

STEP

energy services

BOREHOLE COMPENSATED SONIC LOG

Company MERIT ENERGY COMPANY Well DRUSSEL A-11 Field COYOTE NORTHWEST County FINNEY State KANSAS Country USA API No. 15-055-22526-0100		File No : HAYS-70374 Company : MERIT ENERGY COMPANY Well : DRUSSEL A-11 Field : COYOTE NORTHWEST County : FINNEY State : KANSAS Country : USA API No : 15-055-22526-0100	
Location : 314' FWL & 2359' FSL NW SW		LSD : Sect : 27 Twp : 25S Rge : 33W	
Permanent Datum: Drilling Measured From: GL KB Elevations: KB 2927.00 Services: GRT MLT Log Measured From: KB KB DF 2926.00 CNT CST Above Permanent Datum: 12.00 Ft GL 2915.00 LDT PIT			
Date	02-21-2020		
Run Number	1		
Depth--Driller	5270.0 Ft		
Depth--Logger	5269.0 Ft		
First Reading	5268.0 Ft		
Last Reading	1785.0 Ft		
Casing--Driller	1799.0 Ft		
Casing--Logger	1785.0 Ft		
Bit Size	7.875 In		
Casing Size	8.625 In		
Hole Fluid Type	WBM		
Density	9.2		
Fluid Loss	6.4		
PH/Viscosity	10.5	58.0	
Sample Source	MEASURED		
RM@Measured Temp.	1.400 @ 61 F		
RMF@Measured Temp	1.190 @ 61 F		
RMG@Measured Temp.	1.610 @ 61 F		
Source RMF/RMG	CALCULATED/CALCULATED		
RM@BHT	0.670 @ 135 F		
Time Circulation Stopped			
Max Recorded Temp.	135	F	
Equipment/Base	TRK 137	HAYS	
Recorded By	R. FRANKLIN		
Witnessed By	R. GONZALES, K. ROBINSON		

The customer is hereby warned that by providing the log data herein, STEP Energy Services does not agree to provide any interpretation of log data, conversion of log data to physical rock parameters or recommendations. STEP Energy Services does not guarantee or warrant either expressly or impliedly, the accuracy of any interpretation of log data, conversion of log data to physical rock parameters or recommendations which may be given by STEP Energy Services personnel. Any interpretation, conversion or recommendation is not part of the consideration for the agreement between the parties and is not part of any part of the charge by STEP Energy Services for its services. Any user of the log data is warned that said user is not entitled to rely on interpretations, conversions or recommendations as aforesaid.

Bitsize Intervals		Casing Strings			
Size (In)	Bottom (Ft)	Size (In)	Weight (Lbs)	Bottom (Ft)	Top (Ft)
7.875	5270.00	8.625	0.00	1790.00	0.00

Run Number	1		
Date	02-21-2020		
Date/Time On Bottom	02-21-2020 00:45		
Depth to Fluid	0.0 Ft		
Salinity	1250.000		
RMF@BHT	0.570 @ 135 F		
RMC@BHT	0.770 @ 135 F		

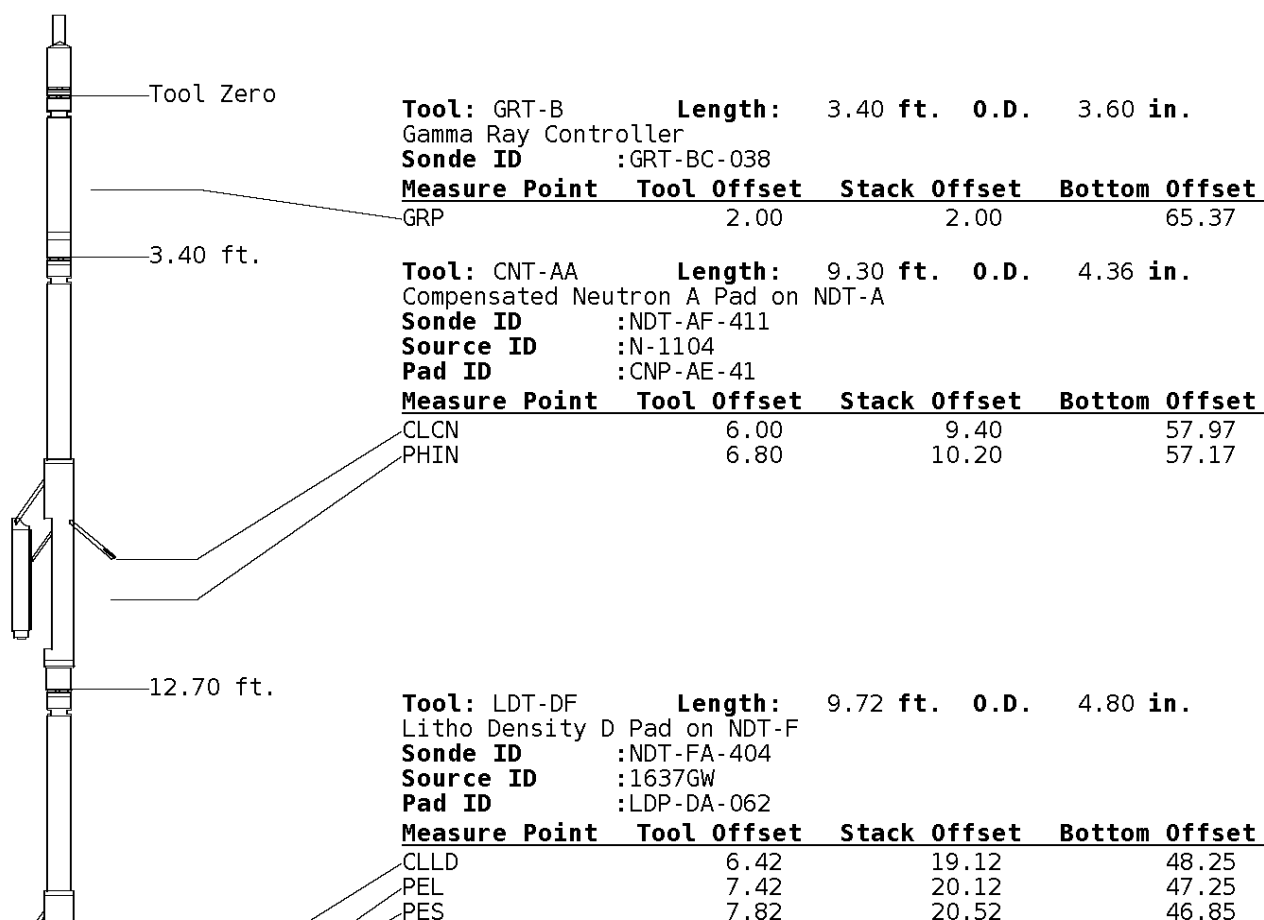
ALL PRESENTATIONS AS PER CUSTOMER REQUEST
GRT, CNT, LDT, CST, MLT AND PIT RUN IN COMBINATION
CALIPERS ORIENTED ON X-Y AXIS
2.71 G/CC USED TO CALCULATE POROSITY
ANNULAR HOLE VOLUME CALCULATED USING 5.5" PRODUCTION CASING
PHIN IS CALIPER CORRECTED

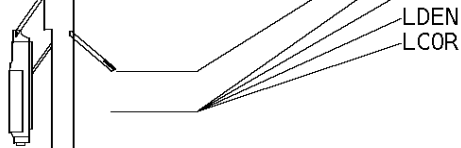
GRT: GRP
CNT: PHIN, CLCNIN,
LDT: PORL, LCORN, PECLN, LDENN, PORLLS, CLLDIN
CST: PORS, CDTF, TTIPF, TT2PF, TT3PF, TT4PF, ITT
MLT: NOR_RF, INV_RF, MSCLPIN
PIT: ILD, ILM, SPU, SFLAEC, CIRD

OPERATORS:
D. RAGSDALE
J. VAUGHN
D.LEGLEITER

Tool String Schematic

Total Tool Length - 67.37 ft.
Maximum Outside diameter - 6.00 in.
Net Weight in Air - 1171.00 lbs.



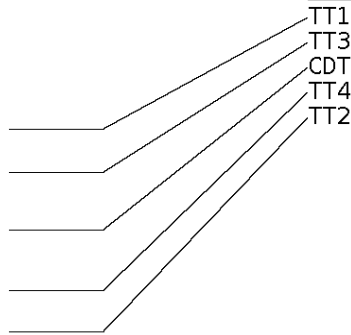


7.62	20.32	47.05
7.62	20.32	47.05

22.42 ft.

Tool: CST-AD **Length:** 13.80 ft. **O.D.** 3.60 in.
Open Hole Sonic
Sonde ID : CST-AB-21

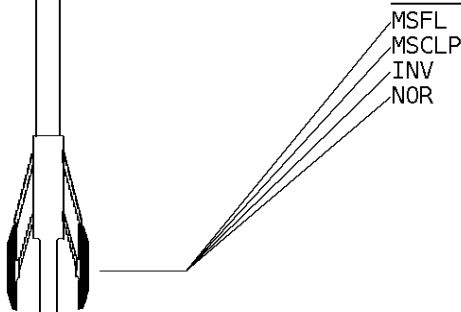
Measure Point	Tool Offset	Stack Offset	Bottom Offset
TT1	4.80	27.22	40.15
TT3	5.80	28.22	39.15
CDT	7.30	29.72	37.65
TT4	8.80	31.22	36.15
TT2	9.80	32.22	35.15



36.22 ft.

Tool: MST-DA **Length:** 9.66 ft. **O.D.** 6.00 in.
Micro Spherically Focused (IC)
Sonde ID : MST-DA-13

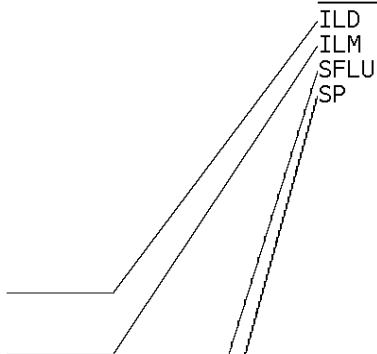
Measure Point	Tool Offset	Stack Offset	Bottom Offset
MSFL	7.60	43.82	23.55
MSCLP	7.60	43.82	23.55
INV	7.60	43.82	23.55
NOR	7.60	43.82	23.55



45.88 ft.

Tool: PIT-CA **Length:** 21.49 ft. **O.D.** 3.62 in.
Phased Dual Induction w/ RM & D
Sonde ID : PIT-AC-043

Measure Point	Tool Offset	Stack Offset	Bottom Offset
ILD	8.92	54.80	12.56
ILM	10.10	55.98	11.39
SFLU	17.49	63.37	4.00
SP	20.60	66.48	0.88



LWT 67.37 ft.

