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**OTHER SERVICES1**  
 OS1: FMS/DSI  
 OS2: VSI  
 OS3: HRLA/HLDS/APS  
 OS4:  
 OS5:

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

**REMARKS: RUN NUMBER 1**  
 Hole GC-11A Hole E was drilled with a 9 7/8" RCB bit to TDD of 990 mbsf.  
 This log originally acquired in measured depth from rig floor but played back for sea floor reference.

**REMARKS: RUN NUMBER 2**

A playback was produced and listed on the log for caliper input for hole size.  
 The original logs were acquired with bit size as the hole size assumption.  
 Barite mud ID was used in the playback and not on the original log.  
 All logs recorded via wireline thru 5-5.5" drillpipe and RCB coring BHA consisting of a bit release sub, Kinley sub, drill collars. The bit was released prior to logging.

TD of 990mbsf was not reached due to hole conditions. Tool could not descend lower than 567mbsf and was logged up from there.

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

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

## EQUIPMENT DESCRIPTION






**RUN 1**

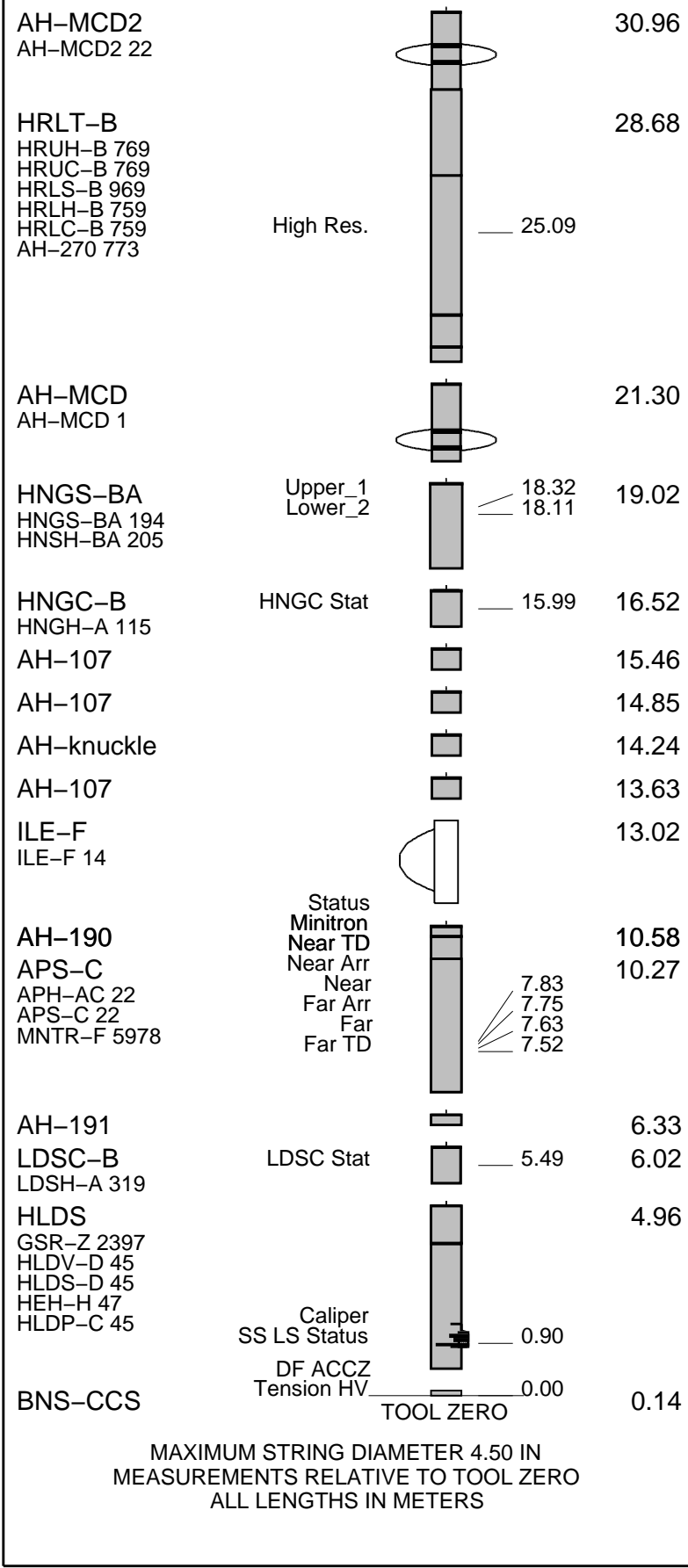
**SURFACE EQUIPMENT**

SFT-281 1  
 SFT-178 1  
 GSR-U 616008  
 WITM (EDTS)-A

**RUN 2**

**DOWNHOLE EQUIPMENT**

LEH-QT				34.26
	MDSB_EDTC		32.94	
AH-369	Mud Tempe		31.87	33.37
	CTEM		31.30	
EDTC-B	Gamma Ray		30.96	32.94
EDTH-B 8303	EFTB DIAG			
EDTC-B 8317	TelStatus			
	EDTCB Ele			



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

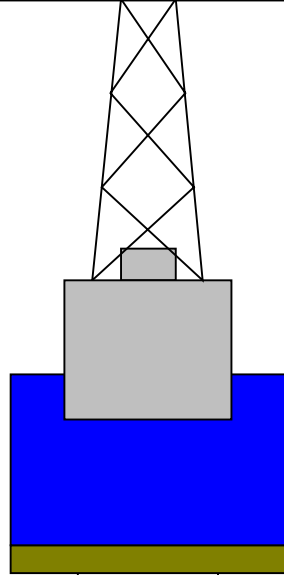
Kelly Bushing Elevation  
Derrick Floor Elevation

Mean Sea Level

-655

-655

-645



4.1



0

3.80

102.2

9.875

Sea Floor

Open Hole

990

Total Depth

### Input DLIS Files

DEFAULT	LDL_APS_NGS_HRLA_027LUP	FN:21	PRODUCER	02-Jan-2012 03:40	1220.7 M	643.0 M
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### Output DLIS Files

DEFAULT	LDL_APS_NGS_HRLA_030PUP	FN:25	PRODUCER	02-Jan-2012 06:00	566.9 M	-10.9 M
BACKUPDLIS	LDL_APS_NGS_HRLA_030PUP	FN:26	PRODUCER	02-Jan-2012 06:00	566.9 M	-10.9 M

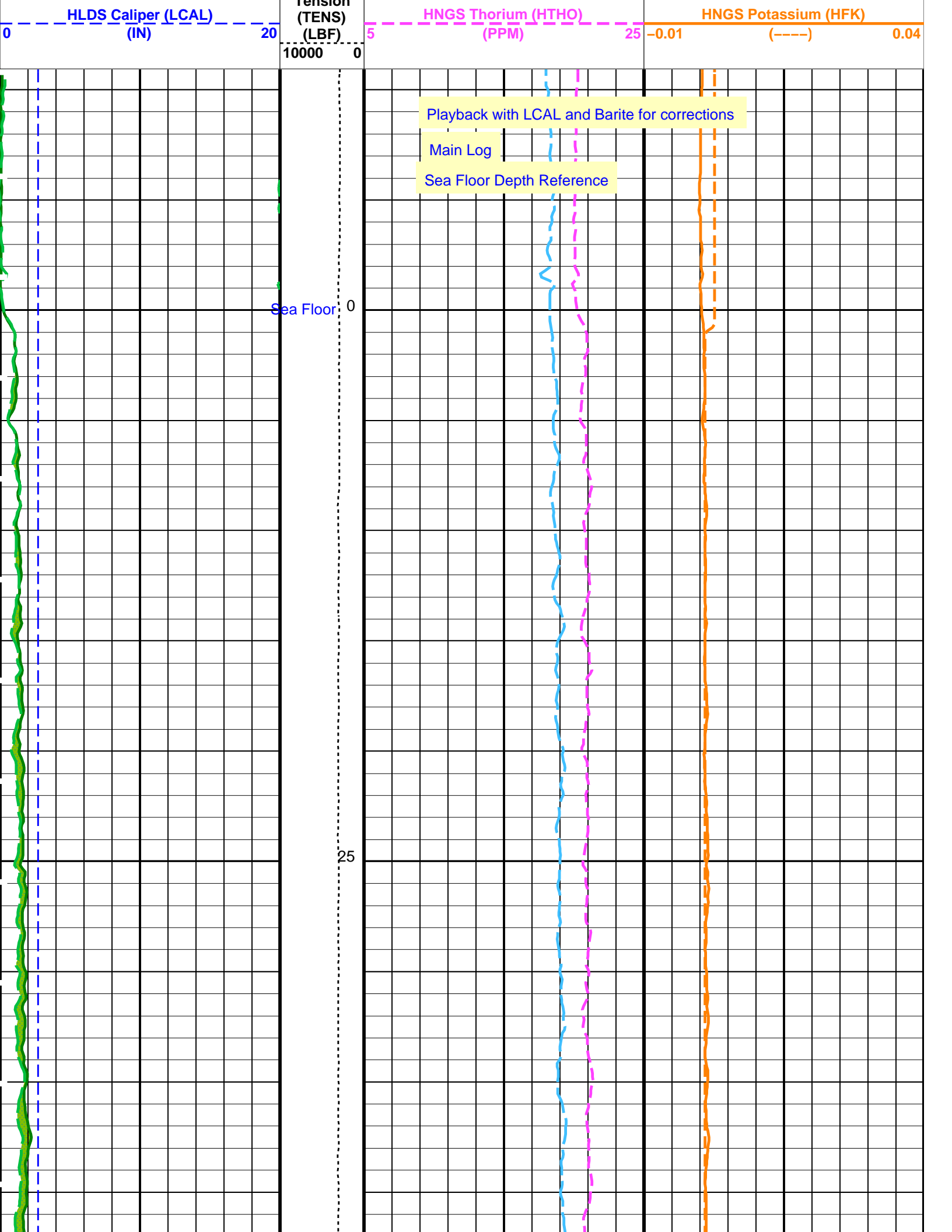
### OP System Version: 19C0-187

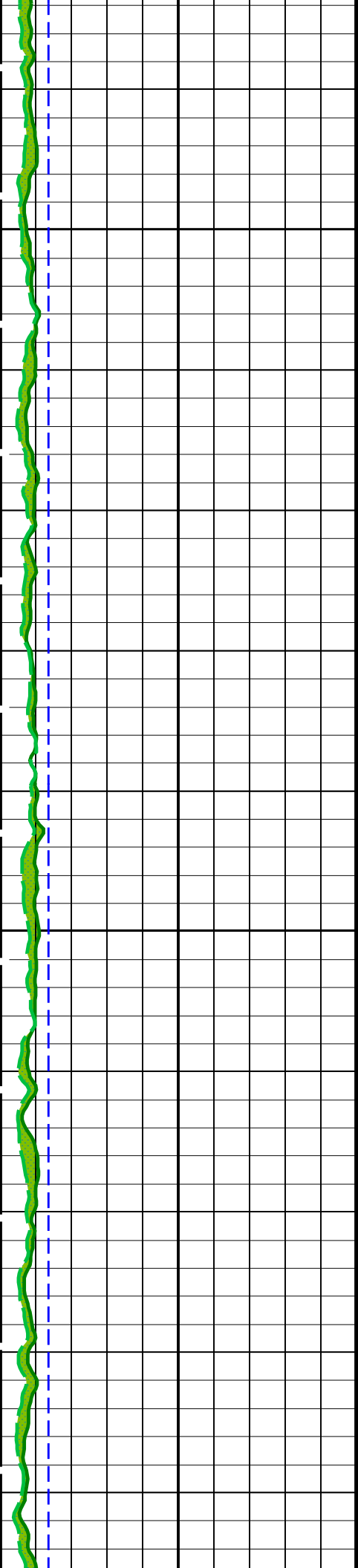
HLDS	19C0-187	LDSC-B	19C0-187
APS-C	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	HRLT-B	19C0-187
EDTC-B	19C0-187		

### PIP SUMMARY

Time Mark Every 60 S

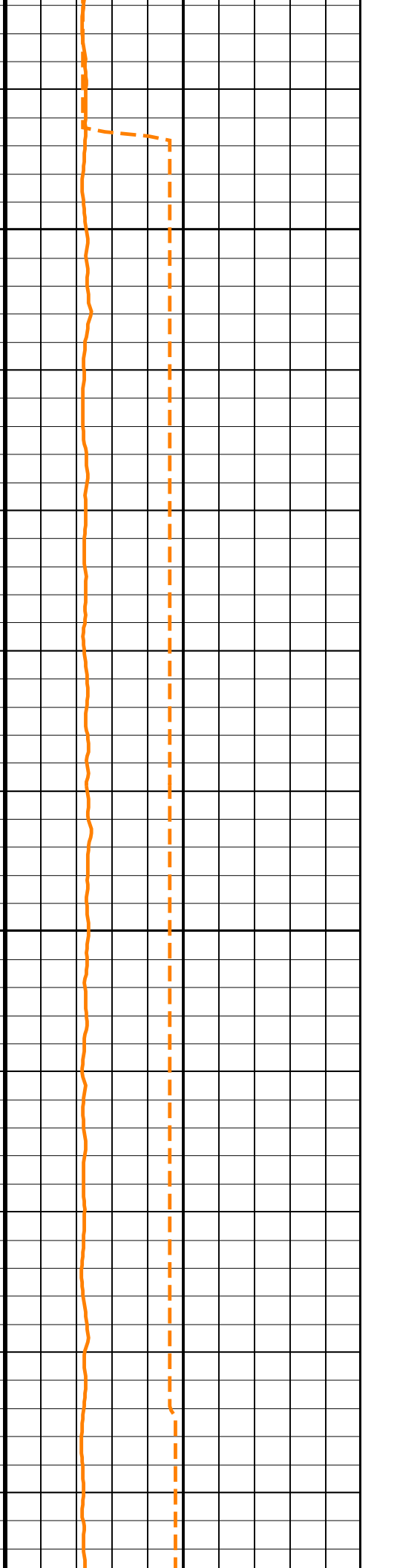
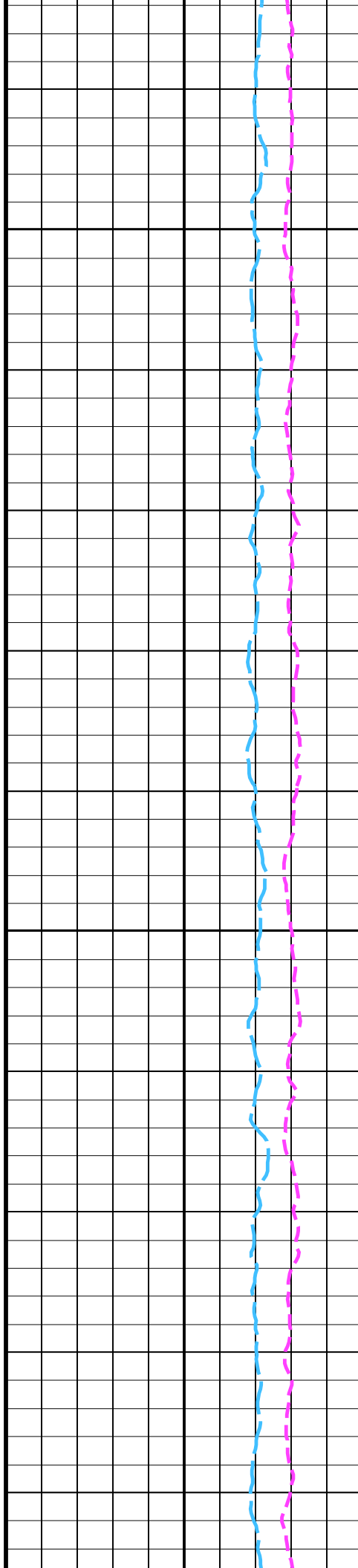


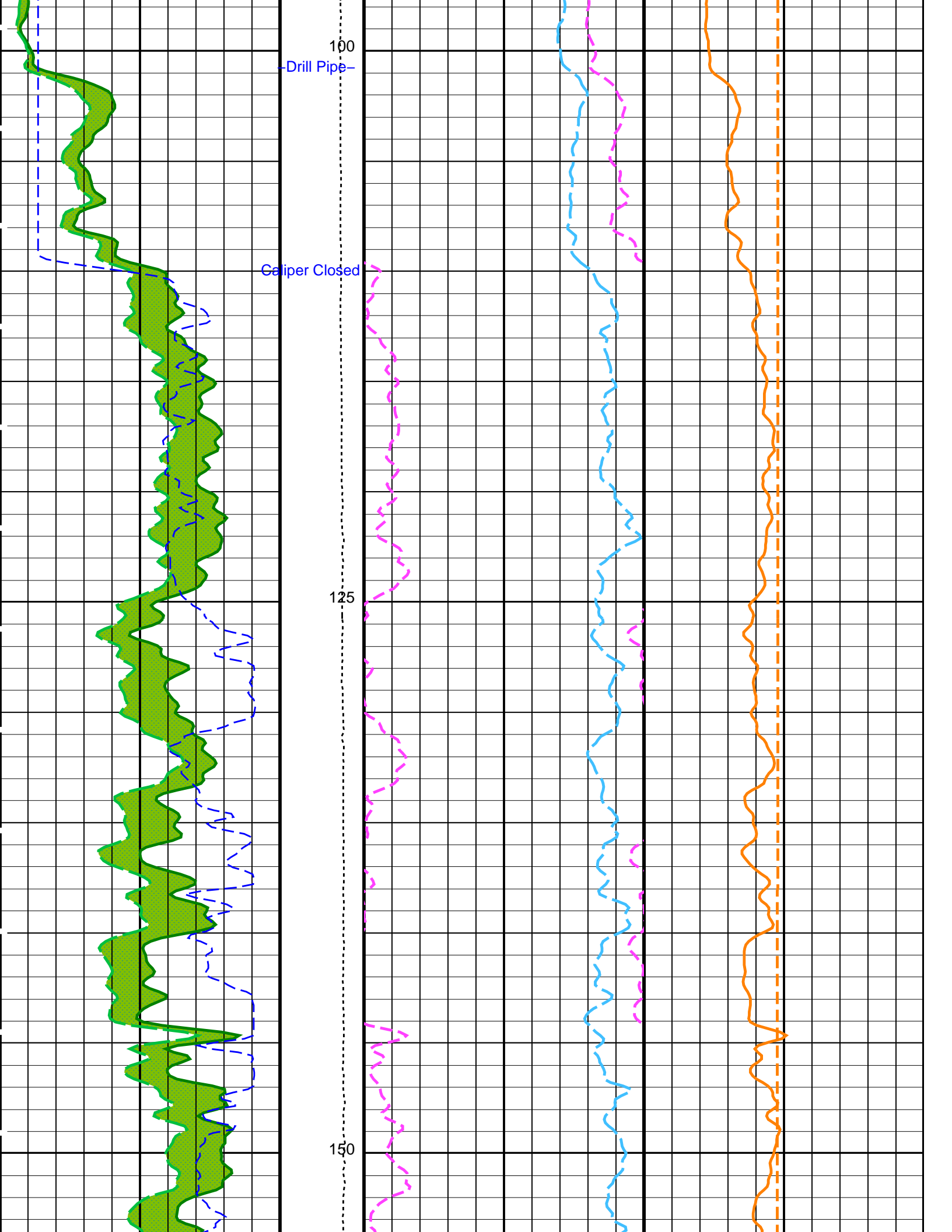




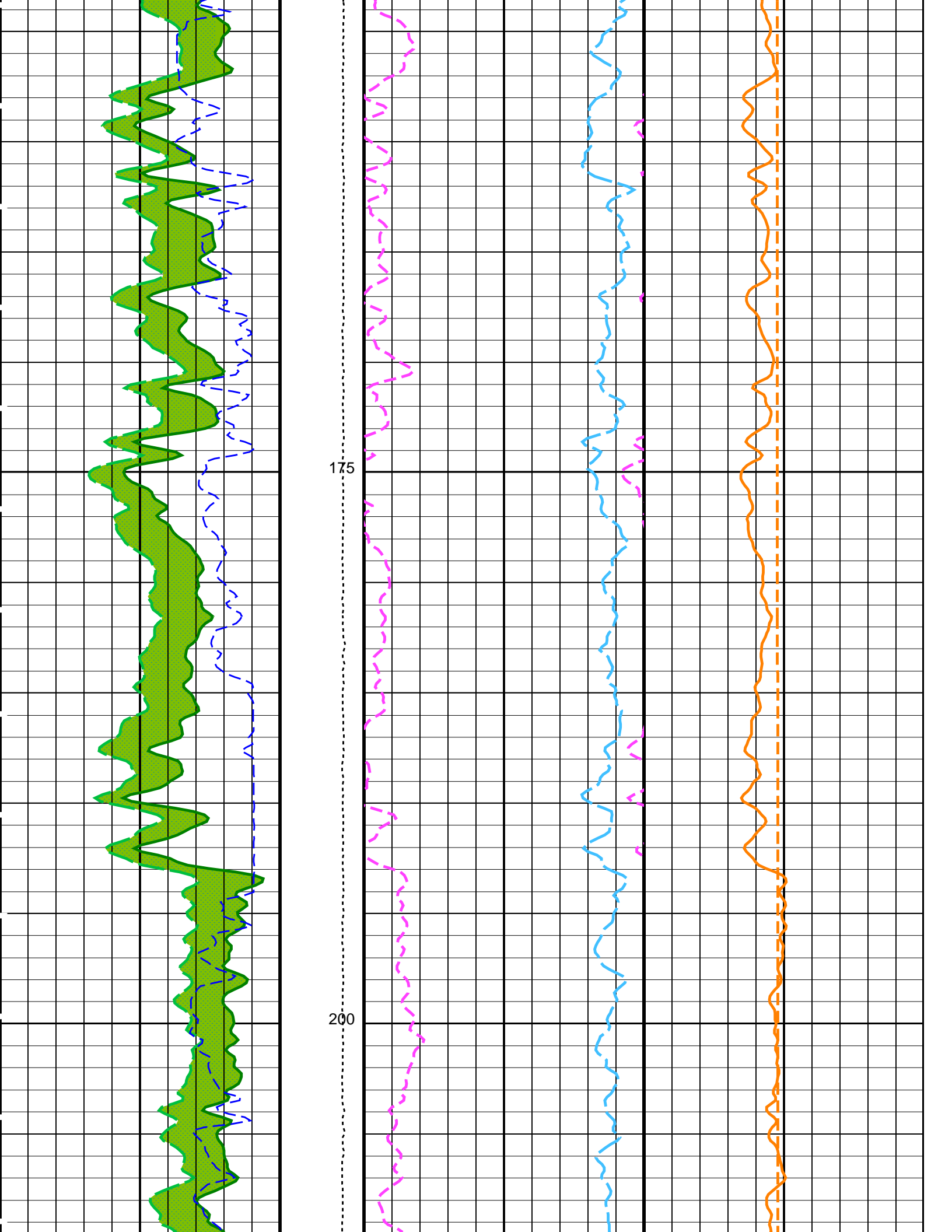
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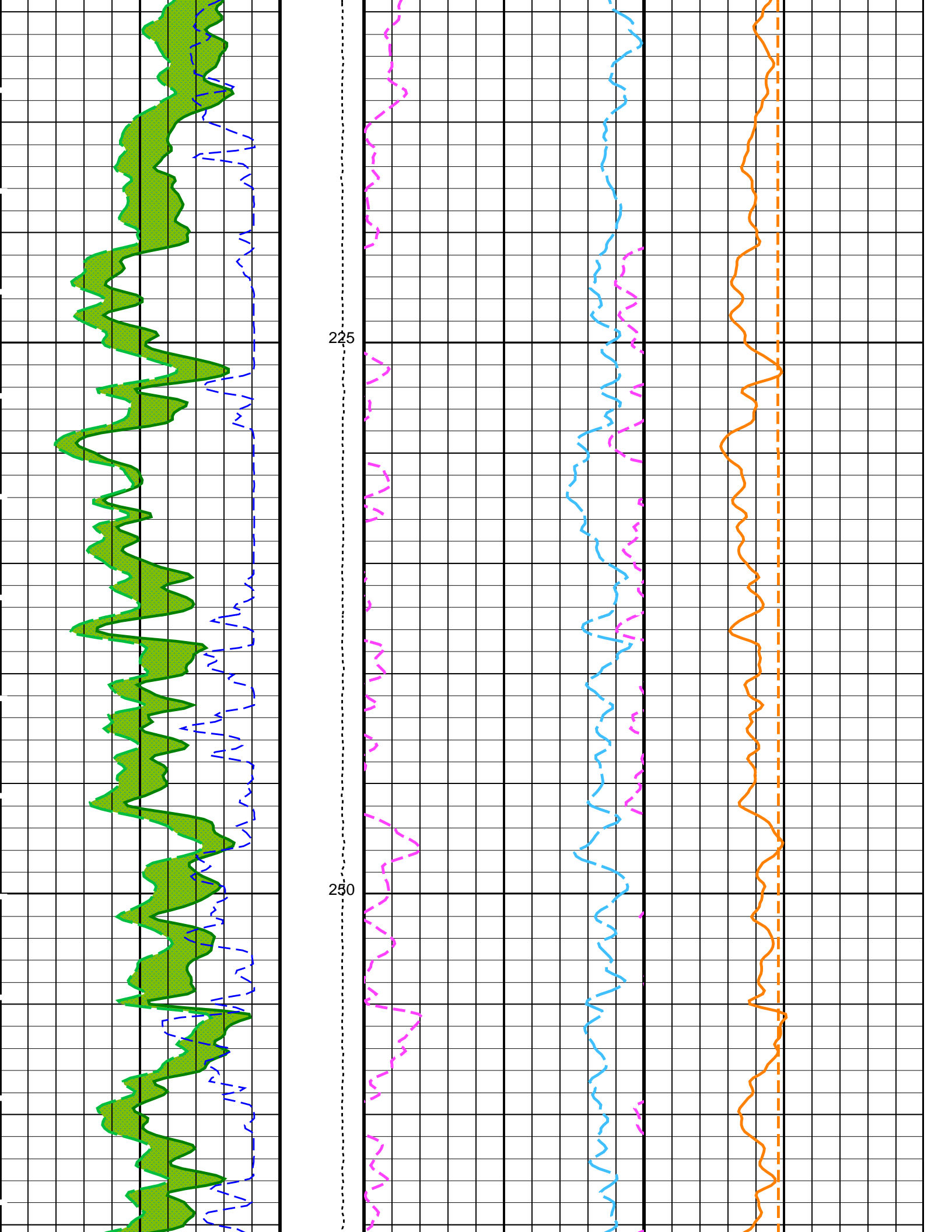
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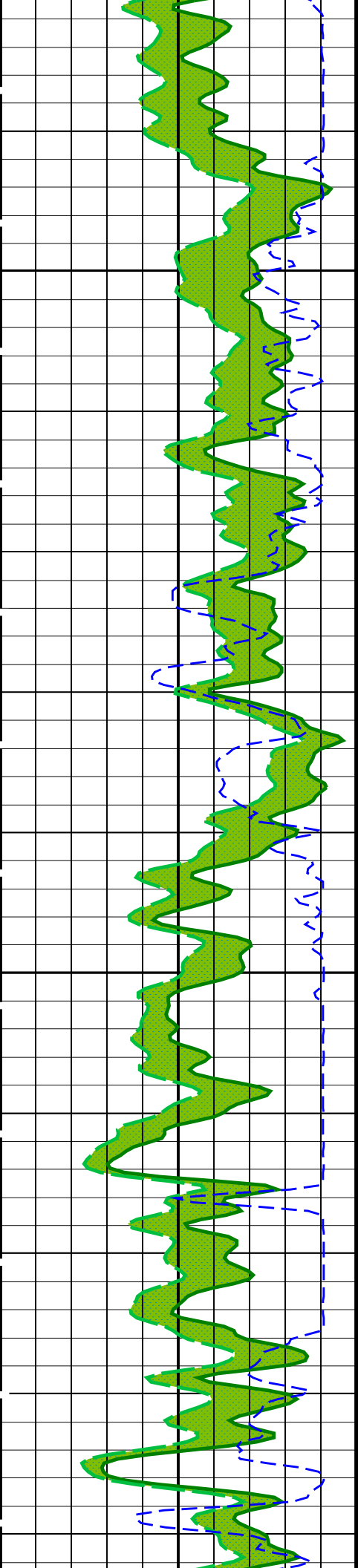






