

Company: ENCANA OIL & GAS (USA) INC

Well: FEDERAL 31-2C (PF 31)

Field: PARACHUTE

County: GARFIELD

State: COLORADO

County: GARFIELD

Field: PARACHUTE

Location: SHL: 2336 FNL & 1440 FWL

Well: FEDERAL 31-2C (PF 31)

Company: ENCANA OIL & GAS (USA) INC

TEMPERATURE LOG

CCL

SHL: 2336 FNL & 1440 FWL

BHL: 770 FNL & 2287 FEL

Elev.: K.B. 5855.00 ft

G.L. 5833.00 ft

D.F. 5854.00 ft

Permanent Datum: GROUND LEVEL

Log Measured From: KELLY BUSHING

Drilling Measured From: KELLY BUSHING

Elev.: 22.00 ft above Perm. Datum

API Serial No. 05-045-20516-00

Section 31

Township 7S

Range 95W

Logging Date	3-Nov-2013			
Run Number	1			
Depth Driller	6935 ft			
Schlumberger Depth	6870 ft			
Bottom Log Interval	6869 ft			
Top Log Interval	22 ft			
Casing Fluid Type	FRESH WATER			
Salinity				
Density	8.45 lbm/gal			
Fluid Level	22 ft			
BIT/CASING/TUBING STRING				
Bit Size	8.750 in			
From	22 ft			
To	6935 ft			
Casing/Tubing Size	4.500 in			
Weight	11.6 lbm/ft			
Grade	S-80			
From	22 ft			
To	6917 ft			
Maximum Recorded Temperatures	156 degF			
Logger On Bottom	3-Nov-2013	Time	2:15	
Unit Number	391	Location	GRAND JUNCTION	
Recorded By	KURTIS IRWIN			
Witnessed By	TERRY DUINN			

Oil Density		Run 1	Run 2	Run
Water Salinity				
Gas Gravity				
Bo				
Bw				
1/Bg				
Bubble Point Pressure				
Bubble Point Temperature				
Solution GOR				
Maximum Deviation				
CEMENTING DATA				
Primary/Squeeze		Primary		
Casing String No				
Lead Cement Type				
Volume				
Density				
Water Loss				
Additives				
Tail Cement Type				
Volume				
Density				
Water Loss				
Additives				
Expected Cement Top				
Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Fluid Type				
Salinity				
Density				
Fluid Level				
BIT/CASING/TUBING STRING				
Bit Size				
From				
To				
Casing/Tubing Size				
Weight				
Grade				
From				
To				
Maximum Recorded Temperatures				
Logger On Bottom	Time			
Unit Number	Location			
Recorded By				
Witnessed By				

DEPTH SUMMARY LISTING

Date Created: 14-AUG-2013 11:54:57

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-JB	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6349	Serial Number:	3421	Serial Number:	112136
Calibration Date:	7-31-2013	Calibration Date:	14-AUG-2013	Length:	19000 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878	<div>Conveyance Method: Wireline</div> <div>Rig Type: LAND</div>	
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10		
Wheel Correction 1:	-5	Calibration RMS:	3		
Wheel Correction 2:	-4	Calibration Peak Error:	8		

Depth Control Parameters

Log Sequence:	First Log In the Well
Rig Up Length At Surface:	0.00 FT
Rig Up Length At Bottom:	0.00 FT
Rig Up Length Correction:	0.00 FT
Stretch Correction:	
Tool Zero Check At Surface:	

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES USED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SPWT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
- 4.
- 5.
- 6.

DISCLAIMER

THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (b) DISCLAIMERS AND WAIVERS OF WARRANTIES AND REPRESENTATIONS REGARDING COMPANY'S USE OF AND RELIANCE UPON THE RECORDED-DATA; AND (c) CUSTOMER'S FULL AND SOLE RESPONSIBILITY FOR ANY INFERENCE DRAWN OR DECISION MADE IN CONNECTION WITH THE USE OF THIS RECORDED-DATA.

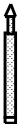


OTHER SERVICES1 OS1: NONE OS2: OS3: OS4: OS5:	OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:
REMARKS: RUN NUMBER 1	REMARKS: RUN NUMBER 2
FIRST RUN IN HOLE	
TOOL RAN AS PER TOOL SKETCH	
ENTRANCE TIME: 01:30	
TIME ON BOTTOM: 02:15	
EXIT TIME: 3:15	

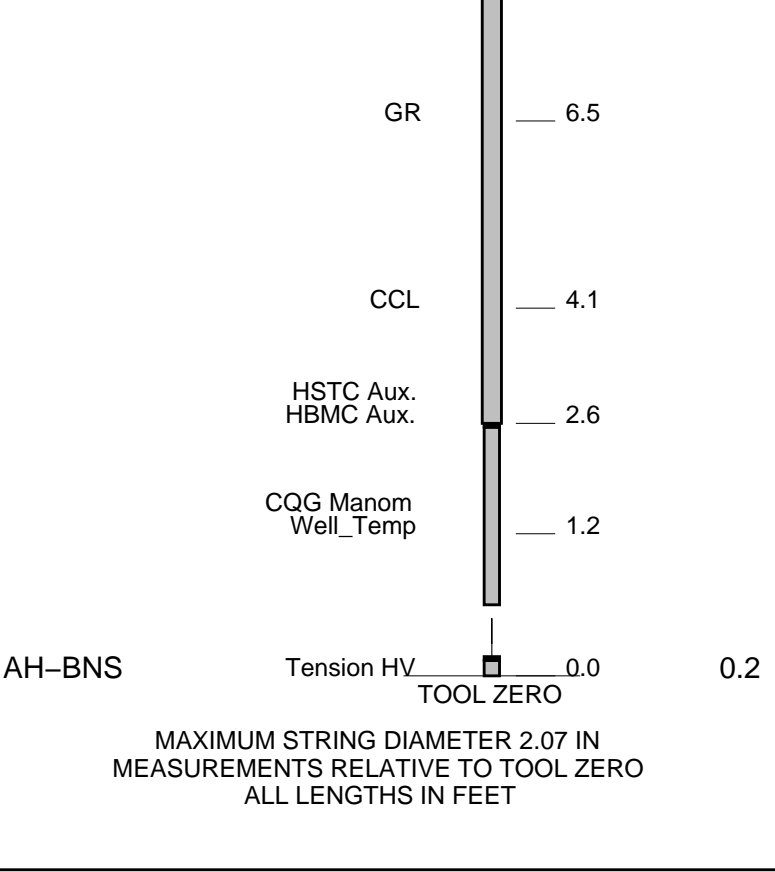
MAXIMUM RECORDED TEMPERATURE: 156 DEGF	
MAXIMUM RECORDED PRESSURE: 2721 PSIA	
SHORT JOINTS: 4725 FT & 5755 FT	
THANK YOU FOR CHOOSING E&P WIRELINE, A SCHLUMBERGER COMPANY	
CREW: KBUNTING, KIRWIN, KBOZARTH	

RUN 1 SERVICE ORDER #: CGF9-00164 PROGRAM VERSION: 19C0-187 FLUID LEVEL: 22 ft			RUN 2 SERVICE ORDER #: PROGRAM VERSION: FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

	EQUIPMENT	DESCRIPTION	
RUN 1			RUN 2

SURFACE EQUIPMENT		
WITM-A		
PSC_16MHZ		

DOWNHOLE EQUIPMENT			
MH-22 MH-22			13.2
AH-38	Detail MT TelStatus CTEM		11.7
HBMS-B PSC-A HUDH-A HSTC-A HBMC-A GR CCL HBMC HTPS-A 2884 HCQG_E_Mano RTD_Thermometer			11.4

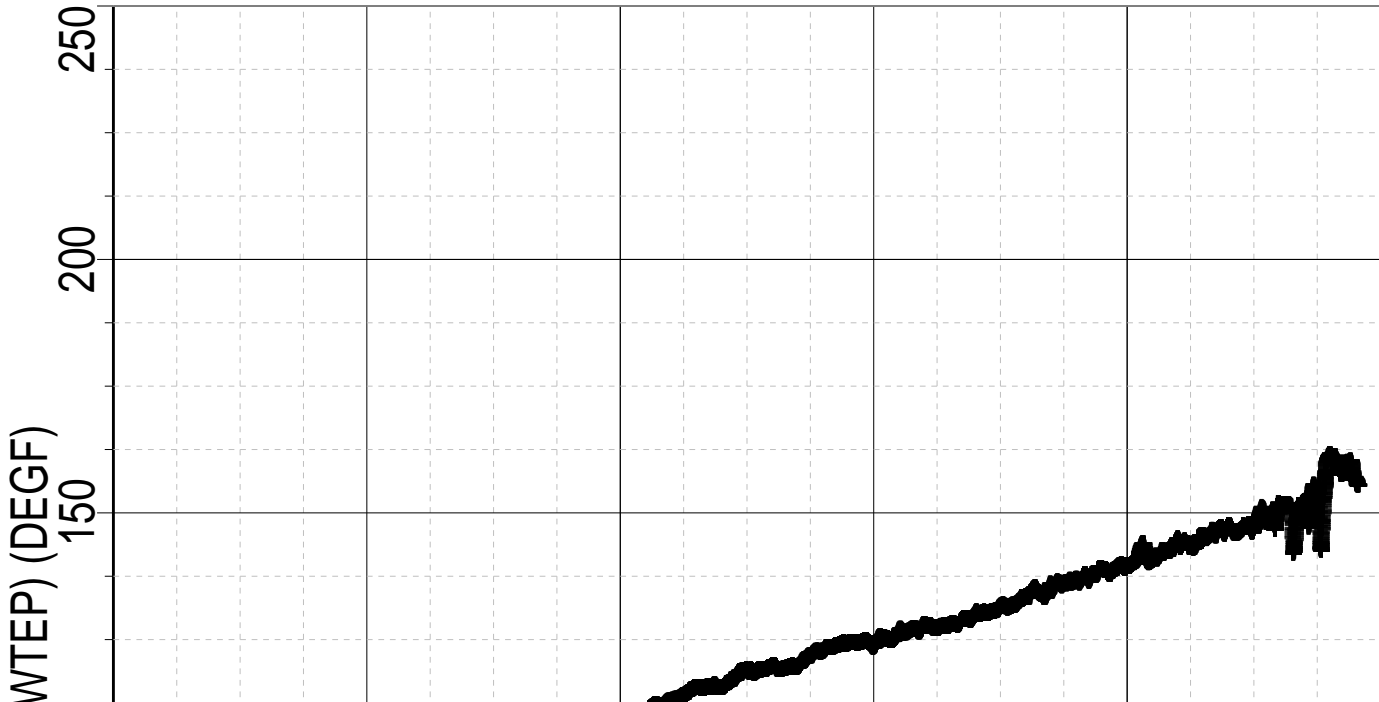


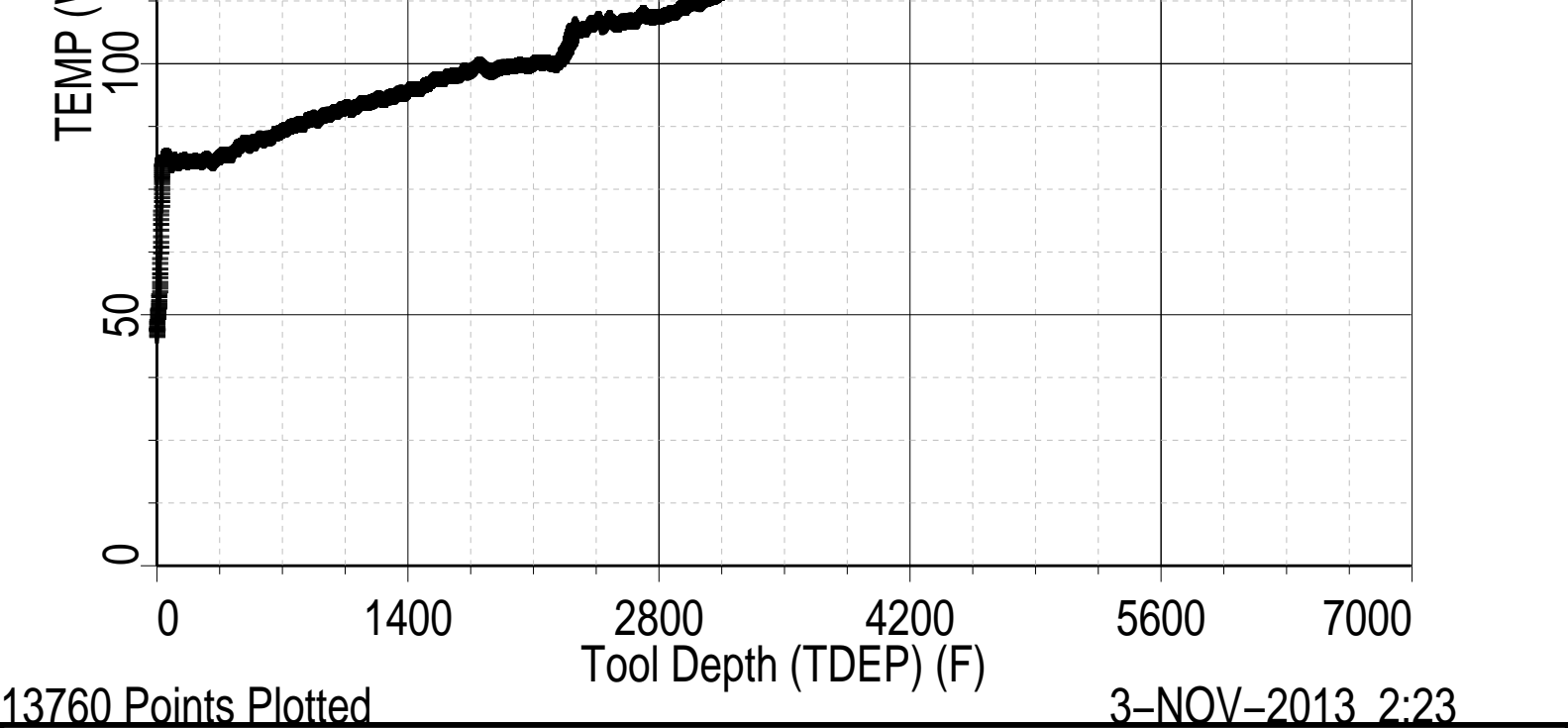
Schlumberger

TEMPERATURE PLOT

MAXIS Field Log

Index: 6879.5 – -15.5 FT





Schlumberger

TEMPERATURE LOG

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: FEDERAL 31-2C (PF 31)

Input DLIS Files

DEFAULT Flip_HBMS_007LUP PRODUCER 03-Nov-2013 02:18 6884.5 FT -10.5 FT

Output DLIS Files

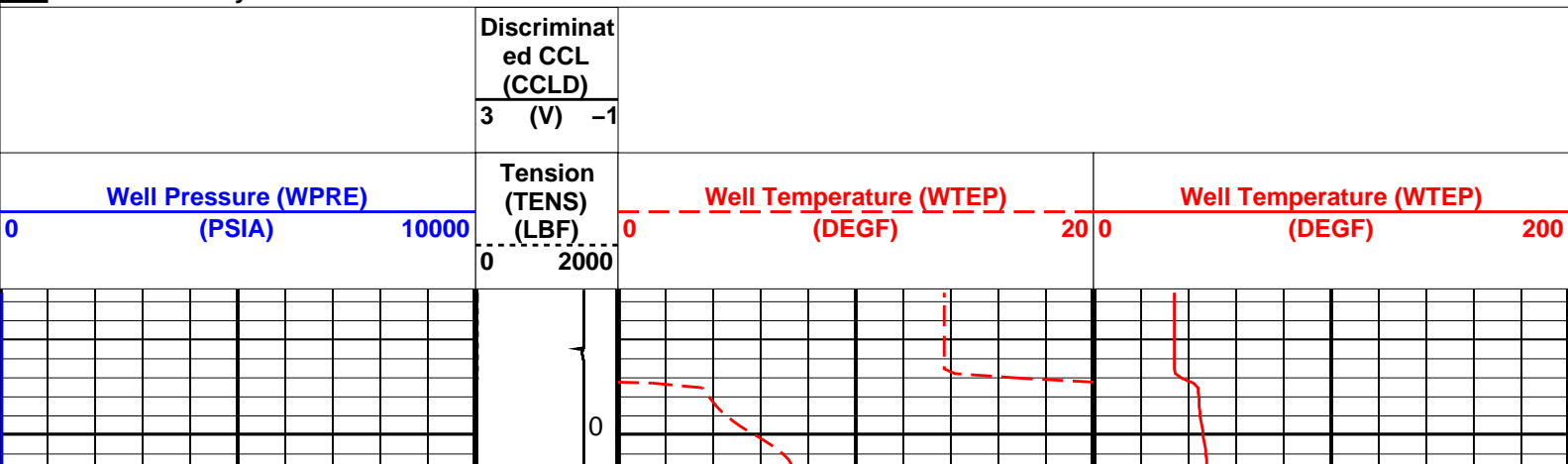
DEFAULT HBMS_009PUP FN:5 PRODUCER 03-Nov-2013 02:19 6879.5 FT -15.5 FT

