Schlumberger

Company: IMPERIAL OIL RESOURCES LIMITED

Well: IMP 05 H58-H06 COLD LK 1-15-66-4

Field: LEMING

Province: ALBERTA Status **MD**

TEMPERATURE LOG

Province: ALBERTA
Field: LEMING
Location: LSD: 16-9-66-4W4
Well: IMP 05 H58-H06 COLD LK 1-15-66-4
Company: IMPERIAL OIL RESOURCES LIMITED

Location:

LSD: 16-9-66-4W4
UWI: 100011506604W400

Elev.: K.B. 624.43 m
G.L. 618.39 m
D.F.

Permanent Datum:	Ground Level	Elev.:	618.39
Log Measured From:	Kelly Bushing	6.04 m	above Perm.Datum
Drilling Measured From:	Kelly Bushing		

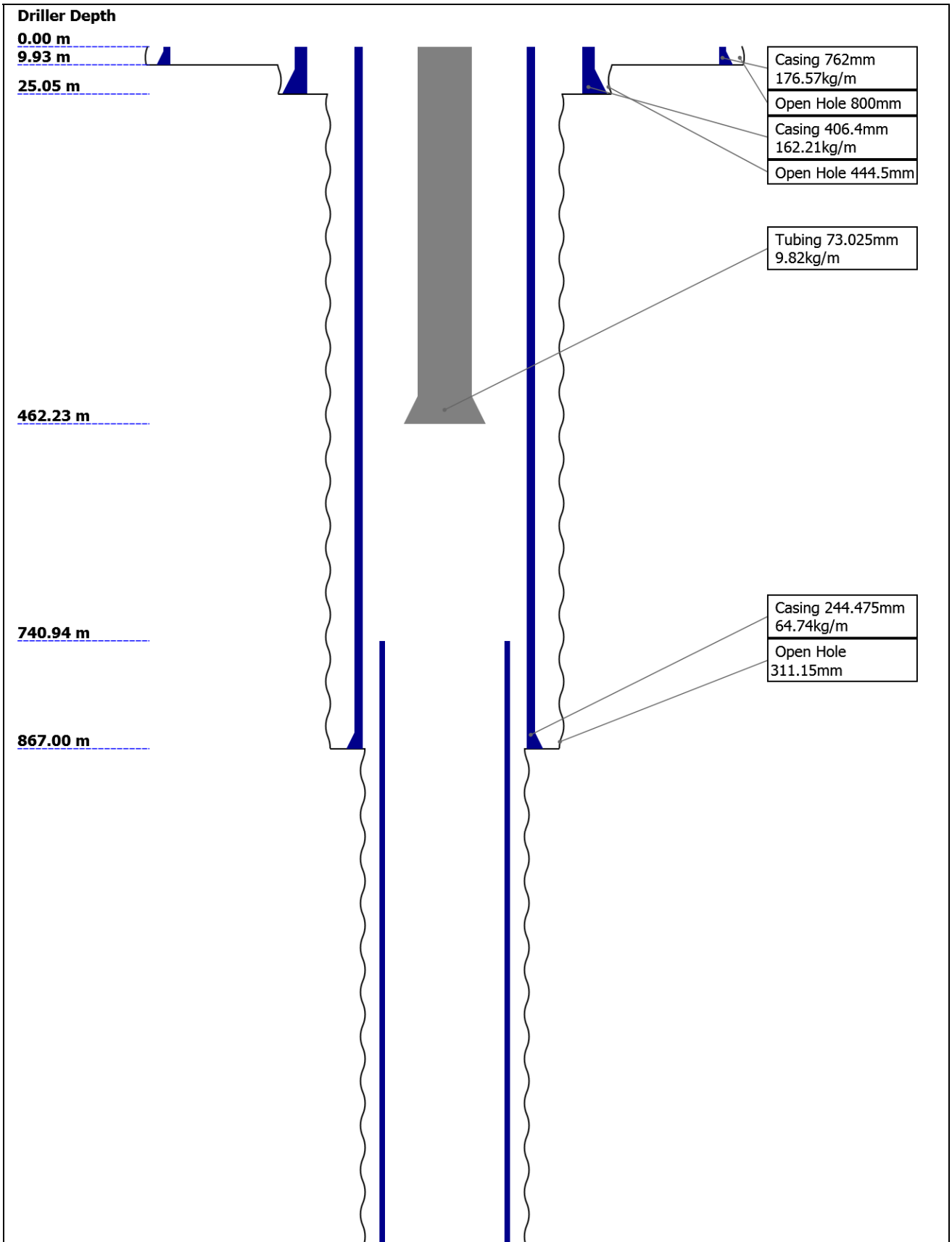
API Serial No.	Section:	Township:	Range:
0323668	16-9	066	4W4

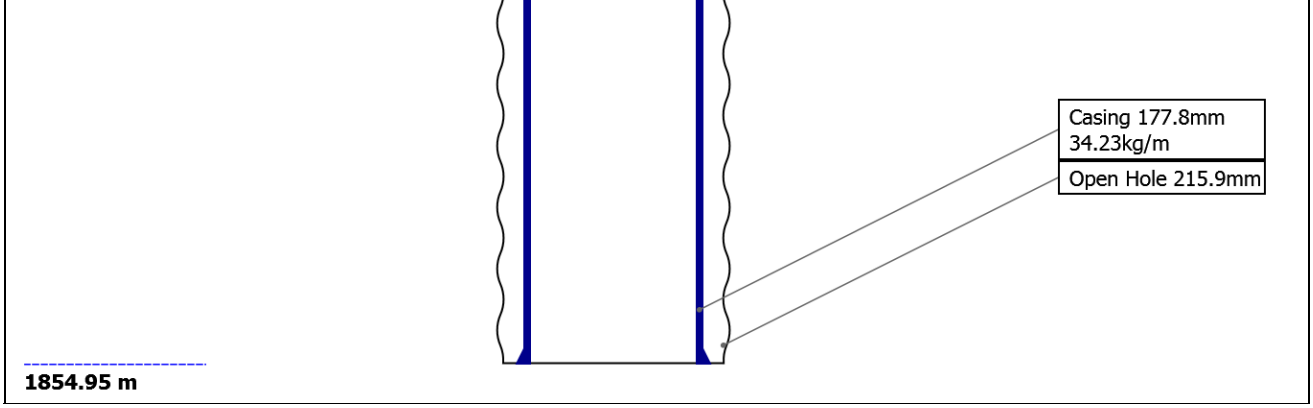
Logging Date		29-Jul-2018		
Run Number		DE02-00234		
Depth Driller		1854.95 m		
Schlumberger Depth		461.00 m		
Bottom Log Interval		460.90 m		
Top Log Interval		0.00 m		
Casing Fluid Type		WATER/OIL		
Salinity				
Density		1020 kg/m3		
Fluid Level		45.60 m		
BIT/CASING/TUBING STRING				
Bit Size		215.90 mm		
From		867.00 m		
To		1854.95 m		
Casing/Tubing Size		73.025 mm		
Weight		9.82 kg/m		
Grade		N/A		
From		0.00 m		
To		462.23 m		
Max Recorded Temperatures		191.91 degC		
Logger on Bottom	Time	29-Jul-2018	11:53:00	
Unit Number	Location:	D218	NISKU PS	
Recorded By		CODY FREY		
Witnessed By		KARL KOTLARZ		

Disclaimer

Contents

Well Sketch





Borehole Size/Casing/Tubing Record

Bit						
Bit Size (mm)	800	444.5	311.15	215.9		
Top Driller (m)	0	9.93	25.05	867		
Top Logger (m)	0	9.93	25.05	867		
Bottom Driller (m)	9.93	25.05	867	1854.95		
Bottom Logger (m)	9.93	25.05	867	1854.95		
Casing						
Size (mm)	762	406.4	244.475	177.8		
Weight (kg/m)	176.57	162.21	64.74	34.23		
Inner Diameter (mm)	743.378	373.075	222.463	161.797		
Grade	N/A	C75	L80	L80		
Top Driller (m)	0	0	0	740.94		
Top Logger (m)	0	0	0	740.94		
Bottom Driller (m)	9.93	25.05	867	1854.95		
Bottom Logger (m)	9.93	25.05	867	1854.95		
Tubing						
Size (mm)	73.025					
Weight (kg/m)	9.82					
Inner Diameter (mm)	61.43					
Grade	N/A					
Top Driller (m)	0					
Top Logger (m)	0					
Bottom Driller (m)	462.23					
Bottom Logger (m)	462.23					

Remarks and Equipment Summary

DE02-00234: Toolstring

Equip name	Length	MP name	Offset
PEH-E	7.65		
AH-38	7.13		
EQF-43[2]	7.05		

DE02-00234: Remarks
MAX TEMPERAUTRE 191.9 C AT 460.2 MKB C
MAX PRESSURE 6072 KPA AT 460.9 MKB
TUBING PRESSURE BEFORE LOGGING 2800 KPA
TUBING PRESSURE AFTER LOGGING 2800 KPA
LAST FLUID MOVEMENT 27 JULY 13:13
FLUID LEVEL AT 45.5 MKB IN TUBING

Lengths are in m
Maximum Outer Diameter = 52.451 mm
Line: Sensor Location, Value: Gating Offset
All measurements are relative to TOOL_ZERO

CASING PRESURE 2800 KPA BEFORE AND AFTER LOGGING

Depth Summary

	DE02-00234		
Depth Measuring Device			
Type	IDW-B		
Serial Number	6146		
Calibration Date	12-JAN-2018		
Calibrator Serial Number	C-57		
Calibration Cable Type	SLIC 33		
Wheel Correction 1	-1		
Wheel Correction 2	-1		
Tension Device			
Type	CMTD-B/A		
Serial Number	1636		
Calibration Date	11-JUN-2018		
Calibrator Serial Number	1246		
Number of Calibration Points	10		
Calibration Root Mean Square Error	9		
Calibration Peak Error	14		
Logging Cable			
Type	1-33A-SLC		
Serial Number	U115039		
Length	0.01 m		

