

Company: IMPERIAL OIL RESOURCES

Well: IMP 07 T15-25 COLD LK 5-28-64-3

Field: ETHEL LAKE

Province: ALBERTA State: **MD**

Province: ALBERTA
Field: ETHEL LAKE
Location: 01-29-064-03W4M
Well: IMP 07 T15-25 COLD LK 5-28-64-3
Company: IMPERIAL OIL RESOURCES

PRODUCTION ANALYSIS
TEMP/PRESSURE

Location:		01-29-064-03W4M	Elev.:	K.B.	606.75 m
		104052806403W400		G.L.	601.70 m
				D.F.	606.45 m
Permanent Datum:		Ground Level		Elev.:	601.70
Log Measured From:		Kelly Bushing		5.05 m	above Perm.Datum
Drilling Measured From:		Kelly Bushing			
API Serial No.	Section:	Township:		Range:	
0395574	05-28	064		03W4M	

Logging Date 06-Dec-2016

Run Number ONE.1

Depth Driller 813.00 m

Schlumberger Depth 791.58 m

Bottom Log Interval 791.58 m

Top Log Interval 0.00 m

Casing Fluid Type Air

Salinity

Density 11.98 kg/m3

Fluid Level

BIT/CASING/TUBING STRING

Bit Size 450.00 mm

From 0.00 m

To 791.58 m

Casing/Tubing Size 88.900 mm

Weight 13.84 kg/m

Grade

From 2.96 m

To 799.12 m

Max Recorded Temperatures 191.49 degC

Logger on Bottom 06-Dec-2016 12:18:00

Unit Number D222 Location: LLOYDMINSTER

Recorded By J.LAING

Witnessed By GREG GELETTY

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 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.

Contents

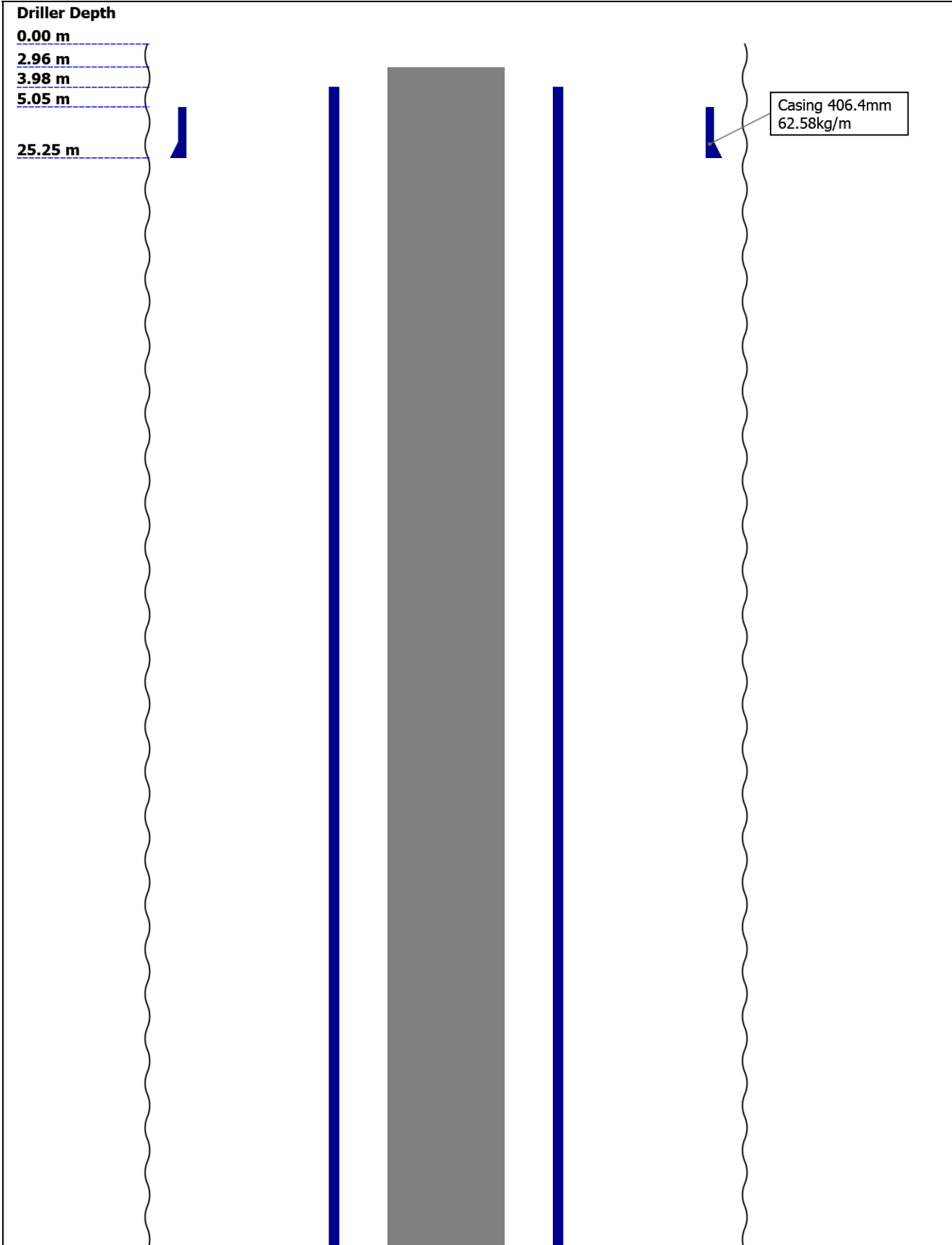
- 1. Header
- 2. Disclaimer
- 3. Contents
- 4. Well Sketch
- 5. Borehole Size/Casing/Tubing Record
- 6. Remarks and Equipment Summary
- 7. Depth Summary
- 8. ONE.1 DOWN PASS
 - 8.1 Integration Summary
 - 8.2 Software Version
 - 8.3 Composite Summary
 - 8.4 Log (TEMP DOWN PASS imperial)
 - 8.5 Parameter Listing
- 9. ONE.1 UP PASS
 - 9.1 Integration Summary
 - 9.2 Software Version
 - 9.3 Composite Summary

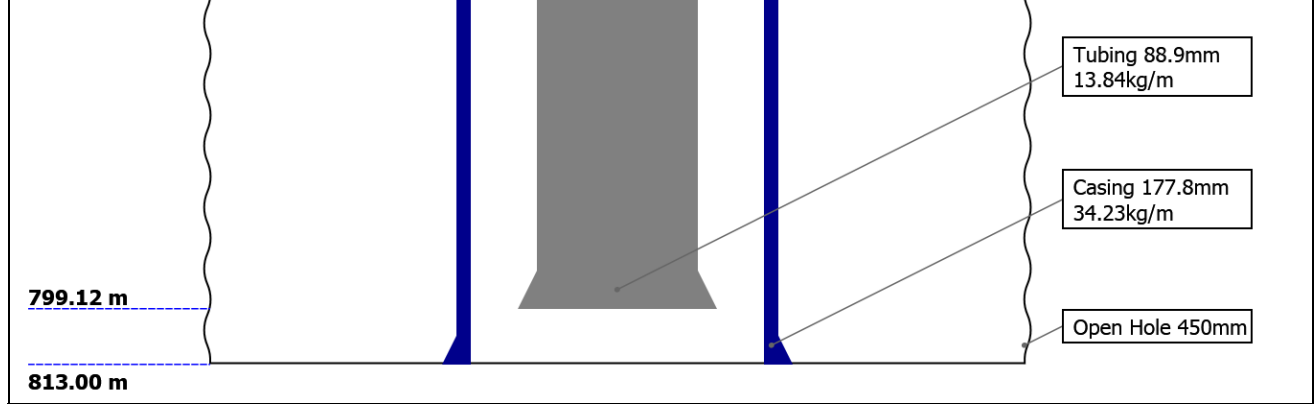
9.4 Log (TEMP DOWN PASS imperial)

9.5 Parameter Listing

10. Tail

Well Sketch



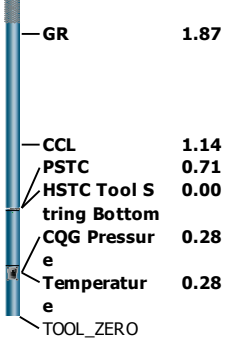


Borehole Size/Casing/Tubing Record

Bit						
Bit Size (mm)	450					
Top Driller (m)	0					
Top Logger (m)	0					
Bottom Driller (m)	813					
Bottom Logger (m)	791.58					
Casing						
Size (mm)	406.4	177.8				
Weight (kg/m)	62.58	34.23				
Inner Diameter (mm)	393.987	161.797				
Grade	N/A	N/A				
Top Driller (m)	5.05	3.98				
Top Logger (m)	5.05	3.98				
Bottom Driller (m)	25.25	813				
Bottom Logger (m)	25.25	813				
Tubing						
Size (mm)	88.9					
Weight (kg/m)	13.84					
Inner Diameter (mm)	75.997					
Grade						
Top Driller (m)	2.96					
Top Logger (m)	2.96					
Bottom Driller (m)	799.12					
Bottom Logger (m)	799.12					

Remarks and Equipment Summary

ONE.1: Toolstring				ONE.1: Remarks		
Equip name	Length	MP name	Offset	LOGGED DOWN TO 500M @ 10 m/min		
MH-22	3.96			LOGGED UP FROM PSN TO 450 mKB AT 5 m/min THEN CONTINUED TO SURFACE AT 10 m/min.		
AH-38	3.48			NO FLUID LEVEL DETECTED.		
HBMS-B:2838	3.39			LAST FLUID MOVEMENT (N2 PURGED) DEC 2, 2016		
HUDH-A:2838				MAX TEMP 191.49 C RECORDED AT 791.58 mKB		
PSC-A:2838						
HSTC-A:2838						
HBMC-A:2838						
HTPS-A:2838						

 <p>Lengths are in m Maximum Outer Diameter = 52.451 mm Line: Sensor Location, Value: Gating Offset All measurements are relative to TOOL_ZERO</p>	GR	1.87	ENGAGED TRACTOR @ 500 mKB
			CWT @ 700.3 mKB
			BURST NIPPLE TOP @ 772.11mKB
	CCL	1.14	PSN TOP @ 791.58 Mkb
	PSTC	0.71	
	HSTC Tool String Bottom	0.00	
	CQG Pressure	0.28	FLUID SHOT SITP = 1500 kPa 82/82
	Temperature	0.28	SICP = 1500 kPa 82/82
	TOOL_ZERO		SITP = 1450 kPa

Depth Summary			
	ONE.1		
Depth Measuring Device			
Type	IDW-B		
Serial Number	6305		
Calibration Date	16-SEP-2015		
Calibrator Serial Number	4		
Calibration Cable Type	1-33A-SLC		
Wheel Correction 1	1		
Wheel Correction 2	1		
Tension Device			
Type	CMTD-B/A		
Serial Number	1084		
Calibration Date	22-OCT-2016		
Calibrator Serial Number	345687		
Number of Calibration Points	10		
Calibration Root Mean Square Error	16		
Calibration Peak Error	31		
Logging Cable			
Type	1-33A-SLC		
Serial Number			
Length	1.00 m		
Conveyance Type	Wireline		
Rig Type			
ONE.1:Depth Control Parameters		Depth Control Remarks	
Log Sequence	Subsequent Log In the Well	IDW USED AS PRIMARY DEPTH CONTROL	
Reference Log Name	LOG CORRELATED TO PIPE TALLY BURST NIPPLE @ 791.58 mKB	Z-CHART USED AS SECONDARY DEPTH CONTROL	
Reference Log Run Number		SCHLUMBERGER DEPTH STANDARD FOLLOWED	
Reference Log Date		DEPTH ACCURACY 0.05% AND REPEATABILITY 0.02% LOG CORRELATED TO PIPE TALLY BURST NIPPLE @ 791.58 mKB	
ONE.1			
DOWN PASS			

Acquisition System	Version
Maxwell 2016	6.0.53731.3100
Application Patch	Wireline_TestKit-EMIT-C-2016RC3_6.0.54288

Pass Summary

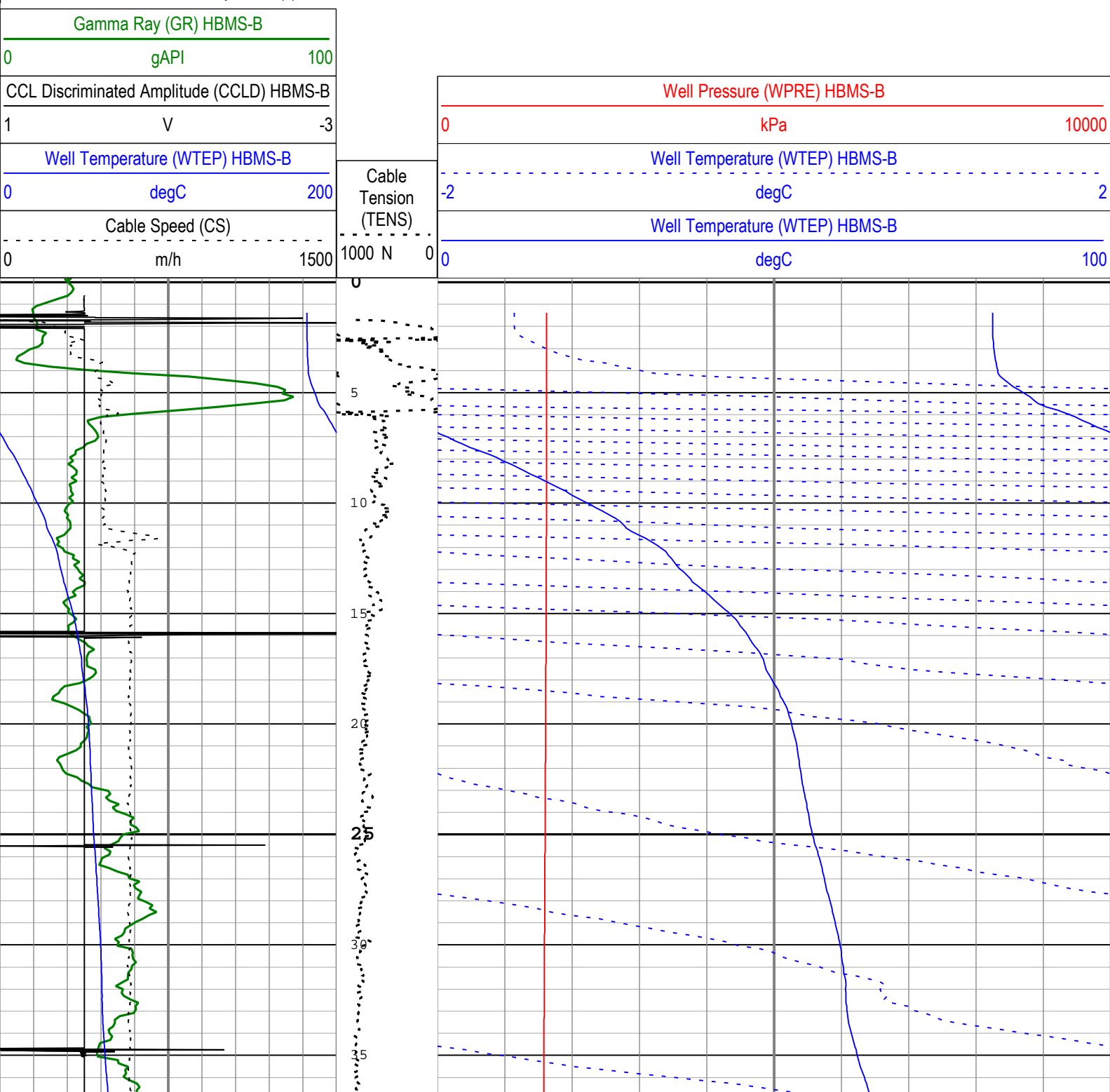
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE.1	Log[1]:Down	Down	1.71 m	500.17 m	06-Dec-2016 10:23:45 AM	06-Dec-2016 11:18:56 AM	ON	-0.90 m	No