Well File: MERIT_DRUSSEL_A-11_FEB_20_QUINT

Scale: 1:240

Format: CST-240

Segment: V1.D1.S6 MAIN

Acquired: 2020-02/21 01:21 3.4.1-13972

Reference: 0

Processed: 2020-02/21 03:32 3.4.1-13972

NEUTRON (Y) CALIPER
INCHES (IN)

16 26
6 16

DENSITY (X) CALIPER
INCHES (IN)

16 26
6 16

BIT SIZE
INCHES (IN)

6 16

TENSION
LBS

10000 0

GAMMA RAY
API UNITS

150 300
0 150

COMPENSATED SONIC TRAVEL TIME
uSEC/FT

240 140 140 40

SONIC POROSITY
PERCENT

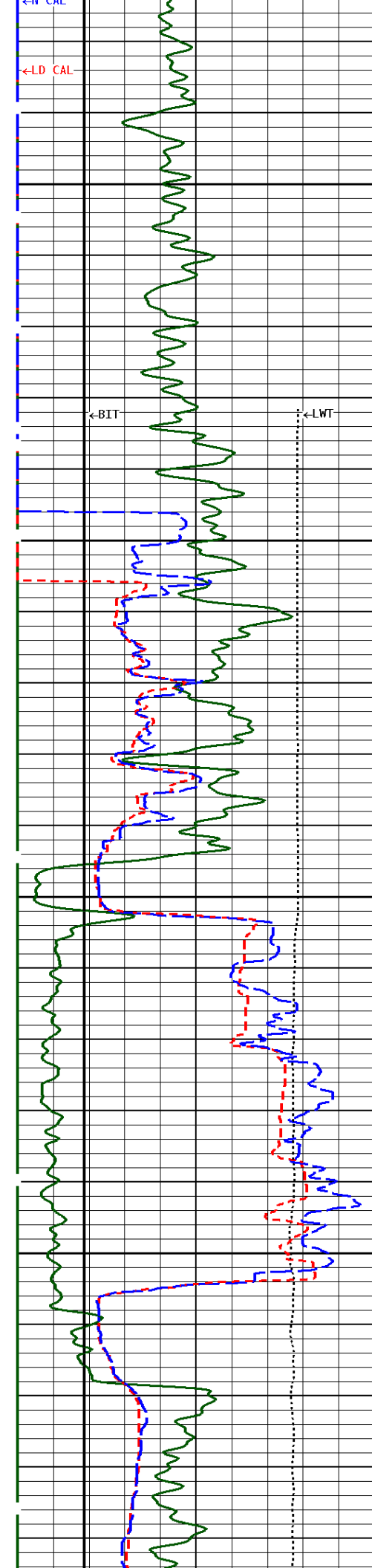
30 -10

1:240 MAIN SECTION

File #1.1.6

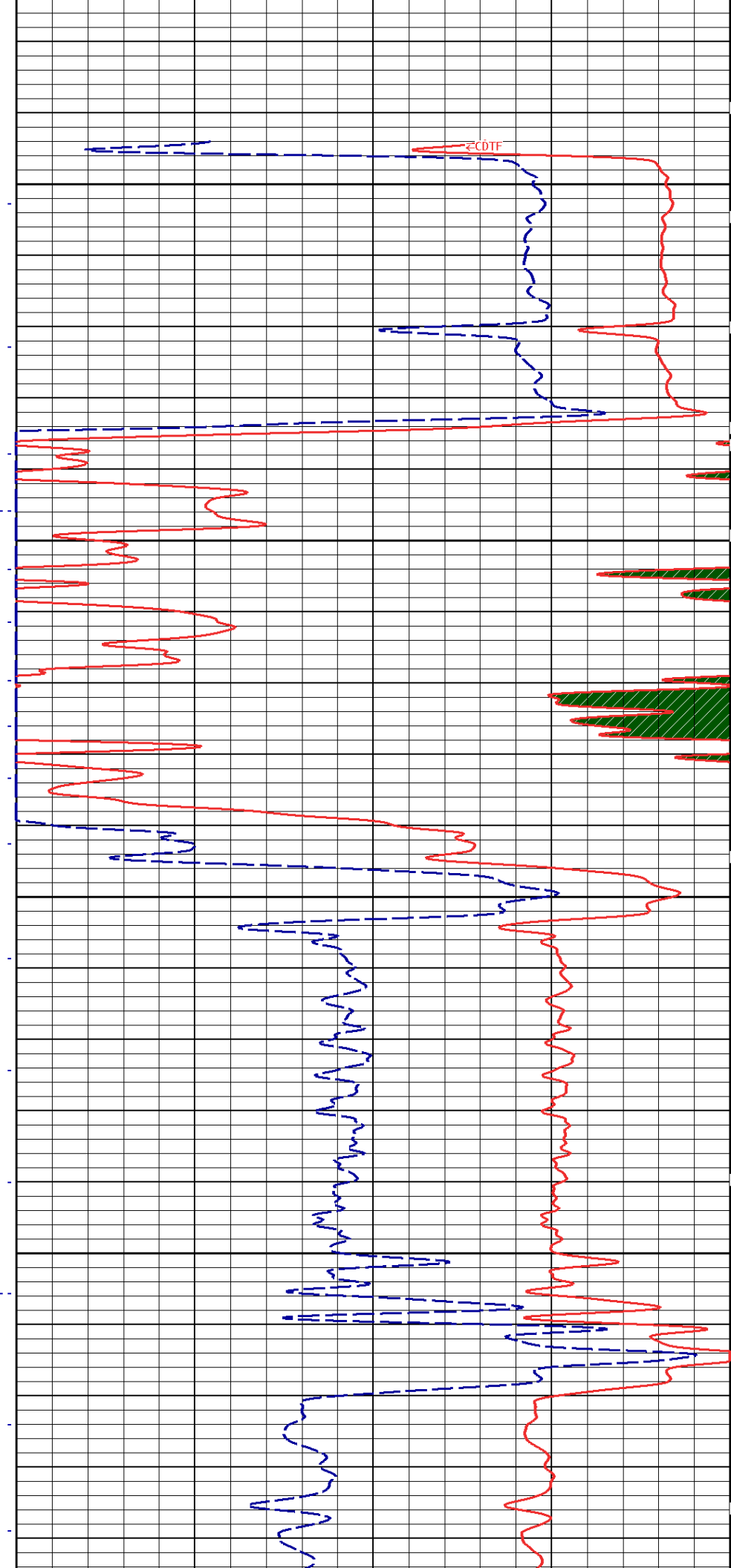
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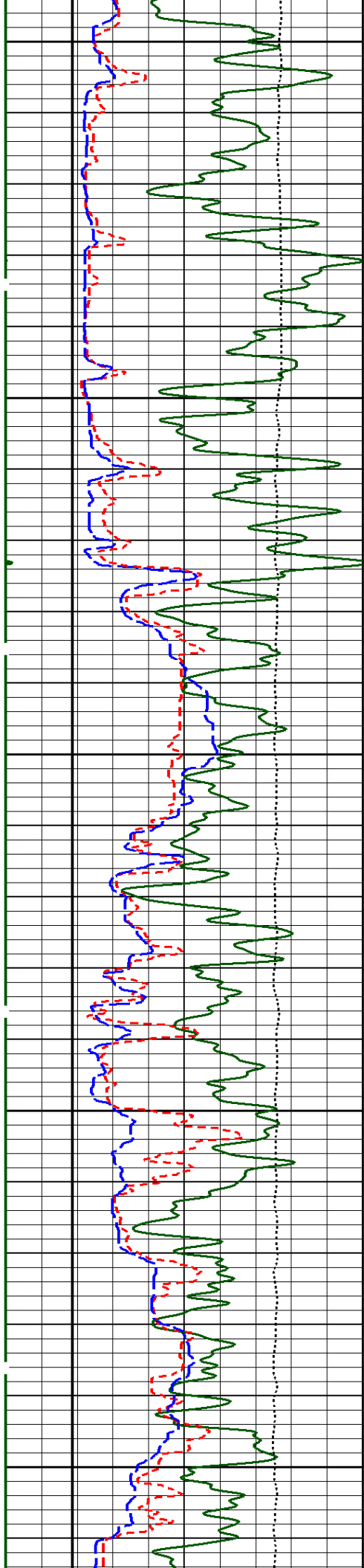
←-GR



1800

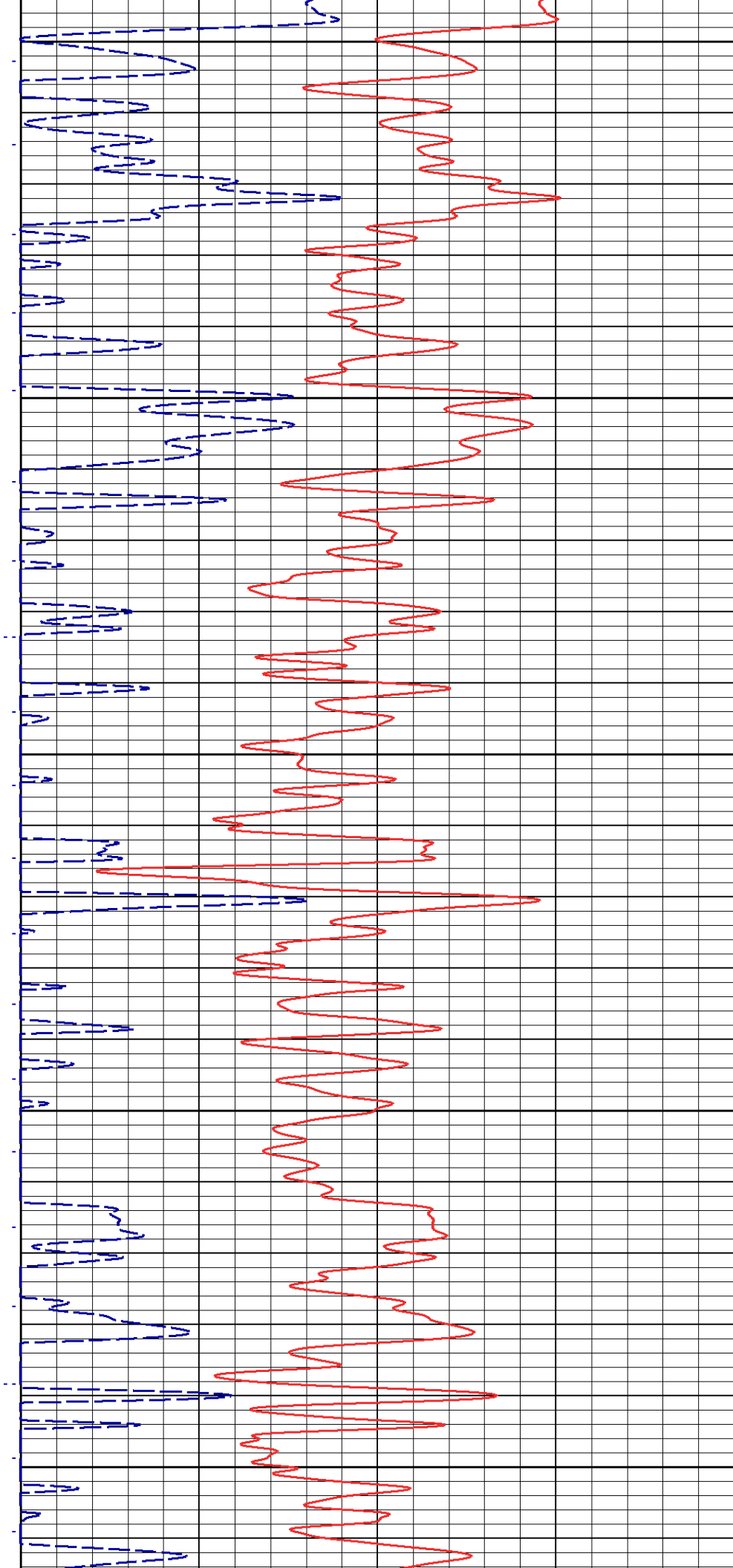
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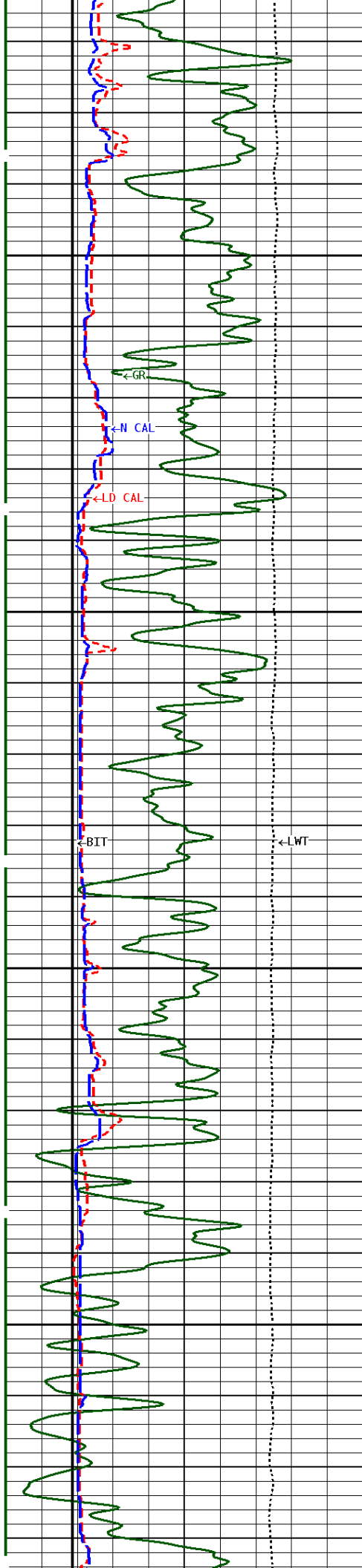