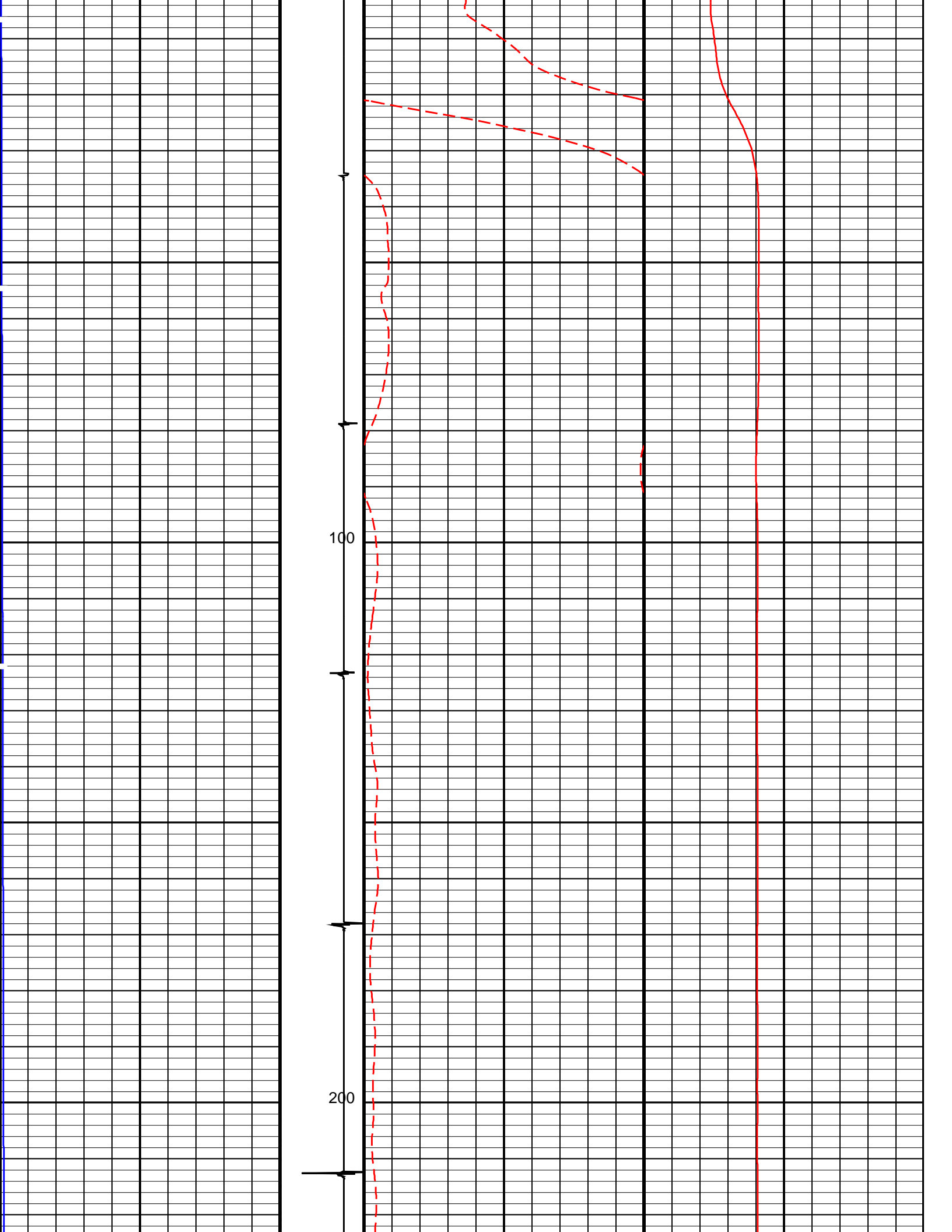
OP System Version: 19C0-187

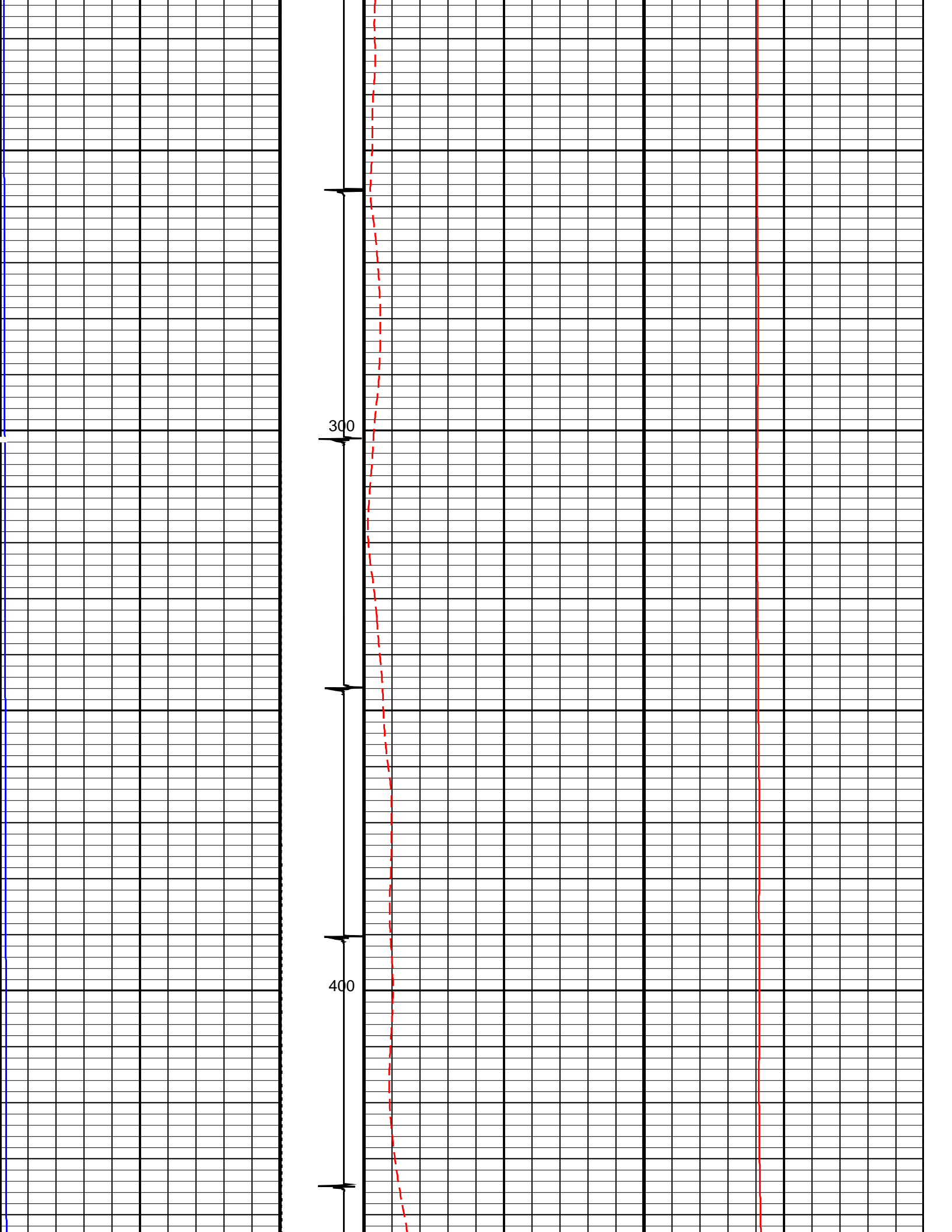
HBMS-B SRPC-5214-H2-2012-OP19

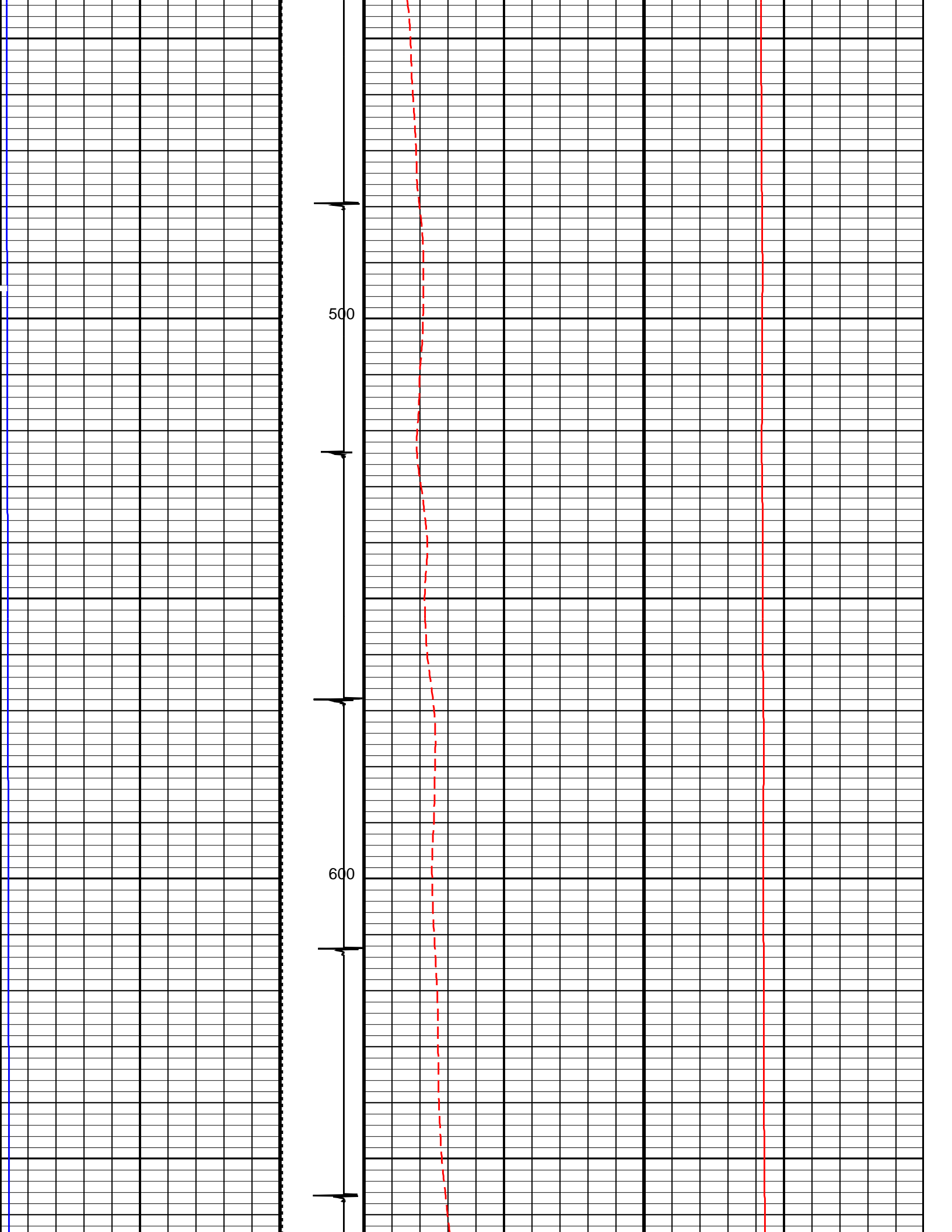
PIP SUMMARY

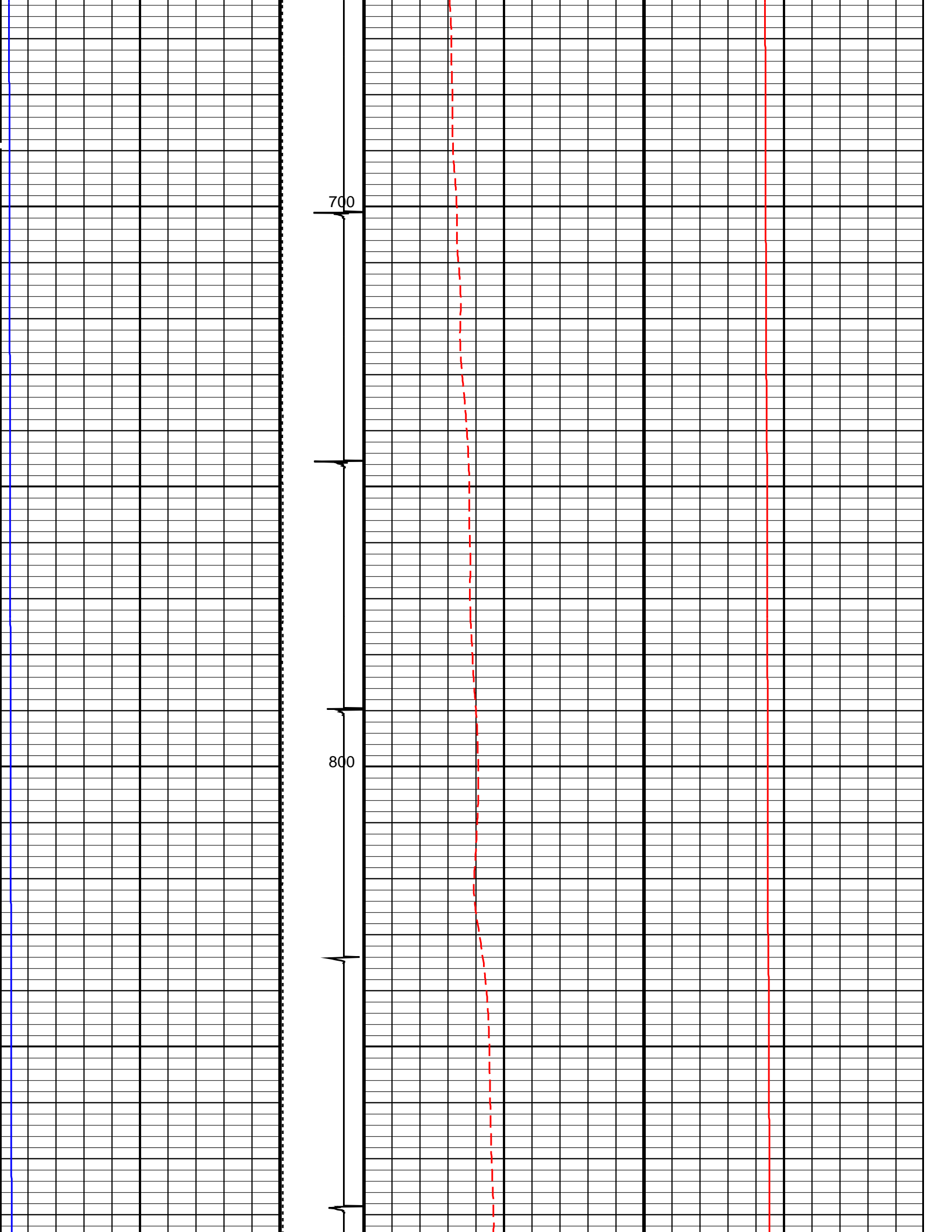
Time Mark Every 60 S

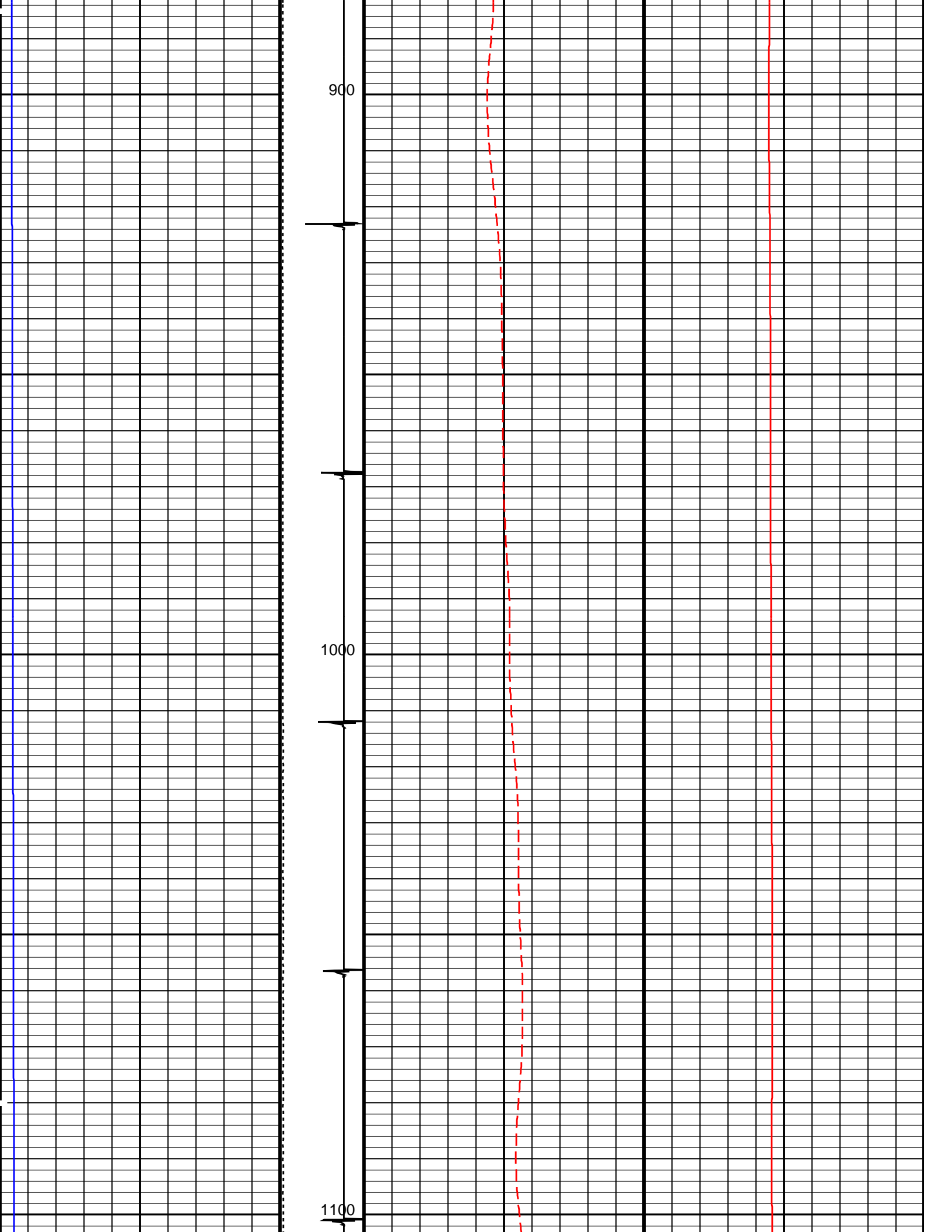


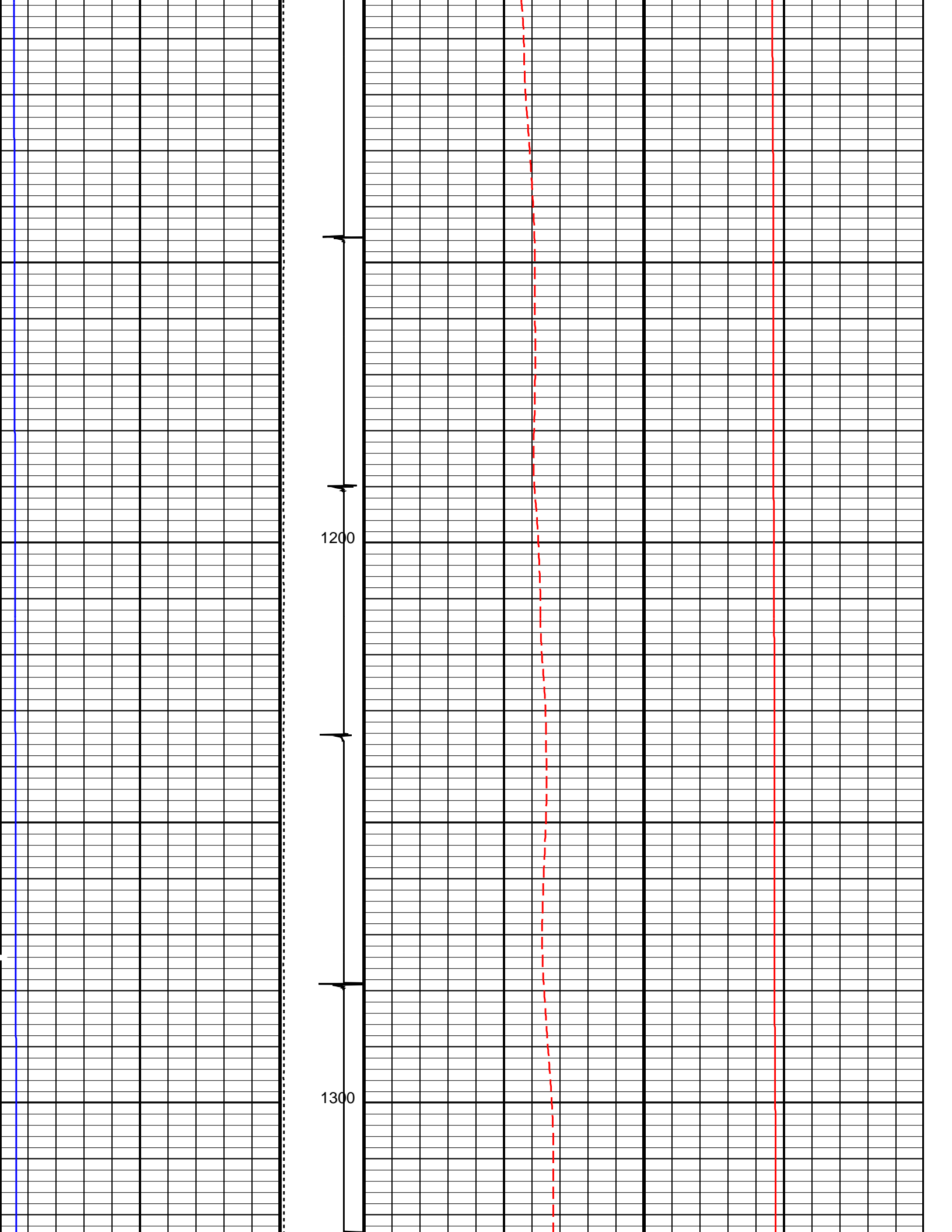


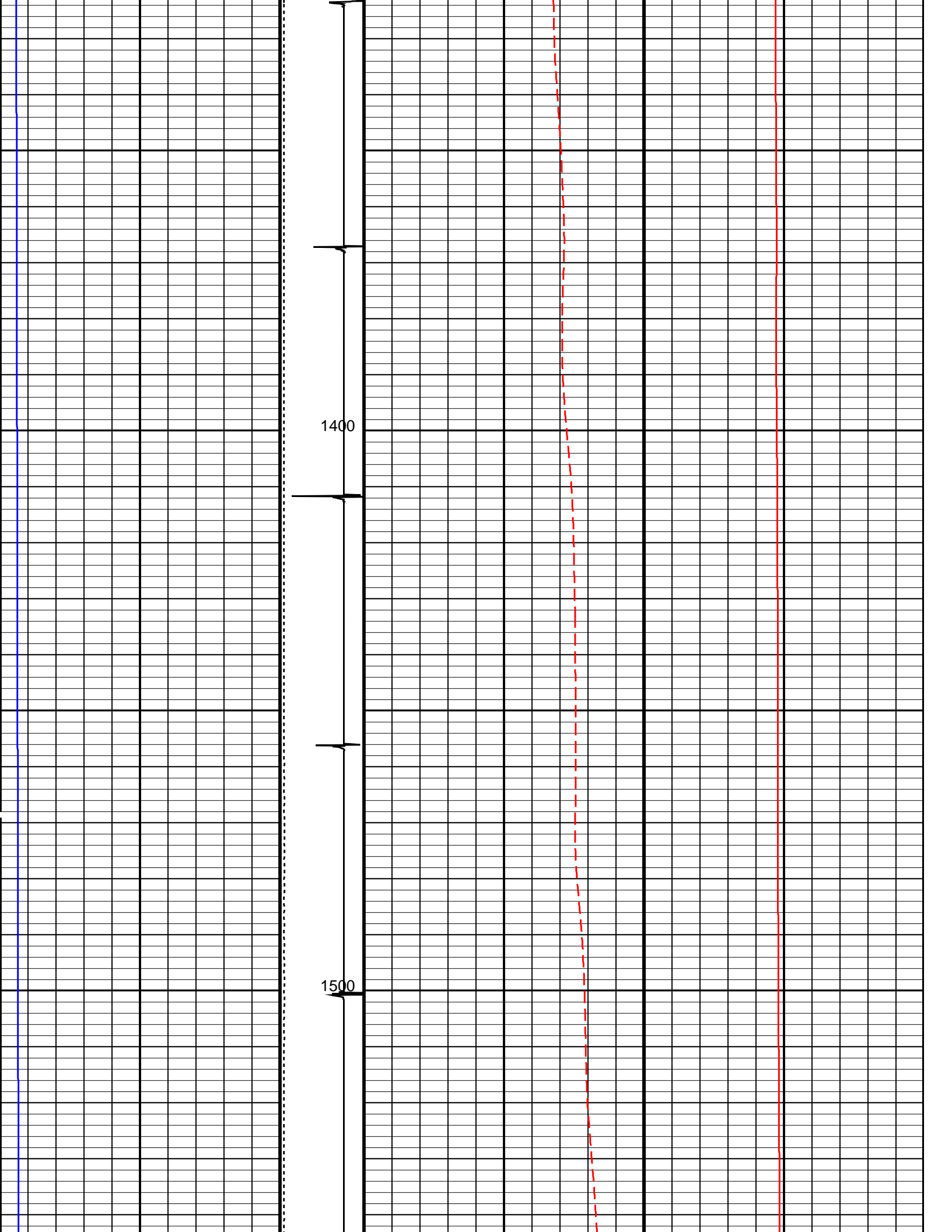


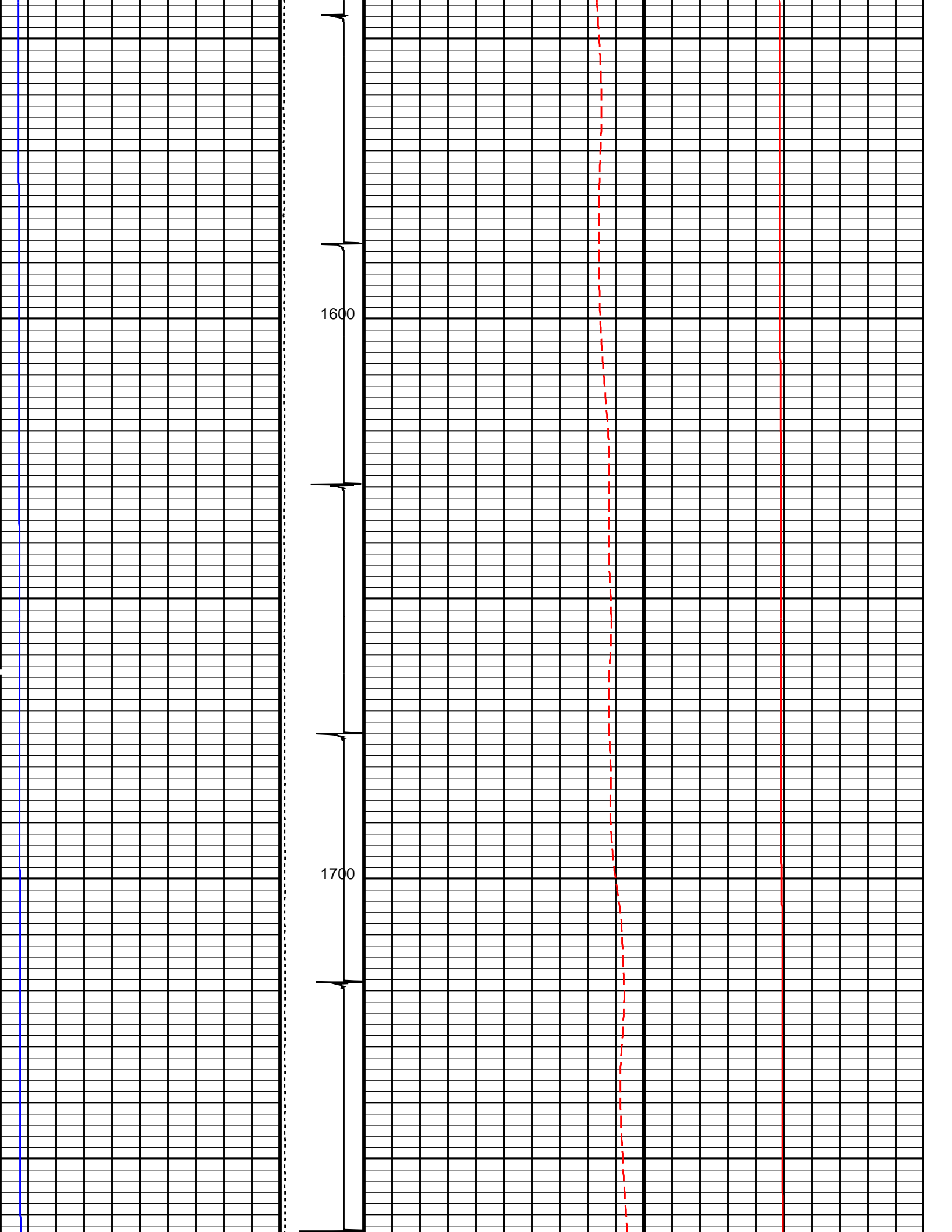


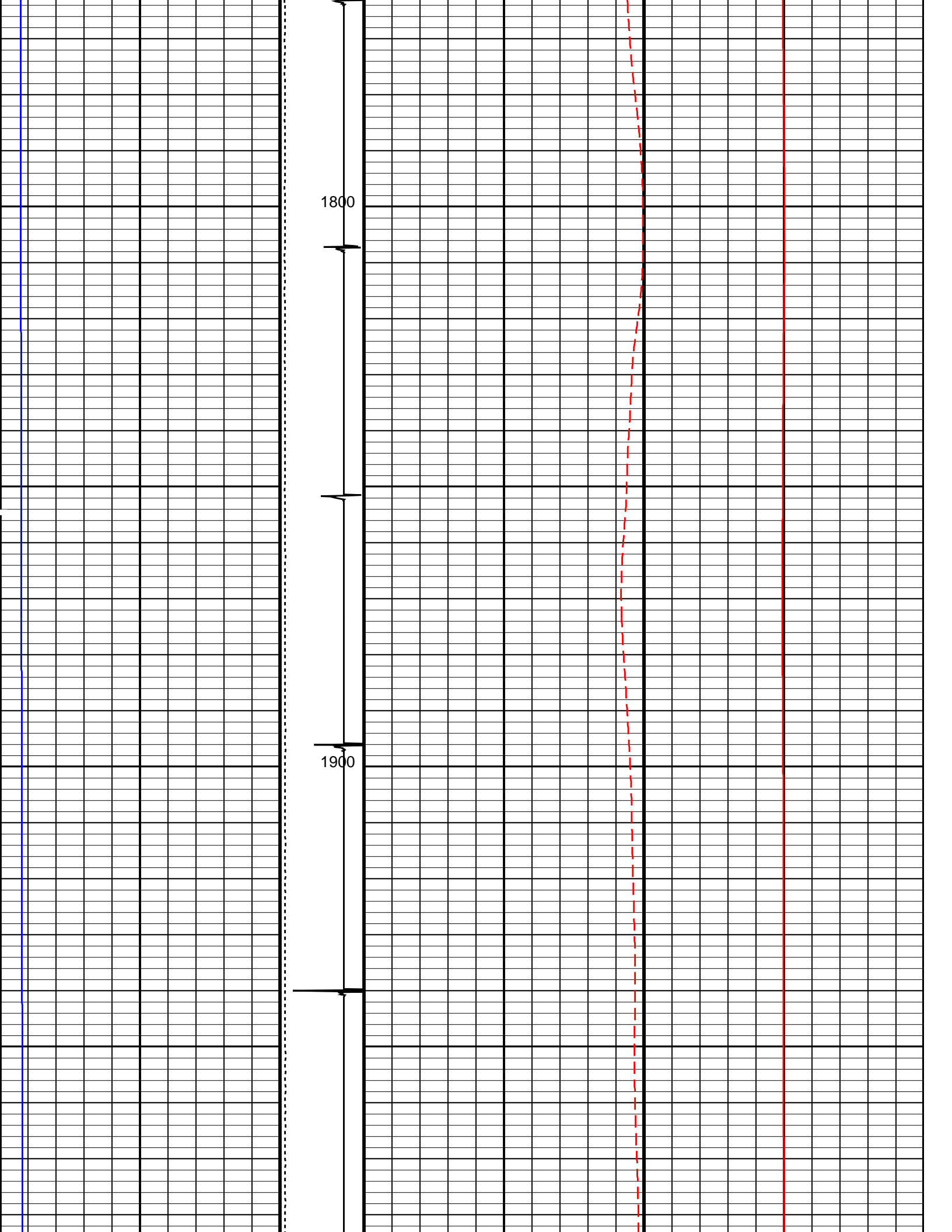


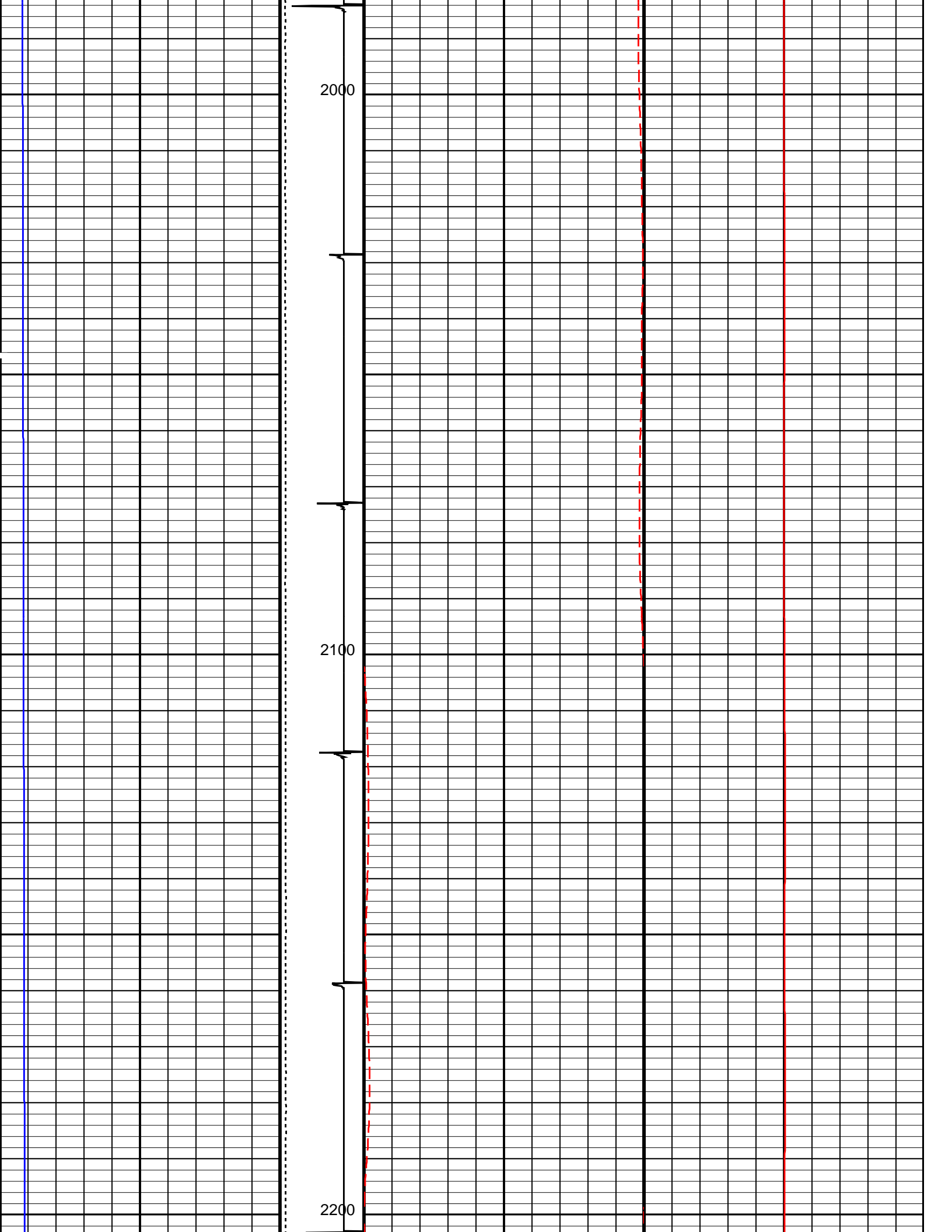


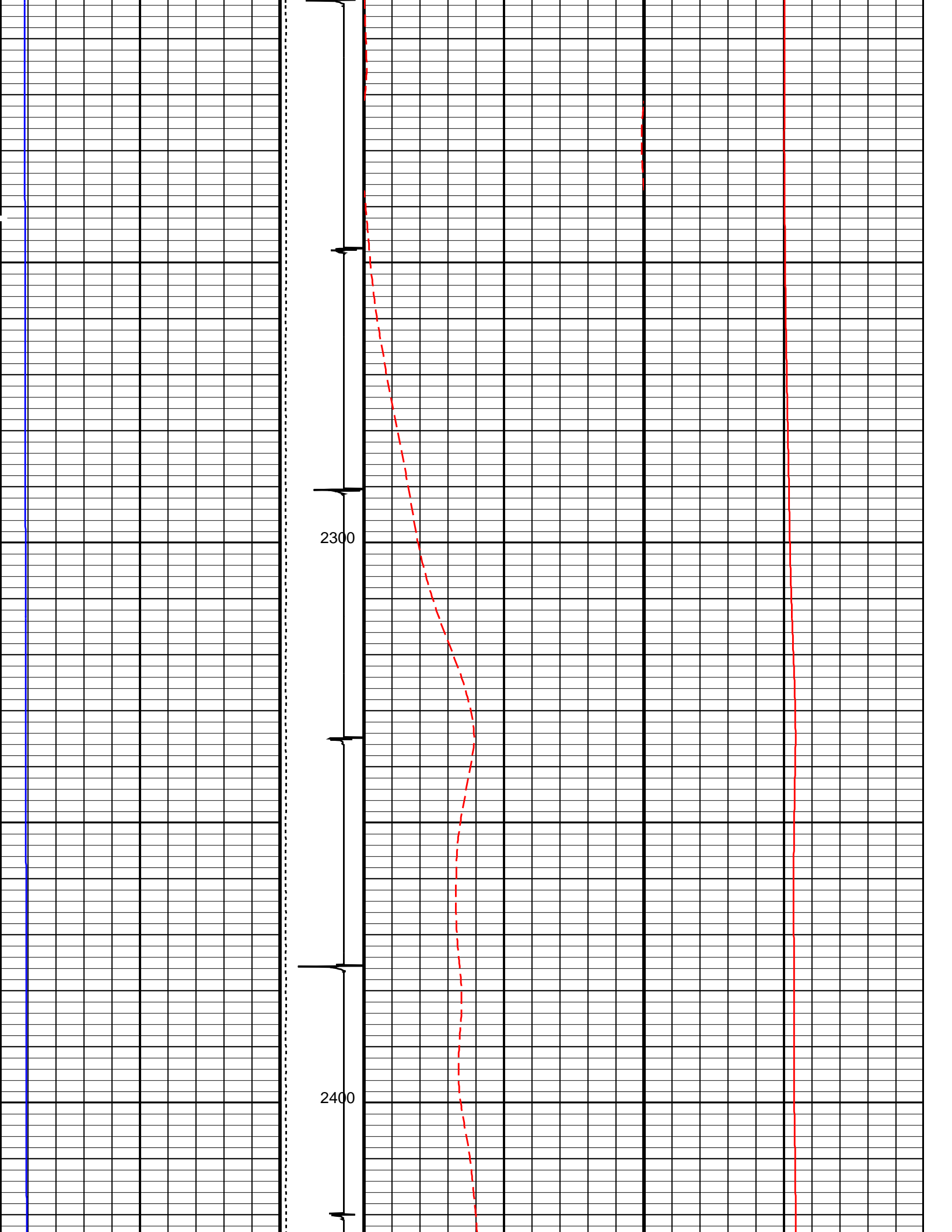


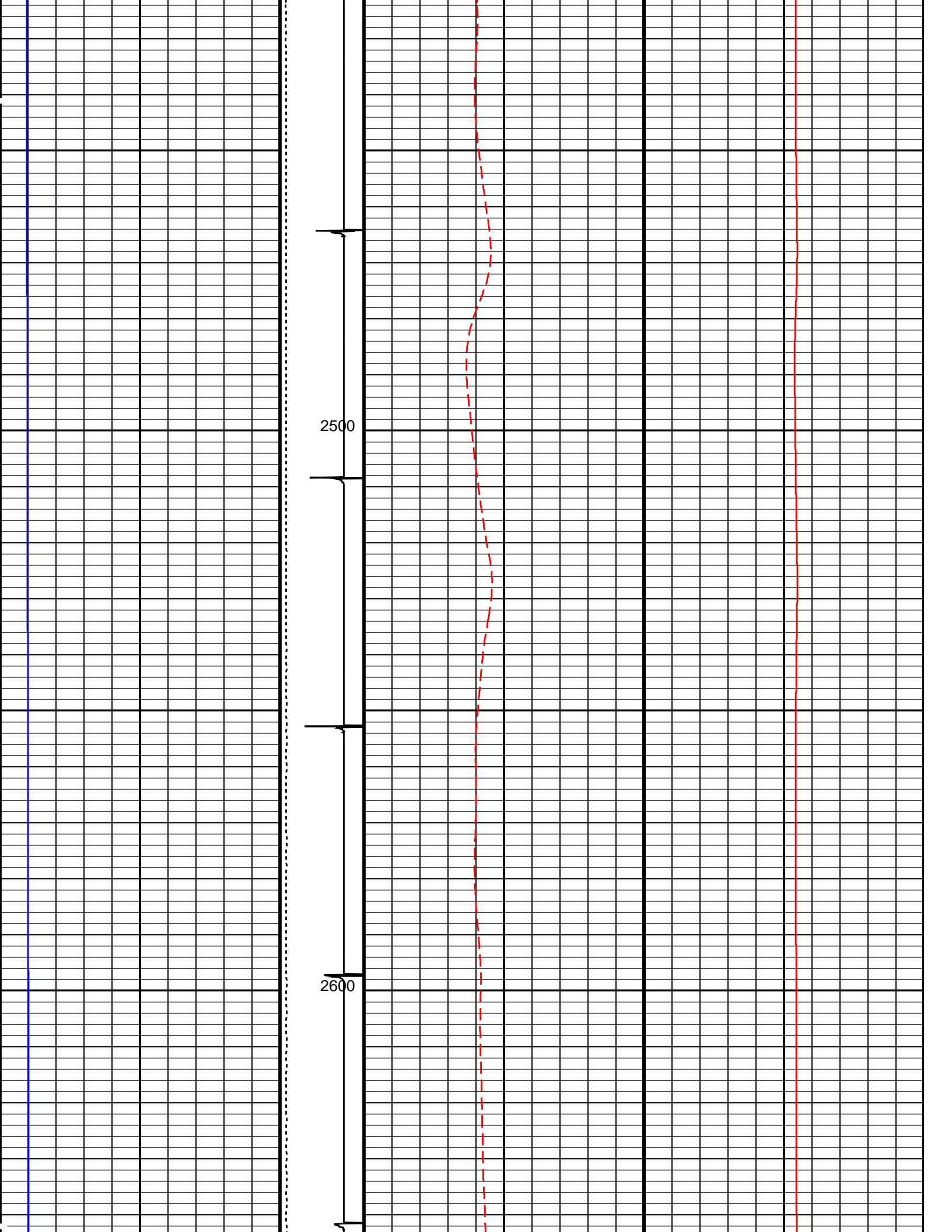


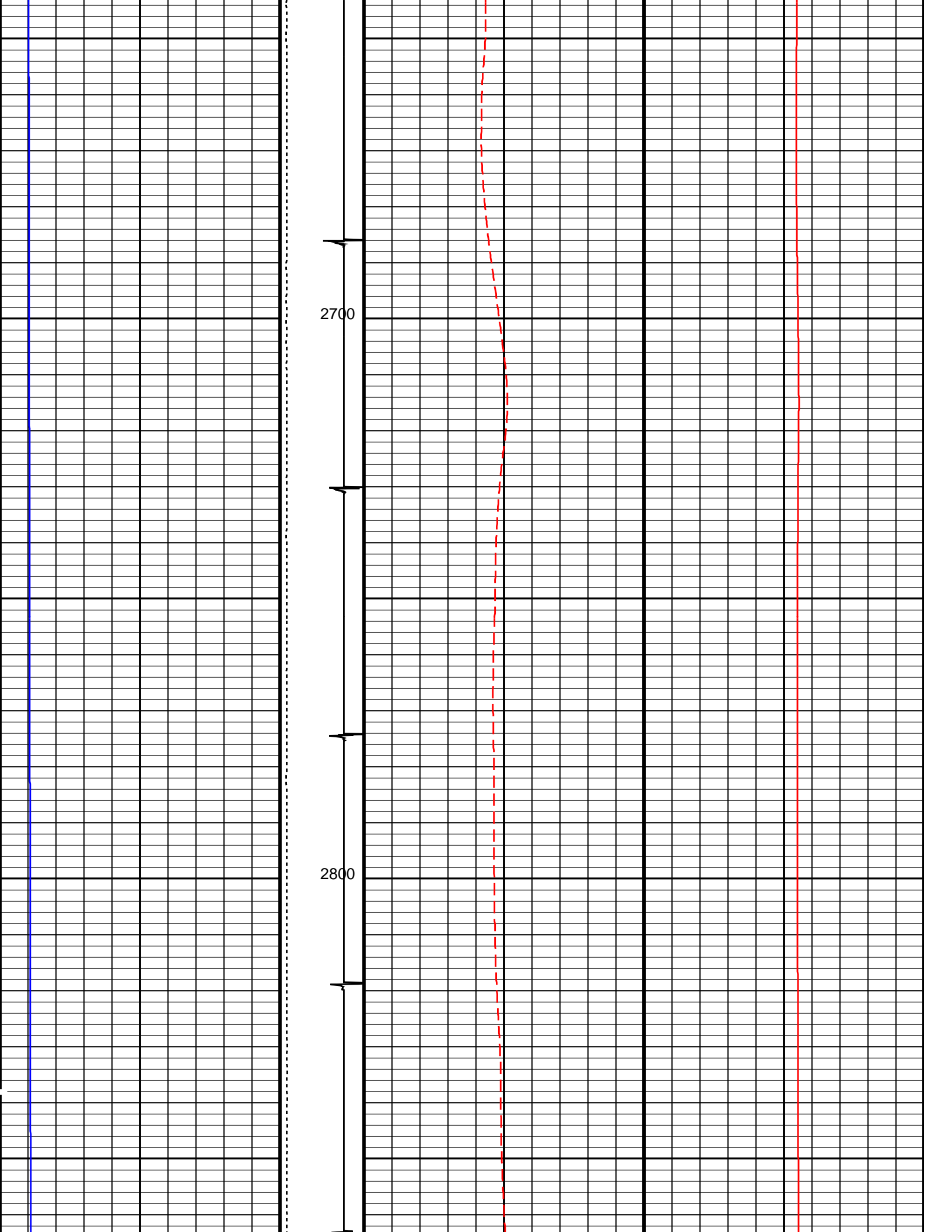


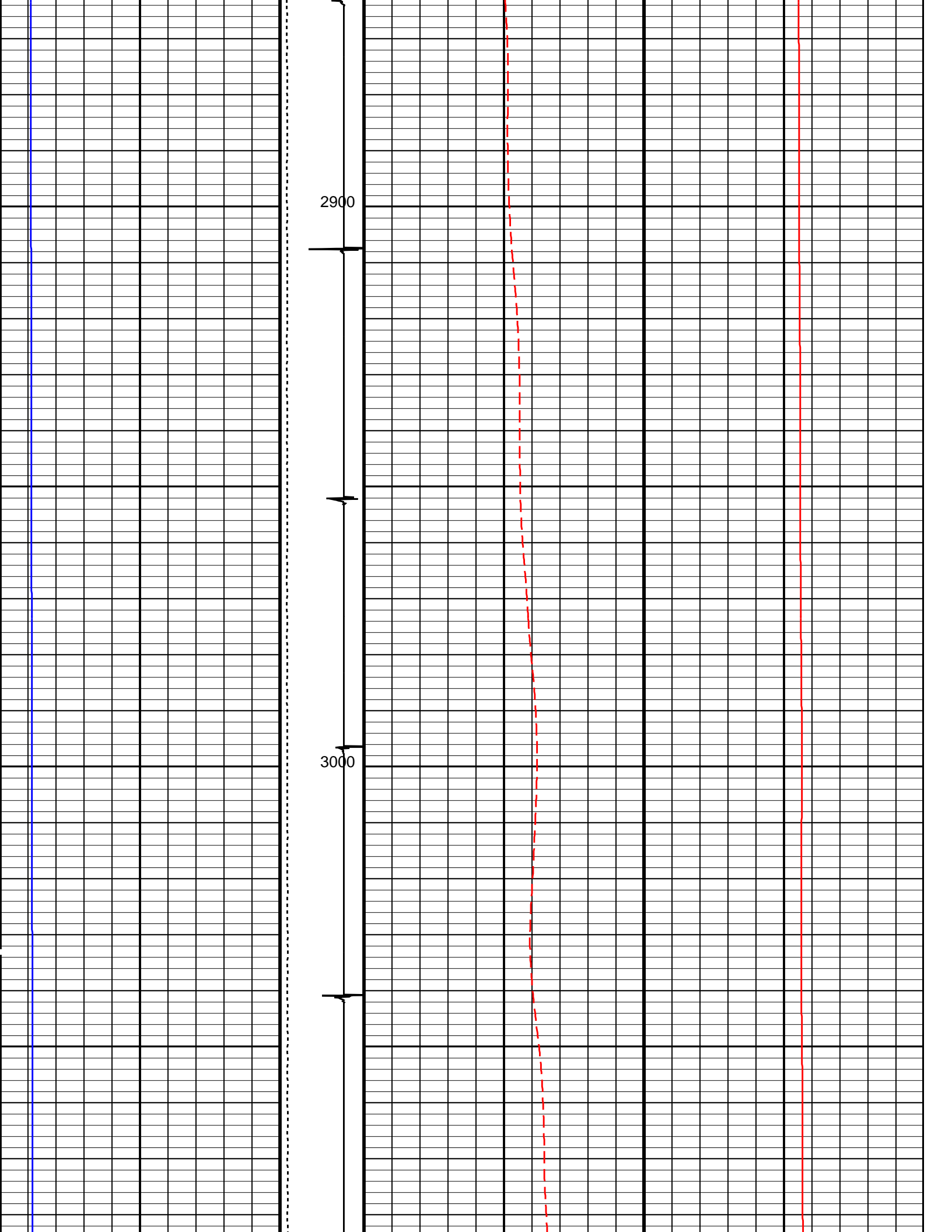


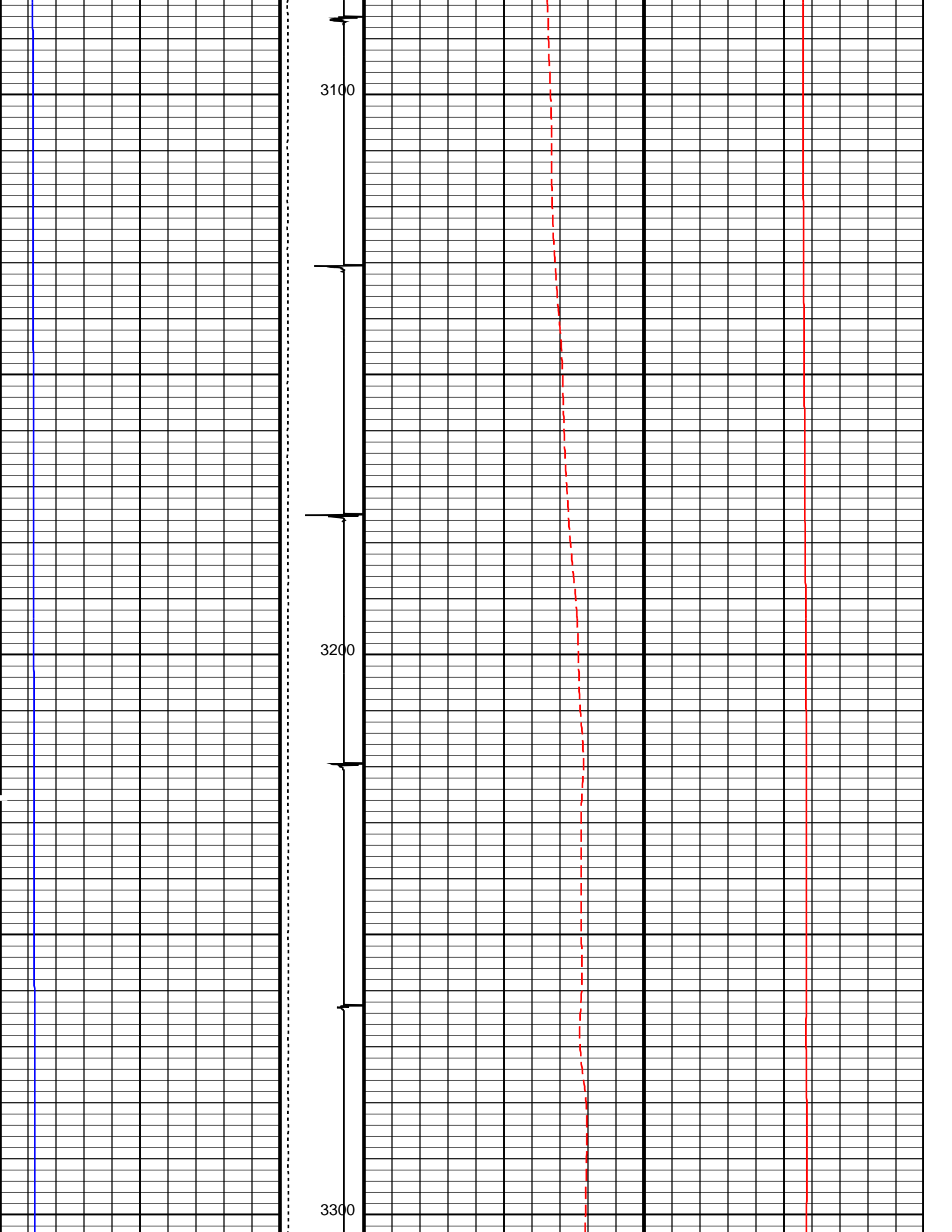


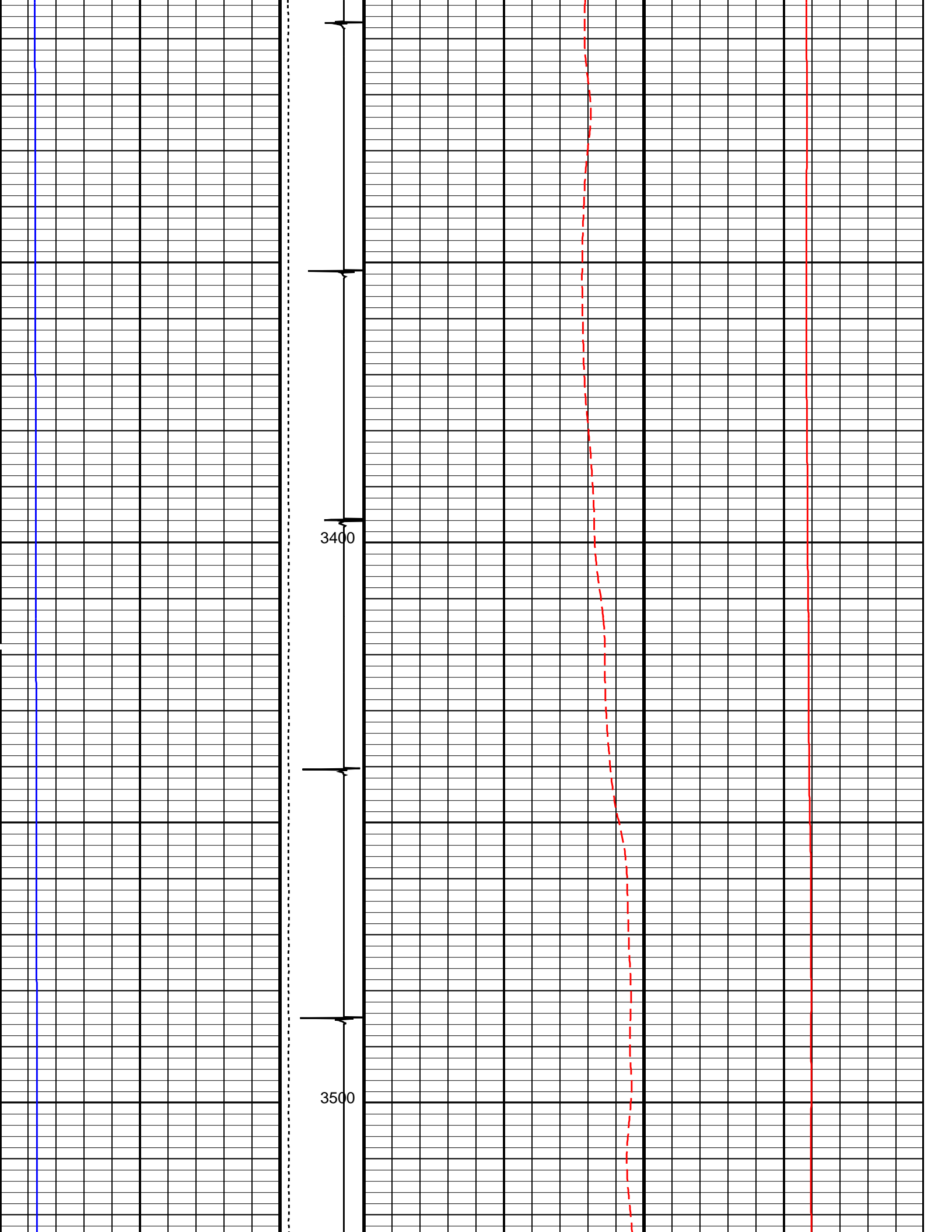


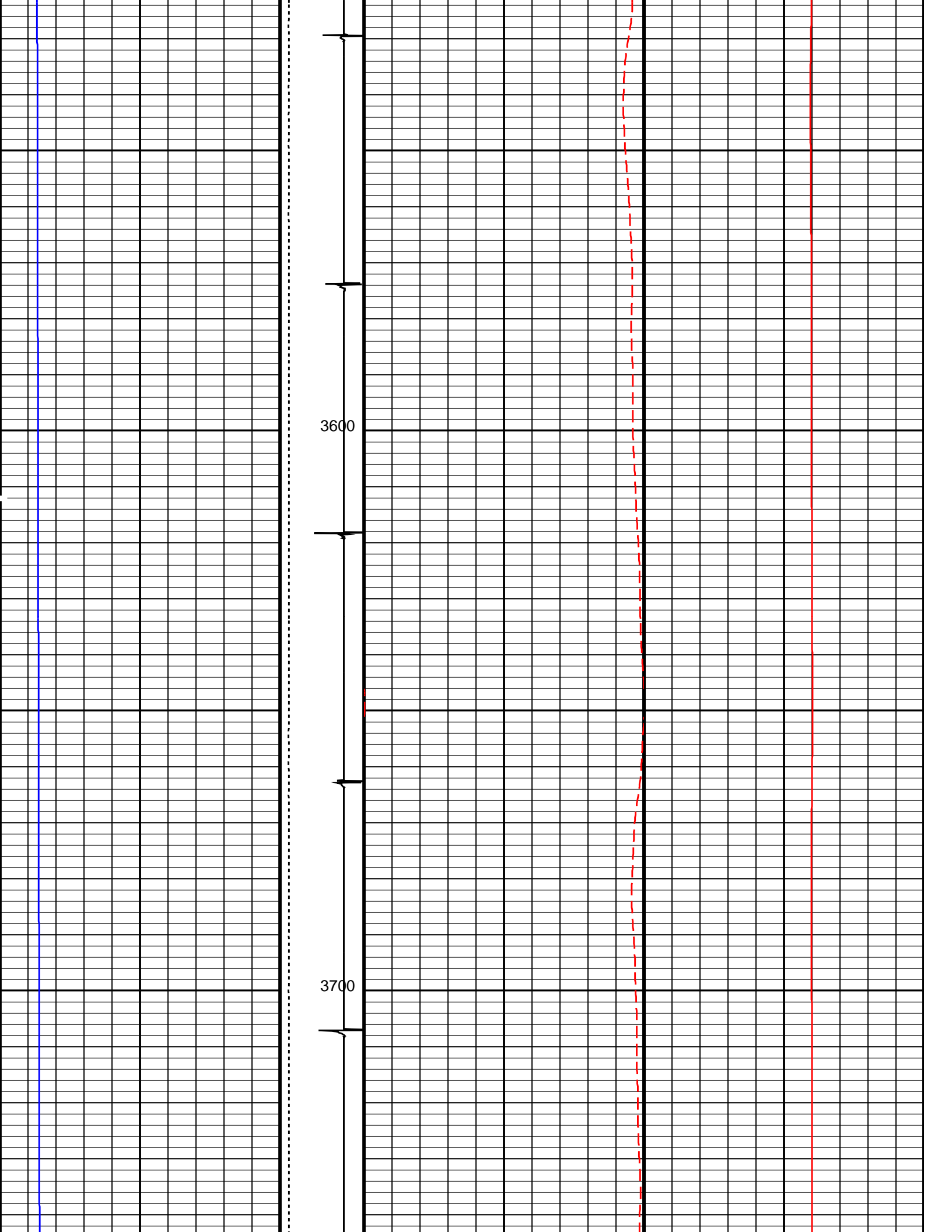


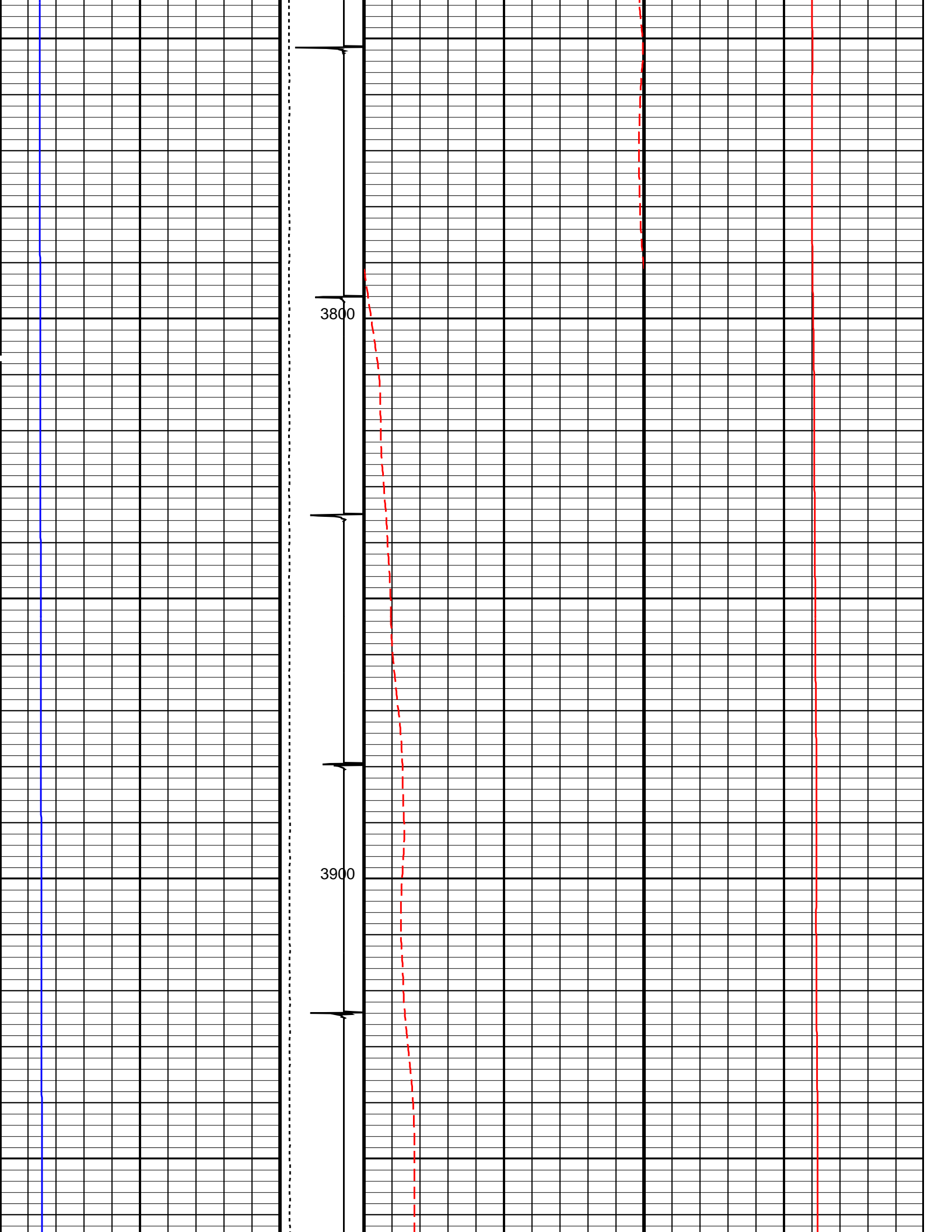


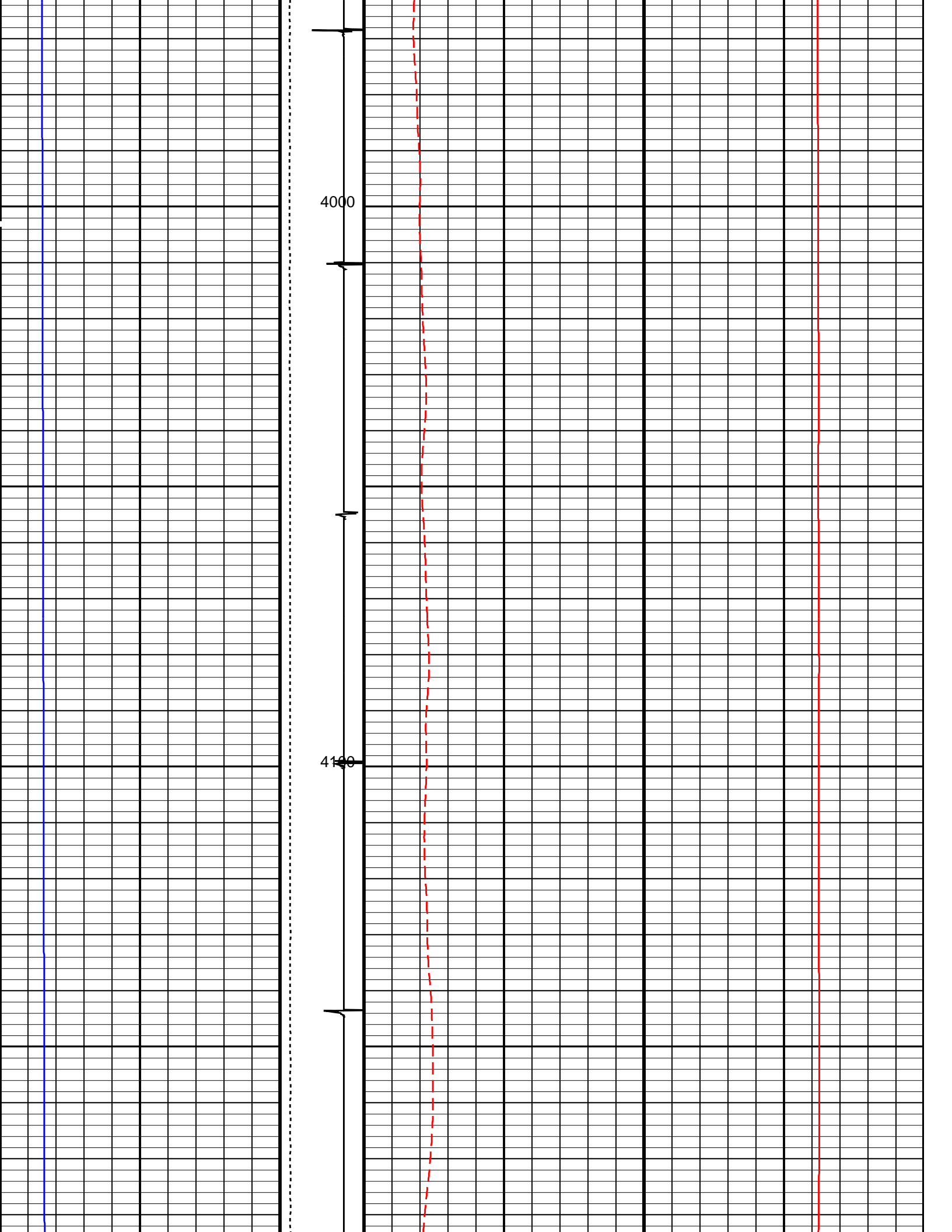


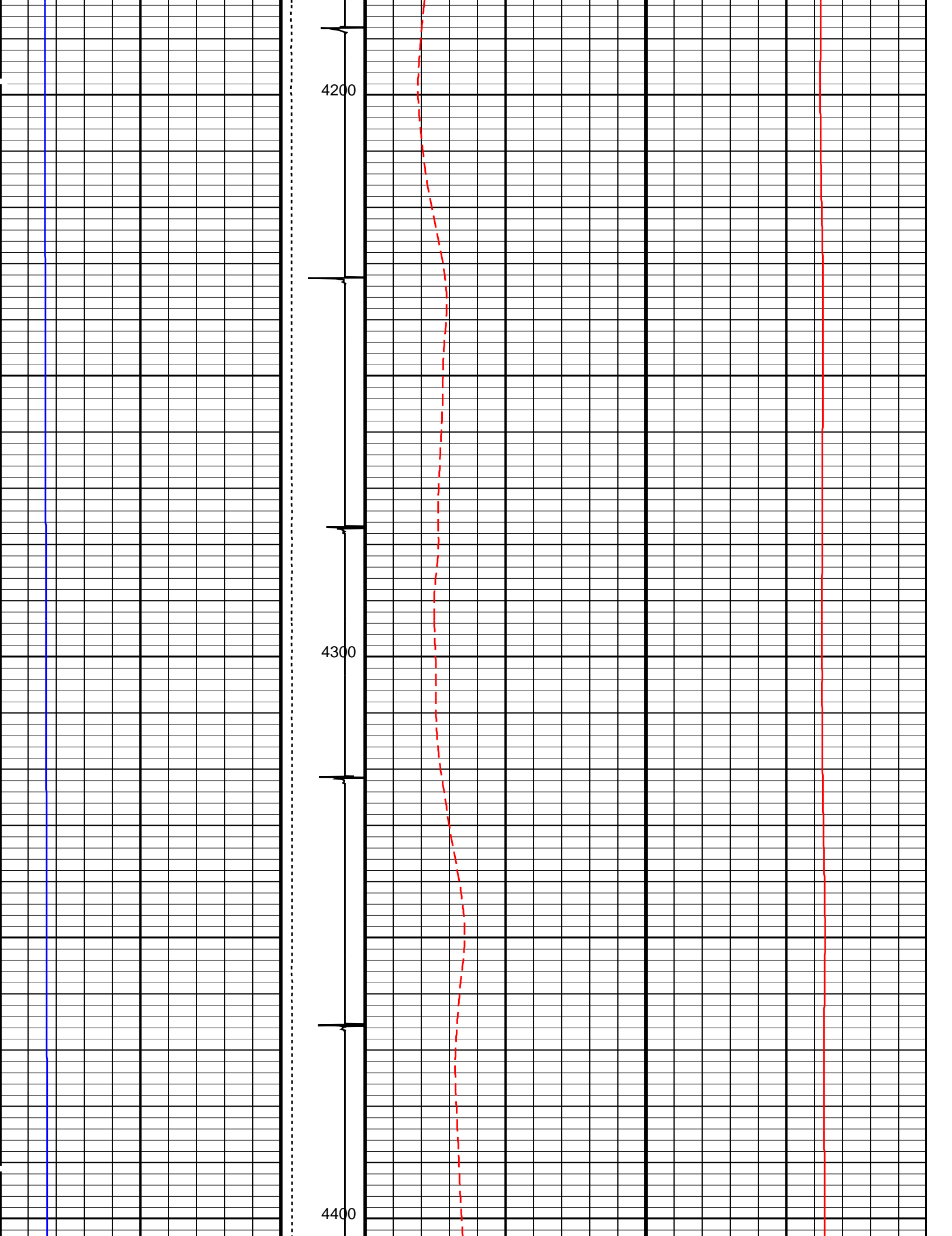


