



**DISCLAIMER**

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**OTHER SERVICES1**

- OS1: MTT
- OS2: HLDS
- OS3: DSI
- OS4: MSS
- OS5: VSI




**REMARKS: RUN NUMBER 1**

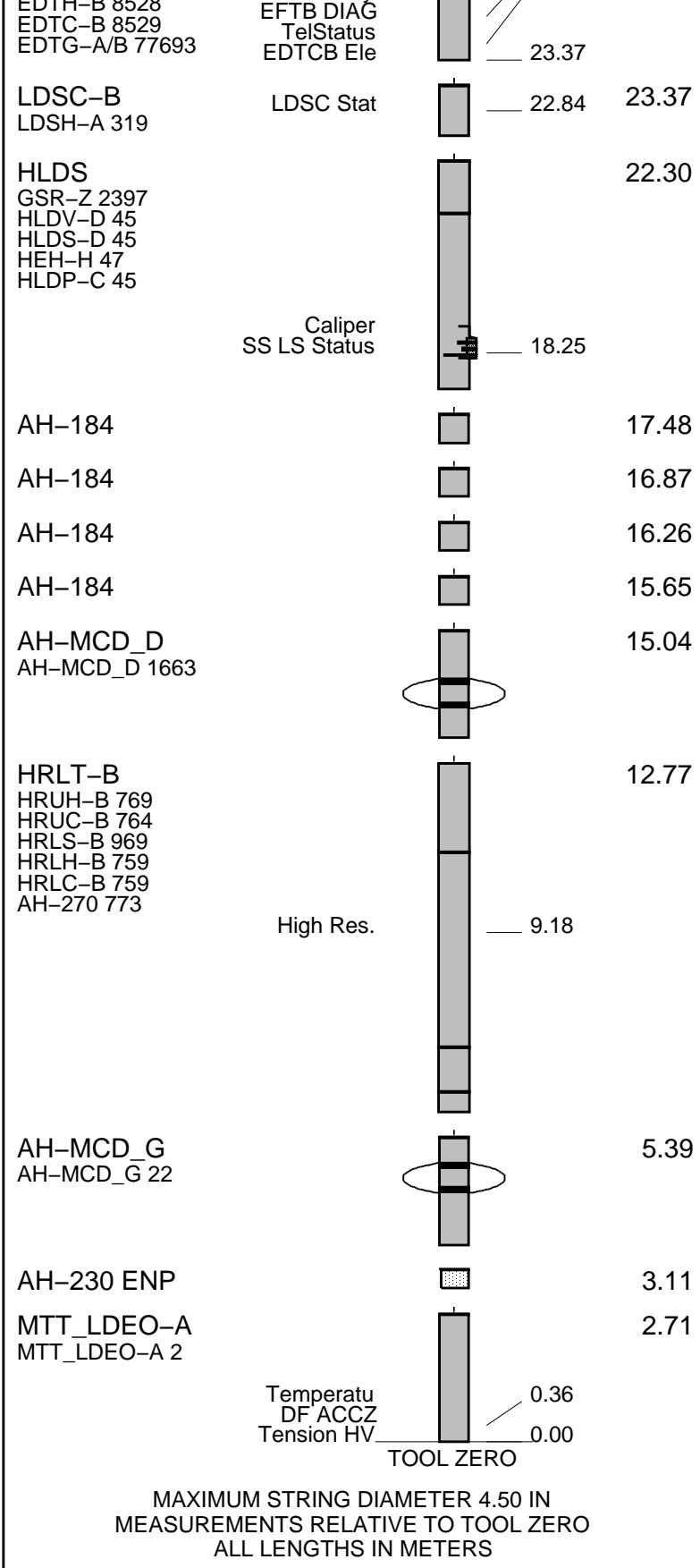
Hole U1309D was originally drilled during ODP Leg 304 in 2004 and deepened during Leg 305 in 2005.  
 This is the first re-entry since deepening and the first descent is being made without a pipe trip in order to preserve temperature data. A shut-in temperature profile is one of the main objectives of this run.  
 The purpose of this expedition is to acquire additional logging information that could not be acquired during Exp 304/305.  
 Logs correlated to "Dual-Laterolog Tool" log recorded by Schlumberger on 31 JAN 05.  
 Tools became stuck while re-entering drill pipe after completing the logging run and had to be fished by use of Kinley devices.  
 All tools were recovered, and the cause of the sticking was found to be that the arms on the MCD centralizers had worn thin over the long open-hole section and then broken while entering pipe, making the tool OD too large for the bit.  
 No after survey calibrations were possible due to fishing the string, so before-survey calibrations are presented instead.  
 HRLA centralized using two modified MCD centralizers with three bowspring arms each.  
**Shallow curves affected by borehole signal throughout logging interval.**  
 Data corrected for borehole diameter using HLDS caliper.

RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION: 19C0-187			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

**EQUIPMENT DESCRIPTION**

RUN 1		RUN 2	
SURFACE EQUIPMENT		SURFACE EQUIPMENT	
WITM (EDTS)-A			

RUN 1		RUN 2	
DOWNHOLE EQUIPMENT		DOWNHOLE EQUIPMENT	
LEH-MT		26.74	
LEH-MT 101			
AH-369	MDSB_EDTC Mud Tempe		25.78
EDTC-B	CTEM		25.35
EDTL 2-2522	Gamma Ray		
		25.35	
		24.28	
		23.71	



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

CD ID MD

MD CD ID

Kelly Bushing Elevation

0.0

Derrick Floor Elevation

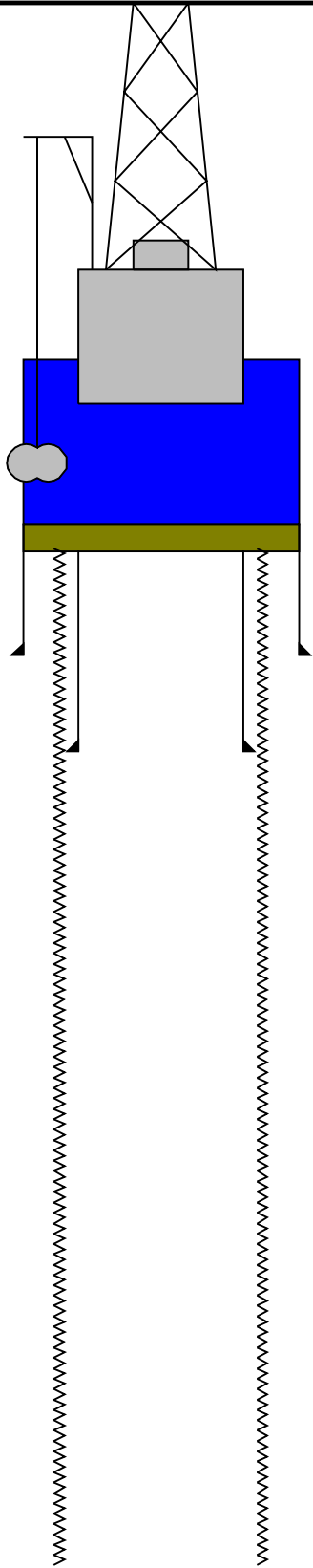
0.0

Mean Sea Level

11.0

Seismic Gun depth below MSL

7.0



1650.0

Top of Re-entry Cone  
Sea Bed

1656.0

9.875

1676.0

13.375

Casing Shoe

1711.0

8.000

Drill Pipe (Driller's Depth)  
1711mbrf for Triple-Combo  
1759mbrf for VSI & MSS  
2356mbrf for DSI

3071.5

9.875

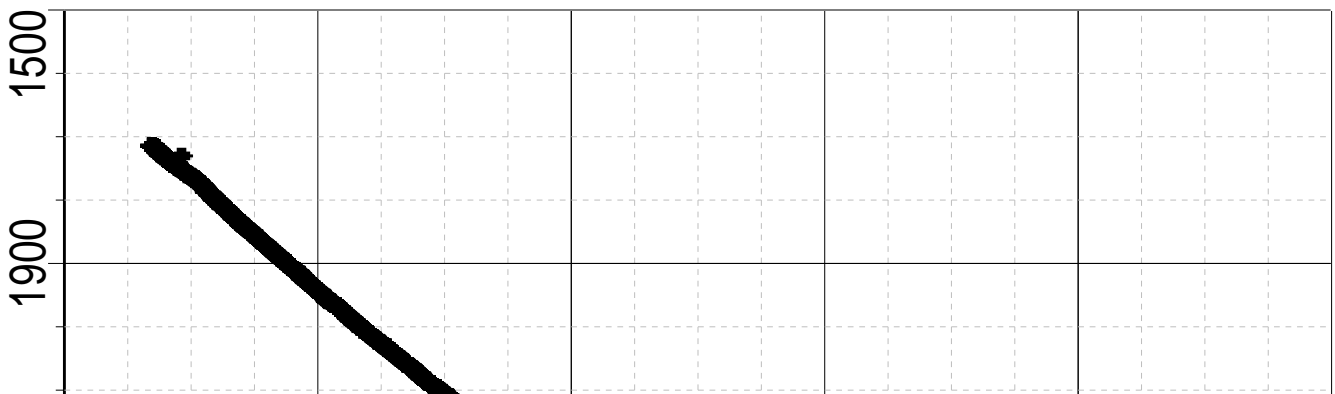
Driller's Total Depth

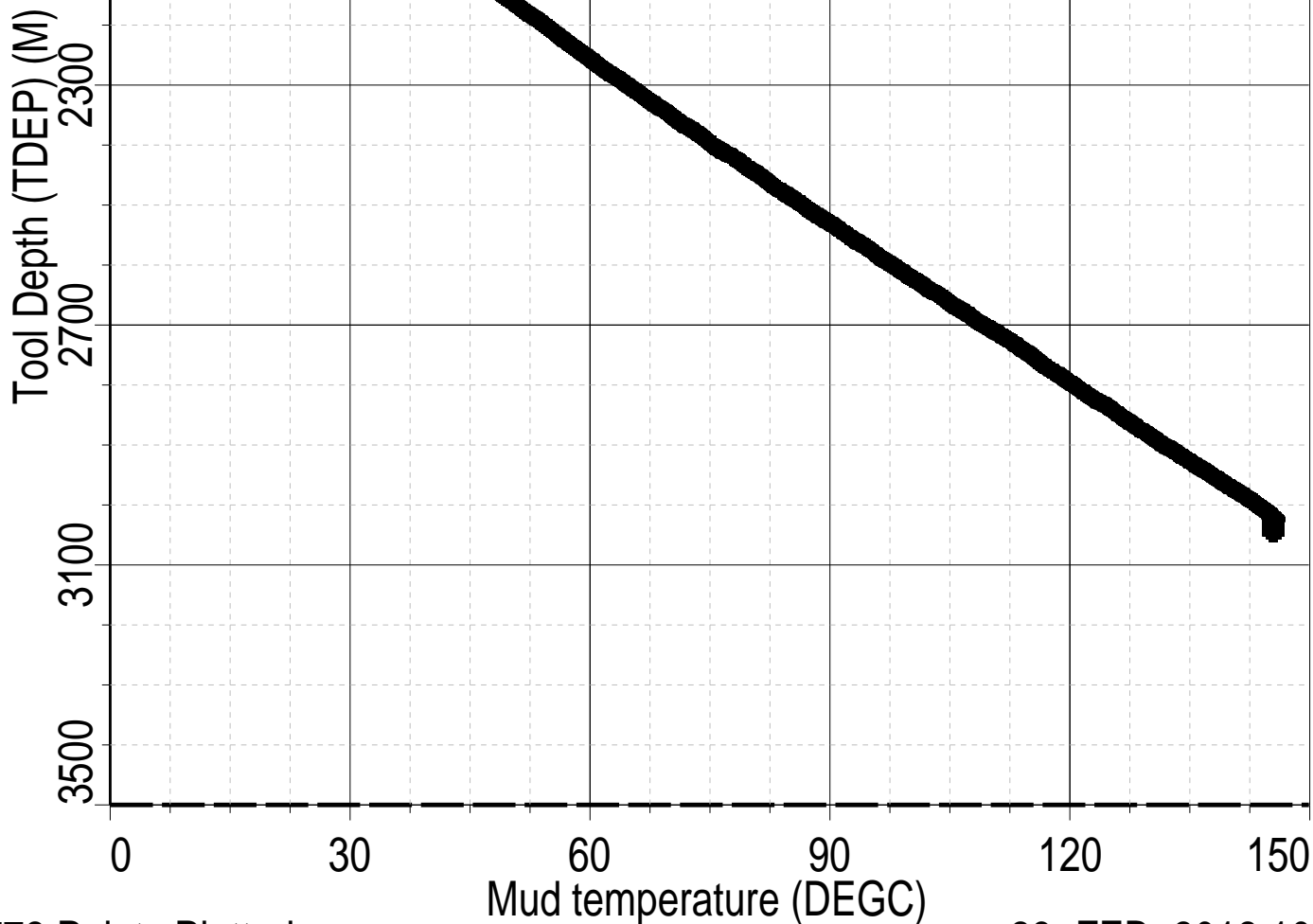
**Schlumberger**

**LEH-MT Mud Temperature**

MAXIS Field Log

Index: 3049.5 – 1712.8 M





8772 Points Plotted

23-FEB-2012 10:20

**Schlumberger**

**Down Log**

MAXIS Field Log

Company: Lamont Doherty

Well: Expedition 340T, Site U1309D

**Input DLIS Files**

DEFAULT	Flip_MTT_LDEO_HRLA_024LUP	PRODUCER	23-Feb-2012 10:31	3059.7 M	1674.9 M
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**Output DLIS Files**

DEFAULT	MTT_LDEO_HRLA_LDL_025PUP	FN:13	PRODUCER	23-Feb-2012 10:32	3063.7 M	1678.8 M
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**OP System Version: 19C0-187**

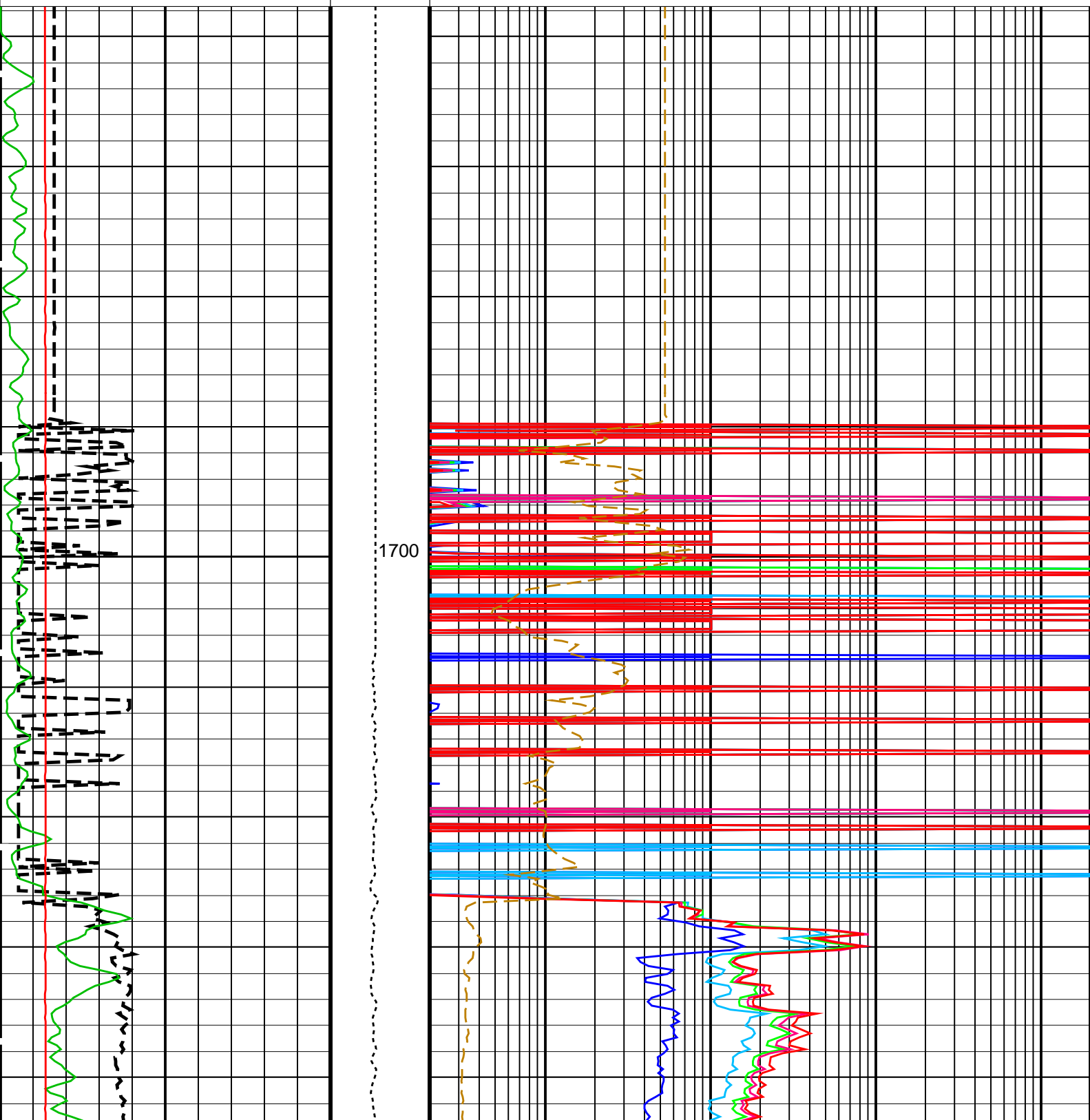
MTT_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
EDTC-B	19C0-187		

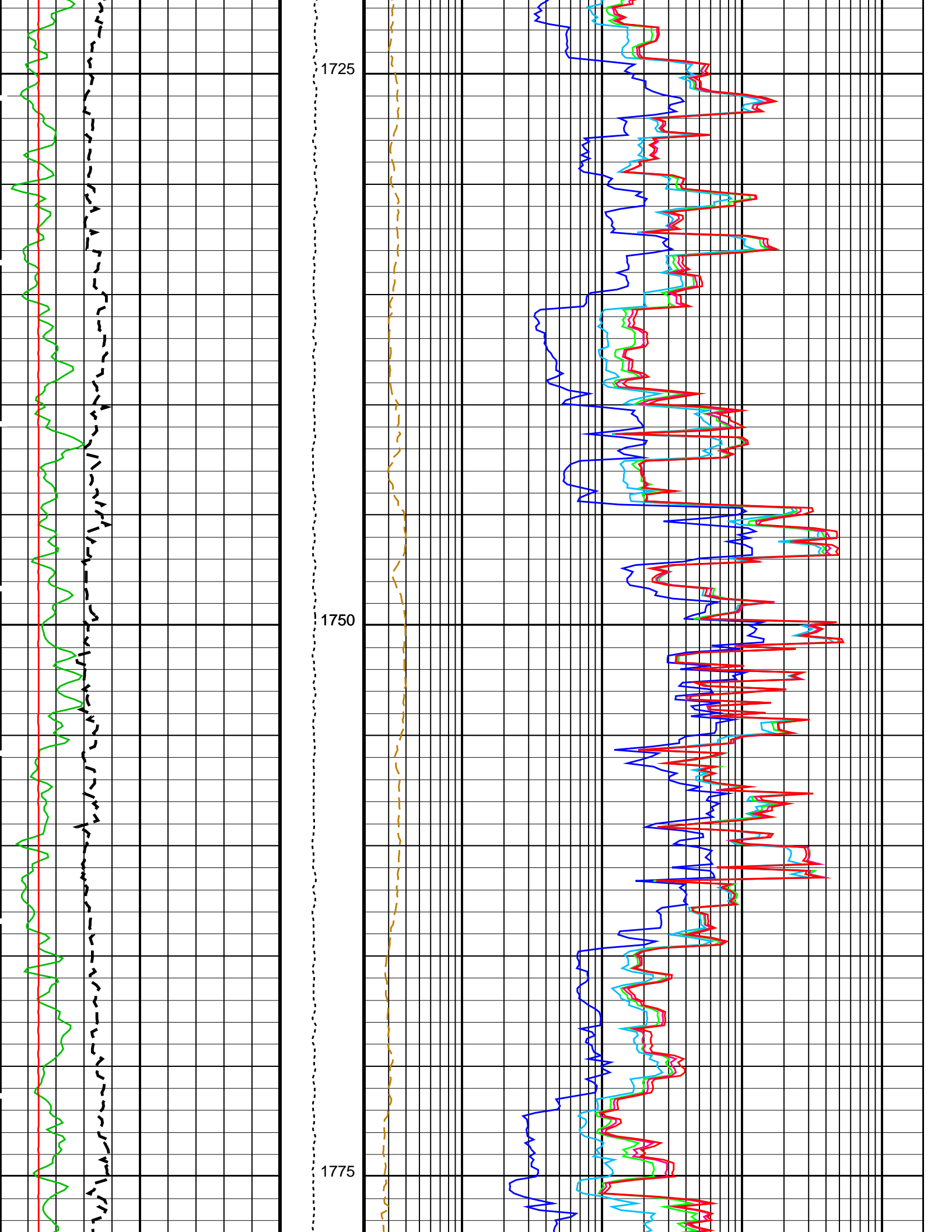
**PIP SUMMARY**

Time Mark Every 60 S

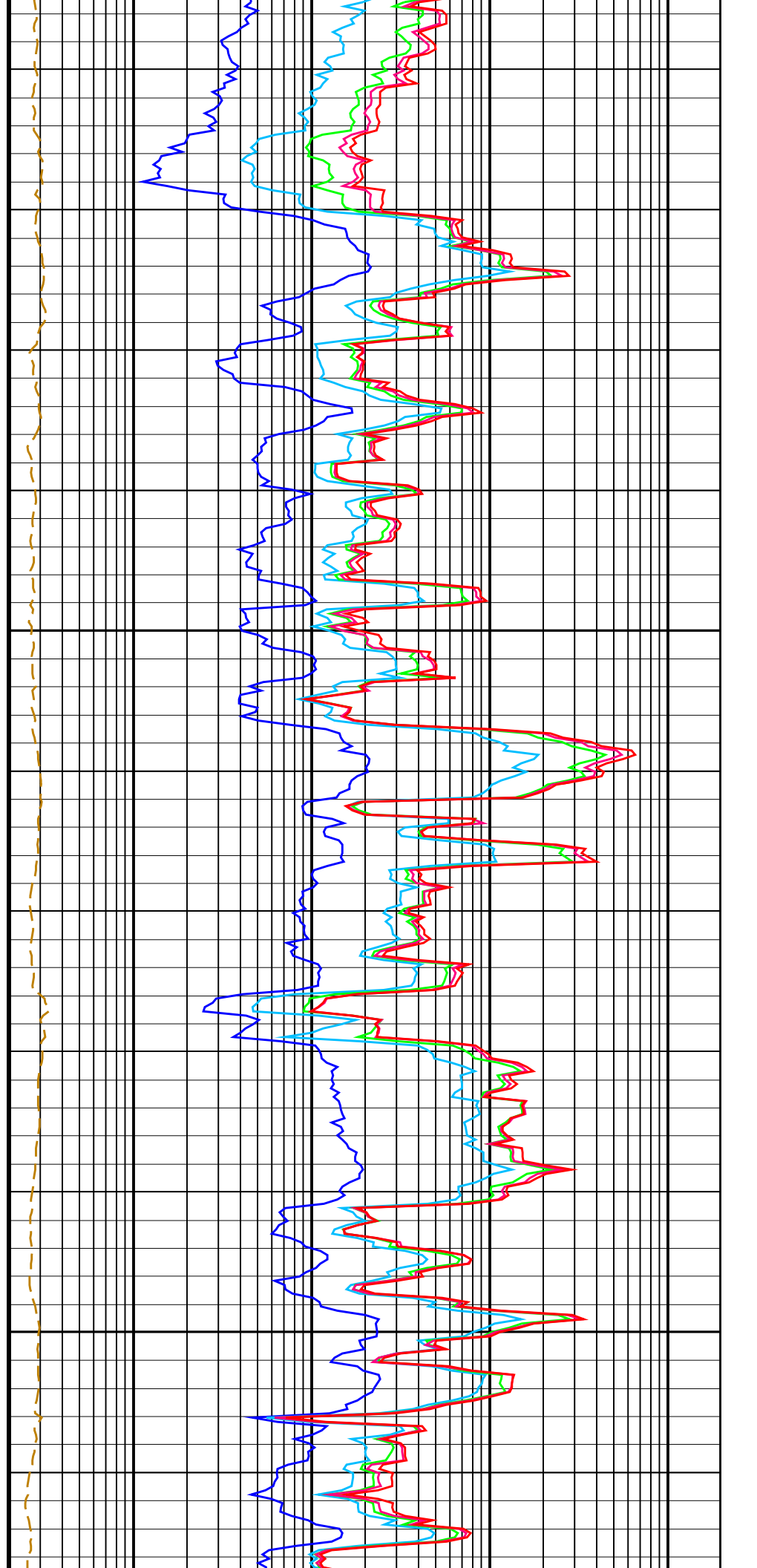
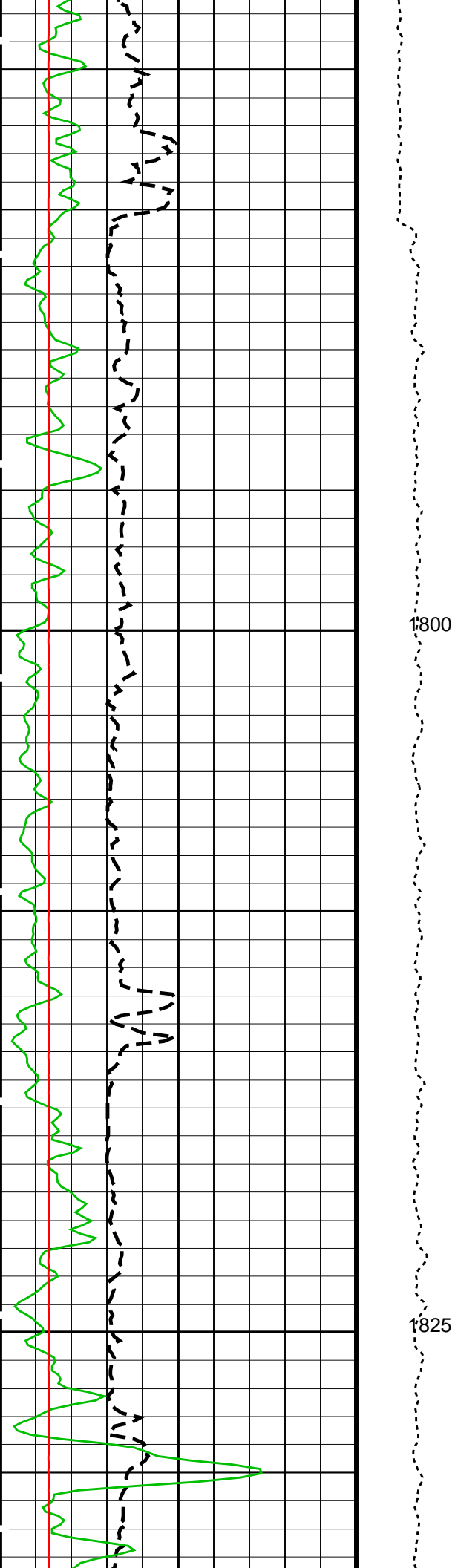
0.02 **HRLT Mud Resistivity (RM\_HRLT)** 200  
(OHMM)

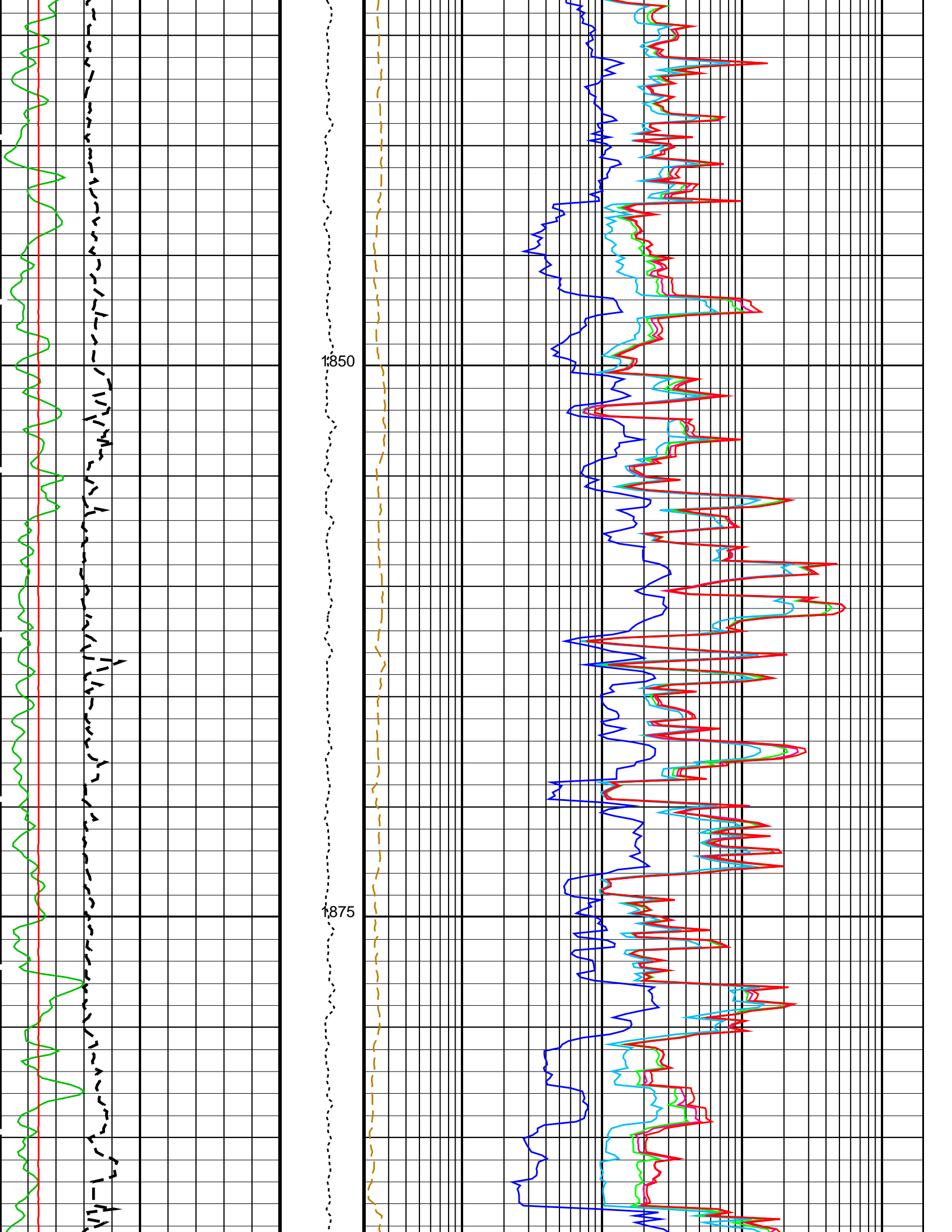
Invasion Diameter (DI_HRLT) (IN)		HRLT Resistivity 5 (RLA5) (OHMM)	
0	50	0.2	2000
HLDS Caliper (LCAL) (IN)		HRLT Resistivity 4 (RLA4) (OHMM)	
0	20	0.2	2000
Gamma Ray (GR_EDTC) (GAPI)		HRLT Resistivity 3 (RLA3) (OHMM)	
0	15	0.2	2000
Tension (TENS) (LBF)		HRLT Resistivity 2 (RLA2) (OHMM)	
0	5000	0.2	2000
		HRLT Resistivity 1 (RLA1) (OHMM)	
		0.2	2000

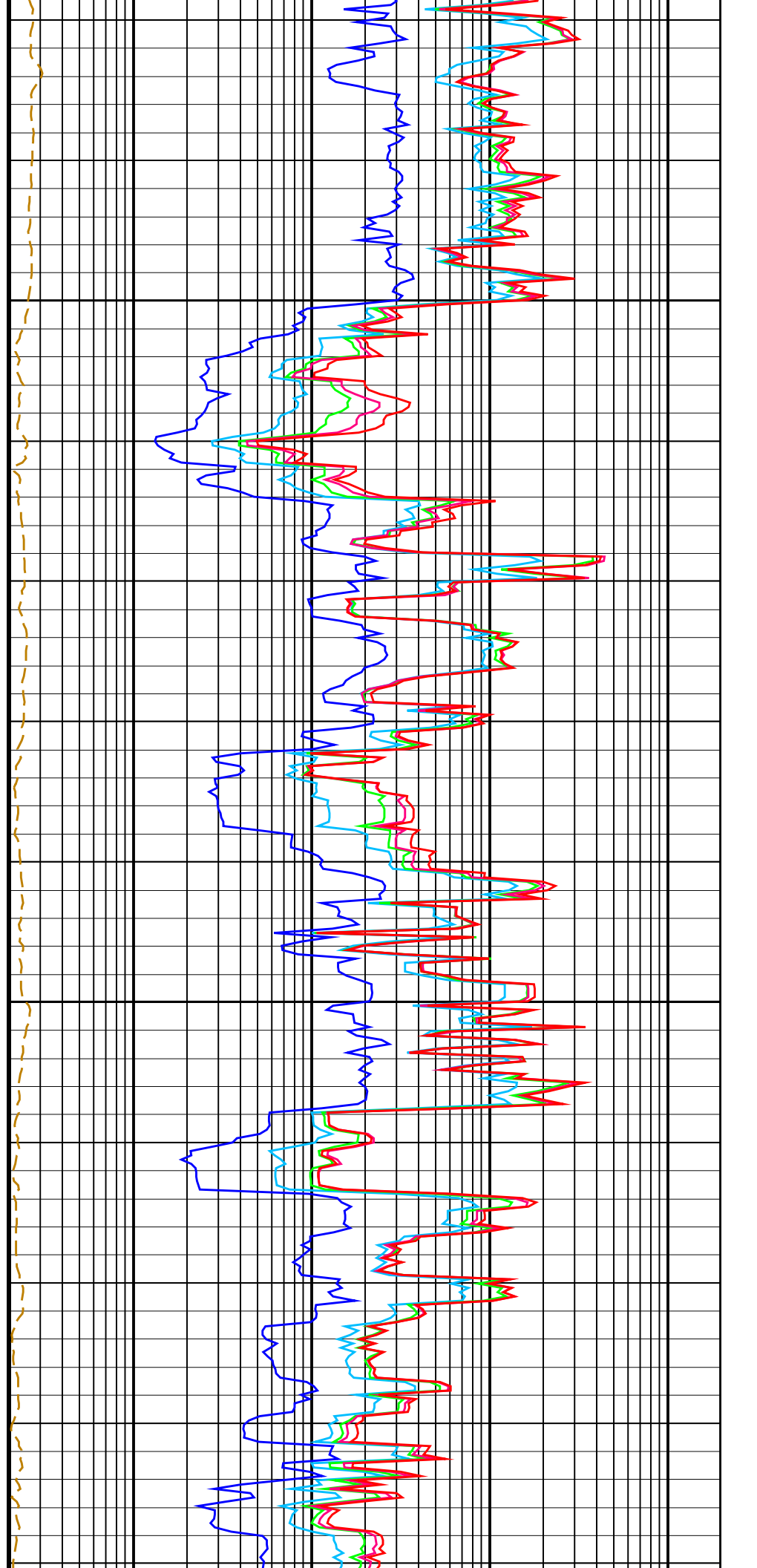
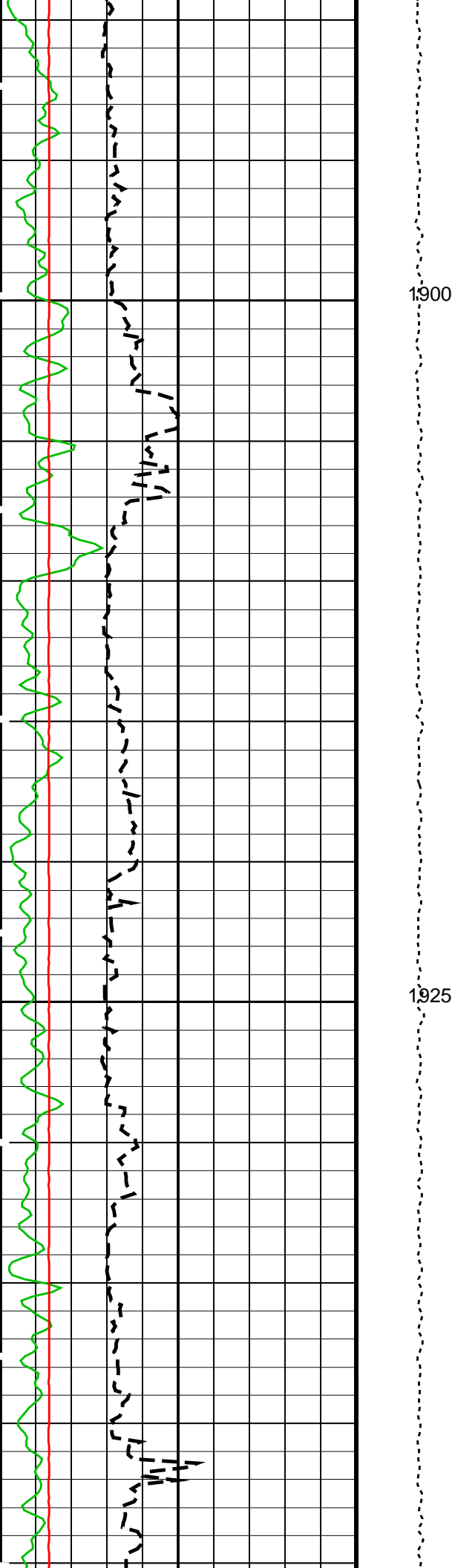