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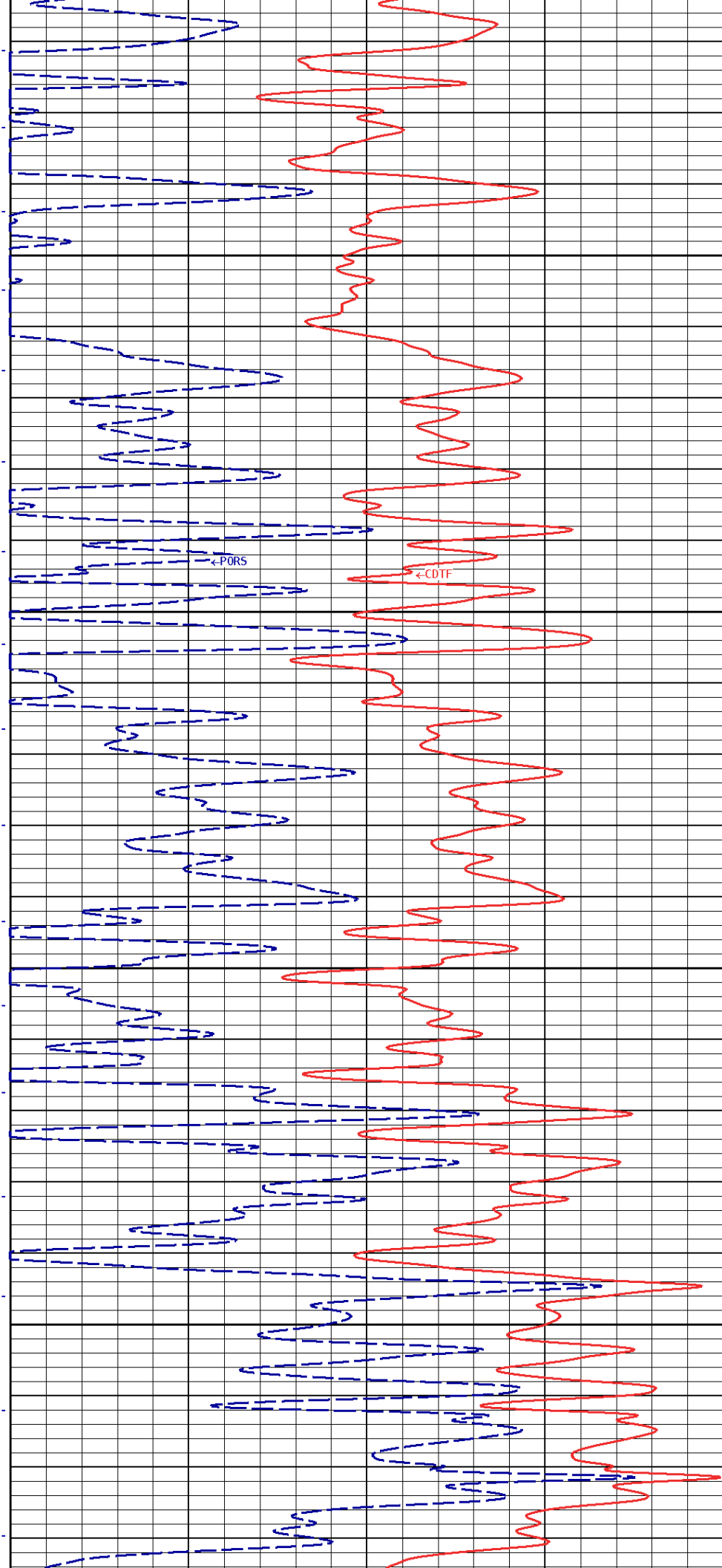
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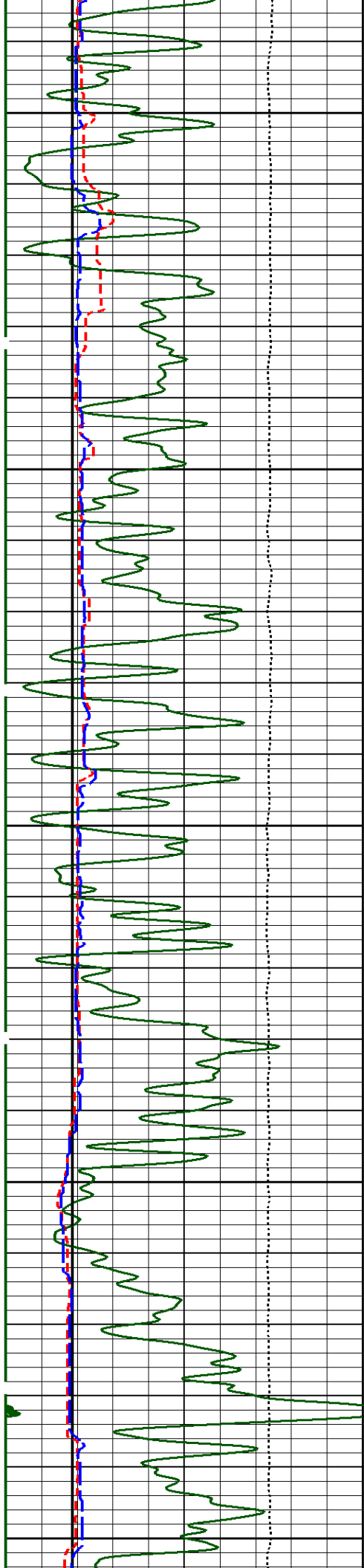




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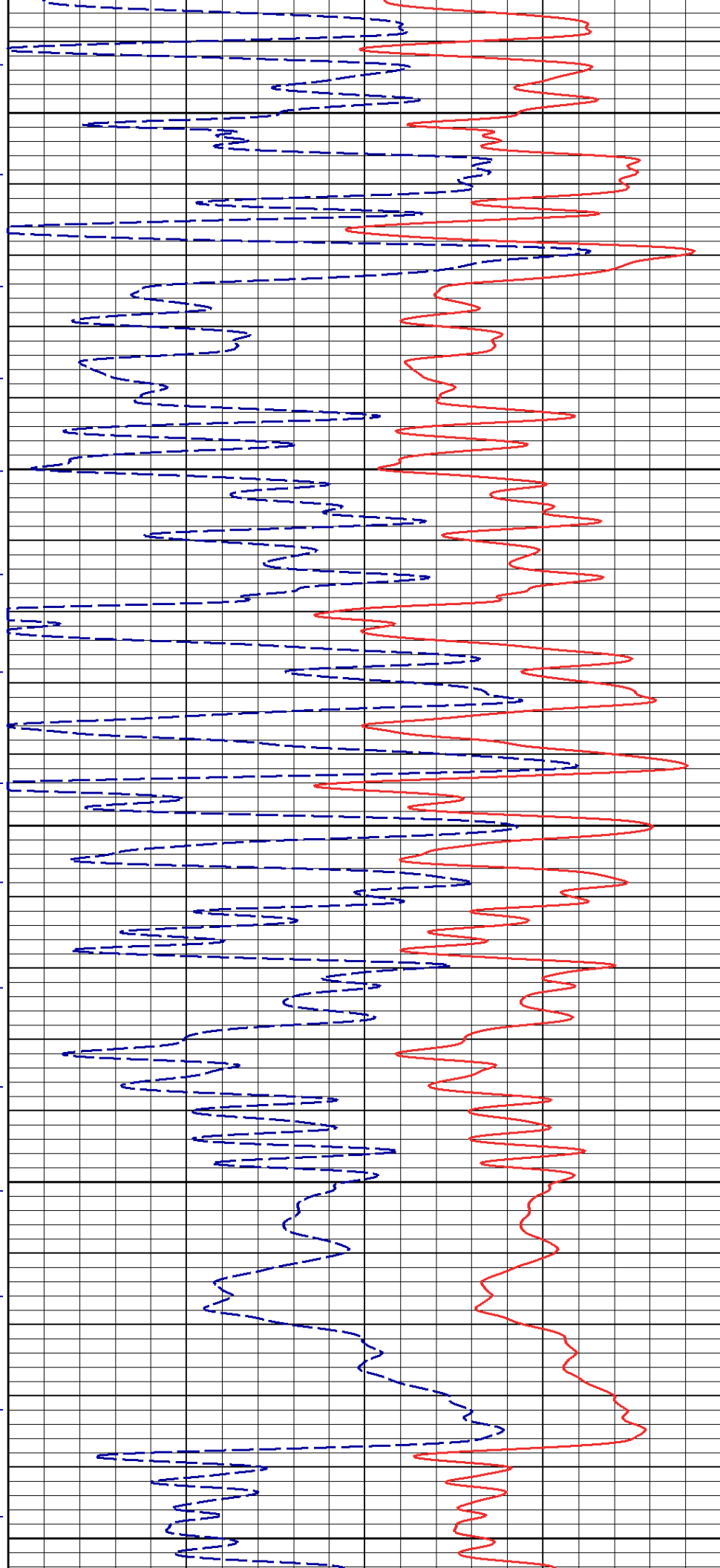