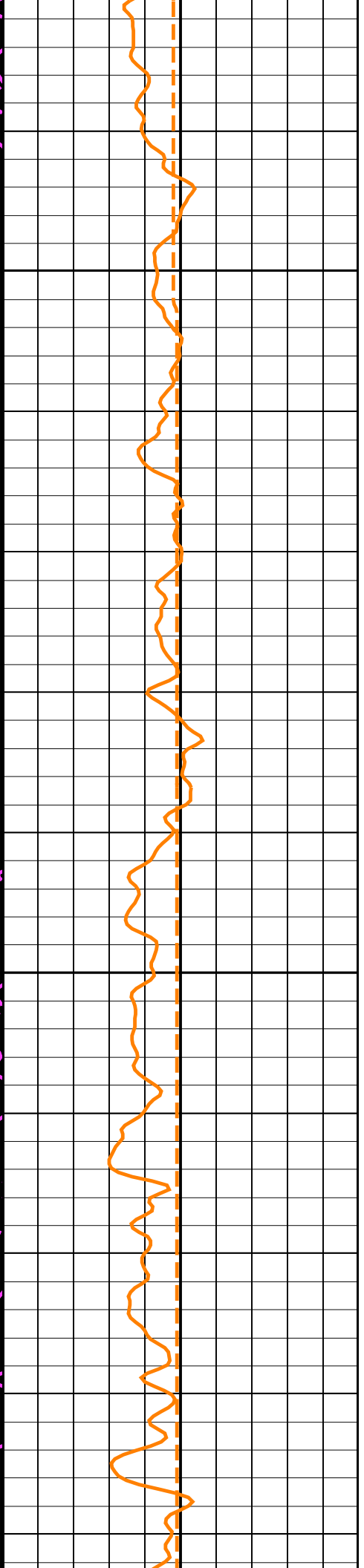
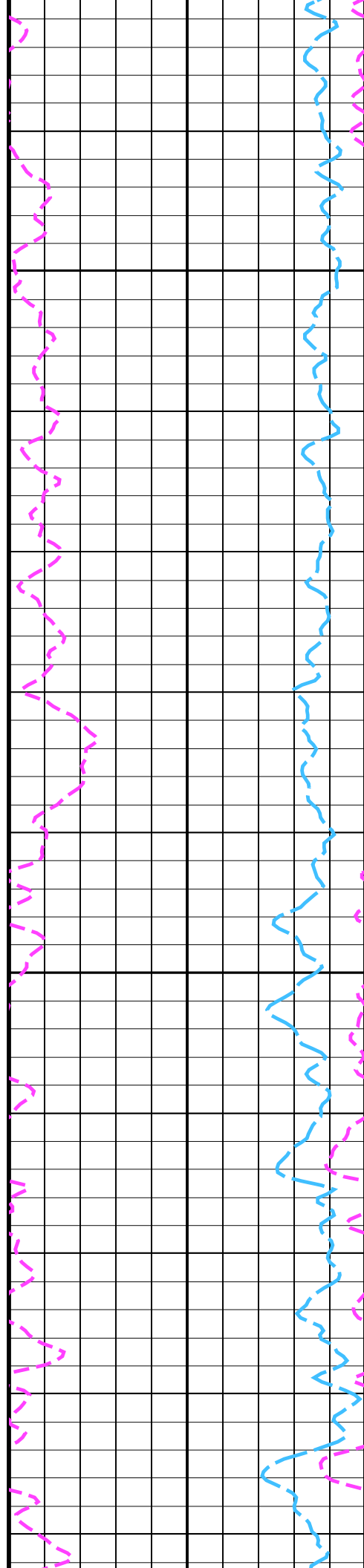


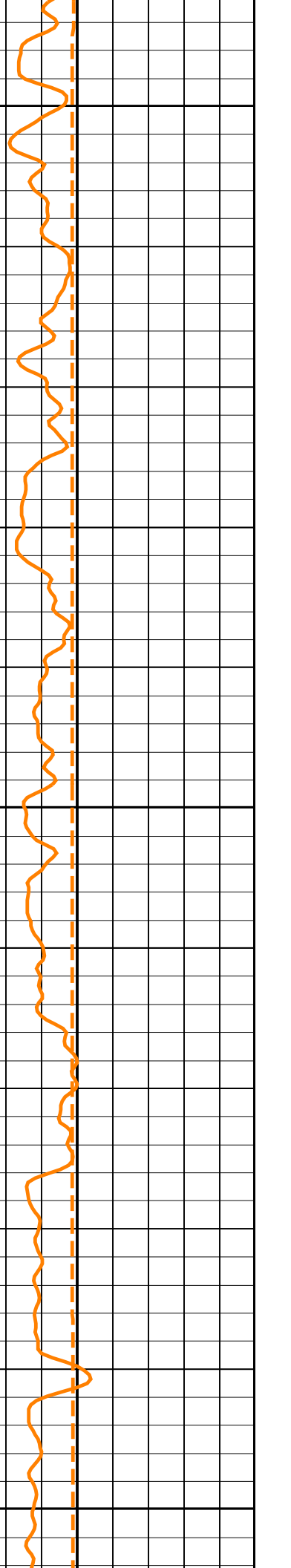
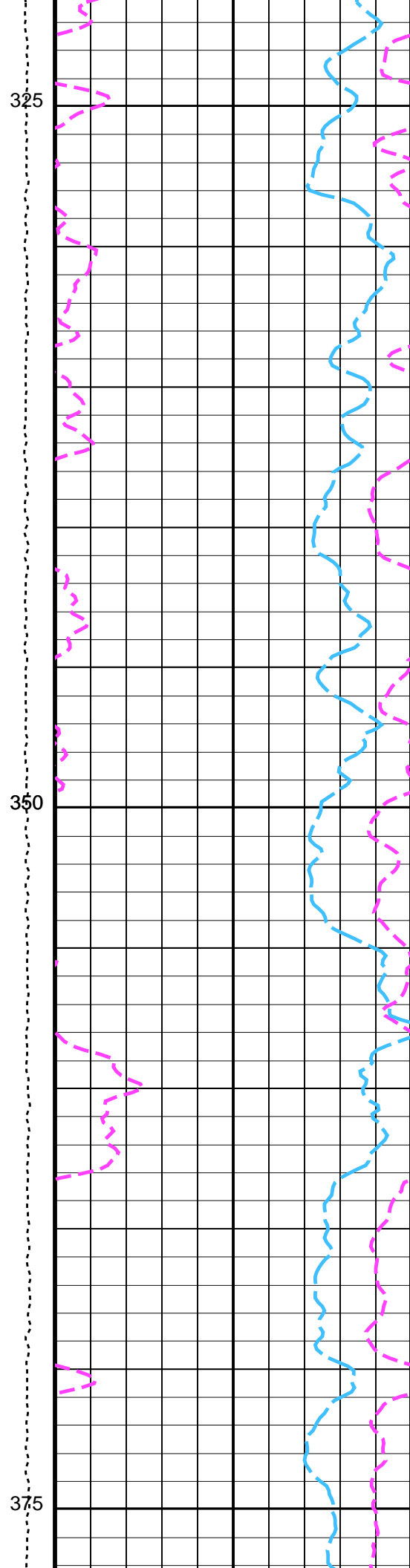
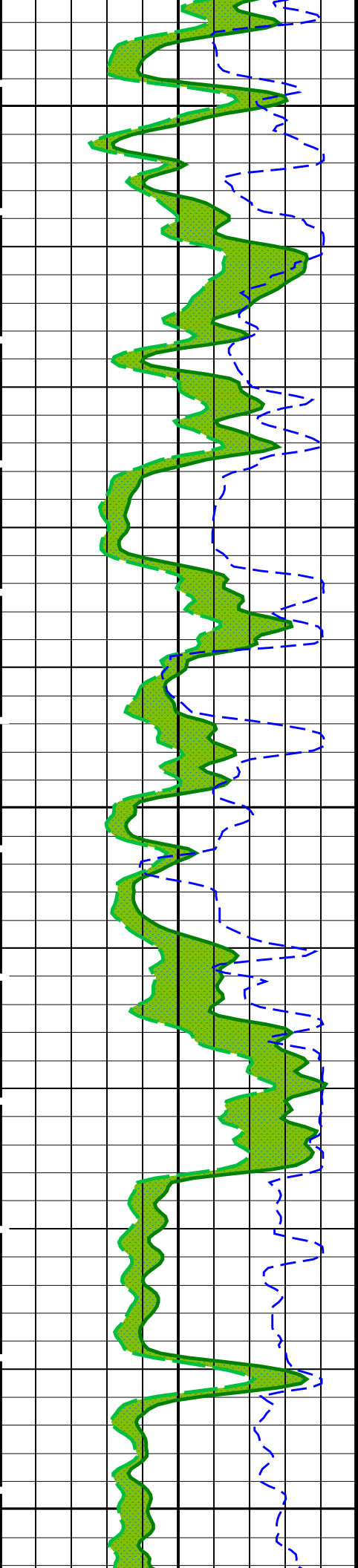


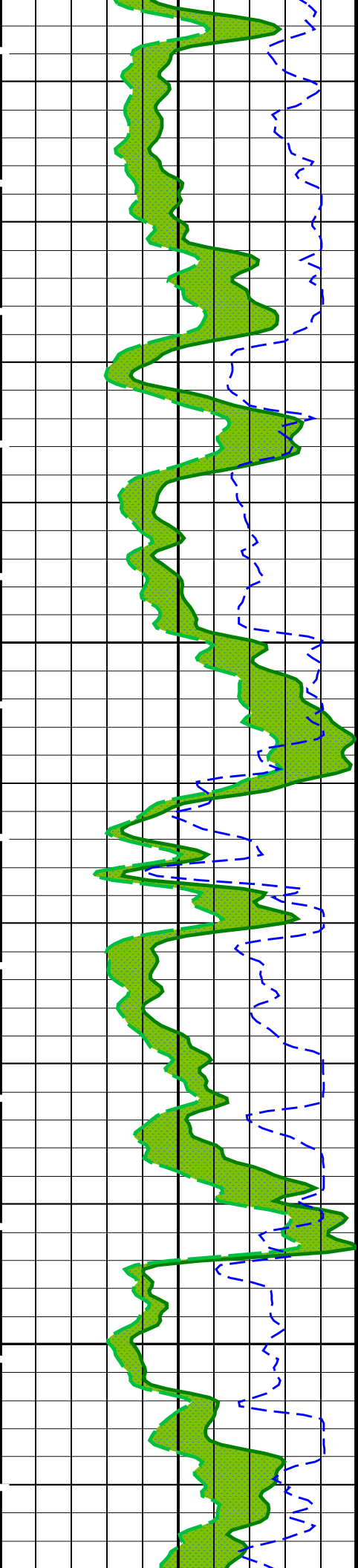


275

300

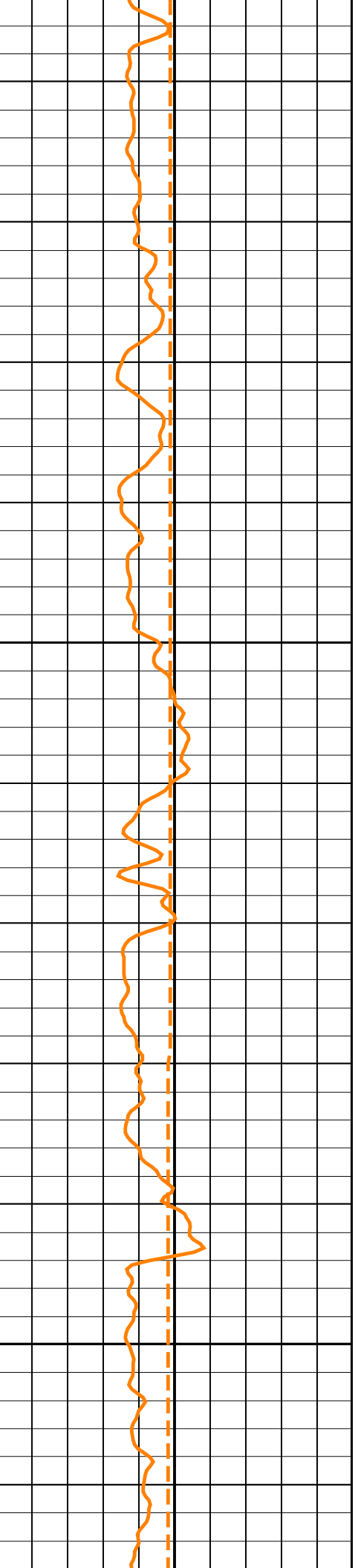
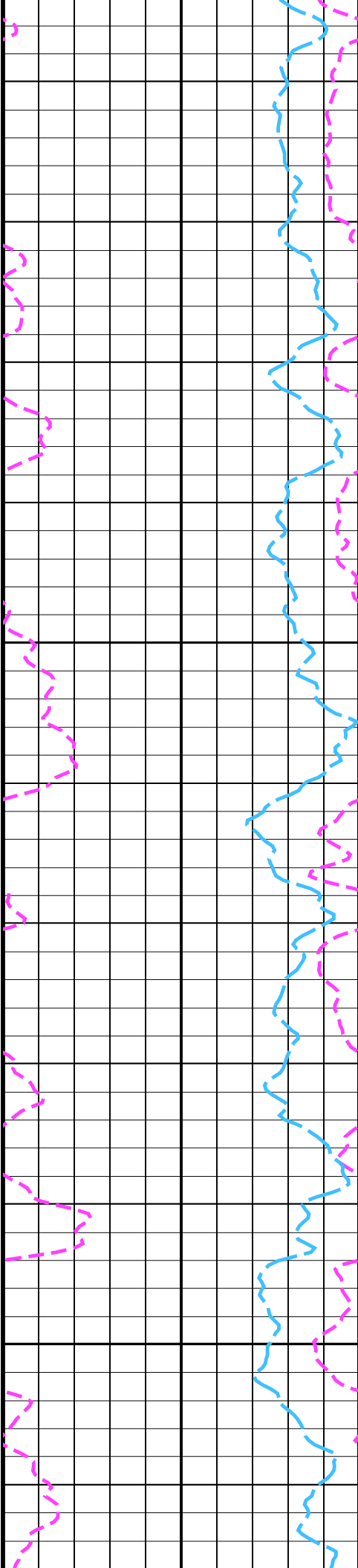


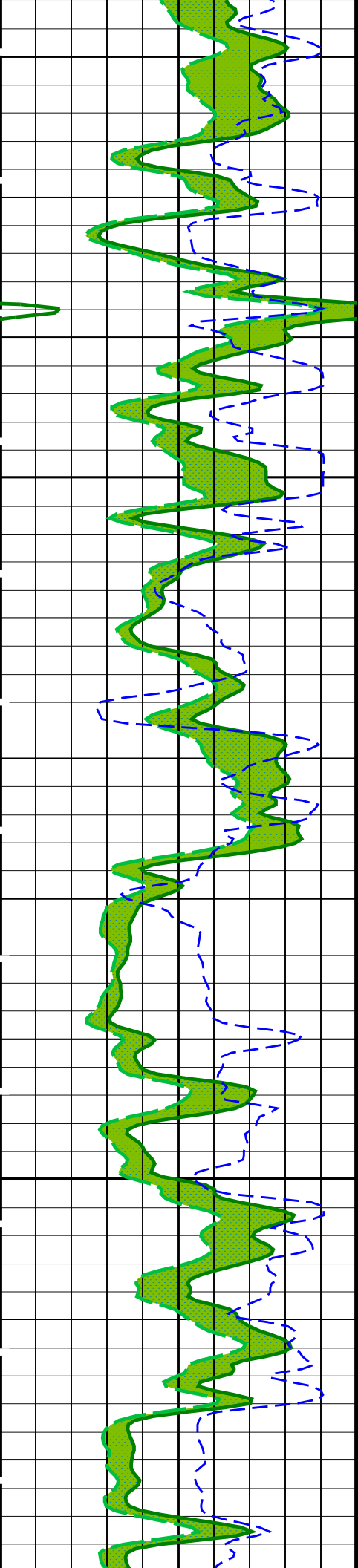




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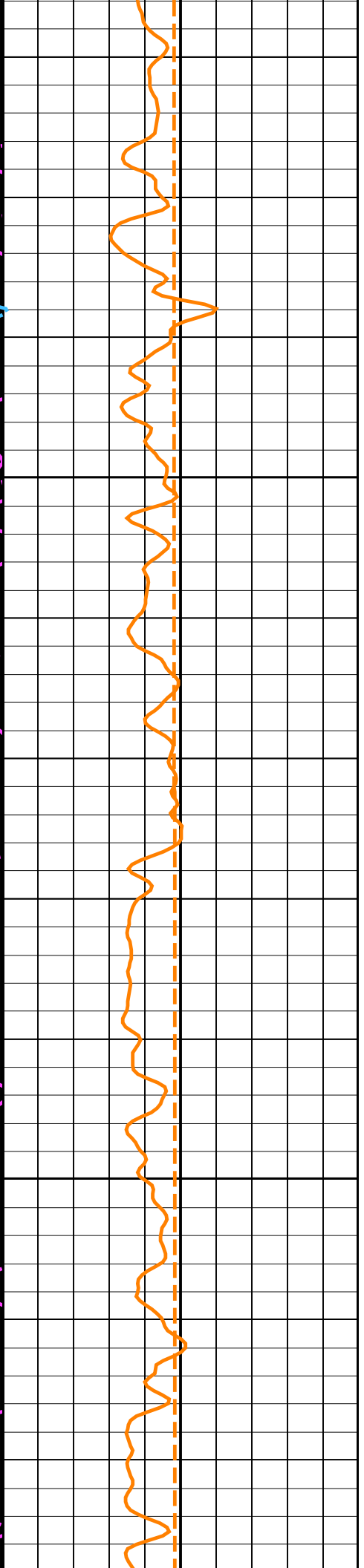
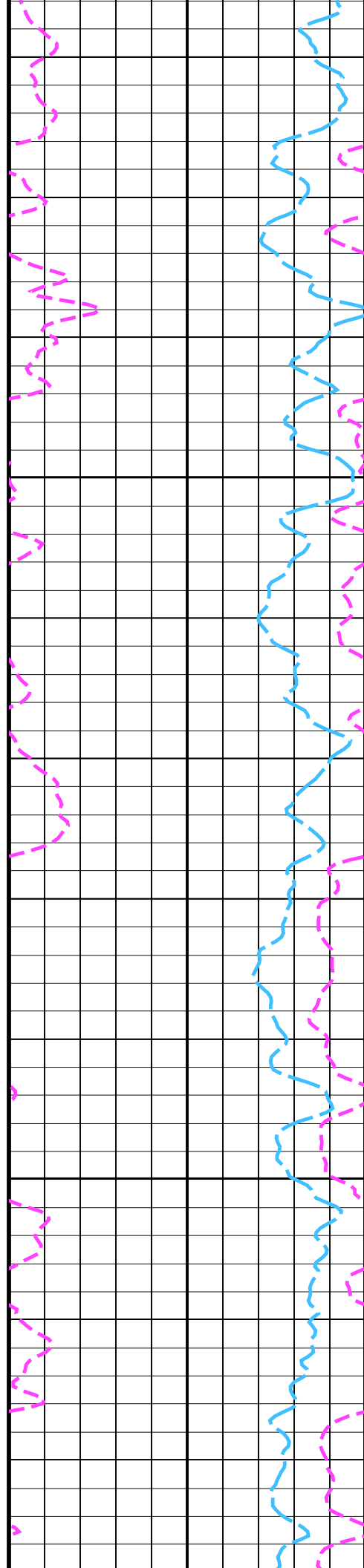
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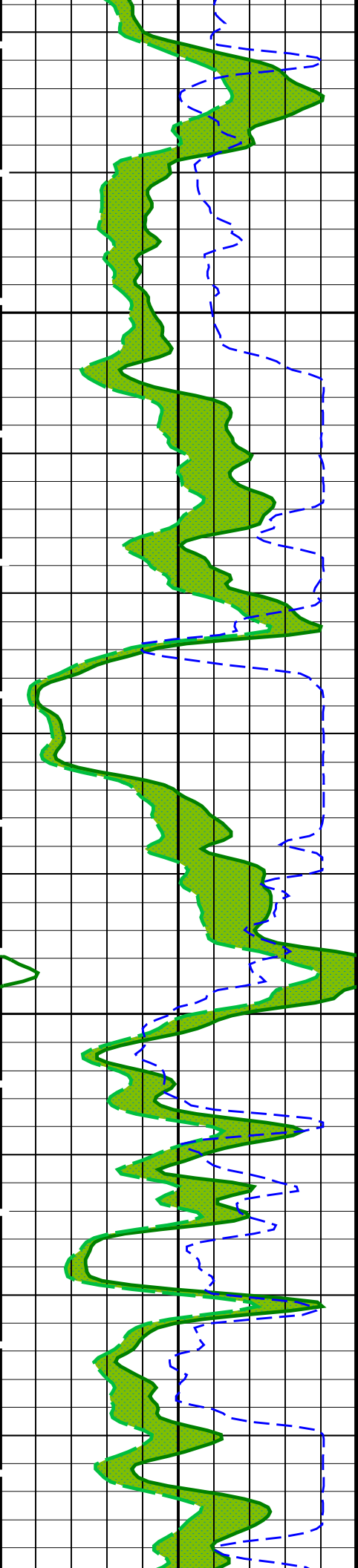




