

**Schlumberger**

Company: Lamont Doherty

Well: Expedition 339, Site U1391 WI-01B

Field: Mediterranean Outflow (Portugal)

Rig: JOIDES Resolution Ocean: Atlantic

Well: Expedition 339, Site U1391 W1-01B  
Field: Mediterranean Outflow (Portugal)  
Rig: JOIDES Resolution Ocean: Atlantic

Field: Mediterranean Outflow (Portugal)  
Rig: JOIDES Resolution Ocean: Atlantic

Rig: **JOIDES Resolution** Ocean: **Atlantic**

[illegible]

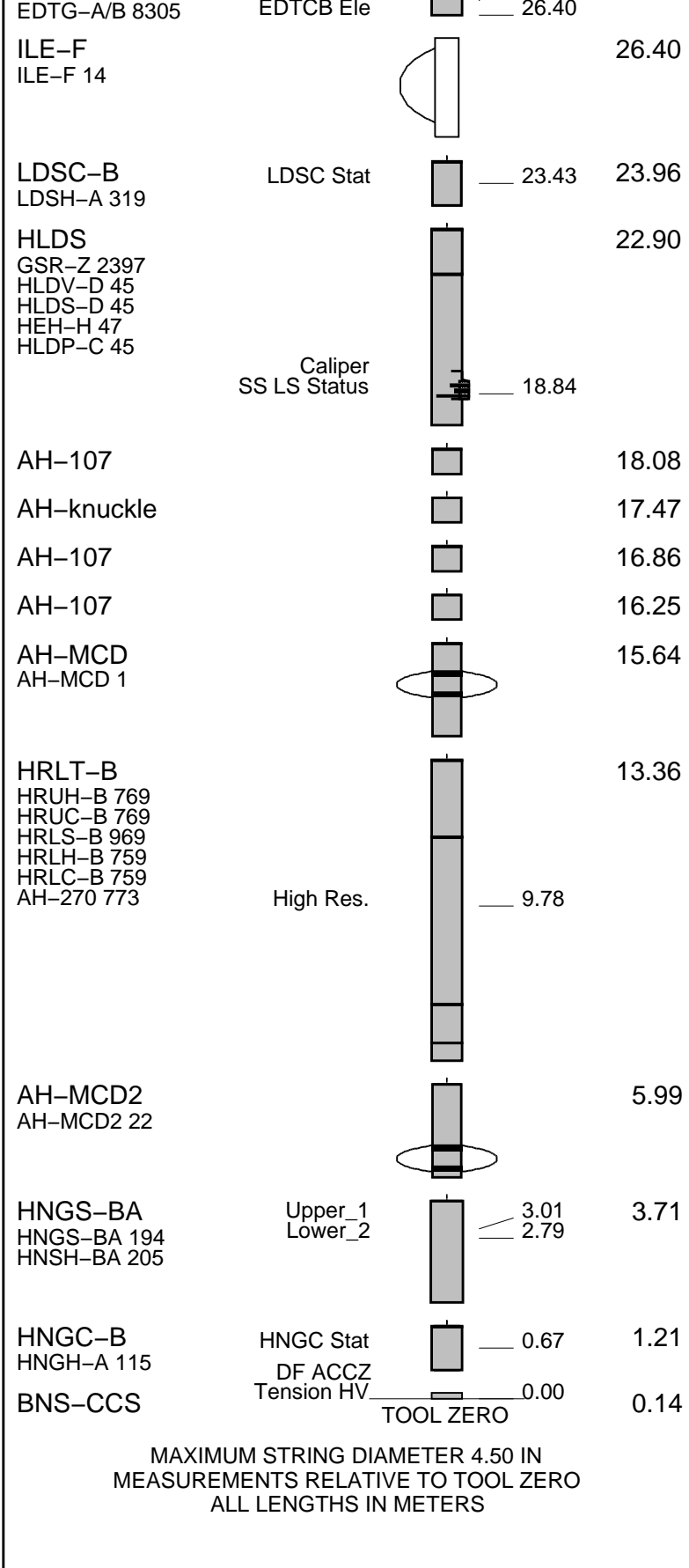
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth		@		
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
Density		Viscosity		
Fluid Loss		PH		
Source Of Sample				
RM @ Measured Temperature		@		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

**DISCLAIMER**

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REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
Hole WI-01B Hole C was drilled with a 9 7/8" RCB bit to TDD of 671.5 mbsf.	
This log originally acquired in measured depth from rig floor but played back for sea floor reference.	
Playback used LCAL and barite for processing with recompute for Playback.	
The original logs were acquired with bit size as the hole size assumption.	
All logs recorded via wireline thru 5-5.5" drillpipe and RCB coring BHA consisting of a bit release sub, Kinley sub, drill collars. Drill bit dropped prior to logging.	

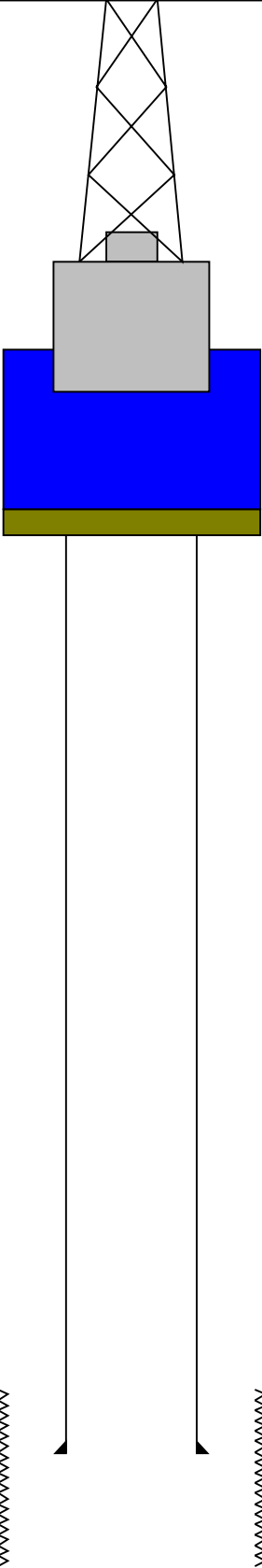
	EQUIPMENT DESCRIPTION	
RUN 1		RUN 2



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

Kelly Bushing Elevation  
Derrick Floor Elevation  
  
Mean Sea Level

-1085.0  
-1085.0  
  
-1074.0



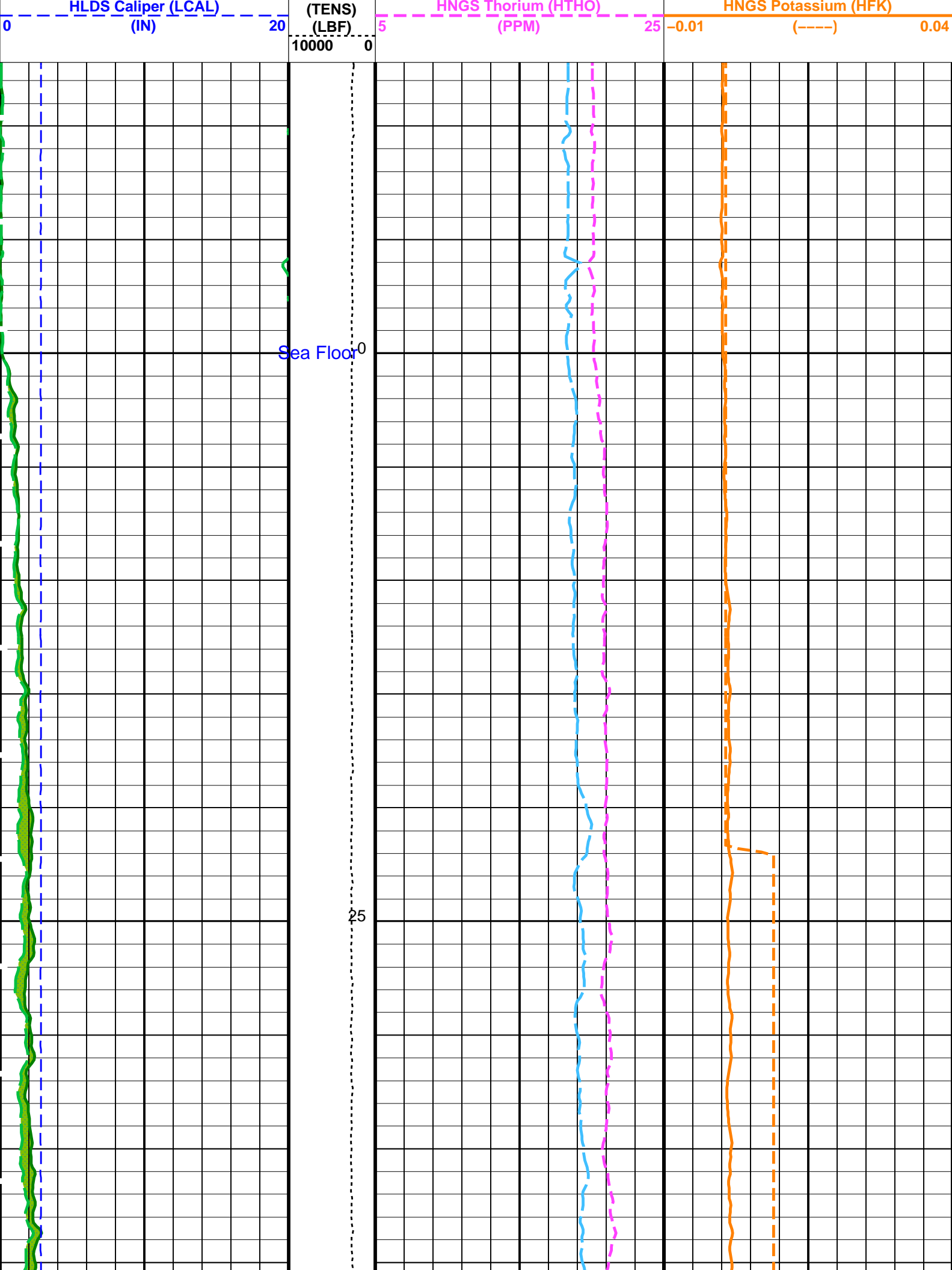
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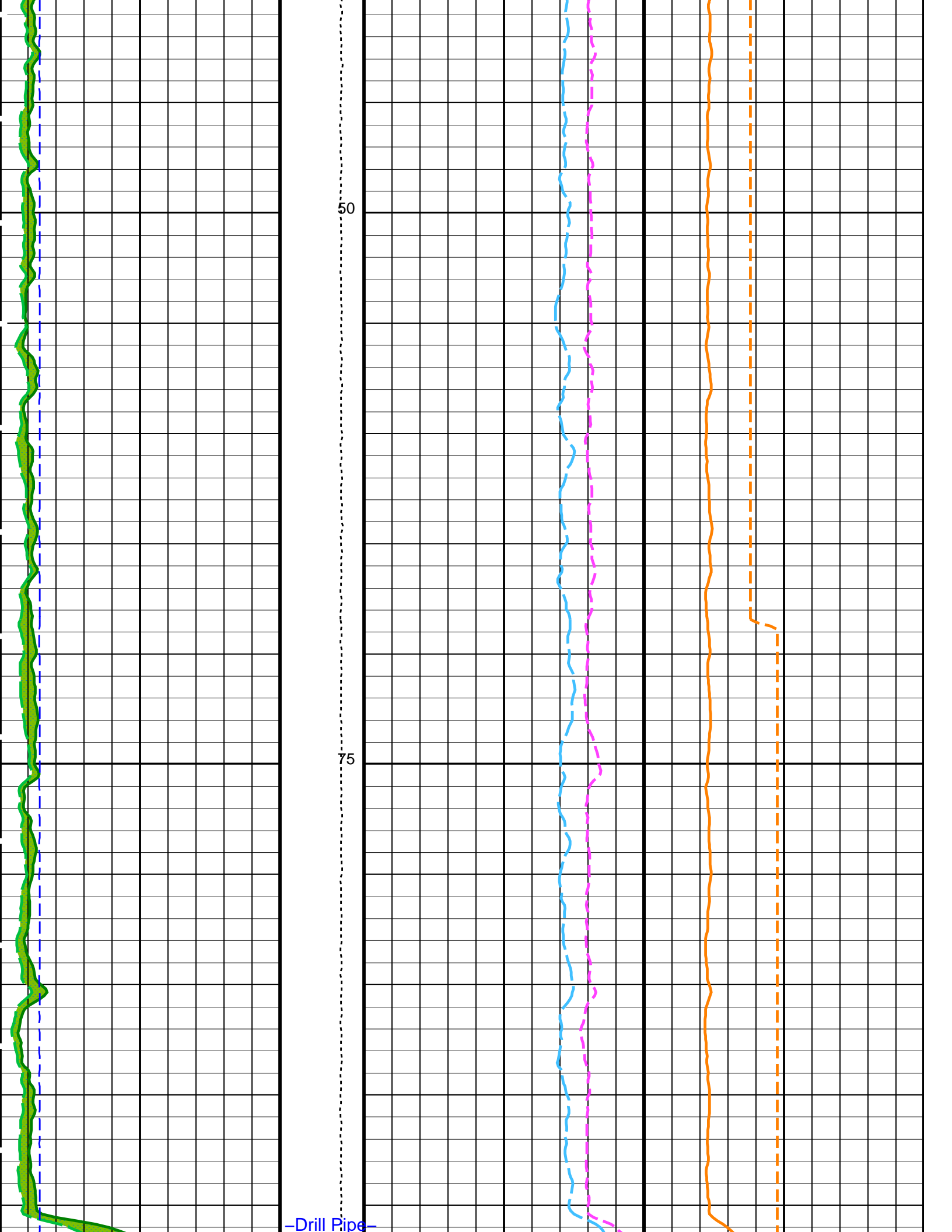
0  
98.9  
  