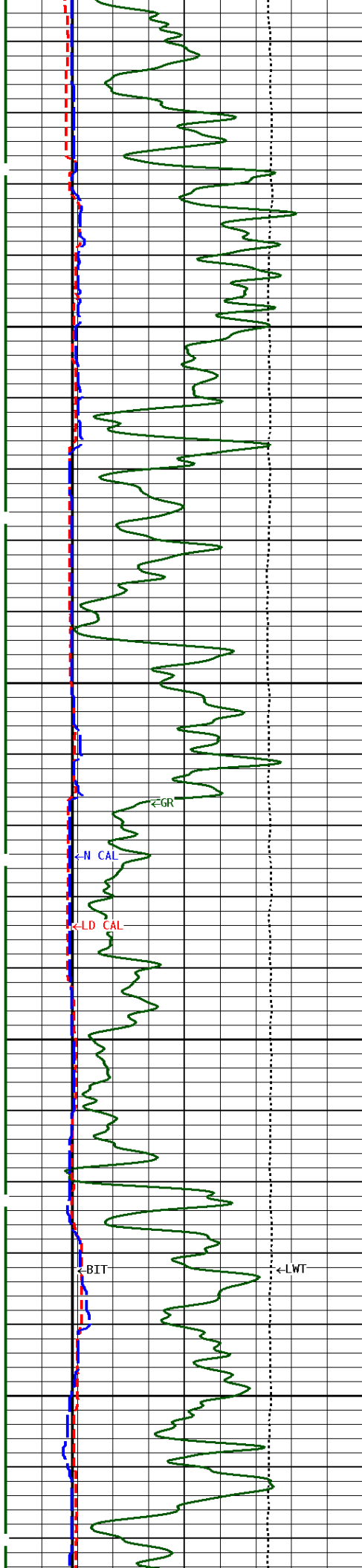


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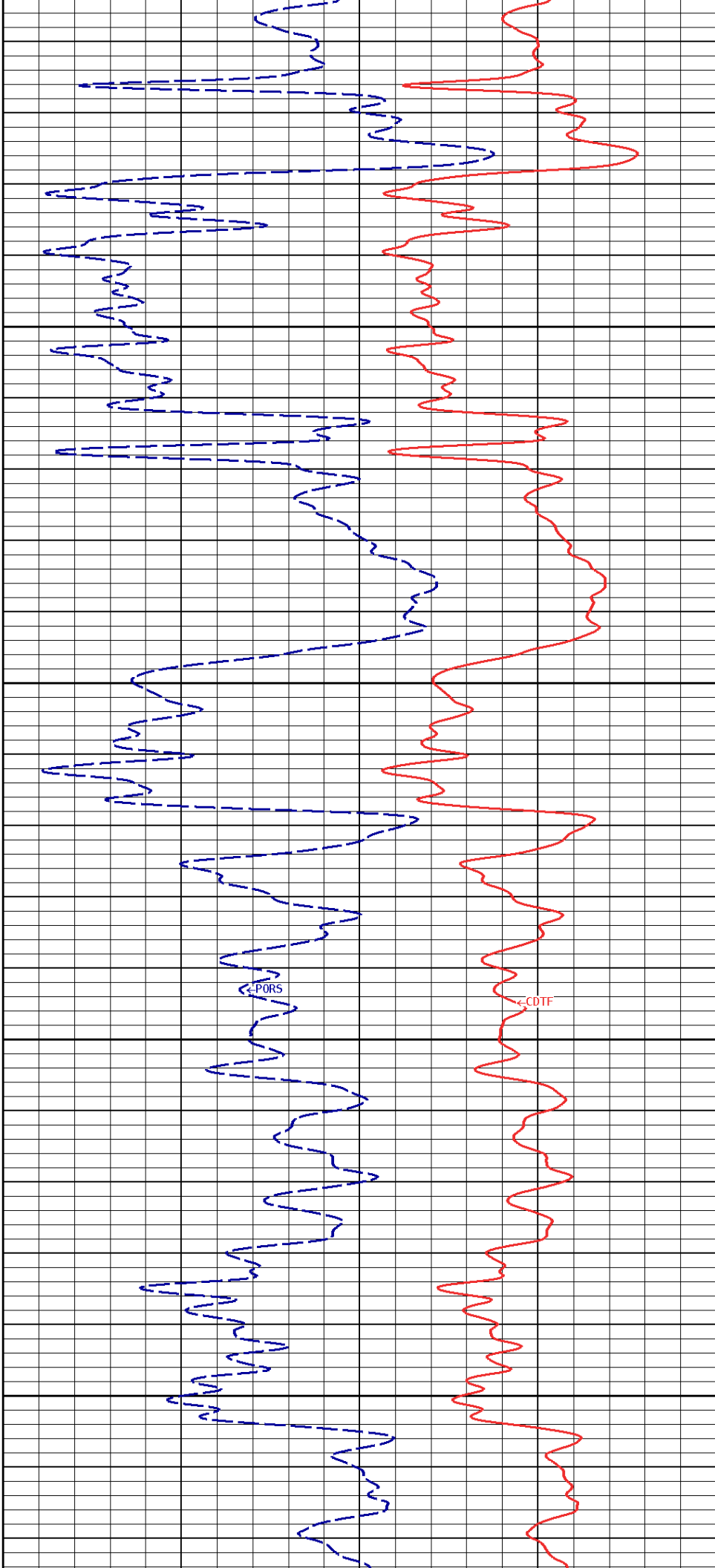
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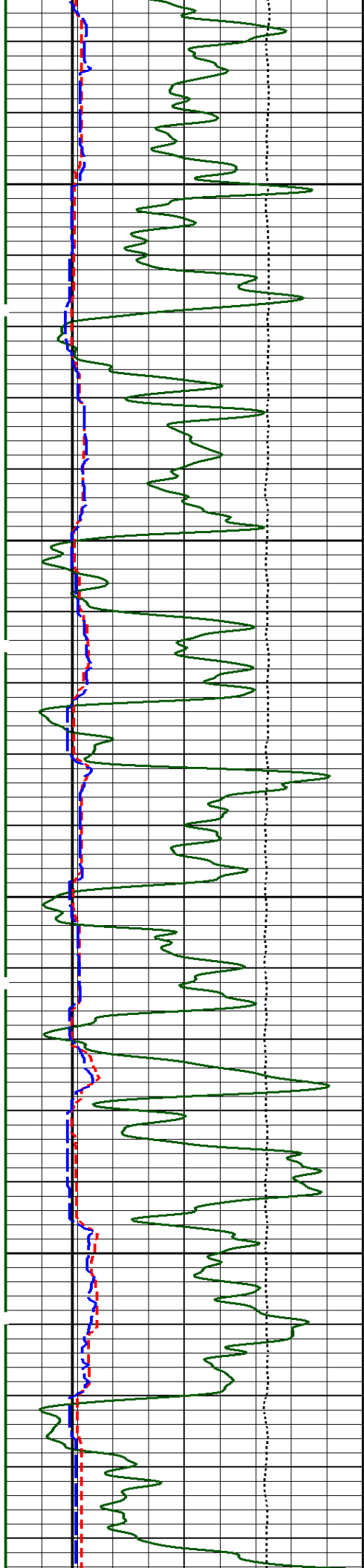




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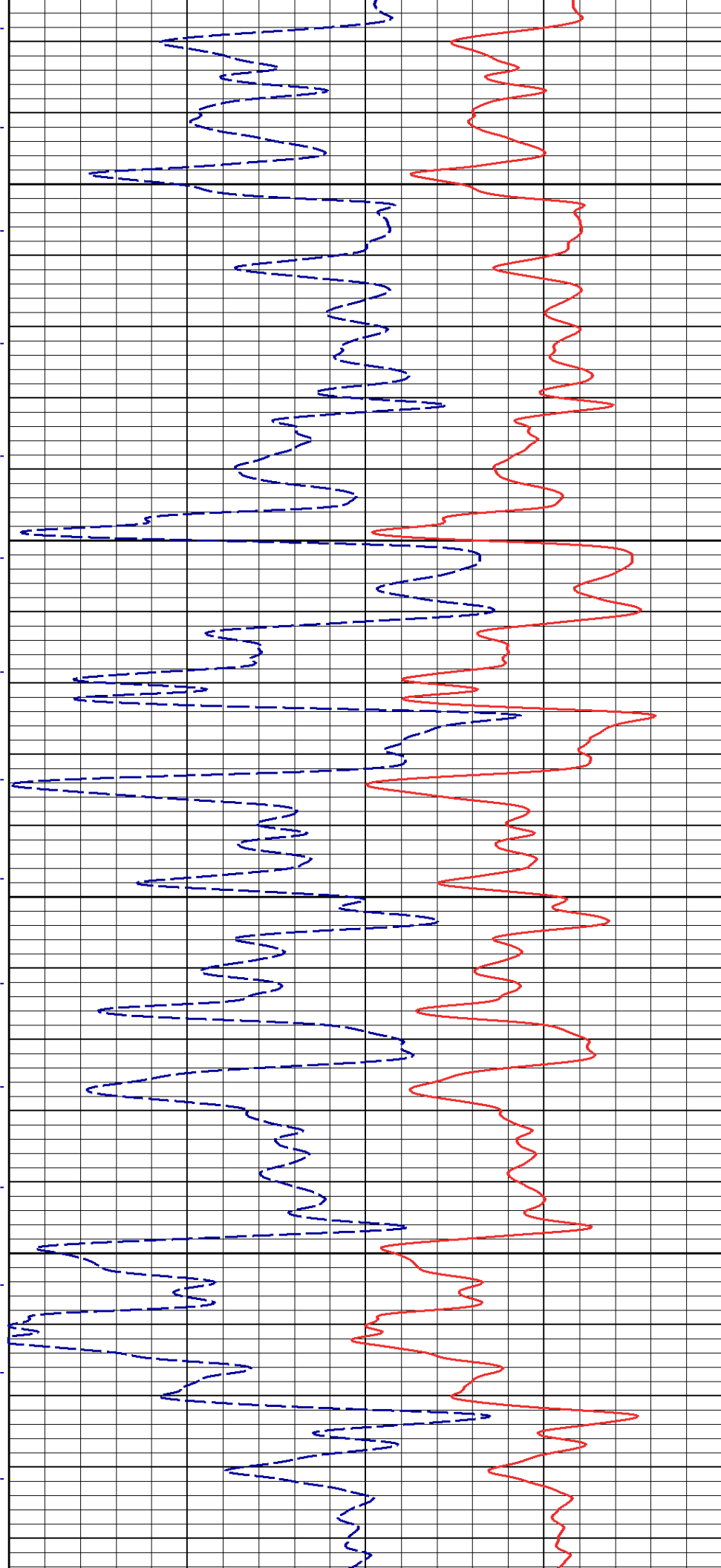
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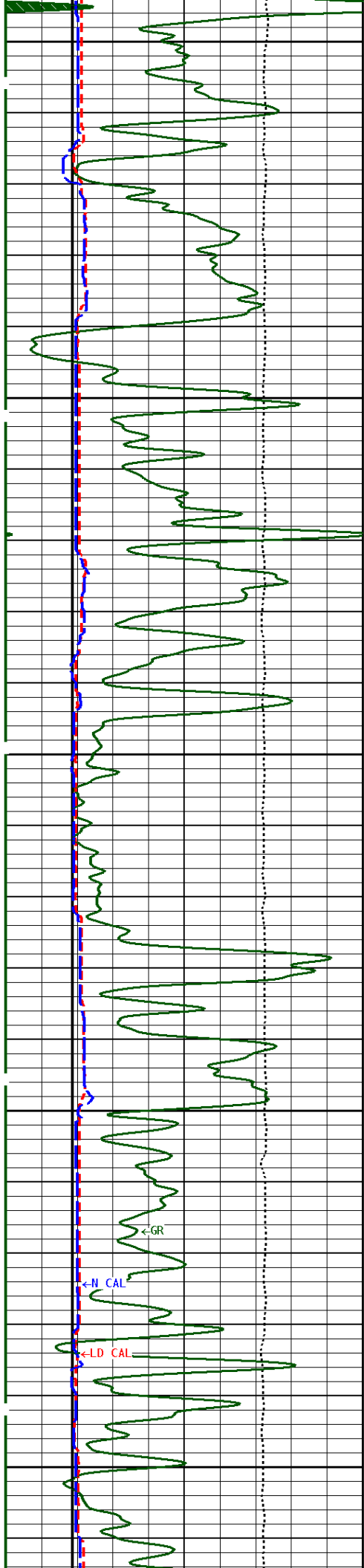