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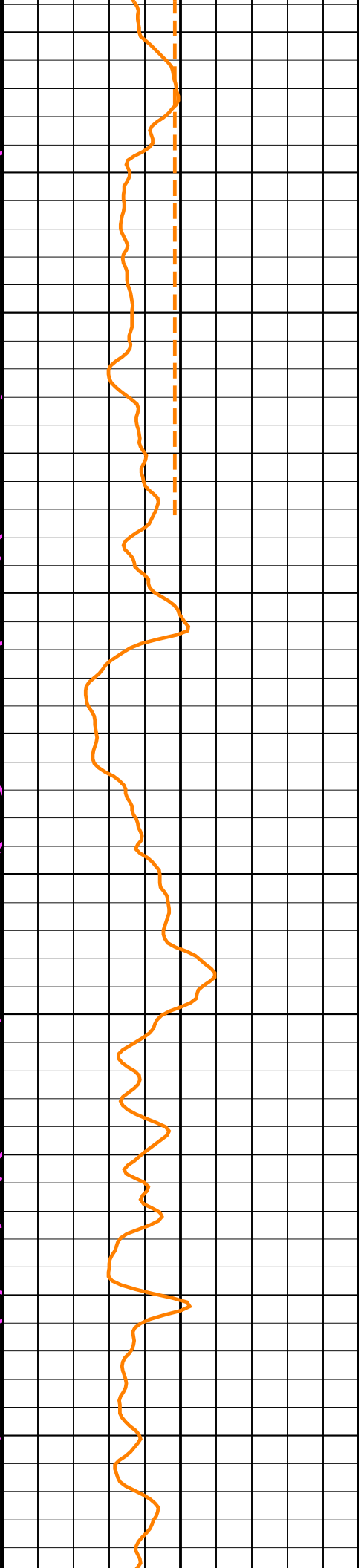
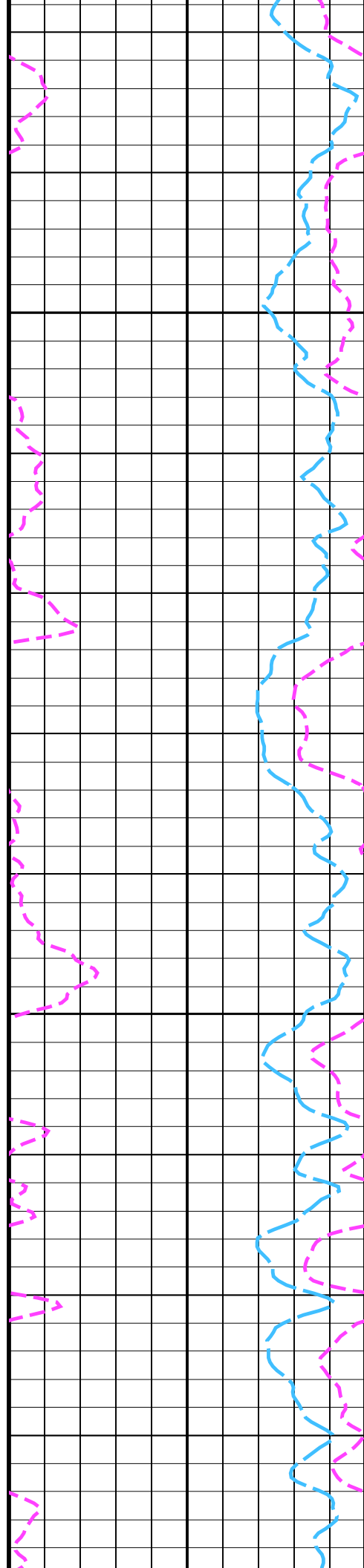
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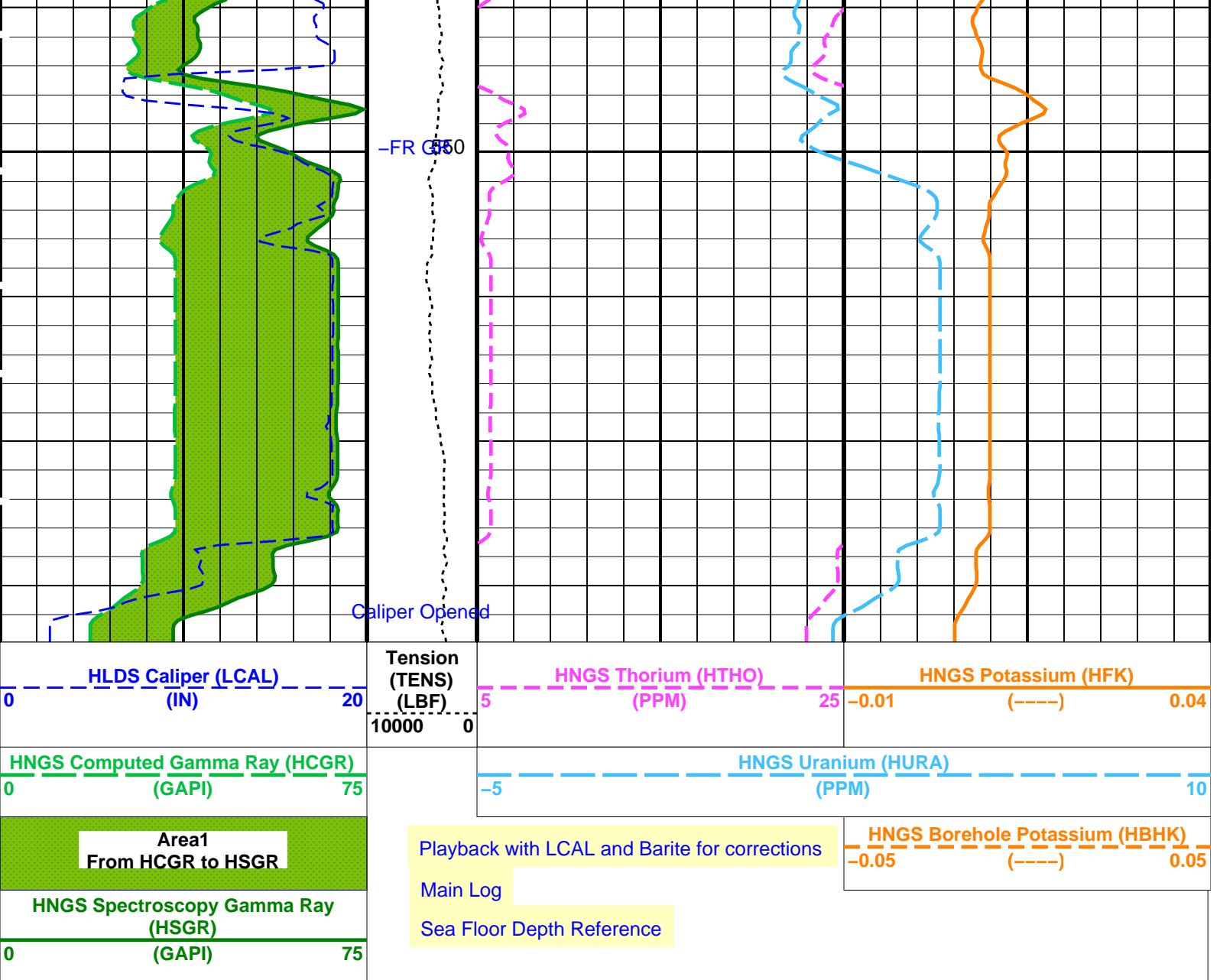




500

525





PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
BHS	APS-C: Accelerator-Porosity Tool	
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	LCAL
	HNGS-BA: Hostile Natural Gamma Ray Sonde	
BAR1	HNGS Detector 1 Barite Constant	1
BAR2	HNGS Detector 2 Barite Constant	1
BHK	HNGS Borehole Potassium Correction Concentration	0
BHS	Borehole Status	OPEN
CSD1	Inner Casing Outer Diameter	0 IN
CSD2	Outer Casing Outer Diameter	0 IN
CSW1	Inner Casing Weight	0 LB/F
CSW2	Outer Casing Weight	0 LB/F
DBCC	HNGS Barite Constant Correction Flag	NONE
GCSE	Generalized Caliper Selection	LCAL
H1P	HNGS Detector 1 Allow/Disallow In Processing	ALLOW
H2P	HNGS Detector 2 Allow/Disallow In Processing	ALLOW
HABK	HNGS Borehole Potassium Running Average	-0.00518472
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
TRCS	Tool Position	FCSE



IPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.992678	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.983861	
<b>HRLT-B: High Resolution Laterolog Array - B</b>			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
<b>EDTC-B: Enhanced DTS Cartridge</b>			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	LCAL	
<b>System and Miscellaneous</b>			
BS	Bit Size	9.875	IN
DFD	Drilling Fluid Density	1.25	G/C3
DO	Depth Offset for Playback	-654.0	M
PP	Playback Processing	RECOMPUTE	

Format: HNGSYields    Vertical Scale: 1:200    Graphics File Created: 02-Jan-2012 06:00

### OP System Version: 19C0-187

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

#### Input DLIS Files

DEFAULT	LDL_APS_NGS_HRLA_027LUP	FN:21	PRODUCER	02-Jan-2012 03:40	1220.7 M	643.0 M
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#### Output DLIS Files

DEFAULT	LDL_APS_NGS_HRLA_030PUP	FN:25	PRODUCER	02-Jan-2012 06:00		
BACKUPDLIS	LDL_APS_NGS_HRLA_030PUP	FN:26	PRODUCER	02-Jan-2012 06:00		

#### Input DLIS Files

DEFAULT	LDL_APS_NGS_HRLA_027LUP	FN:21	PRODUCER	02-Jan-2012 03:40	1220.7 M	643.0 M
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#### Output DLIS Files

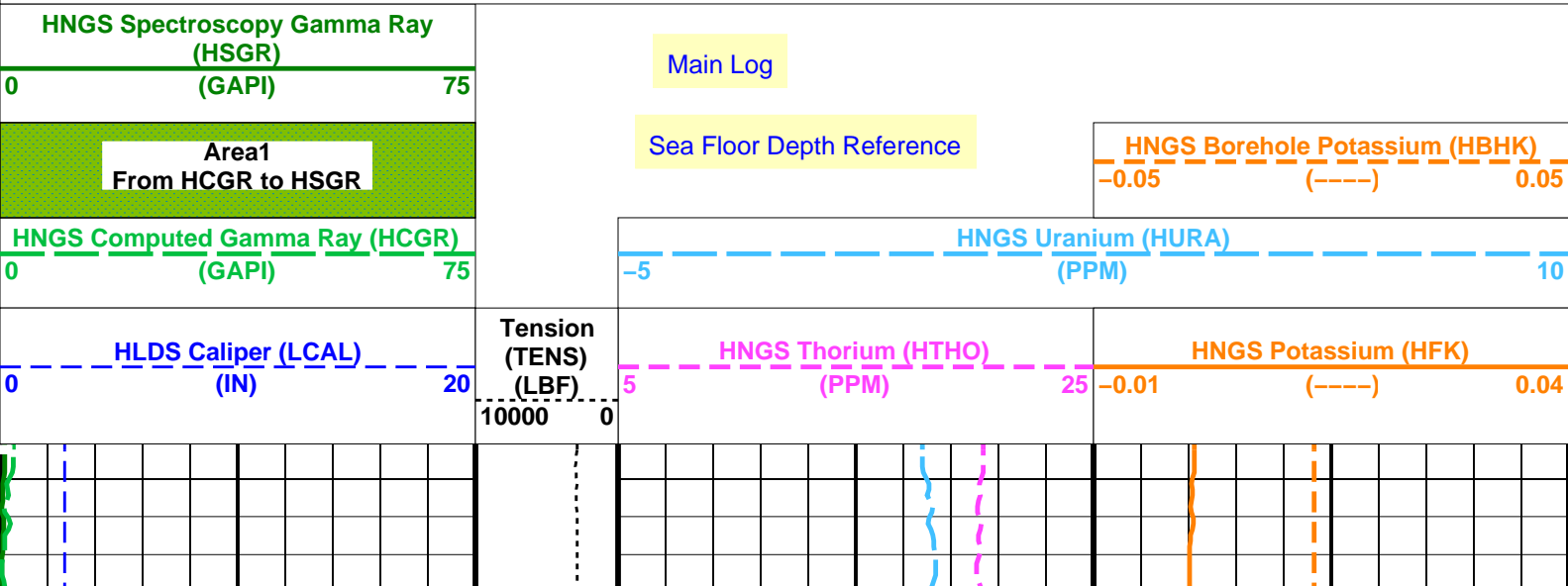
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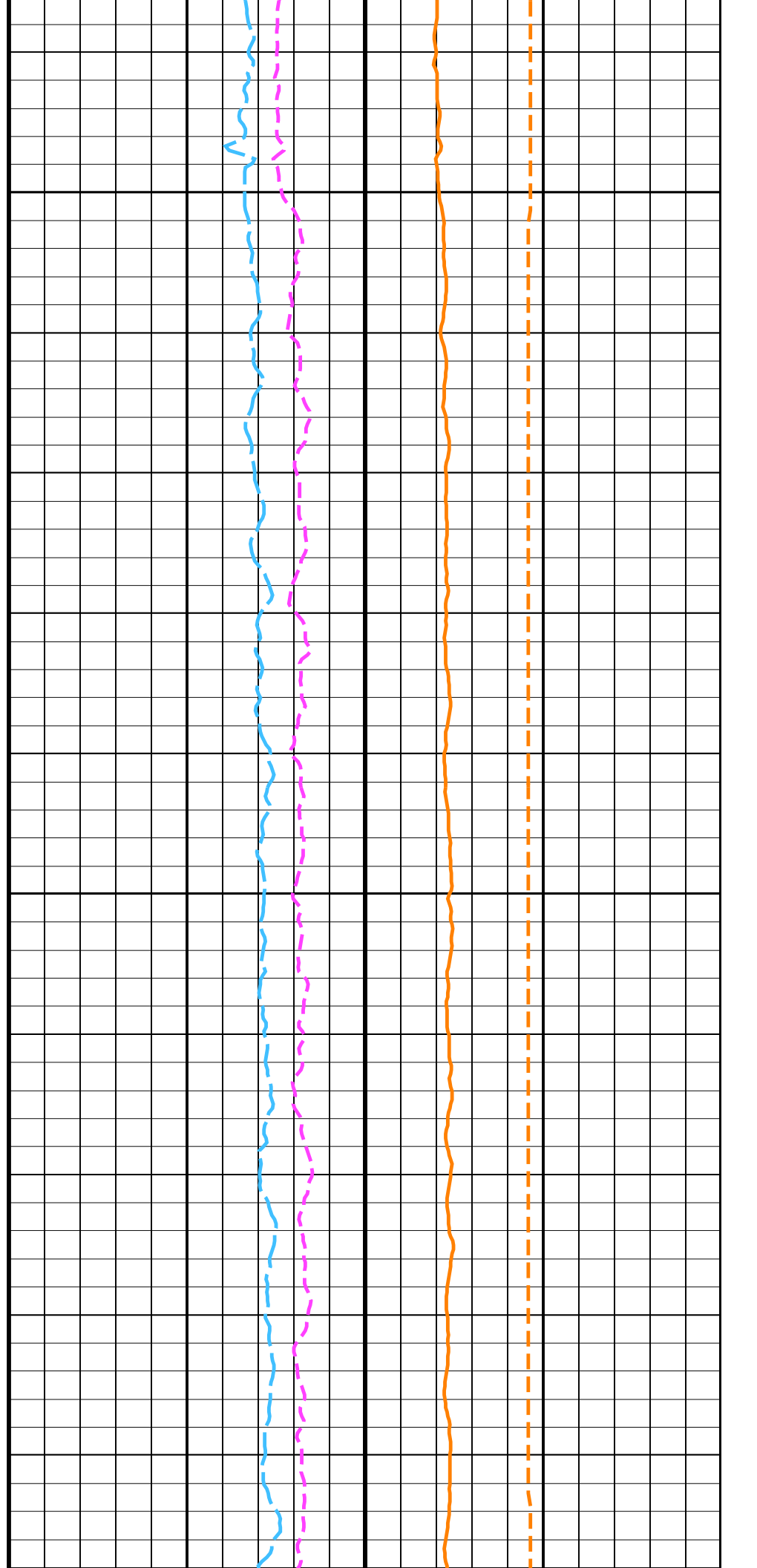
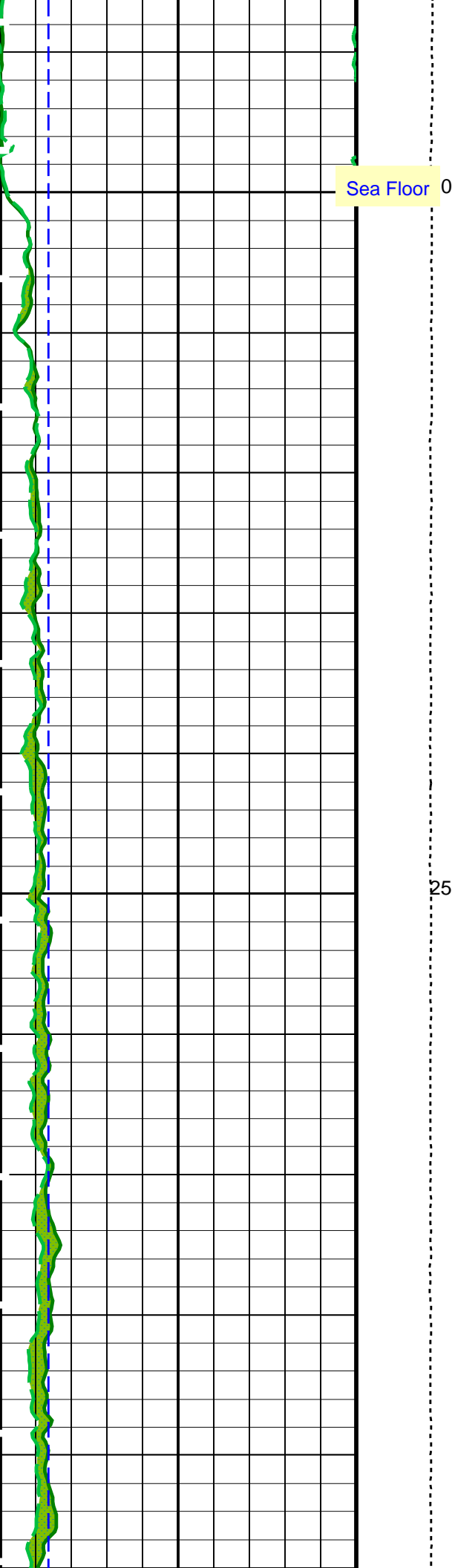
### OP System Version: 19C0-187

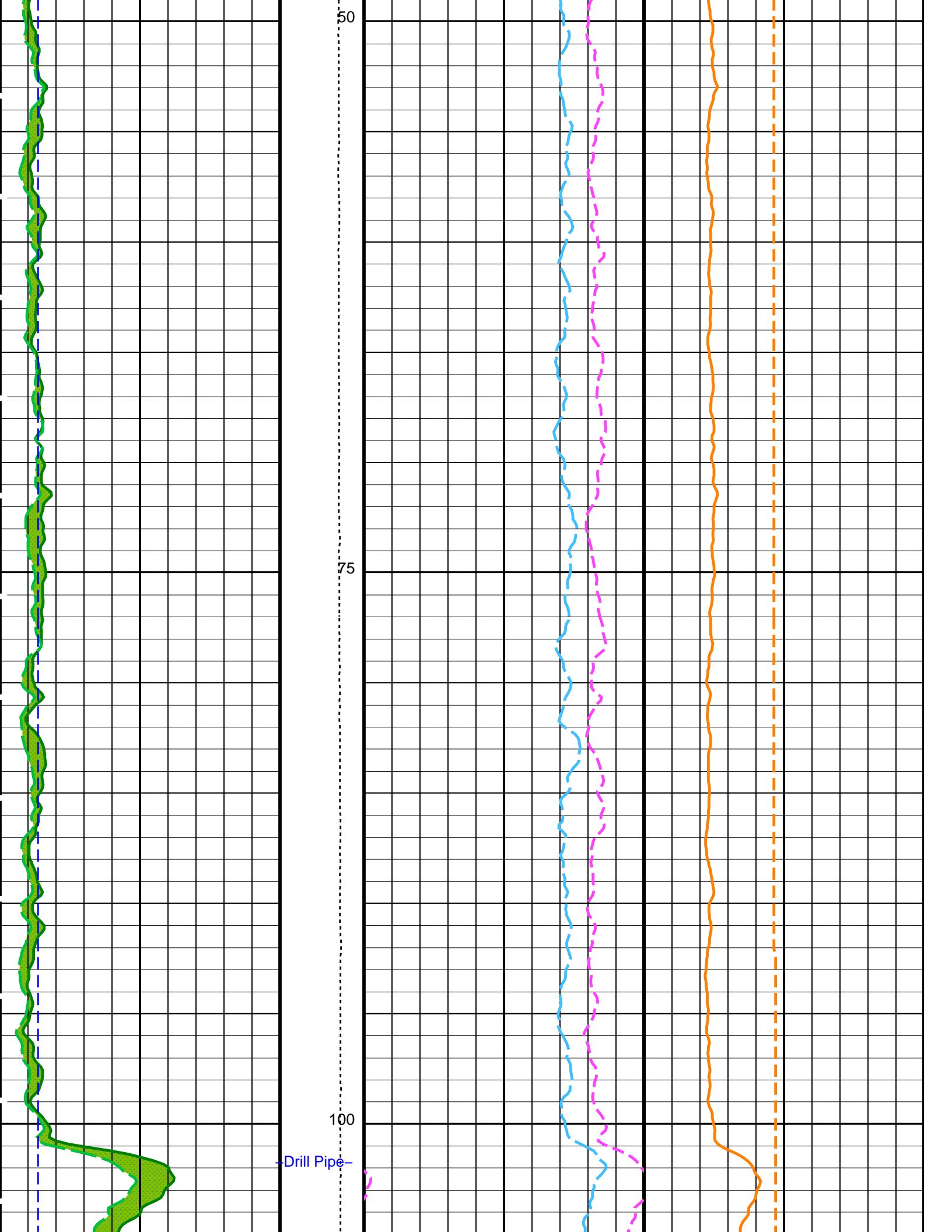
HLDS	19C0-187	LDSC-B	19C0-187
APS-C	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	HRLT-B	19C0-187
EDTC-B	19C0-187		