671.5

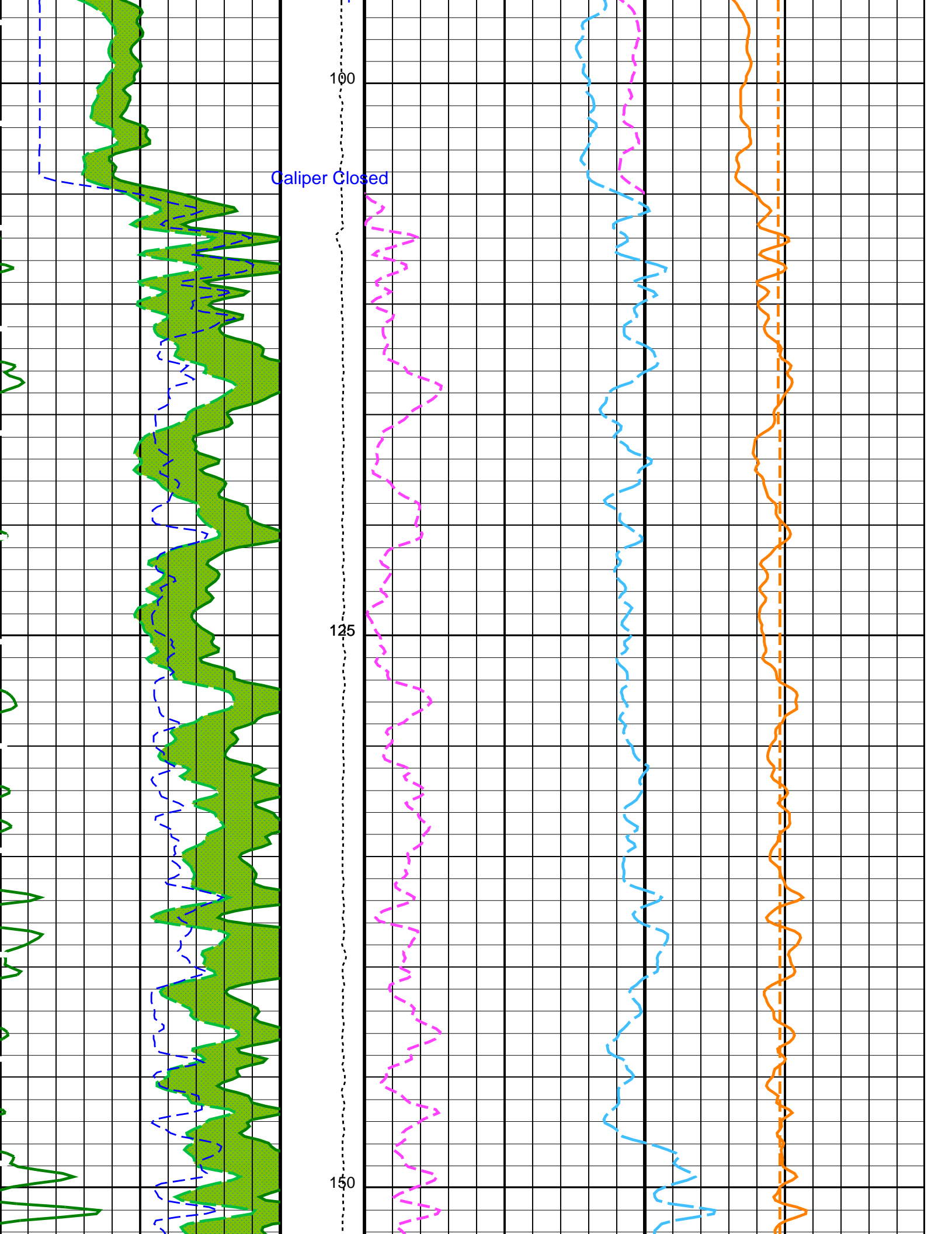
3.80  
9.875

Sea Floor  
Open Hole  
  
Total Depth

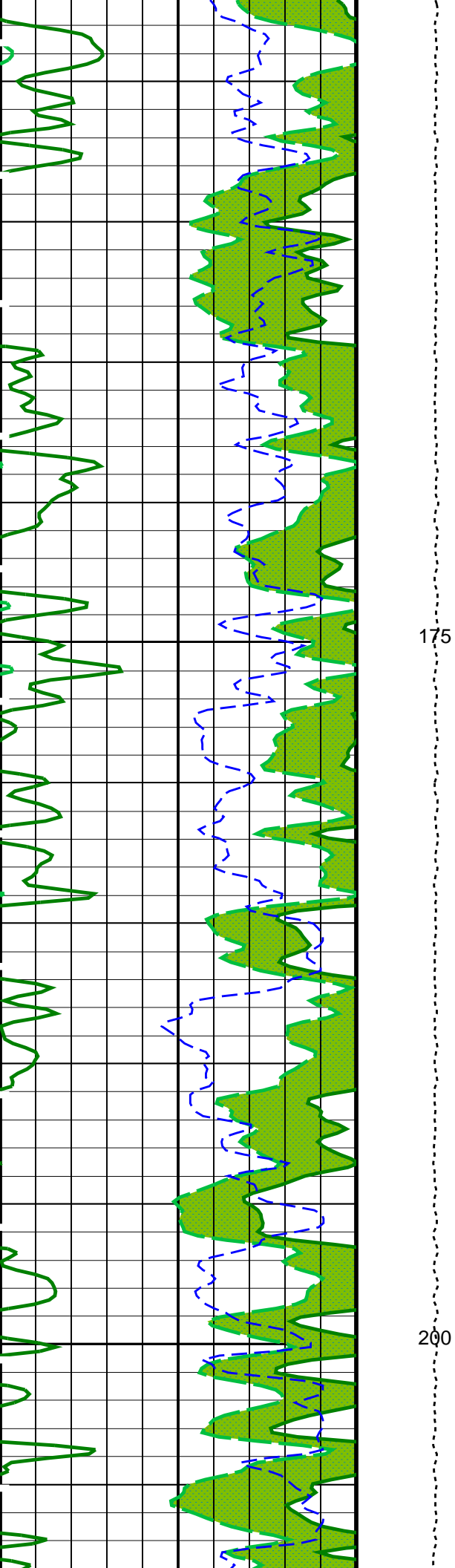






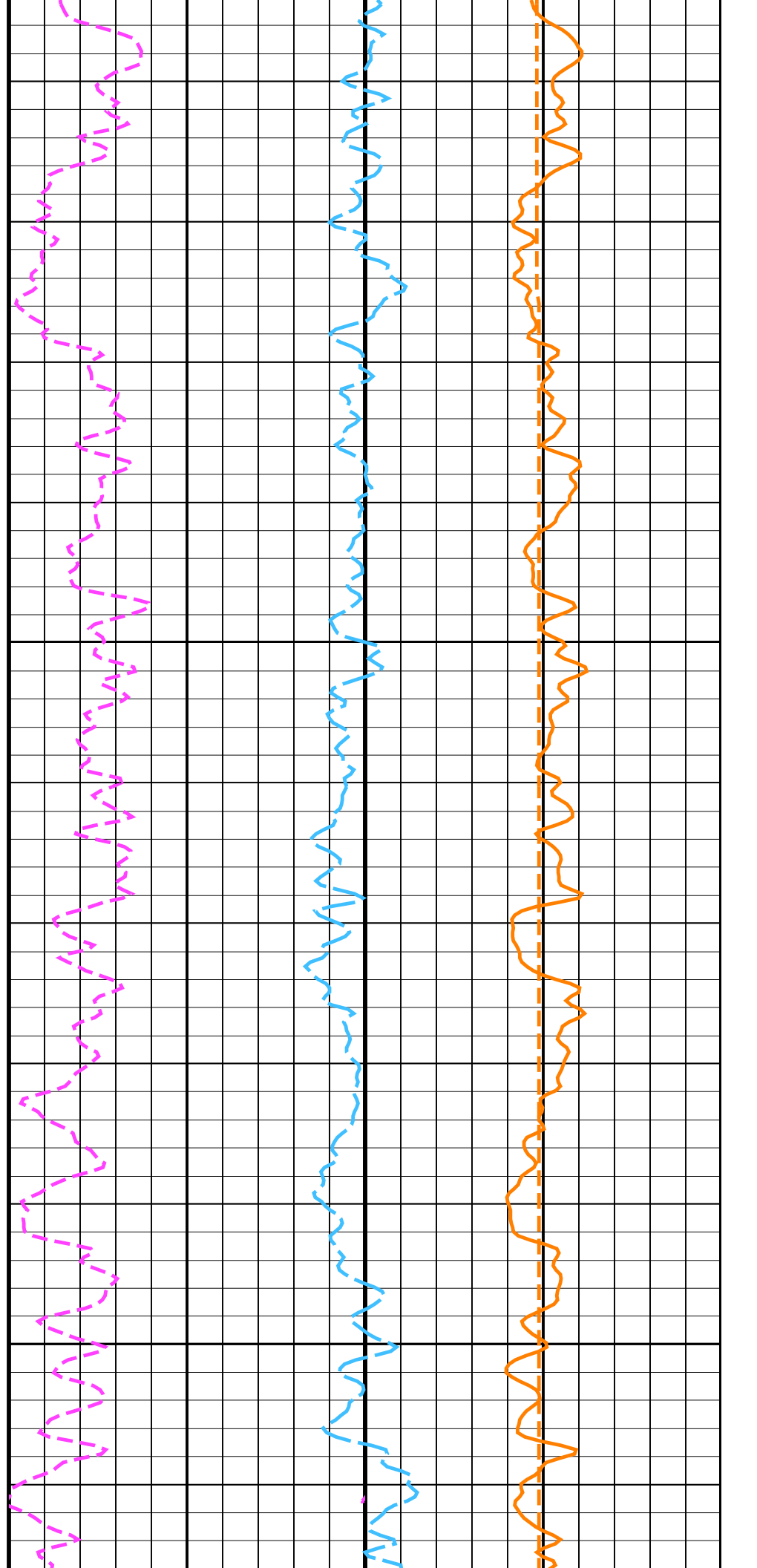


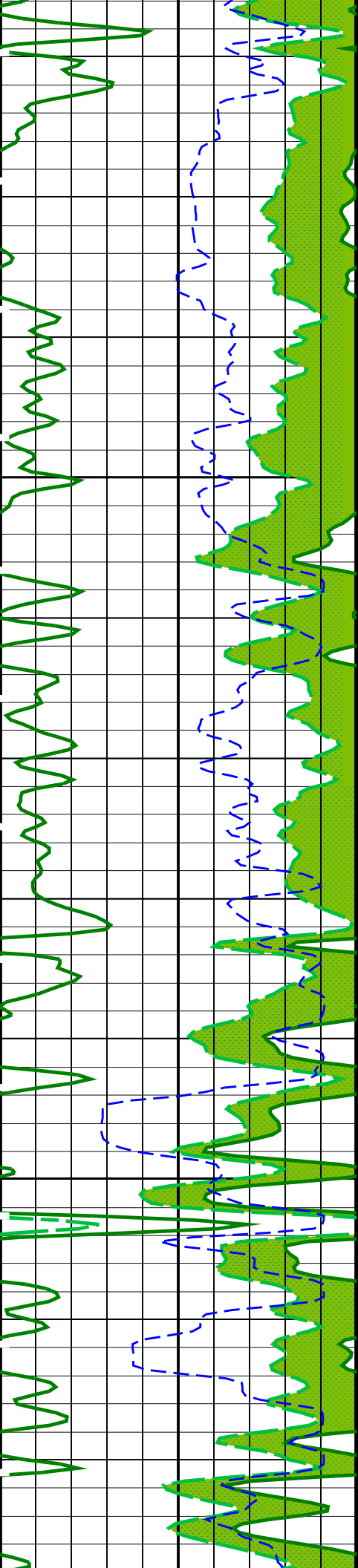




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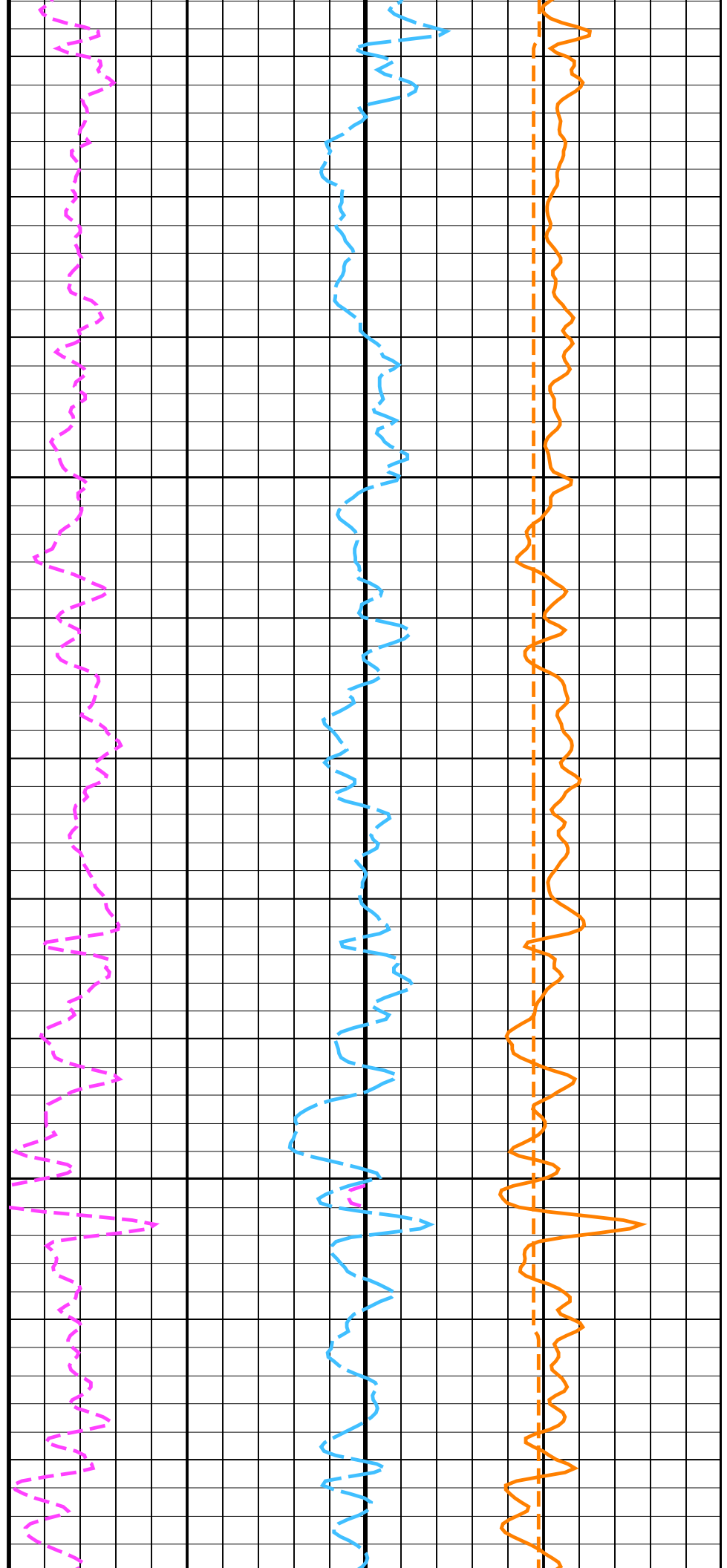
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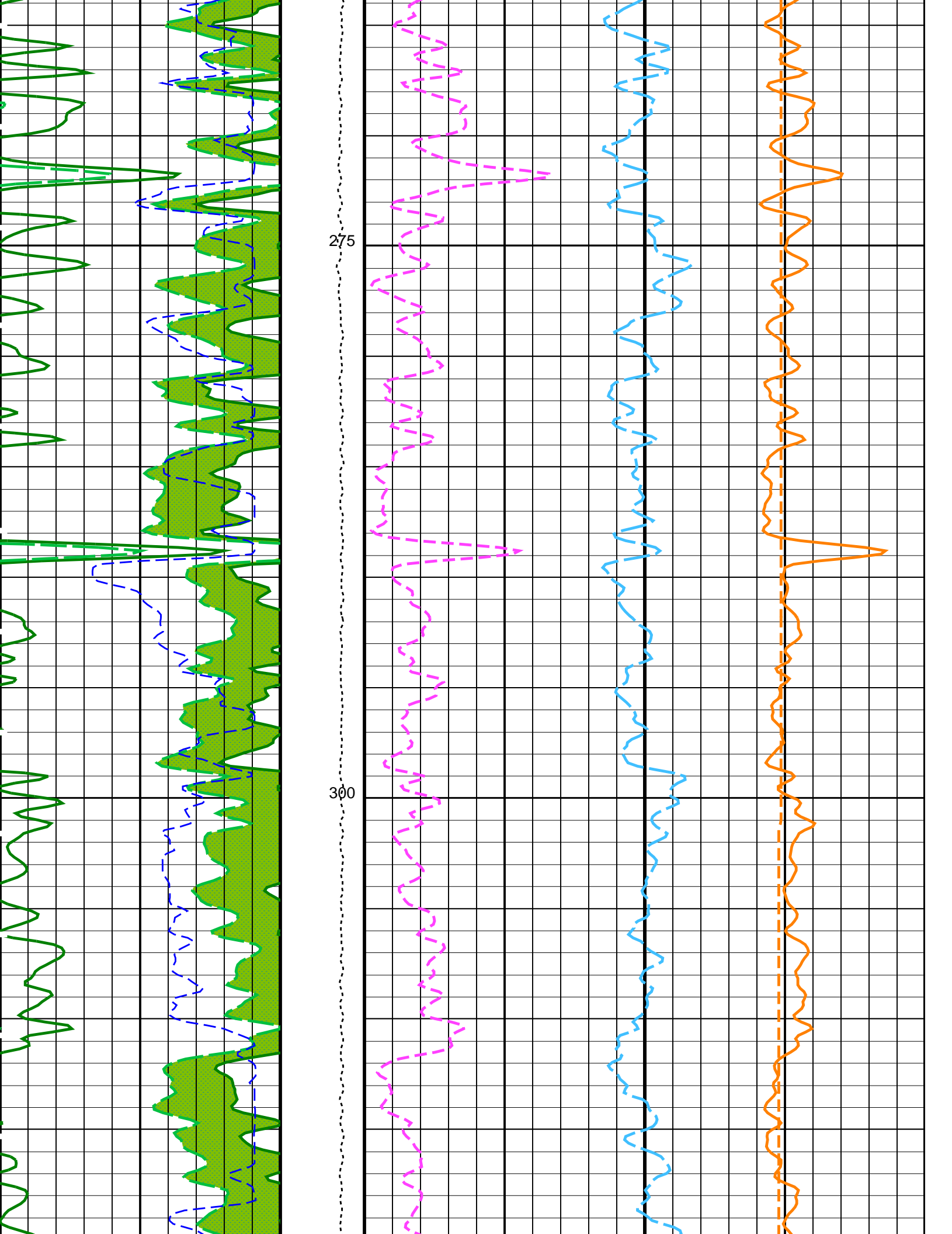


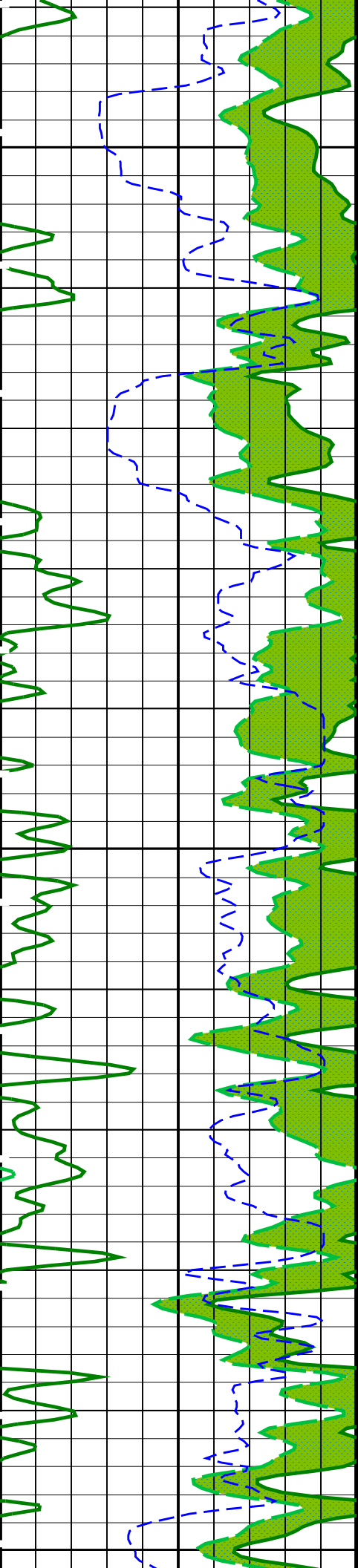


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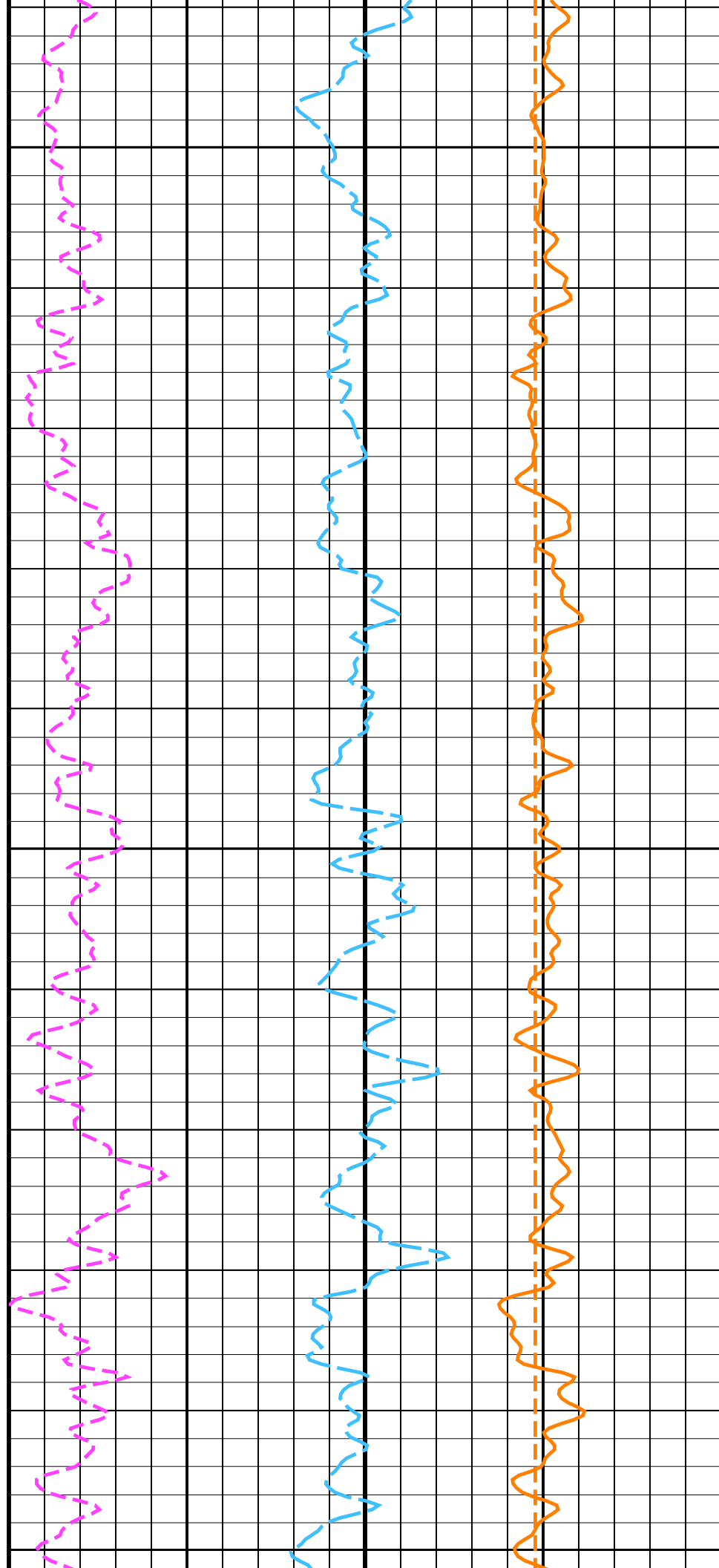


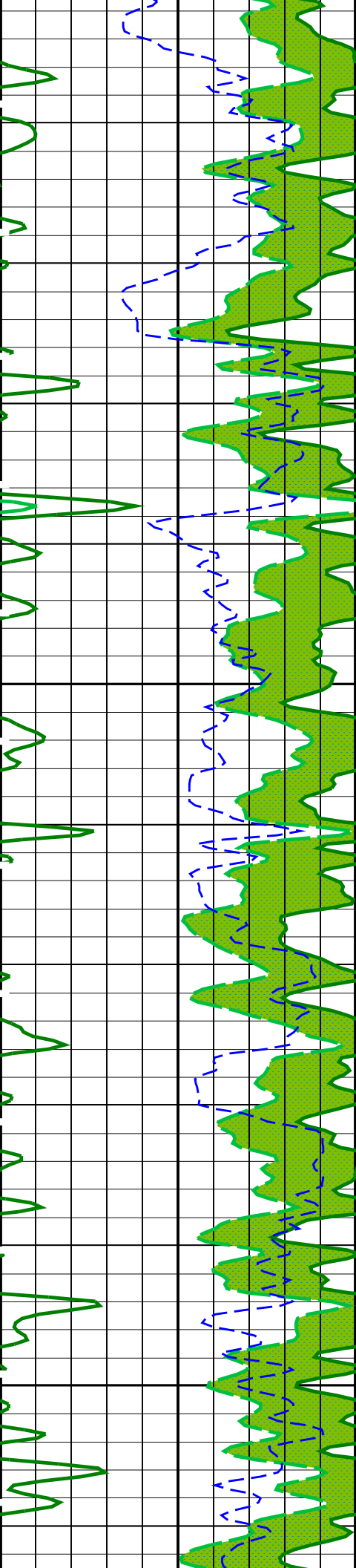


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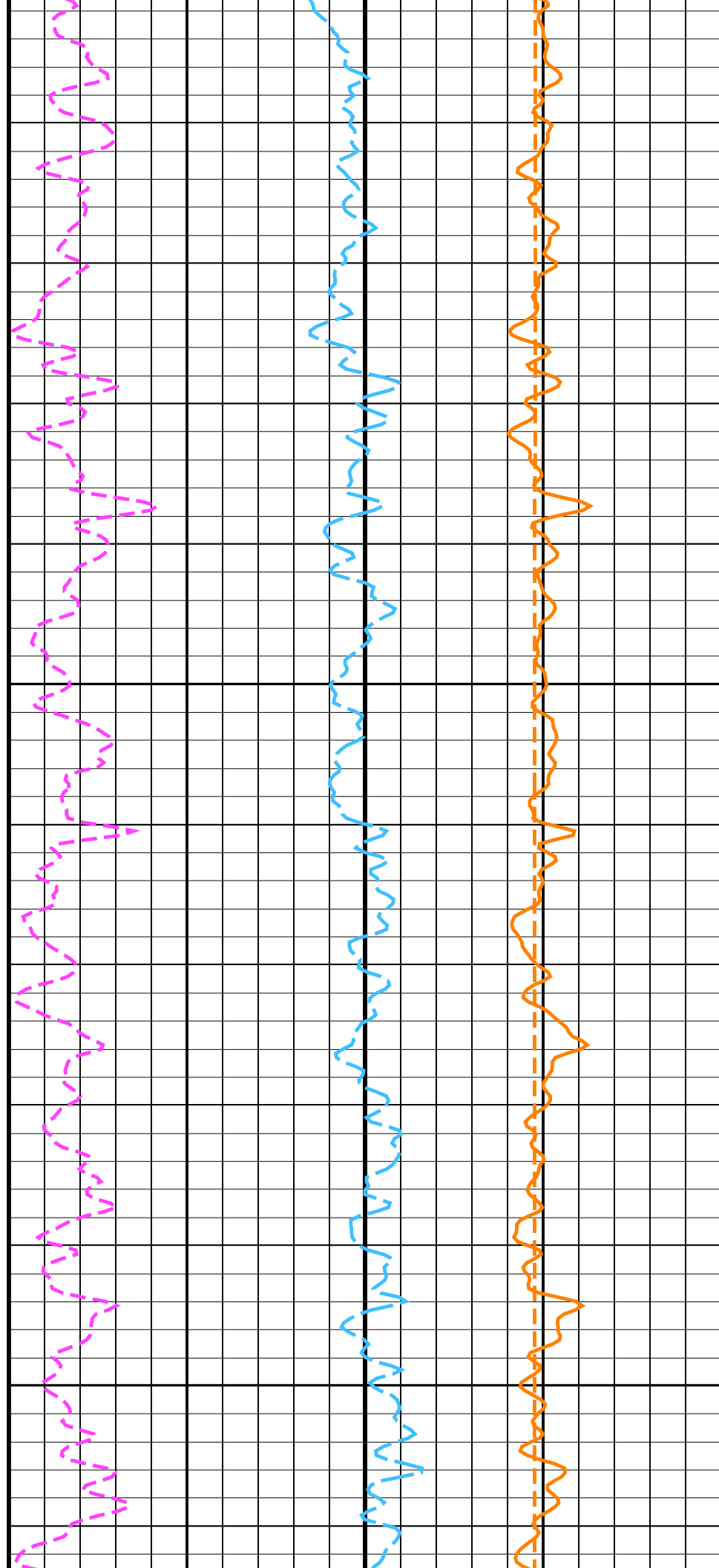
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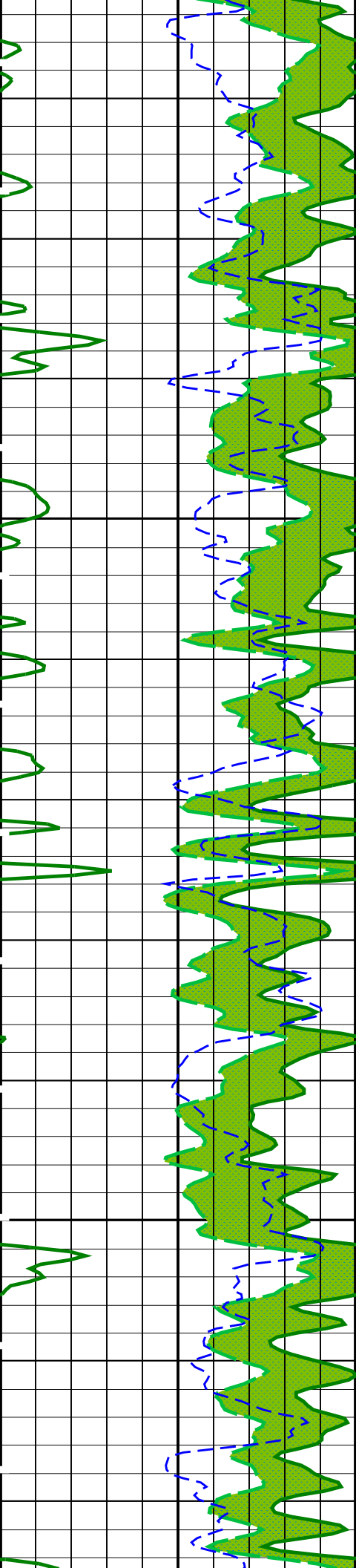




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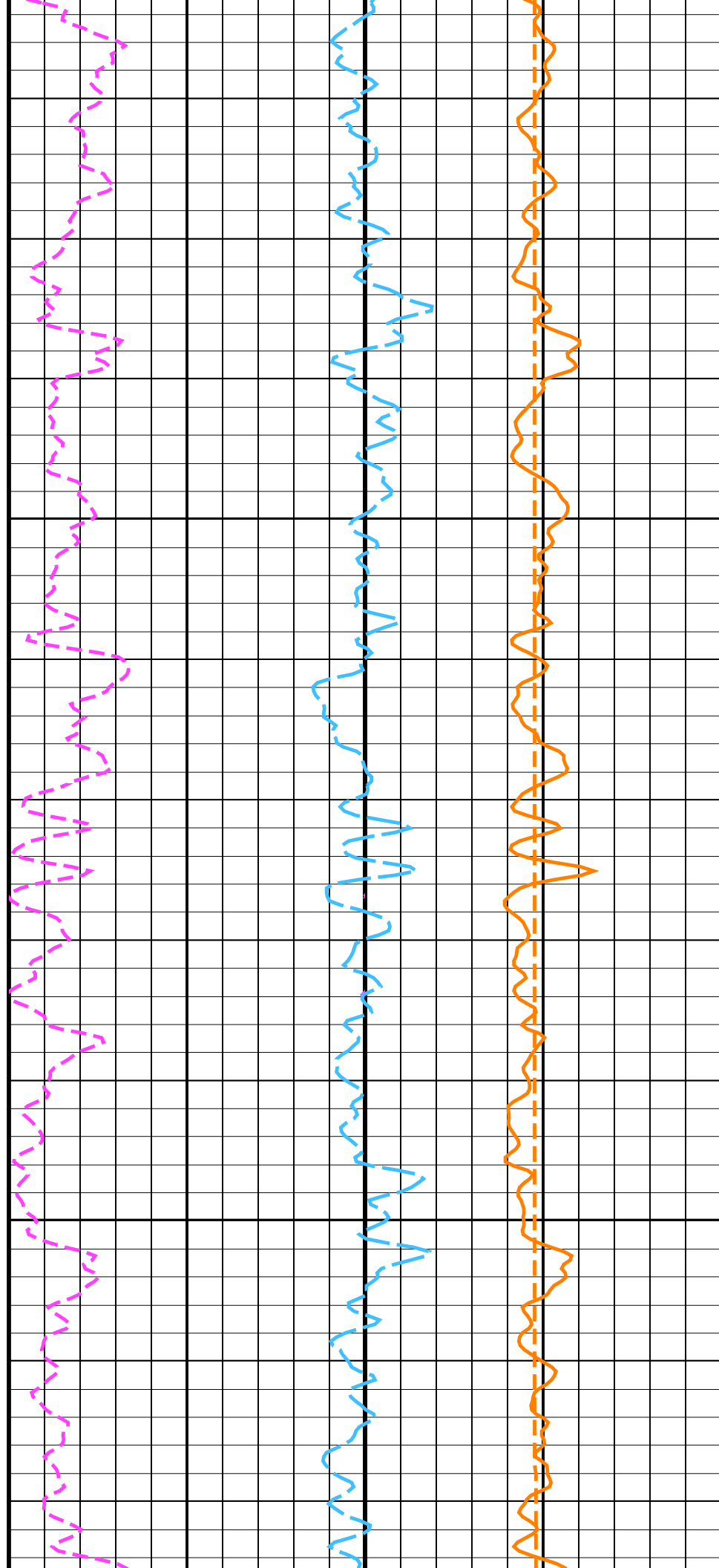
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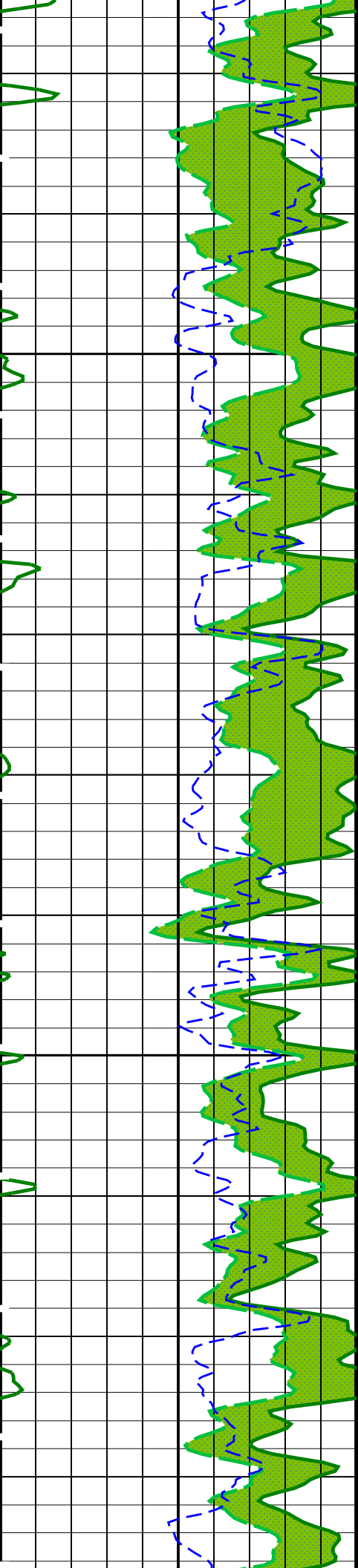