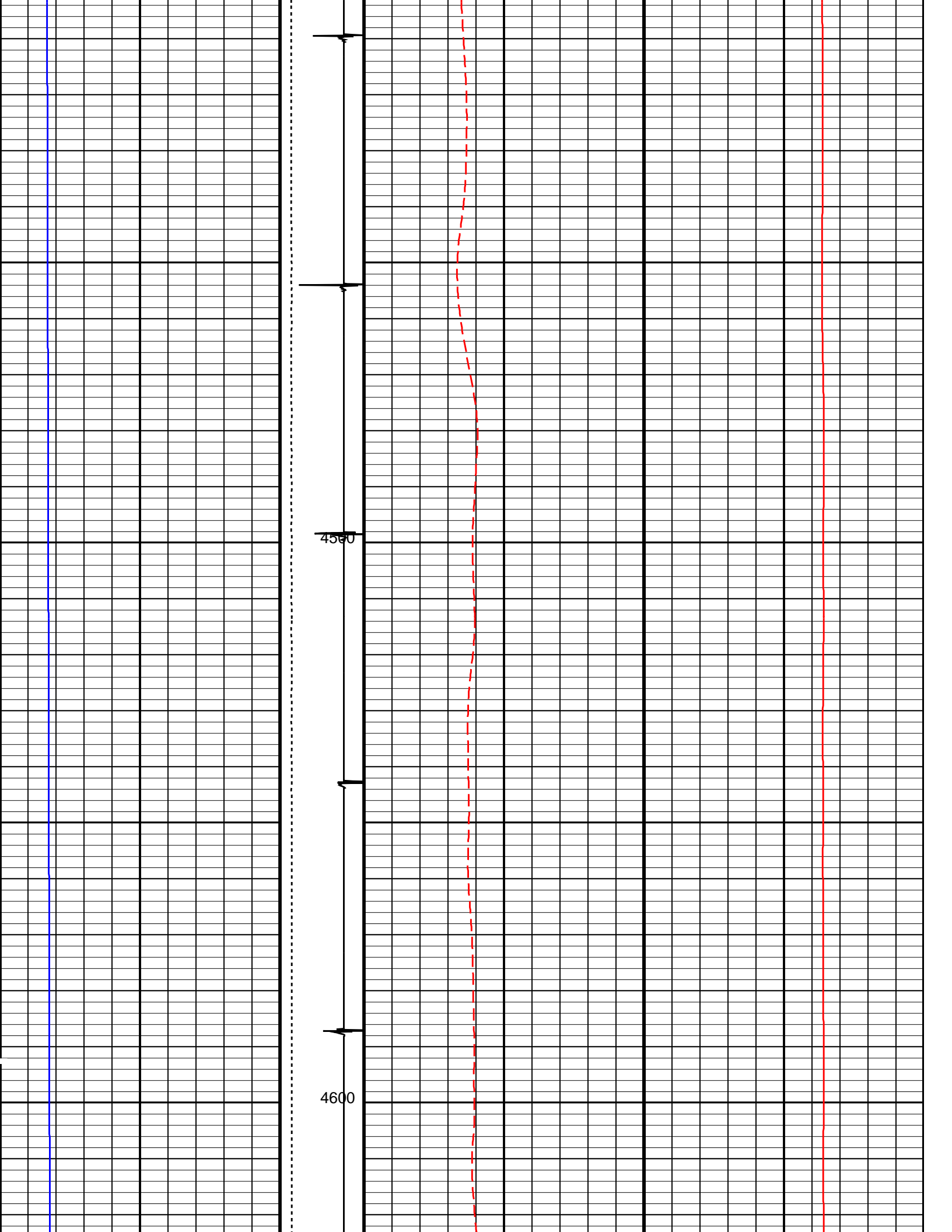


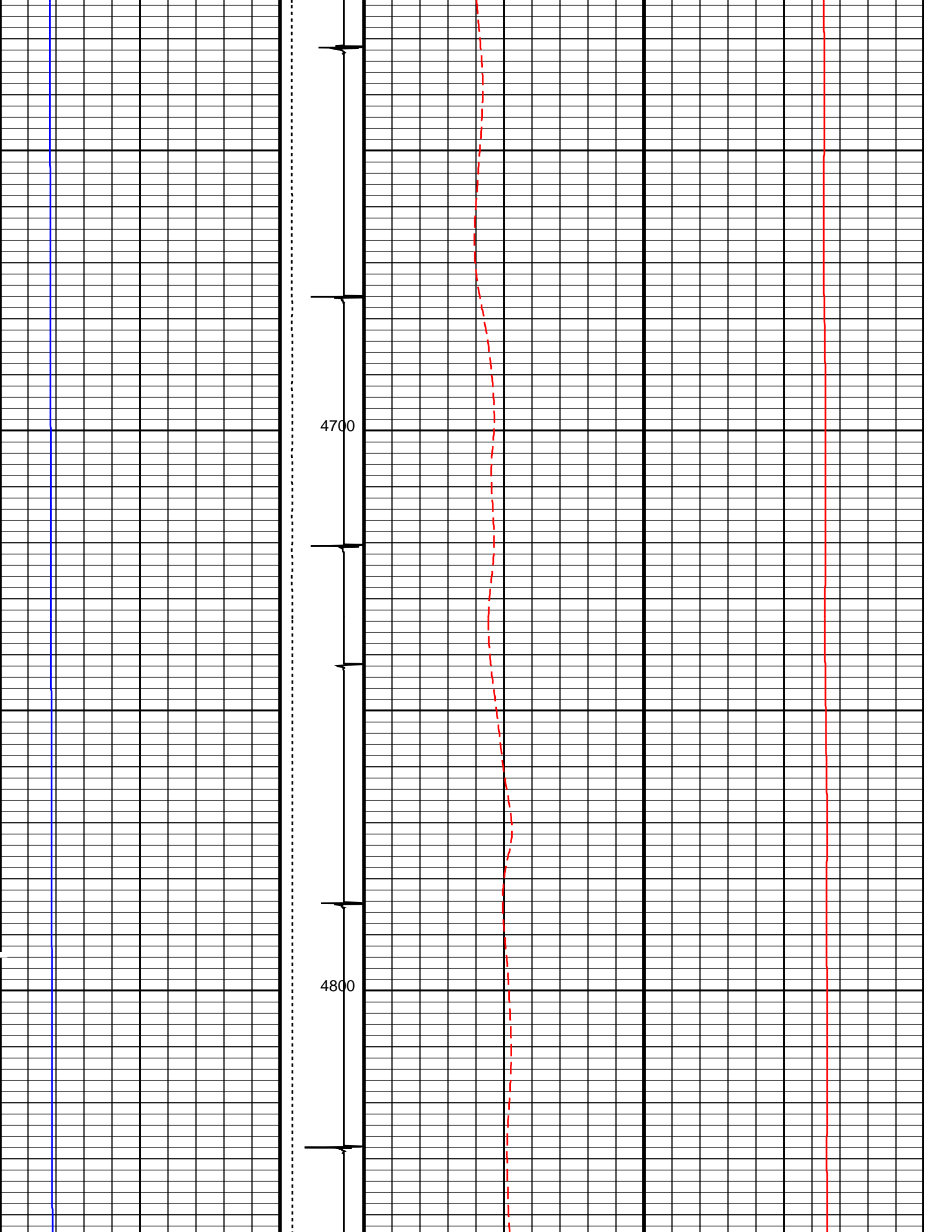


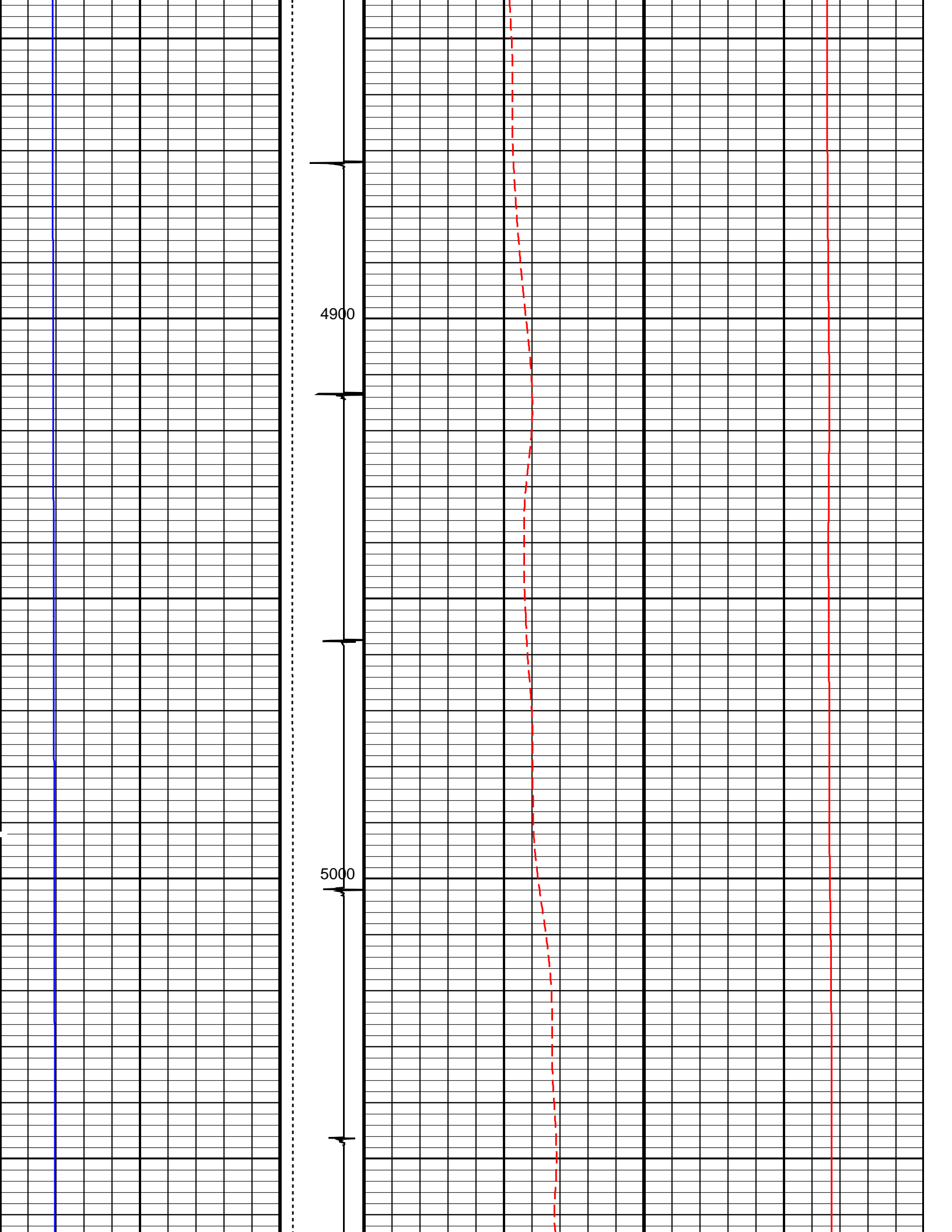


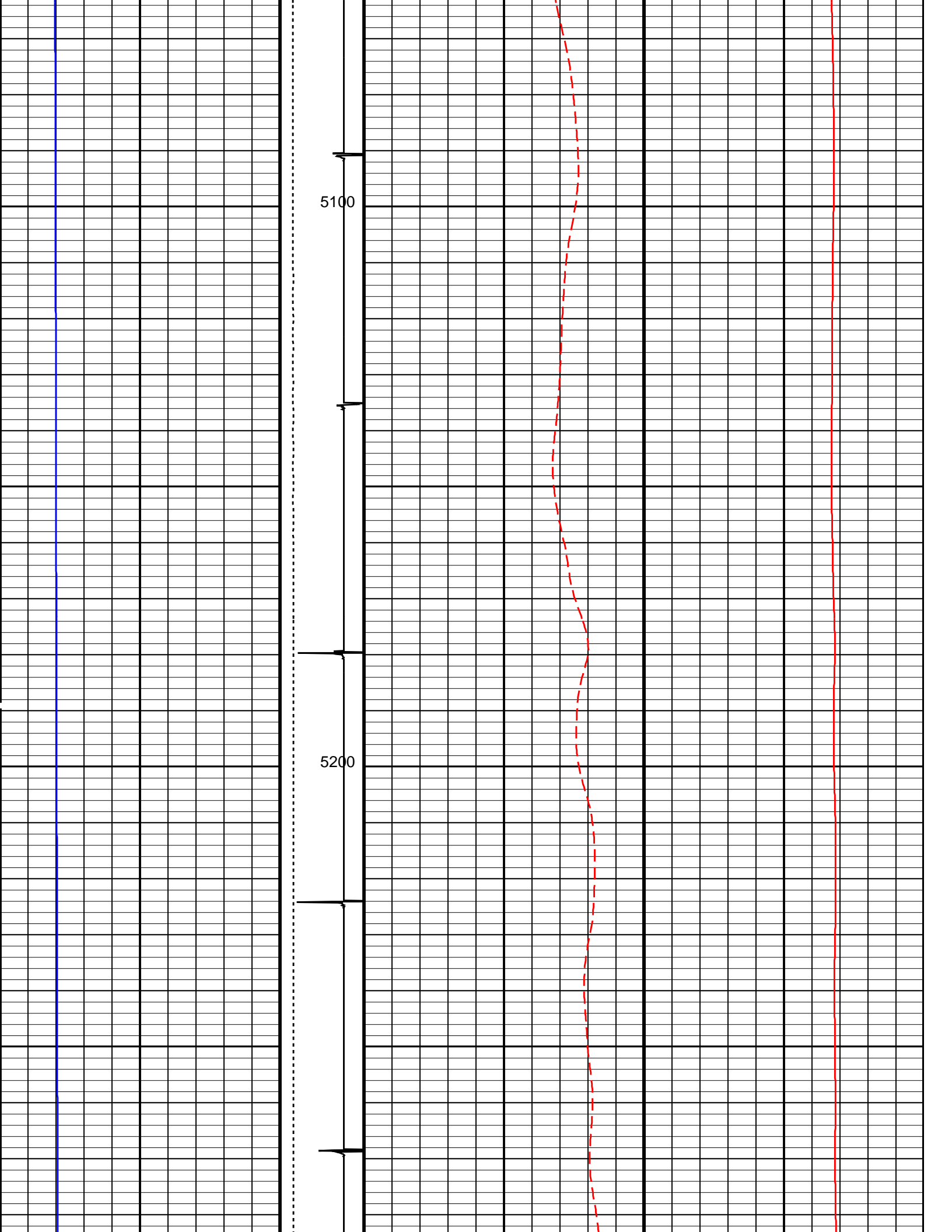


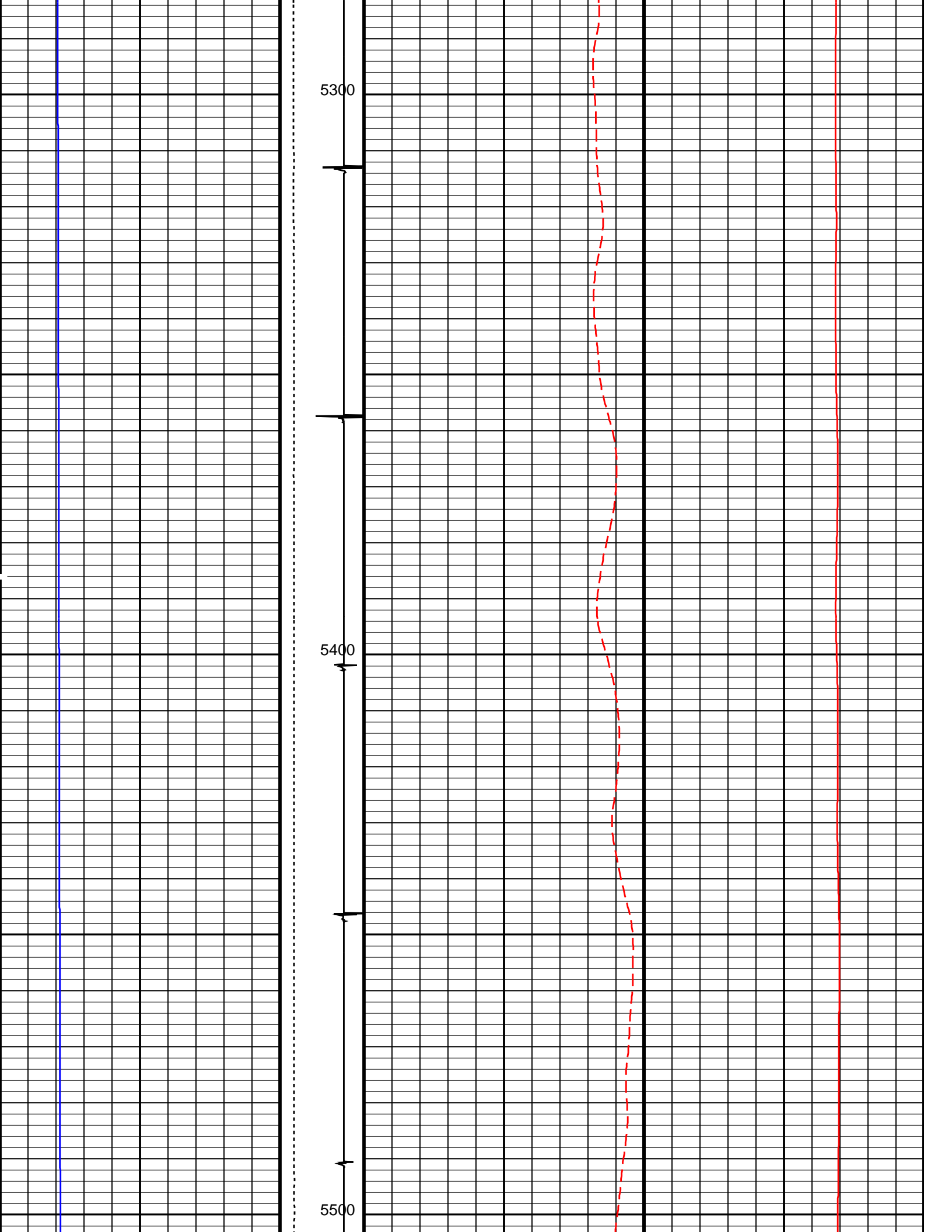


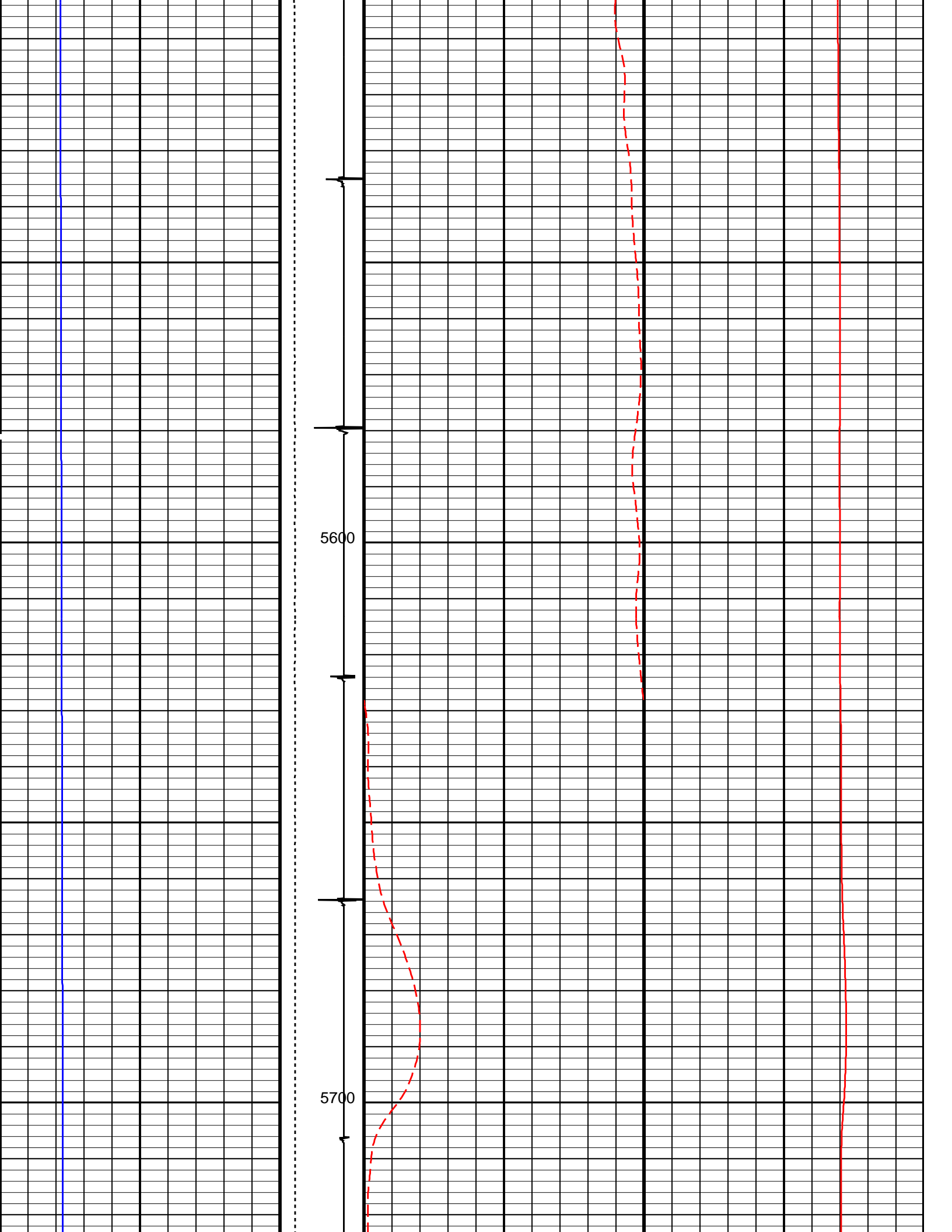


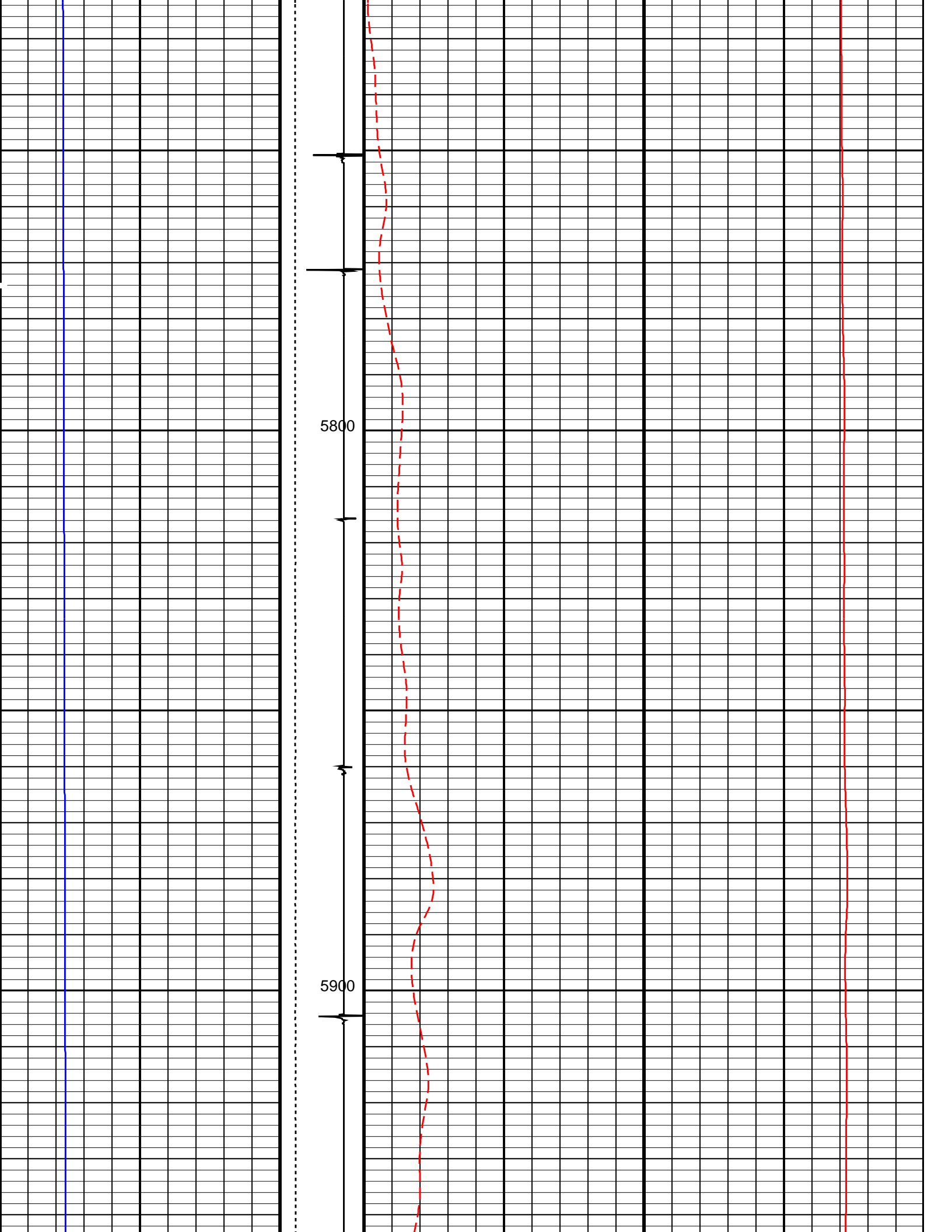


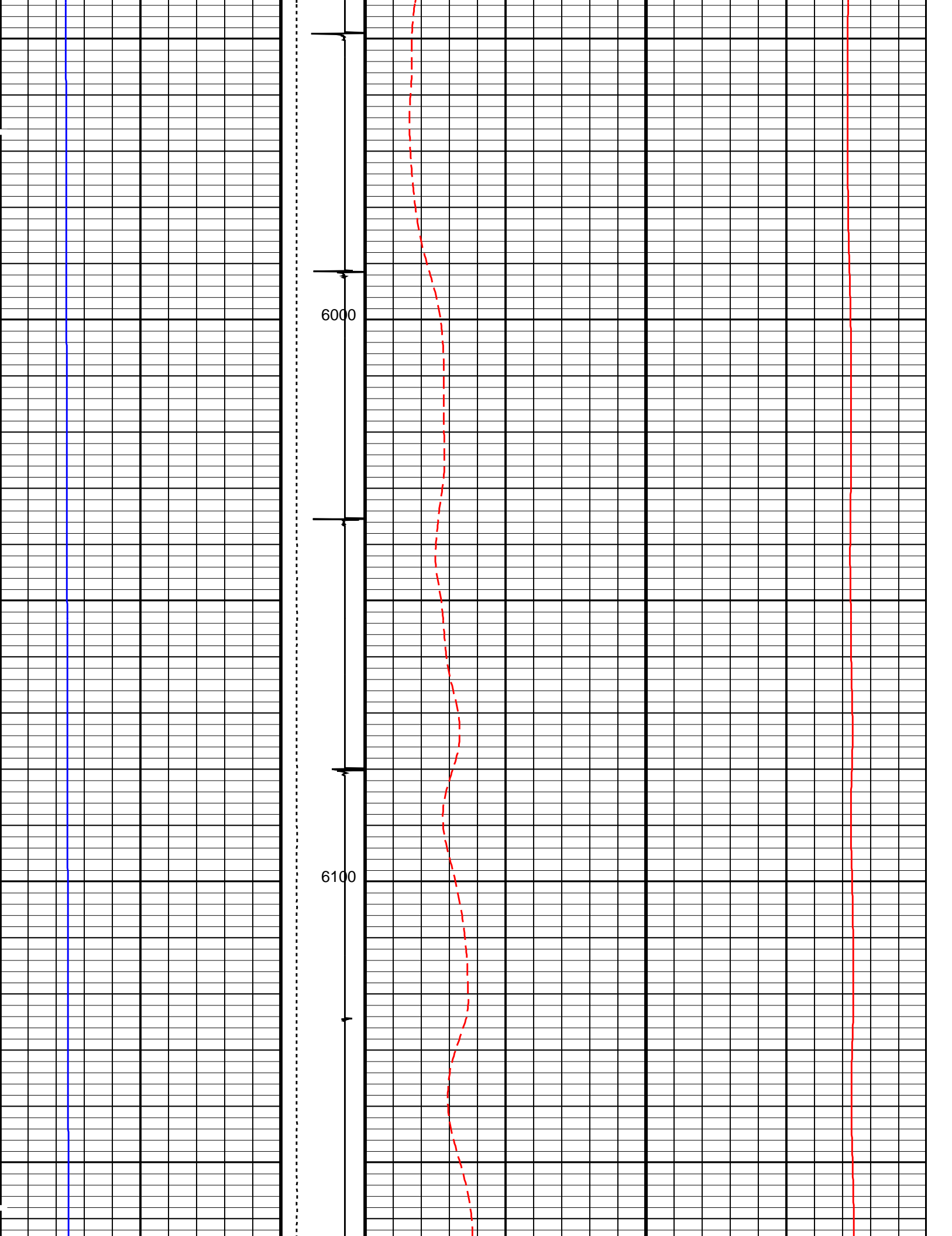


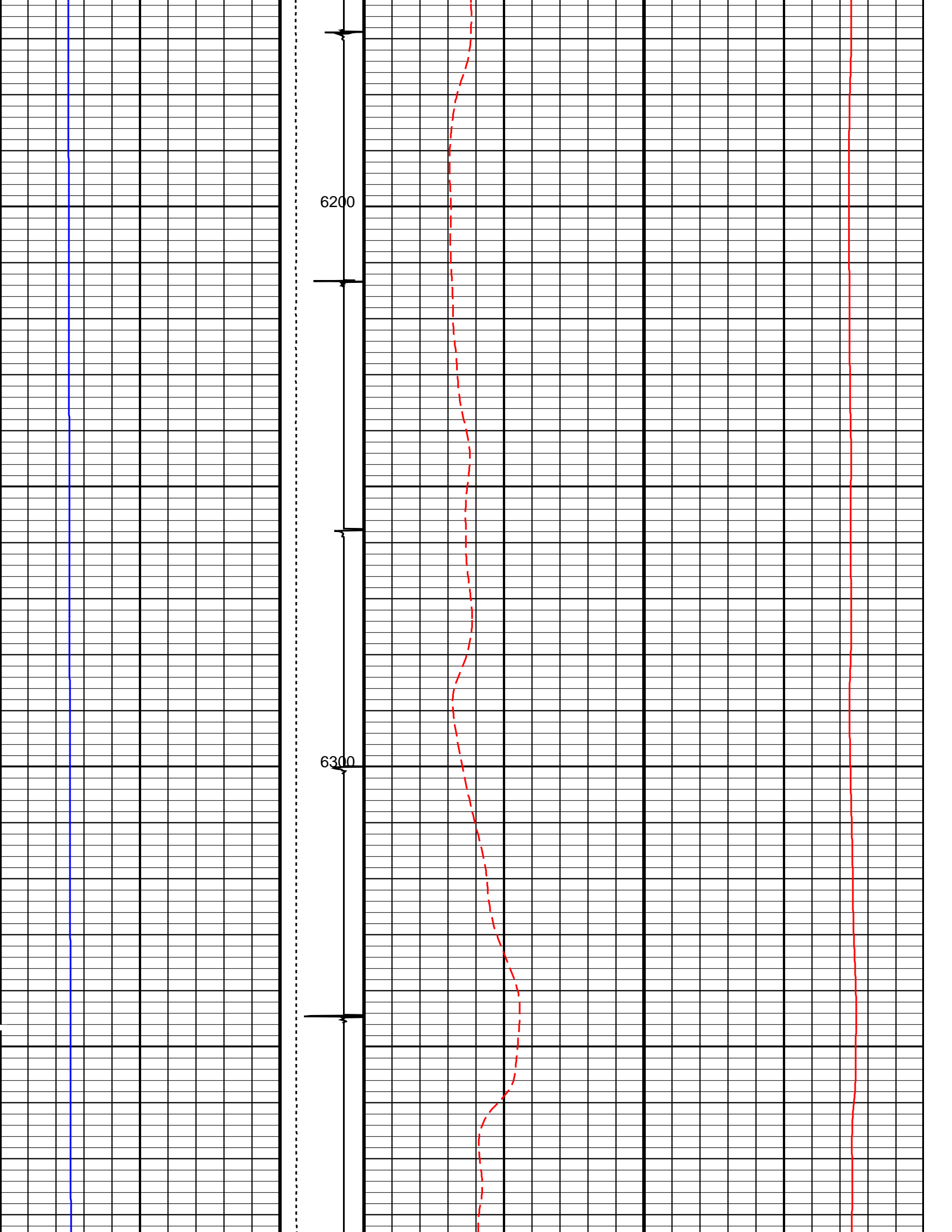




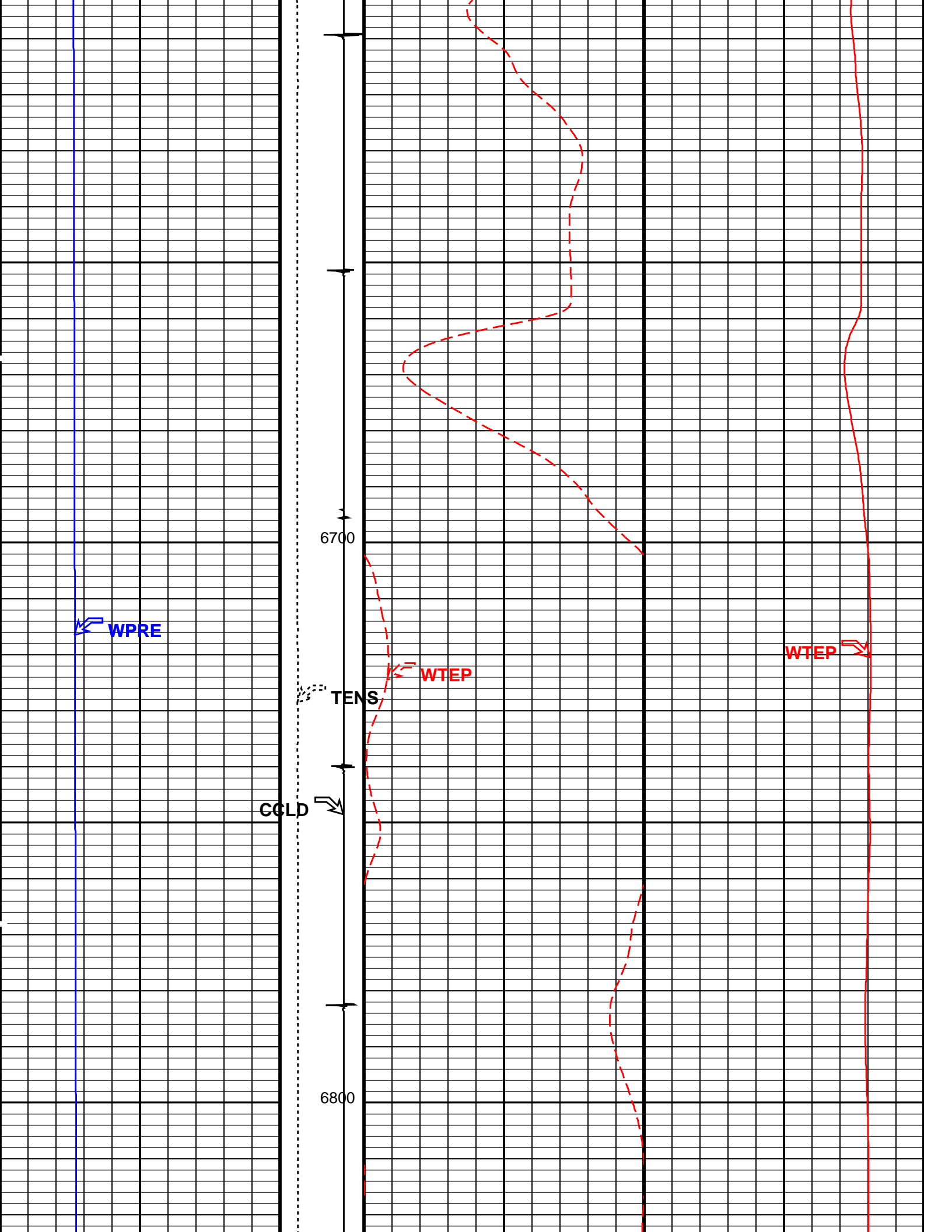


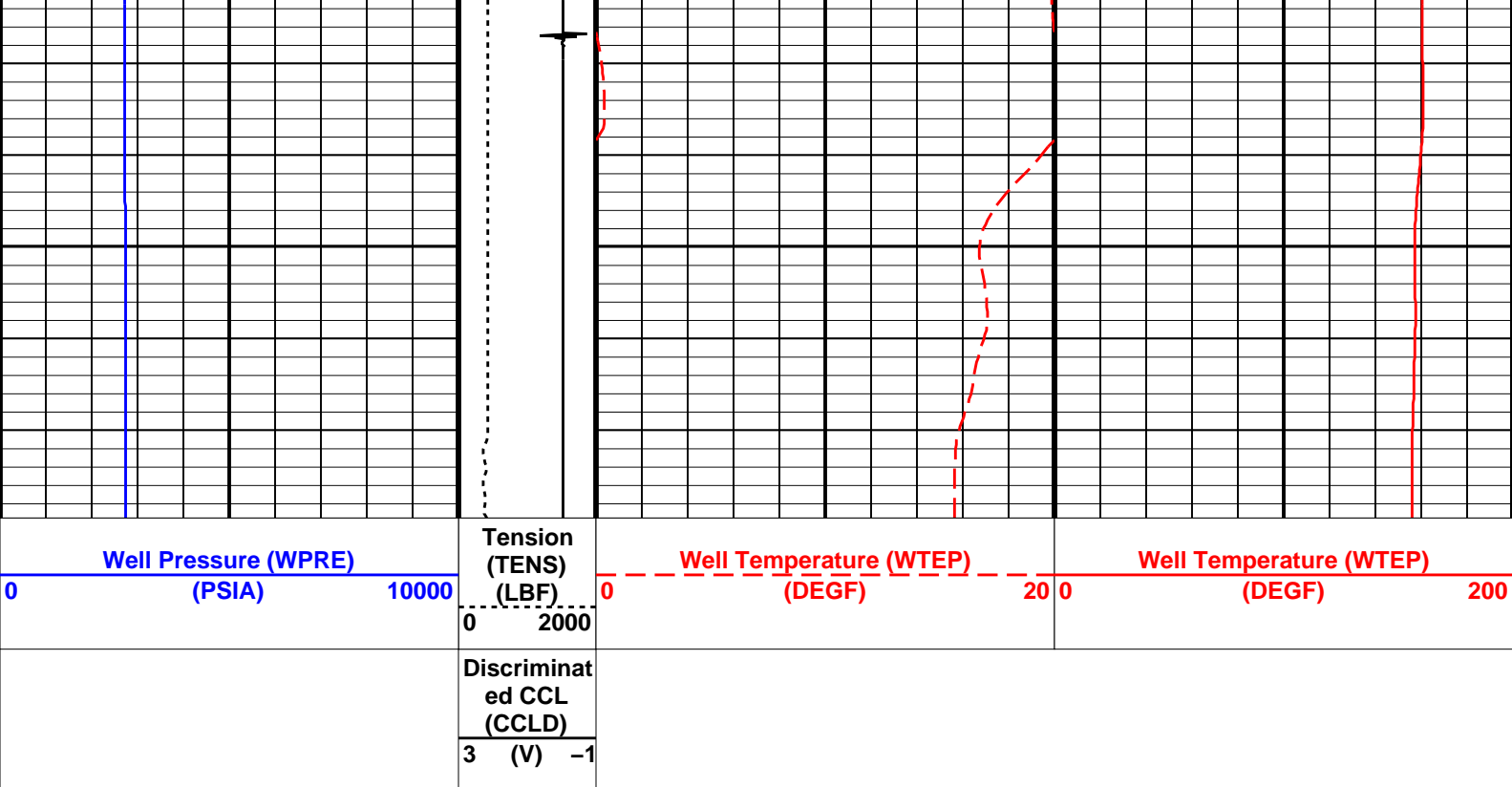












PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DO PP	System and Miscellaneous Depth Offset for Playback Playback Processing	-5.0 FT RECOMPUTE

Format: TEMP LOG Vertical Scale: 5" per 100' Graphics File Created: 03-Nov-2013 02:19

OP System Version: 19C0-187

HBMS-B SRPC-5214-H2-2012-OP19

Input DLIS Files

DEFAULT Flip_HBMS_007LUP PRODUCER 03-Nov-2013 02:18 6884.5 FT -10.5 FT

Output DLIS Files

DEFAULT HBMS_009PUP FN:5 PRODUCER 03-Nov-2013 02:19

Schlumberger

REPEAT ANALYSIS

