

Company: IMPERIAL OIL RESOURCES LIMITED

Well: IMP 06 U08-24 COLD LK 1-3-65-3

Field: ETHEL LAKE

Province: ALBERTA Status: \*\*MD\*\*

TEMPERATURE LOG

Province:		ALBERTA	
Field:		ETHEL LAKE	
Location:		LSD: 8-3-65-3W4	
Well:		IMP 06 U08-24 COLD LK 1-3-65-3	
Company:		IMPERIAL OIL RESOURCES LIMITED	
<div>API Serial No.</div> <div>0356936</div> <div>Section:</div> <div>8-3</div> <div>Township:</div> <div>065</div> <div>Range:</div> <div>03W4</div>		Location:	
		LSD: 8-3-65-3W4	
		UWI: 103010306503W400	
		Elev.: K.B. 648.55 m	
		G.L. 643.50 m	
D.F.			
Permanent Datum:		Ground Level	
Log Measured From:		Kelly Bushing	
Drilling Measured From:		Kelly Bushing	
		Elev.: 5.05 m	
		643.50	
		above Perm. Datum	

Logging Date	28-Feb-2018		
Run Number	1		
Depth Driller	620.00 m		
Schlumberger Depth	576.70 m		
Bottom Log Interval	575.80 m		
Top Log Interval	5.05 m		
Casing Fluid Type	Water		
Salinity			
Density	1000 kg/m3		
Fluid Level	2.44 m		
BIT/CASING/TUBING STRING			
Bit Size	250.83 mm		
From	25.05 m		
To	620.00 m		
Casing/Tubing Size	177.8 mm		
Weight	34.23 kg/m		
Grade	L80		
From	25.05 m		
To	620.00 m		
Max Recorded Temperatures			
Logger on Bottom	Time	11:19:00	
Unit Number	Location:	NISKU PS	
Recorded By	CODY FREY		
Witnessed By	JARED TANGUAY		

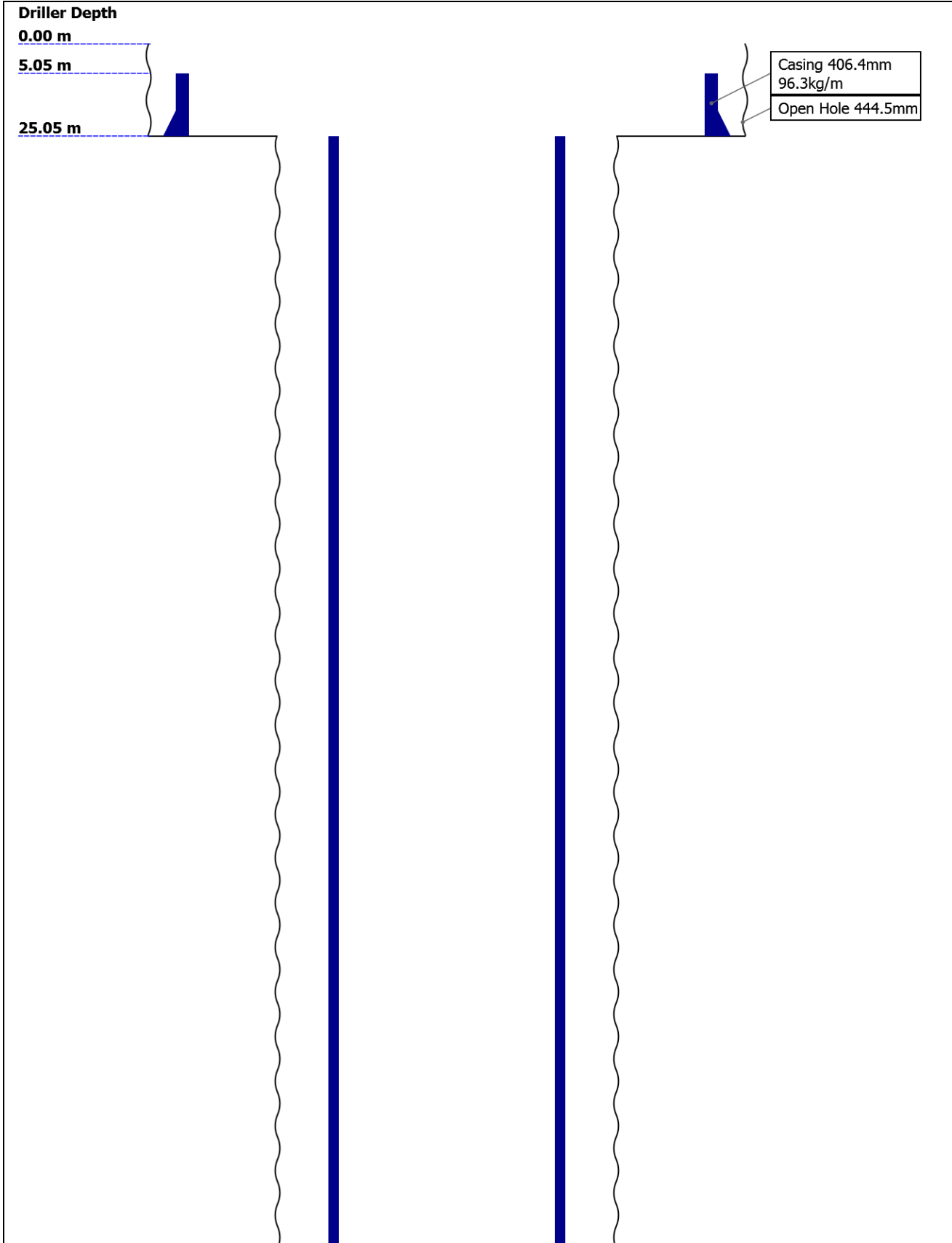
Disclaimer

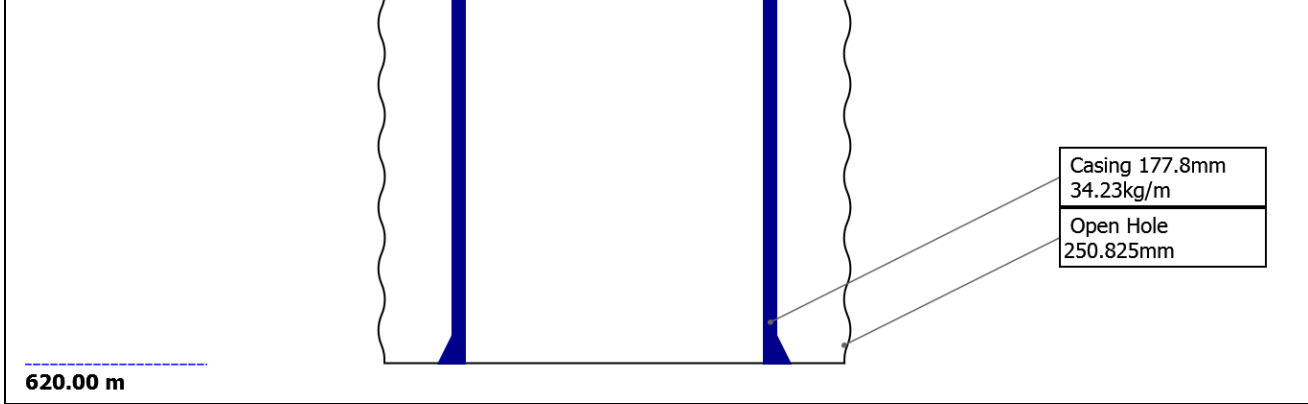
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Well Sketch






Borehole Size/Casing/Tubing Record

Bit						
Bit Size ( mm )	444.5	250.825				
Top Driller ( m )	0	25.05				
Top Logger ( m )	0	25.05				
Bottom Driller ( m )	25.05	620				
Bottom Logger ( m )	25.05	620				
Casing						
Size ( mm )	406.4	177.8				
Weight ( kg/m )	96.3	34.23				
Inner Diameter ( mm )	387.133	161.797				
Grade	K55	L80				
Top Driller ( m )	5.05	25.05				
Top Logger ( m )	5.05	25.05				
Bottom Driller ( m )	25.05	620				
Bottom Logger ( m )	25.05	620				

