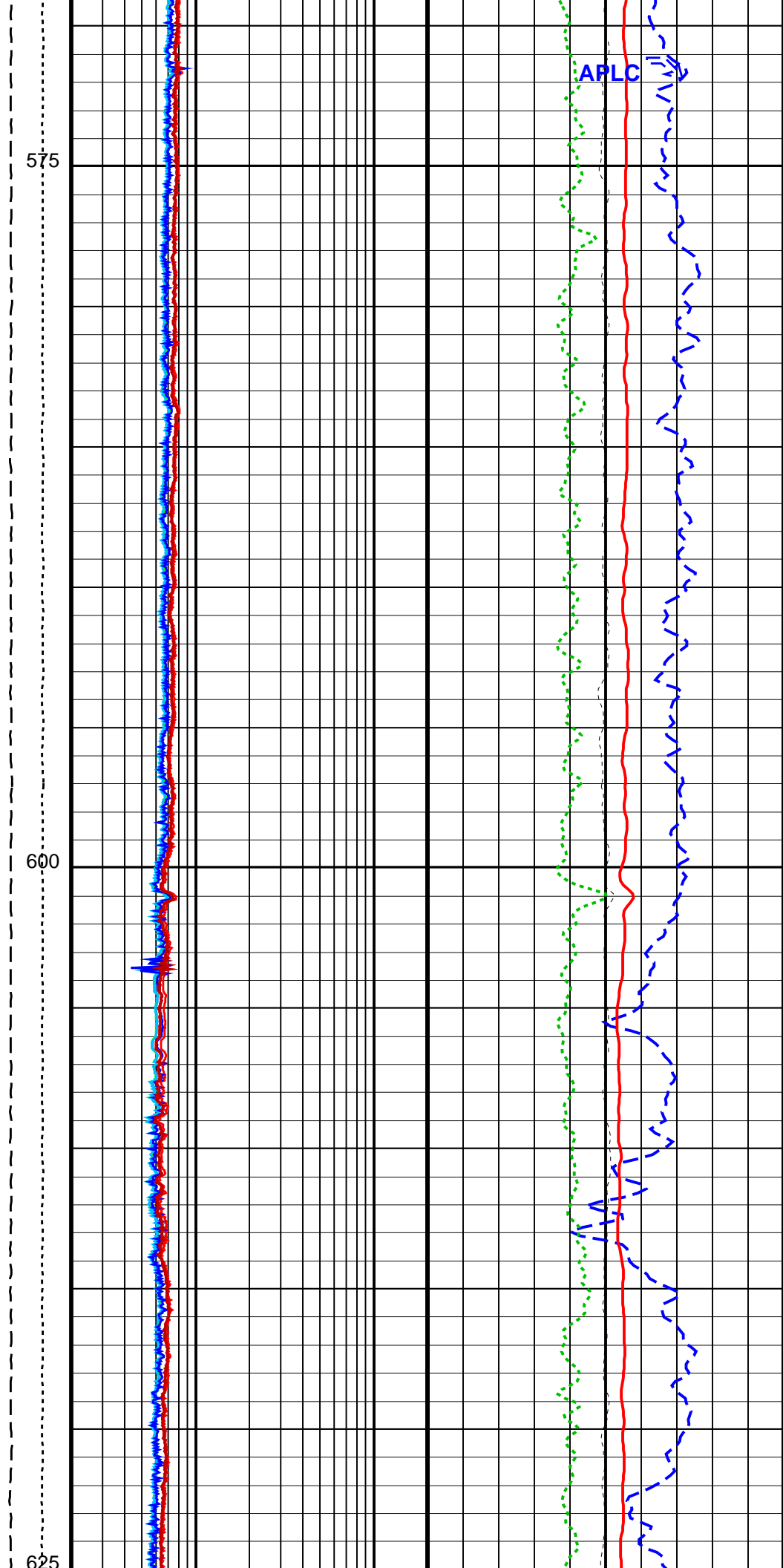
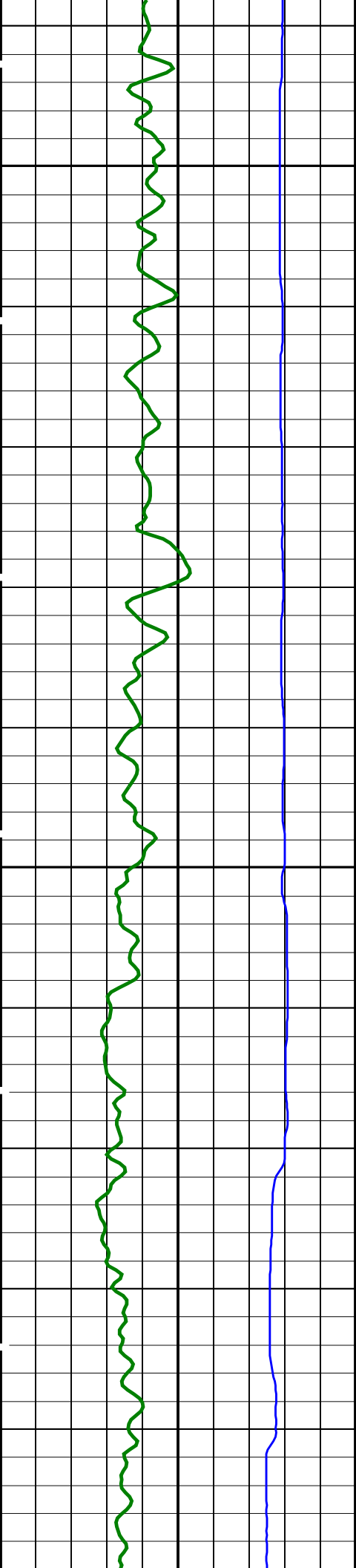


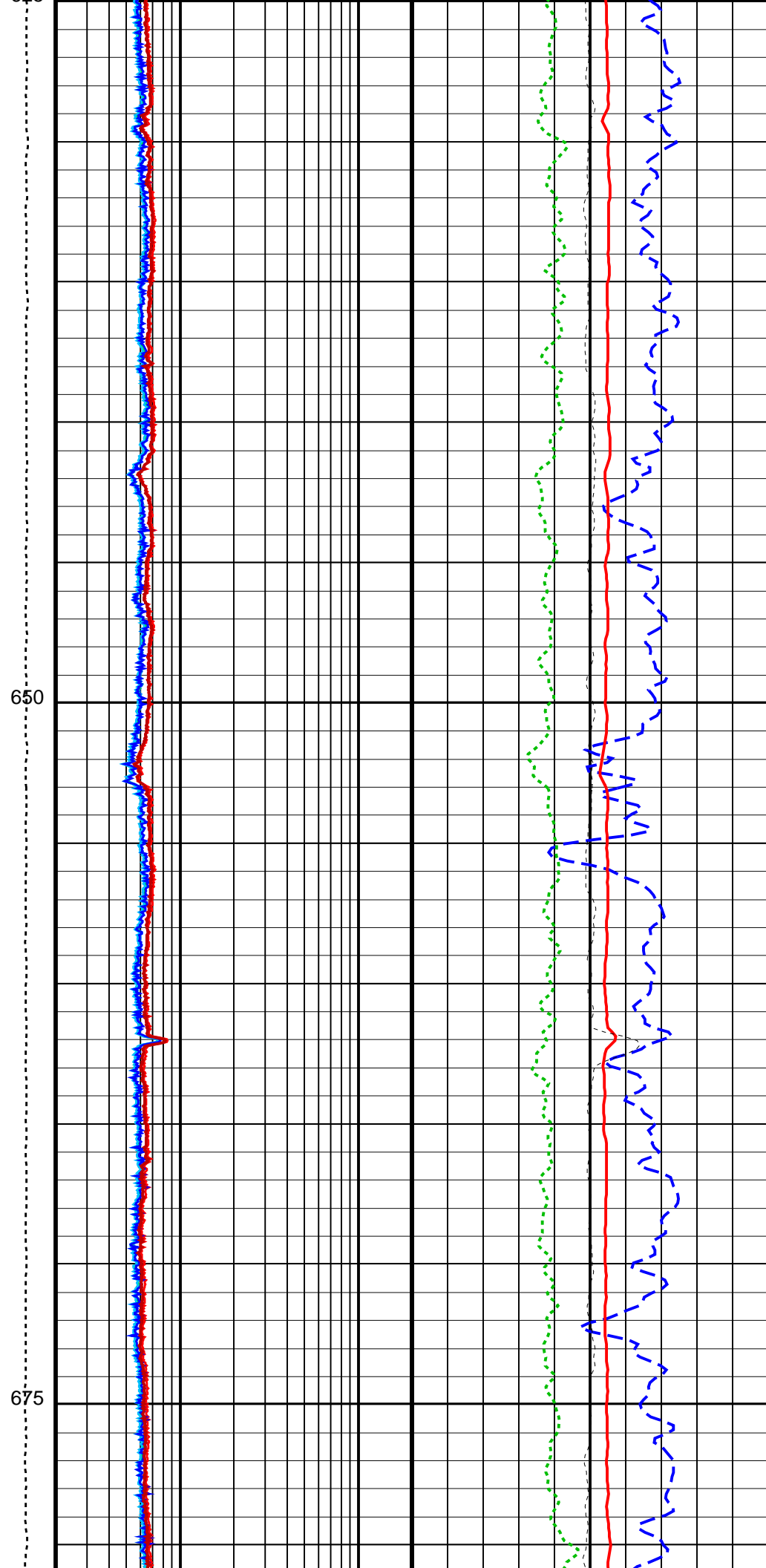
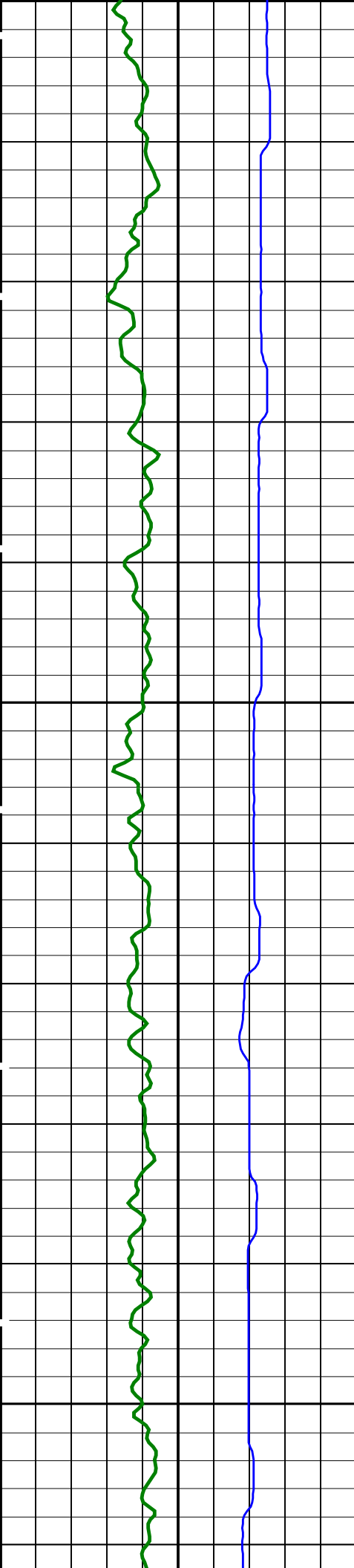


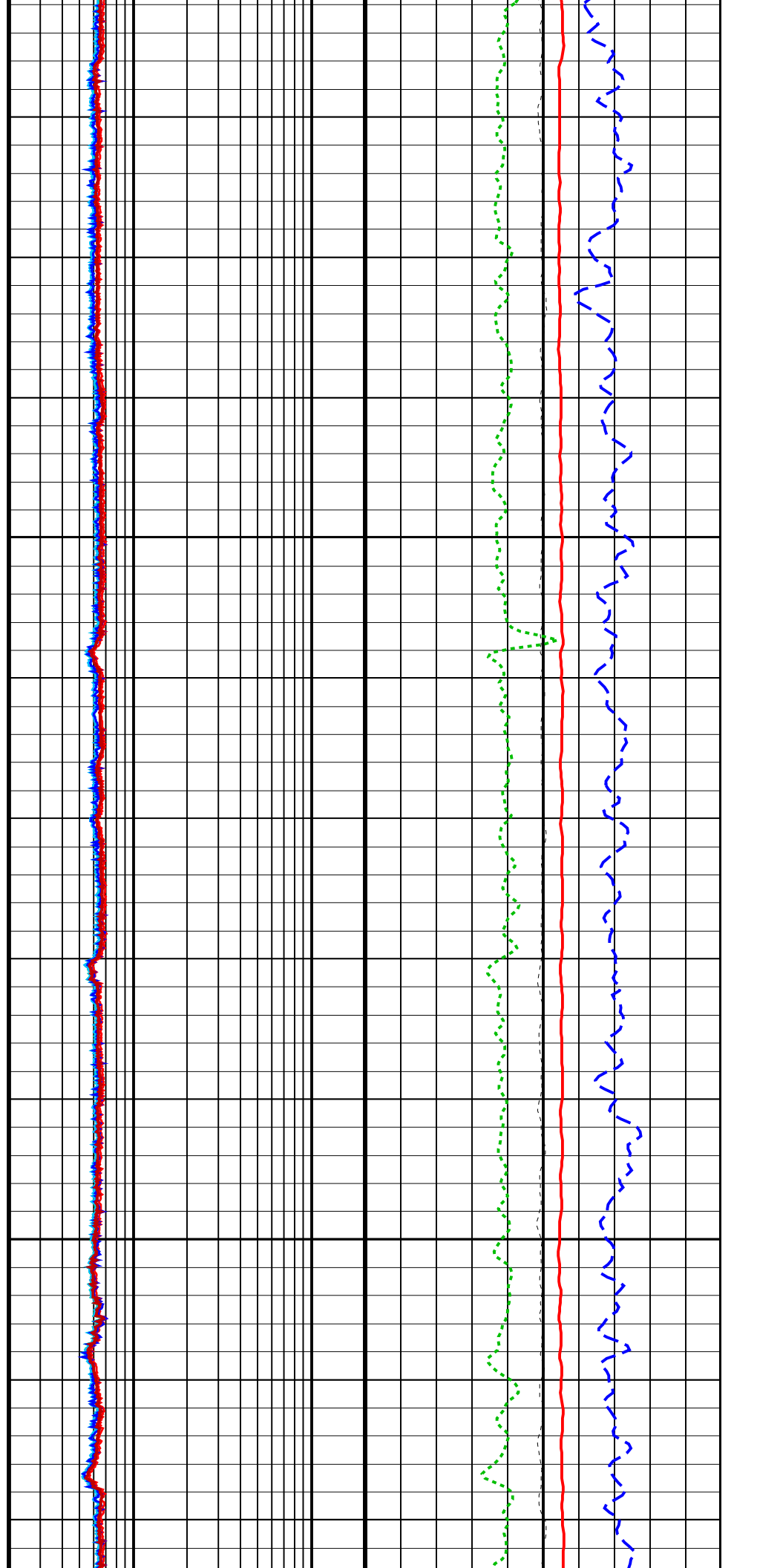
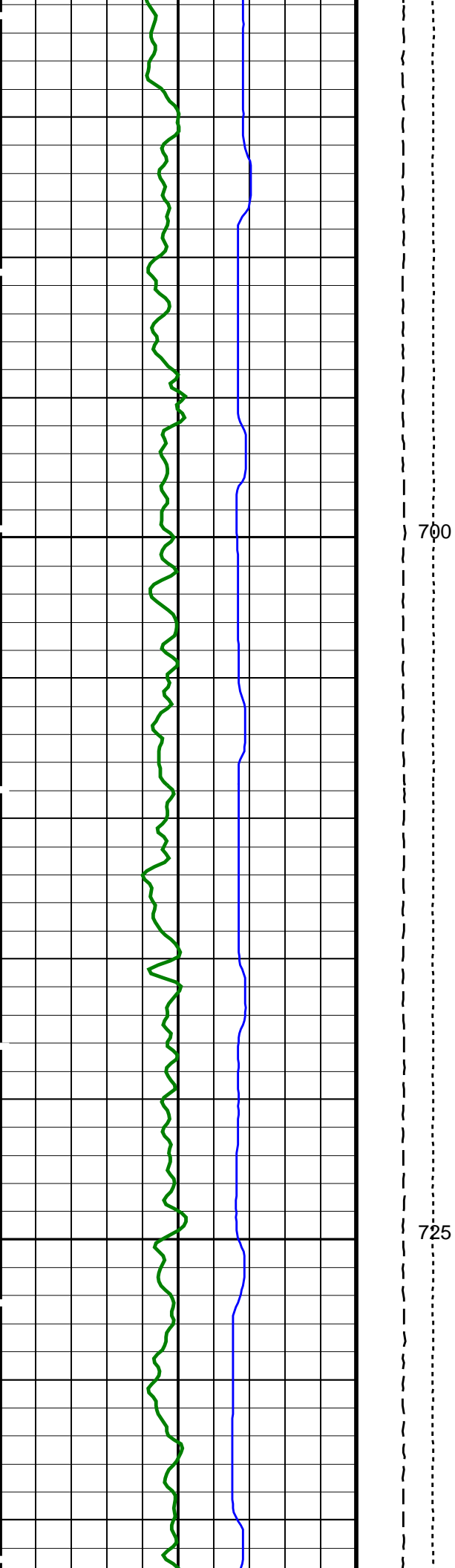


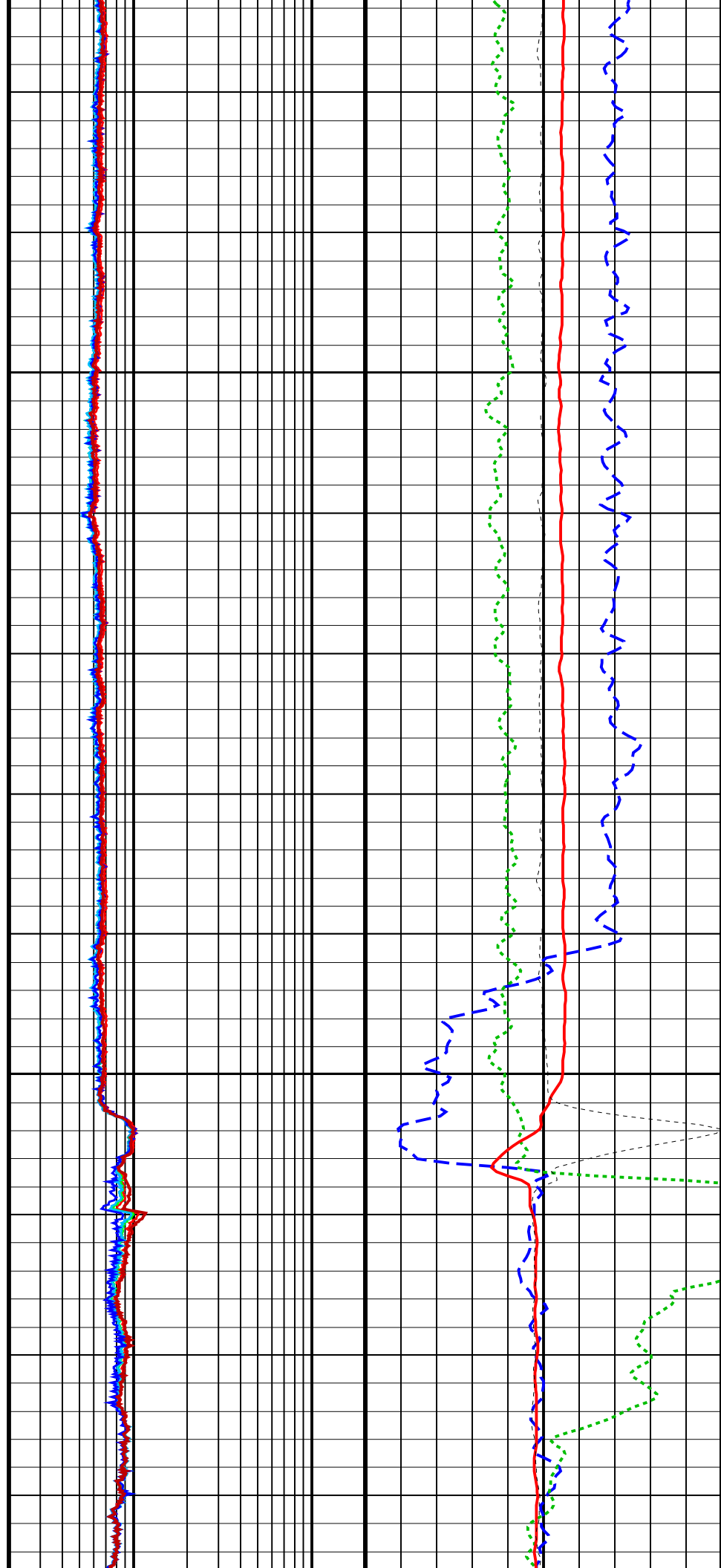
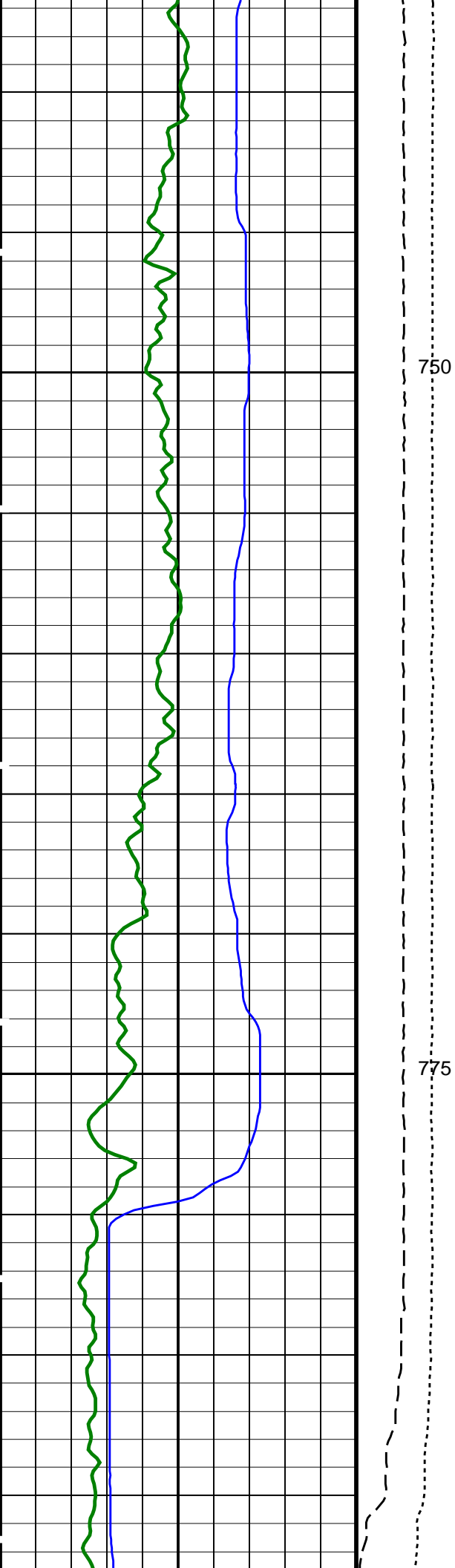


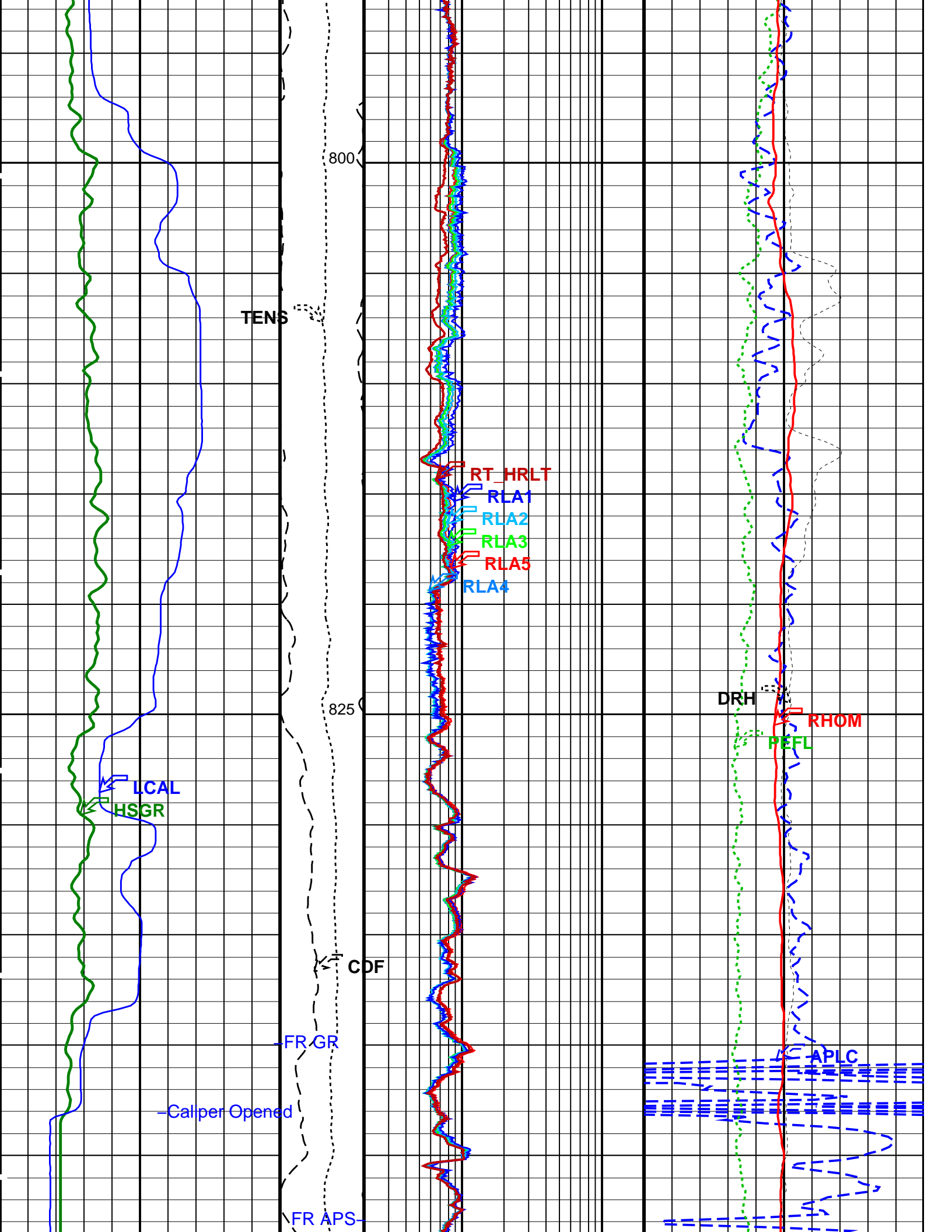


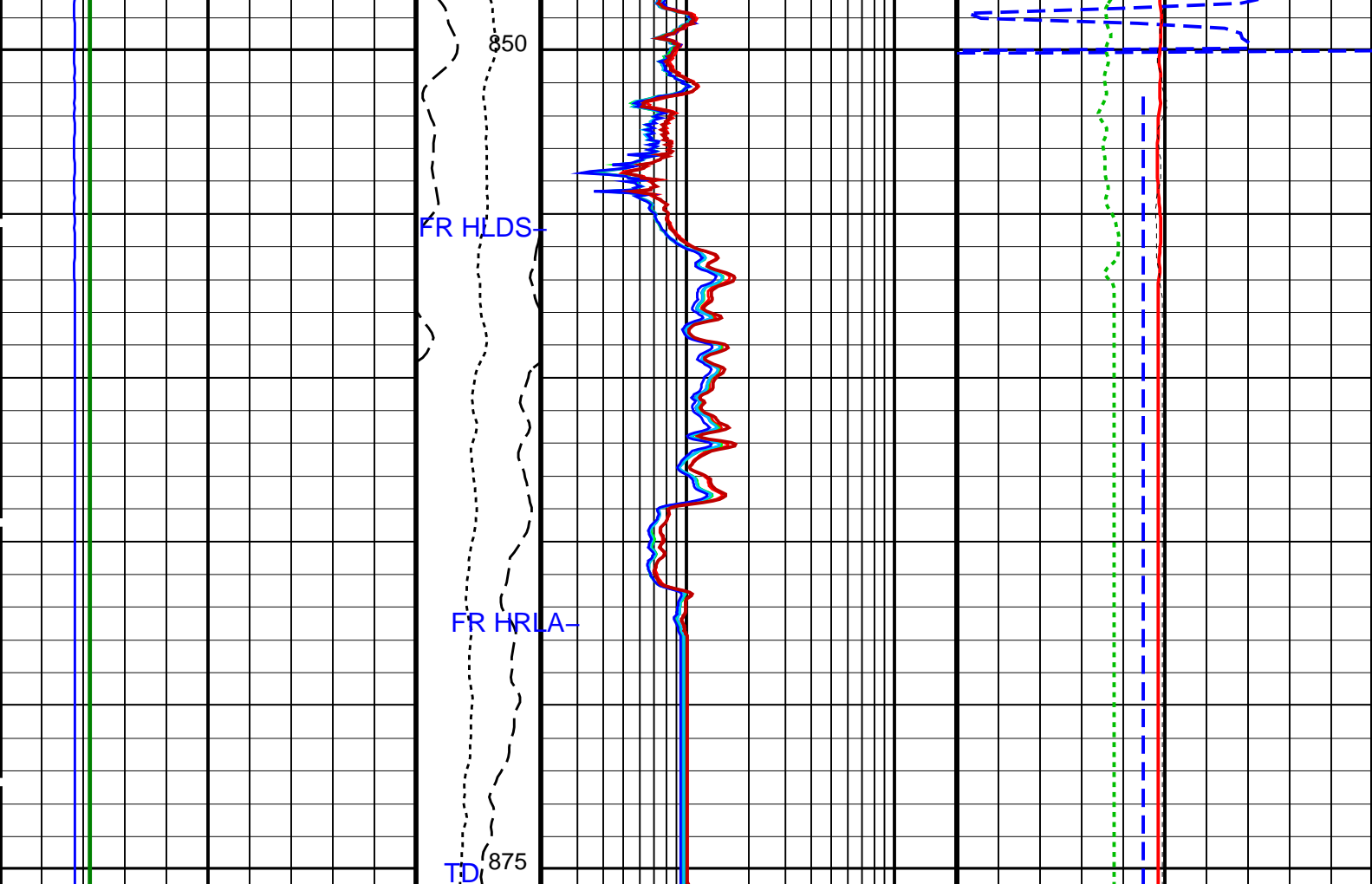












HLDS Caliper (LCAL) (IN)		Tension (TENS) (LBF)	HRLT Resistivity 4 (RLA4) (OHMM)		APS Near/Array Corrected Limestone Porosity (APLC) (PU)	
0 20		10000 0	0.2 20		100 0	
HNGS Spectroscopy Gamma Ray (HSGR) (GAPI)		Calibrated Downhole Force (CDF) (LBF)	HRLT Resistivity 5 (RLA5) (OHMM)		HLDS Long Spaced Photoelectric Effect (PEFL) (-----)	
0 100		3000 0	0.2 20		0 10	
Main Log			HRLT Resistivity 3 (RLA3) (OHMM)		HLDS Bulk Density (RHOM) (G/C3)	
			0.2 20		0 4	
			HRLT Resistivity 2 (RLA2) (OHMM)		HLDS Bulk Density Correction (DRH) (G/C3)	
			0.2 20		-0.25 0.25	
			HRLT Resistivity 1 (RLA1) (OHMM)			
			0.2 20			
			HRLT True Resistivity (RT_HRLT) (OHMM)			
			0.2 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)	40	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	24.3635	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	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
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
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.6	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	
APS-C: Accelerator-Porosity Tool			
AASD	APS Software Version	0	
ADSO	APS Thermal and Array Detectors High Voltage Setting	1938.41	V
AFSD	APS Array Detectors Data Source Switch	Both	
AHCS	APS Far Detector High Voltage Setting	2034.64	V
AHSS	APS Holesize Correction Source	GCSE	
AMTY	APS Holesize Correction Switch	ON	
ANSO	APS Environmental Corrections Mud Type	WaterBaseBarite	
ASOS	APS Near Detector High Voltage Setting	1700.34	V
ATSS	APS Standoff Correction Switch	ON	
BHFL_APS	APS Temperature-Pressure-Salinity Correction Switch	OFF	
BHS	APS TNPH Borehole Fluid Type	WATER	
BHT	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
FSAL	Formation Salinity	-50000	PPM
FSCO_APS	APS TNPH 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_APS	APS TNPH Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	40	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	-0.00112198	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.12768	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.999754	
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	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	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	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	9.875	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	1.32	G/C3
DO	Depth Offset for Playback	-97.5	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	900	M
TDD	Total Depth - Driller	950.00	M
TDL	Total Depth - Logger	950.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC

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OP System Version: 19C0-187

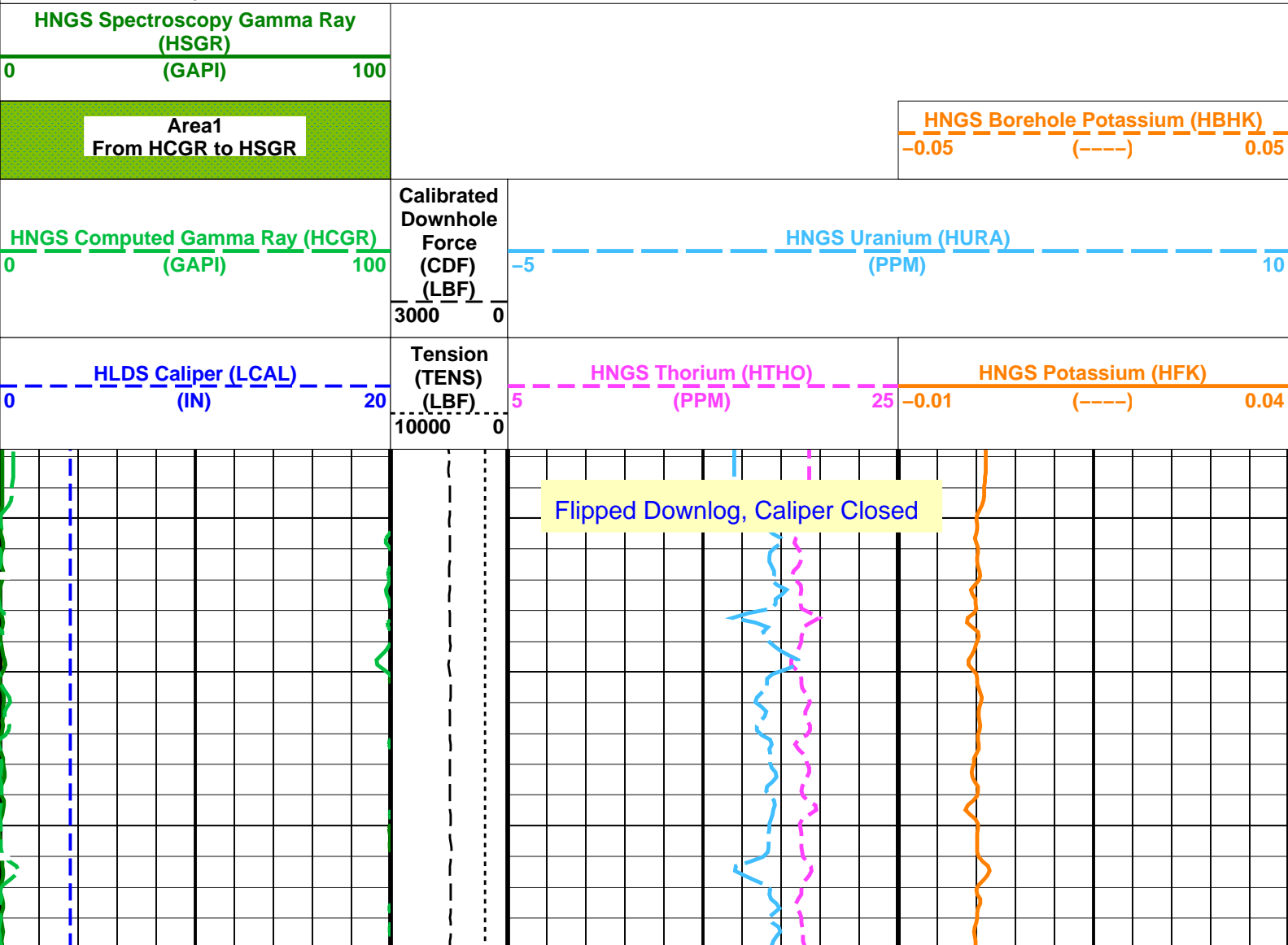
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HLDS	19C0-187	LDSC-B	19C0-187

