

Company: ENCANA OIL & GAS (USA) INC

Well: ENCANA FEE 24-1B (K19CNE)

Field: MAMM CREEK

County: GARFIELD

State: COLORADO

County: GARFIELD

Field: MAMM CREEK

Location: SHL: 2380 FSL & 315 FWL

Well: ENCANA FEE 24-1B (K19CNE)

Company: ENCANA OIL & GAS (USA) INC

TEMPERATURE LOG

CCL - TEMPERATURE

SHL: 2380 FSL & 315 FWL

BHL: 640 FNL & 1110 FEL

Elev.: K.B. 5687.00 ft

G.L. 5665.00 ft

D.F. 5686.00 ft

Permanent Datum: GROUND LEVEL

Elev.: 5665.00 ft

Log Measured From: KELLY BUSHING

Drilling Measured From: KELLY BUSHING

API Serial No. 05-045-20751-00

Section 19

Township 6S

Range 92W

PVT DATA				Run 1	Run 2	Run 3
Oil Density						
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 Date15-Apr-2013

Run Number1

Depth Driller8460 ft

Schlumberger Depth8386 ft

Bottom Log Interval8386 ft

Top Log Interval0 ft

Casing Fluid TypeFRESH WATER

Salinity

Density8.4 lbm/gal

Fluid Level22 ft

BIT/CASING/TUBING STRING

Bit Size8.750 in

From0 ft

To8460 ft

Casing/Tubing Size4.500 in

Weight11.6 lbm/ft

Grade

From0 ft

To8460 ft

Maximum Recorded Temperatures209 degF

Logger On Bottom15-Apr-2013

Unit Number391

Recorded ByJASON BARRY

Witnessed ByTERRY DUNN

Time4:00

LocationGRAND JUNCTION

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						
Unit Number						
Recorded By						
Witnessed By						
Time						
Location						

DEPTH SUMMARY LISTING

Date Created: 14-MAR-2013 10:41:08

Depth System Equipment

Depth Measuring Device		Tension Device		Logging Cable	
Type:	IDW-B	Type:	CMTD-B/A	Type:	1-25ZT
Serial Number:	6214	Serial Number:	3421	Serial Number:	112136
Calibration Date:	24-APR-2012	Calibration Date:	20-FEB-2012	Length:	19500 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878	Conveyance Method:	Wireline
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10	Rig Type:	LAND
Wheel Correction 1:	-3	Calibration RMS:	4		
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

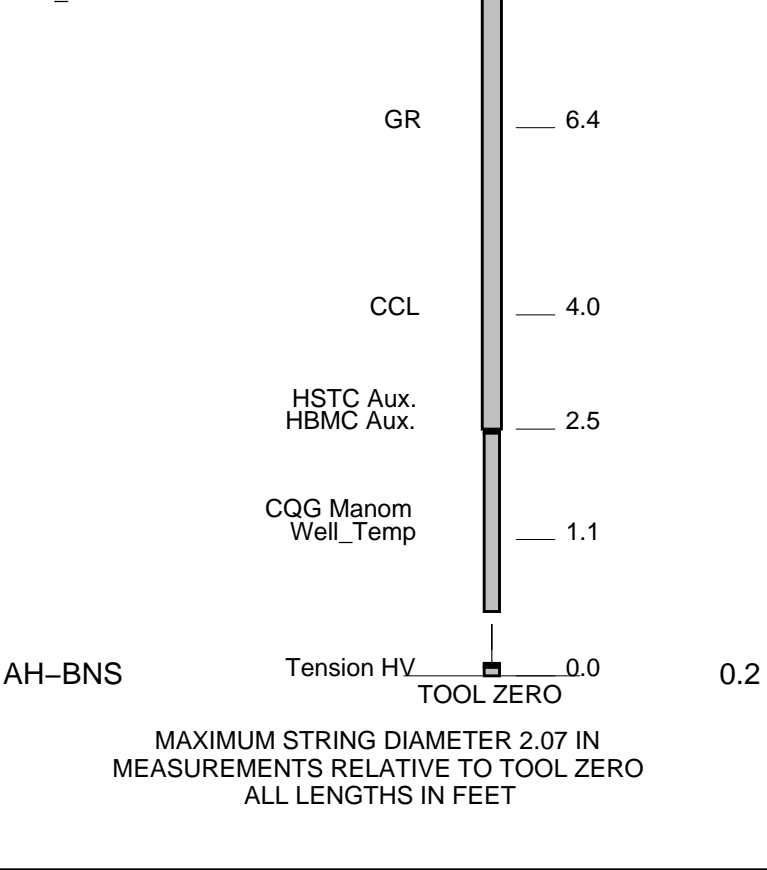
1. ALL SCHLUMBERGER DEPTH CONTROL POLICIES APPLIED
2. IDW USED AS PRIMARY DEPTH REFERENCE
3. SWPT DRUM COUNTER USED AS SECONDARY DEPTH REFERENCE
- 4.
- 5.
- 6.

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: 3:00	
TIME ON BOTTOM: 4:00	
EXIT TIME: 4:30	

[illegible]

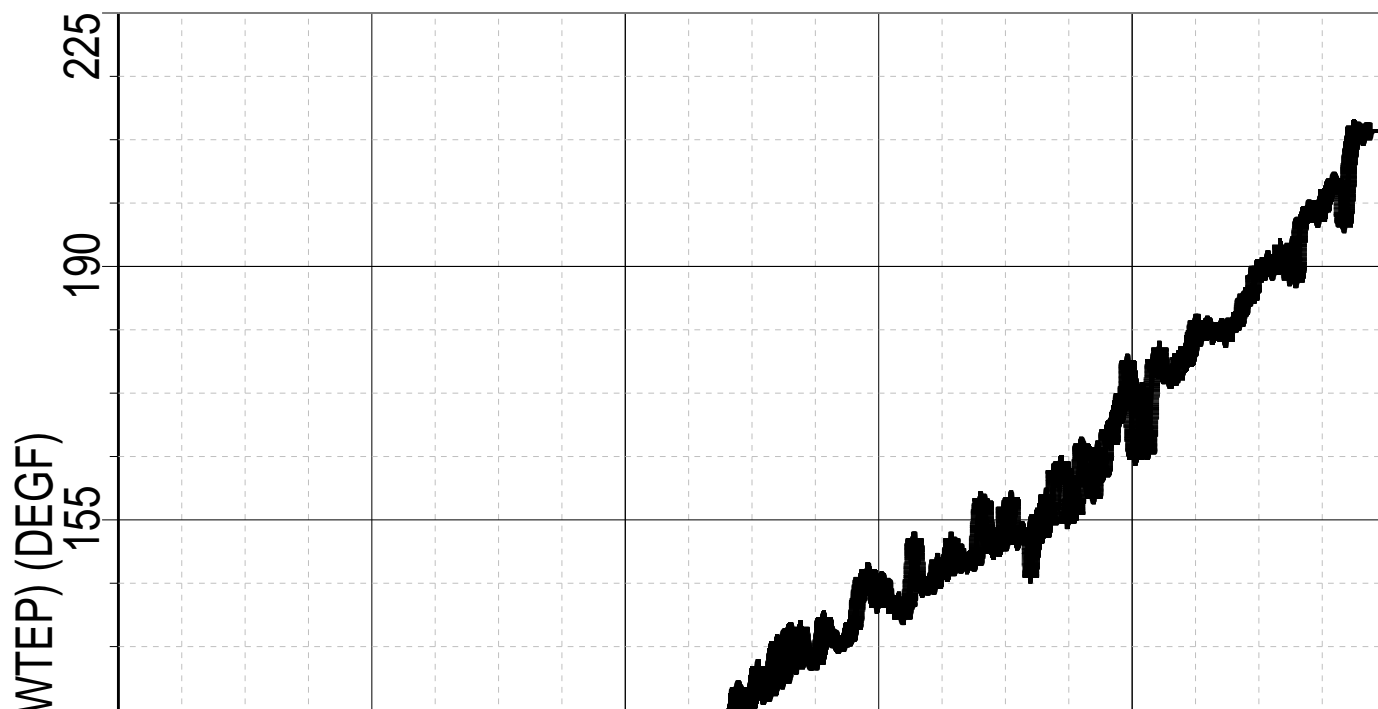


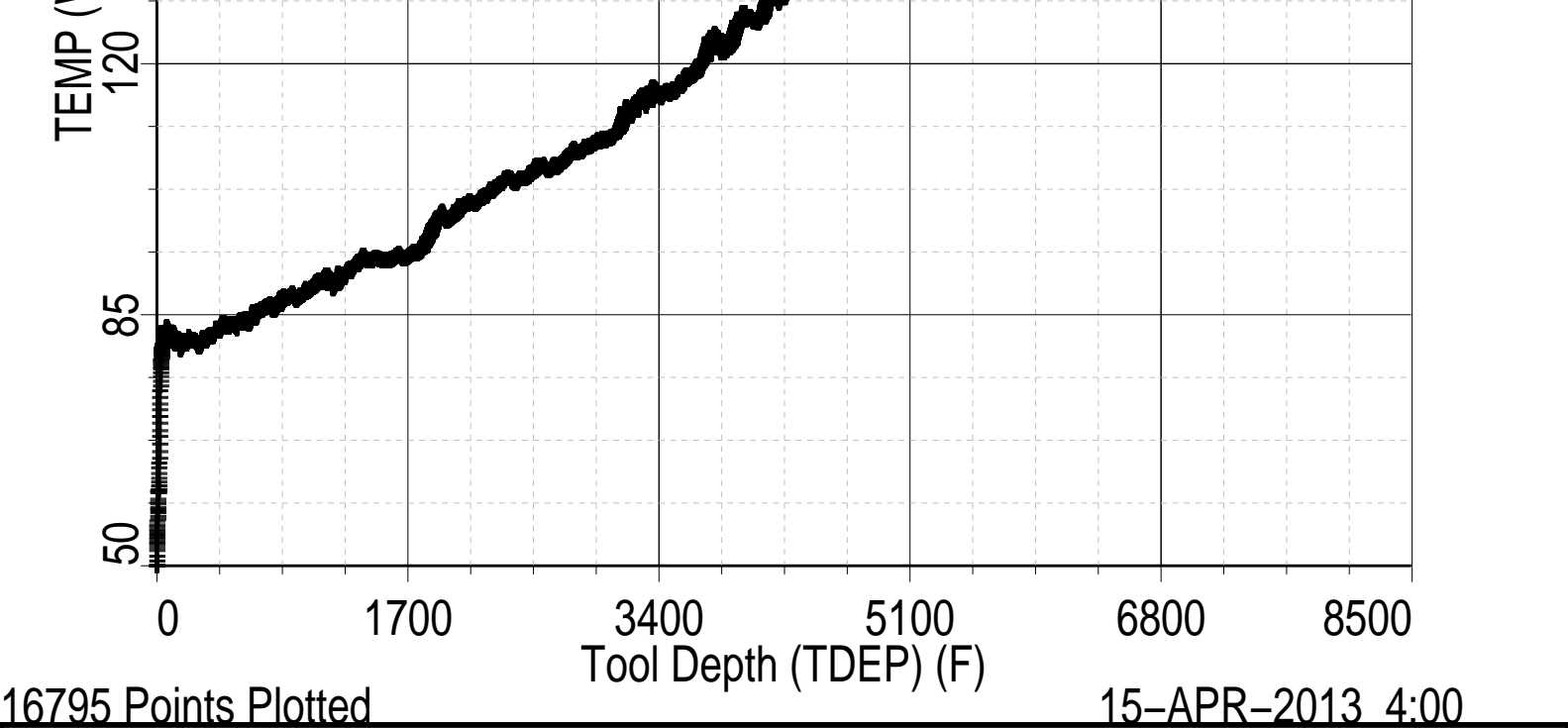
Schlumberger

TEMPERATURE PLOT

MAXIS Field Log

Index: 8397.0 – -16.5 FT





Schlumberger

TEMPERATURE LOG

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC

Well: ENCANA FEE 24-1B (K19CNE)

Input DLIS Files

File Name	Tool Depth (F)	Time	Temperature (°F)
Flip_HBMS_004LUP	8403.0	15-Apr-2013 03:54	-10.5

Output DLIS Files

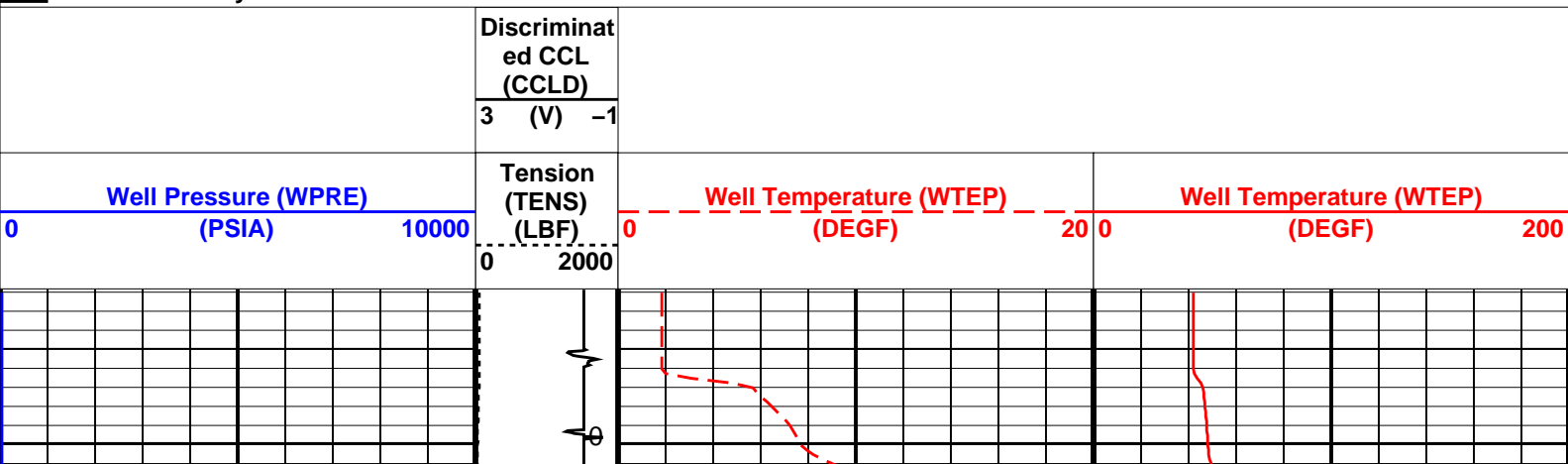
File Name	Tool Depth (F)	Time	Temperature (°F)
HBMS_006PUP	8397.0	15-Apr-2013 03:56	-16.5