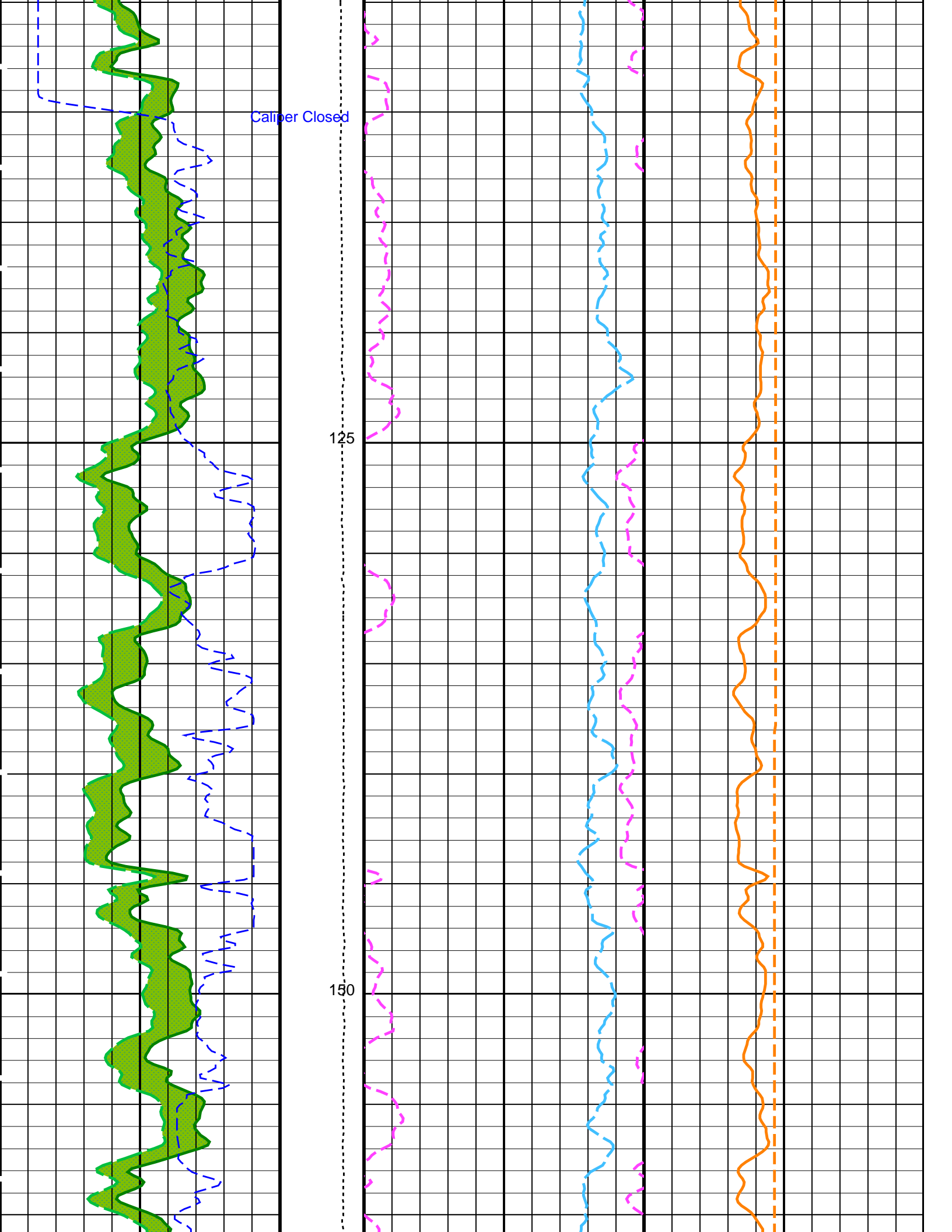
#### PIP SUMMARY

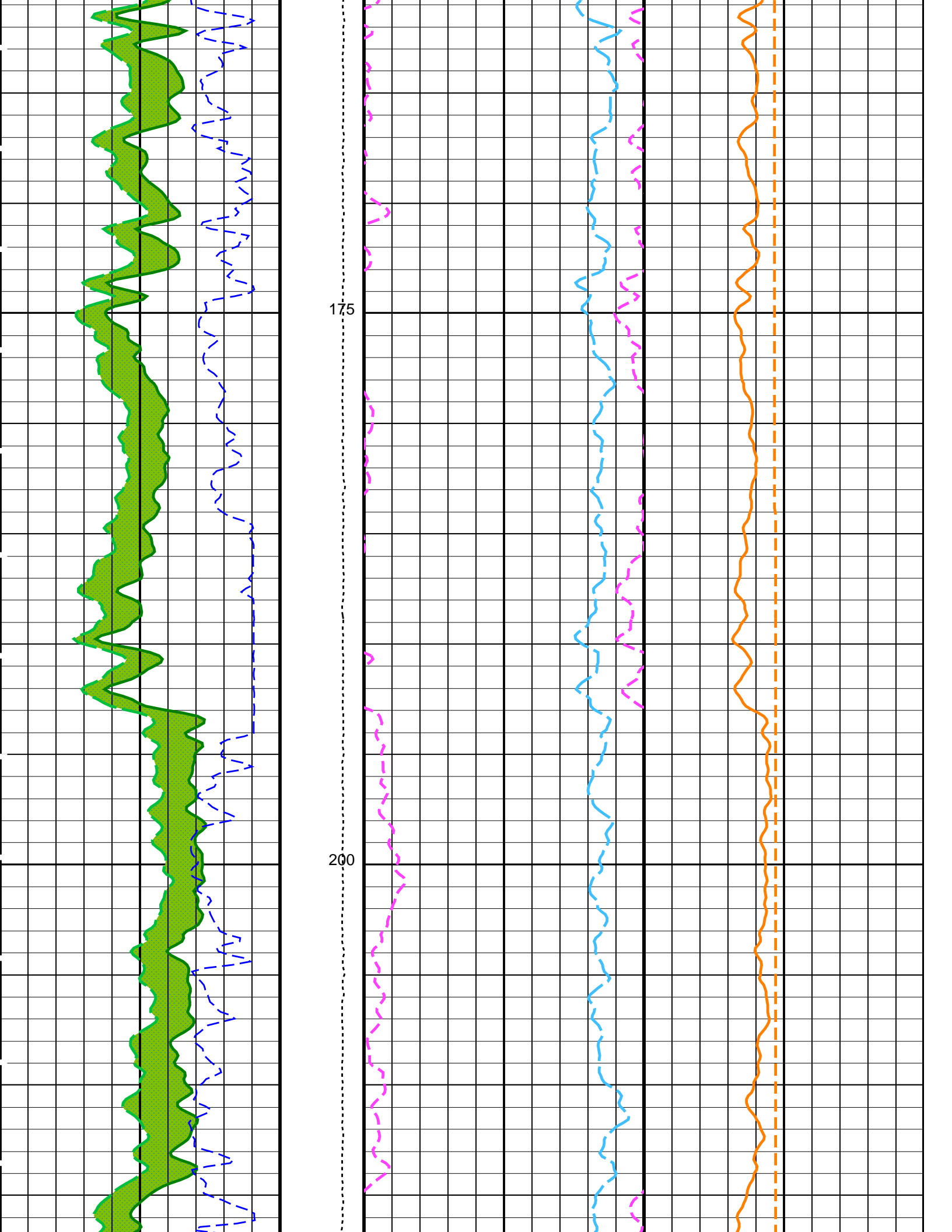
Time Mark Every 60 S

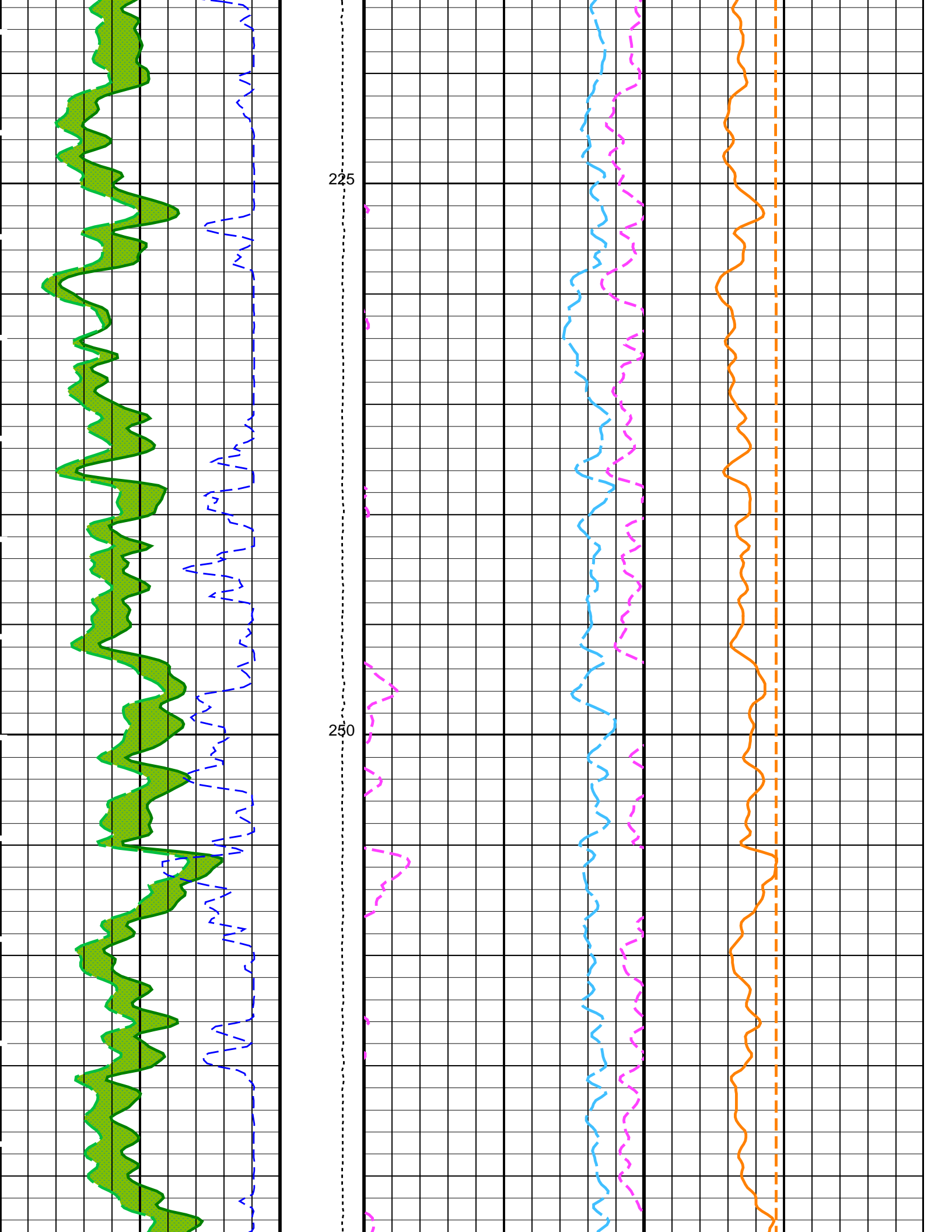


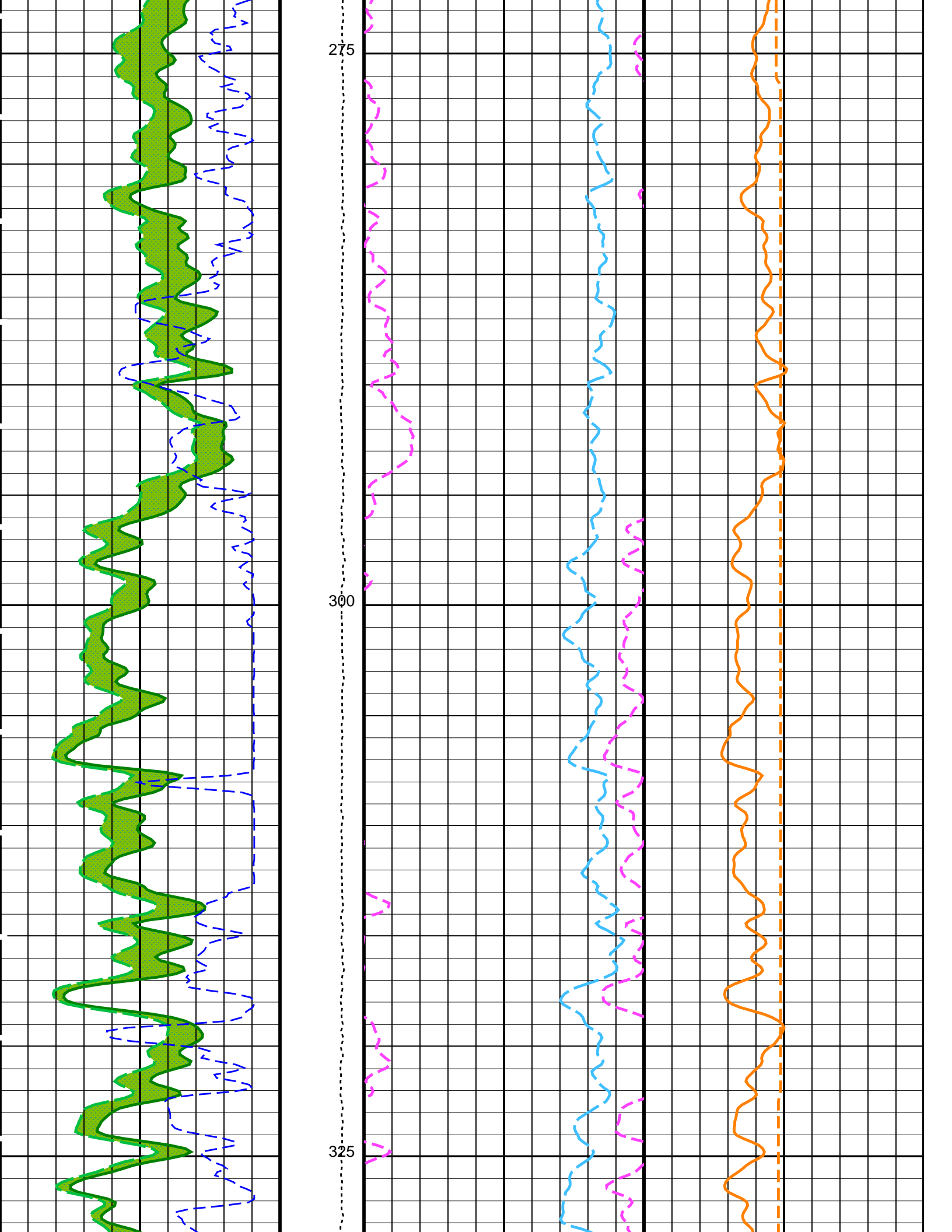


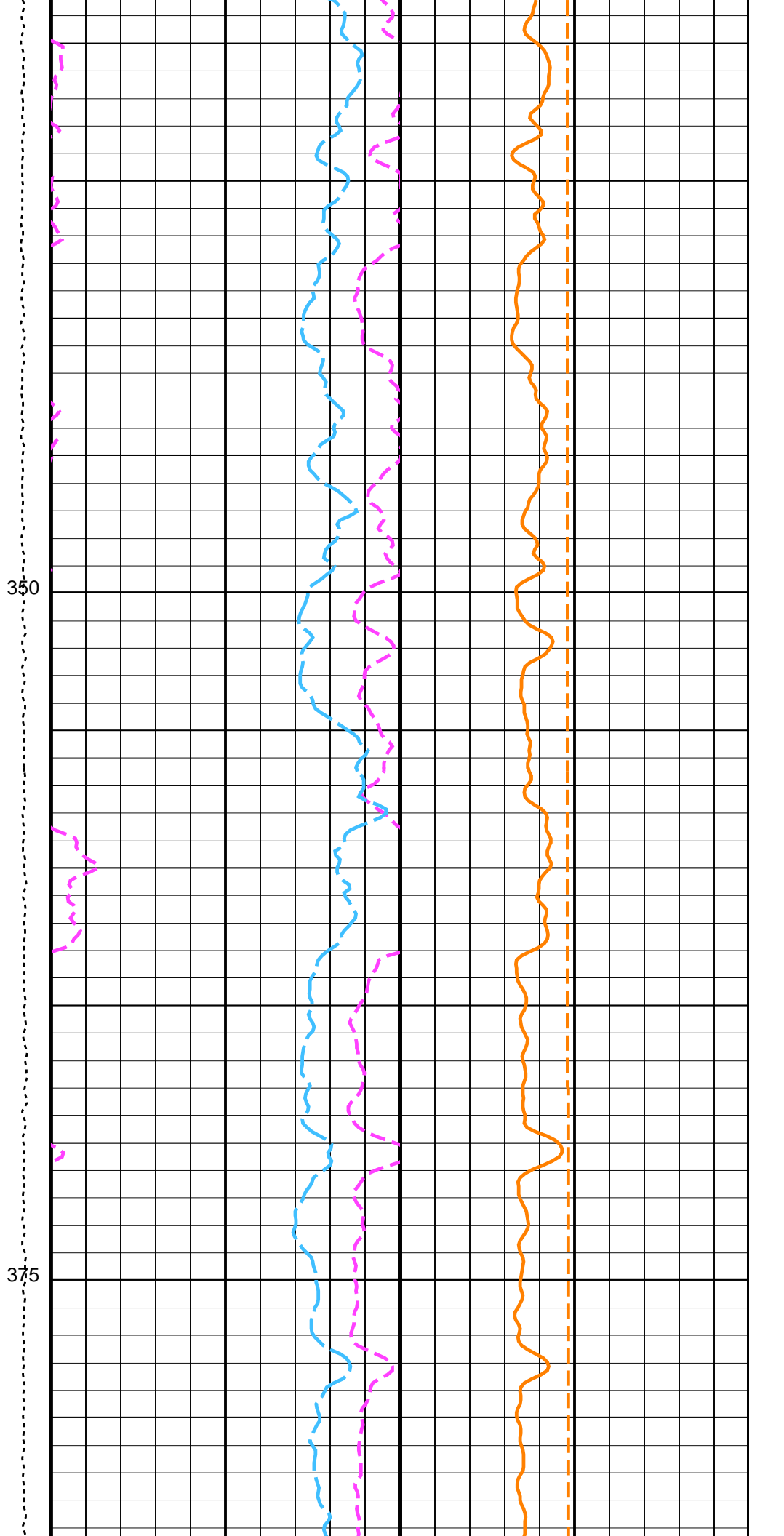
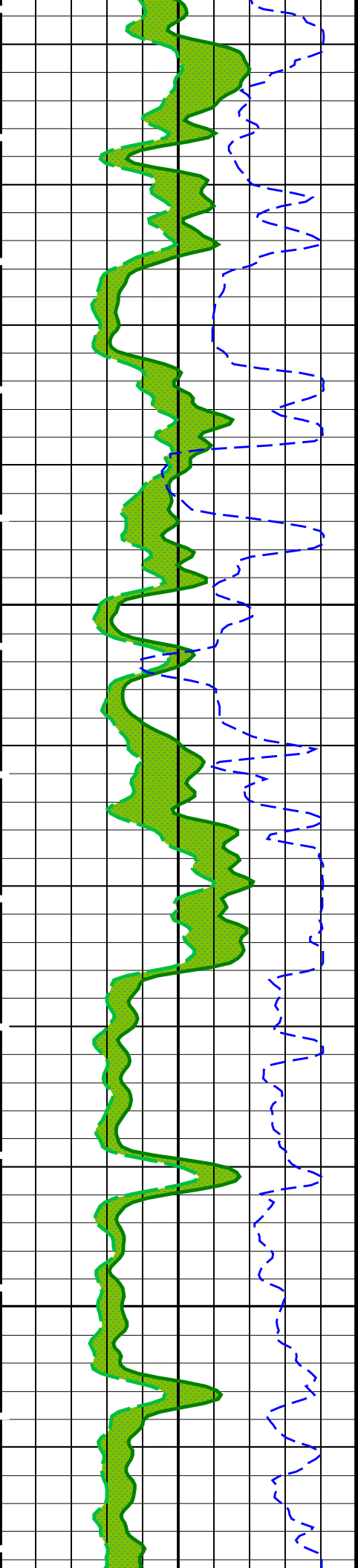




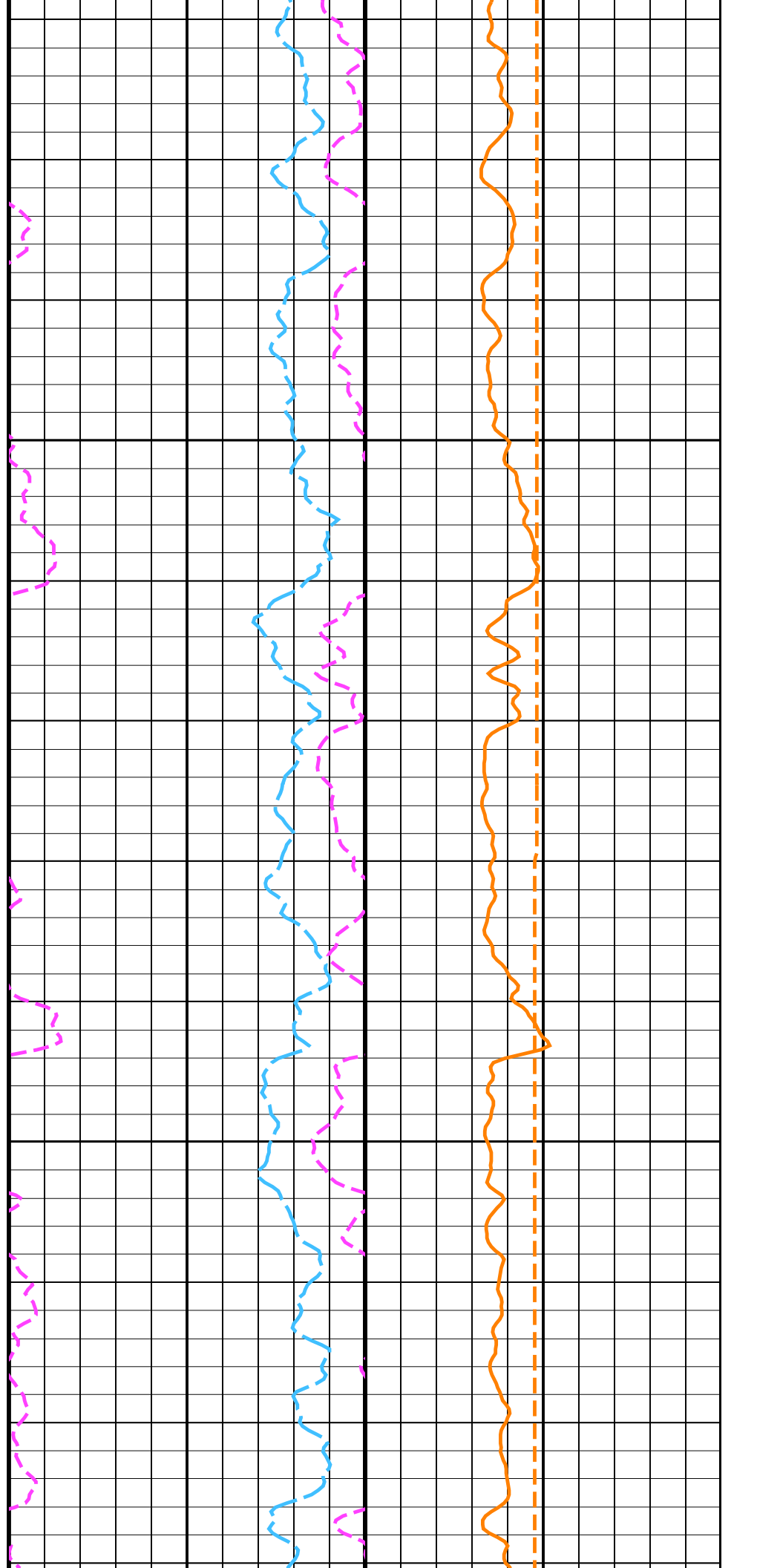
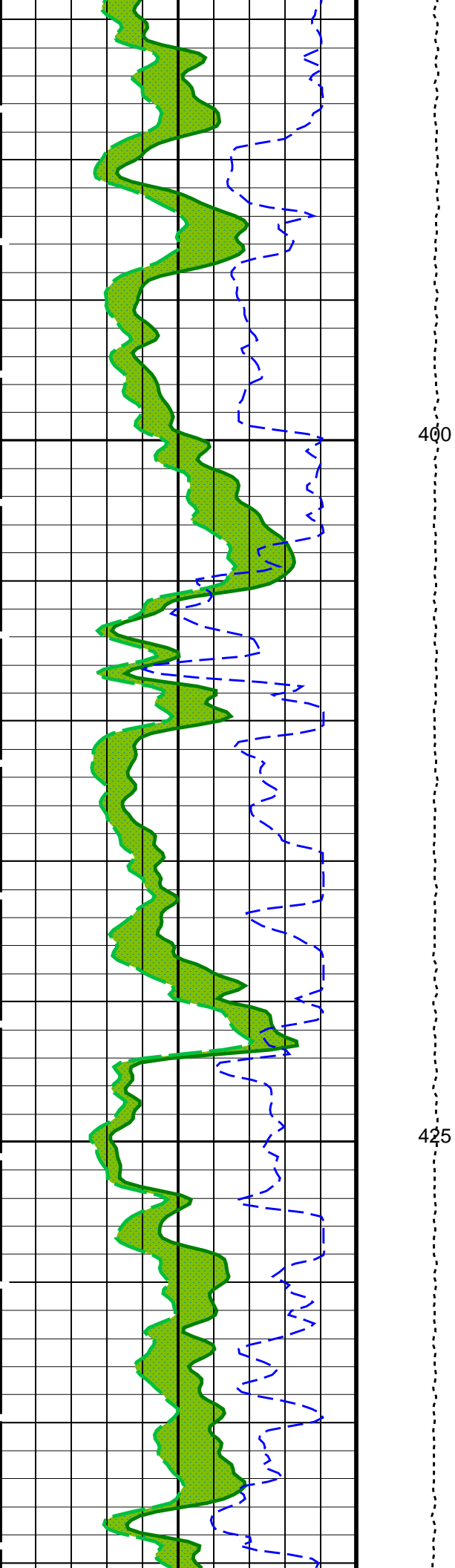