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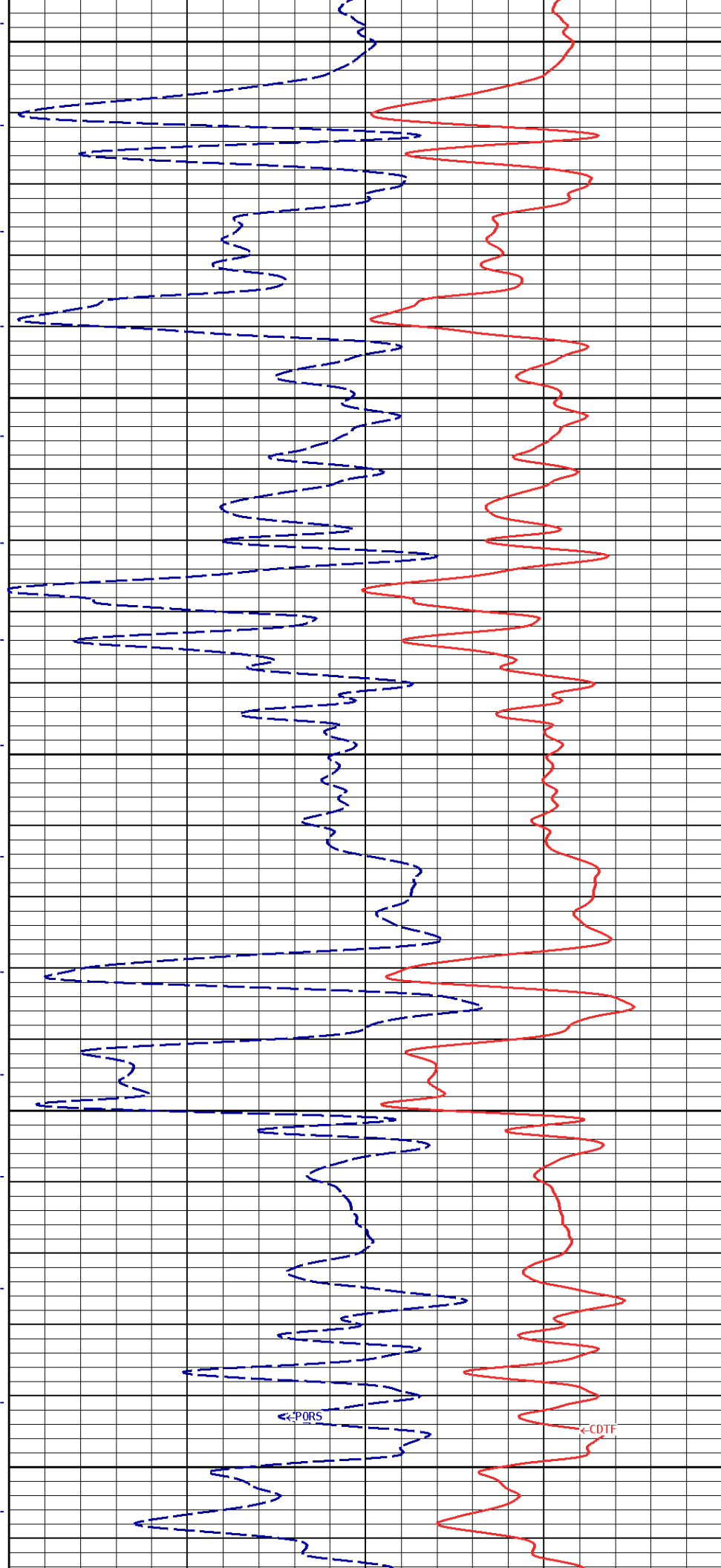
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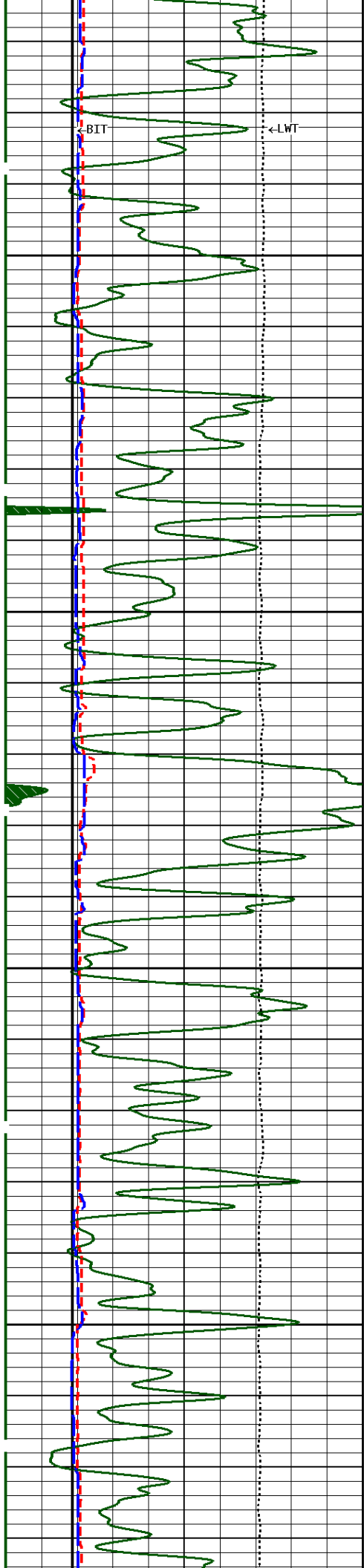
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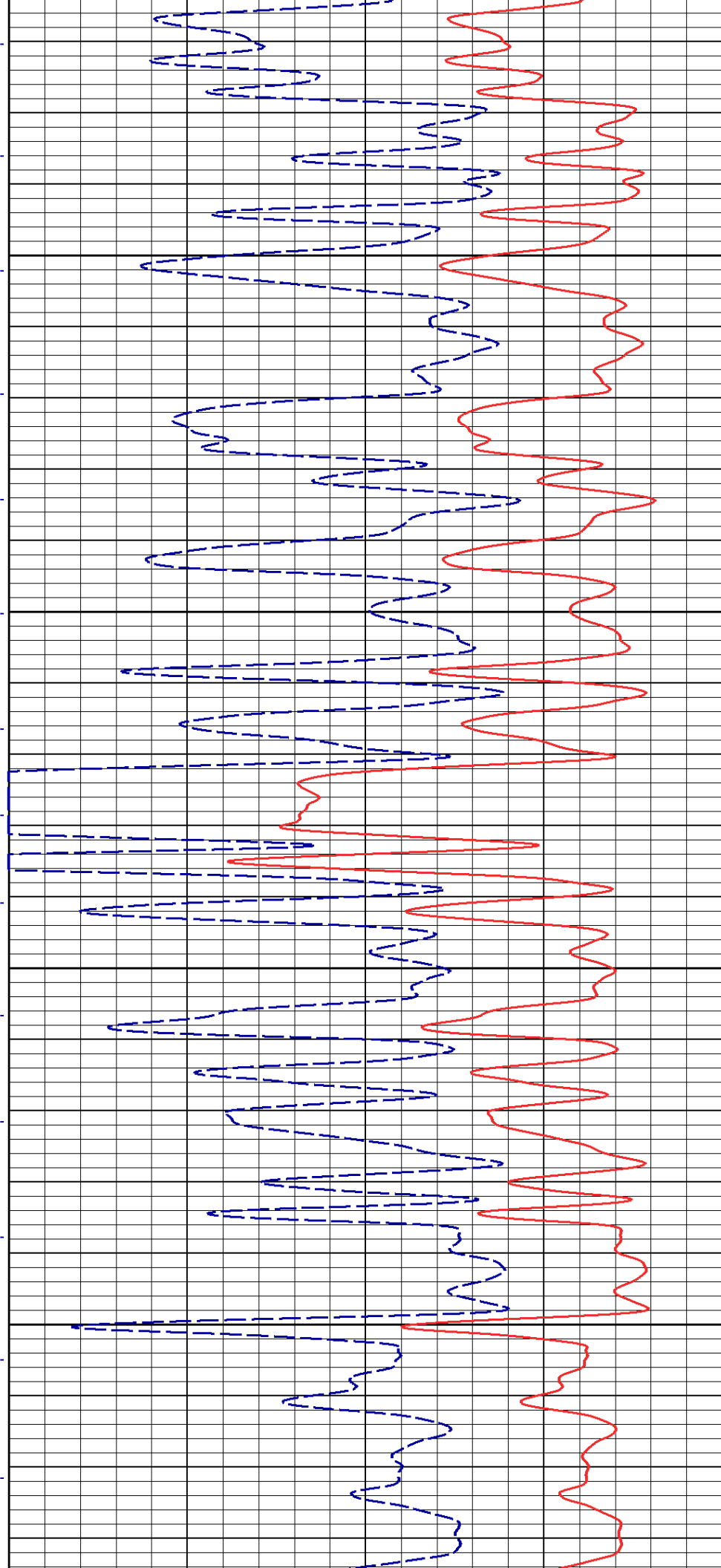
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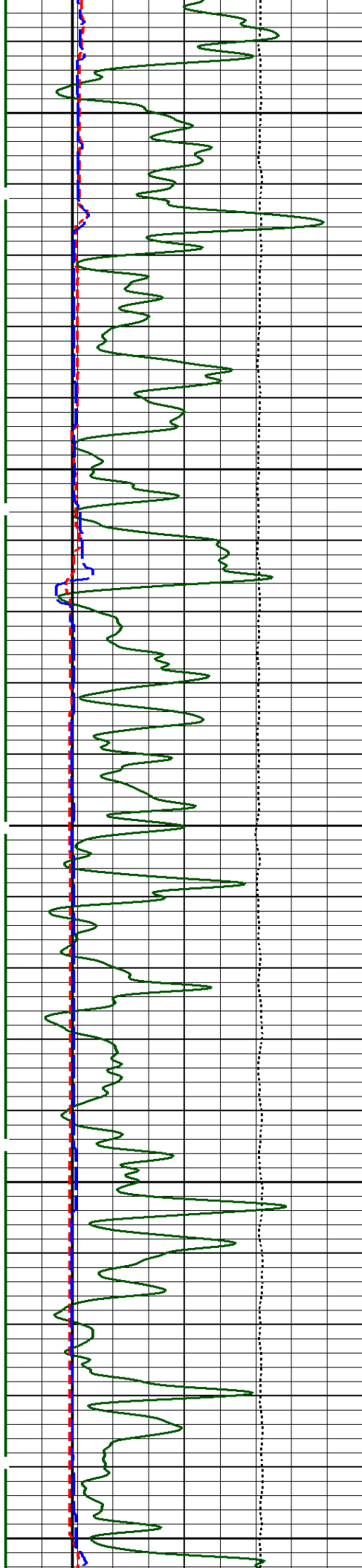
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3300