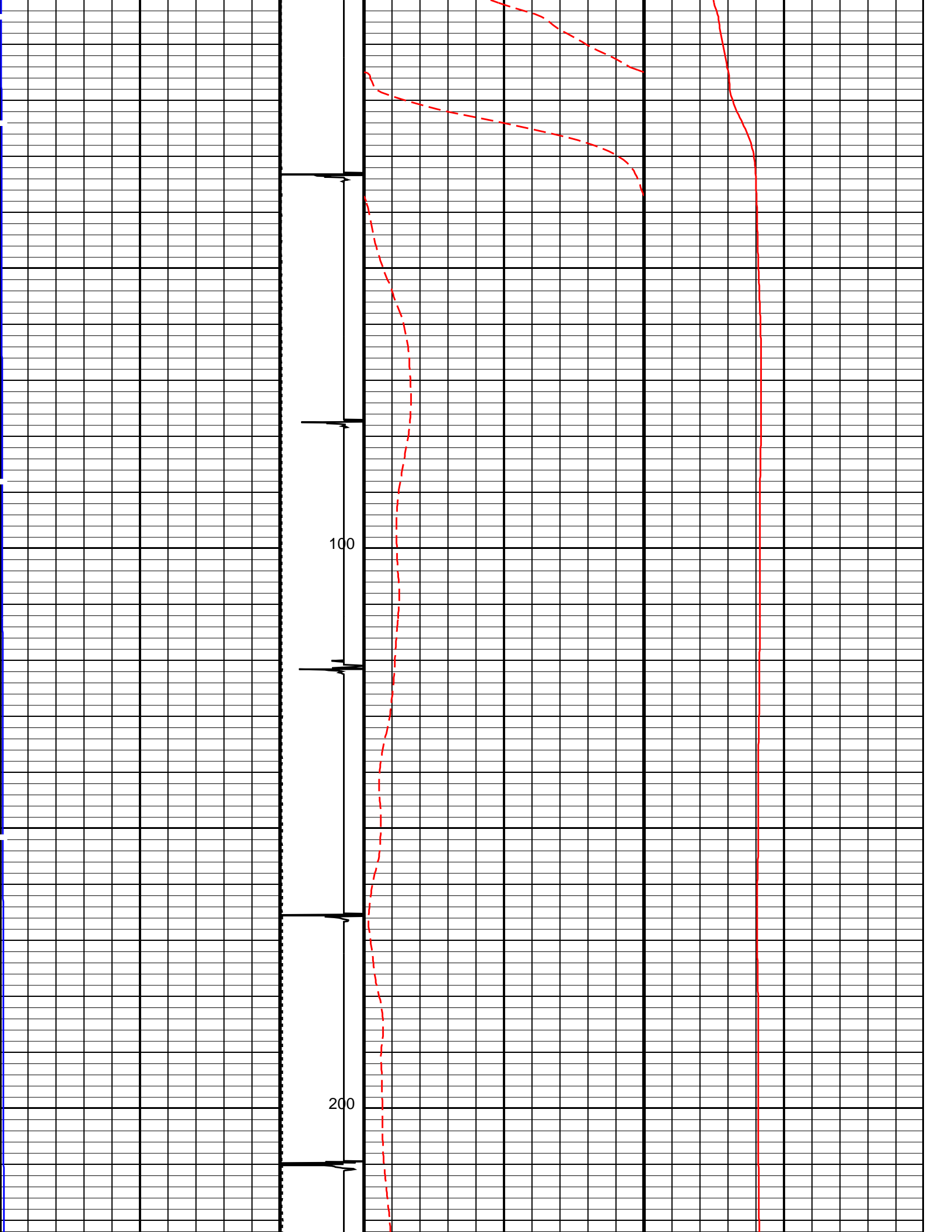
OP System Version: 19C0-187

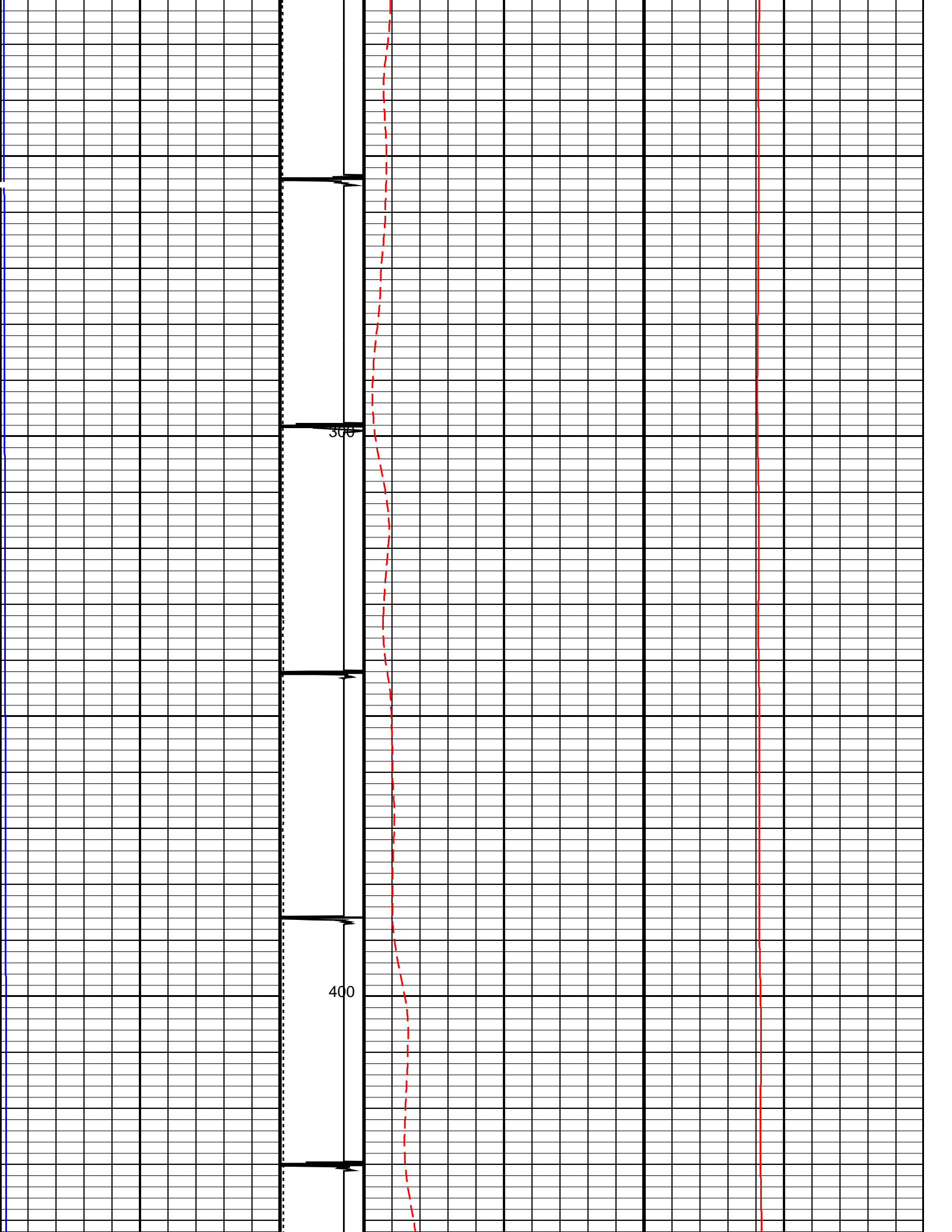
HBMS-B SRPC-5214-H2-2012-OP19

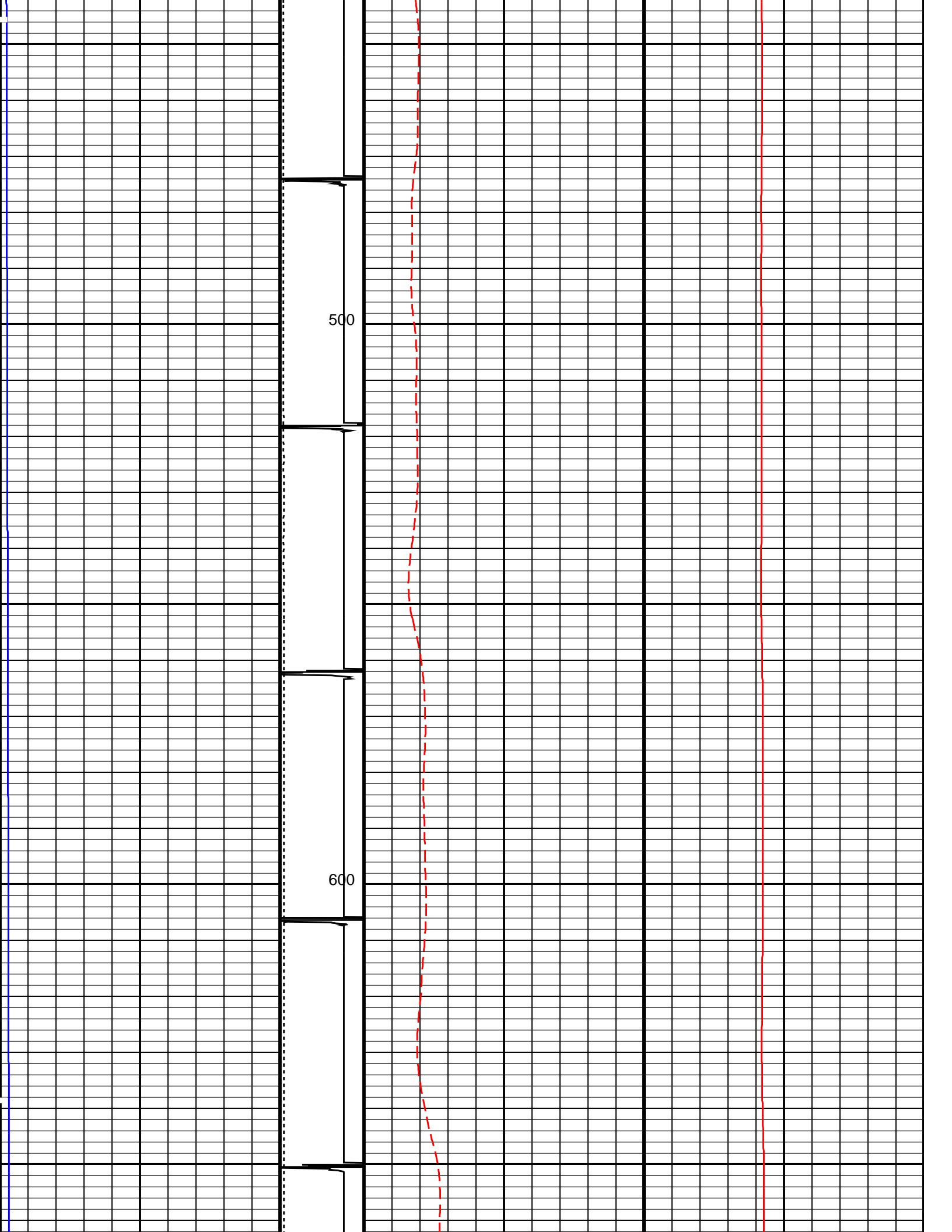
PIP SUMMARY

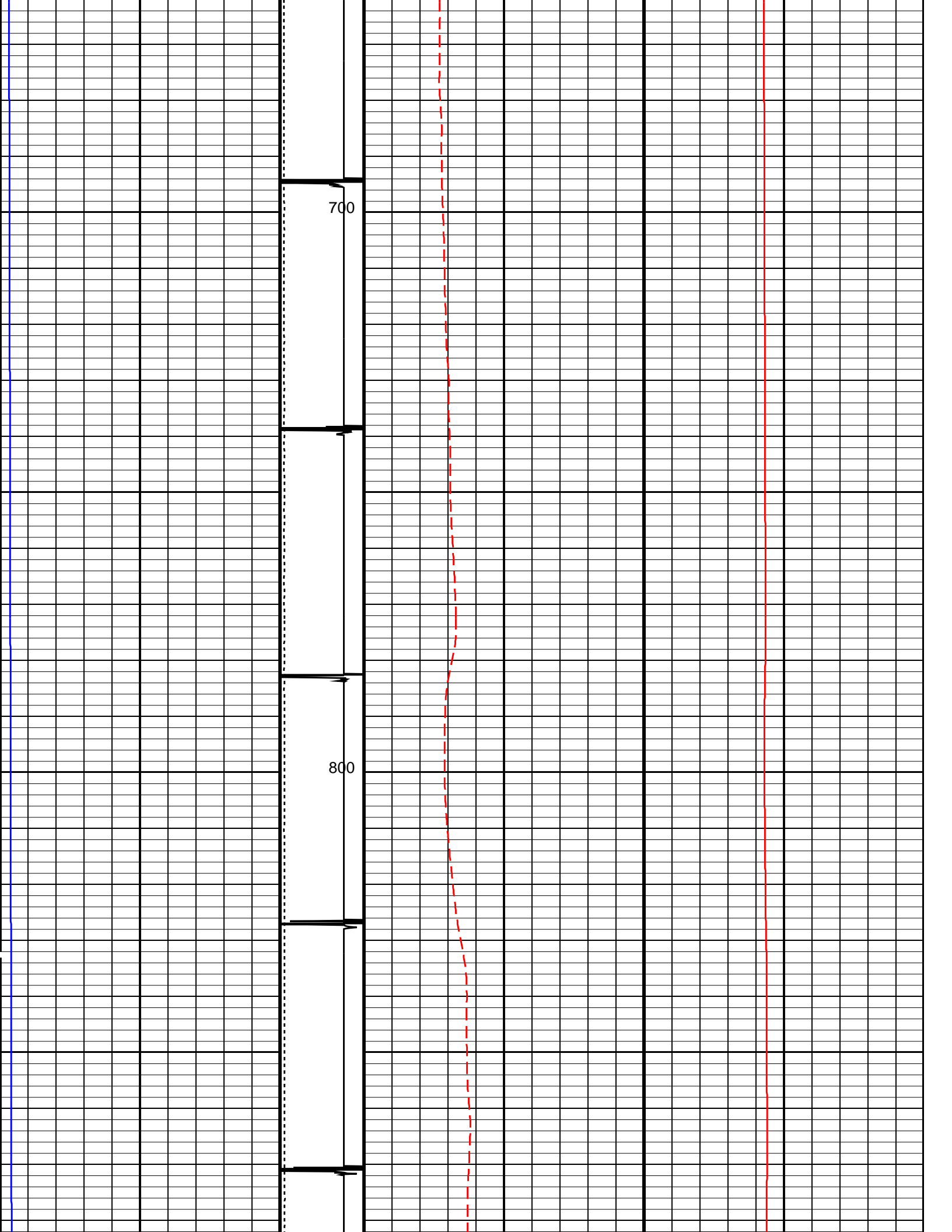
Time Mark Every 60 S

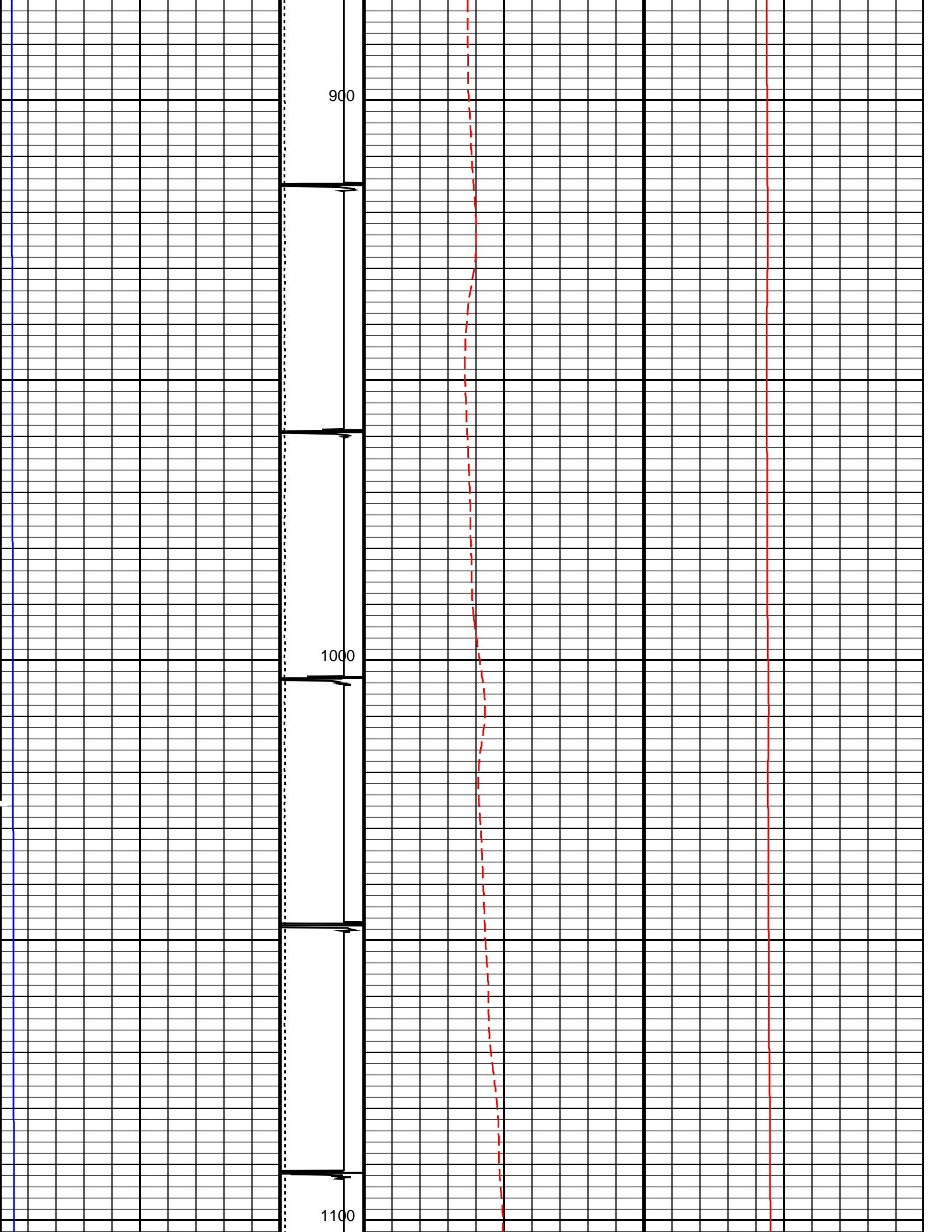


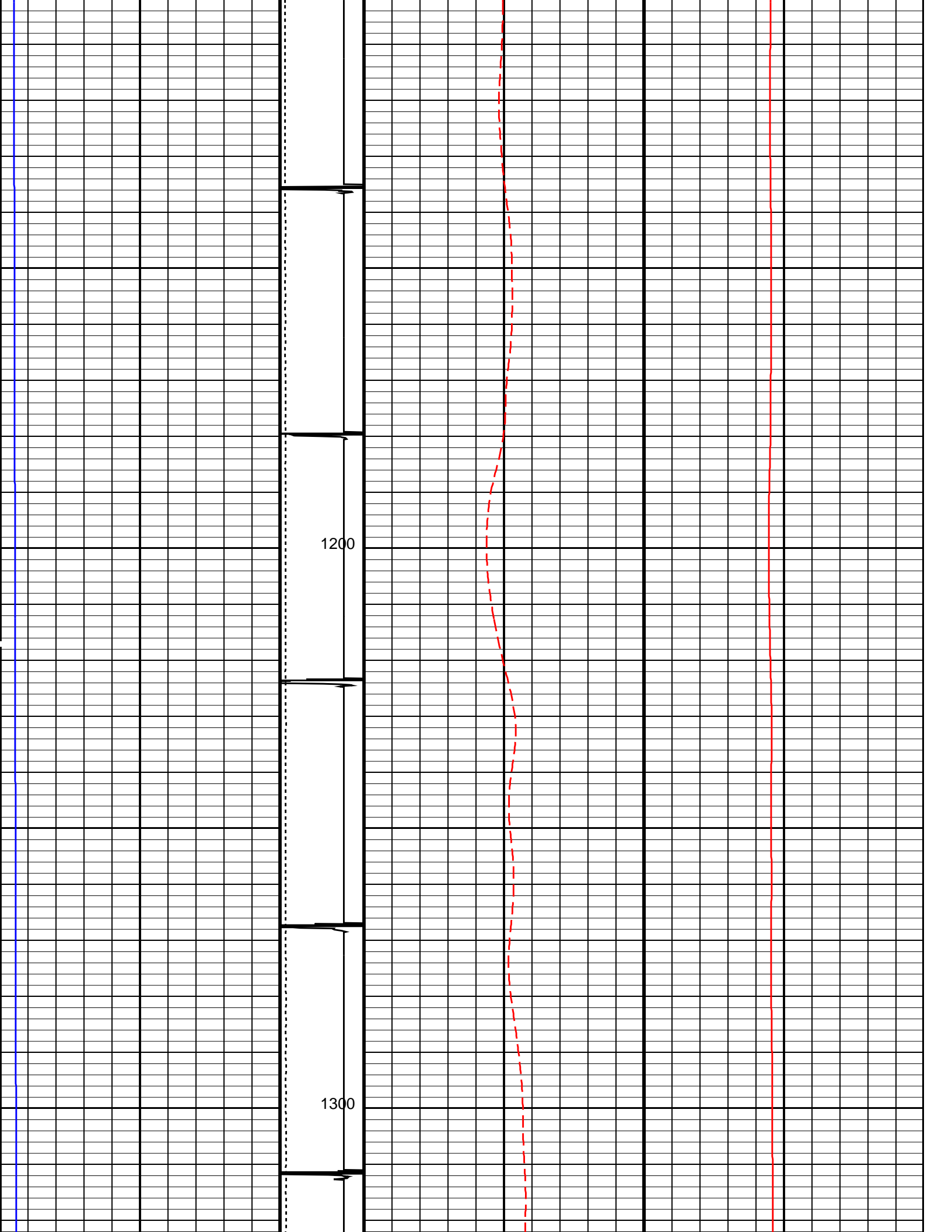


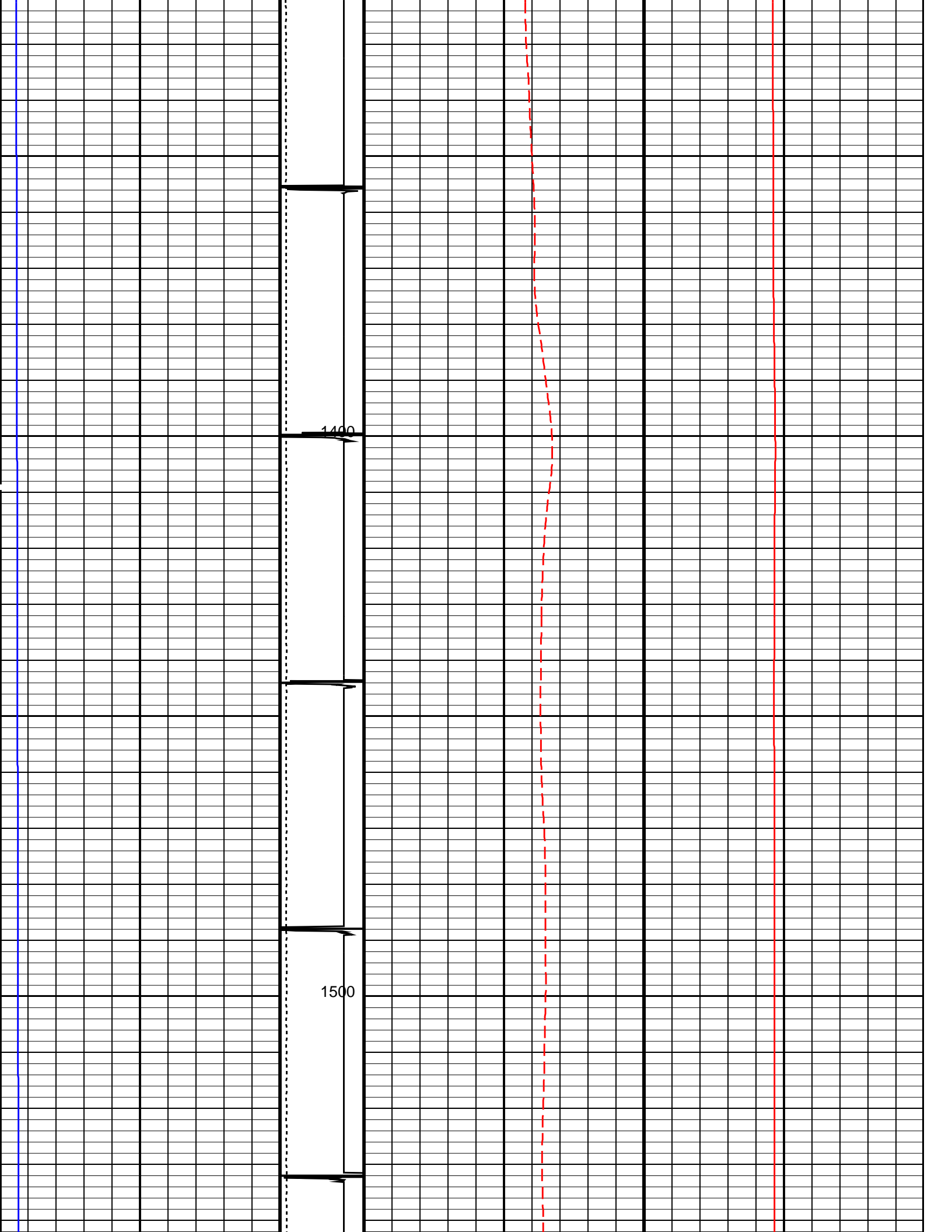


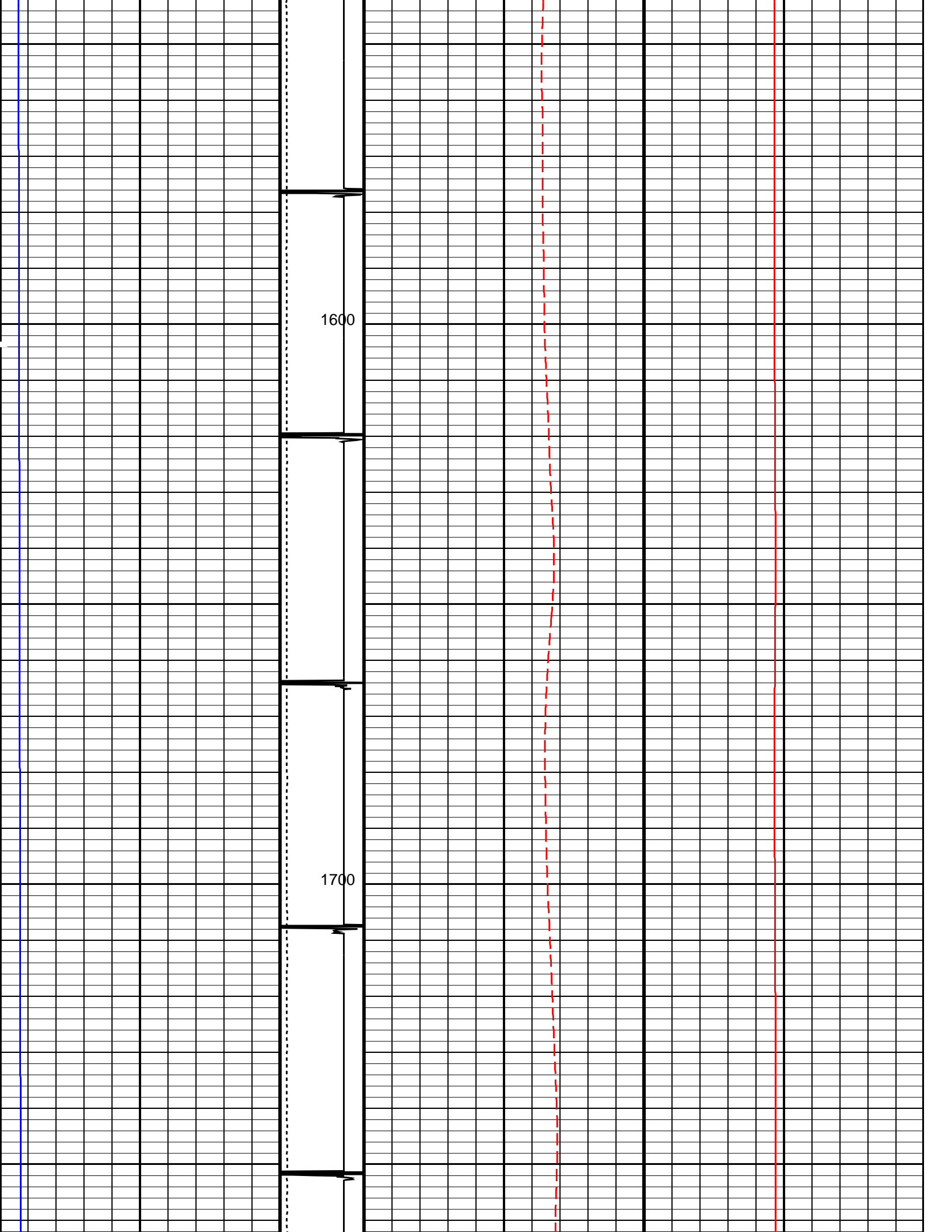


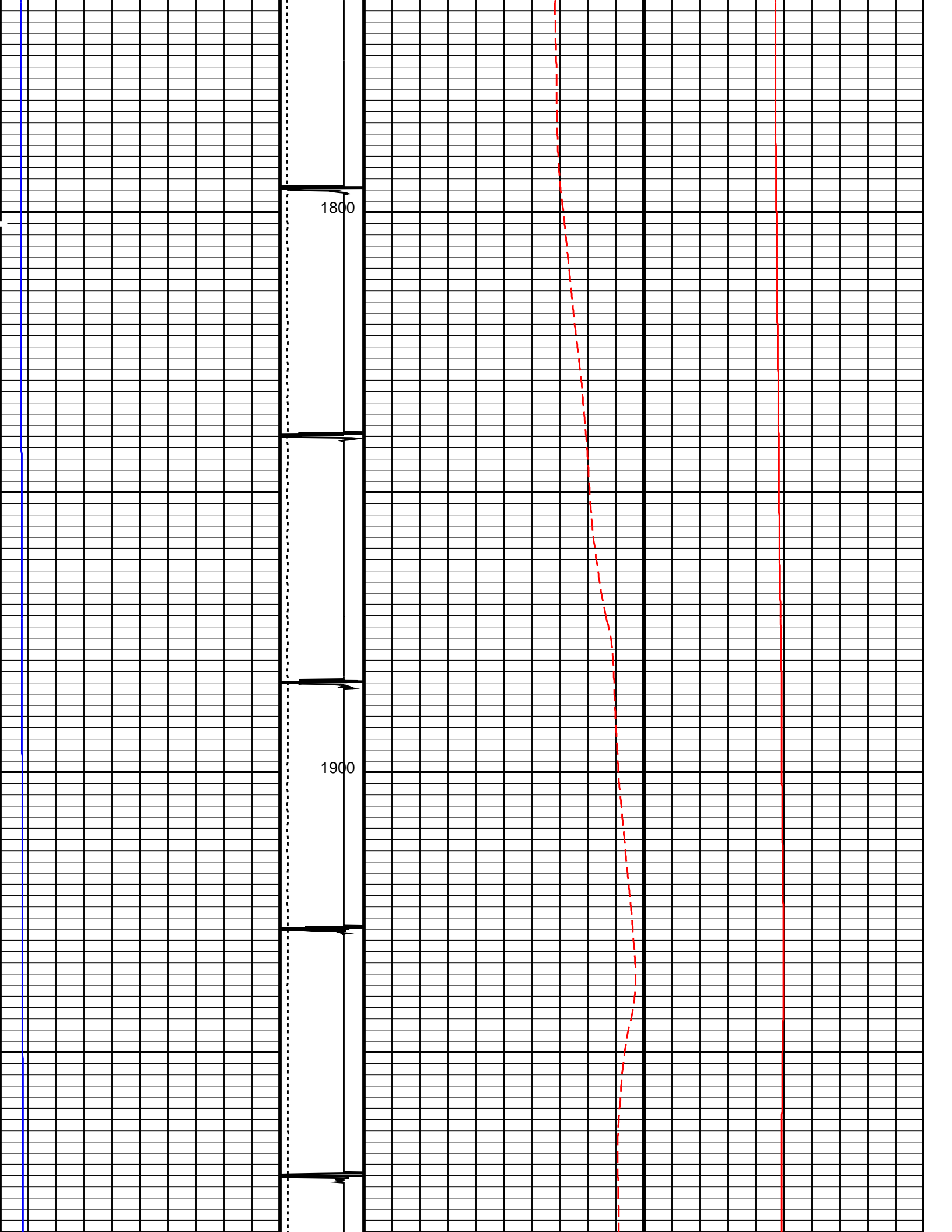


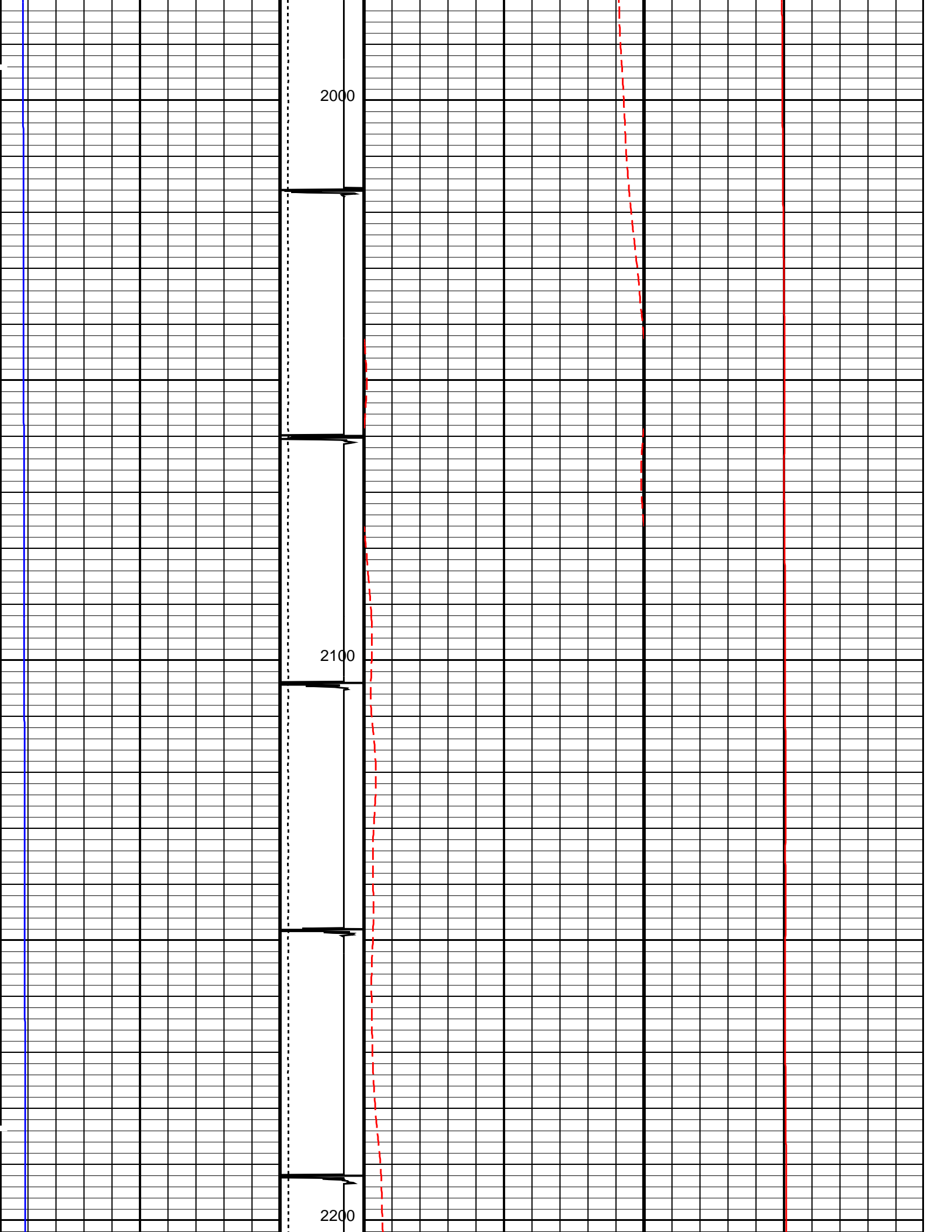


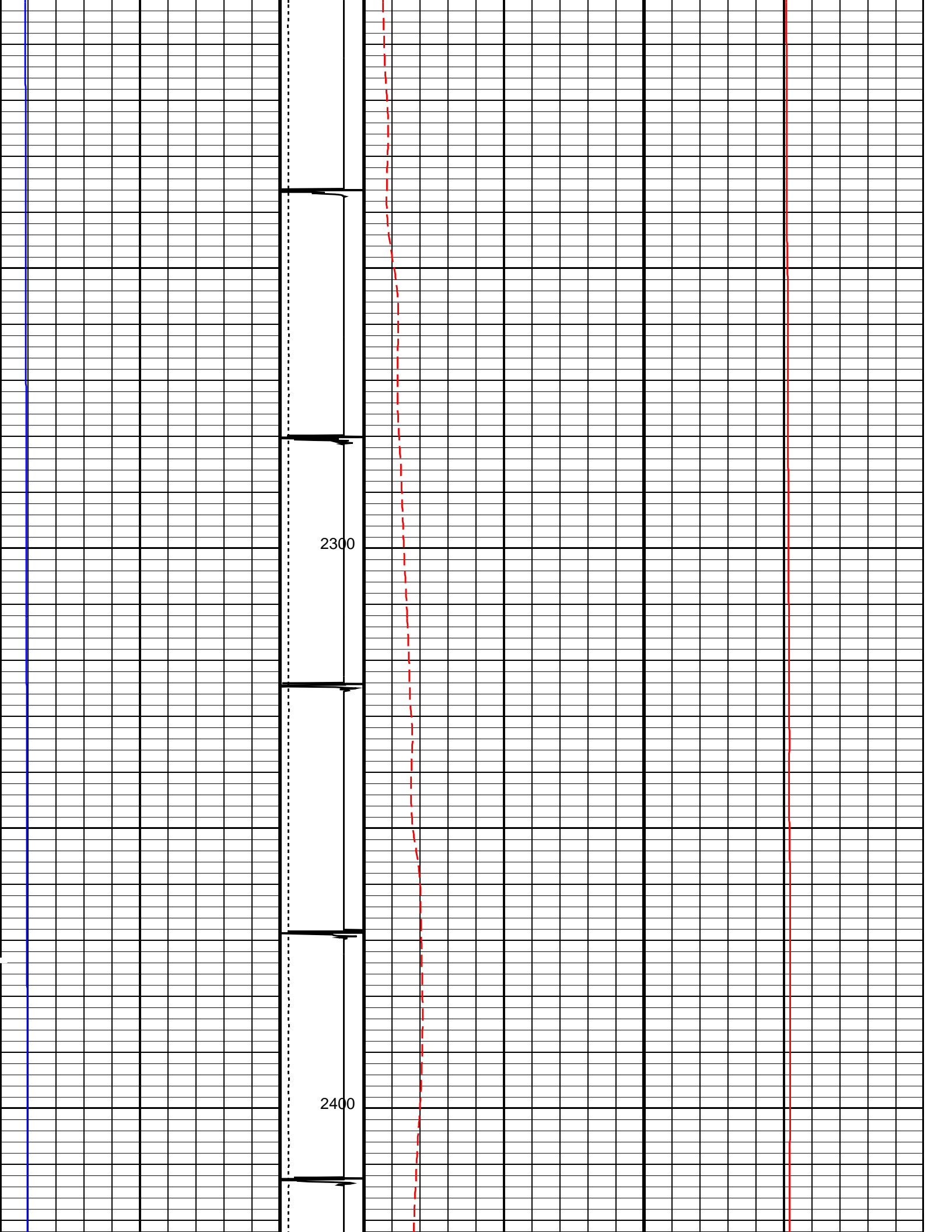


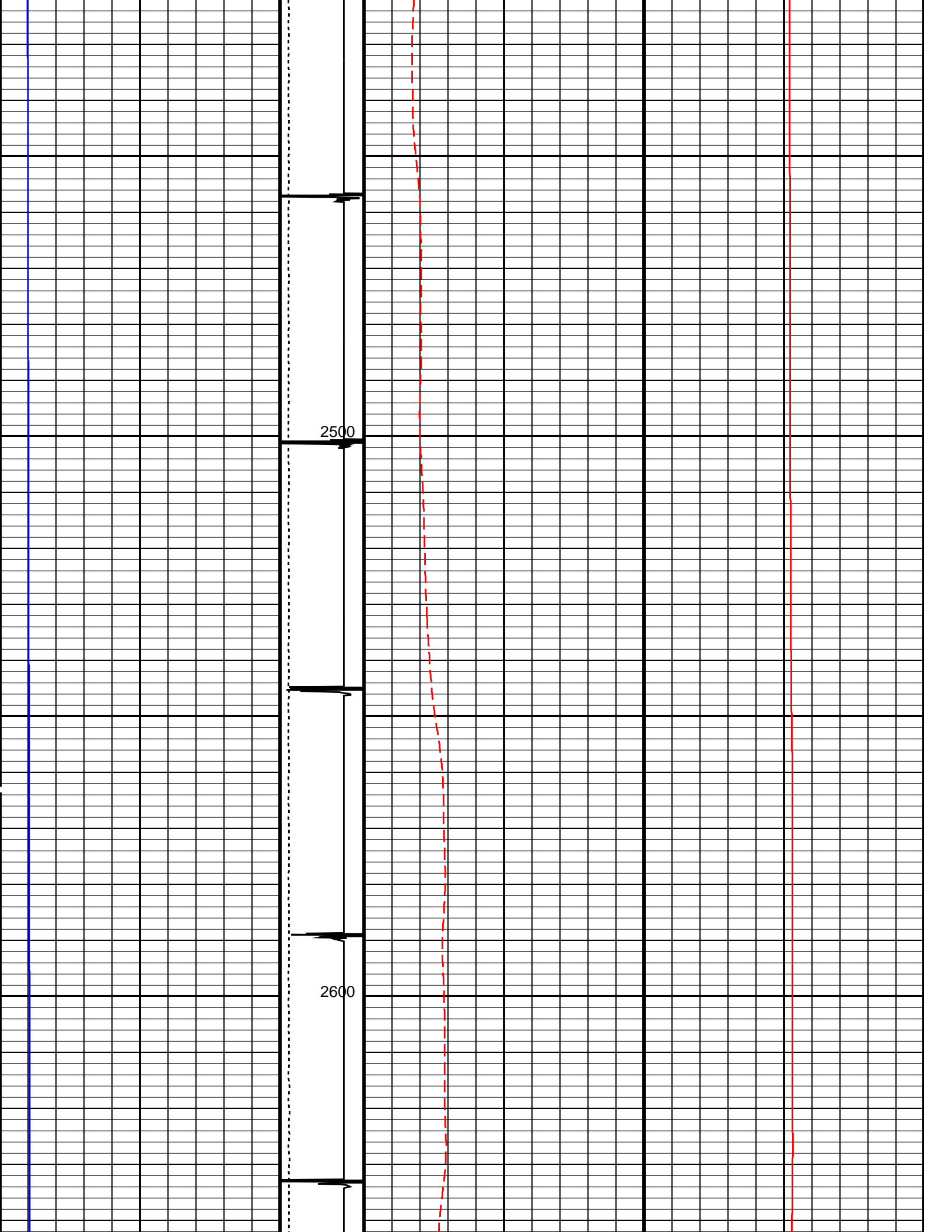


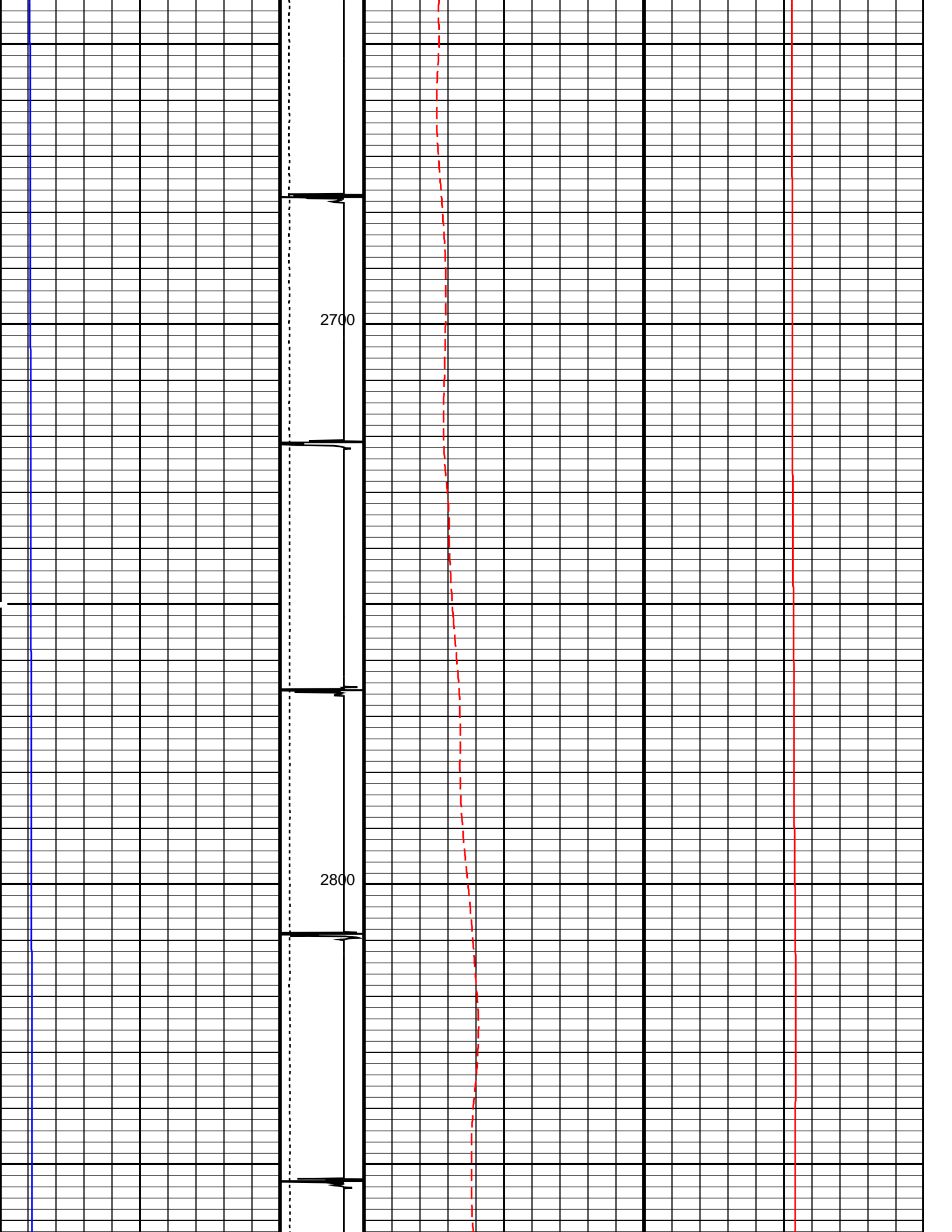


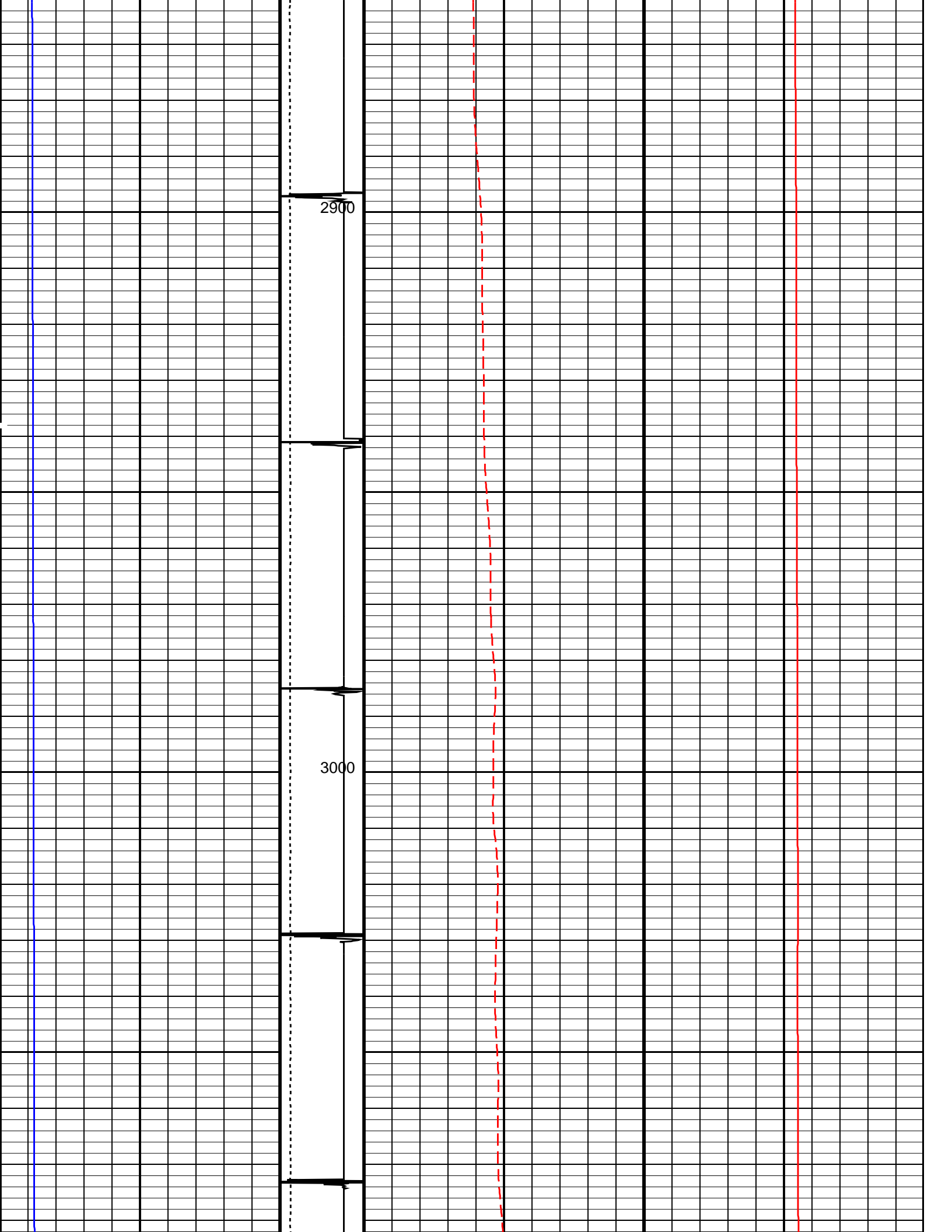


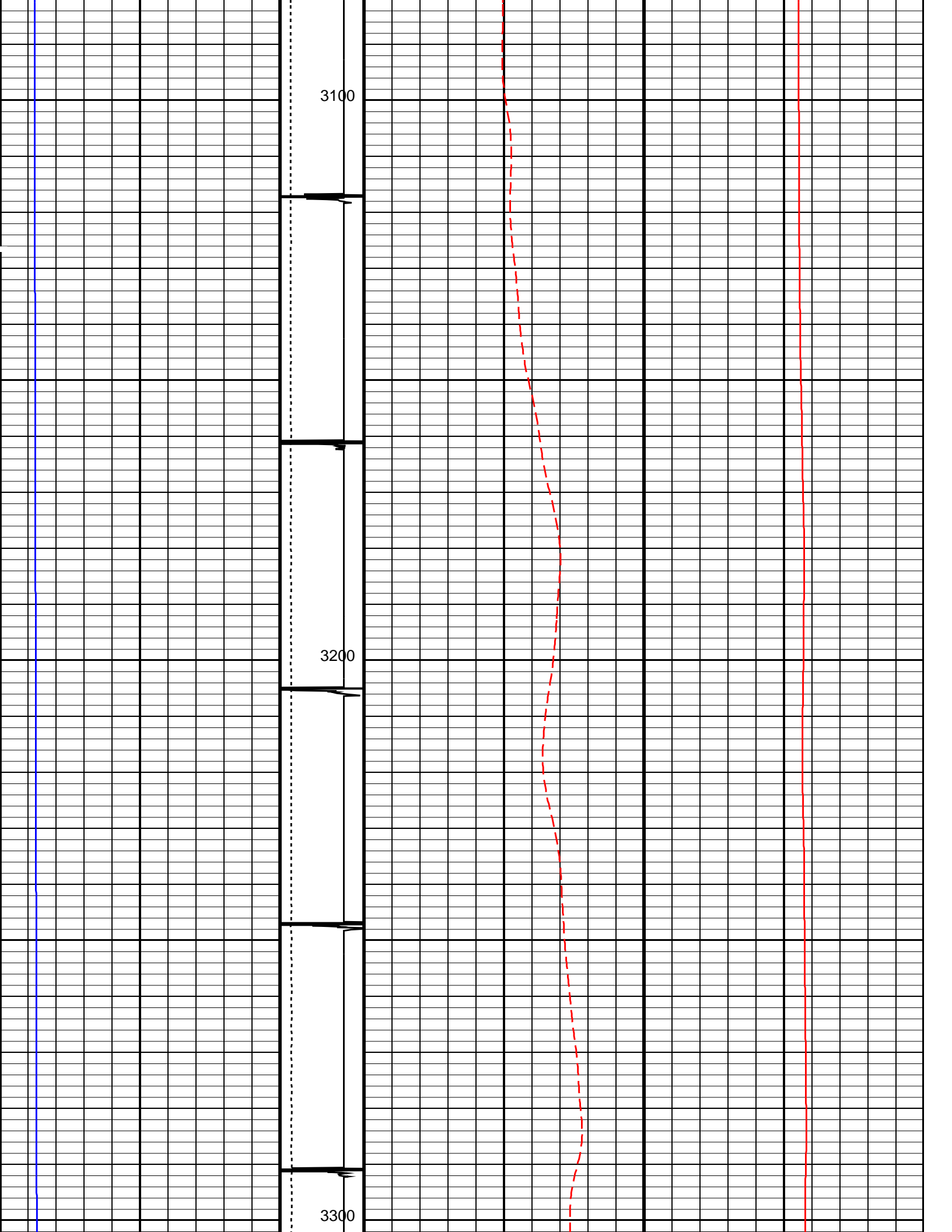


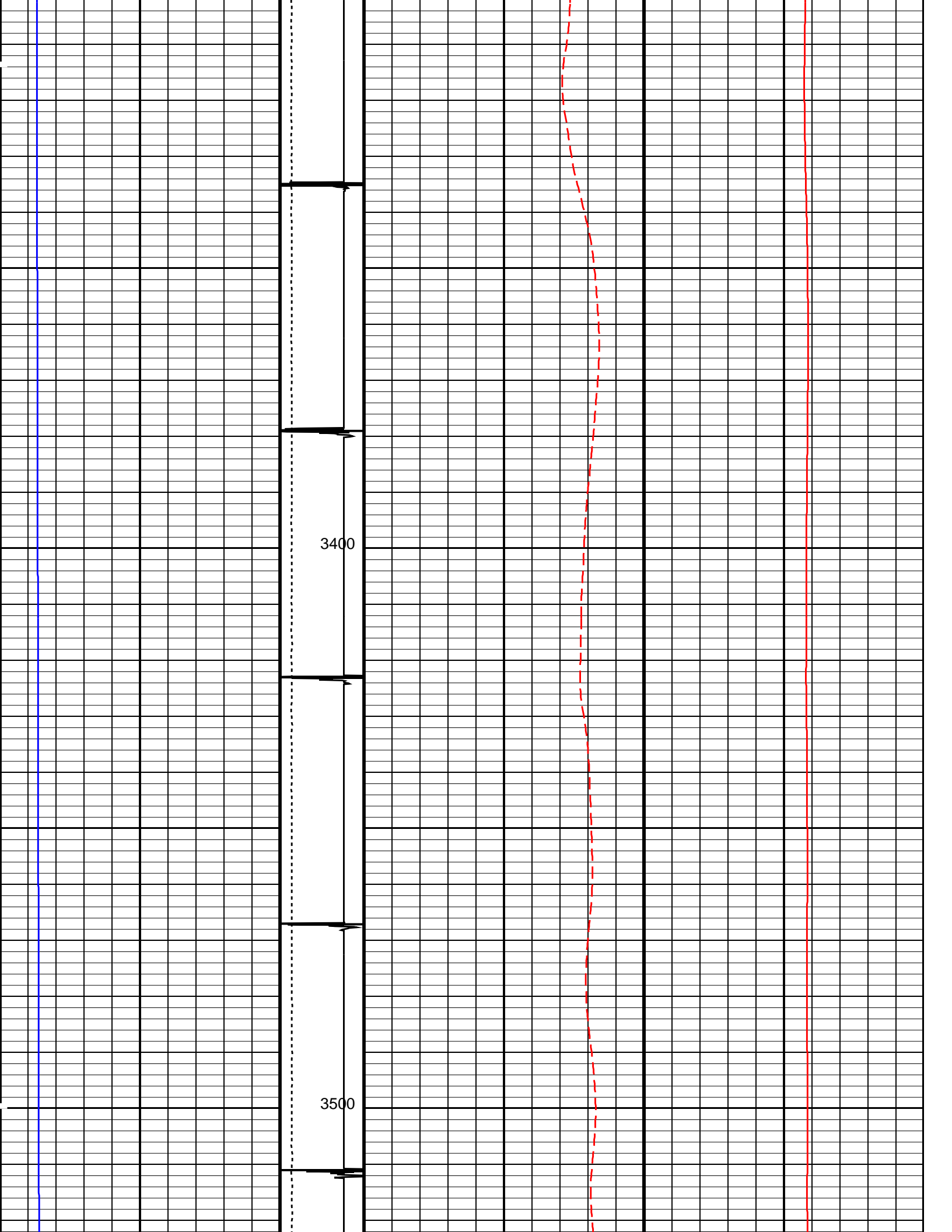


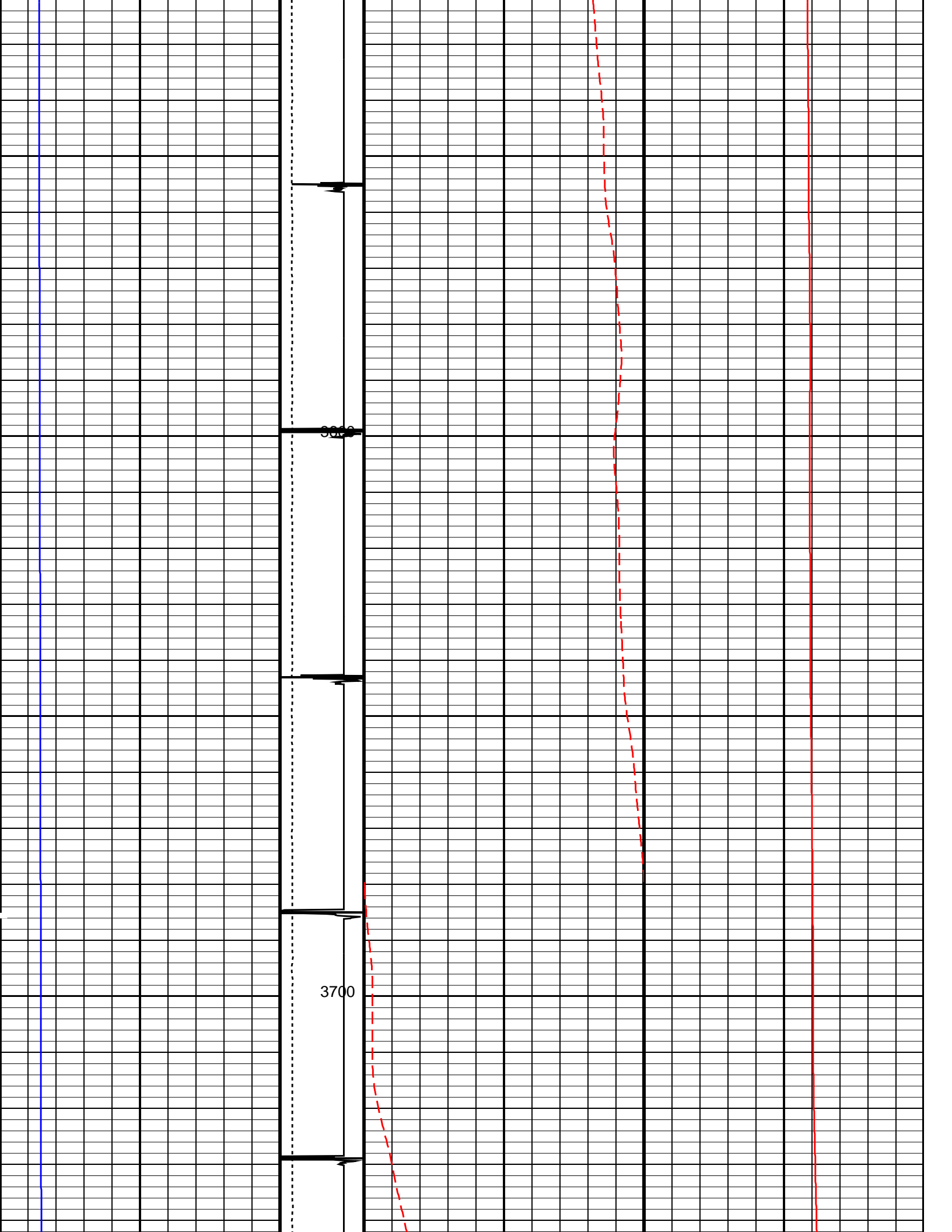


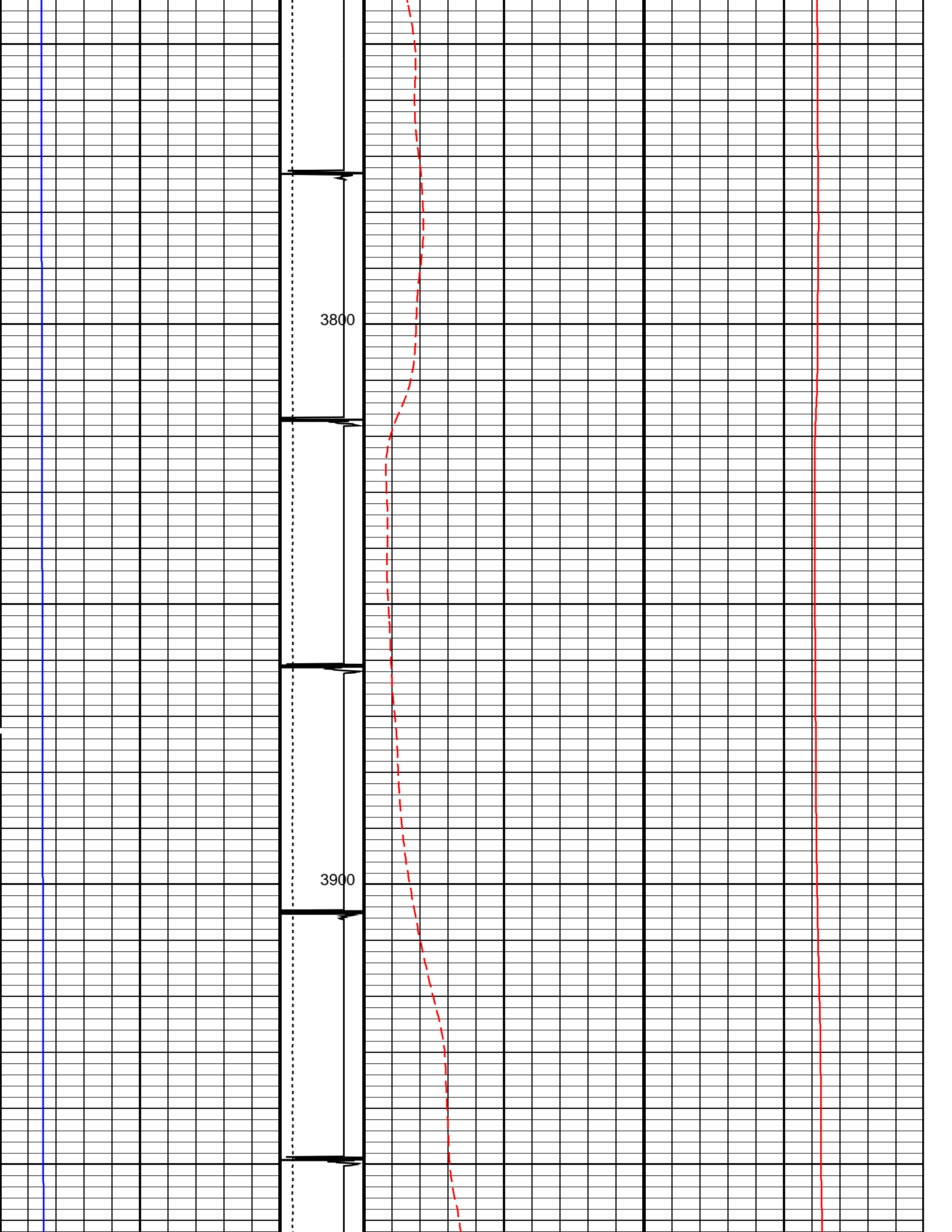