Remarks and Equipment Summary

1: Toolstring				1: Remarks	
Equip name PEH-E	Length 5.86		MP name	Offset	TEMPERATURE LOGGED DOWN AT 9 M/MIN
					LOGGED FROM SURFACE DOWN TO 575.1 MKB
AH-38 EQF-43	5.35 5.26				CASING PRESSURE BEFORE LOGGING 0 KPA
					CASING PRESSURE AFTER LOGGING 0 KPA
					FLUID LEVEL FOUND AT SURFACE
					MAX TEMPERATURE 91.3 C AT 575.1 MKB
					YOUR CREW TODAY WAS C.FREY, B. FAIRHURST
					THANK YOU FOR CHOOSING SCHLUMBERGER
HBMS-B:2838	3.43				
HUDH-A:2838					
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>			
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Depth Summary										
		1								
Depth Measuring Device										
Type		IDW-B								
Serial Number										
Calibration Date										
Calibrator Serial Number										
Calibration Cable Type										
Wheel Correction 1		0								
Wheel Correction 2		0								
Tension Device										
Type		CMTD-B/A								
Serial Number										
Calibration Date										
Calibrator Serial Number										
Number of Calibration Points		0								
Logging Cable										
Type		1-33A-SLC								
Serial Number										
Length		0.01 m								
Conveyance Type		Wireline								
Rig Type		SERVICE RIG								
1:Depth Control Parameters					Depth Control Remarks					
Log Sequence		Subsequent Log In the Well			ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES FOLLOWED					
Reference Log Name		FIRST RUN IN WELL			IDW USED AS PRIMARY DEPTH CONTROL					
Reference Log Run Number					Z-CHART USED AS SECONDARY DEPTH CONTROL					
Reference Log Date		28-Feb-2018								
1										
TEMERPATURE DOWN										
Software Version										
Acquisition System						Version				
Maxwell 2017 SP2						7.2.87778.3100				
Application Patch						Wireline_NPD-EMIT-C-2017SP2_7.2.90108				
Pass Summary										
Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data	

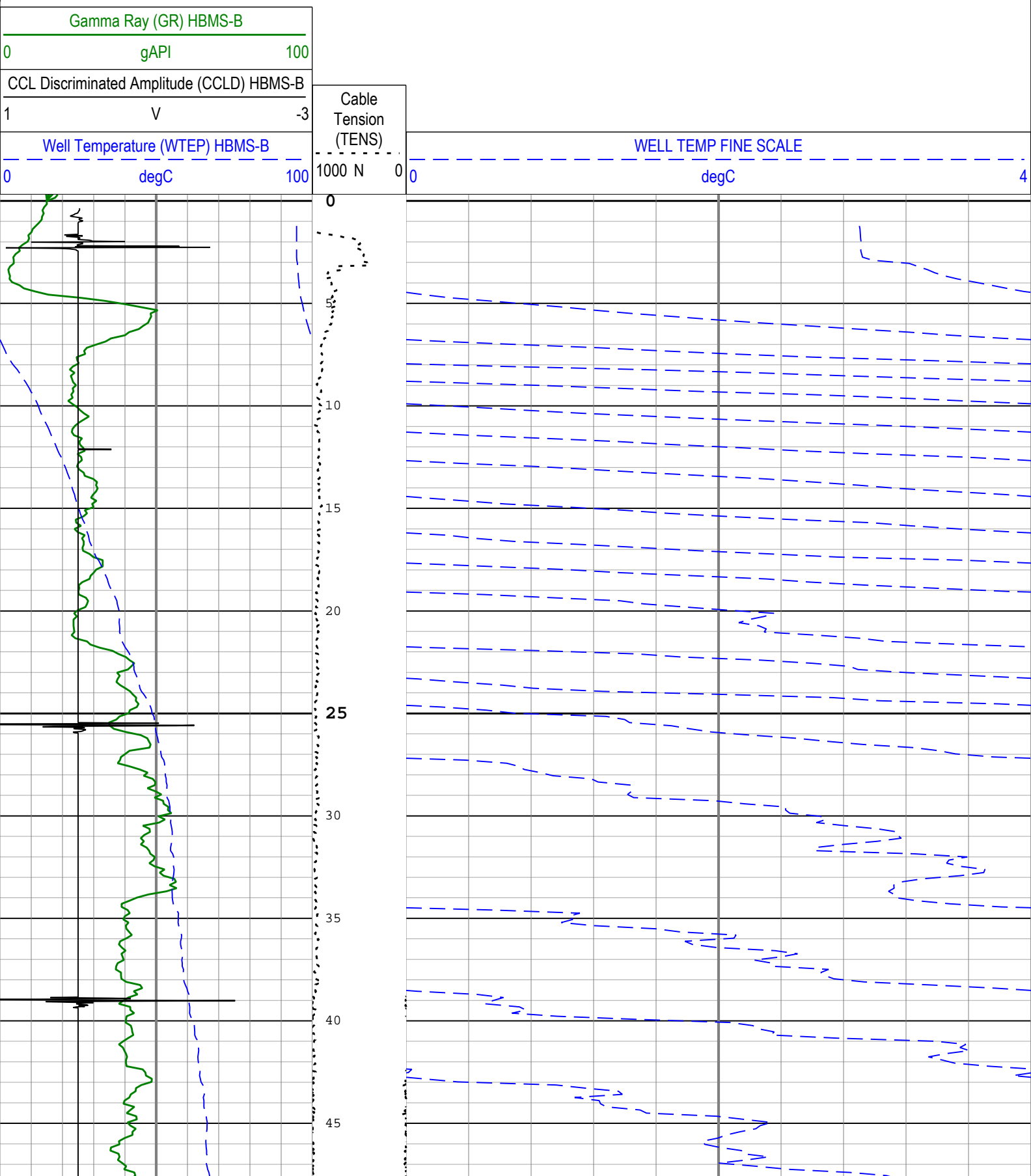
1	Log[1]:Down	Down	1.52 m	575.26 m	28-Feb-2018 9:26:45 AM	28-Feb-2018 10:22:20 AM	ON	0.00 m	No
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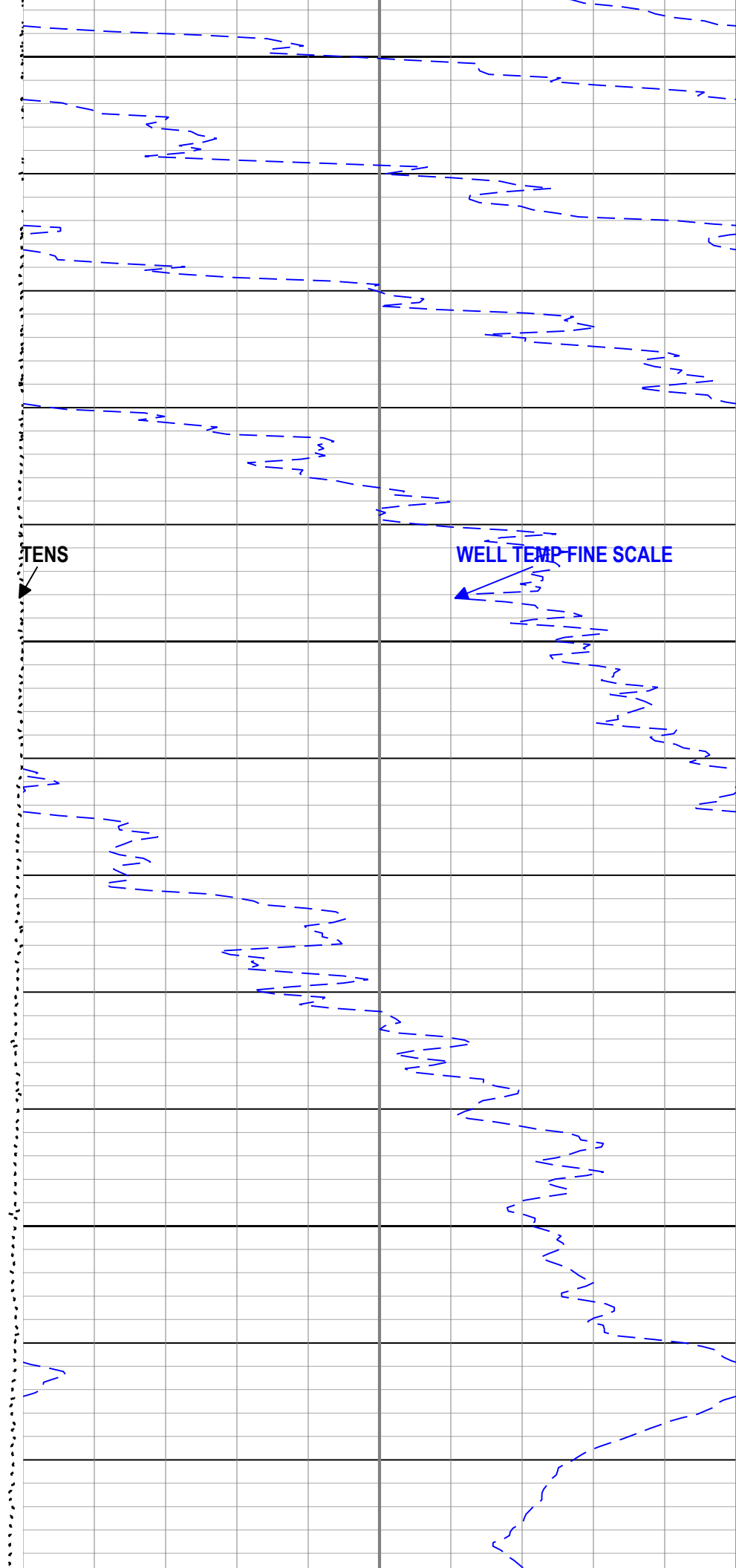
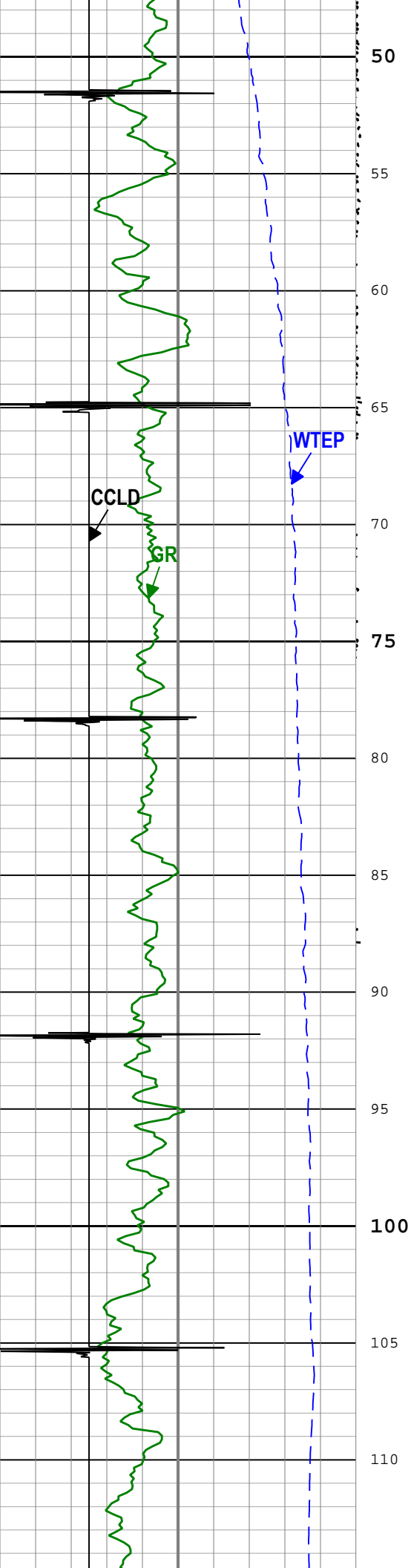
All depths are referenced to toolstring zero