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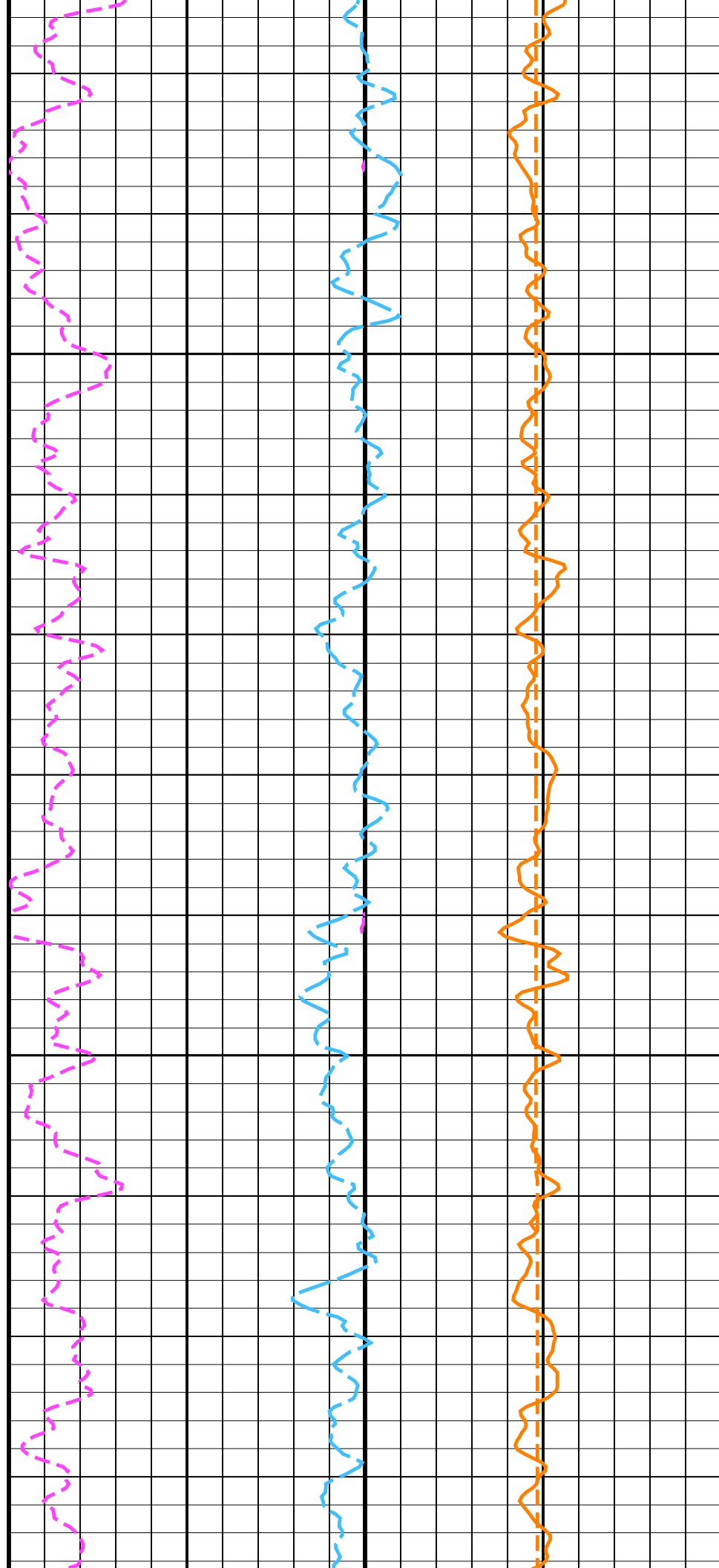
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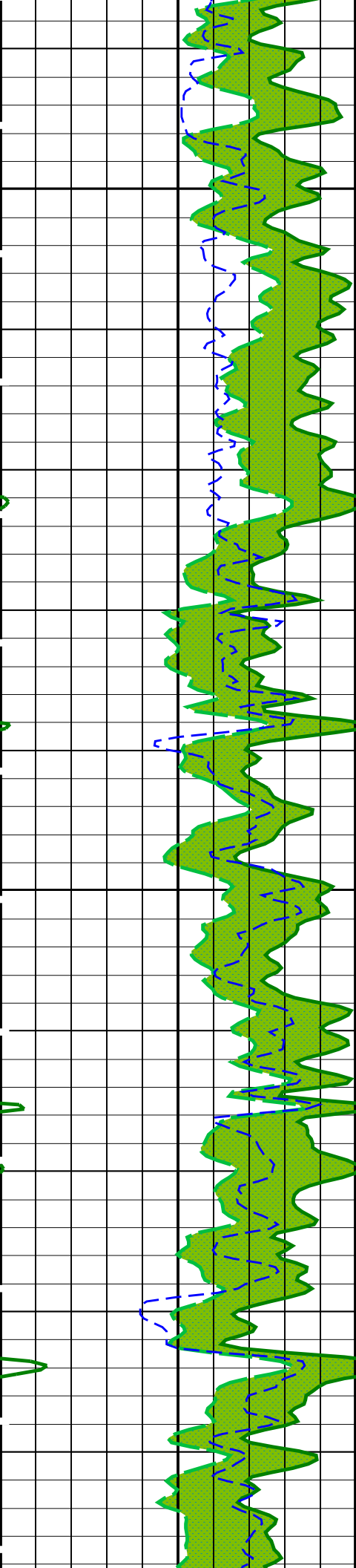




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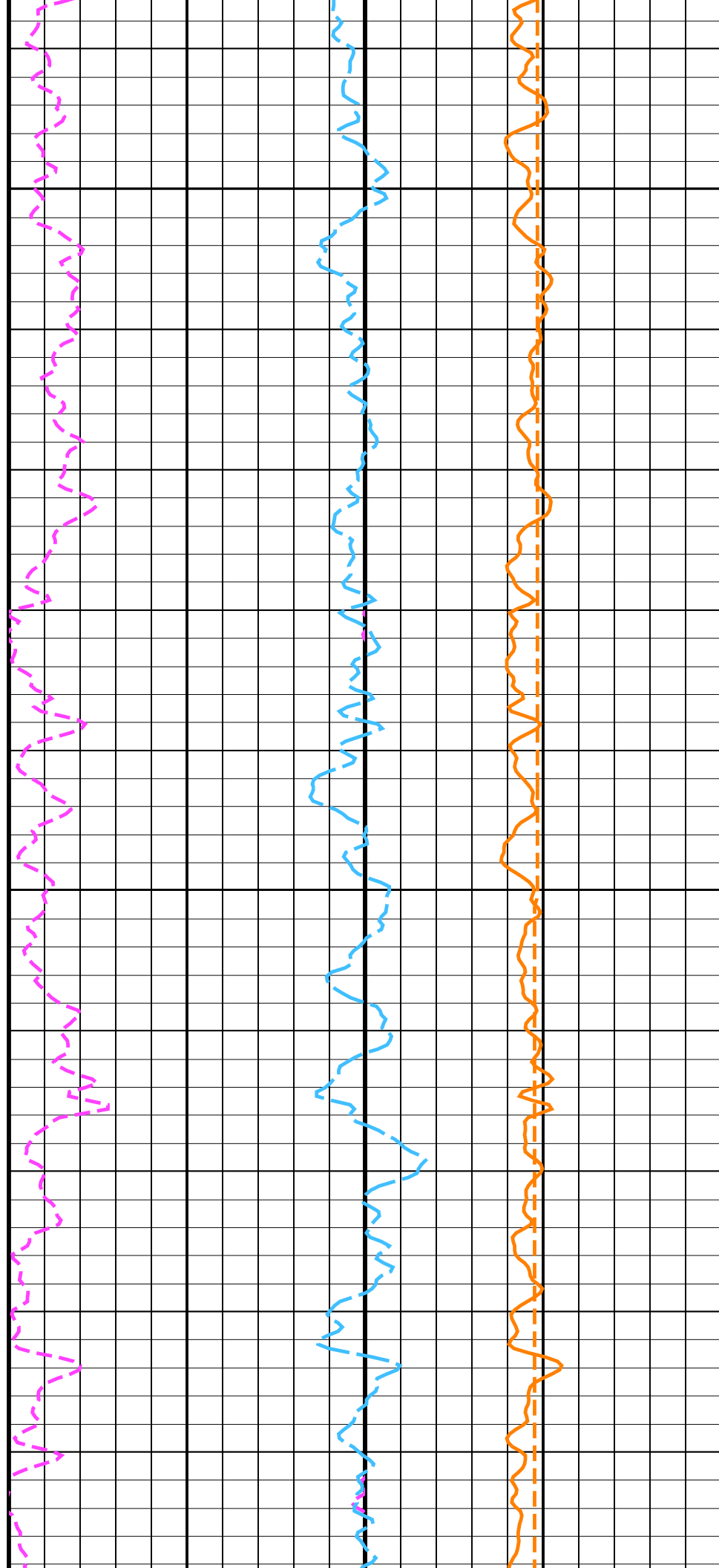
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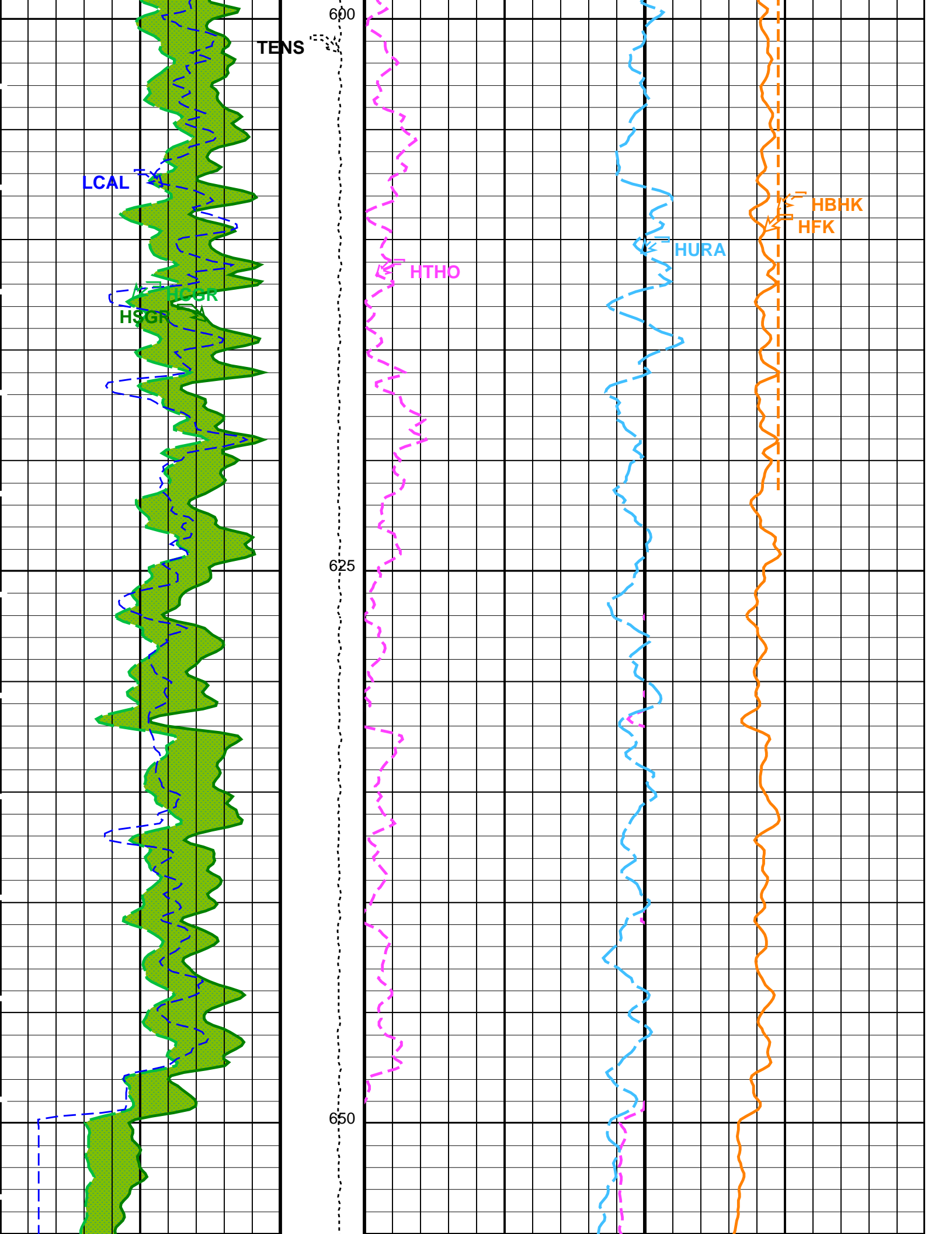


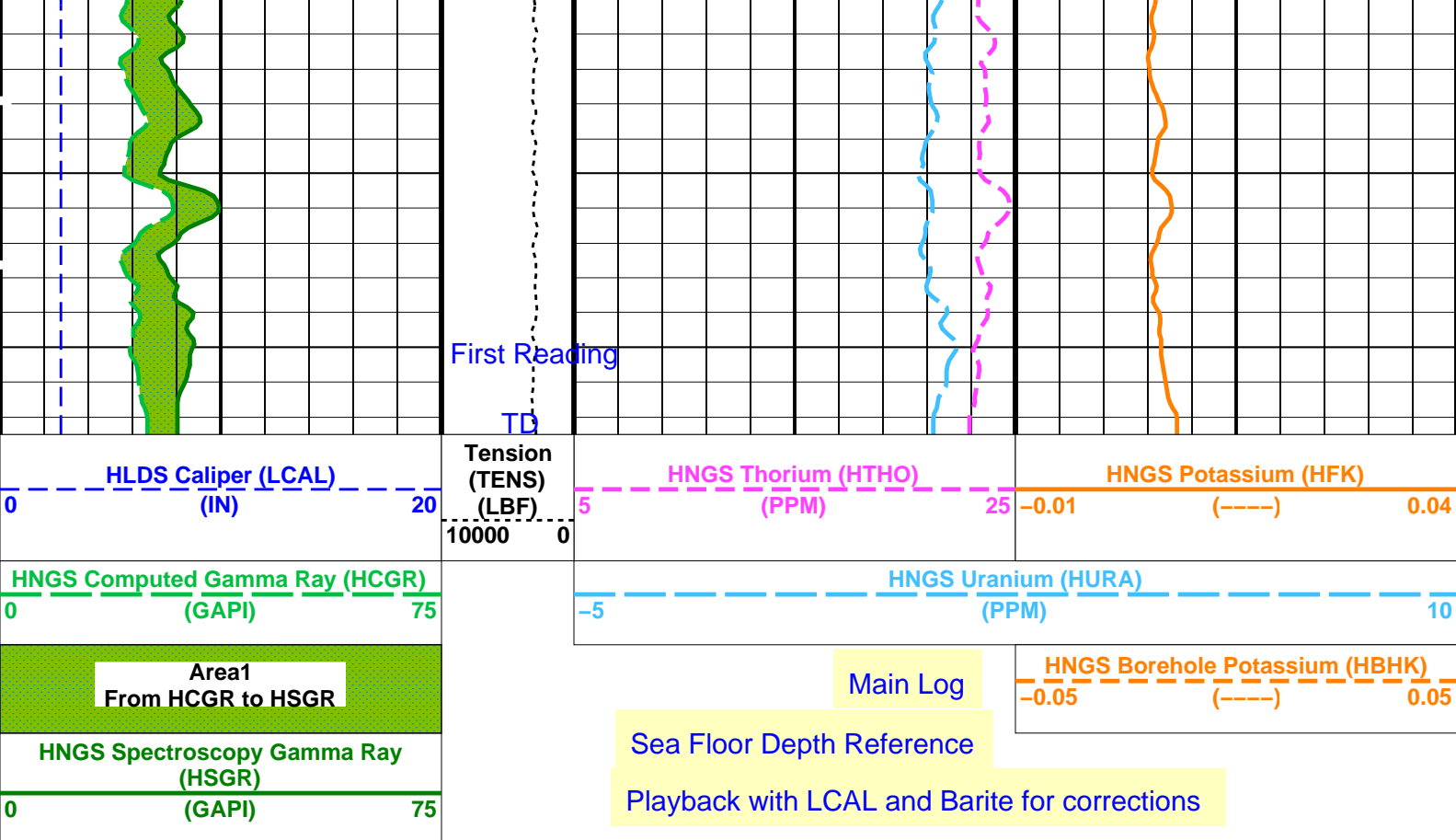
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575









#### PIP SUMMARY

Time Mark Every 60 S

### Parameters

DLIS Name	Description	Value
HNGS-BA: Hostile Natural Gamma Ray Sonde		
BAR1	HNGS Detector 1 Barite Constant	1
BAR2	HNGS Detector 2 Barite Constant	1
BHK	HNGS Borehole Potassium Correction Concentration	0
BHS	Borehole Status	OPEN
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	-0.00416761
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	CENT
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.974112
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.970002
HRLT-B: High Resolution Laterolog Array - B		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	LCAL
EDTC-B: Enhanced DTS Cartridge		
BHS	Borehole Status	OPEN
GCSE	Generalized Caliper Selection	LCAL
System and Miscellaneous		
BS	Bit Size	9.875 IN
DFD	Drilling Fluid Density	1.25 G/C3
DO	Depth Offset for Playback	-1086.0 M
PP	Playback Processing	RECOMPUTE

Format: HNGSYields Vertical Scale: 1:200

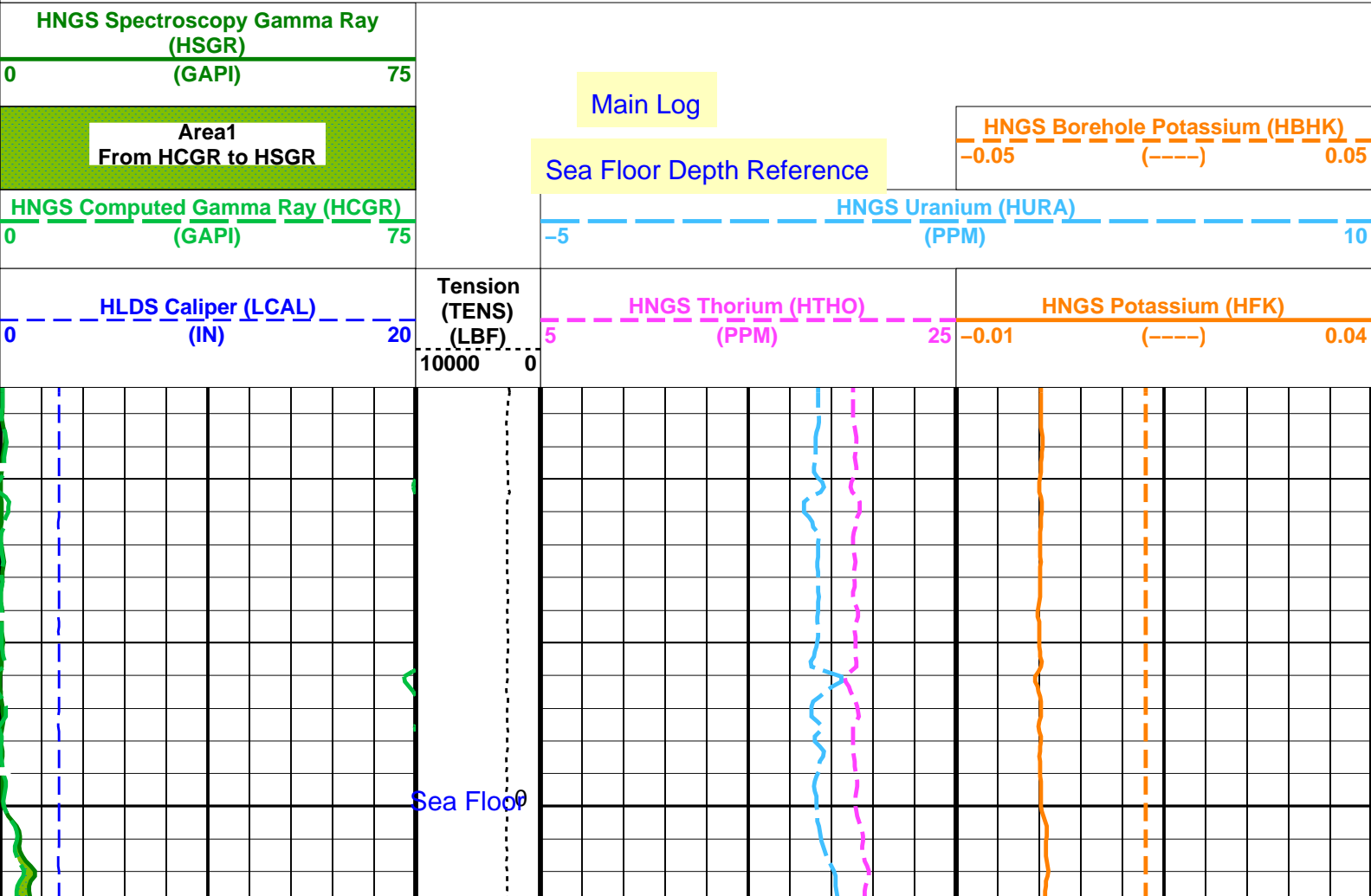
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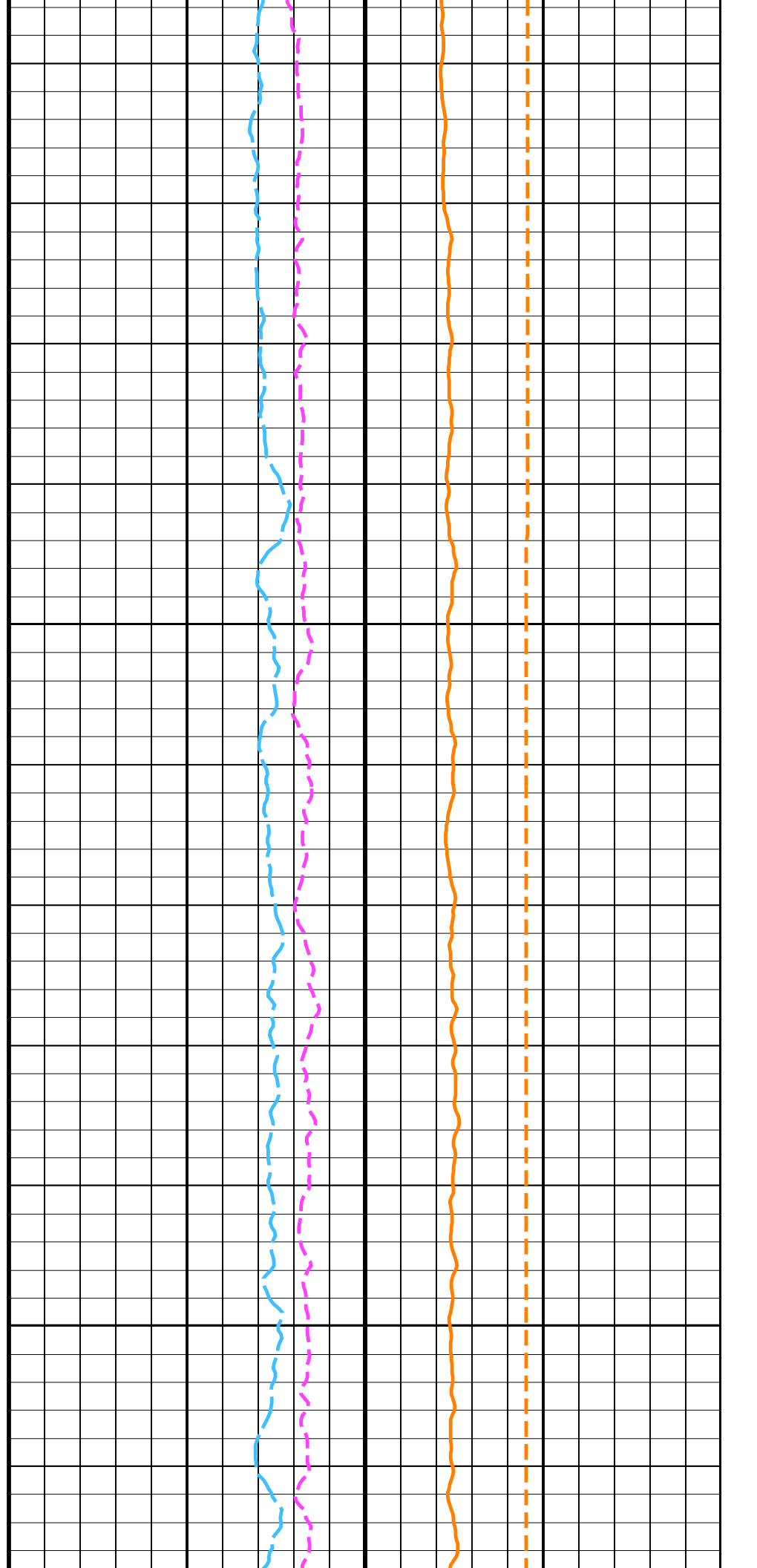
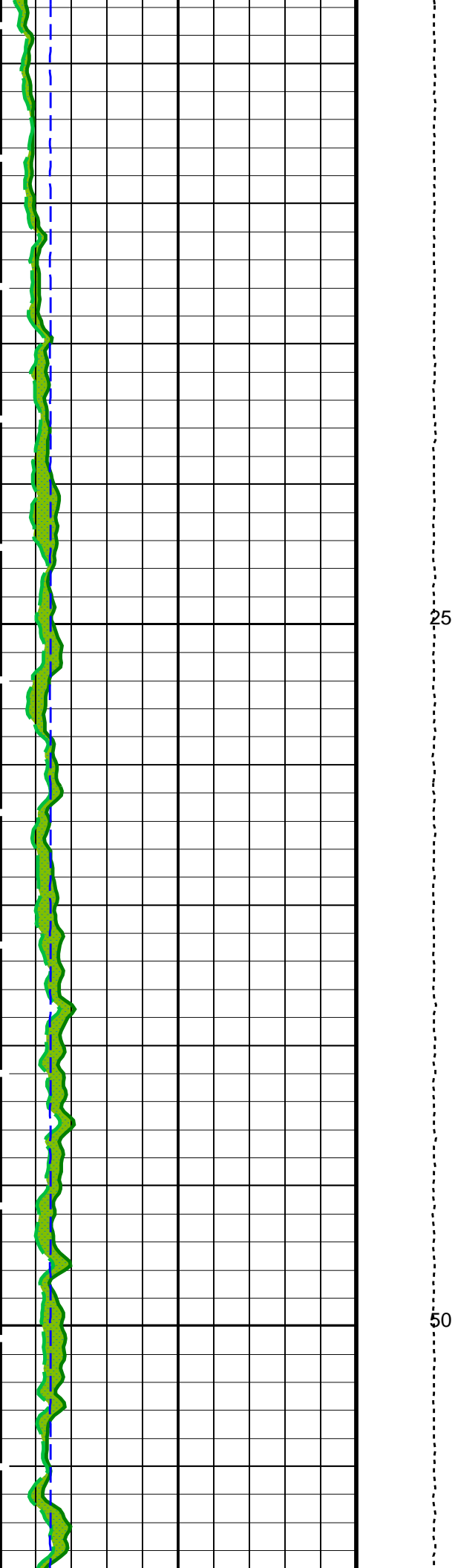
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HRLT-B	19C0-187			HLDS	19C0-187
LDSC-B	19C0-187			EDTC-B	SKK-5169-EDTCB
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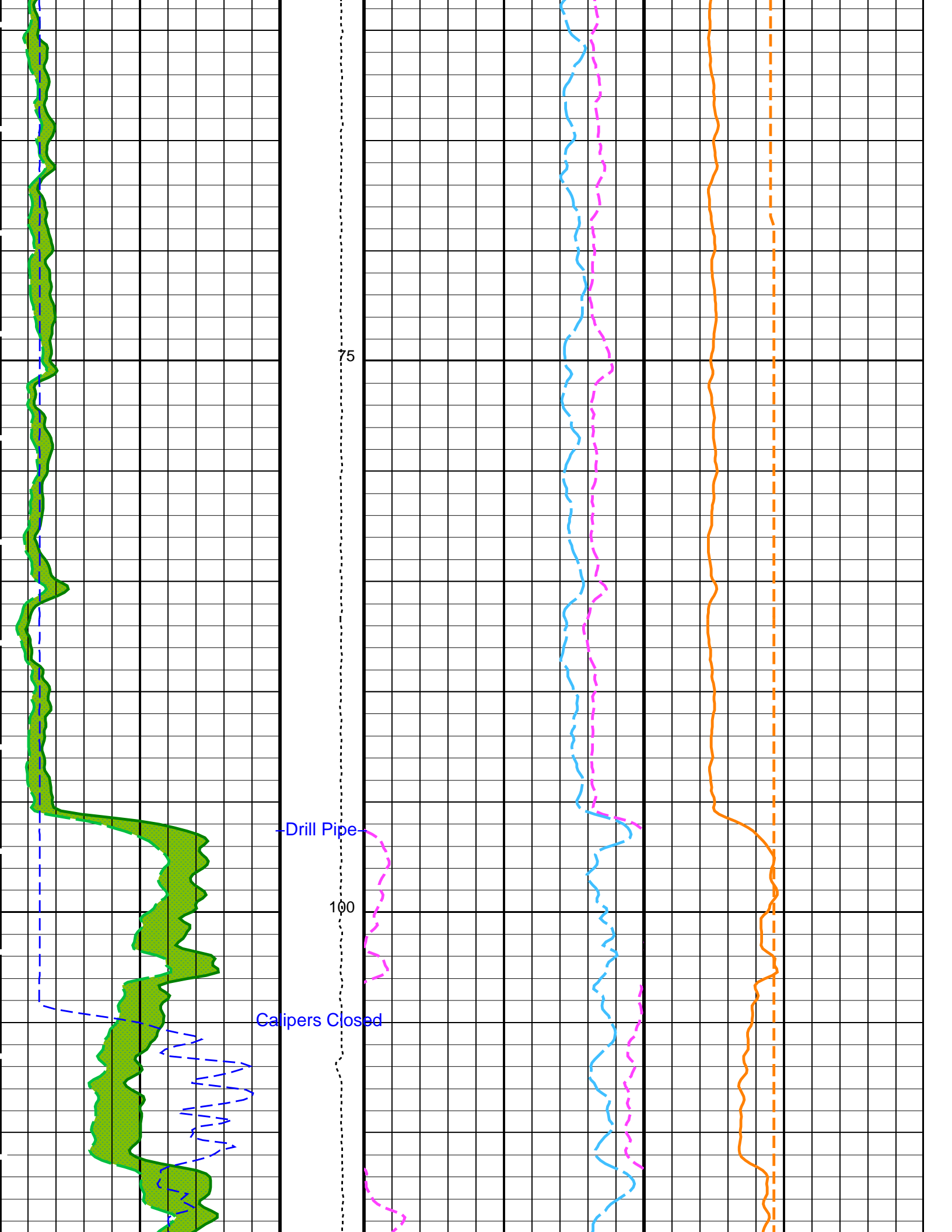
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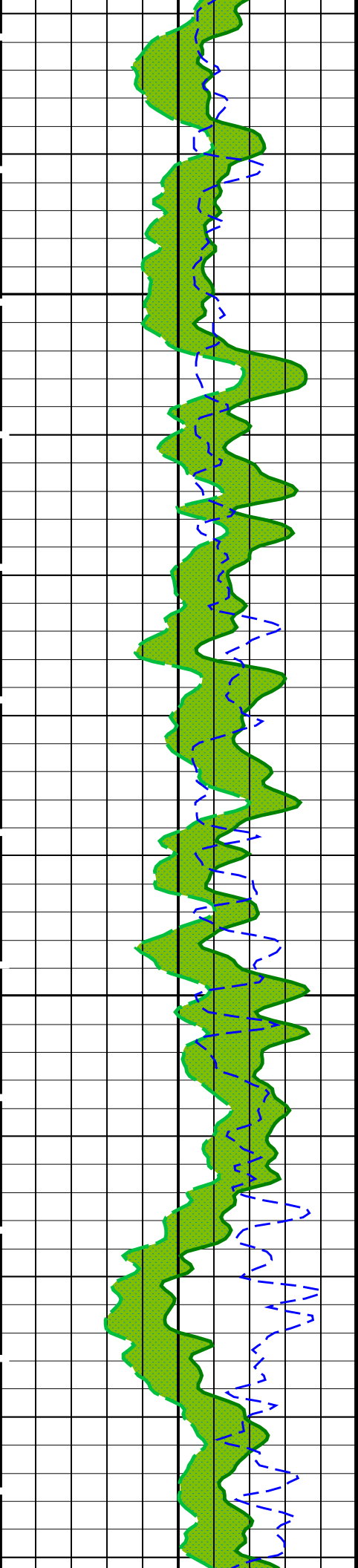
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HRLT-B	19C0-187			HLDS	19C0-187
LDSC-B	19C0-187			EDTC-B	SKK-5169-EDTCB