MAXIS Field Log

Input DLIS Files

DEFAULT	Flip_HBMS_008LUP	PRODUCER	03-Nov-2013 02:18	6883.0 FT	6622.0 FT
DEFAULT	HBMS_009PUP	FN:5	PRODUCER	03-Nov-2013 02:19	6879.5 FT
				6879.5 FT	-15.5 FT

Output DLIS Files

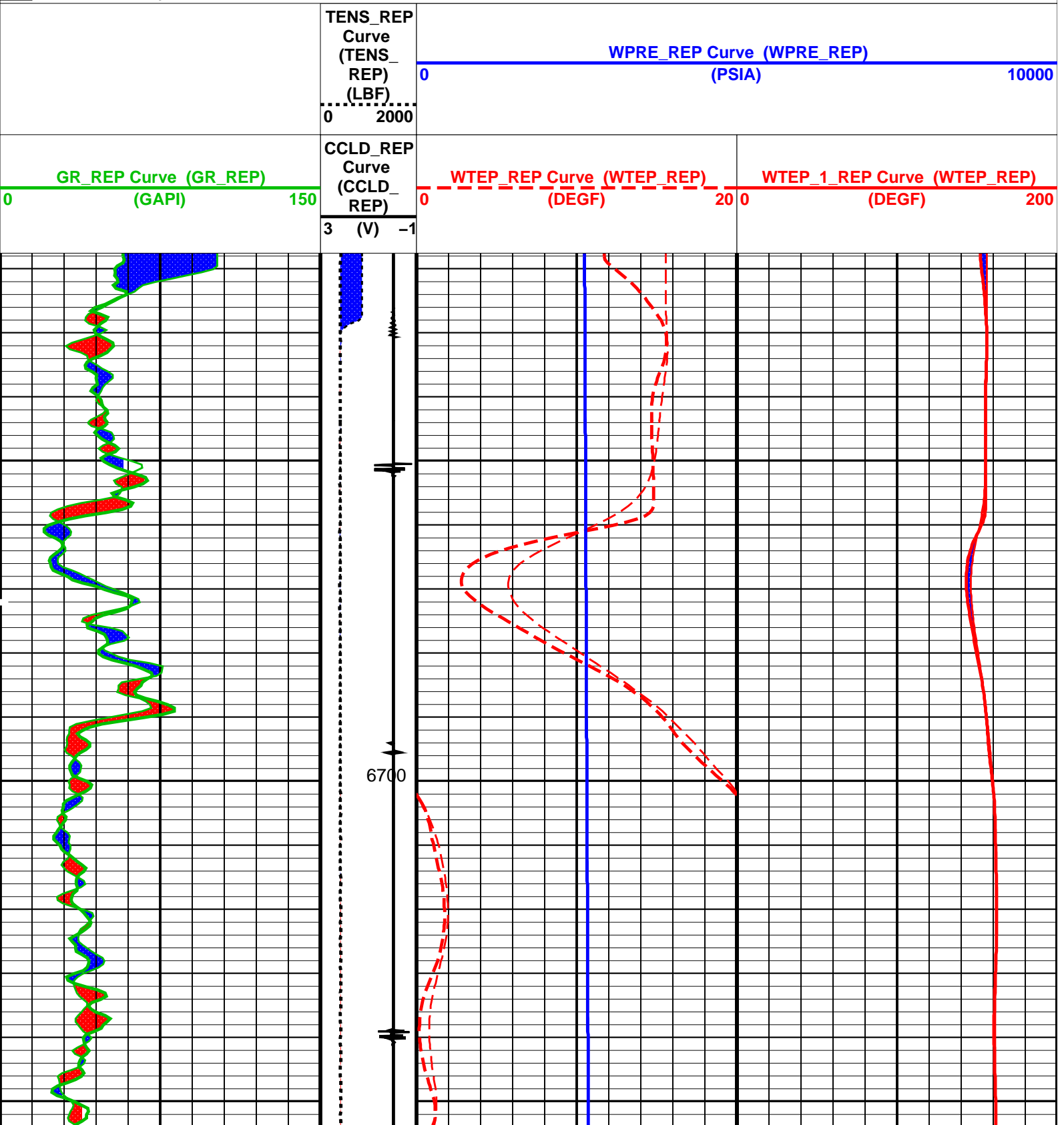
DEFAULT	HBMS_010PUP	FN:6	PRODUCER	03-Nov-2013 02:24	6878.0 FT	6617.0 FT
---------	-------------	------	----------	-------------------	-----------	-----------

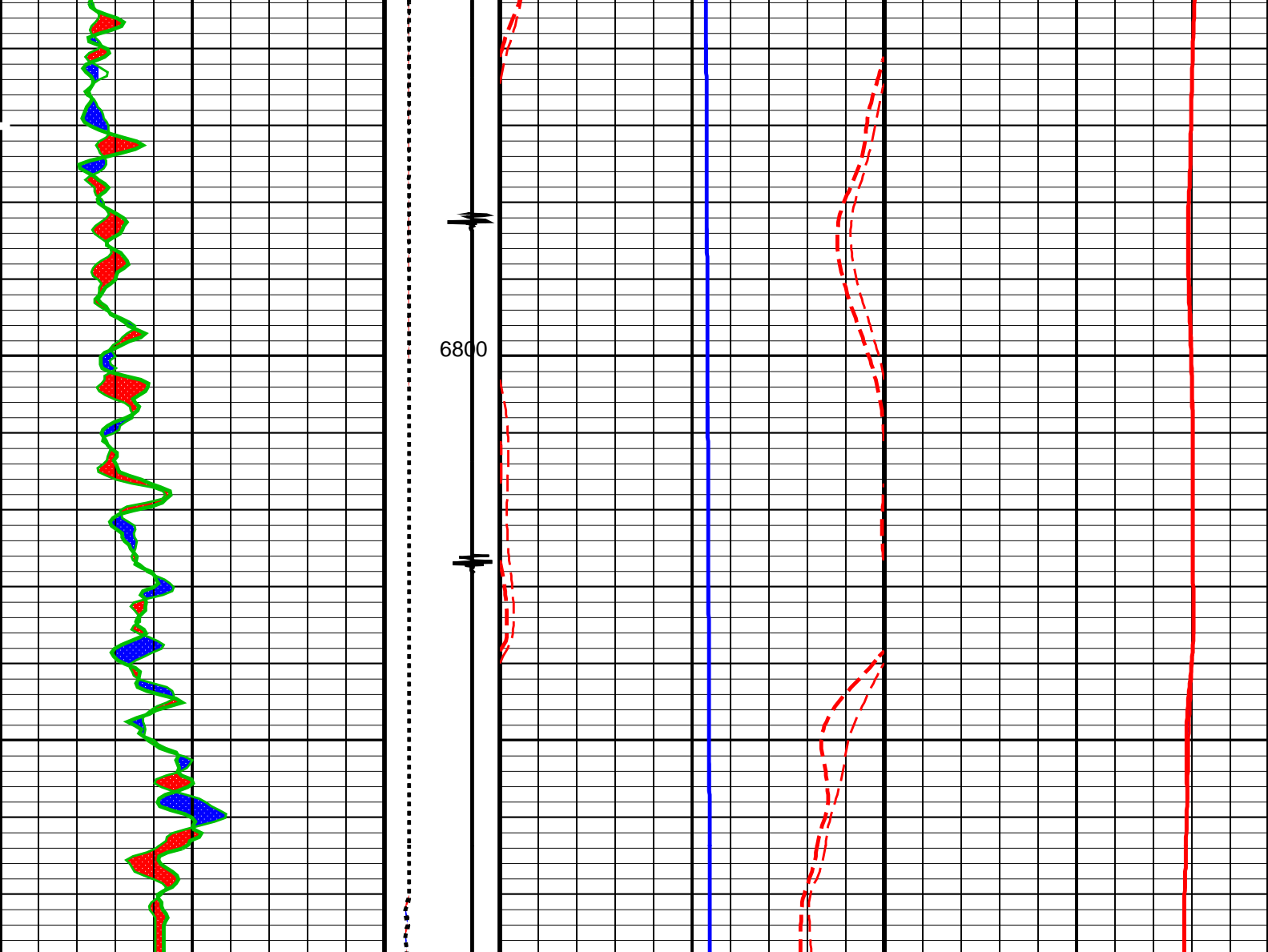
OP System Version: 19C0-187

HBMS-B SRPC-5214-H2-2012-OP19

PIP SUMMARY

Time Mark Every 60 S





GR_REP Curve (GR_REP) (GAPI)		CCLD_REP Curve (CCLD_REP)	WTEP_REP Curve (WTEP_REP) (DEGF)	WTEP_1_REP Curve (WTEP_1_REP) (DEGF)
0 150		3 (V) -1	0 20	0 200
TENS_REP Curve (TENS_REP) (LBF)		WPRE_REP Curve (WPRE_REP) (PSIA)		
0 2000		0 10000		

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
System and Miscellaneous		
DO	Depth Offset for Playback	-5.0 FT
DORL	Depth Offset for Repeat Analysis	0.0 FT