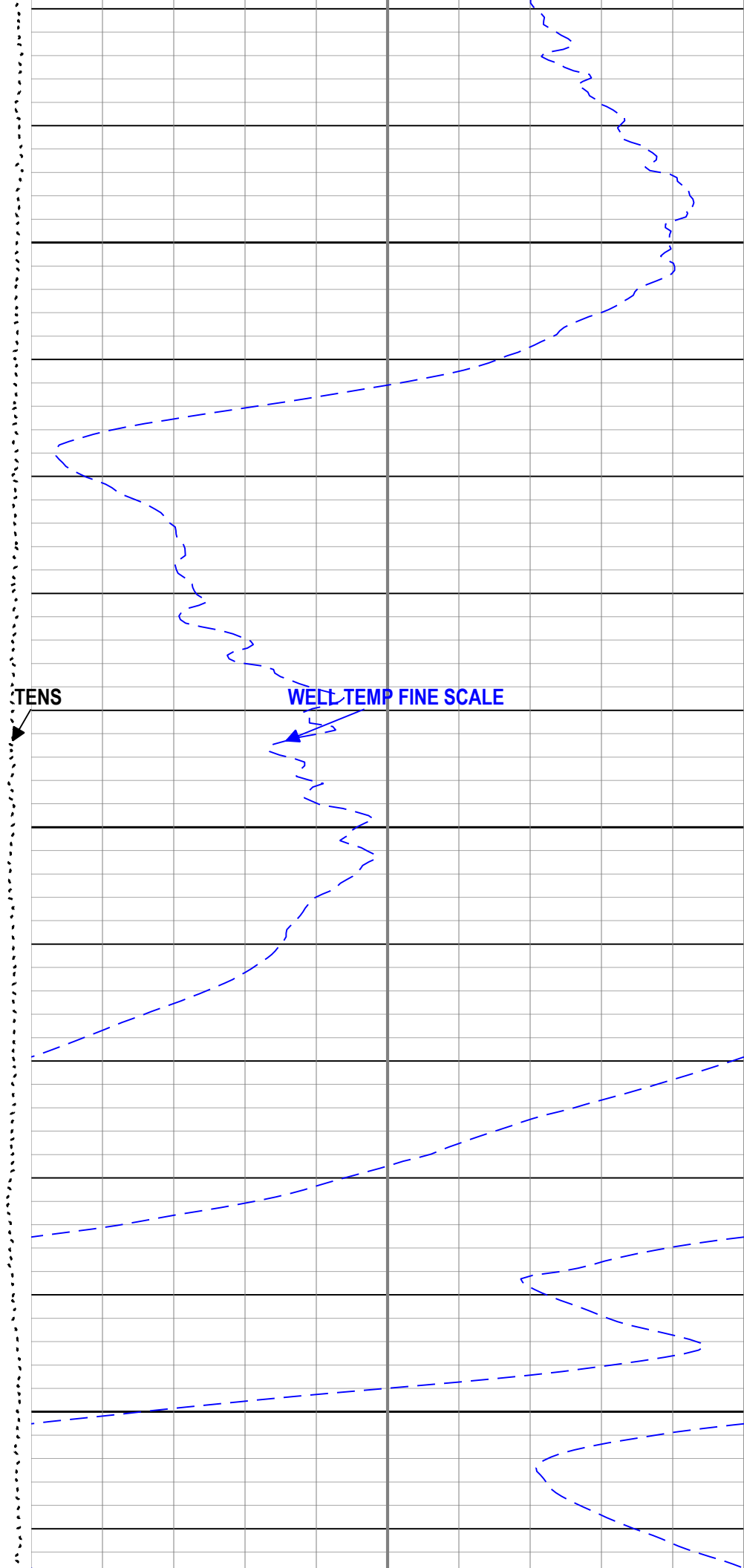
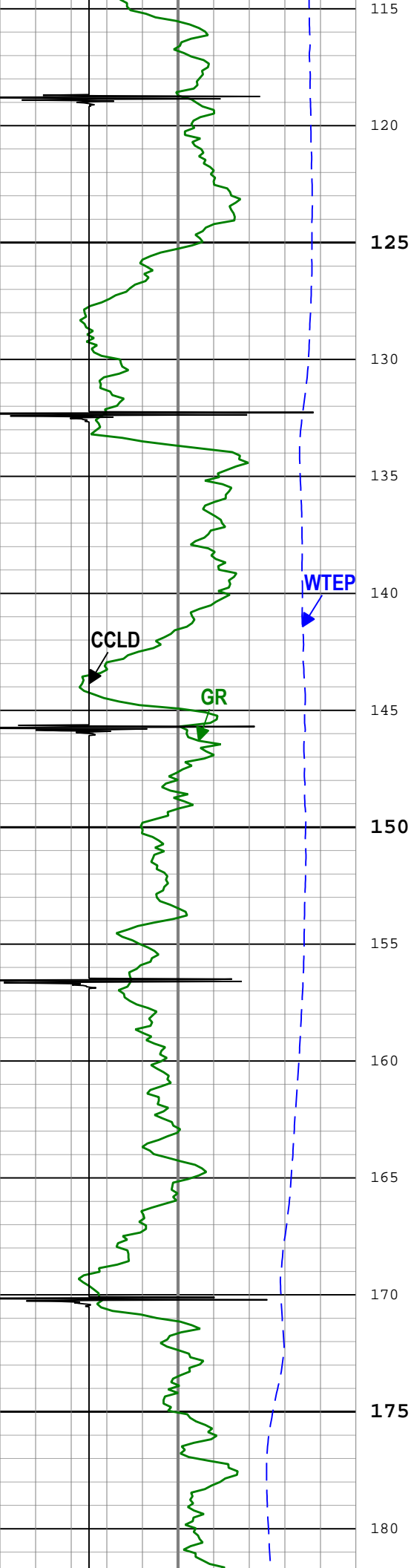
Log	Company:IMPERIAL OIL RESOURCES LIMITED	Well:IMP 06 U08-24 COLD LK 1-3-65-3	1: Log[1]:Down:S004
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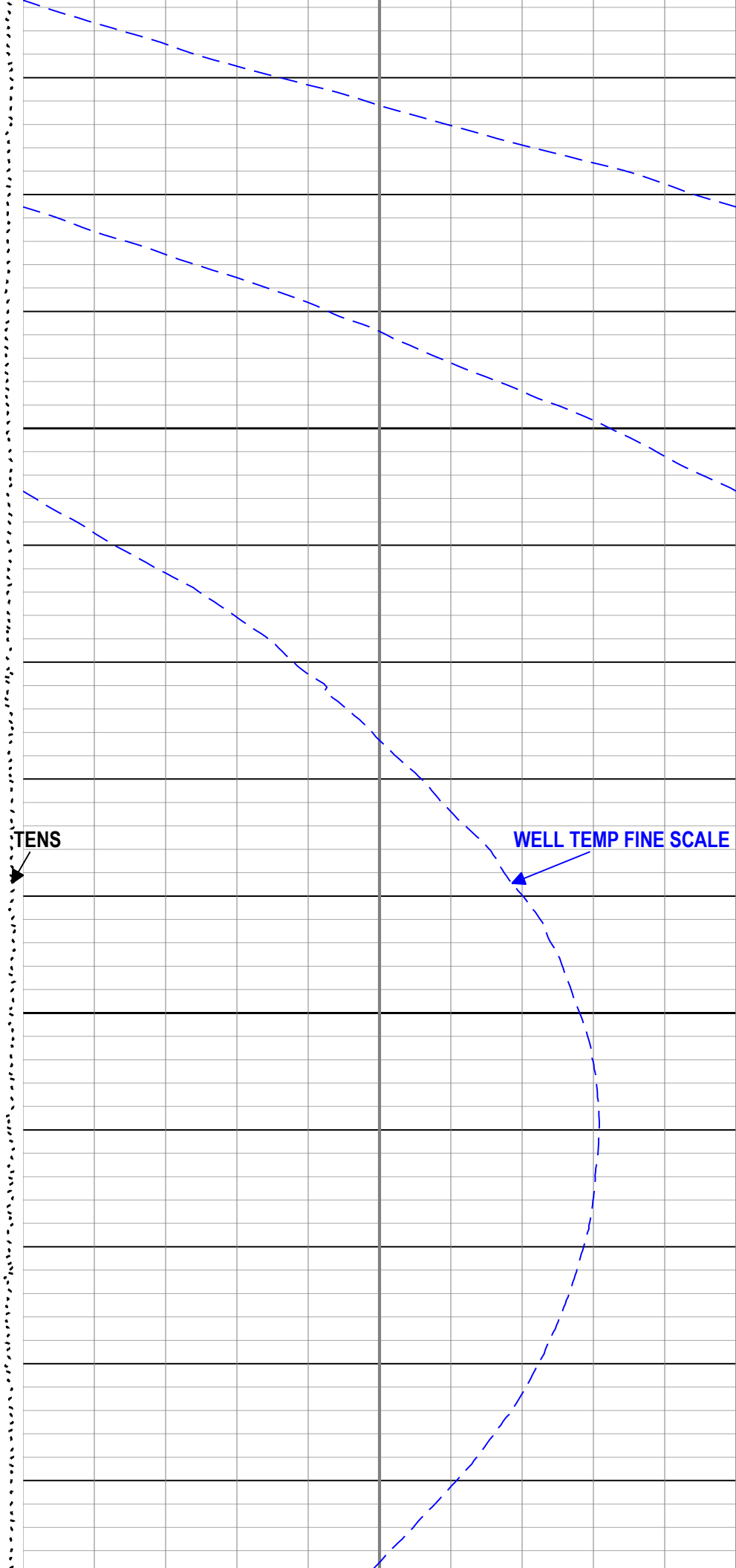