3400

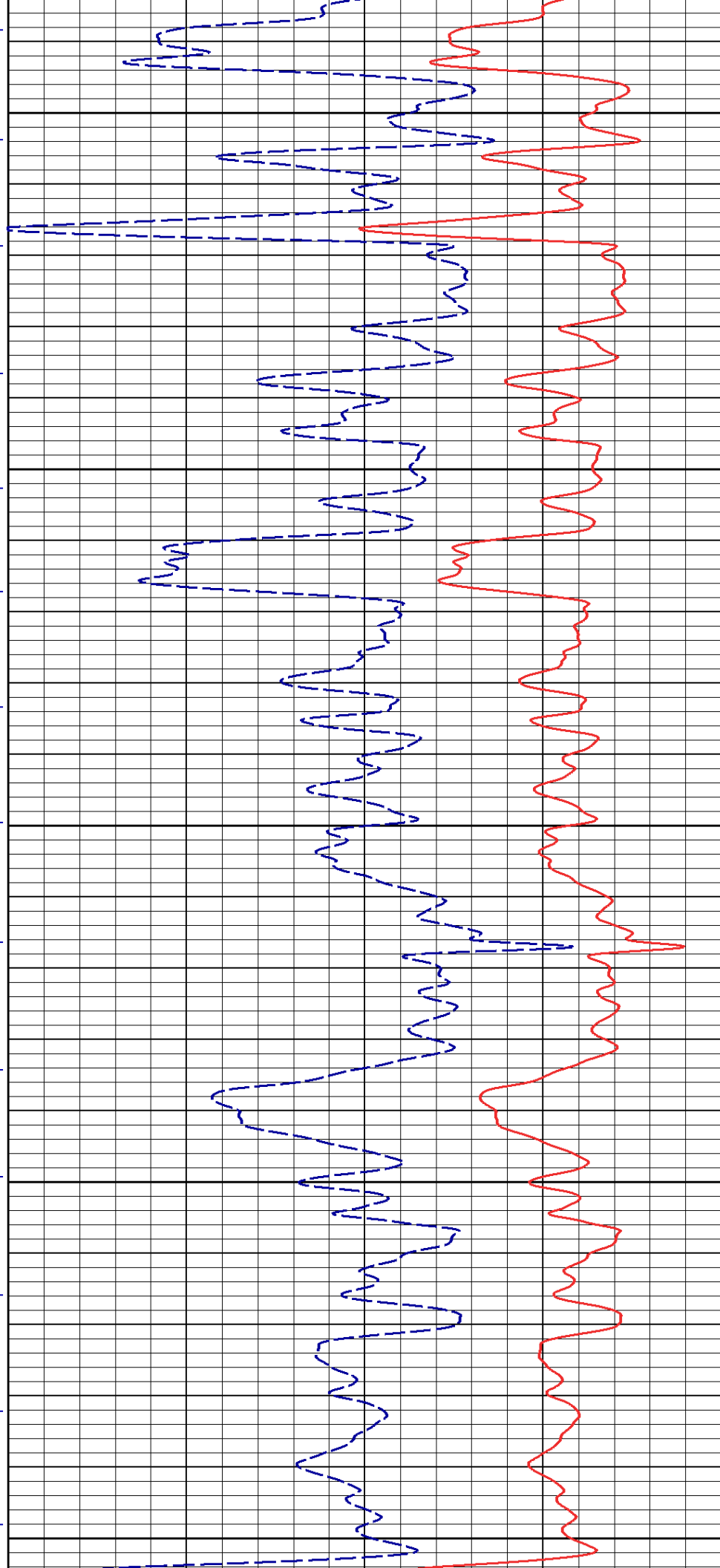


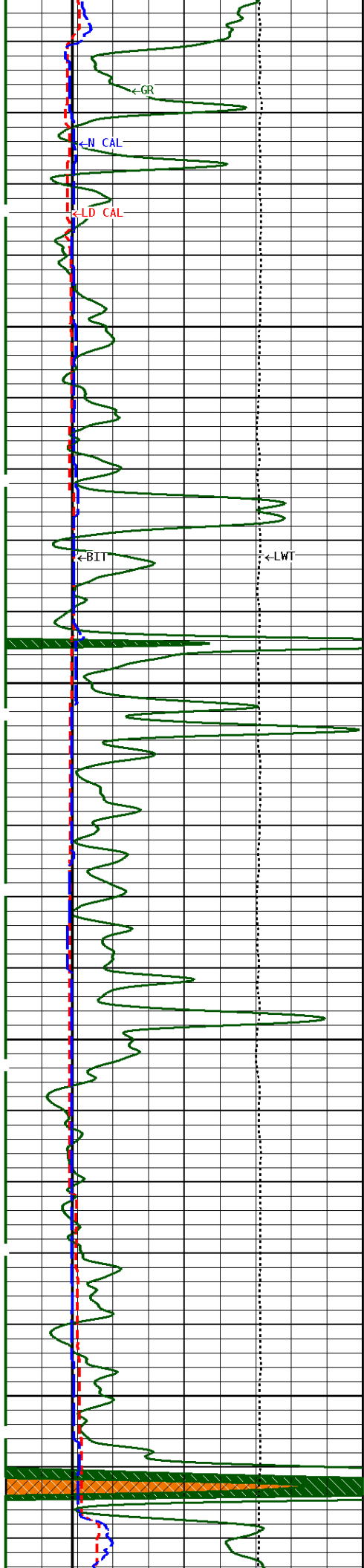


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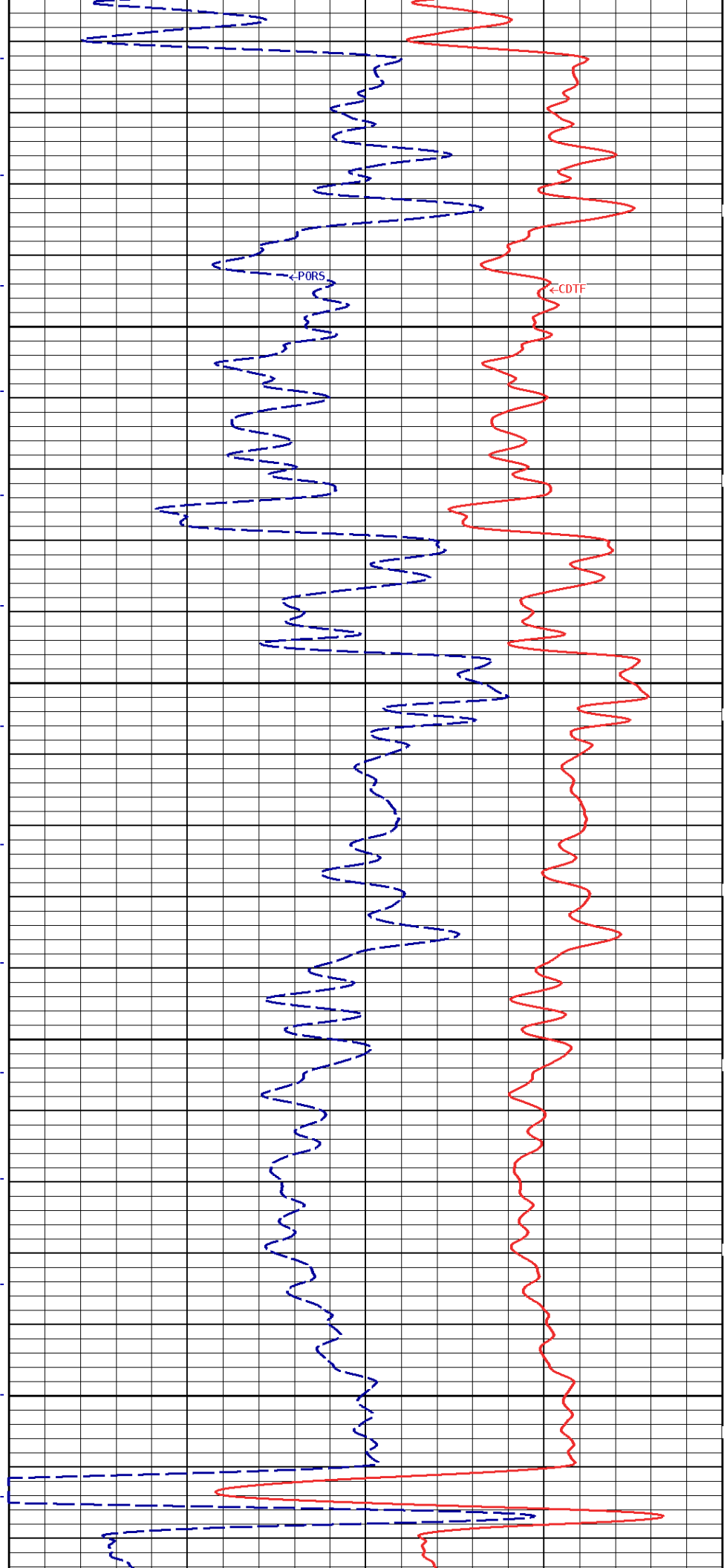
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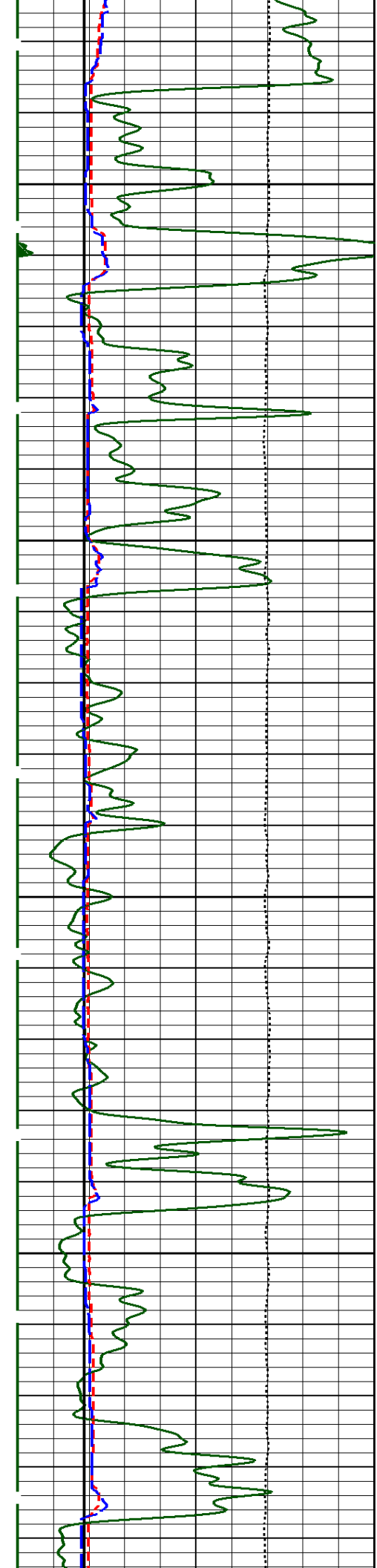