Conveyance Type	Wireline		
Rig Type	PICKER		

DE02-00234:Depth Control Parameters		Depth Control Remarks
Log Sequence	First Log In the Well	ALL SCHLUMBERGER DEPTH CONTROL PROCEDURES FOLLOWED
Rig Up Length At Surface		IDW USED AS PRIMARY DEPTH CONTROL
Rig Up Length At Bottom		Z-CHART USED AS SECONDARY DEPTH CONTROL
Rig Up Length Correction		CORRELATED TO TWO FOOT JOINT TO TUBING STRING
Stretch Correction		
Tool Zero Check At Surface		

DE02-00234

TEMP DOWN 5 M /MIN

Software Version

Acquisition System	Version
Maxwell 2018 SP1	8.1.99839.3100
Application Patch	Wireline_NPD-EMIT-C-2018SP1_8.1.100393

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
DE02-00234	Log[1]:Down	Down	-0.39 m	459.53 m	29-Jul-2018 9:43:35 AM	29-Jul-2018 11:09:05 AM	ON	-1.76 m	Yes

All depths are referenced to toolstring zero

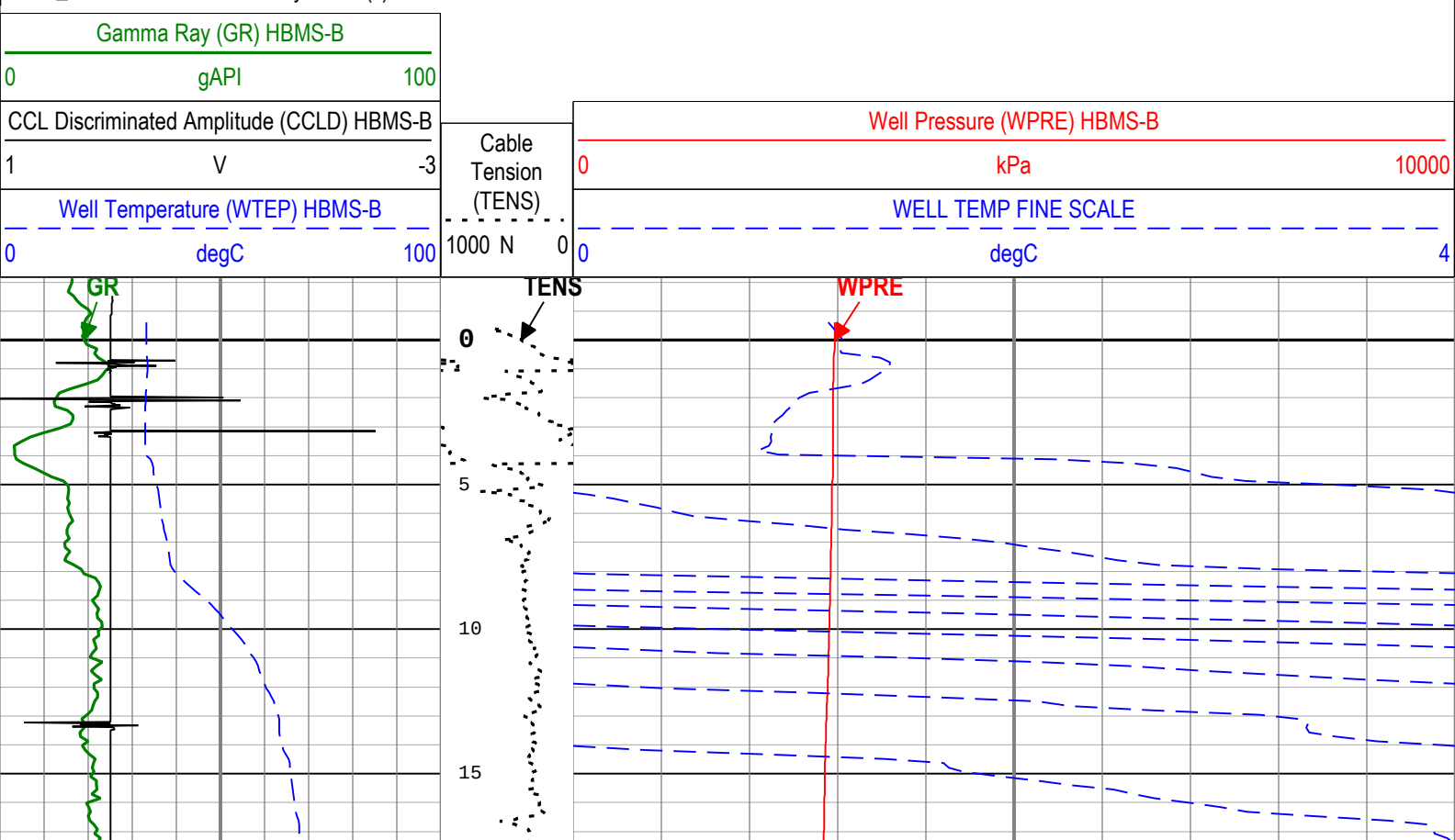
Log

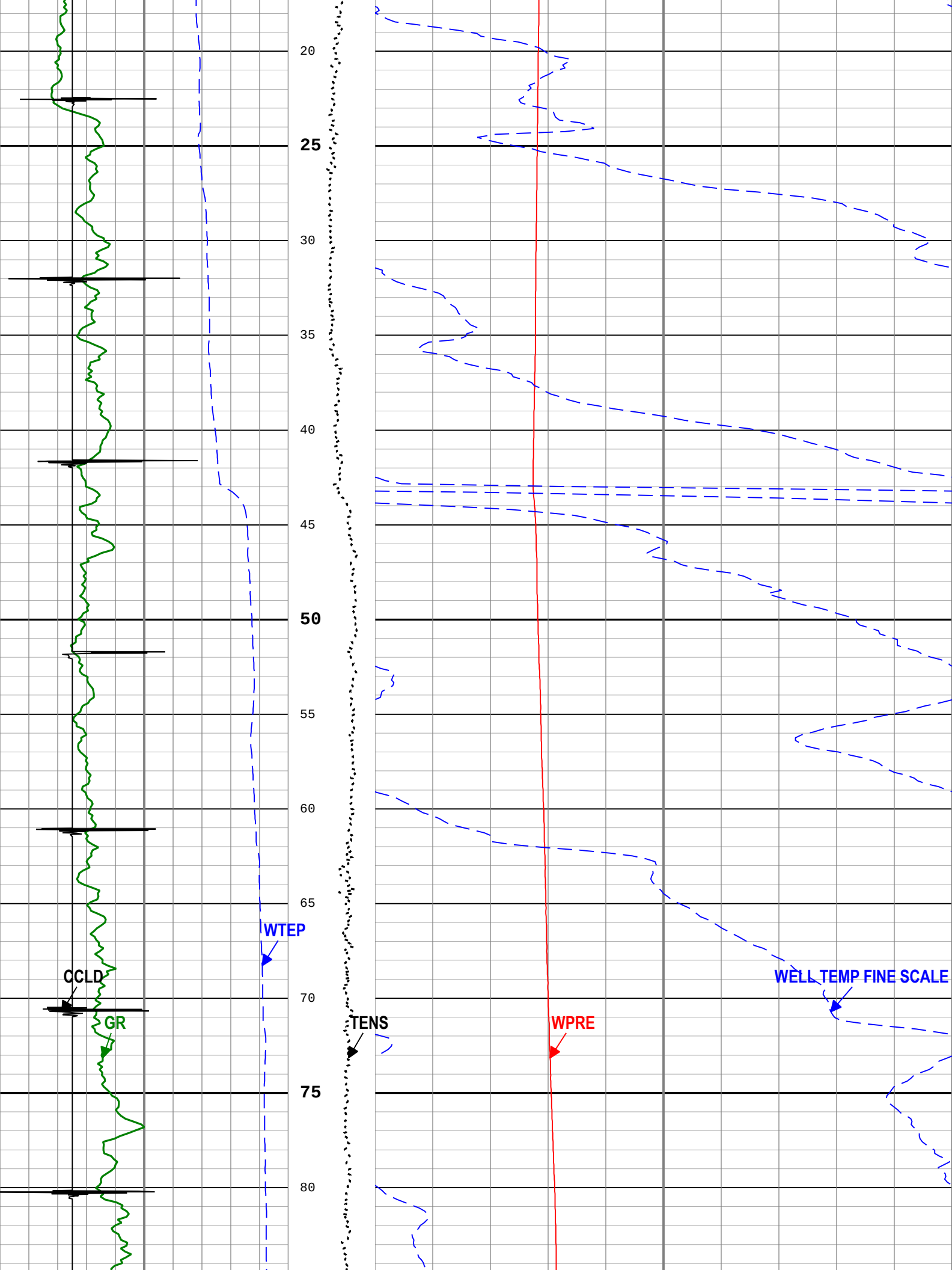
Company:IMPERIAL OIL RESOURCES LIMITED Well:IMP 05 H58-H06 COLD LK 1-15-66-4

DE02-00234: Log[1]:Down:S008

Description: PSP Depth Format: Log (TEMP DOWN PASS imperial) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 29-Jul-2018 13:08:13

TIME_1900 - Time Marked every 60.00 (s)