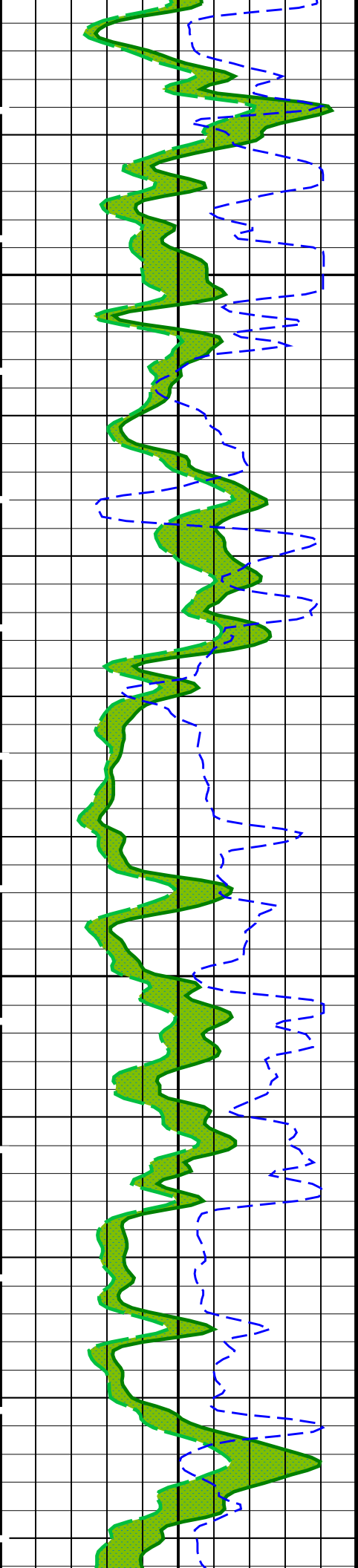






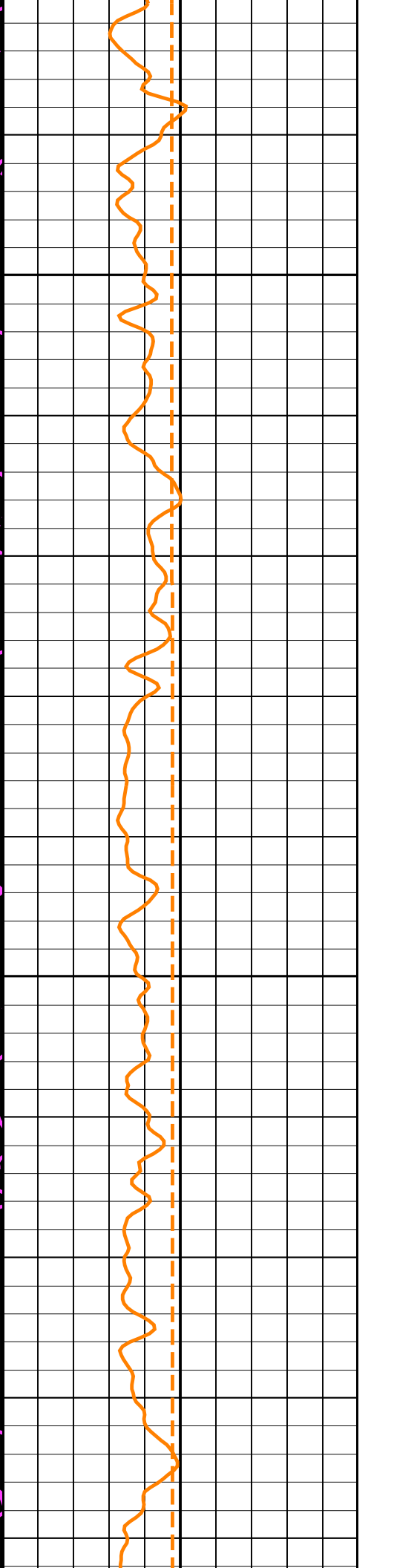
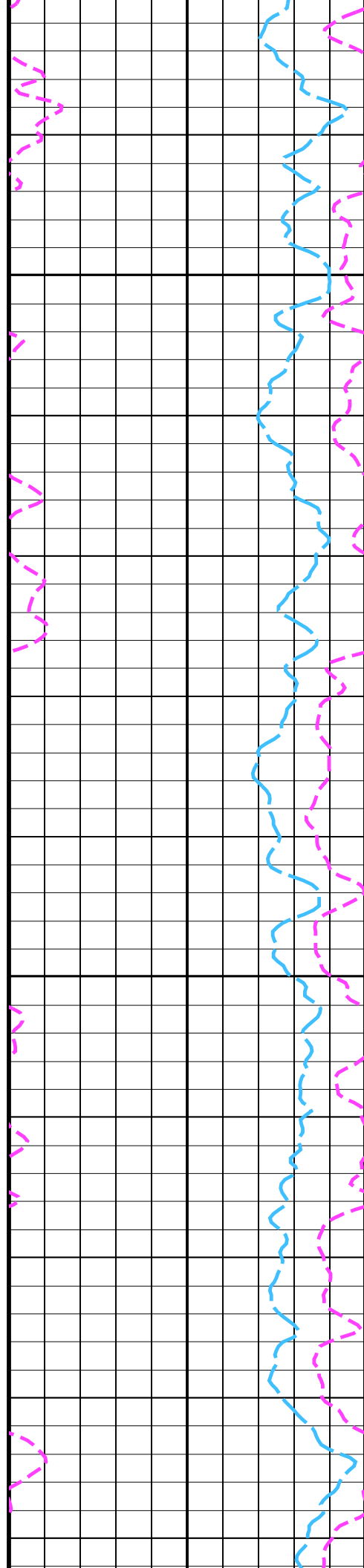


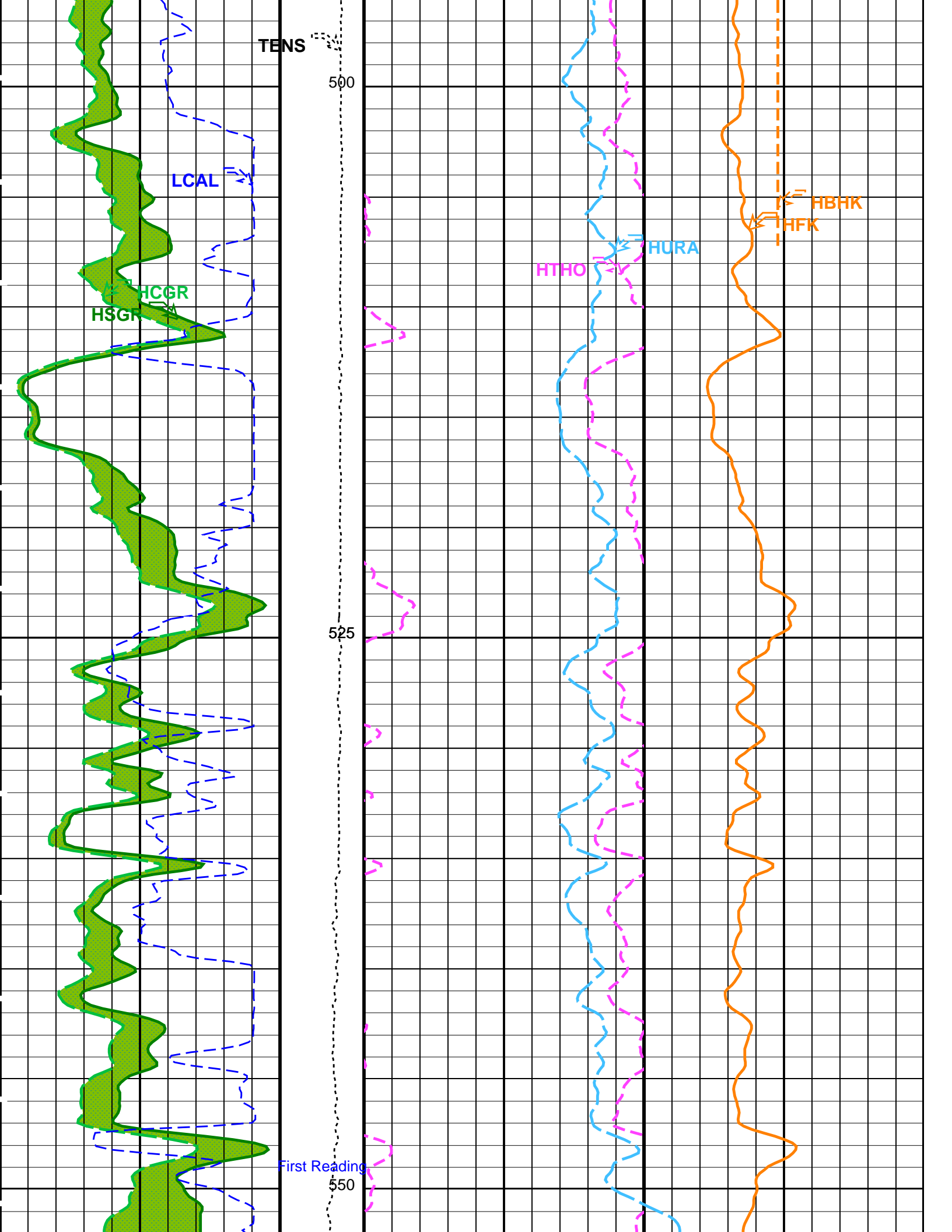


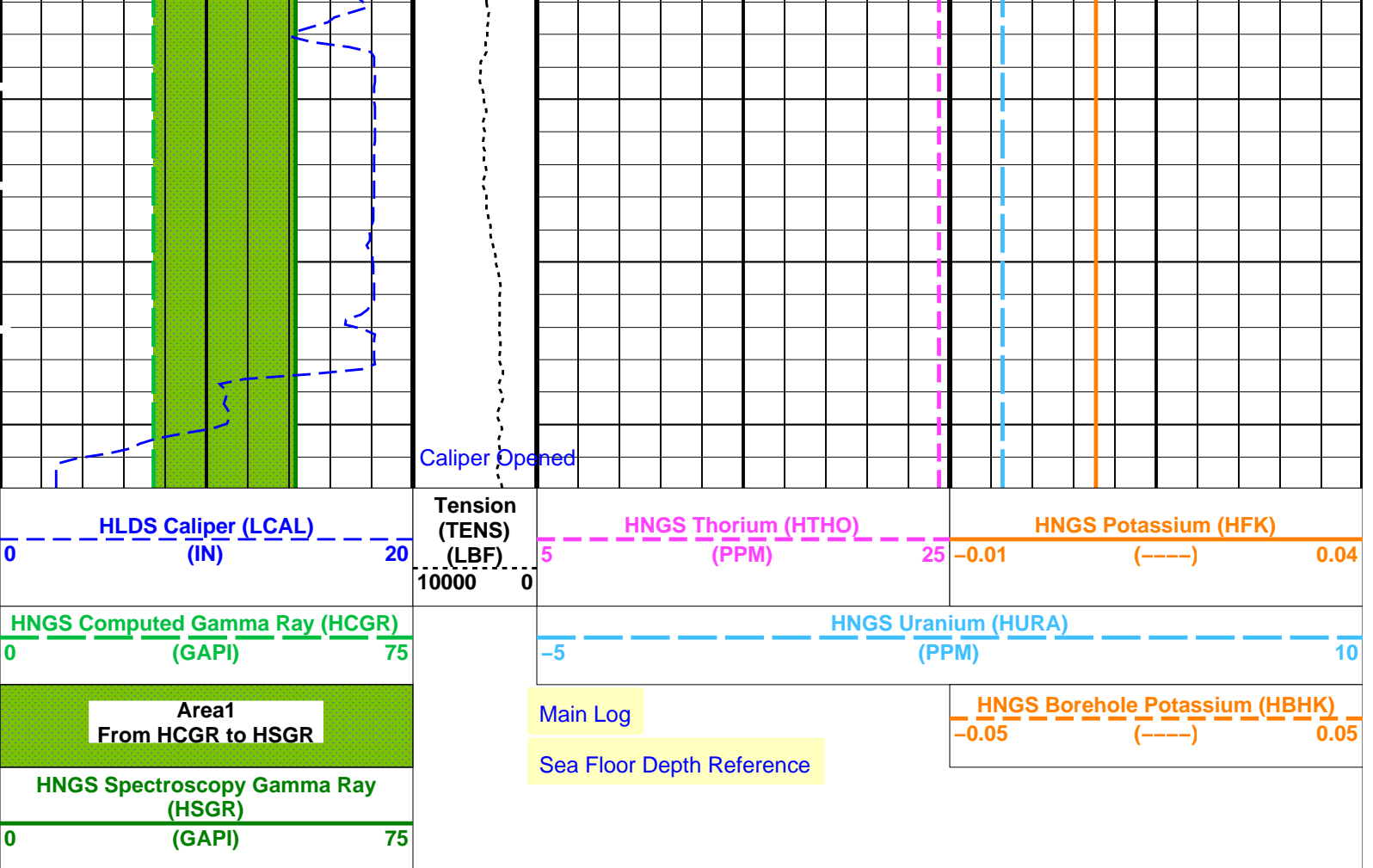


450

475







PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
BHS	APS-C: Accelerator-Porosity Tool	
GCSE	Borehole Status	OPEN
BHS	Generalized Caliper Selection	BS
GCSE	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	-0.00279021
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	NATU
HNPE	HNGS Processing Enable	YES
S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3 CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3 CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES
TPOS	Tool Position	ECCE
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.960045
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.971544
BHS	HRLT-B: High Resolution Laterolog Array - B	
GCSE	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	BS
BHS	EDTC-B: Enhanced DTS Cartridge	
GCSE	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	BS
BS	System and Miscellaneous	
BS	Bit Size	9.875 IN

### OP System Version: 19C0-187

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

### Input DLIS Files

DEFAULT	LDL_APS_NGS_HRLA_027LUP	FN:21	PRODUCER	02-Jan-2012 03:40	1220.7 M	643.0 M
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### Output DLIS Files

DEFAULT	LDL_APS_NGS_HRLA_042PUP	FN:46	PRODUCER	10-Jan-2012 02:40		
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### Input DLIS Files

DEFAULT	Flip_LDL_APS_NGS_028LUP		PRODUCER	02-Jan-2012 05:48	1190.5 M	594.4 M
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### Output DLIS Files

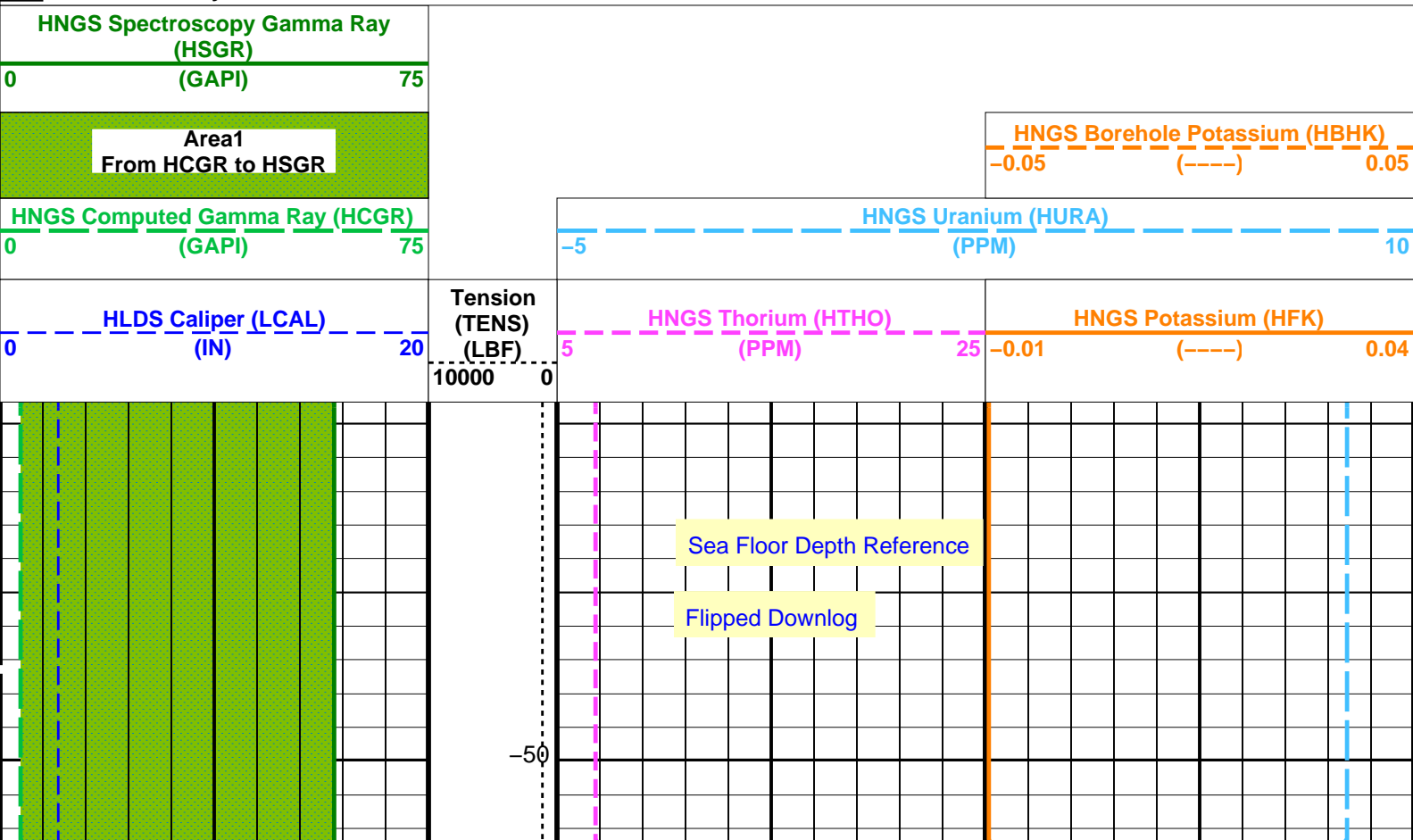
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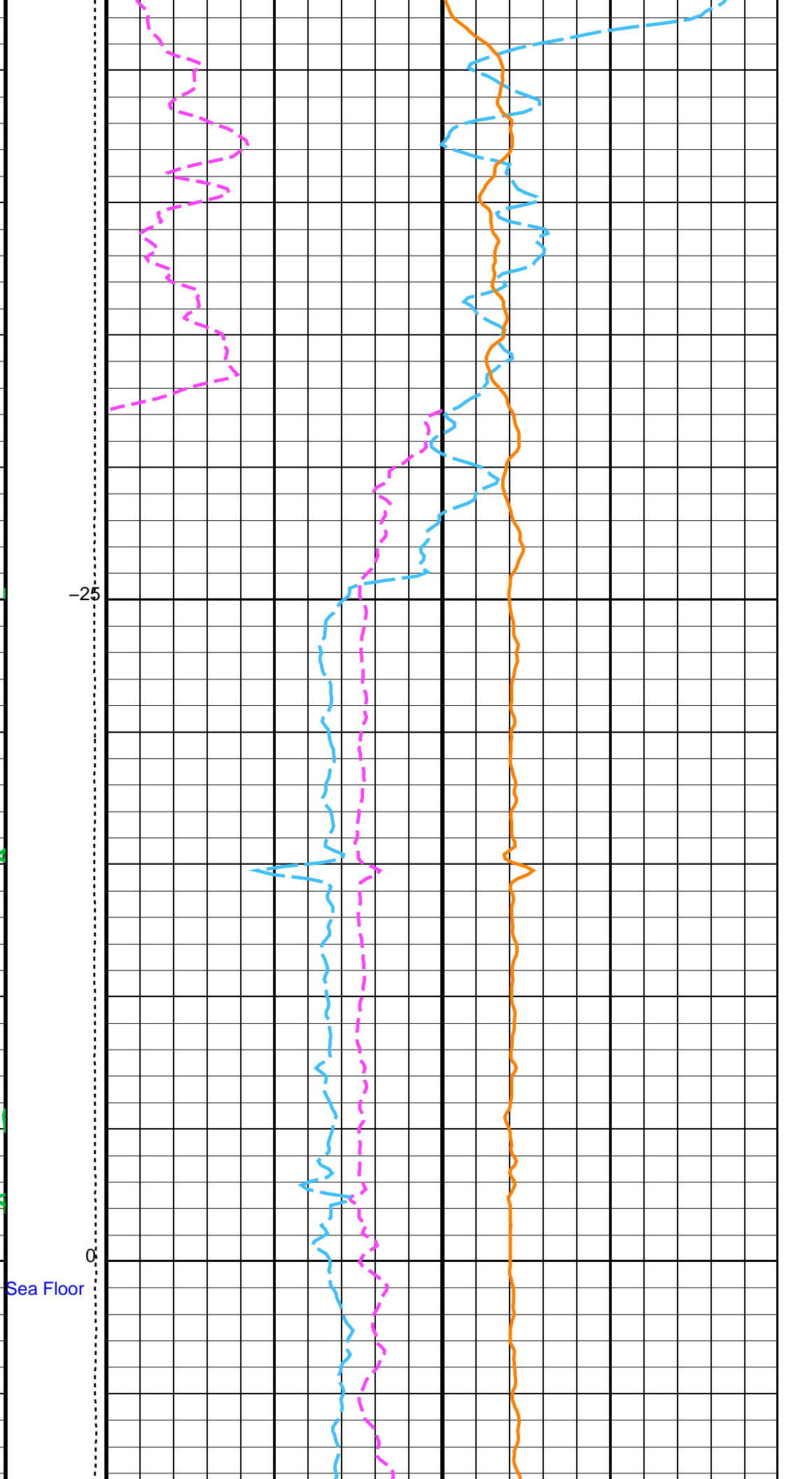
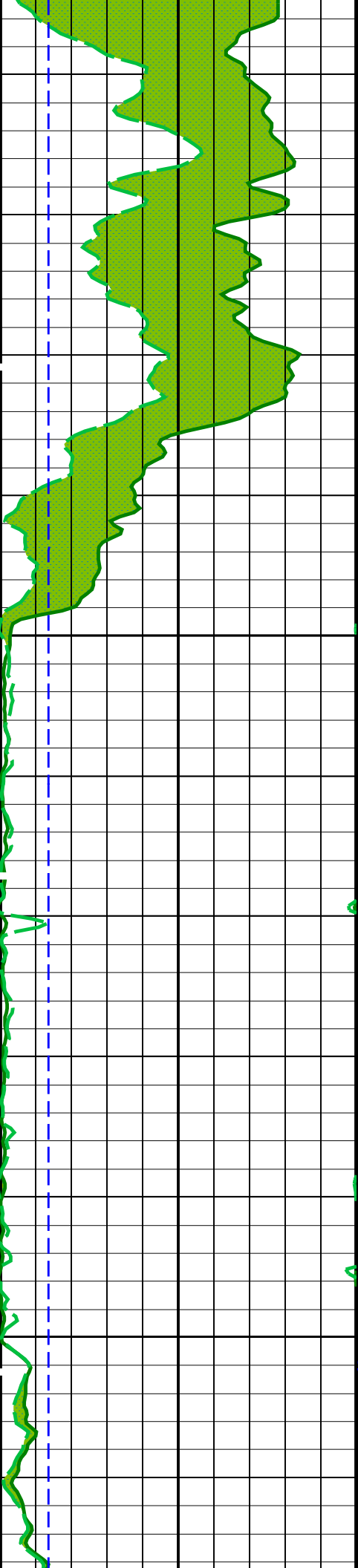
### OP System Version: 19C0-187