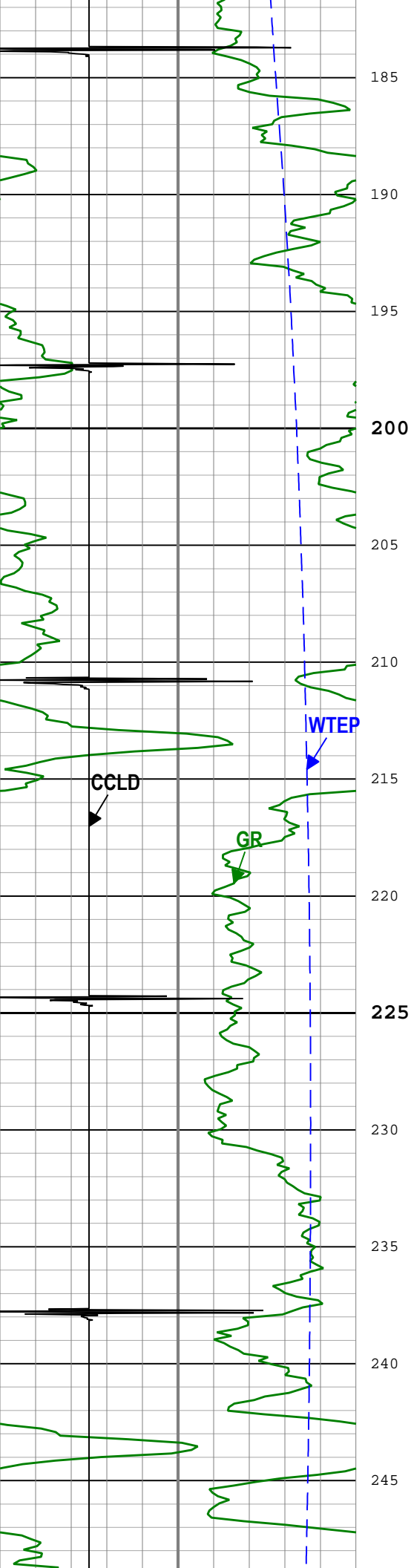
Description: PSP Depth    Format: Log ( TEMP DOWN PASS imperial )    Index Scale: 1:240    Index Unit: m    Index Type: Measured Depth    Creation Date: 28-Feb-2018 10:51:28

