

Schlumberger

Company: Encana Oil & Gas (USA) Inc

Well: MCU 26-5A (I27W)

Field: Mamm Creek

County: Garfield

State: Colorado

TEMPERATURE LOG
GAMMA RAY - CCL - TEMPERATURE

County: Garfield	
Field: Mamm Creek	
Location: SHL: 1978 FSL 485 FEL	
Well: MCU 26-5A (I27W)	
Company: Encana Oil & Gas (USA) Inc	
LOCATION	
SHL: 1978 FSL 485 FEL BHL: 1365 FNL 985 FEL	Elev.: K.B. 7223.00 ft G.L. 7201.00 ft D.F. 7222.00 ft
Permanent Datum: _____ Log Measured From: _____ Drilling Measured From: _____	GROUND LEVEL KELLY BUSHING KELLY BUSHING
API Serial No. 05 045 21603 00	Section 27
	Township 7S
	Range 93W
Logging Date 21-Nov-2012	
Run Number	1
Depth Driller	9476 ft
Schlumberger Depth	9476 ft
Bottom Log Interval	8500 ft
Top Log Interval	0 ft
Casing Fluid Type	Fresh Water
Salinity	
Density	8.4 lbm/gal
Fluid Level	0 ft
BIT/CASING/TUBING STRING	
Bit Size	8.750 in
From	
To	0 ft
Casing/Tubing Size	4.500 in
Weight	11.6 lbm/ft
Grade	S-80
From	
To	9376 ft
Maximum Recorded Temperatures	197 degF
Logger On Bottom	21-Nov-2012
Unit Number	391
Recorded By	BRANDON CUPP
Witnessed By	TONY KETTERLING

PVT DATA		Run 1	Run 2	Run
Oil Density				
Water Salinity				
Gas Gravity				
Bo				
Bw				
1/Bq				
Bubble Point Pressure				
Bubble Point Temperature				
Solution GOR				
Maximum Deviation	14.5 deg			
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				
Unit Number				
Recorded By				
Witnessed By				

DEPTH SUMMARY LISTING

Date Created: 29-AUG-2012 2:29:56

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:	5006	Serial Number:	
Calibration Date:	24-APR-2012	Calibration Date:	26-JUL-2012	Length:	19000 FT
Calibrator Serial Number:		Calibrator Serial Number:	174878	Conveyance Method: Wireline Rig Type: LAND	
Calibration Cable Type:	1-25ZT	Number of Calibration Points:	10		
Wheel Correction 1:	-3	Calibration RMS:	6		
Wheel Correction 2:	-4	Calibration Peak Error:	10		

Depth Control Parameters

Log Sequence: First Log In the Well
 Rig Up Length At Surface: 200.00 FT
 Rig Up Length At Bottom: 200.00 FT
 Rig Up Length Correction: 0.00 FT
 Stretch Correction:
 Tool Zero Check At Surface:

Depth Control Remarks

1. ALL SCHLUMBERGER DEPTH PROCEDURES USED
2. PRIMARY DEPTH CONTROL: IDW
3. SECONDARY DEPTH CONTROL: DRUM COUNTER (SWPT)
- 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

First Run in Hole

Tool Run as per Tool Sketch

Entrance Time: 1:00

Time Logger at BLI: 2:00

Exit Time: 2:45

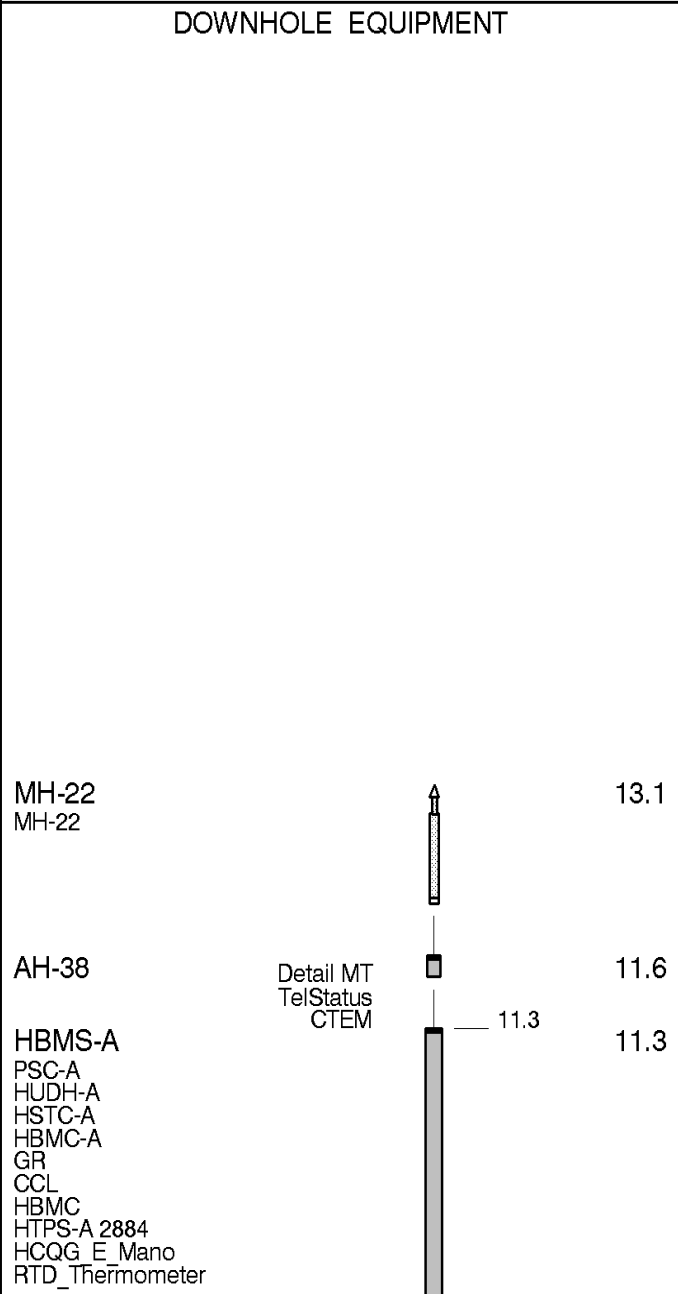
REMARKS: RUN NUMBER 2

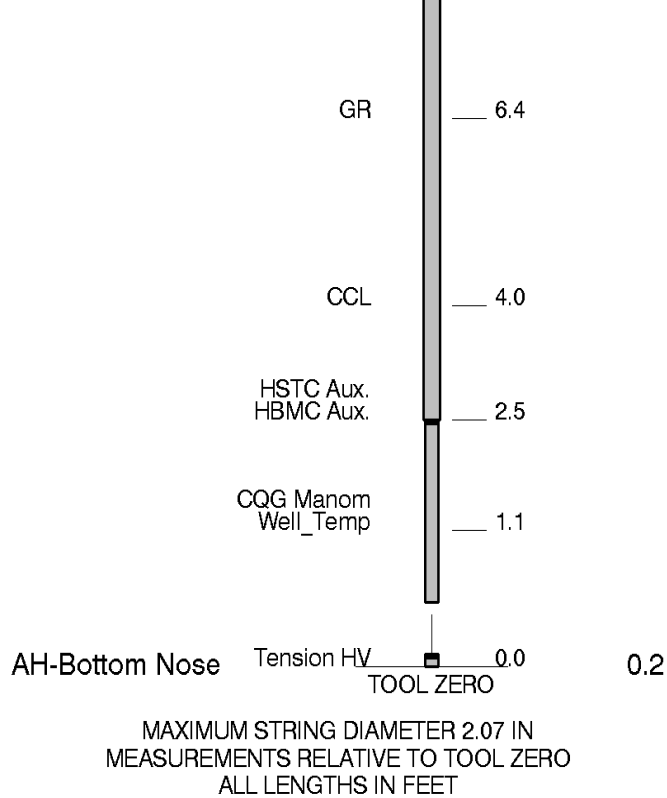
Maximum Recorded Temperature: 197 DegF	
Maximum Recorded Pressure: 3500 PSI	
Crew: B.CUPP, K.JOHNS, D.OEST	
Thank You for Choosing E&P Wireline - A Schlumberger Company	

RUN 1			RUN 2		
SERVICE ORDER #:		C49N-00011	SERVICE ORDER #:		
PROGRAM VERSION:		19C0-187	PROGRAM VERSION:		
FLUID LEVEL:		0 ft	FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

EQUIPMENT DESCRIPTION					
RUN 1			RUN 2		

SURFACE EQUIPMENT
WITM-A PSC_16MHZ



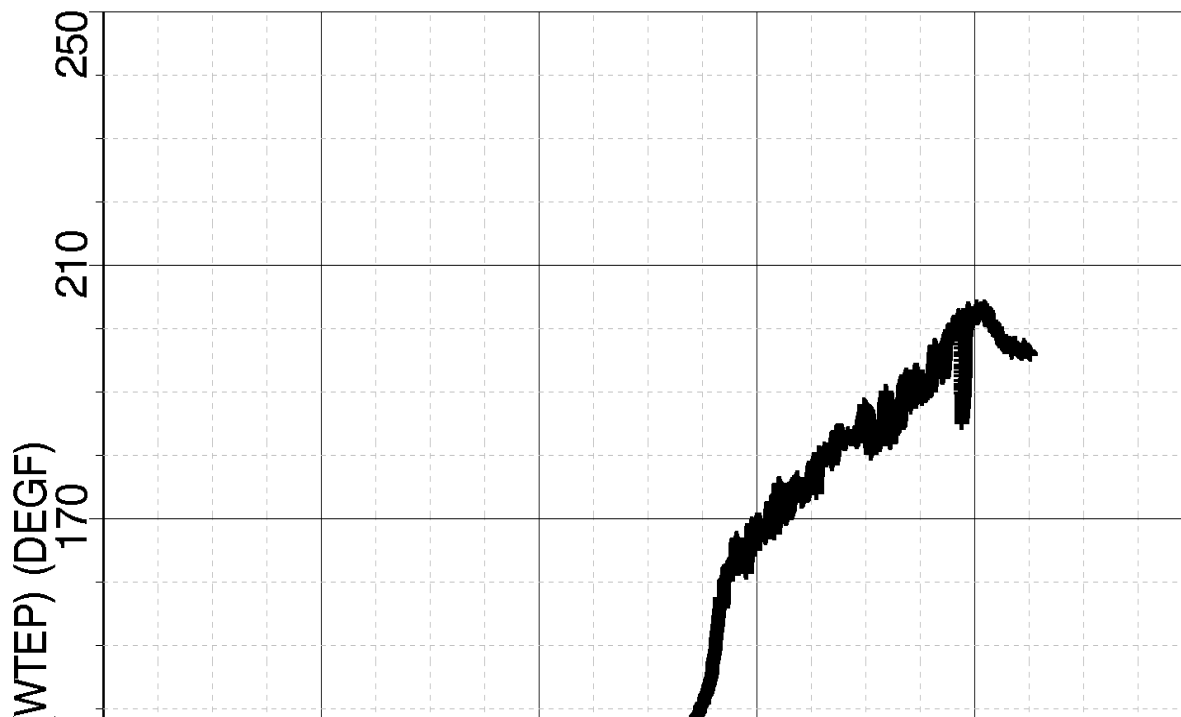


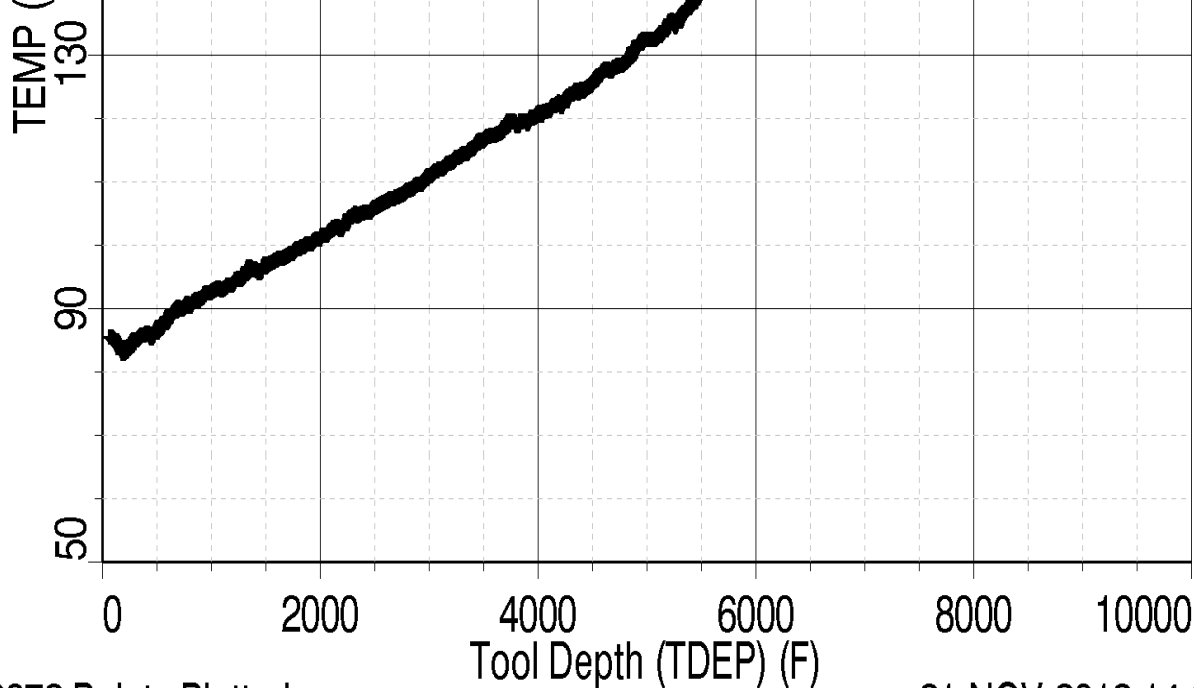
Schlumberger

TEMPERATURE PLOT

MAXIS Field Log

Index: 8515.0 - 79.5 FT





16872 Points Plotted

21-NOV-2012 14:38

Schlumberger

TEMPERATURE LOG

MAXIS Field Log

Company: Encana Oil & Gas (USA) Inc

Well: MCU 26-5A (I27W)

Input DLIS Files

DEFAULT	Flip_HBMS_008LUP	PRODUCER	21-Nov-2012 14:31	8515.0 FT	79.5 FT
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Output DLIS Files

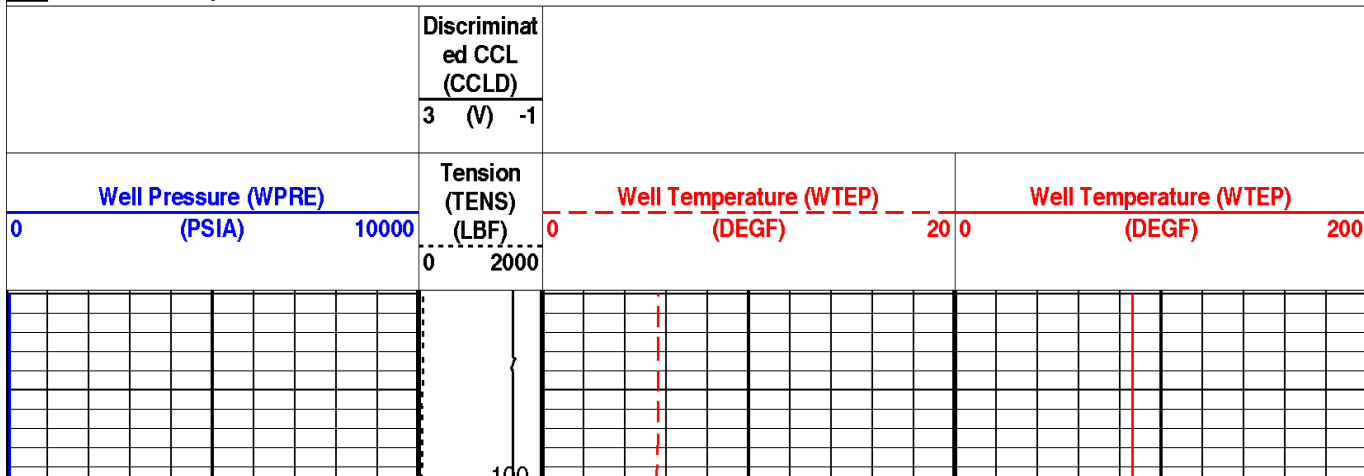
DEFAULT	HBMS_010PUP	FN:7	PRODUCER	21-Nov-2012 14:34	8515.0 FT	79.5 FT
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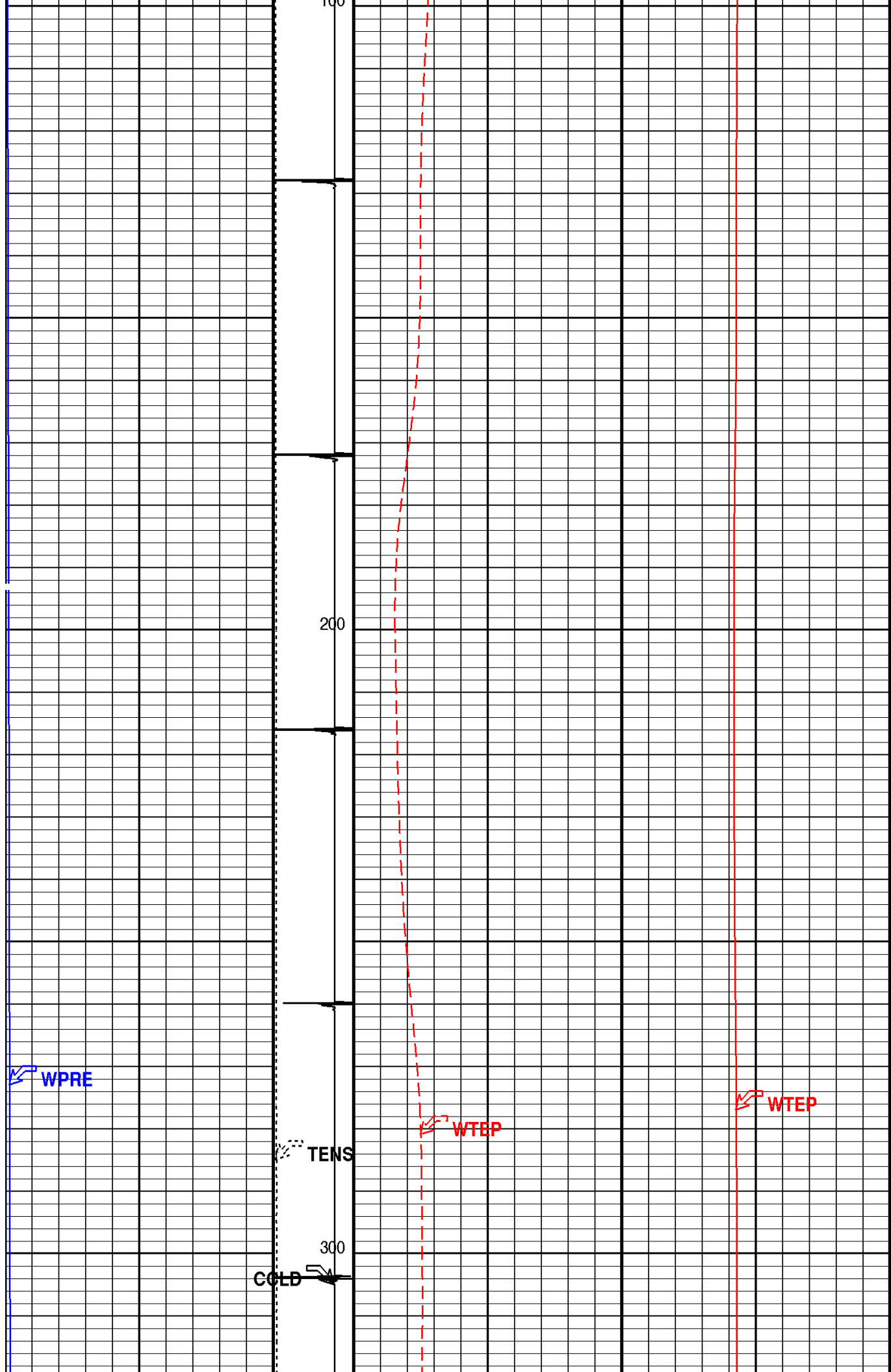
OP System Version: 19C0-187