PIP SUMMARY					
<div> <div>Time Mark Every 60 S</div> <div> <div> <div>HNGS Spectroscopy Gamma Ray (HSGR)</div> <div> <div>0</div> <div>(GAPI)</div> <div>75</div> </div> <div>Area1</div> <div>From HCGR to HSGR</div> </div> <div> <div>HNGS Computed Gamma Ray (HCGR)</div> <div> <div>0</div> <div>(GAPI)</div> <div>75</div> </div> </div> <div> <div>HLDS Caliper (LCAL)</div> <div> <div>0</div> <div>(IN)</div> <div>20</div> </div> </div> <div> <div>Tension (TENS) (LBF)</div> <div> <div>10000</div> <div>0</div> </div> </div> <div> <div>Sea Floor</div> </div> <div> <div>Main Log</div> <div>Sea Floor Depth Reference</div> <div> <div>HNGS Uranium (HURA)</div> <div> <div>-5</div> <div>(PPM)</div> <div>10</div> </div> </div> <div> <div>HNGS Thorium (HTHO)</div> <div> <div>5</div> <div>(PPM)</div> <div>25</div> </div> </div> <div> <div>HNGS Potassium (HFK)</div> <div> <div>-0.01</div> <div>(-----)</div> <div>0.04</div> </div> </div> <div> <div>HNGS Borehole Potassium (HBHK)</div> <div> <div>-0.05</div> <div>(-----)</div> <div>0.05</div> </div> </div> </div> </div></div>					



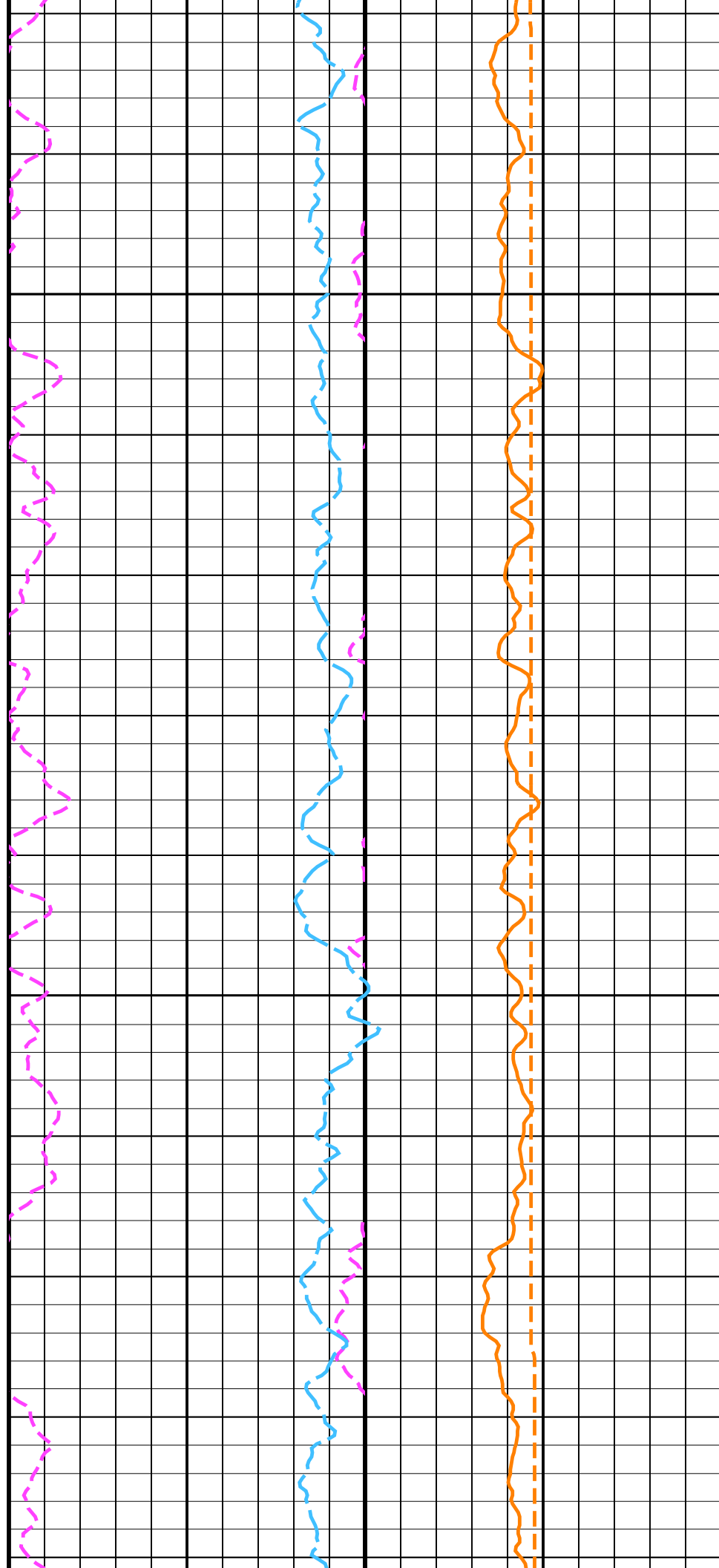


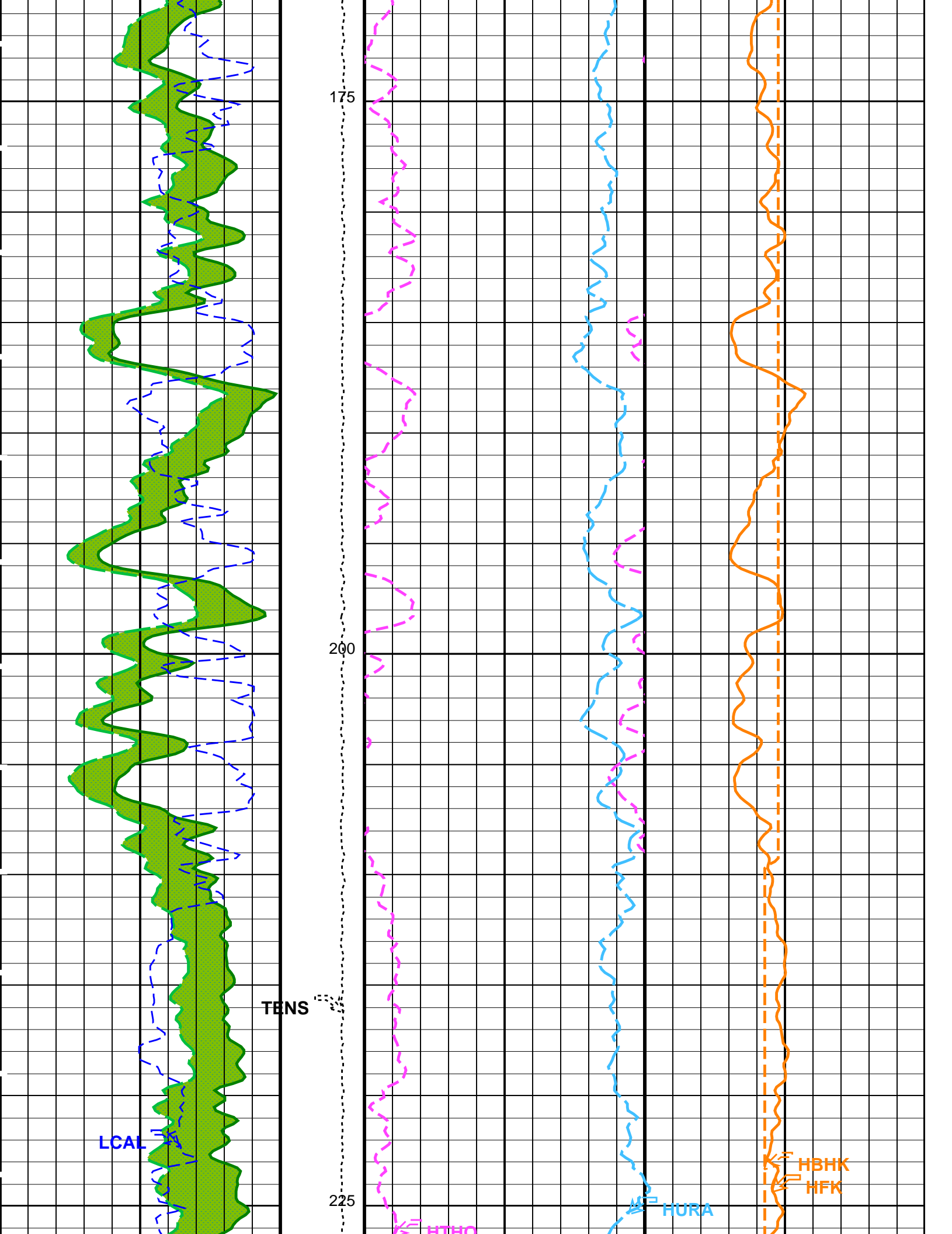


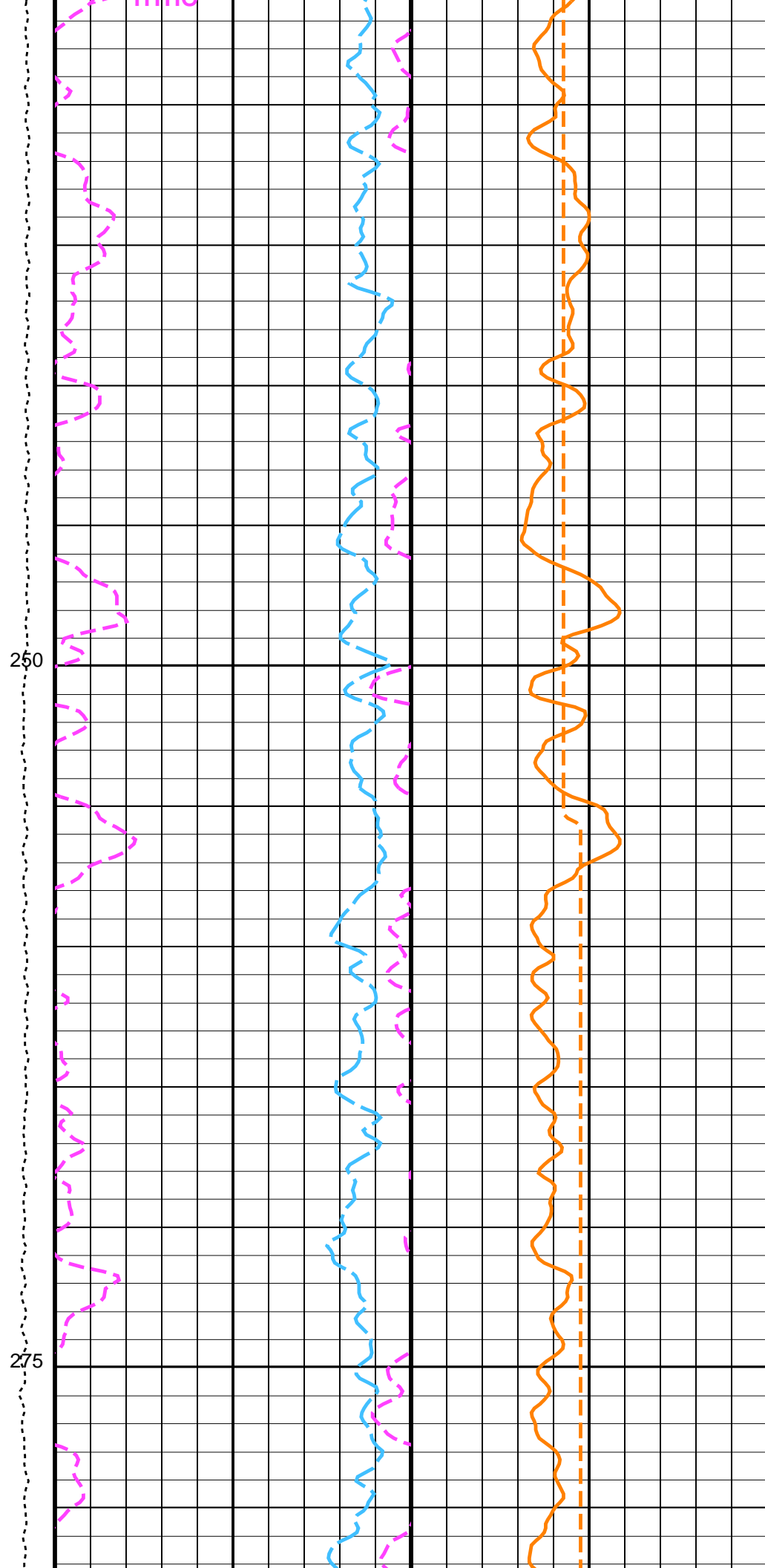
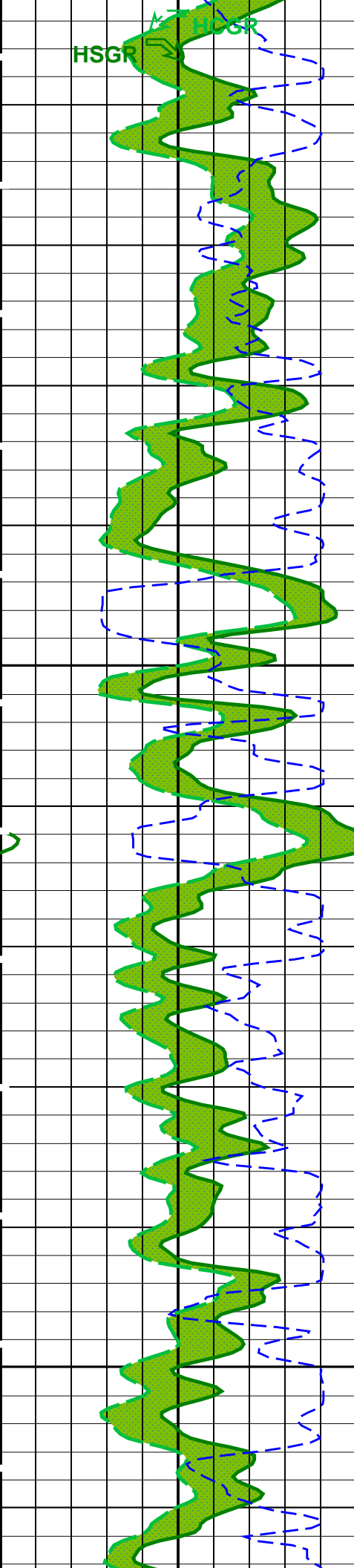


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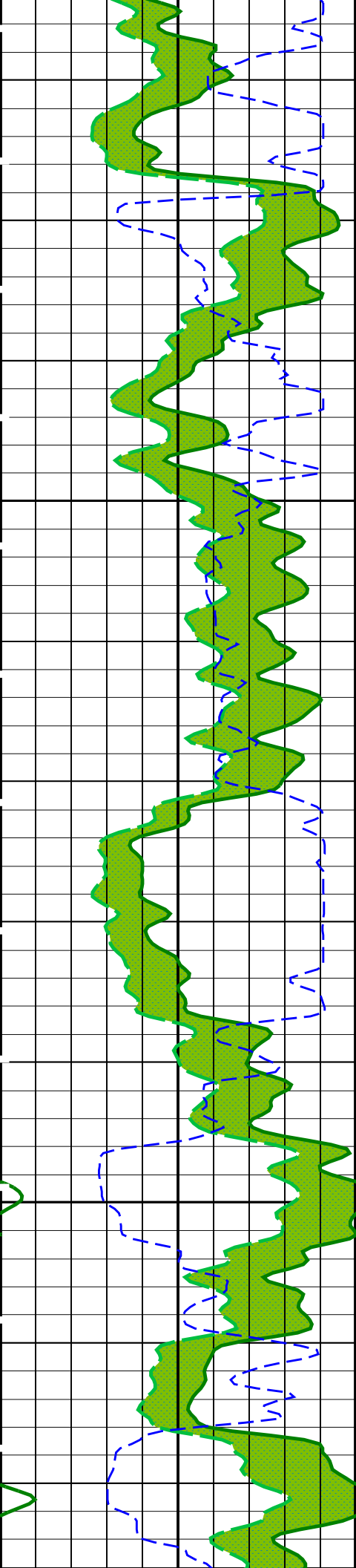
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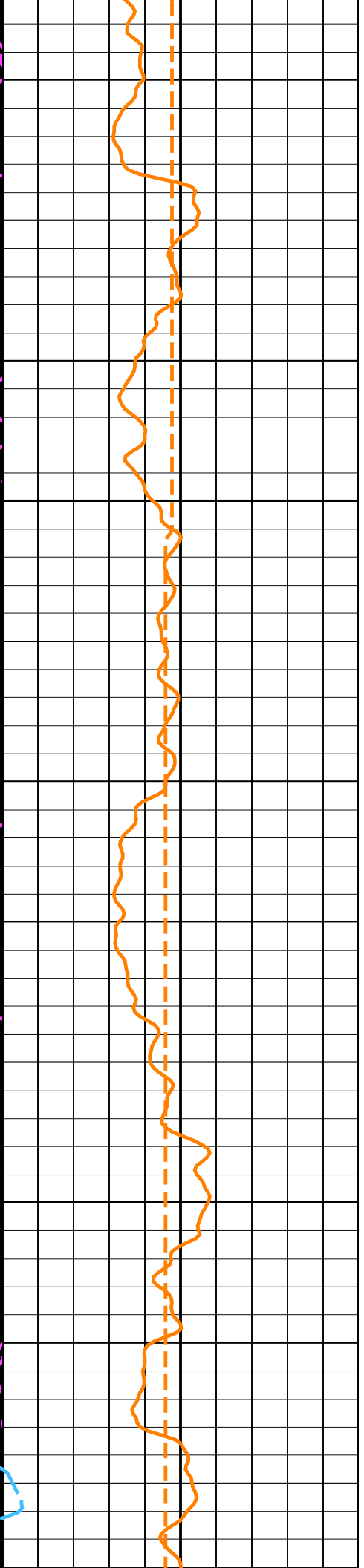
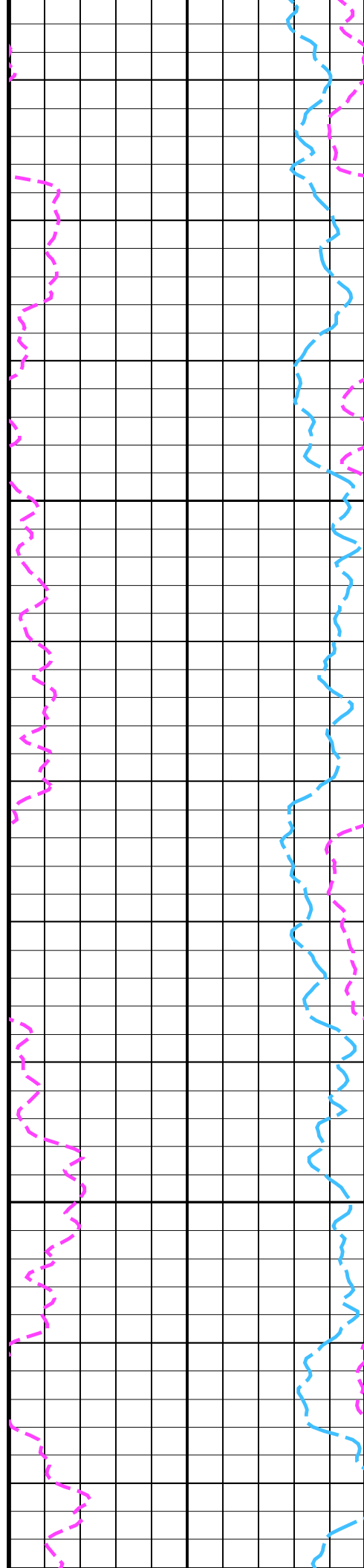