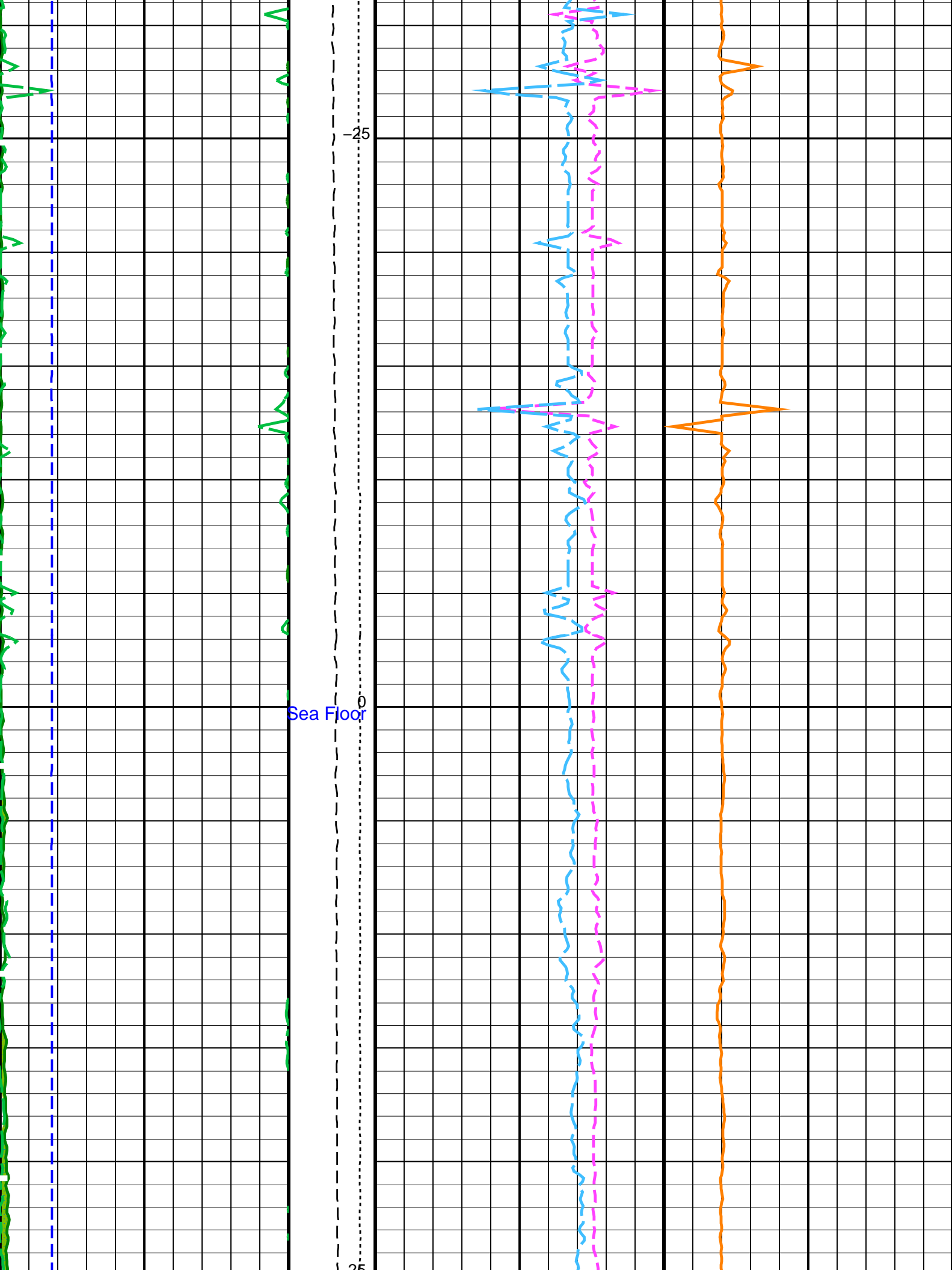
APS-C	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB
Input DLIS Files			
DEFAULT	MSS_LDEO_HRLA_LDL_029PUP	FN:45	PRODUCER 11-Sep-2015 22:56 973.8 M 83.8 M
Output DLIS Files			
DEFAULT	MSS_LDEO_HRLA_LDL_050PUP	FN:54	PRODUCER 18-Sep-2015 15:30

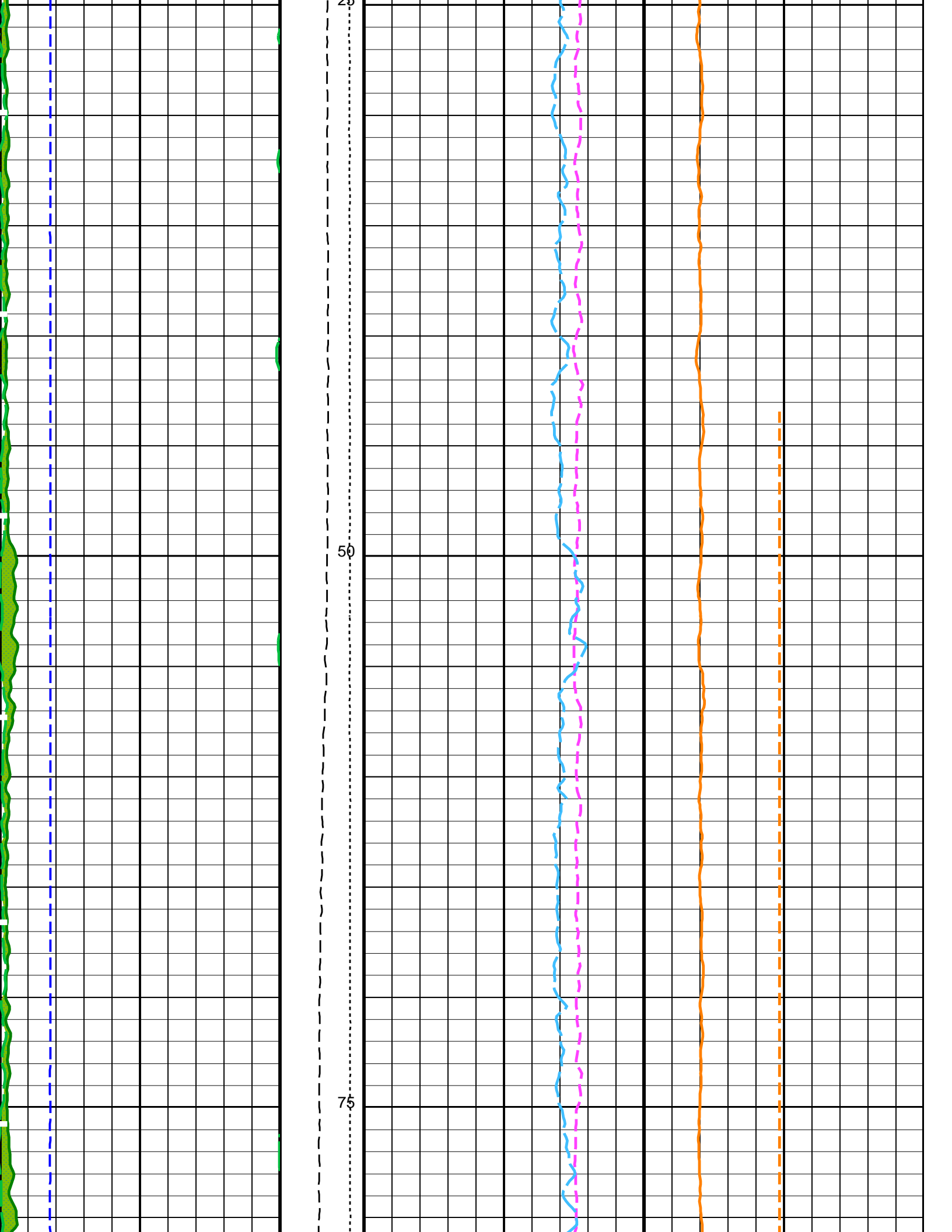
Input DLIS Files			
DEFAULT	Flip_MSS_LDEO_HRLA_047PUP	PRODUCER	18-Sep-2015 15:04 852.5 M -47.2 M
Output DLIS Files			
DEFAULT	MSS_LDEO_HRLA_LDL_048PUP	FN:52	PRODUCER 18-Sep-2015 15:06 852.5 M -47.2 M

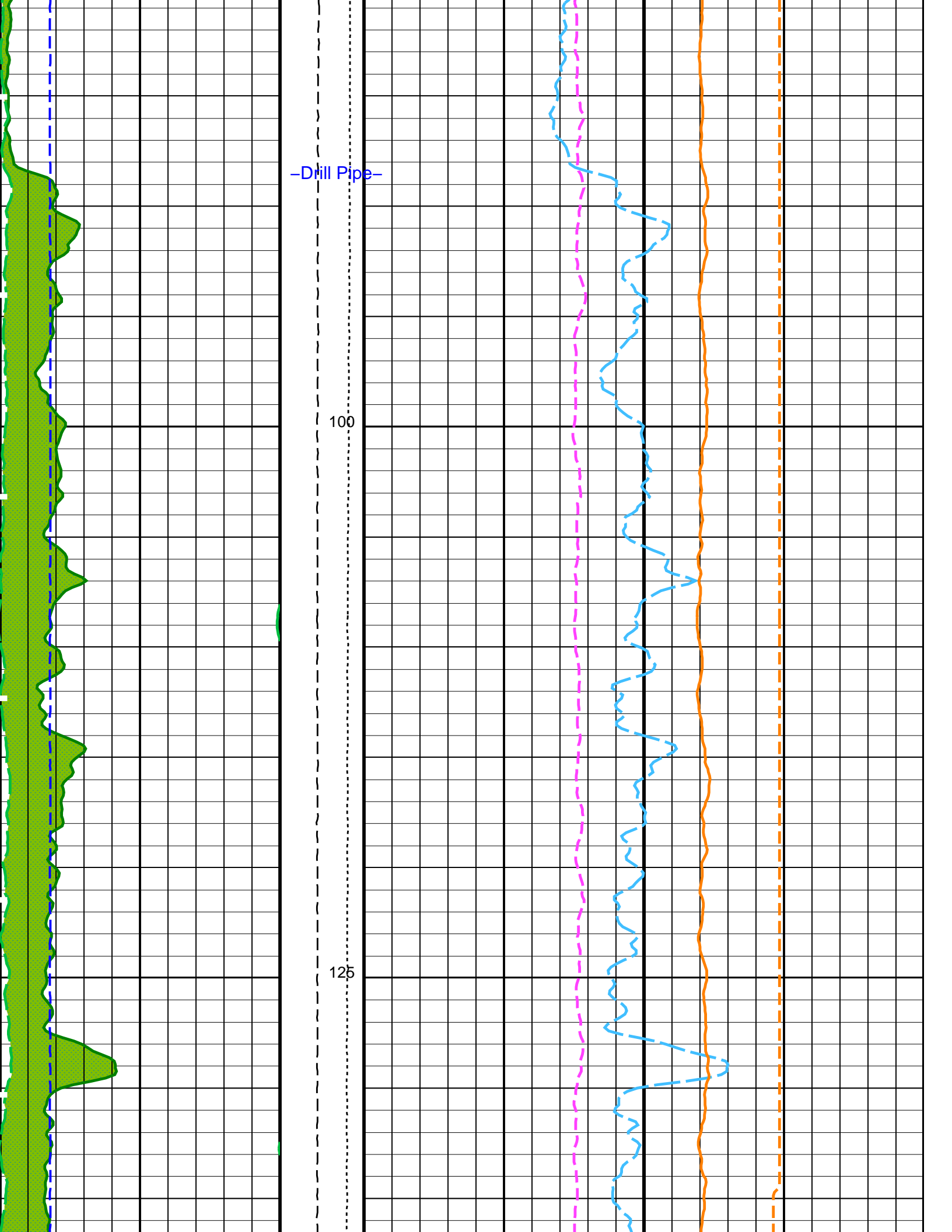
OP System Version: 19C0-187			
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
APS-C	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB

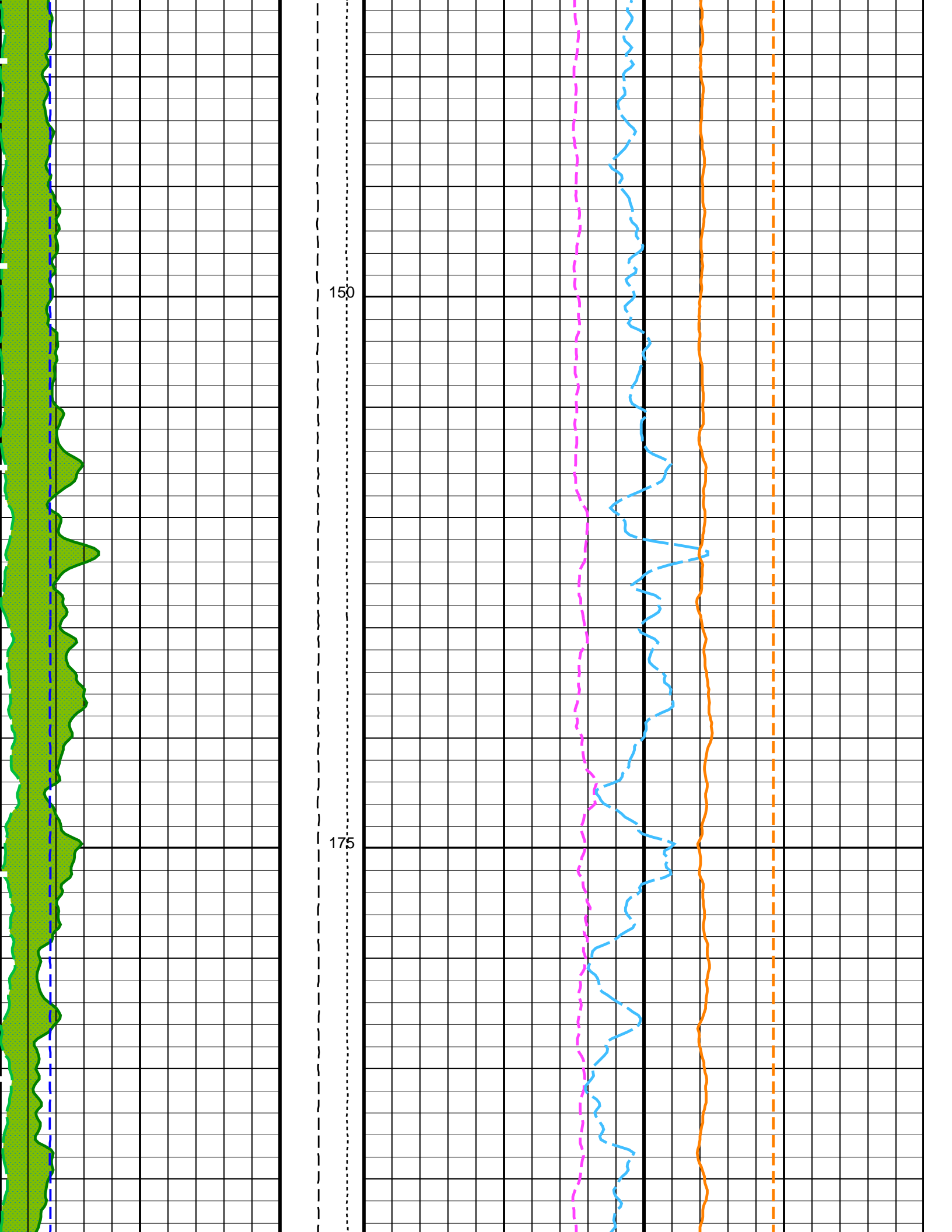
PIP SUMMARY			
Time Mark Every 60 S			

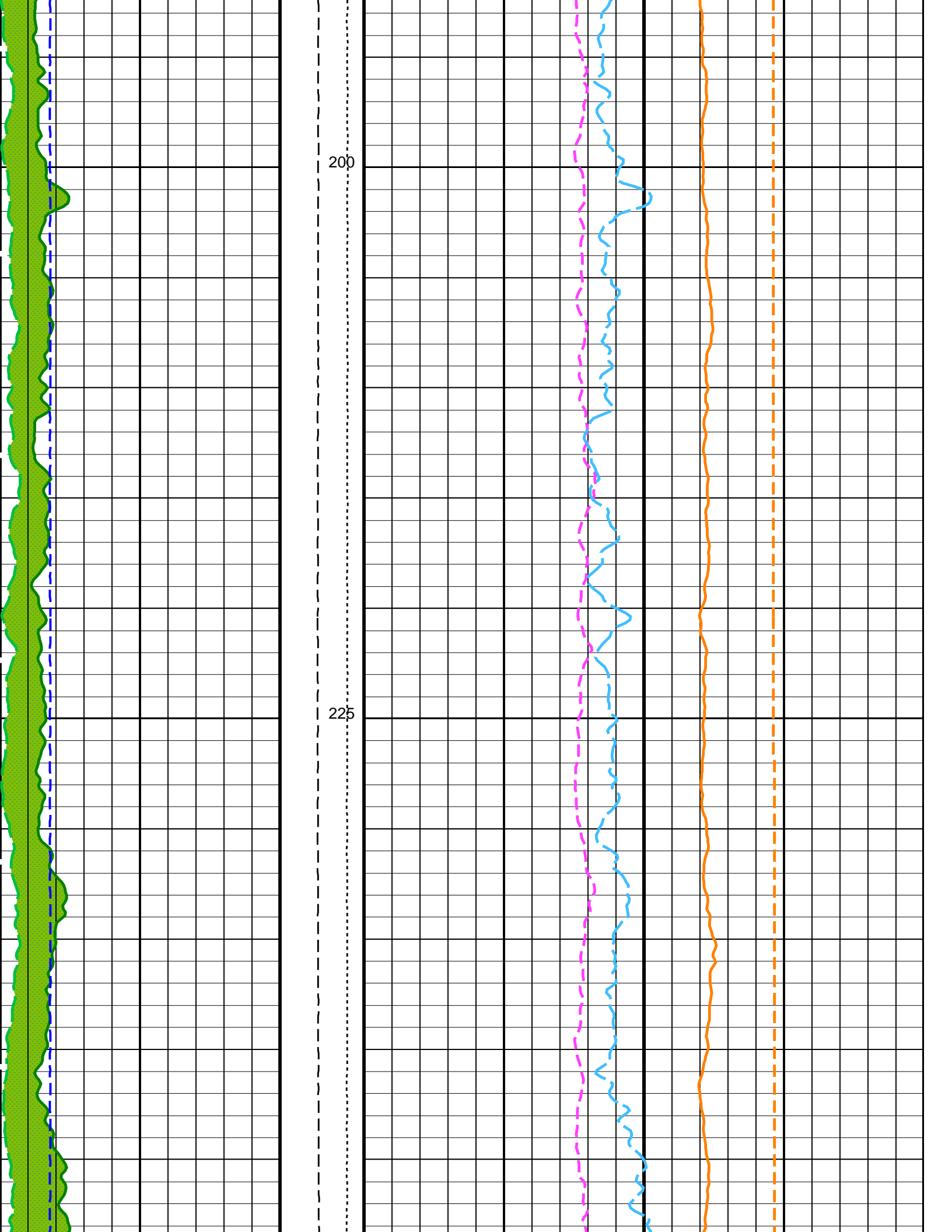


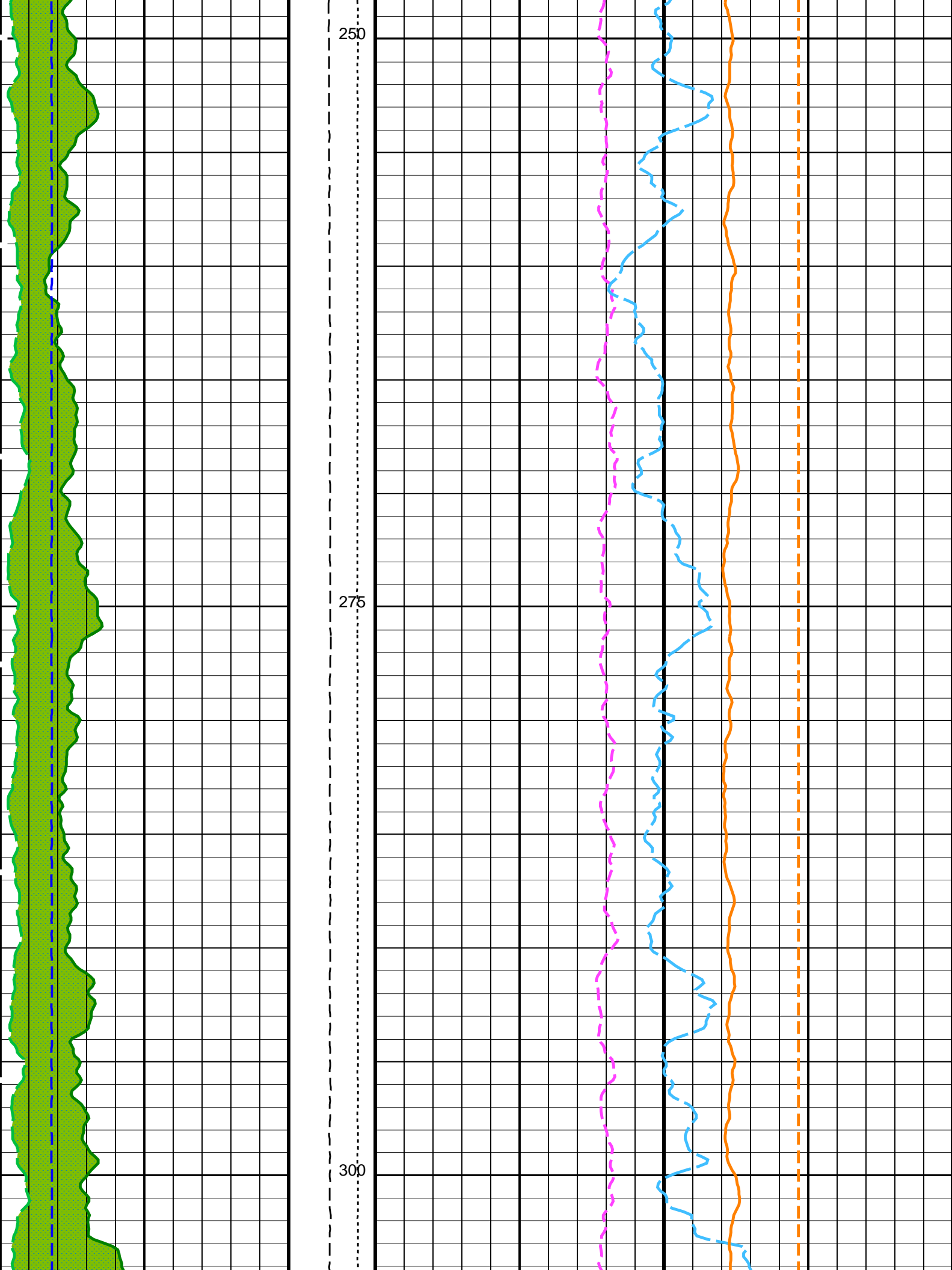


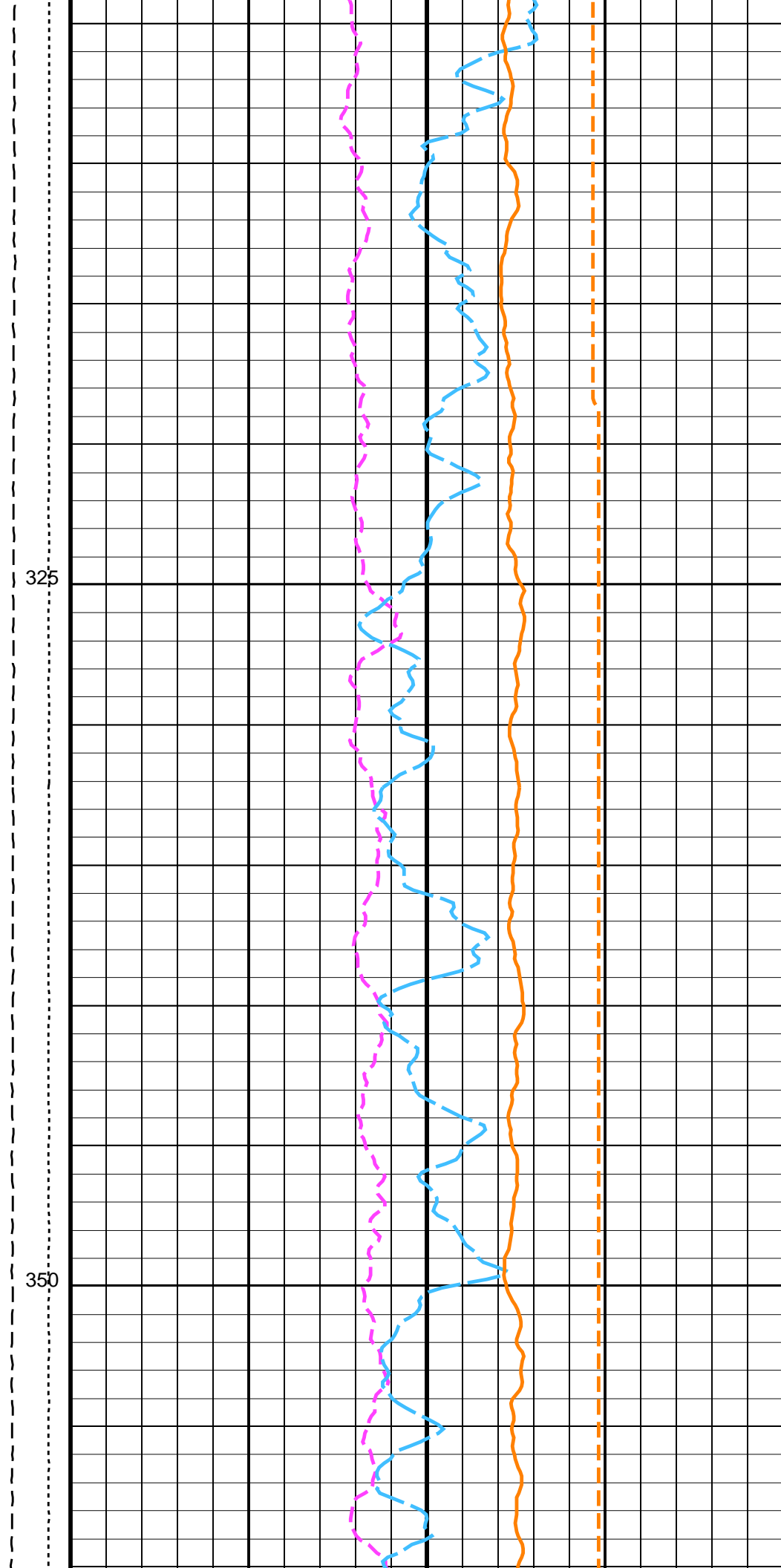
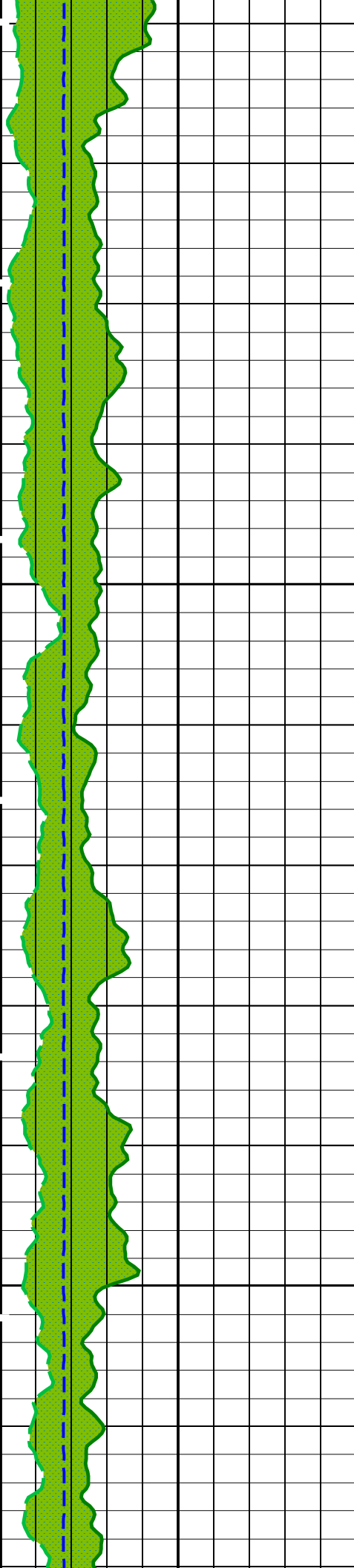