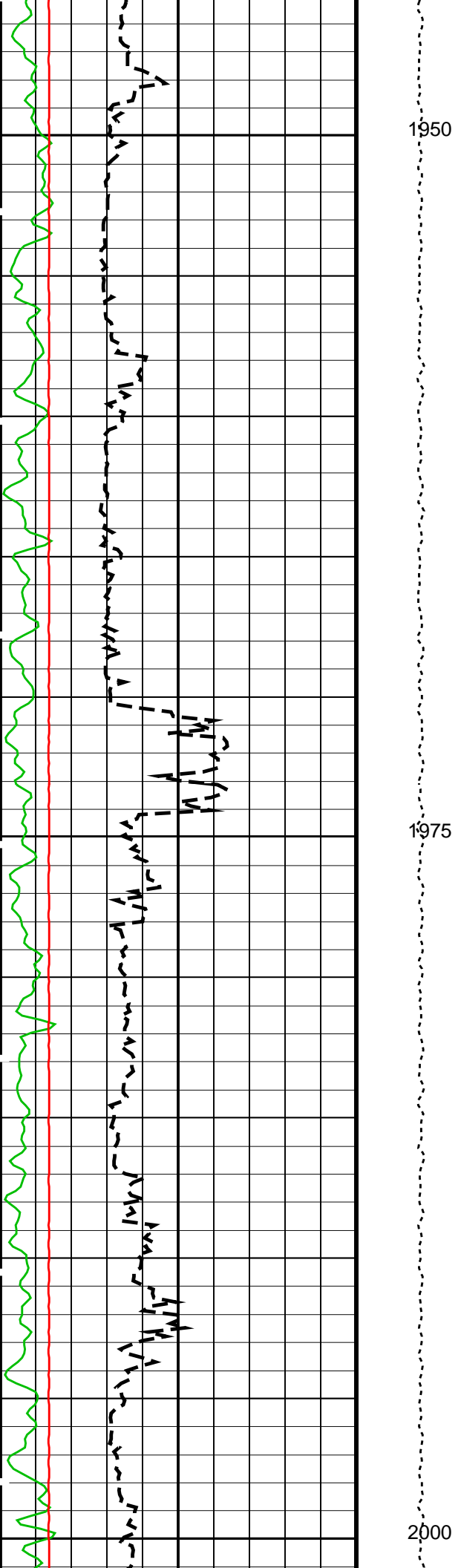








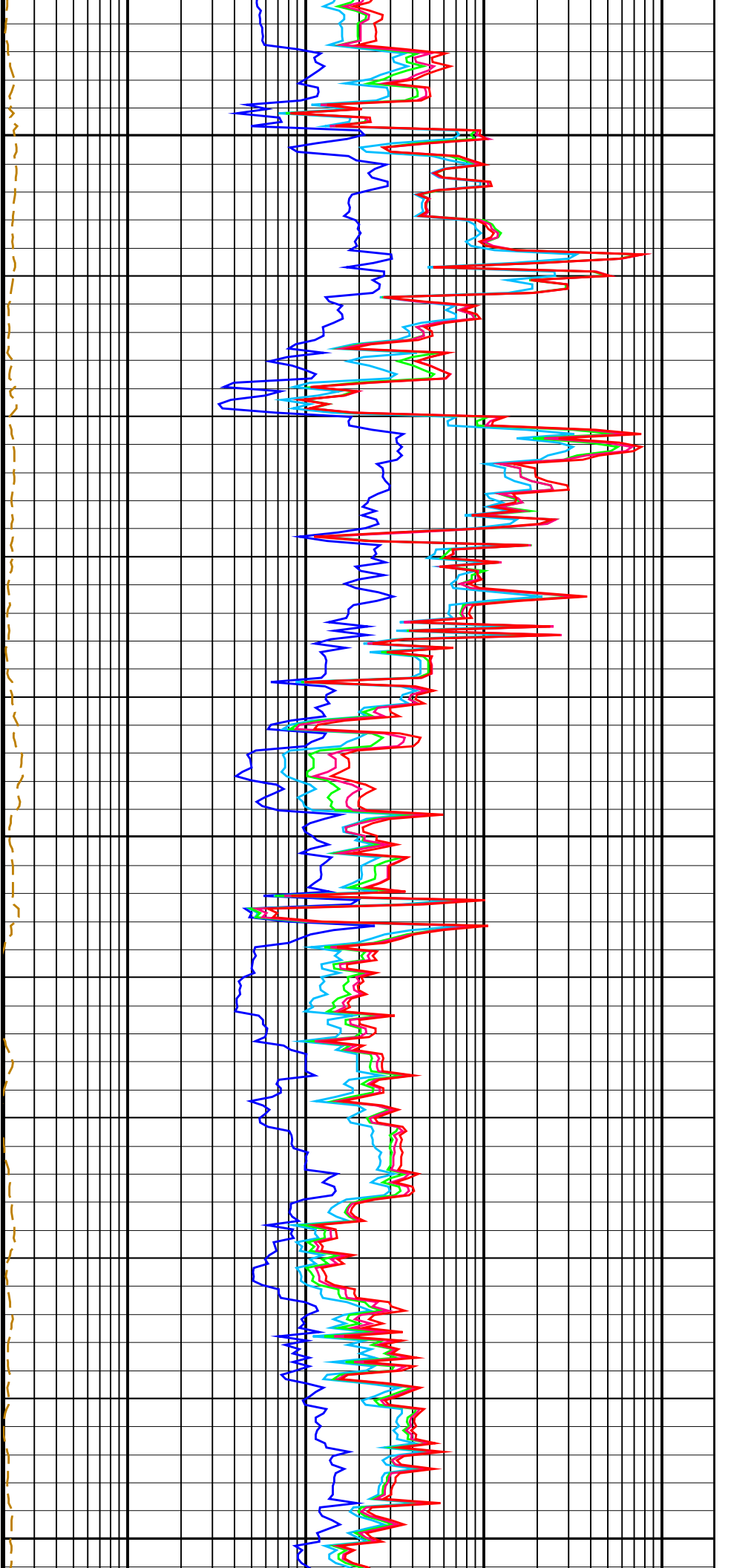


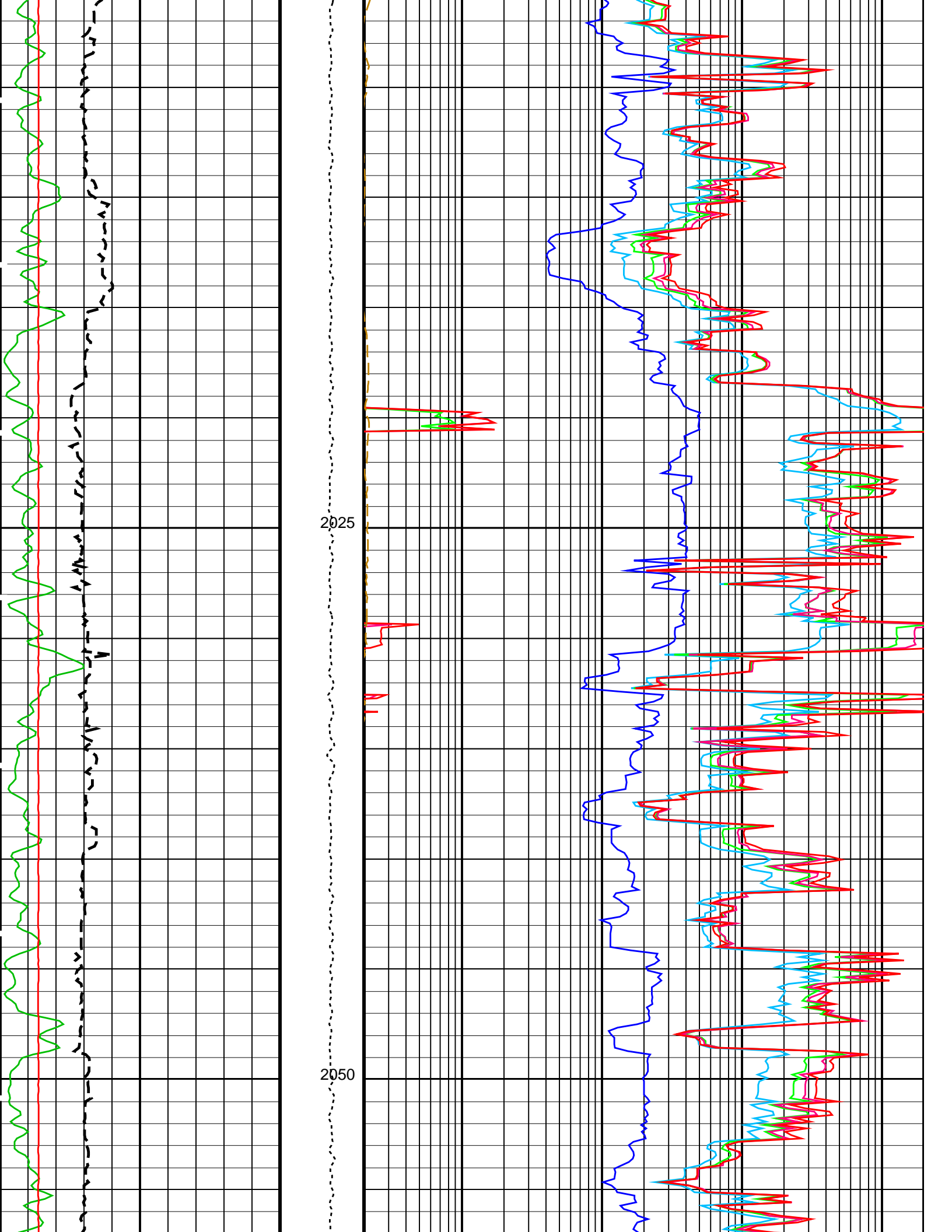


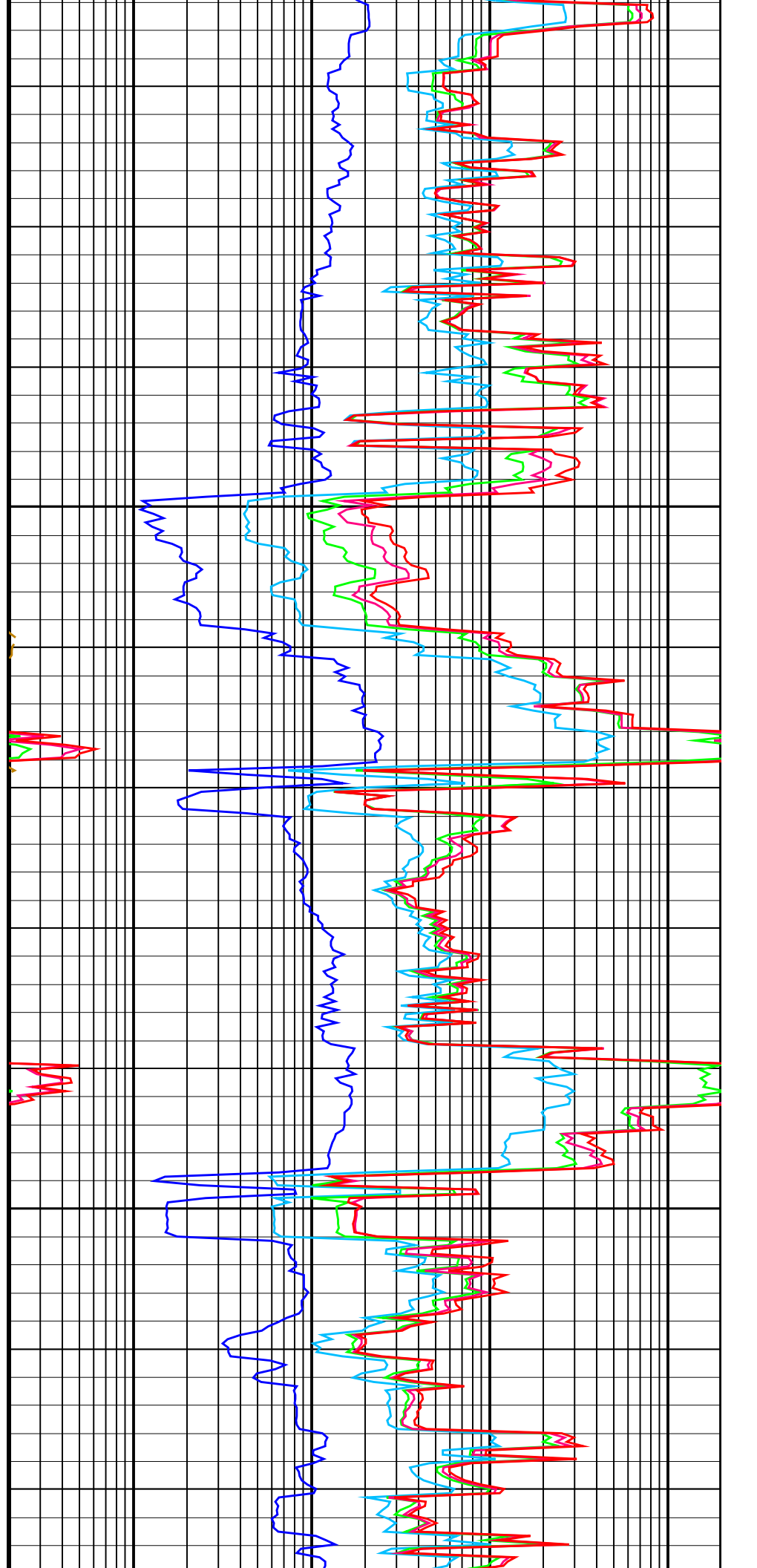
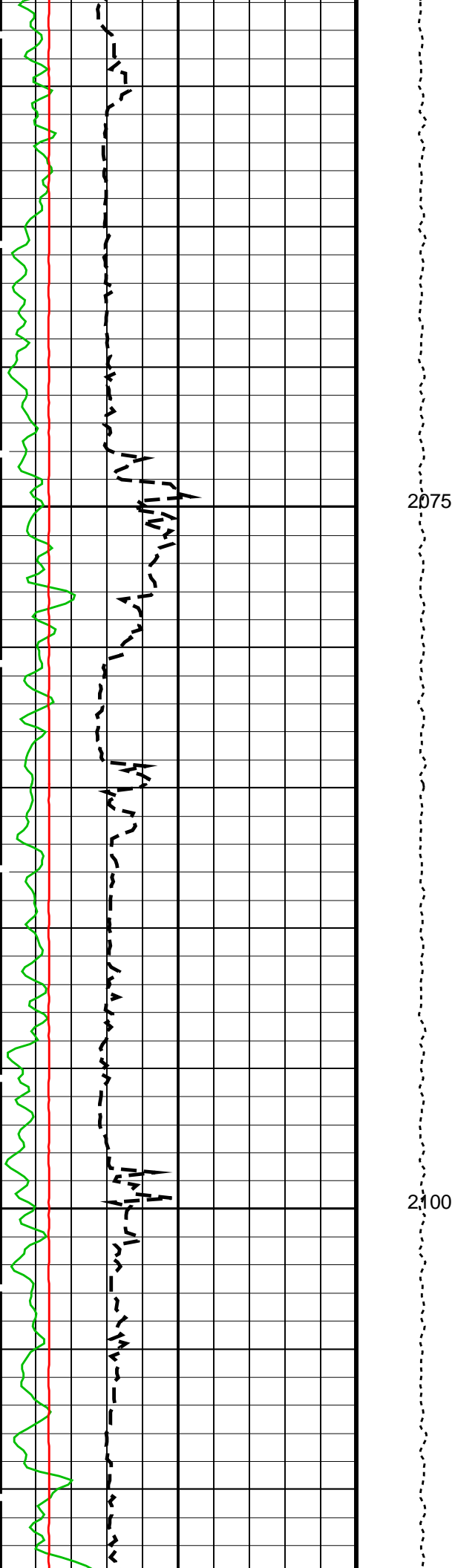
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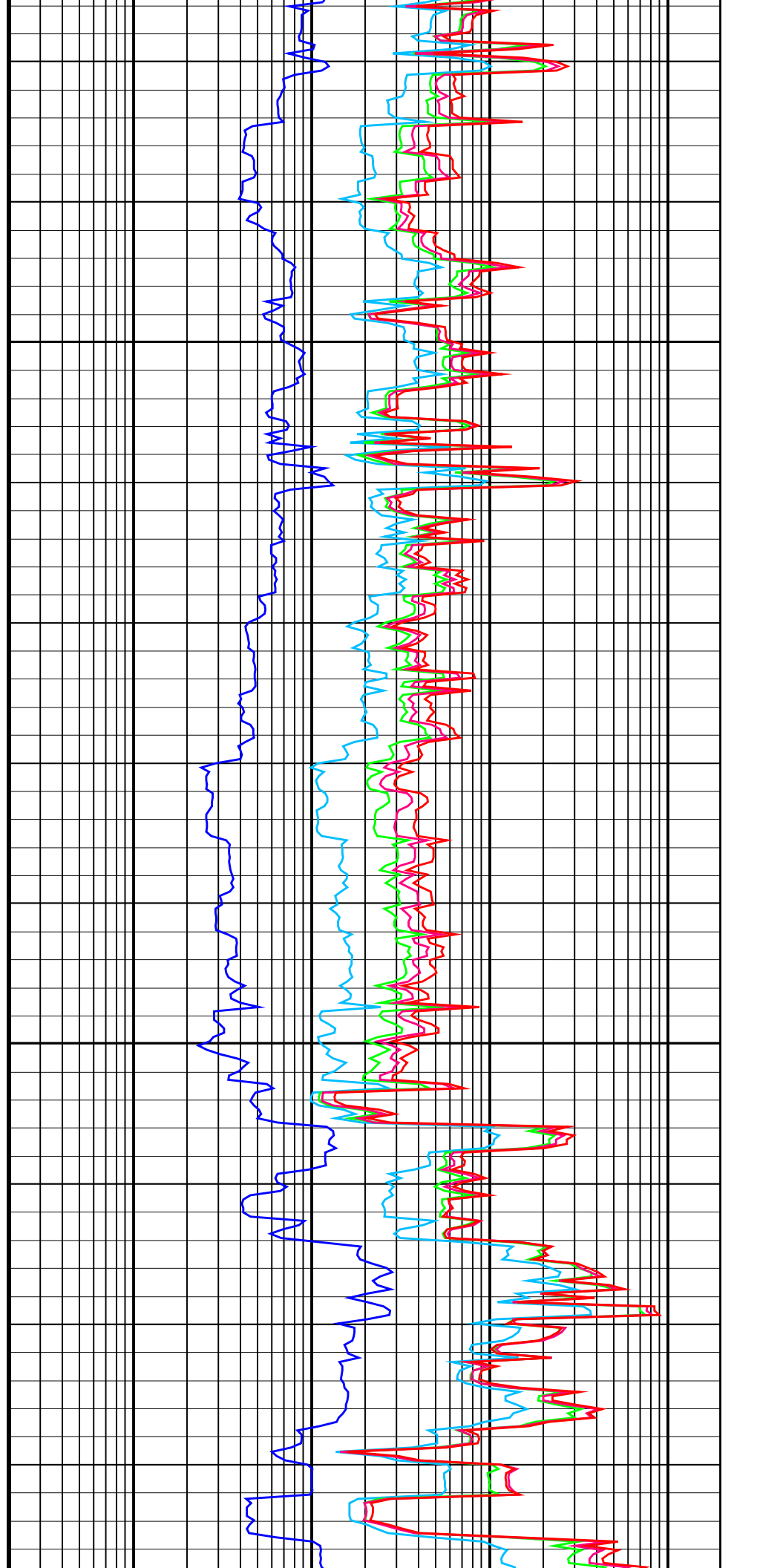
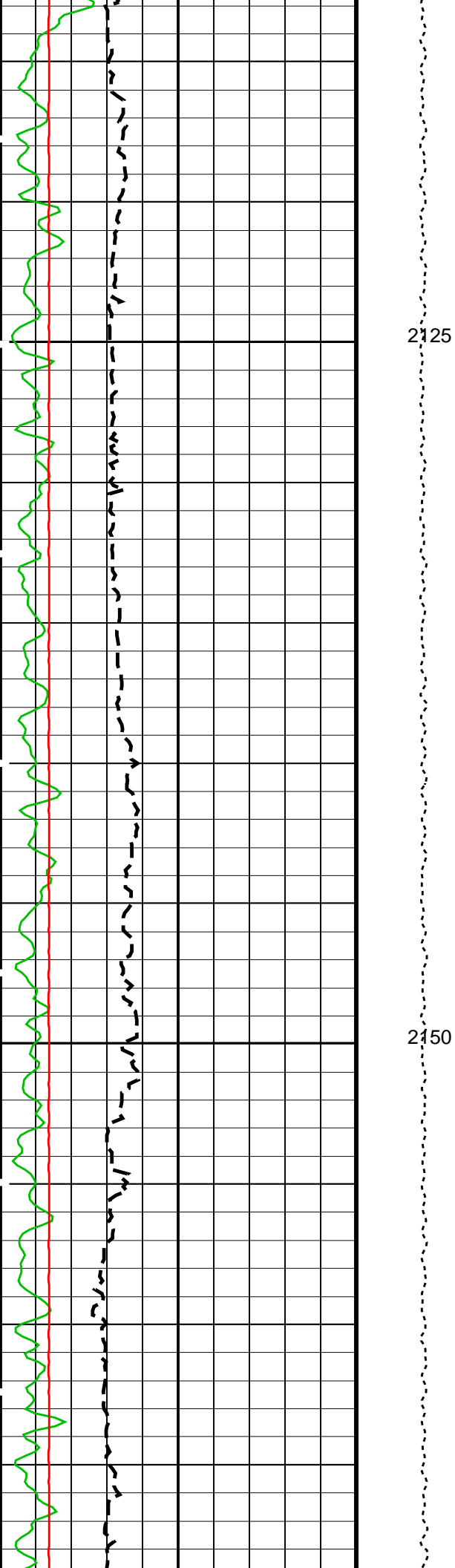
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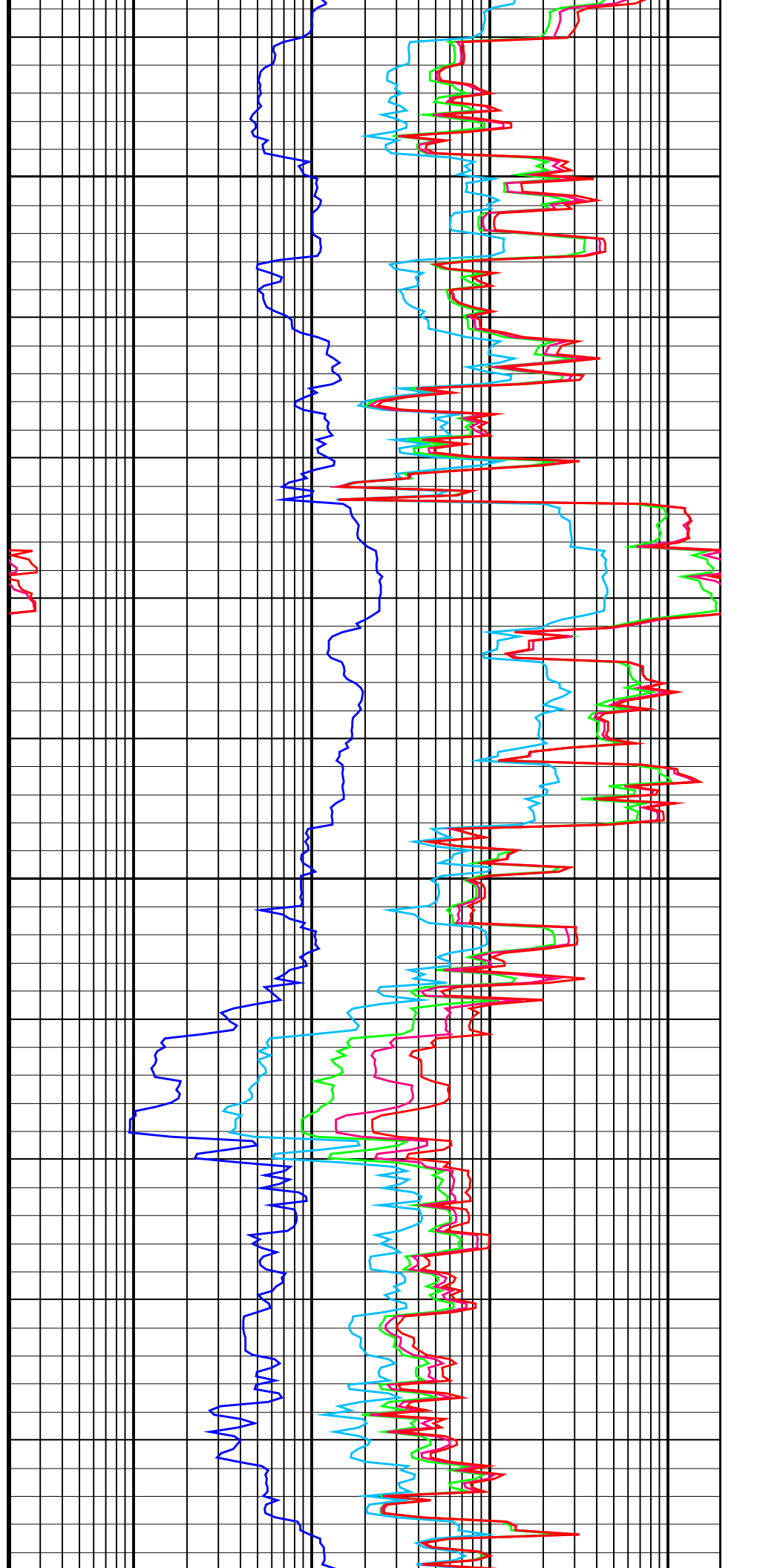
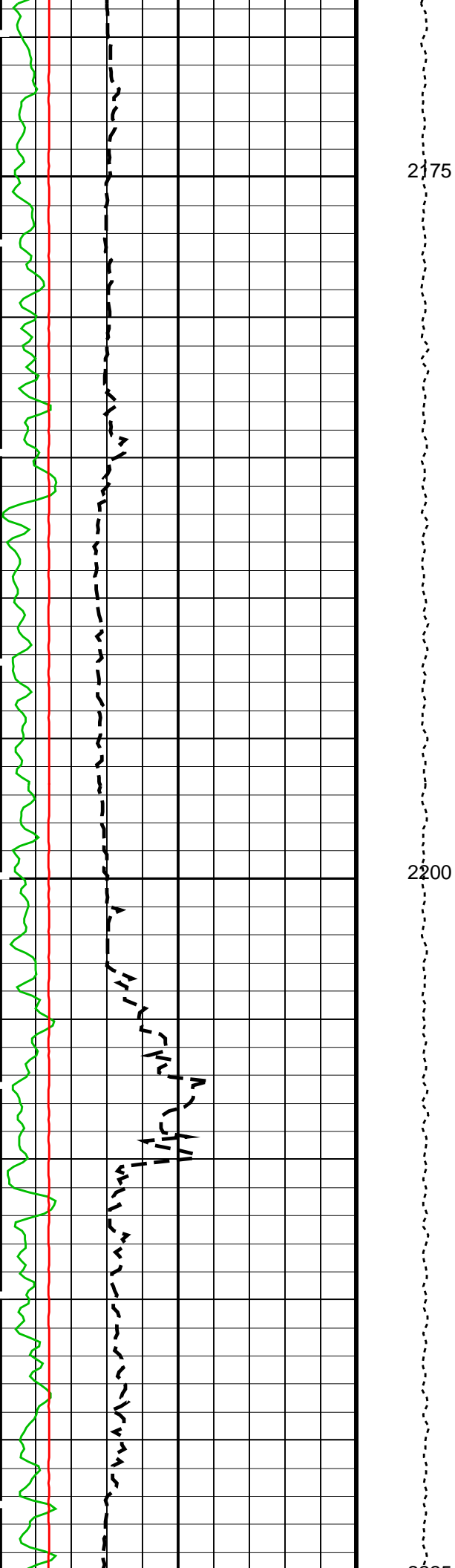
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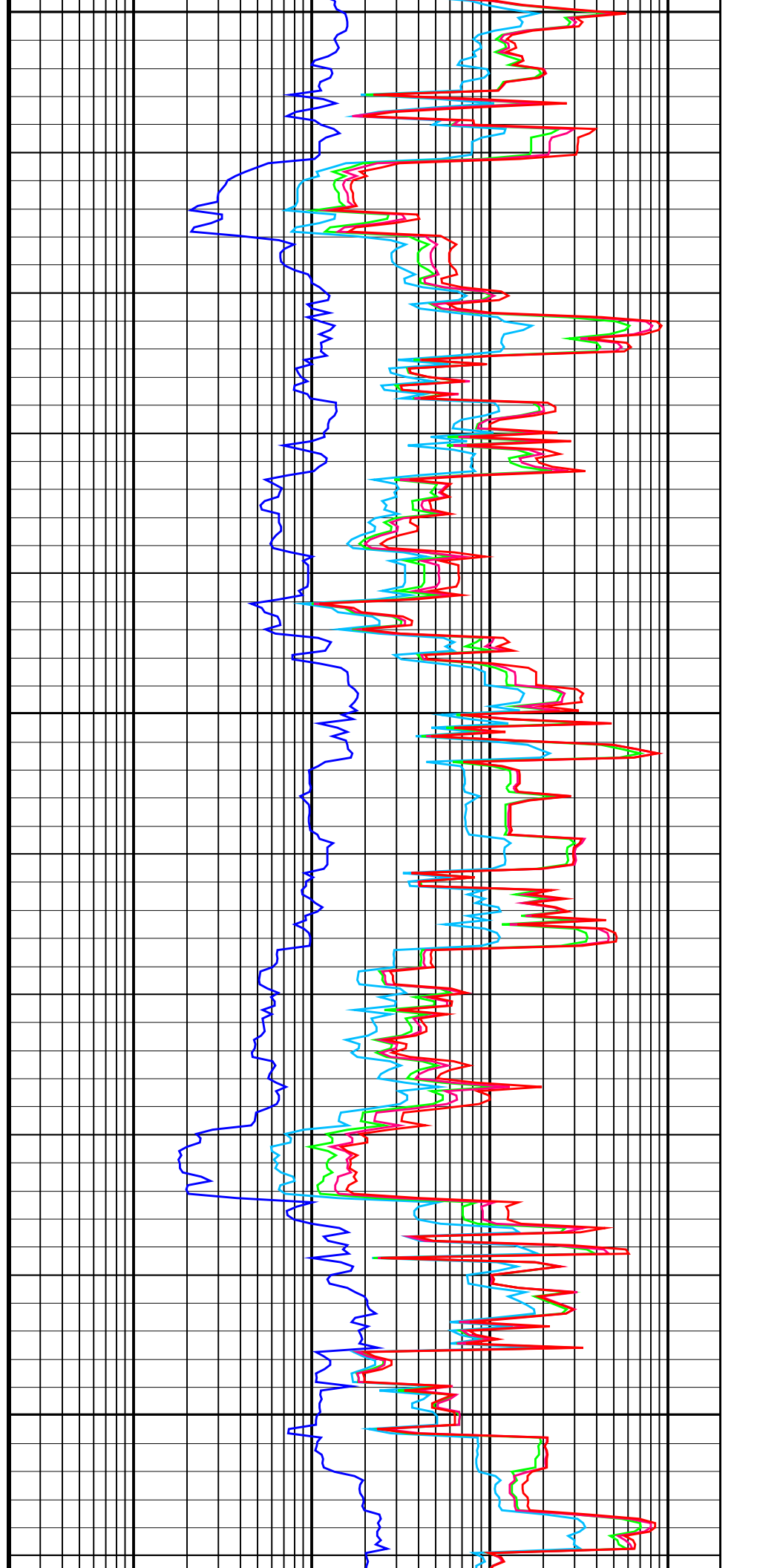
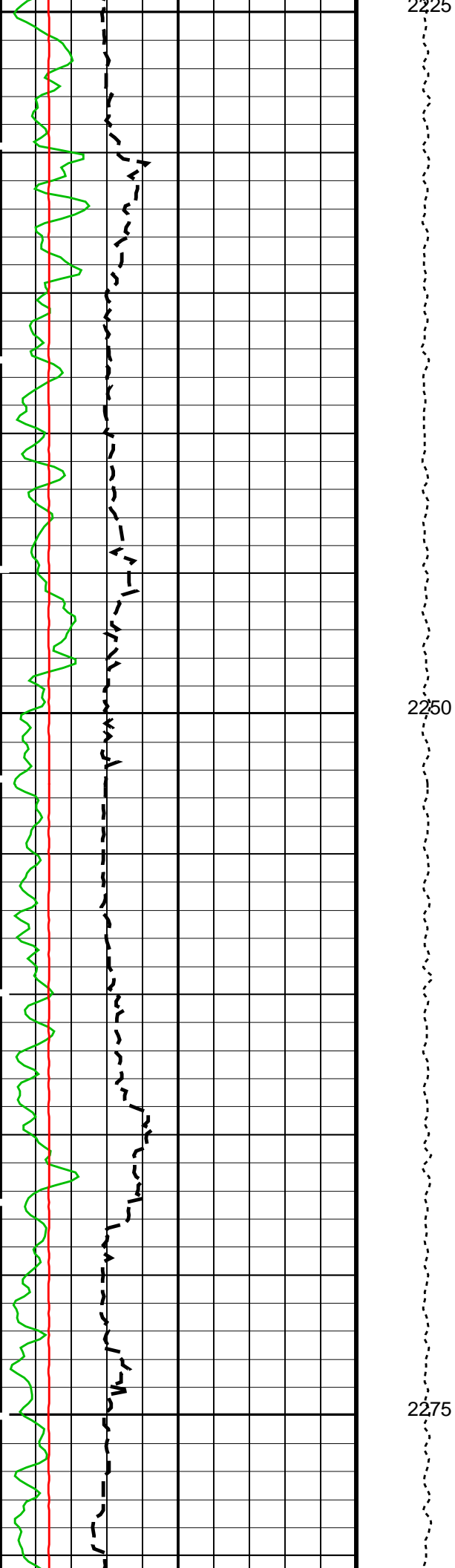