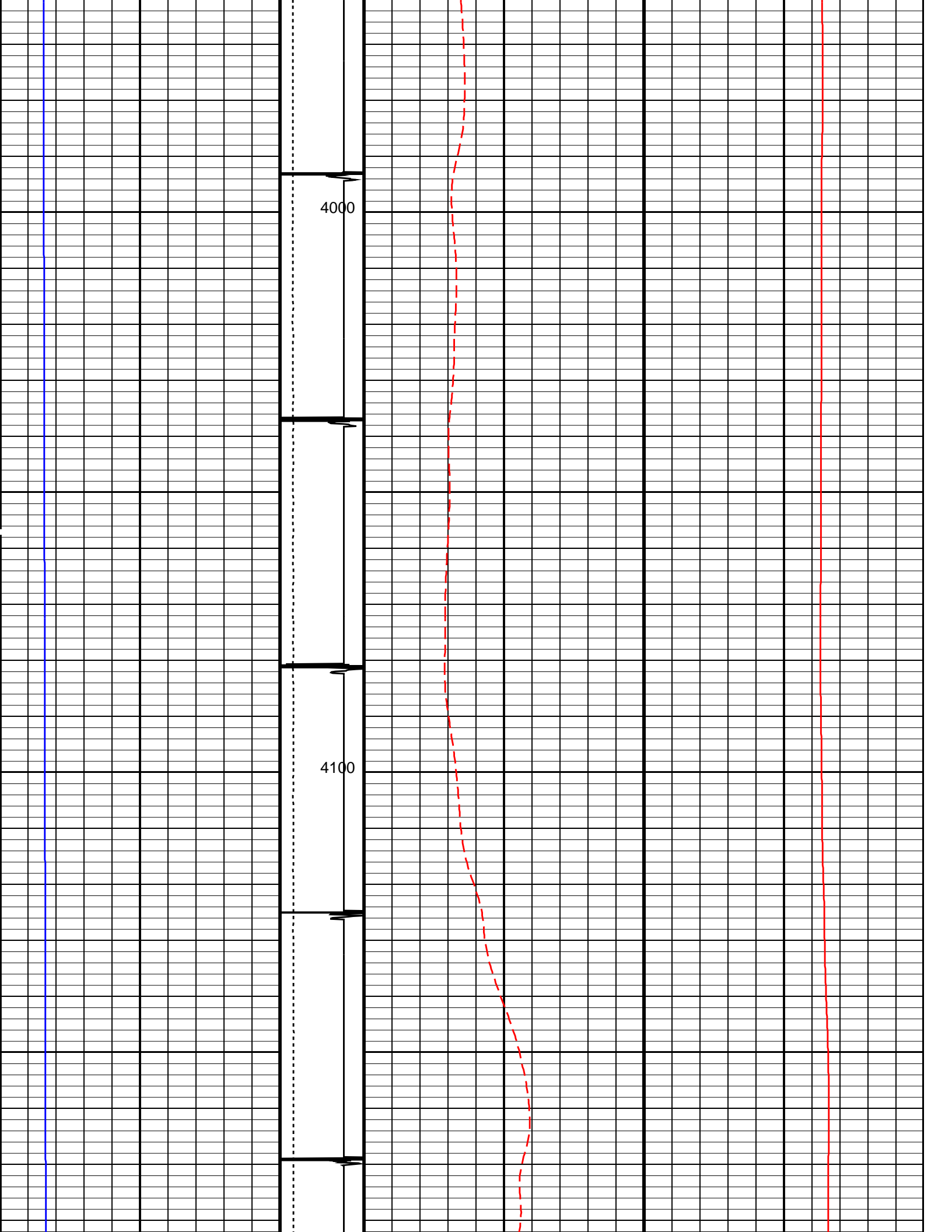


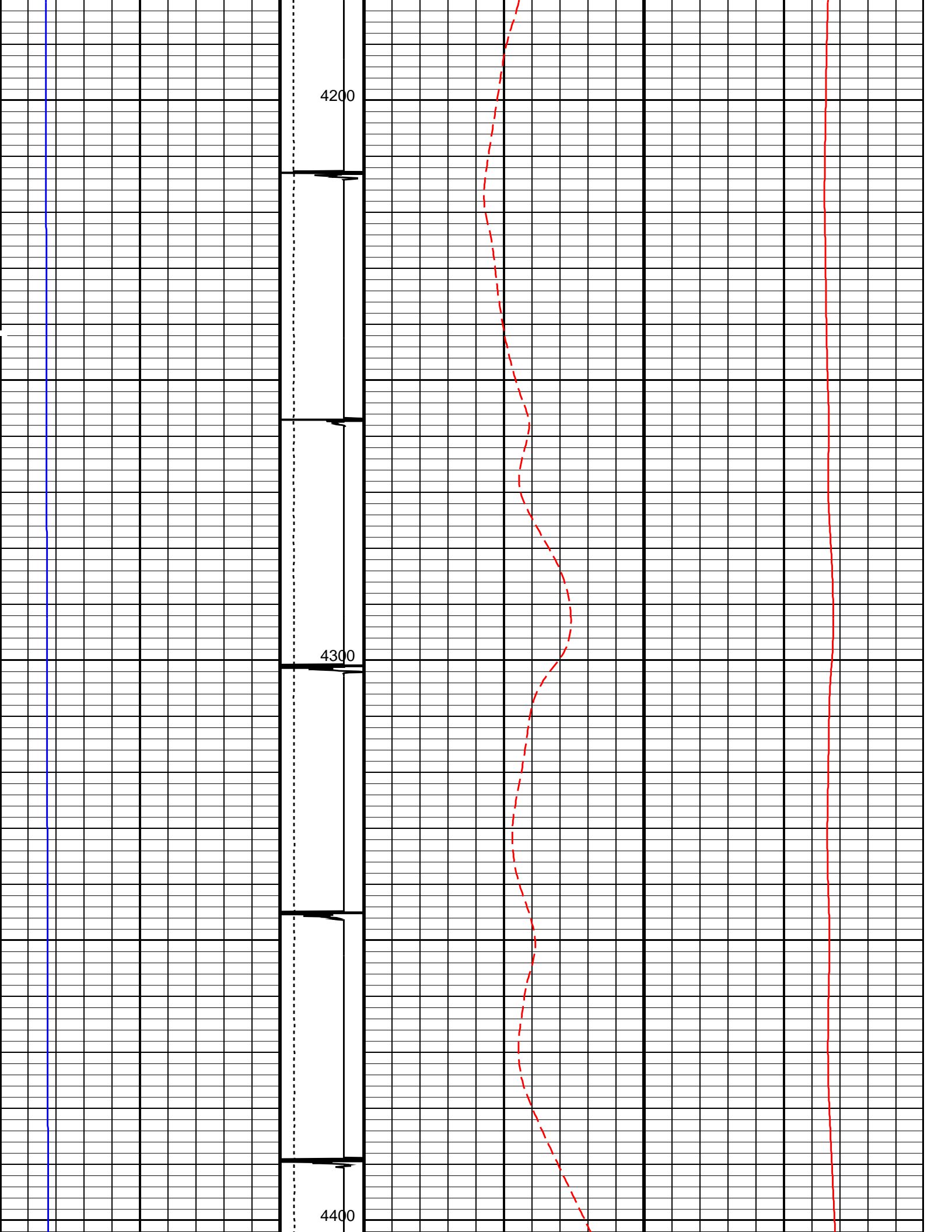


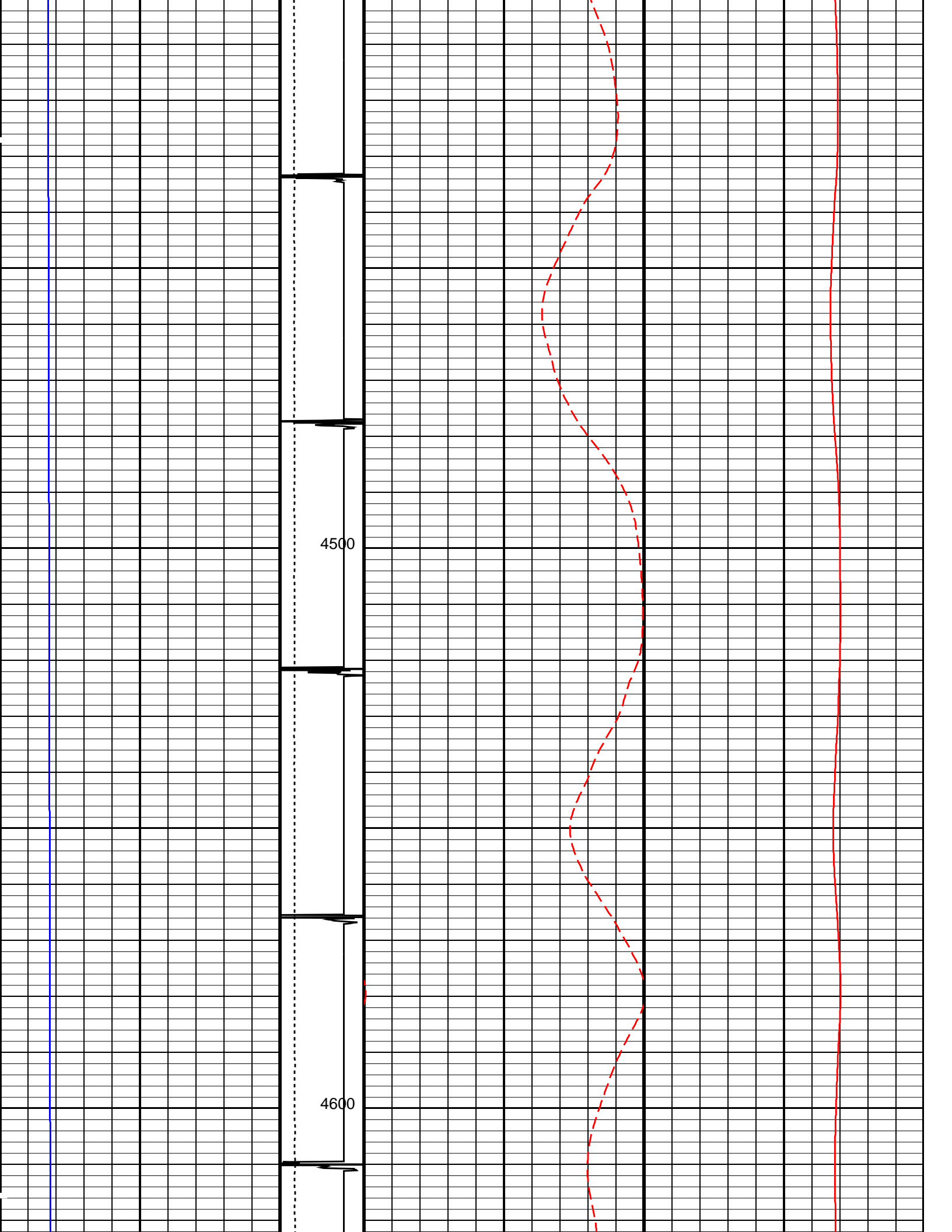


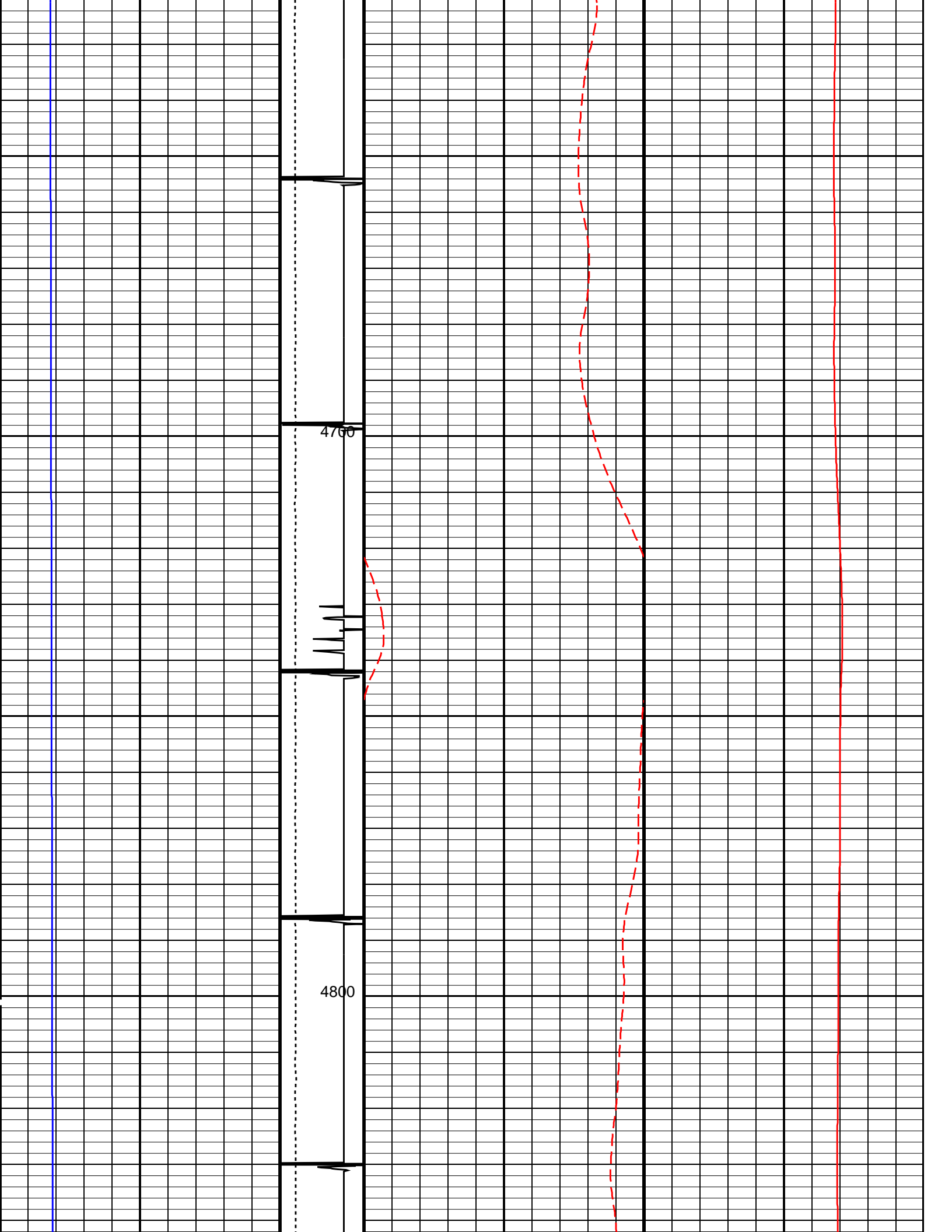


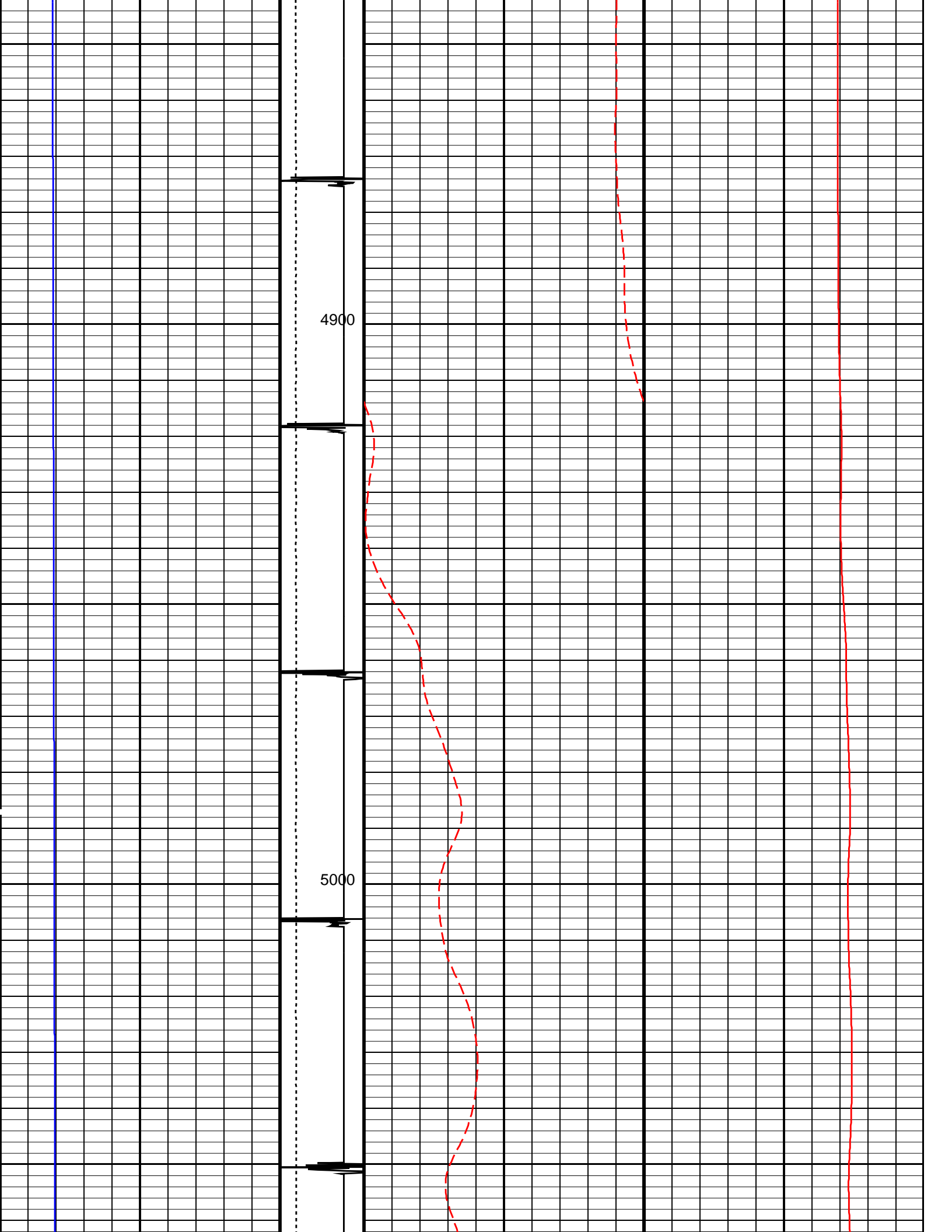


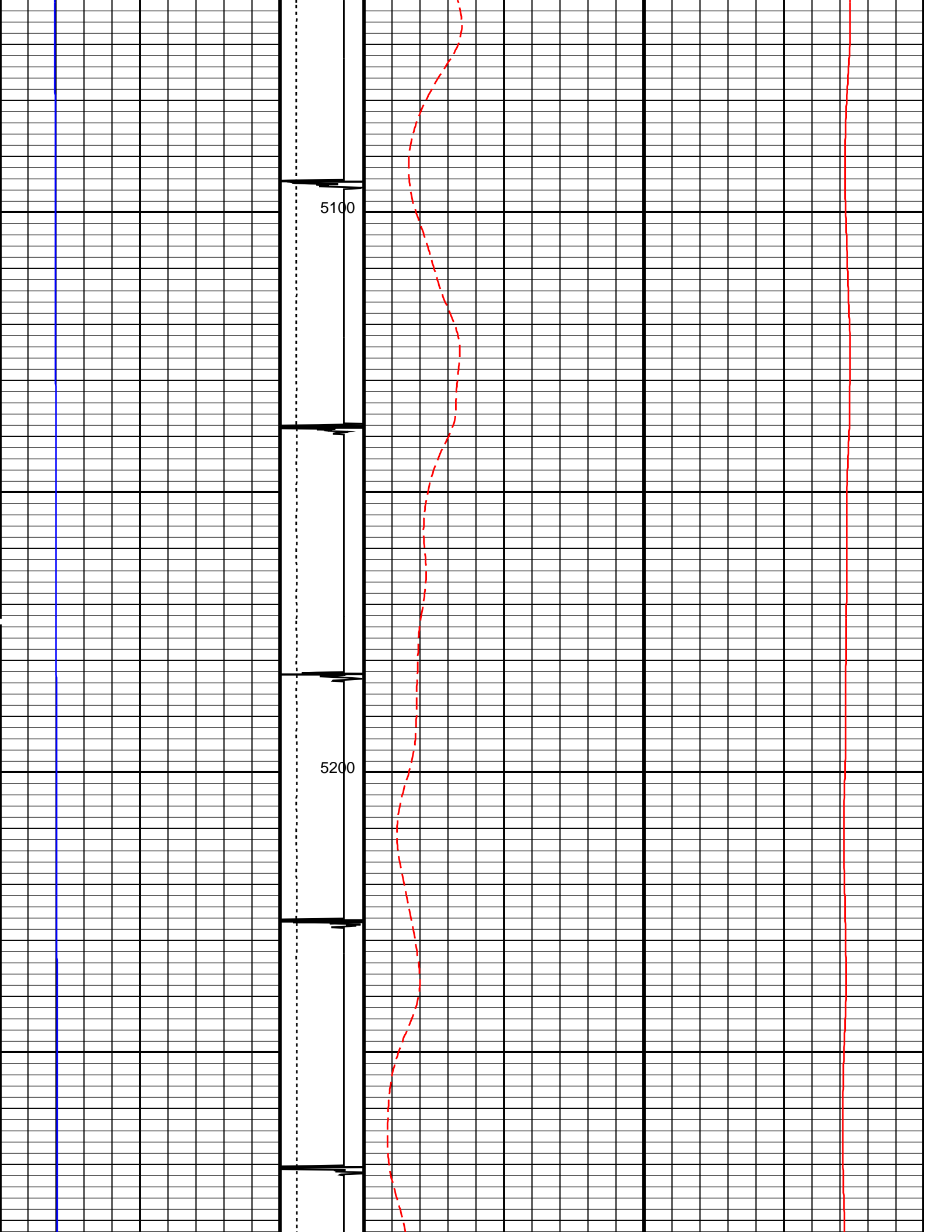


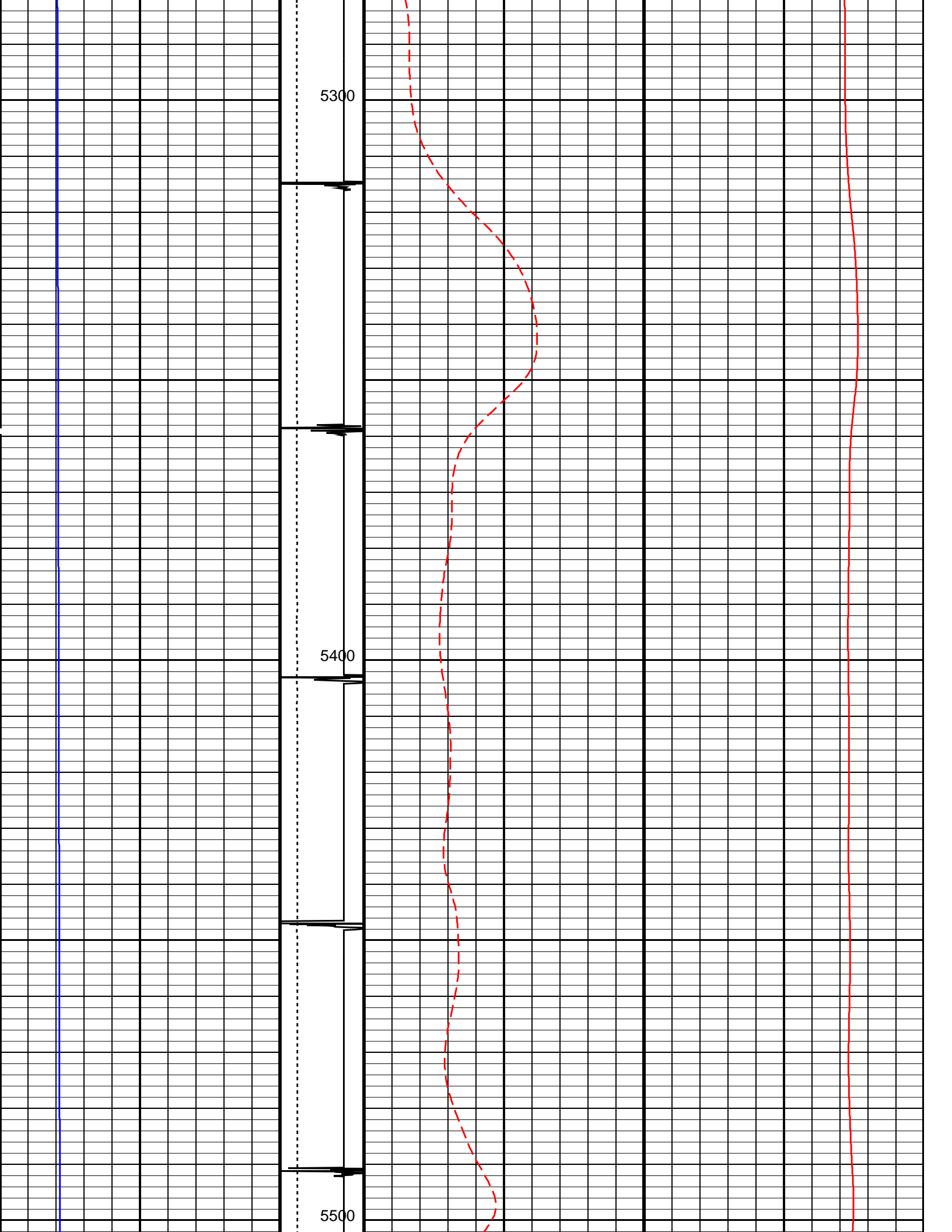


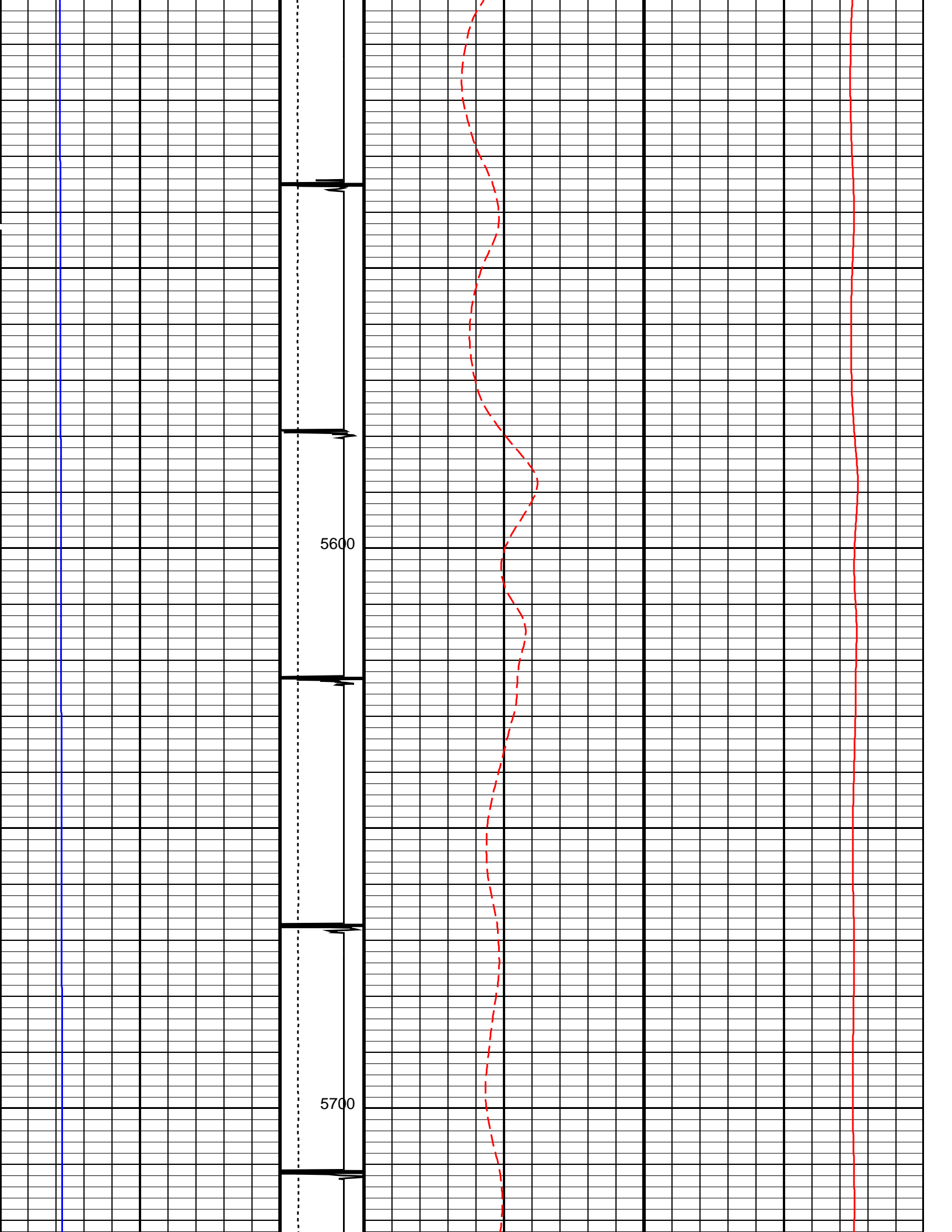


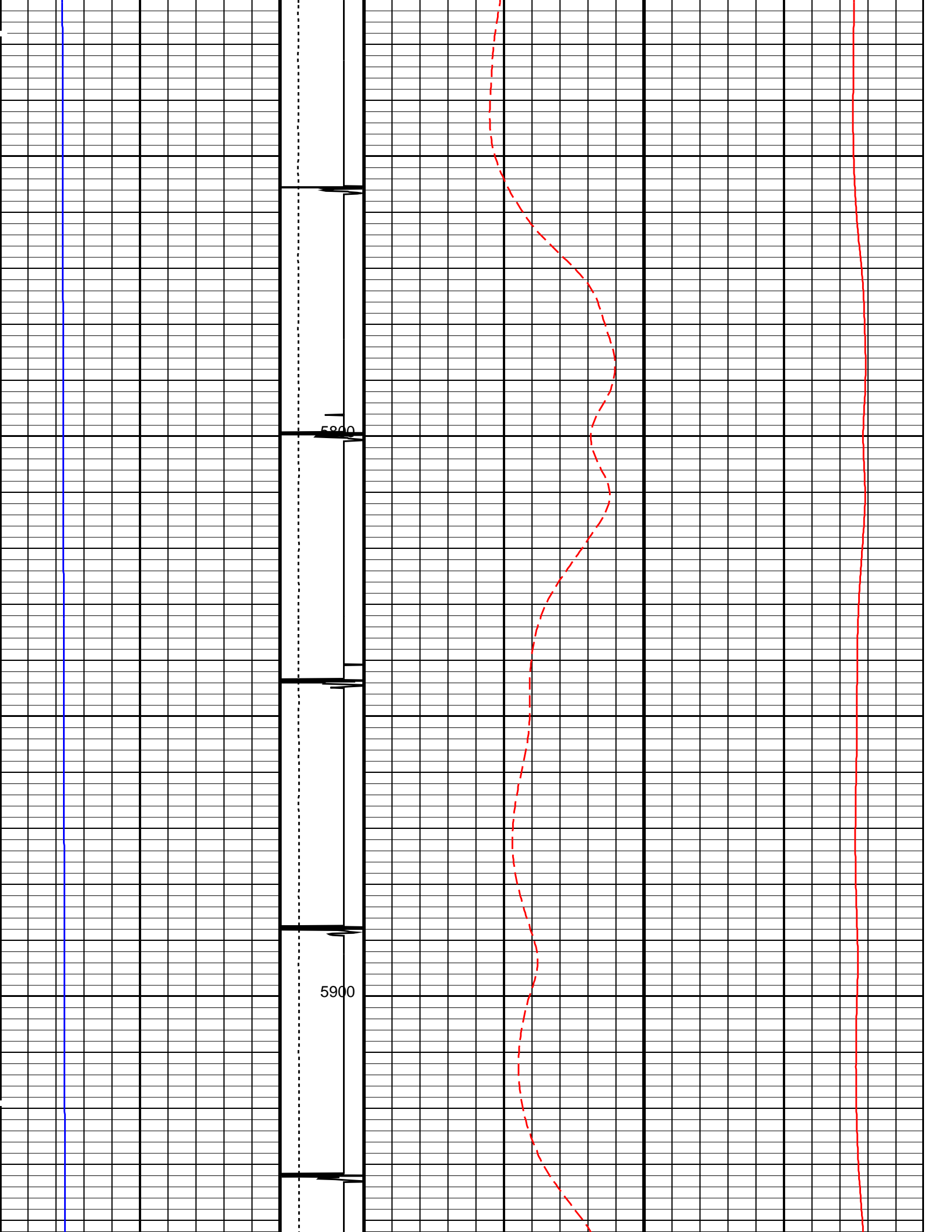


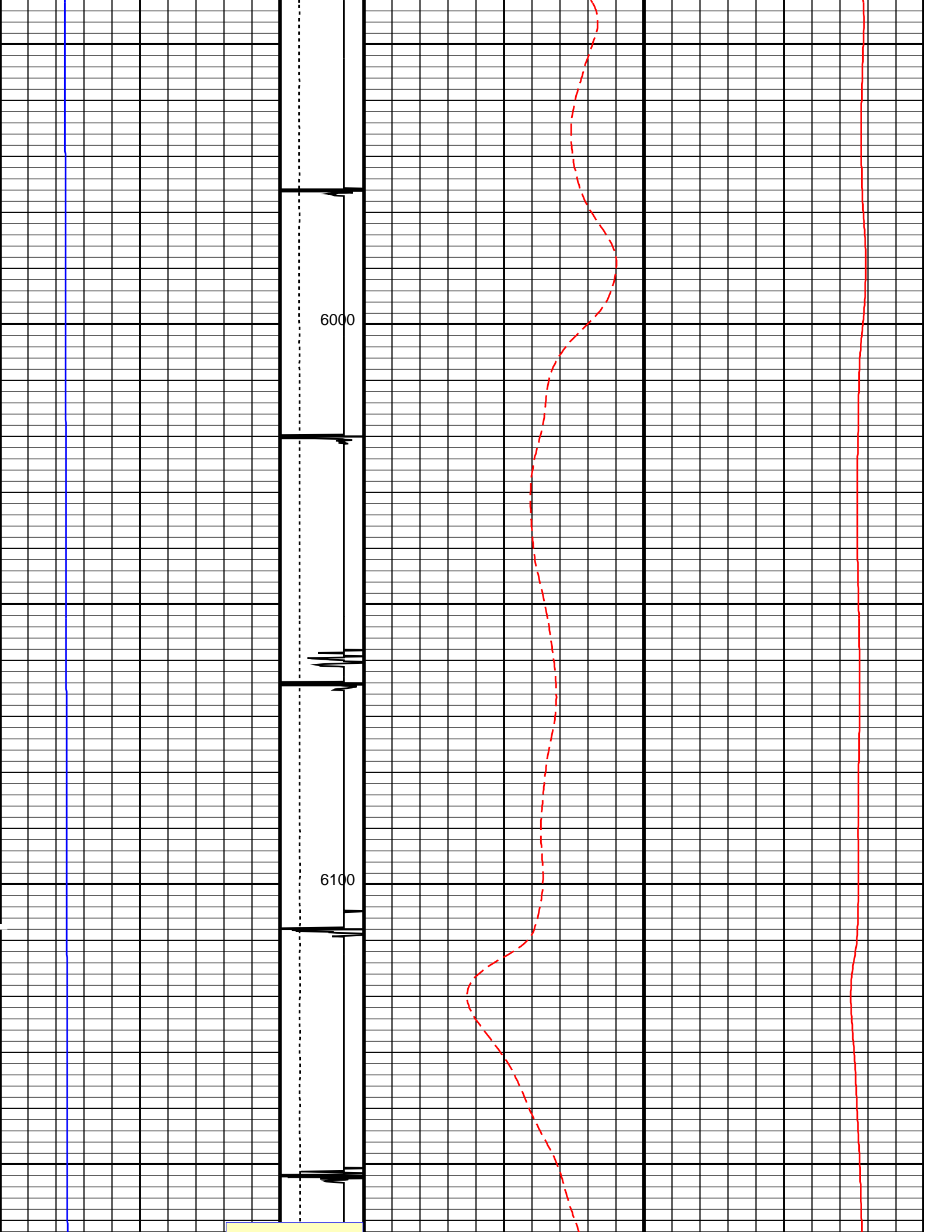








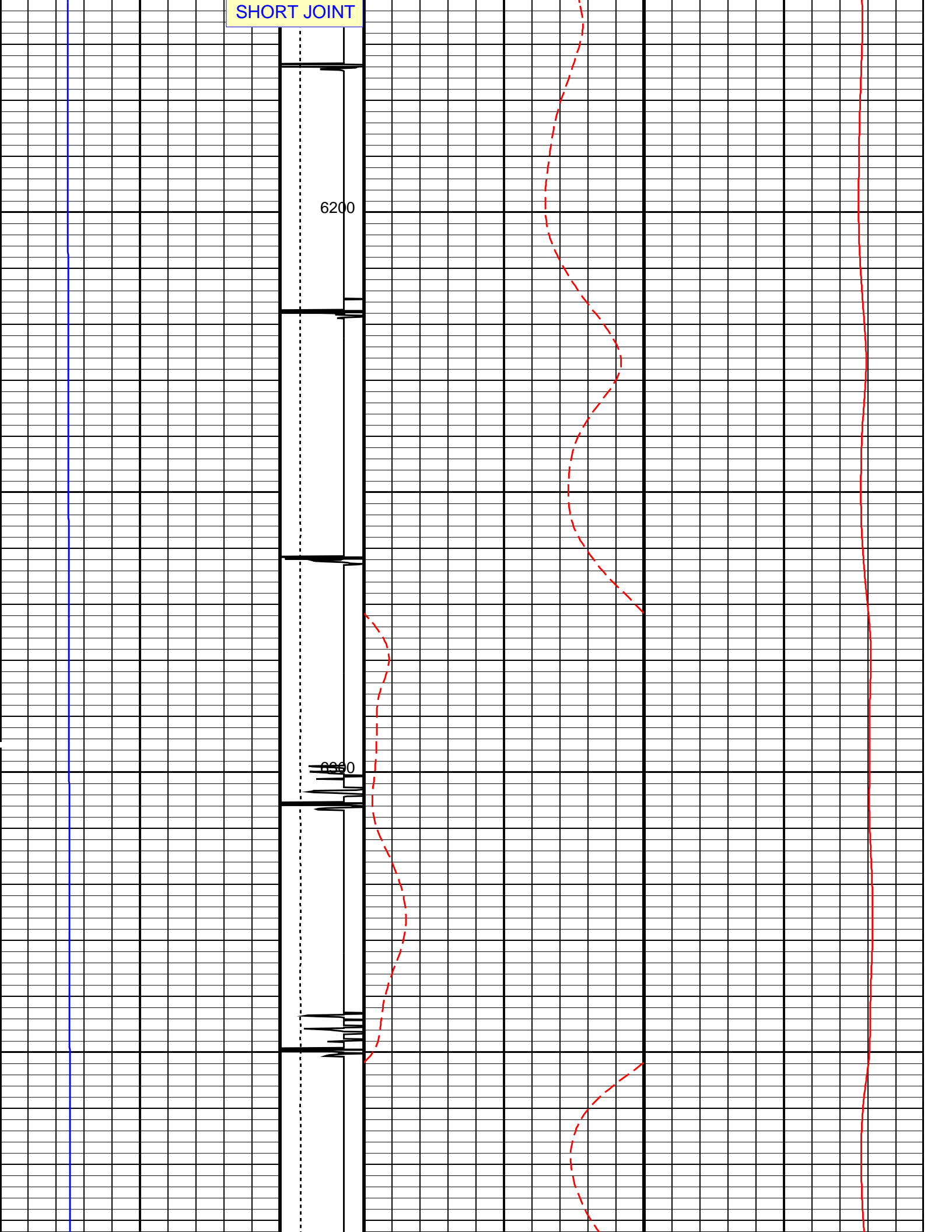


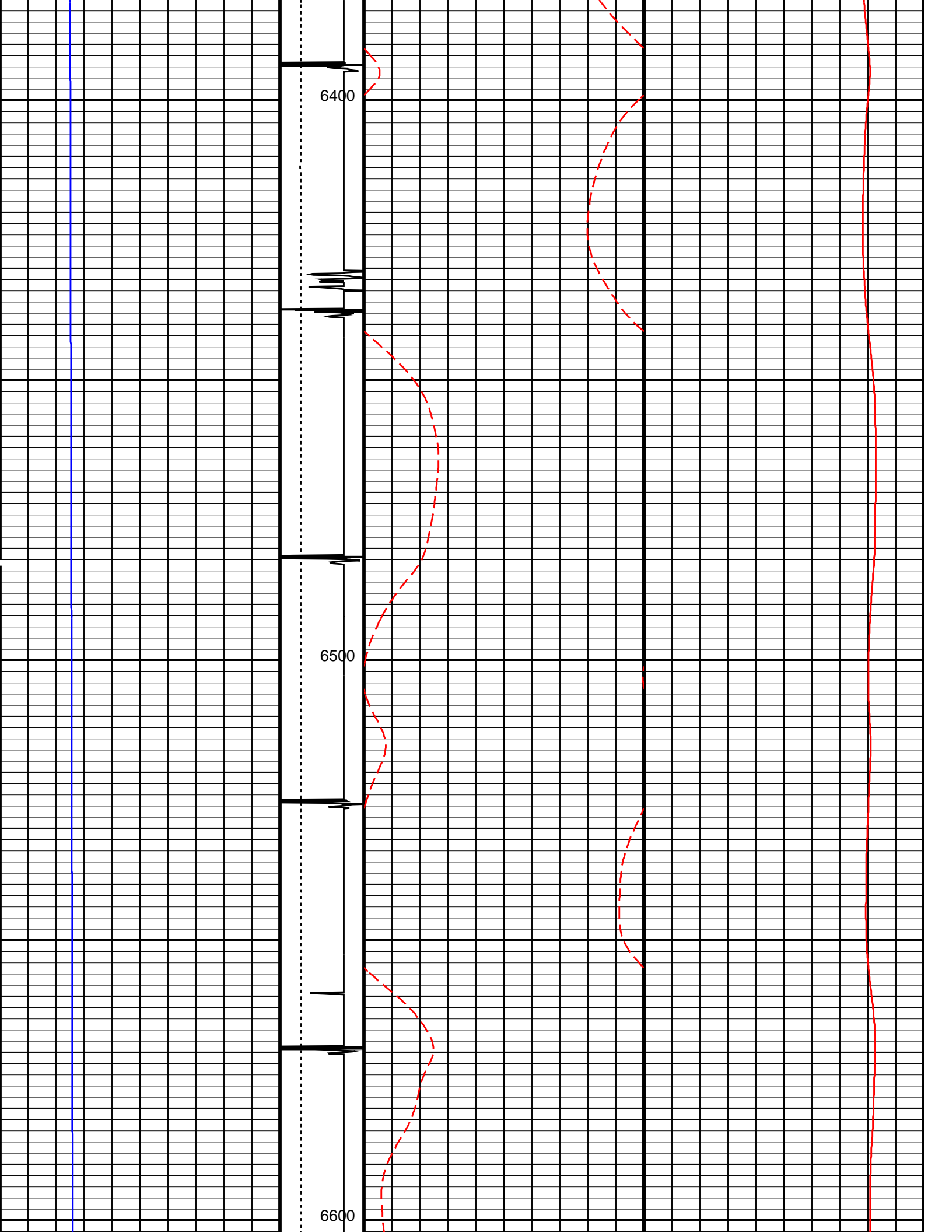


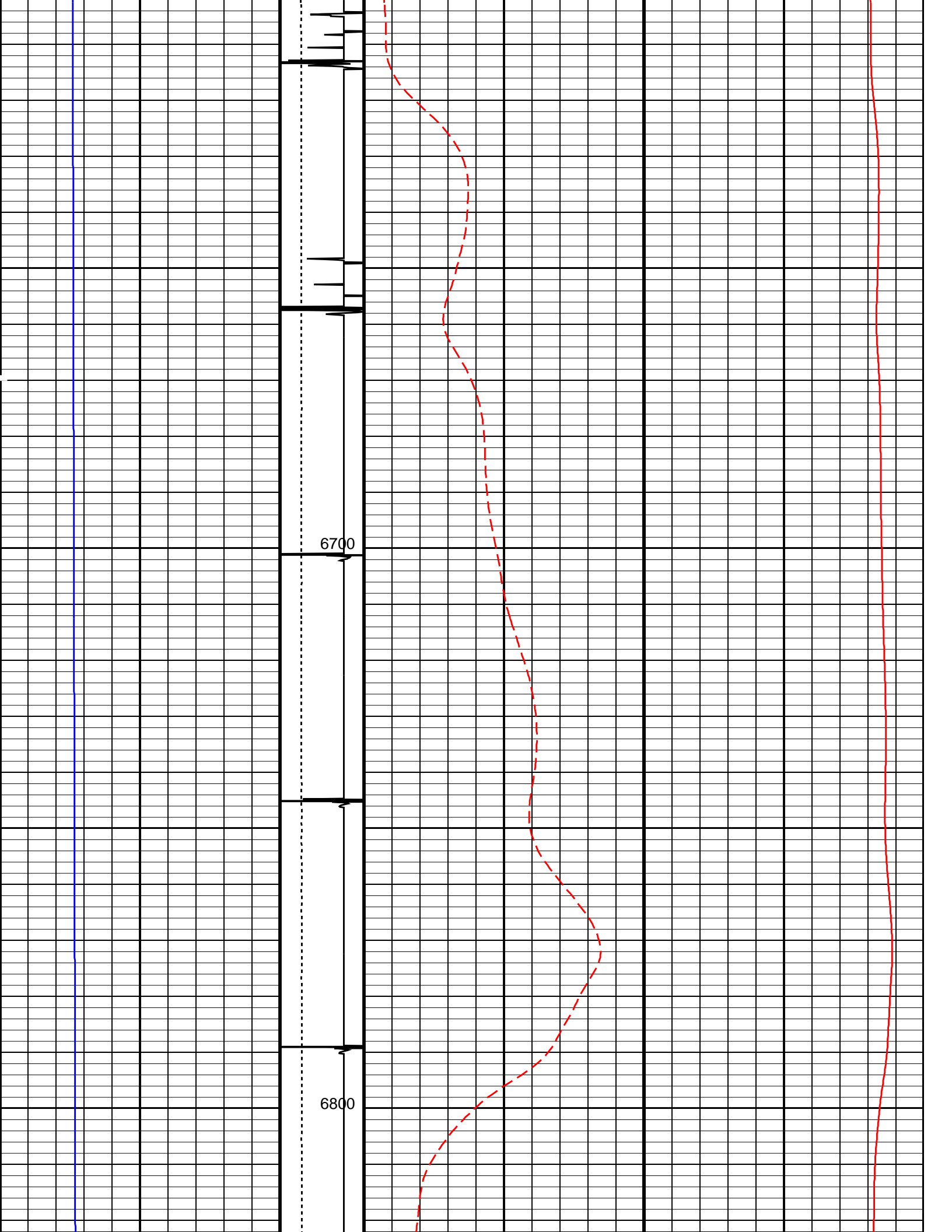
SHORT JOINT

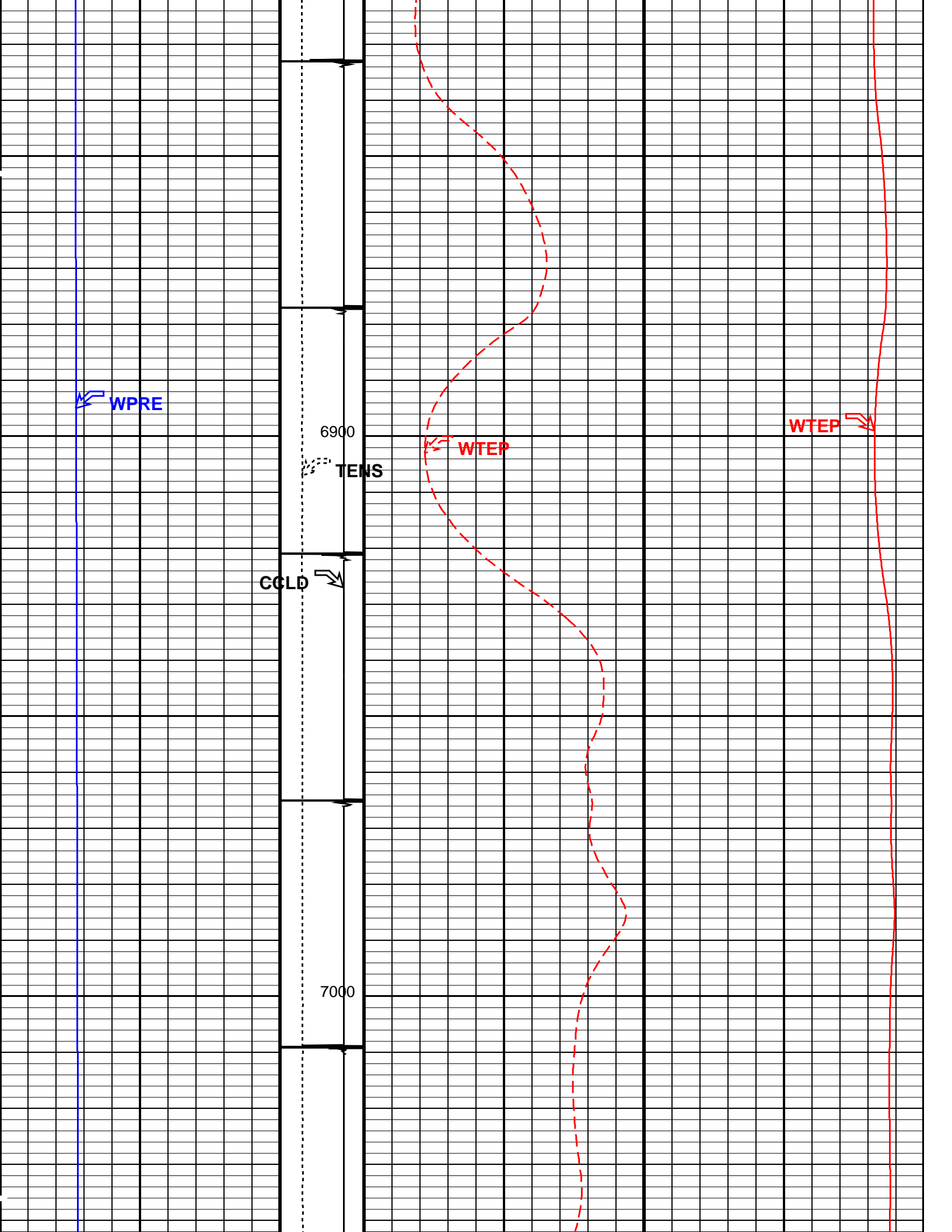
6200

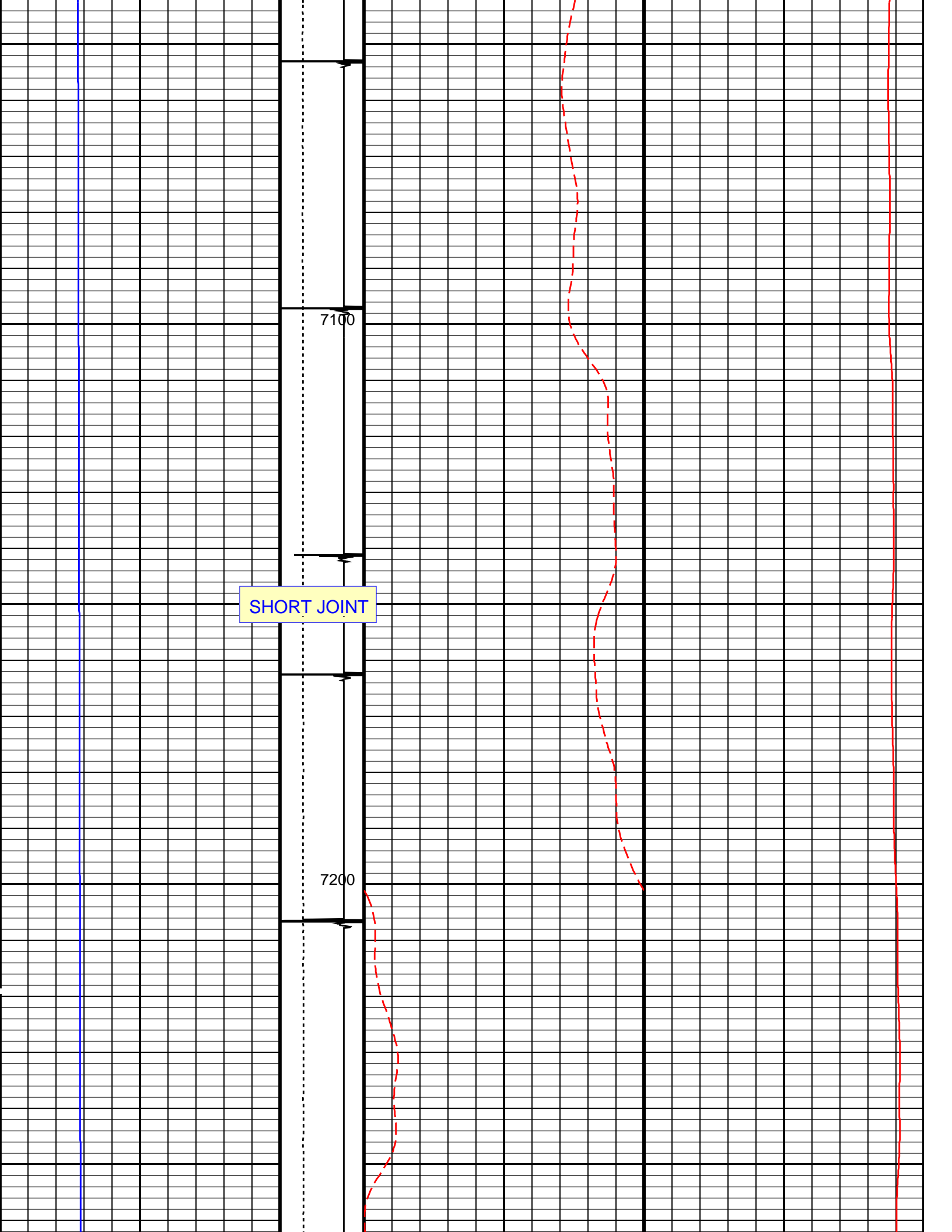
6260







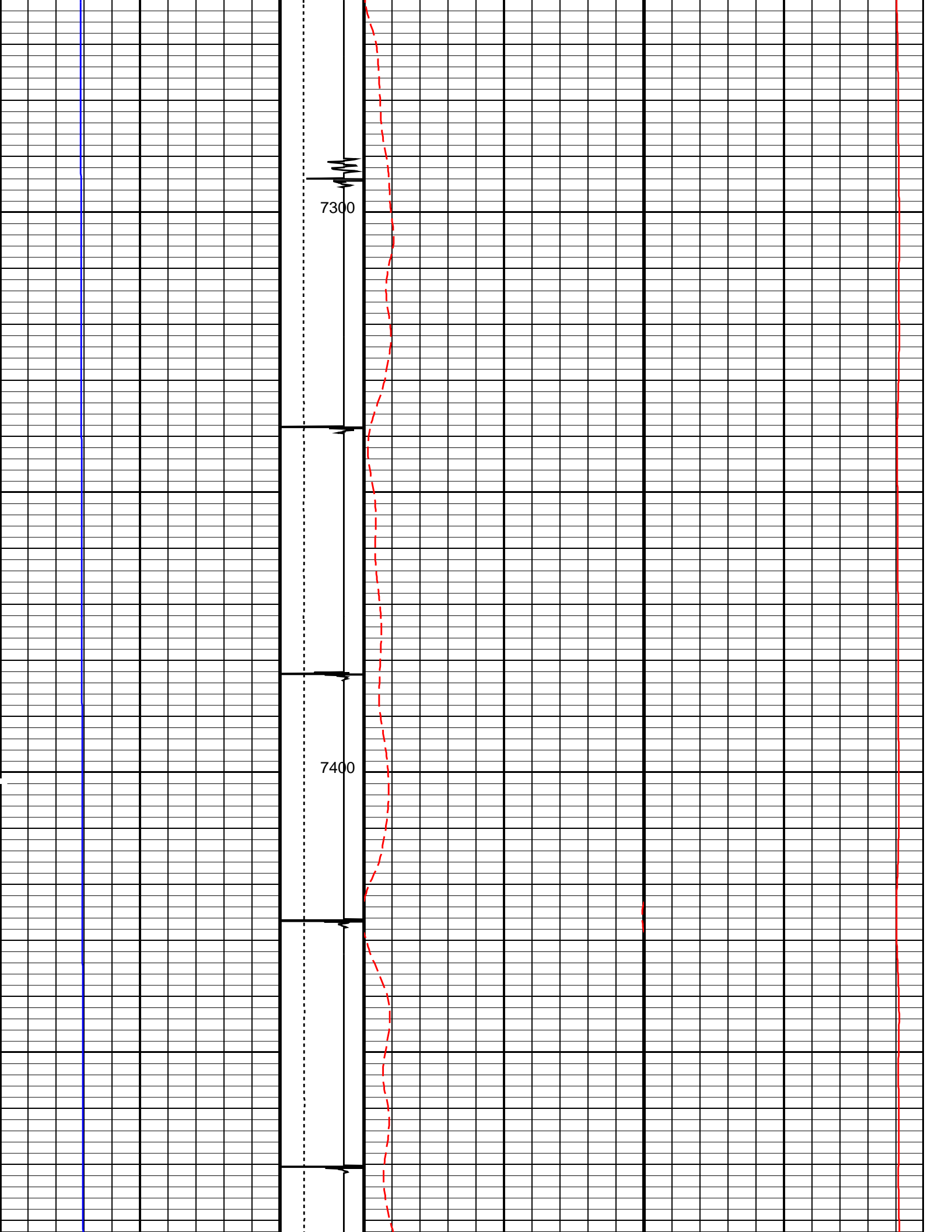


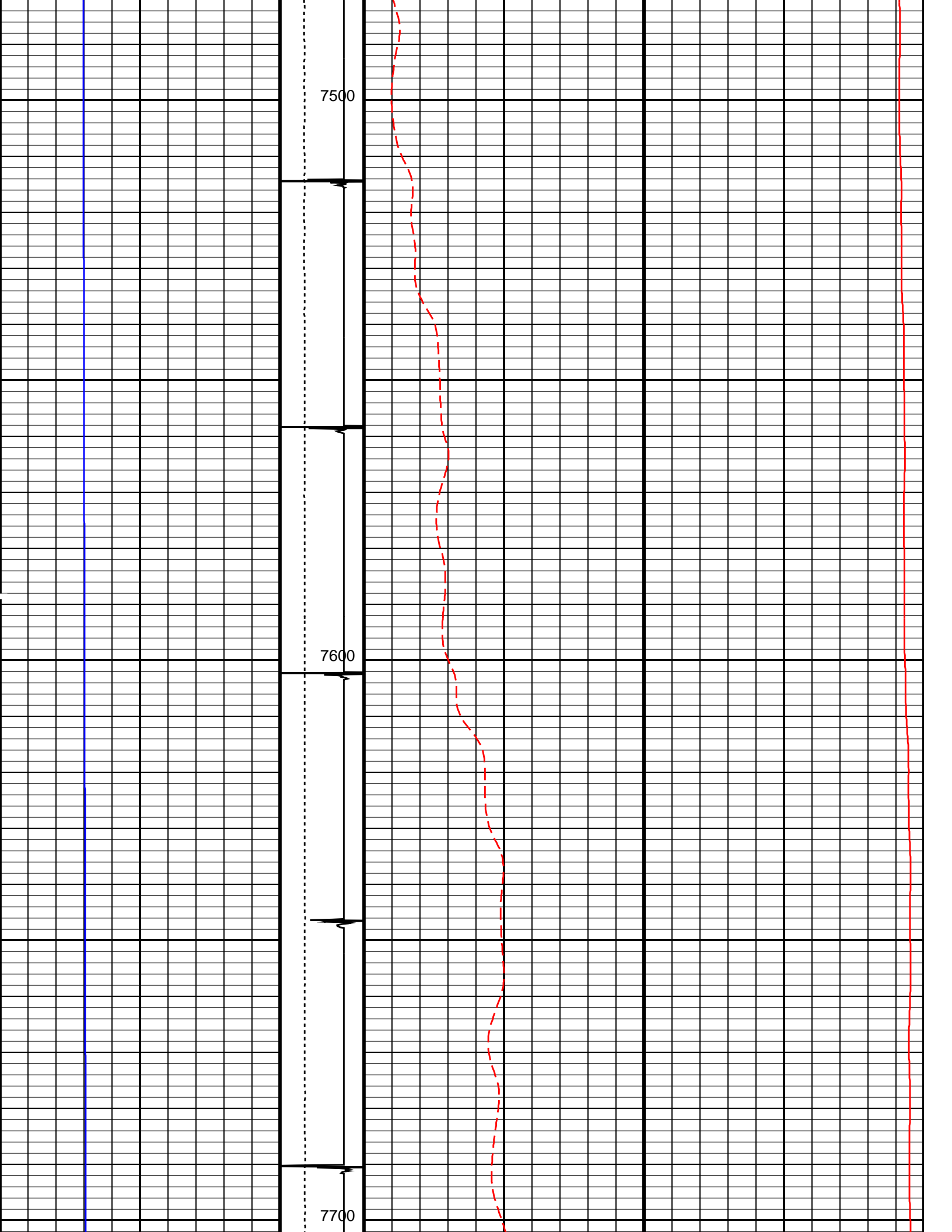


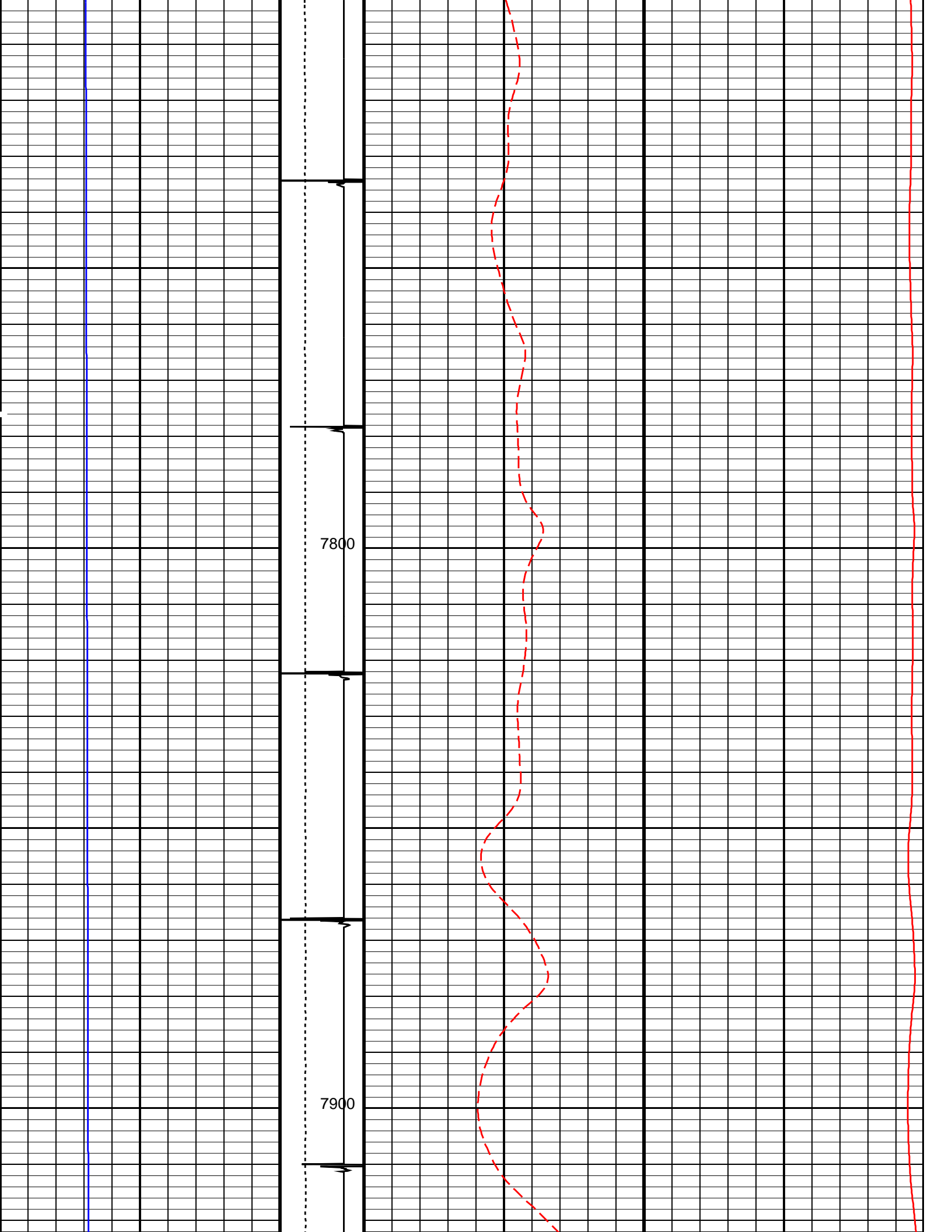
SHORT JOINT

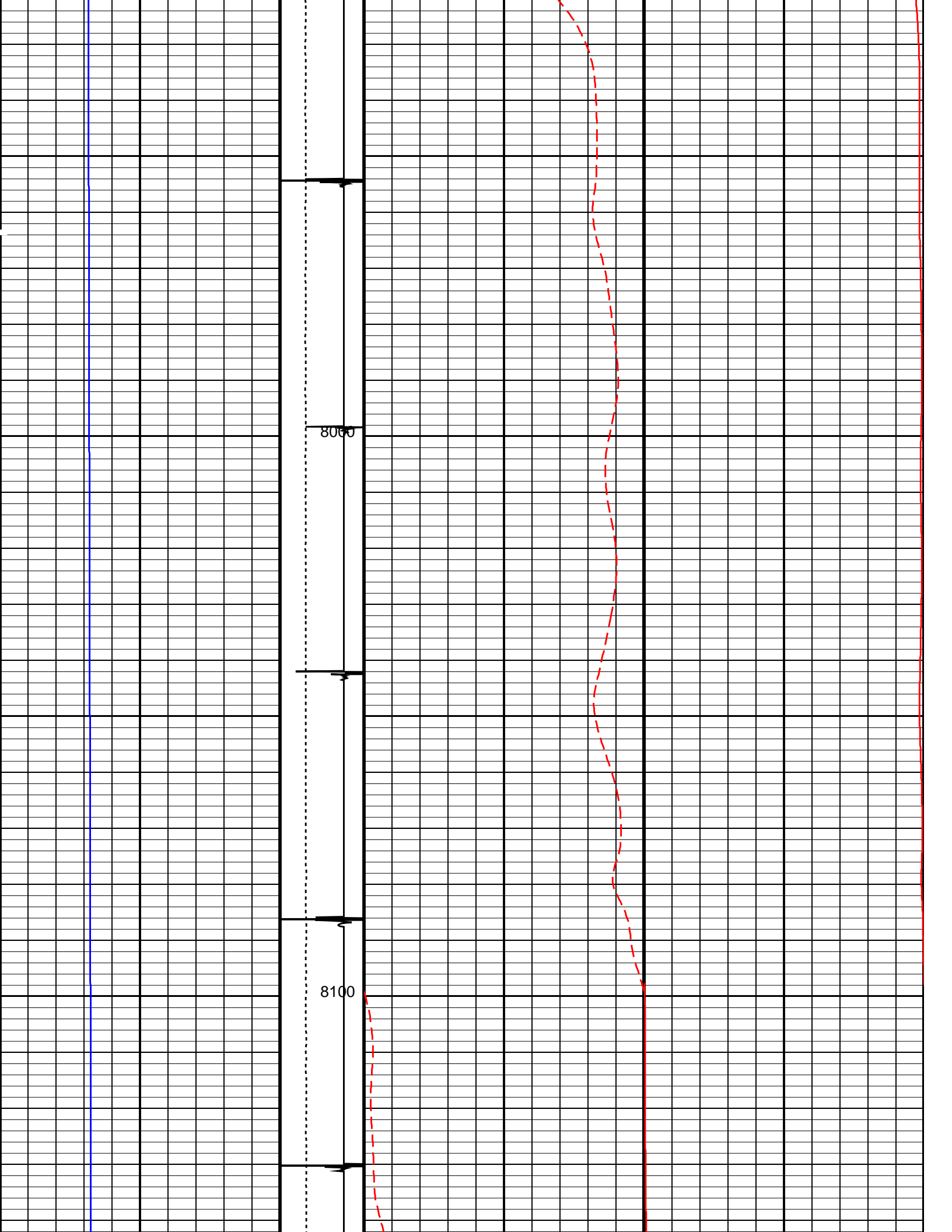