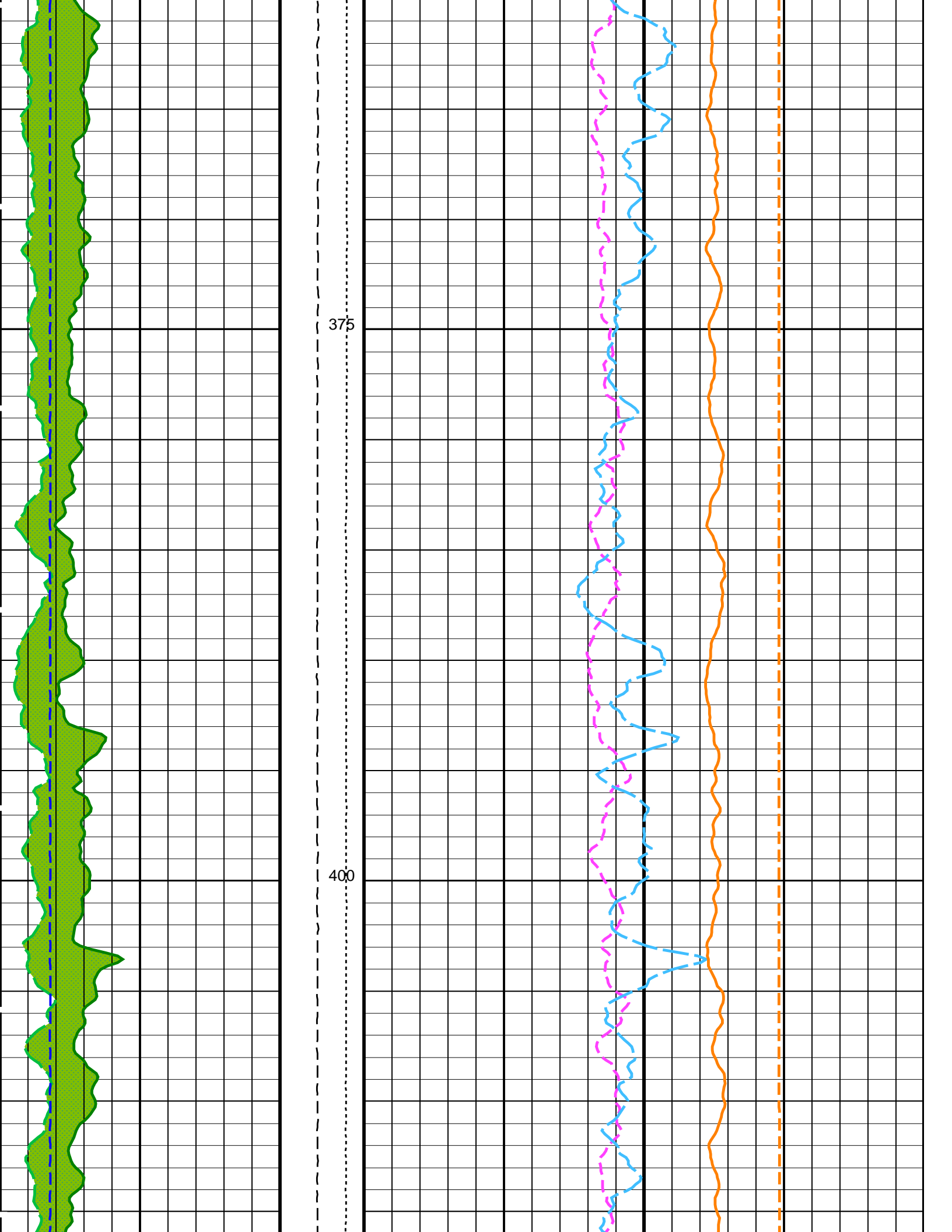


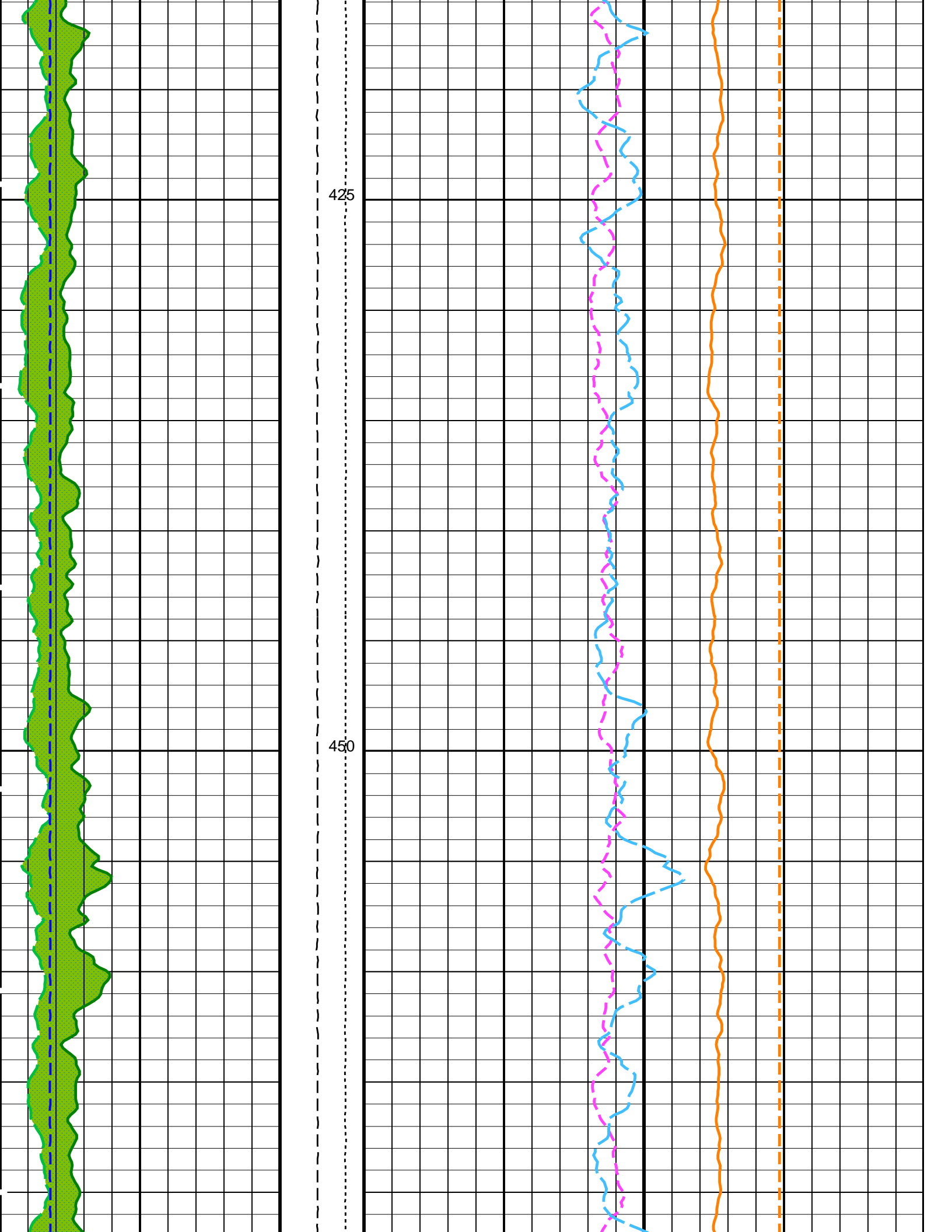


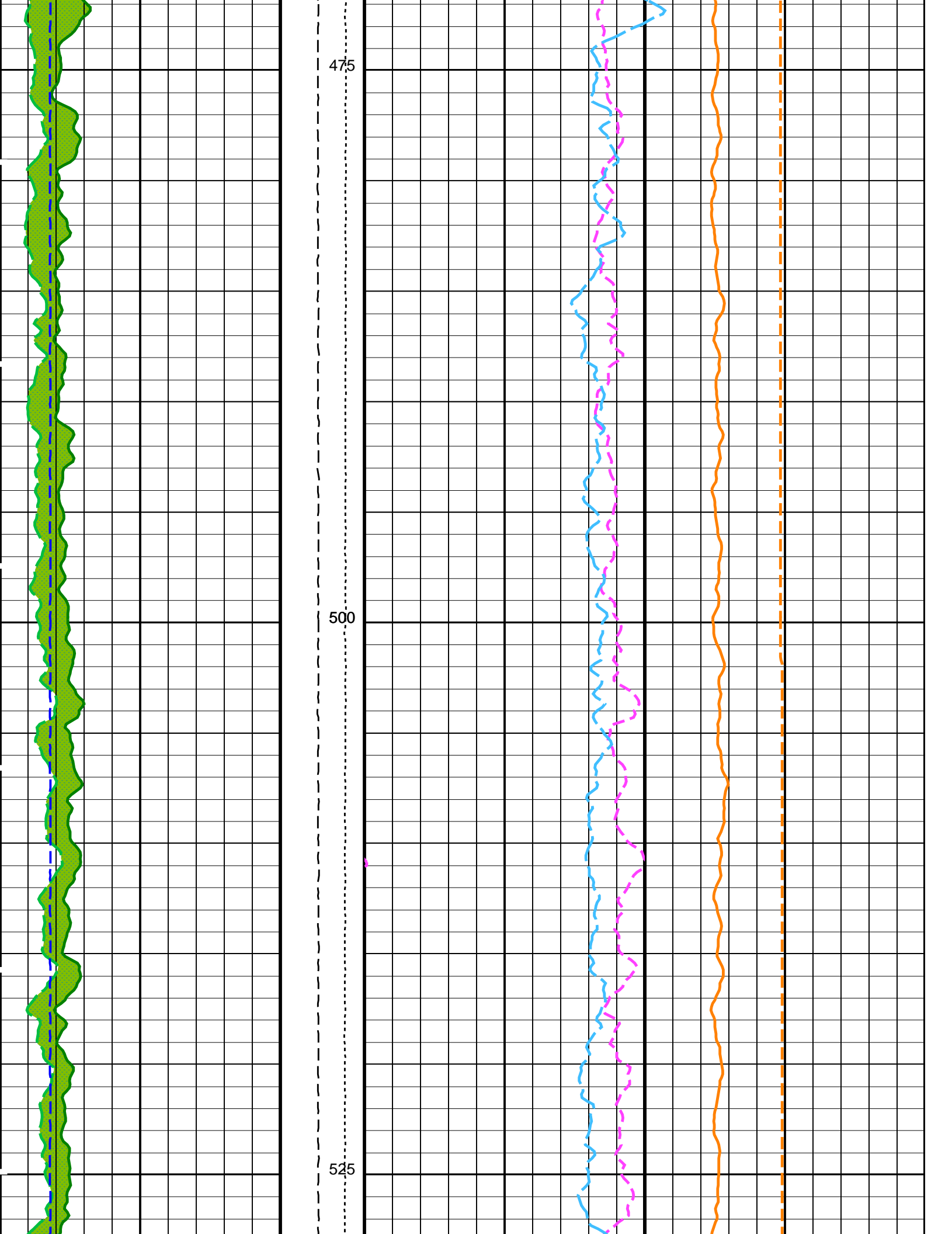


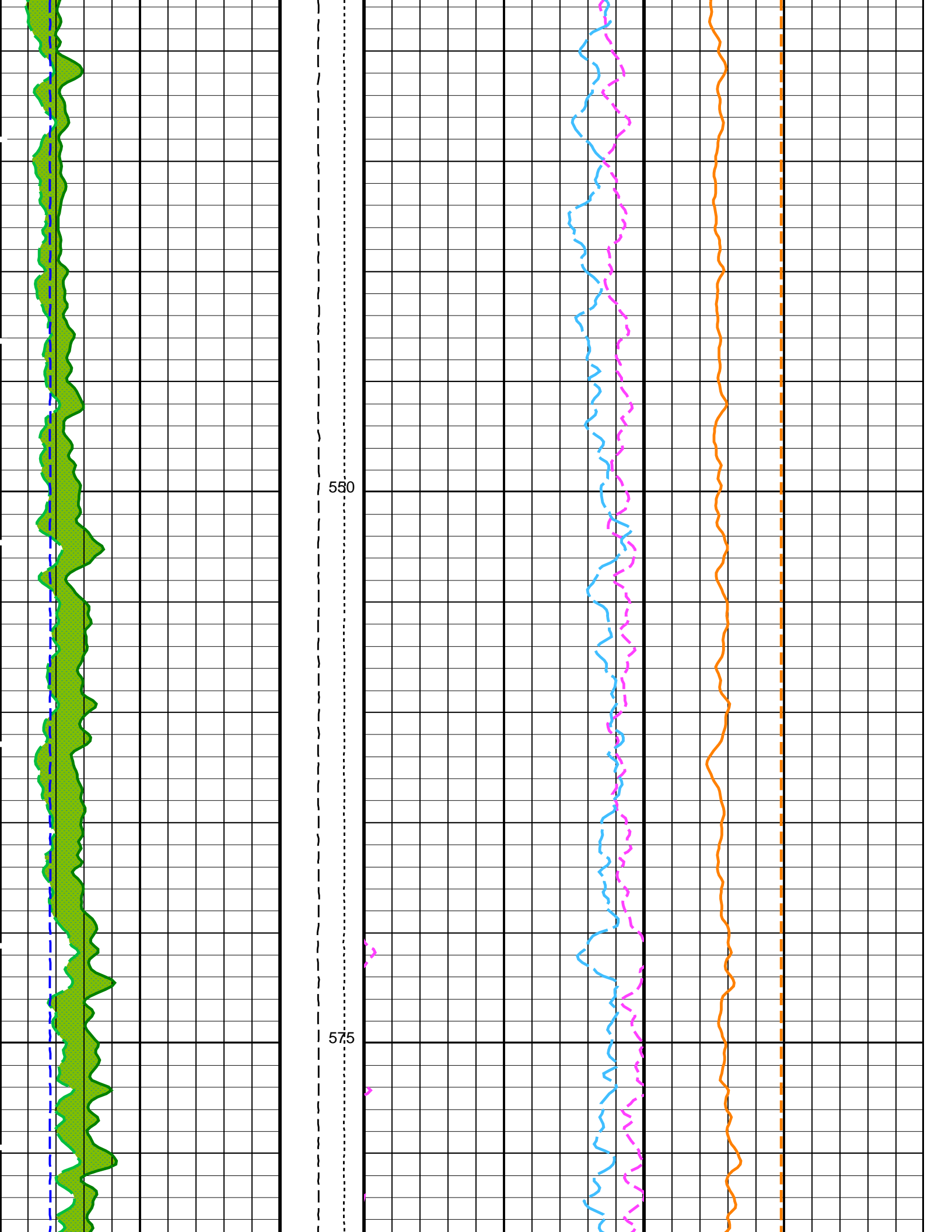


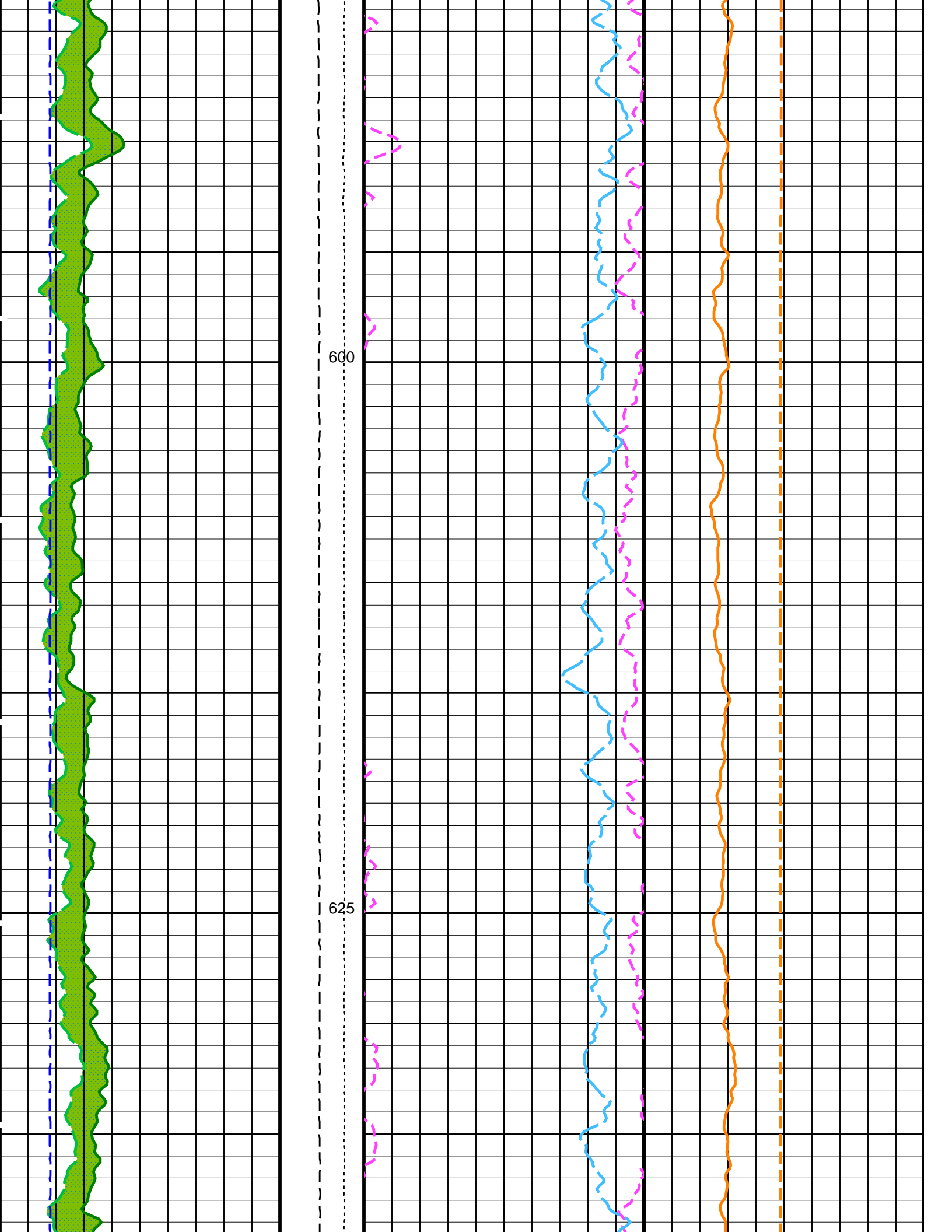


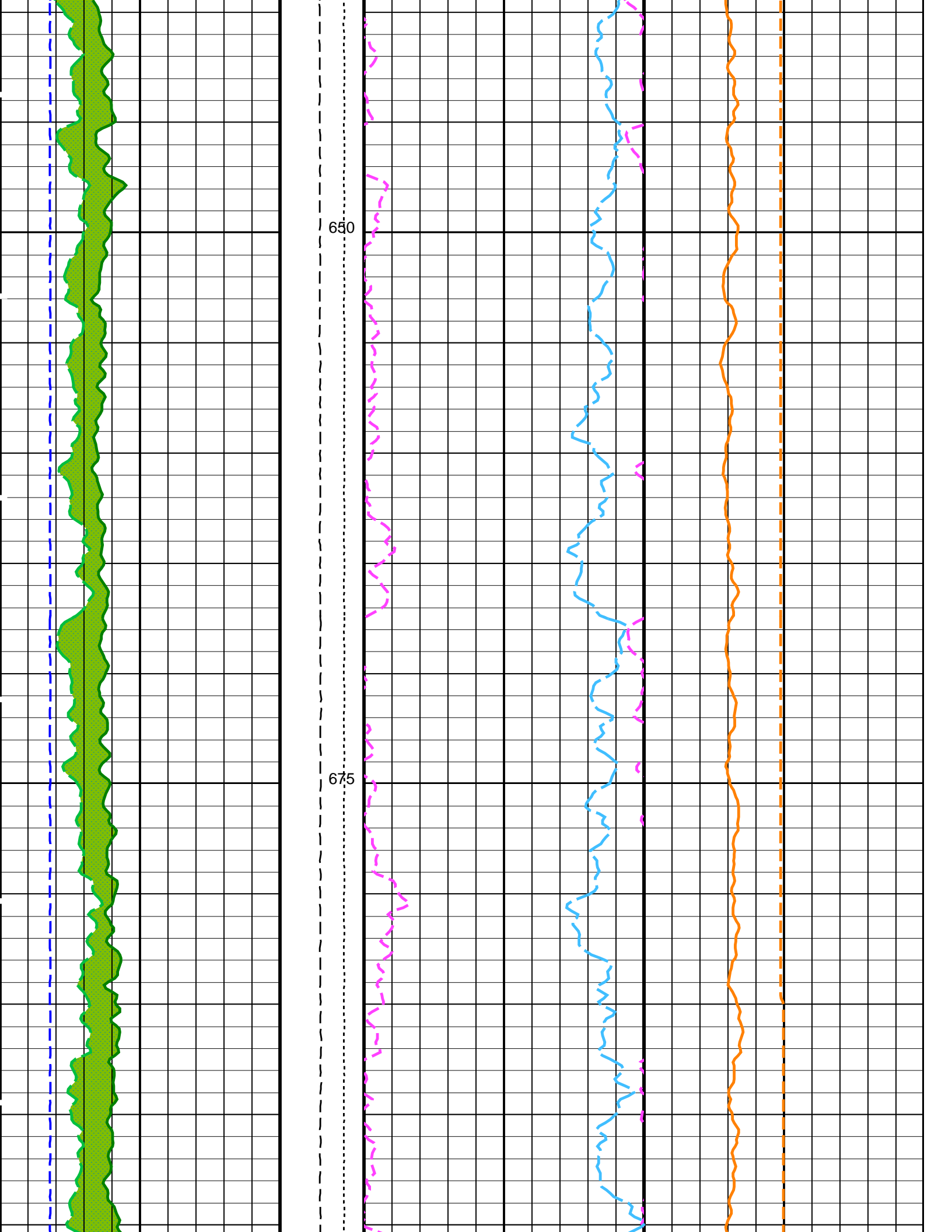


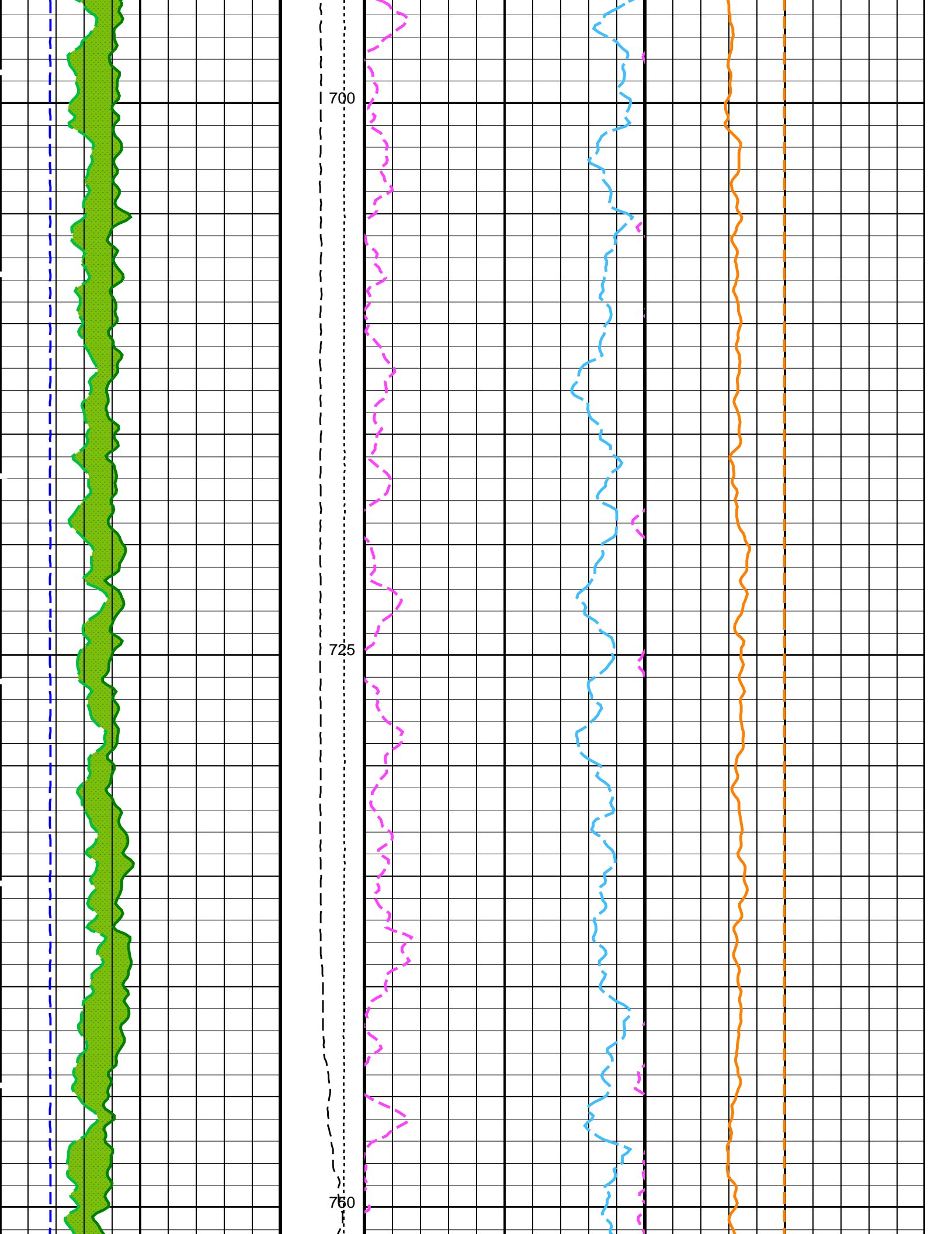


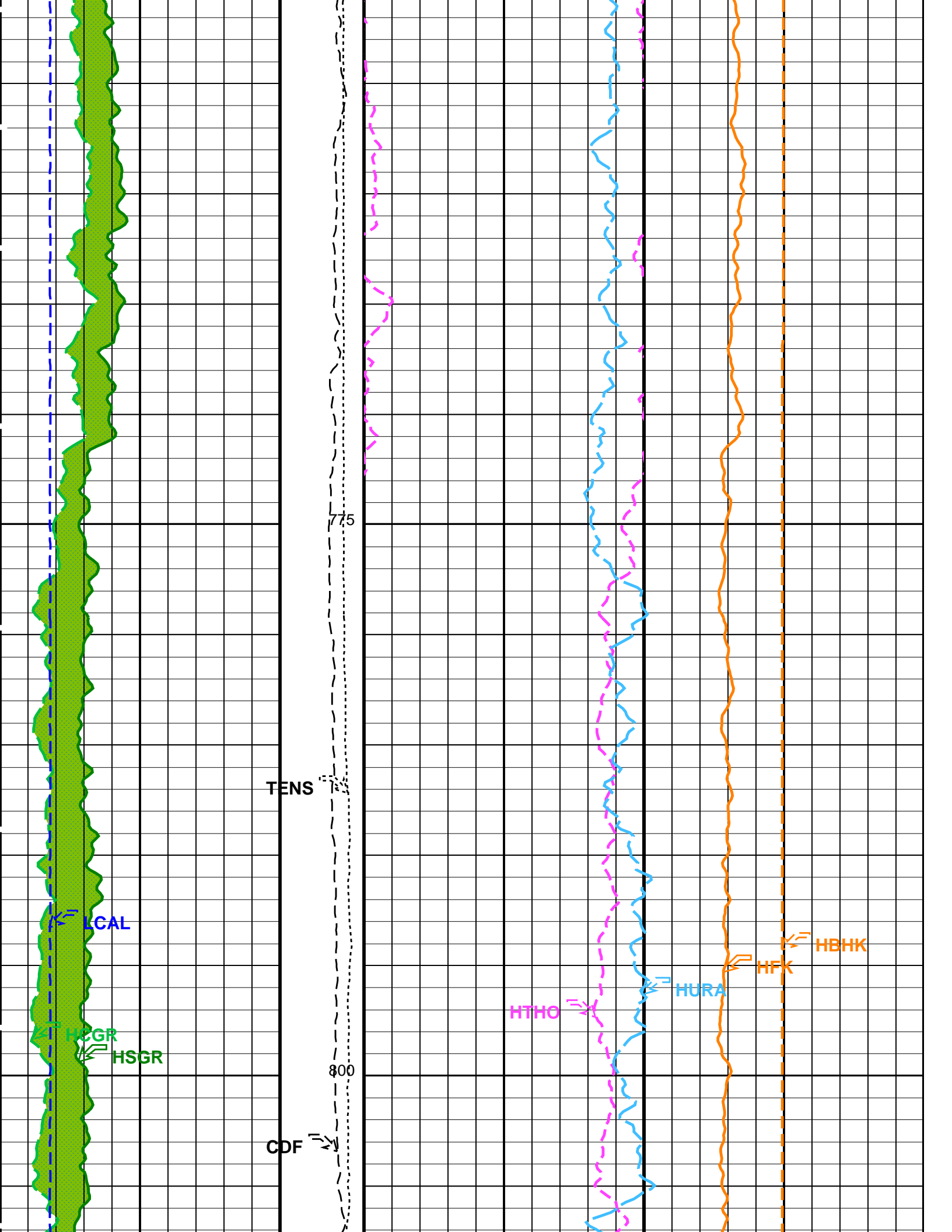


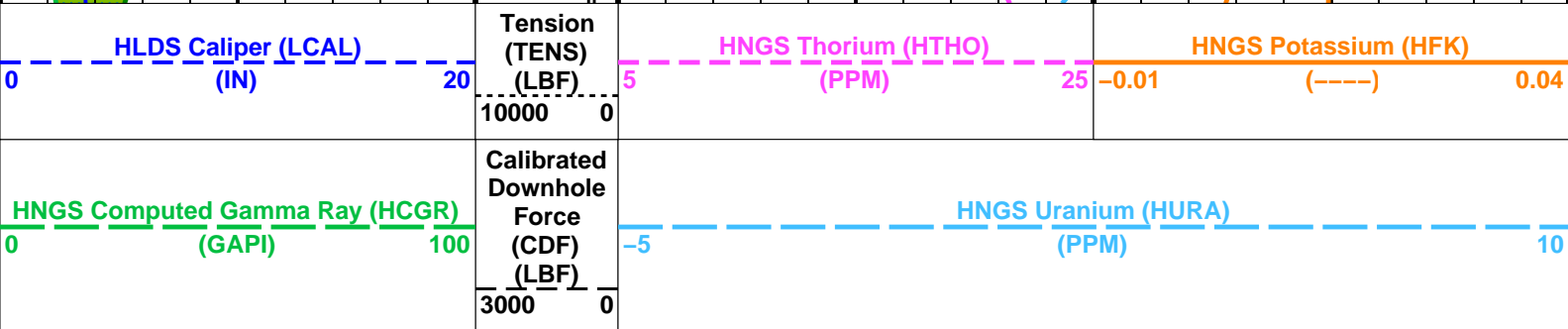
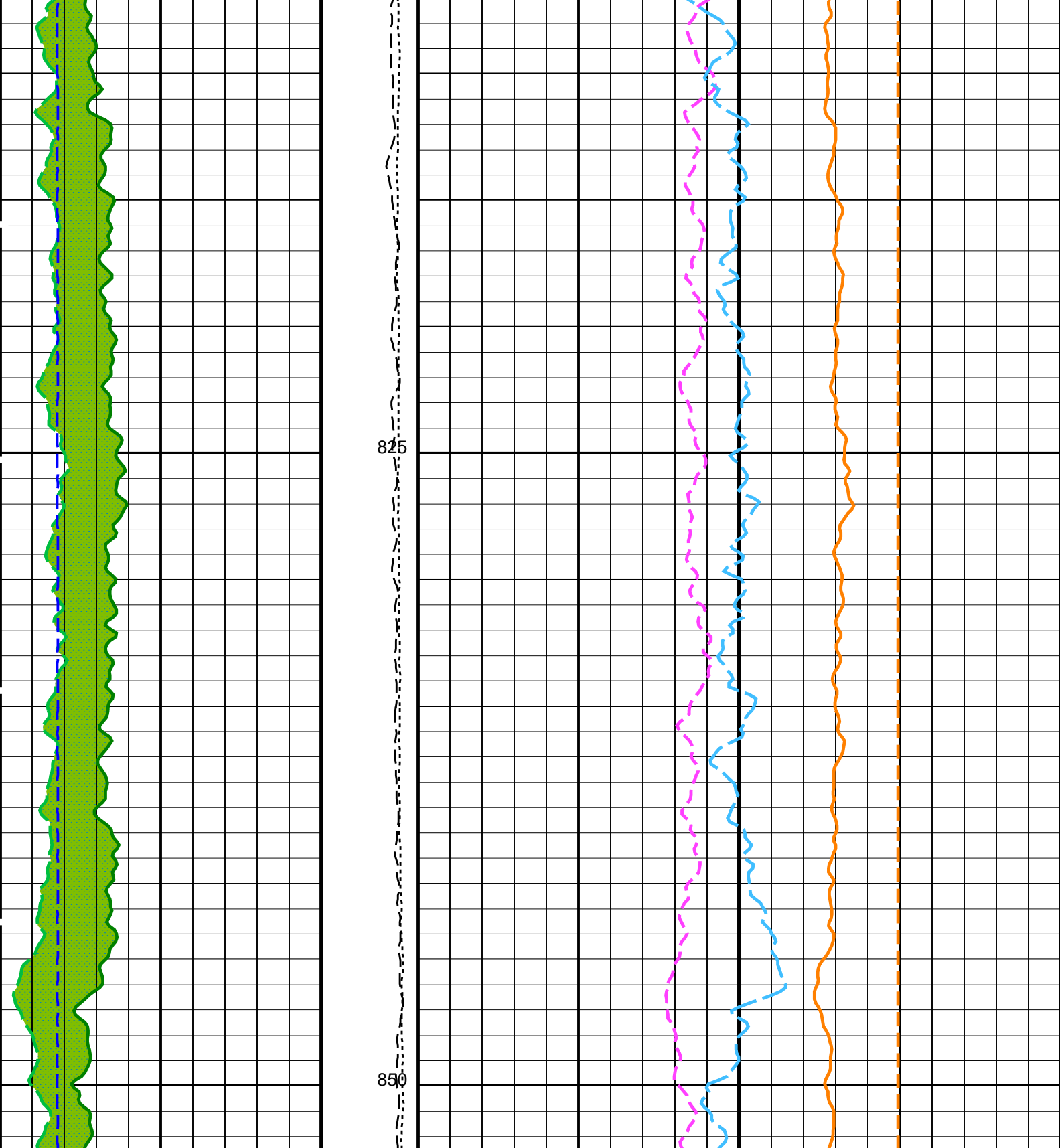












Area1
From HCGR to HSGR

Flipped Downlog. Caliper Closed

HNGS Borehole Potassium (HBHK)
(-----)

From Hook to Hook		Clipped Downlog, Caliper, Slotted		0.00 () 0.00						
HNGS Spectroscopy Gamma Ray (HSGR)										
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								
GCSE	Generalized Caliper Selection	BS								
APS-C: Accelerator-Porosity Tool										
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	-0.00112198								
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	1.12768								
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.999754								
EDTC-B: Enhanced DTS Cartridge										
BHS	Borehole Status	OPEN								
GCSE	Generalized Caliper Selection	BS								
System and Miscellaneous										
BS	Bit Size	9.875	IN							
DO	Depth Offset for Playback	0.0	M							
PP	Playback Processing	NORMAL								
Format: HNGSYields		Vertical Scale: 1:200		Graphics File Created: 18-Sep-2015 15:06						
OP System Version: 19C0-187										
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187							
HLDS	19C0-187	LDSC-B	19C0-187							
APS-C	19C0-187	HNGC-B	19C0-187							
HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB							
Input DLIS Files										
DEFAULT	Flip_MSS_LDEO_HRLA_047PUP	PRODUCER	18-Sep-2015 15:04	852.5 M	-47.2 M					
Output DLIS Files										
DEFAULT	MSS_LDEO_HRLA_LDL_048PUP	FN:52	PRODUCER	18-Sep-2015 15:06						
Input DLIS Files										
DEFAULT	Flip_MSS_LDEO_HRLA_047PUP	PRODUCER	18-Sep-2015 15:04	852.5 M	-47.2 M					
Output DLIS Files										
DEFAULT	MSS_LDEO_HRLA_LDL_048PUP	FN:52	PRODUCER	18-Sep-2015 15:06	852.5 M -47.2 M					

OP System Version: 19C0-187

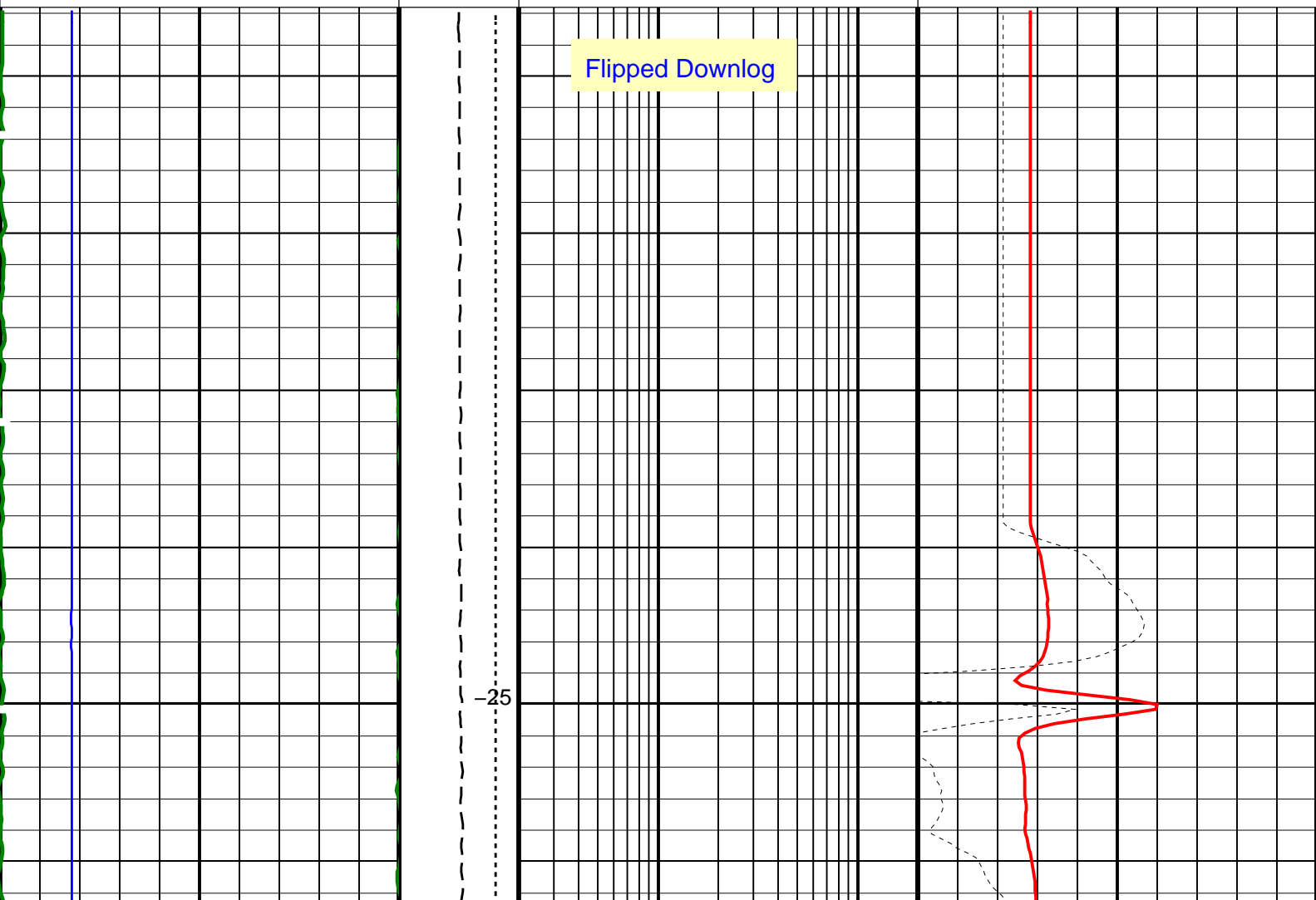
MSS_LDEO-A 19C0-187
HLDS 19C0-187
APS-C 19C0-187
HNGS-BA 19C0-187

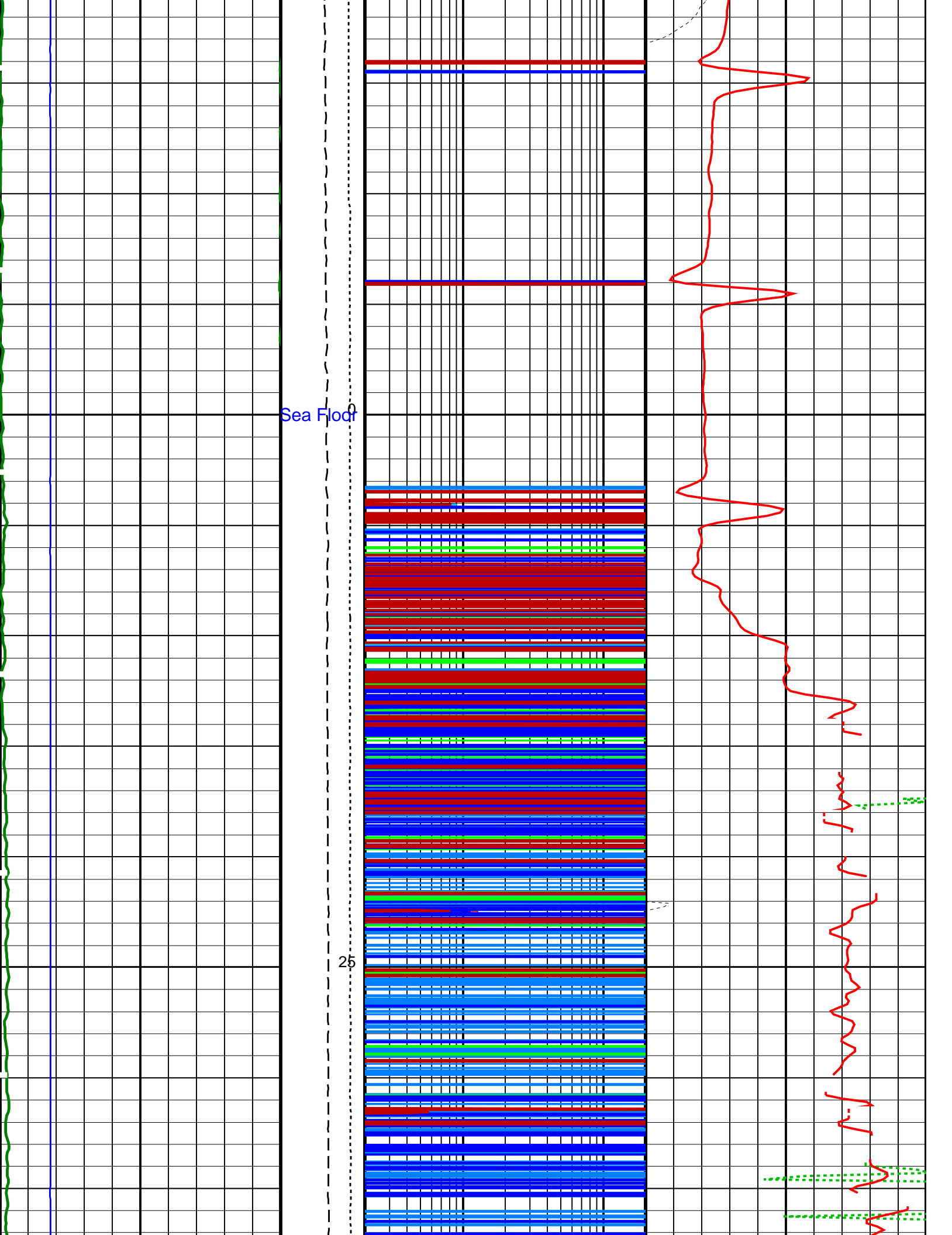
HRLT-B 19C0-187
LDSC-B 19C0-187
HNGC-B 19C0-187
EDTC-B SKK-5169-EDTCB