PP	Playback Processing	RECOMPUTE

Format: TEMP LOG_REP Vertical Scale: 5" per 100'

Graphics File Created: 03-Nov-2013 02:24

OP System Version: 19C0-187

Input DLIS Files

DEFAULT	Flip_HBMS_008LUP		PRODUCER	03-Nov-2013 02:18	6883.0 FT	6622.0 FT
DEFAULT	HBMS_009PUP	FN:5	PRODUCER	03-Nov-2013 02:19	6879.5 FT	-15.5 FT

Output DLIS Files

DEFAULT	HBMS_010PUP	FN:6	PRODUCER	03-Nov-2013 02:24
---------	-------------	------	----------	-------------------

Schlumberger

HBMS COEFFICIENTS

MAXIS Field Log

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	PARACHUTE	Sub Type:	PBMS
Well:	FEDERAL 31-2C (PF 31)	Sensor:	GR
Run date:	3-Nov-2013		

PBMS Gamma Ray	
Sonde Serial NB	RESISTORS FOR GR SENSOR N.34384,TOOL HBMS-BA2880. SENSOR S/N:
Sensor Serial NB	34384
Calib Date ddmmyy	160206
Matrix Size	12
Coeff CRC	D8B5

GR HV Rt		
	Rt**0	Rt**1
Rt**0	+.200000000000e+04	+.173000000000e+04

Client:	ENCANA OIL & GAS (USA) INC	Tool:	PSP
Field:	PARACHUTE	Sub Type:	PBMS