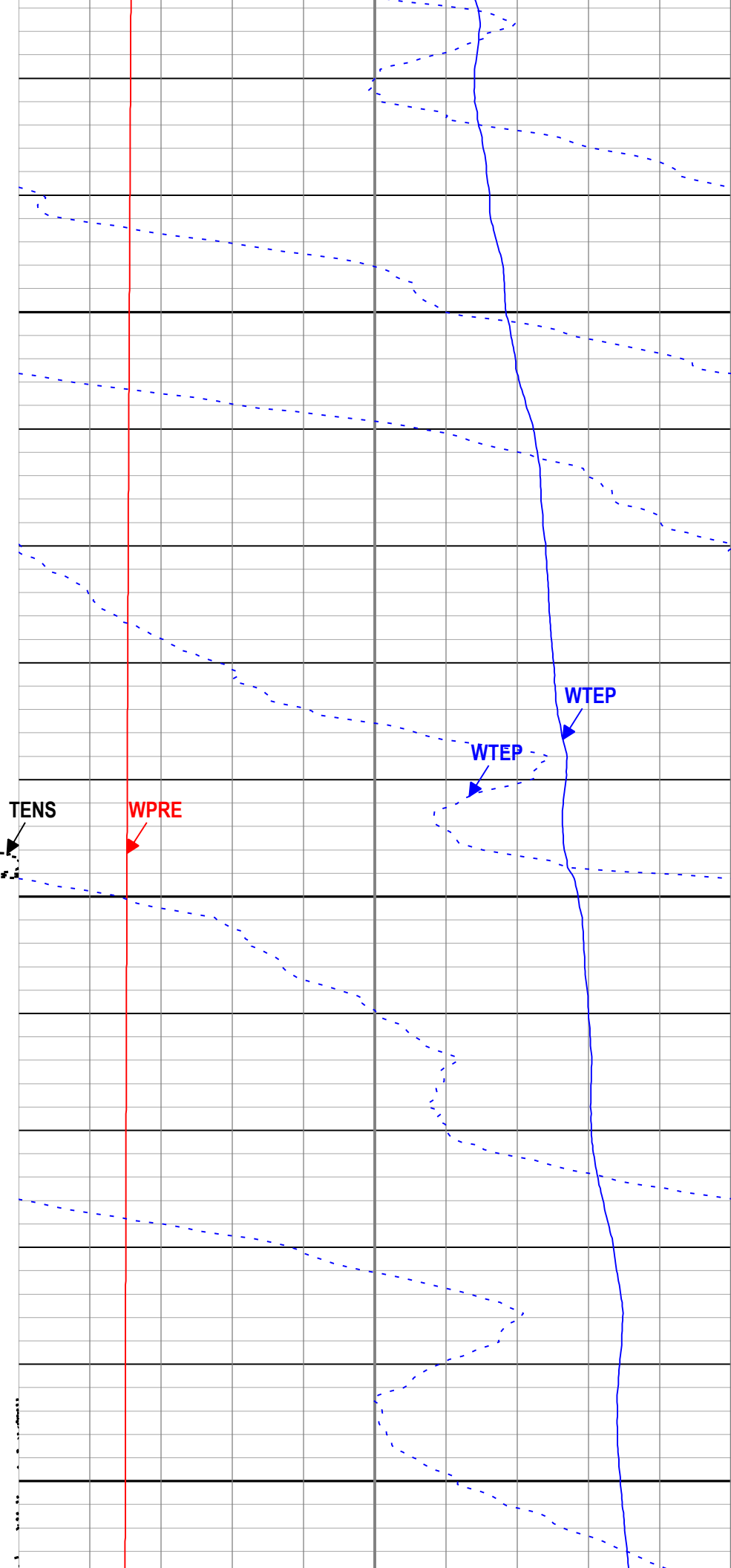
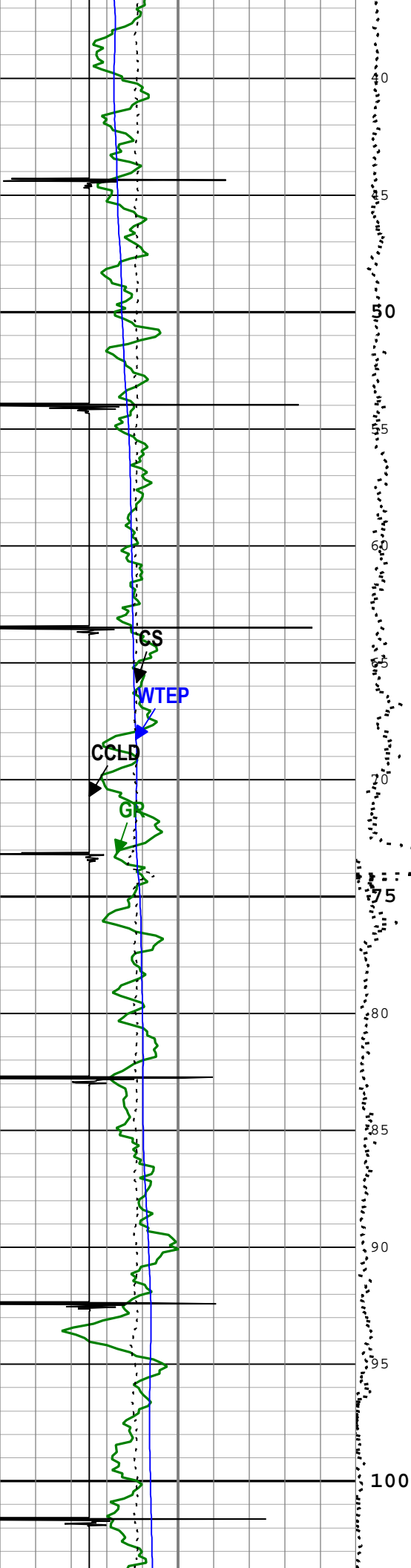
All depths are referenced to toolstring zero

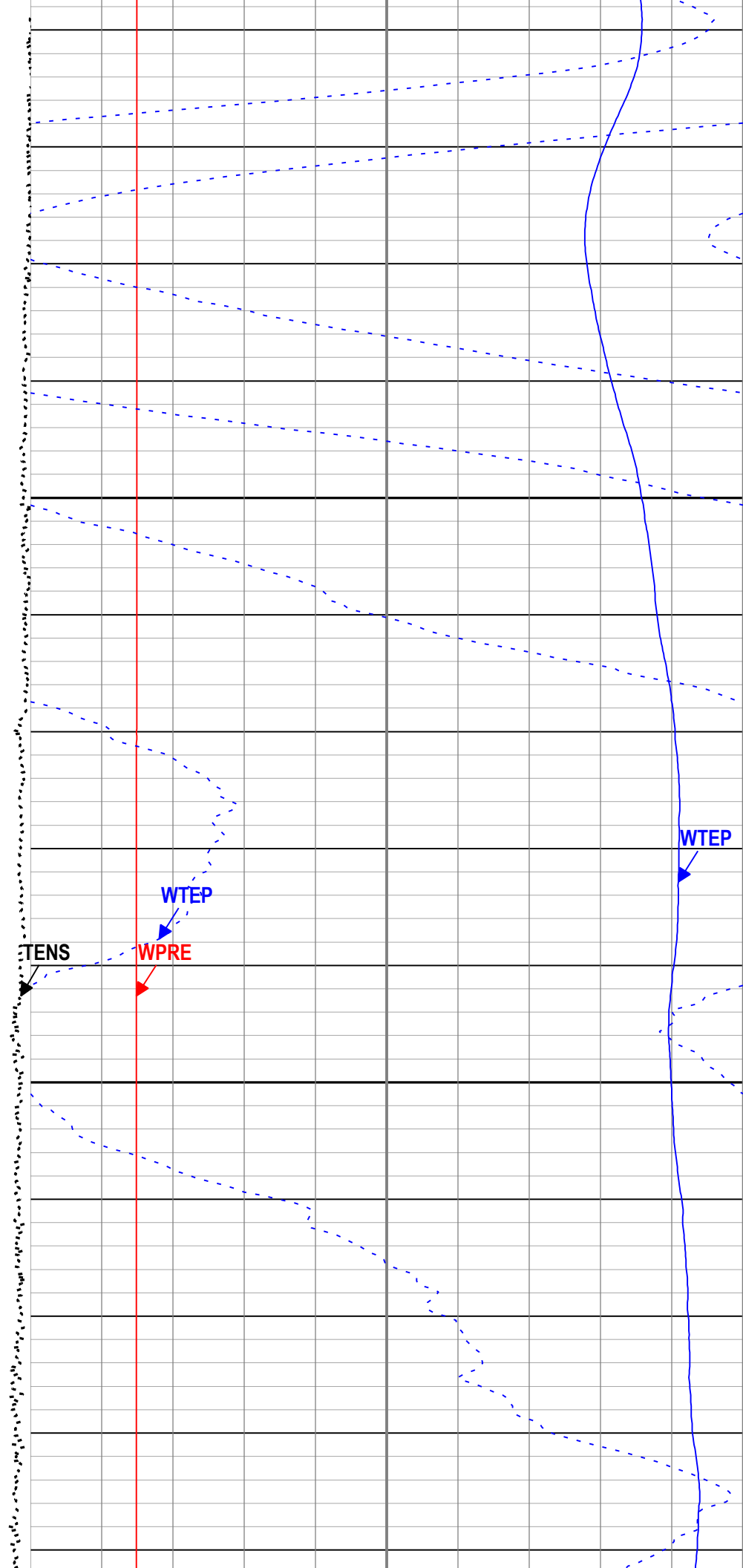
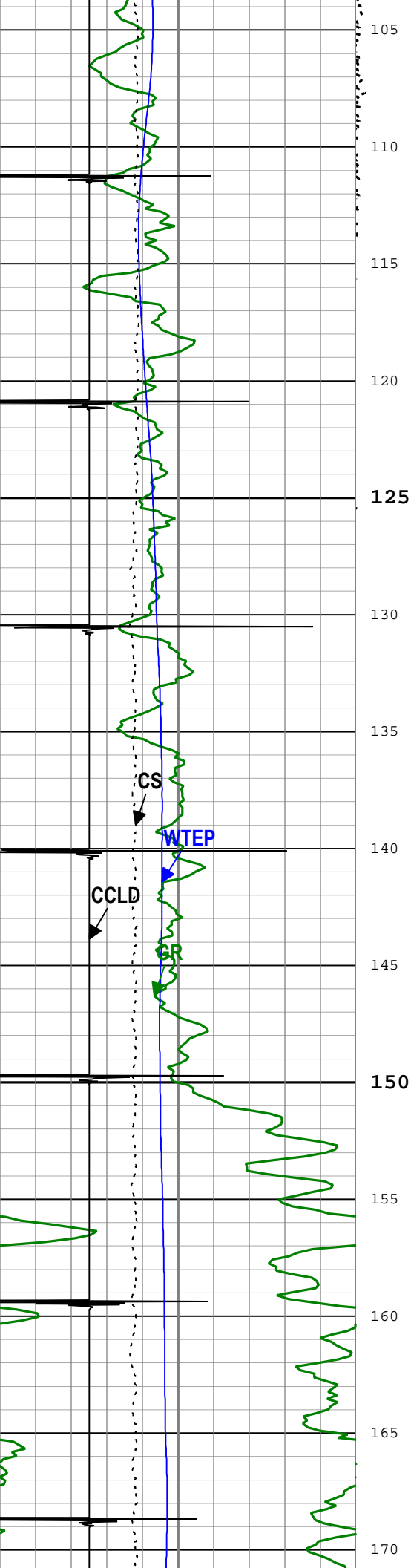
Log	Company:IMPERIAL OIL RESOURCES	Well:IMP 07 T15-25 COLD LK 5-28-64-3	ONE.1: Log[1]:Down:S006
-----	--------------------------------	--------------------------------------	-------------------------