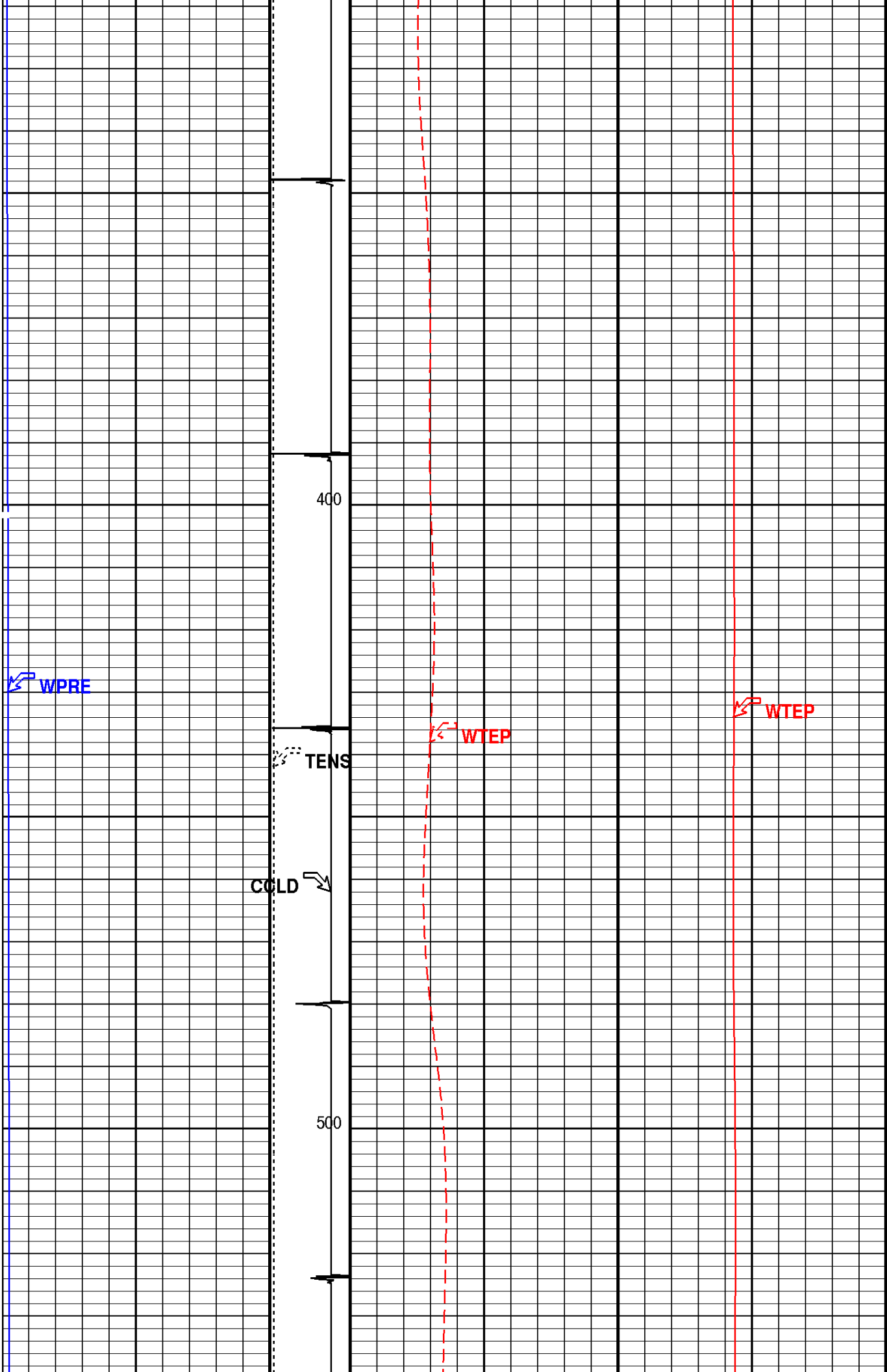
HBMS-A SRPC-5214-H2-2012-OP19

PIP SUMMARY

☒ Time Mark Every 60 S







600

700

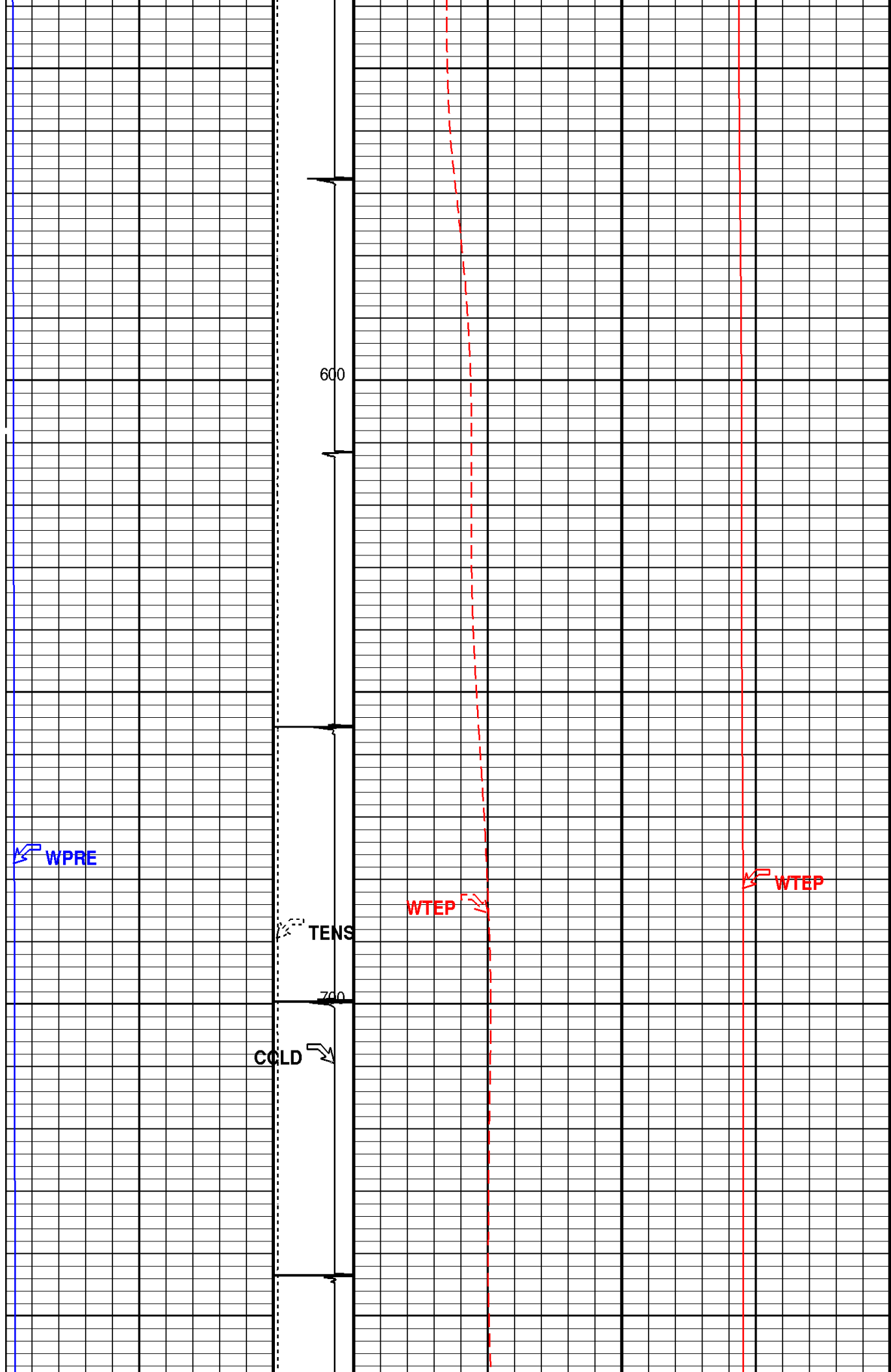
WPRE

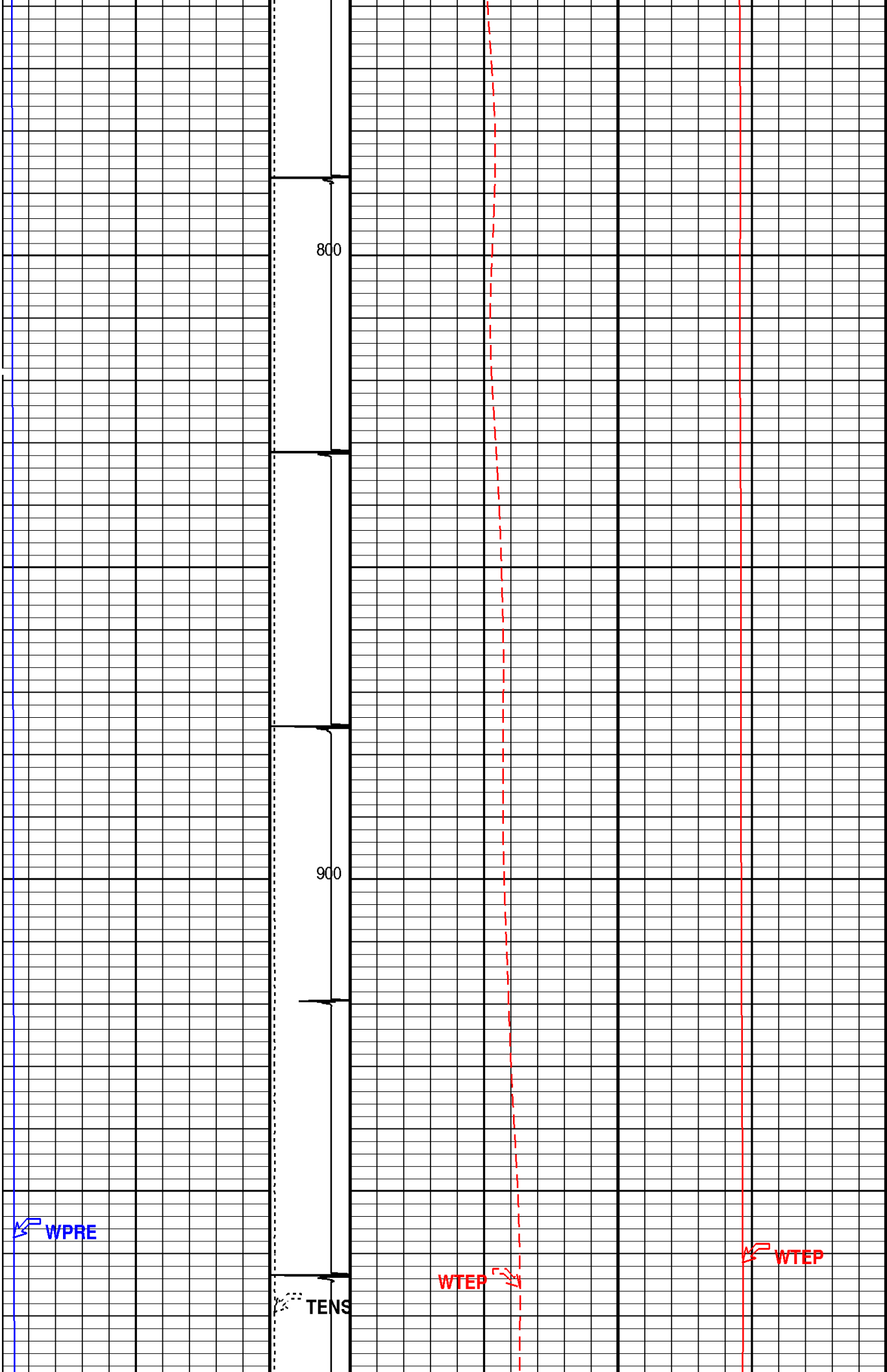
TENS

COLD

WTEP

WTEP





CCLD ↗

1000

1100

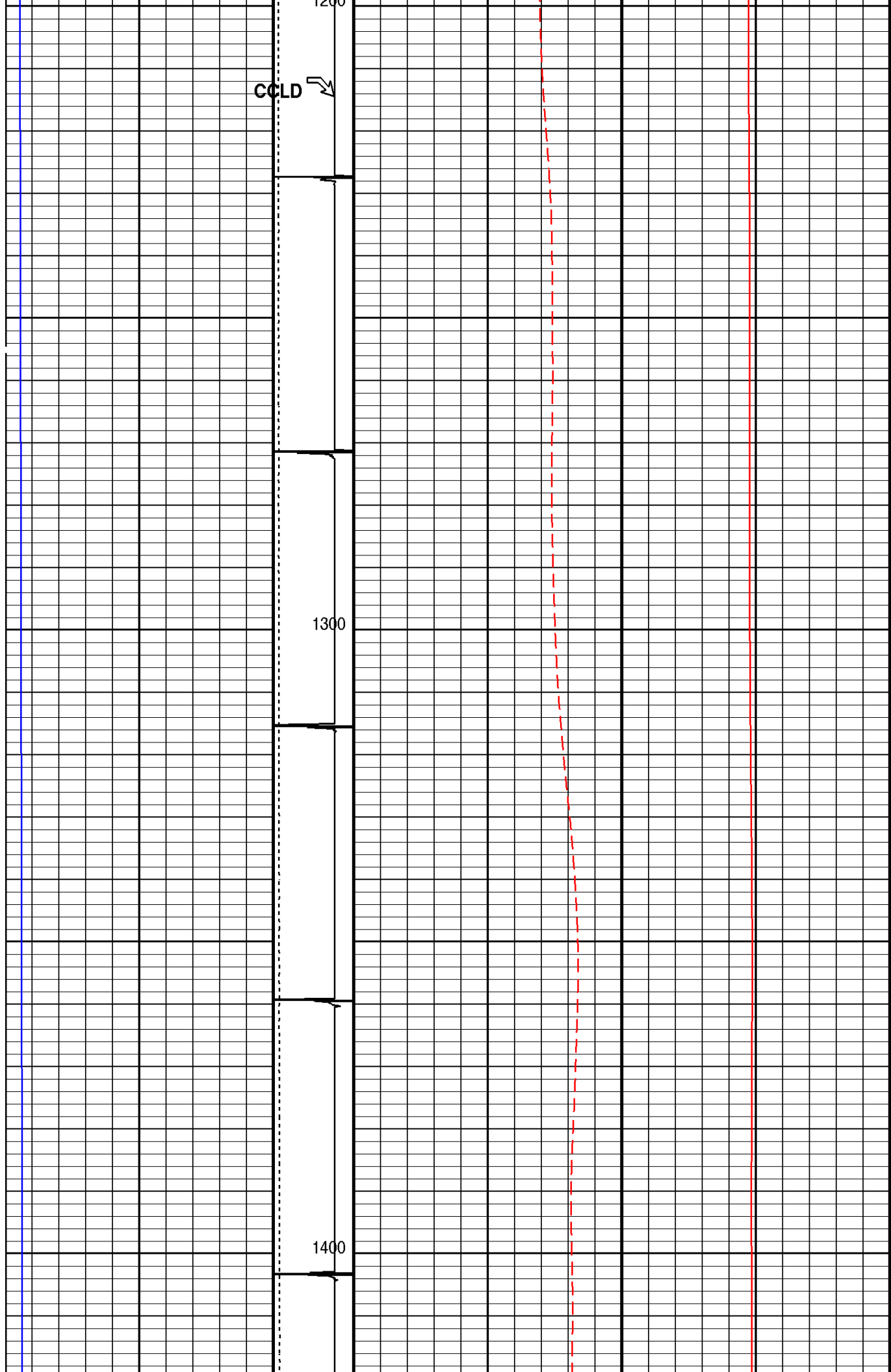
WPRE ↗

TENS

1200

WTEP ↗

WTEP ↗



WPRE

TENS

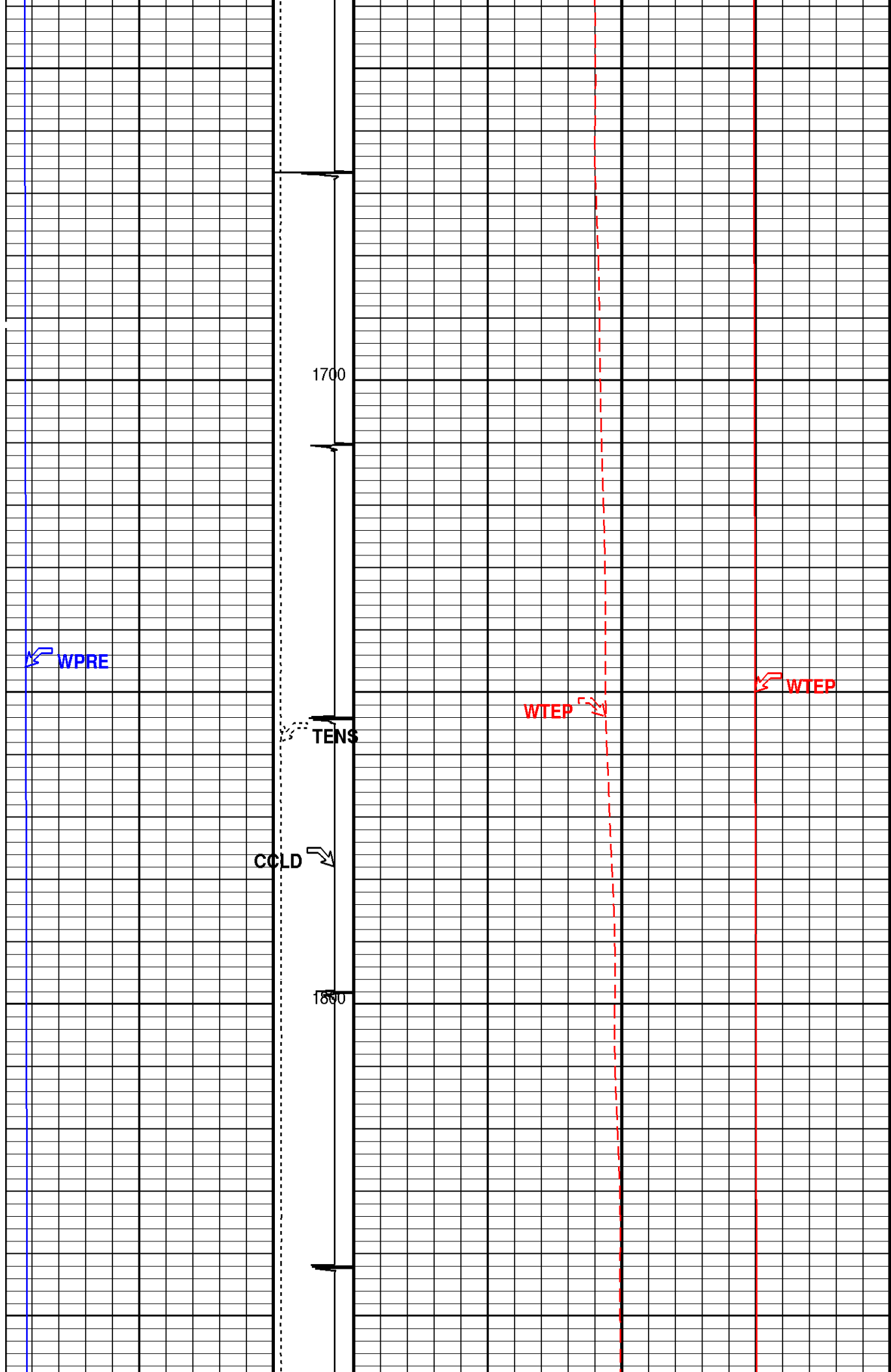
CCLD

1500

1600

WTEP

WTEP



1900

2000

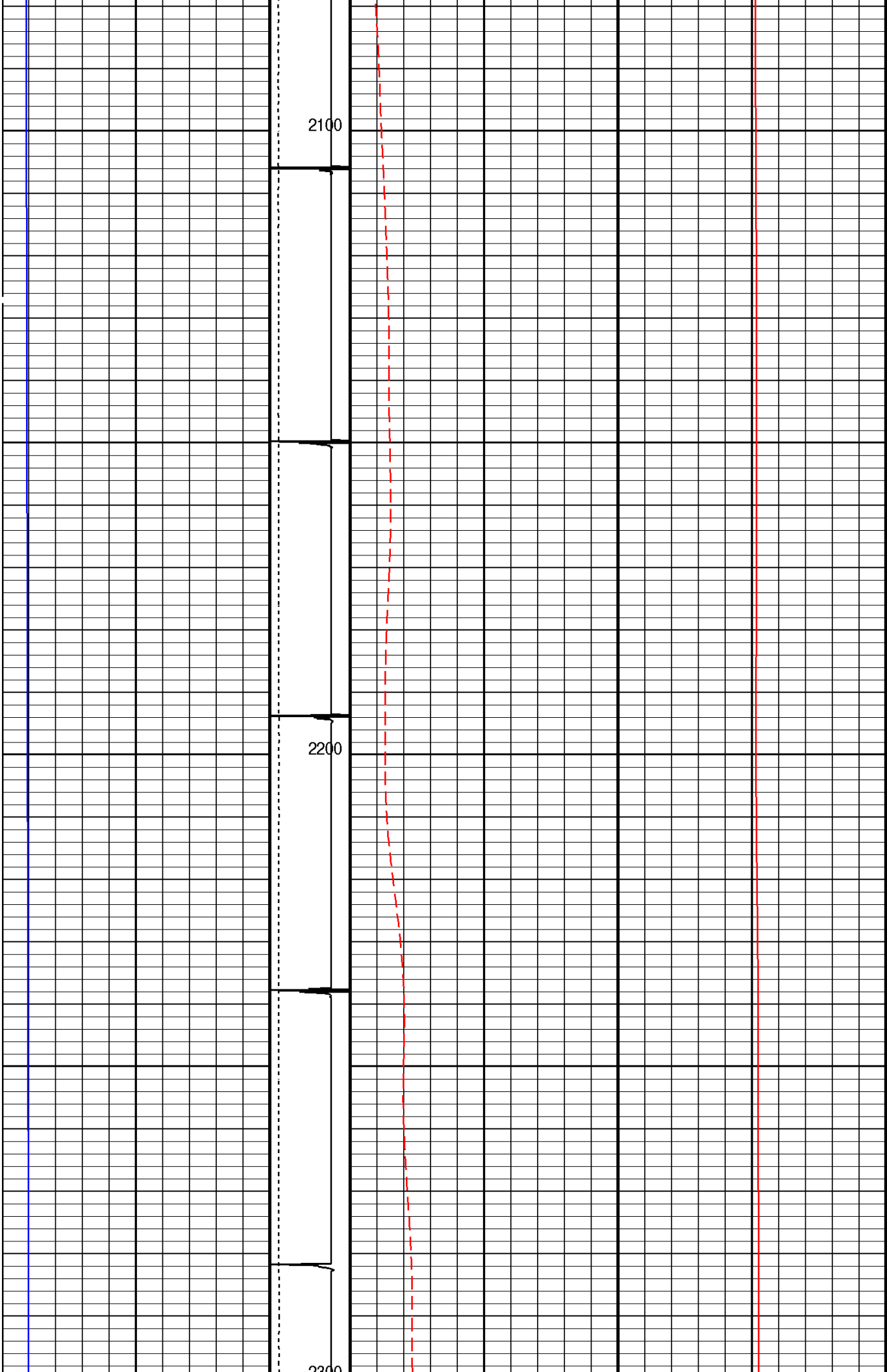
WPRE

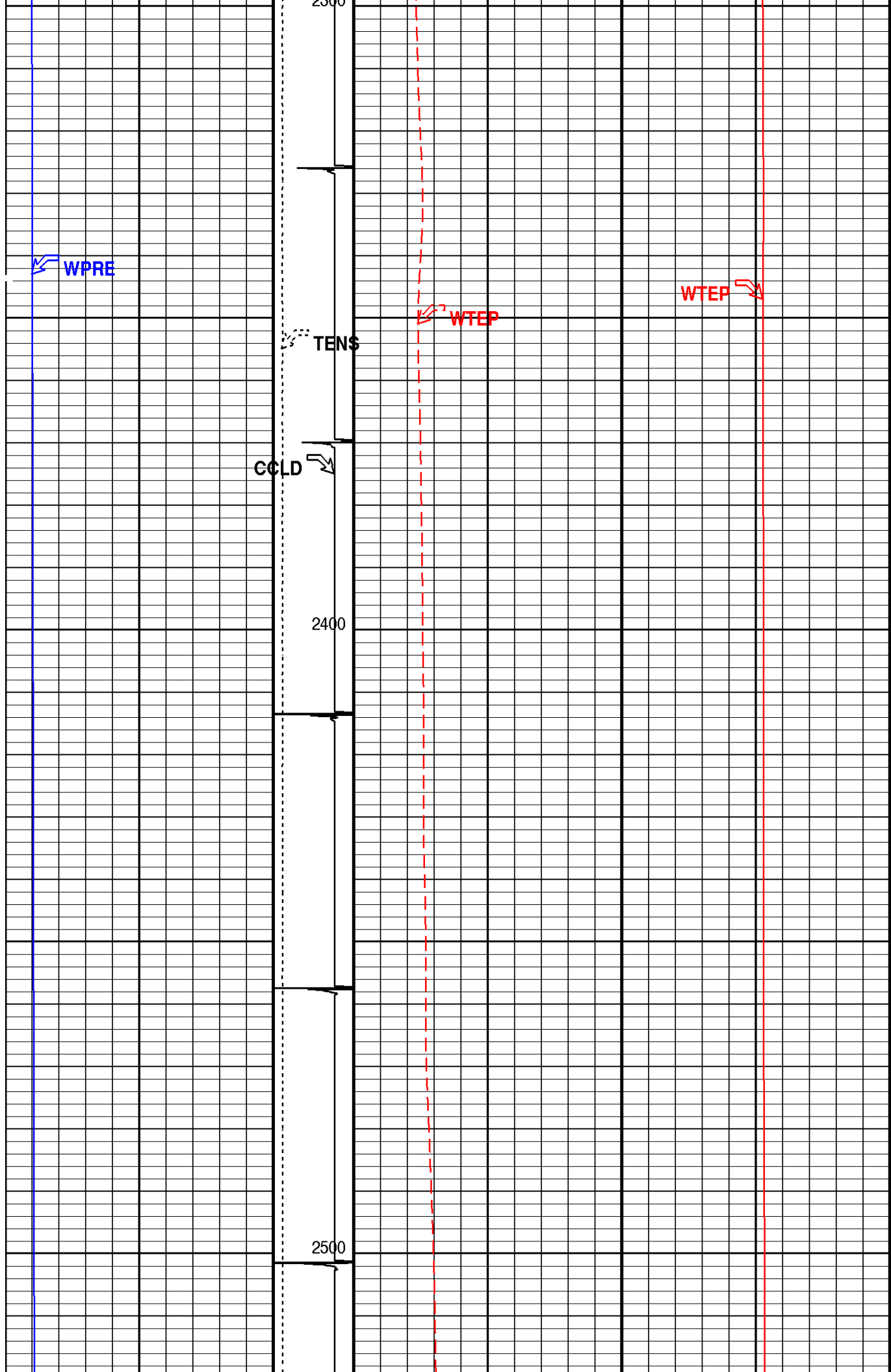
TENS

CCLD

WTEP

WTEP





WPRE

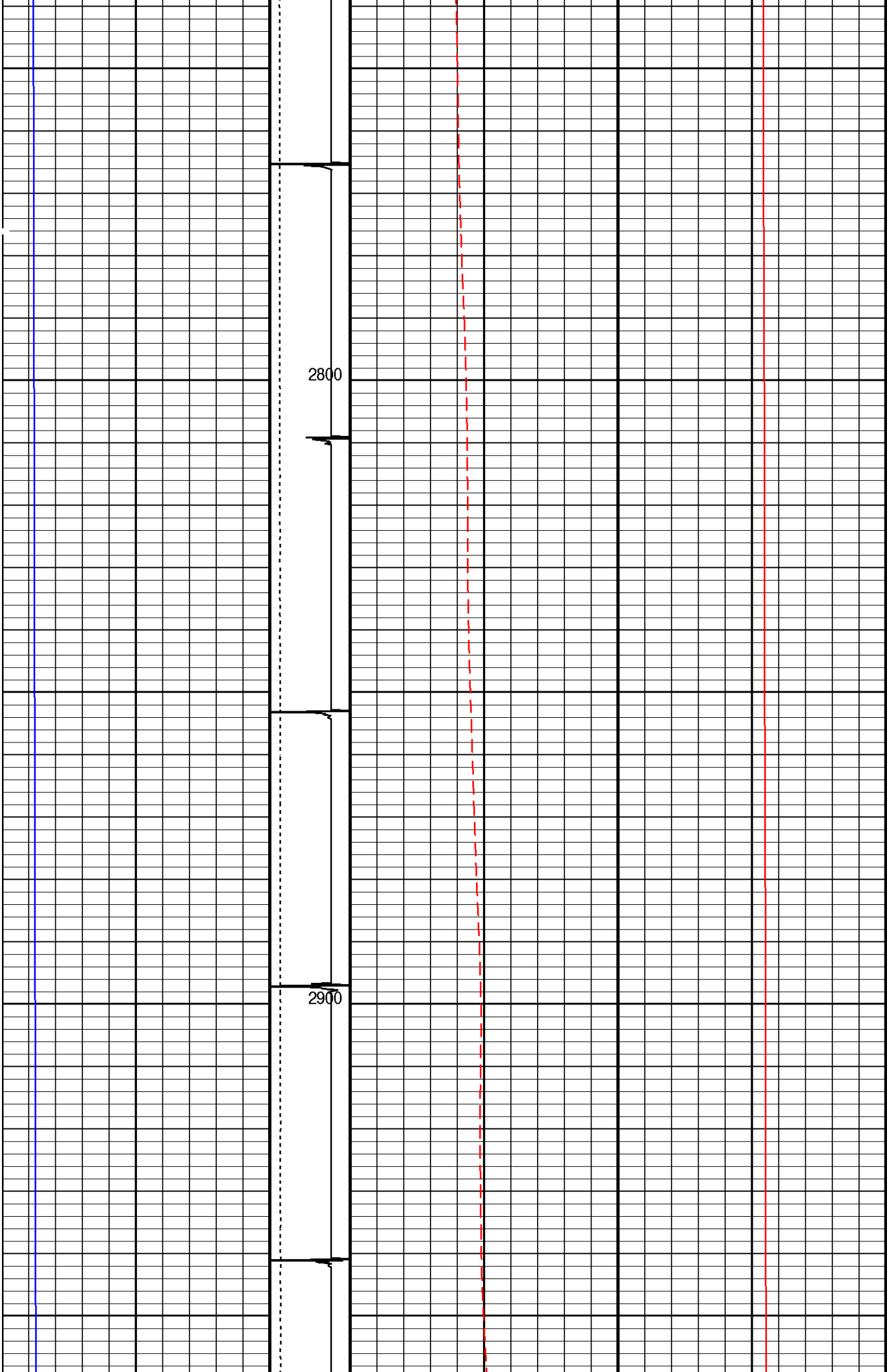
TENS

COLD 2600

2700