Well:	FEDERAL 31-2C (PF 31)	Sensor:	WellTemp RTD
Run date:	3 Nov 2013		

PBMS RTD Well Thermometer

Sonde Serial NB

COEFFICIENTS FOR RTD THERMOMETER PBMS-B.2880 S/N:

Sensor Serial NB

2880

Calib Date ddmmyy

260408

Matrix Size

16

Coeff CRC

A3AF

WTemp Coeff

	Tt**0	Tt**1	Tt**2
Tt**0	-.104337336008E+04	+.798824971753E+03	-.251944021281E+03
	Tt**3	Tt**4	Tt**5
Tt**0	+.406192777109E+02	-.240958437264E+01	0.0

Client: ENCANA OIL & GAS (USA) INC

Tool:

PSP

Field: PARACHUTE

Sub Type:

PBMS

Well: FEDERAL 31-2C (PF 31)

Sensor:

CQG

Run date: 3-Nov-2013

PBMS Quartz Gauge type F

Sonde Serial NB

COEFFICIENTS FOR CQG PBMS-B.2880 S/N:

Sensor Serial NB

2880

Calib Date ddmmyy

260408

Matrix Size

66

Coeff CRC

66B8

Pres Coeff

	Fb**0	Fb**1	Fb**2
Fc**0	+.694668499013E+04	+.138137467574E-01	-.206148488488E-06
Fc**1	-.104285125976E+01	-.125721589078E-04	-.971577899959E-10
Fc**2	+.101045175546E-05	+.480801816357E-10	+.889110474366E-15