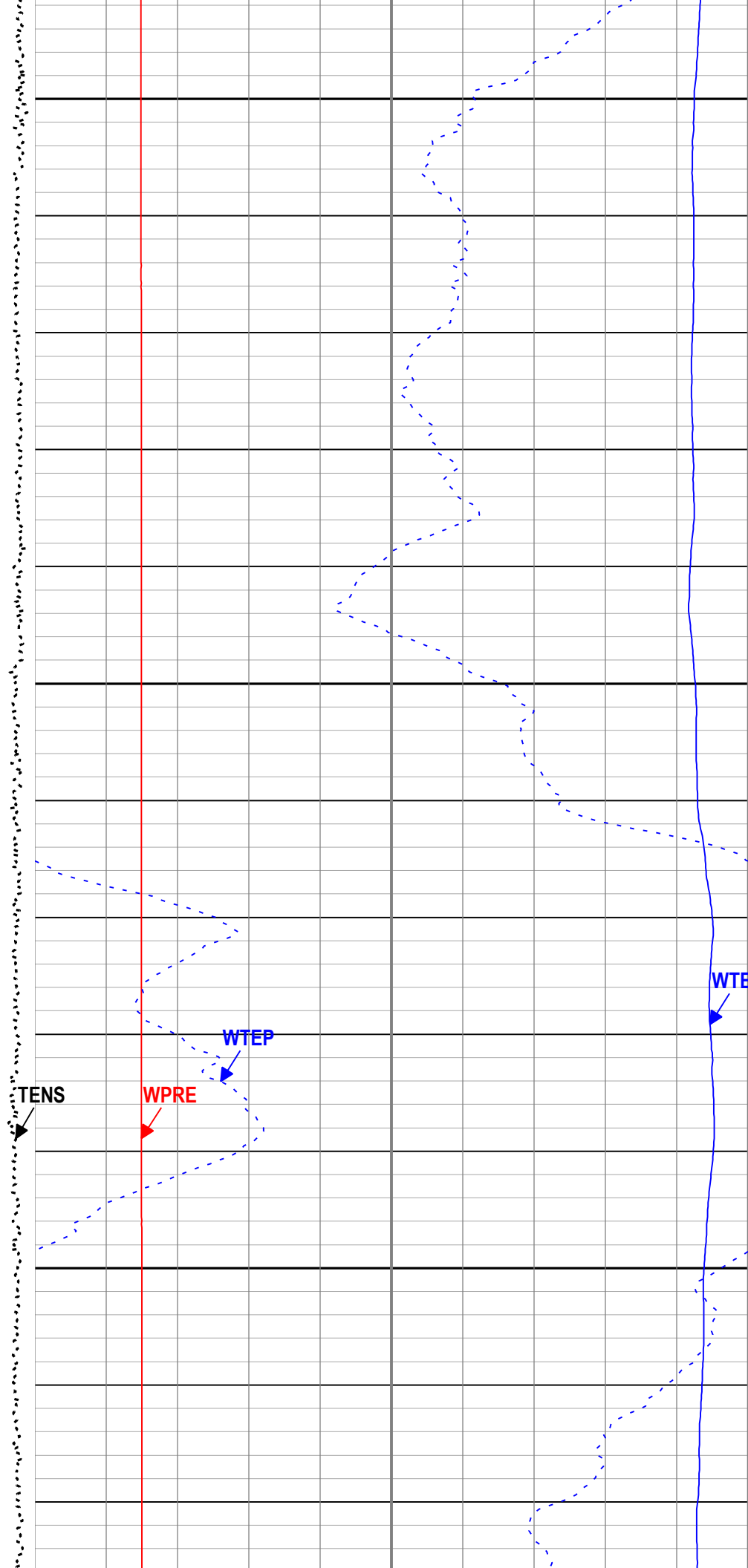
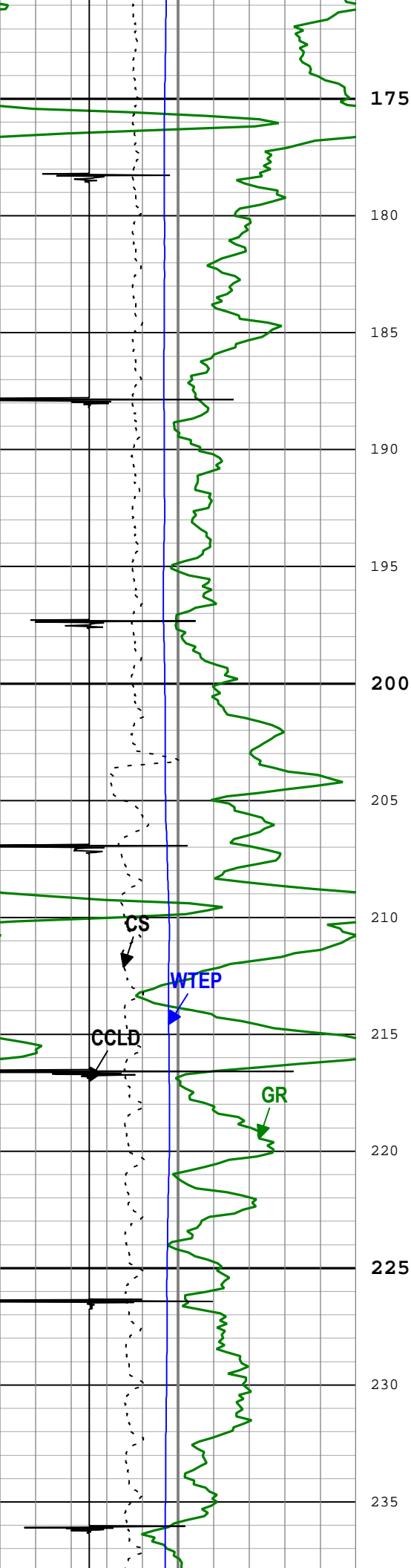
Description: PSP Depth Format: Log (TEMP DOWN PASS imperial) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 06-

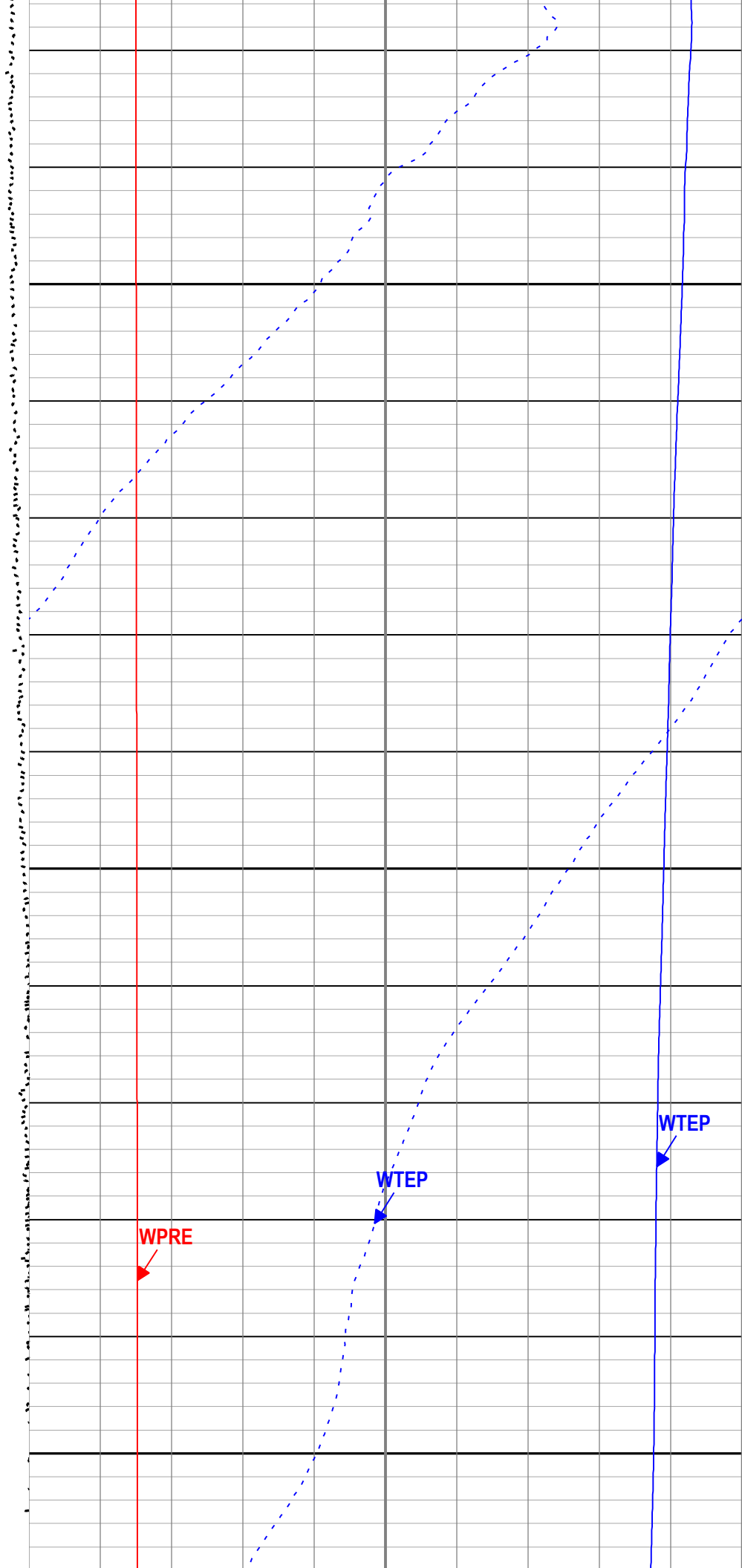
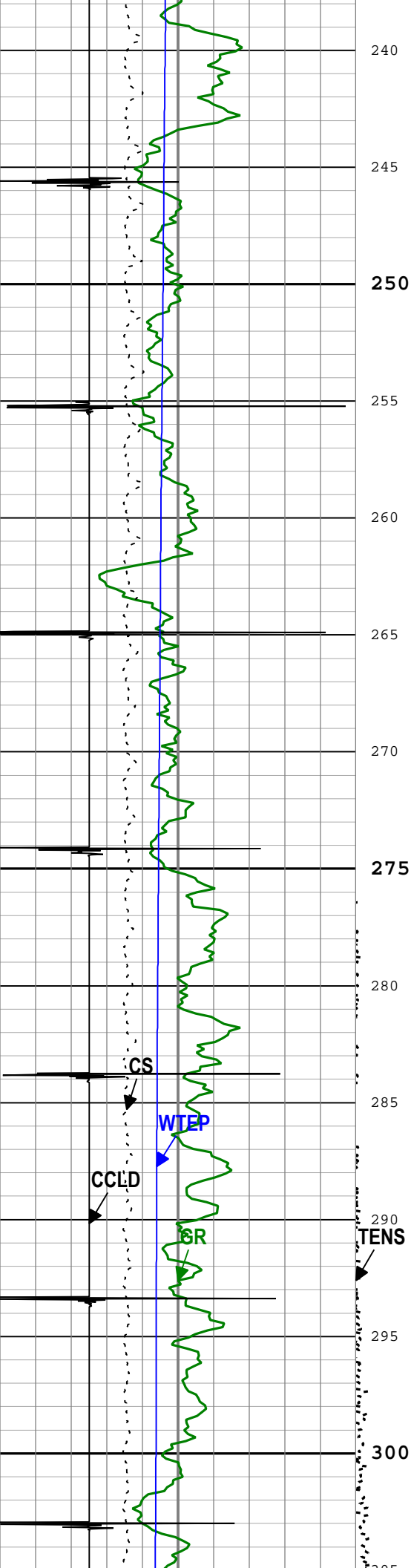
TIME_1900 - Time Marked every 60.00 (s)

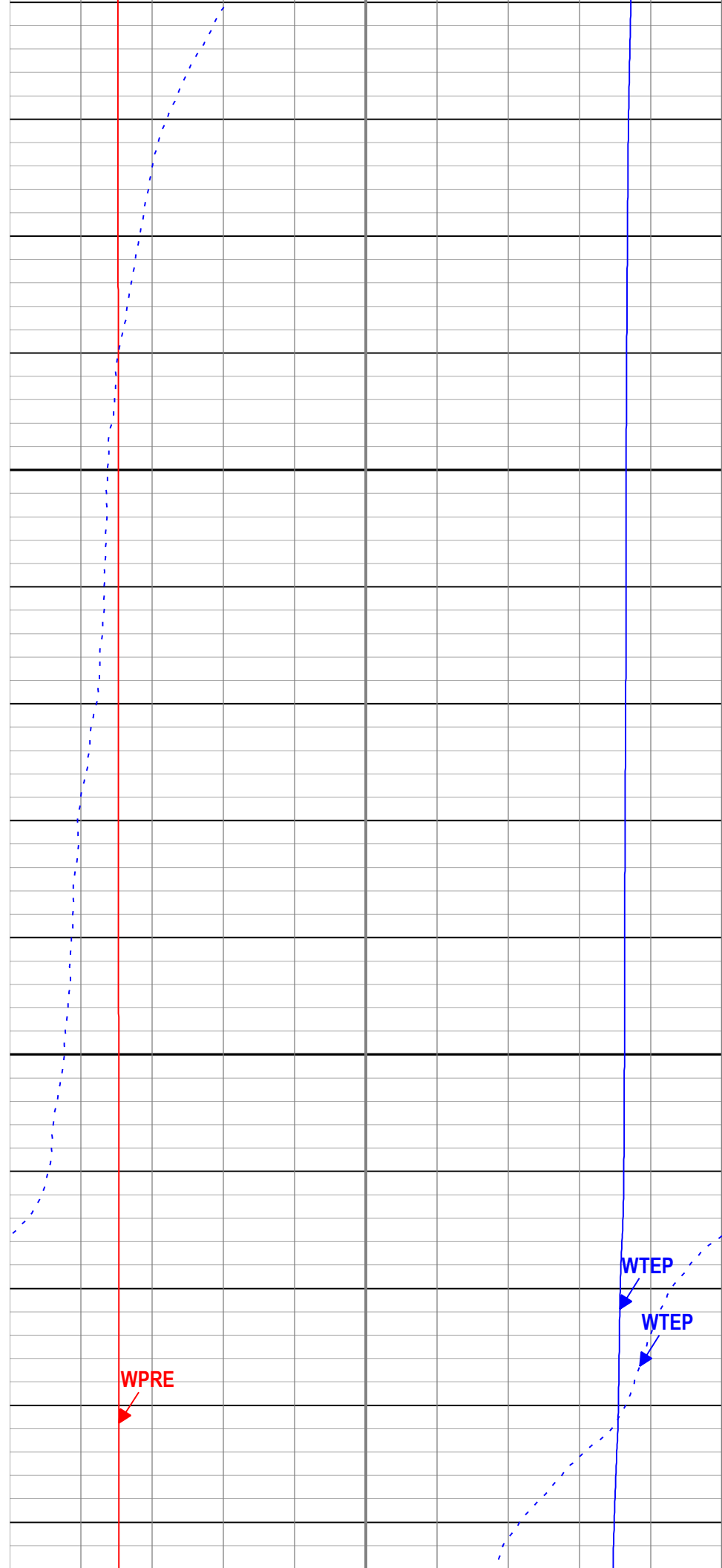
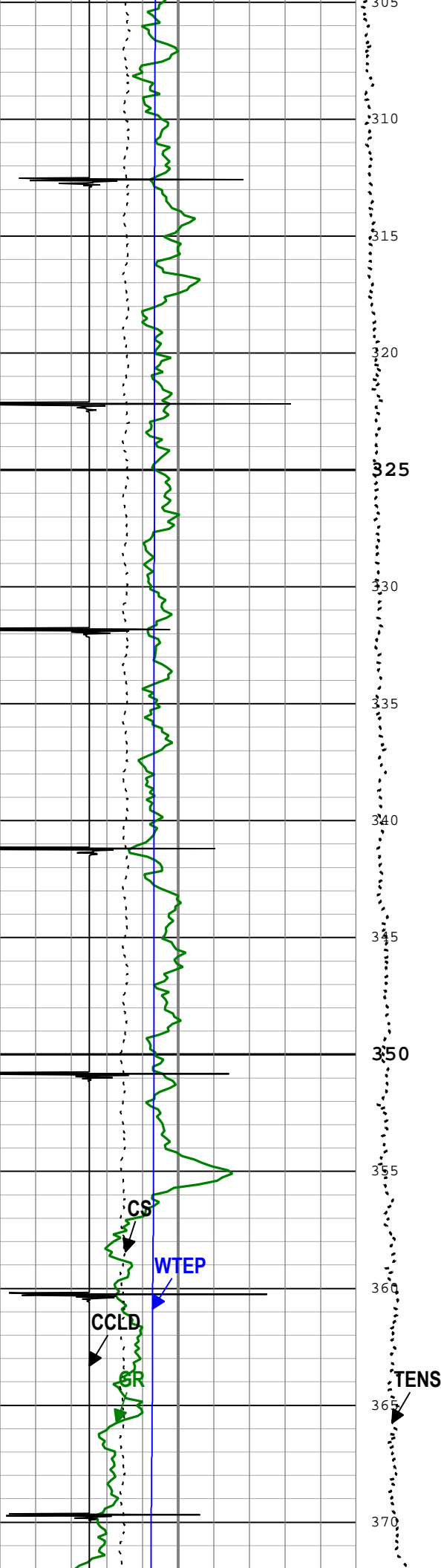