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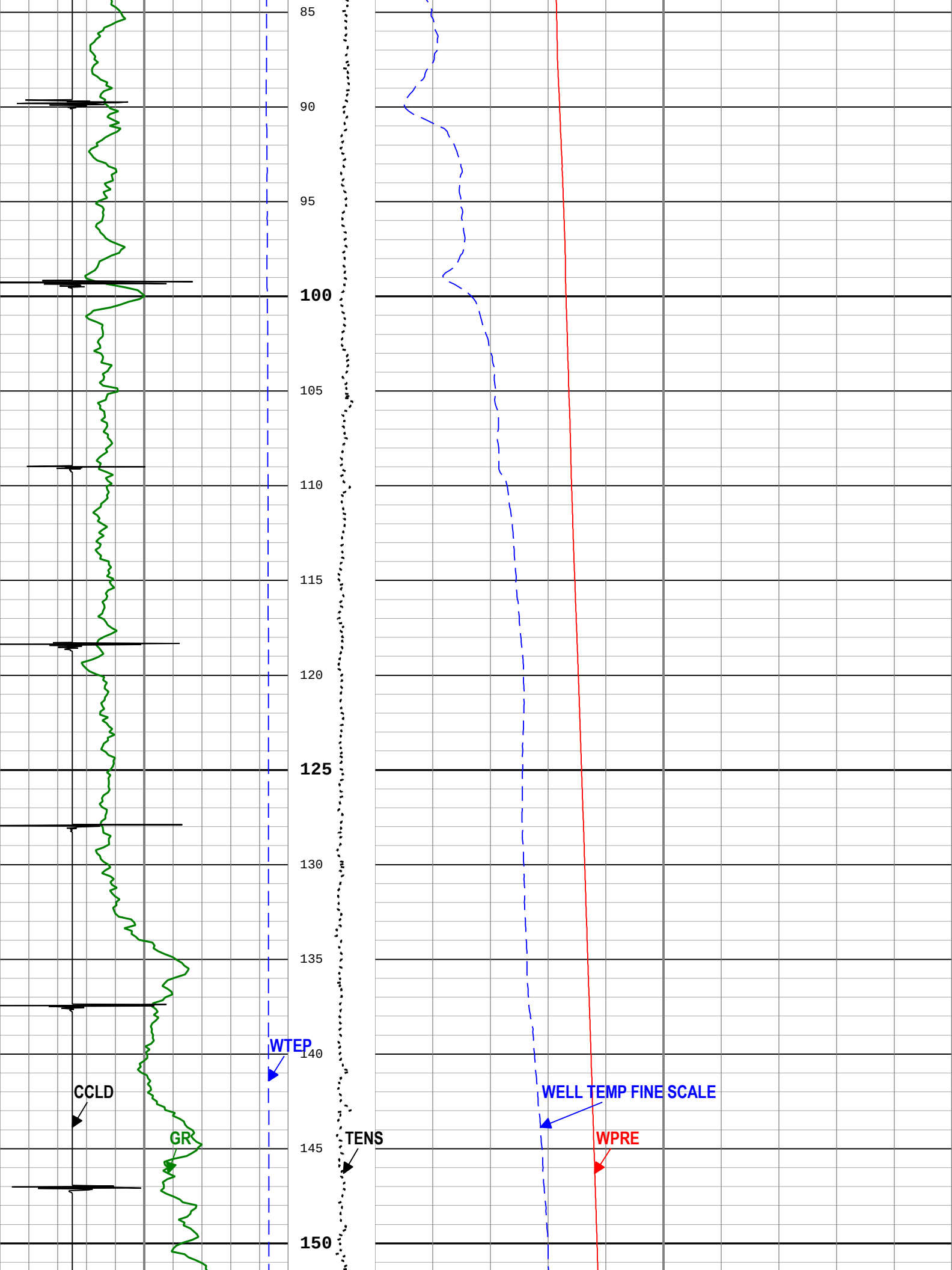
CCLD
GR
TENS
WPRE
WELL TEMP FINE SCALE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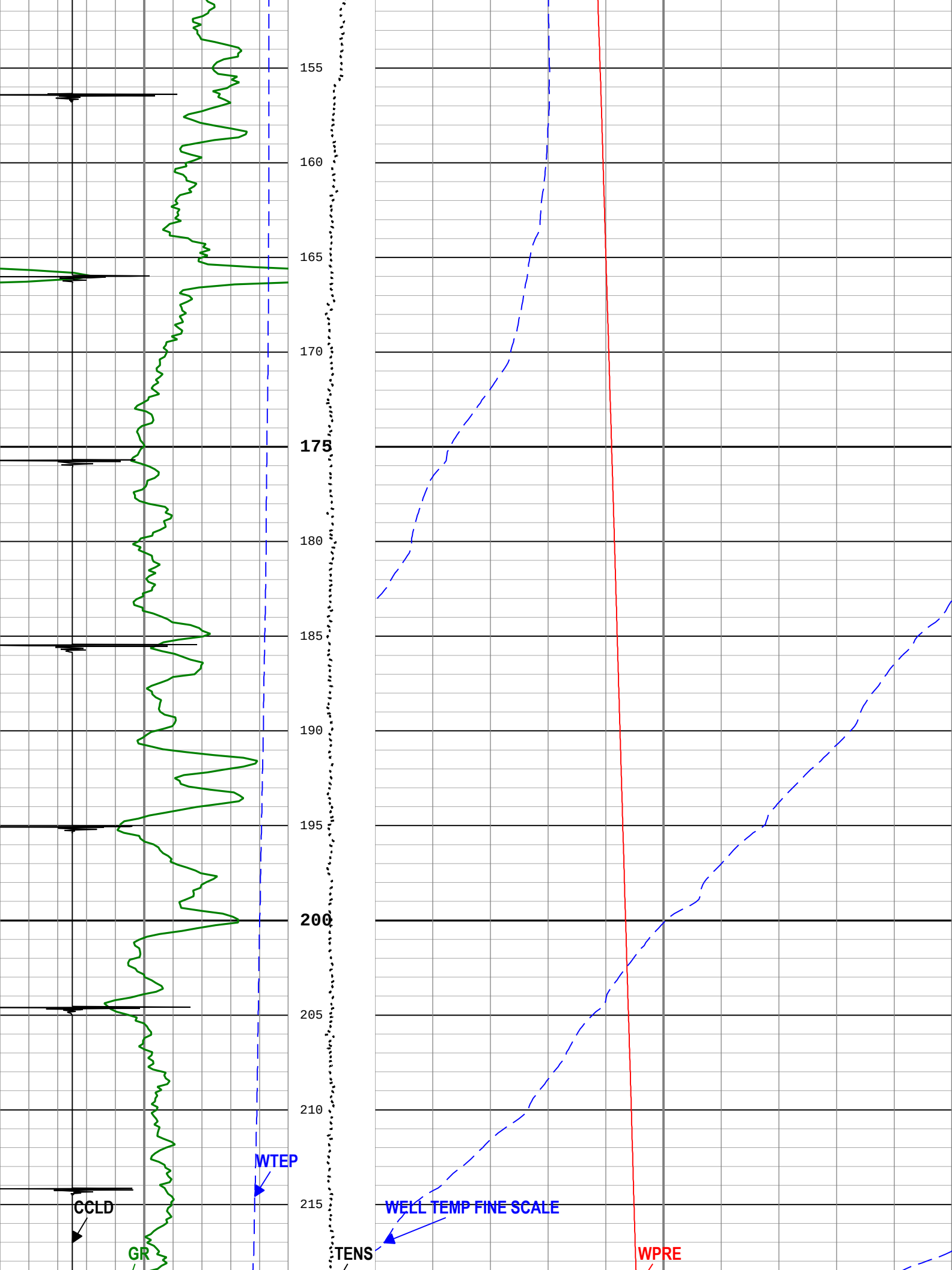
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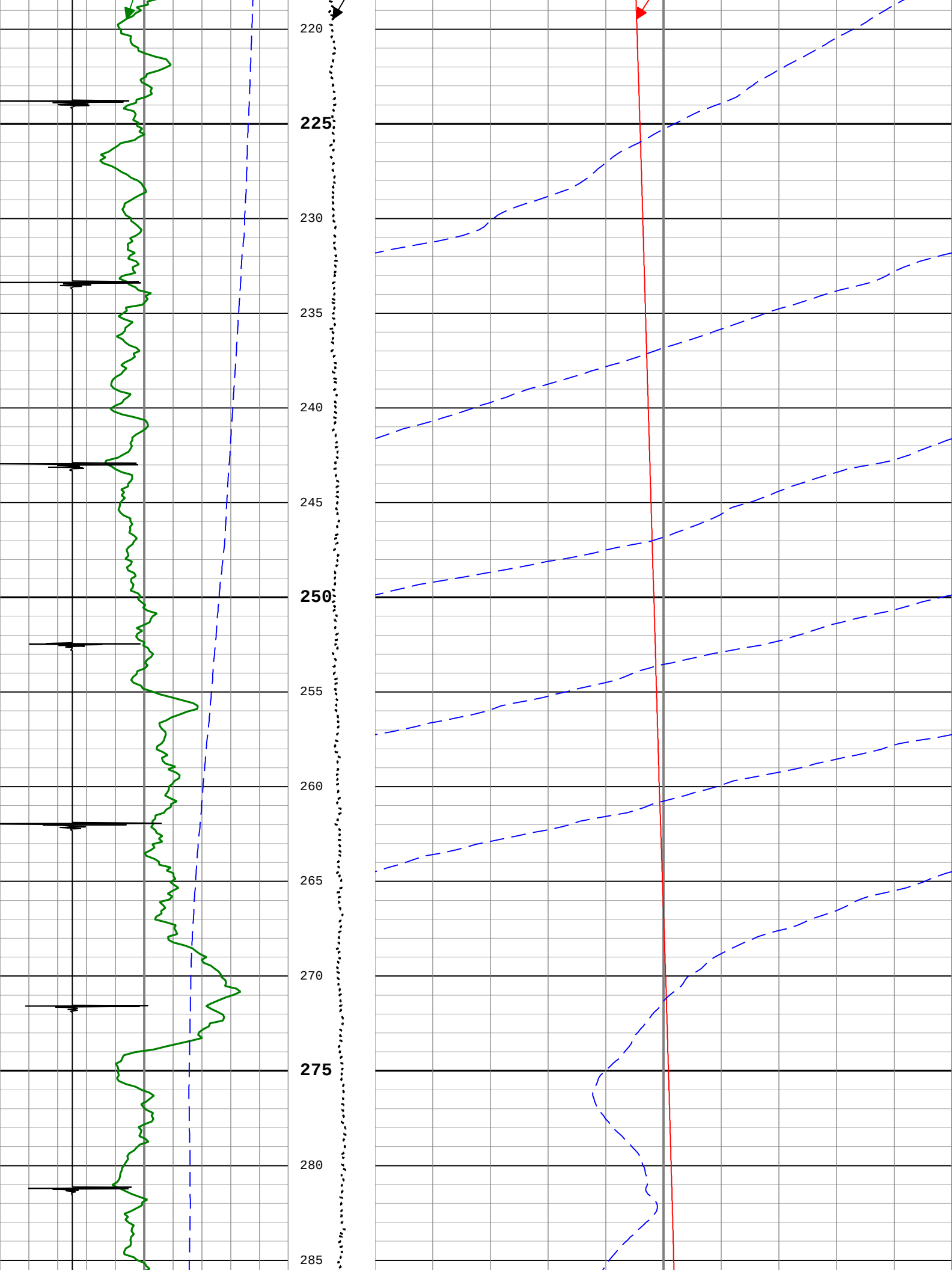