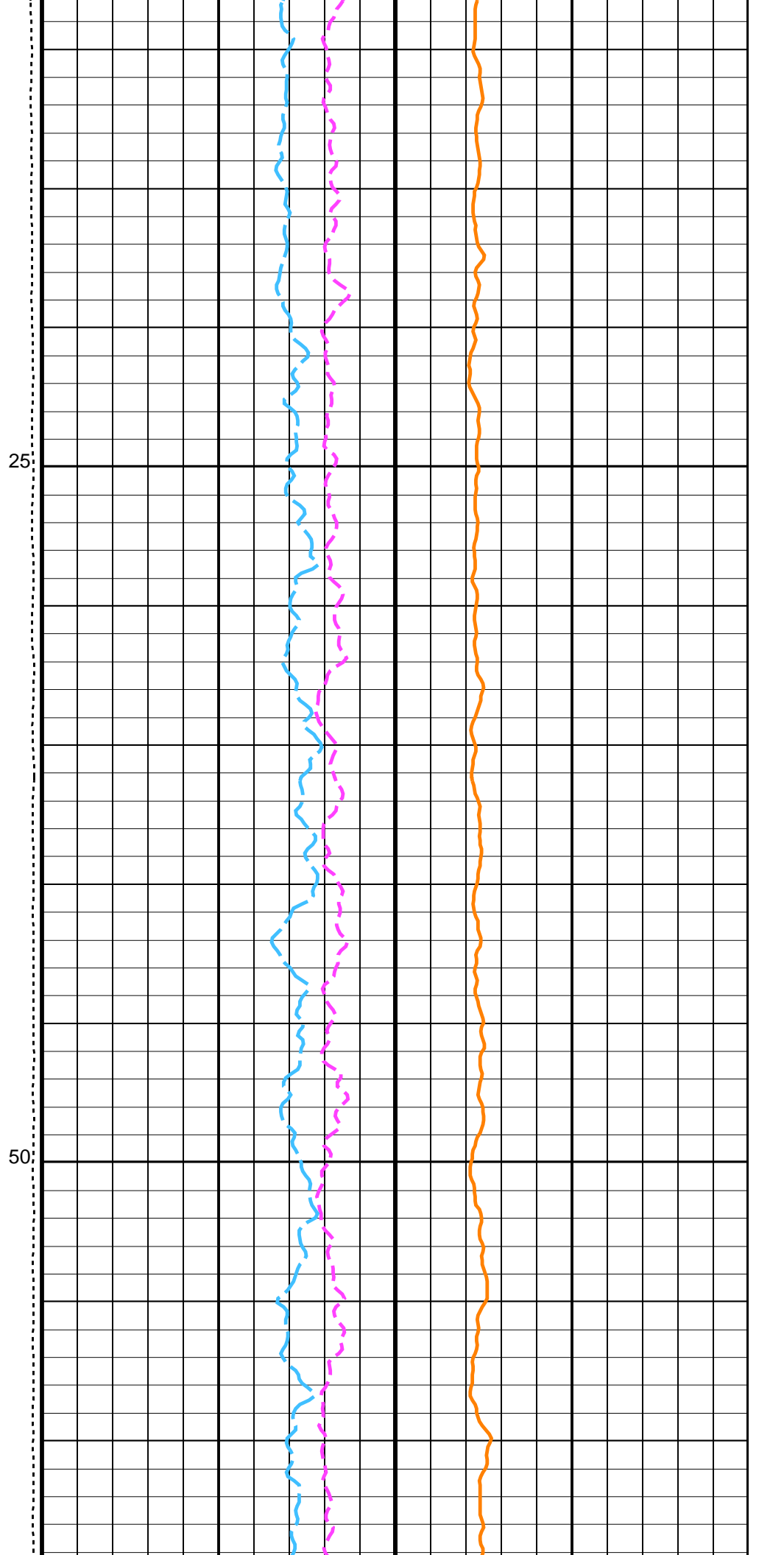
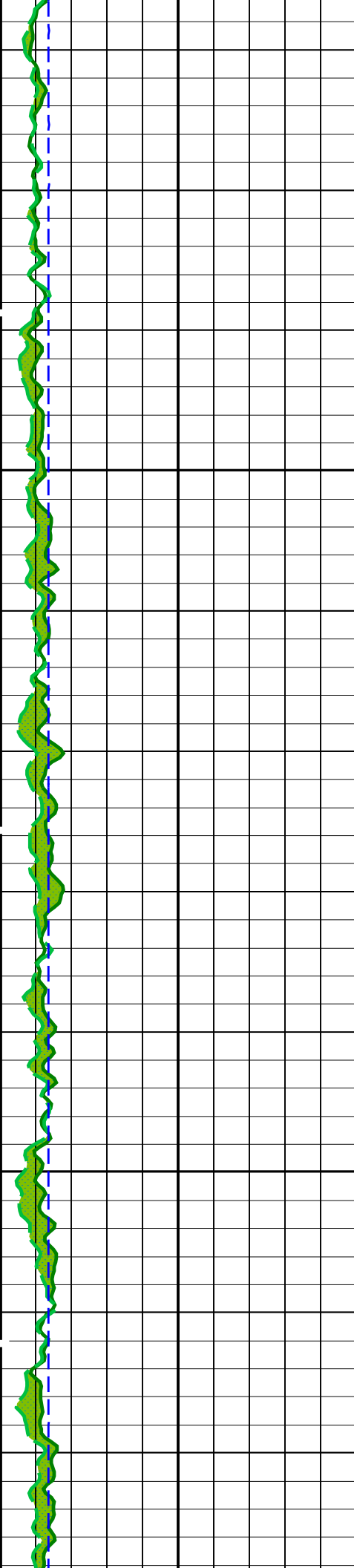
HLDS	19C0-187	LDSC-B	19C0-187
APS-C	19C0-187	HNGC-B	19C0-187
HNGS-BA	19C0-187	HRLT-B	19C0-187
EDTC-B	19C0-187		

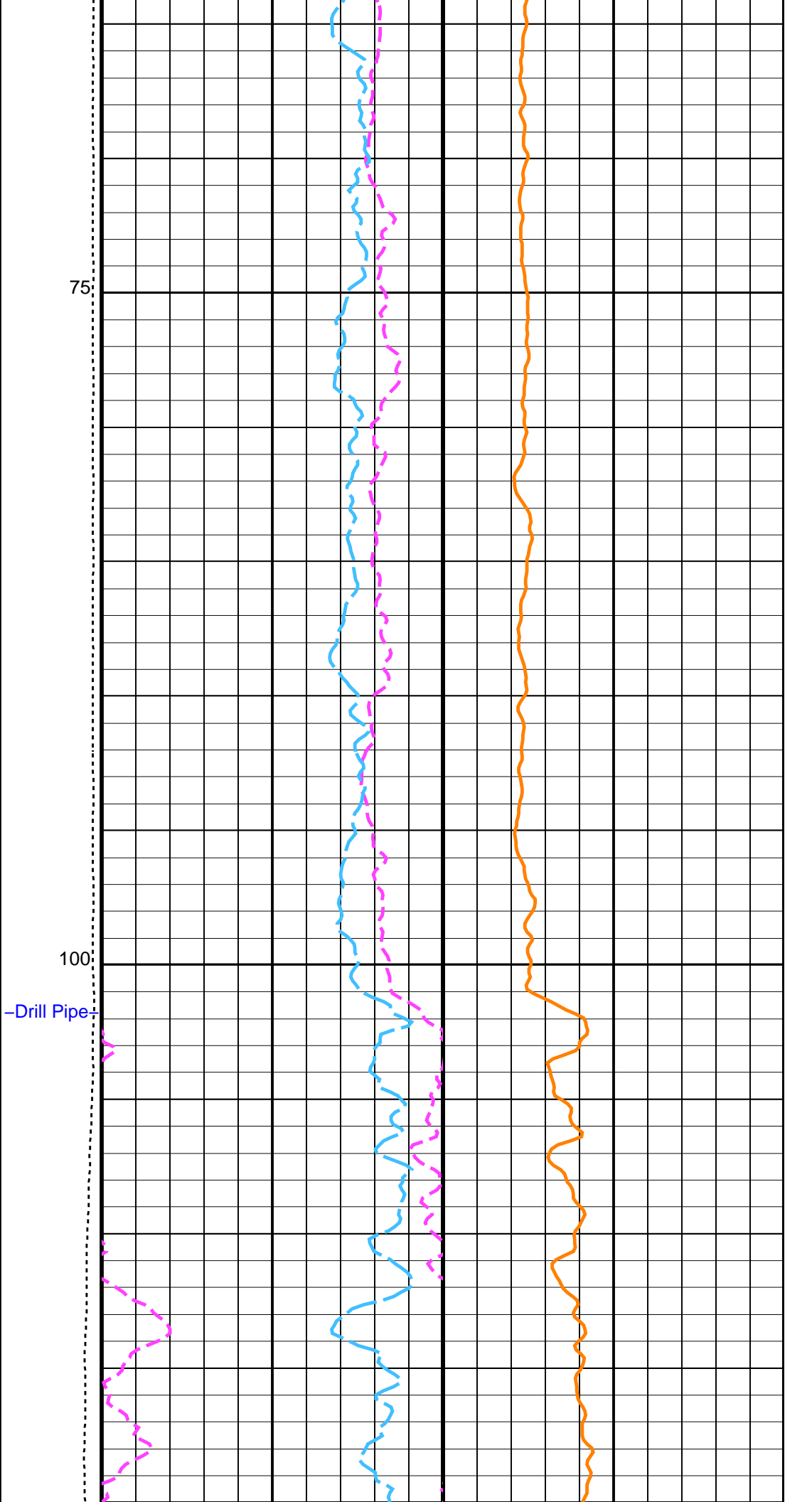
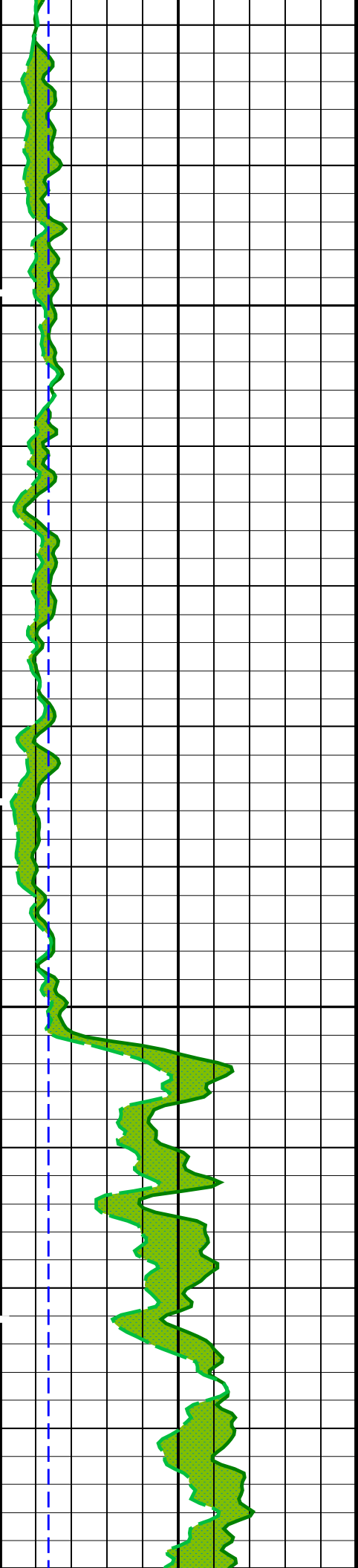
### PIP SUMMARY

Time Mark Every 60 S

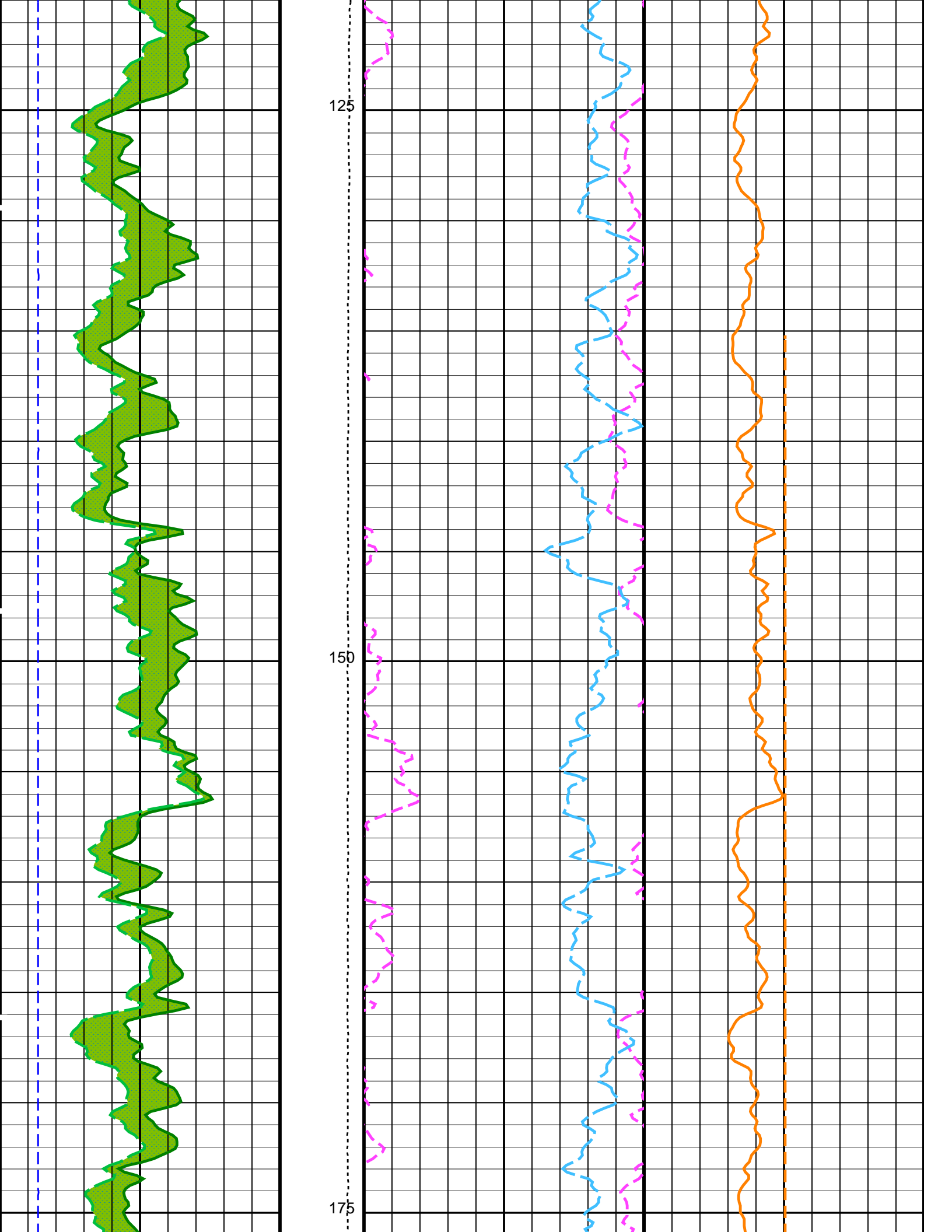


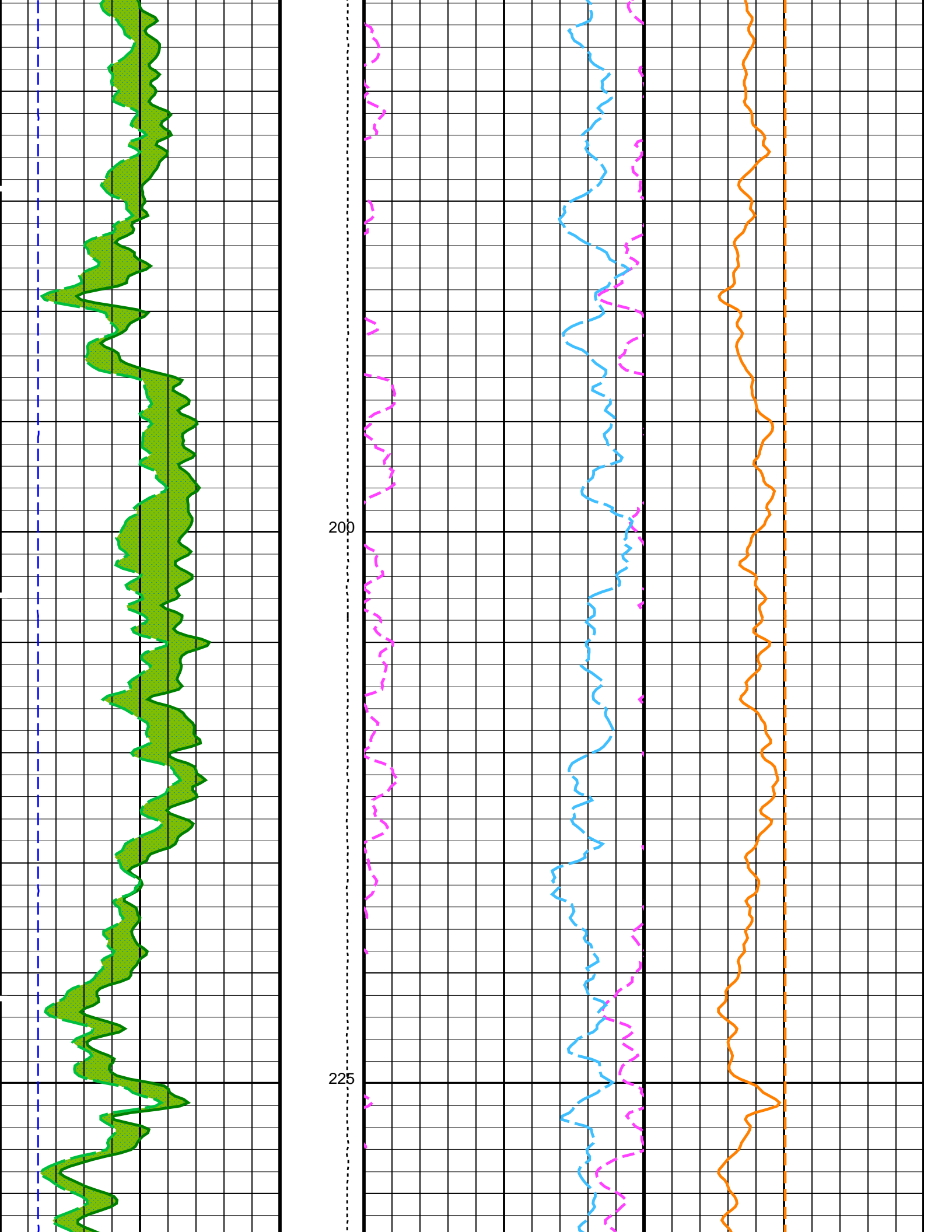


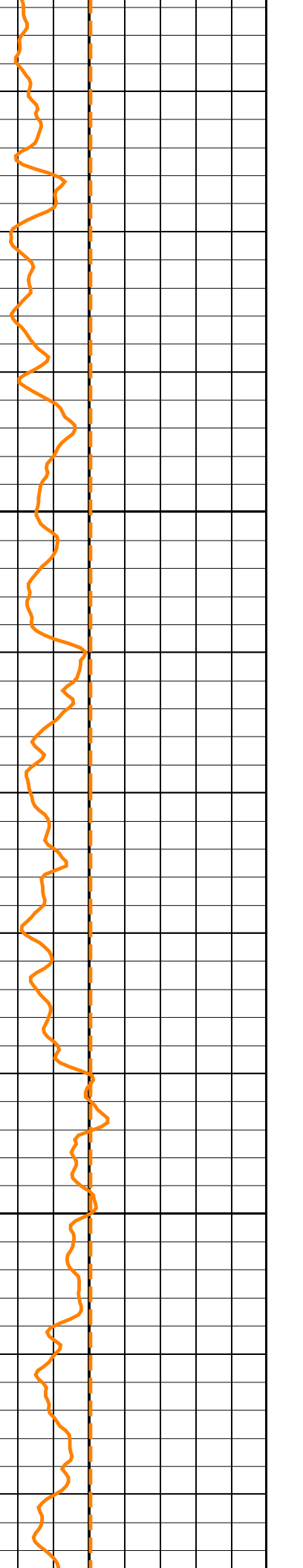
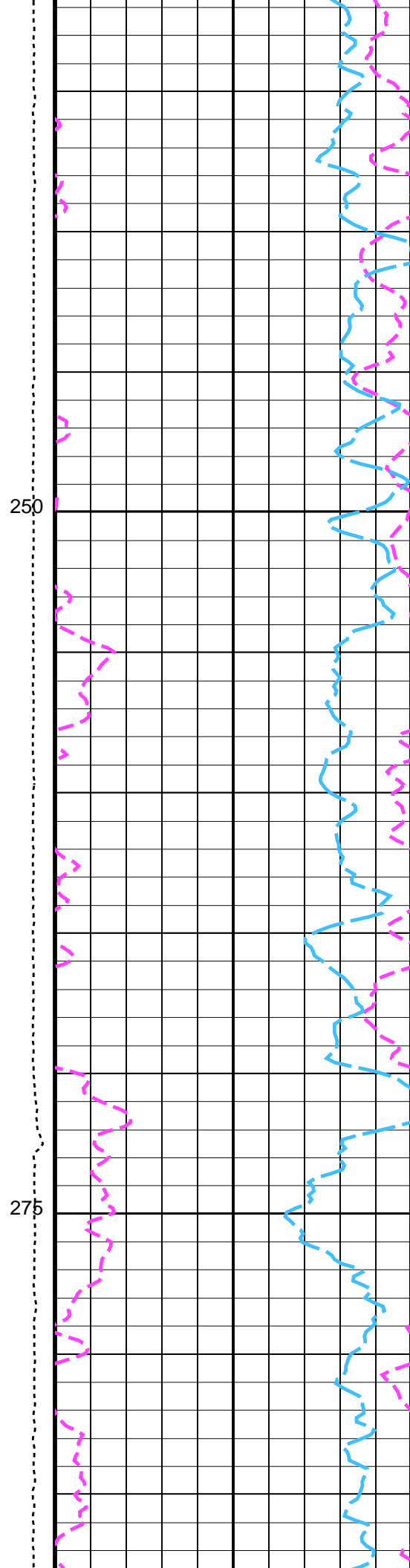
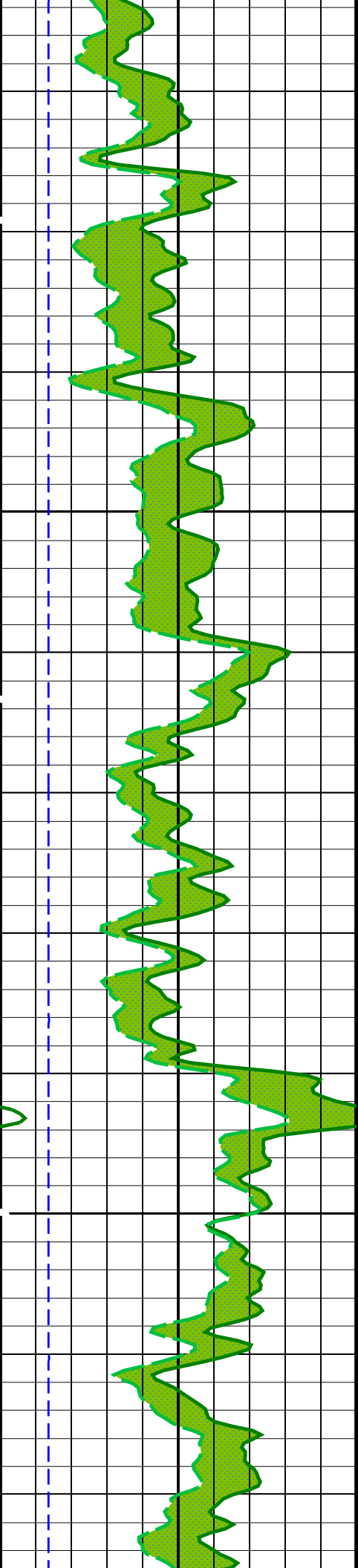