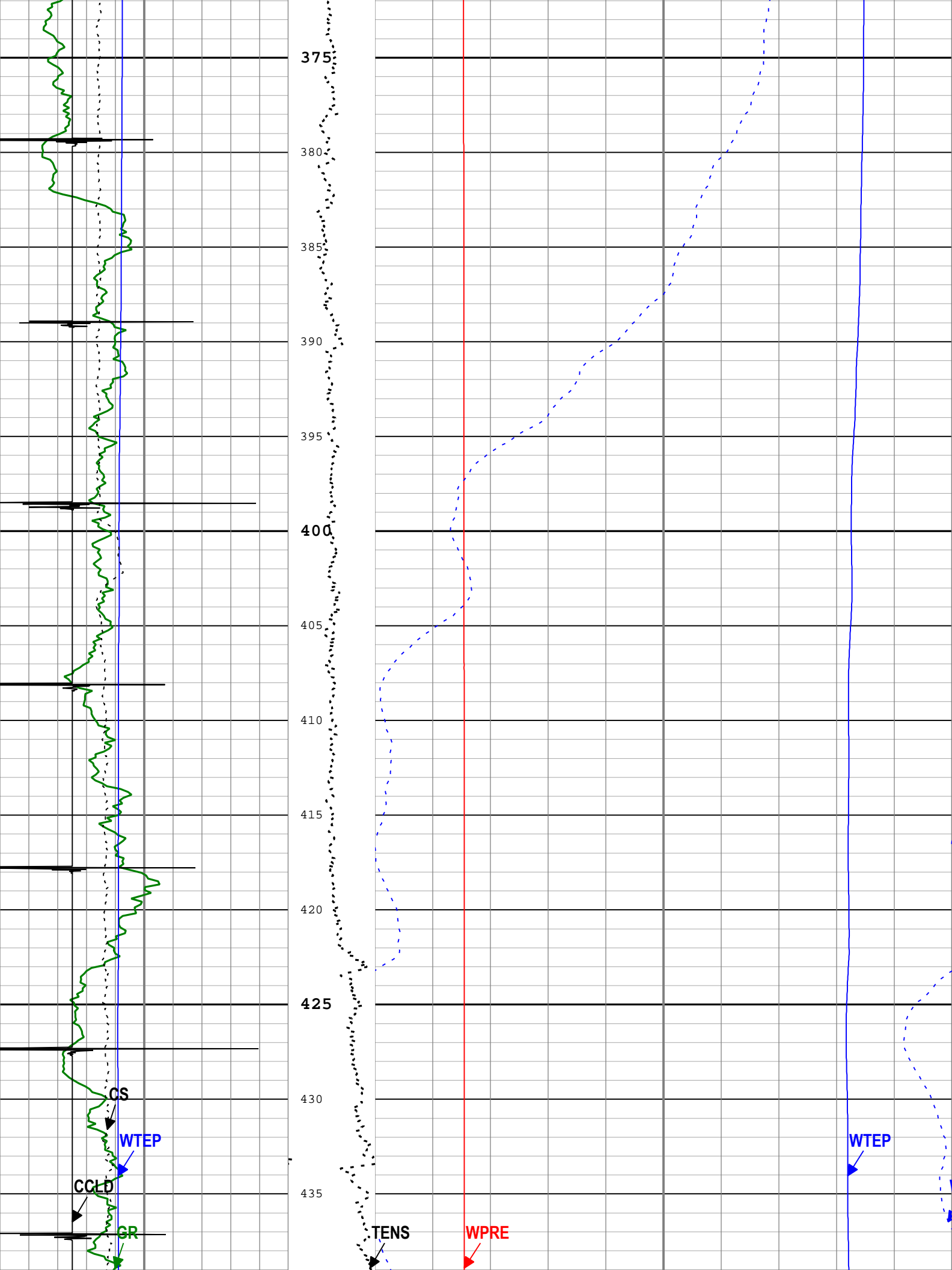


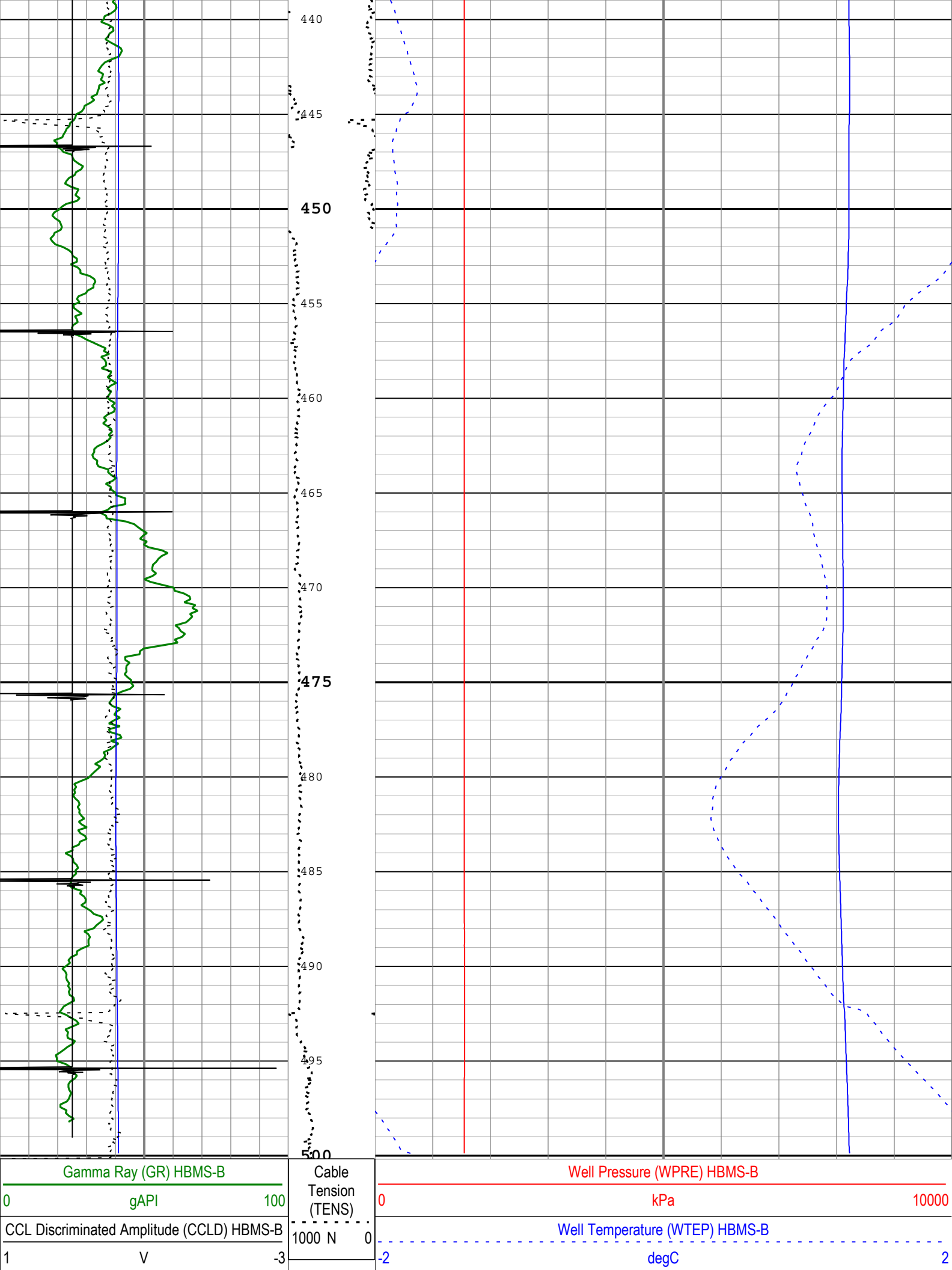












Well Temperature (WTEP) HBMS-B		
0	degC	200
Cable Speed (CS)		
0	m/h	1500

TIME_1900 - Time Marked every 60.00 (s)

Description: PSP Depth Format: Log (TEMP DOWN PASS imperial) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 06-

Channel Processing Parameters

Tool Control Parameters

ONE.1: Parameters

Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	5486.4	m/h
PCCG	PSP Downhole CCL Gain	HBMS-B	Time Zoned	

Time Zone Parameters

Parameter	Value	Start Time	Stop Time	Start Depth (m)	Stop Depth (m)
PCCG	36 dB	06-Dec-2016 10:23:45	06-Dec-2016 10:26:20	1.71	20.98
PCCG	12 dB	06-Dec-2016 10:26:20	06-Dec-2016 11:18:56	20.98	500.17

All depth are at tool zero.

ONE.1

UP PASS

Software Version

Acquisition System	Version
Maxwell 2016	6.0.53731.3100
Application Patch	Wireline_TestKit-EMIT-C-2016RC3_6.0.54288

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
ONE.1	Log[3]:Up	Up	-0.31 m	792.55 m	06-Dec-2016 12:19:20 PM	06-Dec-2016 2:20:30 PM	ON	0.00 m	No

All depths are referenced to toolstring zero

Log

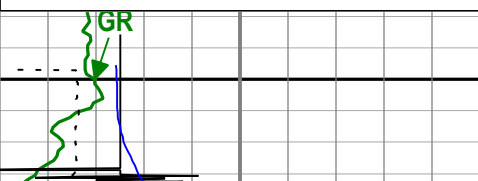
Company:IMPERIAL OIL RESOURCES Well:IMP 07 T15-25 COLD LK 5-28-64-3

ONE.1: Log[3]:Up:S006

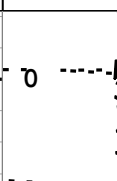
Description: PSP Depth Format: Log (TEMP DOWN PASS imperial) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 06-

TIME_1900 - Time Marked every 60.00 (s)

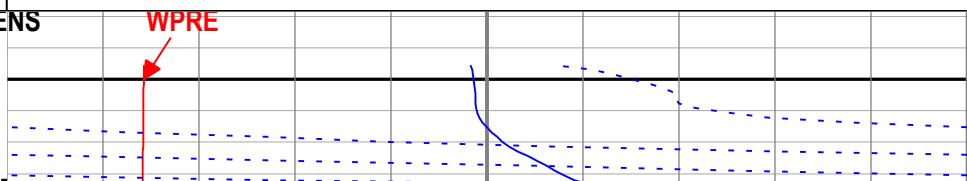
Gamma Ray (GR) HBMS-B		
0	gAPI	100
CCL Discriminated Amplitude (CCLD) HBMS-B		
1	V	-3
Well Temperature (WTEP) HBMS-B		
0	degC	200
Cable Speed (CS)		
0	m/h	1500