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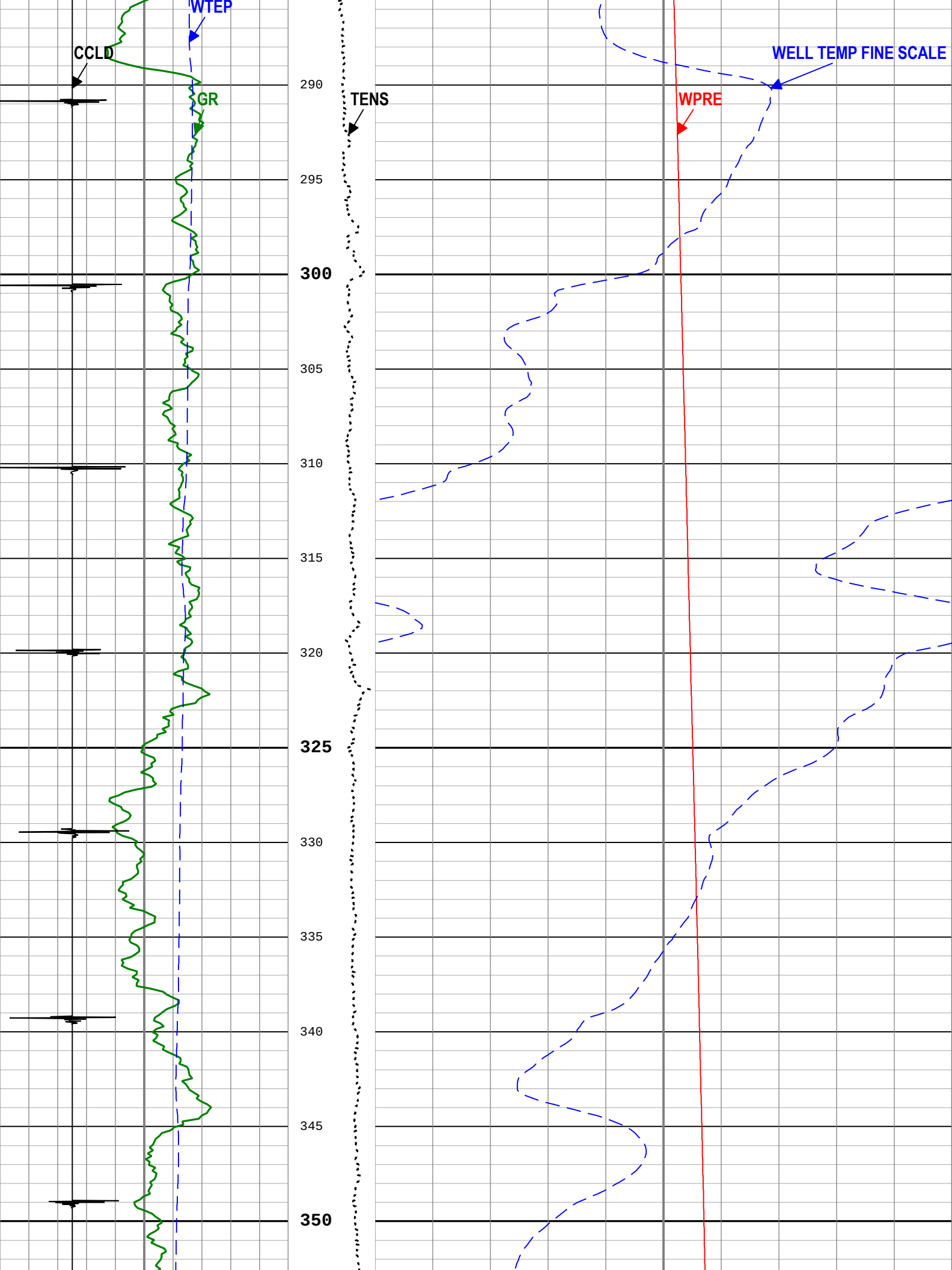
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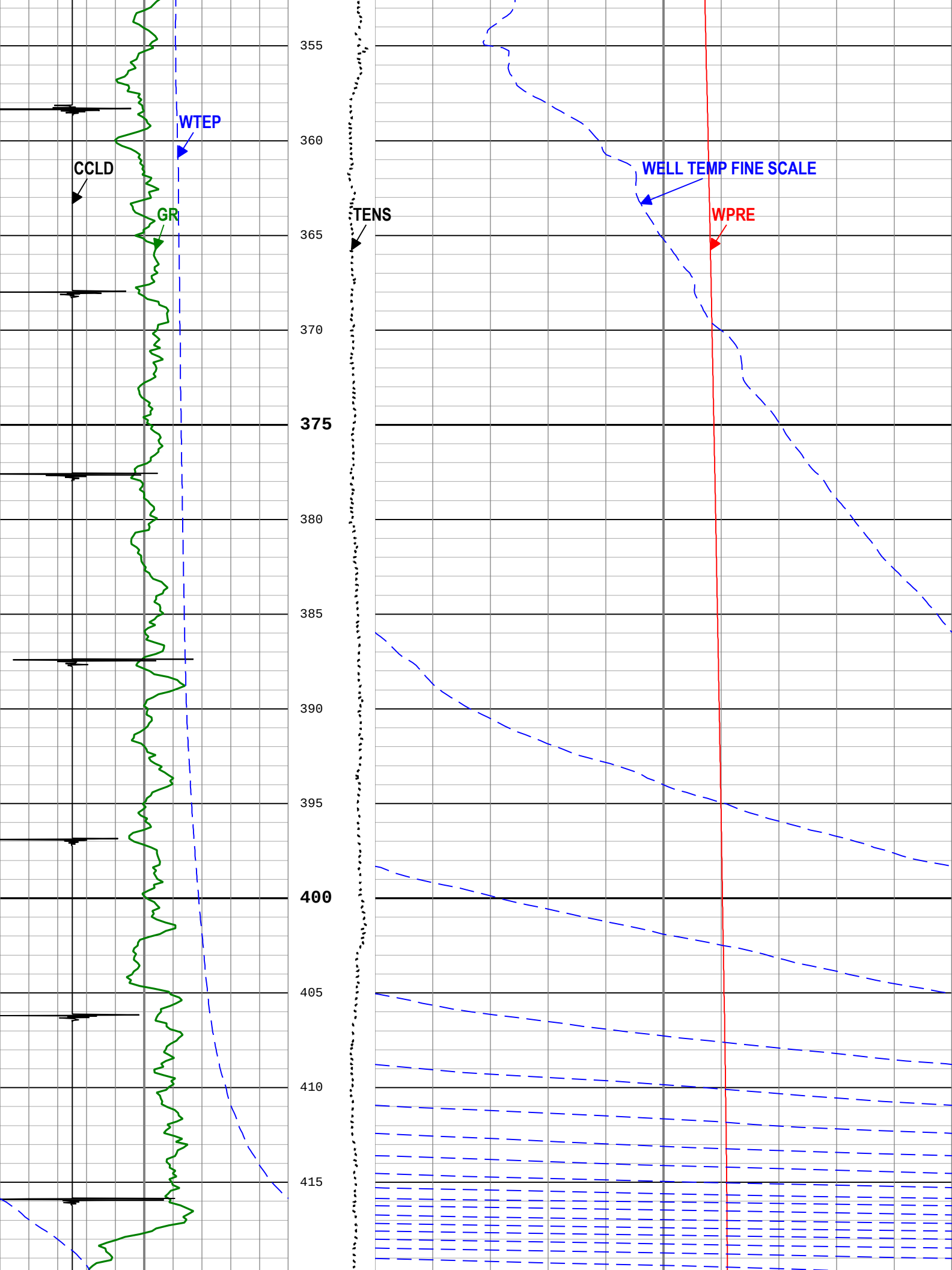
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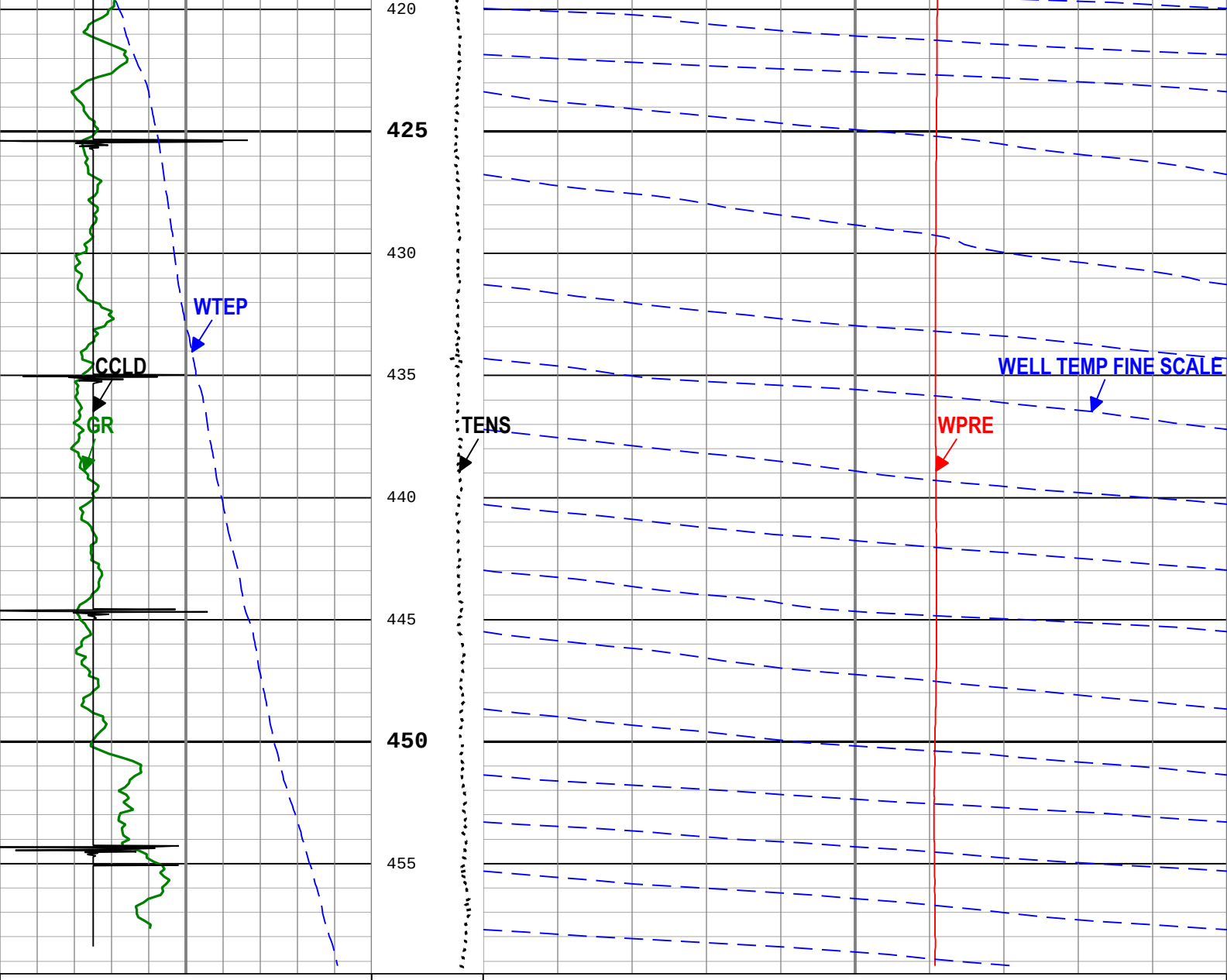