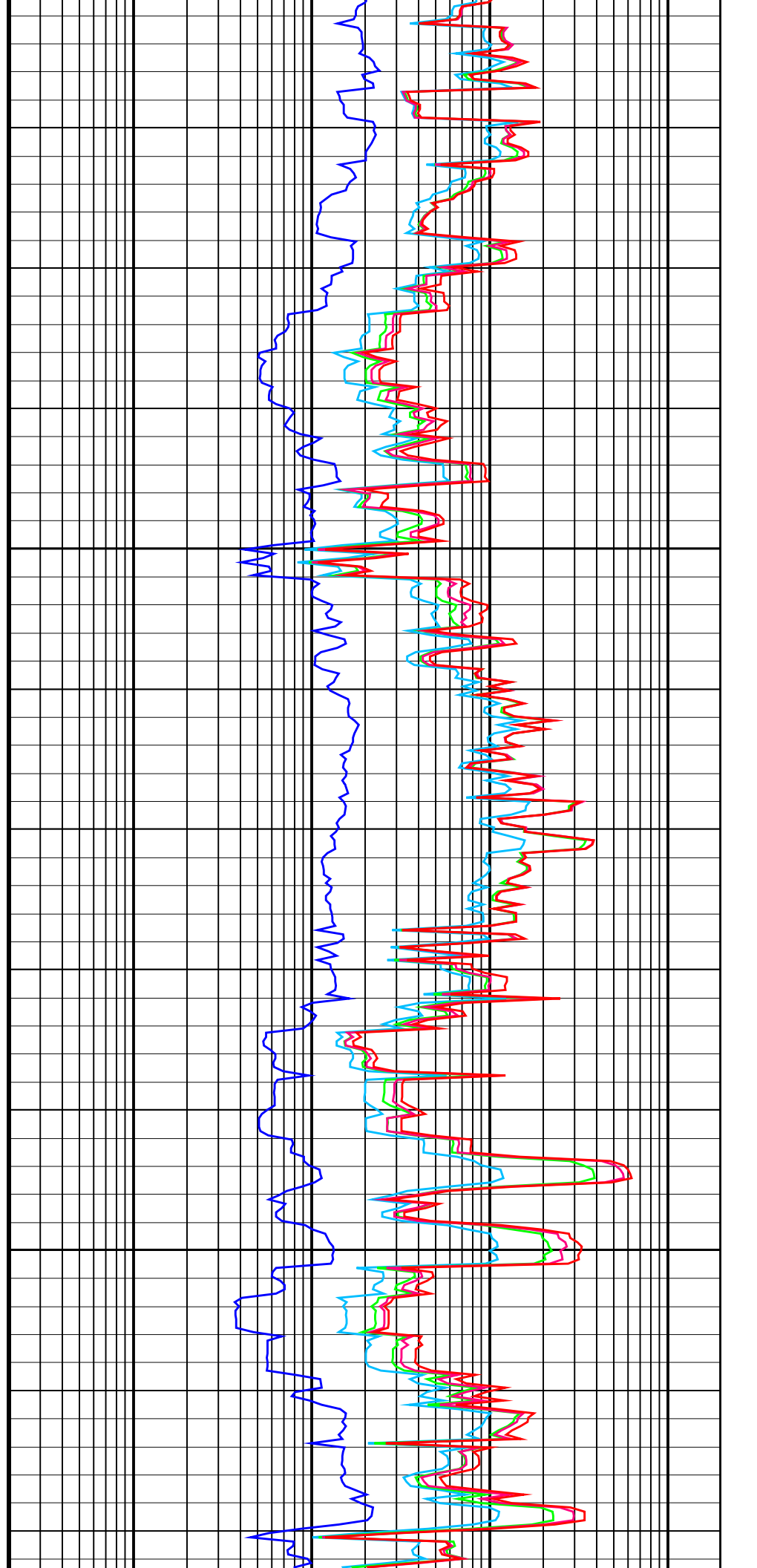
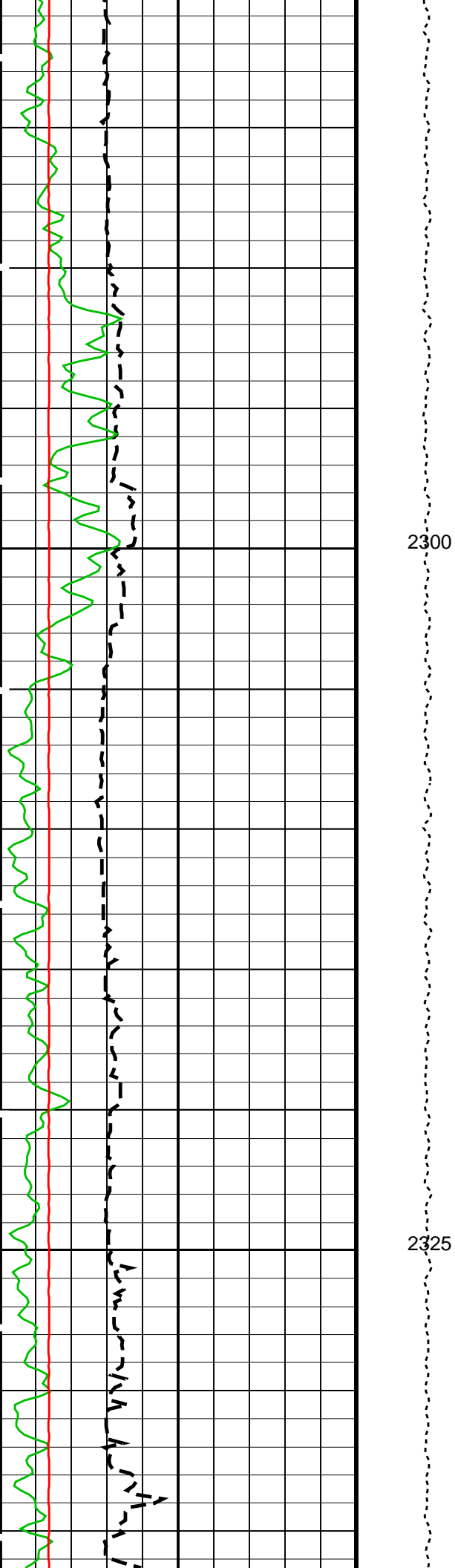


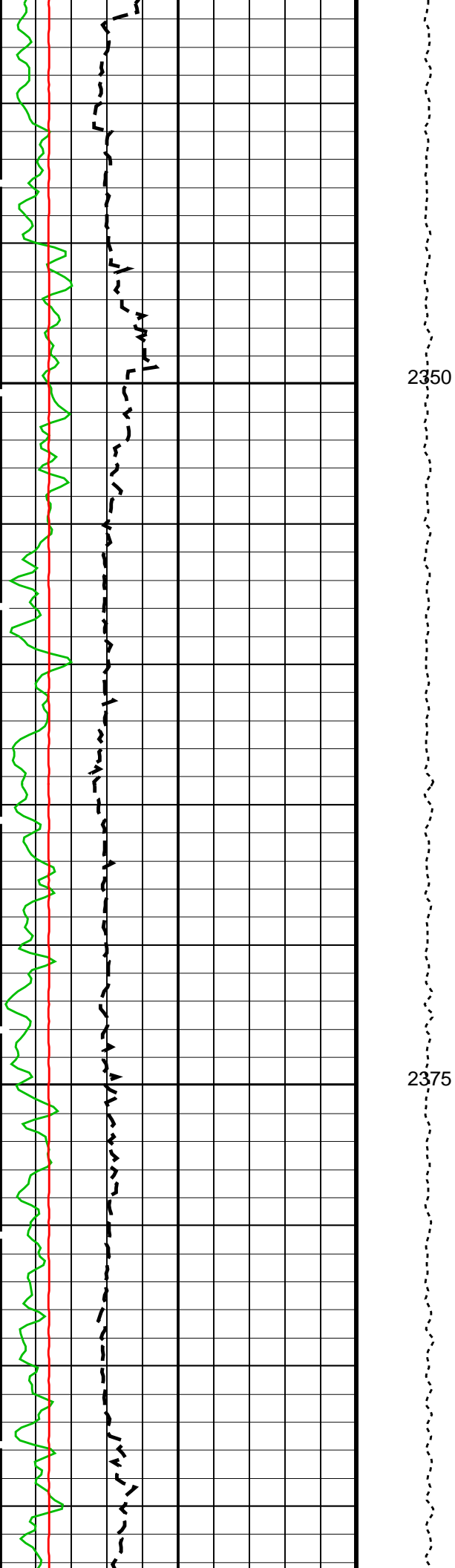






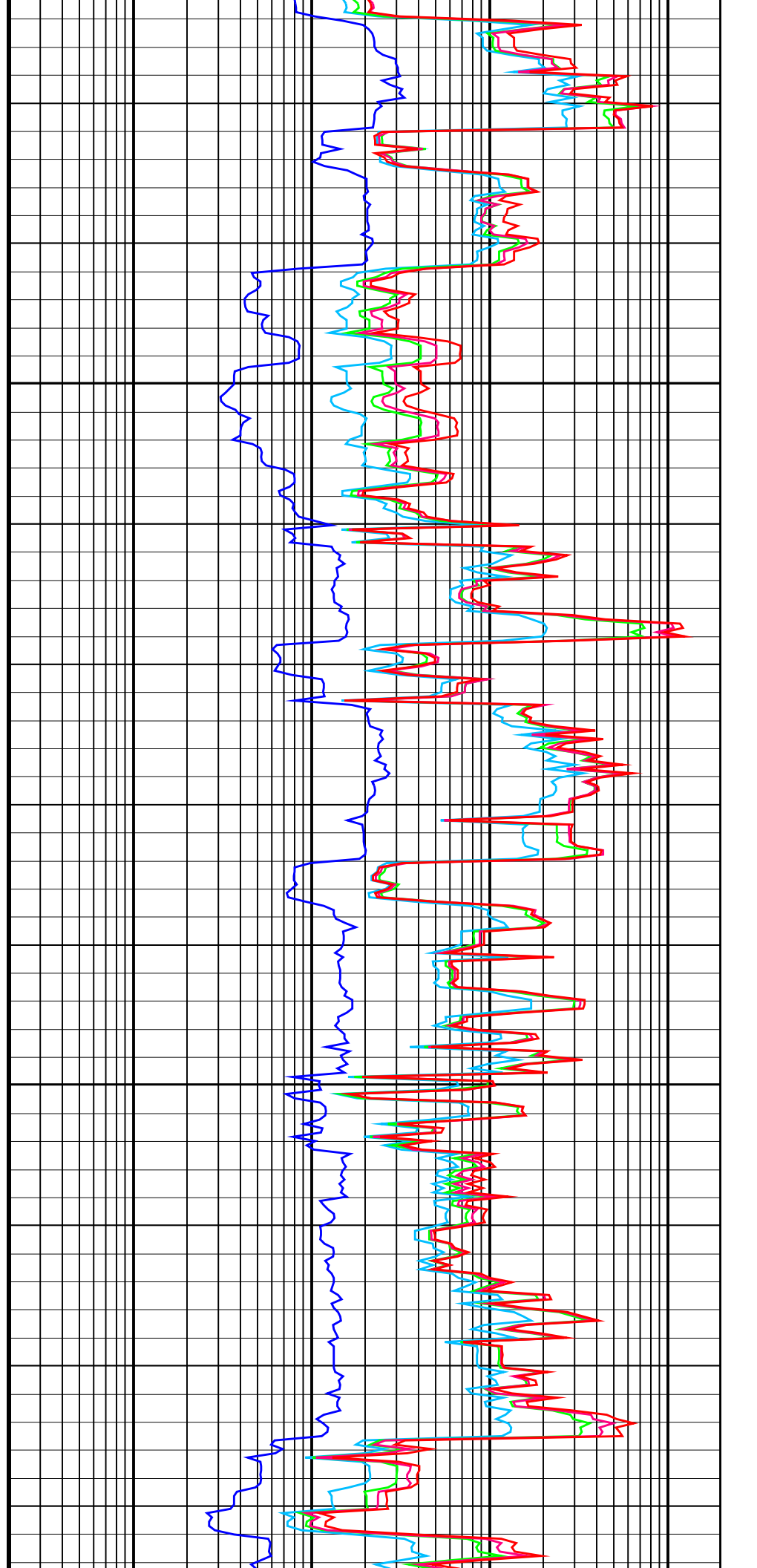


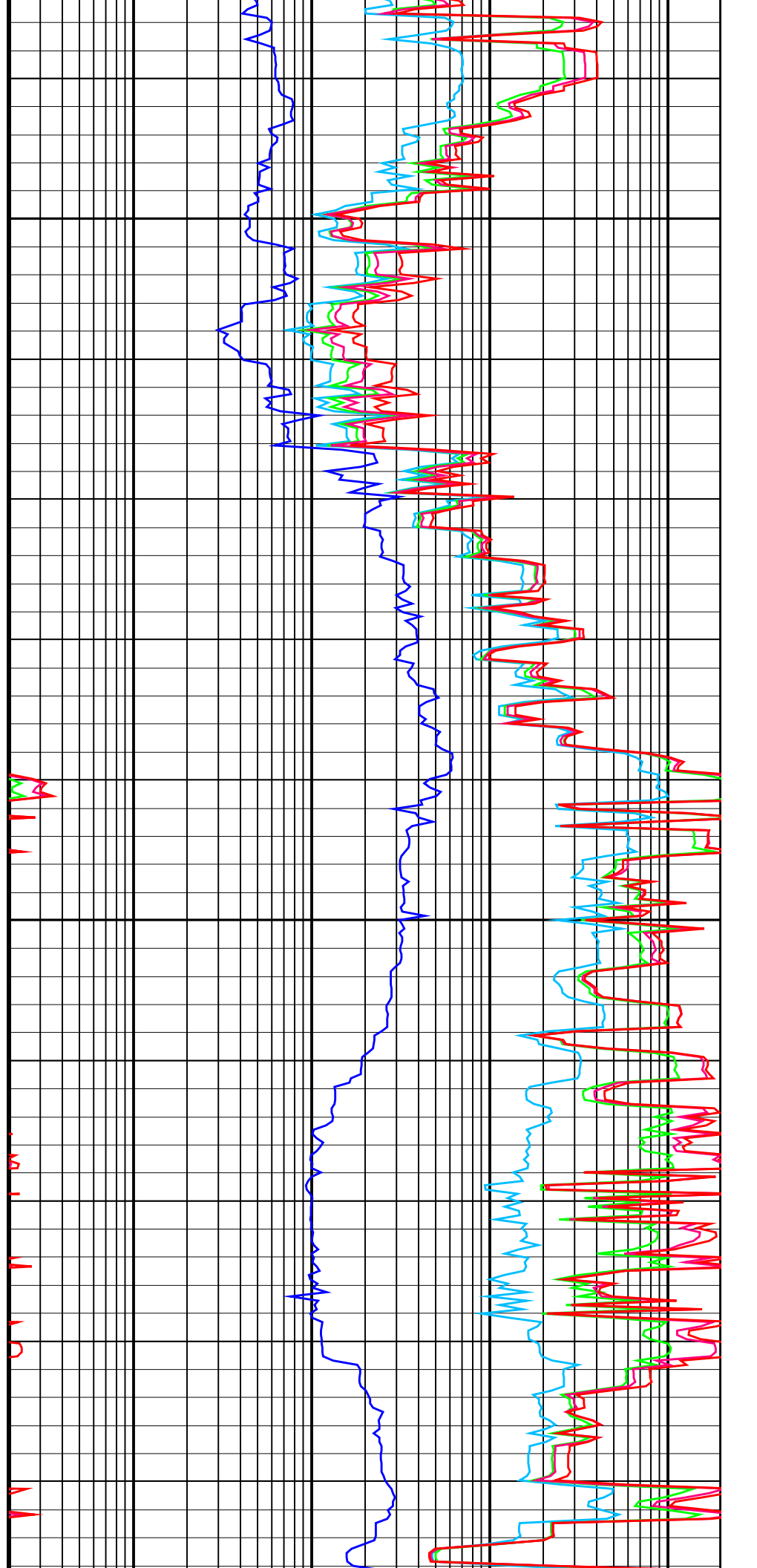
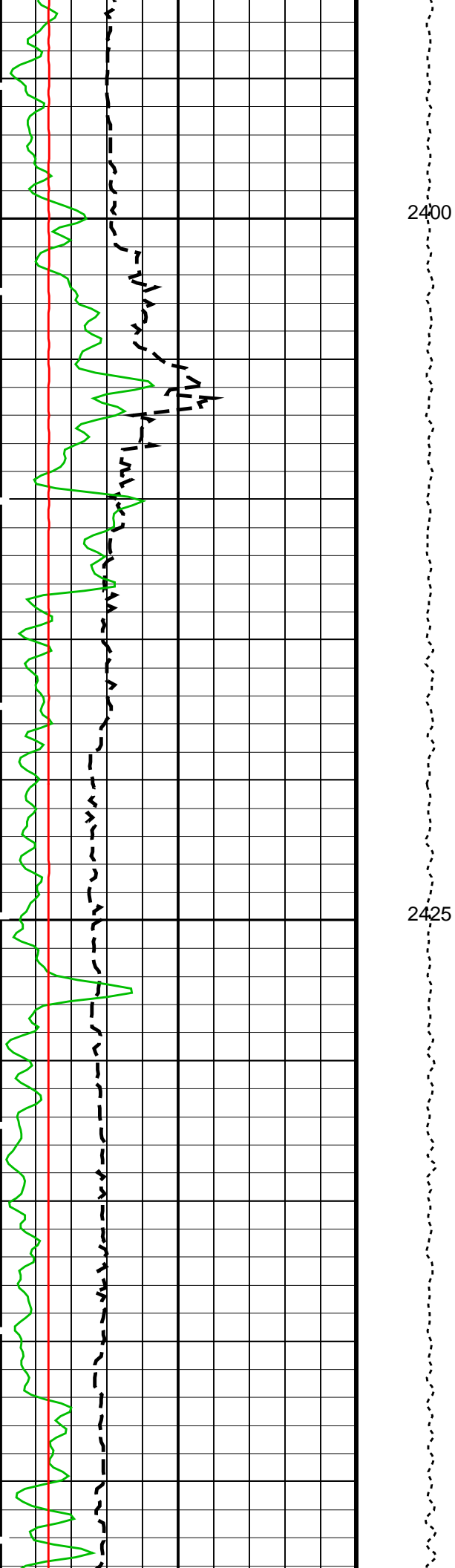


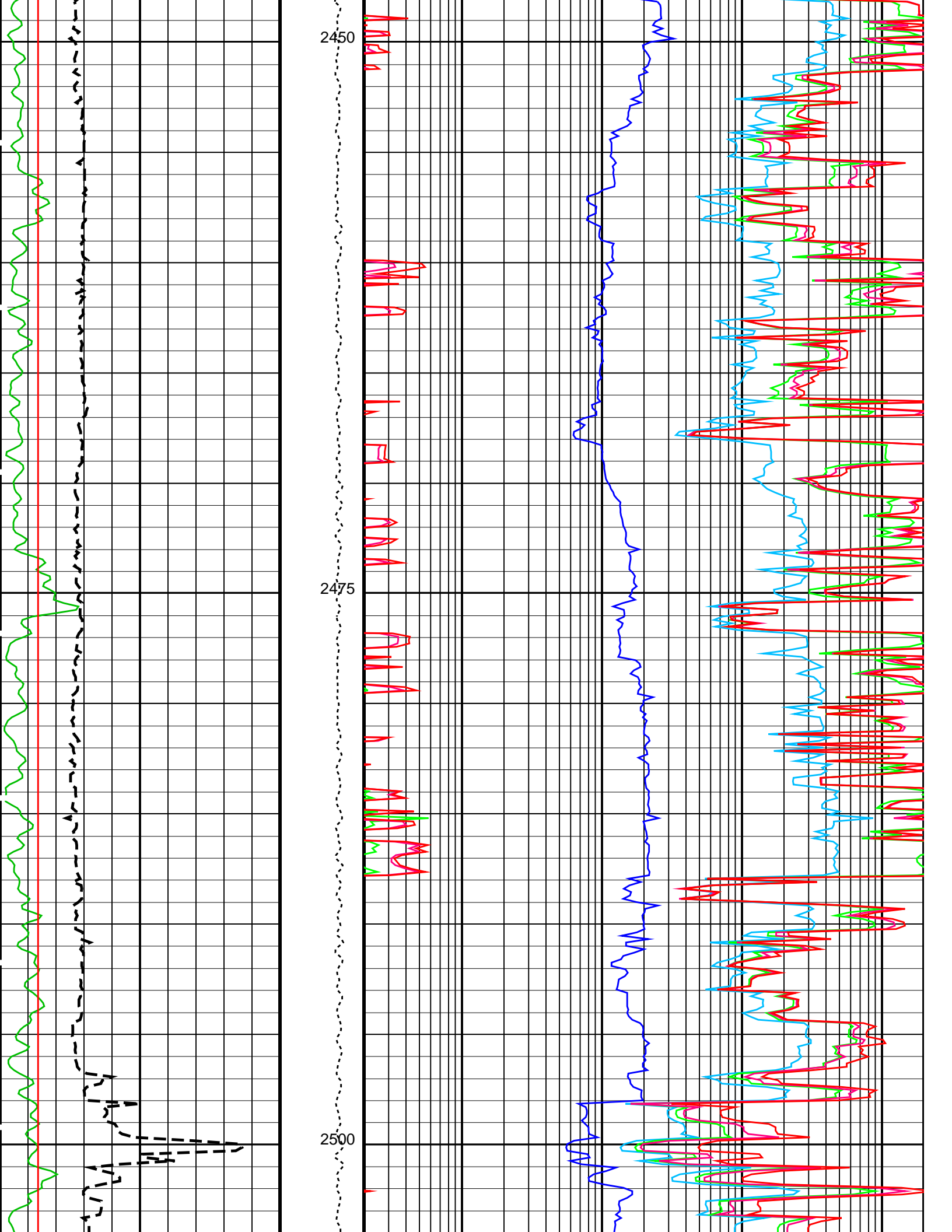


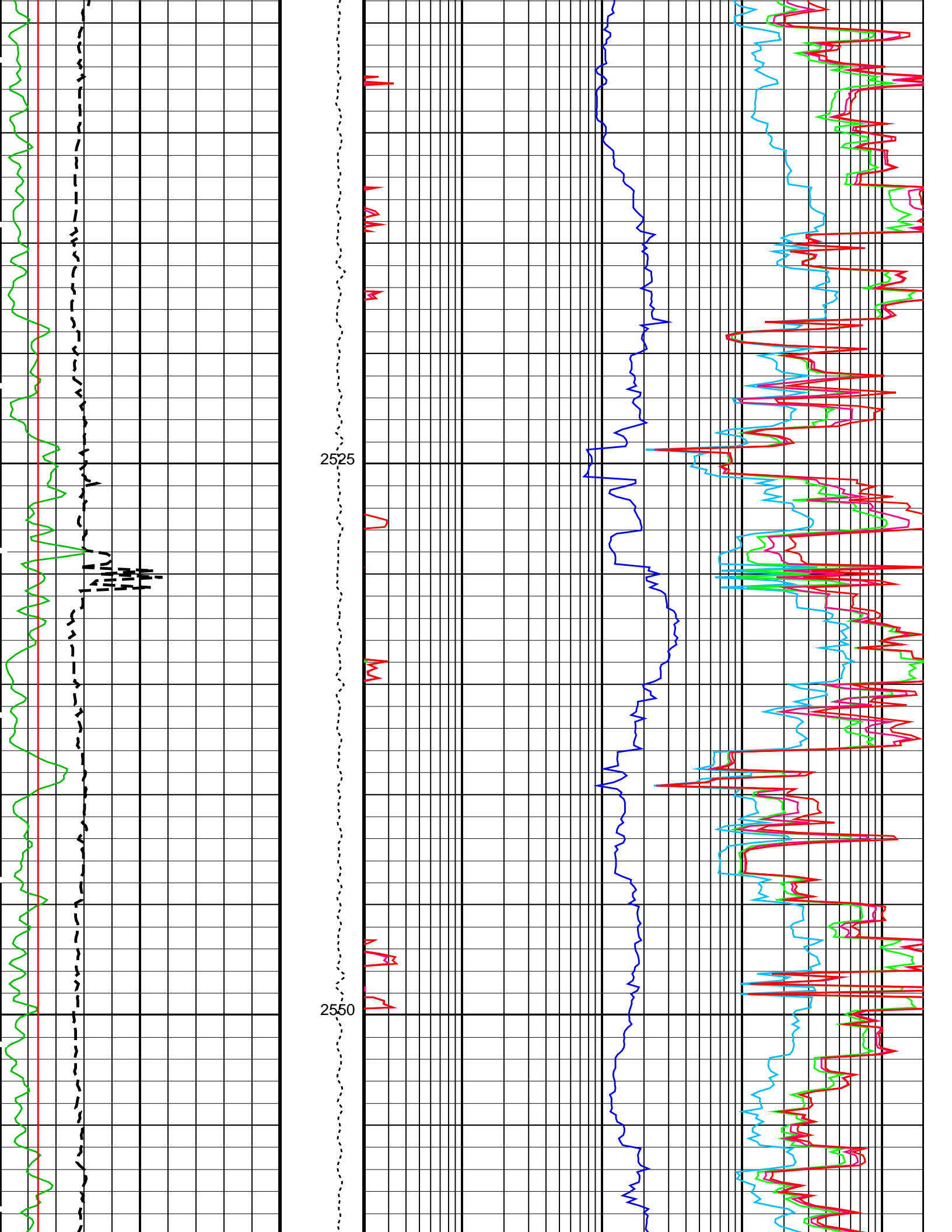
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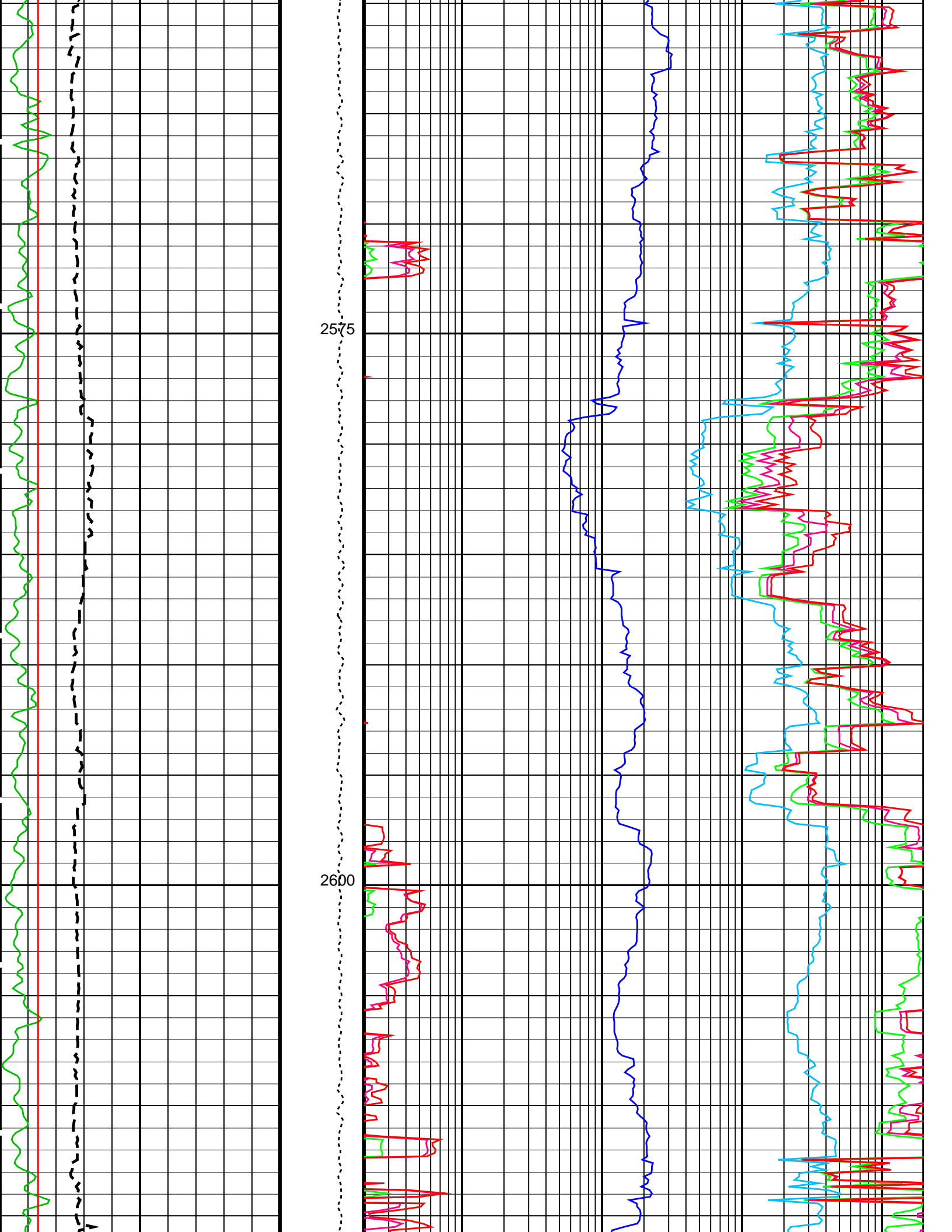
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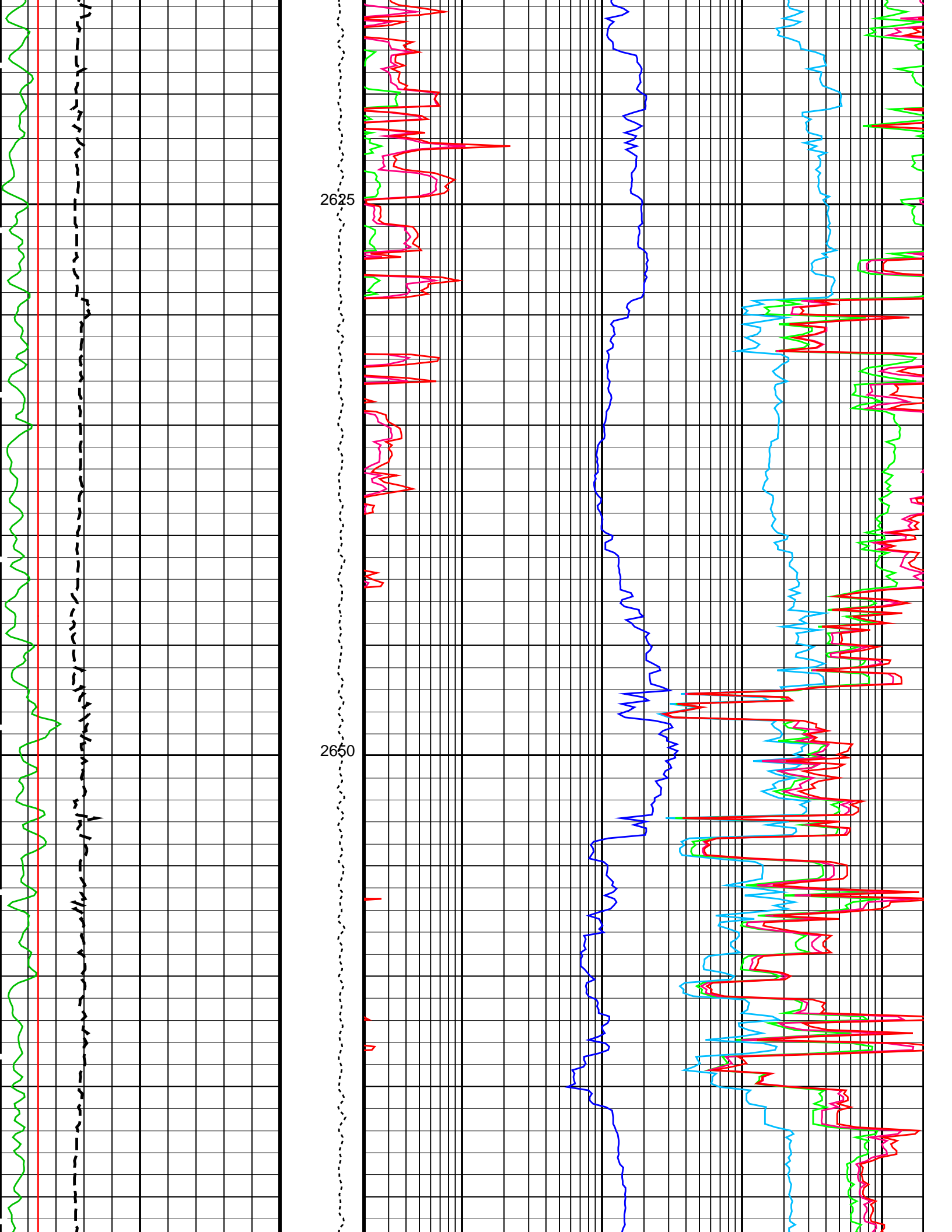




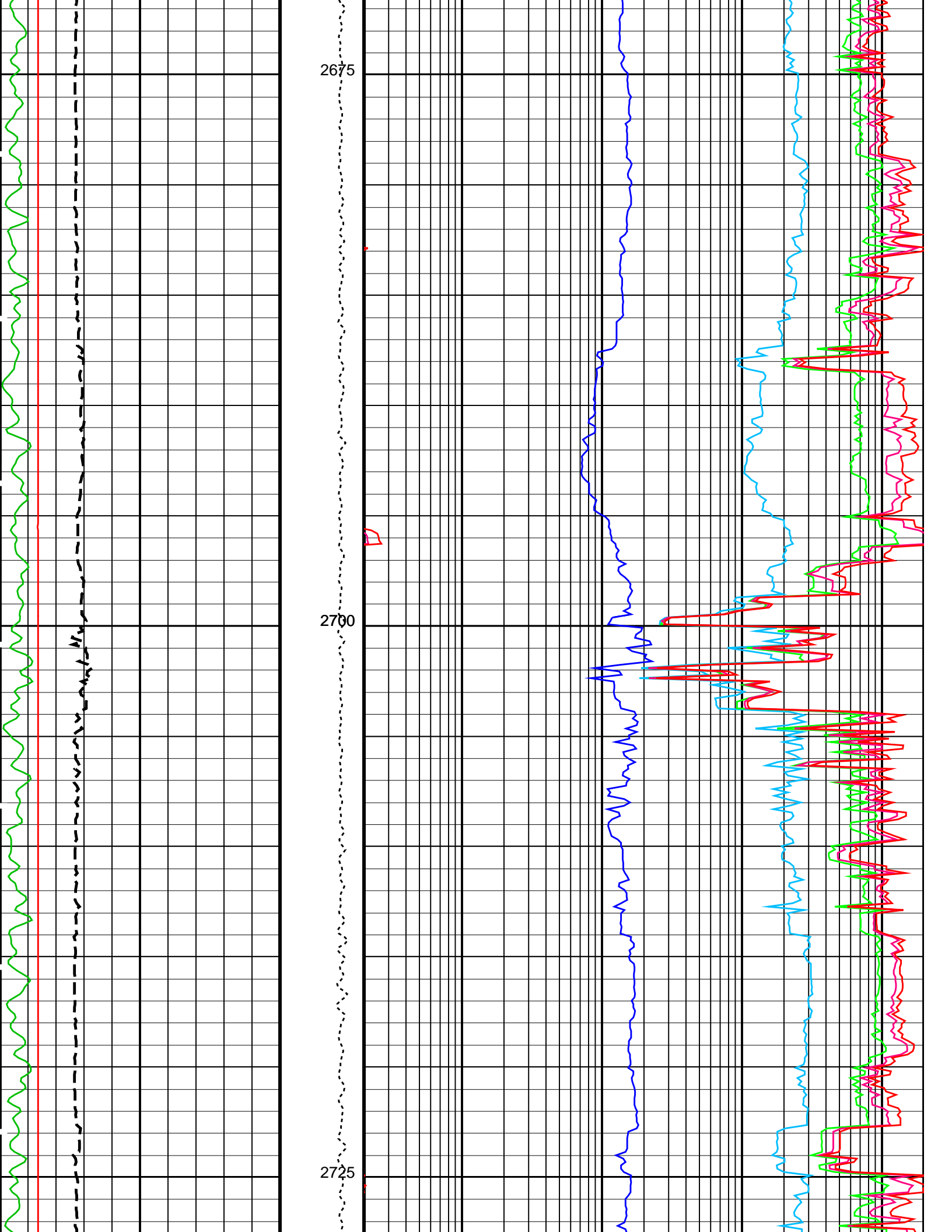


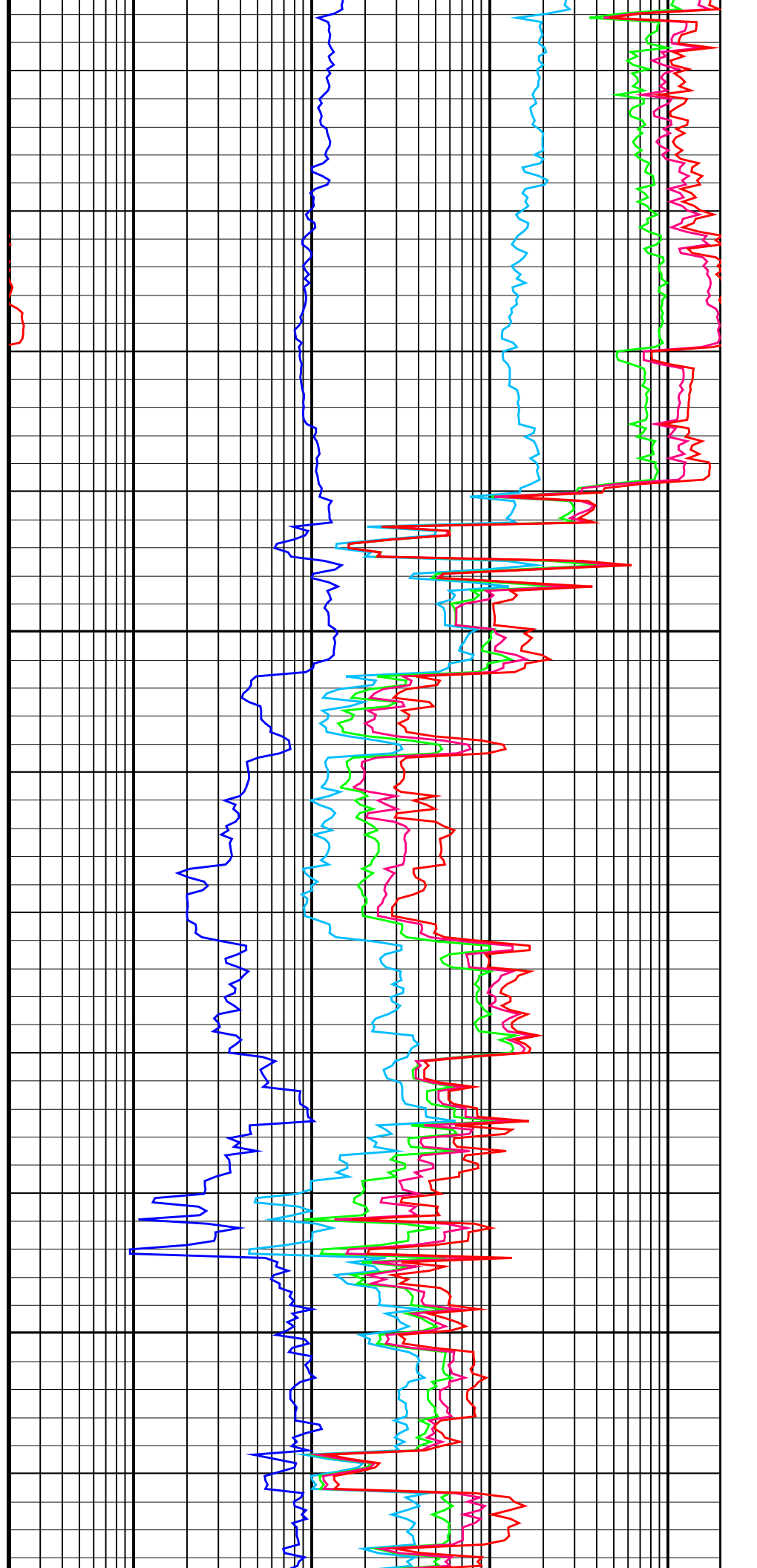
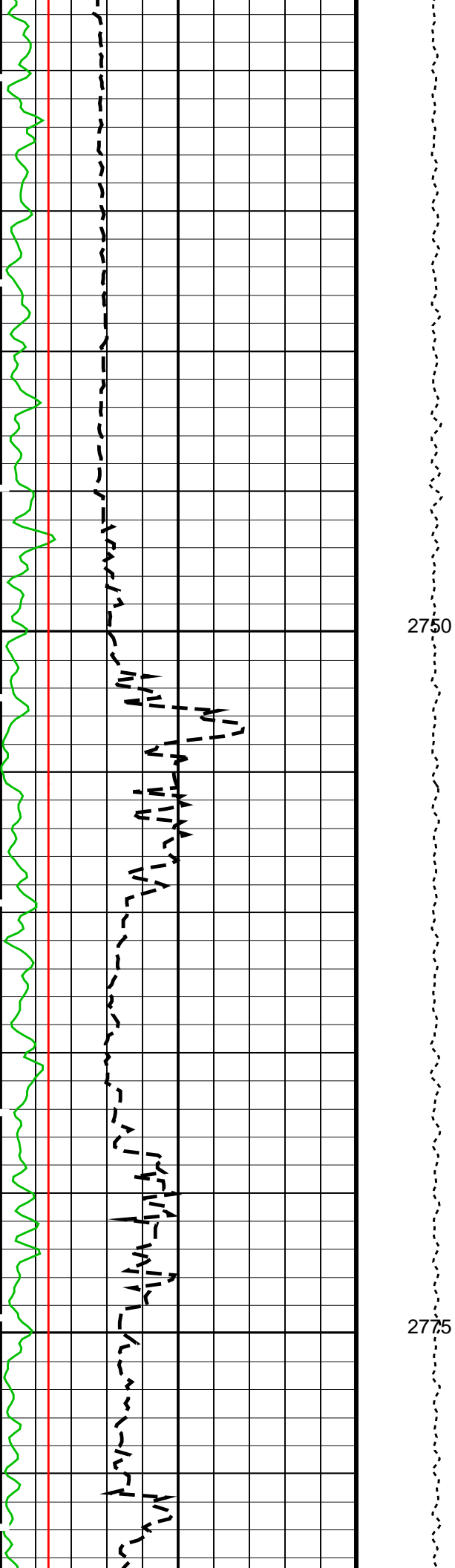