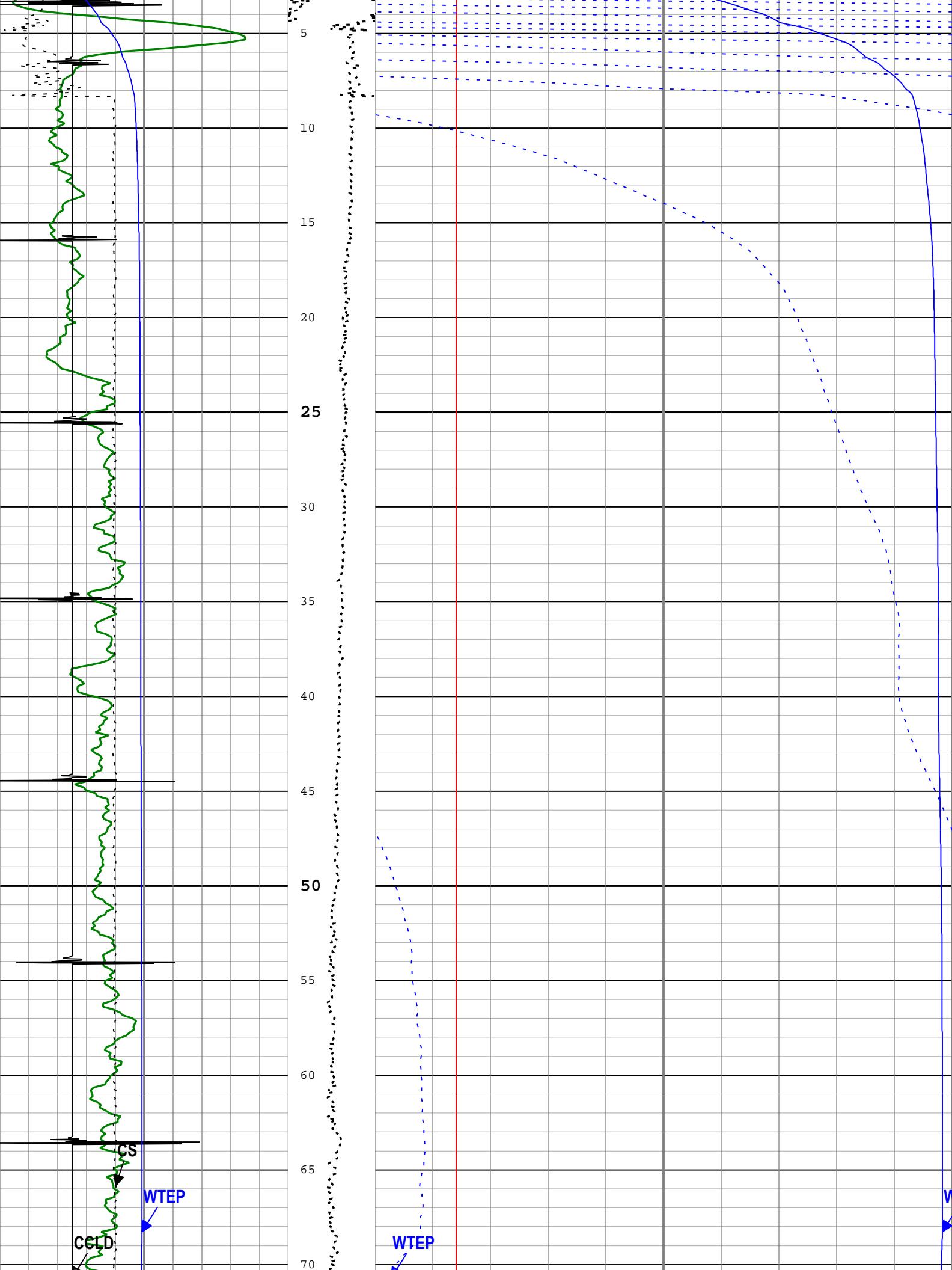


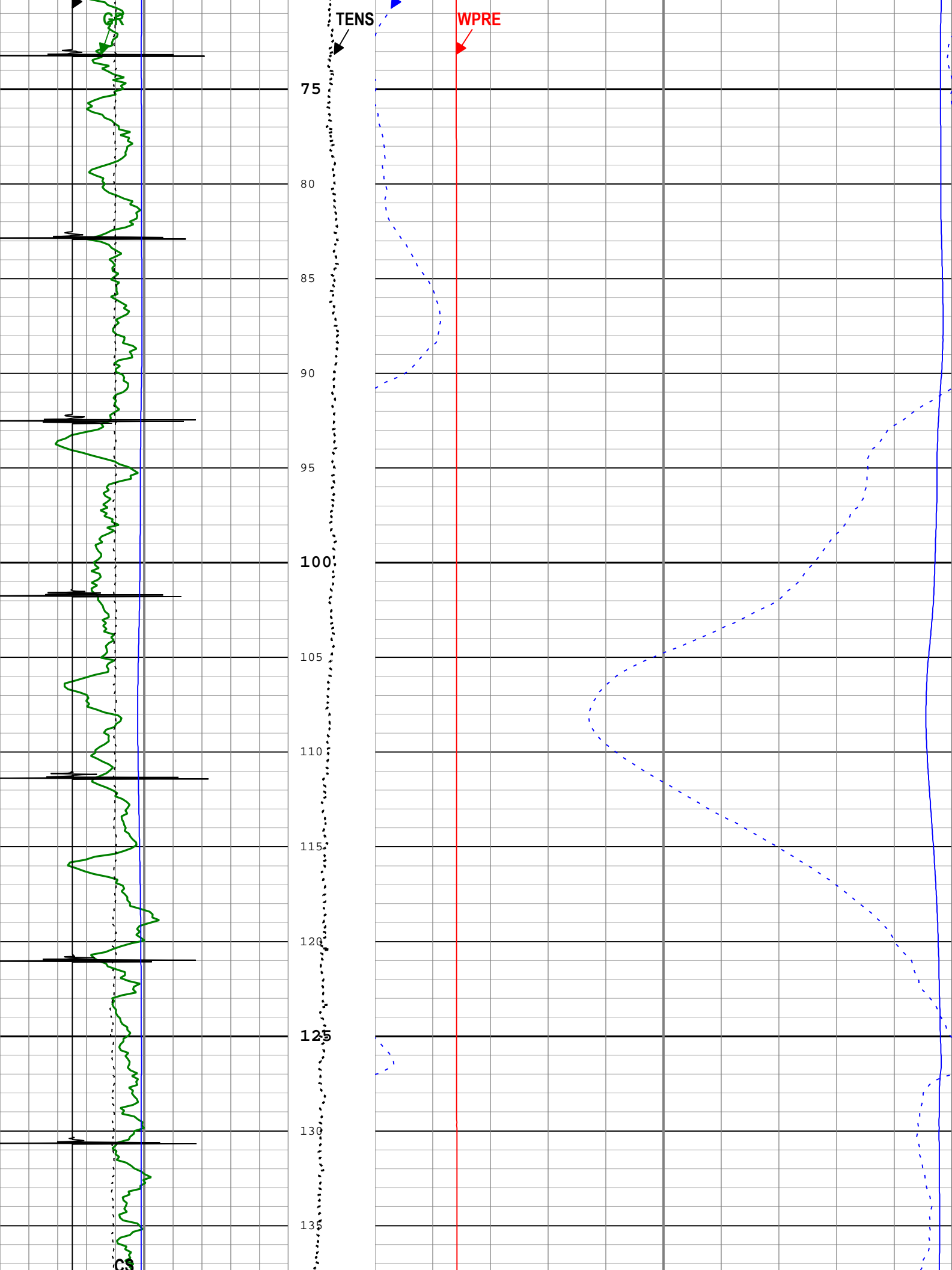
Cable
Tension
(TENS)

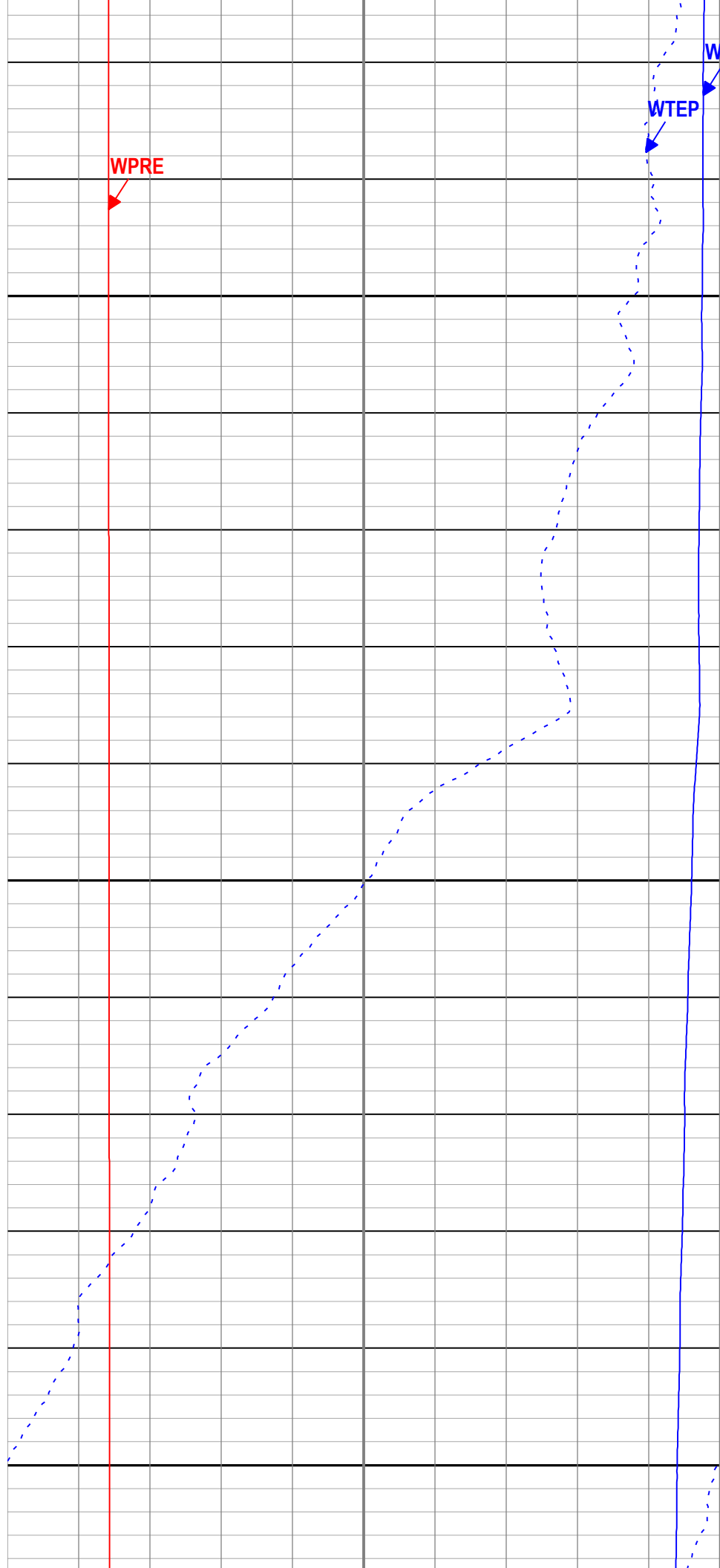
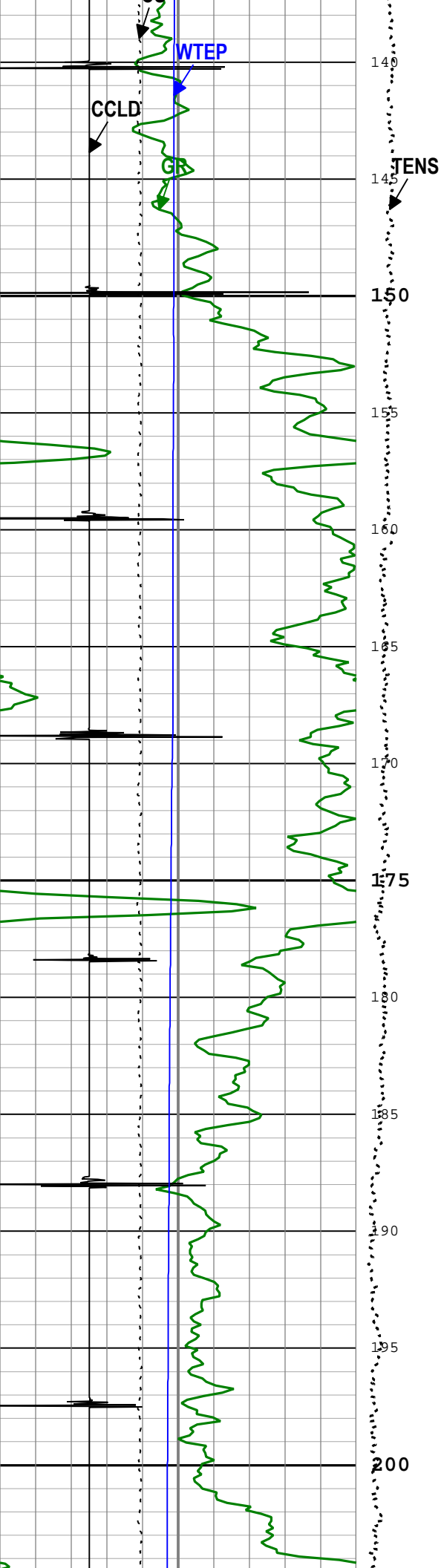


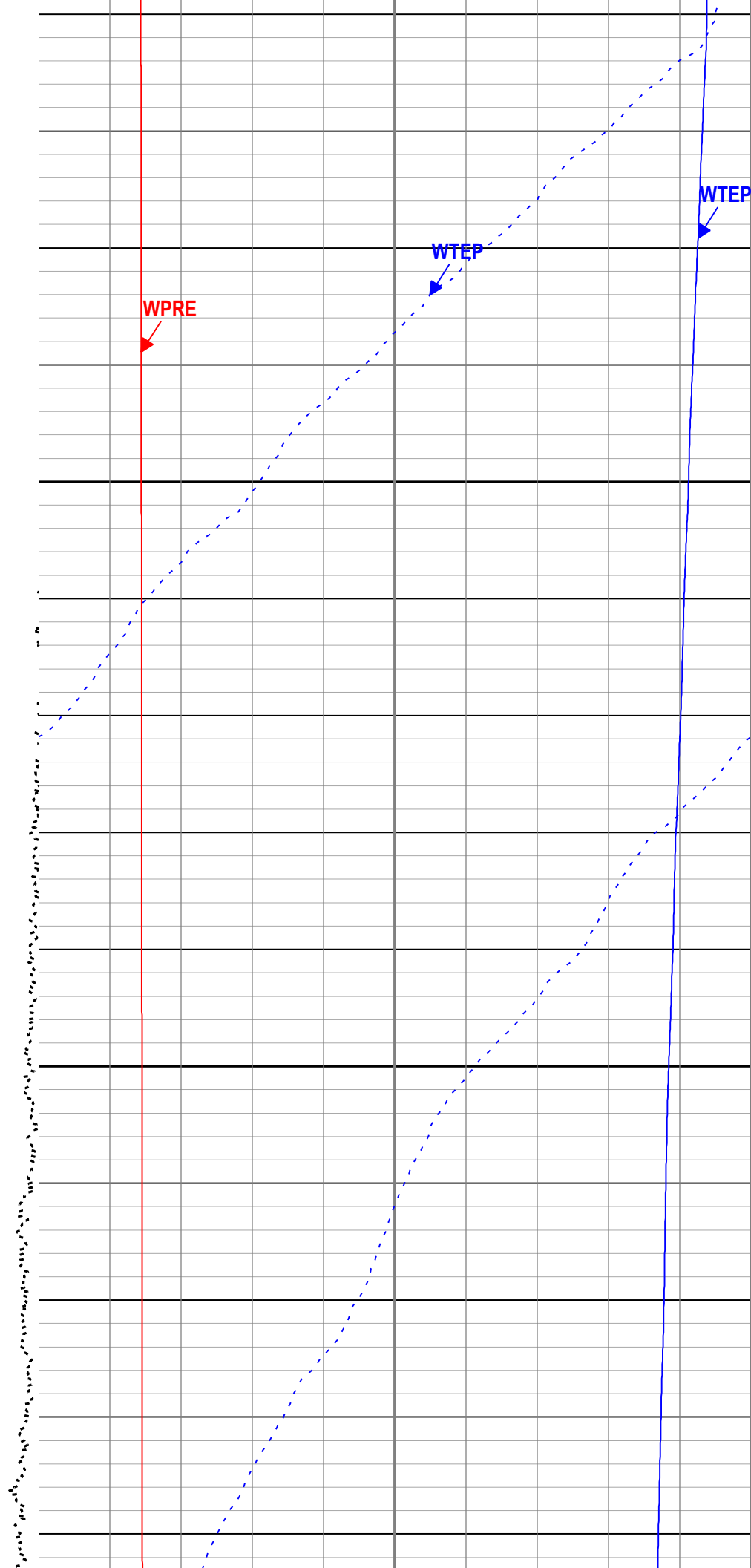
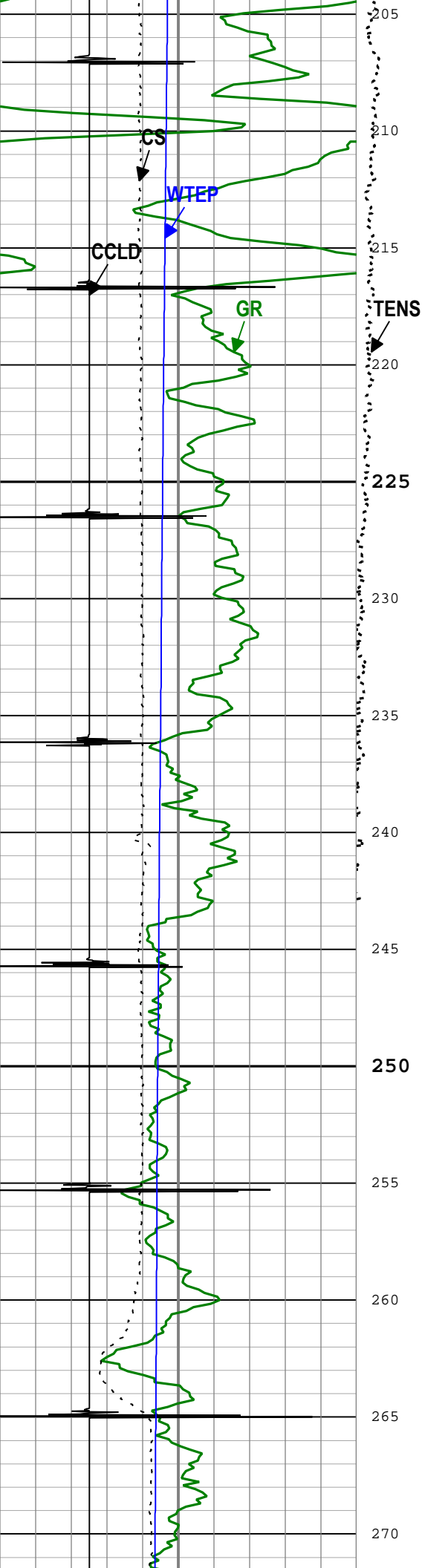
Well Pressure (WPRE) HBMS-B		
0	kPa	10000
Well Temperature (WTEP) HBMS-B		
-2	degC	2
Well Temperature (WTEP) HBMS-B		
0	degC	100