TIME\_1900 - Time Marked every 60.00 (s)

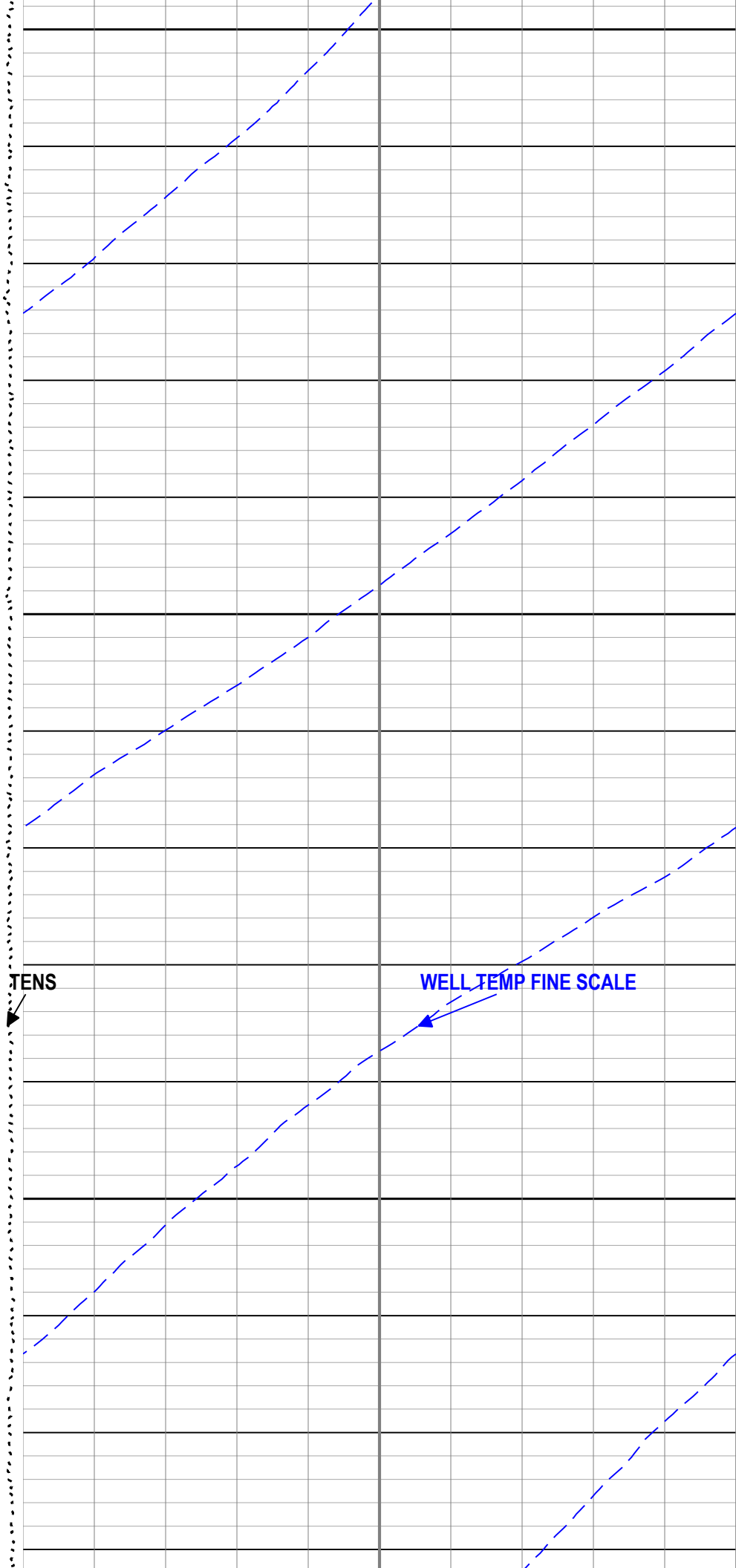
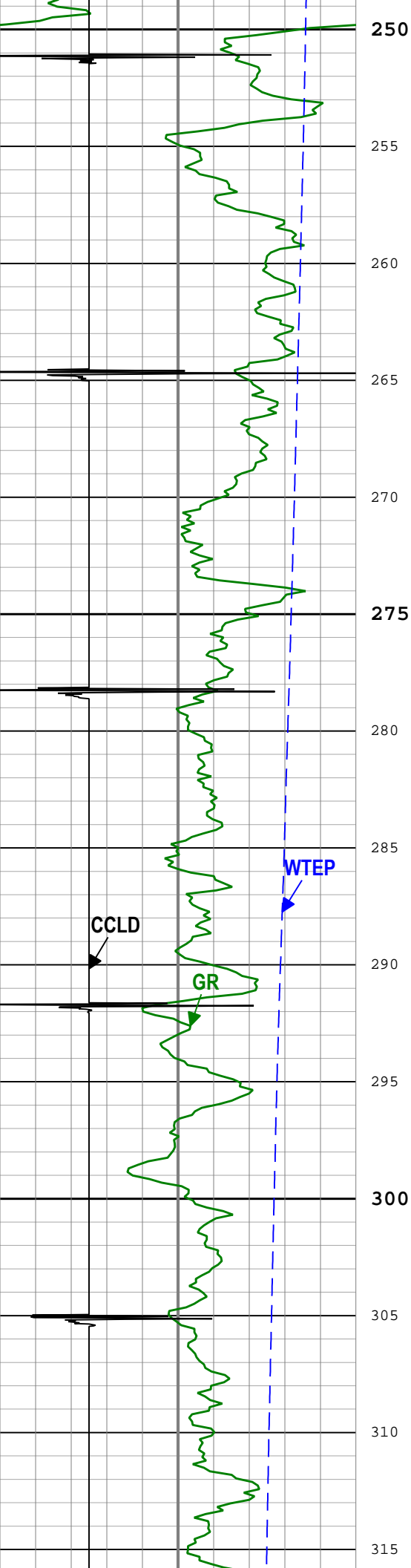


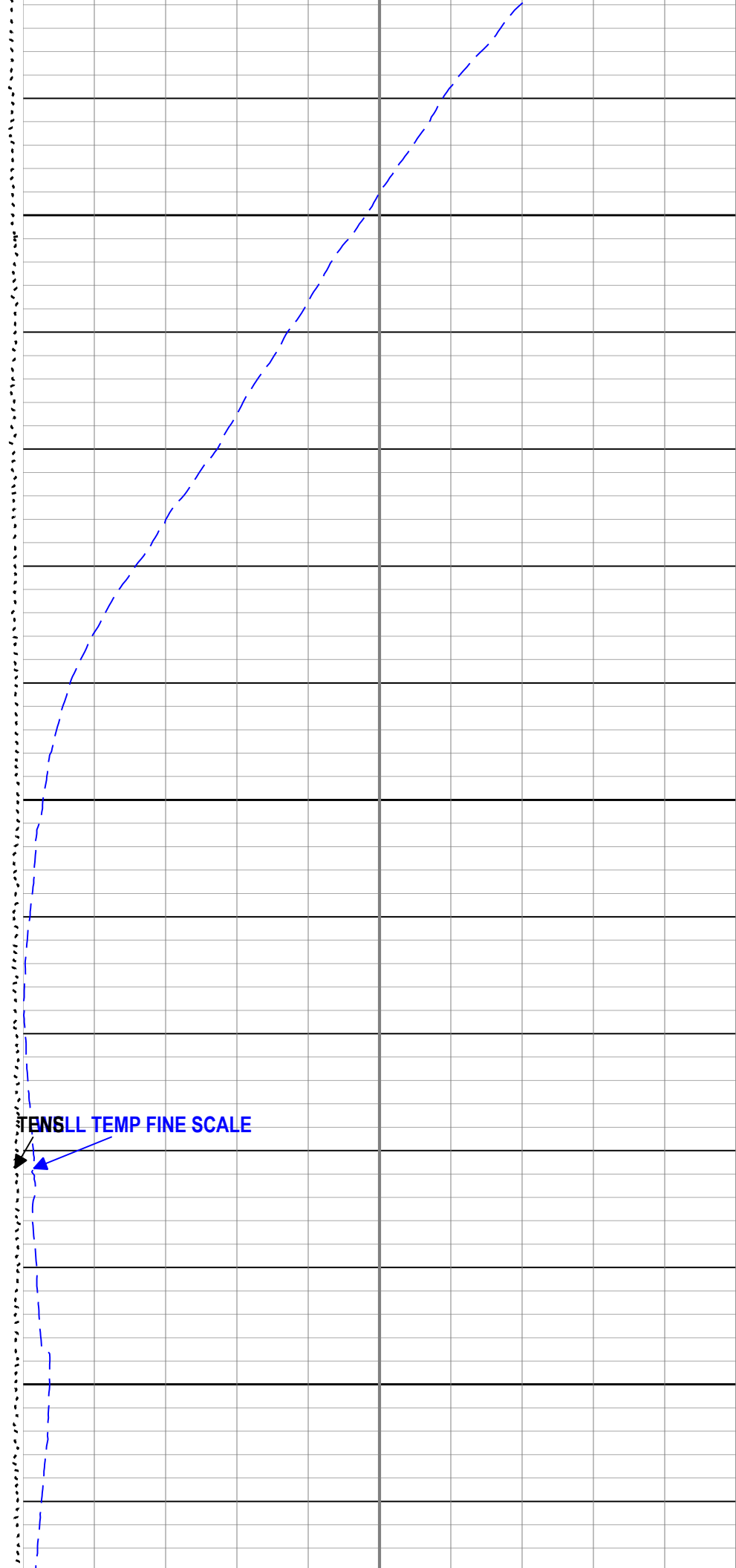
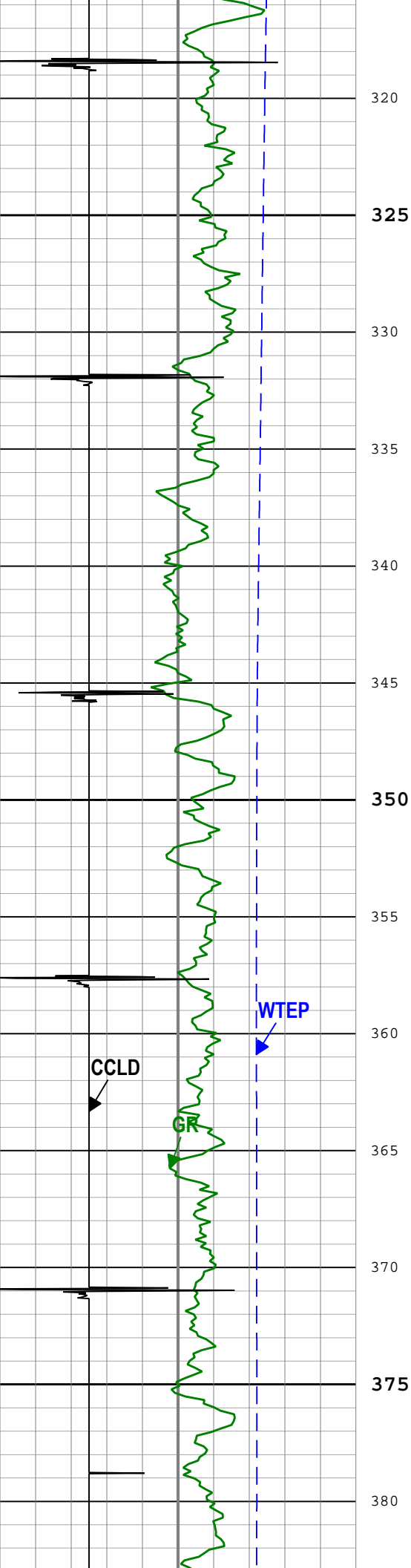