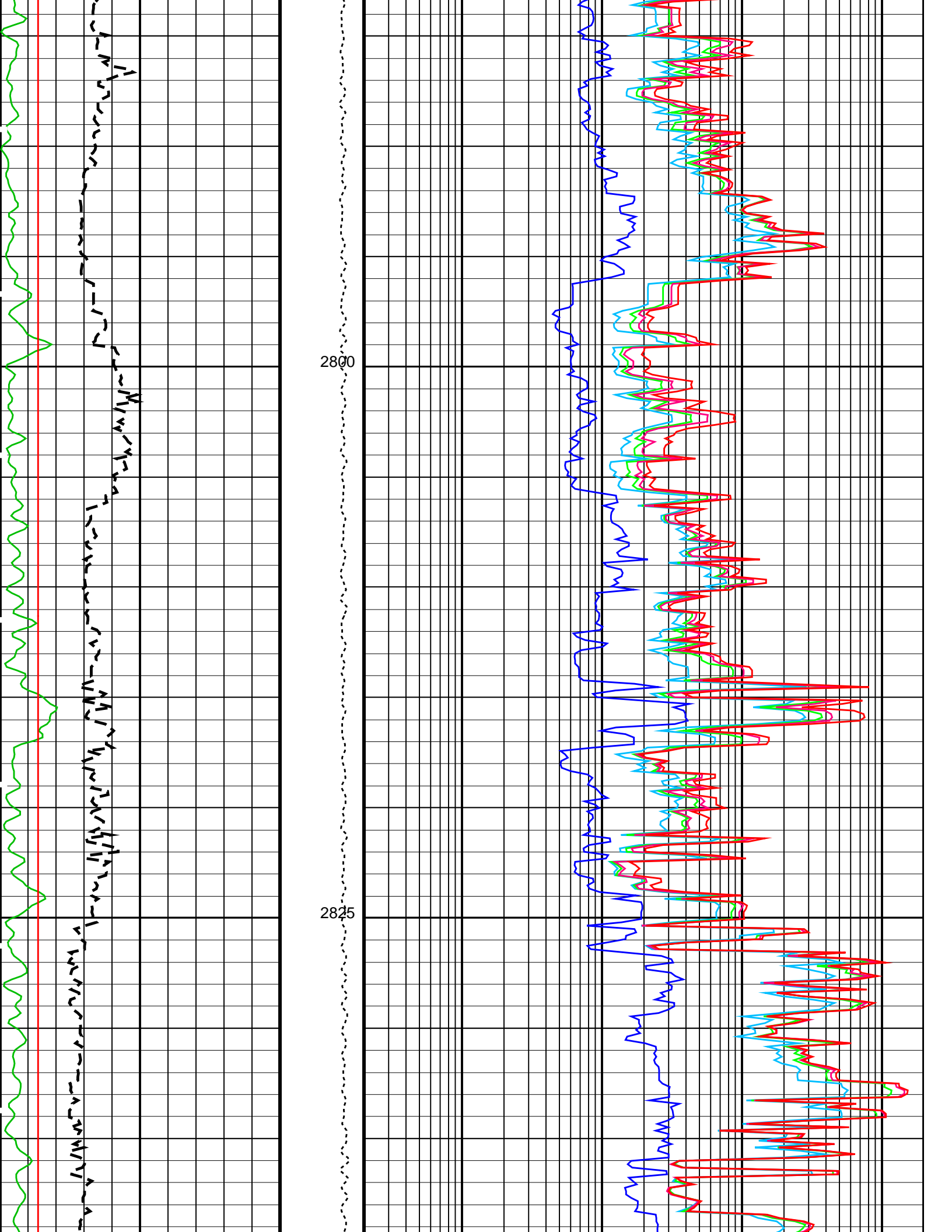


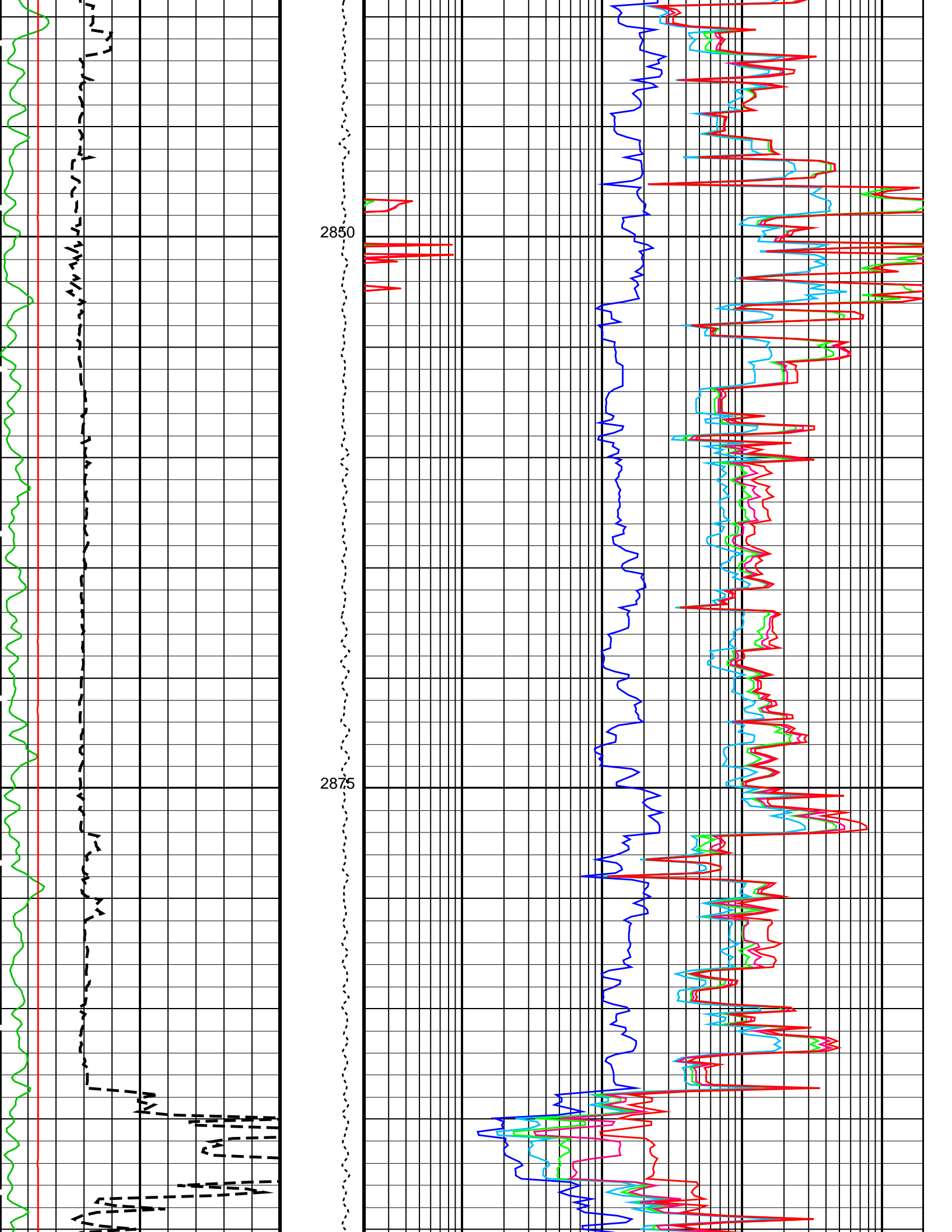


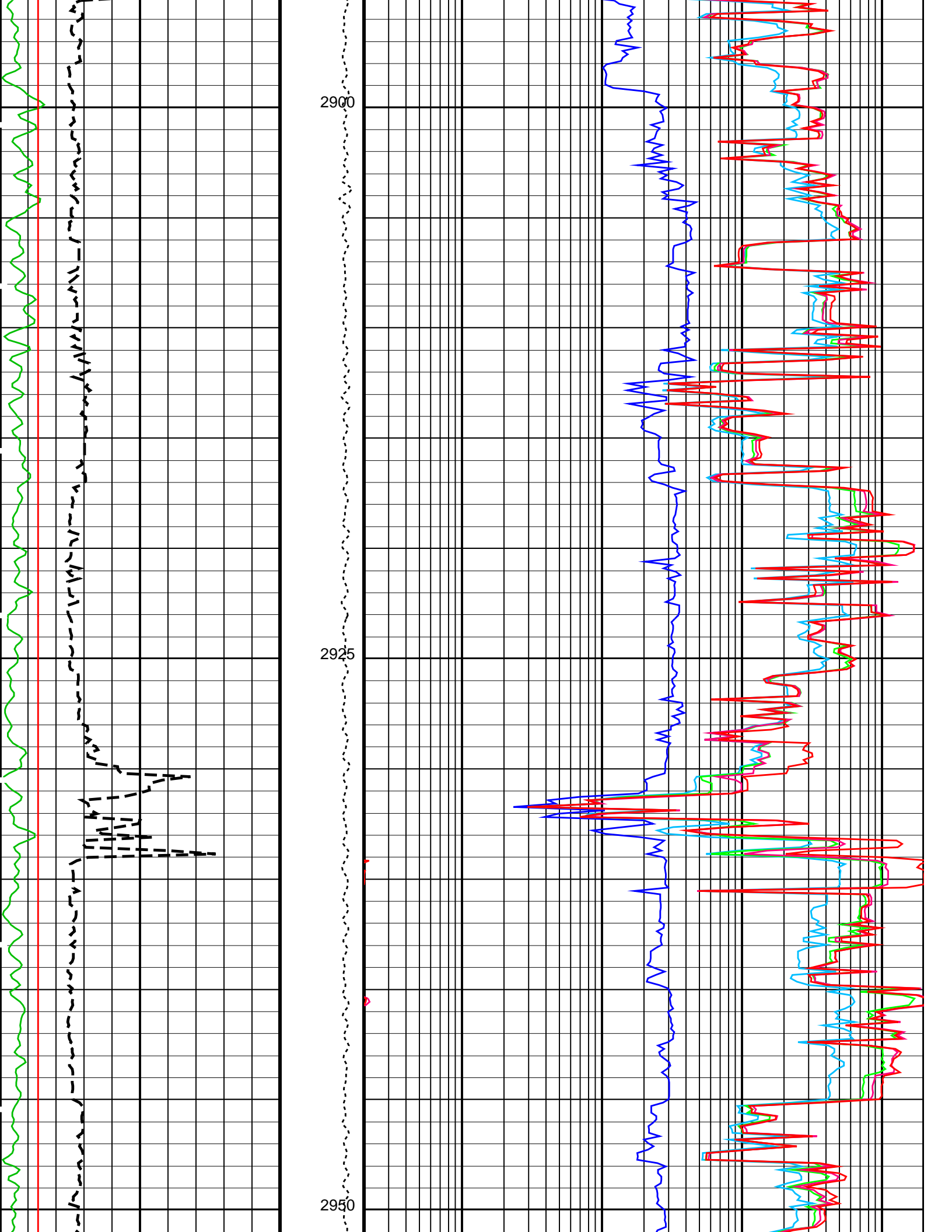


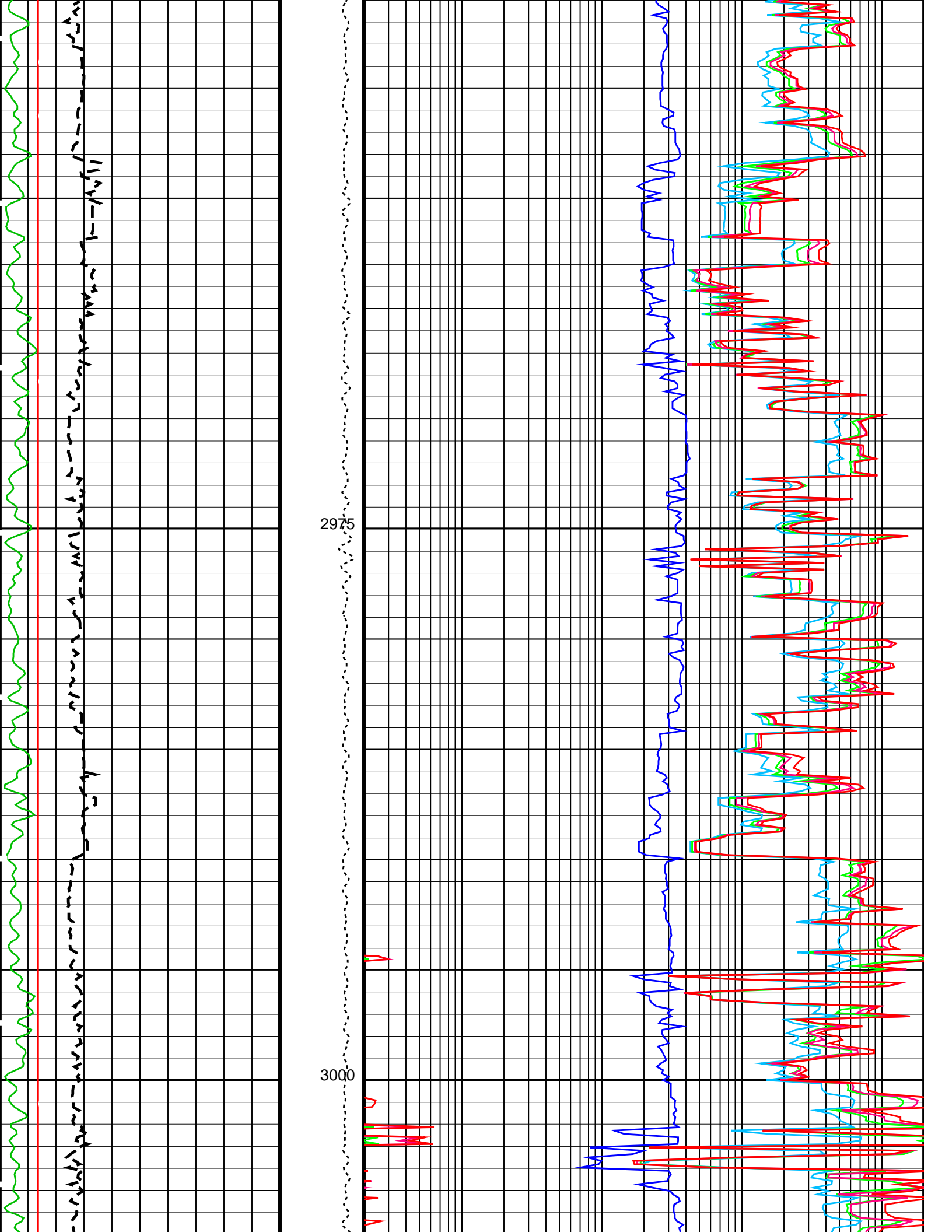


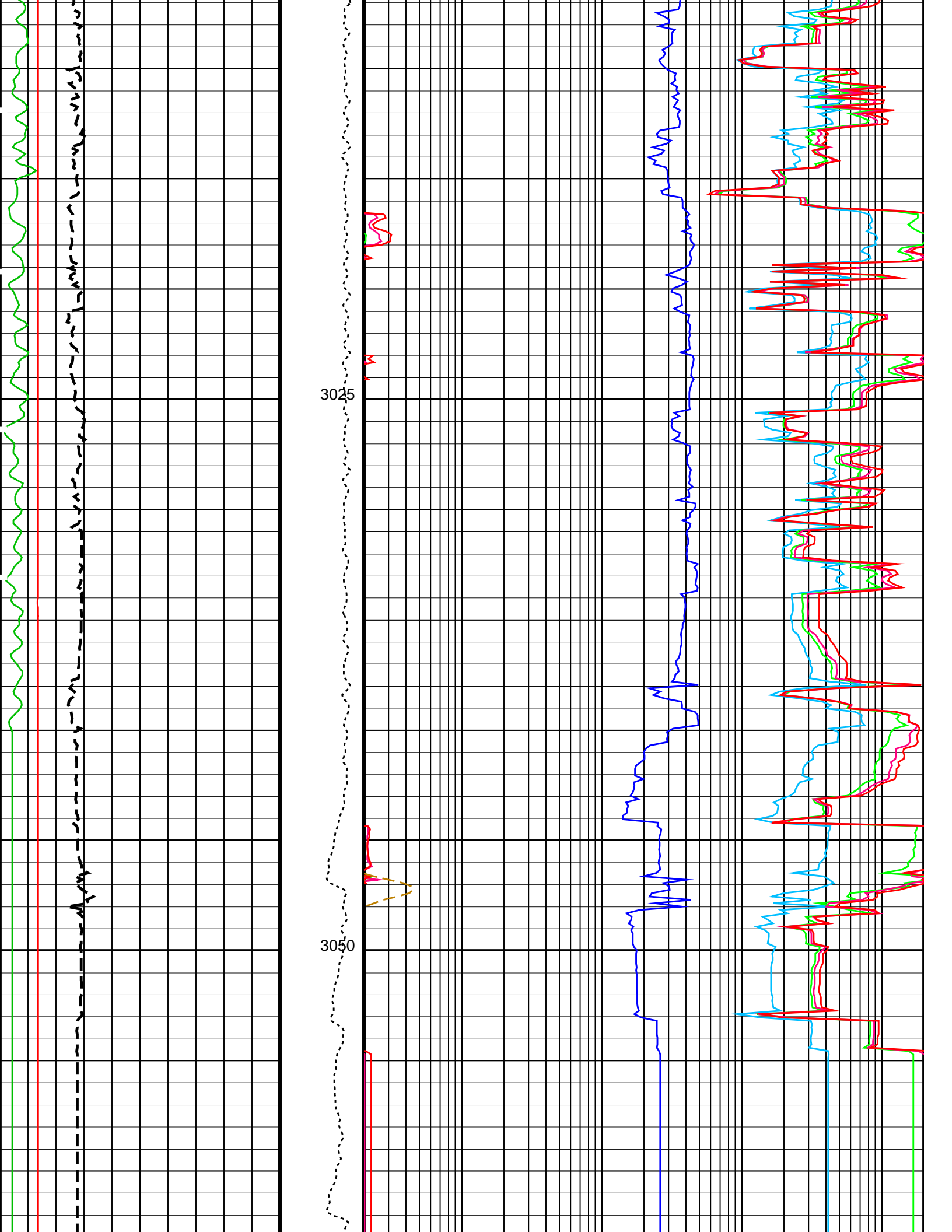












<b>Gamma Ray (GR_EDTC)</b> (GAPI) 0 15	<b>Tension</b> (TENS) (LBF) 0 5000	<b>HRLT Resistivity 1 (RLA1)</b> (OHMM) 0.2 2000
<b>HLDS Caliper (LCAL)</b> (IN) 0 20		<b>HRLT Resistivity 2 (RLA2)</b> (OHMM) 0.2 2000
<b>Invasion Diameter (DI_HRLT)</b> (IN) 0 50		<b>HRLT Resistivity 3 (RLA3)</b> (OHMM) 0.2 2000
		<b>HRLT Resistivity 4 (RLA4)</b> (OHMM) 0.2 2000
		<b>HRLT Resistivity 5 (RLA5)</b> (OHMM) 0.2 2000
		<b>HRLT Mud Resistivity (RM_HRLT)</b> (OHMM) 0.02 200

**PIP SUMMARY**

Time Mark Every 60 S

**Parameters**

DLIS Name	Description	Value	
<b>HRLT-B: High Resolution Laterolog Array - B</b>			
BHT	Bottom Hole Temperature (used in calculations)	140	DEGC
GCSE	Generalized Caliper Selection	LCAL	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
PROCINV	Inversion Selection	ON	
PROCMLF	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMSO	Mechanical Standoff Fin Size	1.5	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Eccentered	
SHT	Surface Hole Temperature	20	DEGC
<b>EDTC-B: Enhanced DTS Cartridge</b>			
BHT	Bottom Hole Temperature (used in calculations)	140	DEGC
GCSE	Generalized Caliper Selection	LCAL	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	20	DEGC
<b>System and Miscellaneous</b>			
BS	Bit Size	11.875	IN
DO	Depth Offset for Playback	4.0	M
MST	Mud Sample Temperature	-50000.00	DEGC
PP	Playback Processing	NORMAL	
TD	Total Depth	-50000	M

Format: HRLT Vertical Scale: 1:200 Graphics File Created: 23-Feb-2012 10:32

**OP System Version: 19C0-187**

MTT_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
EDTC-B	19C0-187		

**Input DLIS Files**

DEFAULT	Flip_MTT_LDEO_HRLA_024LUP	PRODUCER	23-Feb-2012 10:31	3059.7 M	1674.9 M
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**Output DLIS Files**

DEFAULT	MTT_LDEO_HRLA_LDL_025PUP	FN:13	PRODUCER	23-Feb-2012 10:32
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Company: Lamont Doherty Well: Expedition 340T, Site U1309D

**Input DLIS Files**

DEFAULT MTT\_LDEO\_HRLA\_LDL\_018LUP FN:7 PRODUCER 22-Feb-2012 00:04 3059.4 M 2900.9 M

**Output DLIS Files**

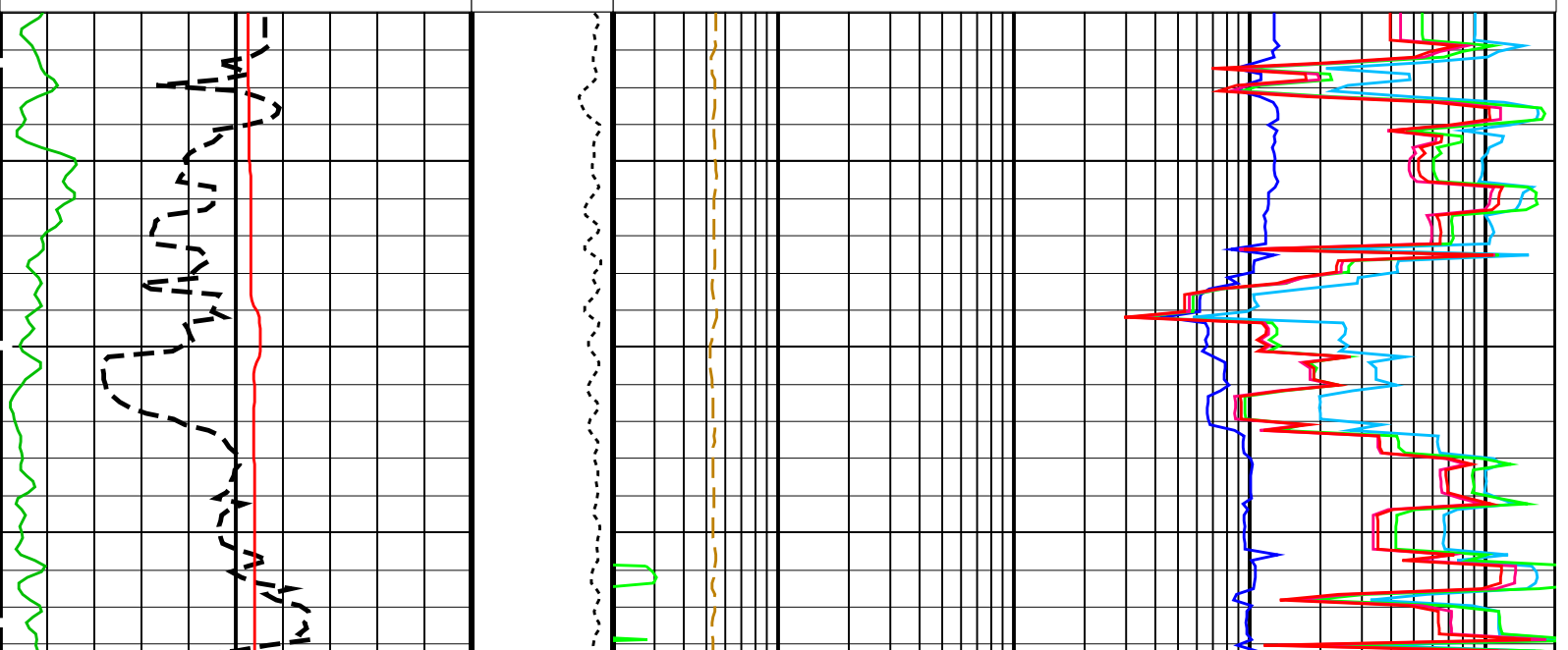
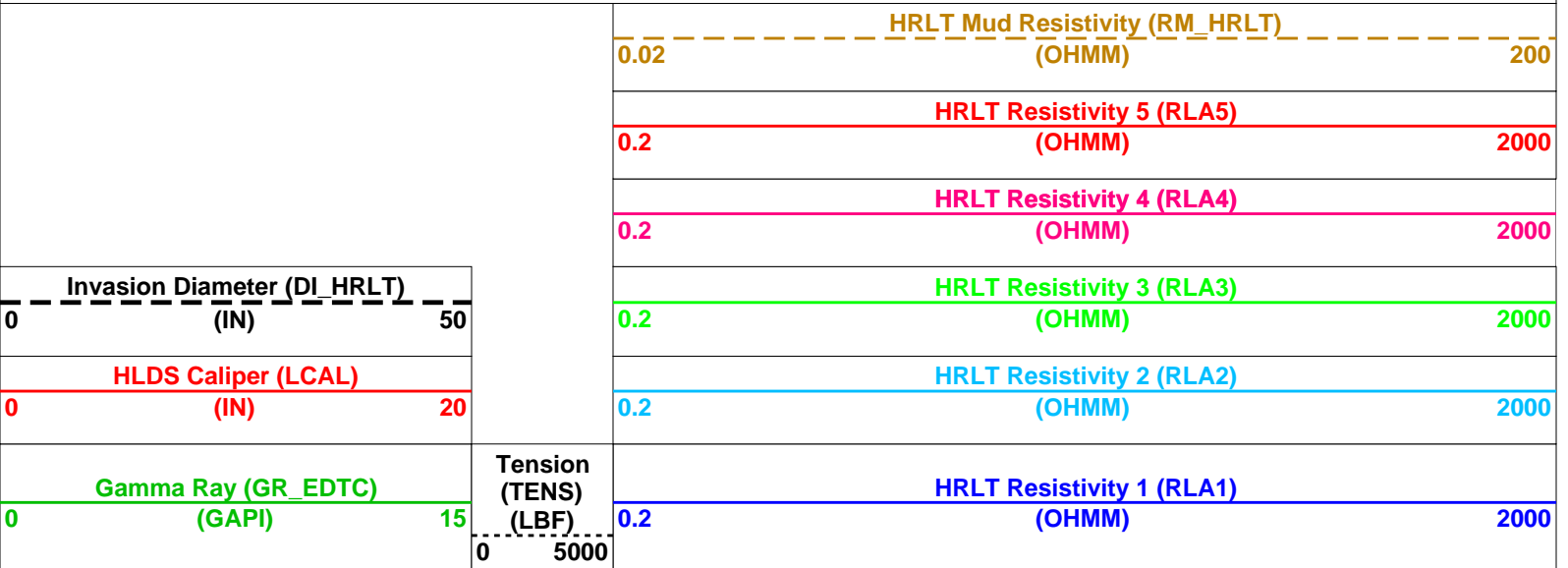
DEFAULT MTT\_LDEO\_HRLA\_LDL\_023PUP FN:12 PRODUCER 23-Feb-2012 10:25 3064.8 M 2906.0 M

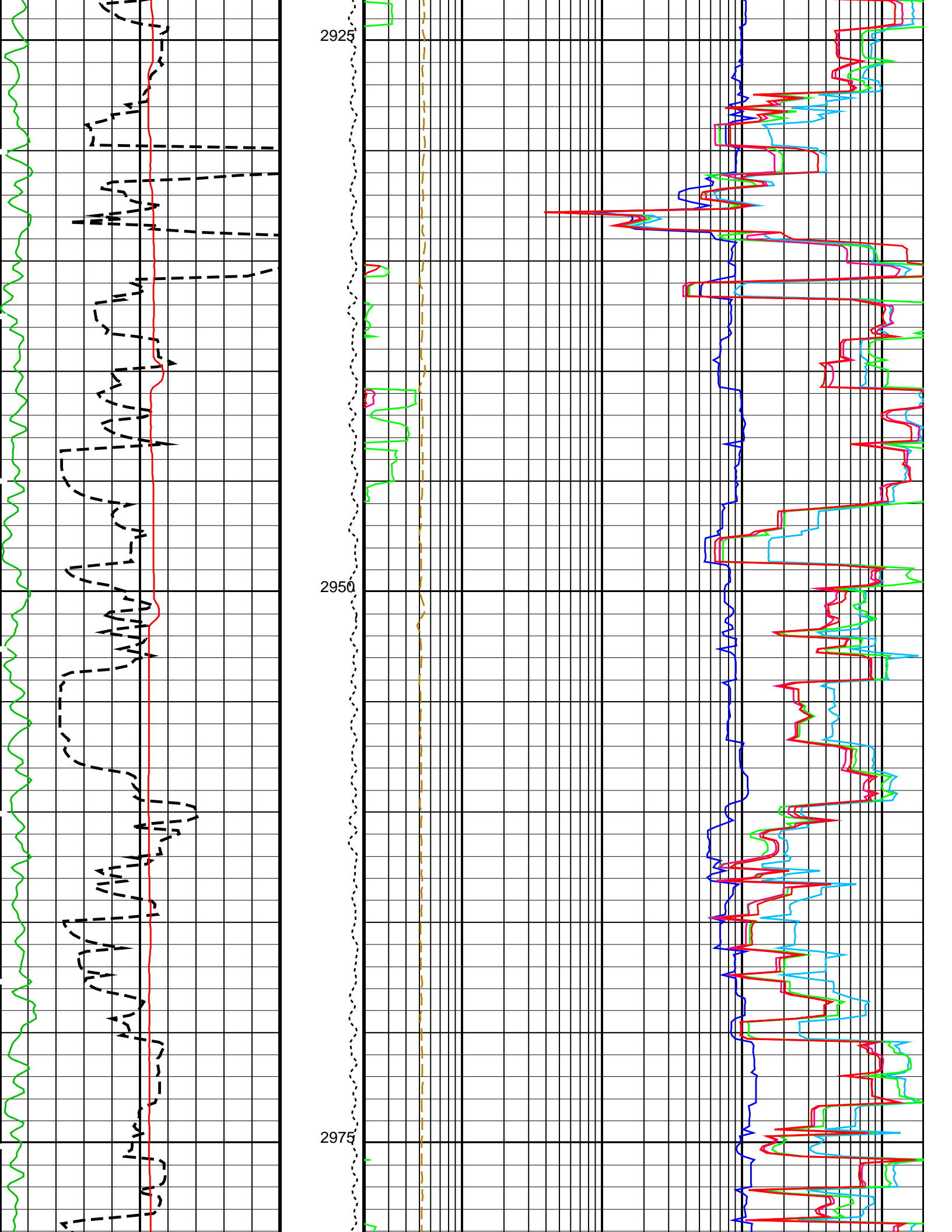
**OP System Version: 19C0-187**

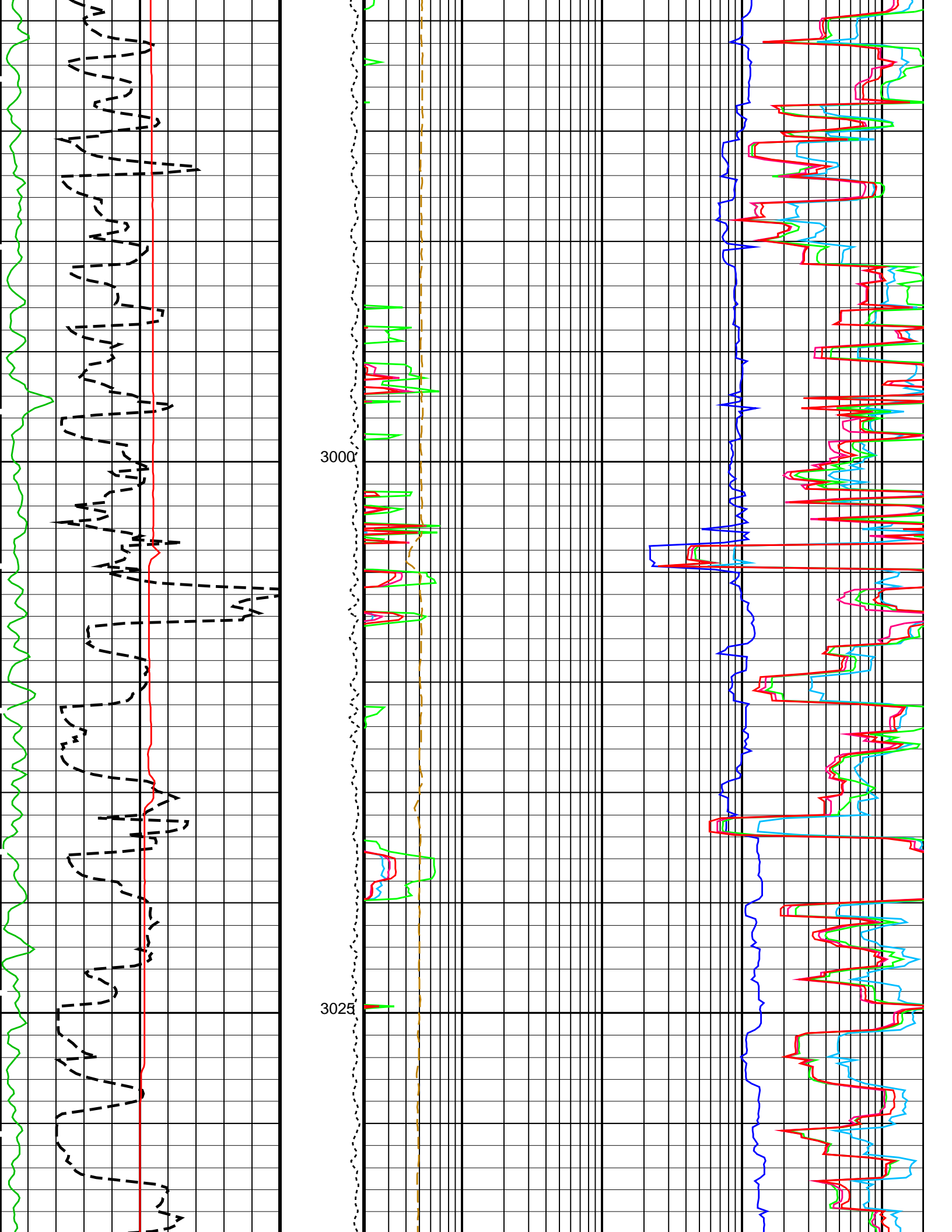
MTT_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
EDTC-B	19C0-187		