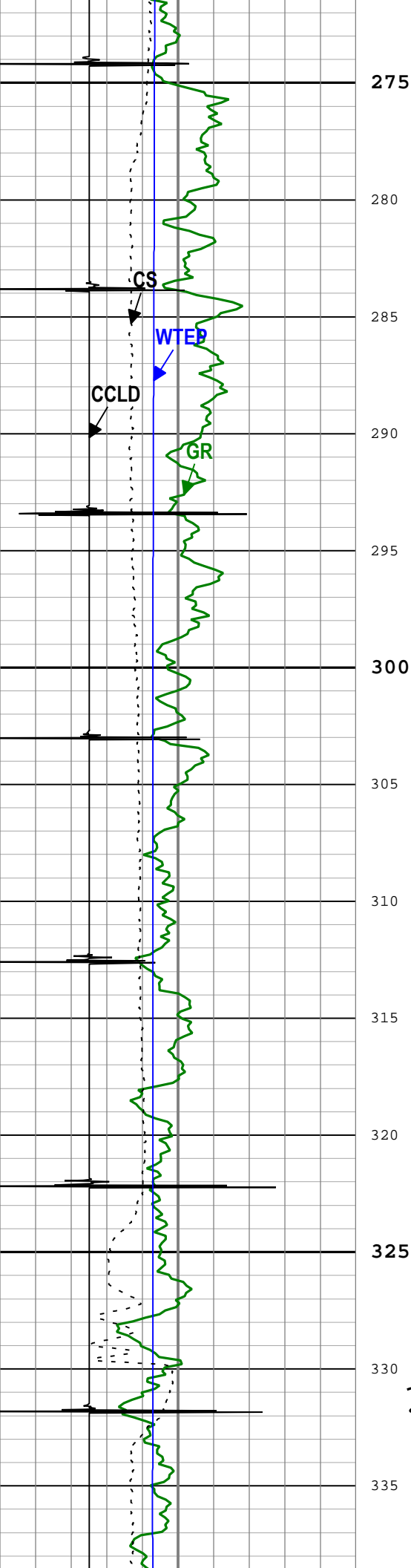












275

280

285

290

295

300

305

310

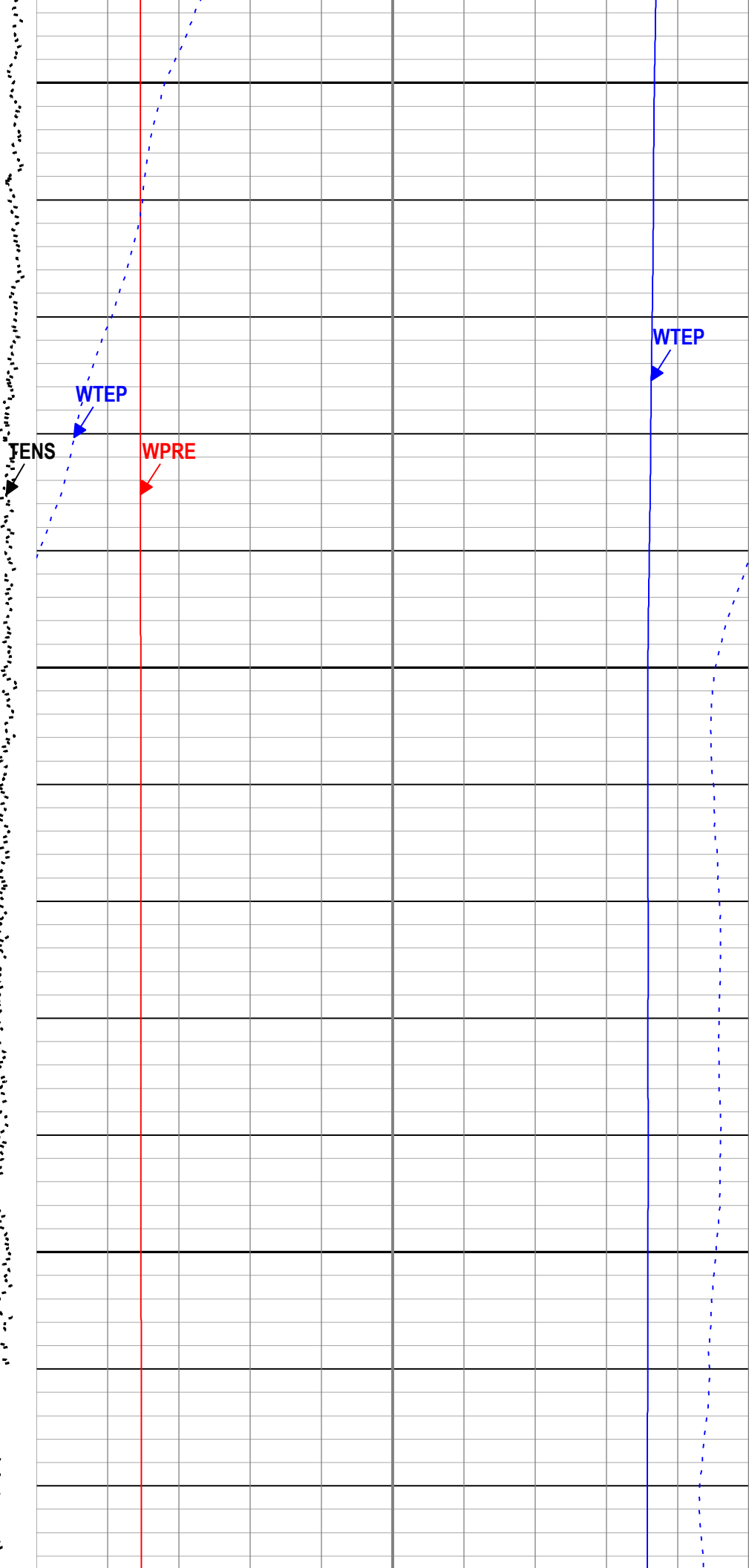
315

320

325

330

335

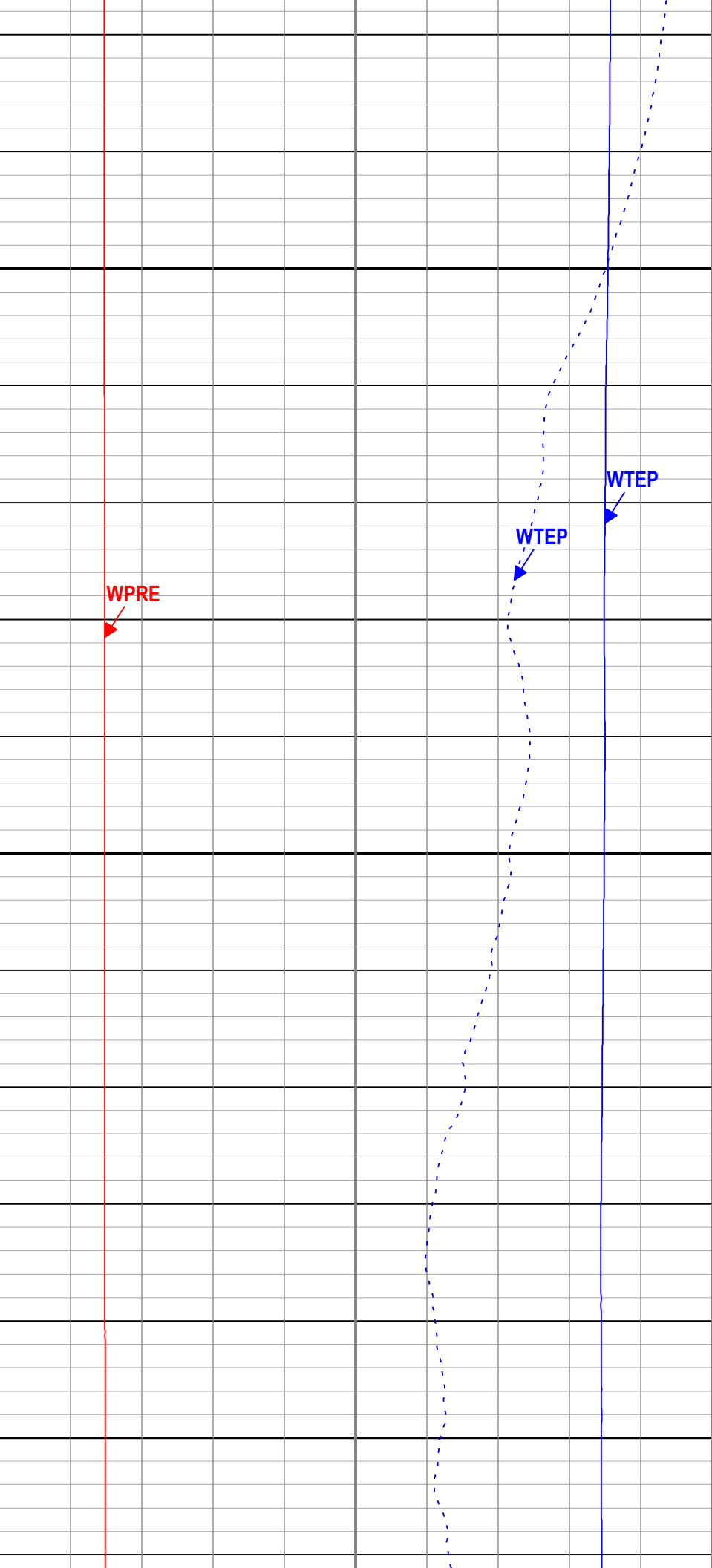
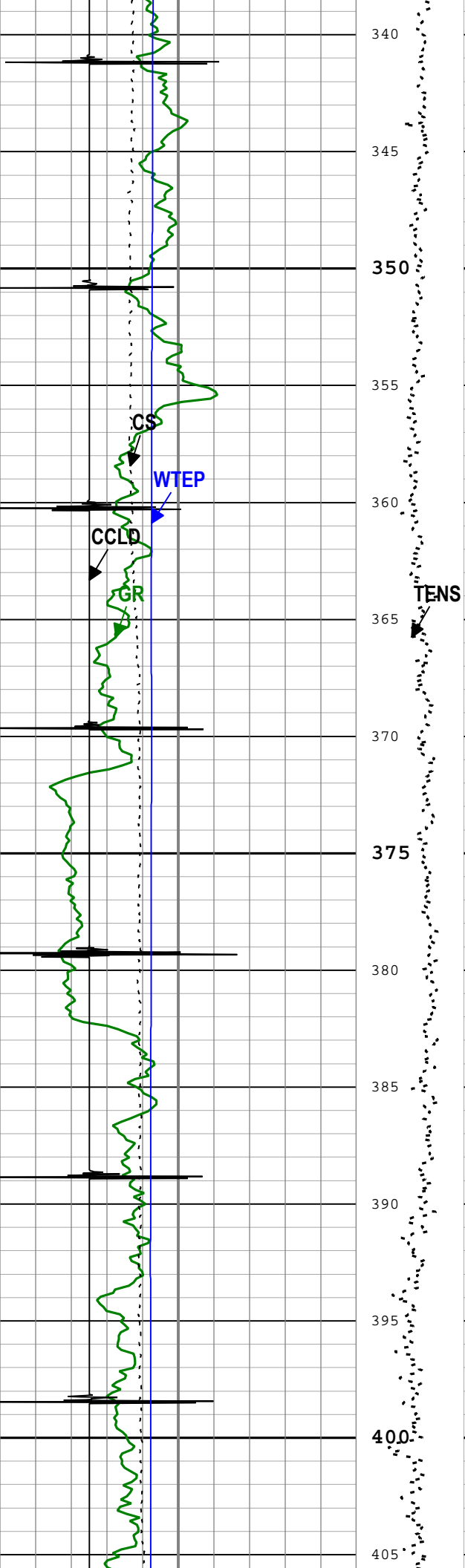