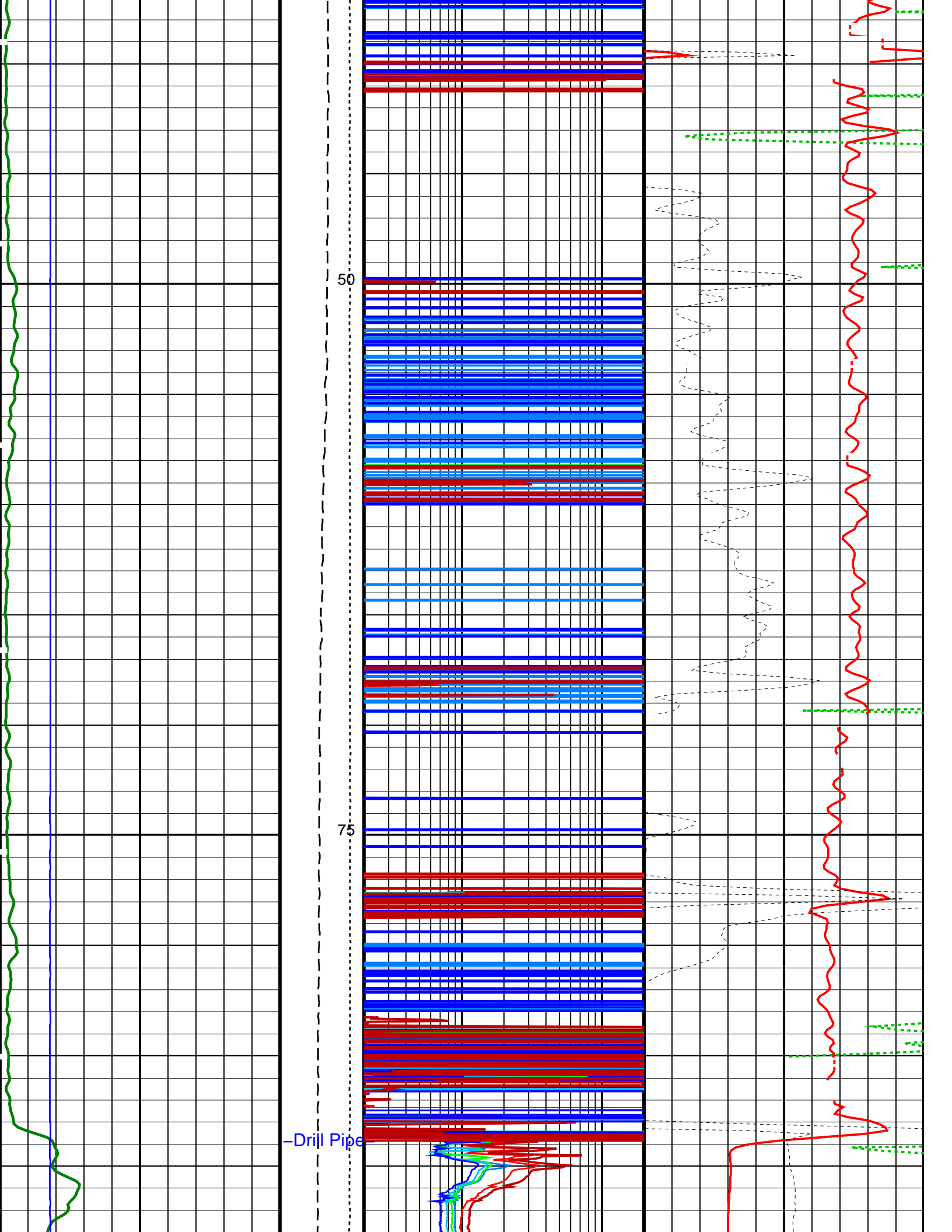
PIP SUMMARY

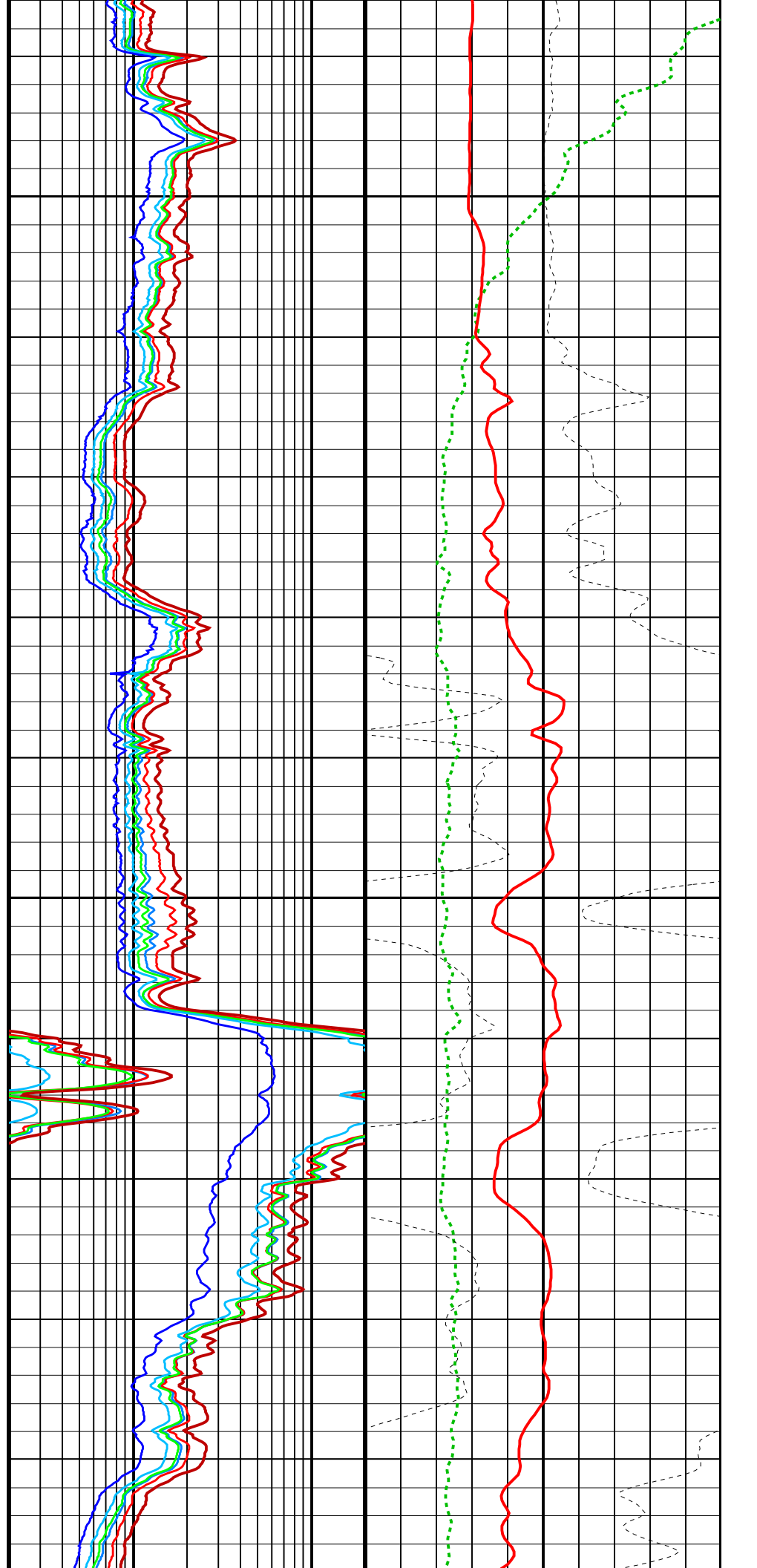
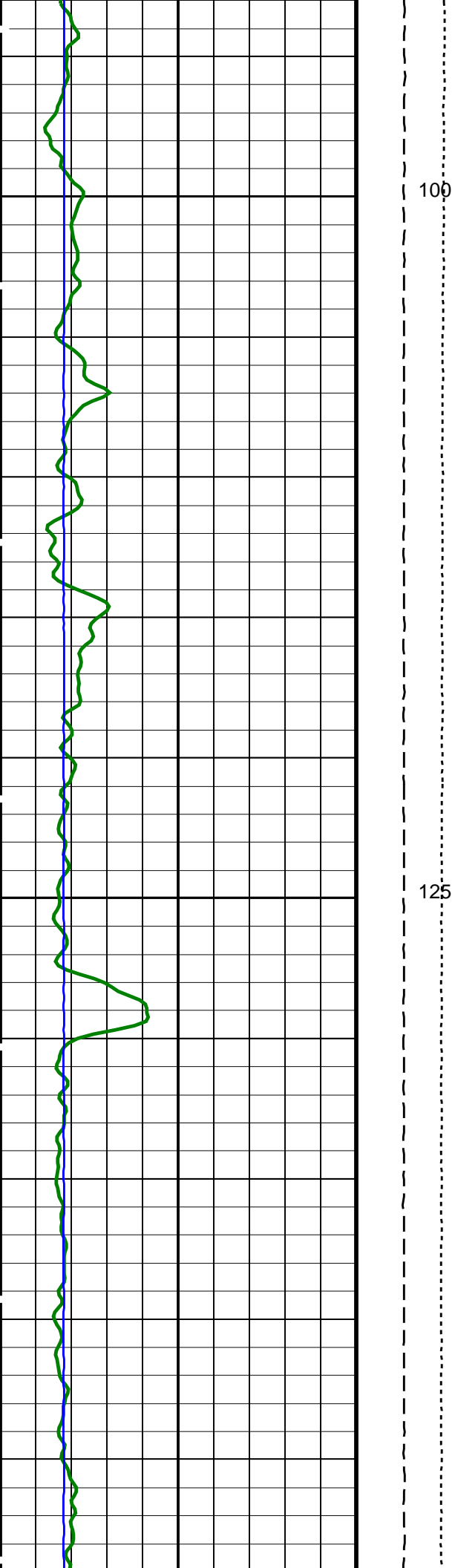
Time Mark Every 60 S

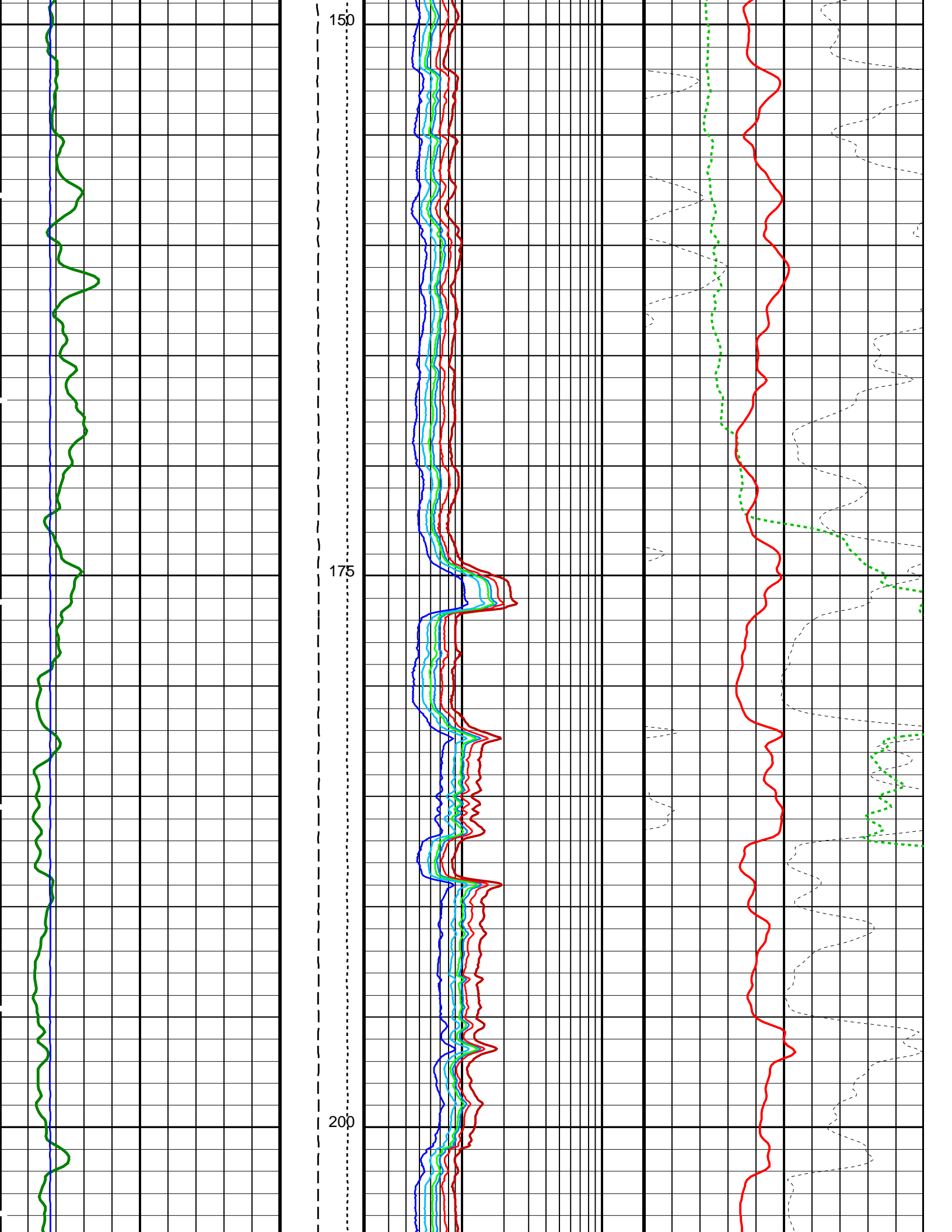
		HRLT True Resistivity (RT_HRLT)					
		0.2	(OHMM) 20				
		HRLT Resistivity 1 (RLA1)					
		0.2	(OHMM) 20				
		HRLT Resistivity 2 (RLA2)					
		0.2	(OHMM) 20				
HRLT Resistivity 3 (RLA3)		HLDS Bulk Density Correction (DRH)					
0.2	(OHMM) 20	-0.25	(G/C3)	0.25			
HNGS Spectroscopy Gamma Ray (HSGR)		Calibrated Downhole Force (CDF) (LBF)	HRLT Resistivity 5 (RLA5)		HLDS Bulk Density (RHOM)		
0	(GAPI) 100		0.2	(OHMM) 20	0	(G/C3) 4	
		3000	0				
HLDS Caliper (LCAL)		Tension (TENS) (LBF)	HRLT Resistivity 4 (RLA4)		HLDS Long Spaced Photoelectric Effect (PEFL)		
0	(IN) 20		0.2	(OHMM) 20	0	(----) 10	
		10000	0				

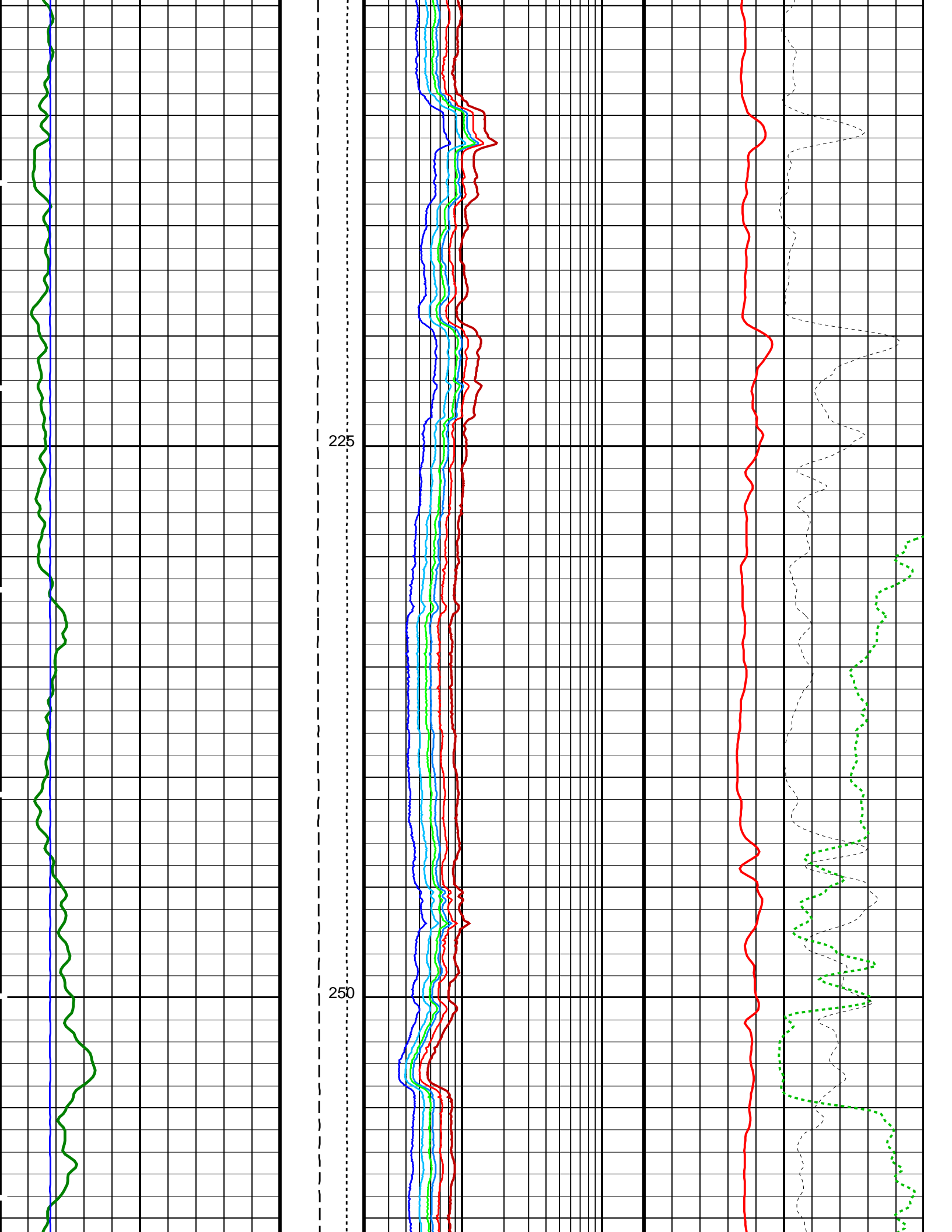


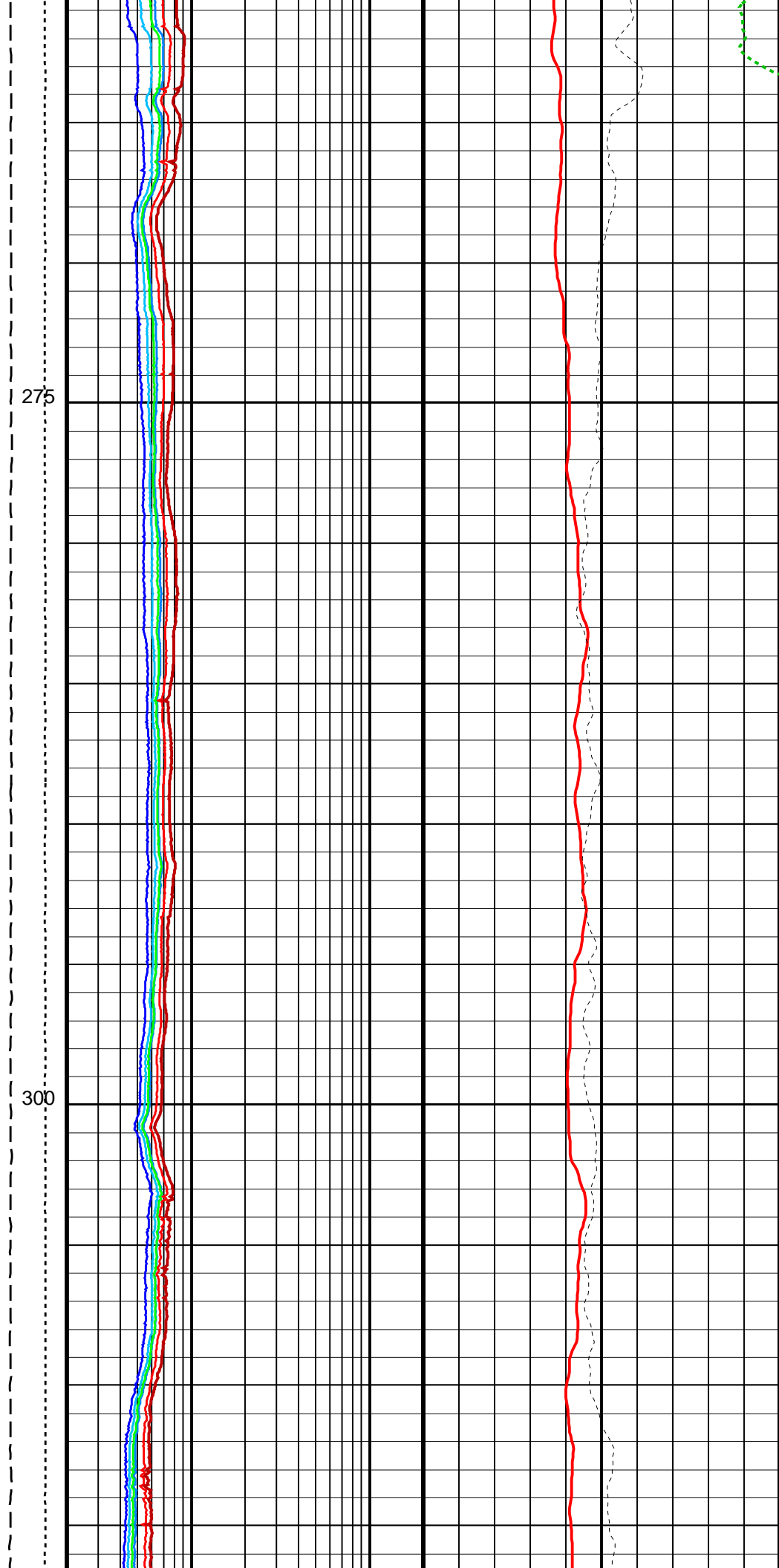
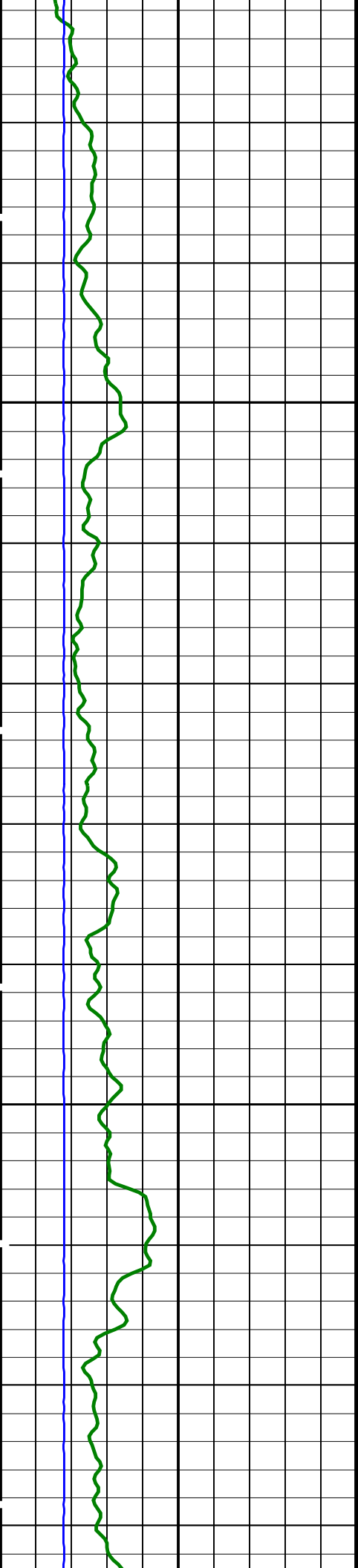


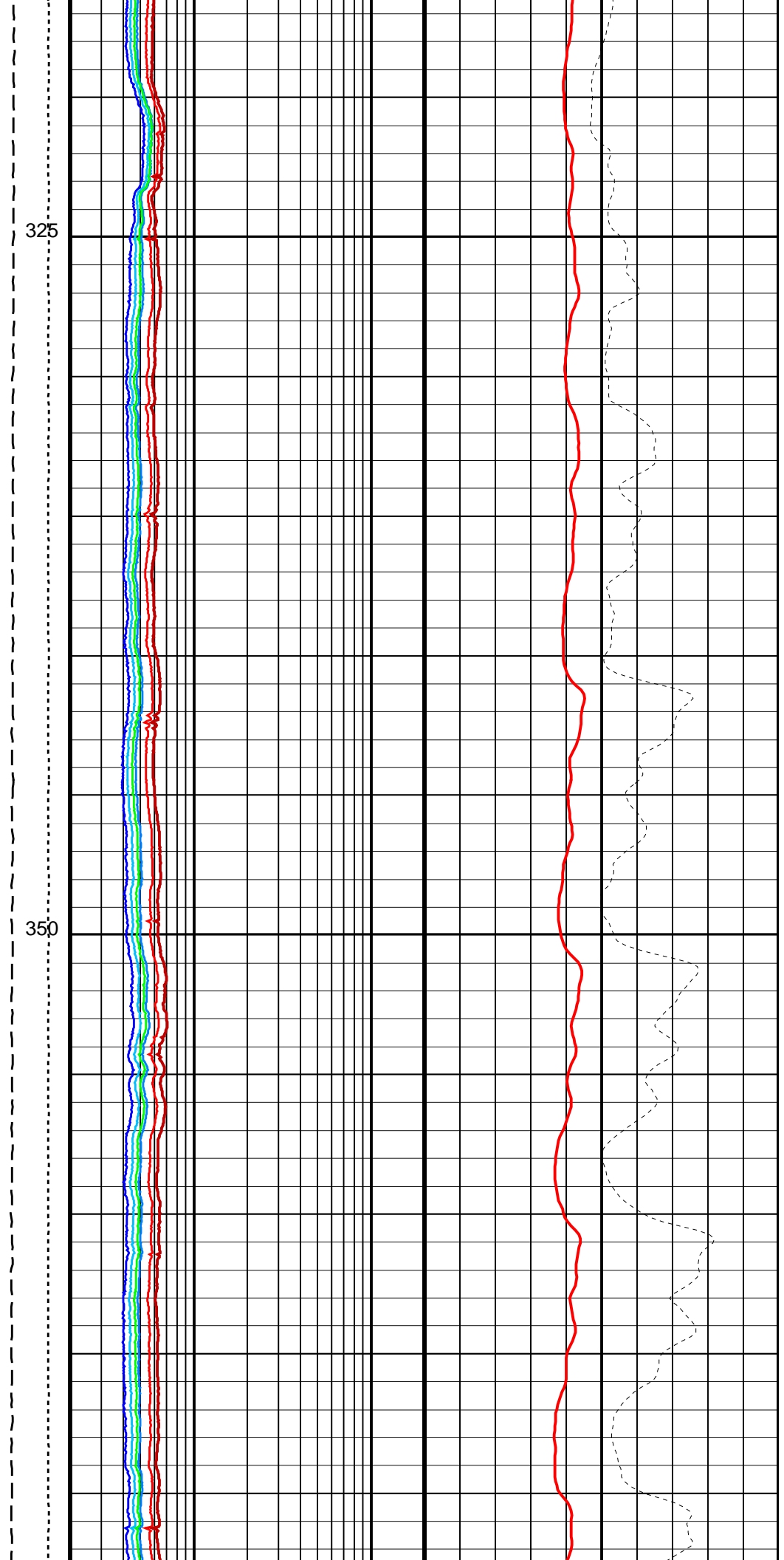
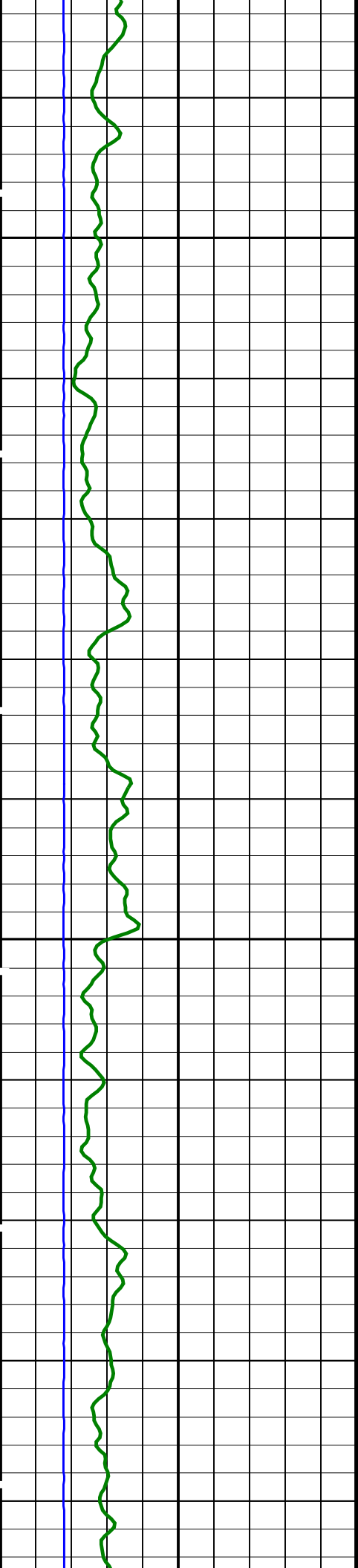


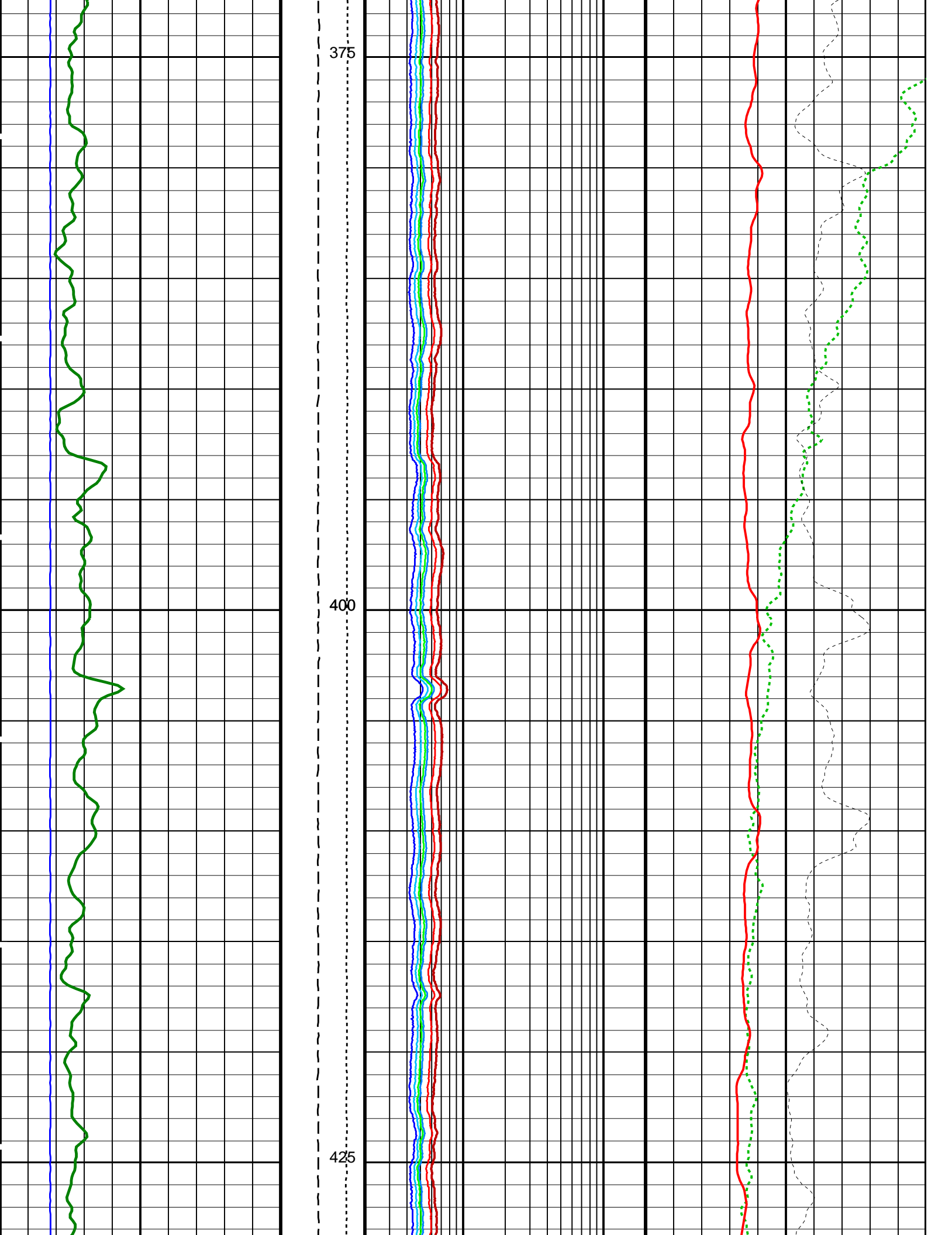


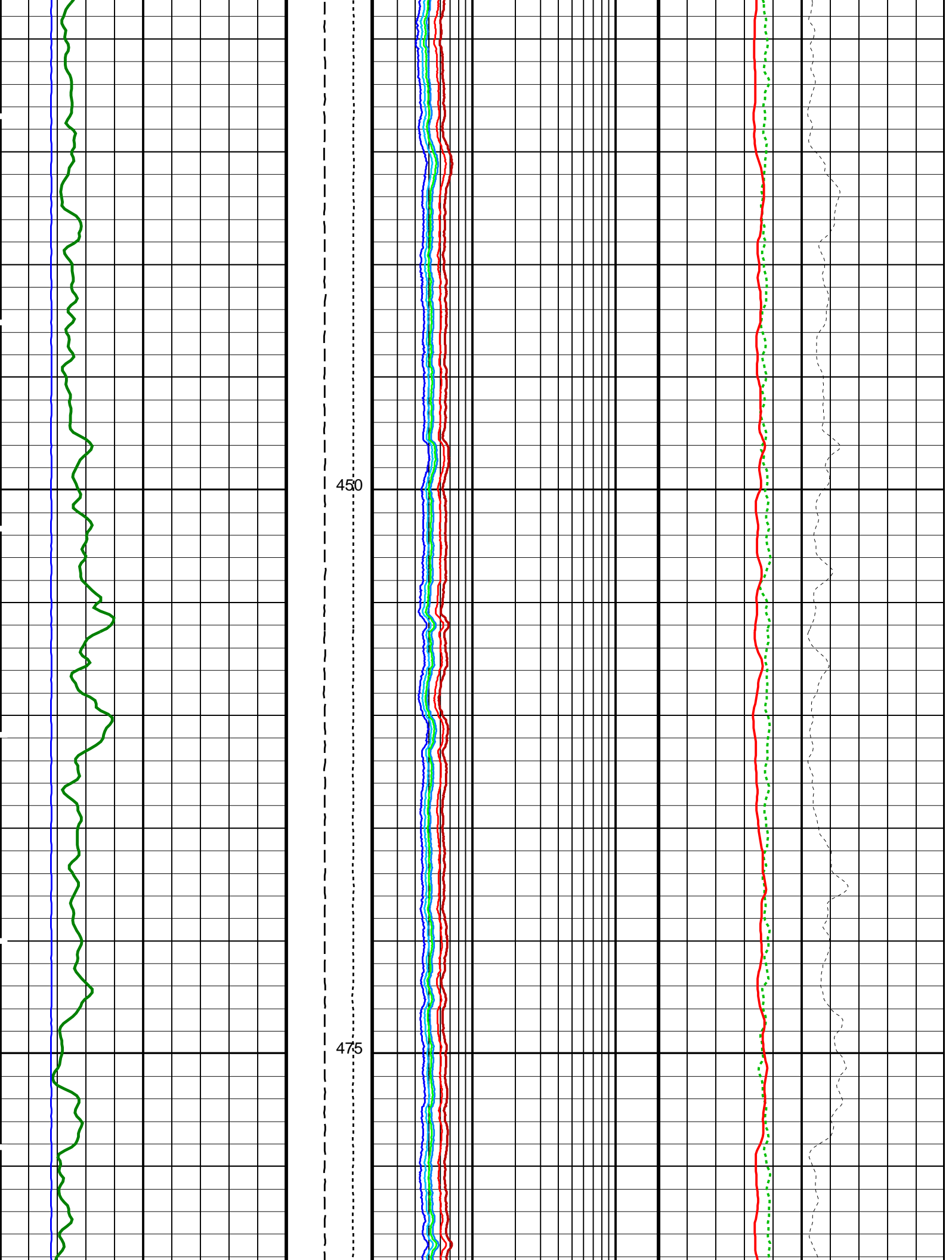


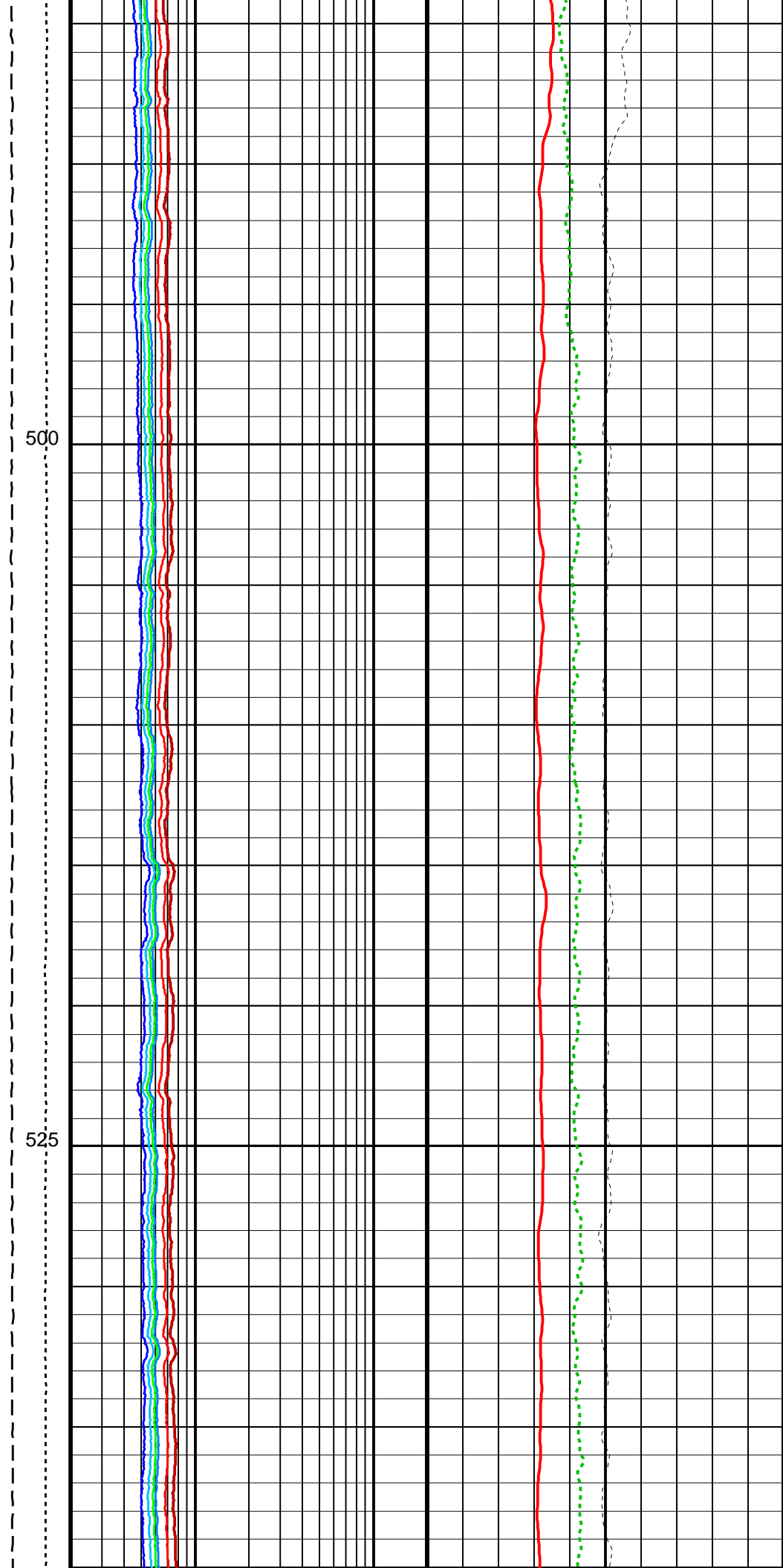
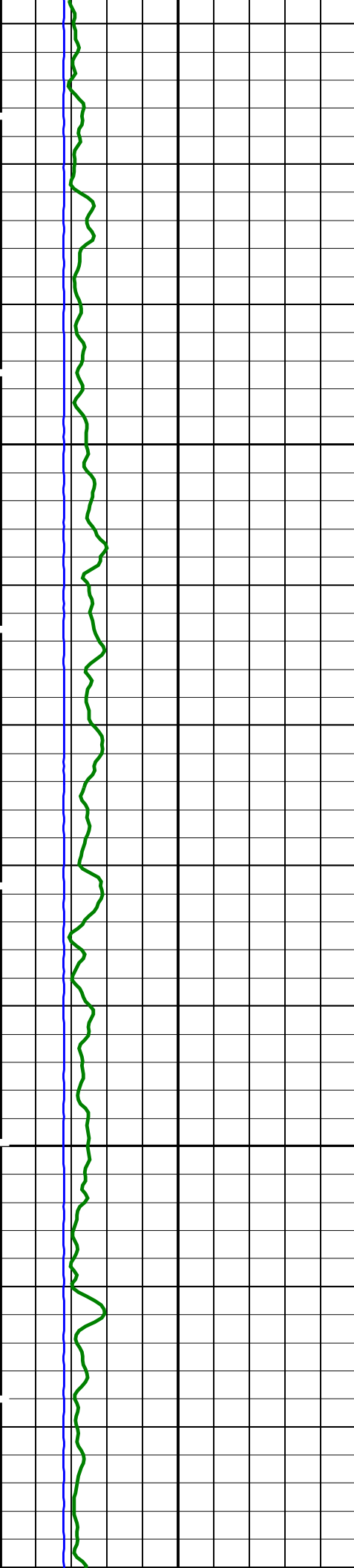