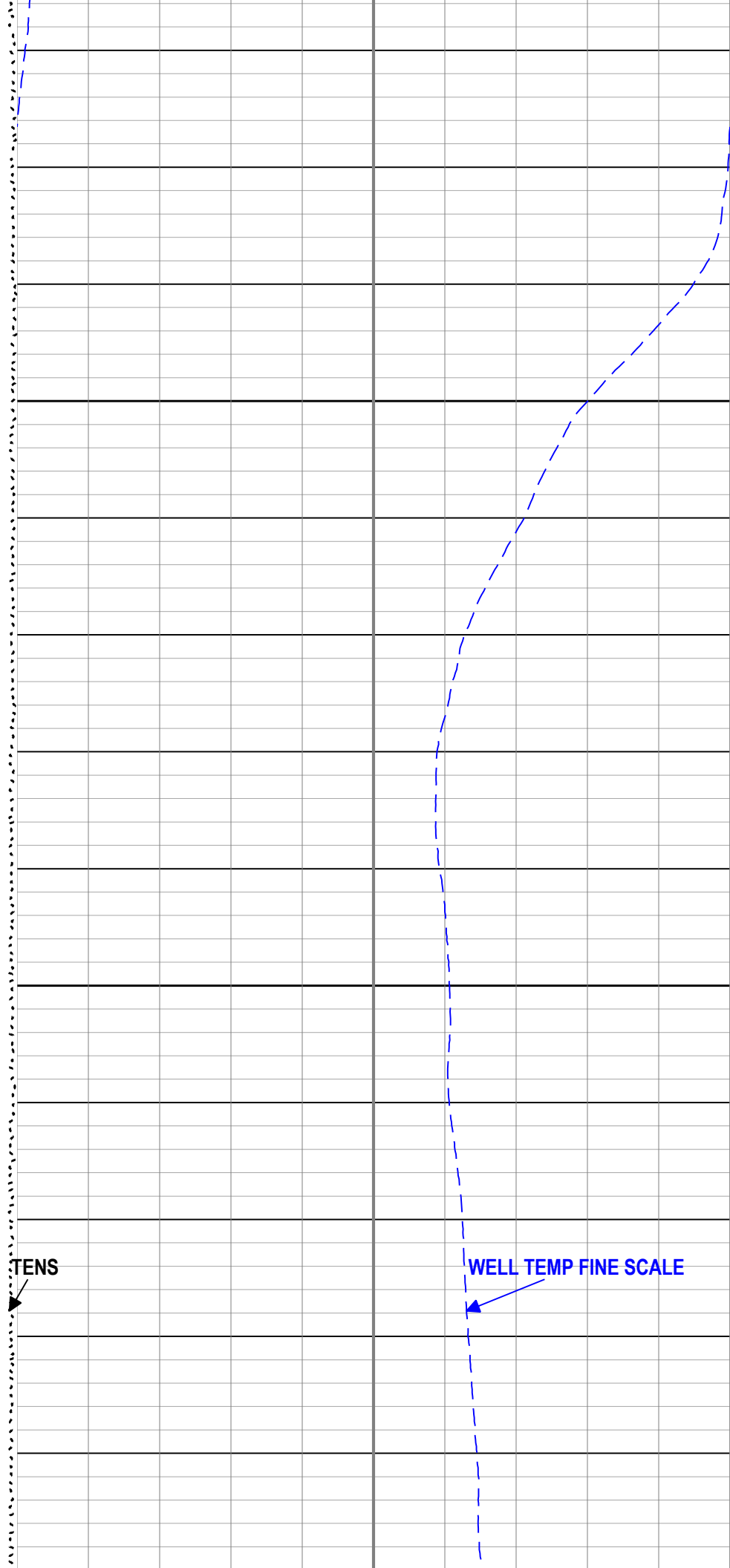
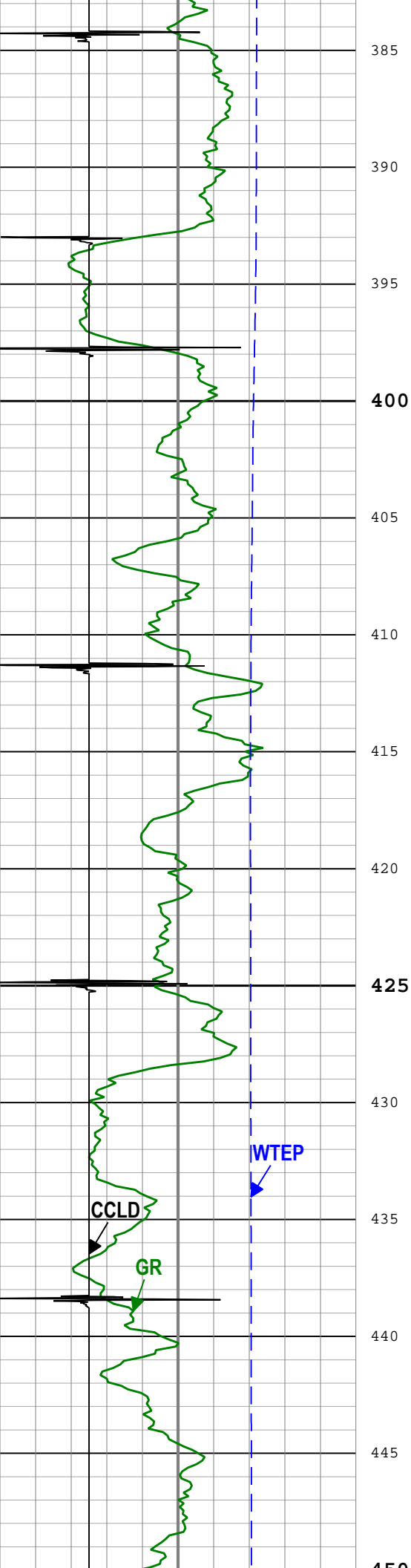