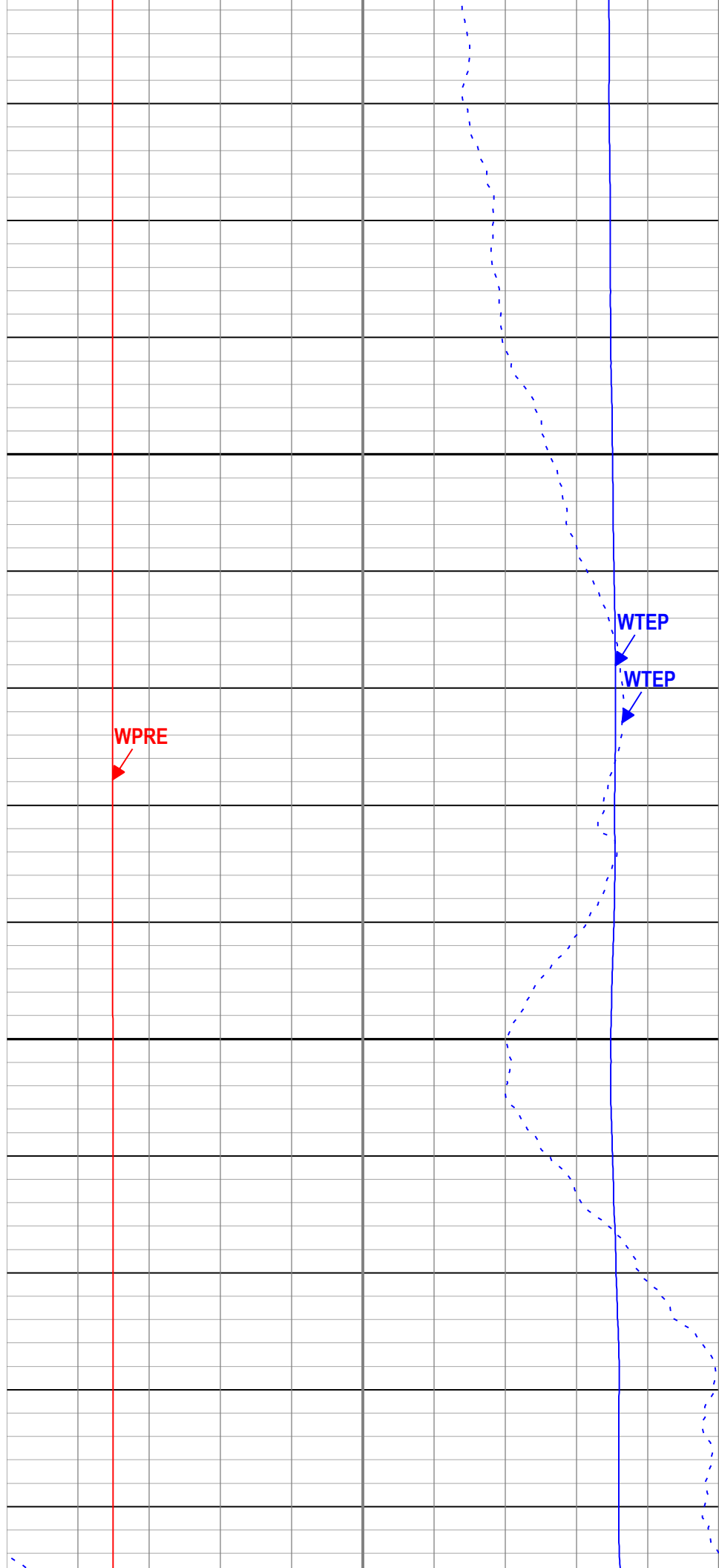
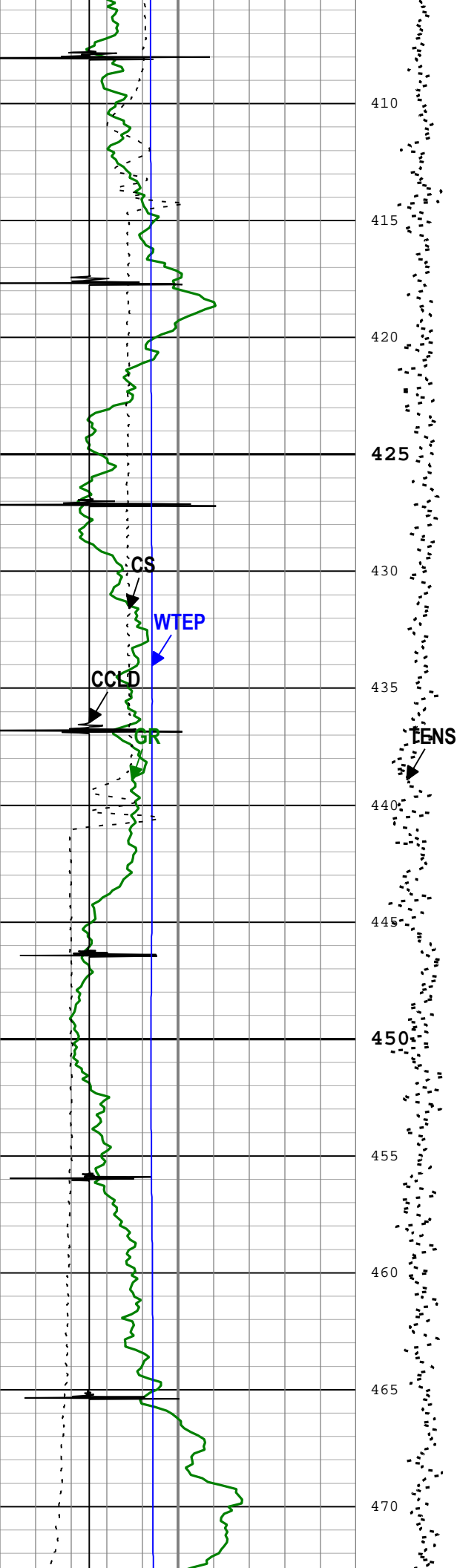
TENS