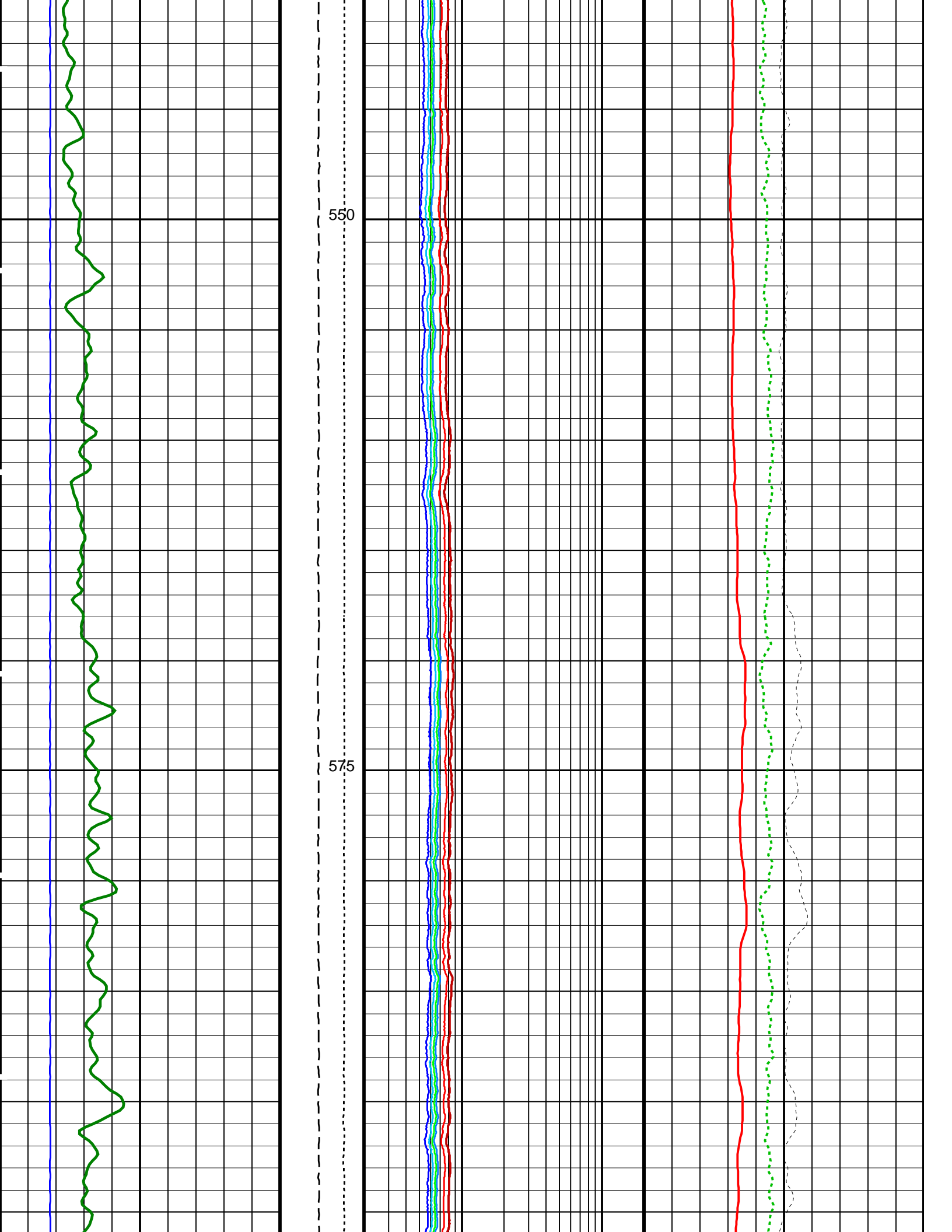


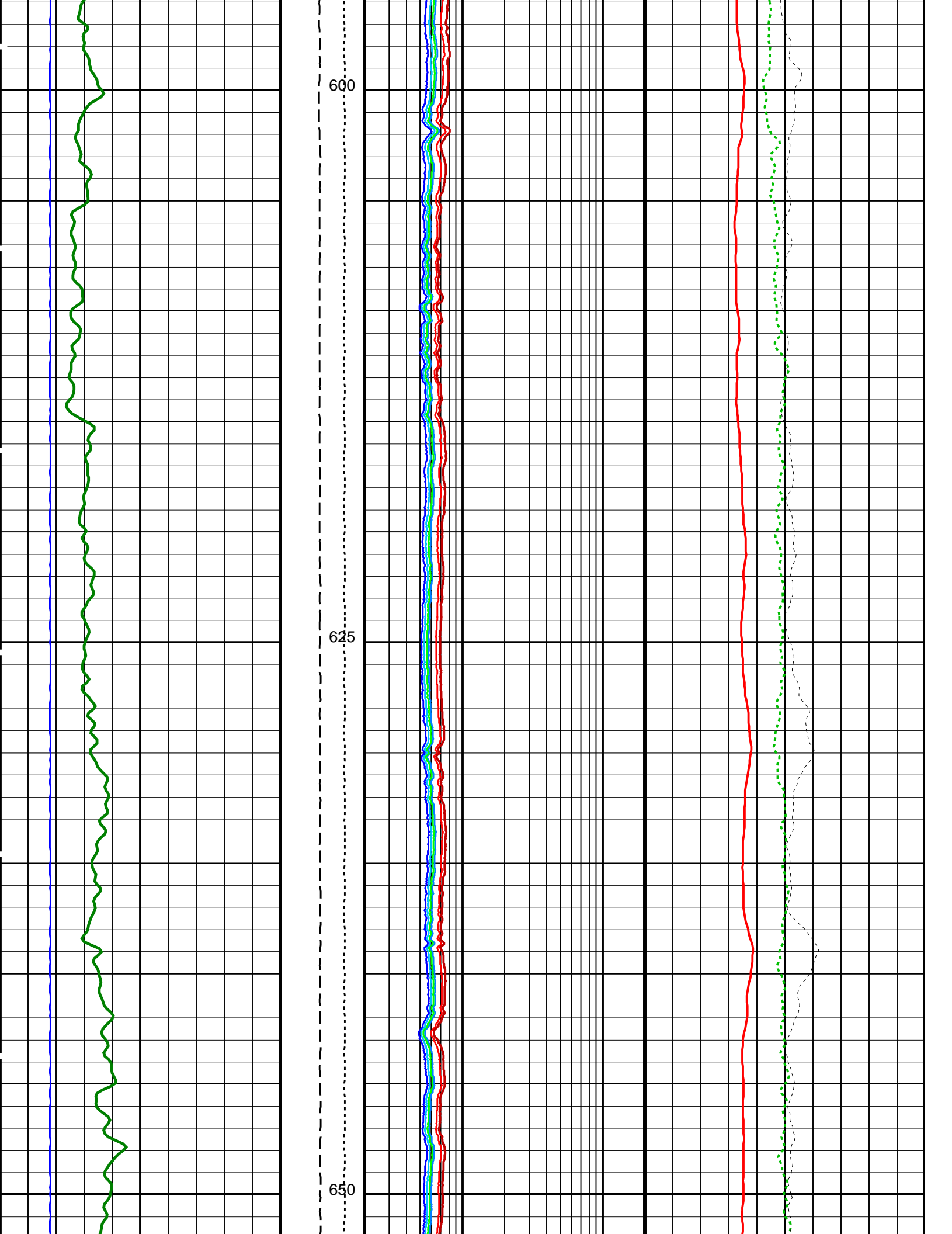


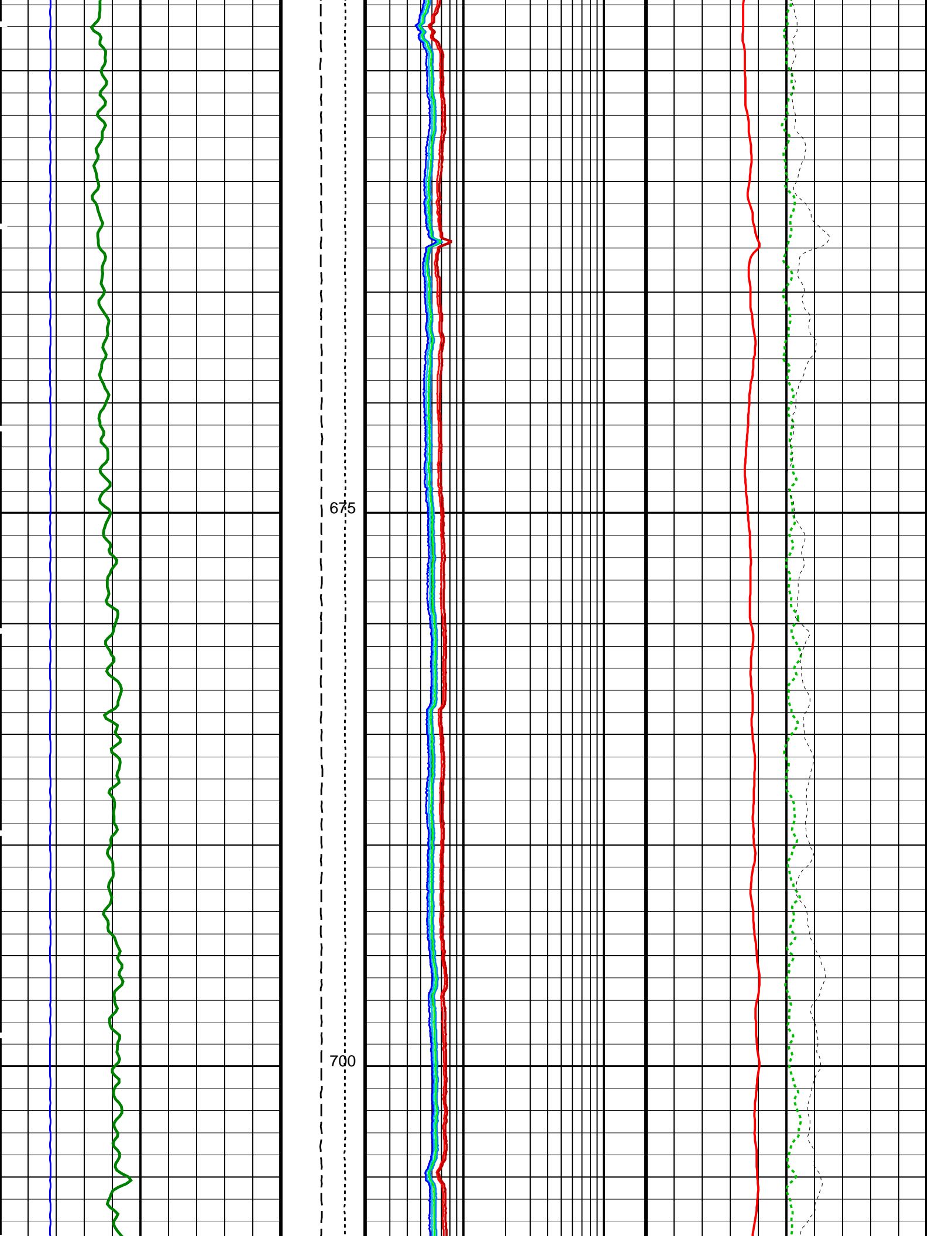


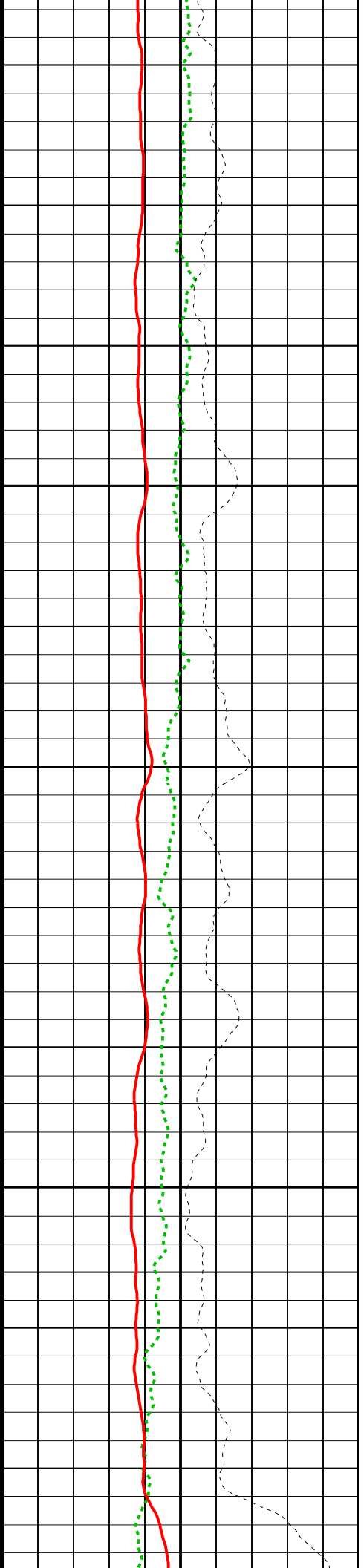
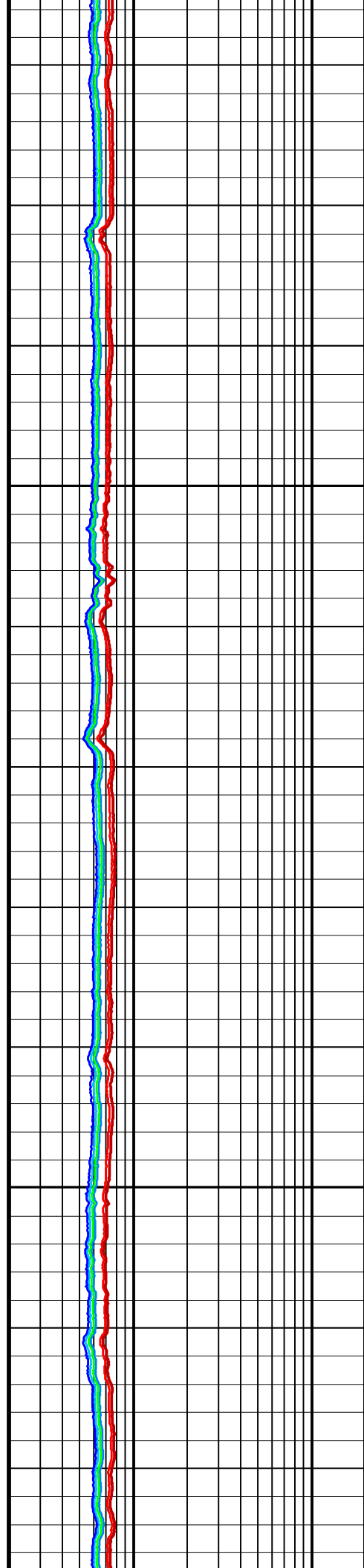
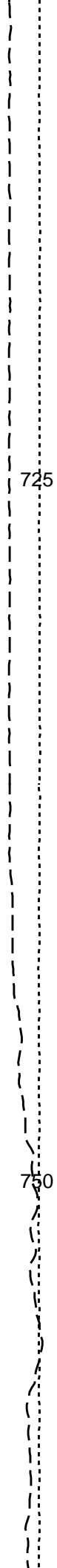
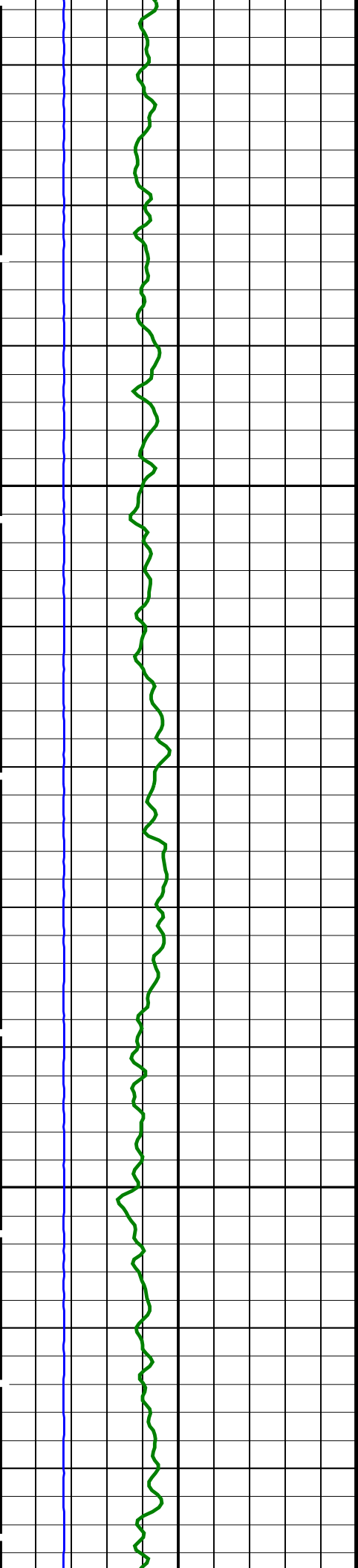


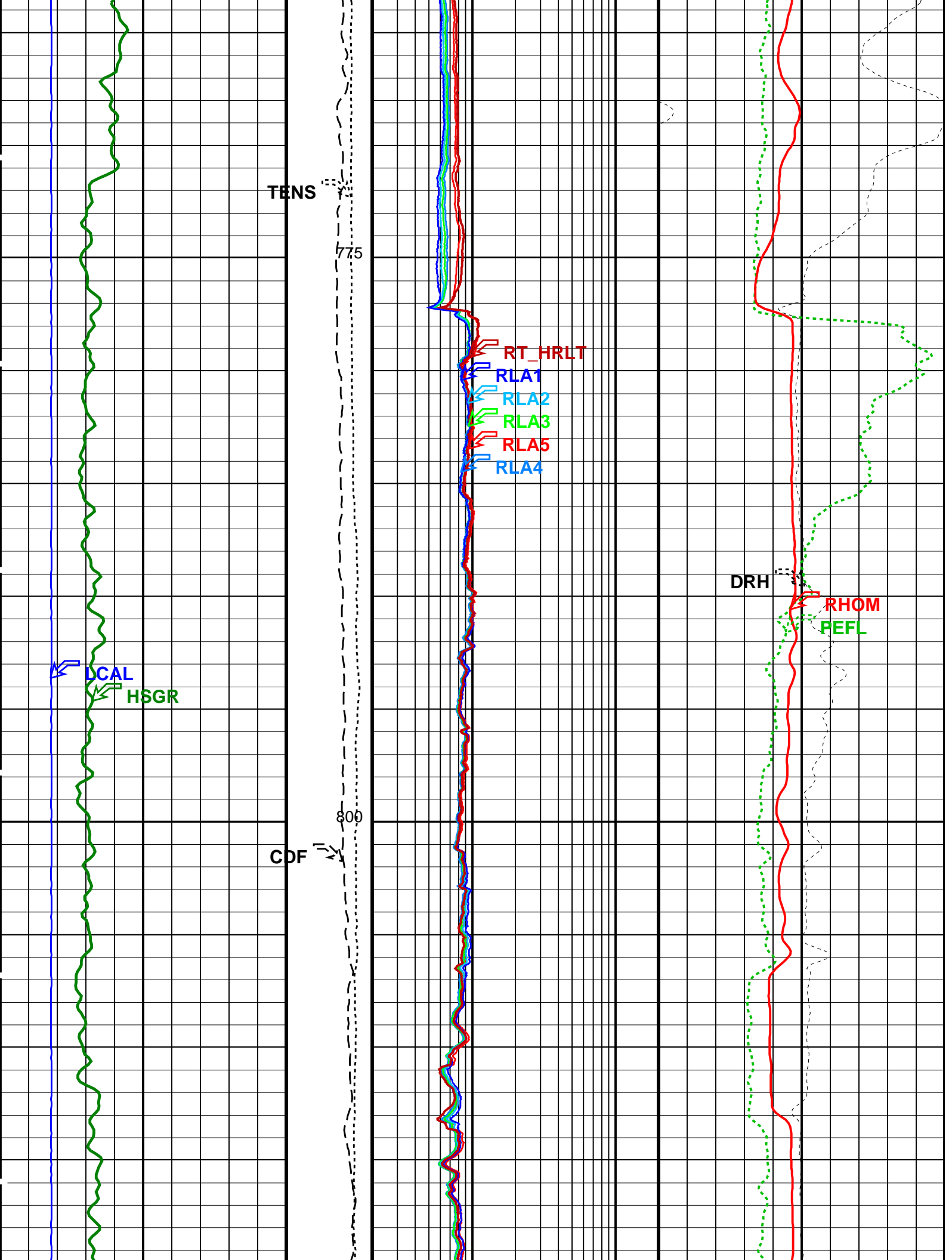










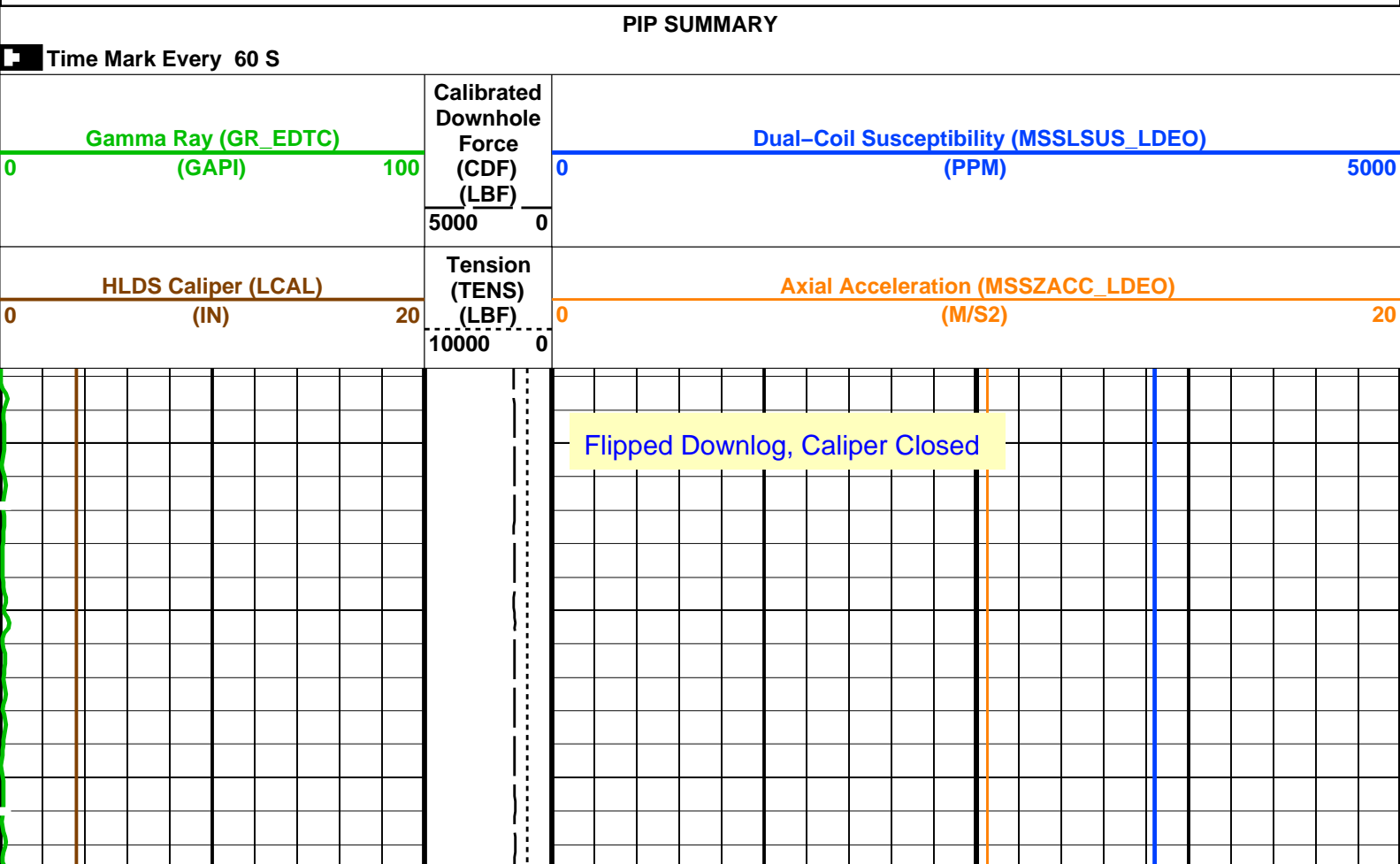


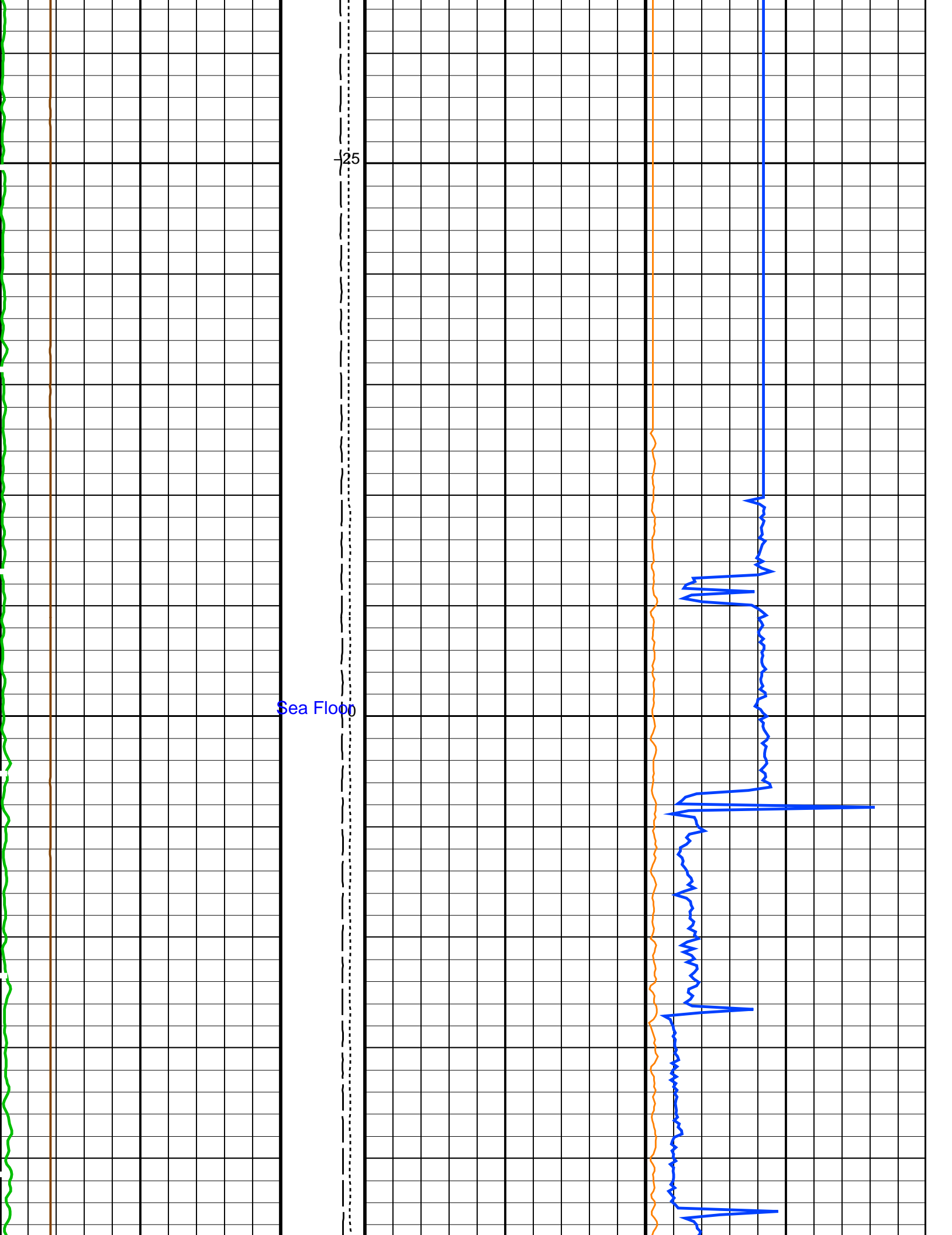
DLIS Name	Description	Value	
HRLT-B: High Resolution Laterolog Array – B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	24.3635	DEGC
FREQ0	HRLT Frequency Index for Mode 0	32	
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	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCIINV	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.6	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	
APS-C: Accelerator-Porosity Tool			
	APS Software Version	0	
AASD	APS Thermal and Array Detectors High Voltage Setting	1938.41	V
ADSO	APS Array Detectors Data Source Switch	Both	
AFSD	APS Far Detector High Voltage Setting	2034.64	V
AHCS	APS Holesize Correction Source	GCSE	
AHSS	APS Holesize Correction Switch	ON	
AMTY	APS Environmental Corrections Mud Type	WaterBaseBarite	
ANSO	APS Near Detector High Voltage Setting	1700.34	V
ASOS	APS Standoff Correction Switch	ON	
ATSS	APS Temperature-Pressure-Salinity Correction Switch	OFF	
BHFL_APS	APS TNPH Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
FSAL	Formation Salinity	-50000	PPM
FSCO_APS	APS TNPH 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_APS	APS TNPH Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOB_APS	APS TNPH Mud Correction	BARI	

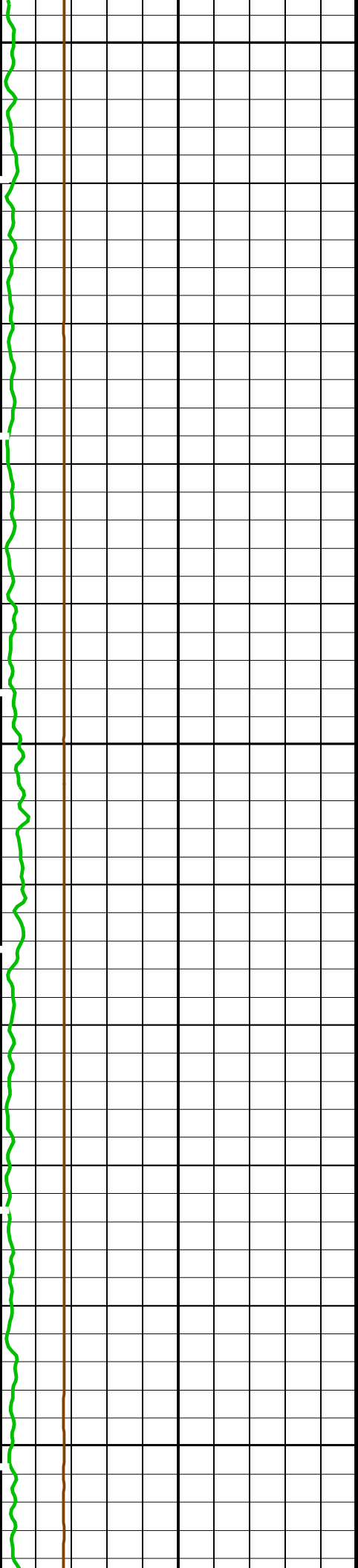
MWCO_APS	APS Near/Array Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
HNGB--BA: Hostile 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)	40	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	-0.00112198	
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	BARITE	
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	1.12768	
VBA2	HNGB Detector 2 Variable Barite Factor Running Average	0.999754	
EDTC--B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	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	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	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	9.875	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	1.32	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	
PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	900	M
TDD	Total Depth - Driller	950.00	M
TDL	Total Depth - Logger	950.00	M
TWC	Temperature of Connate Water Sample	87.78	DEGC

TWS		Temperature of Connate Water Sample		37.78	DEGC
Format: TripleCombo		Vertical Scale: 1:200		Graphics File Created: 18-Sep-2015 15:06	
OP System Version: 19C0-187					
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187		
HLDS	19C0-187	LDSC-B	19C0-187		
APS-C	19C0-187	HNGC-B	19C0-187		
HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB		
Input DLIS Files					
DEFAULT	Flip_MSS_LDEO_HRLA_047PUP	PRODUCER	18-Sep-2015 15:04	852.5 M	-47.2 M
Output DLIS Files					
DEFAULT	MSS_LDEO_HRLA_LDL_048PUP	FN:52	PRODUCER	18-Sep-2015 15:06	

Company: International Ocean Discovery Program				Well: Expedition 356, Site U1462 C	
Input DLIS Files					
DEFAULT	Flip_MSS_LDEO_HRLA_047PUP	PRODUCER	18-Sep-2015 15:04	852.5 M	-47.2 M
Output DLIS Files					
DEFAULT	MSS_LDEO_HRLA_LDL_048PUP	FN:52	PRODUCER	18-Sep-2015 15:06	852.5 M
OP System Version: 19C0-187					
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187		
HLDS	19C0-187	LDSC-B	19C0-187		
APS-C	19C0-187	HNGC-B	19C0-187		
HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB		