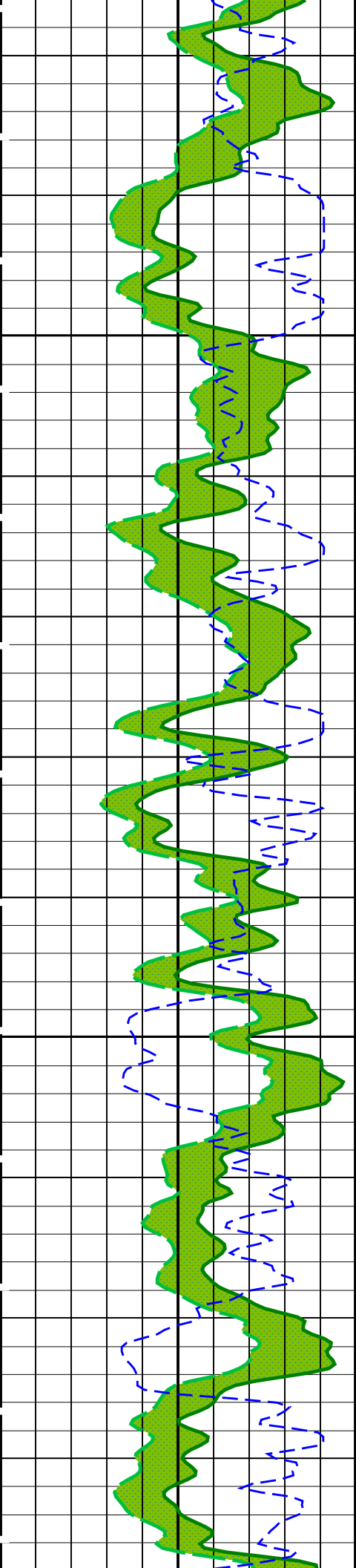




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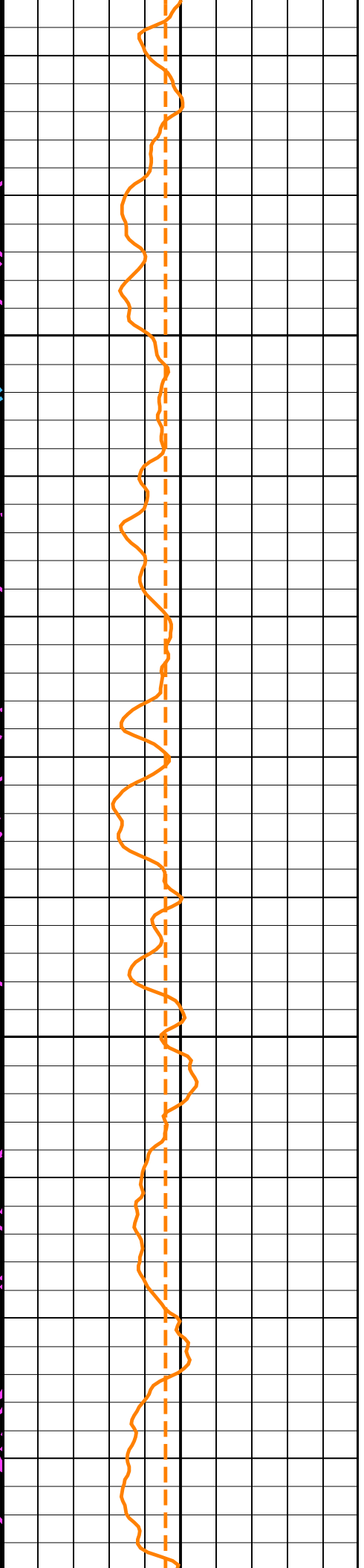
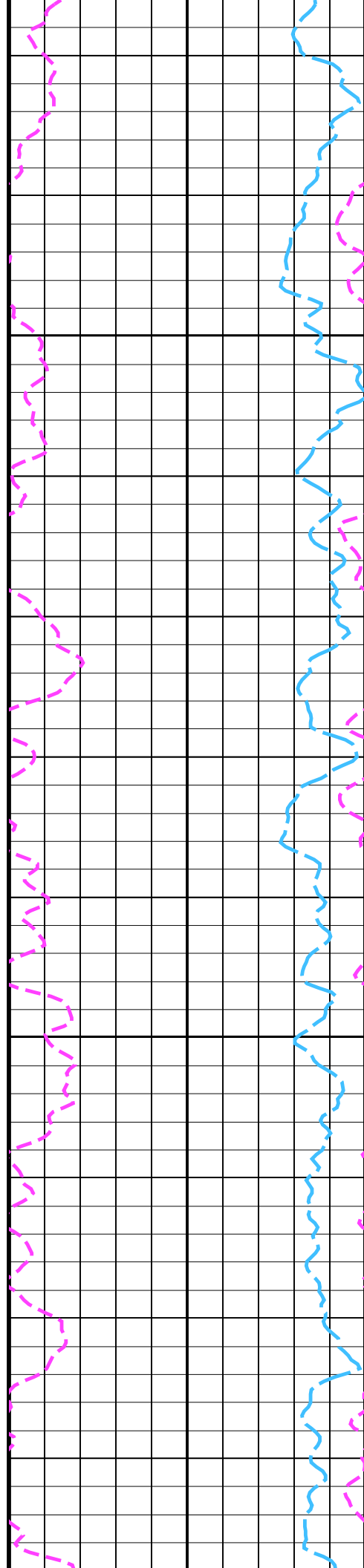
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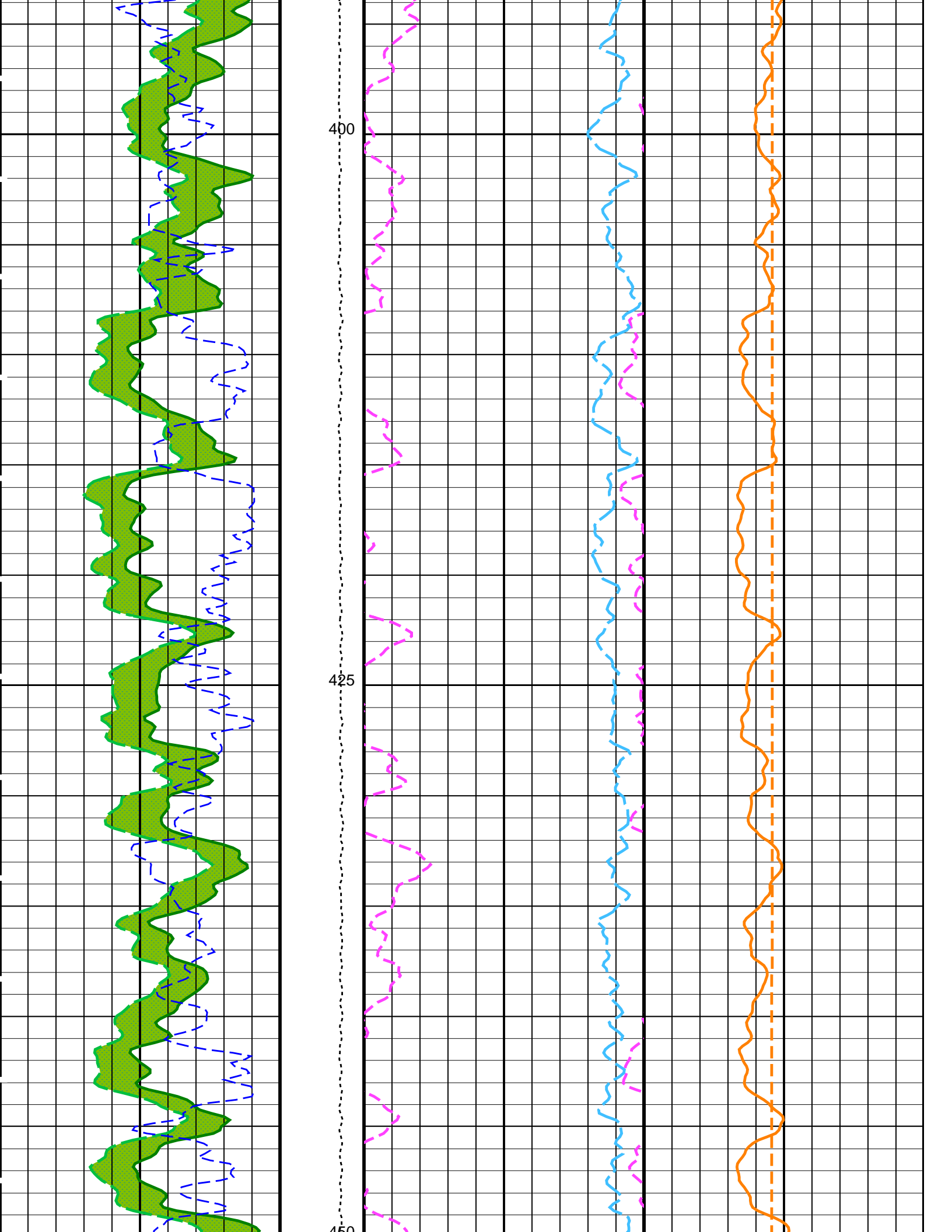


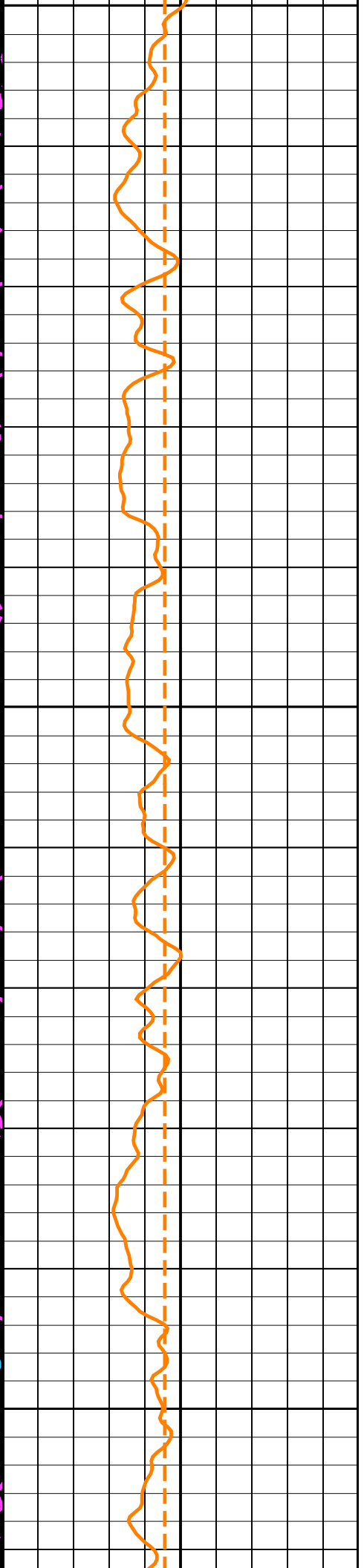
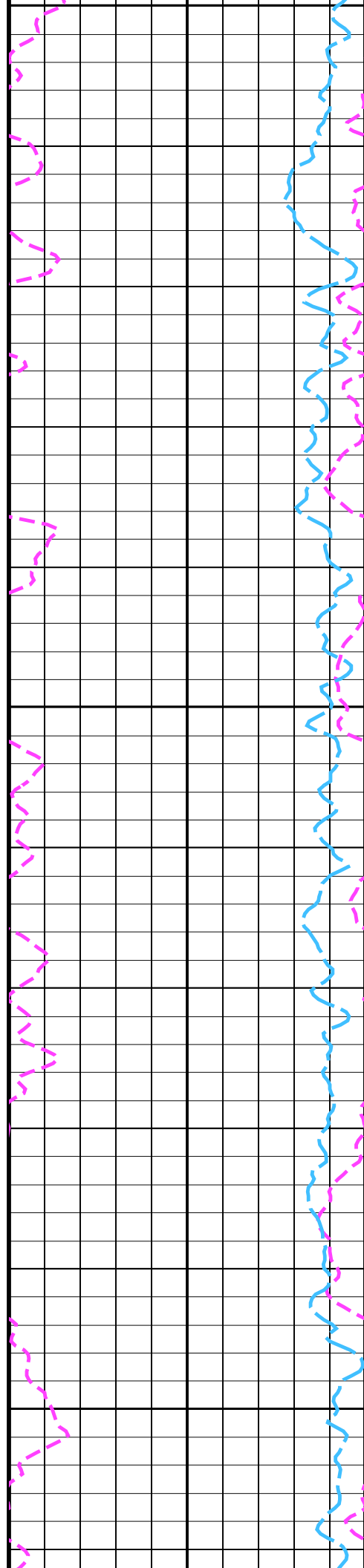
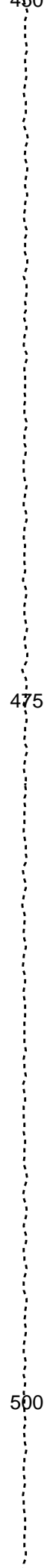
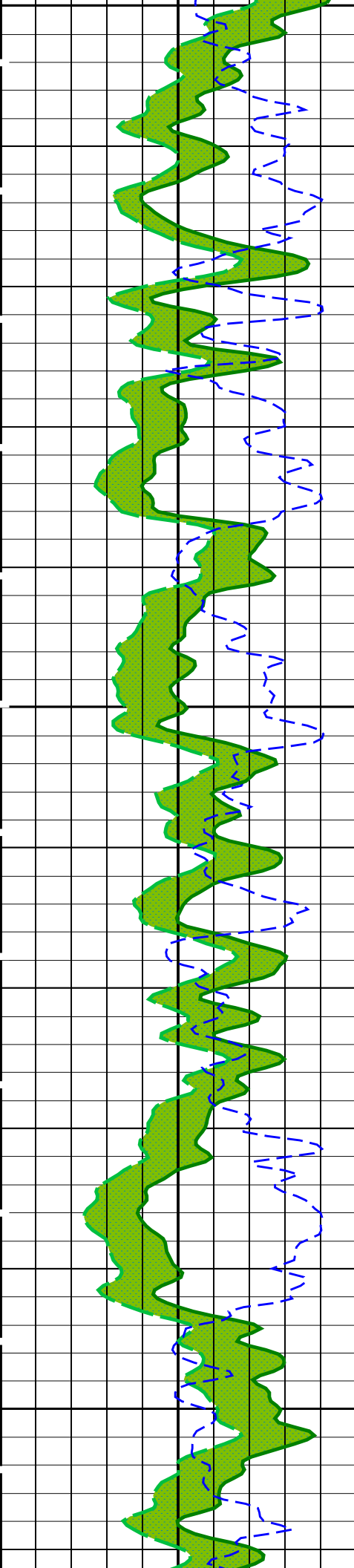


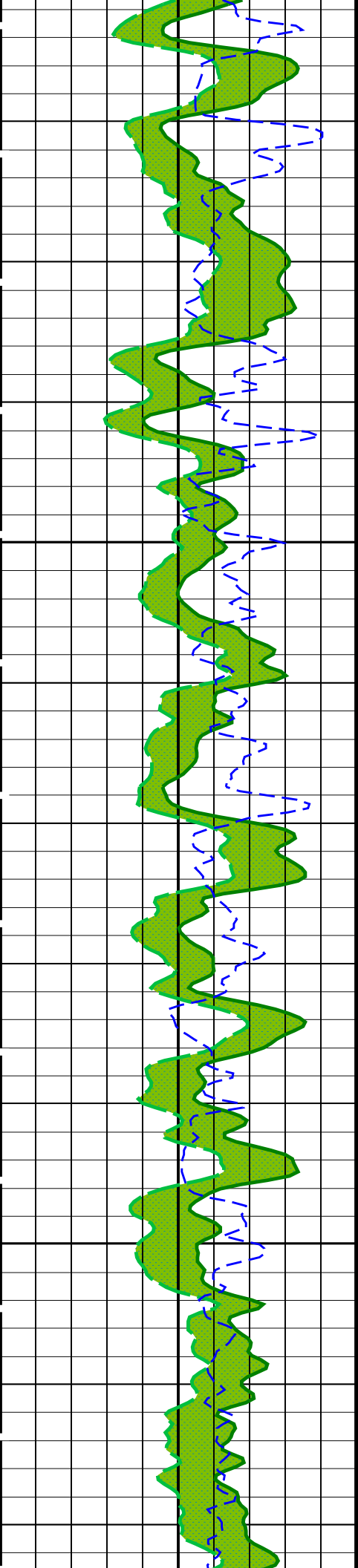
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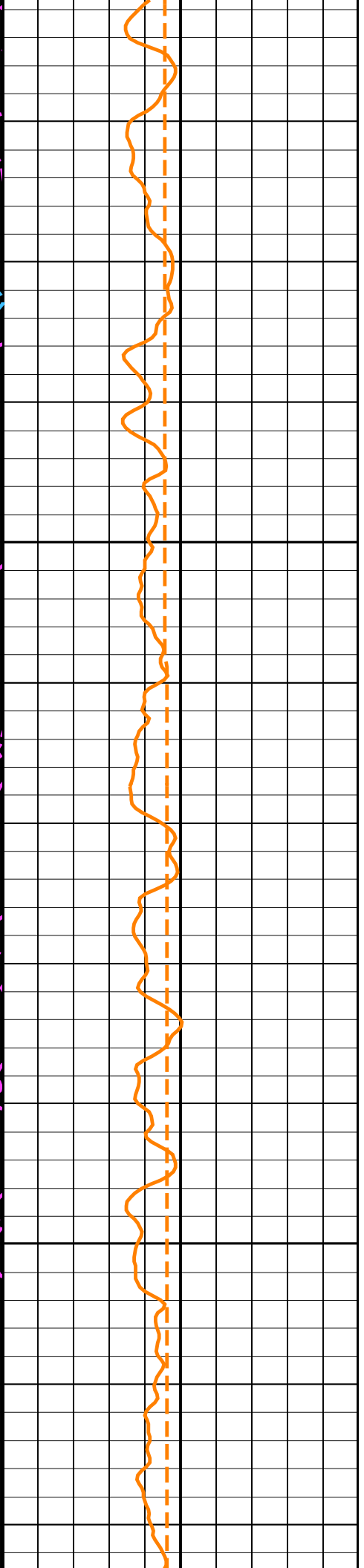
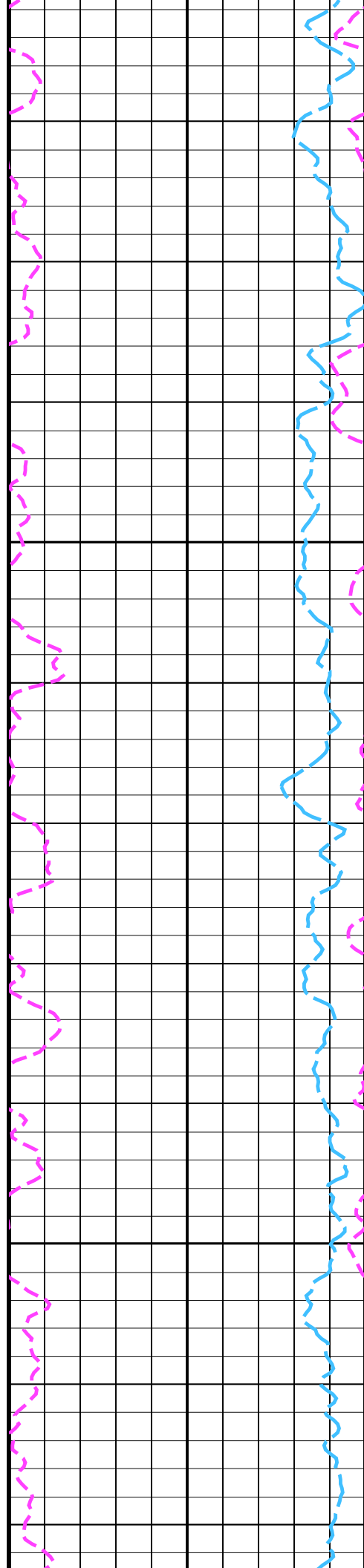


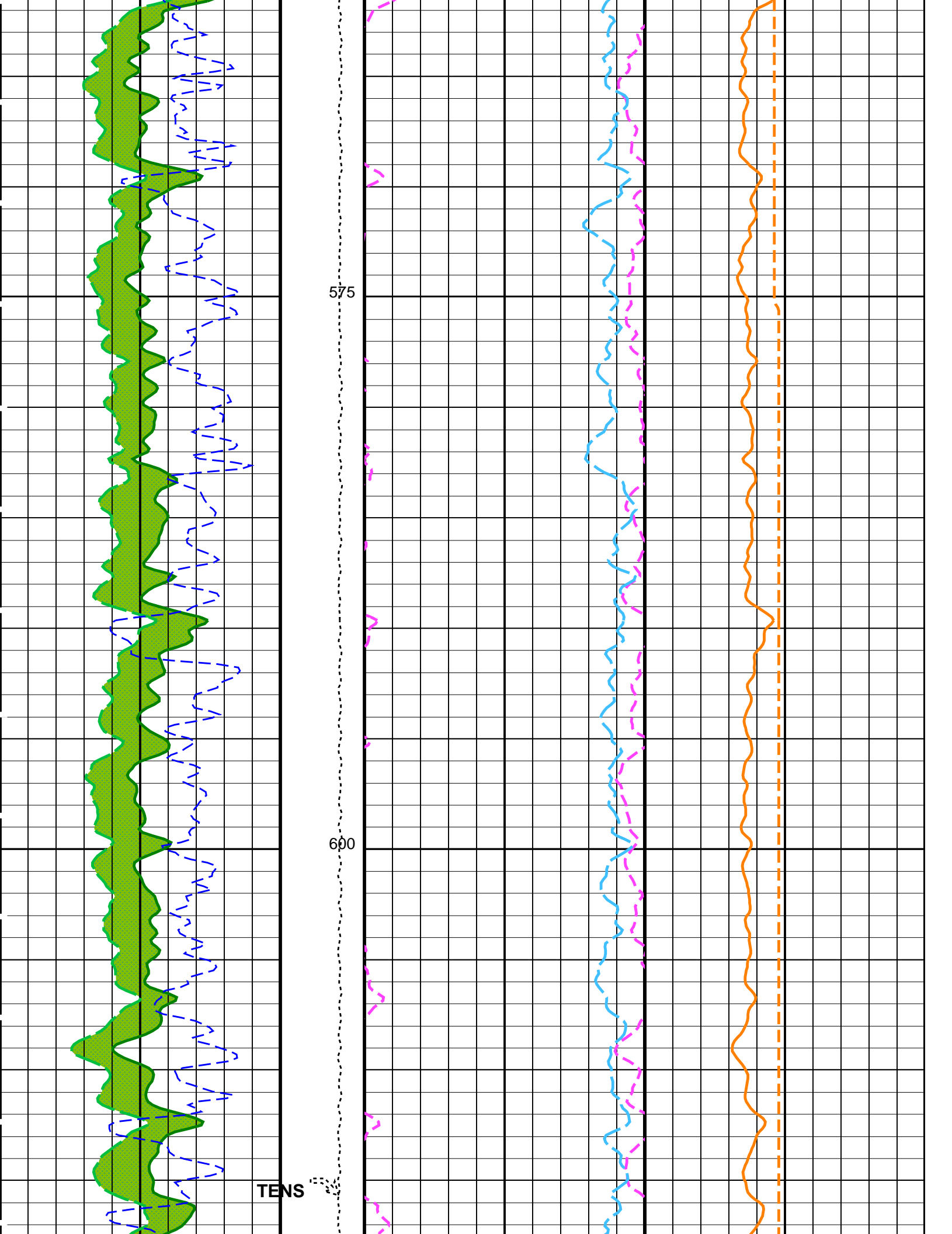


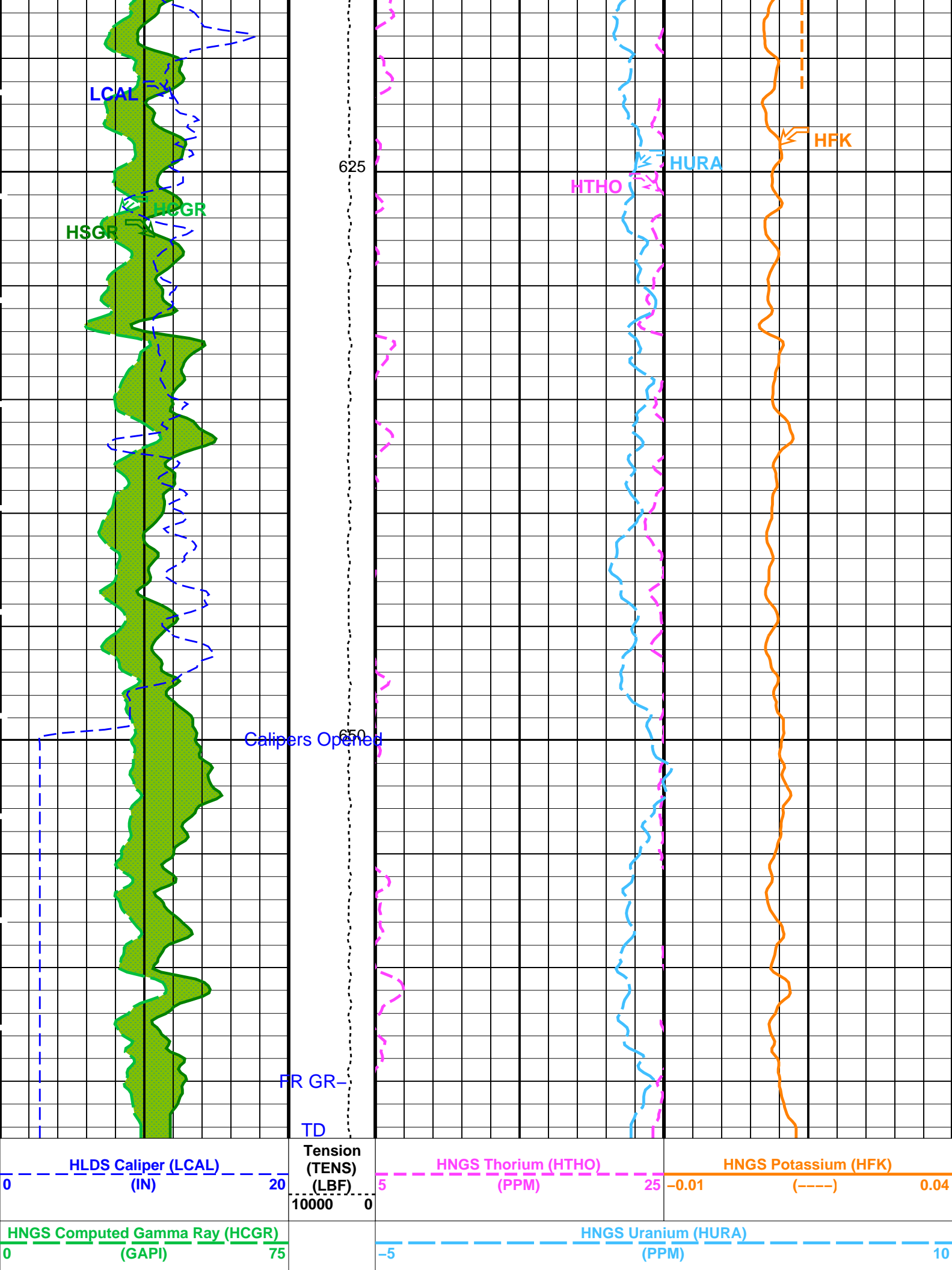


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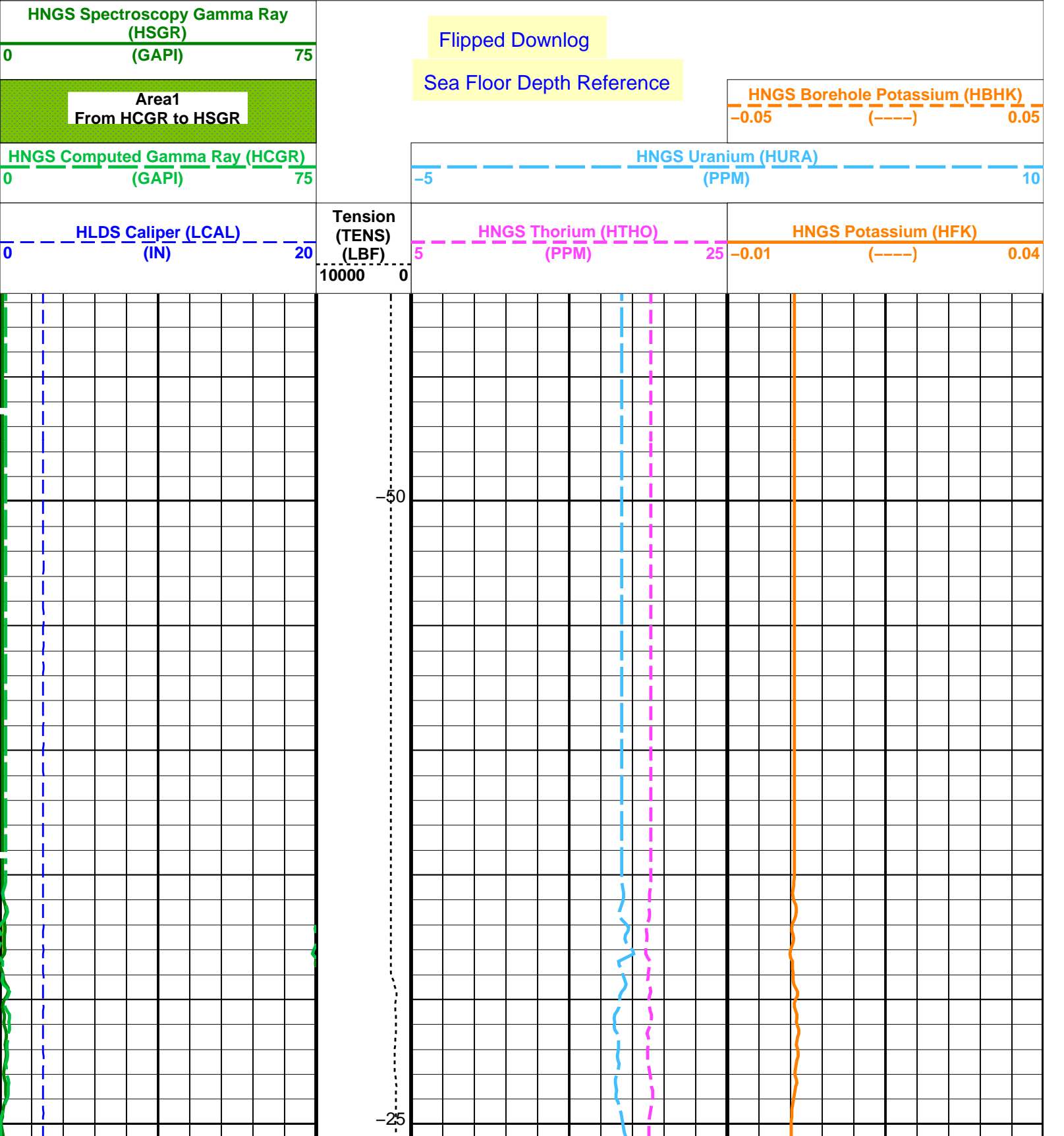