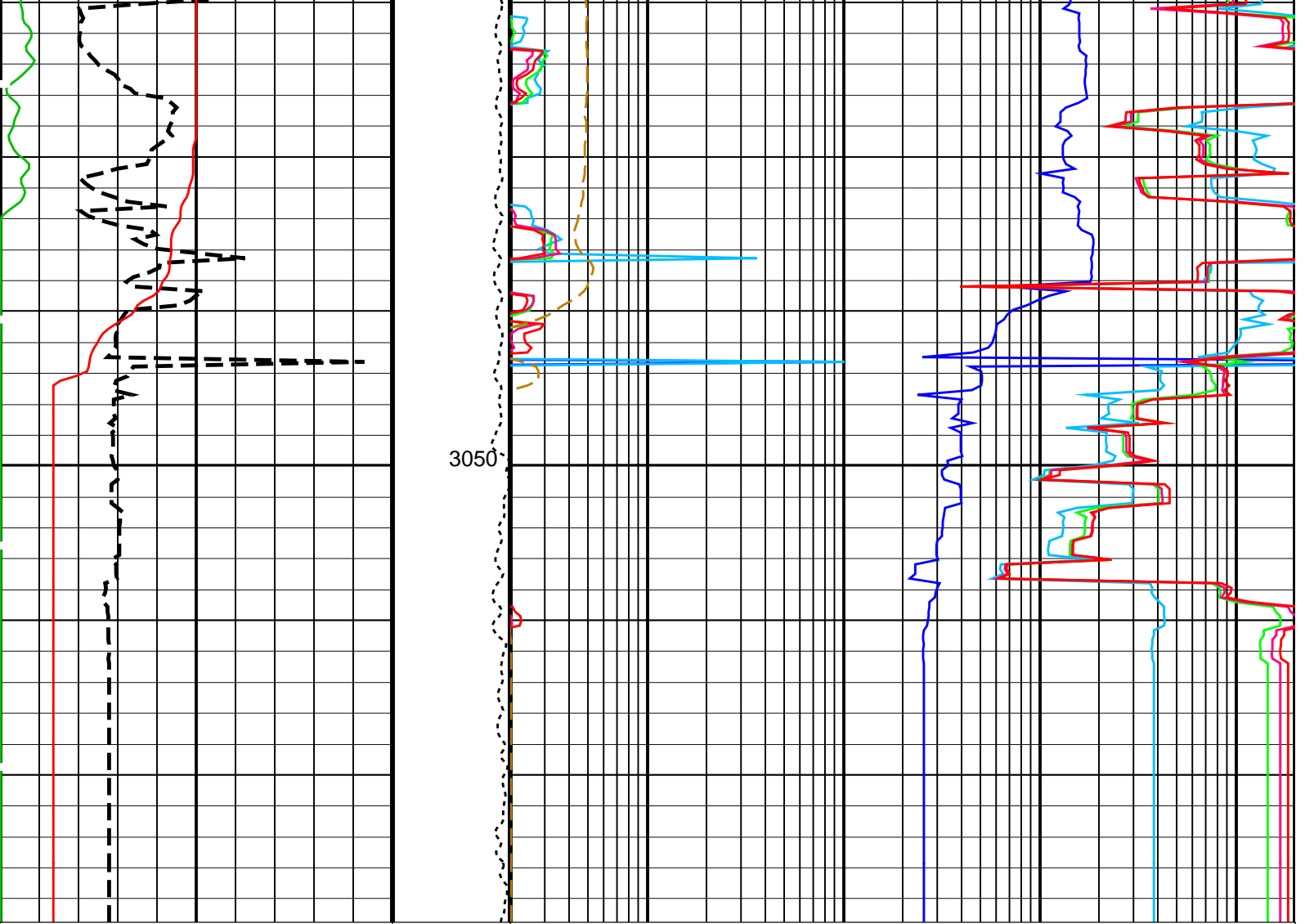
**PIP SUMMARY**

Time Mark Every 60 S









Gamma Ray (GR_EDTC) (GAPI)	0	15	Tension (TENS) (LBF)	0.2	5000	HRLT Resistivity 1 (RLA1) (OHMM)	0.2	2000
HLDS Caliper (LCAL) (IN)	0	20				HRLT Resistivity 2 (RLA2) (OHMM)	0.2	2000
Invasion Diameter (DI_HRLT) (IN)	0	50				HRLT Resistivity 3 (RLA3) (OHMM)	0.2	2000
						HRLT Resistivity 4 (RLA4) (OHMM)	0.2	2000
						HRLT Resistivity 5 (RLA5) (OHMM)	0.2	2000
						HRLT Mud Resistivity (RM_HRLT) (OHMM)	0.02	200

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
HRLT-B: High Resolution Laterolog Array - B			
BHT	Bottom Hole Temperature (used in calculations)	140	DEGC
GCSE	Generalized Caliper Selection	LCAL	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
KFAC_HRLT	HRLT K Factor Option	SONDE	

PROCVN	Inversion Selection	NO_EXTERNAL_RXO	ON
PROCMFL	Inversion Micro-Resistivity Selection		
PROCMSO	Mechanical Standoff Fin Size	1.5	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Eccentered	
SHT	Surface Hole Temperature	20	DEGC
	EDTC-B: Enhanced DTS Cartridge		
BHT	Bottom Hole Temperature (used in calculations)	140	DEGC
GCSE	Generalized Caliper Selection	LCAL	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	20	DEGC
	System and Miscellaneous		
BS	Bit Size	11.875	IN
DO	Depth Offset for Playback	5.4	M
MST	Mud Sample Temperature	-50000.00	DEGC
PP	Playback Processing	NORMAL	
TD	Total Depth	-50000	M

Format: HRLT Vertical Scale: 1:200 Graphics File Created: 23-Feb-2012 10:25

### OP System Version: 19C0-187

MTT_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
EDTC-B	19C0-187		

### Input DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_018LUP	FN:7	PRODUCER	22-Feb-2012 00:04	3059.4 M	2900.9 M
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### Output DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_023PUP	FN:12	PRODUCER	23-Feb-2012 10:25
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## Main Pass

MAXIS Field Log

Company: Lamont Doherty Well: Expedition 340T, Site U1309D

### Input DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_019LUP	FN:8	PRODUCER	22-Feb-2012 00:42	3044.2 M	1707.2 M
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### Output DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_022PUP	FN:11	PRODUCER	23-Feb-2012 10:18	3049.5 M	1712.8 M
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### OP System Version: 19C0-187

MTT_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
EDTC-B	19C0-187		

### PIP SUMMARY

Time Mark Every 60 S

0.02 ----- HRLT Mud Resistivity (RM\_HRLT) ----- 200  
(OHMM)

0.2 ----- HRLT Resistivity 5 (RLA5) ----- 2000  
(OHMM)

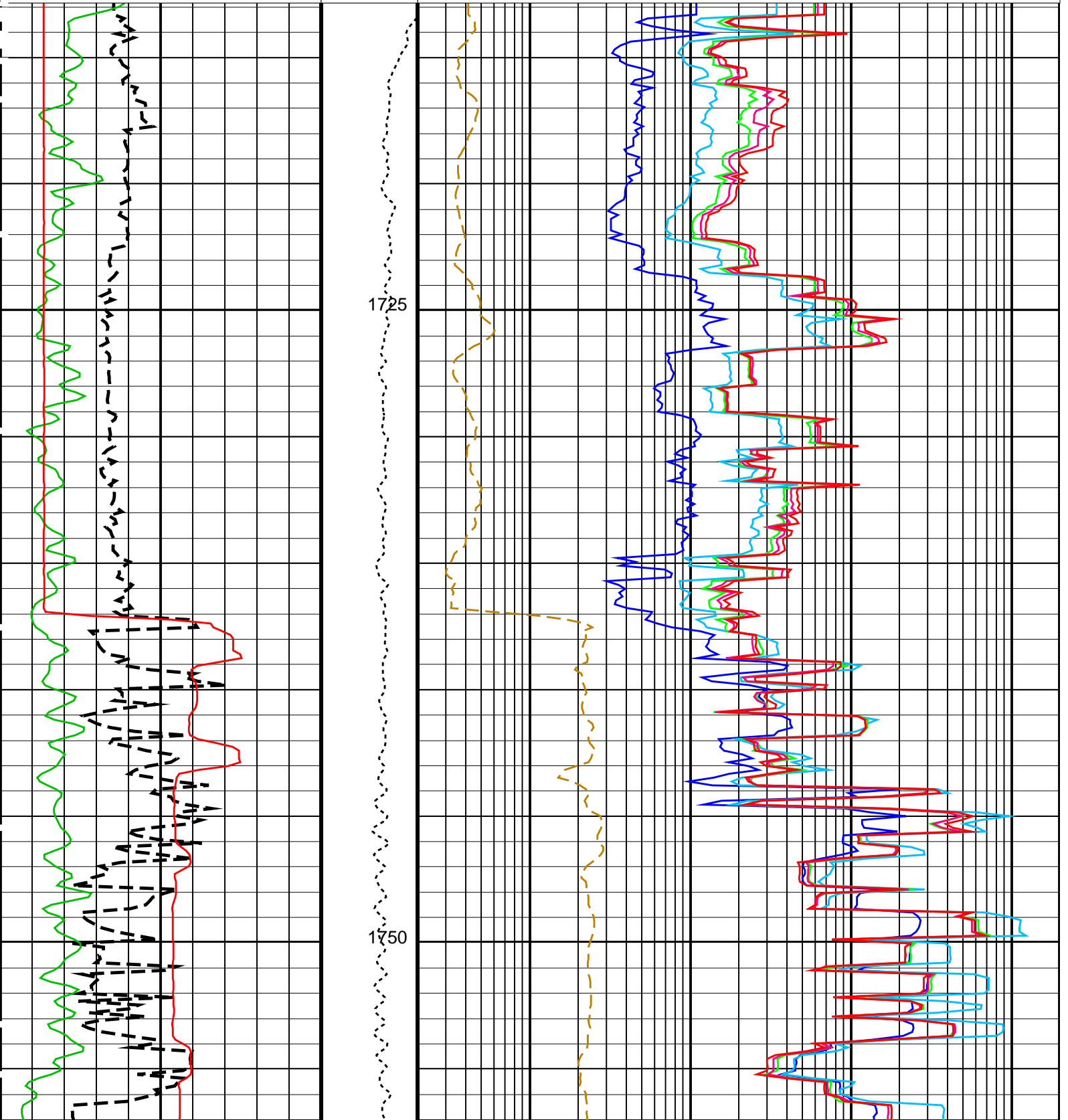
Invasion Diameter (DI\_HRLT)  
(IN) 0 50

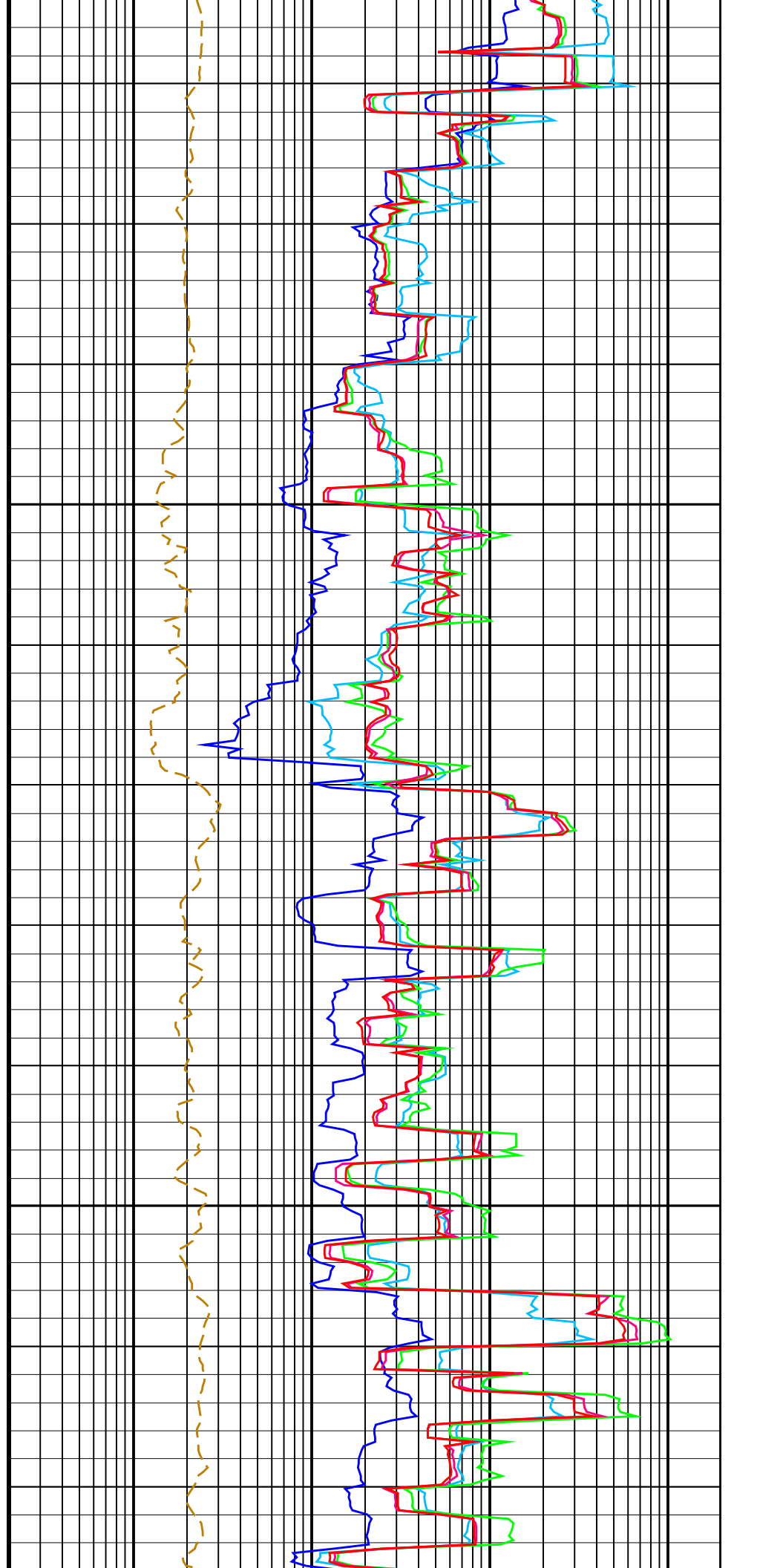
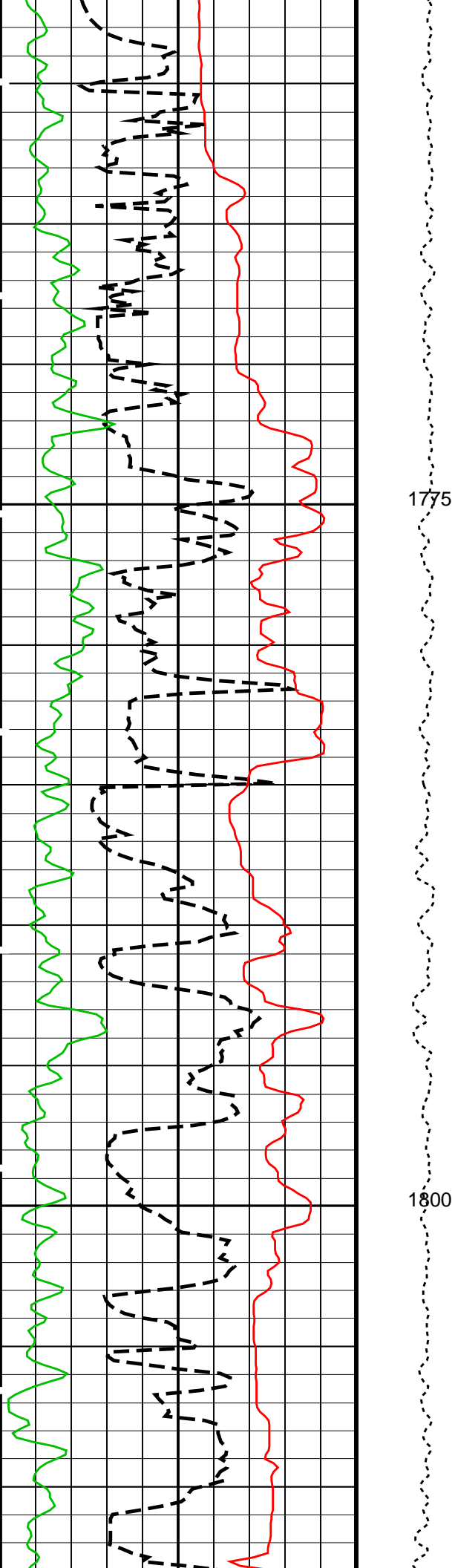
HLDS Caliper (LCAL)  
(IN) 0 20

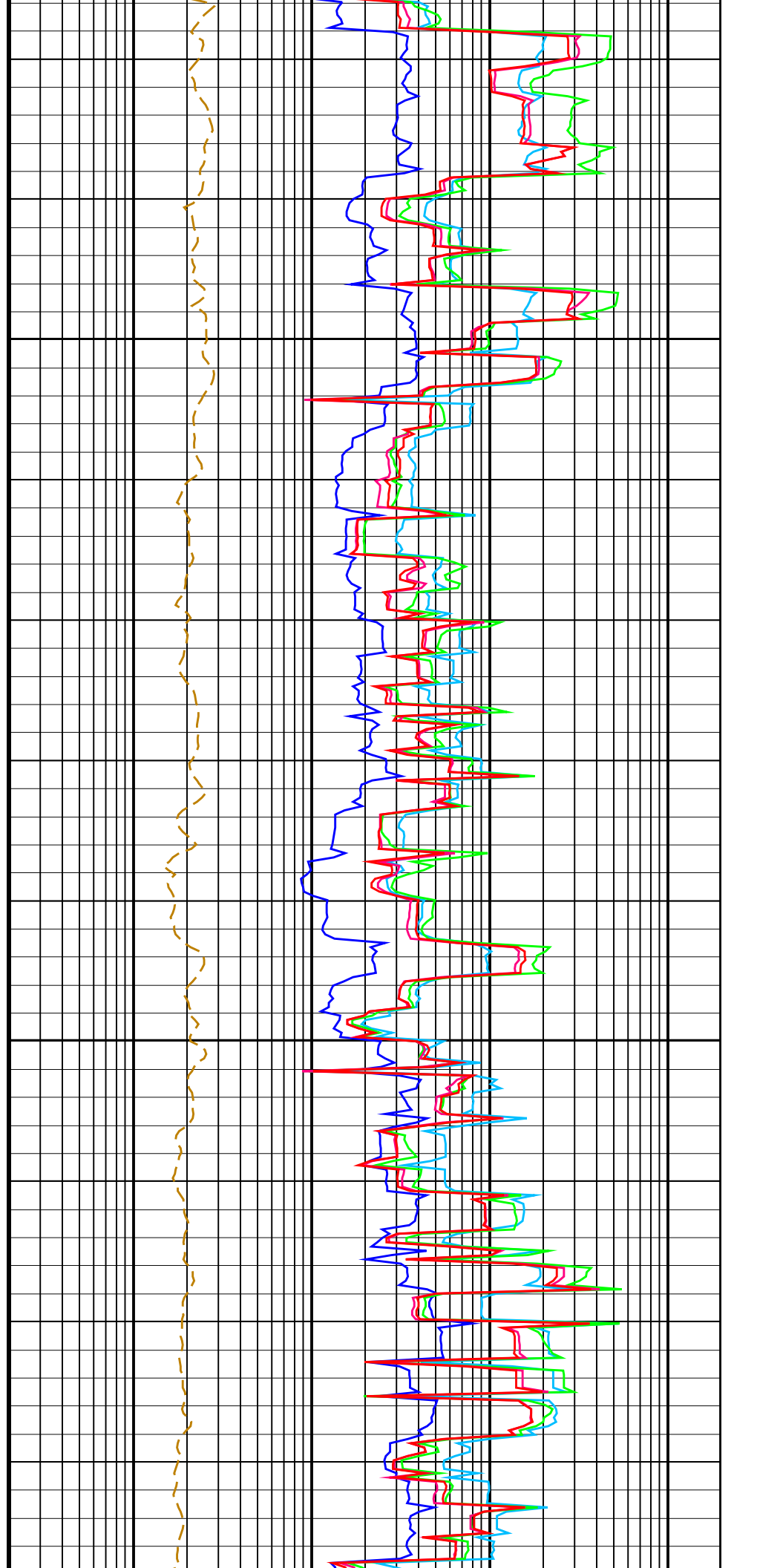
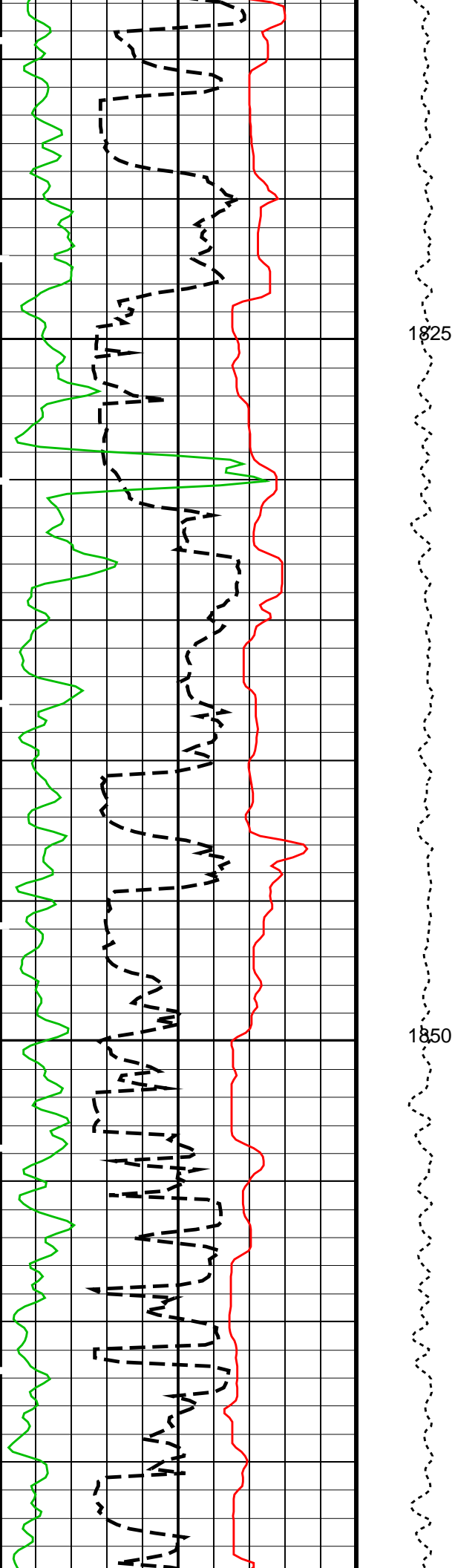
Gamma Ray (GR\_EDTC)  
(GAPI) 0 15

Tension  
(TENS)  
(LBF) 0 5000

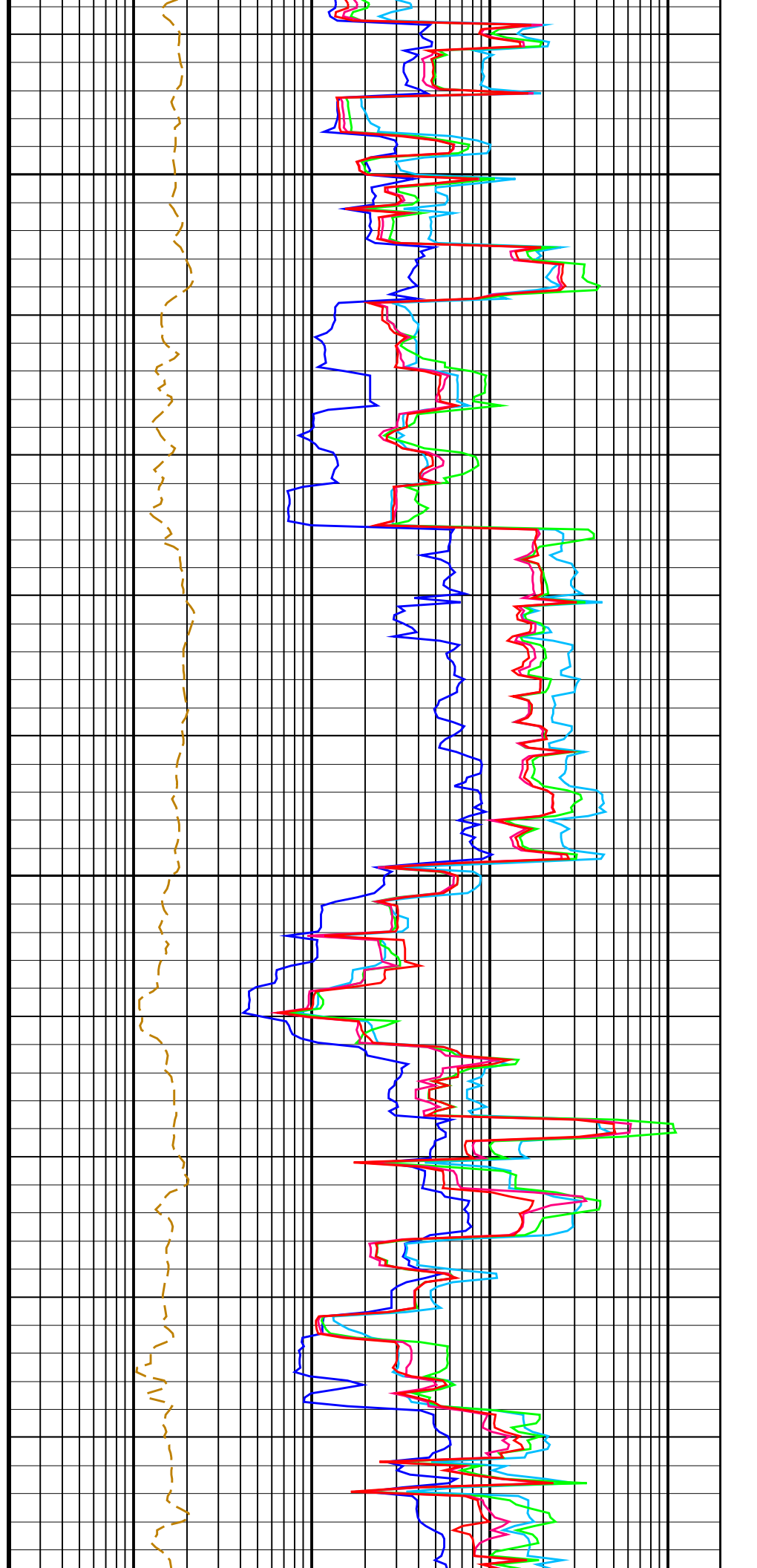
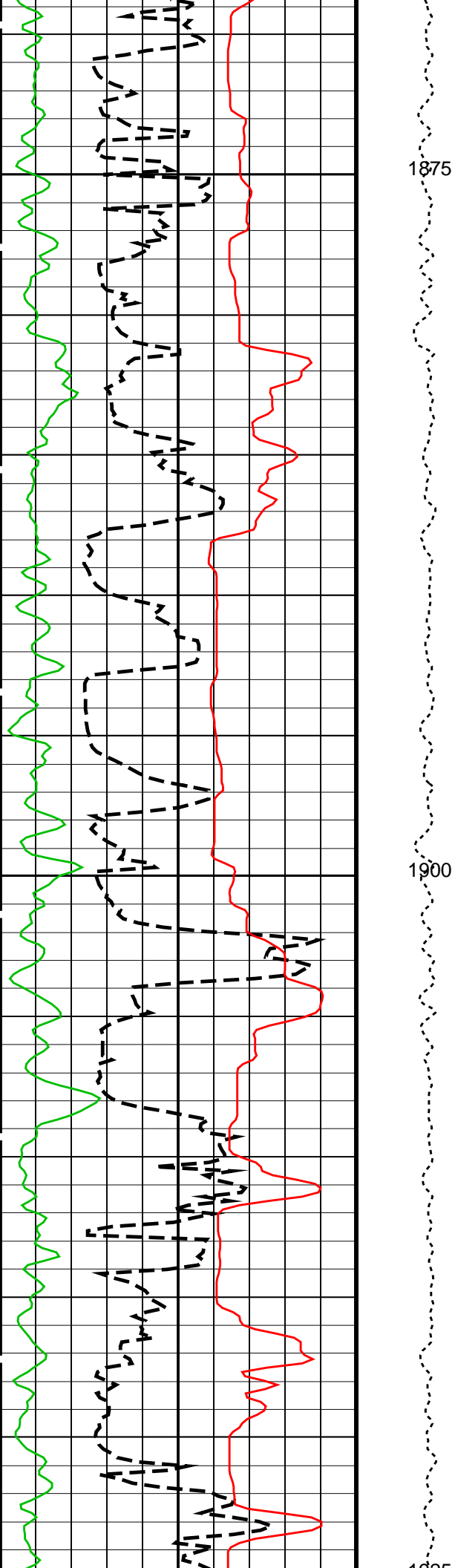
0.2 (OHMM) 2000  
HRLT Resistivity 4 (RLA4)  
0.2 (OHMM) 2000  
HRLT Resistivity 3 (RLA3)  
0.2 (OHMM) 2000  
HRLT Resistivity 2 (RLA2)  
0.2 (OHMM) 2000  
HRLT Resistivity 1 (RLA1)  
0.2 (OHMM) 2000

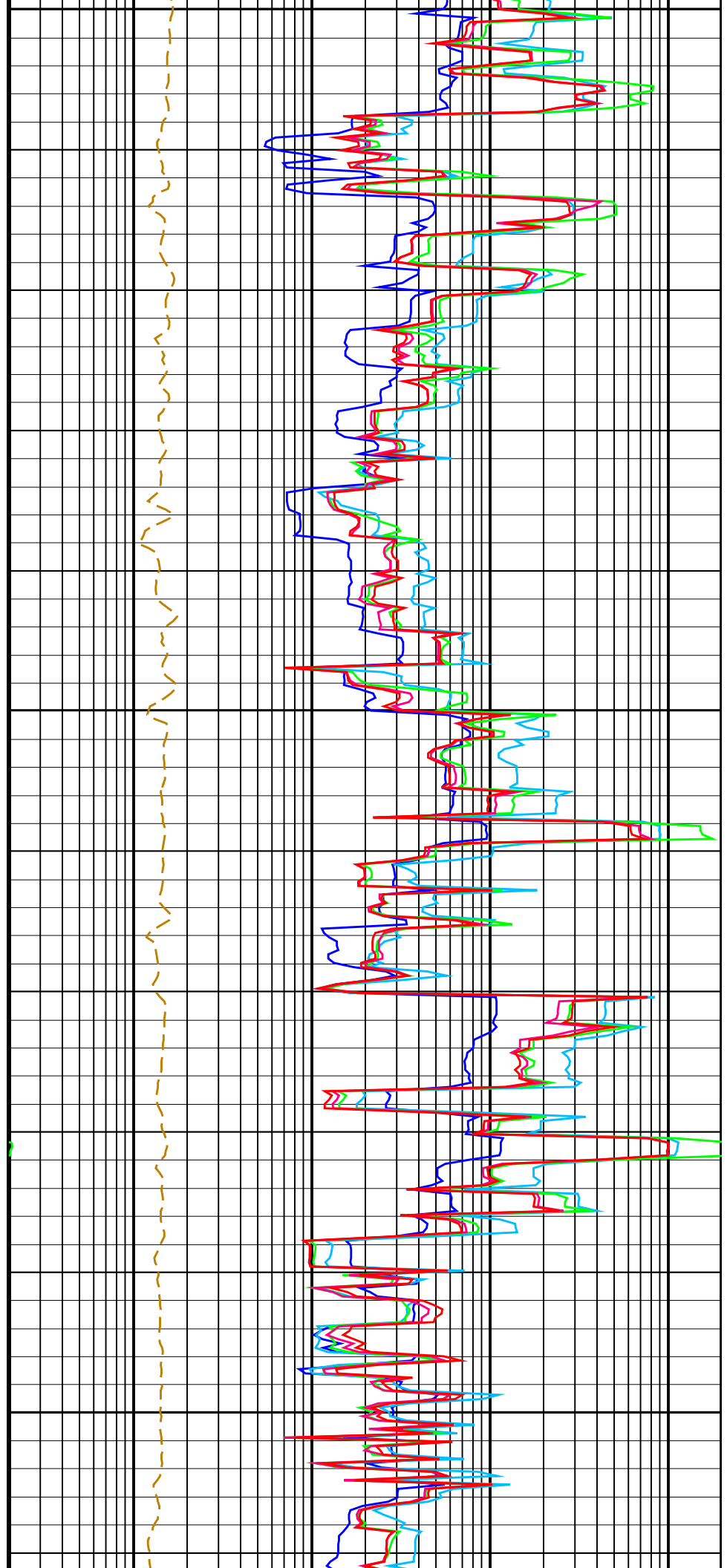
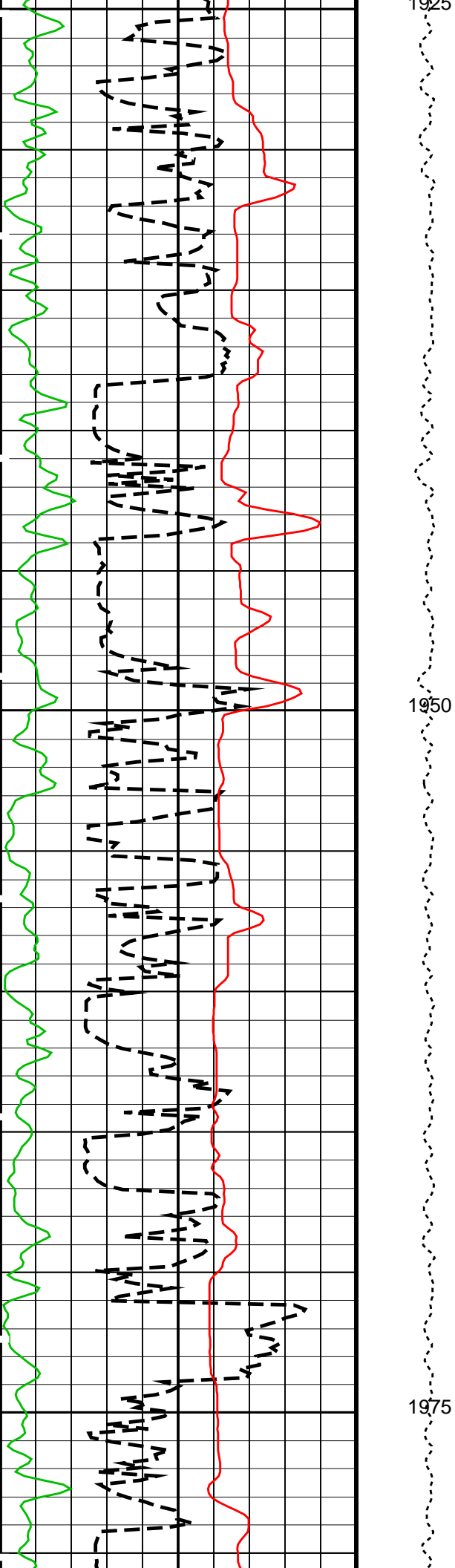