WTEP

WTEP



3000

3100

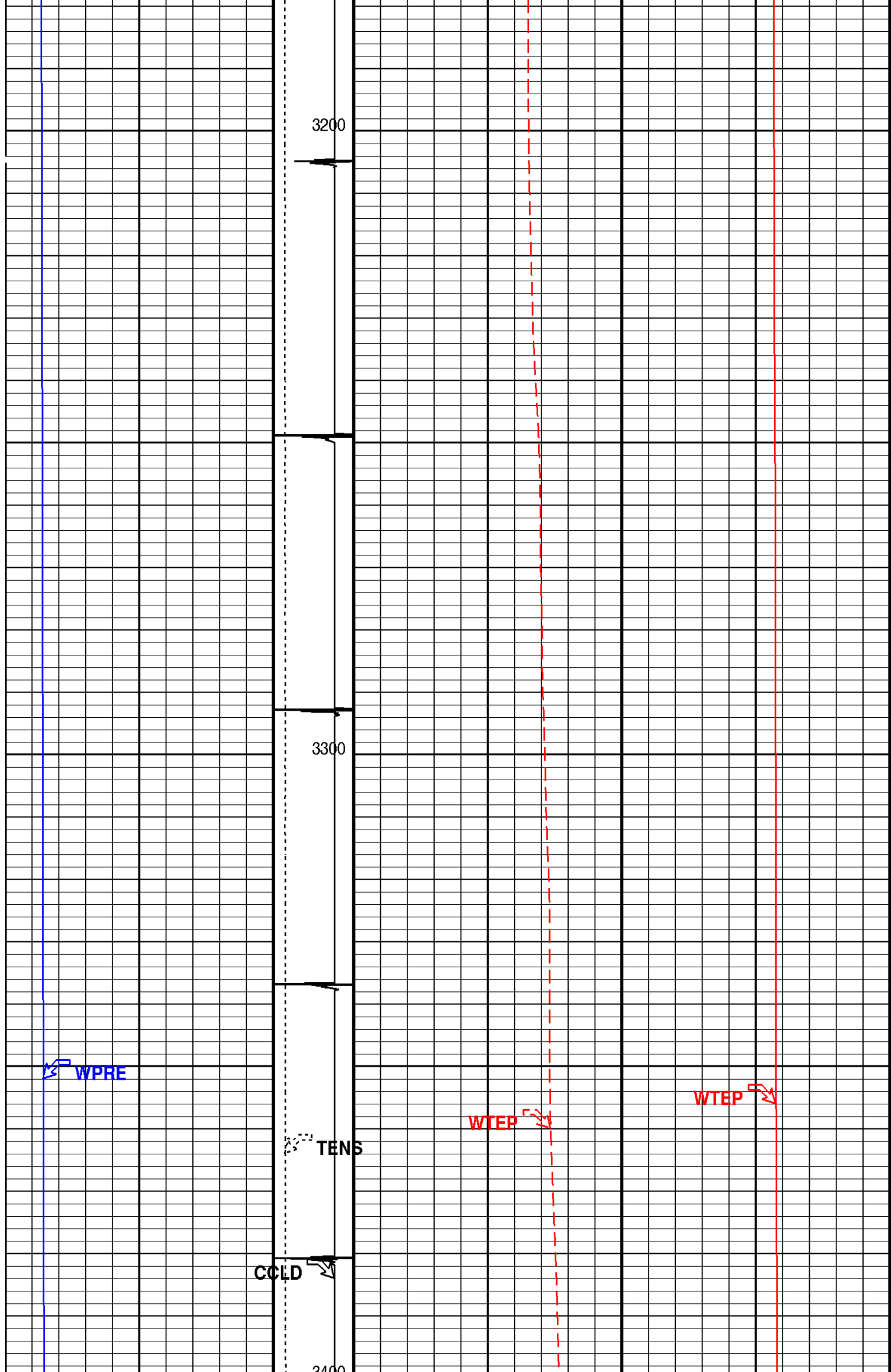
WPRE

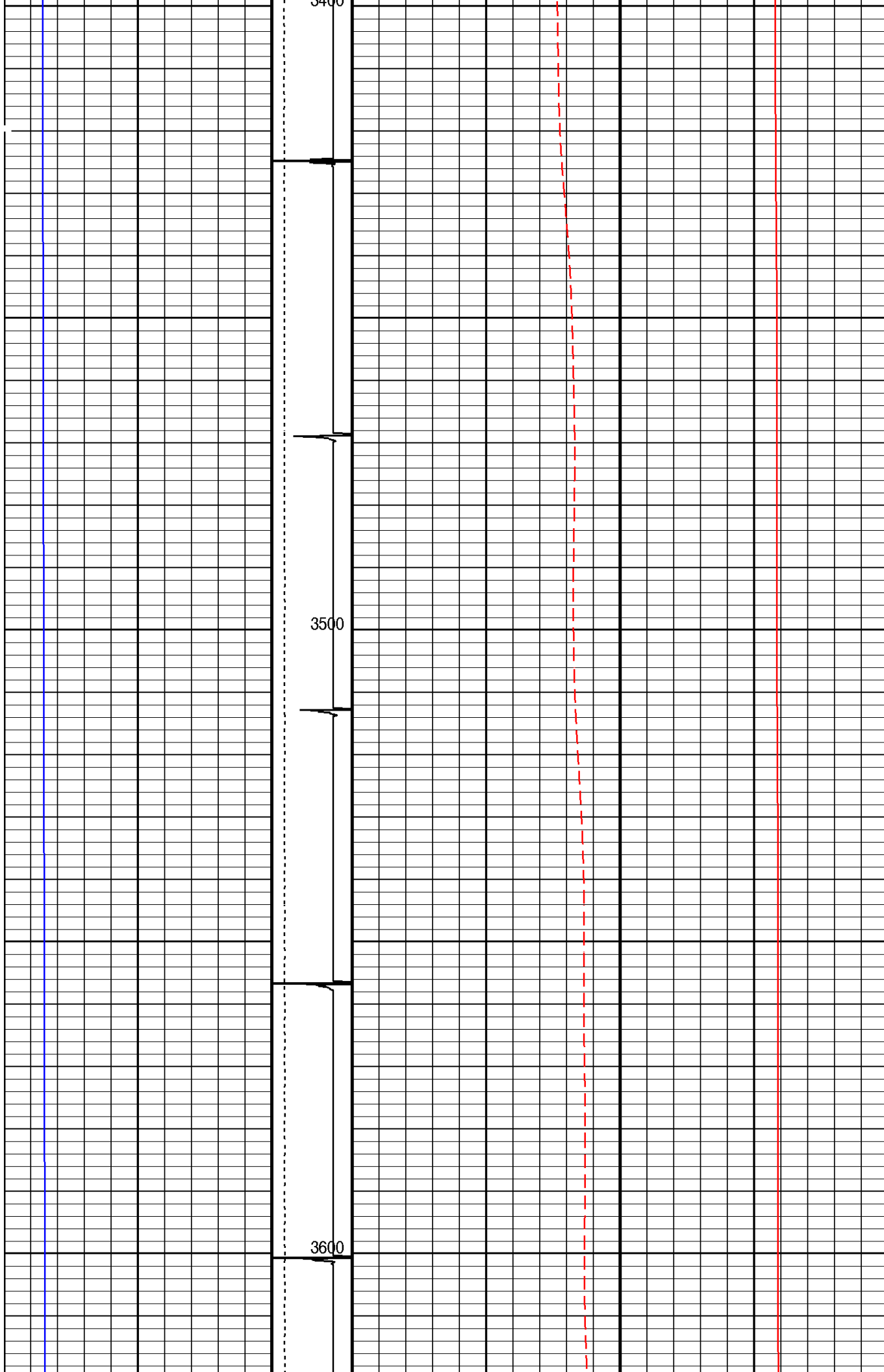
WTEP

WTEP

TENS

COLD





WPRE

3700
TENS

COLD

3800

WTEP

WTEP

WPRE

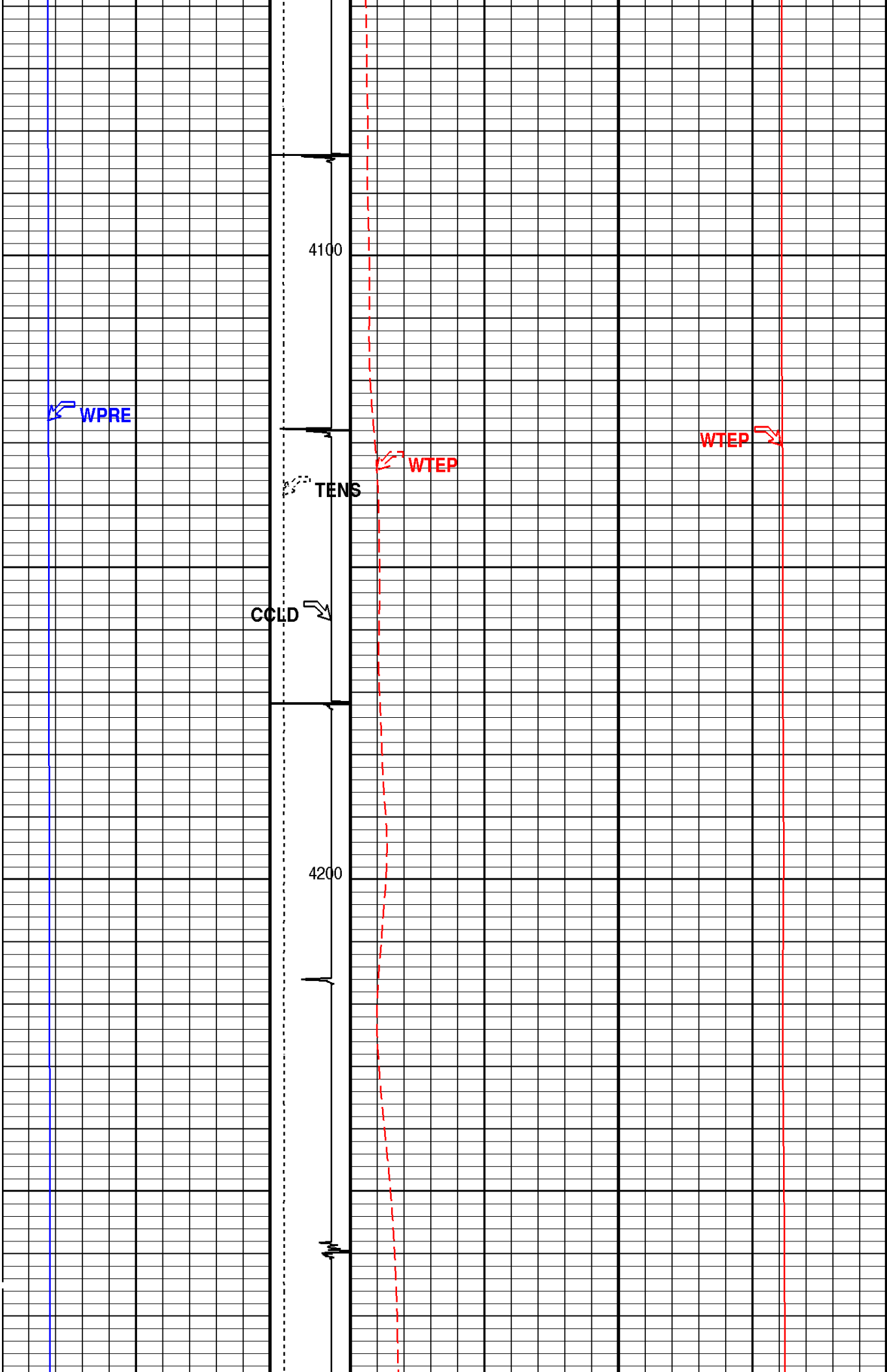
TENS

CCLD 3900

4000

WTEP

WTEP



4300

WPRE

TENS

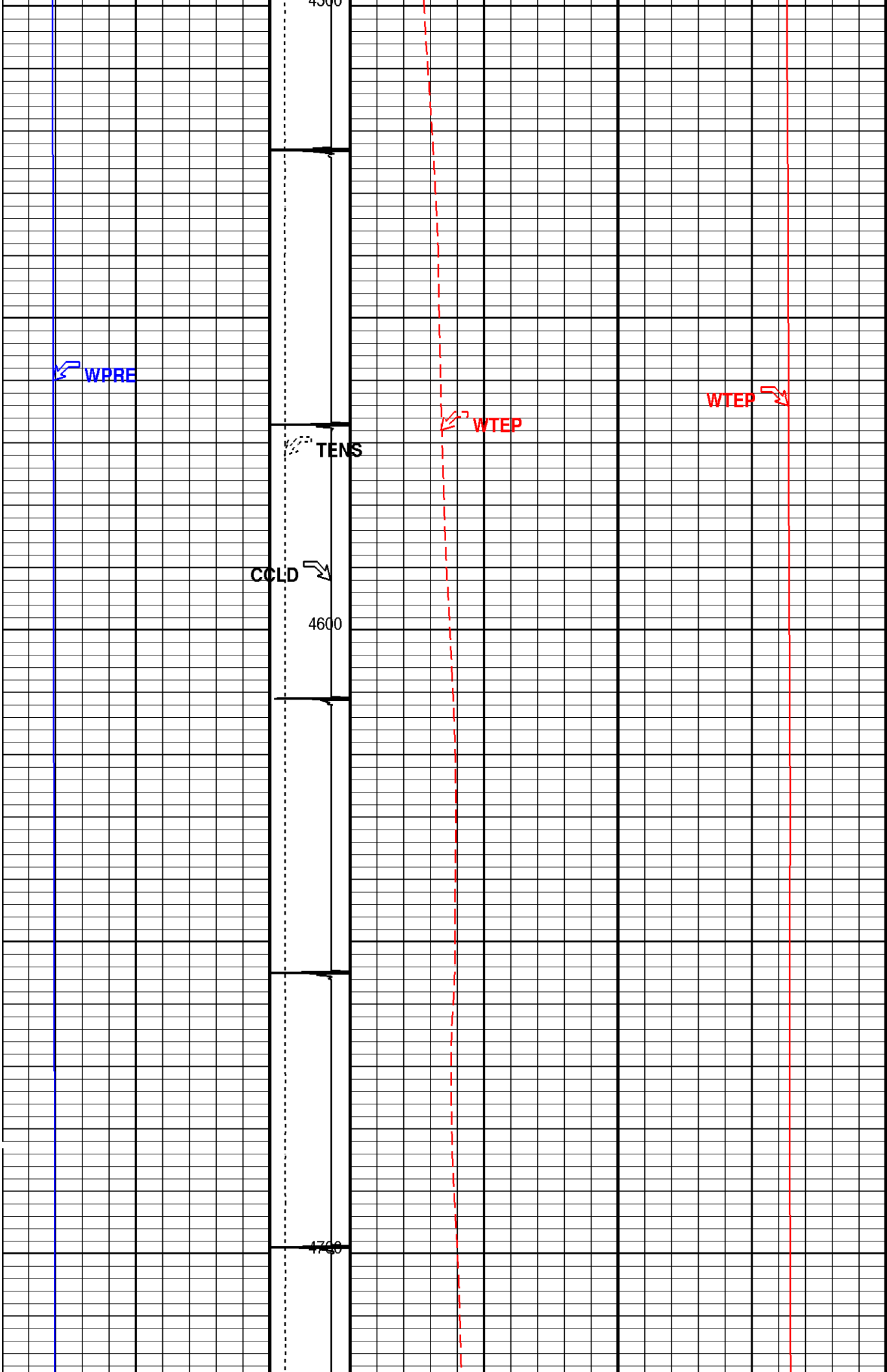
WTEP

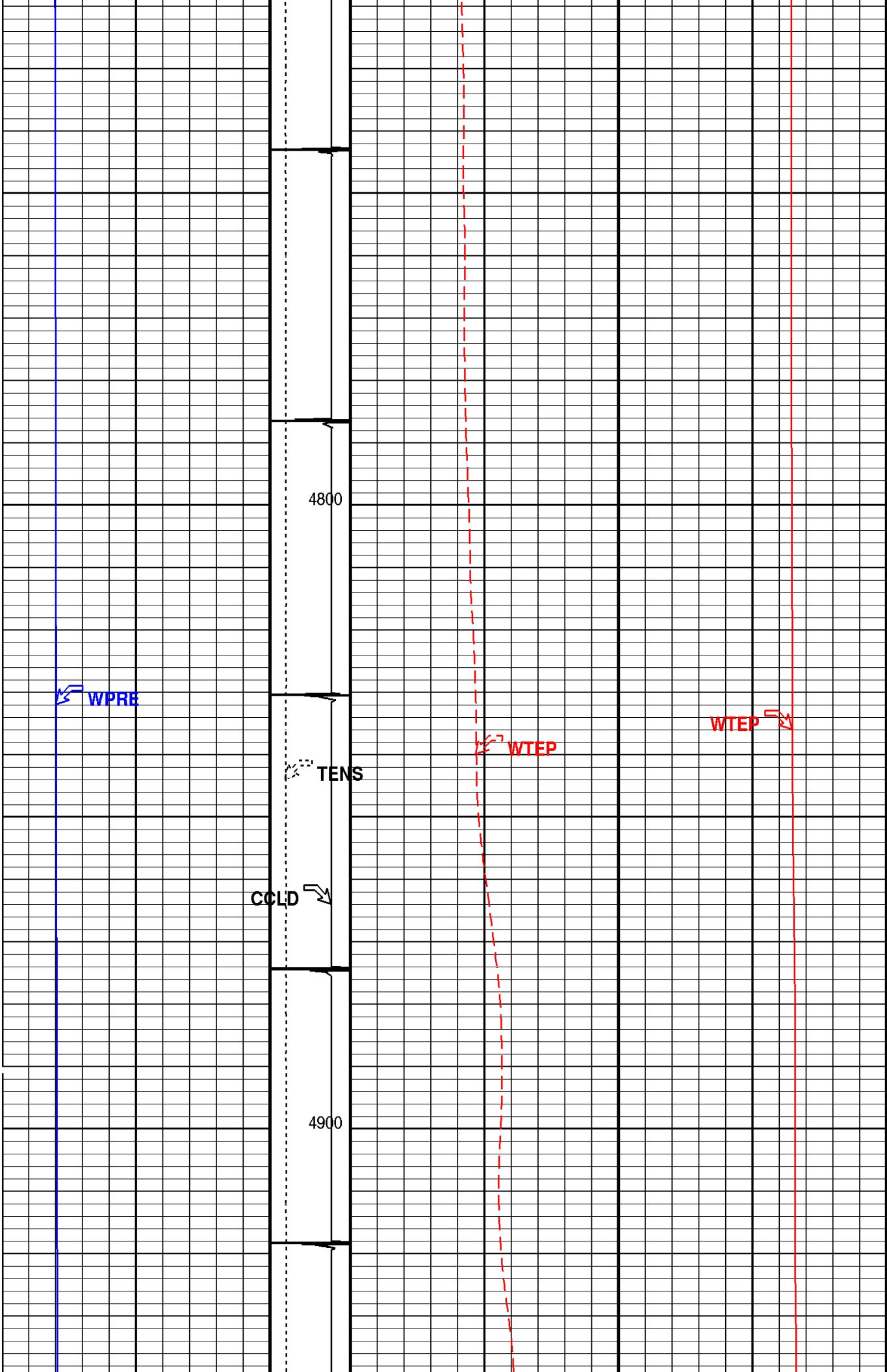
WTEP

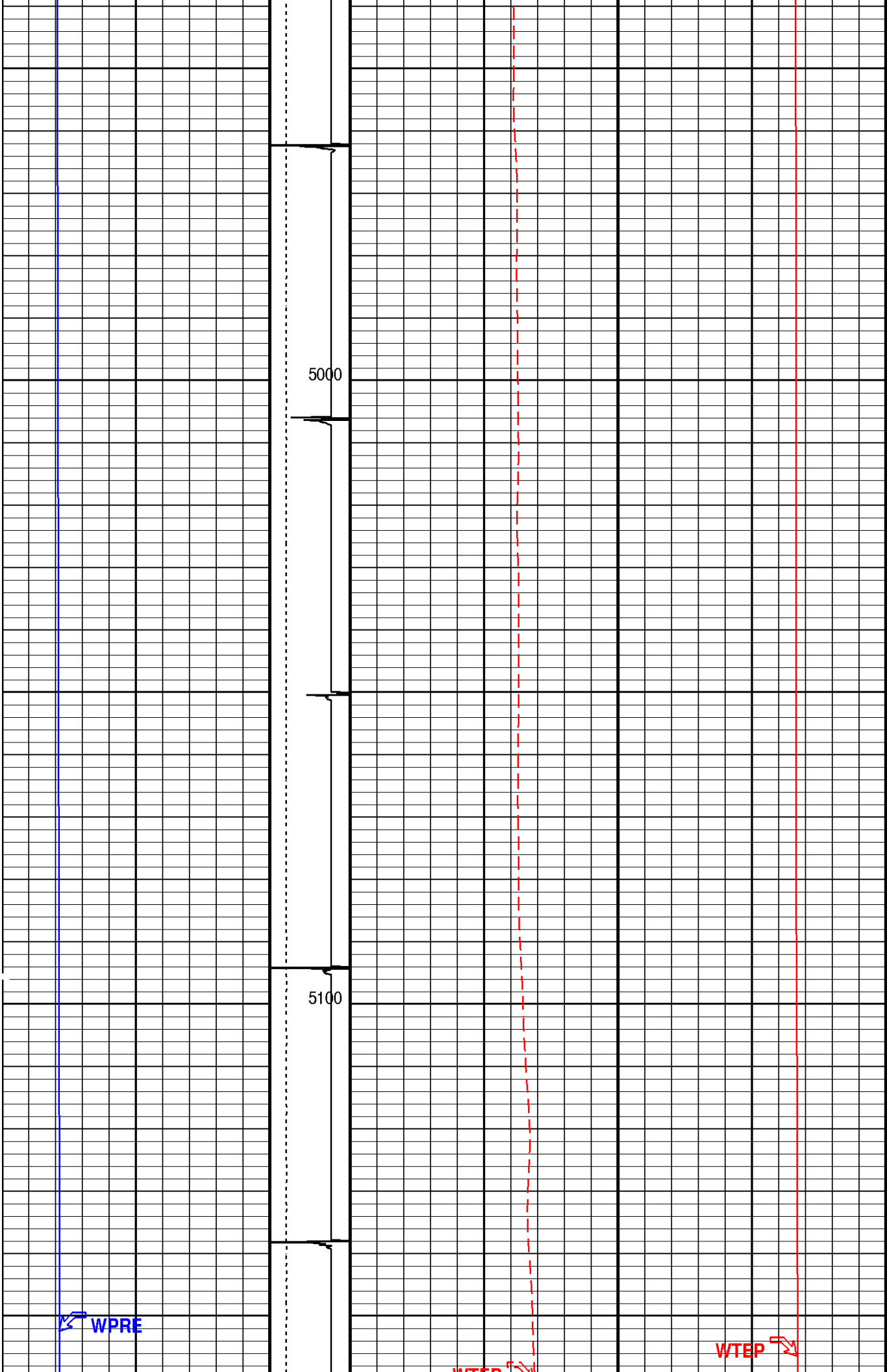
CCLD

4400

4500







5000

5100

WTEP

WTEP

WPRE

TENS

WTEP

CCLD

5200

5300

WPRE

TENS

WTEP

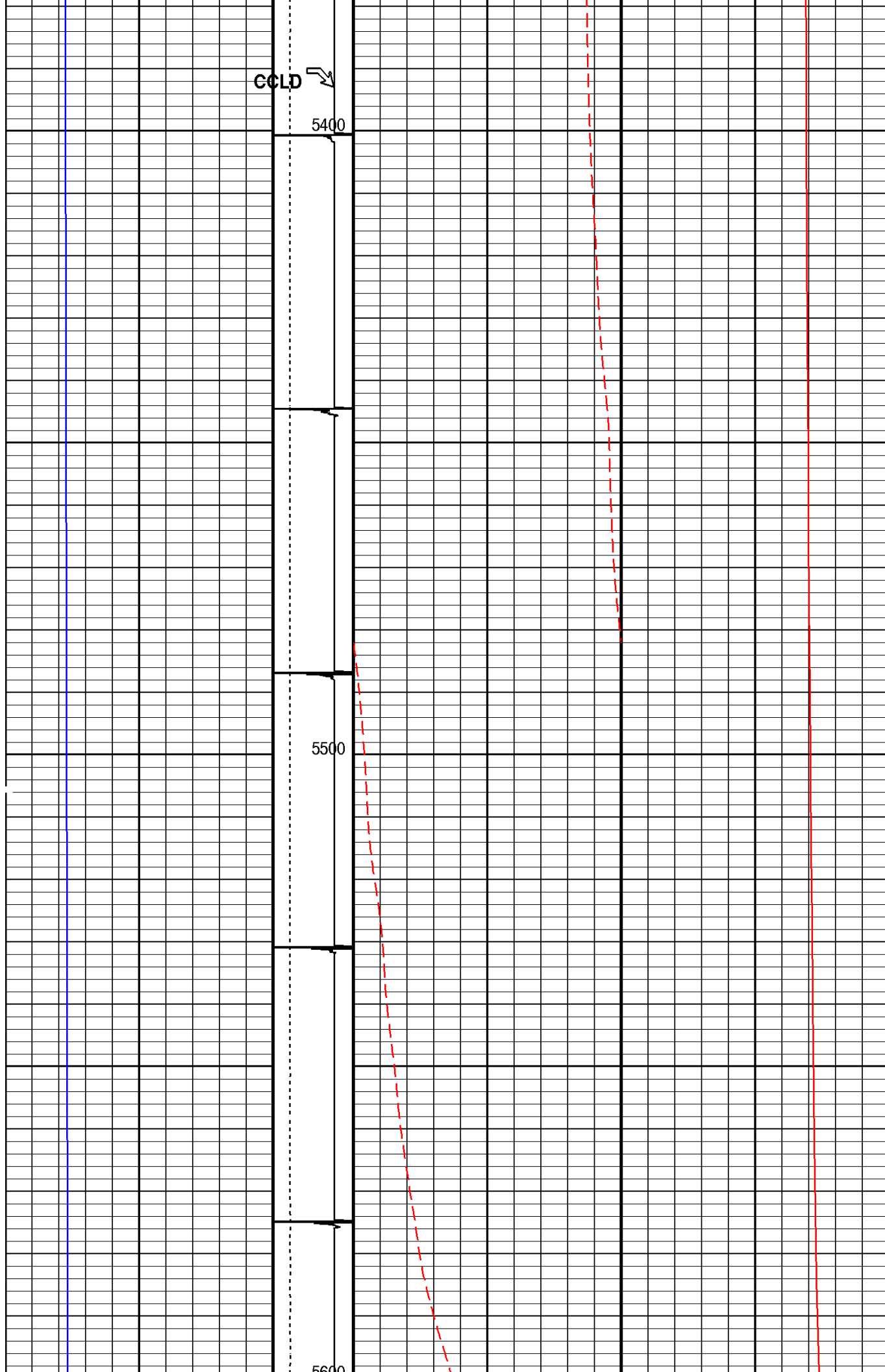
WTEP

CCLD ↗

5400

5500

5600



WPRE

TENS