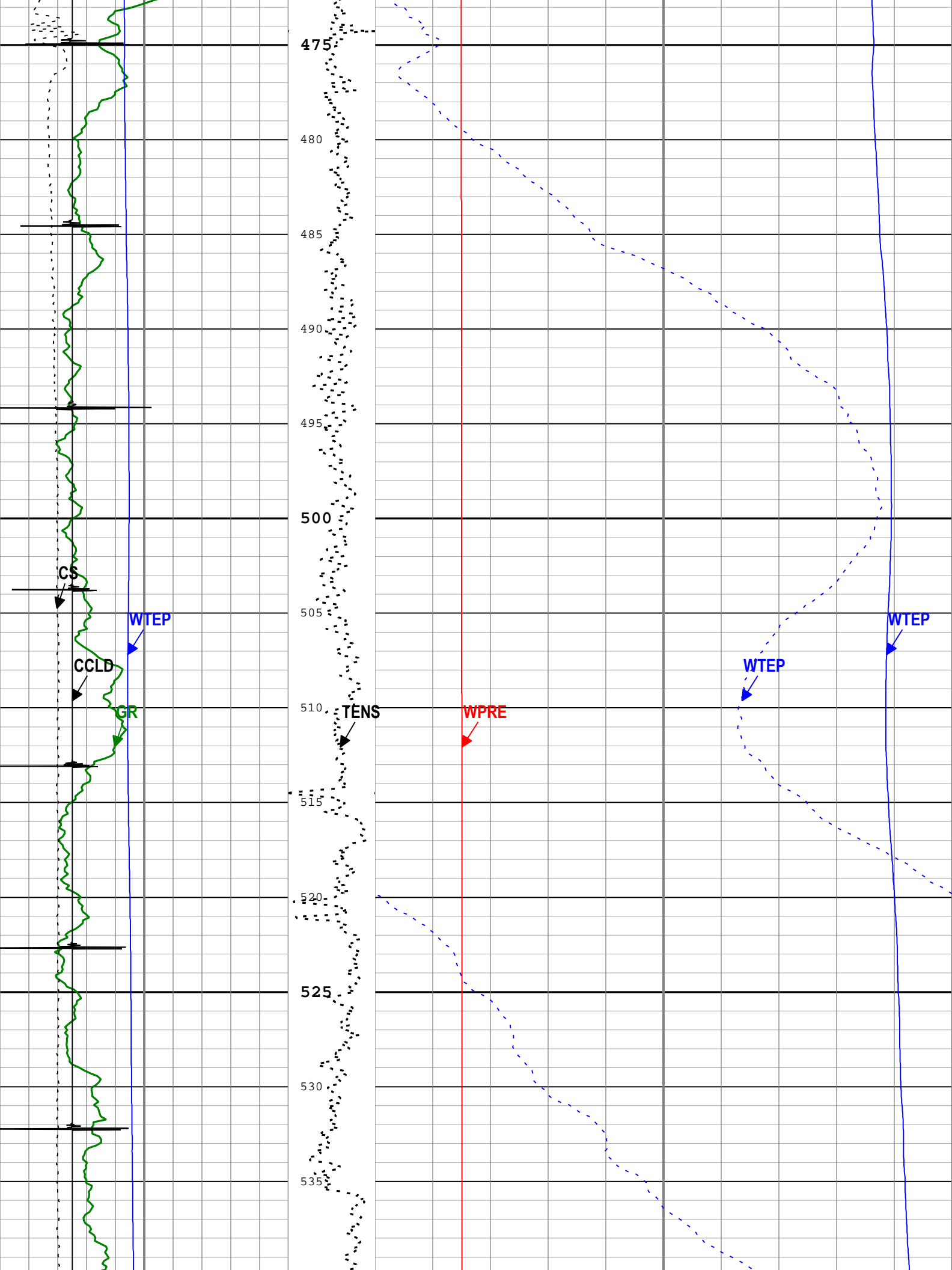
WPRE

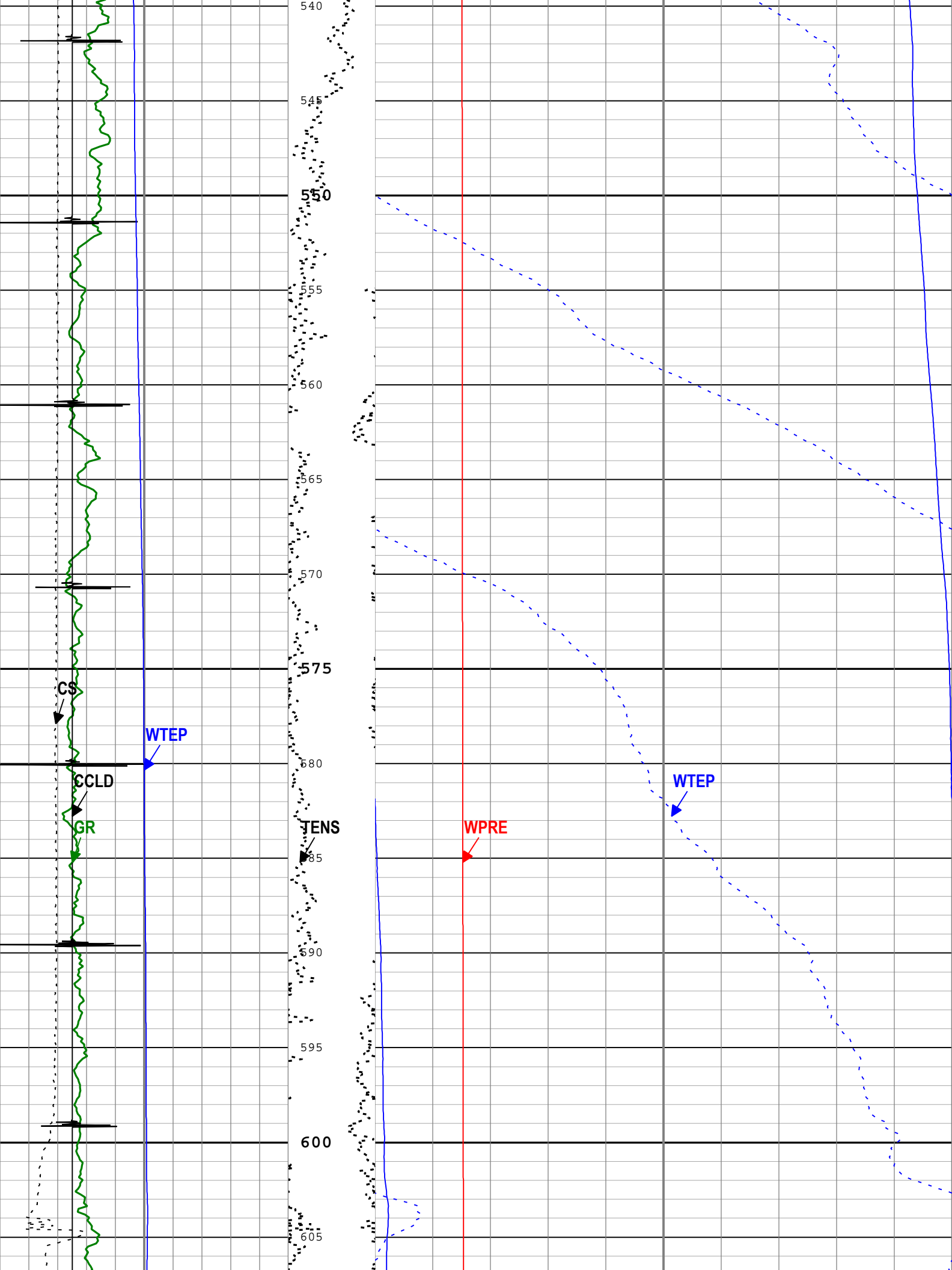
WTEP

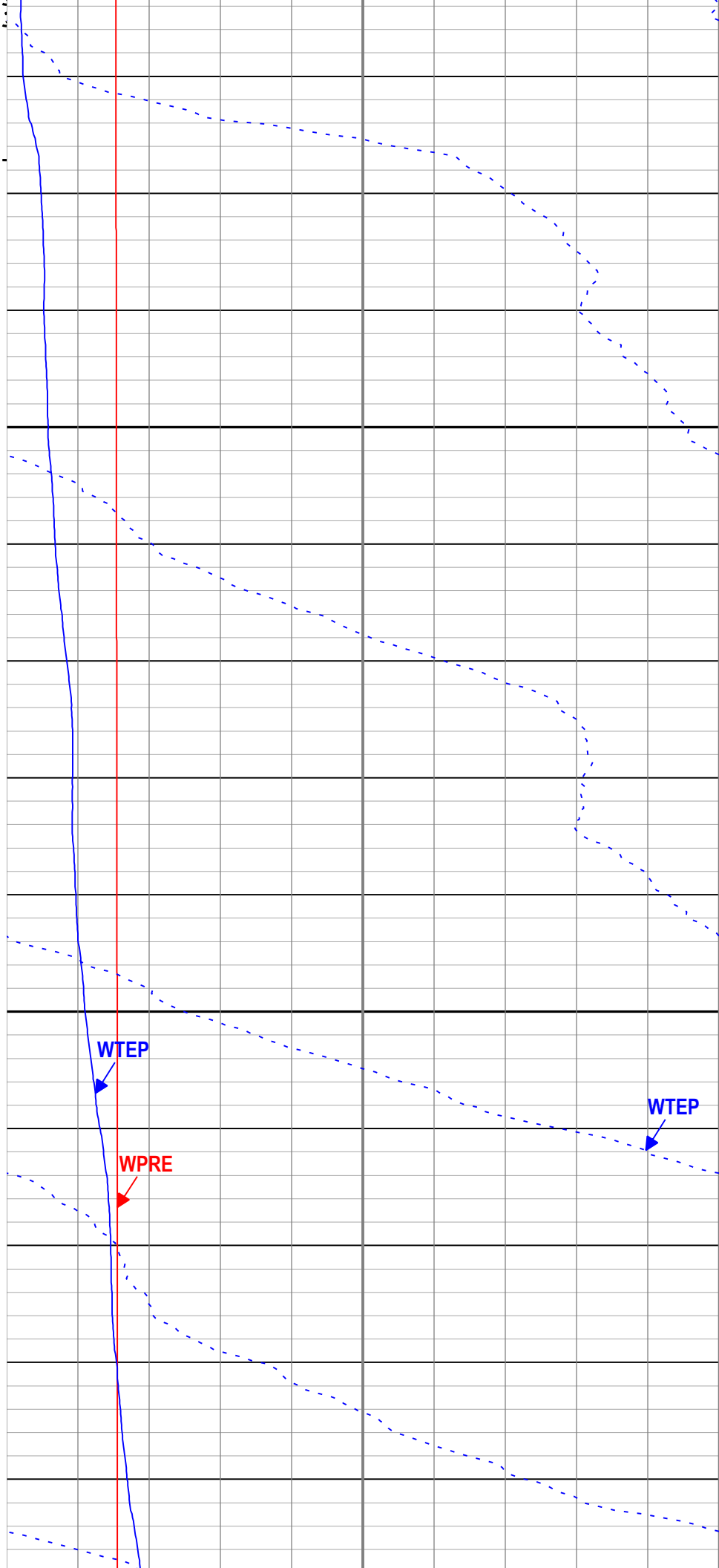
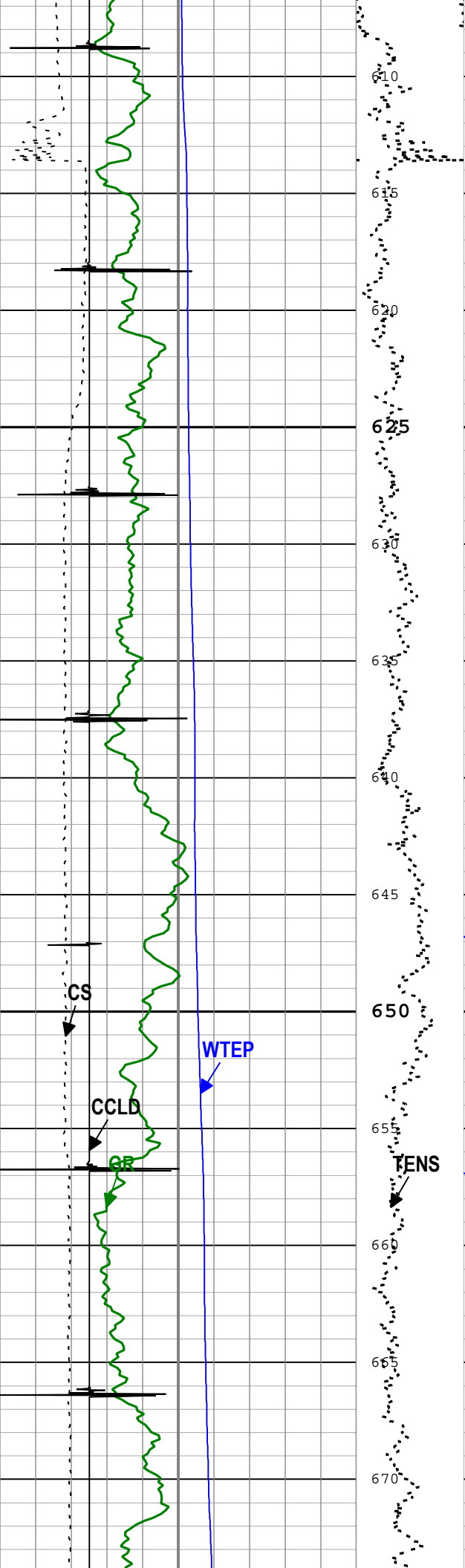
WTEP

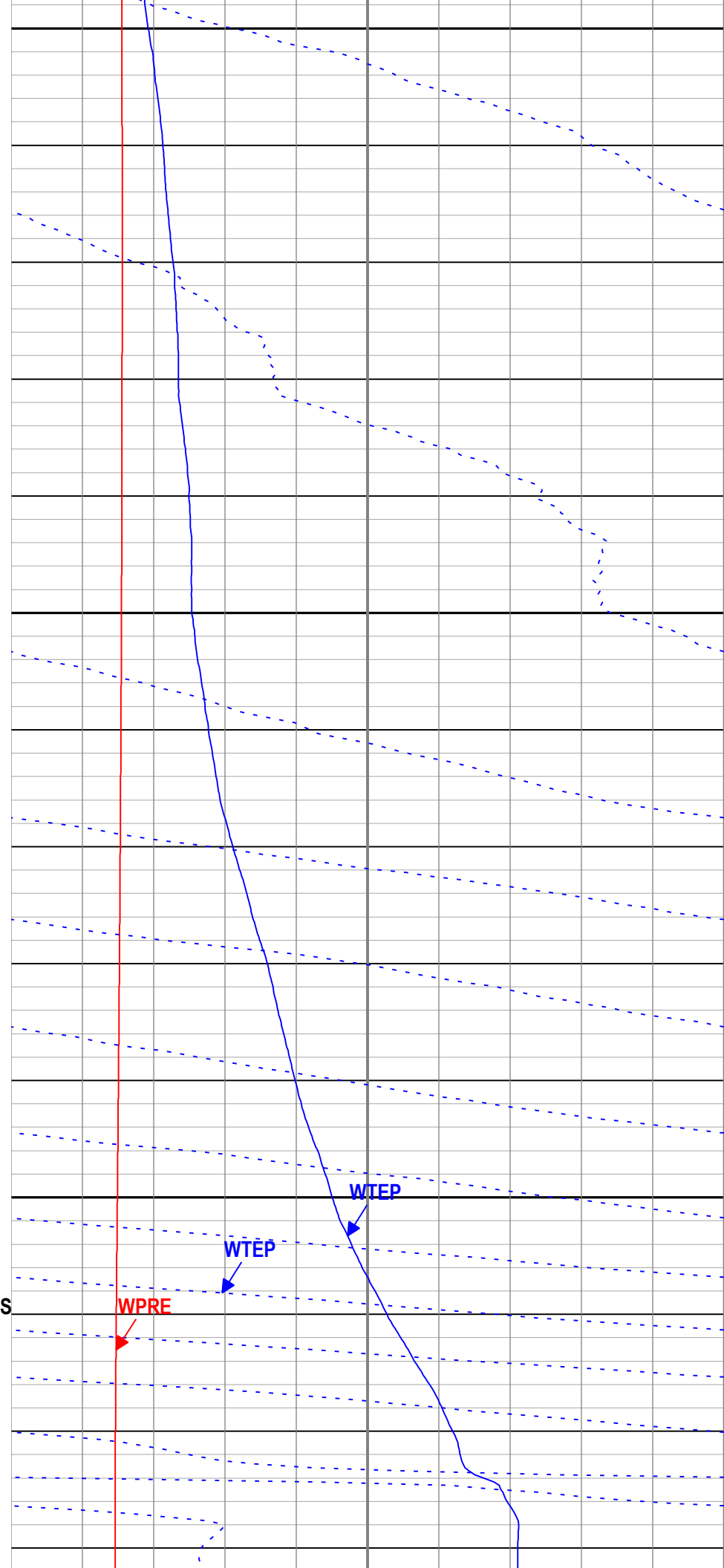
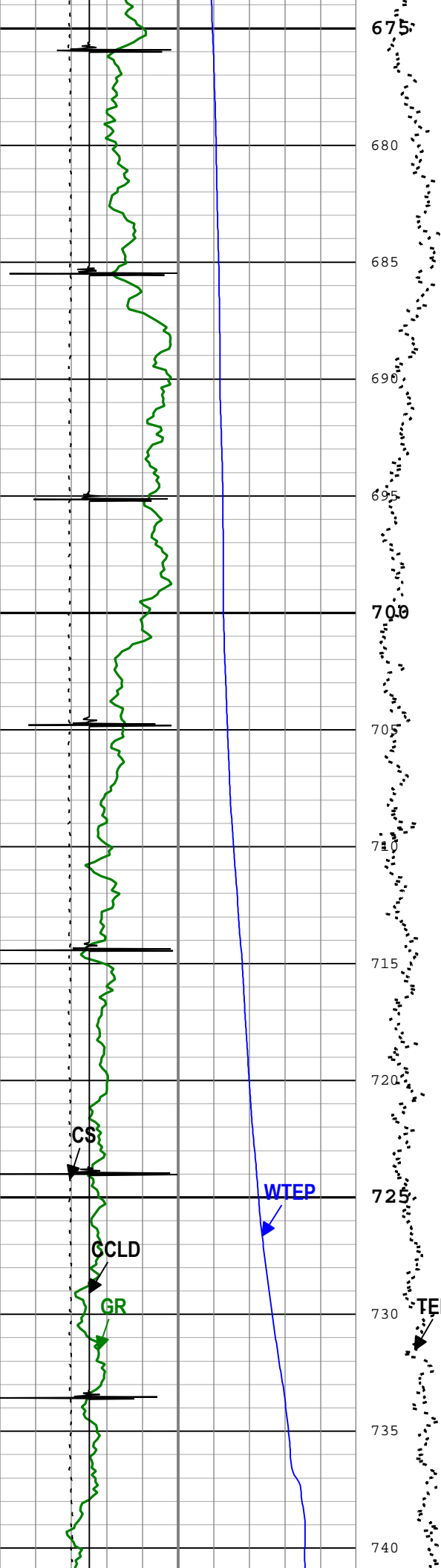


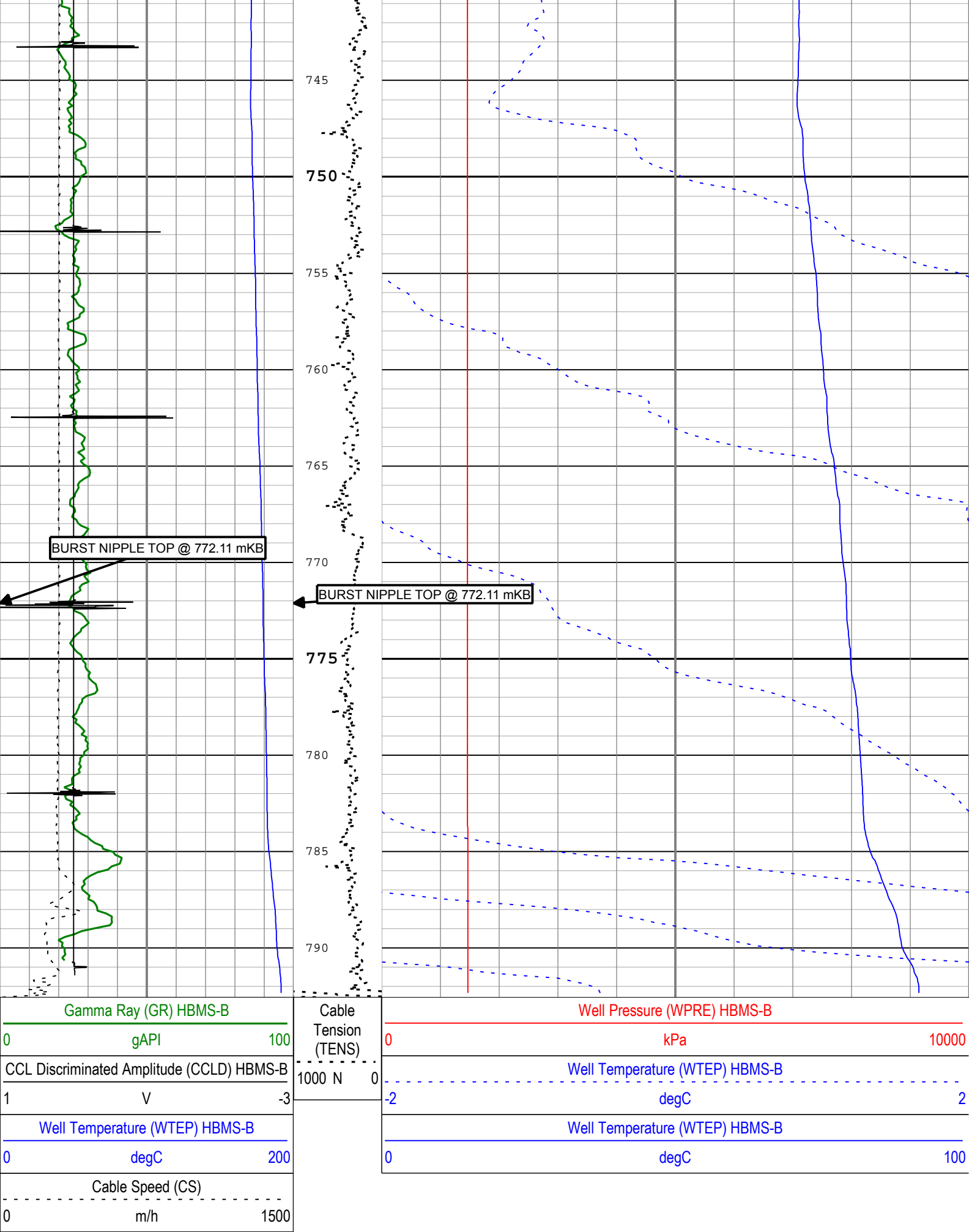












Channel Processing Parameters				
Tool Control Parameters				
ONE.1: Parameters				
Parameter	Description	Tool	Value	Unit
MAX_LOG_SPEED	Toolstring Maximum Logging Speed	WLSESSION	5486.4	m/h
PCCG	PSP Downhole CCL Gain	HBMS-B	12 dB	

Company:	IMPERIAL OIL RESOURCES	Schlumberger
Well:	IMP 07 T15-25 COLD LK 5-28-64-3	
Field:	ETHEL LAKE	
Province:	ALBERTA	

State:

MD

PRODUCTION ANALYSIS

TEMP/PRESSURE