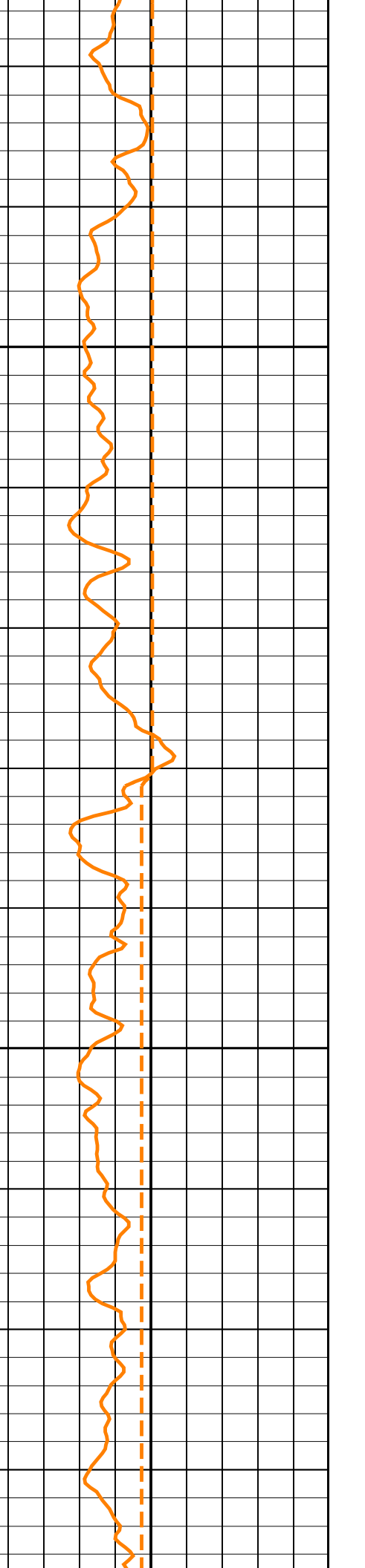
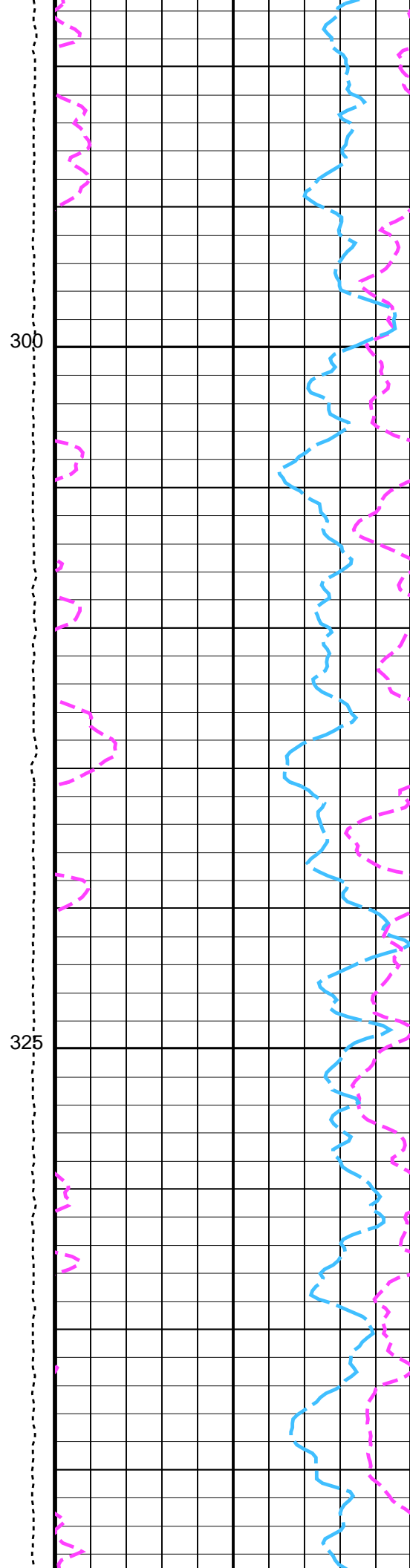
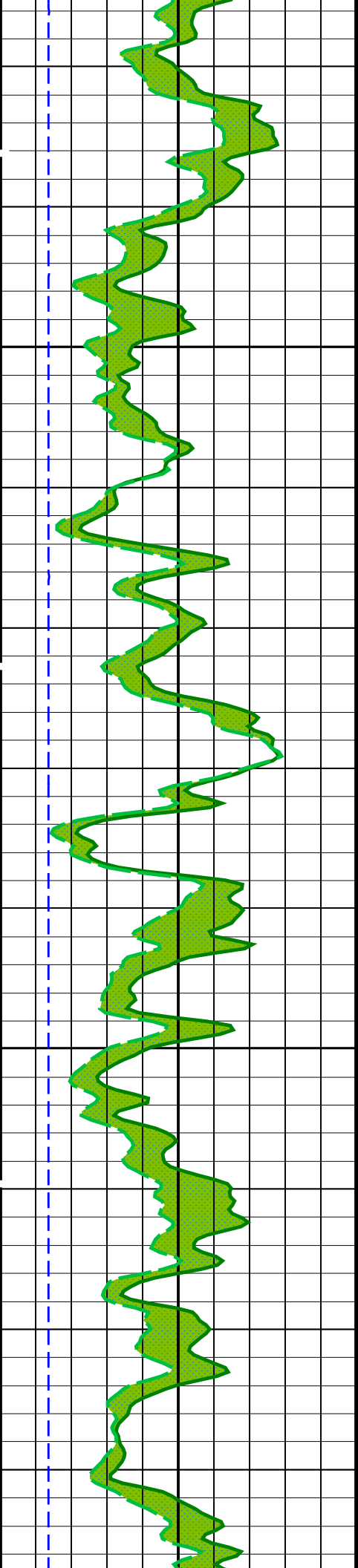






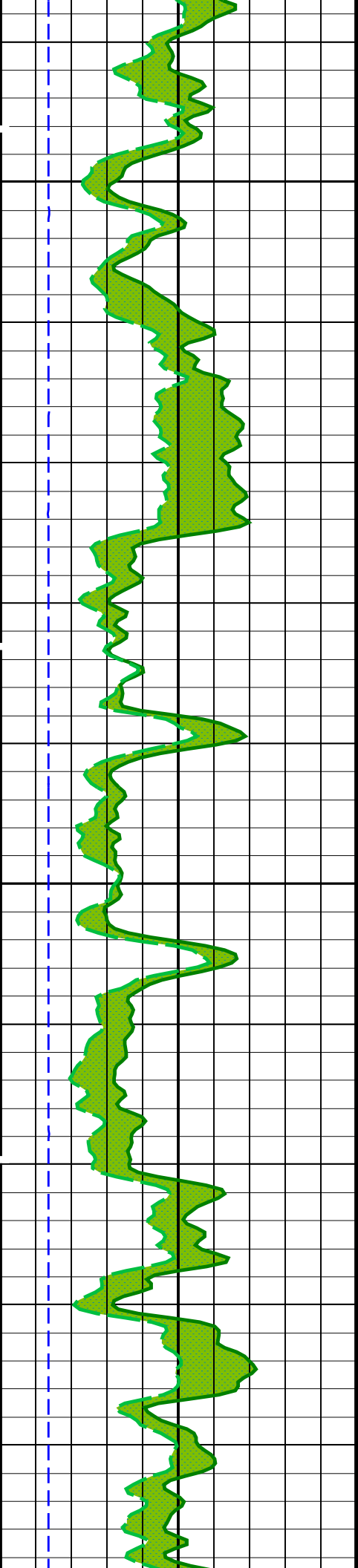






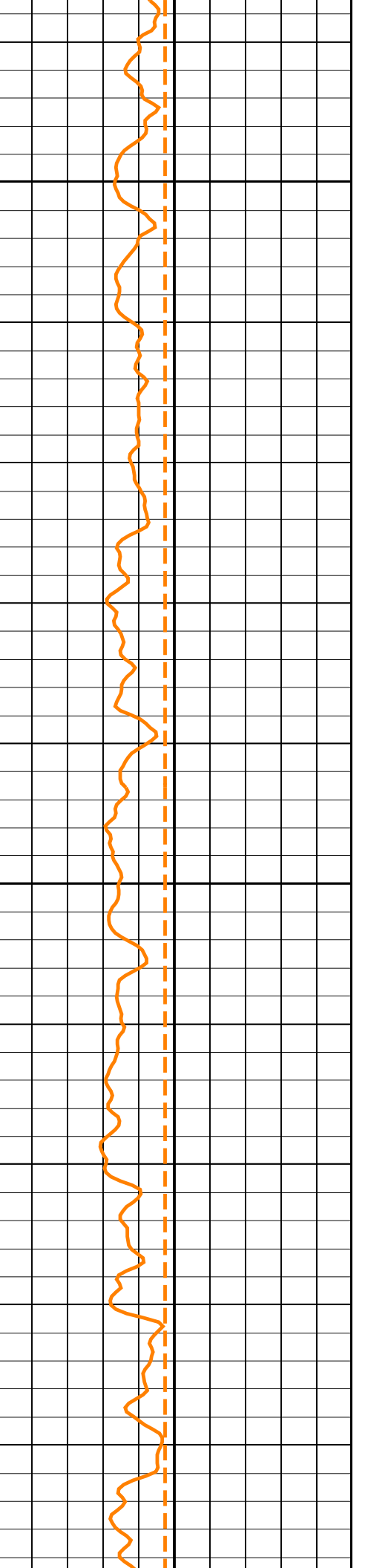
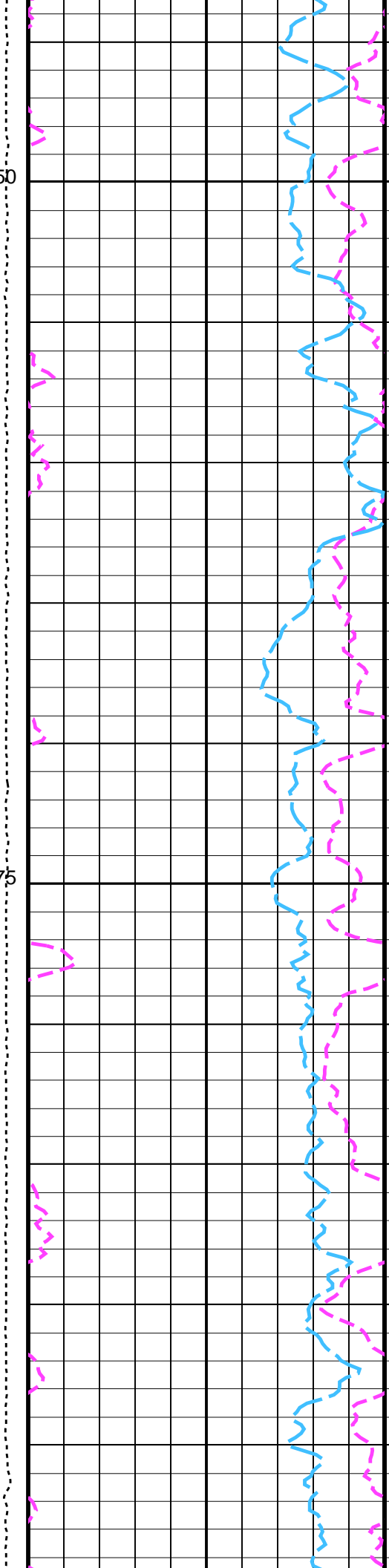
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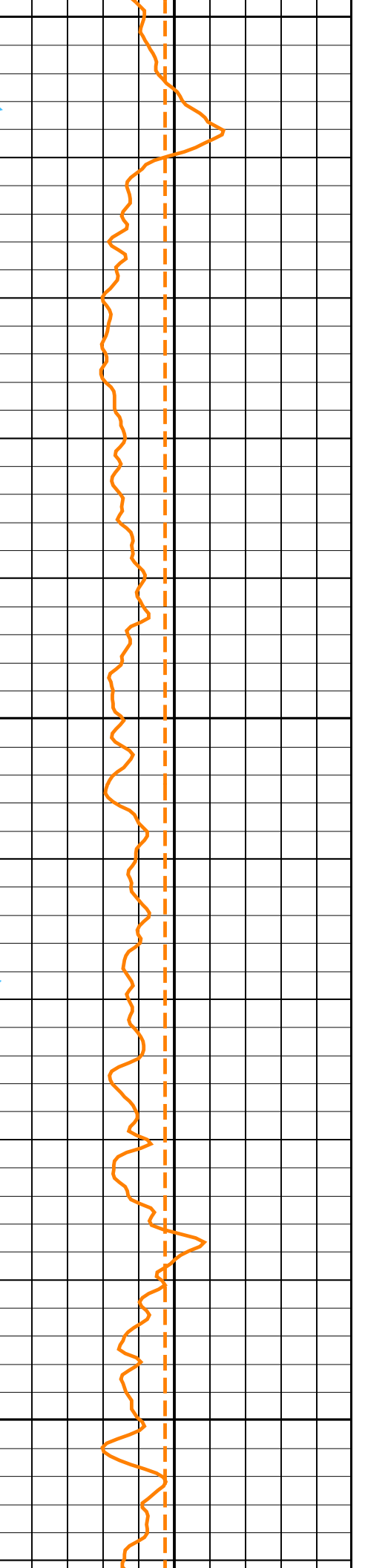
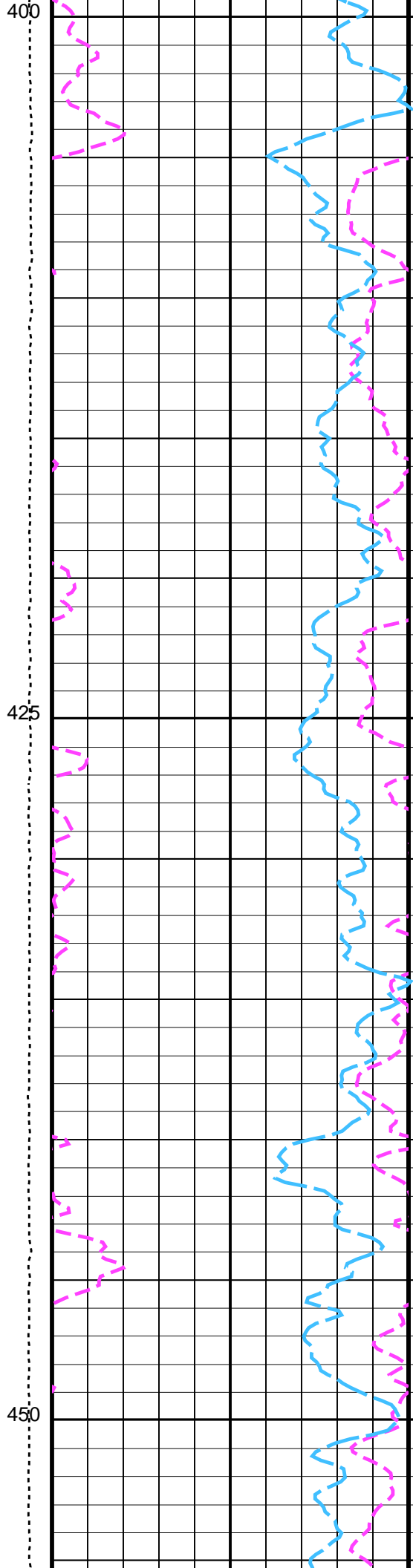
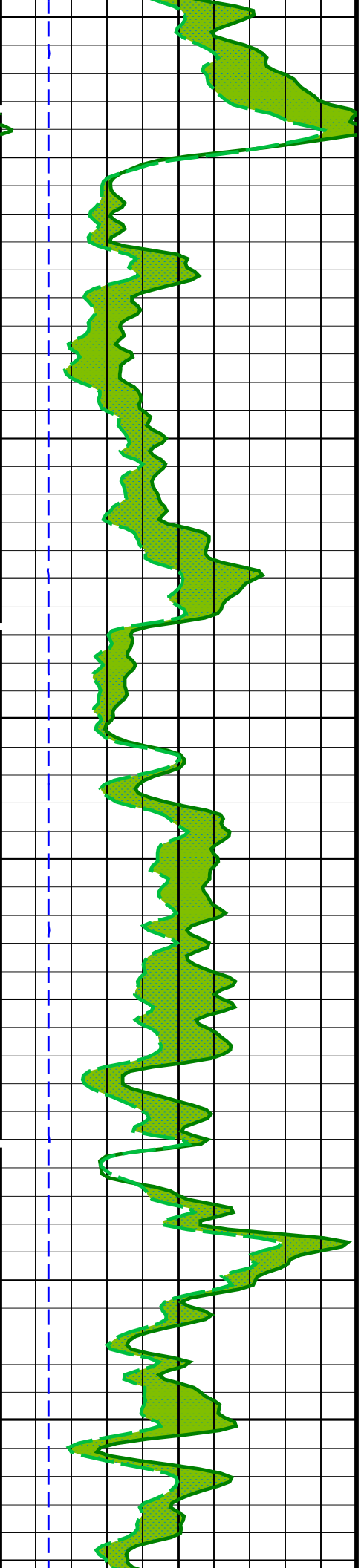
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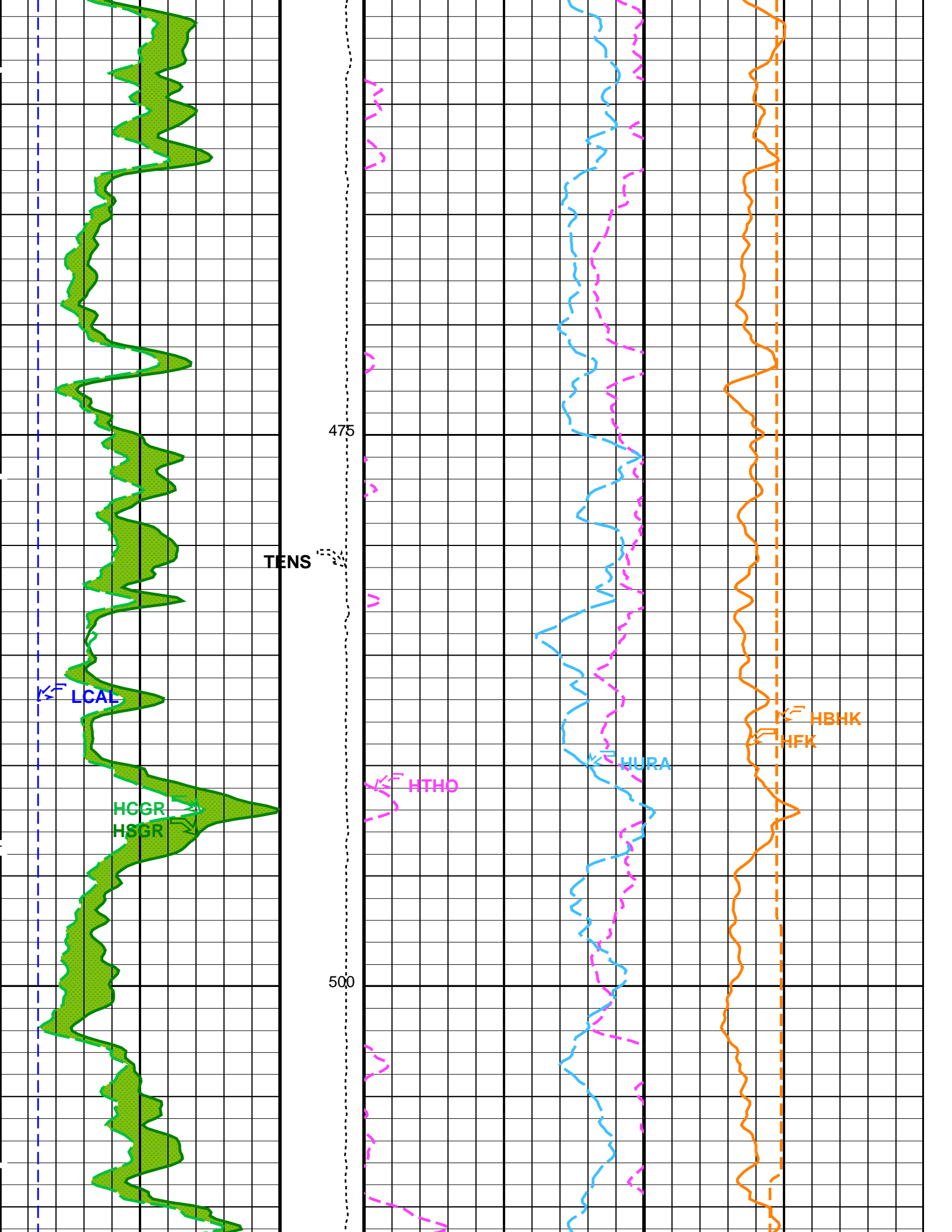