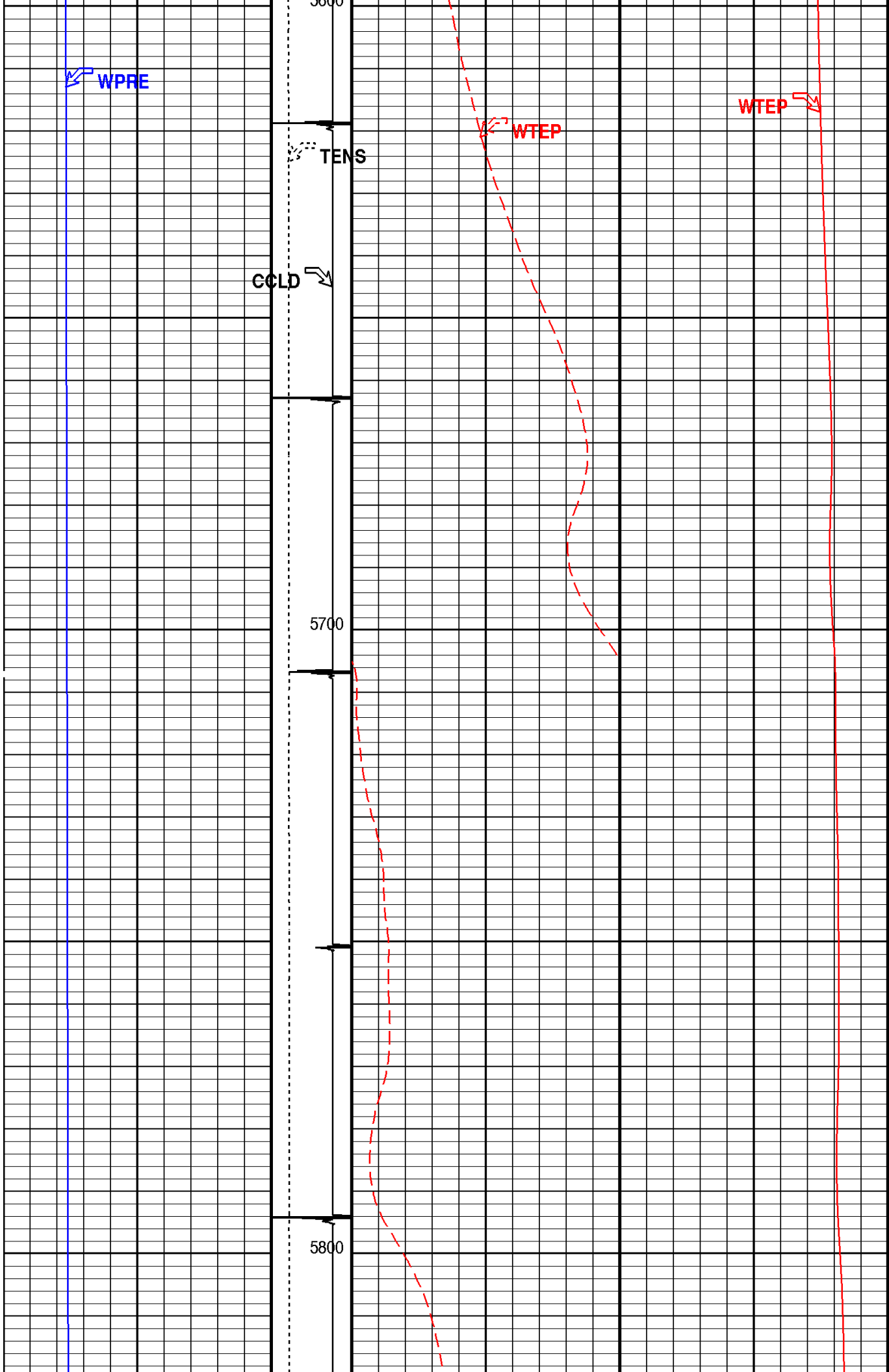
CCLD

WTEP

WTEP

5700

5800



WPRE

TENS

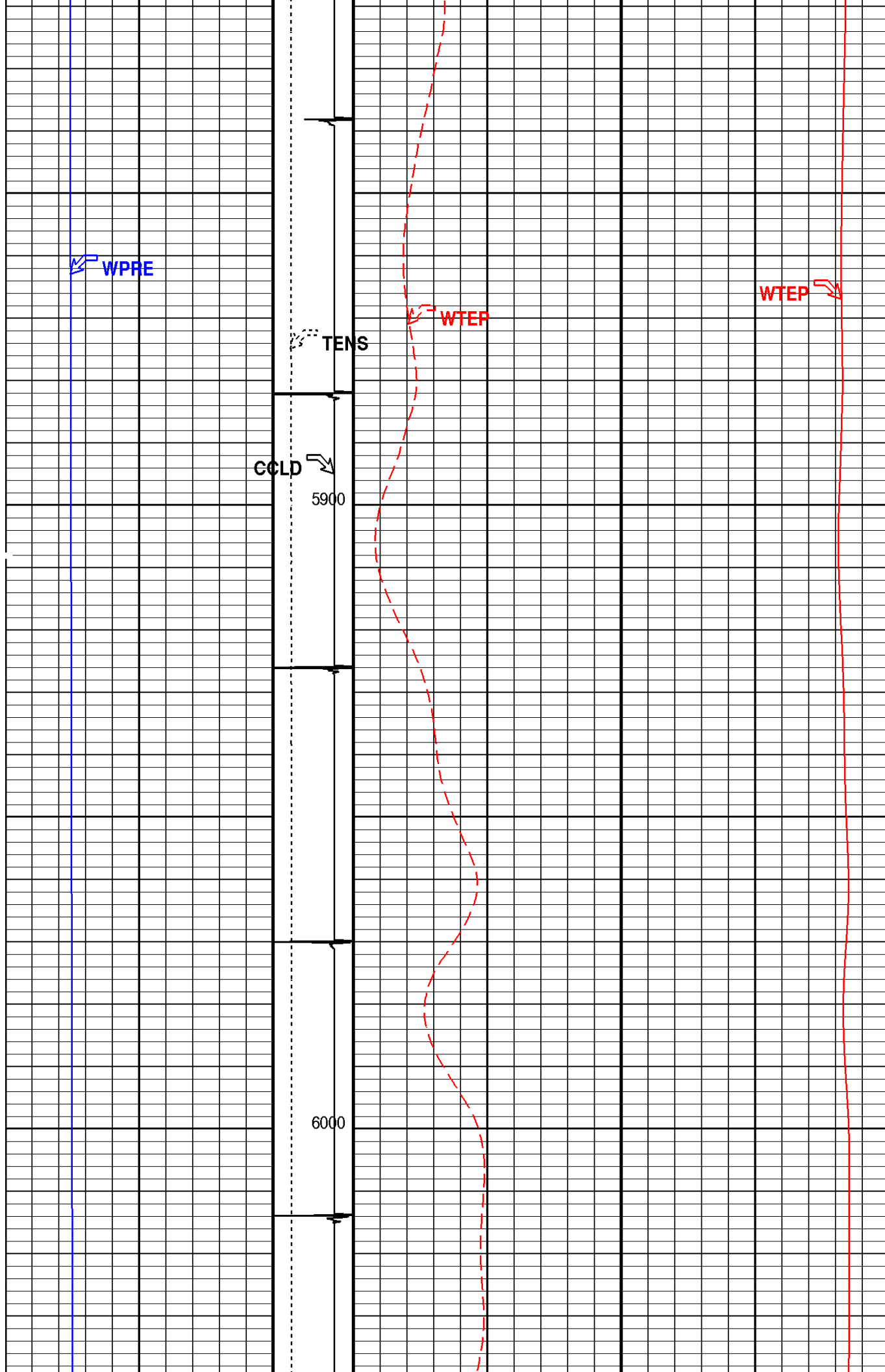
CCLD

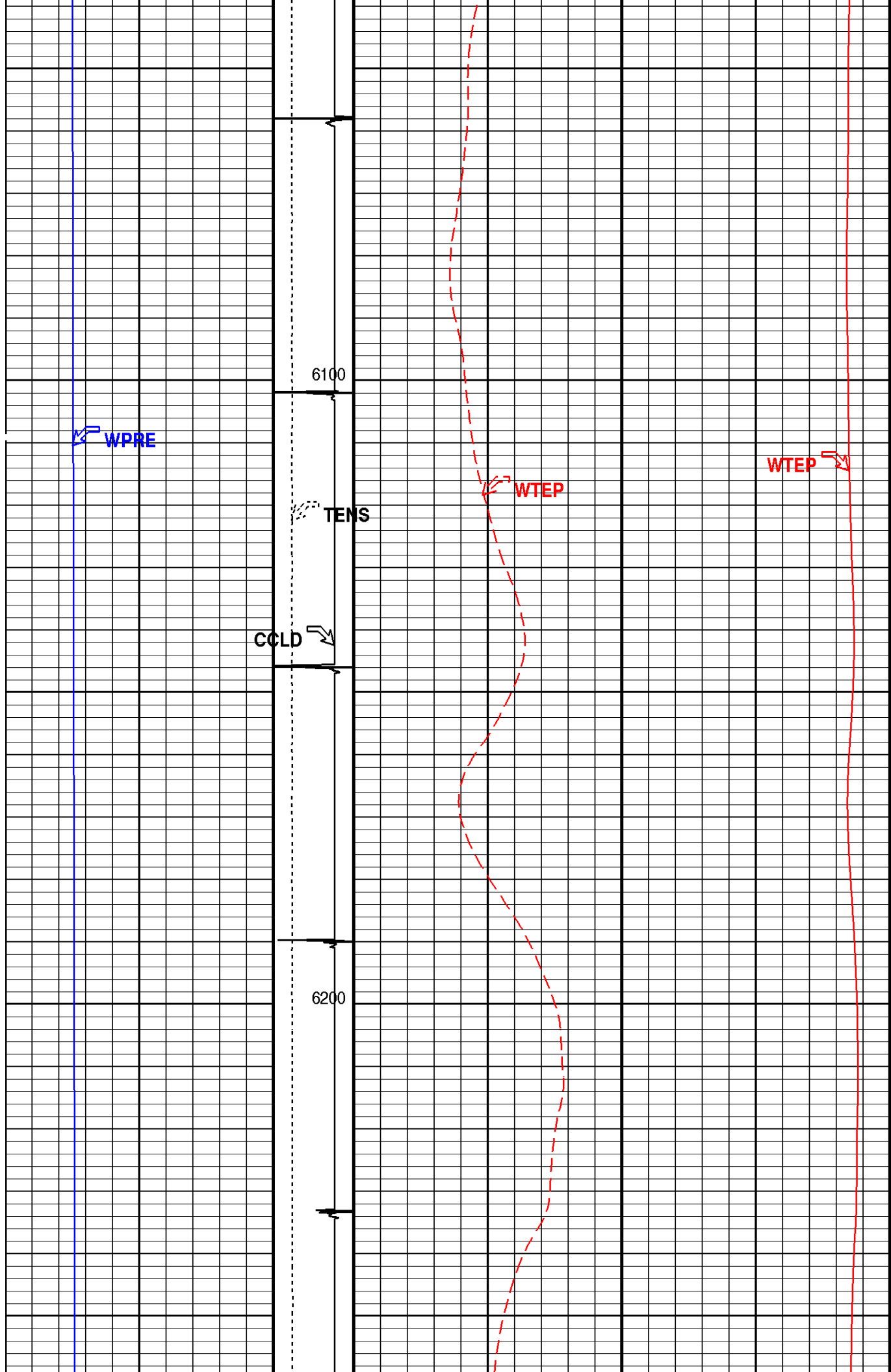
5900

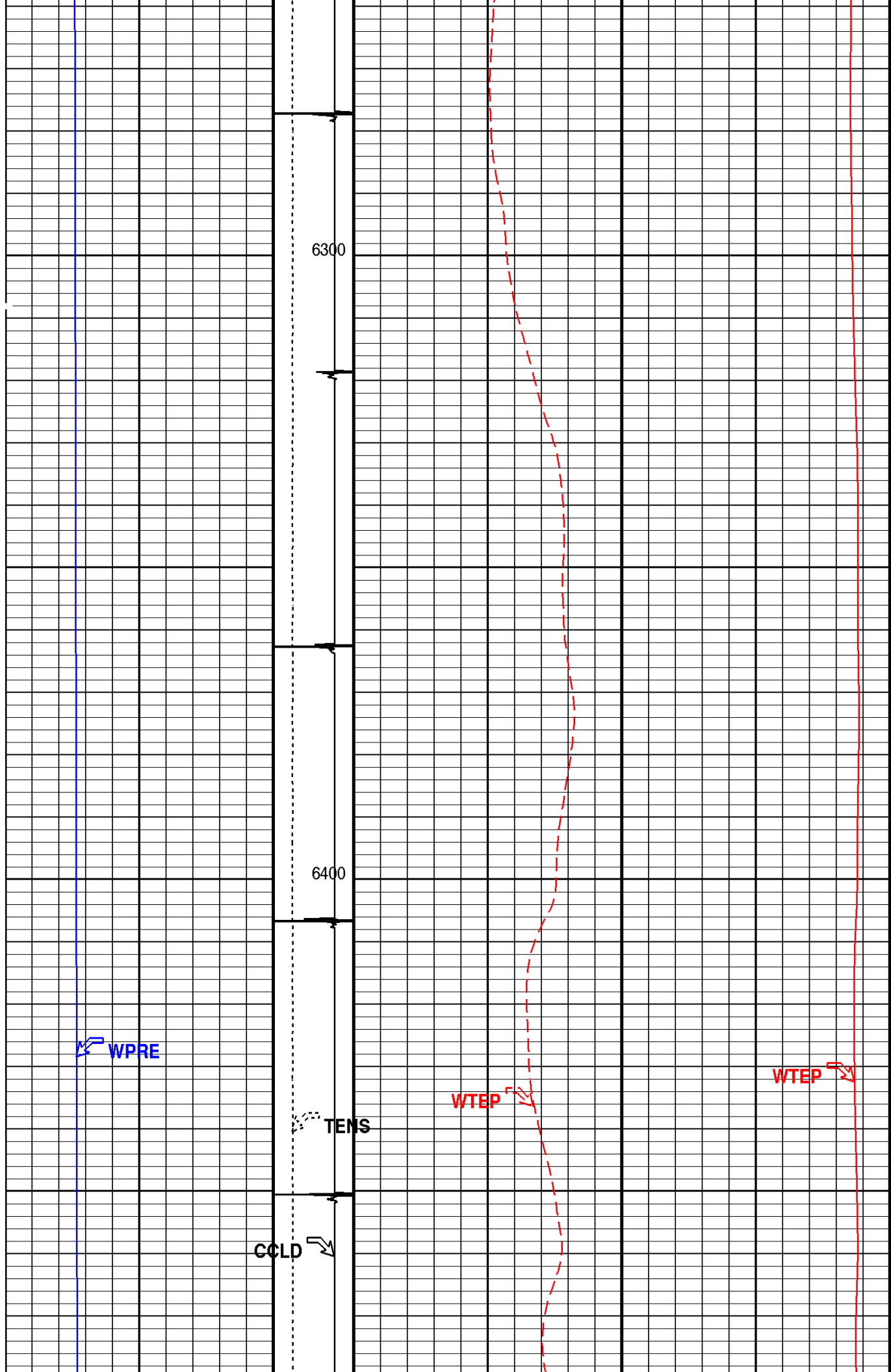
6000

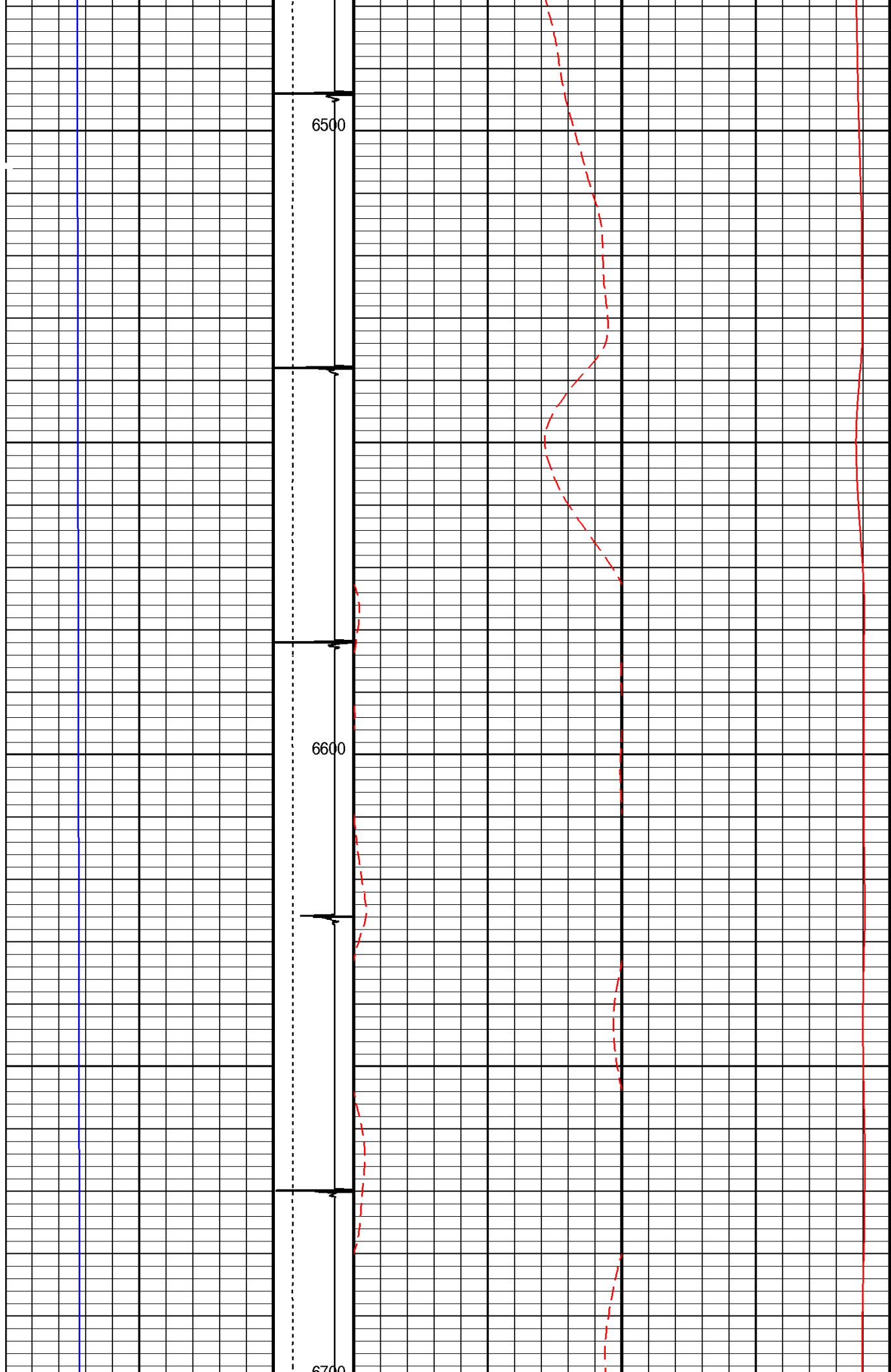
WTEP

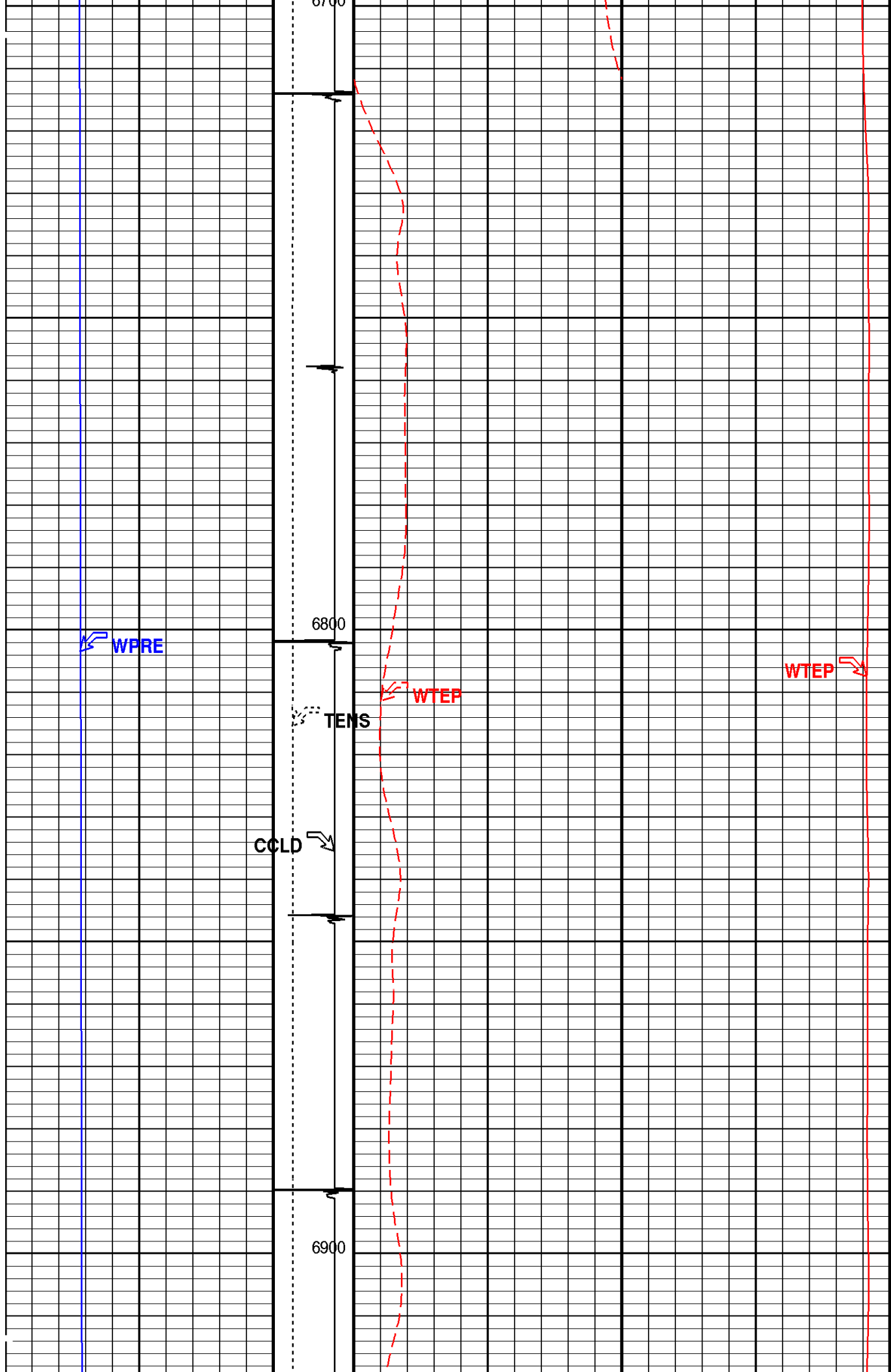
WTEP

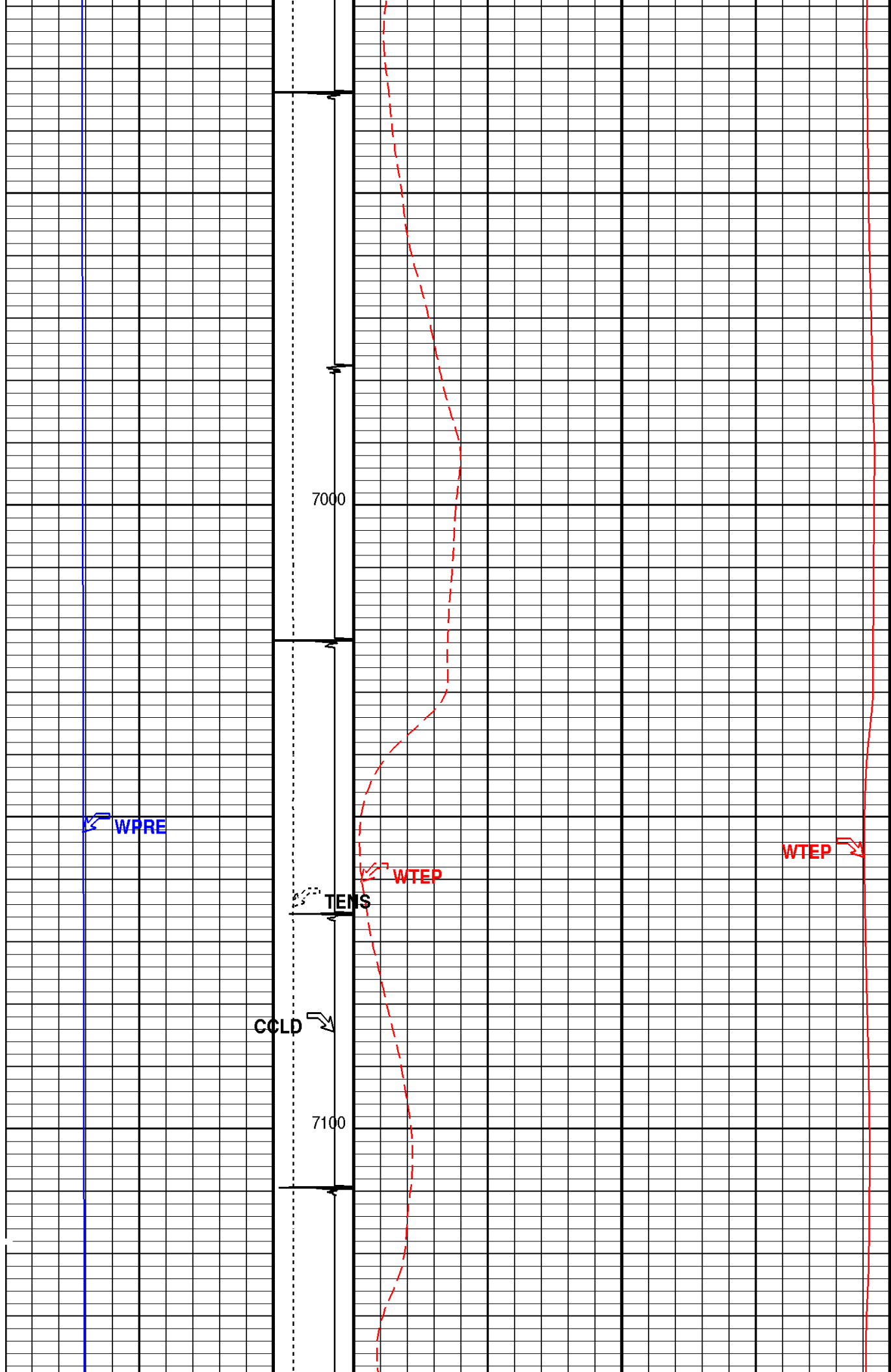












WPRE

WTEP

7300

7200

TENS

WTEP

CCLD

7400

7500

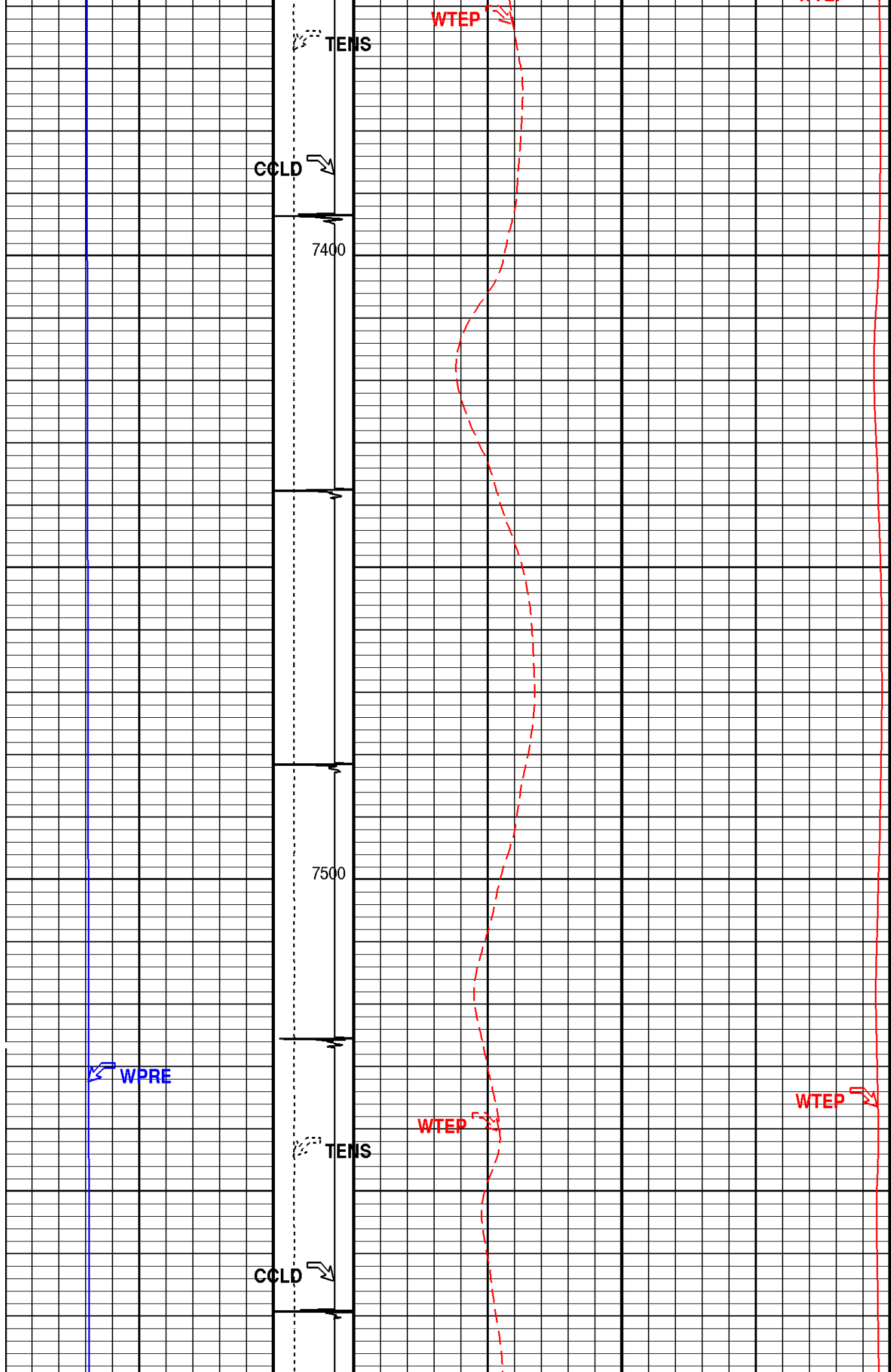
WPRE

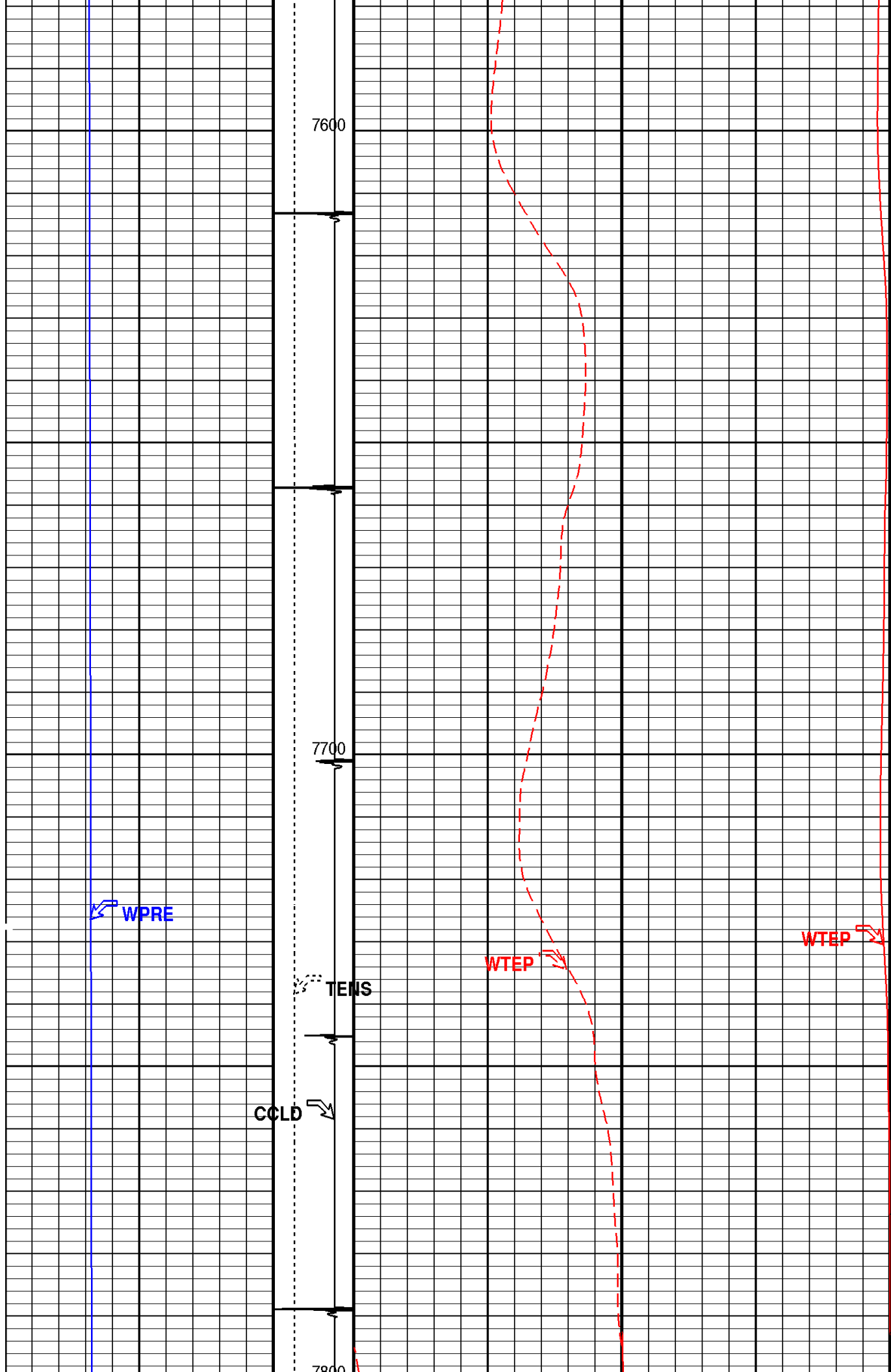
TENS

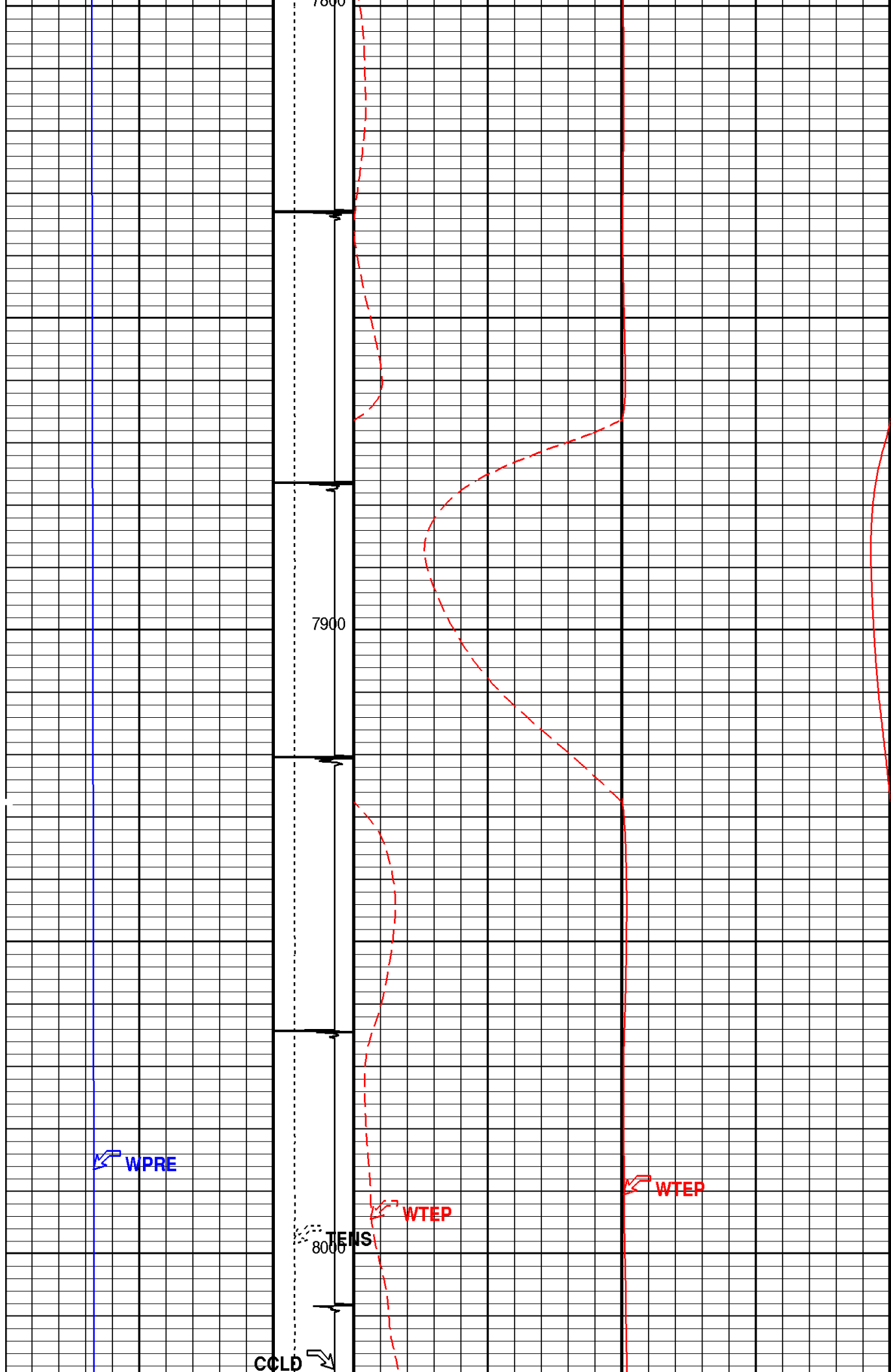
WTEP

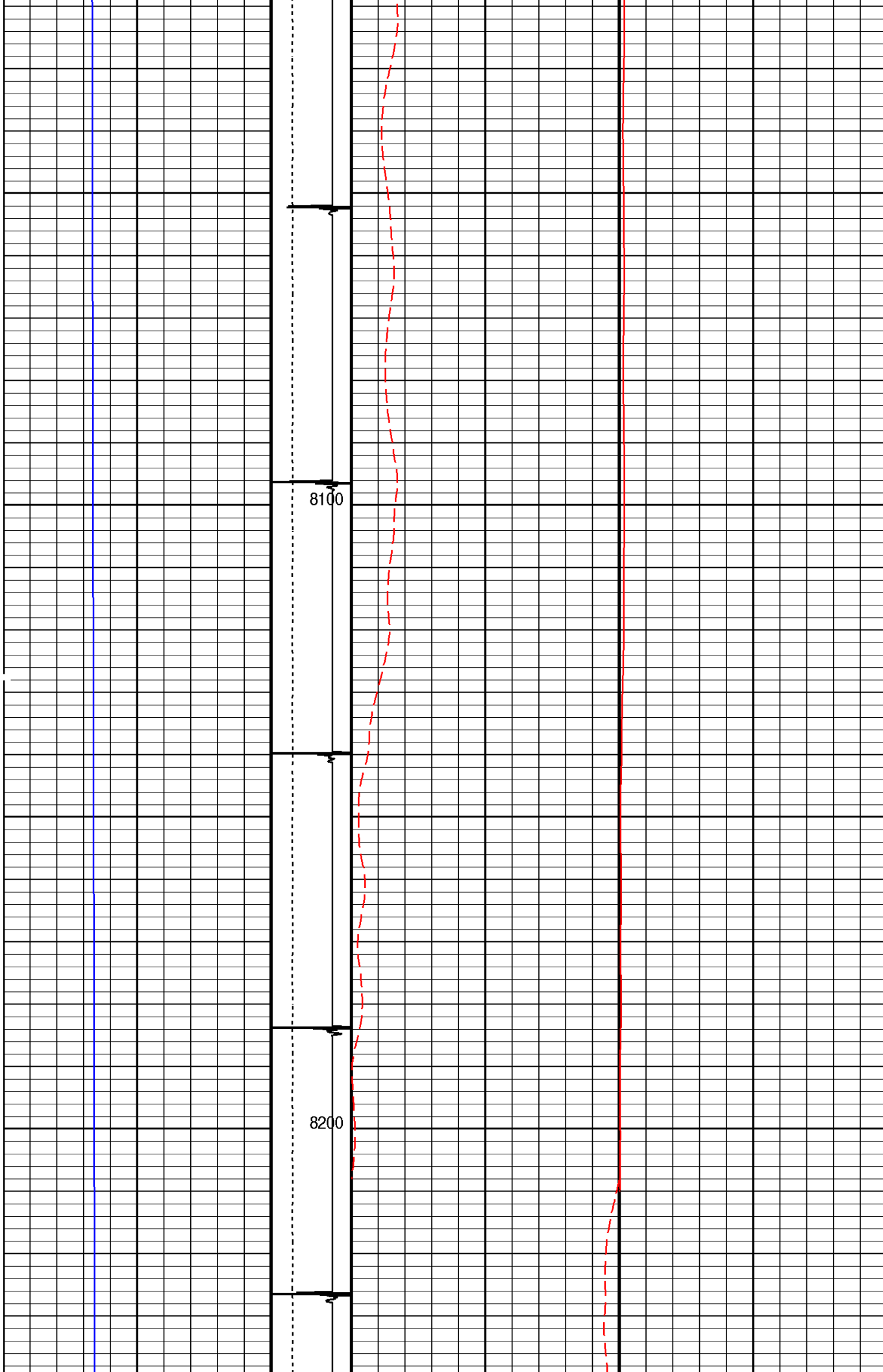
CCLD

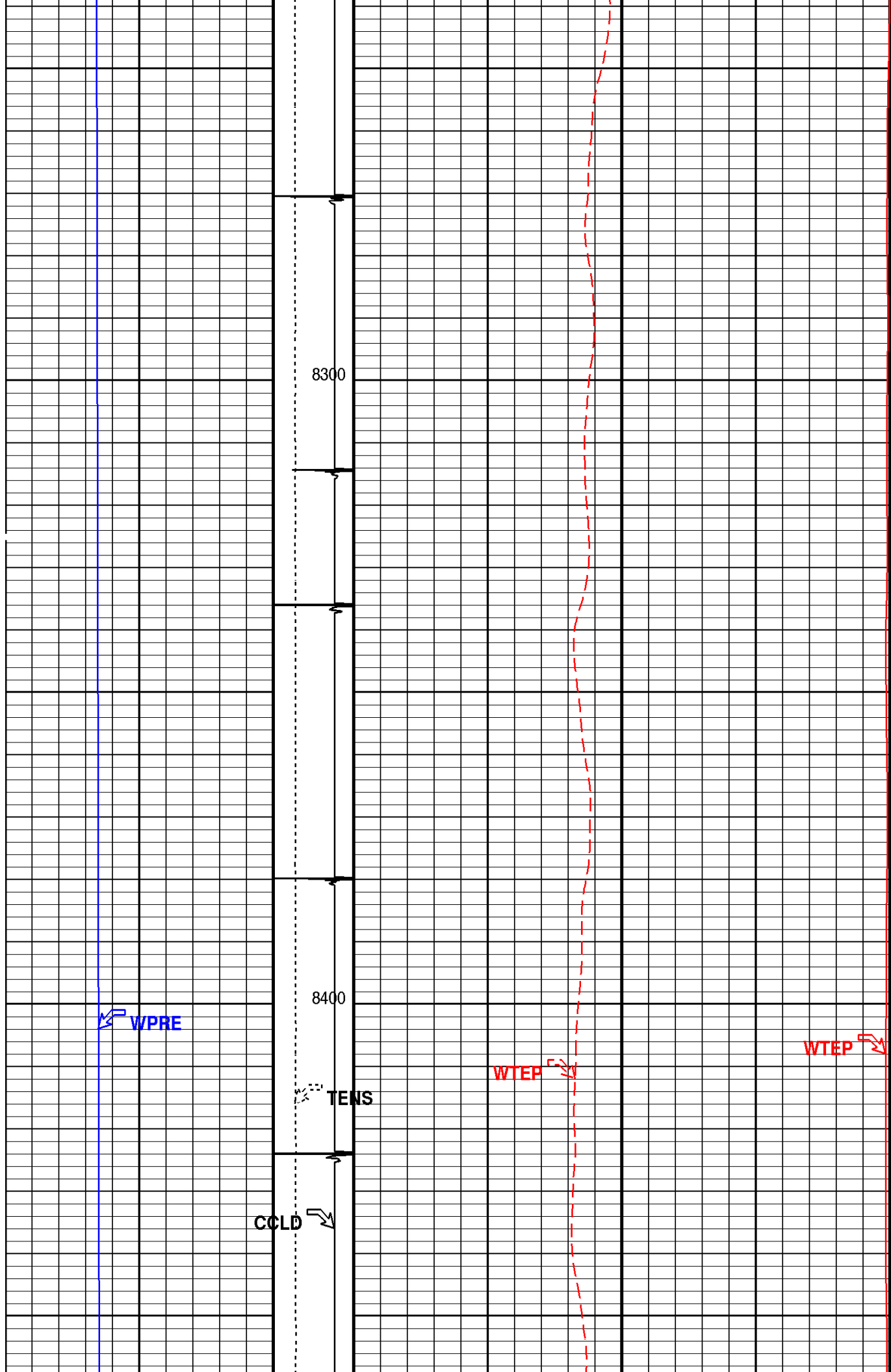