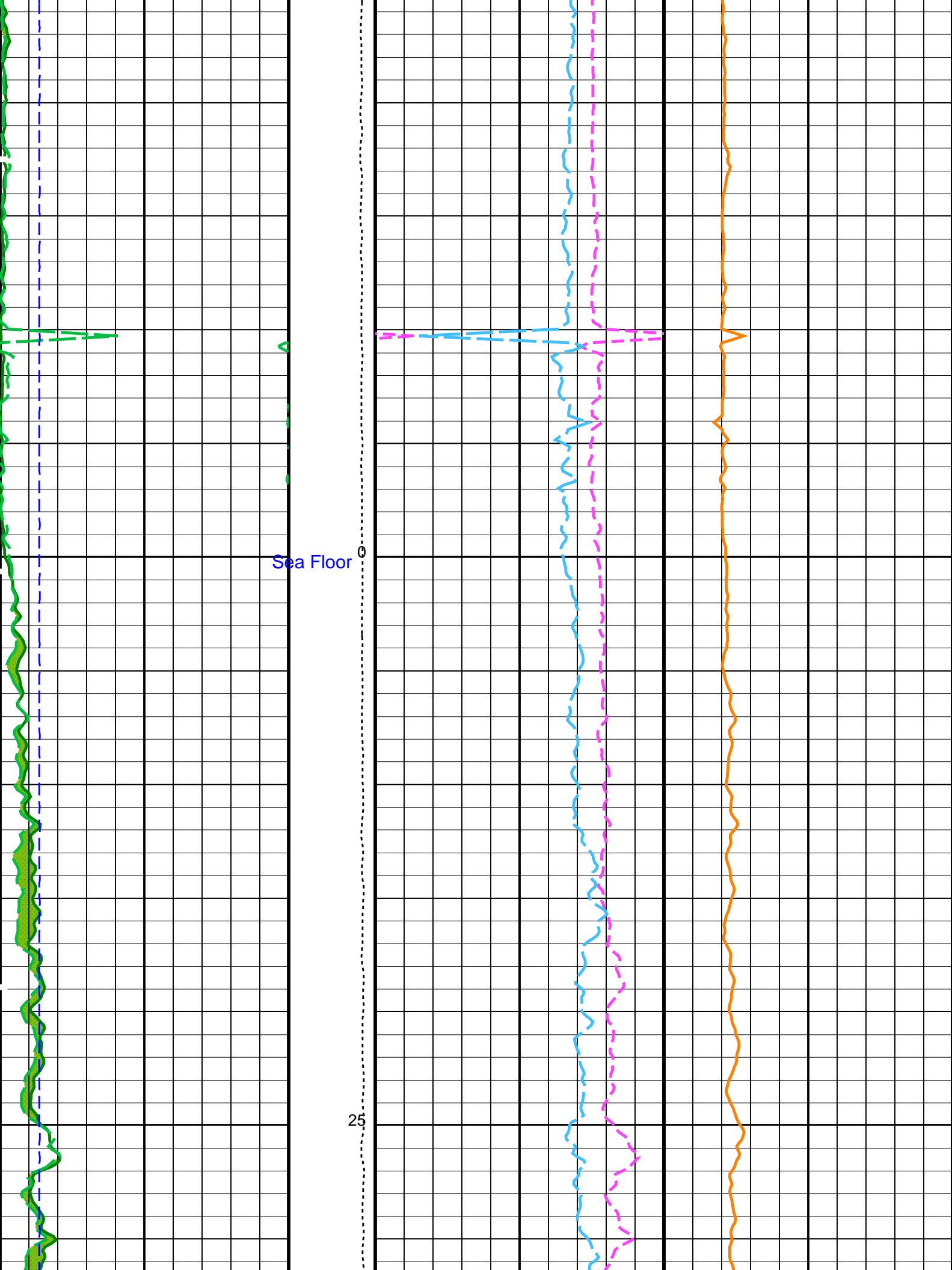
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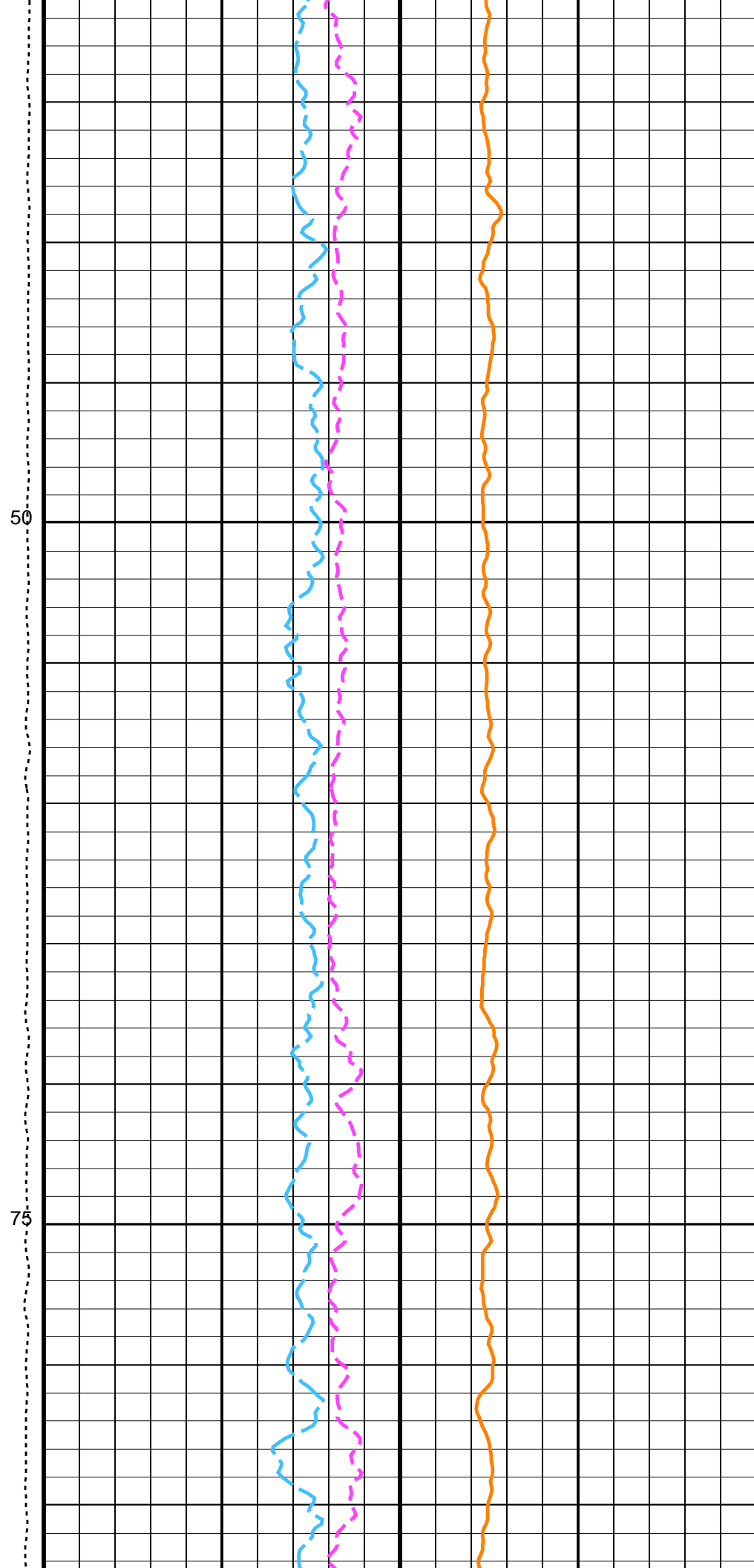
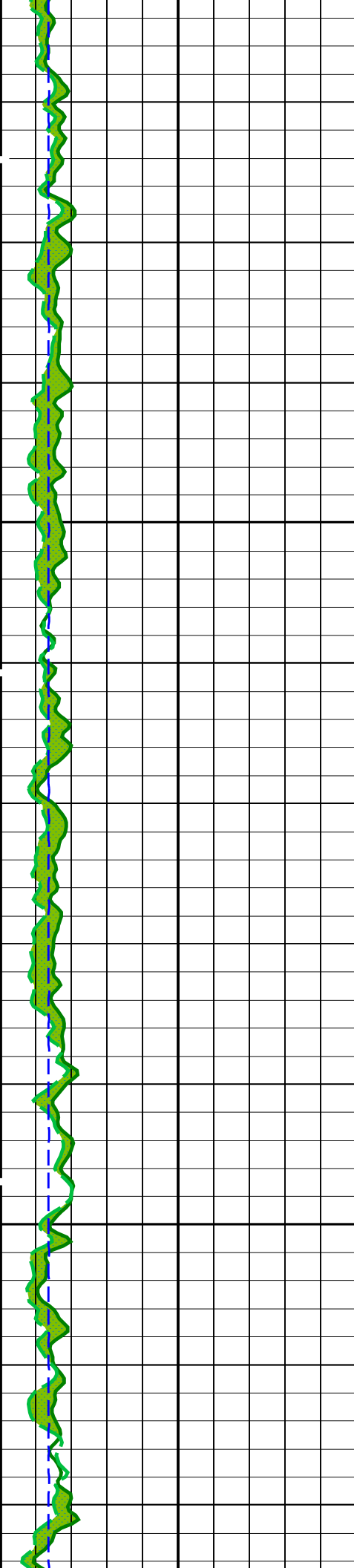
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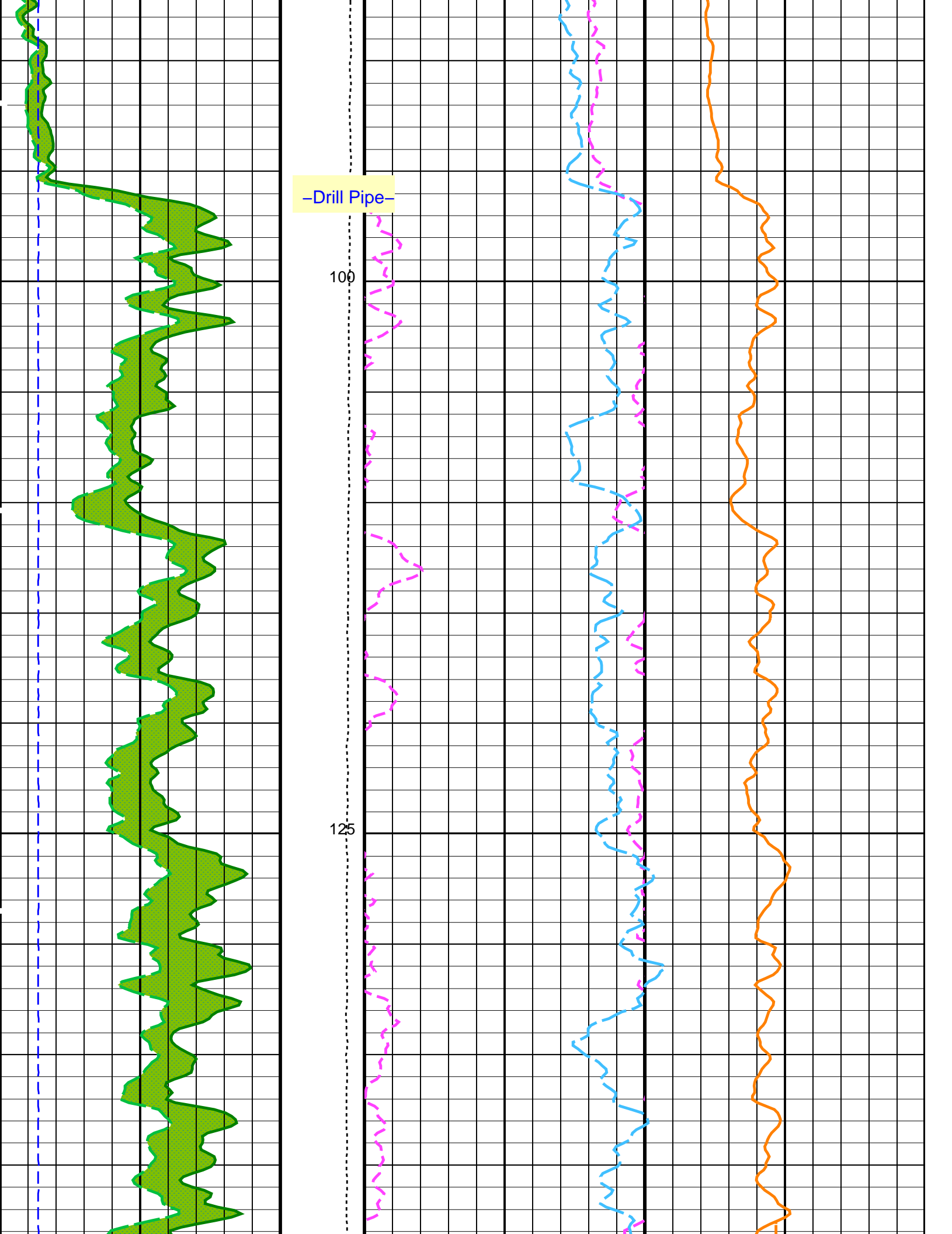
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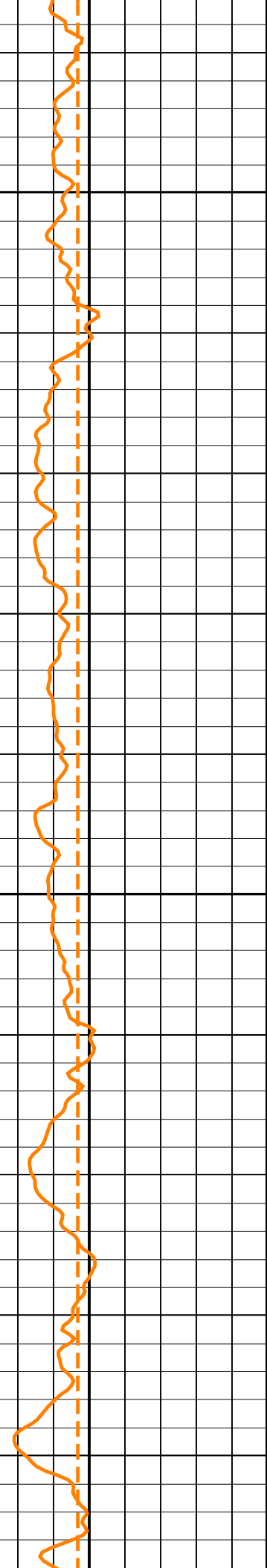
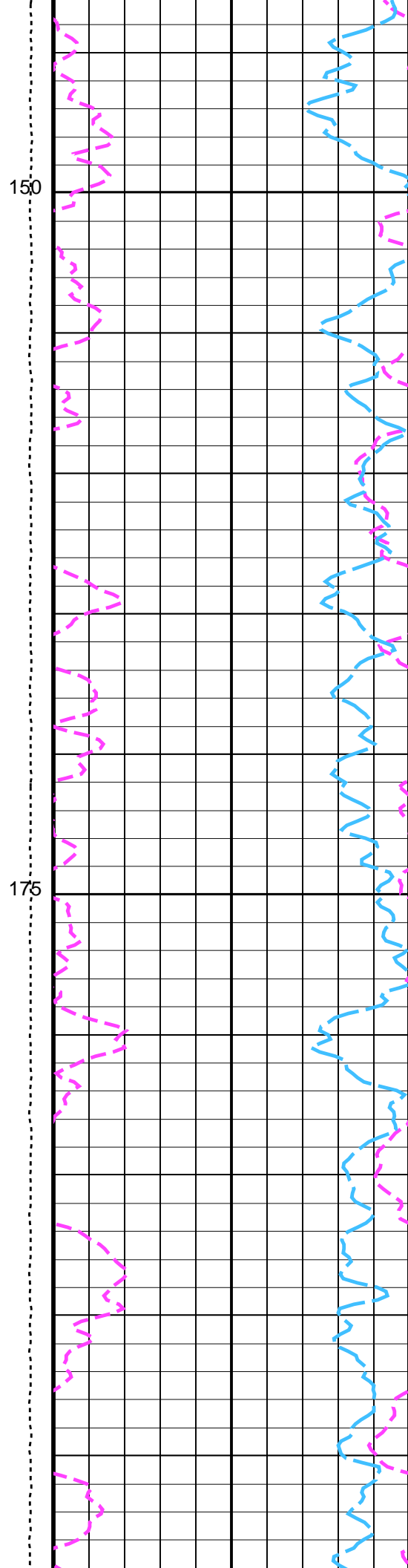
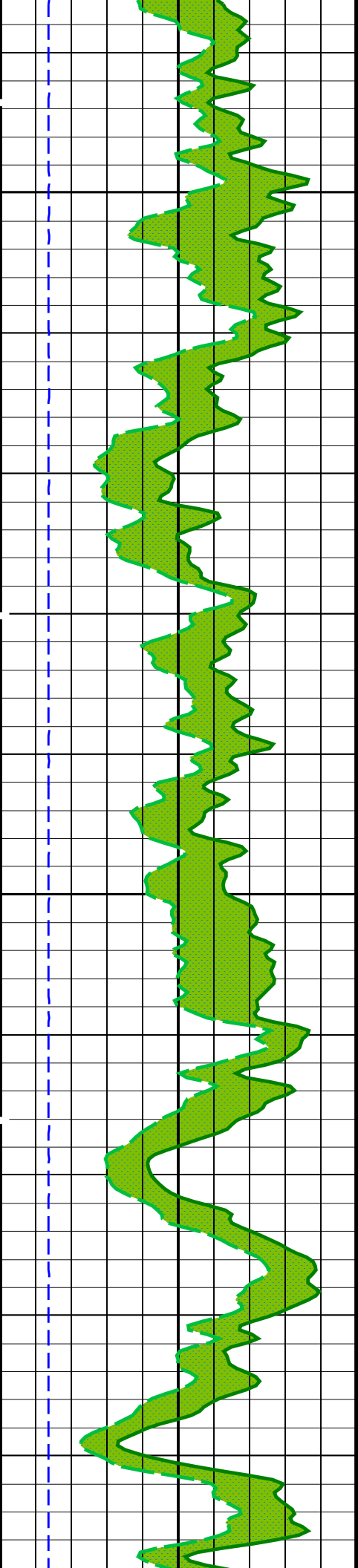
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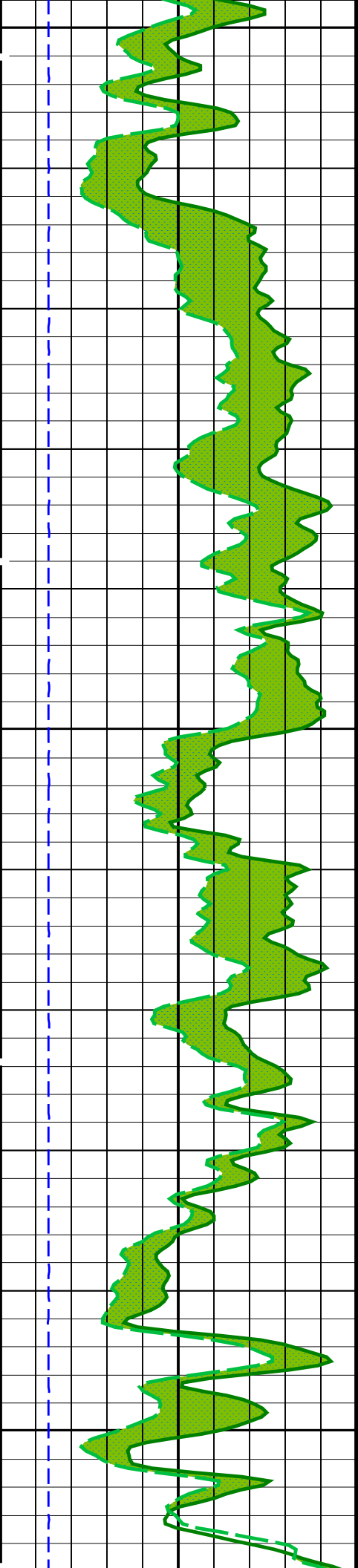








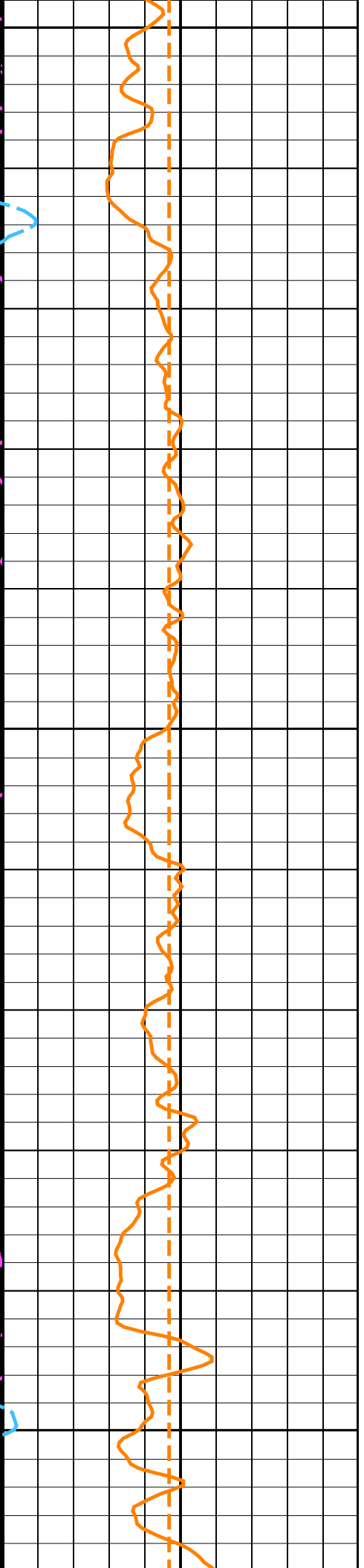
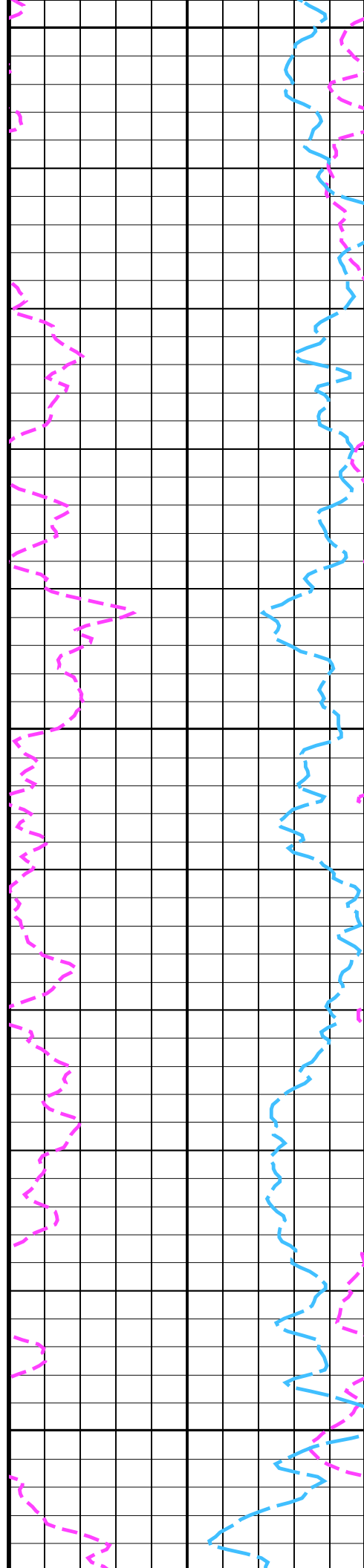