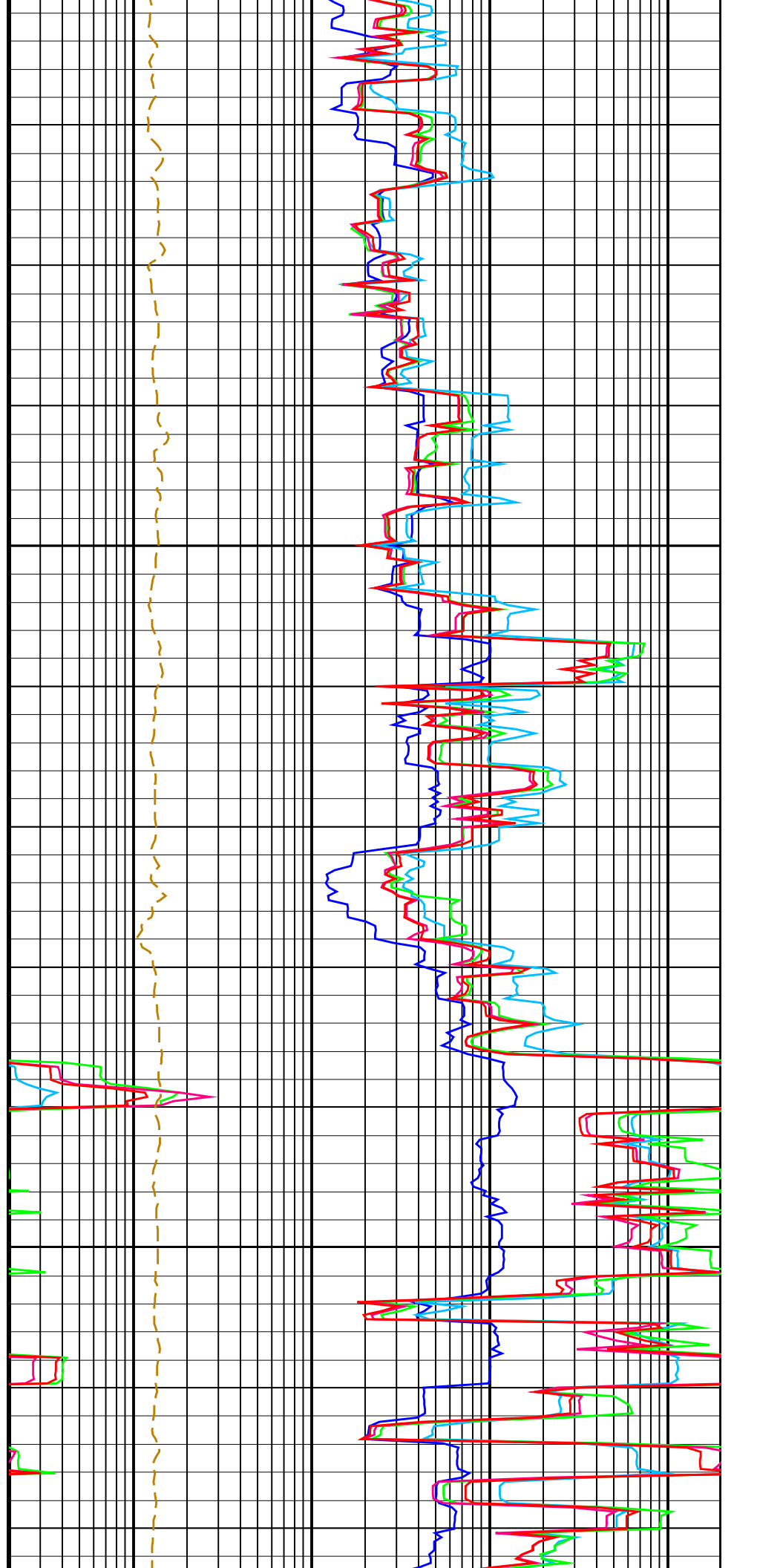
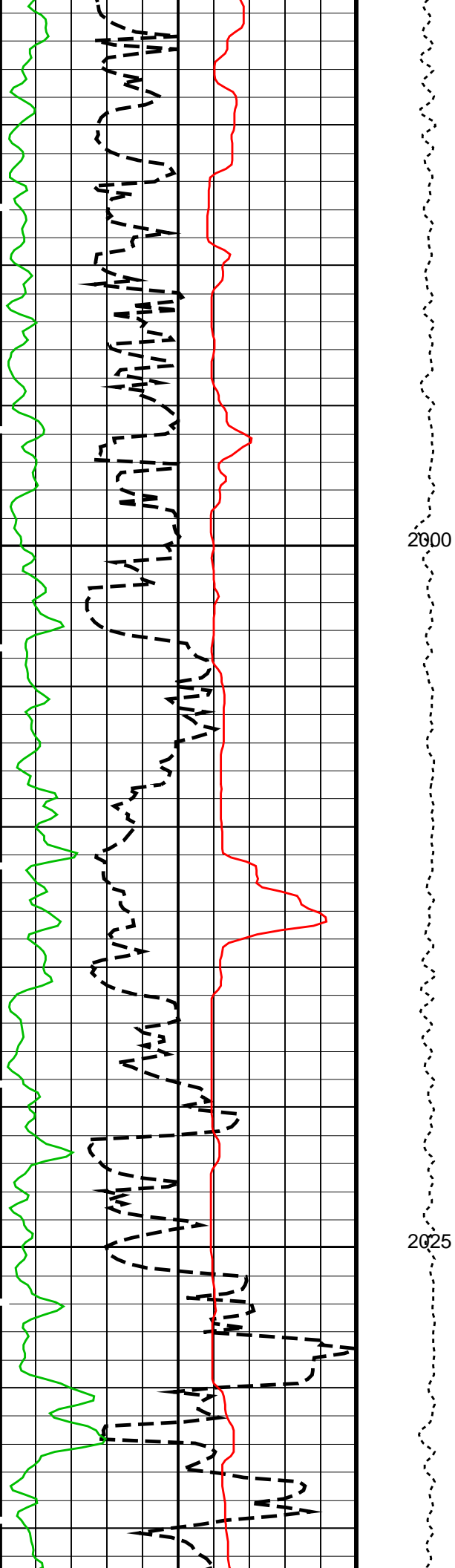


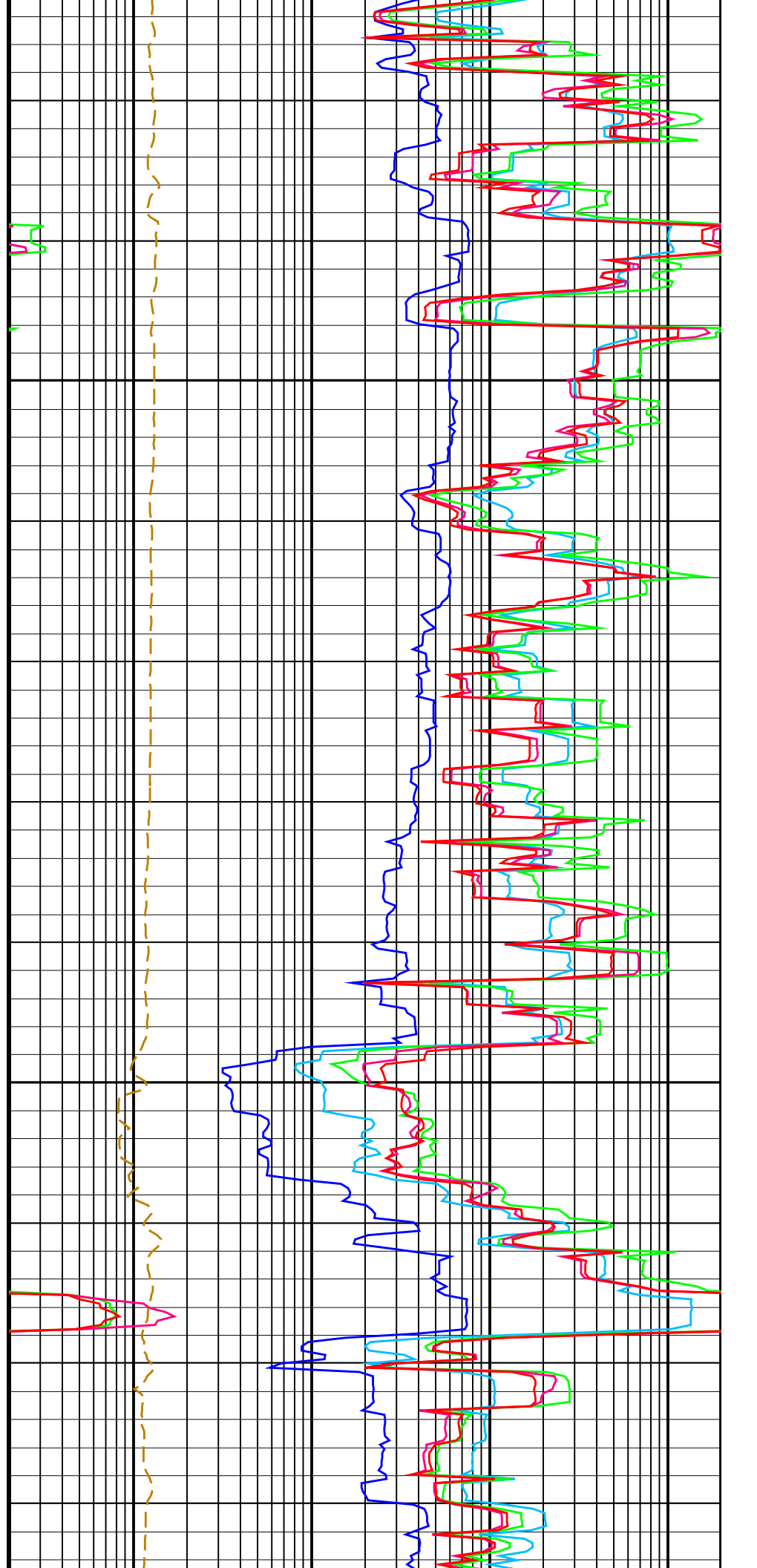
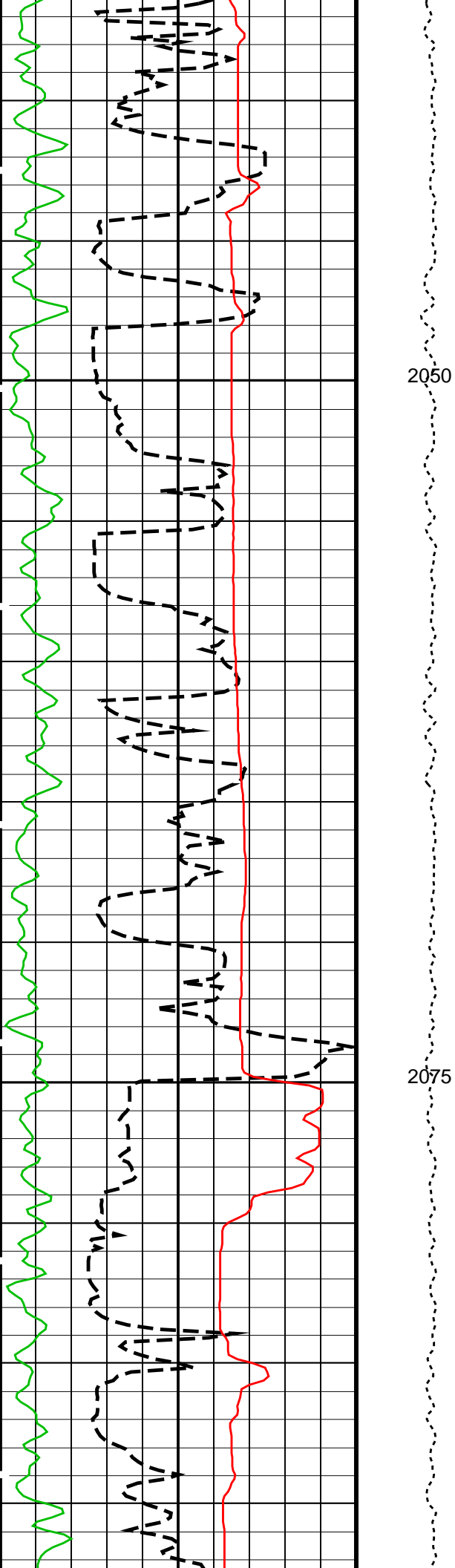


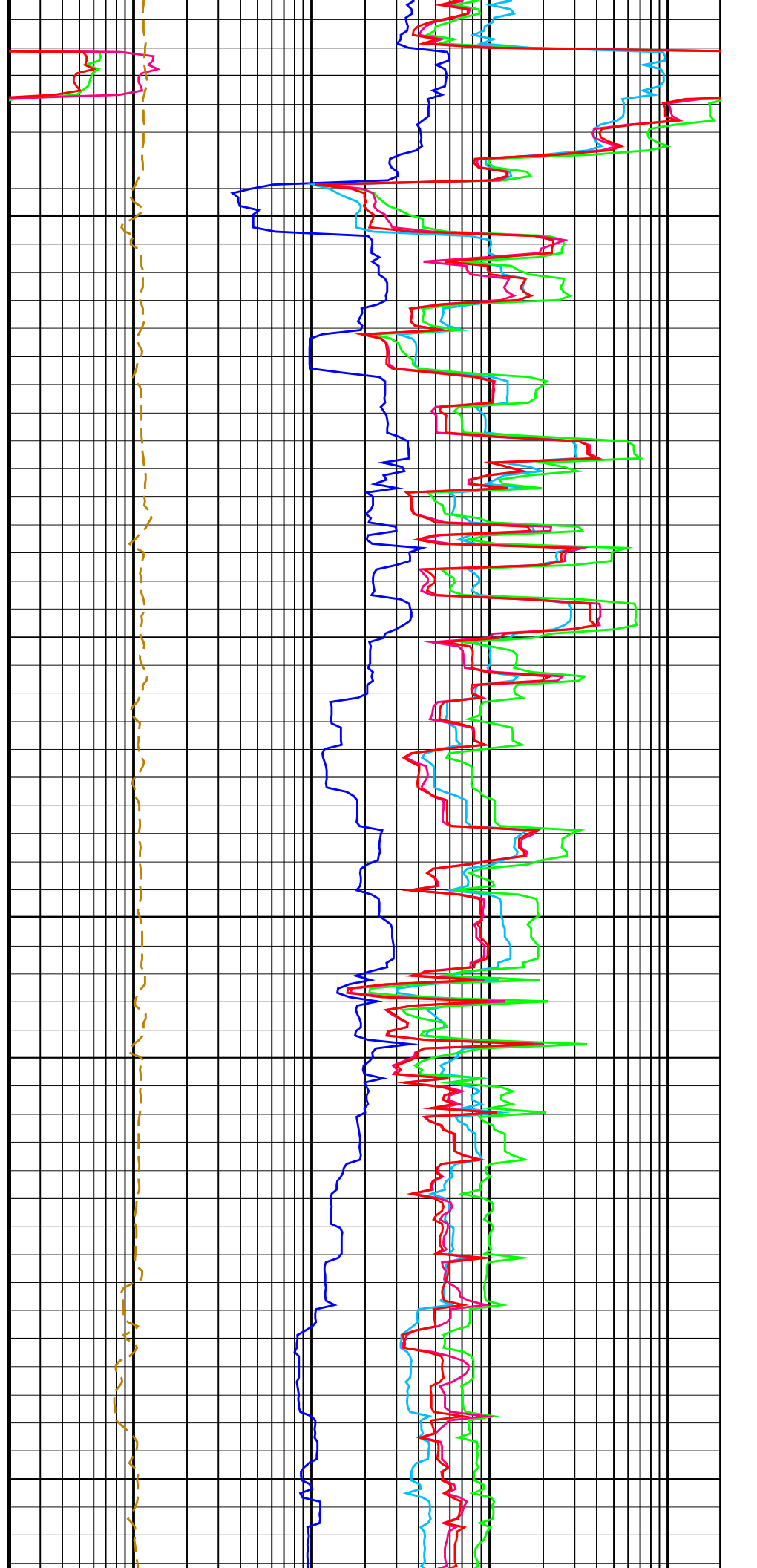
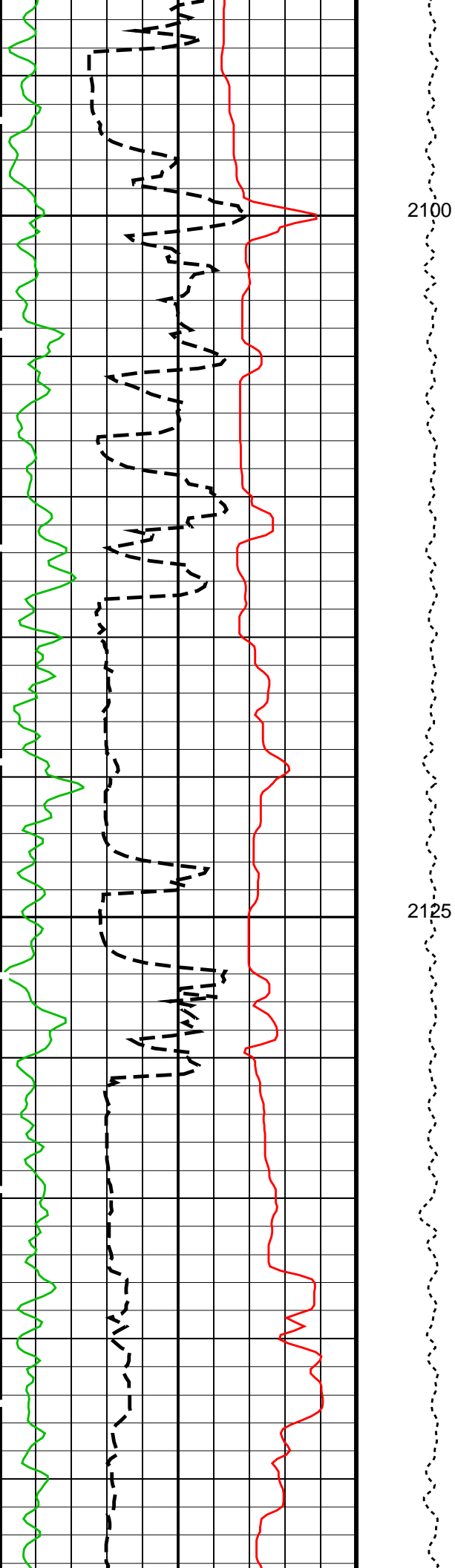


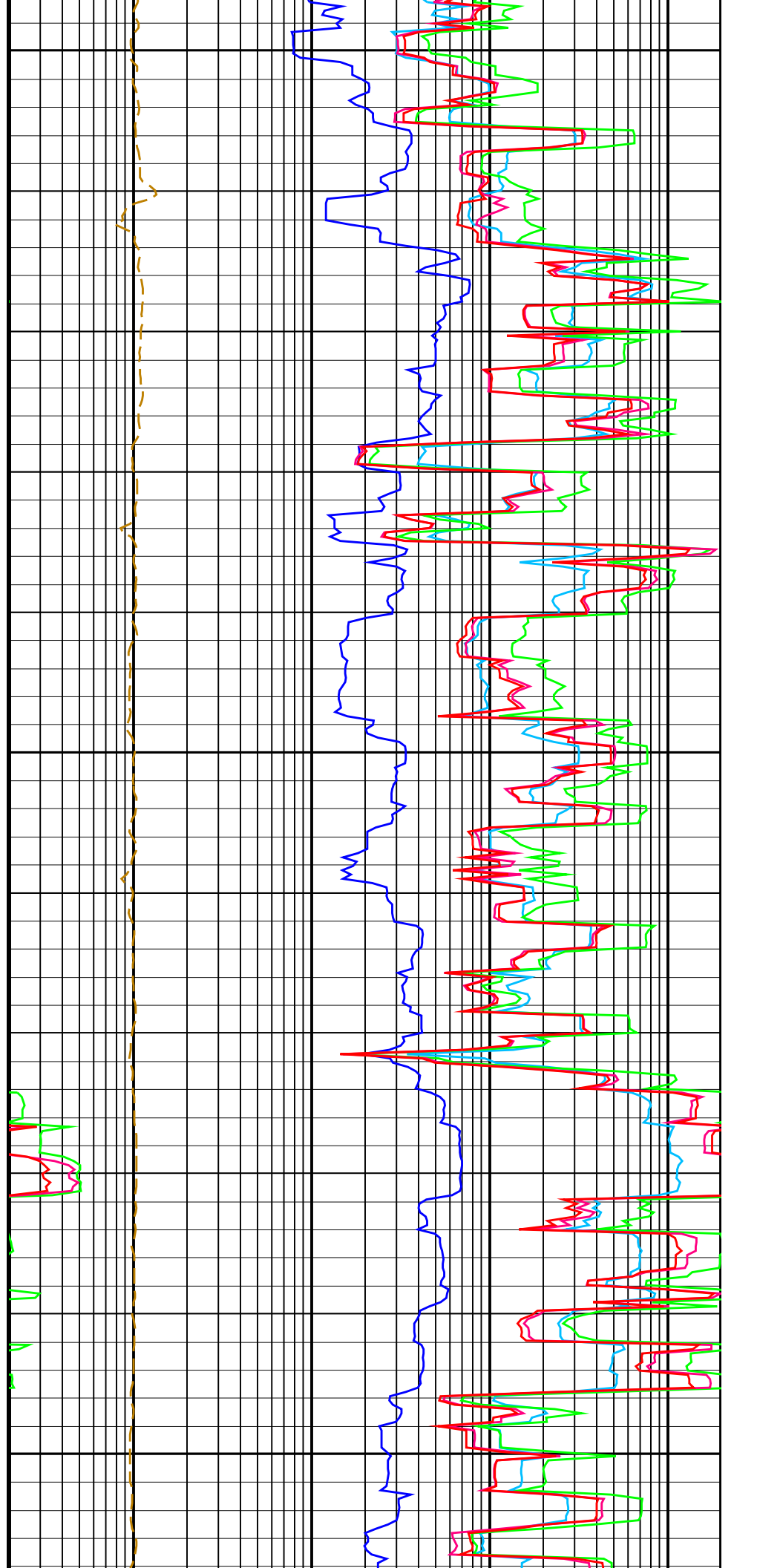
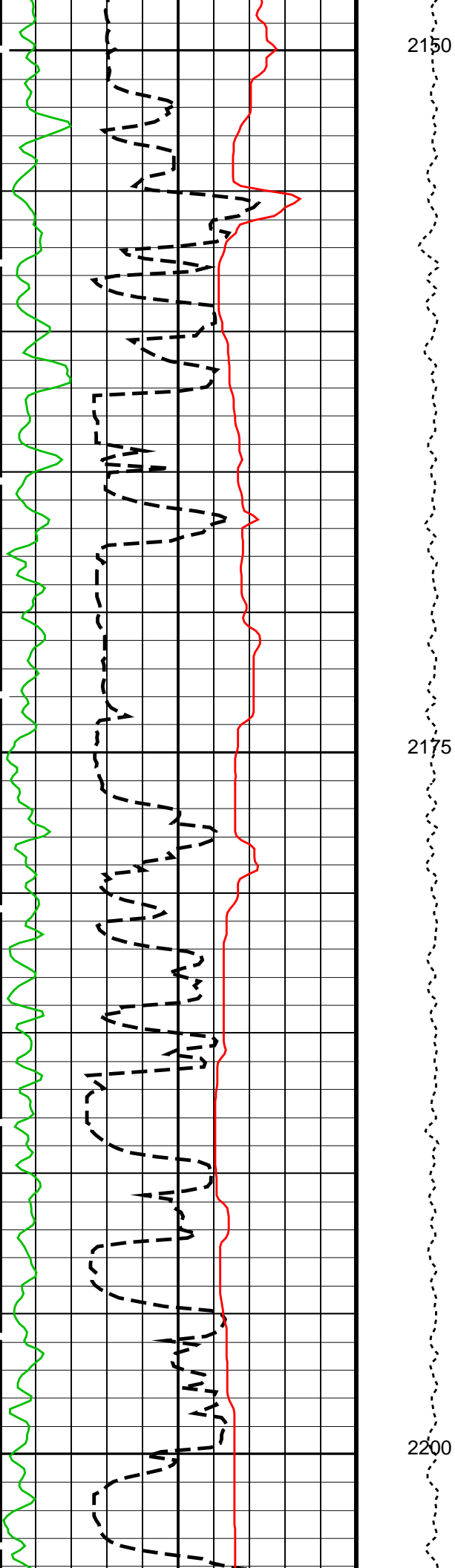


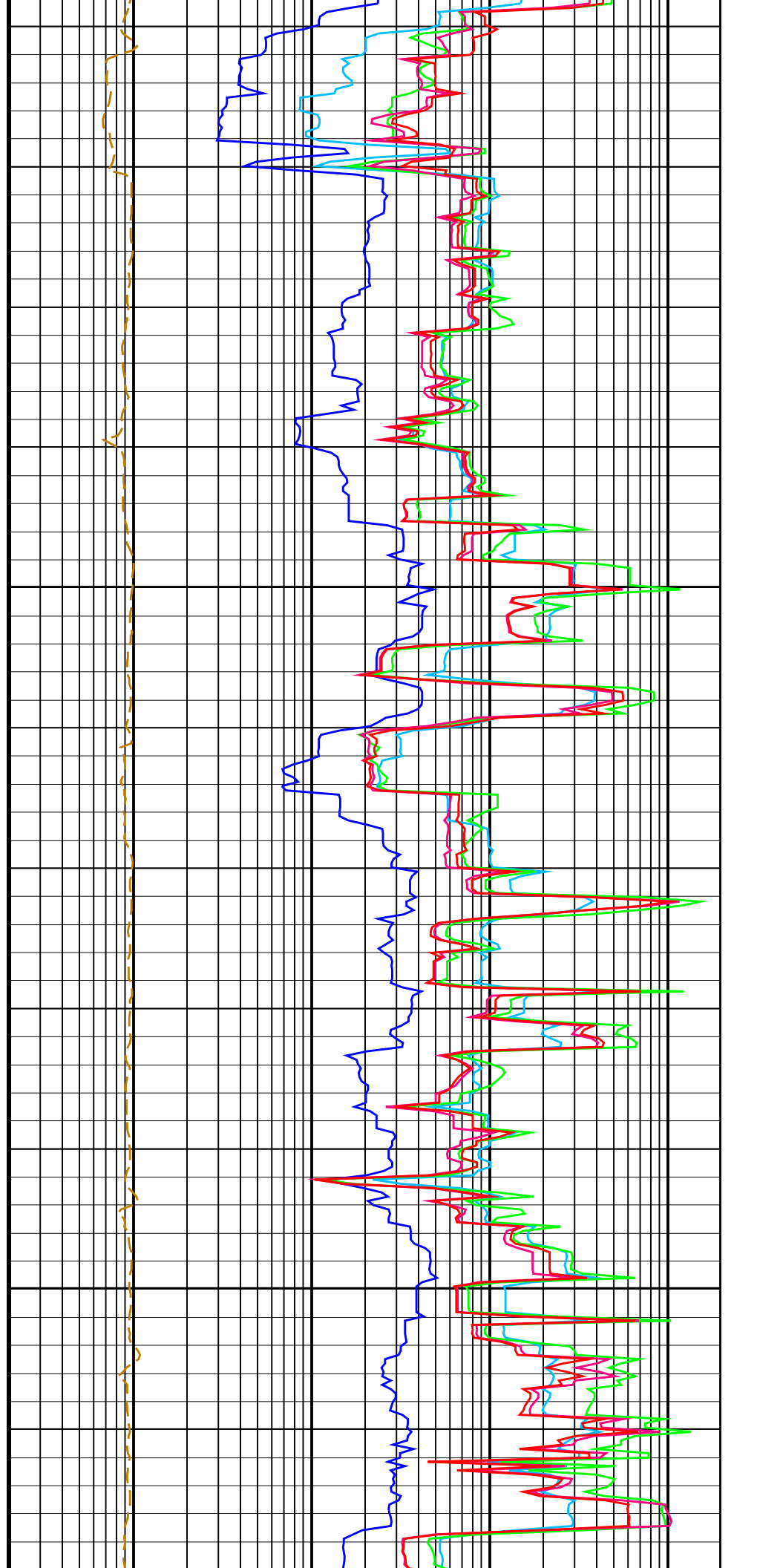
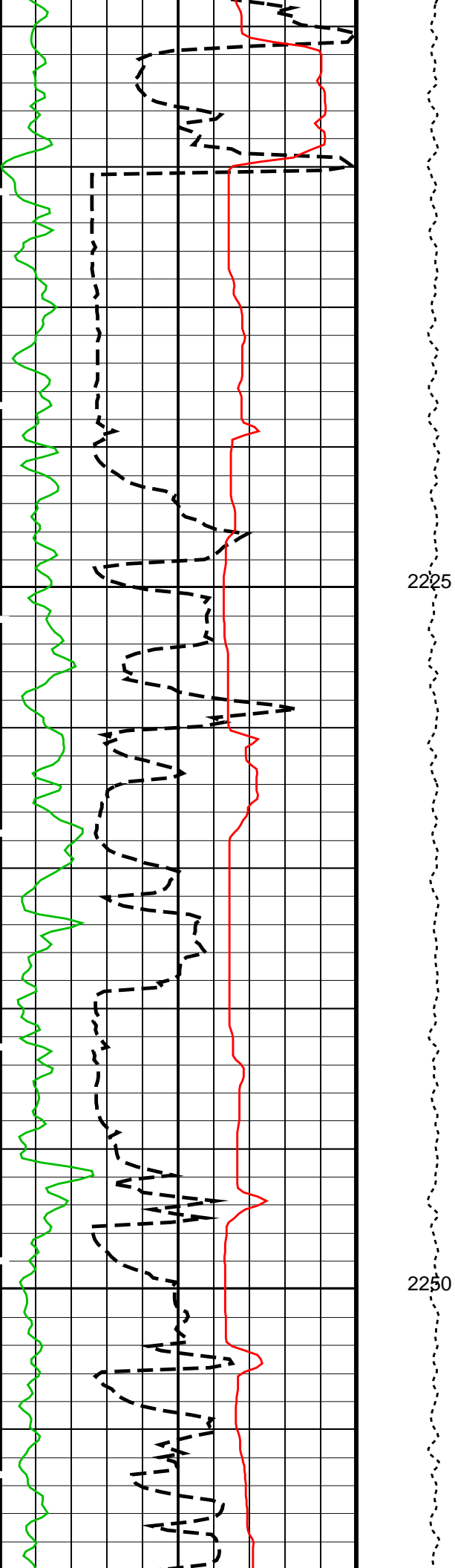


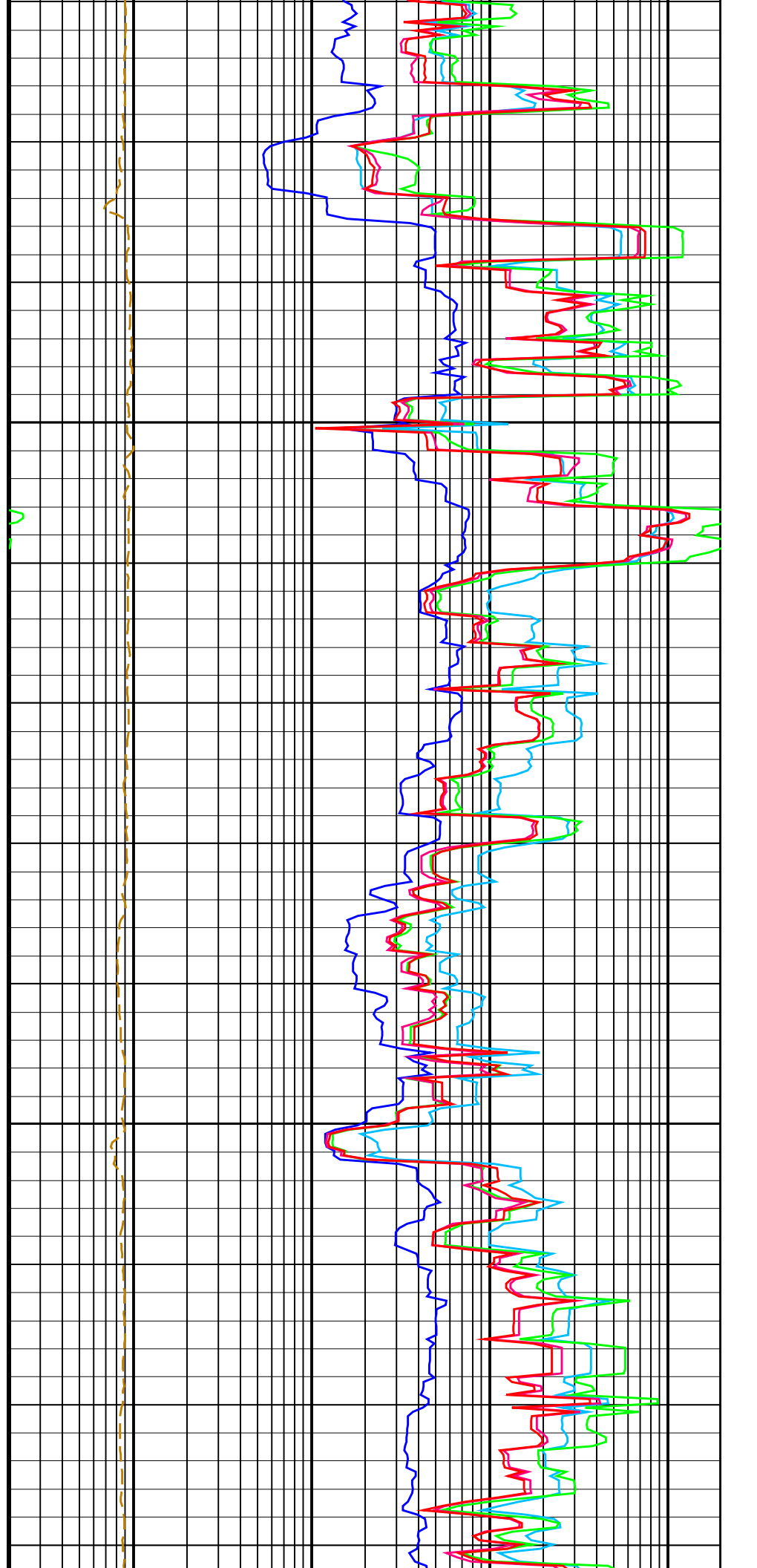
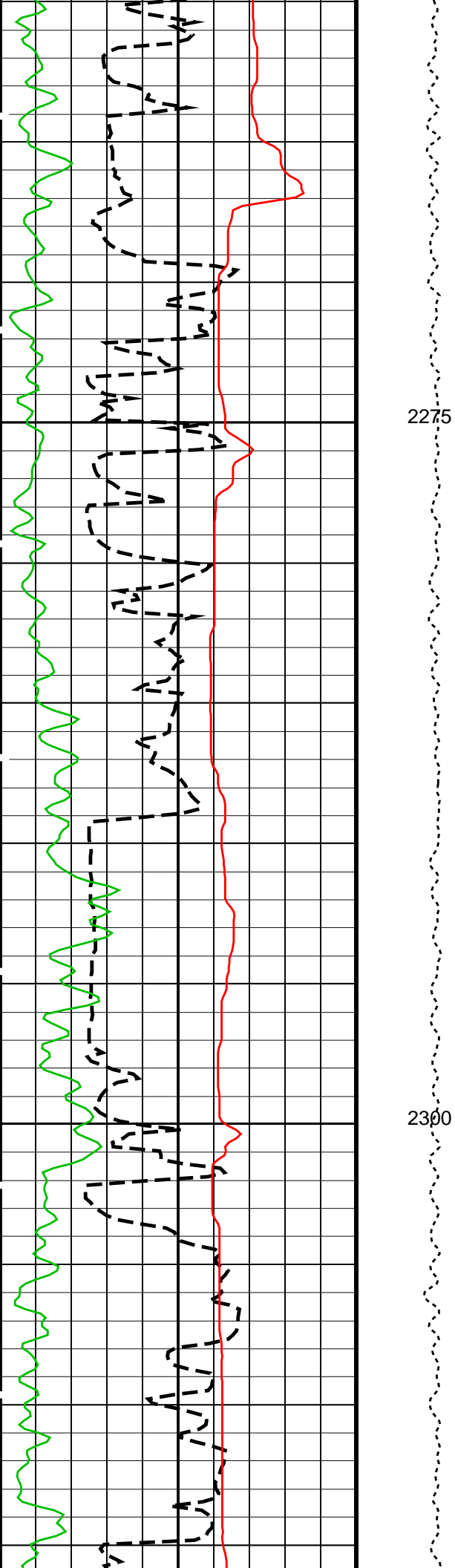