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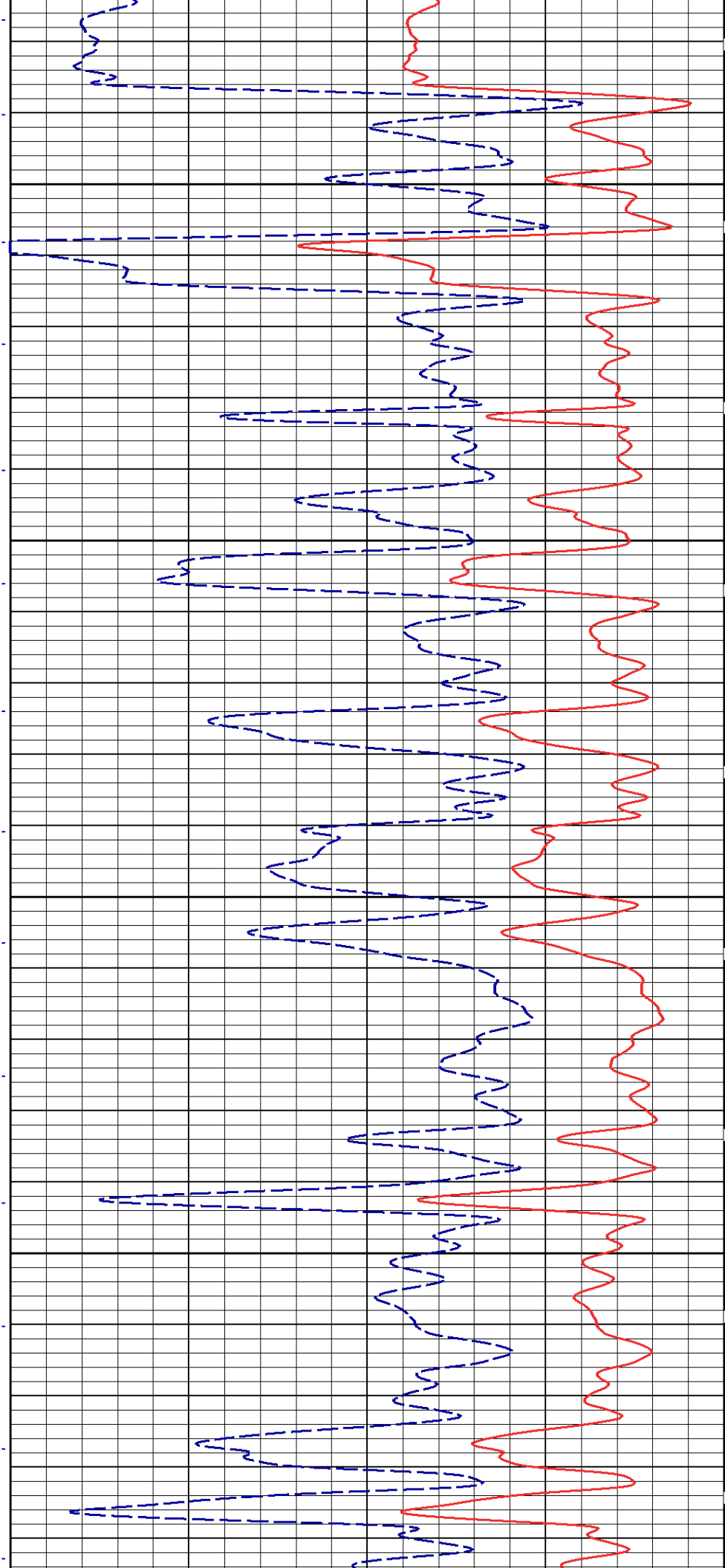
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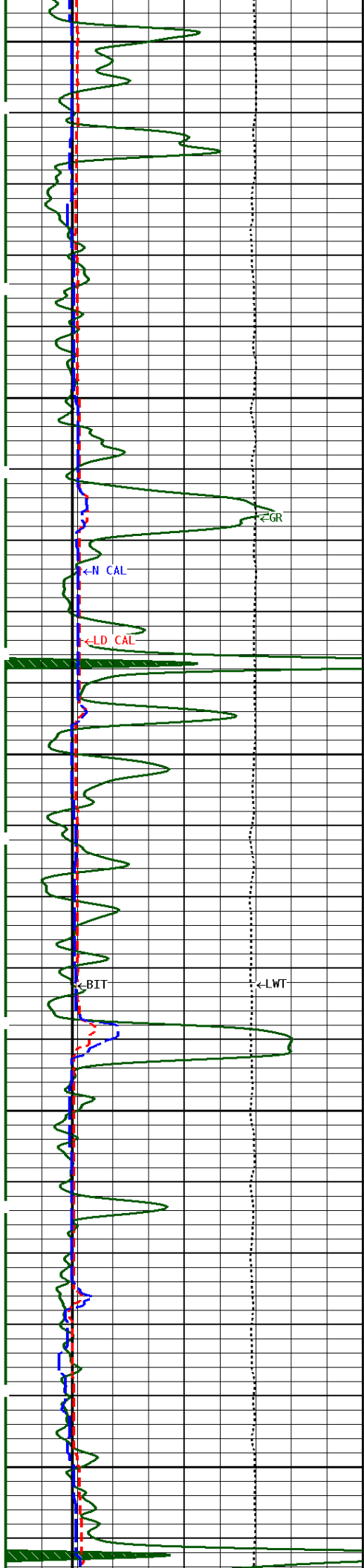




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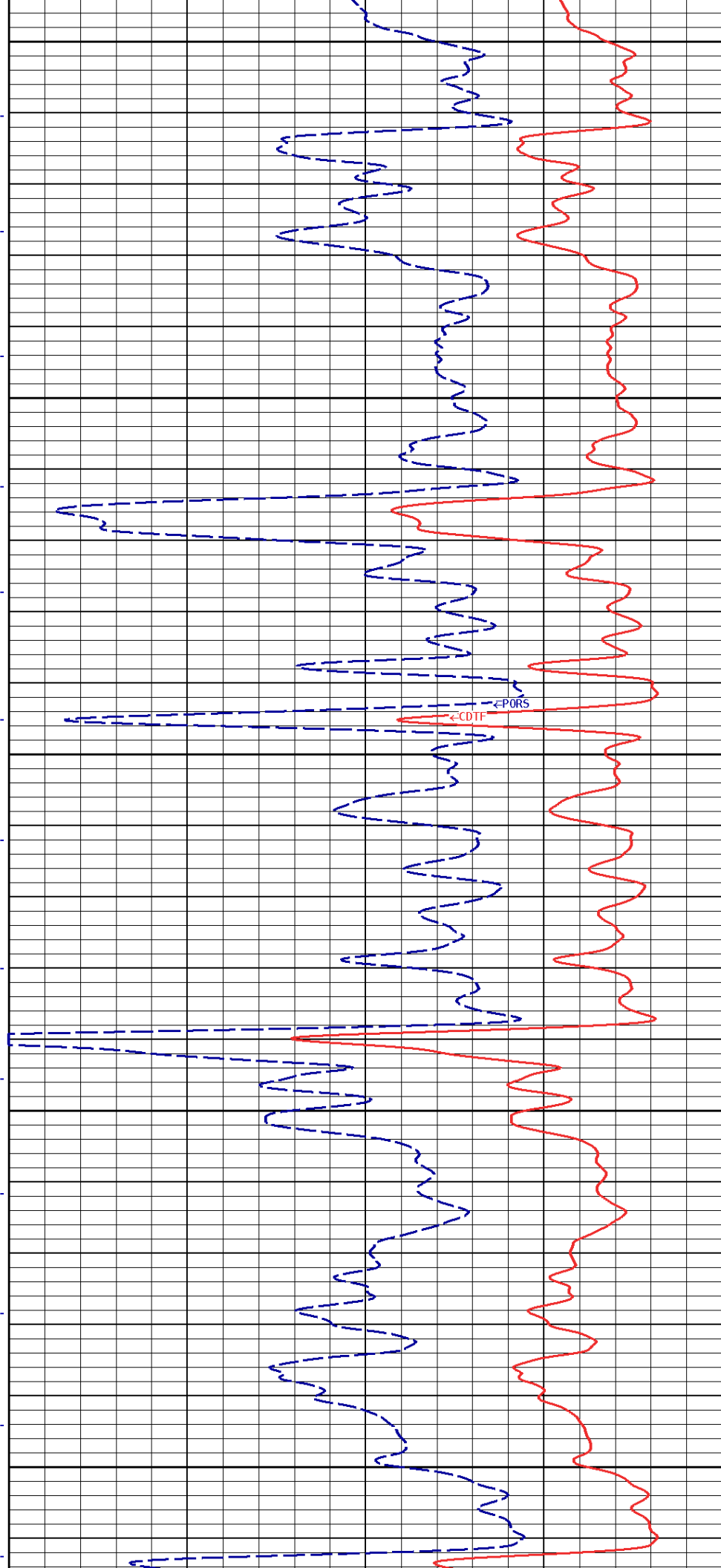
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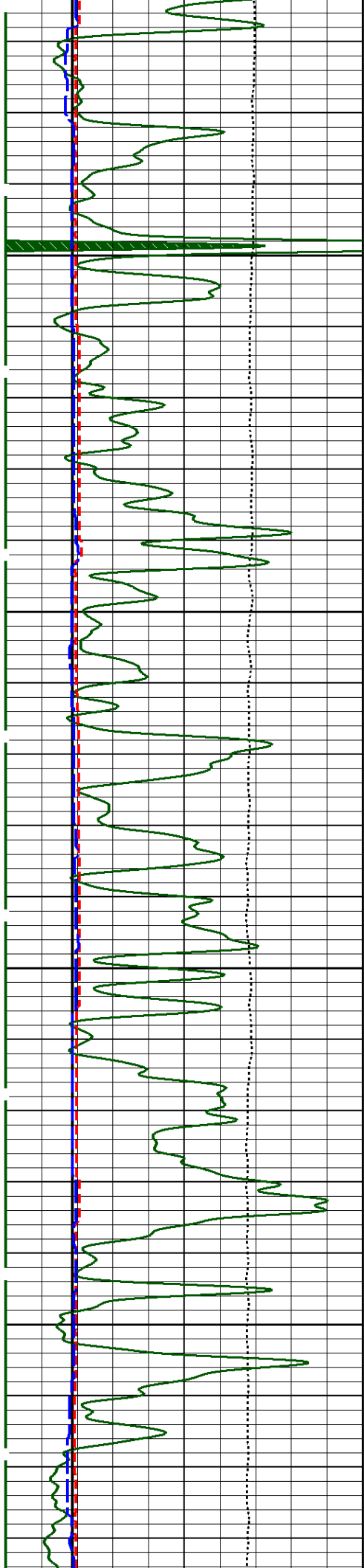