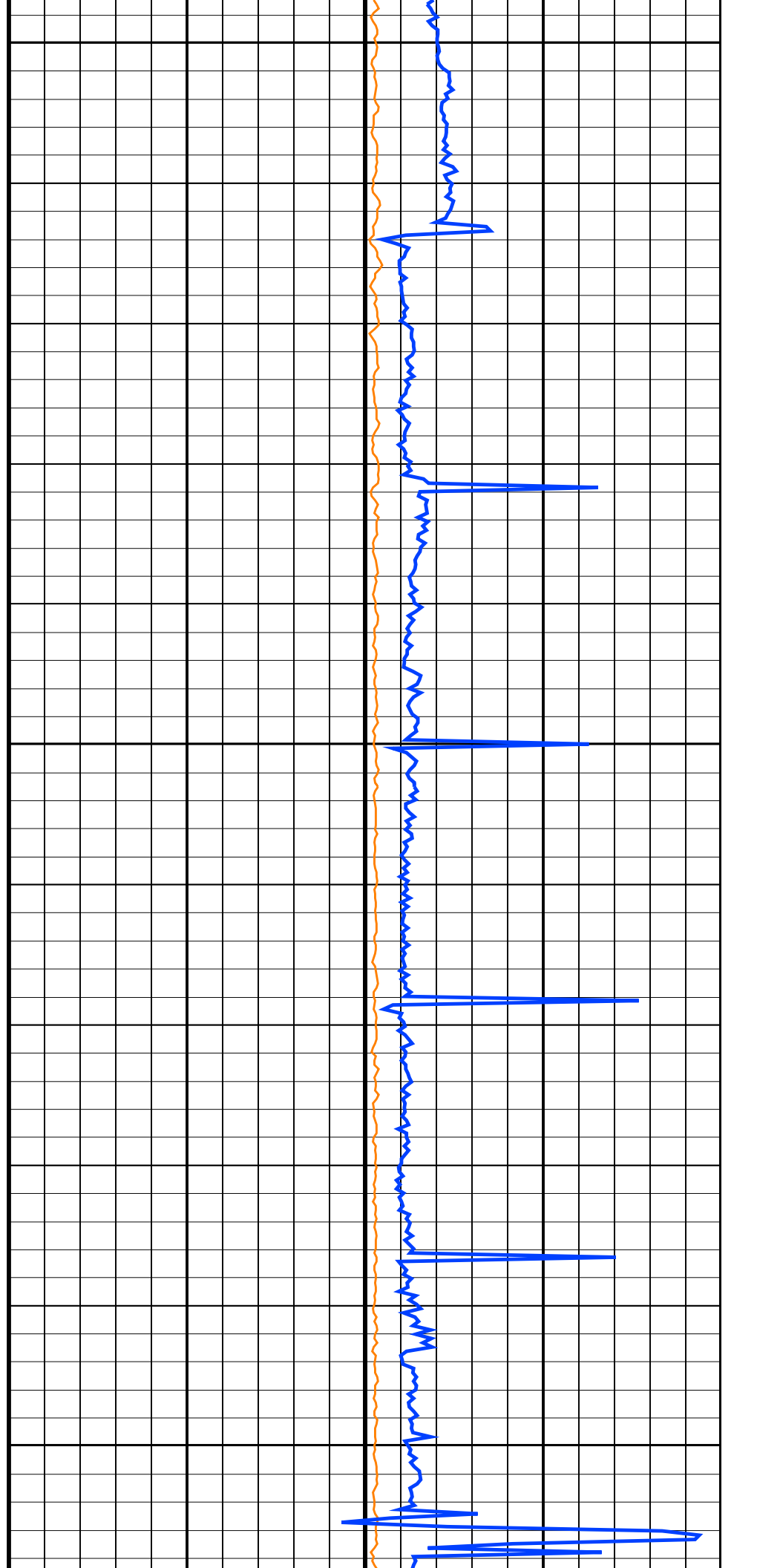


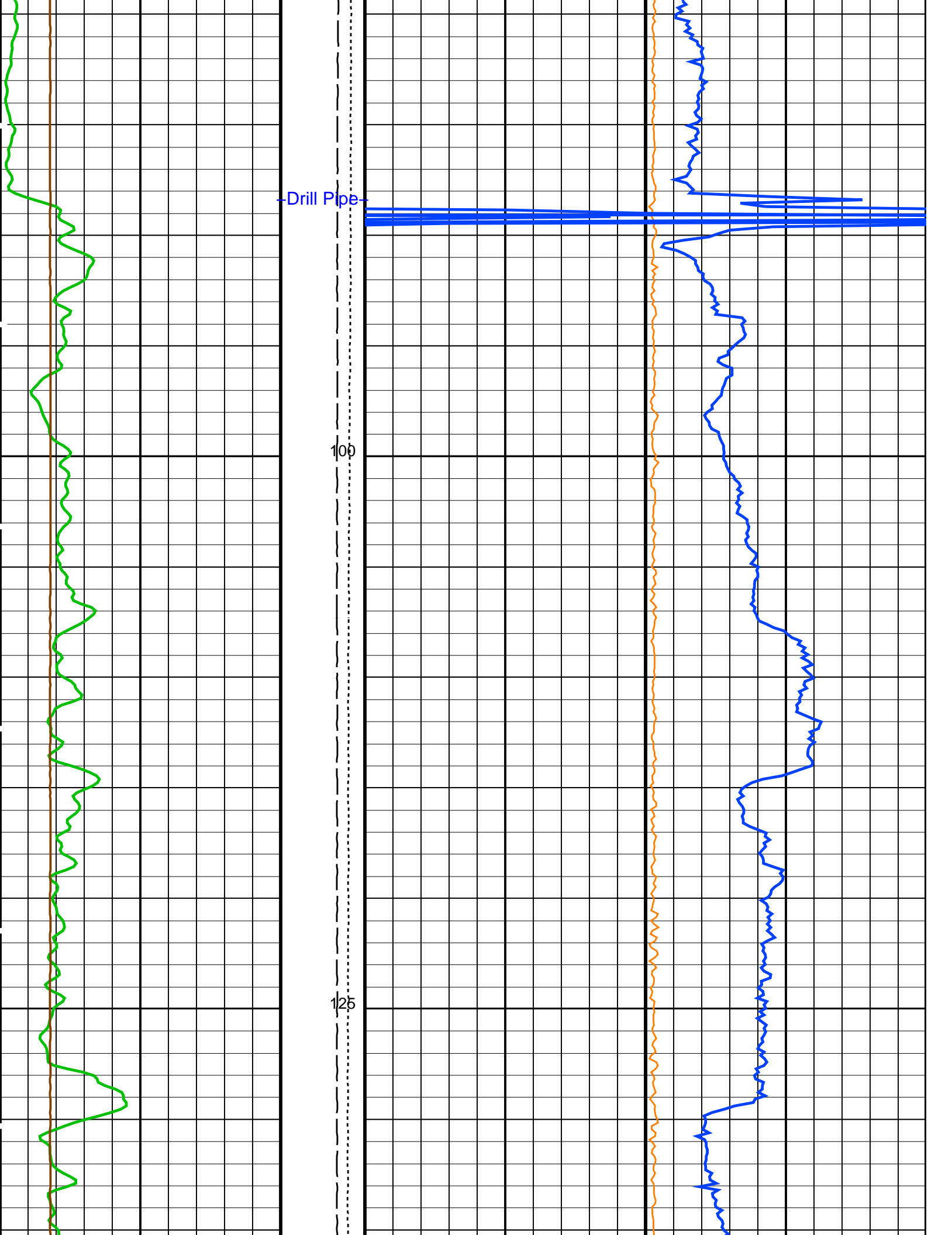


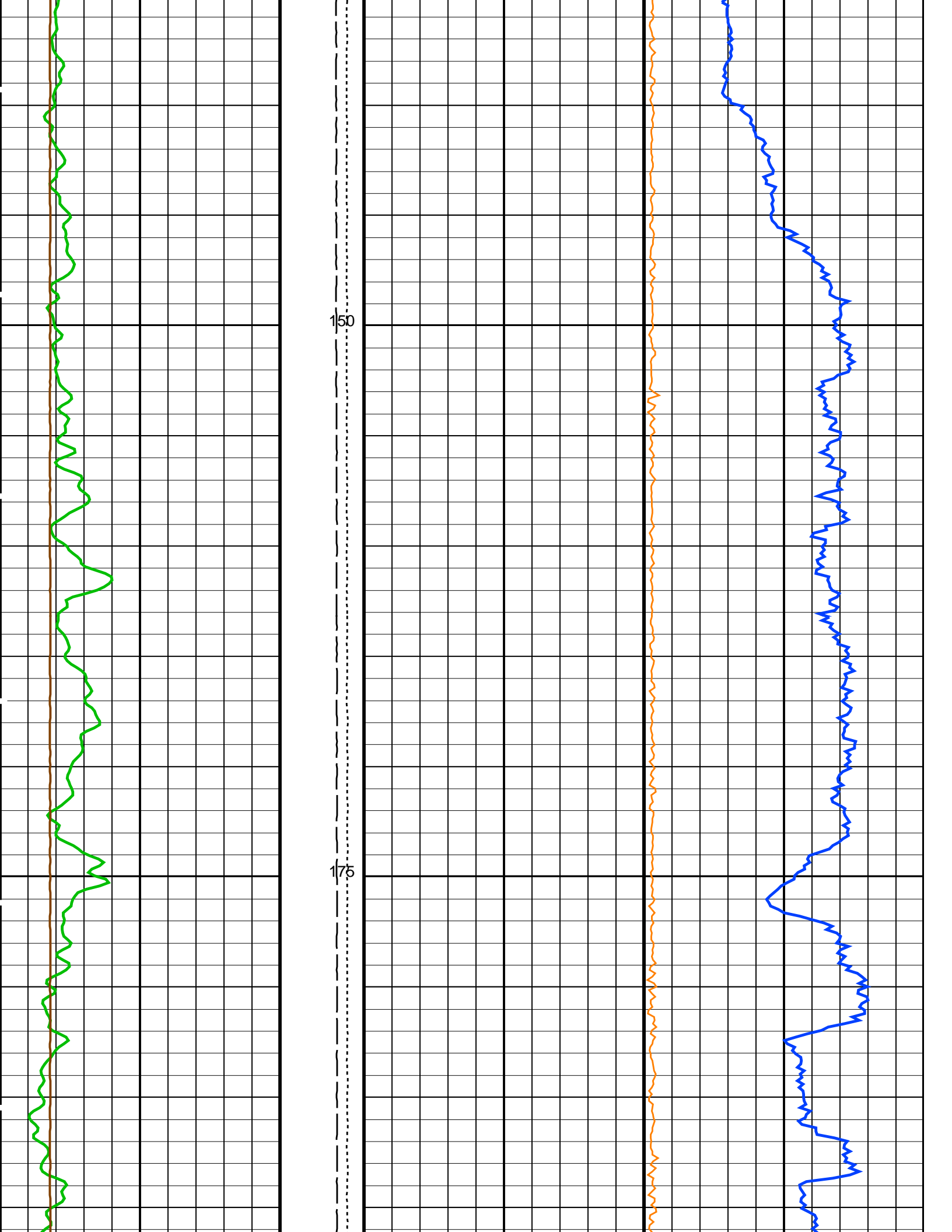
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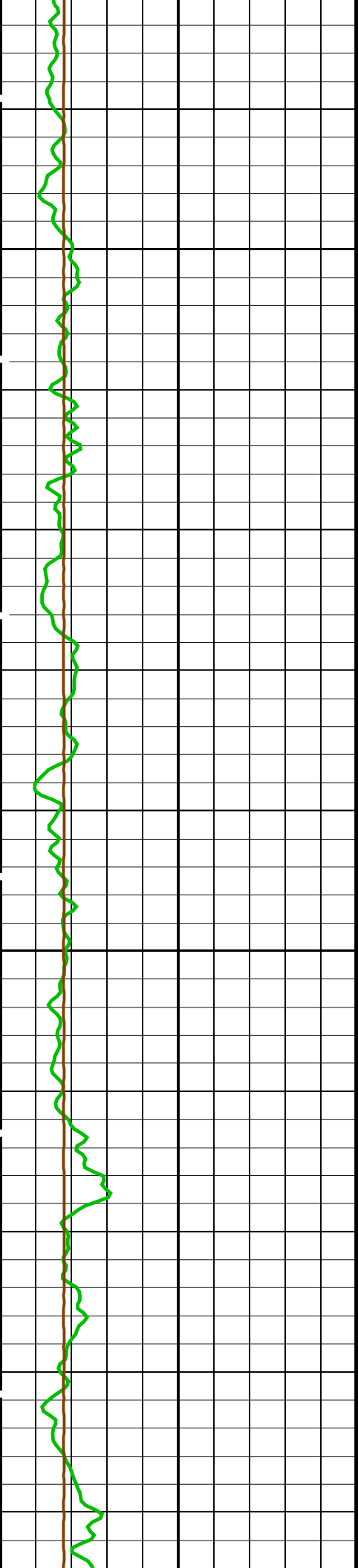
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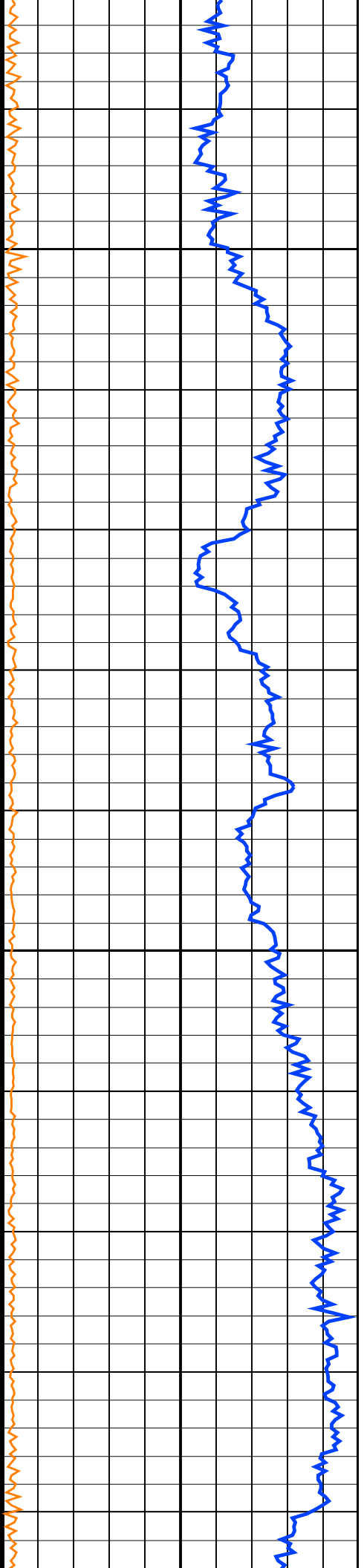
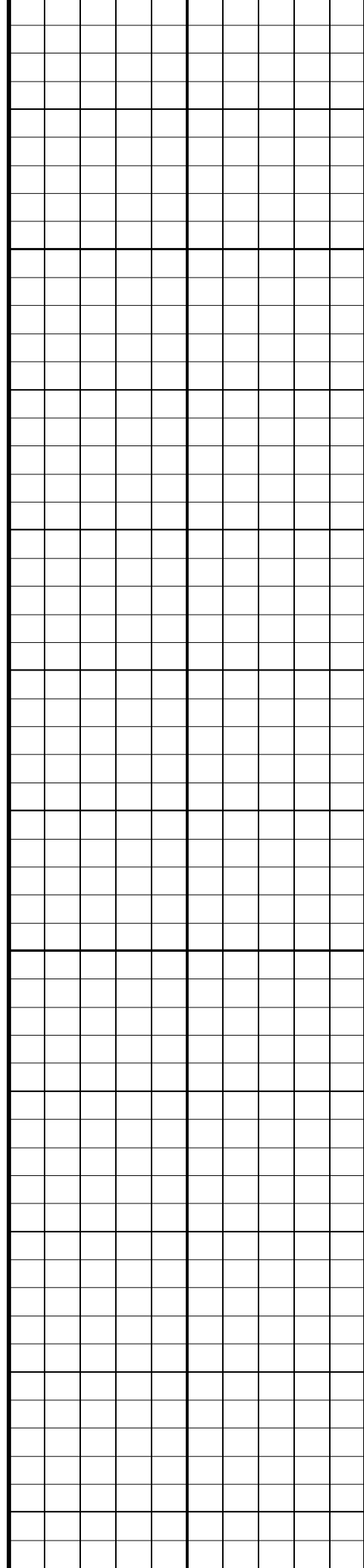


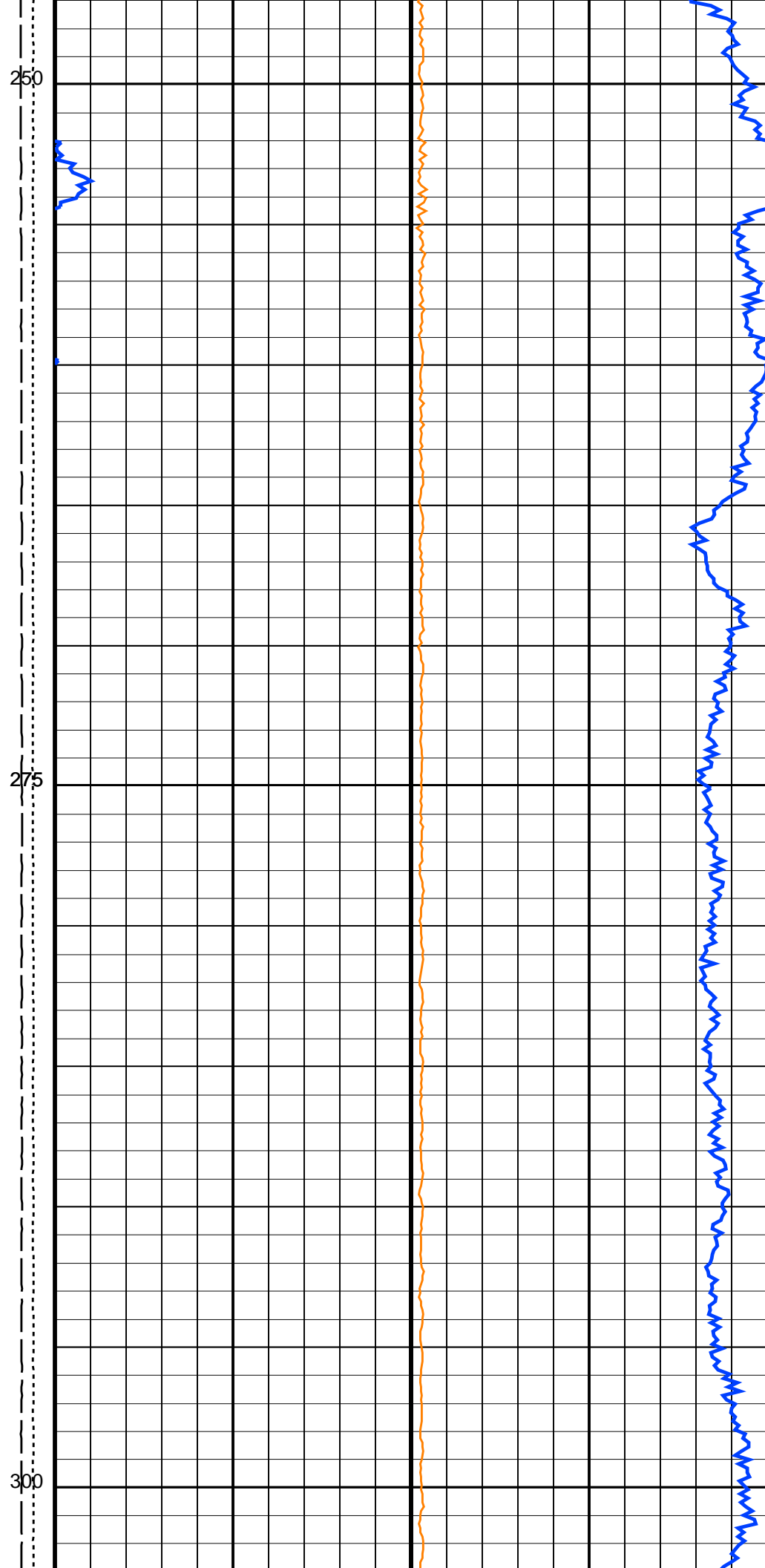
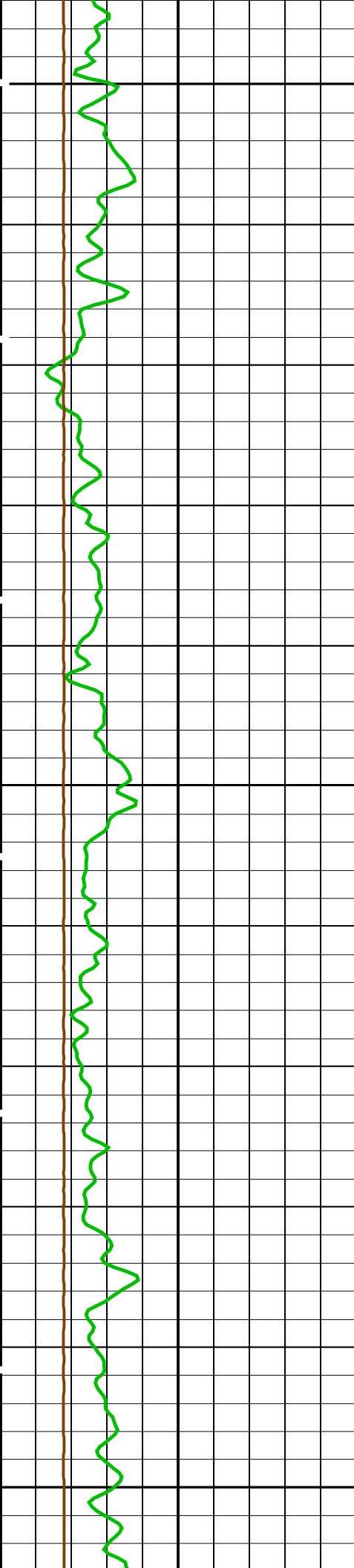


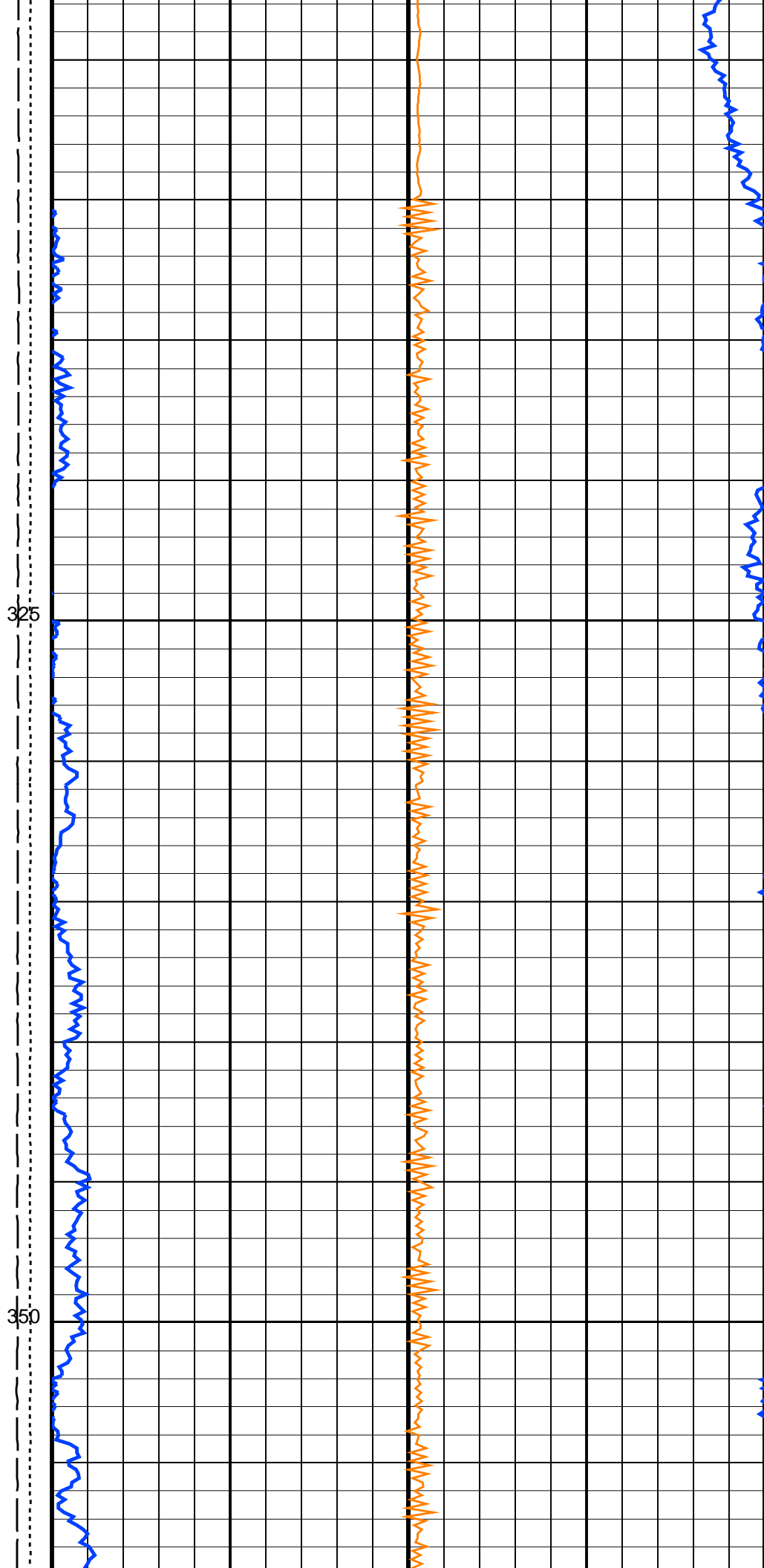
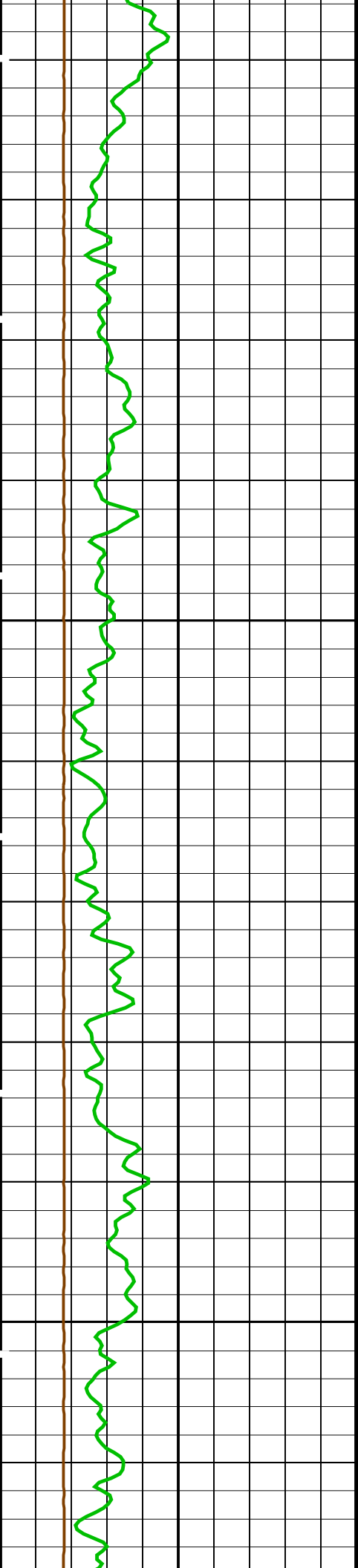


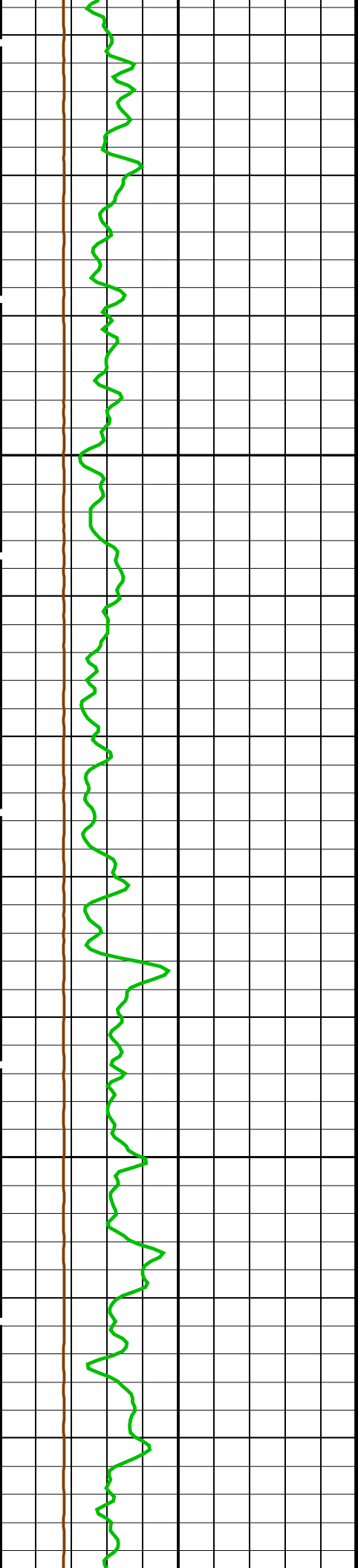
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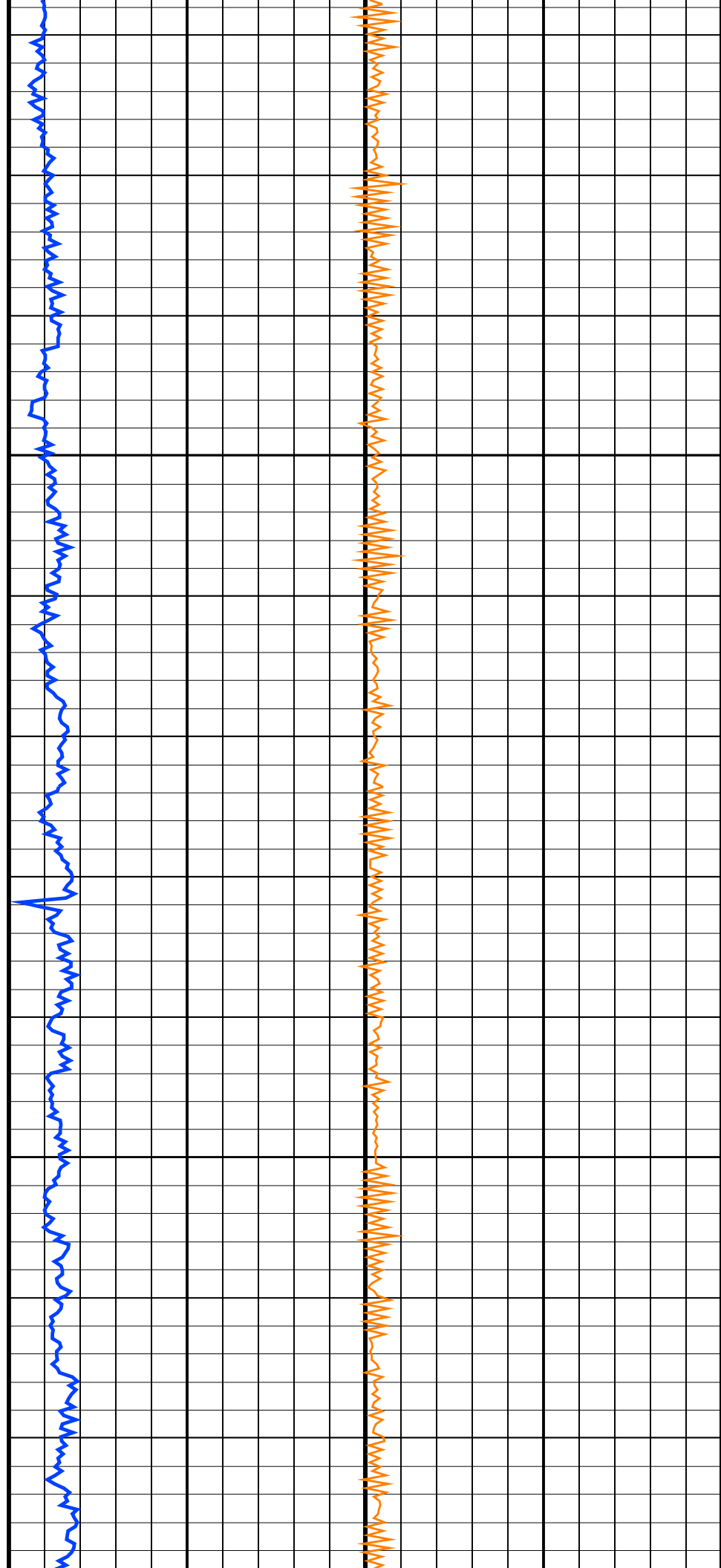


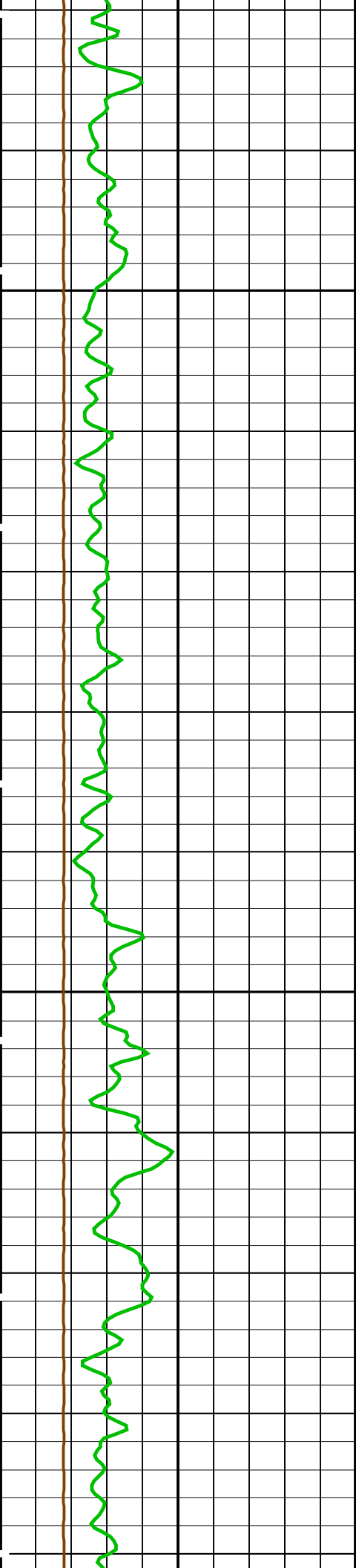






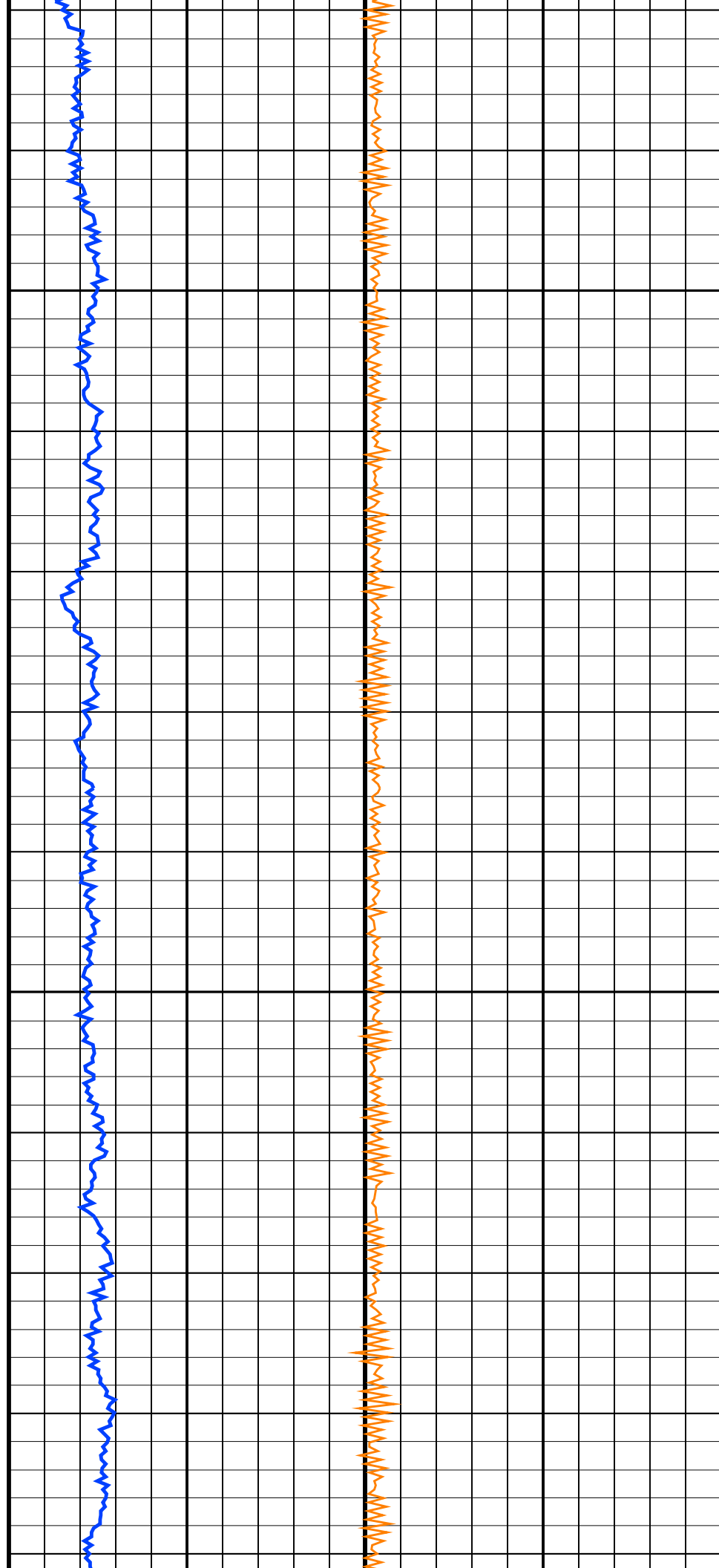
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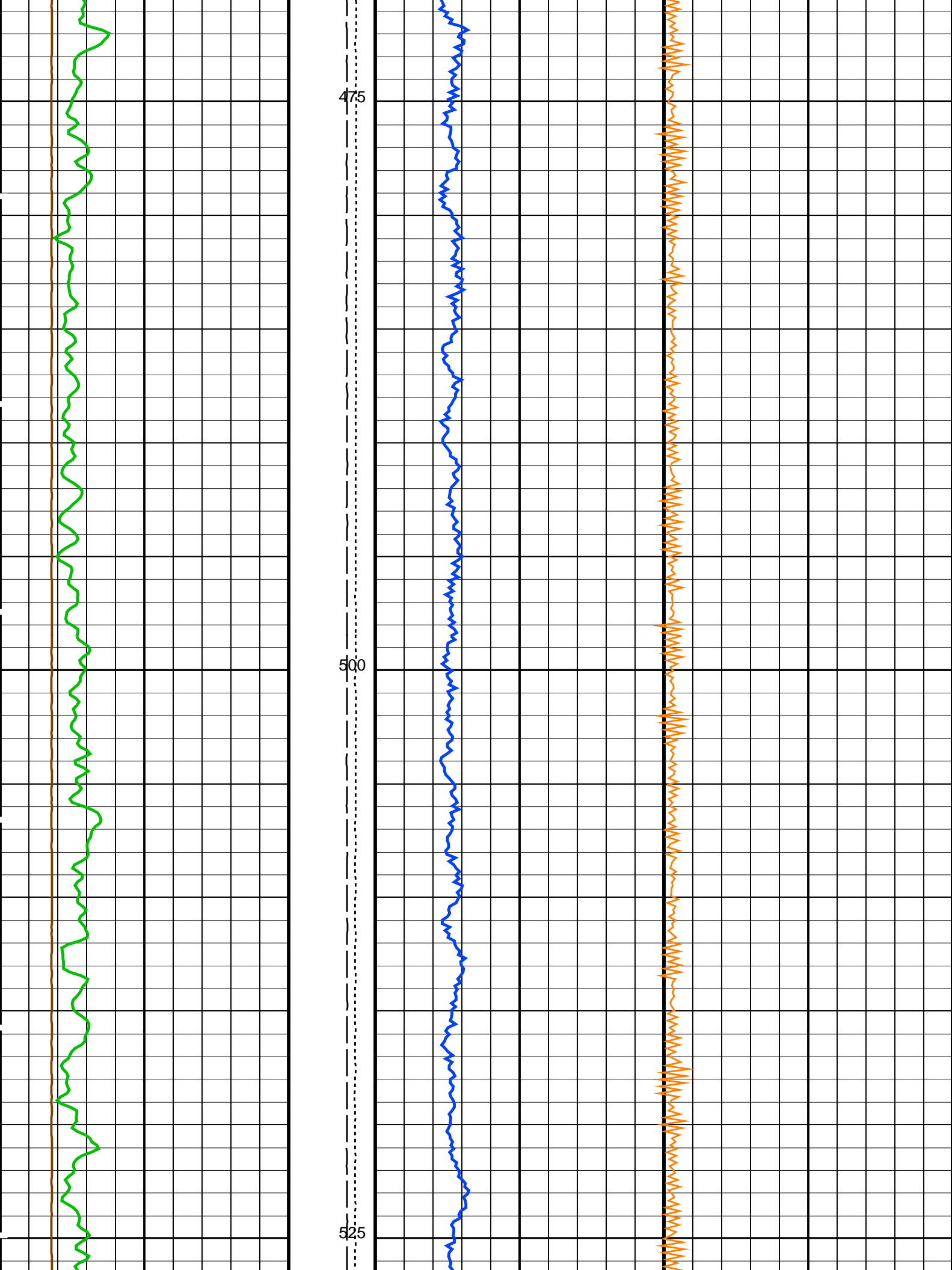