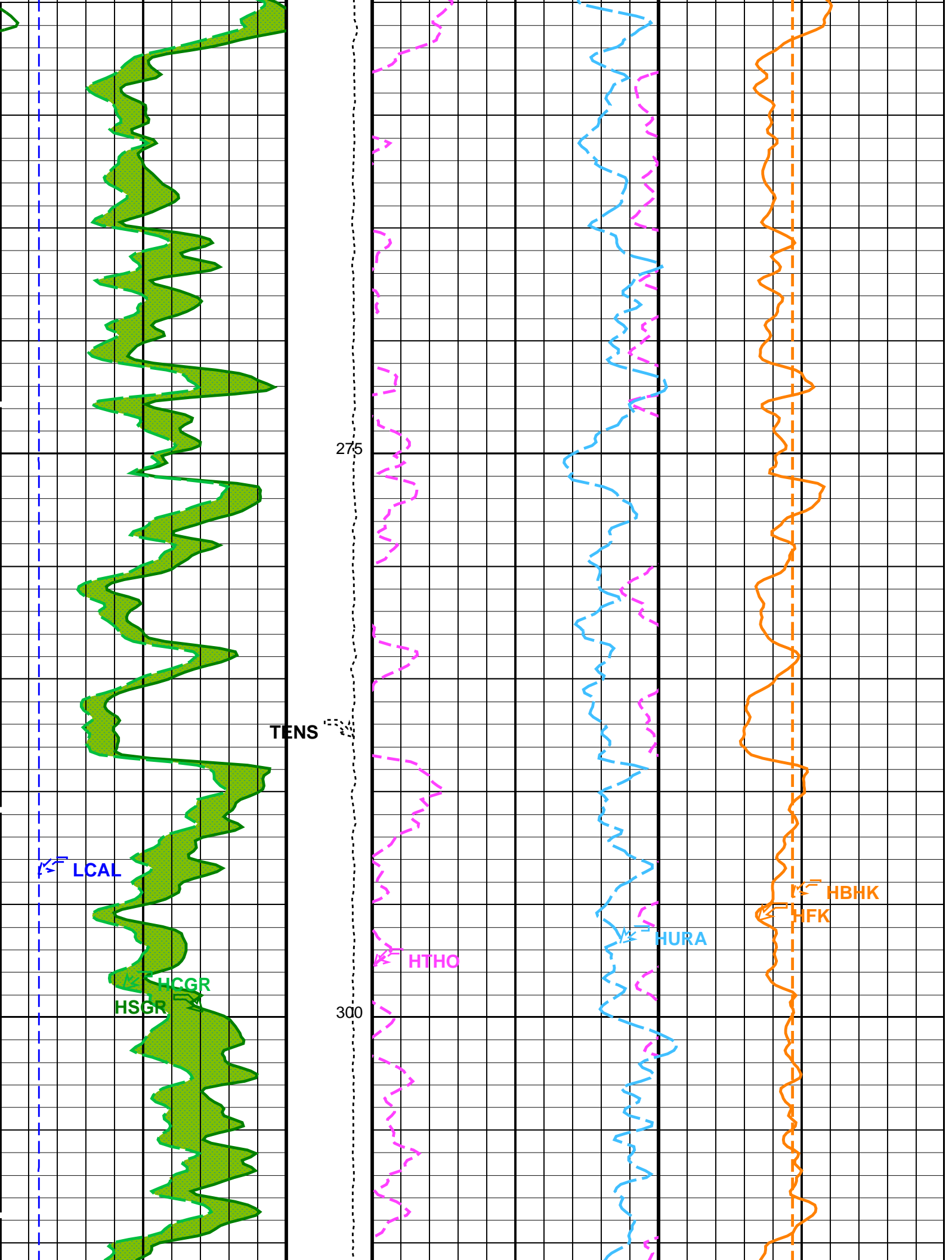


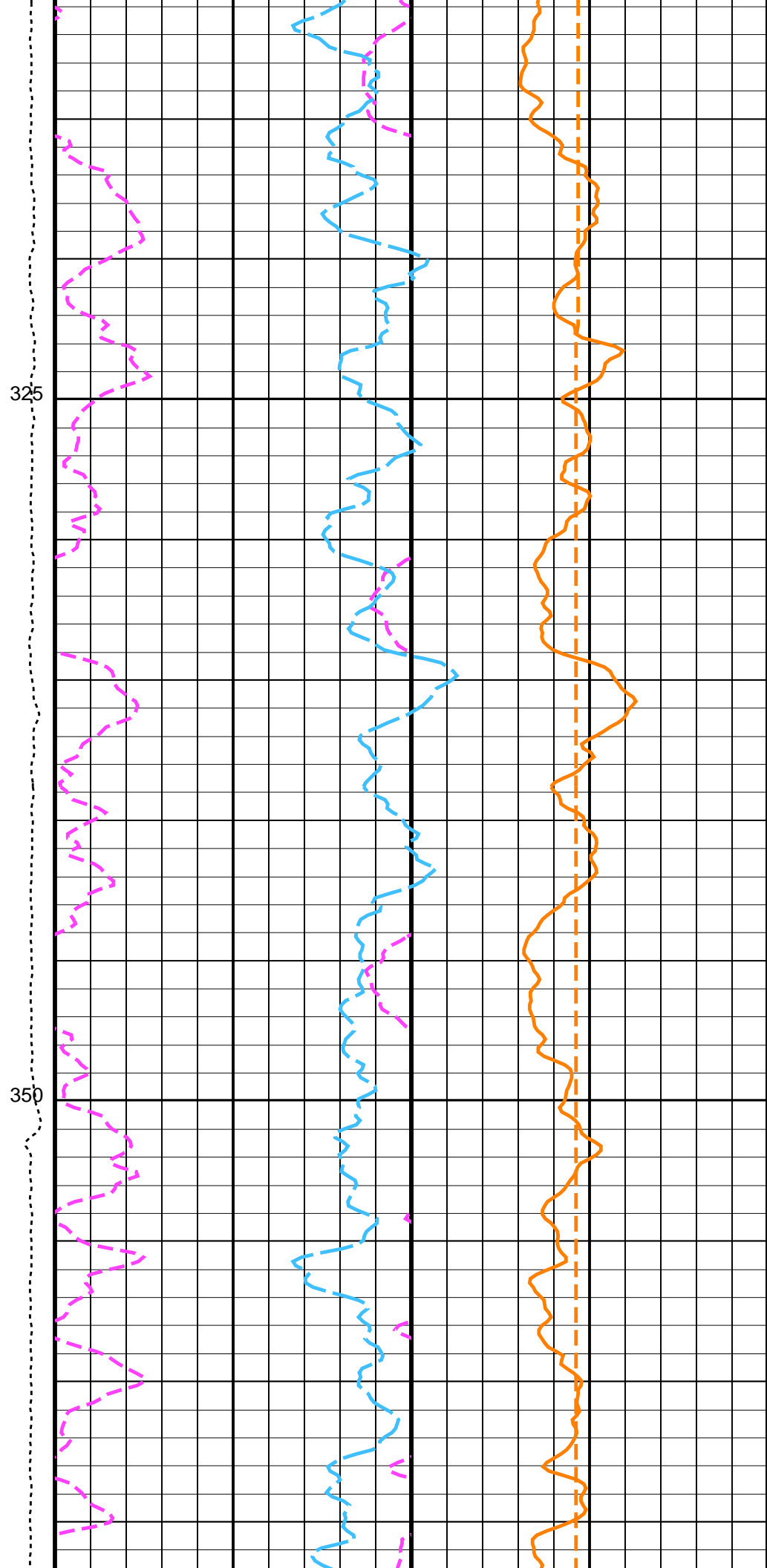
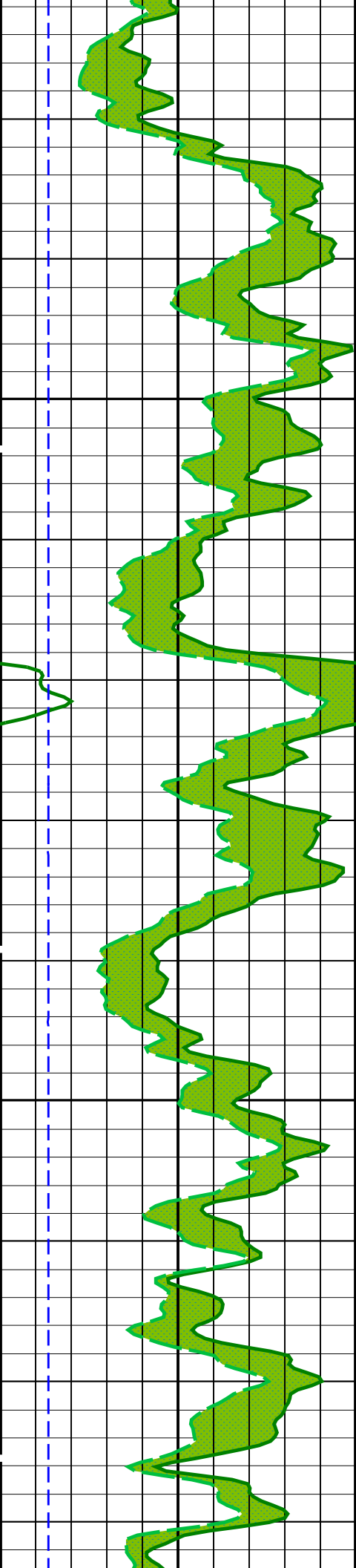
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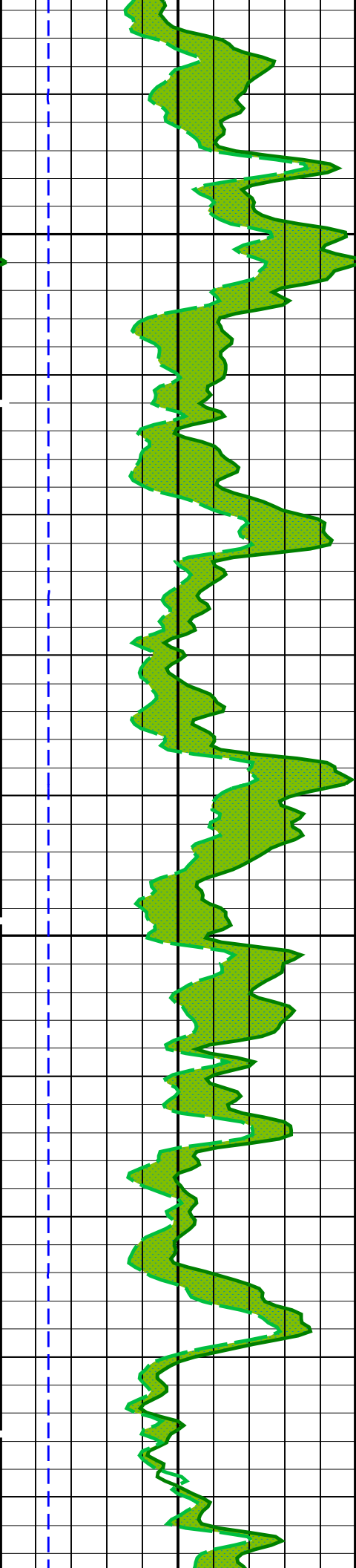
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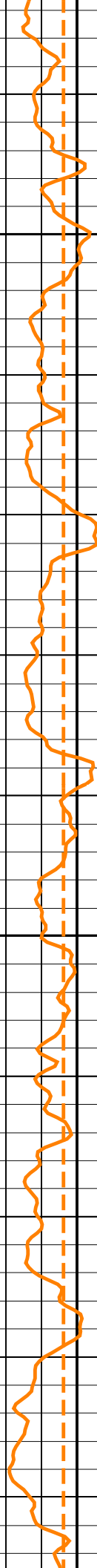
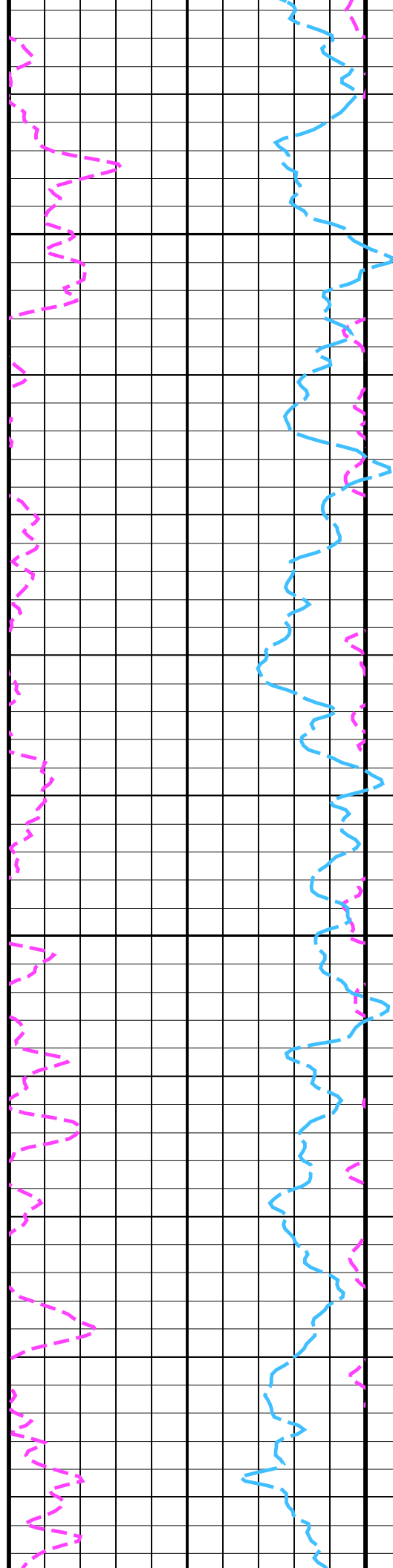


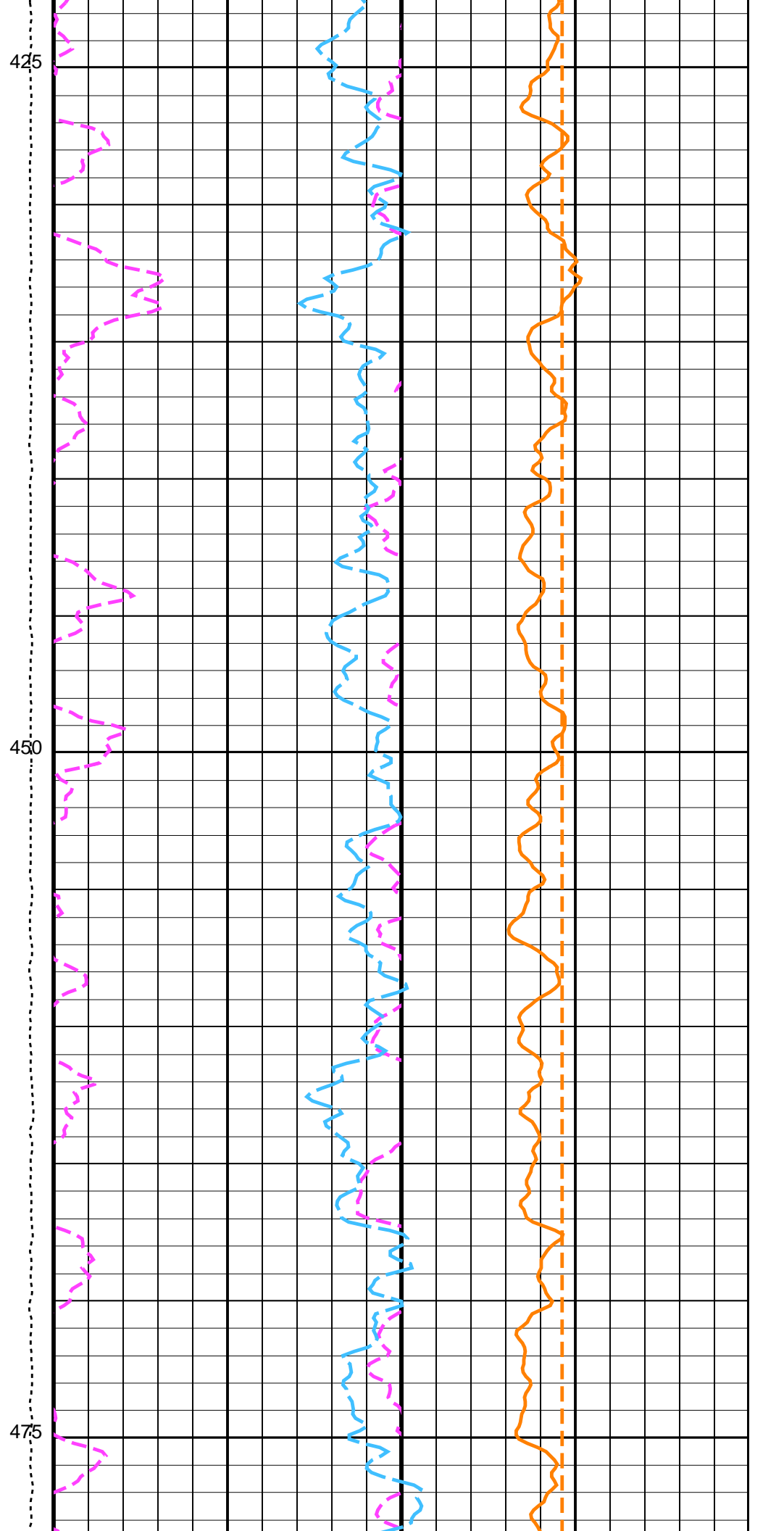
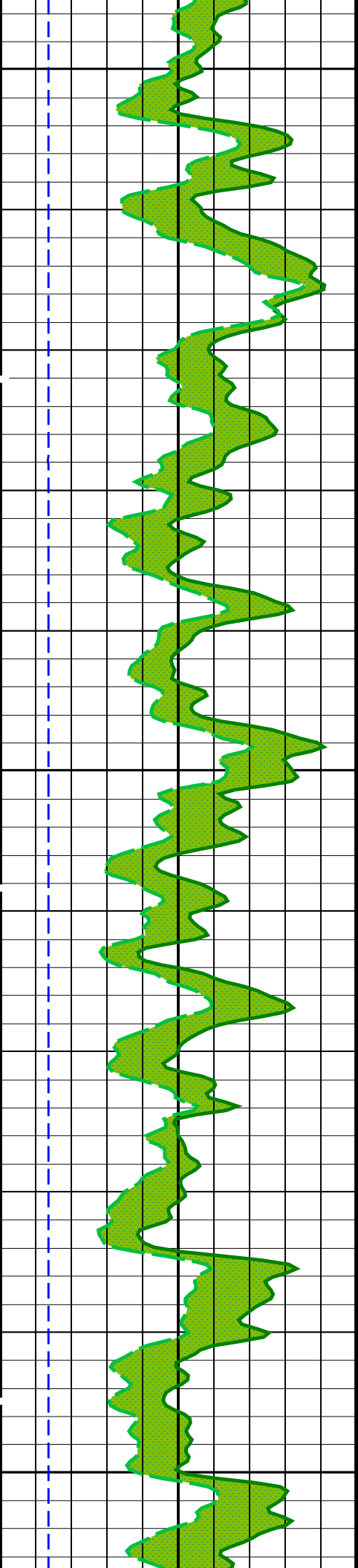


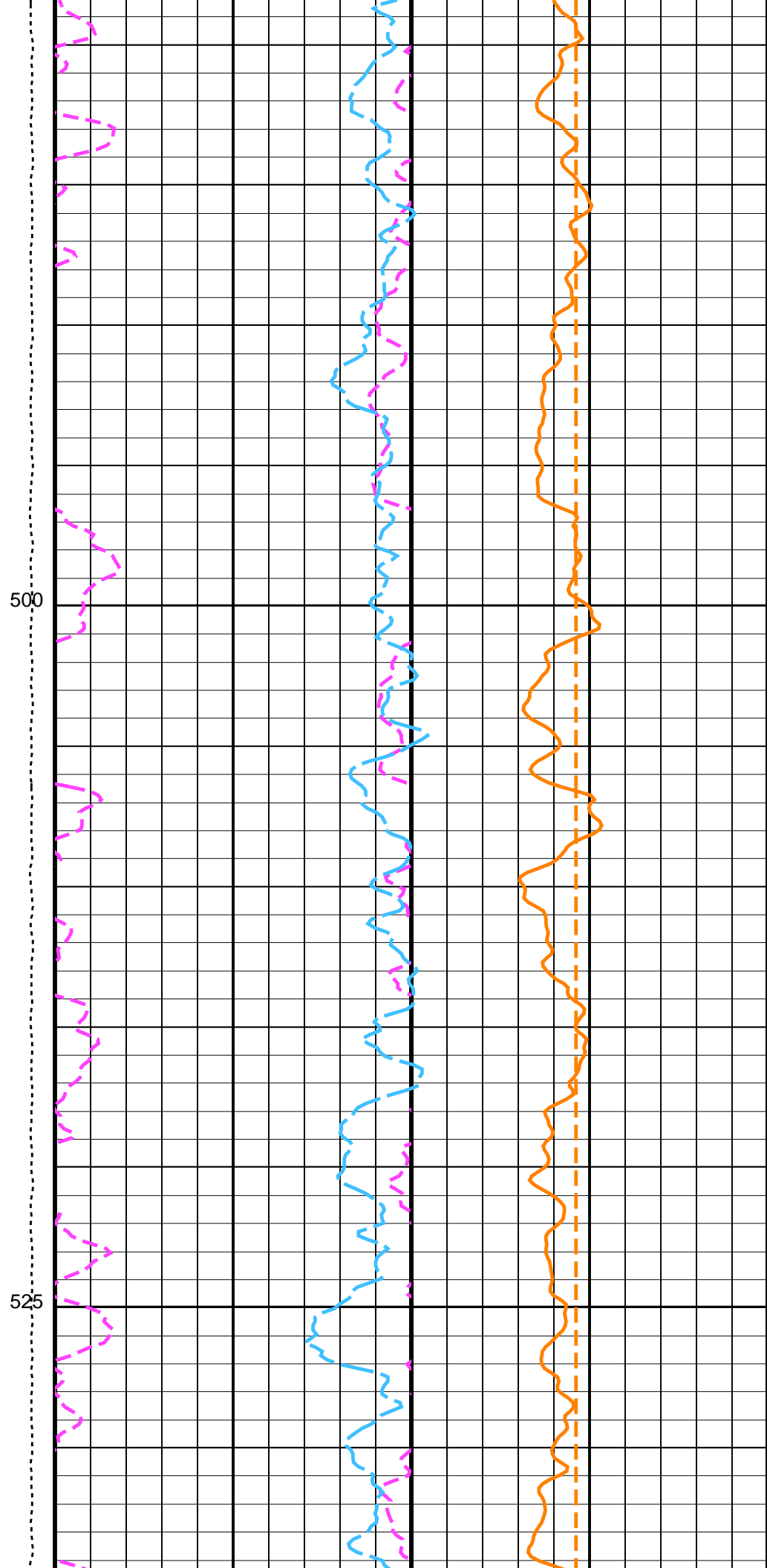
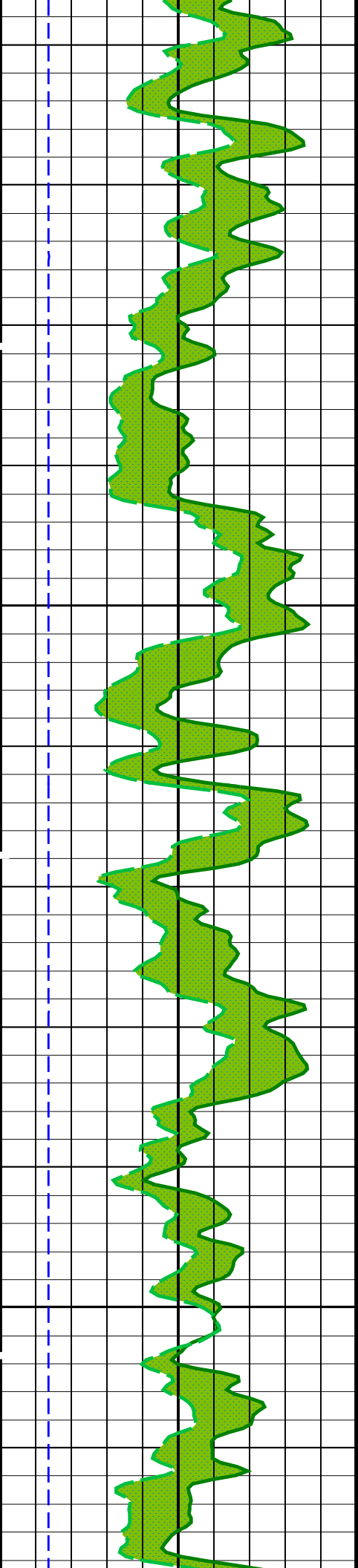