Gamma Ray (GR) HBMS-B 0 gAPI 100	Cable Tension (TENS) 1000 N 0	Well Pressure (WPRE) HBMS-B 0 kPa 10000
CCL Discriminated Amplitude (CCLD) HBMS-B 1 V -3		WELL TEMP FINE SCALE 0 degC 4
Well Temperature (WTEP) HBMS-B 0 degC 100		

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: 29-Jul-2018 13:08:13

Channel Processing Parameters

Tool Control Parameters

DE02-00234: 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	

DE02-00234

TEMP UP 10 M /MIN

Software Version

Acquisition System	Version
Maxwell 2018 SP1	8.1.99839.3100
Application Patch	Wireline_NPD-EMIT-C-2018SP1_8.1.100393

Pass Summary

Run Name	Pass Objective	Direction	Top	Bottom	Start	Stop	DSC Mode	Depth Shift	Include Parallel Data
DE02-00234	Log[2]:Up	Up	-0.39 m	460.31 m	29-Jul-2018 11:09:07 AM	29-Jul-2018 11:52:09 AM	ON	-0.99 m	Yes

All depths are referenced to toolstring zero

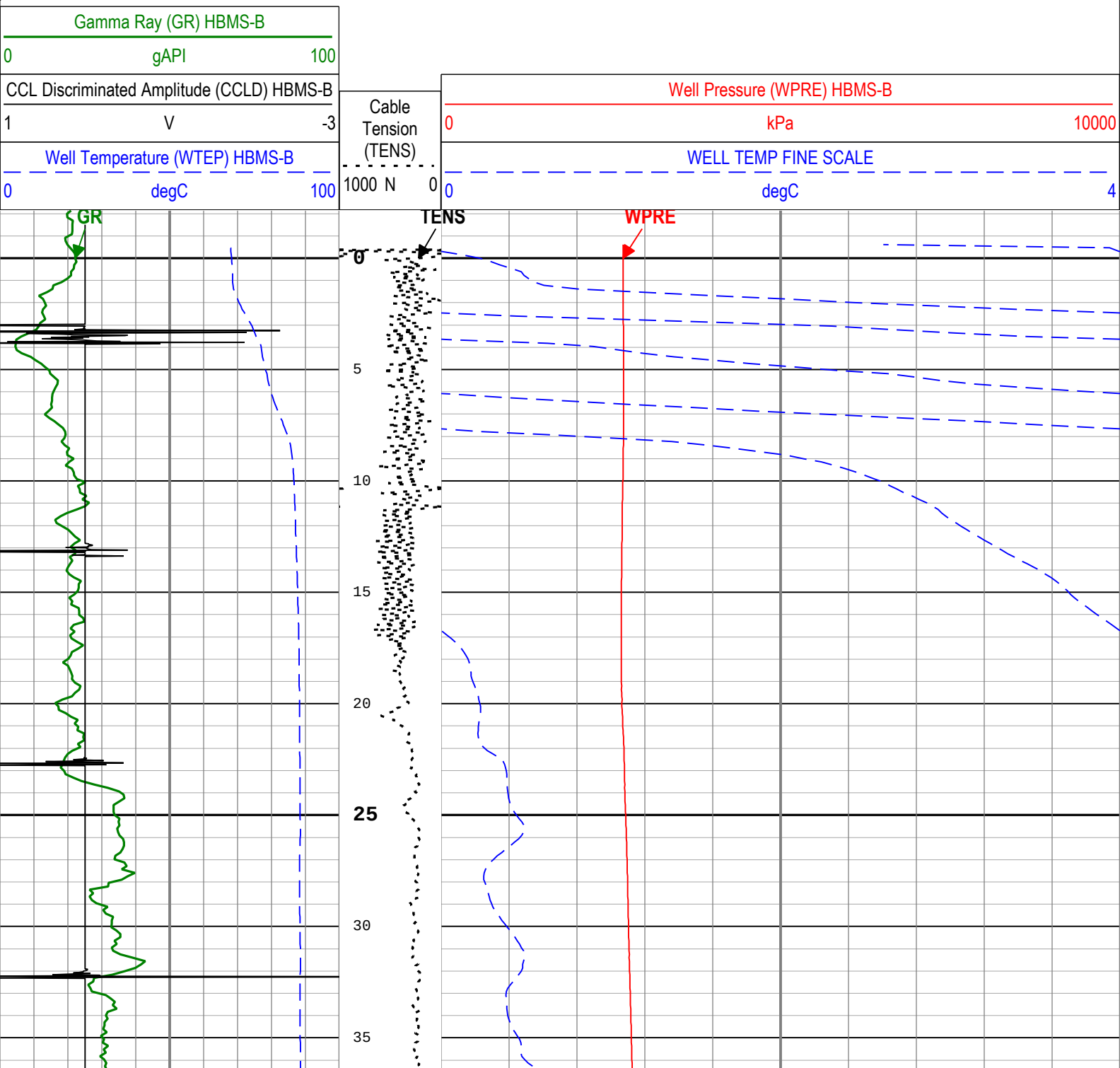
Log

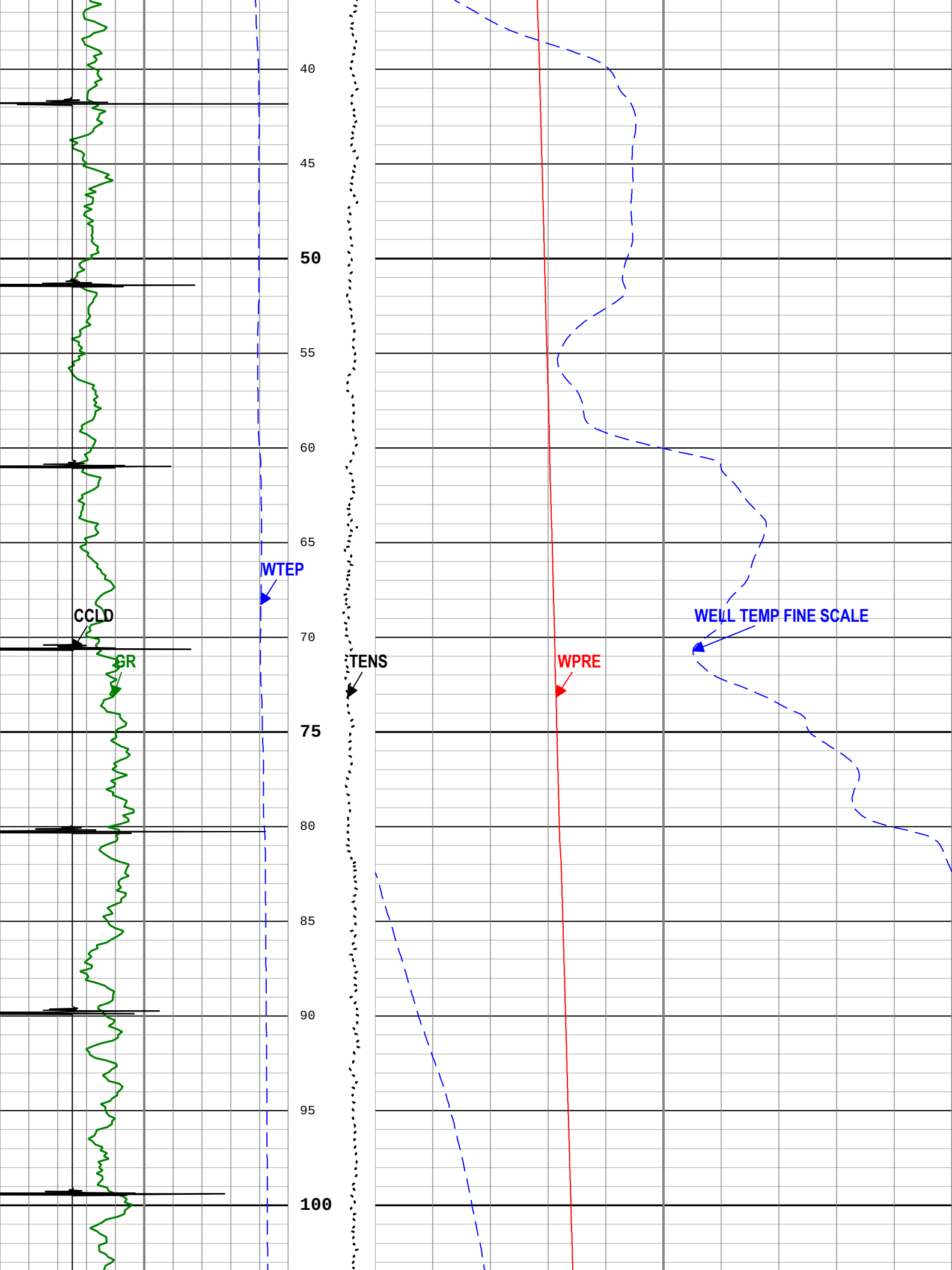
Company:IMPERIAL OIL RESOURCES LIMITED Well:IMP 05 H58-H06 COLD LK 1-15-66-4

DE02-00234: Log[2]:Up:S008

Description: PSP Depth Format: Log (TEMP DOWN PASS imperial) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 29-Jul-2018 13:08:14

TIME_1900 - Time Marked every 60.00 (s)