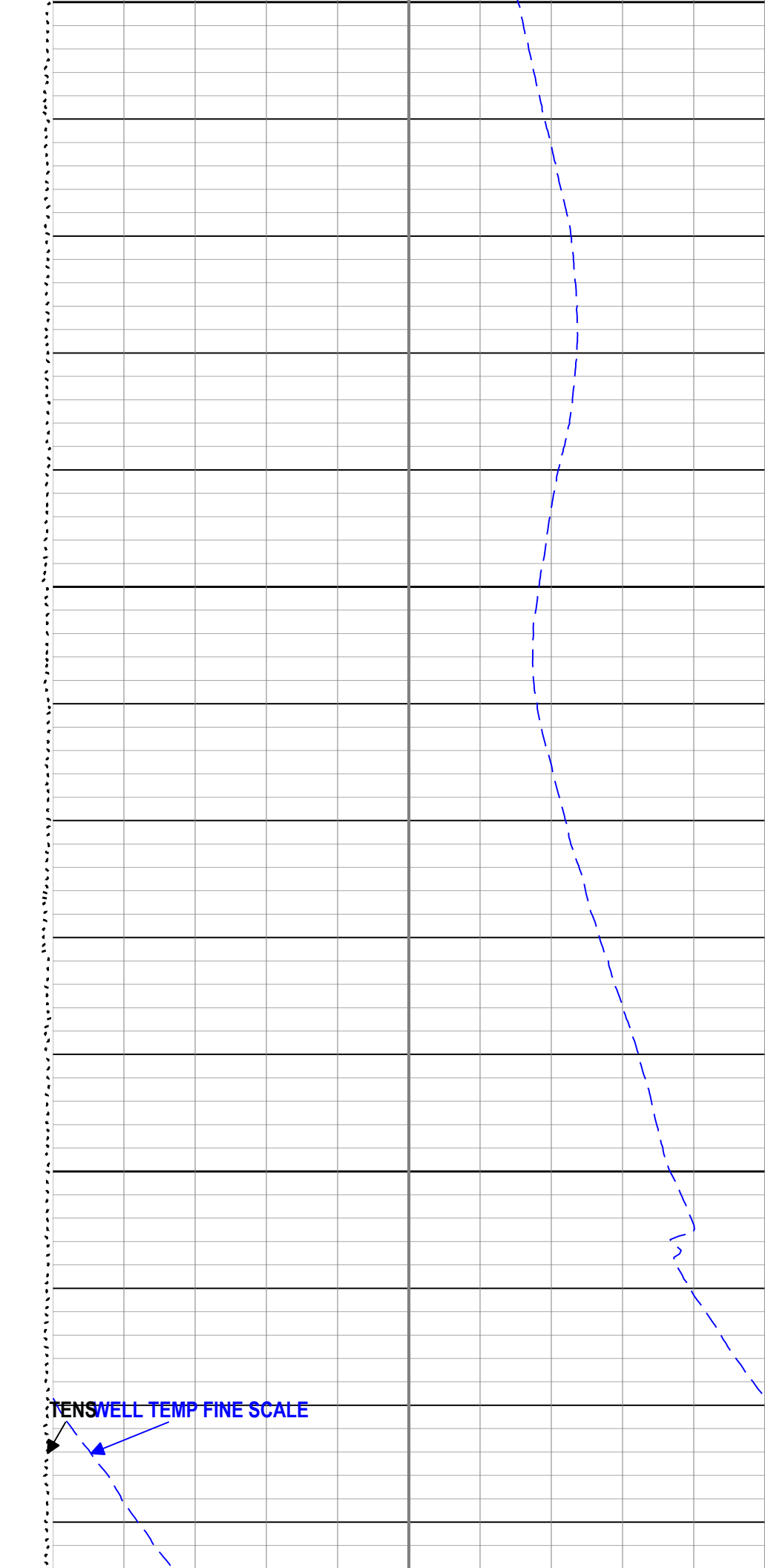
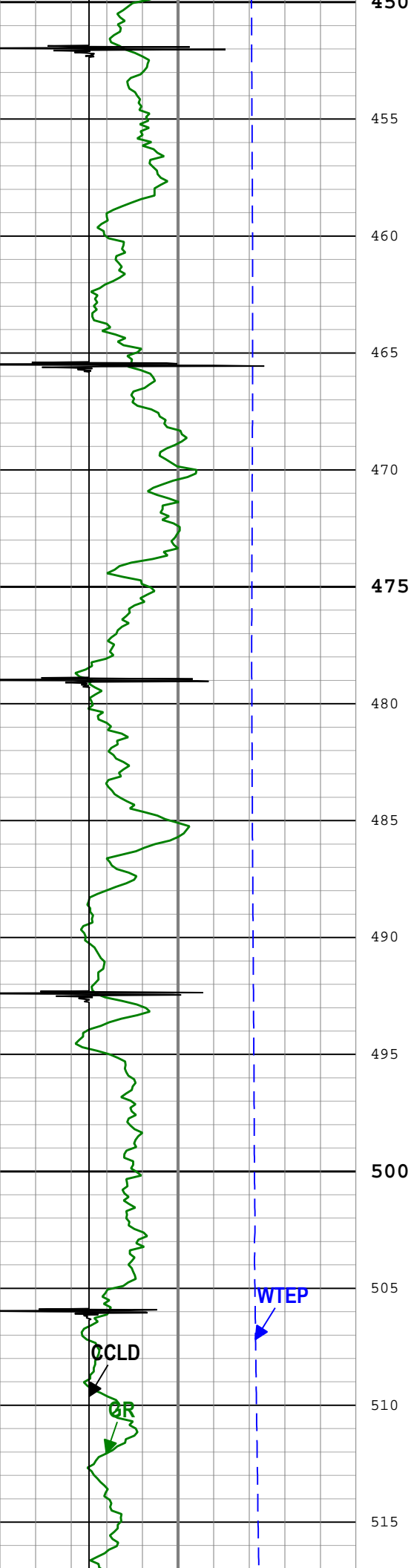