WTEP

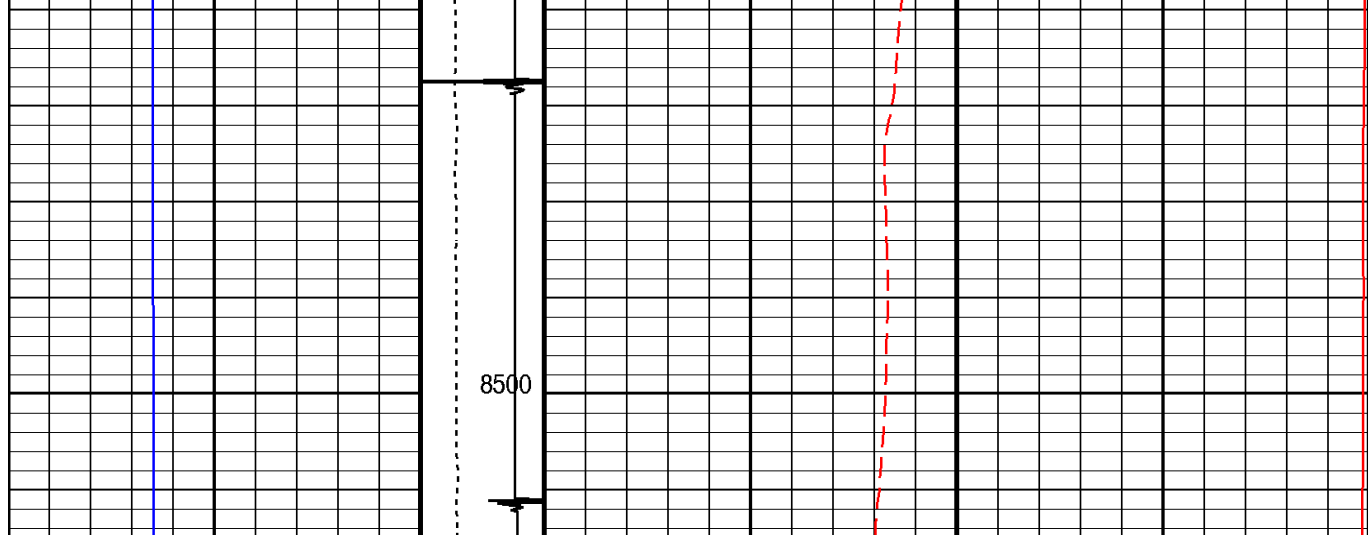












Well Pressure (WPRE)		Tension (TENS)	Well Temperature (WTEP)		Well Temperature (WTEP)	
0	(PSIA)	(LBF)	(DEGF)		(DEGF)	
10000		0	20	0	200	
		0	2000			
		Discriminat				
		ed CCL				
		(CCLD)				
		3 (V) -1				

PIP SUMMARY

Time Mark Every 60 S

Parameters

DLIS Name	Description	Value
DO PP	System and Miscellaneous Depth Offset for Playback Playback Processing	0.0 FT RECOMPUTE

Format: TEMP LOG Vertical Scale: 5" per 100' Graphics File Created: 21-Nov-2012 14:34

OP System Version: 19C0-187

HBMS-A SRPC-5214-H2-2012-OP19

Input DLIS Files