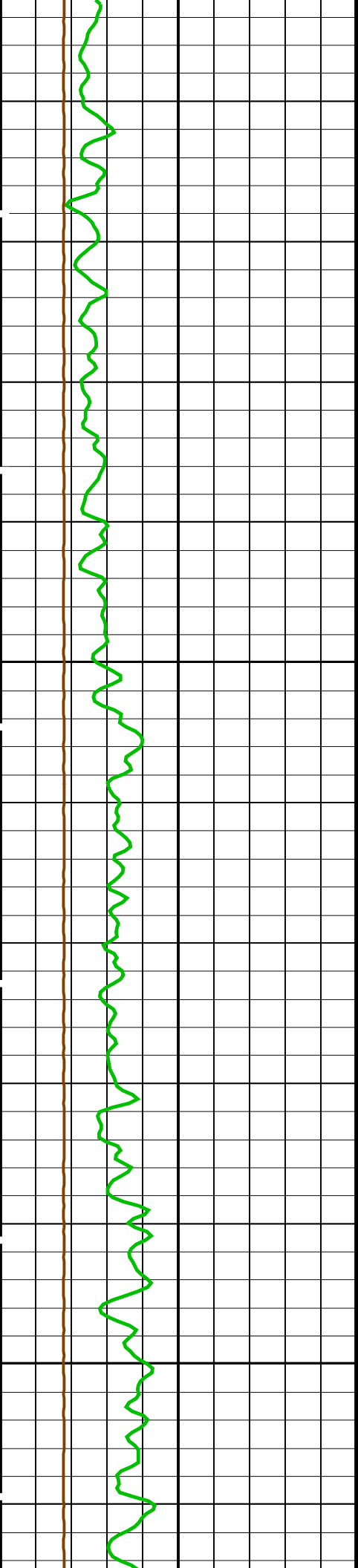


425

450

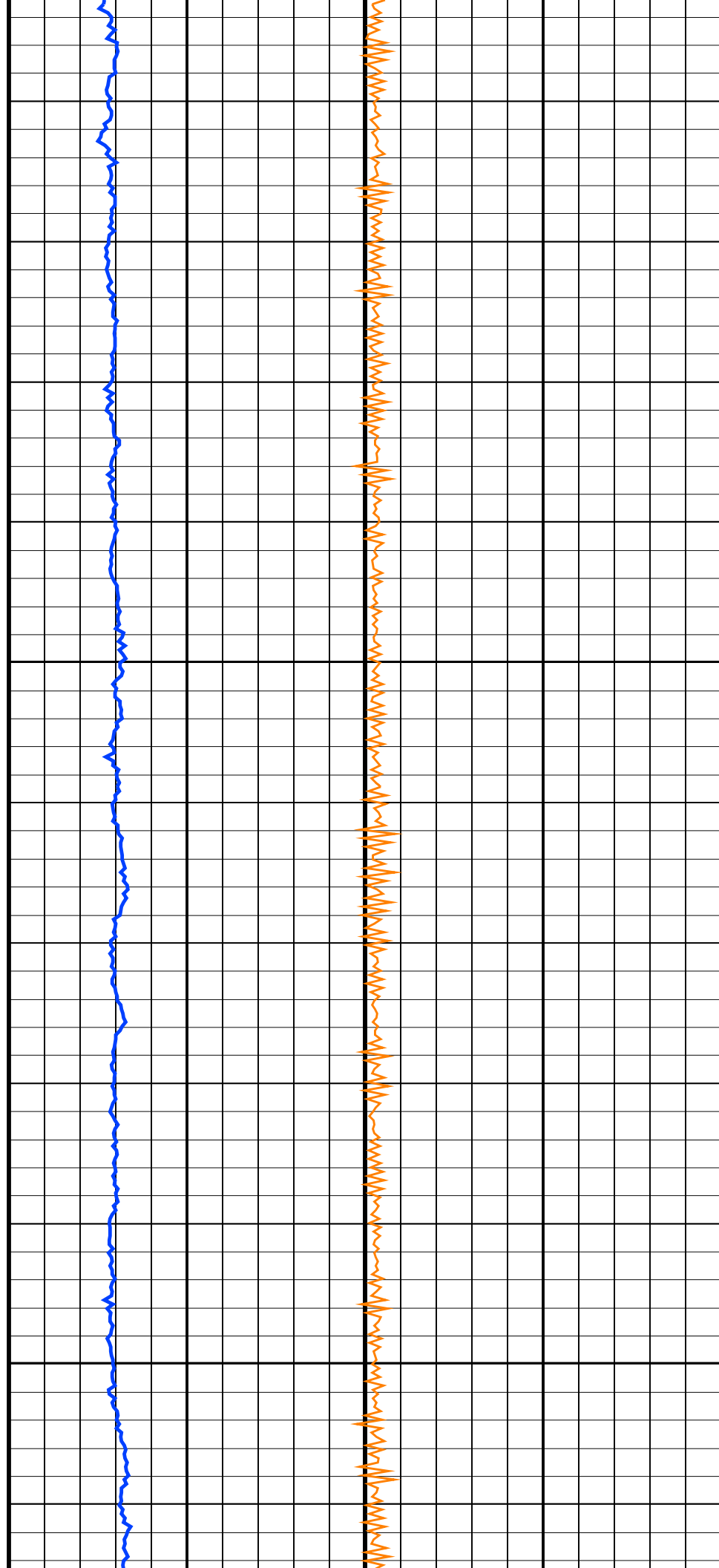


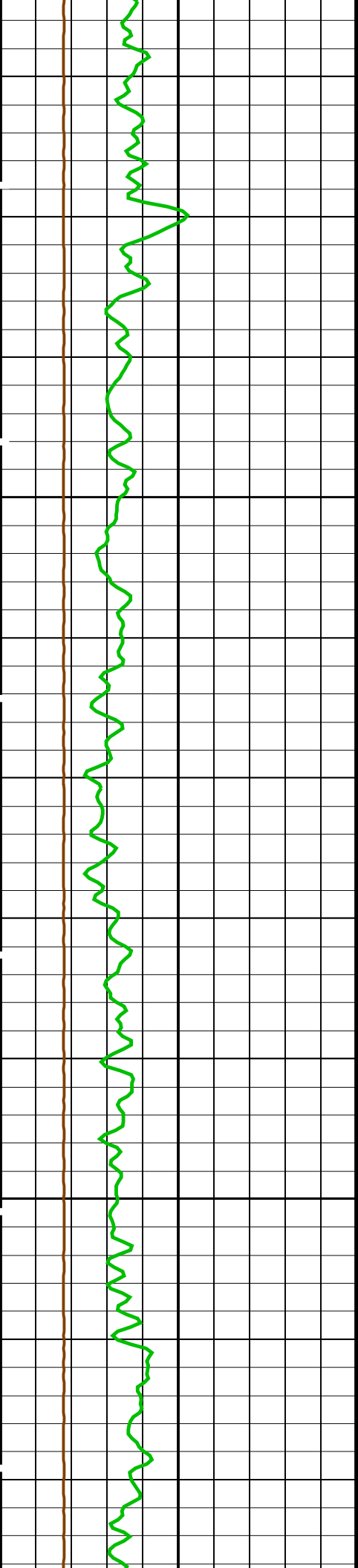




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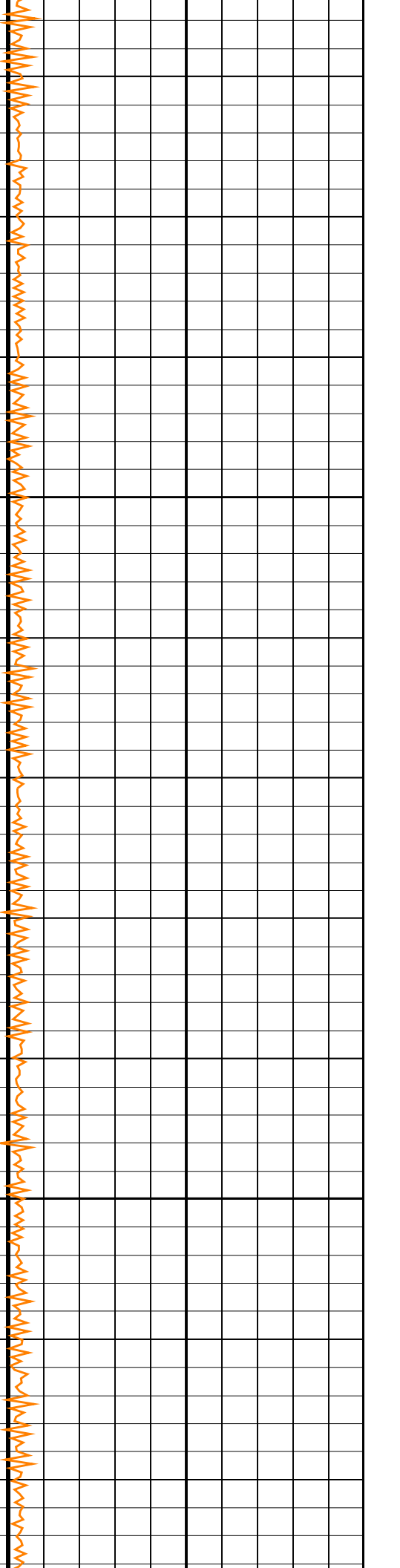
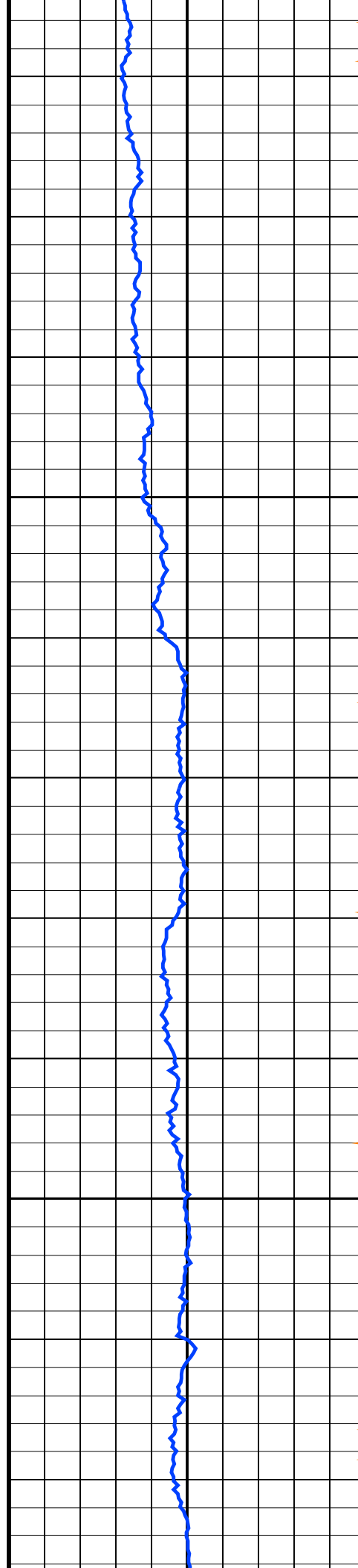
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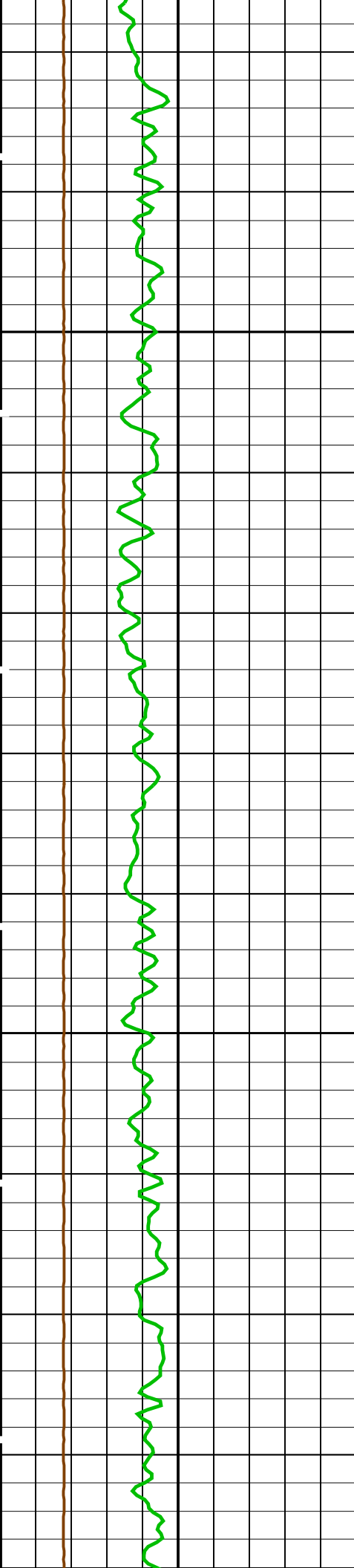




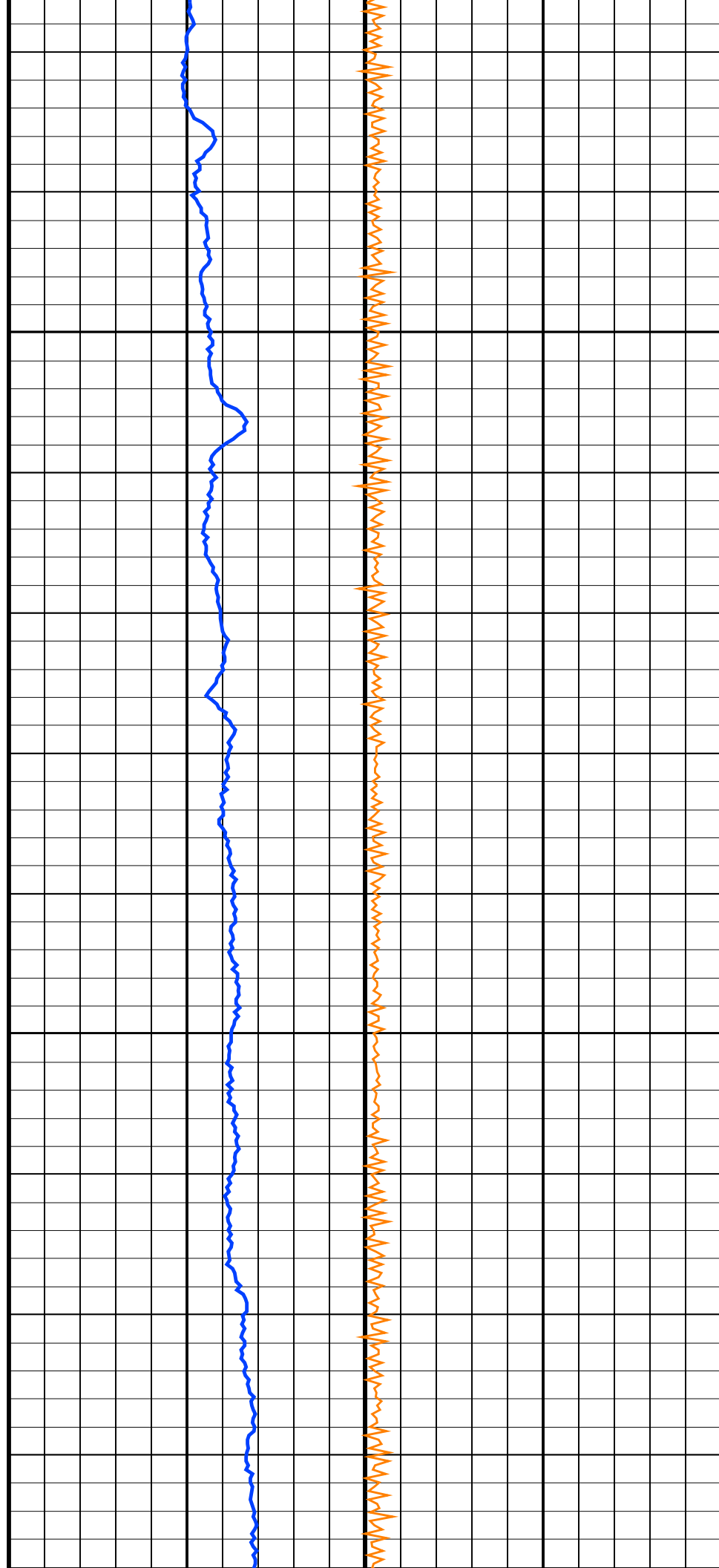
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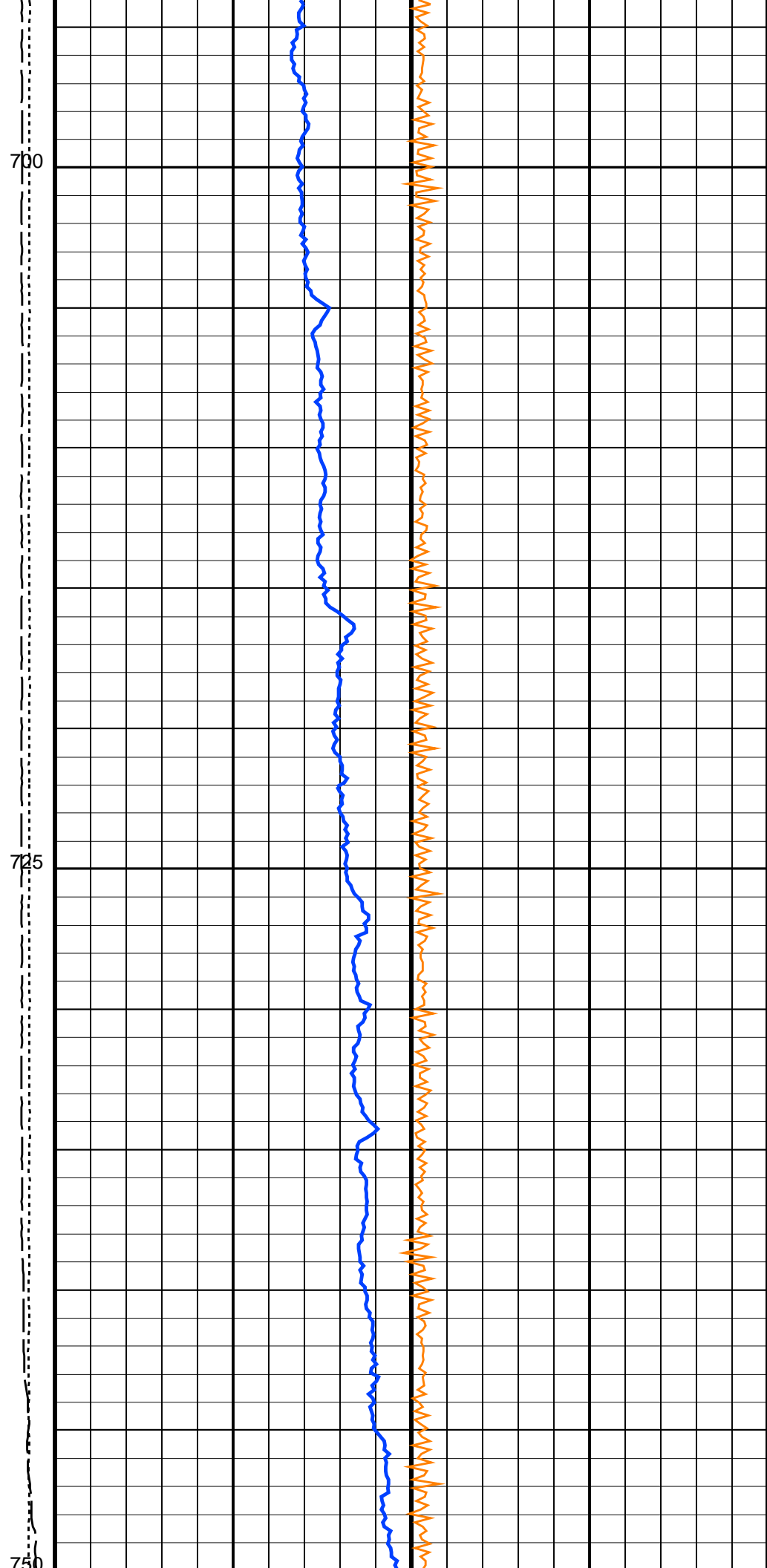
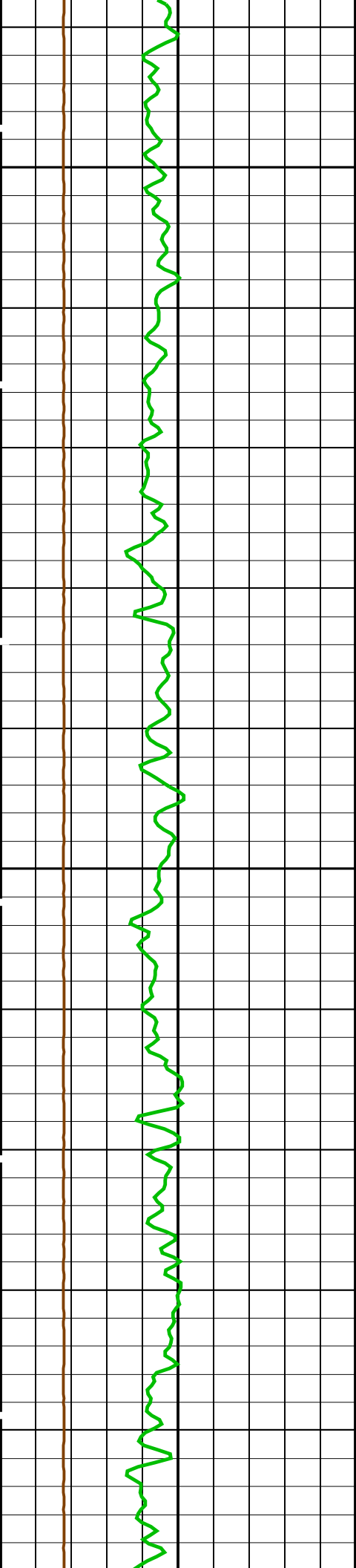
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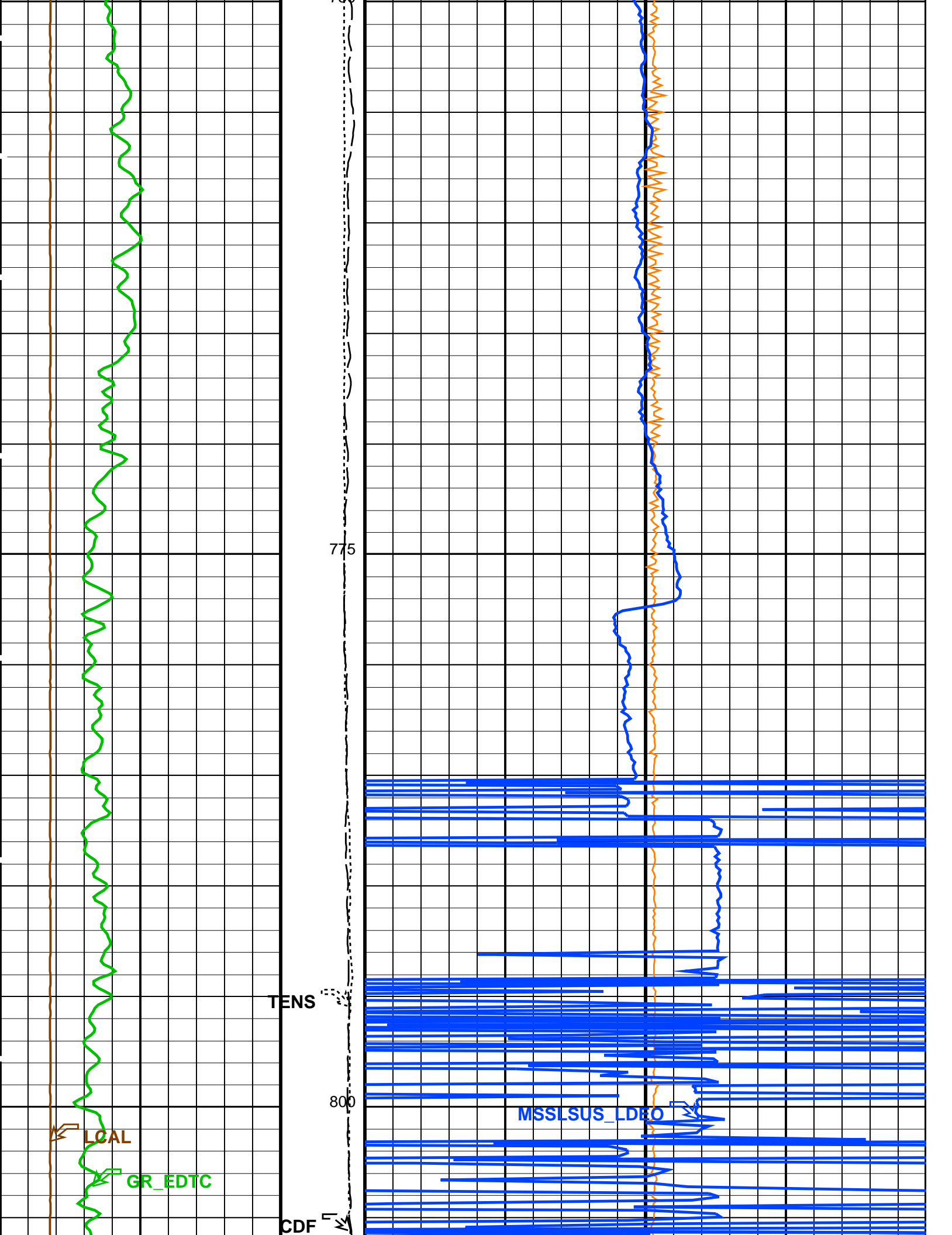


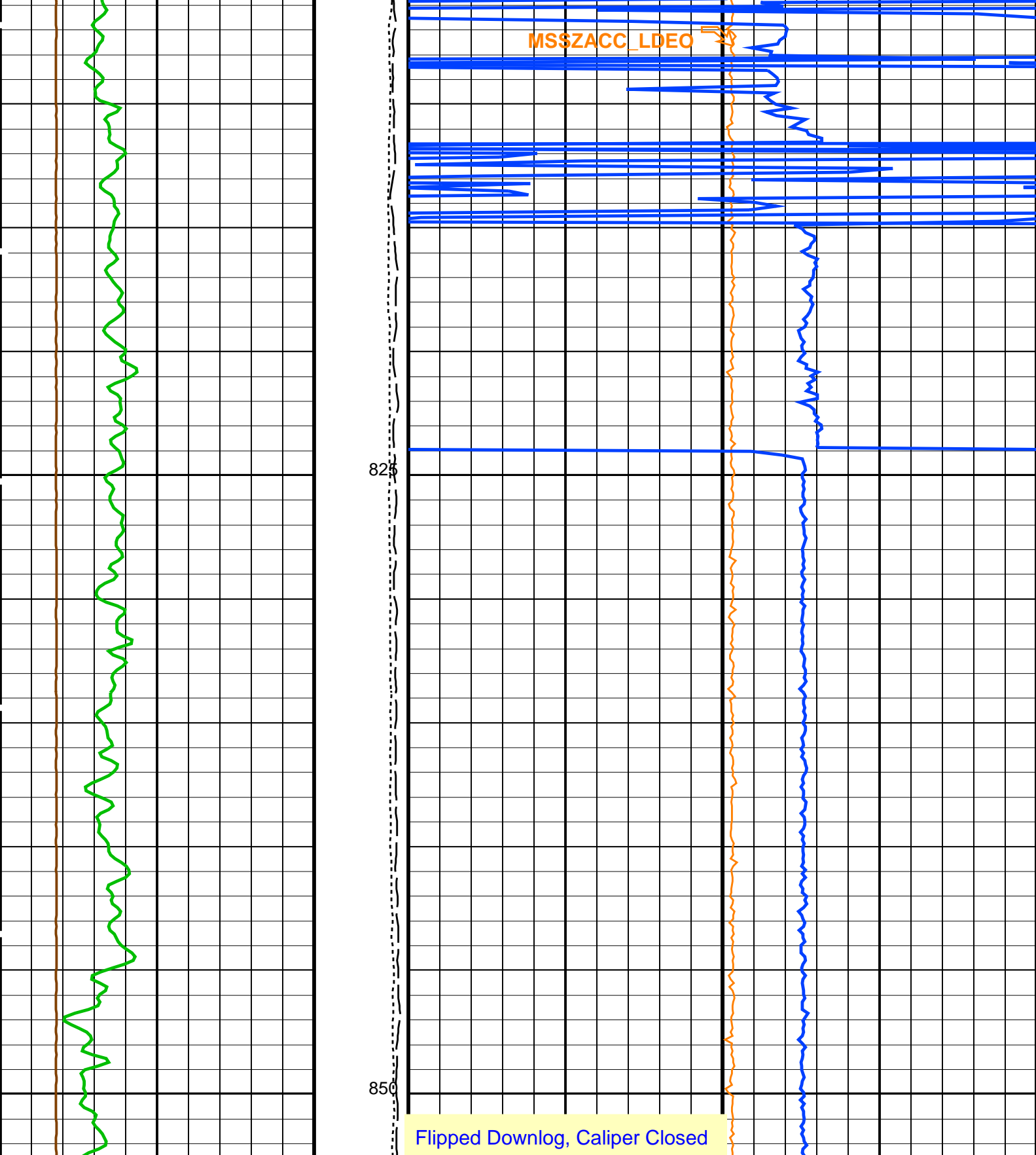


650
675









HLDS Caliper (LCAL) (IN)	Tension (TENS) (LBF)	Axial Acceleration (MSSZACC_LDEO) (M/S2)
020	100000	020
Gamma Ray (GR_EDTC) (GAPI)	Calibrated Downhole Force (CDF) (LBF)	Dual-Coil Susceptibility (MSSLSUS_LDEO) (PPM)
0100	50000	05000

Parameters

DLIS Name	Description	Value	
HRLT-B: High Resolution Laterolog Array – B			
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGC
CALSTAT	HRLTB Calibration Status	SHALLOW_DONE	
CALTEMP	HRLTB Calibration Temperature	24.3635	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	BARITE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
LOOPCOEF_S	HRLT Loop Coefficient for Shallow Modes	LOW	
LOOPMOD0	HRLT Mode 0 Loop Mode	AUTO	
LOOPMOD1	HRLT Mode 1 Loop Mode	AUTO	
LOOPMOD2	HRLT Mode 2 Loop Mode	AUTO	
LOOPMOD3	HRLT Mode 3 Loop Mode	AUTO	
LOOPMOD4	HRLT Mode 4 Loop Mode	AUTO	
LOOPMOD5	HRLT Mode 5 Loop Mode	AUTO	
LOOPMOD6	HRLT Mode 6 Loop Mode	AUTO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
PROCINV	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	0	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Centered	
SHT	Surface Hole Temperature	20	DEGC
HLDS: Hostile Litho-Density Sonde			
CLCL	HLDS LS Control Loop Controller Mode	AUTO_DEFAULT	
CLCS	HLDS SS Control Loop Controller Mode	AUTO_DEFAULT	
CLLS	HLDS Mode Loop Long Spacing	AUTO	
CLSS	HLDS Mode Loop Short Spacing	AUTO	
DHC	Density Hole Correction	BS	
DPPM	Density Porosity Processing Mode	HIRS	
FD	Fluid Density	1	G/C3
LATC	HLDS Activation Correction	ON	
LLDL	HLDS LS Low Level Discriminator DAC	14000	
LLDS	HLDS SS Low Level Discriminator DAC	14000	
LLML	HLDS LS Low Level Discriminator Mode	AUTO	
LLMS	HLDS SS Low Level Discriminator Mode	AUTO	
MDEN	Matrix Density	2.6	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	
APS-C: Accelerator-Porosity Tool			
AASD	APS Software Version	0	
ADSO	APS Thermal and Array Detectors High Voltage Setting	1938.41	V
AFSD	APS Array Detectors Data Source Switch	Both	
AHCS	APS Far Detector High Voltage Setting	2034.64	V
AHSS	APS Holesize Correction Source	GCSE	
AMTY	APS Holesize Correction Switch	ON	
ANSO	APS Environmental Corrections Mud Type	WaterBaseBarite	
ASOS	APS Near Detector High Voltage Setting	1700.34	V
ATSS	APS Standoff Correction Switch	ON	
BHFL_APS	APS Temperature-Pressure-Salinity Correction Switch	OFF	
BHS	APS TNPH Borehole Fluid Type	WATER	
BHT	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	DEGC
BSCO_APS	APS TNPH Borehole Salinity Correction Option	NO	
DPPM	Density Porosity Processing Mode	HIRS	
DSCO_APS	APS TNPH Density Source Correction Option	MEASURED	
FSAL	Formation Salinity	-50000	PPM
FSCO_APS	APS TNPH 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	

GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
HSCO_APS	APS TNPH Hole Size Correction Option	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO_APS	APS TNPH Mud Cake Correction Option	NO	
MCOR_APS	APS TNPH Mud Correction	BARI	
MWCO_APS	APS TNPH Mud Weight Correction Option	YES	
NARC	APS Near/Array Calibration Ratio	1.0863	
NFRC	APS Near/Far Calibration Ratio	0.97772	
PTCO_APS	APS TNPH Pressure/Temperature Correction Option	NO	
SHT	Surface Hole Temperature	20	DEGC
TNCO_APS	APS TNPH Computation Option	YES	
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)	40	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	-0.00112198	
HALF	HNGS Alpha Filter Length	60	IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE	
HMWM	Mud Weighting Material	BARI	
HNPE	HNGS Processing Enable	YES	
ISSBAR	Barite Mud Switch	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
SHT	Surface Hole Temperature	20	DEGC
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	1.12768	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.999754	
EDTC-B: Enhanced DTS Cartridge			
BHFL	Borehole Fluid Type	WATER	
BHS	Borehole Status	OPEN	
BHT	Bottom Hole Temperature (used in calculations)	40	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	BARITE	
ISSBAR_EDTC	Nuclear Mud Type	BARITE	
MATR	Rock Matrix for Neutron Porosity Corrections	LIMESTONE	
MCCO	Mud Cake Correction Option	NO	
MCOR	Mud Correction	BARI	
MWCO	Mud Weight Correction Option	YES	
PTCO	Pressure/Temperature Correction Option	NO	
SDAT	Standoff Data Source	SOCN	
SHT	Surface Hole Temperature	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	9.875	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	1.32	G/C3
DO	Depth Offset for Playback	0.0	M
FLEV	Fluid Level	-50000.00	M
MST	Mud Sample Temperature	23.00	DEGC
PBVSADP	Use alternate depth channel for playback	NO	

PP	Playback Processing	NORMAL	
RMFS	Resistivity of Mud Filtrate Sample	-50000.0000	OHMM
RW	Resistivity of Connate Water	1.0000	OHMM
TD	Total Depth	900	M
TDD	Total Depth – Driller	950.00	M
TDL	Total Depth – Logger	950.00	M
TWS	Temperature of Connate Water Sample	37.78	DEGC
Format: MSS_Logging		Vertical Scale: 1:200	Graphics File Created: 18-Sep-2015 15:06
OP System Version: 19C0-187			
MSS_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
APS-C	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	EDTC-B	SKK-5169-EDTCB
Input DLIS Files			
DEFAULT	Flip_MSS_LDEO_HRLA_047PUP	PRODUCER	18-Sep-2015 15:04 852.5 M -47.2 M
Output DLIS Files			
DEFAULT	MSS_LDEO_HRLA_LDL_048PUP	FN:52	PRODUCER 18-Sep-2015 15:06

Calibration and Check Summary							
Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M01							
Before: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09							
HRLT M0-M1 Voltage Plus – 0	0	N/A	-318.7	-318.5	0.1572	9.681	UV
HRLT M0-M1 Voltage Plus – 1	0	N/A	-331.2	-332.8	-1.545	9.681	UV
HRLT M0-M1 Voltage Plus – 2	0	N/A	-339.2	-340.2	-1.009	9.681	UV
HRLT M0-M1 Voltage Plus – 3	0	N/A	-329.5	-330.3	-0.7990	9.681	UV
HRLT M0-M1 Voltage Plus – 4	0	N/A	-319.9	-320.2	-0.2336	9.681	UV
HRLT M0-M1 Voltage Plus – 5	0	N/A	-321.9	-322.1	-0.2704	9.681	UV
HRLT M0-M1 Voltage Plus – 6	0	N/A	320.7	322.9	2.245	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: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09							
HRLT M1-M2 Voltage Plus – 0	0	N/A	1742	1742	-0.1108	53.42	UV
HRLT M1-M2 Voltage Plus – 1	0	N/A	1817	1826	9.268	53.42	UV
HRLT M1-M2 Voltage Plus – 2	0	N/A	1854	1860	6.383	53.42	UV
HRLT M1-M2 Voltage Plus – 3	0	N/A	1799	1805	5.336	53.42	UV
HRLT M1-M2 Voltage Plus – 4	0	N/A	1746	1748	1.922	53.42	UV
HRLT M1-M2 Voltage Plus – 5	0	N/A	1757	1759	1.864	53.42	UV
HRLT M1-M2 Voltage Plus – 6	0	N/A	-1767	-1780	-13.17	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: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09							
HRLT M2-M3 Voltage Plus – 0	0	N/A	1733	1732	-1.158	53.42	UV
HRLT M2-M3 Voltage Plus – 1	0	N/A	1819	1828	8.723	53.42	UV
HRLT M2-M3 Voltage Plus – 2	0	N/A	1858	1864	5.655	53.42	UV
HRLT M2-M3 Voltage Plus – 3	0	N/A	1807	1811	4.035	53.42	UV
HRLT M2-M3 Voltage Plus – 4	0	N/A	1748	1748	0.8357	53.42	UV
HRLT M2-M3 Voltage Plus – 5	0	N/A	1760	1761	0.3052	53.42	UV
HRLT M2-M3 Voltage Plus – 6	0	N/A	-1759	-1770	-11.94	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: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09							
HRLT A3-A4 Voltage Plus – 0	0	N/A	68660	68660	-0.007813	2100	UV
HRLT A3-A4 Voltage Plus – 1	0	N/A	71880	72260	382.2	2100	UV
HRLT A3-A4 Voltage Plus – 2	0	N/A	73710	73960	247.3	2100	UV
HRLT A3-A4 Voltage Plus – 3	0	N/A	71950	72150	196.6	2100	UV
HRLT A3-A4 Voltage Plus – 4	0	N/A	69550	69630	82.90	2100	UV
HRLT A3-A4 Voltage Plus – 5	0	N/A	70050	70130	86.73	2100	UV
HRLT A3-A4 Voltage Plus – 6	0	N/A	-68510	-69000	-489.7	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: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09

HRLT A4-A5 Voltage Plus – 0	0	N/A	68750	68750	-5.016	2100	UV
HRLT A4-A5 Voltage Plus – 1	0	N/A	72080	72470	385.8	2100	UV
HRLT A4-A5 Voltage Plus – 2	0	N/A	73890	74140	246.5	2100	UV
HRLT A4-A5 Voltage Plus – 3	0	N/A	72100	72300	203.4	2100	UV
HRLT A4-A5 Voltage Plus – 4	0	N/A	69660	69730	78.21	2100	UV
HRLT A4-A5 Voltage Plus – 5	0	N/A	70140	70230	84.15	2100	UV
HRLT A4-A5 Voltage Plus – 6	0	N/A	-68710	-69200	-494.1	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: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09

HRLT A5-A6 Voltage Plus – 0	0	N/A	68610	68600	-13.80	2100	UV
HRLT A5-A6 Voltage Plus – 1	0	N/A	71940	72300	357.5	2100	UV
HRLT A5-A6 Voltage Plus – 2	0	N/A	73760	74000	246.5	2100	UV
HRLT A5-A6 Voltage Plus – 3	0	N/A	71950	72180	223.9	2100	UV
HRLT A5-A6 Voltage Plus – 4	0	N/A	69530	69600	69.52	2100	UV
HRLT A5-A6 Voltage Plus – 5	0	N/A	70020	70090	73.78	2100	UV
HRLT A5-A6 Voltage Plus – 6	0	N/A	-68550	-69040	-491.5	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: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09

HRLT Torpedo-M0 Voltage – 0	0	N/A	-68120	-68110	11.38	2100	UV
HRLT Torpedo-M0 Voltage – 1	0	N/A	-71730	-72110	-376.4	2100	UV
HRLT Torpedo-M0 Voltage – 2	0	N/A	-73600	-73840	-241.7	2100	UV
HRLT Torpedo-M0 Voltage – 3	0	N/A	-71870	-72060	-193.8	2100	UV
HRLT Torpedo-M0 Voltage – 4	0	N/A	-69470	-69540	-67.02	2100	UV
HRLT Torpedo-M0 Voltage – 5	0	N/A	-69960	-70030	-62.44	2100	UV
HRLT Torpedo-M0 Voltage – 6	0	N/A	68320	68810	489.0	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: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09

HRLT Bridle#9-M0 Voltage – 0	0	N/A	-68160	-68150	4.789	2100	UV
HRLT Bridle#9-M0 Voltage – 1	0	N/A	-71820	-72200	-379.0	2100	UV
HRLT Bridle#9-M0 Voltage – 2	0	N/A	-73670	-73920	-244.0	2100	UV
HRLT Bridle#9-M0 Voltage – 3	0	N/A	-71930	-72150	-214.8	2100	UV
HRLT Bridle#9-M0 Voltage – 4	0	N/A	-69520	-69590	-77.23	2100	UV
HRLT Bridle#9-M0 Voltage – 5	0	N/A	-70010	-70060	-55.63	2100	UV
HRLT Bridle#9-M0 Voltage – 6	0	N/A	68400	68890	487.3	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: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09

HRLT Source Current Plus – 0	0	N/A	284.3	284.3	-0.01837	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: 10-Sep-2015 22:57 After: 11-Sep-2015 3:09

HRLT Vertical Voltage PI – 0	0	N/A	-320.6	-320.2	0.3941	9.681	UV
HRLT Vertical Voltage PI – 1	0	N/A	-326.0	-327.3	-1.291	9.681	UV
HRLT Vertical Voltage PI – 2	0	N/A	-332.7	-333.5	-0.7276	9.681	UV
HRLT Vertical Voltage PI – 3	0	N/A	-321.4	-322.0	-0.5334	9.681	UV
HRLT Vertical Voltage PI – 4	0	N/A	-309.1	-309.1	-0.03094	9.681	UV
HRLT Vertical Voltage PI – 5	0	N/A	-326.0	-325.9	0.02457	9.681	UV
HRLT Vertical Voltage PI – 6	0	N/A	328.3	330.4	2.114	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: 3-Aug-2015 21:03 Before: 10-Sep-2015 22:59 After: 5-Aug-2015 9:22

SS Cs Resolution Bkg	9.000	8.017	7.993	7.919	-0.07482	1.800	%
LS Cs Resolution Bkg	9.000	8.170	8.219	8.157	-0.06247	1.800	%
LSW1 Background	100.0	68.33	68.08	67.33	-0.7546	3.000	CPS
LSW2 Background	100.0	63.65	62.52	61.96	-0.5642	3.000	CPS
LSW3 Background	200.0	137.7	138.1	137.2	-0.8874	6.000	CPS
LSW4 Background	250.0	169.1	166.6	168.5	1.915	7.500	CPS
LSW5 Background	600.0	386.6	380.0	383.4	3.381	18.00	CPS
SSW1 Background	100.0	76.45	75.19	75.94	0.7417	3.000	CPS
SSW2 Background	200.0	136.4	134.9	137.6	2.702	6.000	CPS
SSW3 Background	500.0	362.4	363.9	365.1	1.139	15.00	CPS
SSW4 Background	270.0	190.8	190.0	189.5	-0.5672	8.100	CPS
SSW5 Background	200.0	138.4	136.5	138.7	2.256	6.000	CPS

Hostile Litho-Density Sonde Wellsite Calibration – Aluminum Measurement

Master: 3-Aug-2015 21:34

LSW1 Aluminum	600.0	504.7	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	726.8	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	878.5	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	443.6	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	408.1	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2360	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6396	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	8862	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3644	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	446.4	N/A	N/A	N/A	N/A	CPS

Hostile Litho–Density Sonde Wellsite Calibration – Lithology Measurement

Master: 3-Aug-2015 21:29

LSW1 Iron	400.0	344.5	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	588.5	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	781.6	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	405.5	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	370.3	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1732	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5346	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	8101	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3320	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	398.5	N/A	N/A	N/A	N/A	CPS

Hostile Litho–Density Sonde Wellsite Calibration – Caliper Calibration

Before: 3-Aug-2015 21:46

HLDS Caliper Small Ring	12.00	N/A	16.20	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	20.40	N/A	N/A	N/A	IN

Accelerator-Porosity Tool Wellsite Calibration – Detector Background

Master: 4-Aug-2015 18:37 Before: 29-Aug-2015 3:46 After: 11-Sep-2015 3:12

Near Det Bkg Cntrate	30.00	25.87	26.93	26.50	-0.4338	N/A	CPS
Far Det Bkg Cntrate	30.00	28.00	28.70	28.02	-0.6842	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	26.10	26.91	26.14	-0.7673	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	25.95	26.73	28.05	1.318	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	27.77	25.20	25.71	0.5127	N/A	CPS

Accelerator-Porosity Tool Wellsite Calibration – Calibration Ratios

Master: 4-Aug-2015 18:37

Near/Far Calibration Ratio	0.9250	0.9777	N/A	N/A	N/A	N/A
Near/Array Calibration Ratio	1.030	1.086	N/A	N/A	N/A	N/A
Near/Array Cal Ratio Up/Down	1.000	1.021	N/A	N/A	N/A	N/A

Accelerator-Porosity Tool Wellsite Calibration – Tank Check

Master: 4-Aug-2015 18:37

Array-1 Standoff Porosity	11.75	10.45	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	10.61	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	6.032	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	0.9769	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	0.9680	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	34.31	N/A	N/A	N/A	N/A	CU

Accelerator-Porosity Tool Wellsite Calibration – CCR7 signal boxes

Master: 4-Aug-2015 18:00

Near Detector Plateau Setting	1650	1700	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2035	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1938	N/A	N/A	N/A	N/A	V

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 1 Check

Master: 31-Jul-2015 10:01 Before: 5-Aug-2015 7:59 After: 5-Aug-2015 9:23

Na 511 Peak Loc	40.00	37.71	37.63	37.62	-0.01348	1.000	
Na 511 Peak Res	15.50	16.11	15.42	15.72	0.3043	2.000	%
High Voltage	1150	1211	1201	1204	2.856	N/A	V
Na 1785 Peak Loc	142.6	136.7	136.8	136.3	-0.4773	7.000	
Na 1785 Peak Res	8.500	10.13	8.646	8.654	0.007848	2.000	%
Temperature	15.50	22.16	22.65	22.78	0.1236	N/A	DEGC
Na Count Rate	45.00	43.96	43.37	42.72	-0.6500	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check

Master: 31-Jul-2015 10:01 Before: 5-Aug-2015 7:59 After: 5-Aug-2015 9:23















Na 511 Peak Loc	40.00	39.69	39.55	39.58	0.02773	1.000	
Na 511 Peak Res	15.50	15.27	16.42	15.01	-1.409	2.000	%
High Voltage	1150	1084	1083	1085	2.161	N/A	V
Na 1785 Peak Loc	142.6	143.4	143.2	142.7	-0.5449	7.000	
Na 1785 Peak Res	8.500	8.457	8.664	8.451	-0.2128	2.000	%
Temperature	15.50	21.65	22.00	22.57	0.5625	N/A	DEGC
Na Count Rate	45.00	44.18	43.52	42.99	-0.5368	8.000	CPS



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

















Master: 31-Jul-2015 10:01 Before: 5-Aug-2015 7:59 After: 5-Aug-2015 9:23

















Coincidence Count Rate Ratio	1.000	0.9887	0.9903	0.9926	0.002269	0.05000	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration							
Master: 31-Jul-2015 9:56							
Na 511 Peak Set Point	40.00	39.00	--	--	--	--	
Th Peak Loc	209.6	206.7	--	--	--	--	
Th Peak Res	7.000	8.351	--	--	--	--	%
Background Count Rate	142.5	37.67	--	--	--	--	CPS
Gain Ratio	1.000	1.042	--	--	--	--	
Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration							
Master: 31-Jul-2015 9:56							
Na 511 Peak Set Point	40.00	41.00	--	--	--	--	
Th Peak Loc	209.6	211.5	--	--	--	--	
Th Peak Res	7.000	6.877	--	--	--	--	%
Background Count Rate	142.5	39.84	--	--	--	--	CPS
Gain Ratio	1.000	1.014	--	--	--	--	
Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration							
Before: 10-Sep-2015 23:00							
EDTC Z-Axis Acceleration	9.810	N/A	9.820	N/A	N/A	N/A	M/S2
Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration							
Before: Calibration out of date 5-Aug-2015 7:56 After: Calibration out of date 5-Aug-2015 9:33							
Gamma Ray (Jig – Bkg)	152.3	N/A	152.3	152.9	0.5175	13.85	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	164.6	0.5571	15.00	GAPI
Accelerator-Porosity Tool – Detector Plateau Settings :							
Near Detector Plateau Setting	1700 V						
Far Detector Plateau Setting	2035 V						
Array Detector Plateau Setting	1938 V						

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	HRUH – 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
0	Before		-318.7	-322.7	-280.7	-379.7
	After		-318.5			
1	Before		-331.2	-322.7	-280.7	-379.7
	After		-332.8			
2	Before		-339.2	-322.7	-280.7	-379.7
	After		-340.2			
3	Before		-329.5	-322.7	-280.7	-379.7
	After		-330.3			
4	Before		-319.9	-322.7	-280.7	-379.7
	After		-320.2			
5	Before		-321.9	-322.7	-280.7	-379.7
	After		-322.1			
6	Before		320.7	322.7	379.7	280.7
	After		322.9			
7	Before		-322.7			
	After					

7	Before		322.7	-322.7	-280.7	-379.7
	After					
		(Minimum) (Nominal) (Maximum)				
Before: 10-Sep-2015 22:57						
After: 11-Sep-2015 3:09						

















High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M12						
Idx	Phase	HRLT M1–M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1742	1781	2095	1549
	After		1742			
1	Before		1817	1781	2095	1549
	After		1826			
2	Before		1854	1781	2095	1549
	After		1860			
3	Before		1799	1781	2095	1549
	After		1805			
4	Before		1746	1781	2095	1549
	After		1748			
5	Before		1757	1781	2095	1549
	After		1759			
6	Before		-1767	-1781	-1549	-2095
	After		-1780			
7	Before		1781	1781	2095	1549
	After		1781			
		(Minimum) (Nominal) (Maximum)				
Before: 10-Sep-2015 22:57						
After: 11-Sep-2015 3:09						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M23						
Idx	Phase	HRLT M2–M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1733	1781	2095	1549
	After		1732			
1	Before		1819	1781	2095	1549
	After		1828			
2	Before		1858	1781	2095	1549
	After		1864			
3	Before		1807	1781	2095	1549
	After		1811			
4	Before		1748	1781	2095	1549
	After		1748			
5	Before		1760	1781	2095	1549
	After		1761			
6	Before		-1759	-1781	-1549	-2095
	After		-1770			
7	Before		1781	1781	2095	1549
	After		1781			

















(Minimum)	(Nominal)	(Maximum)
Before: 10-Sep-2015 22:57		
After: 11-Sep-2015 3:09		

















High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V34						
Idx	Phase	HRLT A3–A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68660	70000	82360	60900
	After		68660			
1	Before		71880	70000	82360	60900
	After		72260			
2	Before		73710	70000	82360	60900
	After		73960			
3	Before		71950	70000	82360	60900
	After		72150			
4	Before		69550	70000	82360	60900
	After		69630			
5	Before		70050	70000	82360	60900
	After		70130			
6	Before		-68510	-70000	-60900	-82360
	After		-69000			
7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				

Before: 10-Sep-2015 22:57		
After: 11-Sep-2015 3:09		

















High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V45						
Idx	Phase	HRLT A4–A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68750	70000	82360	60900
	After		68750			
1	Before		72080	70000	82360	60900
	After		72470			
2	Before		73890	70000	82360	60900
	After		74140			
3	Before		72100	70000	82360	60900
	After		72300			
4	Before		69660	70000	82360	60900
	After		69730			
5	Before		70140	70000	82360	60900
	After		70230			
6	Before		-68710	-70000	-60900	-82360
	After		-69200			
7	Before		70000	70000	82360	60900
	After		70000			
		(Minimum) (Nominal) (Maximum)				

















Before: 10-Sep-2015 22:57		
After: 11-Sep-2015 3:09		



High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V56						
Idx	Phase	HRLT A5–A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68610	70000	82360	60900
	After		68600			
1	Before		71940	70000	82360	60900
	After		72300			
2	Before		73760	70000	82360	60900
	After		74000			
3	Before		71950	70000	82360	60900
	After		72180			
4	Before		69530	70000	82360	60900
	After		69600			
5	Before		70020	70000	82360	60900
	After		70090			
6	Before		–68550	–70000	–60900	–82360
	After		–69040			
7	Before		70000	70000	82360	60900
	After		70000			
(Minimum) (Nominal) (Maximum)						
Before: 10–Sep–2015 22:57						
After: 11–Sep–2015 3:09						















High Resolution Laterolog Array – B Wellsite Calibration						
HRLT VTP						
Idx	Phase	HRLT Torpedo–M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		–68120	–70000	–60900	–82360
	After		–68110			
1	Before		–71730	–70000	–60900	–82360
	After		–72110			
2	Before		–73600	–70000	–60900	–82360
	After		–73840			
3	Before		–71870	–70000	–60900	–82360
	After		–72060			
4	Before		–69470	–70000	–60900	–82360
	After		–69540			
5	Before		–69960	–70000	–60900	–82360
	After		–70030			
6	Before		68320	70000	82360	60900
	After		68810			
7	Before		–70000	–70000	–60900	–82360
	After		–70000			
(Minimum) (Nominal) (Maximum)						
Before: 10–Sep–2015 22:57						
After: 11–Sep–2015 3:09						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT VBD						

Idx	Phase	HRLT Bridge#9-M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68160	-70000	-60900	-82360
	After		-68150			
1	Before		-71820	-70000	-60900	-82360
	After		-72200			
2	Before		-73670	-70000	-60900	-82360
	After		-73920			
3	Before		-71930	-70000	-60900	-82360
	After		-72150			
4	Before		-69520	-70000	-60900	-82360
	After		-69590			
5	Before		-70010	-70000	-60900	-82360
	After		-70060			
6	Before		68400	70000	82360	60900
	After		68890			
7	Before		-70000	-70000	-60900	-82360
	After		-70000			
		(Minimum) (Nominal) (Maximum)				
Before: 10-Sep-2015 22:57						
After: 11-Sep-2015 3:09						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT ISO						
Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		284.3	284.0	334.1	247.0
	After		284.3			
1	Before		281.1	281.1	330.7	244.4
	After		281.1			
2	Before		281.1	281.1	330.7	244.4
	After		281.1			
3	Before		281.1	281.1	330.7	244.4
	After		281.1			
4	Before		281.1	281.1	330.7	244.4
	After		281.1			
5	Before		281.1	281.1	330.7	244.4
	After		281.1			
6	Before		281.1	281.1	330.7	244.4
	After		281.1			
7	Before		281.1	281.1	330.7	244.4
	After		281.1			
		(Minimum) (Nominal) (Maximum)				
Before: 10-Sep-2015 22:57						
After: 11-Sep-2015 3:09						

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT MV						
Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-320.6	-322.7	-280.7	-379.7
	After		-320.6			

1	After		-320.2	-322.7	-280.7	-379.7
	Before		-327.3			
2	Before		-332.7	-322.7	-280.7	-379.7
	After		-333.5			
3	Before		-321.4	-322.7	-280.7	-379.7
	After		-322.0			
4	Before		-309.1	-322.7	-280.7	-379.7
	After		-309.1			
5	Before		-326.0	-322.7	-280.7	-379.7
	After		-325.9			
6	Before		328.3	322.7	379.7	280.7
	After		330.4			
7	Before		-322.7	-322.7	-280.7	-379.7
	After		-322.7			
(Minimum) (Nominal) (Maximum)						
Before: 10-Sep-2015 22:57						
After: 11-Sep-2015 3:09						

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:




































Hostile Litho Density Sonde
Hostile Litho Density High Voltage
Gamma Source Radioactive













HLDS - D 45
HLDV - D 45
GSR - Z 8113











Auxiliary Equipment:

Hostile Litho Density Pad
Hostile Litho Density High Voltage Housi

HLDP - C 45
HEH - H 47

Hostile Litho-Density Sonde Wellsite Calibration								
Background Measurement								
Phase	SS Cs Resolution Bkg %	Value	Phase	LS Cs Resolution Bkg %	Value	Phase	LSW1 Background CPS	Value
Master		8.017	Master		8.170	Master		68.33
Before		7.993	Before		8.219	Before		68.08
After		7.919	After		8.157	After		67.33
7.000 (Minimum)		9.000 (Nominal)	7.000 (Minimum)		9.000 (Nominal)	55.00 (Minimum)		100.0 (Nominal)
		11.00 (Maximum)			11.00 (Maximum)			150.0 (Maximum)
Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value	Phase	LSW4 Background CPS	Value
Master		63.65	Master		137.7	Master		169.1
Before		62.52	Before		138.1	Before		166.6
After		61.96	After		137.2	After		168.5
50.00 (Minimum)		100.0 (Nominal)	110.0 (Minimum)		200.0 (Nominal)	140.0 (Minimum)		250.0 (Nominal)
		140.0 (Maximum)			290.0 (Maximum)			360.0 (Maximum)
Phase	LSW5 Background CPS	Value	Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value
Master		386.6	Master		76.45	Master		136.4
Before		380.0	Before		75.19	Before		134.9
After		383.4	After		75.94	After		137.6
330.0 (Minimum)		600.0 (Nominal)	55.00 (Minimum)		100.0 (Nominal)	100.0 (Minimum)		200.0 (Nominal)
		830.0 (Maximum)			150.0 (Maximum)			260.0 (Maximum)
Phase	SSW3 Background CPS	Value	Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value
Master		362.4	Master		190.8	Master		138.4
Before		363.9	Before		190.0	Before		136.5
After		365.1	After		189.5	After		138.7

Hostile Litho-Density Sonde Master Calibration											
Detector Background Measurement											
Phase	LSW1 Background CPS		Value	Phase	LSW2 Background CPS		Value	Phase	LSW3 Background CPS		Value
Master			68.33	Master			63.65	Master			137.7
	55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)		50.00 (Minimum)	100.0 (Nominal)	140.0 (Maximum)		110.0 (Minimum)	200.0 (Nominal)	290.0 (Maximum)
Phase	LSW4 Background CPS		Value	Phase	LSW5 Background CPS		Value	Phase	LS Cs Resolution Bkg %		Value
Master			169.1	Master			386.6	Master			8.170
	140.0 (Minimum)	250.0 (Nominal)	360.0 (Maximum)		330.0 (Minimum)	600.0 (Nominal)	830.0 (Maximum)		7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)
Phase	SSW1 Background CPS		Value	Phase	SSW2 Background CPS		Value	Phase	SSW3 Background CPS		Value
Master			76.45	Master			136.4	Master			362.4
	55.00 (Minimum)	100.0 (Nominal)	150.0 (Maximum)		100.0 (Minimum)	200.0 (Nominal)	260.0 (Maximum)		280.0 (Minimum)	500.0 (Nominal)	700.0 (Maximum)
Phase	SSW4 Background CPS		Value	Phase	SSW5 Background CPS		Value	Phase	SS Cs Resolution Bkg %		Value
Master			190.8	Master			138.4	Master			8.017
	150.0 (Minimum)	270.0 (Nominal)	380.0 (Maximum)		110.0 (Minimum)	200.0 (Nominal)	270.0 (Maximum)		7.000 (Minimum)	9.000 (Nominal)	11.00 (Maximum)
Master: 3-Aug-2015 21:03											

Hostile Litho-Density Sonde Master Calibration											
Detector Litholog Measurement (bkgd-subtracted)											
Phase	LSW1 Iron CPS		Value	Phase	LSW2 Iron CPS		Value	Phase	LSW3 Iron CPS		Value
Master			344.5	Master			588.5	Master			781.6
	290.0 (Minimum)	400.0 (Nominal)	560.0 (Maximum)		520.0 (Minimum)	730.0 (Nominal)	950.0 (Maximum)		720.0 (Minimum)	1000 (Nominal)	1350 (Maximum)
Phase	LSW4 Iron CPS		Value	Phase	LSW5 Iron CPS		Value	Phase	SSW1 Iron CPS		Value
Master			405.5	Master			370.3	Master			1732
	370.0 (Minimum)	520.0 (Nominal)	700.0 (Maximum)		340.0 (Minimum)	470.0 (Nominal)	750.0 (Maximum)		1500 (Minimum)	2100 (Nominal)	2400 (Maximum)
Phase	SSW2 Iron CPS		Value	Phase	SSW3 Iron CPS		Value	Phase	SSW4 Iron CPS		Value
Master			5346	Master			8101	Master			3320
	4900 (Minimum)	6800 (Nominal)	7900 (Maximum)		7800 (Minimum)	10800 (Nominal)	12600 (Maximum)		3300 (Minimum)	4600 (Nominal)	5400 (Maximum)
Phase	SSW5 Iron CPS		Value								
Master			398.5								
	420.0 (Minimum)	580.0 (Nominal)	680.0 (Maximum)								

Master: 3-Aug-2015 21:29

Hostile Litho-Density Sonde Master Calibration

Quality Ratios														
Phase	AL CALIBRATION RATIO 1			Value	Phase	AL CALIBRATION RATIO 2			Value	Phase	AL CALIBRATION RATIO 3			Value
Master	<div><div></div></div>			1.031	Master	<div><div></div></div>			2.166	Master	<div><div></div></div>			0.5926
	0.9000 (Minimum)	1.000 (Nominal)	1.100 (Maximum)			1.900 (Minimum)	2.100 (Nominal)	2.300 (Maximum)			0.4500 (Minimum)	0.5500 (Nominal)	0.6500 (Maximum)	
Phase	AL CALIBRATION RATIO 4			Value	Phase	Pad-Wear SS Ratio			Value	Phase	Pad-Wear LS Ratio			Value
Master	<div><div></div></div>			0.5770	Master	<div><div></div></div>			0.9867	Master	<div><div></div></div>			0.9843
	0.4000 (Minimum)	0.5500 (Nominal)	0.6500 (Maximum)			0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)			0.9800 (Minimum)	0.9880 (Nominal)	0.9960 (Maximum)	
Phase	Pad-Position SS Ratio			Value	Phase	Pad-Position LS Ratio			Value					
Master	<div><div></div></div>			1.006	Master	<div><div></div></div>			0.9952					
	0.9900 (Minimum)	0.9940 (Nominal)	1.015 (Maximum)			0.9850 (Minimum)	0.9940 (Nominal)	1.010 (Maximum)						
Master: 3-Aug-2015 21:34														

Master: 3-Aug-2015 21:34

Litho-Density Spectroscopy Cartridge – B / Equipment Identification

Primary Equipment:		
LDSC Cartridge	LDSC – B	521
Auxiliary Equipment:		
LDSC Housing	LDSH – A	319

Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:		
Accelerator-Porosity Sonde	APS – C	212
APS Minitron	MNTR – F	6504
Auxiliary Equipment:		
Accelerator-Porosity Housing	APH – AC	121
APS Calibration Water Tank	SFT – 178	1
APS Aluminum Calibrator Sleeve	SFT – 281	1

Accelerator-Porosity Tool Wellsite Calibration

Detector Background														
Phase	Near Det Bkg Cntrate CPS			Value	Phase	Far Det Bkg Cntrate CPS			Value	Phase	Array-1 Det Bkg Cntrate CPS			Value
Master				25.87	Master				28.00	Master				26.10
Before				26.93	Before				28.70	Before				26.91
After				26.50	After				28.02	After				26.14
1.000 (Minimum)30.00 (Nominal)50.00 (Maximum)					1.000 (Minimum)30.00 (Nominal)50.00 (Maximum)					1.000 (Minimum)30.00 (Nominal)50.00 (Maximum)				
Phase	Array-2 Det Bkg Cntrate CPS			Value	Phase	Array Therm Det Bkg Cntrate CPS			Value					
Master				25.95	Master				27.77					
Before				26.73	Before				25.20					
After				28.05	After				25.71					
1.000 (Minimum)30.00 (Nominal)50.00 (Maximum)					1.000 (Minimum)30.00 (Nominal)50.00 (Maximum)									
Master: 4-Aug-2015 18:37					Before: 29-Aug-2015 3:46					After: 11-Sep-2015 3:12				

Master: 4-Aug-2015 18:37

Before: 29-Aug-2015 3:46

After: 11-Sep-2015 3:12

Accelerator-Porosity Tool Wellsite Calibration

Calibration Ratios																
Phase	Near/Far Calibration Ratio		Value	Phase	Near/Array Calibration Ratio		Value	Phase	Near/Array Cal Ratio Up/Down		Value					
Master			0.9777	Master			1.086	Master			1.021					
0.8000 (Minimum)			0.9250 (Nominal)	1.050 (Maximum)			0.9000 (Minimum)			1.030 (Nominal)	1.170 (Maximum)	0.9700 (Minimum)			1.000 (Nominal)	1.030 (Maximum)
Master: 4-Aug-2015 18:37																

Master: 4-Aug-2015 18:37

Accelerator-Porosity Tool Wellsite Calibration

Tank Check										
Phase	Array-1 Standoff Porosity PU		Value	Phase	Array-2 Standoff Porosity PU		Value	Phase	Average Slowing Down Time US	Value

Master		10.45	Master		10.61	Master		6.032
	9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)			9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)			5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)	
Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Array-2 SDT Ratio Up/Down	Value	Phase	Sigma Formation CU	Value
Master		0.9769	Master		0.9680	Master		34.31
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)	

Master: 4-Aug-2015 18:37

Accelerator-Porosity Tool Master Calibration								
Detector Calibration								
Phase	Near/Far Calibration Ratio	Value	Phase	Near/Array Calibration Ratio	Value	Phase	Near/Array Cal Ratio Up/Down	Value
Master		0.9777	Master		1.086	Master		1.021
	0.8000 (Minimum) 0.9250 (Nominal) 1.050 (Maximum)			0.9000 (Minimum) 1.030 (Nominal) 1.170 (Maximum)			0.9700 (Minimum) 1.000 (Nominal) 1.030 (Maximum)	

Master: 4-Aug-2015 18:37

Accelerator-Porosity Tool Master Calibration								
Tank Check								
Phase	Array-1 Standoff Porosity PU	Value	Phase	Array-2 Standoff Porosity PU	Value	Phase	Average Slowing Down Time US	Value
Master		10.45	Master		10.61	Master		6.032
	9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)			9.900 (Minimum) 11.75 (Nominal) 13.60 (Maximum)			5.500 (Minimum) 6.000 (Nominal) 6.250 (Maximum)	
Phase	Array-1 SDT Ratio Up/Down	Value	Phase	Array-2 SDT Ratio Up/Down	Value	Phase	Sigma Formation CU	Value
Master		0.9769	Master		0.9680	Master		34.31
	0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)			20.00 (Minimum) 27.50 (Nominal) 35.00 (Maximum)	

Master: 4-Aug-2015 18:37

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 174
GSR – U 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		37.71	Master		16.11	Master		1211
Before		37.63	Before		15.42	Before		1201
After		37.62	After		15.72	After		1204
	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		136.7	Master		10.13	Master		22.16
Before		136.8	Before		8.646	Before		22.65
After		136.3	After		8.654	After		22.78
	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		43.96						

Before		43.37
After		42.72
10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)		
Master: 31-Jul-2015 10:01 Before: 5-Aug-2015 7:59 After: 5-Aug-2015 9:23		

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			39.69	Master			15.27	Master			1084									
Before			39.55	Before			16.42	Before			1083									
After			39.58	After			15.01	After			1085									
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			143.4	Master			8.457	Master			21.65									
Before			143.2	Before			8.664	Before			22.00									
After			142.7	After			8.451	After			22.57									
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			44.18																	
Before			43.52																	
After			42.99																	
10.00 (Minimum)			45.00 (Nominal)									100.0 (Maximum)								
Master: 31-Jul-2015 10:01				Before: 5-Aug-2015 7:59				After: 5-Aug-2015 9:23												

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9887
Before		0.9903
After		0.9926
0.9500 (Minimum) 1.000 (Nominal) 1.050 (Maximum)		
Master: 31-Jul-2015 10:01		
Before: 5-Aug-2015 7:59		
After: 5-Aug-2015 9:23		

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	<div><div></div></div>		39.00	Master	<div><div></div></div>		206.7	Master	<div><div></div></div>		8.351
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	<div><div></div></div>		37.67	Master	<div><div></div></div>		1.042				
10.00 (Minimum) 142.5 (Nominal) 265.0 (Maximum)				0.9400 (Minimum) 1.000 (Nominal) 1.060 (Maximum)							
Master: 31-Jul-2015 9:56											

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		211.5	Master		6.877
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		39.84	Master		1.014			

10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)
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Master: 31-Jul-2015 9:56

Enhanced DTS Cartridge / Equipment Identification

Primary Equipment:


EDTC Gamma Ray Detector
Enhanced DTS Cartridge

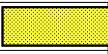


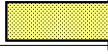


EDTG – A/B 8305
EDTC – B 8317

Auxiliary Equipment:

EDTC Housing

EDTH – B 8303

Enhanced DTS Cartridge Wellsite Calibration		
EDTC Accelerometer Calibration		
Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		9.820
	9.610 (Minimum) 9.810 (Nominal) 10.01 (Maximum)	
Before: 10-Sep-2015 23:00		

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		9.594	Before		152.3	Before		164.0	
After		10.26	After		152.9	After		164.6	
	0 (Minimum) 30.00 (Nominal) 120.0 (Maximum)			138.5 (Minimum) 152.3 (Nominal) 166.2 (Maximum)			149.0 (Minimum) 164.0 (Nominal) 179.0 (Maximum)		
Before: Calibration out of date 5-Aug-2015 7:56 After: Calibration out of date 5-Aug-2015 9:33									

Company: **International Ocean Discovery Program**

Schlumberger

Well: **Expedition 356, Site U1462 C**

Field: **Indonesian Throughflow**

Rig: **JOIDES Resolution**

Ocean: **Indian**

High Resolution Laterolog Array (HRLA)

Density/Porosity (HLDS) (APS)

Magnetic Susceptibility (MSS), (HNGS)