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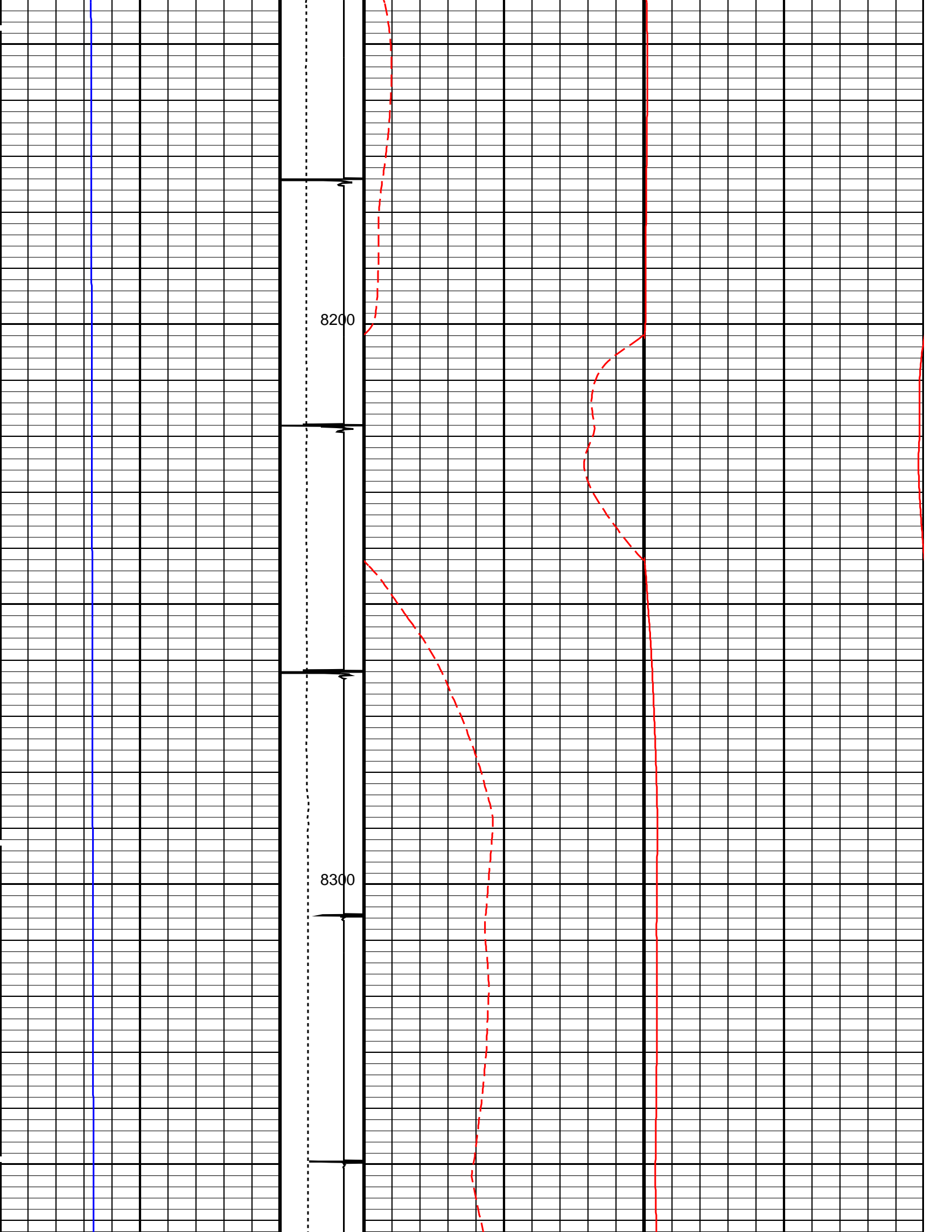
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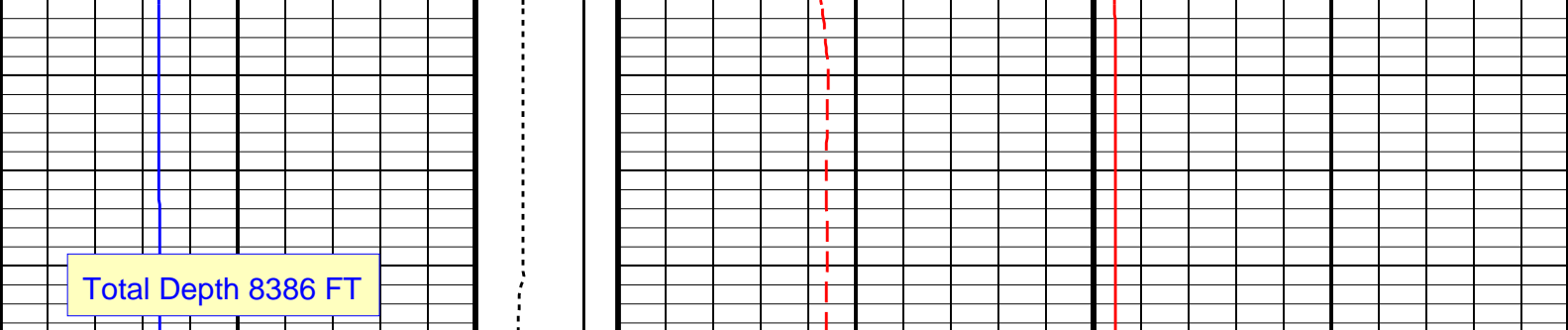












Well Pressure (WPRE)		Tension (TENS)		Well Temperature (WTEP)		Well Temperature (WTEP)	
(PSIA)		(LBF)		(DEGF)		(DEGF)	
0	10000	0	2000	0	20	0	200
		Discriminat ed CCL (CCLD)					
		3 (V) -1					

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DO PP	System and Miscellaneous Depth Offset for Playback Playback Processing	-6.0 FT RECOMPUTE

Format: TEMP LOG Vertical Scale: 5" per 100' Graphics File Created: 15-Apr-2013 03:56

OP System Version: 19C0-187

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

Input DLIS Files

DEFAULT	Flip_HBMS_004LUP	PRODUCER	15-Apr-2013 03:54	8403.0 FT	-10.5 FT
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Output DLIS Files

DEFAULT	HBMS_006PUP	FN:3	PRODUCER	15-Apr-2013 03:56	