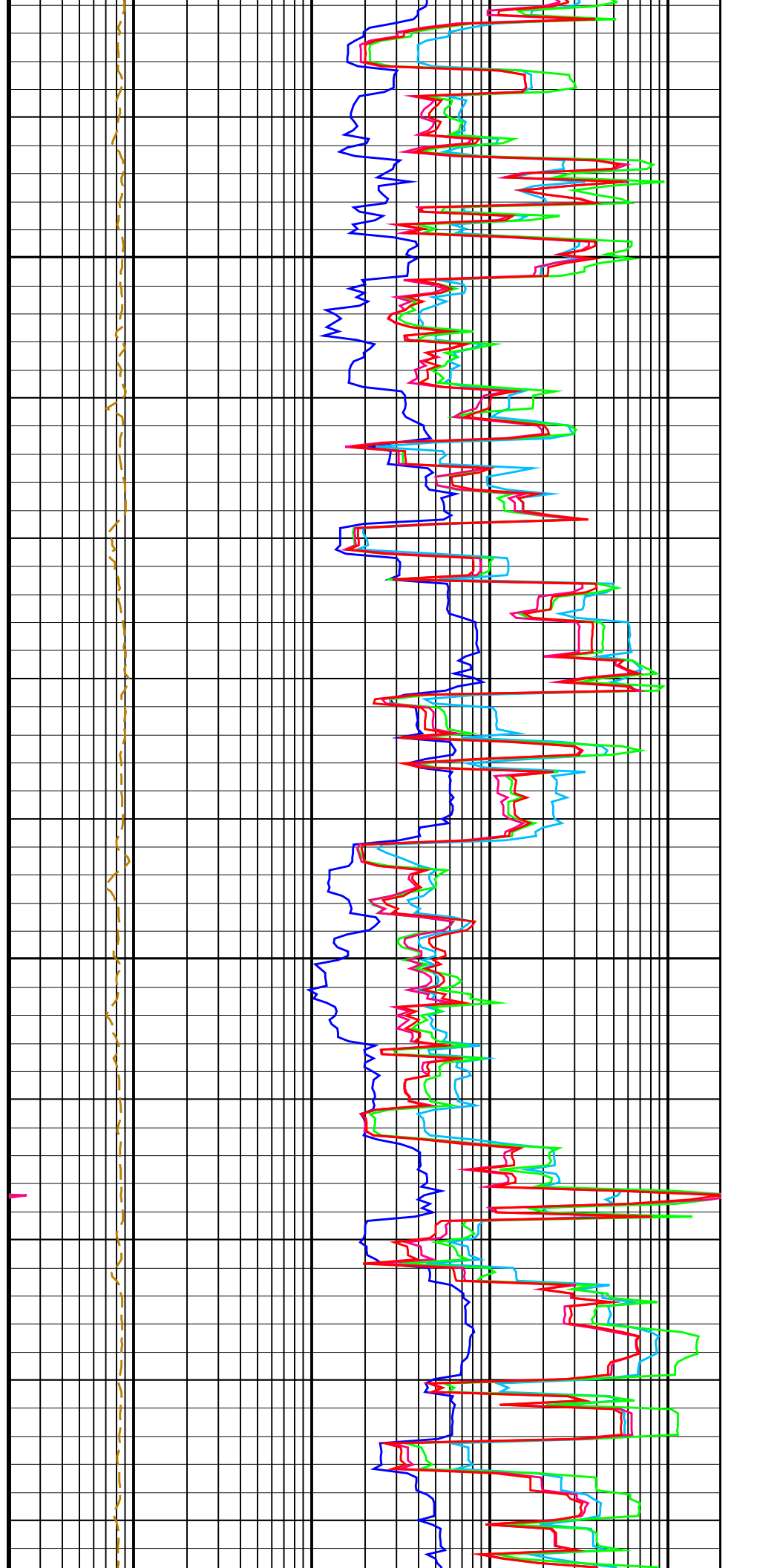
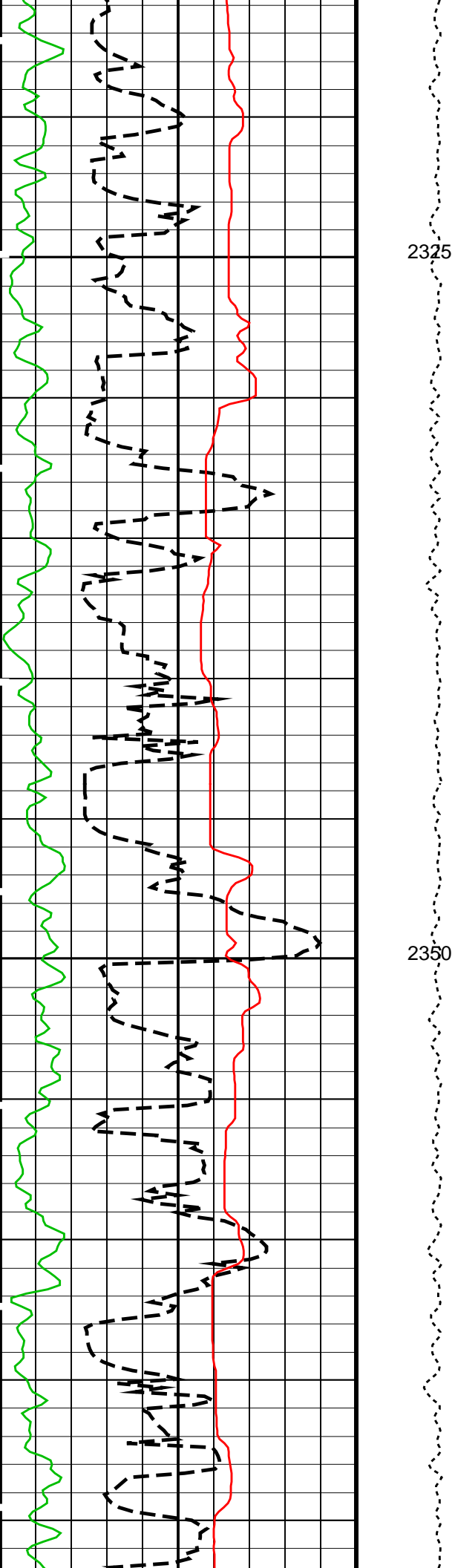


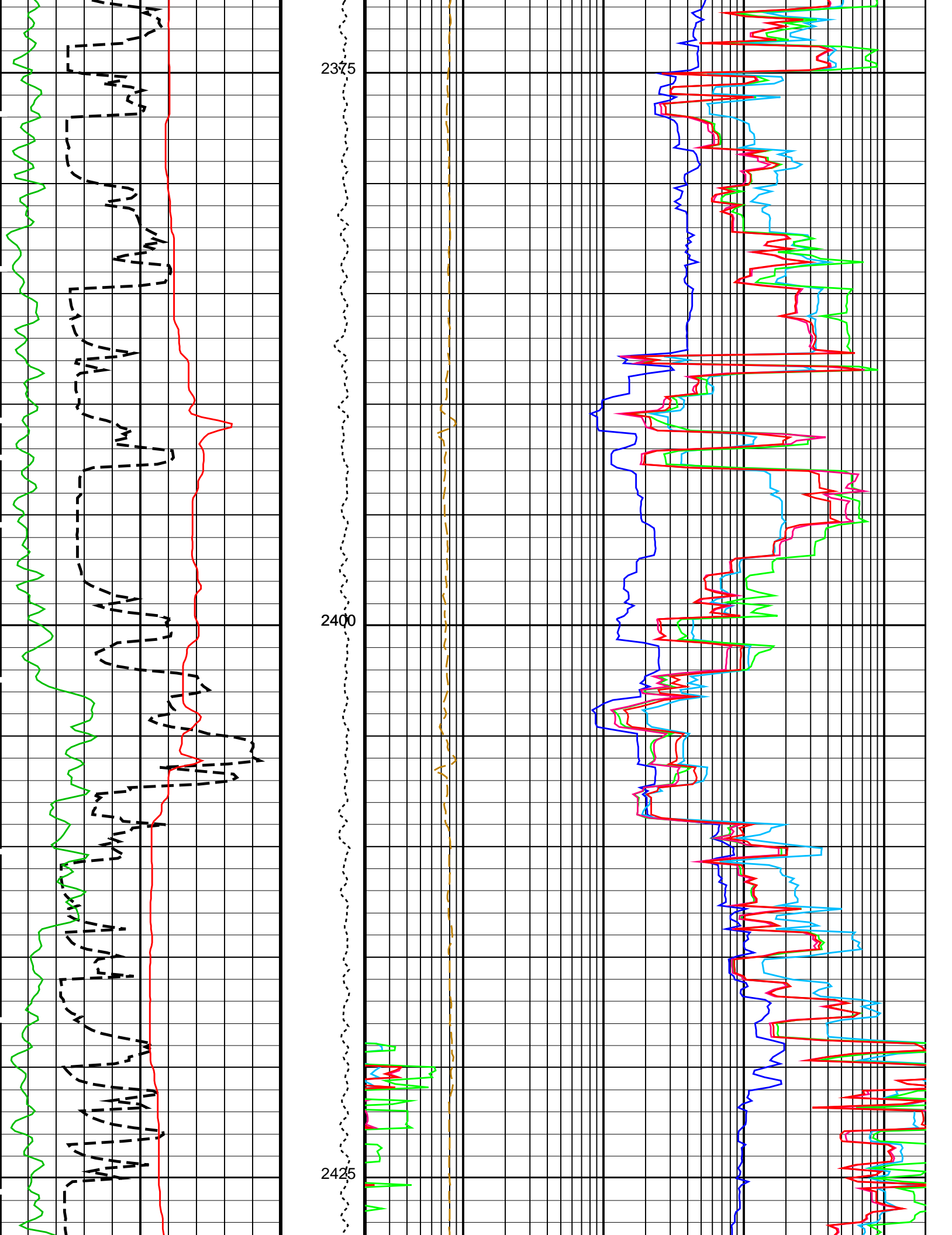


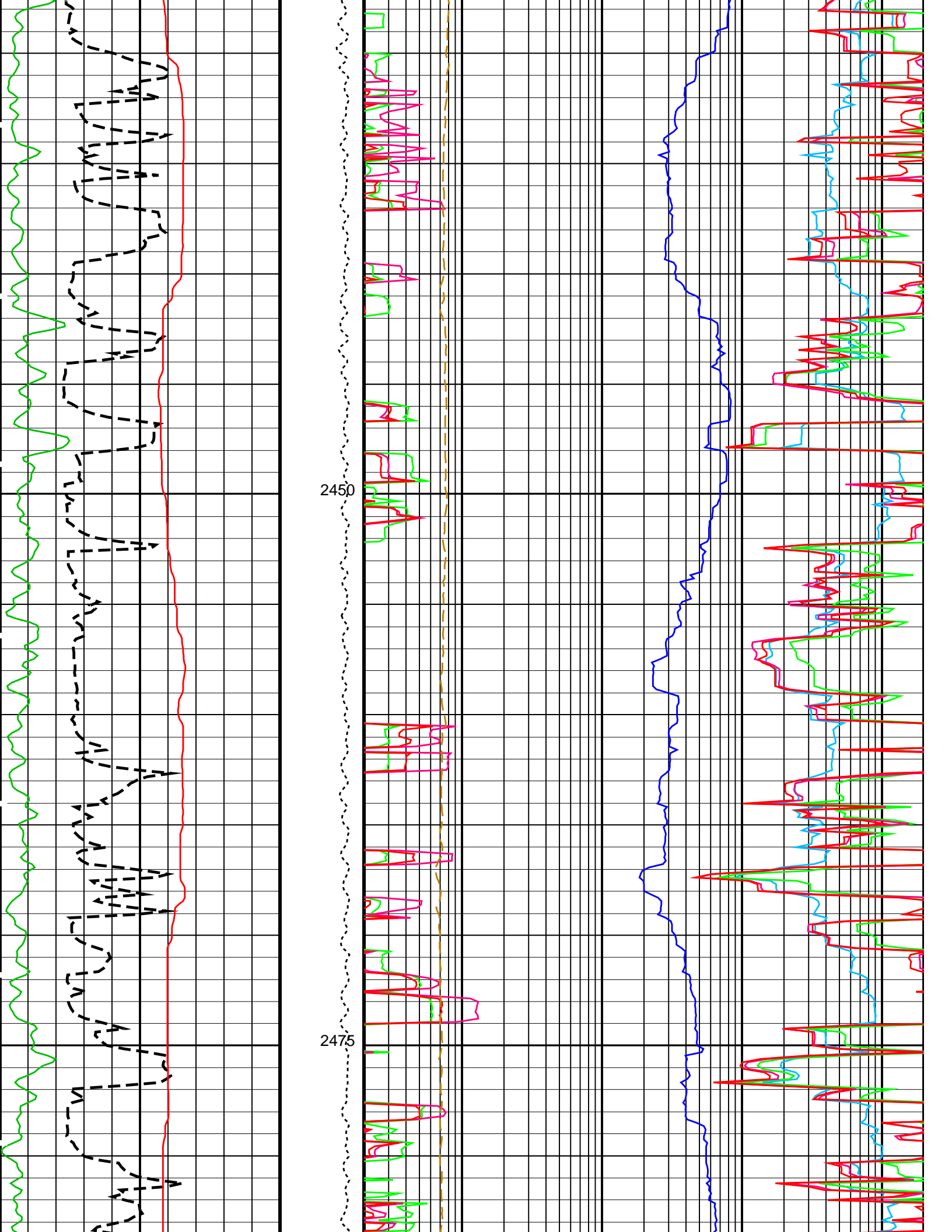


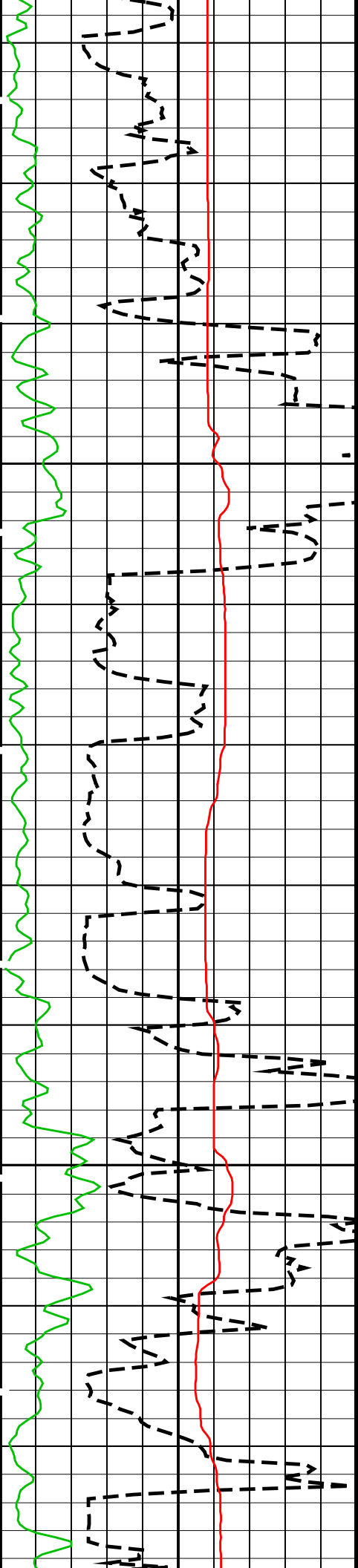






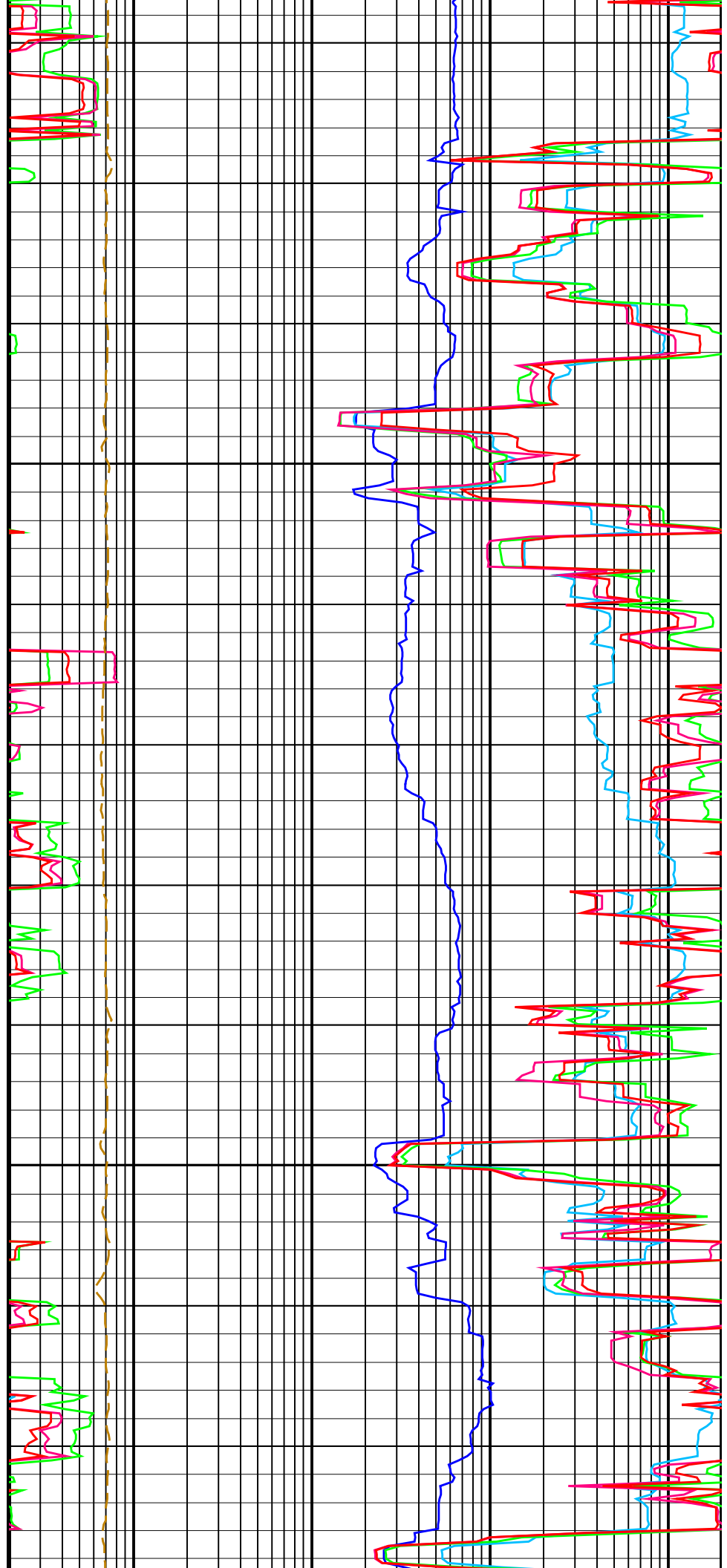


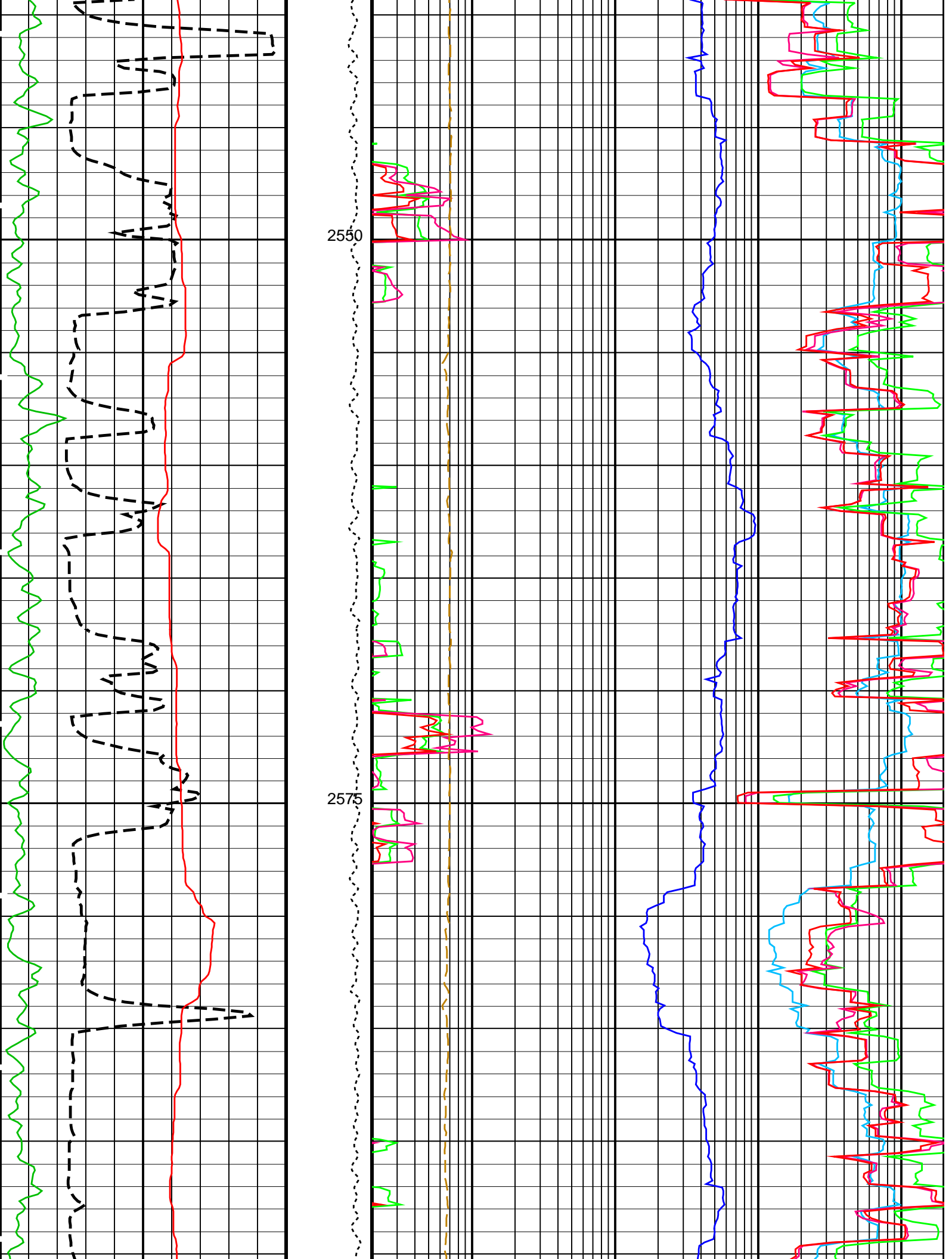


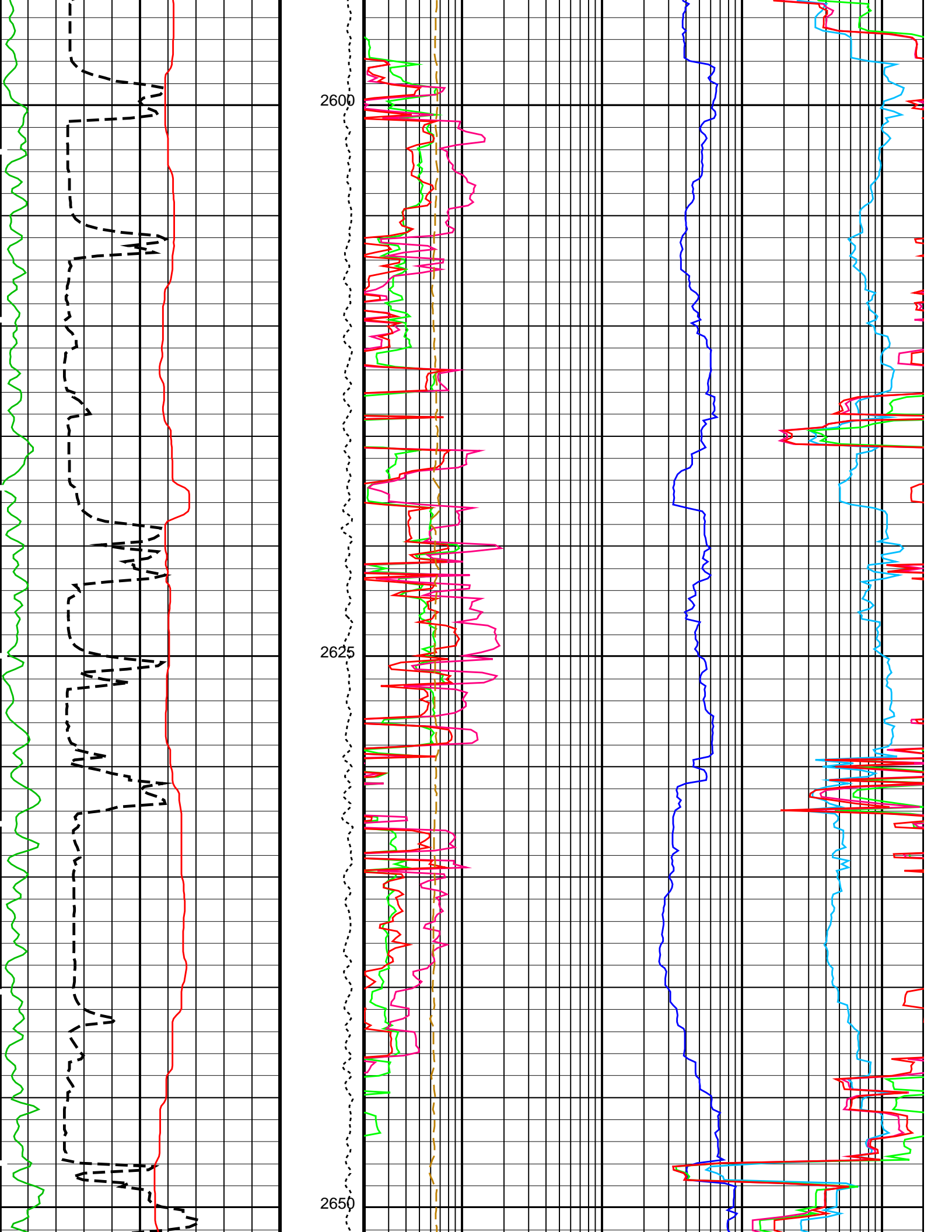


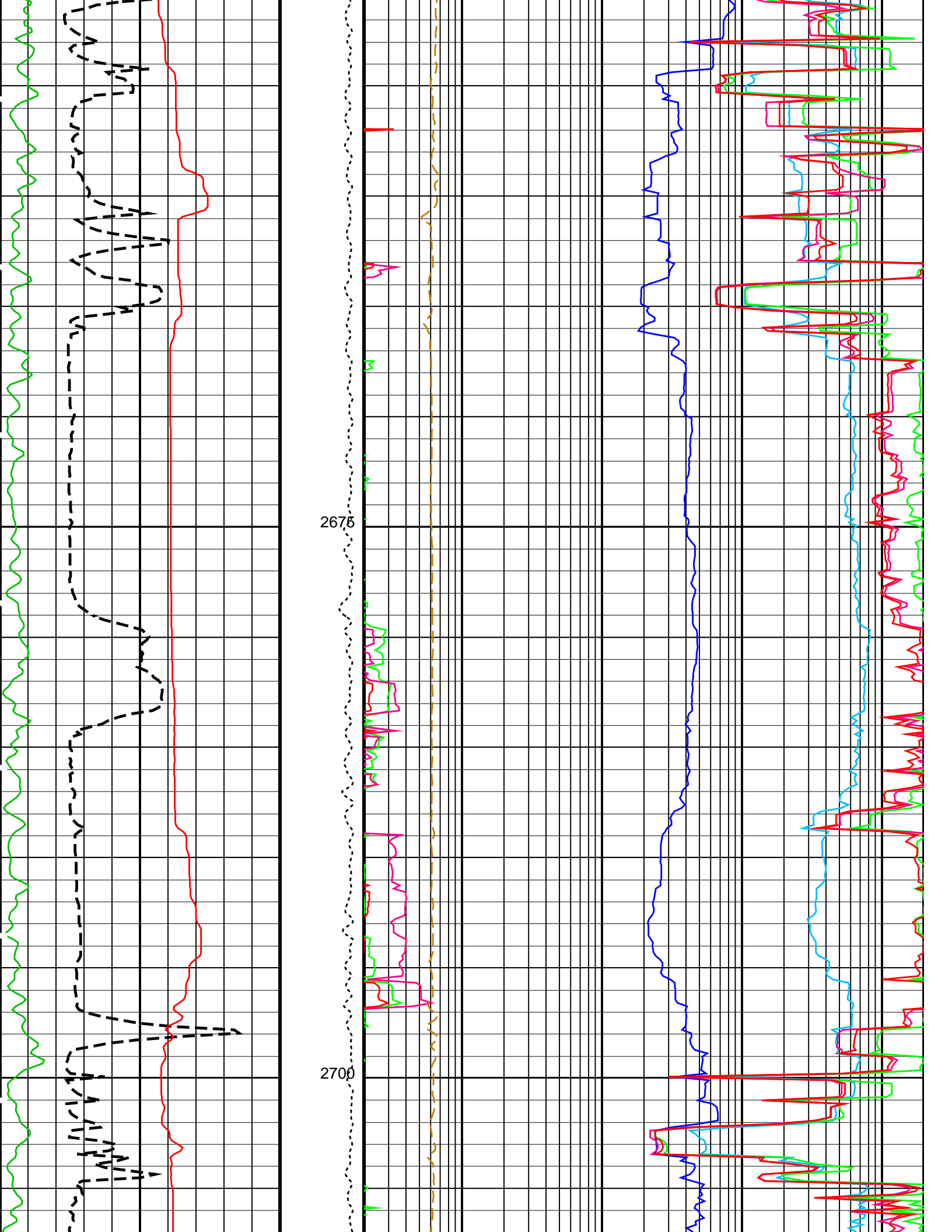
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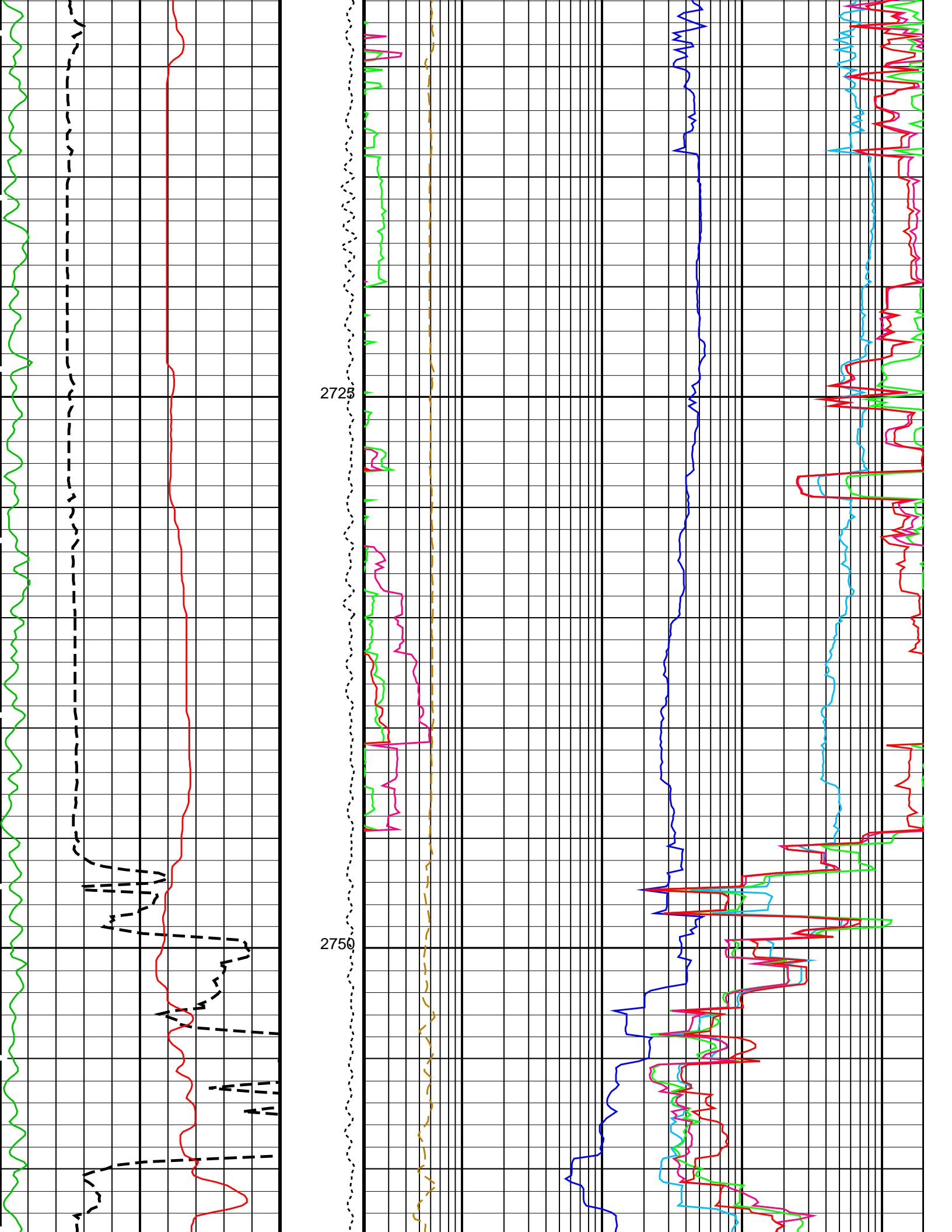
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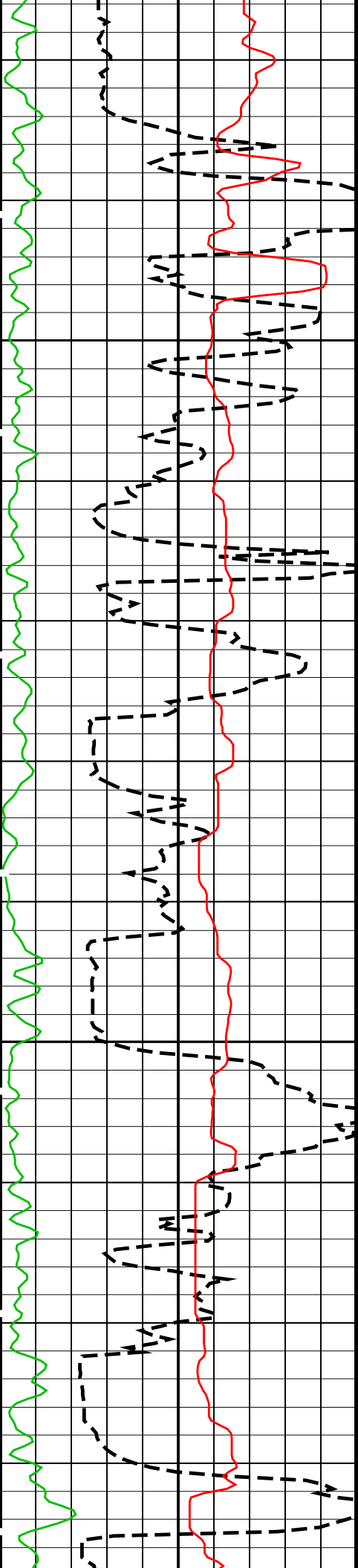