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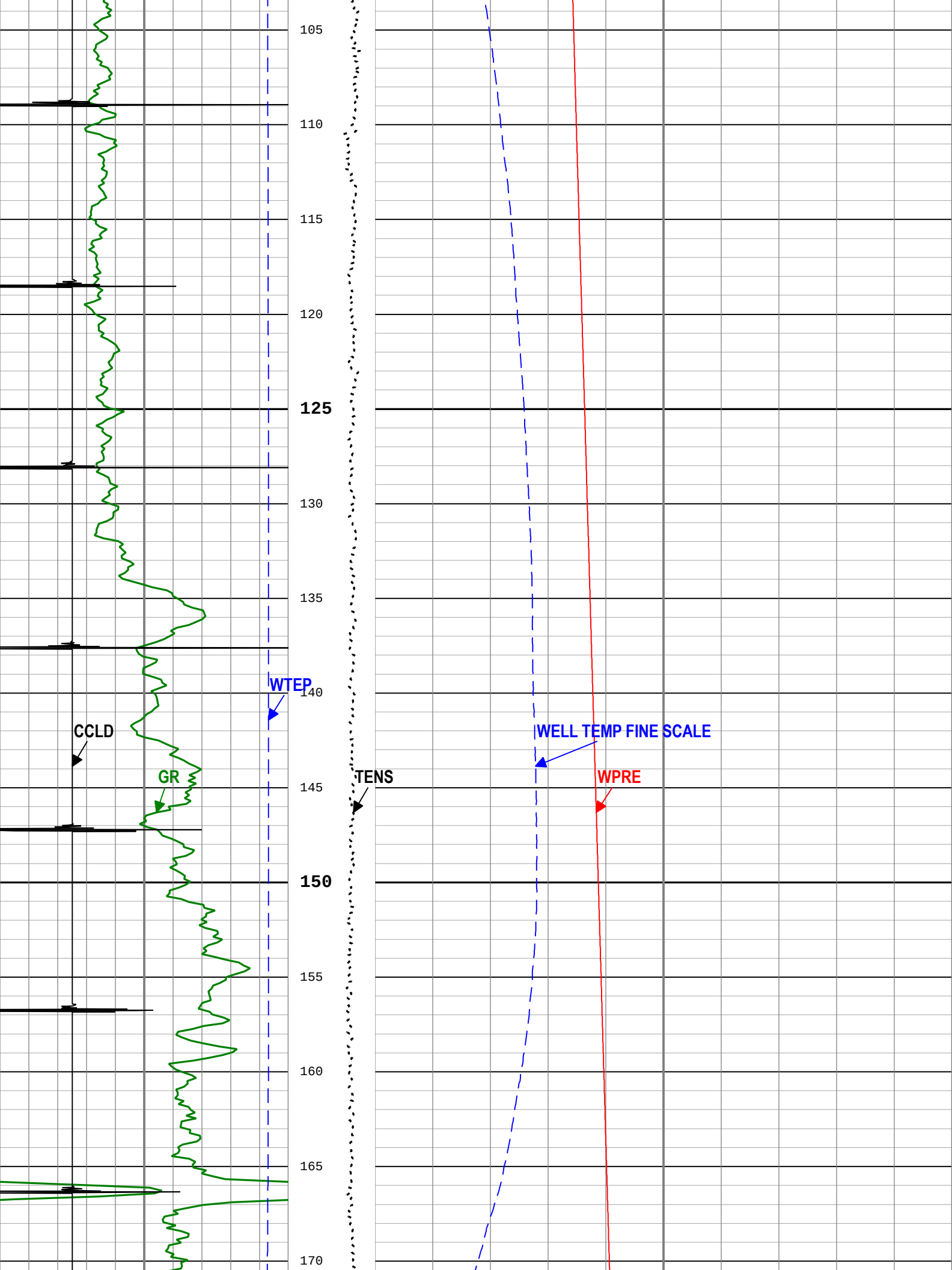
WELL TEMP FINE SCALE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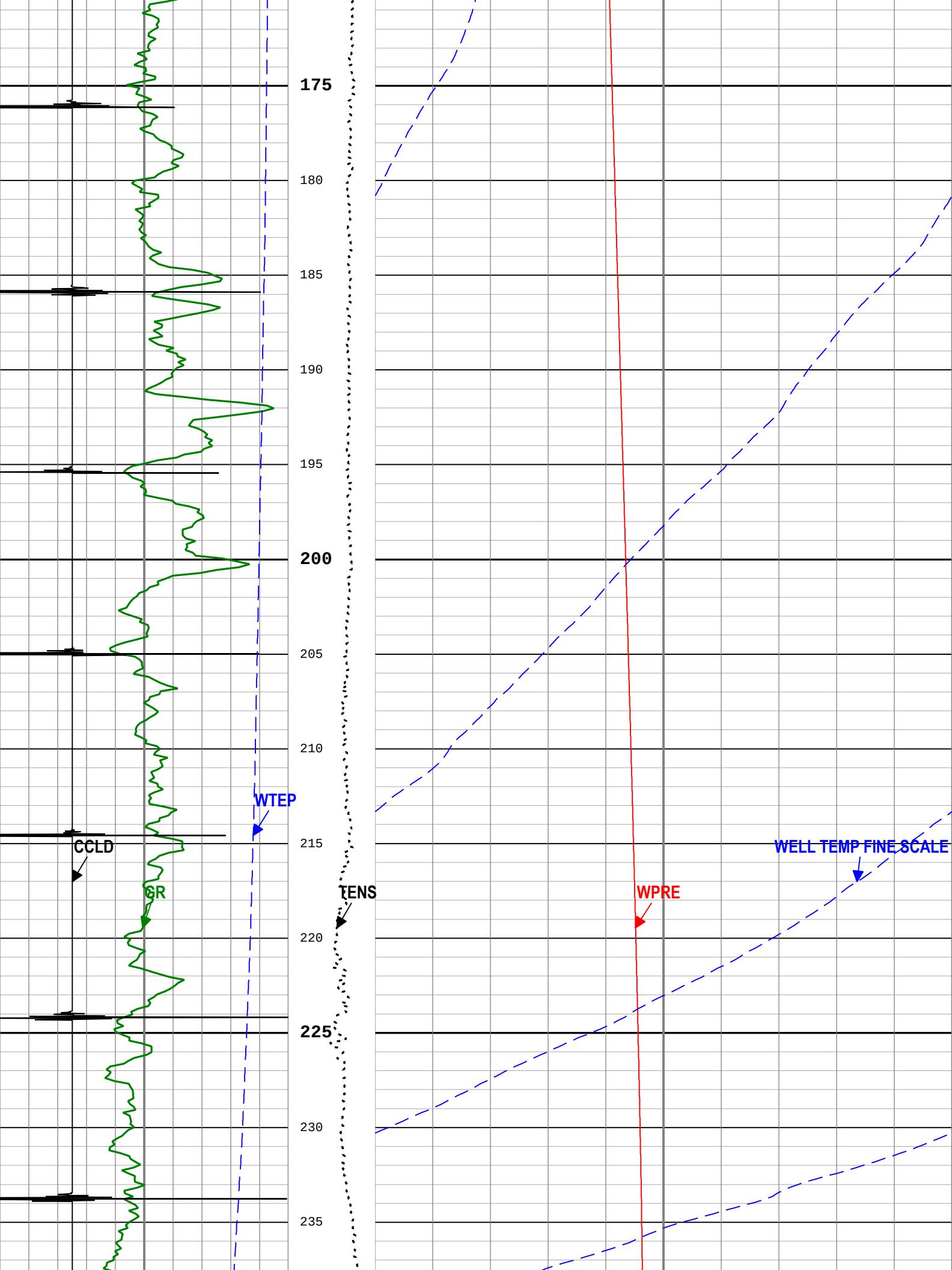
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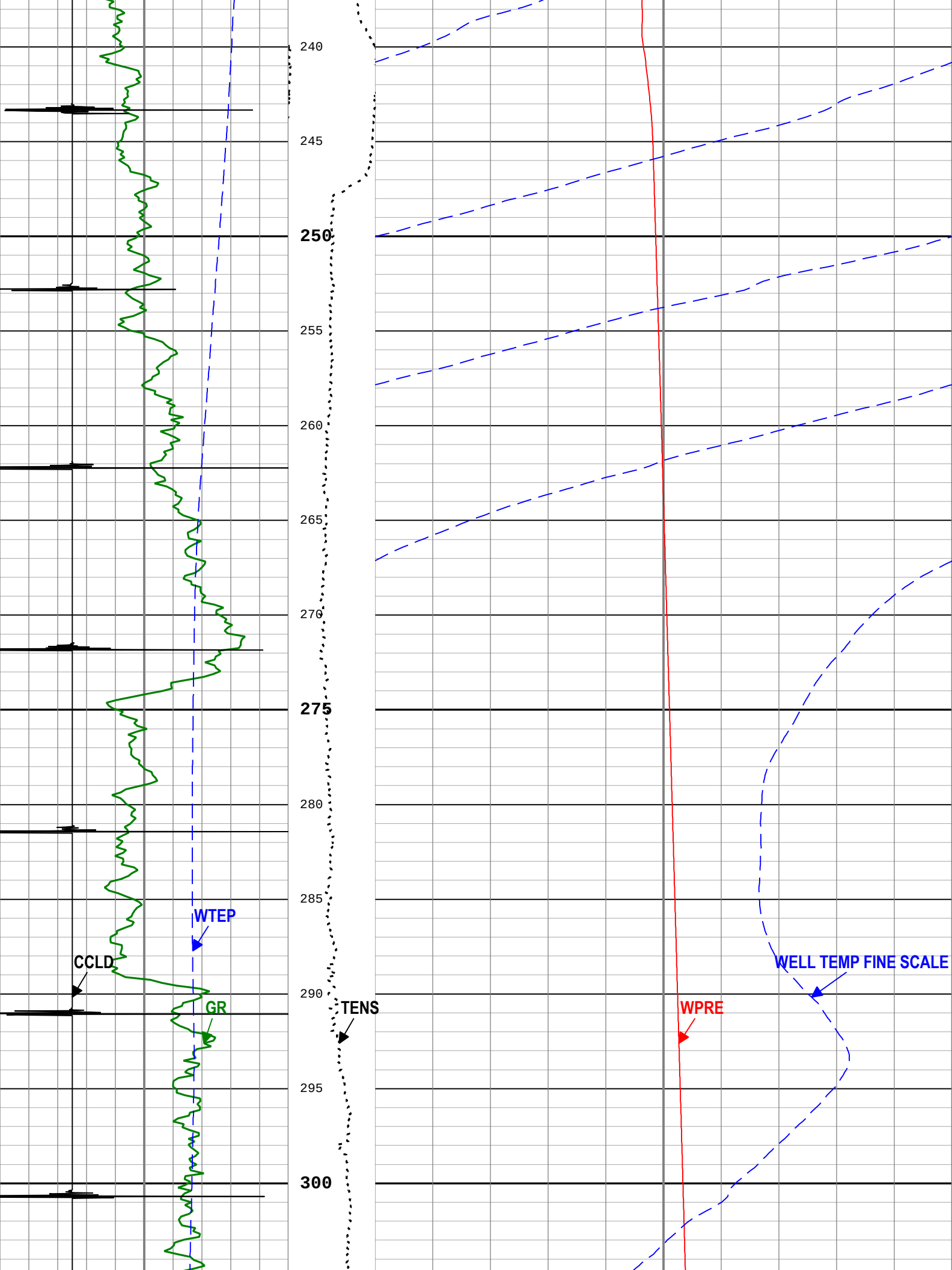