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REPEAT ANALYSIS

MAXIS Field Log

Company: ENCANA OIL & GAS (USA) INC Well: ENCANA FEE 24-1B (K19CNE)

Input DLIS Files

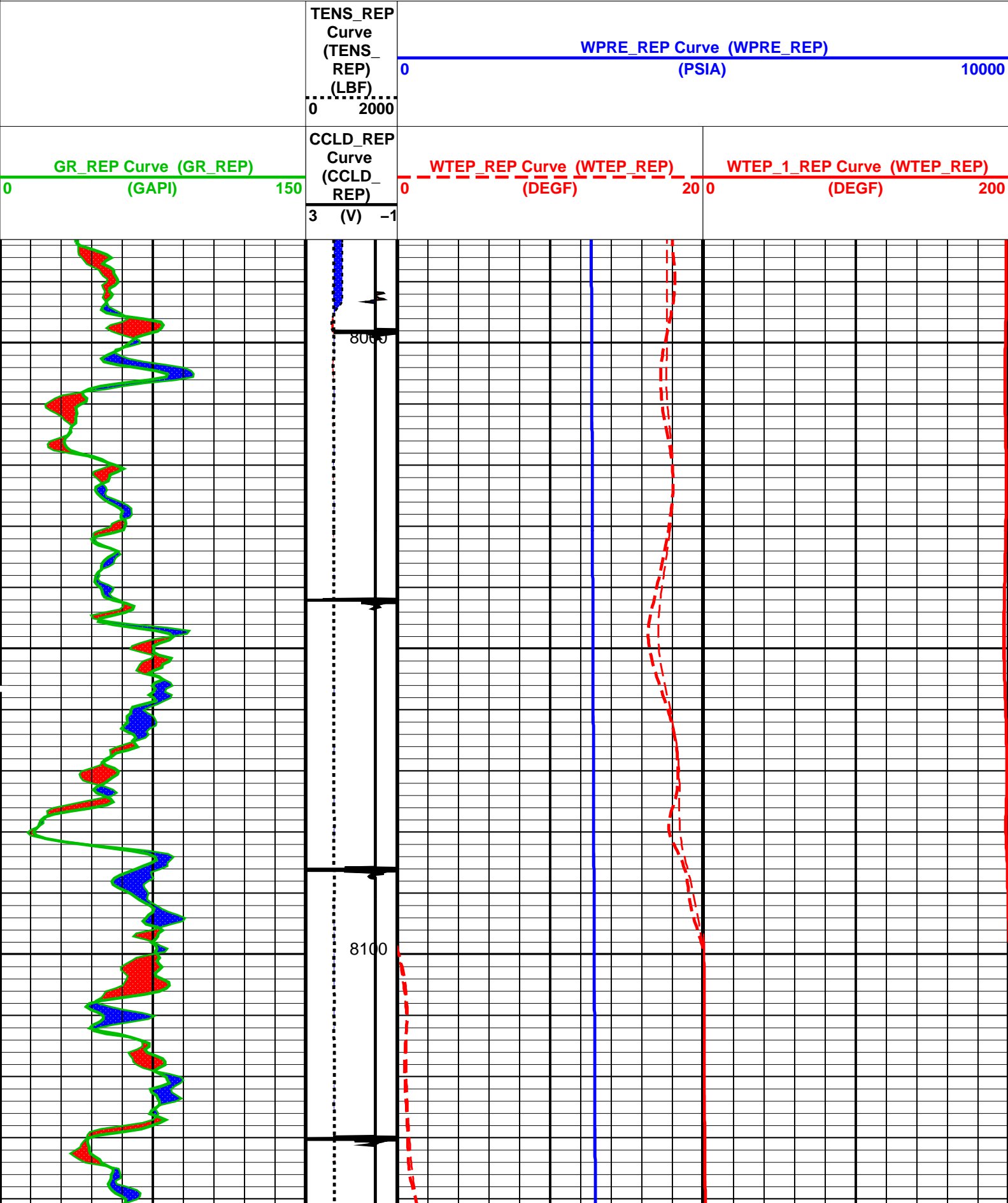
DEFAULT	Flip_HBMS_005LUP	PRODUCER	15-Apr-2013 03:54	8258.5 FT	7988.5 FT
DEFAULT	HBMS_006PUP	FN:3	PRODUCER	15-Apr-2013 03:56	8397.0 FT

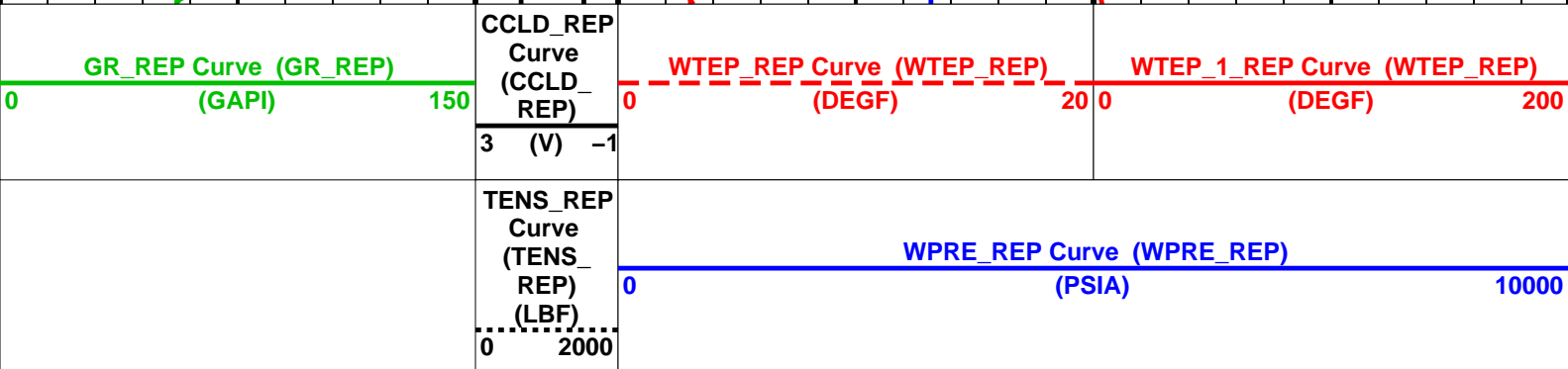
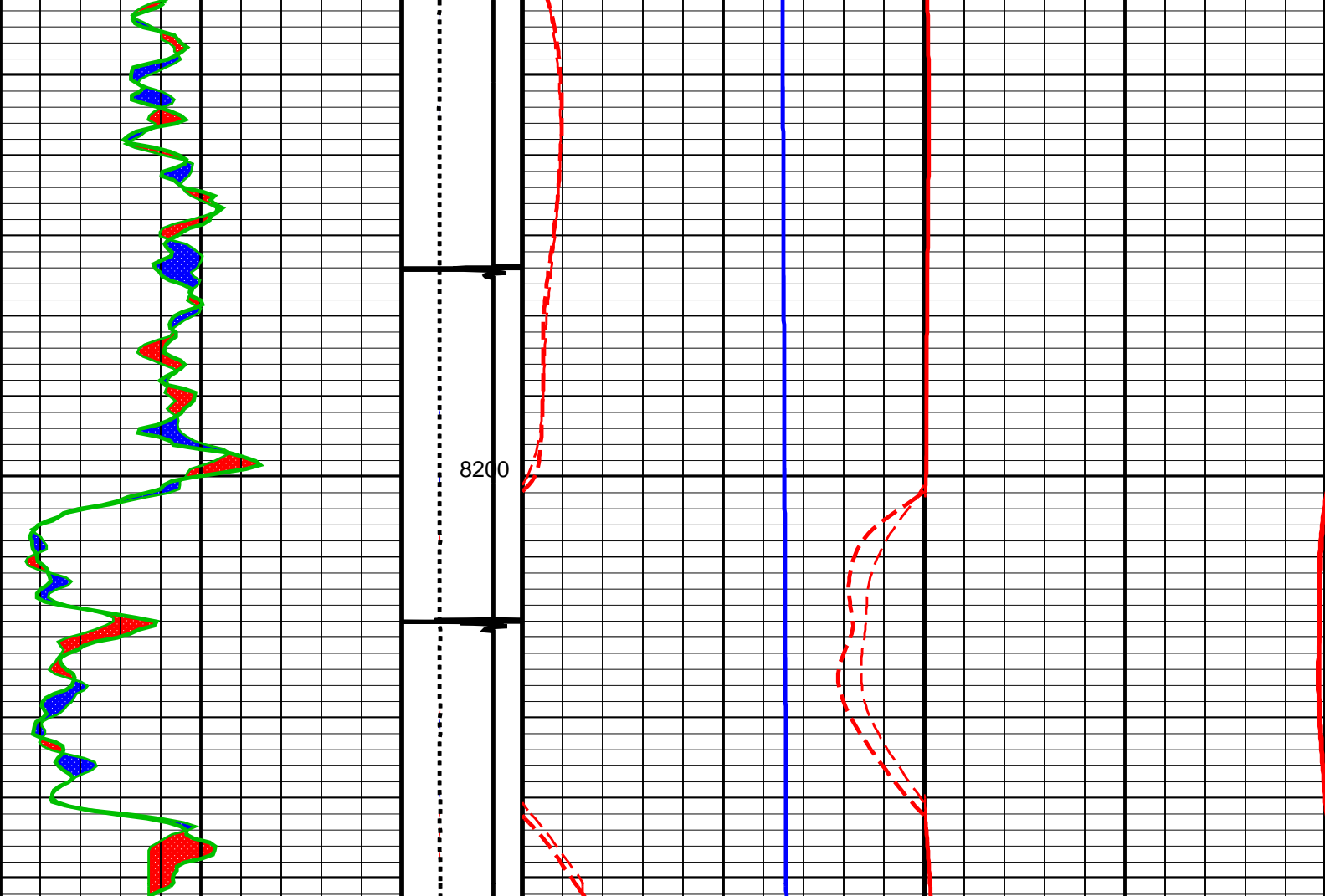
Output DLIS Files

DEFAULT	HBMS_008PUP	FN:5	PRODUCER	15-Apr-2013 04:01	8252.5 FT
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PIP SUMMARY

Time Mark Every 60 S





PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
System and Miscellaneous		
DO	Depth Offset for Playback	-6.0 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: 15-Apr-2013 04:01

OP System Version: 19C0-187

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