Fc**3	+.127326781620E-11	+.130693902354E-15	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

	Fb**3	Fb**4	Fb**5
Fc**0	−.802395356069E−10	−.148392899370E−14	−.162952476494E−19
Fc**1	+.114970383999E−15	+.186330526680E−19	0.0
Fc**2	0.0	0.0	0.0
Fc**3	0.0	0.0	0.0
Fc**4	0.0	0.0	0.0
Fc**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB :
 Sensor Serial NB 2880
 Calib Date ddmmyy 260408
 Matrix Size 66
 Coeff CRC 3690

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+.114978632240E+03	−.318843725686E−03	+.651766172344E−08
Fb**1	−.590205352250E−02	+.168686572404E−07	+.162345150354E−12
Fb**2	−.362996279263E−07	+.407654559315E−12	+.452411391342E−17
Fb**3	−.276281361281E−12	+.871817059405E−17	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

	Fc**3	Fc**4	Fc**5
Fb**0	+.199118144093E−13	−.260997933236E−18	+.618908211390E−21
Fb**1	+.250084591851E−17	+.455070709200E−21	0.0
Fb**2	0.0	0.0	0.0
Fb**3	0.0	0.0	0.0
Fb**4	0.0	0.0	0.0
Fb**5	0.0	0.0	0.0