WELL TEMP FINE SCALE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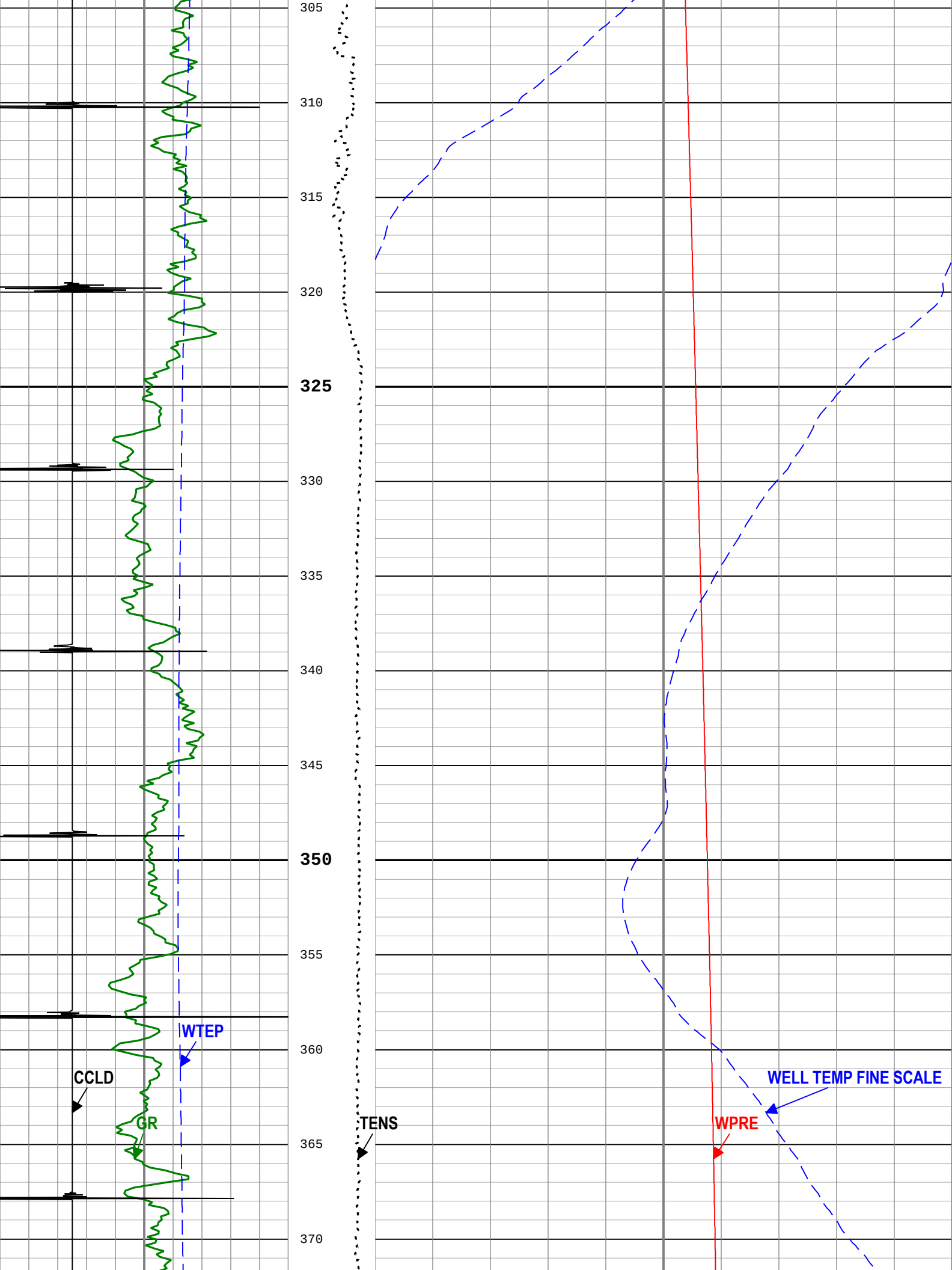
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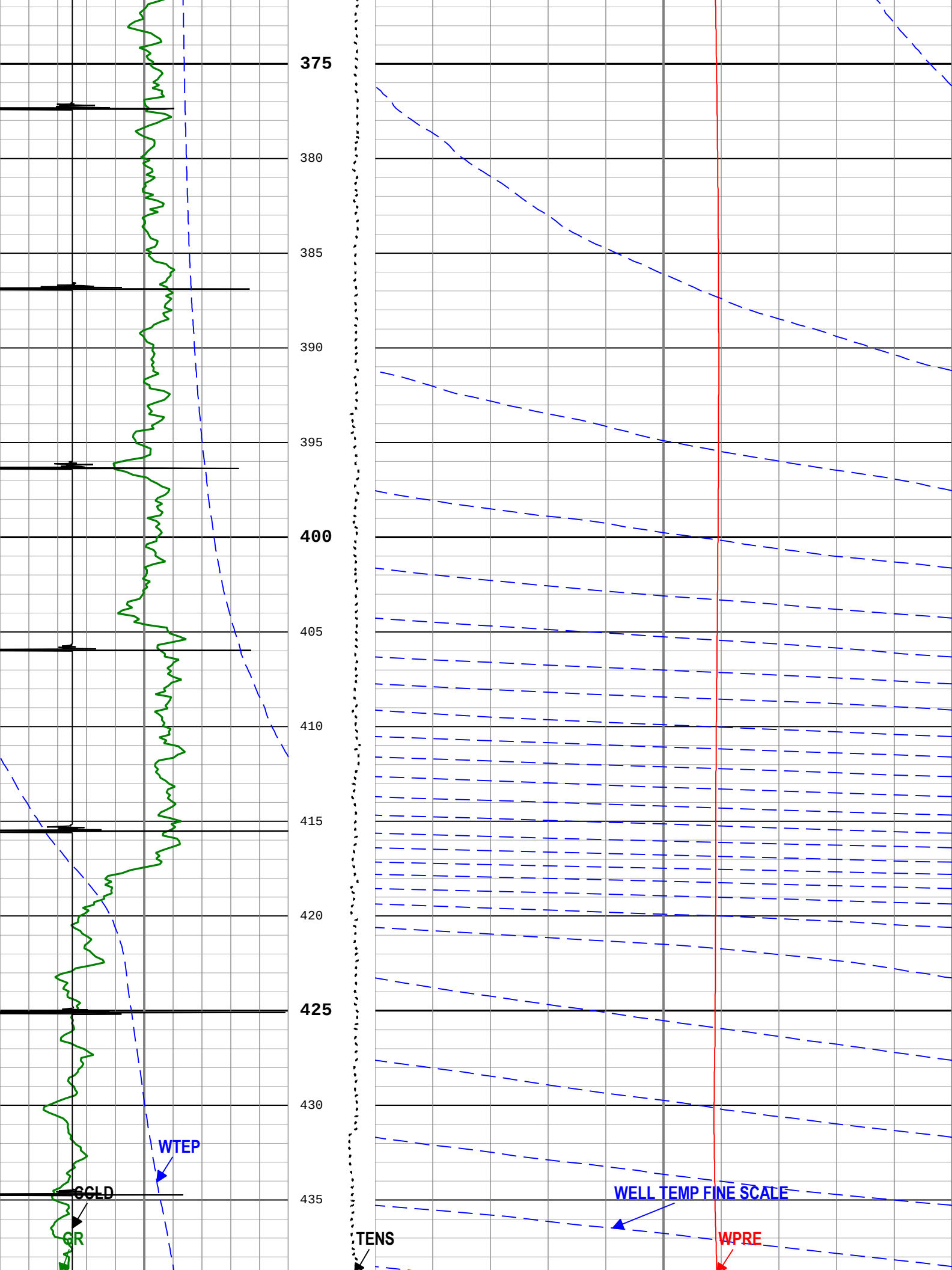
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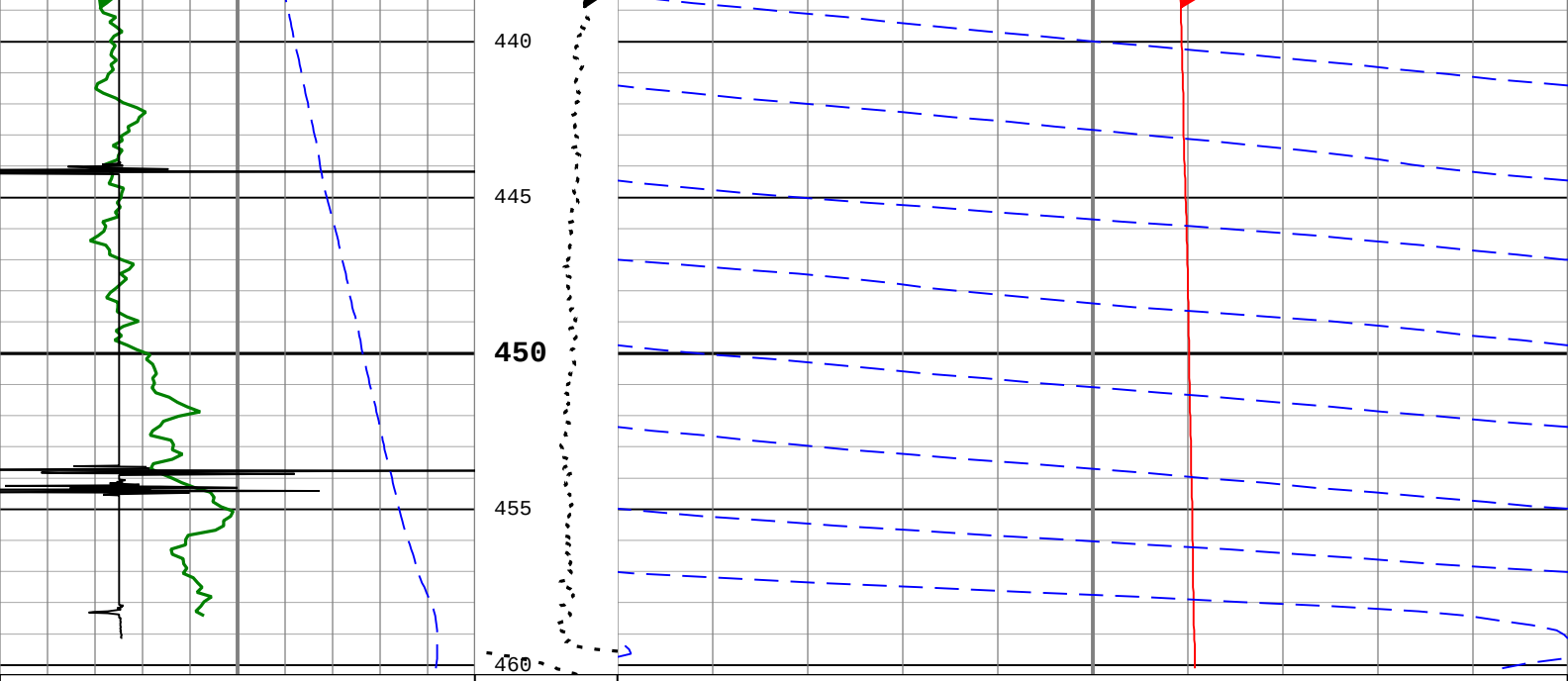