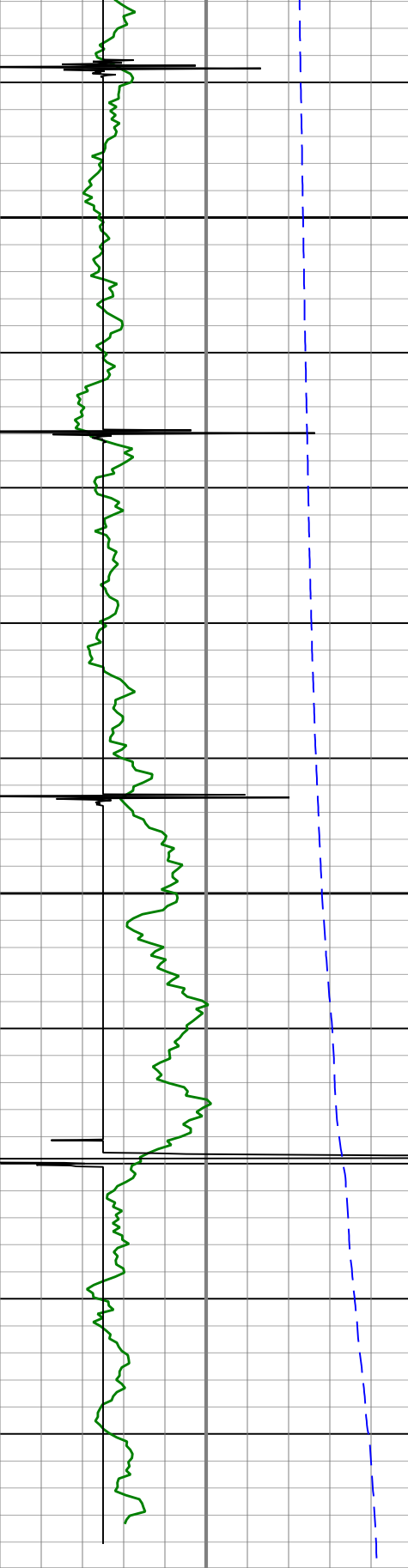








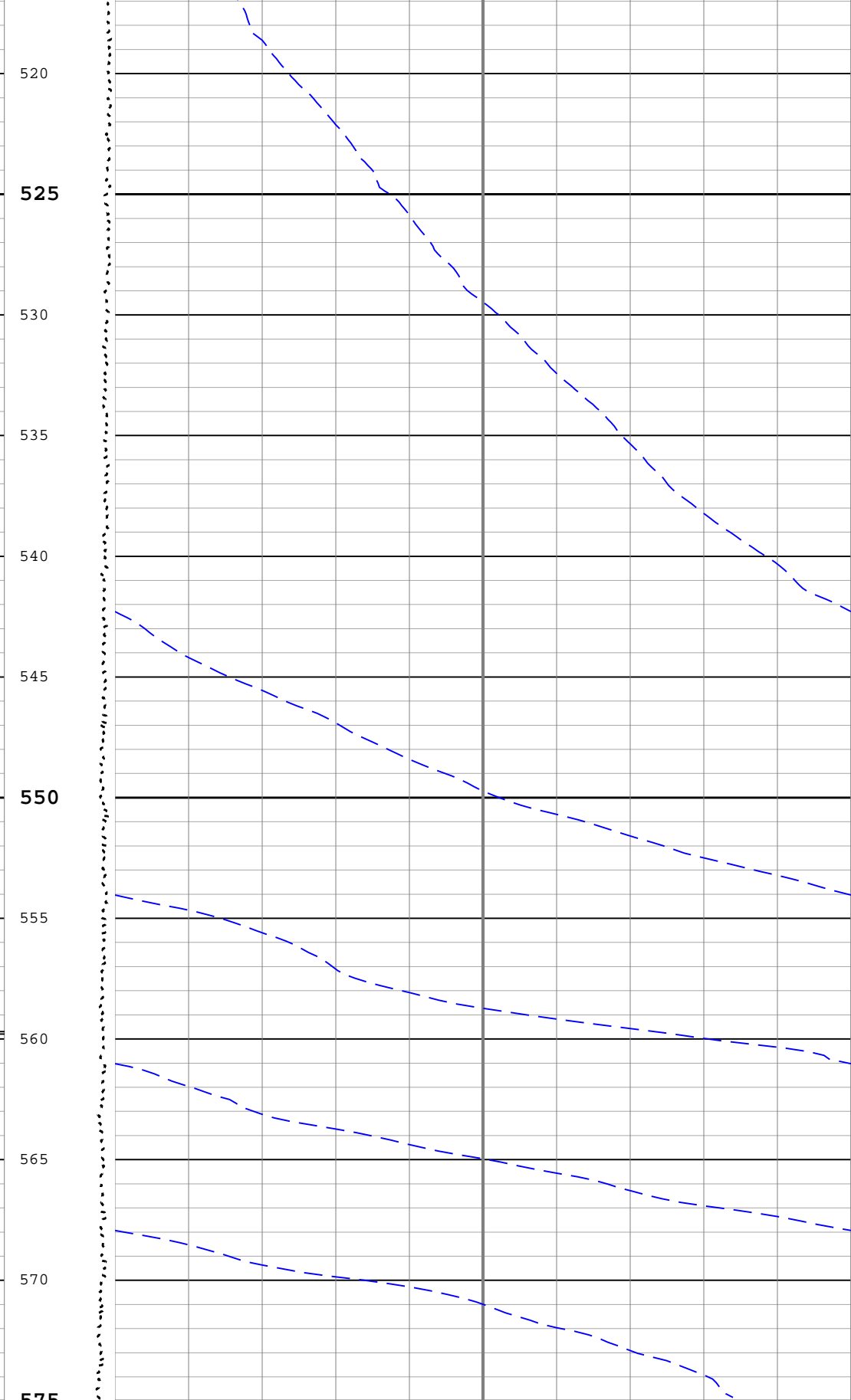




Gamma Ray (GR) HBMS-B  
0 gAPI 100

CCL Discriminated Amplitude (CCLD) HBMS-B  
1 V -3

Well Temperature (WTEP) HBMS-B  
0 degC 100



Cable Tension (TENS)  
1000 N 0

WELL TEMP FINE SCALE  
0 degC 40

0 degC 100

Channel Processing Parameters

Tool Control Parameters

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	12 dB	28-Feb-2018 09:26:45	28-Feb-2018 09:29:11	1.52	15.96
PCCG	24 dB	28-Feb-2018 09:29:11	28-Feb-2018 10:22:20	15.96	575.26

All depth are at tool zero.

Calibration Report

HBMS-B (PSP HBMS-B Tool) Calibration - Run 1

Primary Equipment :					
	HBMC		HBMC-A		2838
	HTPS		HTPS-A		2838
Calibration Parameter :					
	JIG-BKGD				

PBMS Gamma Ray Check - HBMS Gamma Ray Accumulations

Before:		After:					
Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit	
GR Zero Average - 0	gAPI	Before	----	----	----	----	
		After	----	----	----	----	
		After-Before	----	----	----	----	
GR Zero Standard Deviation - 0	gAPI	Before	----	----	----	----	
		After	----	----	----	----	
		After-Before	----	----	----	----	
GR Zero Accumulation - 0	gAPI	Before	----	----	----	----	
		After	----	----	----	----	
		After-Before	----	----	----	----	
GR Plus Average - 0	gAPI	Before	----	----	----	----	
		After	----	----	----	----	
		After-Before	----	----	----	----	
GR Plus Standard Deviation - 0	gAPI	Before	----	----	----	----	
		After	----	----	----	----	
		After-Before	----	----	----	----	
GR Plus Max Deviation - 0	gAPI	Before	----	----	----	----	
		After	----	----	----	----	
		After-Before	----	----	----	----	
Jig-Background	gAPI	Before			NOT DONE		
		After			NOT DONE		
		After-Before	----	----	----	----	

HBMS Gamma Ray Master Calibration		
Master (EEPROM):                      00:00:00 06-Feb-2003		
PBMS_GR_MODEL                      GR Coefficients (Master)		
	Rt**0	Rt**1
Rt**0	2000	3170

## HBMS Well Temp Master Calibration

Master (EEPROM): 00:00:00 24-Oct-2014

PBMS\_RTD\_THERM RTD Coefficients  
(Master)

	Tt**0	Tt**1	Tt**2	Tt**3	Tt**4	Tt**5
Tt**0	-232.8999	8.331875	32.31371	-4.562783	0.2659911	0

## HBMS CQG Master Calibration

Master (EEPROM): 00:00:00 24-Oct-2014

PBMS\_P\_GAUGE\_PRES CQG Pressure Model Coefficients  
(Master)

	Fb**0	Fb**1	Fb**2	Fb**3	Fb**4	Fb**5
Fc**0	8079.792	0.0310173	8.291946E-08	-7.764635E-11	-1.49792E-15	-1.410762E-20
Fc**1	-1.050566	-1.270948E-05	-1.034487E-10	-6.160725E-18	1.948299E-20	0
Fc**2	9.710903E-07	4.637268E-11	9.155453E-16	0	0	0
Fc**3	1.028755E-12	1.846718E-16	0	0	0	0
Fc**4	0	0	0	0	0	0
Fc**5	0	0	0	0	0	0

PBMS\_P\_GAUGE\_TEMP CQG Temperature Model Coefficients  
(Master)

	Fc**0	Fc**1	Fc**2	Fc**3	Fc**4	Fc**5
Fb**0	119.1043	-0.0004229978	6.661657E-09	1.316723E-13	-8.492667E-18	3.120095E-22
Fb**1	-0.005971962	1.642466E-08	3.125717E-13	2.20286E-18	-3.387951E-21	0
Fb**2	-3.059693E-08	3.223536E-13	2.683793E-18	0	0	0
Fb**3	-3.297766E-13	4.522437E-18	0	0	0	0
Fb**4	0	0	0	0	0	0
Fb**5	0	0	0	0	0	0

PBMS\_CQG\_FCLK\_FREQ CQG Clock Frequency Model Coefficients  
(Master)

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	31065.42	0.002169653	6.724387E-07	-6.376288E-11	-9.340339E-16	2.190774E-20

PBMS\_CQG\_FCLK\_TEMP CQG Clock Temperature Model Coefficients  
(Master)

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	118.2672	-0.006067951	-2.300627E-08	2.217555E-12	-2.661394E-16	8.210886E-21

Company:	IMPERIAL OIL RESOURCES LIMITED	<b>Schlumberger</b>
Well:	IMP 06 U08-24 COLD LK 1-3-65-3	
Field:	ETHEL LAKE	
Province:	ALBERTA	
Status	**MD**	

## TEMPERATURE LOG