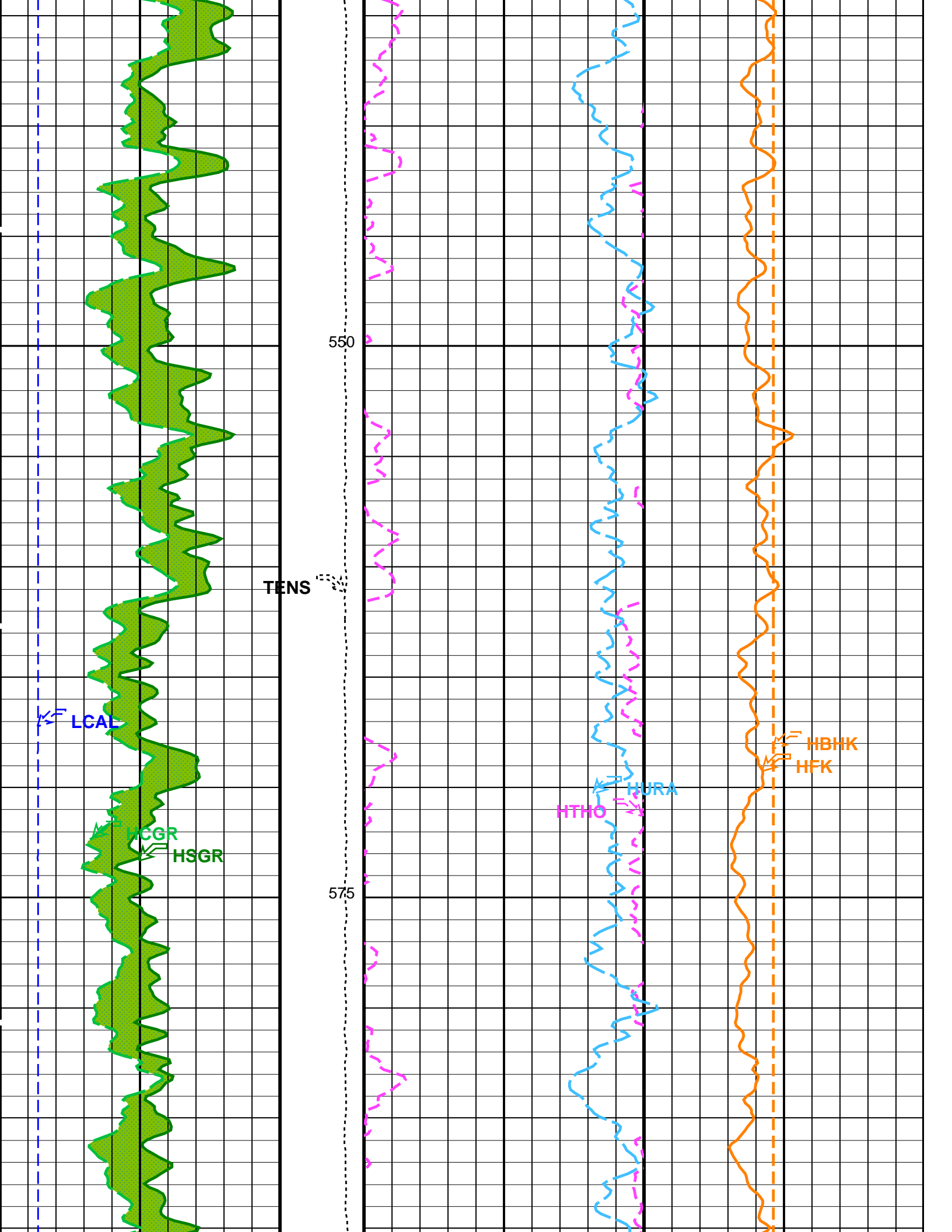
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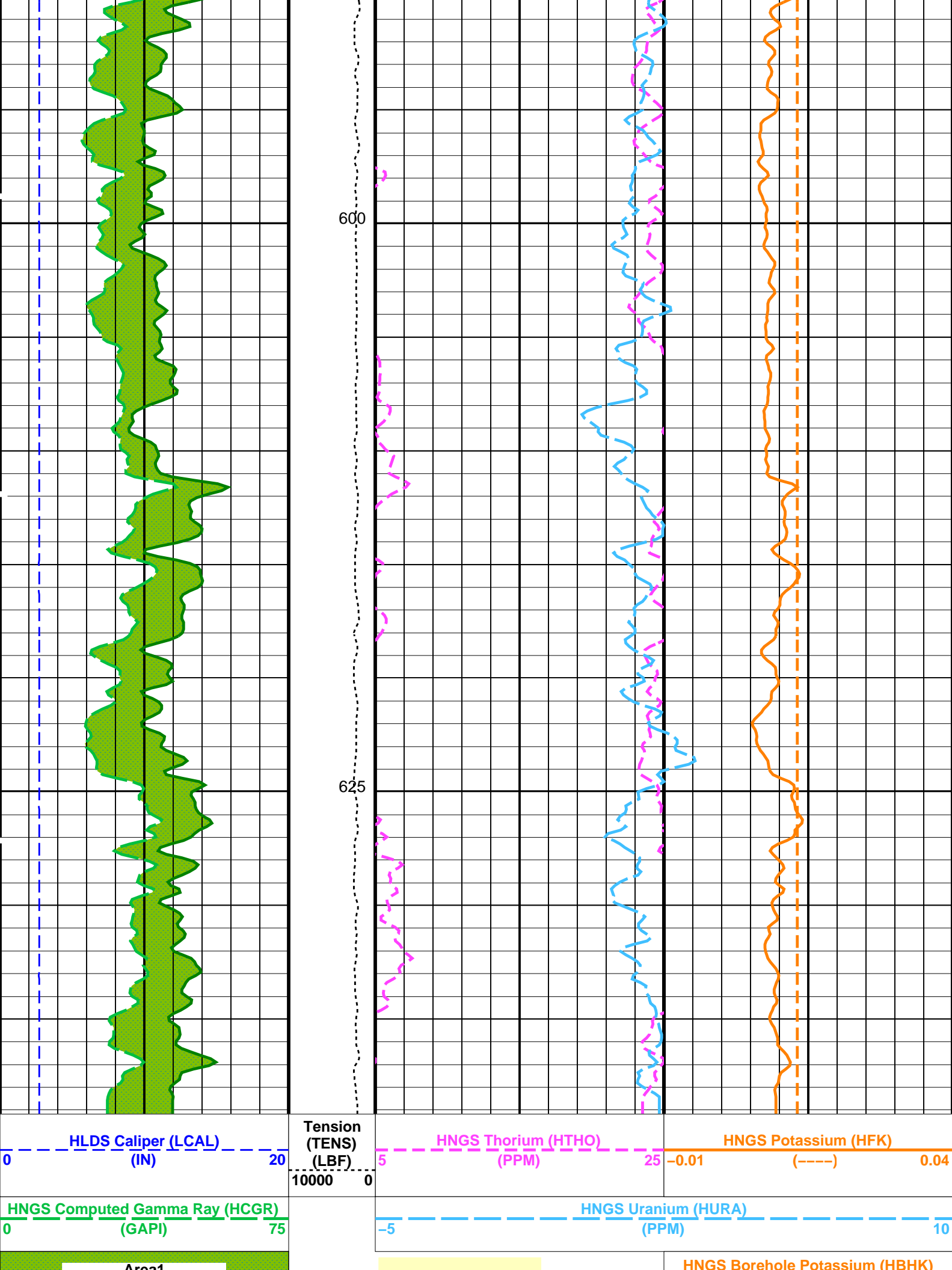
400











Area 1 From HCGR to HSGR	Flipped Downlog	-0.05	(-----)	0.05
HNGS Spectroscopy Gamma Ray (HSGR)	Sea Floor Depth Reference			
0	(GAPI)	75		

PIP SUMMARY				
Time Mark Every 60 S				

Parameters				
DLIS Name	Description	Value		
HNGS-BA: Hostile Natural Gamma Ray Sonde				
BAR1	HNGS Detector 1 Barite Constant	1		
BAR2	HNGS Detector 2 Barite Constant	1		
BHK	HNGS Borehole Potassium Correction Concentration	0		
BHS	Borehole Status	OPEN		
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	-0.00488026		
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	CENT		
VBA1	HNGS Detector 1 Variable Barite Factor Running Average	0.973892		
VBA2	HNGS Detector 2 Variable Barite Factor Running Average	0.969842		
HRLT-B: High Resolution Laterolog Array - B				
BHS	Borehole Status	OPEN		
GCSE	Generalized Caliper Selection	BS		
EDTC-B: Enhanced DTS Cartridge				
BHS	Borehole Status	OPEN		
GCSE	Generalized Caliper Selection	BS		
System and Miscellaneous				
BS	Bit Size	9.875	IN	
DFD	Drilling Fluid Density	1.25	G/C3	
DO	Depth Offset for Playback	-1087.0	M	
PP	Playback Processing	NORMAL		

Format: HNGSYields	Vertical Scale: 1:200	Graphics File Created: 15-Jan-2012 07:58
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OP System Version: 19C0-187			
HNGC-B	19C0-187	HNGS-BA	19C0-187
HRLT-B	19C0-187	HLDS	19C0-187
LDSC-B	19C0-187	EDTC-B	SKK-5169-EDTCB

Input DLIS Files					
DEFAULT	Flip_NGS_HRLA_LDL_014LUP	PRODUCER	15-Jan-2012 07:22	1726.3 M	1028.7 M
Output DLIS Files					
DEFAULT	NGS_HRLA_LDL_018PUP	FN:22	PRODUCER	15-Jan-2012 07:58	
BACKUPDLIS	NGS_HRLA_LDL_018PUP	FN:23	PRODUCER	15-Jan-2012 07:58	

Calibration and Check Summary						
Measurement	Nominal	Master	Before	After	Change	Limit
Hostile Natural Gamma Ray Sonde Wellsite Calibration - Detector 1 Check						
Master	1.3	1.3	1.3	1.3	0.0	0.05

Master: 7-Jan-2012 4:44 Before: 7-Jan-2012 4:51 After: 7-Jan-2012 4:55								
Na 511 Peak Loc	40.00	39.70	39.60	39.67	0.07420	1.000		
Na 511 Peak Res	15.50	14.54	15.72	14.52	-1.200	2.000	%	
High Voltage	1150	1164	1164	1165	1.242	N/A	V	
Na 1785 Peak Loc	142.6	142.8	141.9	142.4	0.4669	7.000		
Na 1785 Peak Res	8.500	8.009	7.428	9.127	1.699	2.000	%	
Temperature	15.50	20.95	20.87	20.87	0	N/A	DEGC	
Na Count Rate	45.00	21.00	21.59	21.17	-0.4197	8.000	CPS	

Hostile Natural Gamma Ray Sonde Wellsite Calibration – Detector 2 Check

Master: 7-Jan-2012 4:44 Before: 7-Jan-2012 4:51 After: 7-Jan-2012 4:55								
Na 511 Peak Loc	40.00	39.71	39.51	39.47	-0.03513	1.000		
Na 511 Peak Res	15.50	15.37	15.57	15.81	0.2371	2.000	%	
High Voltage	1150	1091	1090	1089	-0.07922	N/A	V	
Na 1785 Peak Loc	142.6	142.7	141.7	141.6	-0.06053	7.000		
Na 1785 Peak Res	8.500	7.507	7.898	8.025	0.1269	2.000	%	
Temperature	15.50	21.06	21.04	21.06	0.02601	N/A	DEGC	
Na Count Rate	45.00	20.73	21.49	20.79	-0.7021	8.000	CPS	

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

Master: 7-Jan-2012 4:44 Before: 7-Jan-2012 4:51 After: 7-Jan-2012 4:55								
Coincidence Count Rate Ratio	1.000	1.014	1.001	1.019	0.01773	0.05000		

Hostile Natural Gamma Ray Sonde Master Calibration – Detector 1 Calibration

Master: 7-Jan-2012 4:39								
Na 511 Peak Set Point	40.00	41.00	--	--	--	--		
Th Peak Loc	209.6	211.0	--	--	--	--		
Th Peak Res	7.000	7.010	--	--	--	--	%	
Background Count Rate	142.5	29.12	--	--	--	--	CPS	
Gain Ratio	1.000	1.011	--	--	--	--		

Hostile Natural Gamma Ray Sonde Master Calibration – Detector 2 Calibration

Master: 7-Jan-2012 4:39								
Na 511 Peak Set Point	40.00	41.00	--	--	--	--		
Th Peak Loc	209.6	208.9	--	--	--	--		
Th Peak Res	7.000	7.601	--	--	--	--	%	
Background Count Rate	142.5	29.39	--	--	--	--	CPS	
Gain Ratio	1.000	1.001	--	--	--	--		

High Resolution Laterolog Array – B Wellsite Calibration – HRLT M01

Before: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34								
HRLT M0-M1 Voltage Plus – 0	0	N/A	-319.7	-318.5	1.203	9.681	UV	
HRLT M0-M1 Voltage Plus – 1	0	N/A	-336.9	-334.8	2.149	9.681	UV	
HRLT M0-M1 Voltage Plus – 2	0	N/A	-337.1	-334.1	3.007	9.681	UV	
HRLT M0-M1 Voltage Plus – 3	0	N/A	-339.6	-337.5	2.090	9.681	UV	
HRLT M0-M1 Voltage Plus – 4	0	N/A	-327.0	-325.4	1.580	9.681	UV	
HRLT M0-M1 Voltage Plus – 5	0	N/A	-322.6	-321.4	1.239	9.681	UV	
HRLT M0-M1 Voltage Plus – 6	0	N/A	327.3	325.0	-2.256	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: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34								
HRLT M1-M2 Voltage Plus – 0	0	N/A	1757	1754	-3.424	53.42	UV	
HRLT M1-M2 Voltage Plus – 1	0	N/A	1851	1841	-10.51	53.42	UV	
HRLT M1-M2 Voltage Plus – 2	0	N/A	1848	1832	-15.16	53.42	UV	
HRLT M1-M2 Voltage Plus – 3	0	N/A	1861	1852	-8.751	53.42	UV	
HRLT M1-M2 Voltage Plus – 4	0	N/A	1794	1788	-5.676	53.42	UV	
HRLT M1-M2 Voltage Plus – 5	0	N/A	1771	1768	-3.766	53.42	UV	
HRLT M1-M2 Voltage Plus – 6	0	N/A	-1806	-1794	12.05	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: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34								
HRLT M2-M3 Voltage Plus – 0	0	N/A	1743	1740	-3.191	53.42	UV	
HRLT M2-M3 Voltage Plus – 1	0	N/A	1848	1838	-10.76	53.42	UV	
HRLT M2-M3 Voltage Plus – 2	0	N/A	1846	1831	-15.12	53.42	UV	
HRLT M2-M3 Voltage Plus – 3	0	N/A	1863	1855	-8.475	53.42	UV	
HRLT M2-M3 Voltage Plus – 4	0	N/A	1789	1783	-5.630	53.42	UV	
HRLT M2-M3 Voltage Plus – 5	0	N/A	1768	1765	-3.171	53.42	UV	
HRLT M2-M3 Voltage Plus – 6	0	N/A	-1792	-1781	11.60	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: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34								
HRLT A3-A4 Voltage Plus – 0	0	N/A	68530	68400	-126.1	2100	UV	
HRLT A3-A4 Voltage Plus – 1	0	N/A	72470	72060	-406.0	2100	UV	
HRLT A3-A4 Voltage Plus – 2	0	N/A	72660	72100	-558.7	2100	UV	
HRLT A3-A4 Voltage Plus – 3	0	N/A	73620	73270	-343.8	2100	UV	
HRLT A3-A4 Voltage Plus – 4	0	N/A	70660	70450	-219.3	2100	UV	
HRLT A3-A4 Voltage Plus – 5	0	N/A	69840	69710	-133.3	2100	UV	
HRLT A3-A4 Voltage Plus – 6	0	N/A	-69280	-68830	453.3	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: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34

HRLT A4-A5 Voltage Plus – 0	0	N/A	68810	68680	-124.2	2100	UV
HRLT A4-A5 Voltage Plus – 1	0	N/A	72850	72450	-400.5	2100	UV
HRLT A4-A5 Voltage Plus – 2	0	N/A	73030	72460	-565.2	2100	UV
HRLT A4-A5 Voltage Plus – 3	0	N/A	73960	73610	-353.7	2100	UV
HRLT A4-A5 Voltage Plus – 4	0	N/A	70950	70740	-210.6	2100	UV
HRLT A4-A5 Voltage Plus – 5	0	N/A	70120	69980	-145.0	2100	UV
HRLT A4-A5 Voltage Plus – 6	0	N/A	-69660	-69200	467.2	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: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34

HRLT A5-A6 Voltage Plus – 0	0	N/A	68710	68590	-118.6	2100	UV
HRLT A5-A6 Voltage Plus – 1	0	N/A	72580	72180	-400.5	2100	UV
HRLT A5-A6 Voltage Plus – 2	0	N/A	72780	72220	-562.8	2100	UV
HRLT A5-A6 Voltage Plus – 3	0	N/A	73770	73430	-338.5	2100	UV
HRLT A5-A6 Voltage Plus – 4	0	N/A	70830	70600	-228.0	2100	UV
HRLT A5-A6 Voltage Plus – 5	0	N/A	70000	69860	-132.0	2100	UV
HRLT A5-A6 Voltage Plus – 6	0	N/A	-69370	-68910	462.0	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: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34

HRLT Torpedo-M0 Voltage – 0	0	N/A	-68390	-68250	140.2	2100	UV
HRLT Torpedo-M0 Voltage – 1	0	N/A	-72920	-72500	419.9	2100	UV
HRLT Torpedo-M0 Voltage – 2	0	N/A	-73090	-72510	584.2	2100	UV
HRLT Torpedo-M0 Voltage – 3	0	N/A	-74070	-73710	355.9	2100	UV
HRLT Torpedo-M0 Voltage – 4	0	N/A	-71030	-70800	232.3	2100	UV
HRLT Torpedo-M0 Voltage – 5	0	N/A	-70170	-70020	145.3	2100	UV
HRLT Torpedo-M0 Voltage – 6	0	N/A	69660	69180	-474.1	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: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34

HRLT Bridle#9-M0 Voltage – 0	0	N/A	-68380	-68250	125.8	2100	UV
HRLT Bridle#9-M0 Voltage – 1	0	N/A	-72890	-72470	421.6	2100	UV
HRLT Bridle#9-M0 Voltage – 2	0	N/A	-73080	-72490	589.7	2100	UV
HRLT Bridle#9-M0 Voltage – 3	0	N/A	-74050	-73690	355.9	2100	UV
HRLT Bridle#9-M0 Voltage – 4	0	N/A	-71010	-70800	216.4	2100	UV
HRLT Bridle#9-M0 Voltage – 5	0	N/A	-70150	-70020	134.8	2100	UV
HRLT Bridle#9-M0 Voltage – 6	0	N/A	69630	69170	-456.0	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: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34

HRLT Source Current Plus – 0	0	N/A	285.1	284.6	-0.5565	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: 15-Jan-2012 3:14 After: 15-Jan-2012 7:34

HRLT Vertical Voltage PI – 0	0	N/A	-322.1	-321.1	0.9331	9.681	UV
HRLT Vertical Voltage PI – 1	0	N/A	-331.1	-328.9	2.140	9.681	UV
HRLT Vertical Voltage PI – 2	0	N/A	-330.5	-327.5	3.036	9.681	UV
HRLT Vertical Voltage PI – 3	0	N/A	-331.3	-329.4	1.834	9.681	UV
HRLT Vertical Voltage PI – 4	0	N/A	-316.3	-315.1	1.268	9.681	UV
HRLT Vertical Voltage PI – 5	0	N/A	-327.3	-326.4	0.9203	9.681	UV
HRLT Vertical Voltage PI – 6	0	N/A	334.6	332.2	-2.409	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: 9-Jan-2012 1:31 Before: 9-Jan-2012 5:28 After: 9-Jan-2012 5:41

SS Cs Resolution Bkg	9.000	7.671	7.699	7.674	-0.02595	1.800	%
LS Cs Resolution Bkg	9.000	7.932	7.932	7.903	-0.02832	1.800	%
LSW1 Background	100.0	86.47	87.96	88.18	0.2268	0.03000	CPS
LSW2 Background	100.0	79.53	78.84	77.83	-1.012	0.03000	CPS
LSW3 Background	200.0	181.2	177.4	176.9	-0.4995	0.03000	CPS
LSW4 Background	250.0	222.9	222.9	222.1	-0.8559	0.03000	CPS
LSW5 Background	600.0	520.3	522.4	523.9	1.526	0.03000	CPS
SSW1 Background	100.0	84.85	84.97	85.18	0.2121	0.03000	CPS
SSW2 Background	200.0	146.1	146.8	146.4	-0.3670	0.03000	CPS
SSW3 Background	500.0	411.2	408.9	409.6	0.6414	0.03000	CPS
SSW4 Background	270.0	221.2	219.6	222.1	2.435	0.03000	CPS
SSW5 Background	200.0	157.4	157.7	158.8	1.064	0.03000	CPS



Hostile Litho–Density Sonde Wellsite Calibration – Aluminum Measurement

Master: 9–Jan–2012 1:31

LSW1 Aluminum	600.0	529.4	N/A	N/A	N/A	N/A	CPS
LSW2 Aluminum	900.0	768.5	N/A	N/A	N/A	N/A	CPS
LSW3 Aluminum	1100	932.7	N/A	N/A	N/A	N/A	CPS
LSW4 Aluminum	580.0	473.3	N/A	N/A	N/A	N/A	CPS
LSW5 Aluminum	570.0	425.6	N/A	N/A	N/A	N/A	CPS
SSW1 Aluminum	2800	2541	N/A	N/A	N/A	N/A	CPS
SSW2 Aluminum	8000	6940	N/A	N/A	N/A	N/A	CPS
SSW3 Aluminum	11600	9683	N/A	N/A	N/A	N/A	CPS
SSW4 Aluminum	5000	3909	N/A	N/A	N/A	N/A	CPS
SSW5 Aluminum	660.0	464.7	N/A	N/A	N/A	N/A	CPS

Hostile Litho–Density Sonde Wellsite Calibration – Lithology Measurement

Master: 9–Jan–2012 1:31

LSW1 Iron	400.0	371.1	N/A	N/A	N/A	N/A	CPS
LSW2 Iron	730.0	638.6	N/A	N/A	N/A	N/A	CPS
LSW3 Iron	1000	849.1	N/A	N/A	N/A	N/A	CPS
LSW4 Iron	520.0	442.4	N/A	N/A	N/A	N/A	CPS
LSW5 Iron	470.0	405.0	N/A	N/A	N/A	N/A	CPS
SSW1 Iron	2100	1889	N/A	N/A	N/A	N/A	CPS
SSW2 Iron	6800	5949	N/A	N/A	N/A	N/A	CPS
SSW3 Iron	10800	9074	N/A	N/A	N/A	N/A	CPS
SSW4 Iron	4600	3693	N/A	N/A	N/A	N/A	CPS
SSW5 Iron	580.0	431.1	N/A	N/A	N/A	N/A	CPS

Hostile Litho–Density Sonde Wellsite Calibration – Caliper Calibration

Before: 9–Jan–2012 5:30

HLDS Caliper Small Ring	12.00	N/A	14.30	N/A	N/A	N/A	IN
HLDS Caliper Large Ring	15.19	N/A	18.07	N/A	N/A	N/A	IN

Enhanced DTS Cartridge Wellsite Calibration – EDTC Accelerometer Calibration

Before: 15–Jan–2012 3:14

EDTC Z–Axis Acceleration	9.810	N/A	9.797	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 After: Calibration not done

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

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	HNSH – BA	205
Gamma Source Radioactive	GSR – U	616008

Hostile Natural Gamma Ray Sonde Wellsite Calibration




Detector 1 Check




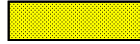

Phase	Na 511 Peak Loc	Value	Phase	Na 511 Peak Res %	Value	Phase	High Voltage V	Value
Master		39.70	Master		14.54	Master		1164
Before		39.60	Before		15.72	Before		1164
After		39.67	After		14.52	After		1165

Phase	Na 1785 Peak Loc	Value	Phase	Na 1785 Peak Res %	Value	Phase	Temperature DEGC	Value
Master		142.8	Master		8.009	Master		20.95
Before		141.9	Before		7.428	Before		20.87




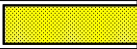

After		142.4	After		9.127	After		20.87	
135.0 (Minimum)	142.6 (Nominal)	150.3 (Maximum)	7.000 (Minimum)	8.500 (Nominal)	11.00 (Maximum)	-28.89 (Minimum)	15.50 (Nominal)	60.00 (Maximum)	
Phase	Na Count Rate CPS								
Master									21.00
Before									21.59
After									21.17
10.00 (Minimum)	45.00 (Nominal)	100.0 (Maximum)							
Master: 7-Jan-2012 4:44									Before: 7-Jan-2012 4:51

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			39.71	Master			15.37	Master			1091								
Before			39.51	Before			15.57	Before			1090								
After			39.47	After			15.81	After			1089								
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			142.7	Master			7.507	Master			21.06								
Before			141.7	Before			7.898	Before			21.04								
After			141.6	After			8.025	After			21.06								
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			20.73																
Before			21.49																
After			20.79																
10.00 (Minimum)			45.00 (Nominal)									100.0 (Maximum)							
Master: 7-Jan-2012 4:44												Before: 7-Jan-2012 4:51				After: 7-Jan-2012 4:55			

Hostile Natural Gamma Ray Sonde Wellsite Calibration			
Ratio Of Detector 1 To Detector 2			
Phase	Coincidence Count Rate Ratio	Value	
Master		1.014	
Before		1.001	
After		1.019	
	0.9500 (Minimum)	1.000 (Nominal)	1.050 (Maximum)
Master: 7-Jan-2012 4:44			
Before: 7-Jan-2012 4:51			
After: 7-Jan-2012 4:55			

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				211.0	Master				7.010
	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				29.12	Master				1.011					
	10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)		0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)							
Master: 7-Jan-2012 4:39														

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		208.9	Master		7.601
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			29.39	Master			1.001	
10.00 (Minimum)	142.5 (Nominal)	265.0 (Maximum)	0.9400 (Minimum)	1.000 (Nominal)	1.060 (Maximum)			
Master: 7-Jan-2012 4:39								

#### 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	

#### 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	
Auxiliary Equipment:			
LDSC Housing	LDSH – A	319	

#### 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 U1391 WI–01B**

Field: **Mediterranean Outflow (Portugal)**

Rig: **JOIDES Resolution**

Ocean:	<b>Atlantic</b>
	Hostile Natural Gamma Ray Spectroscopy