DEFAULT Flip_HBMS_008LUP PRODUCER 21-Nov-2012 14:31 8515.0 FT 79.5 FT

Output DLIS Files

DEFAULT HBMS_010PUP FN:7 PRODUCER 21-Nov-2012 14:34

Schlumberger

REPEAT ANALYSIS

MAXIS Field Log

Company: Encana Oil & Gas (USA) Inc

Well: MCU 26-5A (I27W)

Input DLIS Files

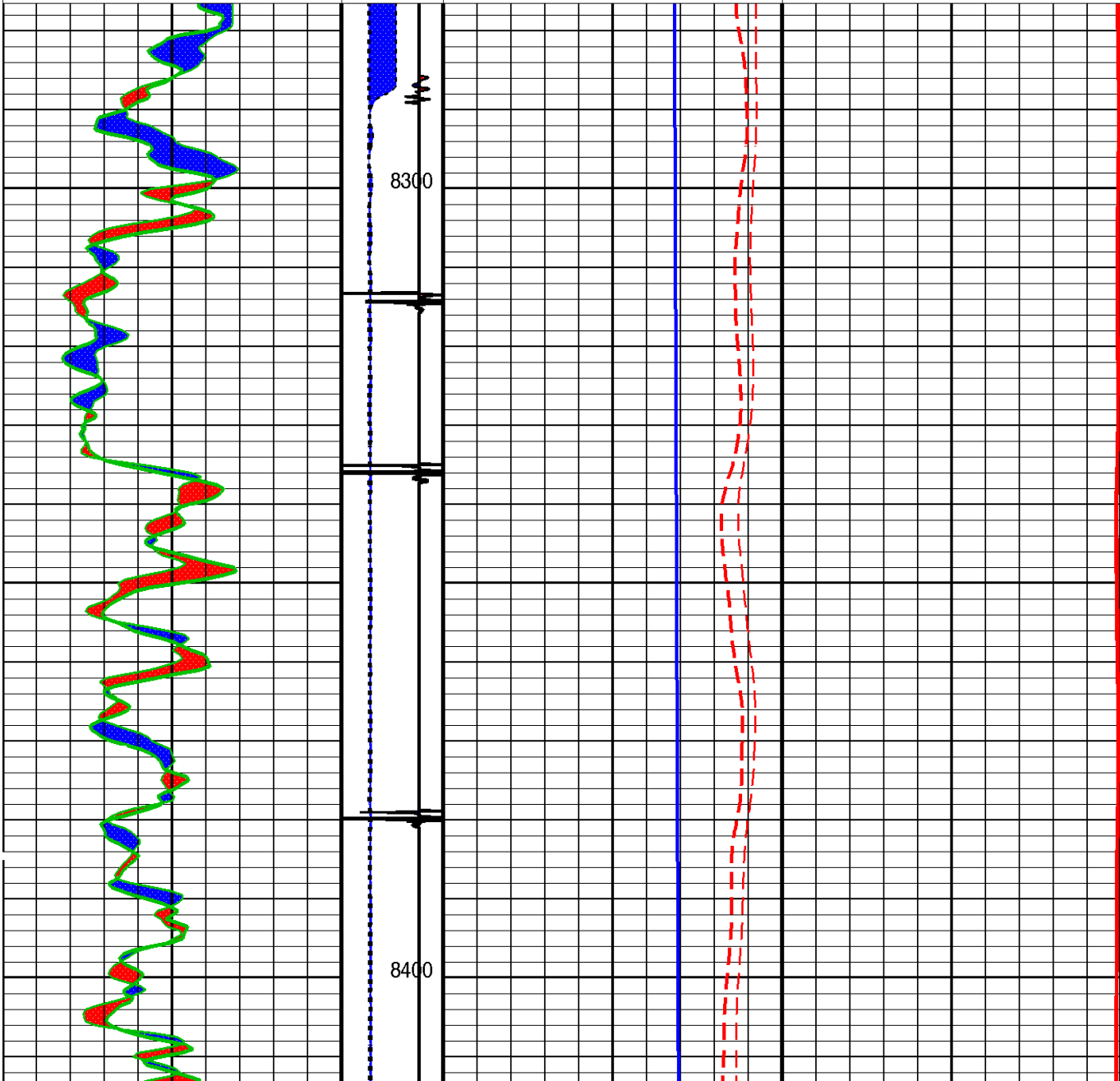
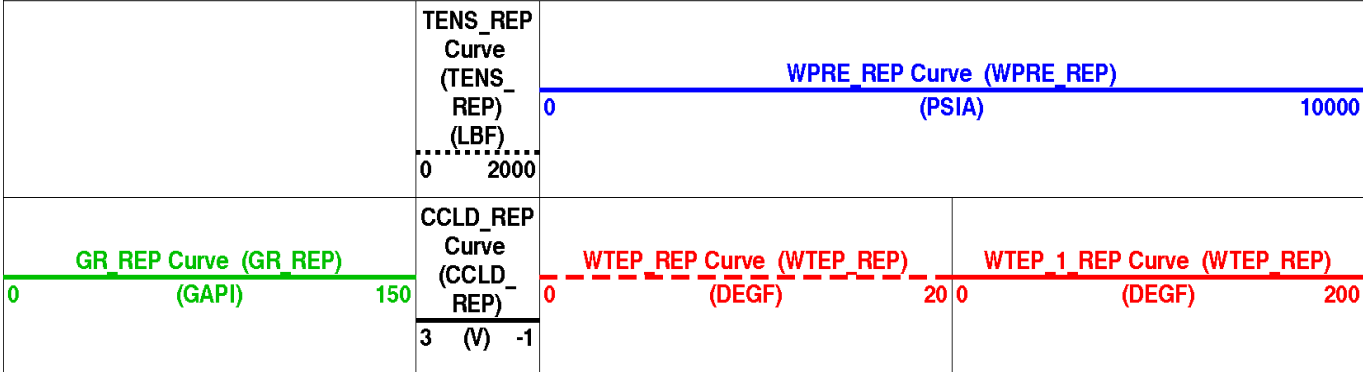
Output DLIS Files

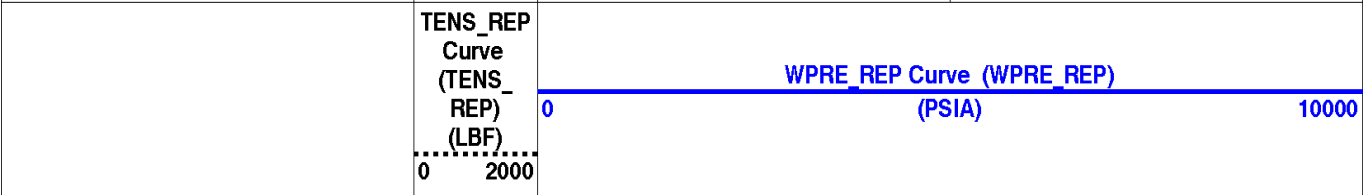
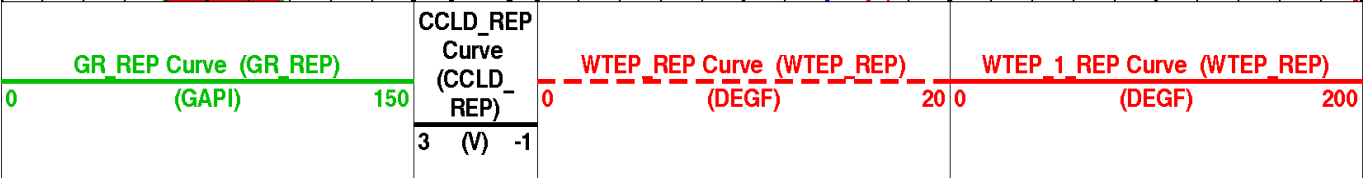
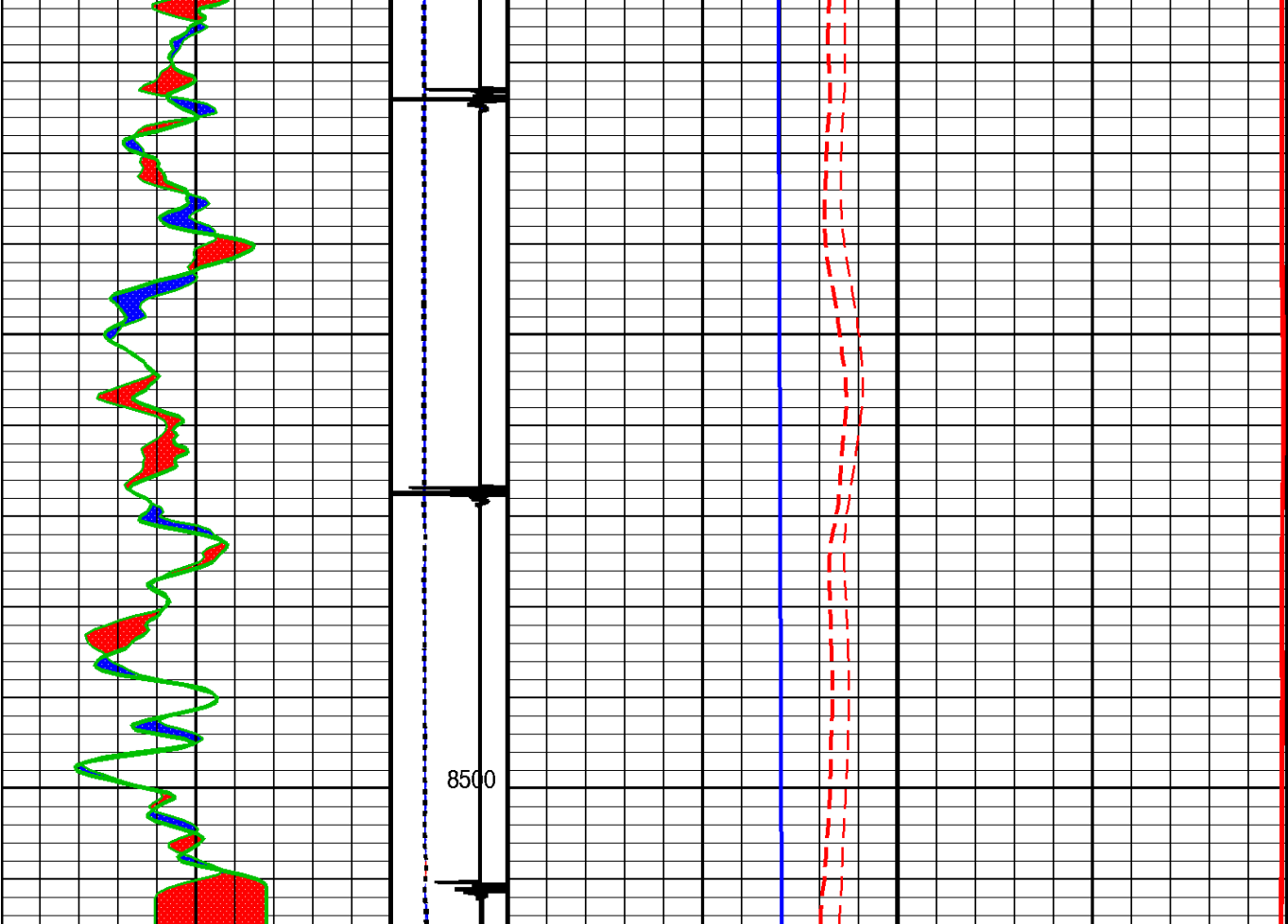
OP System Version: 19C0-187

HBMS-A SRPC-5214-H2-2012-OP19

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	0.0 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: 21-Nov-2012 14:45