PBMS Quartz Gauge type F

Sonde Serial NB :
 Sensor Serial NB 2880
 Calib Date ddmmyy 260408
 Matrix Size 16
 Coeff CRC 71B5

Clock Freq Coeff

	(Fb' Fc')**0	(Fb' Fc')**1	(Fb' Fc')**2
--	--------------	--------------	--------------

	(Fb'–Fc')**0	(Fb'–Fc')**1	(Fb'–Fc')**2
(Fb'–Fc')**0	+.310736316923E+05	+.273670214709E–02	+.731815197856E–06
	(Fb'–Fc')**3	(Fb'–Fc')**4	(Fb'–Fc')**5
(Fb'–Fc')**0	–.654219198492E–10	–.150585137208E–15	–.117697151708E–19

PBMS Quartz Gauge type F
 Sonde Serial NB :
 Sensor Serial NB 2880
 Calib Date ddmmyy 260408
 Matrix Size 16
 Coeff CRC ECB5

	(Fb'–Fc')**0	(Fb'–Fc')**1	(Fb'–Fc')**2
(Fb'–Fc')**0	+.116053417872E+03	–.554118045908E–02	–.348241454518E–07
	(Fb'–Fc')**3	(Fb'–Fc')**4	(Fb'–Fc')**5
(Fb'–Fc')**0	+.207992675474E–12	–.353168788938E–17	–.345142848607E–21

Company: **ENCANA OIL & GAS (USA) INC**

Schlumberger

Well: **FEDERAL 31–2C (PF 31)**
 Field: **PARACHUTE**
 County: **GARFIELD**
 State: **COLORADO**

TEMPERATURE LOG
 CCL