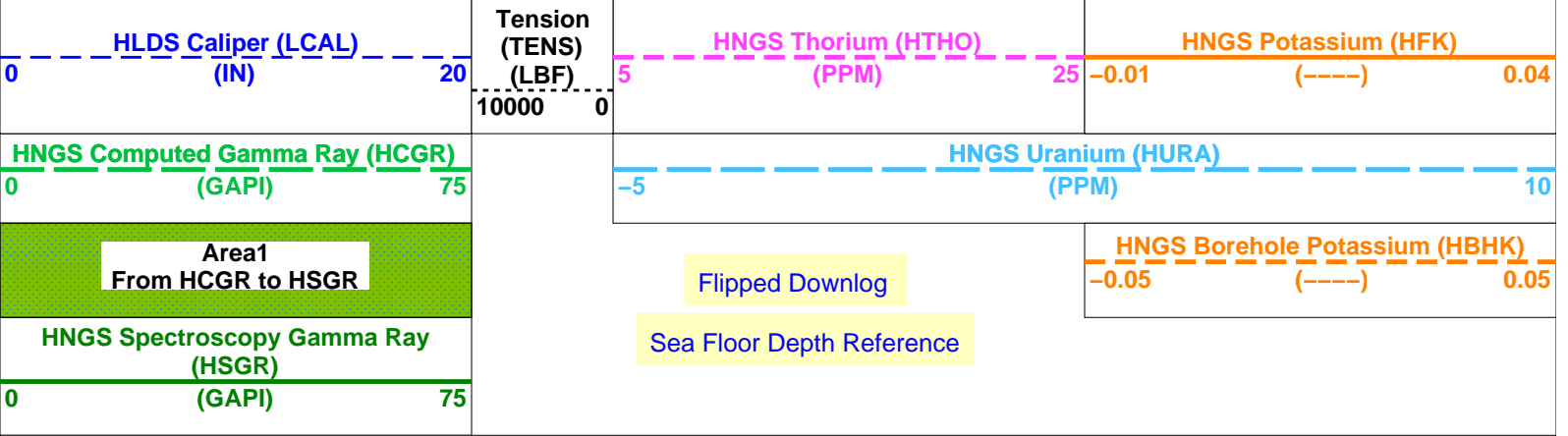
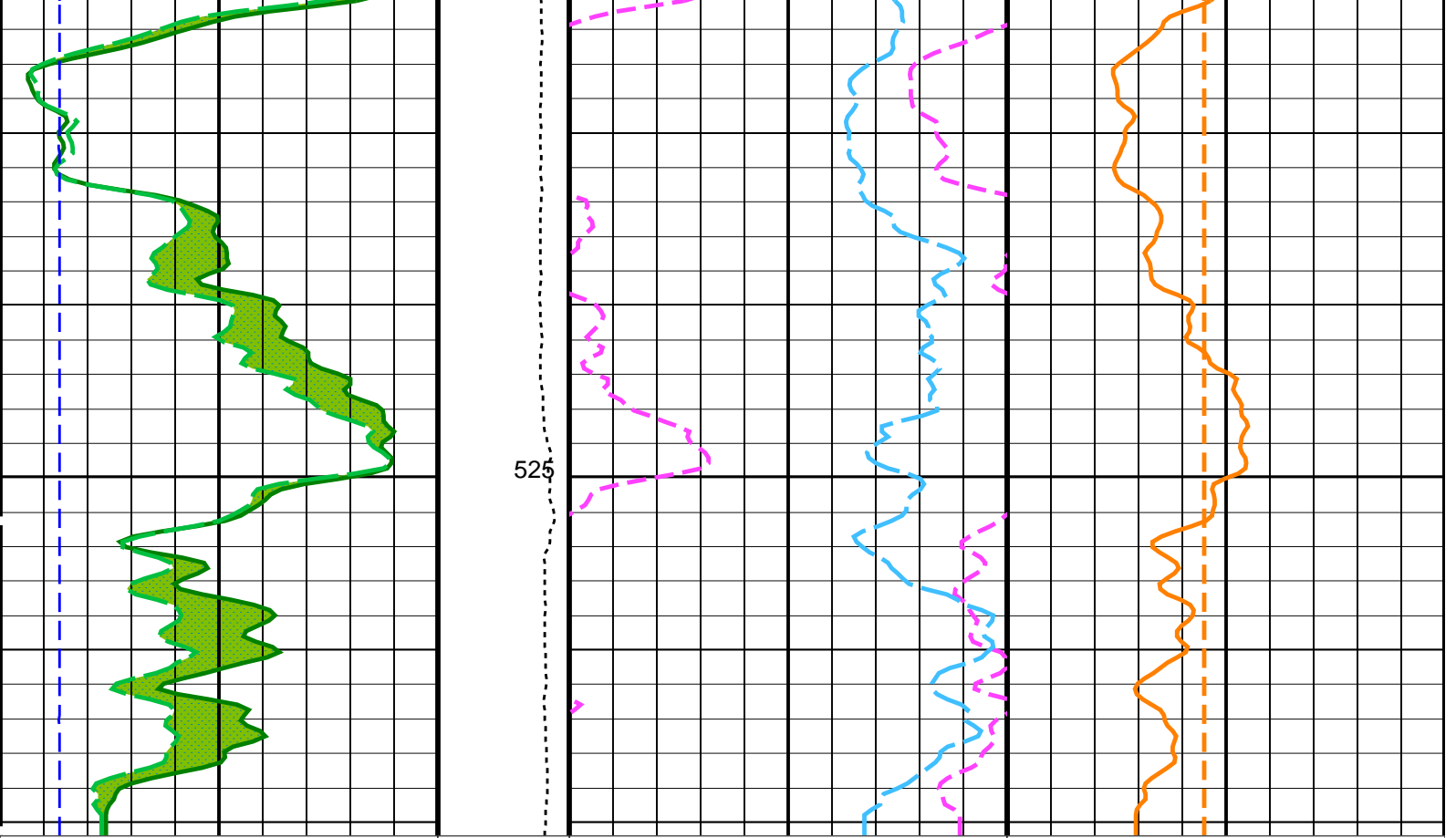
350

375









Area1  
From HCGR to HSGR

Flipped Downlog

Sea Floor Depth Reference

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
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	-0.00279021
HALF	HNGS Alpha Filter Length	60 IN
HCRB	HNGS Apply Borehole Potassium Correction	NONE
HMWM	Mud Weighting Material	NATU
HNPE	HNGS Processing Enable	YES
H1P	HNGS Detector 1 Calibration Diameter Count Rate	1.8



S1BI	HNGS Detector 1 Calibration Bismuth Count Rate	1.3	CPS
S2BI	HNGS Detector 2 Calibration Bismuth Count Rate	1.3	CPS
SGRC	HNGS Standard Gamma-Ray Correction Flag	YES	
TPOS	Tool Position	ECCE	
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.960045	
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.971544	
<b>HRLT-B: High Resolution Laterolog Array - B</b>			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
<b>EDTC-B: Enhanced DTS Cartridge</b>			
BHS	Borehole Status	OPEN	
GCSE	Generalized Caliper Selection	BS	
<b>System and Miscellaneous</b>			
BS	Bit Size	9.875	IN
DO	Depth Offset for Playback	-655.0	M
PP	Playback Processing	NORMAL	

Format: HNGSYields    Vertical Scale: 1:200    Graphics File Created: 10-Jan-2012 02:25

## OP System Version: 19C0-187

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

### Input DLIS Files

DEFAULT	Flip_LDL_APS_NGS_028LUP	PRODUCER	02-Jan-2012 05:48	1190.5 M	594.4 M
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### Output DLIS Files

DEFAULT	LDL_APS_NGS_HRLA_041PUP	FN:45	PRODUCER	10-Jan-2012 02:25
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### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
<b>Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement</b>							
Master: 17-Nov-2011 16:03    Before: 17-Nov-2011 15:55							
SS Cs Resolution Bkg	9.000	7.741	7.618	N/A	N/A	1.800	%
LS Cs Resolution Bkg	9.000	8.089	8.025	N/A	N/A	1.800	%
LSW1 Background	100.0	87.45	87.45	N/A	N/A	0.03000	CPS
LSW2 Background	100.0	80.38	80.38	N/A	N/A	0.03000	CPS
LSW3 Background	200.0	180.0	180.0	N/A	N/A	0.03000	CPS
LSW4 Background	250.0	224.8	224.8	N/A	N/A	0.03000	CPS
LSW5 Background	600.0	526.0	526.0	N/A	N/A	0.03000	CPS
SSW1 Background	100.0	85.28	85.28	N/A	N/A	0.03000	CPS
SSW2 Background	200.0	147.3	147.3	N/A	N/A	0.03000	CPS
SSW3 Background	500.0	409.2	409.2	N/A	N/A	0.03000	CPS
SSW4 Background	270.0	221.7	221.7	N/A	N/A	0.03000	CPS
SSW5 Background	200.0	158.7	158.7	N/A	N/A	0.03000	CPS
<b>Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement</b>							
Master: 17-Nov-2011 16:33							
LSW1 Aluminum	600.0	560.2	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	815.4	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	984.8	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	493.4	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	450.2	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2639	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	7196	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	10050	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	4135	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	504.7	N/A	N/A	N/A	N/A	CPS
<b>Hostile Litho-Density Sonde Wellsite Calibration - Lithology Measurement</b>							
Master: 17-Nov-2011 16:29							
LSW1 Iron	400.0	389.4	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	674.0	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	897.0	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	464.0	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	424.7	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1967	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6000	5445	N/A	N/A	N/A	N/A	CPS

SSW2 Iron	6800	6145	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	9395	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3871	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	460.2	N/A	N/A	N/A	N/A	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Caliper Calibration

Before: 17-Dec-2011 9:53

HLDS Caliper Small Ring	12.00	N/A	14.33	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	18.10	N/A	N/A	N/A	IN

Accelerator-Porosity Tool Wellsite Calibration - Detector Background

Master: 16-Nov-2011 15:14 Before: 2-Jan-2012 1:16

Near Det Bkg Cntrate	30.00	31.42	32.02	N/A	N/A	N/A	CPS
Far Det Bkg Cntrate	30.00	33.69	32.37	N/A	N/A	N/A	CPS
Array-1 Det Bkg Cntrate	30.00	30.06	28.73	N/A	N/A	N/A	CPS
Array-2 Det Bkg Cntrate	30.00	29.35	29.78	N/A	N/A	N/A	CPS
Array Therm Det Bkg Cntrate	30.00	30.97	32.42	N/A	N/A	N/A	CPS

Accelerator-Porosity Tool Wellsite Calibration - Calibration Ratios

Master: 16-Nov-2011 15:12

Near/Far Calibration Ratio	0.9250	0.8880	N/A	N/A	N/A	N/A
Near/Array Calibration Ratio	1.030	1.057	N/A	N/A	N/A	N/A
Near/Array Cal Ratio Up/Down	1.000	1.006	N/A	N/A	N/A	N/A

Accelerator-Porosity Tool Wellsite Calibration - Tank Check

Master: 16-Nov-2011 15:14

Array-1 Standoff Porosity	11.75	11.83	N/A	N/A	N/A	N/A	PU
Array-2 Standoff Porosity	11.75	11.78	N/A	N/A	N/A	N/A	PU
Average Slowing Down Time	6.000	5.843	N/A	N/A	N/A	N/A	US
Array-1 SDT Ratio Up/Down	1.000	0.9874	N/A	N/A	N/A	N/A	
Array-2 SDT Ratio Up/Down	1.000	1.012	N/A	N/A	N/A	N/A	
Sigma Formation	27.50	29.40	N/A	N/A	N/A	N/A	CU

Accelerator-Porosity Tool Wellsite Calibration - CCR7 signal boxes

Master: 16-Nov-2011 14:29

Near Detector Plateau Setting	1650	1732	N/A	N/A	N/A	N/A	V
Far Detector Plateau Setting	2000	2082	N/A	N/A	N/A	N/A	V
Array Detector Plateau Setting	2000	1962	N/A	N/A	N/A	N/A	V

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check

Master: 17-Nov-2011 7:57 Before: 26-Nov-2011 0:21 After: 8-Dec-2011 1:11

Na 511 Peak Loc	40.00	39.70	39.69	39.60	-0.09224	1.000	
Na 511 Peak Res	15.50	15.50	15.07	14.85	-0.2178	2.000	%
High Voltage	1150	1176	1168	1164	-3.540	N/A	V
Na 1785 Peak Loc	142.6	142.1	141.8	143.0	1.198	7.000	
Na 1785 Peak Res	8.500	8.309	8.731	7.037	-1.693	2.000	%
Temperature	15.50	29.76	21.55	20.40	-1.158	N/A	DEGC
Na Count Rate	45.00	20.77	21.01	20.72	-0.2956	8.000	CPS

Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 2 Check

Master: 17-Nov-2011 7:57 Before: 26-Nov-2011 0:21 After: 8-Dec-2011 1:11

Na 511 Peak Loc	40.00	39.60	39.49	39.54	0.04988	1.000	
Na 511 Peak Res	15.50	16.99	15.91	15.93	0.01764	2.000	%
High Voltage	1150	1109	1091	1088	-3.384	N/A	V
Na 1785 Peak Loc	142.6	142.6	142.3	140.3	-1.968	7.000	
Na 1785 Peak Res	8.500	9.914	8.591	8.815	0.2231	2.000	%
Temperature	15.50	29.91	21.84	22.02	0.1821	N/A	DEGC
Na Count Rate	45.00	21.44	20.97	21.04	0.06492	8.000	CPS

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

Master: 17-Nov-2011 7:57 Before: 26-Nov-2011 0:21 After: 8-Dec-2011 1:11

Coincidence Count Rate Ratio	1.000	0.9705	1.004	0.9862	-0.01783	0.05000
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Hostile Natural Gamma Ray Sonde Master Calibration - Detector 1 Calibration

Master: 17-Nov-2011 7:52

Na 511 Peak Set Point	40.00	41.00	--	--	--	--
Th Peak Loc	209.6	210.8	--	--	--	--
Th Peak Res	7.000	6.865	--	--	--	%
Background Count Rate	142.5	24.91	--	--	--	CPS
Gain Ratio	1.000	1.010	--	--	--	--

Hostile Natural Gamma Ray Sonde Master Calibration - Detector 2 Calibration

Master: 17-Nov-2011 7:52

Na 511 Peak Set Point	40.00	41.00	--	--	--	--
Th Peak Loc	209.6	208.5	--	--	--	--
Th Peak Res	7.000	6.879	--	--	--	%
Background Count Rate	142.5	24.15	--	--	--	CPS
Gain Ratio	1.000	1.001	--	--	--	--

High Resolution Laterolog Array - B Wellsite Calibration - HRLT M01

Before: 2-Jan-2012 1:09

HRLT M0-M1 Voltage Plus - 0	0	N/A	-319.5	N/A	N/A	9.681	UV
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HRLT M0-M1 Voltage Plus - 1	0	N/A				9.681	UV
HRLT M0-M1 Voltage Plus - 2	0	N/A	-336.1	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus - 3	0	N/A	-339.4	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus - 4	0	N/A	-326.6	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus - 5	0	N/A	-322.4	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus - 6	0	N/A	326.6	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus - 7	0	N/A	-322.7	N/A	N/A	9.681	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT M12

Before: 2-Jan-2012 1:09

HRLT M1-M2 Voltage Plus - 0	0	N/A	1756	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus - 1	0	N/A	1846	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus - 2	0	N/A	1844	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus - 3	0	N/A	1860	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus - 4	0	N/A	1792	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus - 5	0	N/A	1770	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus - 6	0	N/A	-1802	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus - 7	0	N/A	1781	N/A	N/A	53.42	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT M23

Before: 2-Jan-2012 1:09

HRLT M2-M3 Voltage Plus - 0	0	N/A	1743	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus - 1	0	N/A	1845	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus - 2	0	N/A	1844	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus - 3	0	N/A	1864	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus - 4	0	N/A	1789	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus - 5	0	N/A	1768	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus - 6	0	N/A	-1789	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus - 7	0	N/A	1781	N/A	N/A	53.42	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT V34

Before: 2-Jan-2012 1:09

HRLT A3-A4 Voltage Plus - 0	0	N/A	68490	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus - 1	0	N/A	72290	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus - 2	0	N/A	72560	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus - 3	0	N/A	73600	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus - 4	0	N/A	70610	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus - 5	0	N/A	69800	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus - 6	0	N/A	-69100	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus - 7	0	N/A	70000	N/A	N/A	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT V45

Before: 2-Jan-2012 1:09

HRLT A4-A5 Voltage Plus - 0	0	N/A	68770	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus - 1	0	N/A	72670	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus - 2	0	N/A	72910	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus - 3	0	N/A	73940	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus - 4	0	N/A	70910	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus - 5	0	N/A	70080	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus - 6	0	N/A	-69490	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus - 7	0	N/A	70000	N/A	N/A	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT V56

Before: 2-Jan-2012 1:09

HRLT A5-A6 Voltage Plus - 0	0	N/A	68670	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 1	0	N/A	72400	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 2	0	N/A	72670	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 3	0	N/A	73730	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 4	0	N/A	70780	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 5	0	N/A	69960	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 6	0	N/A	-69200	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 7	0	N/A	70000	N/A	N/A	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT VTP

Before: 2-Jan-2012 1:09

HRLT Torpedo-M0 Voltage - 0	0	N/A	-68330	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 1	0	N/A	-72720	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 2	0	N/A	-72960	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 3	0	N/A	-74020	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 4	0	N/A	-70960	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 5	0	N/A	-70120	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 6	0	N/A	69470	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 7	0	N/A	-70000	N/A	N/A	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT VBD

Before: 2-Jan-2012 1:09

HRLT Bridle#9-M0 Voltage - 0	0	N/A	-68330	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 1	0	N/A	-72710	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 2	0	N/A	-72950	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 3	0	N/A	-74010	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 4	0	N/A	-70960	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 5	0	N/A	-70120	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 6	0	N/A	69470	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 7	0	N/A	-70000	N/A	N/A	2100	UV

HRLT Bridle#9-MO Voltage - 5	0	N/A	-70120	N/A	N/A	2100	UV
HRLT Bridle#9-MO Voltage - 6	0	N/A	69450	N/A	N/A	2100	UV
HRLT Bridle#9-MO Voltage - 7	0	N/A	-70000	N/A	N/A	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT ISO

Before: 2-Jan-2012 1:09

HRLT Source Current Plus - 0	0	N/A	285.0	N/A	N/A	8.520	UA
HRLT Source Current Plus - 1	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 2	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 3	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 4	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 5	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 6	0	N/A	281.1	N/A	N/A	8.520	UA
HRLT Source Current Plus - 7	0	N/A	281.1	N/A	N/A	8.520	UA

High Resolution Laterolog Array - B Wellsite Calibration - HRLT MV

Before: 2-Jan-2012 1:09

HRLT Vertical Voltage PI - 0	0	N/A	-321.5	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 1	0	N/A	-329.9	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 2	0	N/A	-329.6	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 3	0	N/A	-330.8	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 4	0	N/A	-315.8	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 5	0	N/A	-326.8	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 6	0	N/A	333.4	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 7	0	N/A	-322.7	N/A	N/A	9.681	UV

Enhanced DTS Cartridge Wellsite Calibration - EDTC Accelerometer Calibration

Before: 2-Jan-2012 1:11

EDTC Z-Axis Acceleration	9.810	N/A	9.755	N/A	N/A	N/A	M/S2
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Enhanced DTS Cartridge Wellsite Calibration - Detector Calibration

Before: 27-Dec-2011 9:12

Gamma Ray (Jig - Bkg)	160.1	N/A	160.1	N/A	N/A	0.09091	GAPI
Gamma Ray (Calibrated)	164.0	N/A	164.0	N/A	N/A	15.00	GAPI

Accelerator-Porosity Tool - Detector Plateau Settings :

Near Detector Plateau Setting 1732 V  
 Far Detector Plateau Setting 2082 V  
 Array Detector Plateau Setting 1962 V

Hostile Litho-Density Sonde / Equipment Identification

Primary Equipment:

Hostile Litho Density Sonde	HLDS - D	45
Hostile Litho Density High Voltage	HLDV - D	45
Gamma Source Radioactive	GSR - Z	2397

Auxiliary Equipment:

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

Litho-Density Spectroscopy Cartridge - B / Equipment Identification

Primary Equipment:

LDSC Cartridge	LDSC - B	521
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Auxiliary Equipment:

LDSC Housing	LDSH - A	319
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Accelerator-Porosity Tool / Equipment Identification

Primary Equipment:

Accelerator-Porosity Sonde	APS - C	22
APS Minitron	MNTR - F	5978

Auxiliary Equipment:

Accelerator-Porosity Housing	APH - AC	22
APS Calibration Water Tank	SFT - 178	1
APS Aluminum Calibrator Sleeve	SFT - 281	1

Hostile Natural Gamma Ray Cartridge – B / Equipment Identification

Primary Equipment: HNGC Cartridge	HNGC – B	300
Auxiliary Equipment: HNGC Housing	HNGH – A	115

Hostile Natural Gamma Ray Sonde / Equipment Identification

Primary Equipment: HNGS Sonde	HNGS – BA	194
Auxiliary Equipment: HNGS Sonde Housing Gamma Source Radioactive	HNSH – BA GSR – U	205 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		39.70	Master		15.50	Master		1176
Before		39.69	Before		15.07	Before		1168
After		39.60	After		14.85	After		1164
	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		142.1	Master		8.309	Master		29.76
Before		141.8	Before		8.731	Before		21.55
After		143.0	After		7.037	After		20.40
	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		20.77						
Before		21.01						
After		20.72						
	10.00 (Minimum) 45.00 (Nominal) 100.0 (Maximum)							
Master: 17–Nov–2011 7:57			Before: 26–Nov–2011 0:21			After: 8–Dec–2011 1:11		

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		39.60	Master		16.99	Master		1109
Before		39.49	Before		15.91	Before		1091
After		39.54	After		15.93	After		1088
	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		142.6	Master		9.914	Master		29.91
Before		142.3	Before		8.591	Before		21.84
After		140.3	After		8.815	After		22.02
	135.0 (Minimum) 142.6 (Nominal) 150.3 (Maximum)			7.000 (Minimum) 8.500 (Nominal) 11.00 (Maximum)			-28.89 (Minimum) 15.50 (Nominal) 60.00 (Maximum)	
Phase	Na Count Rate CPS	Value						
Master		21.44						
Before		20.97						

After		21.04
	10.00 (Minimum)	45.00 (Nominal)
		100.0 (Maximum)

Master: 17-Nov-2011 7:57      Before: 26-Nov-2011 0:21      After: 8-Dec-2011 1:11

Hostile Natural Gamma Ray Sonde Wellsite Calibration		
Ratio Of Detector 1 To Detector 2		
Phase	Coincidence Count Rate Ratio	Value
Master		0.9705
Before		1.004
After		0.9862
	0.9500 (Minimum)	1.000 (Nominal)
		1.050 (Maximum)

Master: 17-Nov-2011 7:57  
Before: 26-Nov-2011 0:21  
After: 8-Dec-2011 1:11

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		41.00	Master		210.8	Master		6.865
	38.00 (Minimum)	40.00 (Nominal)		201.0 (Minimum)	209.6 (Nominal)		5.000 (Minimum)	7.000 (Nominal)
		43.00 (Maximum)			218.3 (Maximum)			9.000 (Maximum)
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value			
Master		24.91	Master		1.010			
	10.00 (Minimum)	142.5 (Nominal)		0.9400 (Minimum)	1.000 (Nominal)			
		265.0 (Maximum)			1.060 (Maximum)			

Master: 17-Nov-2011 7:52

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		208.5	Master		6.879
	38.00 (Minimum)	40.00 (Nominal)		201.0 (Minimum)	209.6 (Nominal)		5.000 (Minimum)	7.000 (Nominal)
		43.00 (Maximum)			218.3 (Maximum)			9.000 (Maximum)
Phase	Background Count Rate CPS	Value	Phase	Gain Ratio	Value			
Master		24.15	Master		1.001			
	10.00 (Minimum)	142.5 (Nominal)		0.9400 (Minimum)	1.000 (Nominal)			
		265.0 (Maximum)			1.060 (Maximum)			

Master: 17-Nov-2011 7:52

High Resolution Laterolog Array - B / Equipment Identification		
Primary Equipment:		
HRLT Sonde	HRLS - B	969
Auxiliary Equipment:		
HRLT lower Housing	HRLH - B	759
HRLT Lower Cartridge	HRLC - B	759
HRLT upper Housing	HRUH - B	769
HRLT Upper Cartridge	HRUC - B	769

Enhanced DTS Cartridge / Equipment Identification		
Primary Equipment:		
EDTC Gamma Ray Detector	EDTG - A/B	8305
Enhanced DTS Cartridge	EDTC - B	8317
Auxiliary Equipment:		
EDTC Housing	EDTH - B	8303

Company: **Lamont Doherty**

**Schlumberger**

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

Field: **Mediterranean Outflow (Portugal)**

Rig: **JOIDES Resolution**

Ocean: **Atlantic**

Hostile Natural Gamma Sonde  
Gamma Ray Spectroscopy