Input DLIS Files

DEFAULT	Flip_HBMS_005LUP	PRODUCER	15-Apr-2013 03:54	8258.5 FT	7988.5 FT
DEFAULT	HBMS_006PUP	FN:3	PRODUCER	15-Apr-2013 03:56	8397.0 FT
				-16.5 FT	

Output DLIS Files

DEFAULT

HBMS_008PUP

FN:5

PRODUCER

15-Apr-2013 04:01

Schlumberger

HBMS COEFFICIENTS

MAXIS Field Log

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: ENCANA FEE 24-1B (K19CNE)

Run date: 15-Apr-2013

Tool: PSP

Sub Type: PBMS

Sensor: GR

PBMS Gamma Ray

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

RESISTORS FOR GR SENSOR N.34384, TOOL HBMS-BA2880. SENSOR S/N:

34384

160206

12

D8B5

GR HV Rt

Rt**0

Rt**1

Rt**0

+.200000000000e+04

+.173000000000e+04

Client: ENCANA OIL & GAS (USA) INC

Field: MAMM CREEK

Well: ENCANA FEE 24-1B (K19CNE)

Run date: 15-Apr-2013

Tool: PSP

Sub Type: PBMS

Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR RTD THERMOMETER PBMS-B.2880 S/N:
2880
260408
16
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

Field: MAMM CREEK

Well: ENCANA FEE 24-1B (K19CNE)

Run date: 15-Apr-2013

Tool: PSP

Sub Type: PBMS

Sensor: CQG

PBMS Quartz Gauge type F

Sonde Serial NB

Sensor Serial NB

Calib Date ddmmyy

Matrix Size

Coeff CRC

COEFFICIENTS FOR CQG PBMS-B.2880 S/N:
2880
260408
66
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	+1.114970383999E-15	+1.186330526680E-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
Calib Date ddmmyy
Matrix Size
Coeff CRC

:
2880
260408
66
3690

Temp Coeff

	Fc**0	Fc**1	Fc**2
Fb**0	+1.114978632240E+03	-.318843725686E-03	+651766172344E-08
Fb**1	-.590205352250E-02	+1.168686572404E-07	+1.162345150354E-12
Fb**2	-.362996279263E-07	+4.07654559315E-12	+4.452411391342E-17
Fb**3	-.276281361281E-12	+8.71817059405E-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	+1.199118144093E-13	-.260997933236E-18	+6.18908211390E-21
Fb**1	+2.250084591851E-17	+4.455070709200E-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
Calib Date ddmmyy
Matrix Size
Coeff CRC

:
2880
260408
16
71B5

Clock Freq Coeff

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2
(Fb'-Fc')**0	+3.10736316923E+05	+2.73670214709E-02	+7.31815197856E-06
	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5

(Fb'-Fc')**0	-.654219198492E-10	-.150585137208E-15	-.117697151708E-19
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PBMS Quartz Gauge type F

Sonde Serial NB :
Sensor Serial NB 2880
Calib Date ddmmyy 260408
Matrix Size 16
Coeff CRC ECB5

Clock Temp Coeff

	(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: ENCANA FEE 24-1B (K19CNE)
Field: MAMM CREEK
County: GARFIELD
State: COLORADO

TEMPERATURE LOG
CCL - TEMPERATURE