OP System Version: 19C0-187

HBMS-A SRPC-5214-H2-2012-OP19

Input DLIS Files						
DEFAULT	Flip_HBMS_009LUP	PRODUCER	21-Nov-2012 14:32	8516.5 FT	8276.0 FT	
DEFAULT	HBMS_010PUP	FN:7 PRODUCER	21-Nov-2012 14:34	8515.0 FT	79.5 FT	

Output DLIS Files						
DEFAULT	TEMP	FILE	FILE	PRODUCER	FILE	FILE

Schlumberger

PBMS COEFFICIENTS

MAXIS Field Log

Client: Encana Oil & Gas (USA) Inc

Field: Mamm Creek

Well: MCU 26-5A (I27W)

Run date: 21-Nov-2012

Tool: PSP

Sub Type: PBMS

Sensor: GR

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

Field: Mamm Creek

Well: MCU 26-5A (I27W)

Run date: 21-Nov-2012

Tool: PSP

Sub Type: PBMS

Sensor: WellTemp RTD

PBMS RTD Well Thermometer

Sonde Serial NB

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

Sonde 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:	Mamm Creek	Sub Type:	PBMS
Well:	MCU 26-5A (I27W)	Sensor:	CQG
Run date:	21-Nov-2012		

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	+.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

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: **MCU 26-5A (I27W)**
Field: **Mamm Creek**
County: **Garfield**
State: **Colorado**

TEMPERATURE LOG
GAMMA RAY - CCL - TEMPERATURE