TIME_1900 - Time Marked every 60.00 (s)

Description: PSP Depth Format: Log (TEMP DOWN PASS imperial) Index Scale: 1:240 Index Unit: m Index Type: Measured Depth Creation Date: 29-Jul-2018 13:08:14

Channel Processing Parameters

Tool Control Parameters

DE02-00234: 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	

Calibration Report

HBMS-B (PSP HBMS-B Tool) Calibration - Run DE02-00234

Primary Equipment :

HBMC	HBMC-A	35144
HTPS	HTPS-A	2908

Calibration Parameter :

JIG-BKGD

PBMS Gamma Ray Check - HBMS Gamma Ray Accumulations

Before (Measured): 08:30:50 29-Jul-2018 After:

Measurement	Unit	Phase	Nominal	Low Limit	Actual	High Limit
GR Zero Average	gAPI	Before	30	0	28.88516	120
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
GR Zero Standard Deviation	gAPI	Before			19.24074	
		After	-----	-----	-----	-----
		After-Before	-----	-----	-----	-----
GR Zero Accumulation	gAPI	Before			61.21534	
		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 - 0	gAPI	Before	-----	-----	-----	-----	
		After			NOT DONE		
		After-Before	-----	-----	-----	-----	

HBMS Gamma Ray Master Calibration

Master (EEPROM): 00:00:00 11-Jul-2007

PBMS_GR_MODEL (Master) GR Coefficients

	Rt**0	Rt**1
Rt**0	2000	1950

HBMS Well Temp Master Calibration

Master (EEPROM): 00:00:00 07-Mar-2008

PBMS_RTD_THERM (Master) RTD Coefficients

	Tt**0	Tt**1	Tt**2	Tt**3	Tt**4	Tt**5
Tt**0	-718.7785	464.2469	-126.0553	19.32179	-1.05736	0

HBMS CQG Master Calibration

Master (EEPROM): 00:00:00 07-Mar-2008

PBMS_P_GAUGE_PRES (Master) CQG Pressure Model Coefficients

	Fb**0	Fb**1	Fb**2	Fb**3	Fb**4	Fb**5
Fc**0	8933.378	0.0378936	1.237724E-07	-7.84575E-11	-1.499663E-15	-1.721874E-20
Fc**1	-1.078725	-1.307734E-05	-1.052684E-10	9.933236E-17	1.868535E-20	0
Fc**2	9.540245E-07	4.600158E-11	9.309138E-16	0	0	0
Fc**3	3.111973E-12	3.641808E-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 (Master) CQG Temperature Model Coefficients

	Fc**0	Fc**1	Fc**2	Fc**3	Fc**4	Fc**5
Fb**0	120.2991	-0.0003876529	6.764739E-09	1.642167E-13	-1.437137E-17	-3.602714E-22
Fb**1	-0.005977396	1.61306E-08	1.757091E-13	4.741786E-18	-5.878521E-22	0
Fb**2	-3.152556E-08	3.596535E-13	2.34002E-18	0	0	0
Fb**3	-2.553388E-13	9.362392E-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 (Master) CQG Clock Frequency Model Coefficients

	(Fb'-Fc')**0	(Fb'-Fc')**1	(Fb'-Fc')**2	(Fb'-Fc')**3	(Fb'-Fc')**4	(Fb'-Fc')**5
(Fb'-Fc')**0	31015.05	0.002697664	6.920751E-07	-6.564748E-11	-4.552713E-16	3.471011E-21

PBMS_CQG_FCLK_TEMP (Master) CQG Clock Temperature Model Coefficients

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	114.778	-0.005659159	-3.626761E-08	2.558915E-13	1.121204E-16	-6.600849E-21

Company:	IMPERIAL OIL RESOURCES LIMITED
Well:	IMP 05 H58-H06 COLD LK 1-15-66-4
Field:	LEMING
Province:	ALBERTA
Status	**MD**

Schlumberger

TEMPERATURE LOG