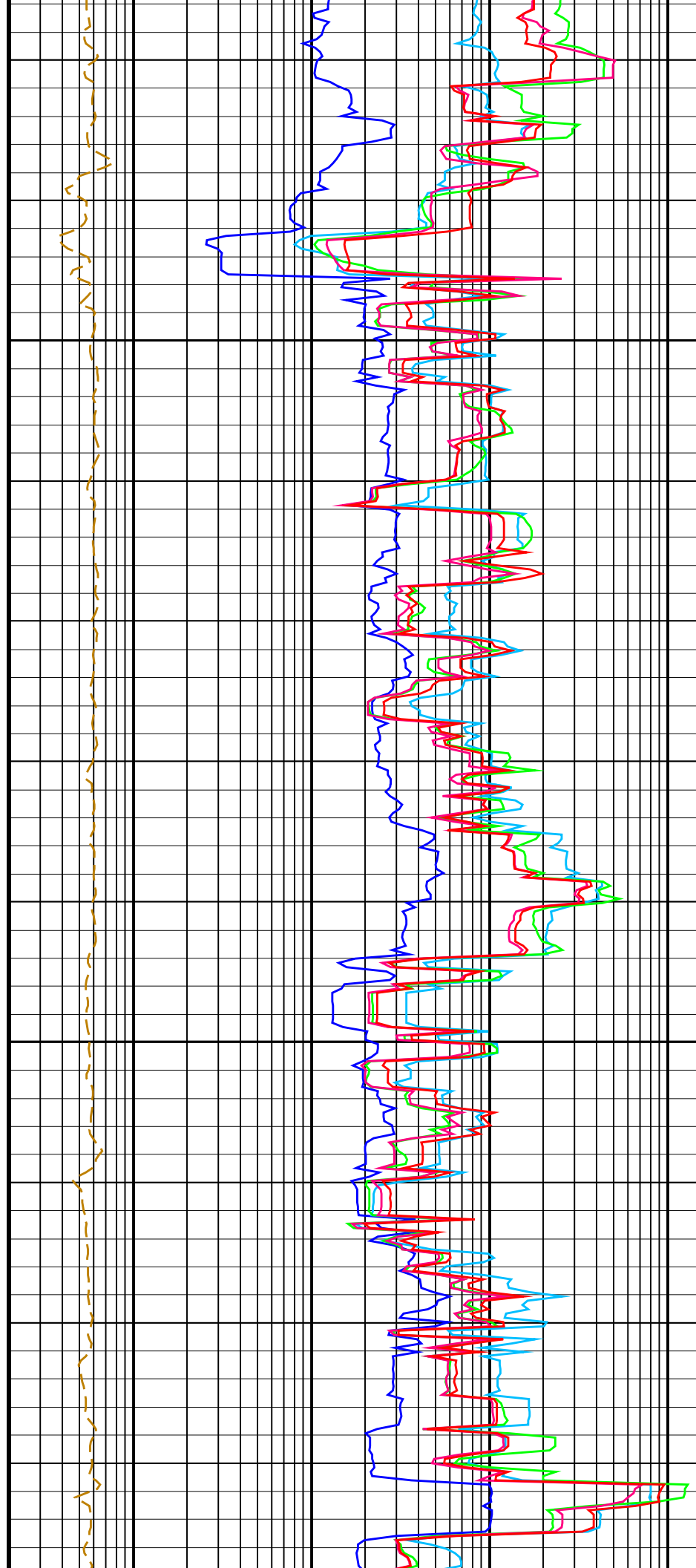


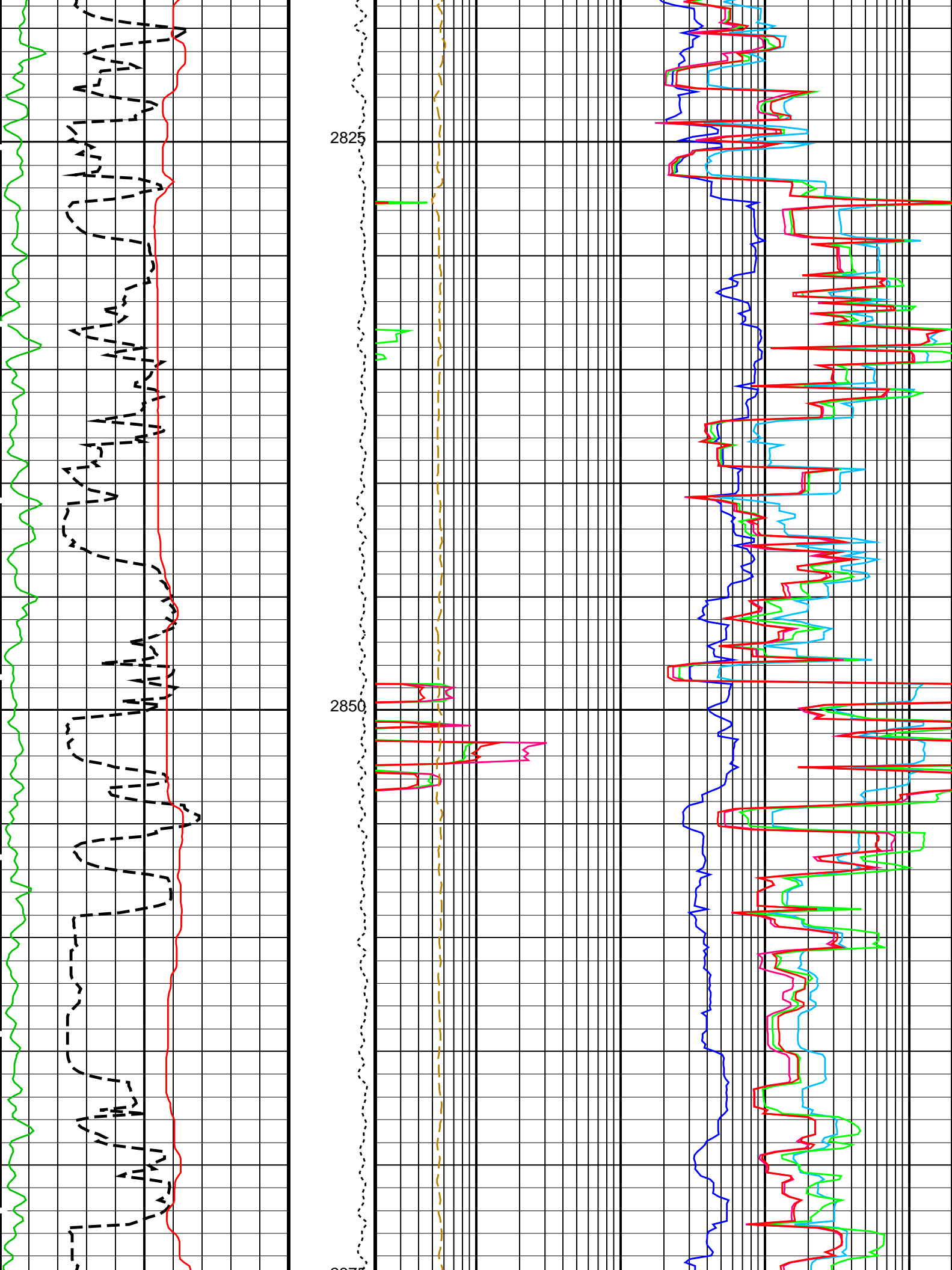


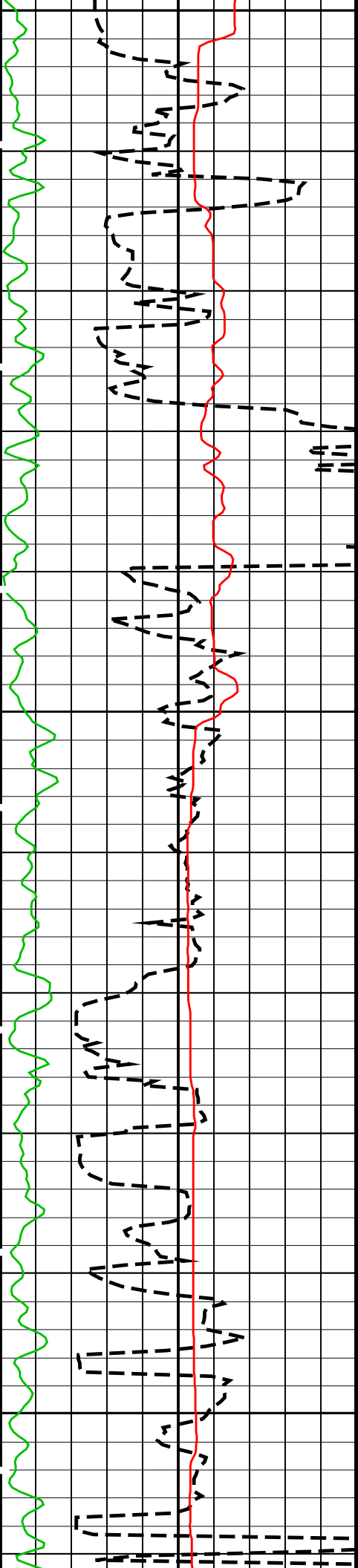


2775

2800



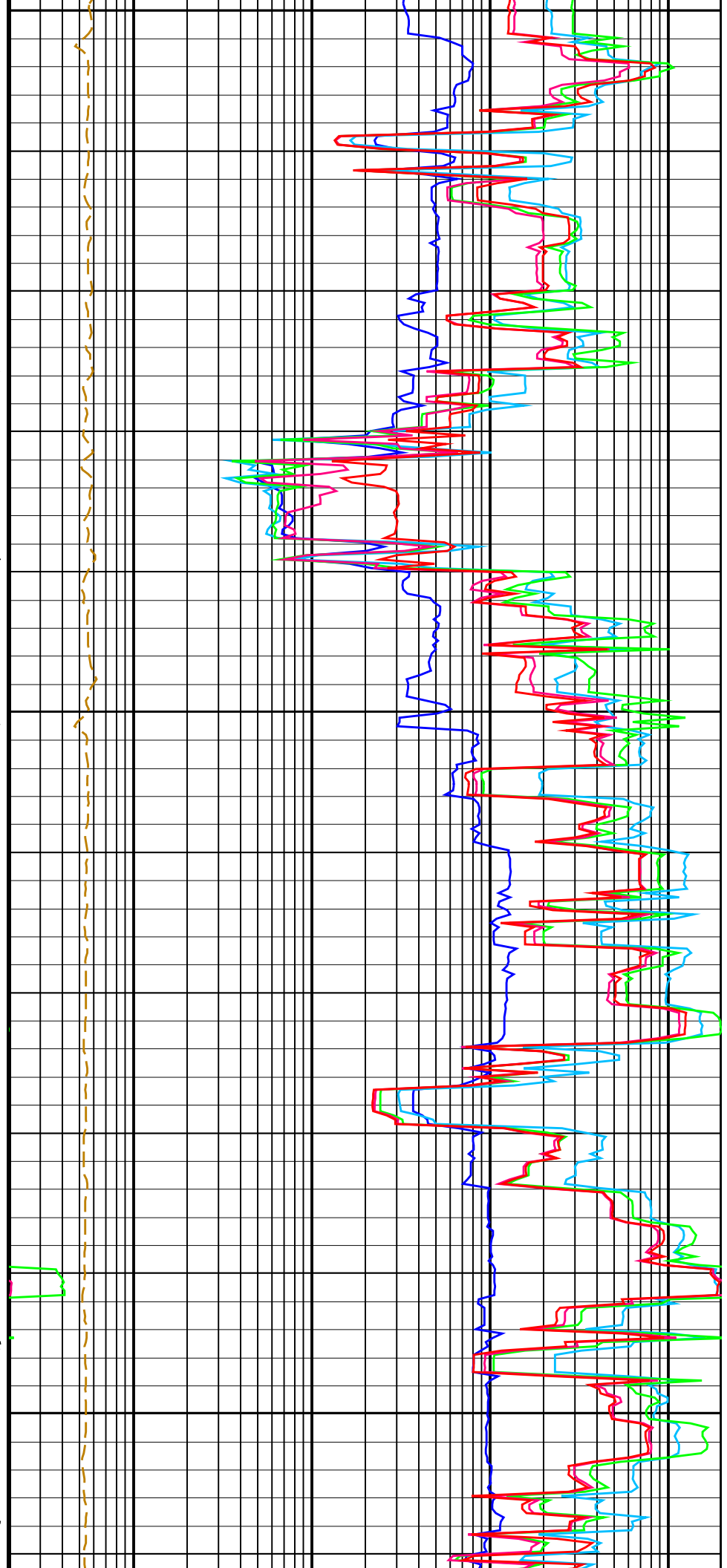


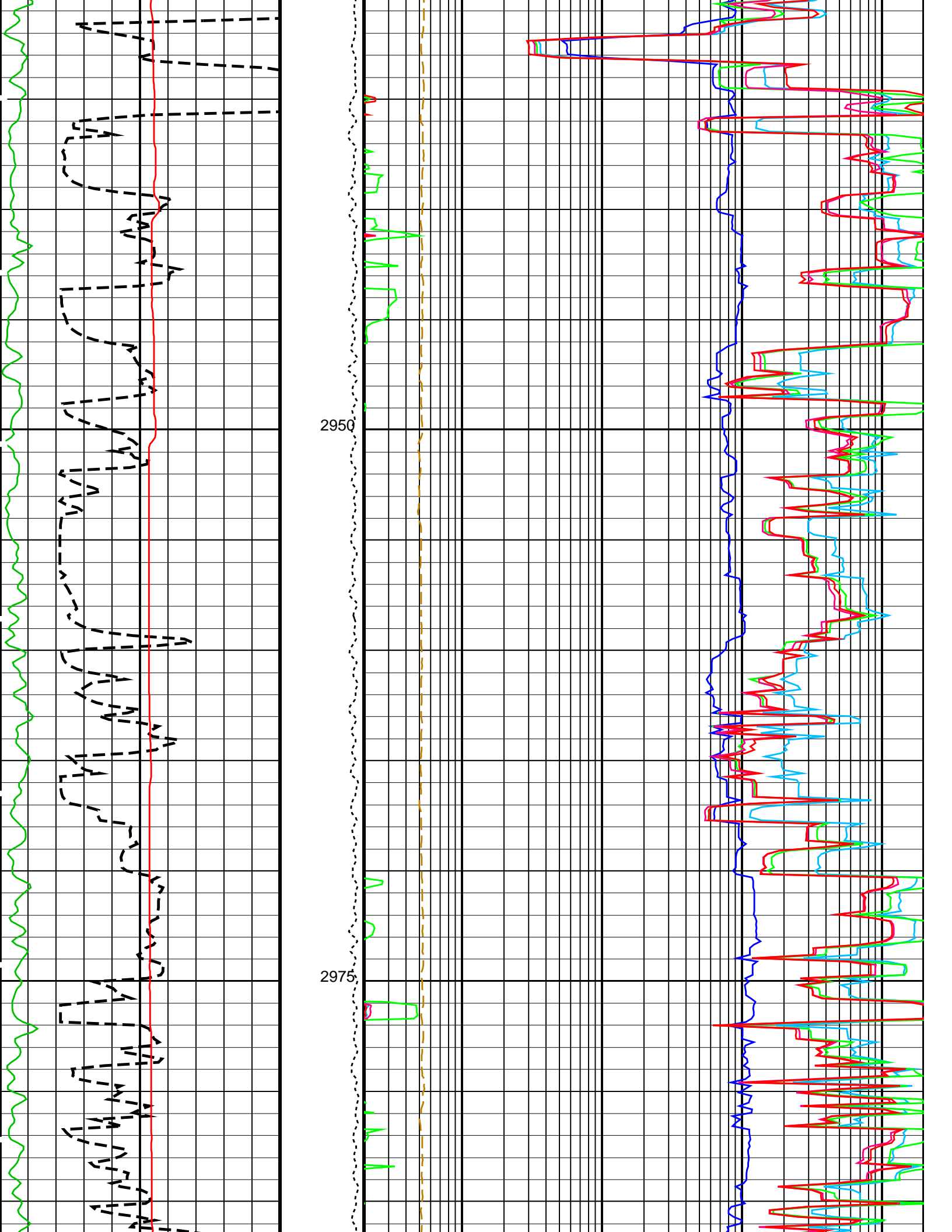


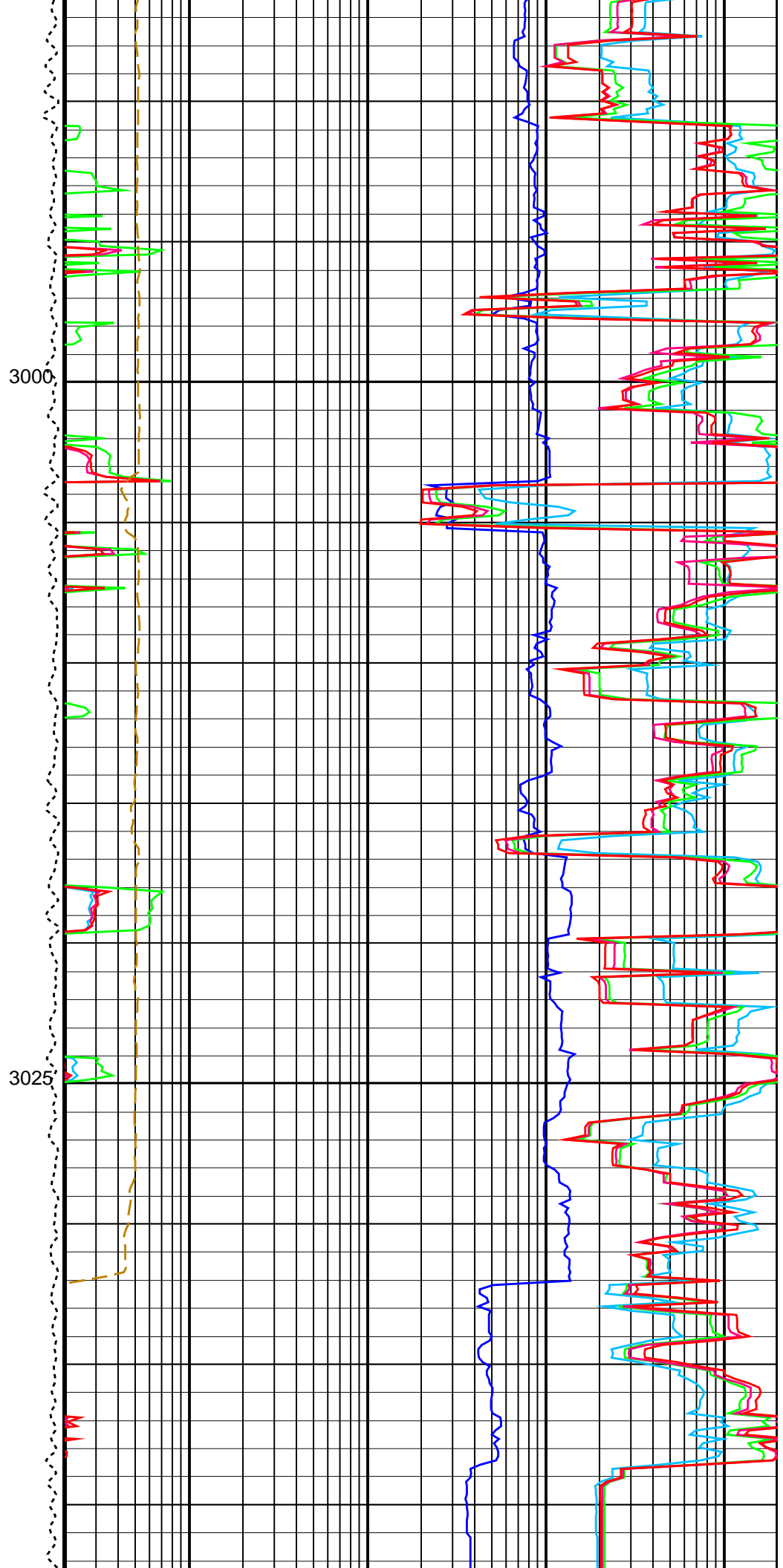
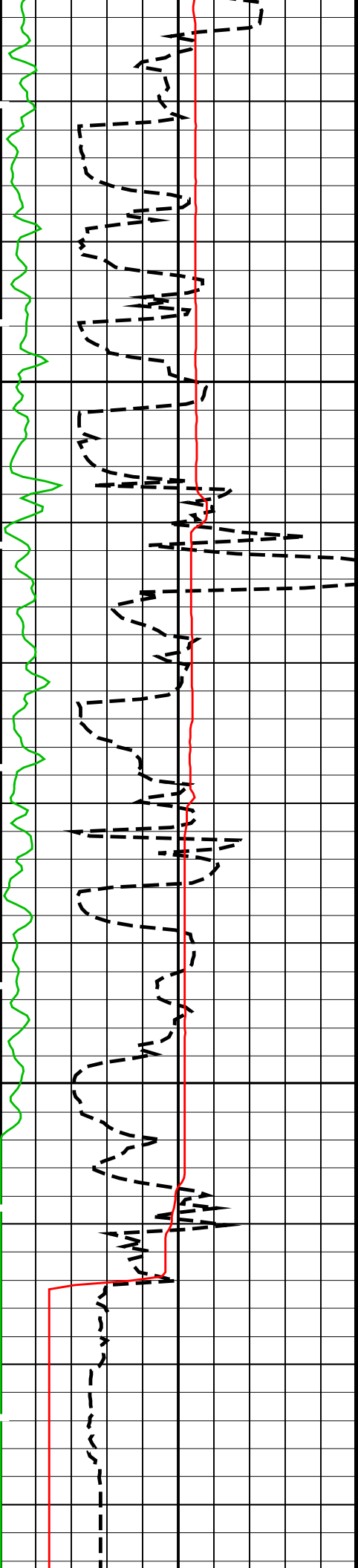
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2900

2925

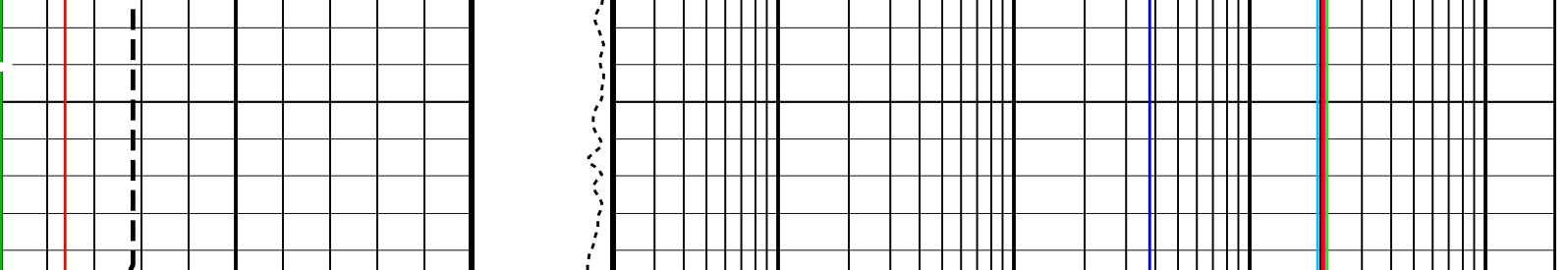






3000

3025



Gamma Ray (GR_EDTC) (GAPI)	0 15	Tension (TENS) (LBF)	0 5000	HRLT Resistivity 1 (RLA1) (OHMM)	0.2 2000
HLDS Caliper (LCAL) (IN)	0 20			HRLT Resistivity 2 (RLA2) (OHMM)	0.2 2000
Invasion Diameter (DI_HRLT) (IN)	0 50			HRLT Resistivity 3 (RLA3) (OHMM)	0.2 2000
				HRLT Resistivity 4 (RLA4) (OHMM)	0.2 2000
				HRLT Resistivity 5 (RLA5) (OHMM)	0.2 2000
				HRLT Mud Resistivity (RM_HRLT) (OHMM)	0.02 200

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value	
<b>HRLT-B: High Resolution Laterolog Array - B</b>			
BHT	Bottom Hole Temperature (used in calculations)	140	DEGC
GCSE	Generalized Caliper Selection	LCAL	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
KFAC_HRLT	HRLT K Factor Option	SONDE	
PROCIINV	Inversion Selection	ON	
PROCMFL	Inversion Micro-Resistivity Selection	NO_EXTERNAL_RXO	
PROCMFO	Mechanical Standoff Fin Size	1.5	IN
PROCRM	Processing Mud Resistivity Select	HRLT_Compute	
PROCSPO	Sonde Position	Eccentered	
SHT	Surface Hole Temperature	20	DEGC
<b>EDTC-B: Enhanced DTS Cartridge</b>			
BHT	Bottom Hole Temperature (used in calculations)	140	DEGC
GCSE	Generalized Caliper Selection	LCAL	
GGRD	Geothermal Gradient	0.018227	DC/M
GRSE	Generalized Mud Resistivity Selection	CHART_GEN_9	
GTSE	Generalized Temperature Selection	LINEAR_ESTIMATE	
SHT	Surface Hole Temperature	20	DEGC
<b>System and Miscellaneous</b>			
BS	Bit Size	11.875	IN
DO	Depth Offset for Playback	5.5	M
MST	Mud Sample Temperature	-50000.00	DEGC
PP	Playback Processing	NORMAL	
TD	Total Depth	-50000	M

Format: HRLT Vertical Scale: 1:200 Graphics File Created: 23-Feb-2012 10:18

OP System Version: 19C0-187

MTT_LDEO-A	19C0-187	HRLT-B	19C0-187
HLDS	19C0-187	LDSC-B	19C0-187
EDTC-B	19C0-187		

Input DLIS Files

DEFAULT	MTT_LDEO_HRLA_LDL_019LUP	FN:8	PRODUCER	22-Feb-2012 00:42	3044.2 M	1707.2 M
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# Output DLIS Files

DEFAULT MTT\_LDEO\_HRLA\_LDL\_022PUP FN:11 PRODUCER 23-Feb-2012 10:18



## Calibrations

### MAXIS Field Log

#### Calibration and Check Summary

Measurement	Nominal	Master	Before	After	Change	Limit	Units
High Resolution Laterolog Array – B Wellsite Calibration – HRLT M01							
Before: 21-Feb-2012 19:04							
HRLT M0-M1 Voltage Plus – 0	0	N/A	-319.0	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus – 1	0	N/A	-332.5	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus – 2	0	N/A	-333.6	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus – 3	0	N/A	-337.5	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus – 4	0	N/A	-325.9	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus – 5	0	N/A	-321.9	N/A	N/A	9.681	UV
HRLT M0-M1 Voltage Plus – 6	0	N/A	324.0	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: 21-Feb-2012 19:04							
HRLT M1-M2 Voltage Plus – 0	0	N/A	1755	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus – 1	0	N/A	1827	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus – 2	0	N/A	1829	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus – 3	0	N/A	1851	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus – 4	0	N/A	1789	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus – 5	0	N/A	1768	N/A	N/A	53.42	UV
HRLT M1-M2 Voltage Plus – 6	0	N/A	-1788	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: 21-Feb-2012 19:04							
HRLT M2-M3 Voltage Plus – 0	0	N/A	1741	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus – 1	0	N/A	1826	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus – 2	0	N/A	1829	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus – 3	0	N/A	1854	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus – 4	0	N/A	1786	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus – 5	0	N/A	1766	N/A	N/A	53.42	UV
HRLT M2-M3 Voltage Plus – 6	0	N/A	-1776	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: 21-Feb-2012 19:04							
HRLT A3-A4 Voltage Plus – 0	0	N/A	68410	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus – 1	0	N/A	71530	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus – 2	0	N/A	71940	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus – 3	0	N/A	73210	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus – 4	0	N/A	70460	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus – 5	0	N/A	69710	N/A	N/A	2100	UV
HRLT A3-A4 Voltage Plus – 6	0	N/A	-68580	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: 21-Feb-2012 19:04							
HRLT A4-A5 Voltage Plus – 0	0	N/A	68690	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus – 1	0	N/A	71930	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus – 2	0	N/A	72300	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus – 3	0	N/A	73550	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus – 4	0	N/A	70750	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus – 5	0	N/A	69990	N/A	N/A	2100	UV
HRLT A4-A5 Voltage Plus – 6	0	N/A	-68950	N/A	N/A	2100	UV

HRLT A4-A5 Voltage Plus - 0	0	N/A	-68350	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: 21-Feb-2012 19:04

HRLT A5-A6 Voltage Plus - 0	0	N/A	68590	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 1	0	N/A	71660	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 2	0	N/A	72060	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 3	0	N/A	73340	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 4	0	N/A	70610	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 5	0	N/A	69880	N/A	N/A	2100	UV
HRLT A5-A6 Voltage Plus - 6	0	N/A	-68690	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: 21-Feb-2012 19:04

HRLT Torpedo-M0 Voltage - 0	0	N/A	-68260	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 1	0	N/A	-71980	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 2	0	N/A	-72350	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 3	0	N/A	-73630	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 4	0	N/A	-70820	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 5	0	N/A	-70040	N/A	N/A	2100	UV
HRLT Torpedo-M0 Voltage - 6	0	N/A	68950	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: 21-Feb-2012 19:04

HRLT Bridle#9-M0 Voltage - 0	0	N/A	-68260	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 1	0	N/A	-71950	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 2	0	N/A	-72320	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 3	0	N/A	-73610	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 4	0	N/A	-70800	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 5	0	N/A	-70020	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 6	0	N/A	68920	N/A	N/A	2100	UV
HRLT Bridle#9-M0 Voltage - 7	0	N/A	-70000	N/A	N/A	2100	UV

High Resolution Laterolog Array - B Wellsite Calibration - HRLT ISO  
 Before: 21-Feb-2012 19:04

HRLT Source Current Plus - 0	0	N/A	284.6	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: 21-Feb-2012 19:04

HRLT Vertical Voltage PI - 0	0	N/A	-321.6	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 1	0	N/A	-326.8	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 2	0	N/A	-327.1	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 3	0	N/A	-329.4	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 4	0	N/A	-315.4	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	331.3	N/A	N/A	9.681	UV
HRLT Vertical Voltage PI - 7	0	N/A	-322.7	N/A	N/A	9.681	UV

Hostile Litho-Density Sonde Wellsite Calibration - Background Measurement  
 Master: 9-Jan-2012 3:31 Before: 21-Feb-2012 19:07

SS Cs Resolution Bkg	9.000	7.671	7.676	N/A	N/A	1.800	%
LS Cs Resolution Bkg	9.000	7.932	8.092	N/A	N/A	1.800	%
LSW1 Background	100.0	86.47	85.93	N/A	N/A	3.000	CPS
LSW2 Background	100.0	79.53	78.97	N/A	N/A	3.000	CPS
LSW3 Background	200.0	181.2	181.6	N/A	N/A	6.000	CPS
LSW4 Background	250.0	222.9	222.8	N/A	N/A	7.500	CPS
LSW5 Background	600.0	520.3	519.9	N/A	N/A	18.00	CPS
SSW1 Background	100.0	84.85	84.50	N/A	N/A	3.000	CPS
SSW2 Background	200.0	146.1	146.3	N/A	N/A	6.000	CPS
SSW3 Background	500.0	411.2	408.7	N/A	N/A	15.00	CPS
SSW4 Background	270.0	221.2	218.7	N/A	N/A	8.100	CPS
SSW5 Background	200.0	157.4	157.9	N/A	N/A	6.000	CPS

Hostile Litho-Density Sonde Wellsite Calibration - Aluminum Measurement  
 Master: 9-Jan-2012 3:31

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 3:31

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: 21-Feb-2012 19:04

EDTC Z-Axis Acceleration	9.810	N/A	9.740	N/A	N/A	N/A	M/S2
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Enhanced DTS Cartridge Wellsite Calibration – Detector Calibration

Before: 21-Feb-2012 19:03

Gamma Ray (Jig – Bkg)	163.3	N/A	163.3	N/A	N/A	14.85	GAPI
Gamma Ray (Calibrated)	165.0	N/A	165.0	N/A	N/A	15.00	GAPI

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 764

High Resolution Laterolog Array – B Wellsite Calibration

HRLT M01

Idx	Phase	HRLT M0-M1 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-319.0	-322.7	-280.7	-379.7
1	Before		-332.5	-322.7	-280.7	-379.7
2	Before		-333.6	-322.7	-280.7	-379.7
3	Before		-337.5	-322.7	-280.7	-379.7
4	Before		-325.9	-322.7	-280.7	-379.7
5	Before		-321.9	-322.7	-280.7	-379.7
6	Before		324.0	322.7	379.7	280.7
7	Before		-322.7	-322.7	-280.7	-379.7
		(Minimum) (Nominal) (Maximum)				

Before: 21-Feb-2012 19:04

High Resolution Laterolog Array – B Wellsite Calibration

HRLT M12

Idx	Phase	HRLT M1-M2 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1755	1781	2095	1549
1	Before		1827	1781	2095	1549
2	Before		1829	1781	2095	1549
3	Before		1851	1781	2095	1549

Idx	Phase	HRLT M2-M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
4	Before		1789	1781	2095	1549
5	Before		1768	1781	2095	1549
6	Before		-1788	-1781	-1549	-2095
7	Before		1781	1781	2095	1549
		(Minimum) (Nominal) (Maximum)				

Before: 21-Feb-2012 19:04

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT M23						
Idx	Phase	HRLT M2-M3 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		1741	1781	2095	1549
1	Before		1826	1781	2095	1549
2	Before		1829	1781	2095	1549
3	Before		1854	1781	2095	1549
4	Before		1786	1781	2095	1549
5	Before		1766	1781	2095	1549
6	Before		-1776	-1781	-1549	-2095
7	Before		1781	1781	2095	1549
		(Minimum) (Nominal) (Maximum)				

Before: 21-Feb-2012 19:04

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V34						
Idx	Phase	HRLT A3-A4 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68410	70000	82360	60900
1	Before		71530	70000	82360	60900
2	Before		71940	70000	82360	60900
3	Before		73210	70000	82360	60900
4	Before		70460	70000	82360	60900
5	Before		69710	70000	82360	60900
6	Before		-68580	-70000	-60900	-82360
7	Before		70000	70000	82360	60900
		(Minimum) (Nominal) (Maximum)				

Before: 21-Feb-2012 19:04

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT V45						
Idx	Phase	HRLT A4-A5 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68690	70000	82360	60900
1	Before		71930	70000	82360	60900
2	Before		72300	70000	82360	60900
3	Before		73550	70000	82360	60900
4	Before		70750	70000	82360	60900
5	Before		69990	70000	82360	60900
6	Before		-68950	-70000	-60900	-82360
7	Before		70000	70000	82360	60900
		(Minimum) (Nominal) (Maximum)				

Before: 21-Feb-2012 19:04

High Resolution Laterolog Array – B Wellsite Calibration

HRLT V56

Idx	Phase	HRLT A5-A6 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		68590	70000	82360	60900
1	Before		71660	70000	82360	60900
2	Before		72060	70000	82360	60900
3	Before		73340	70000	82360	60900
4	Before		70610	70000	82360	60900
5	Before		69880	70000	82360	60900
6	Before		-68690	-70000	-60900	-82360
7	Before		70000	70000	82360	60900
			(Minimum)	(Nominal)	(Maximum)	

Before: 21-Feb-2012 19:04

High Resolution Laterolog Array – B Wellsite Calibration

HRLT VTP

Idx	Phase	HRLT Torpedo-M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68260	-70000	-60900	-82360
1	Before		-71980	-70000	-60900	-82360
2	Before		-72350	-70000	-60900	-82360
3	Before		-73630	-70000	-60900	-82360
4	Before		-70820	-70000	-60900	-82360
5	Before		-70040	-70000	-60900	-82360
6	Before		68950	70000	82360	60900
7	Before		-70000	-70000	-60900	-82360
			(Minimum)	(Nominal)	(Maximum)	

Before: 21-Feb-2012 19:04

High Resolution Laterolog Array – B Wellsite Calibration

HRLT VBD

Idx	Phase	HRLT Bridle#9-M0 Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-68260	-70000	-60900	-82360
1	Before		-71950	-70000	-60900	-82360
2	Before		-72320	-70000	-60900	-82360
3	Before		-73610	-70000	-60900	-82360
4	Before		-70800	-70000	-60900	-82360
5	Before		-70020	-70000	-60900	-82360
6	Before		68920	70000	82360	60900
7	Before		-70000	-70000	-60900	-82360
			(Minimum)	(Nominal)	(Maximum)	

Before: 21-Feb-2012 19:04

High Resolution Laterolog Array – B Wellsite Calibration

HRLT ISO

Idx	Phase	HRLT Source Current Plus UA	Value	Nominal	Maximum	Minimum
0	Before		284.6	284.0	334.1	247.0
1	Before		281.1	281.1	330.7	244.4
2	Before		281.1	281.1	330.7	244.4
3	Before		281.1	281.1	330.7	244.4
4	Before		281.1	281.1	330.7	244.4
5	Before		281.1	281.1	330.7	244.4

Before			281.1	281.1	330.7	244.4
6	Before		281.1	281.1	330.7	244.4
7	Before		281.1	281.1	330.7	244.4
		(Minimum) (Nominal) (Maximum)				

Before: 21-Feb-2012 19:04

High Resolution Laterolog Array – B Wellsite Calibration						
HRLT MV						
Idx	Phase	HRLT Vertical Voltage Plus UV	Value	Nominal	Maximum	Minimum
0	Before		-321.6	-322.7	-280.7	-379.7
1	Before		-326.8	-322.7	-280.7	-379.7
2	Before		-327.1	-322.7	-280.7	-379.7
3	Before		-329.4	-322.7	-280.7	-379.7
4	Before		-315.4	-322.7	-280.7	-379.7
5	Before		-326.8	-322.7	-280.7	-379.7
6	Before		331.3	322.7	379.7	280.7
7	Before		-322.7	-322.7	-280.7	-379.7
		(Minimum) (Nominal) (Maximum)				

Before: 21-Feb-2012 19:04

Hostile Litho-Density Sonde / Equipment Identification			
<b>Primary Equipment:</b>			
Hostile Litho Density Sonde	HLDS – D	45	
Hostile Litho Density High Voltage	HLDV – D	45	
Gamma Source Radioactive	GSR – Z	2397	
<b>Auxiliary Equipment:</b>			
Hostile Litho Density Pad	HLDP – C	45	
Hostile Litho Density High Voltage Housi	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		7.671	Master		7.932	Master		86.47	
Before		7.676	Before		8.092	Before		85.93	
	7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)			7.000 (Minimum) 9.000 (Nominal) 11.00 (Maximum)			55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)		
Phase	LSW2 Background CPS	Value	Phase	LSW3 Background CPS	Value	Phase	LSW4 Background CPS	Value	
Master		79.53	Master		181.2	Master		222.9	
Before		78.97	Before		181.6	Before		222.8	
	50.00 (Minimum) 100.0 (Nominal) 140.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 290.0 (Maximum)			140.0 (Minimum) 250.0 (Nominal) 360.0 (Maximum)		
Phase	LSW5 Background CPS	Value	Phase	SSW1 Background CPS	Value	Phase	SSW2 Background CPS	Value	
Master		520.3	Master		84.85	Master		146.1	
Before		519.9	Before		84.50	Before		146.3	
	330.0 (Minimum) 600.0 (Nominal) 830.0 (Maximum)			55.00 (Minimum) 100.0 (Nominal) 150.0 (Maximum)			100.0 (Minimum) 200.0 (Nominal) 260.0 (Maximum)		
Phase	SSW3 Background CPS	Value	Phase	SSW4 Background CPS	Value	Phase	SSW5 Background CPS	Value	
Master		411.2	Master		221.2	Master		157.4	
Before		408.7	Before		218.7	Before		157.9	
	280.0 (Minimum) 500.0 (Nominal) 700.0 (Maximum)			150.0 (Minimum) 270.0 (Nominal) 380.0 (Maximum)			110.0 (Minimum) 200.0 (Nominal) 270.0 (Maximum)		

Master: 9-Jan-2012 3:31

Before: 21-Feb-2012 19:07

Litho-Density Spectroscopy Cartridge – B / Equipment Identification			
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
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	77693
Enhanced DTS Cartridge	EDTC - B	8529
Auxiliary Equipment:		
EDTC Housing	EDTH - B	8528

Enhanced DTS Cartridge Wellsite Calibration




EDTC Accelerometer Calibration

Phase	EDTC Z-Axis Acceleration M/S2	Value
Before		9.740
	9.610 (Minimum)      9.810 (Nominal)      10.01 (Maximum)	

Before: 21-Feb-2012 19:04

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		1.492	Before		163.3	Before		165.0
	0 (Minimum)      30.00 (Nominal)      120.0 (Maximum)			148.5 (Minimum)      163.3 (Nominal)      178.2 (Maximum)			150.0 (Minimum)      165.0 (Nominal)      180.0 (Maximum)	

Before: 21-Feb-2012 19:03

Company: **Lamont Doherty Earth Observatory**

**Schlumberger**

Well: **Expedition 340T, Site U1309D**

Field: **Atlantis Massif**

Rig: **JOIDES Resolution**

Country: **USA**

High-Resolution Laterolog Array (HRLA)