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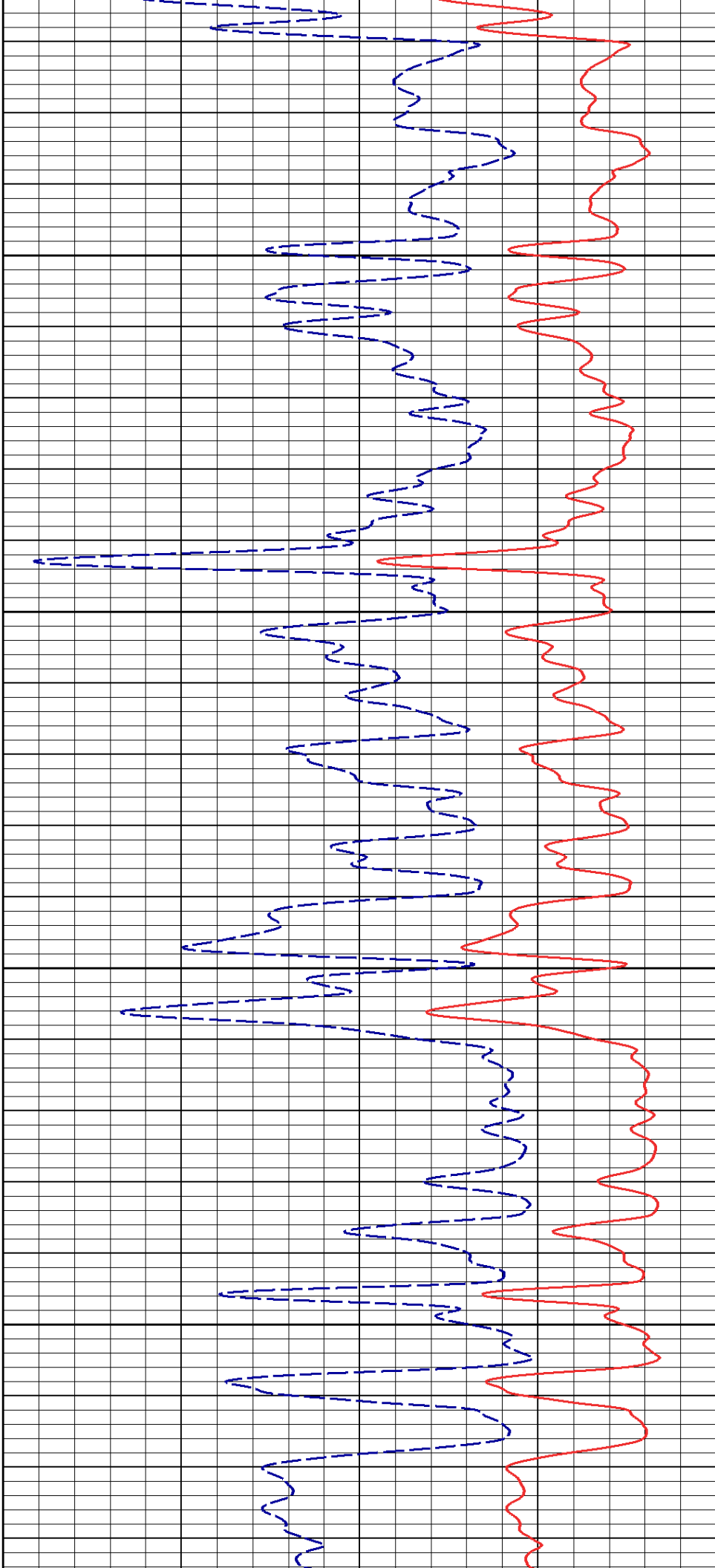
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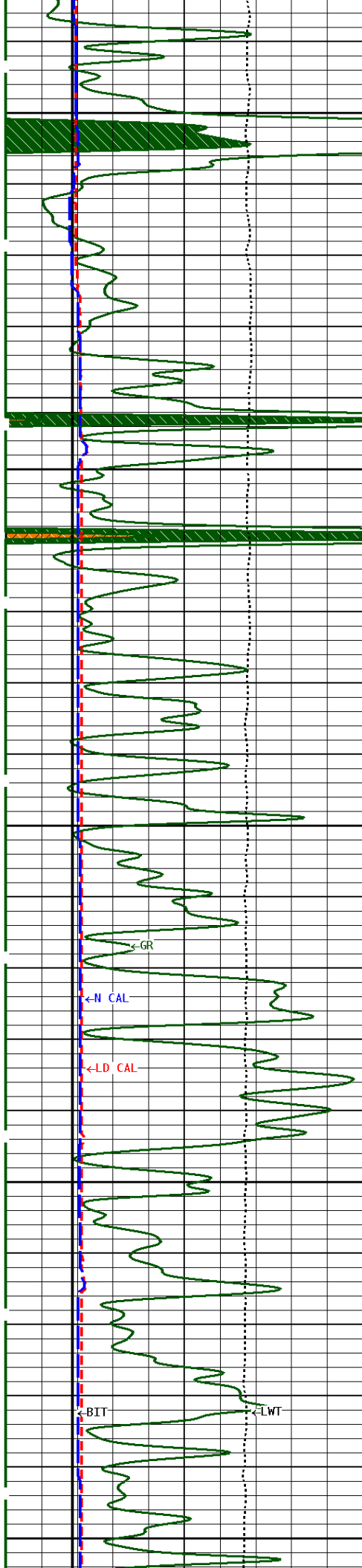




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4500

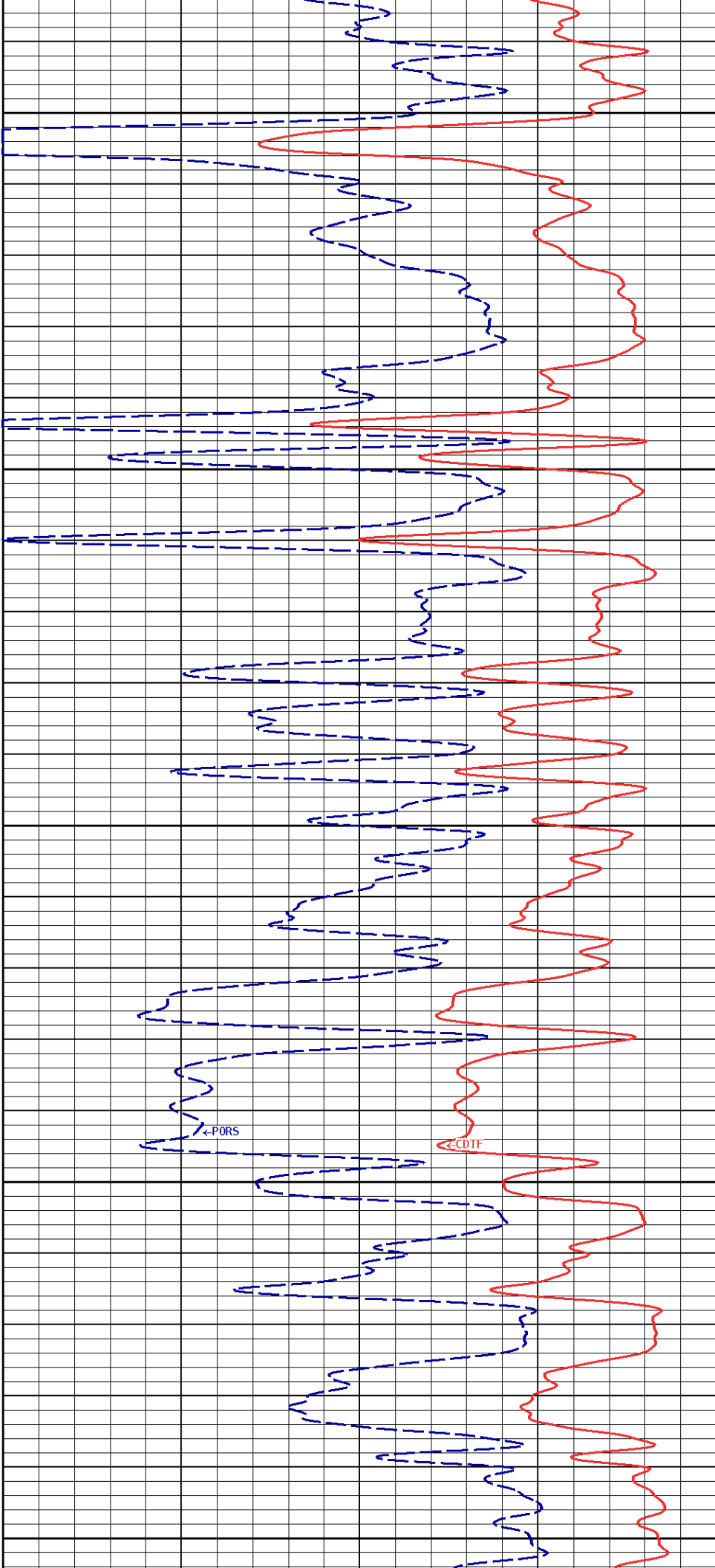


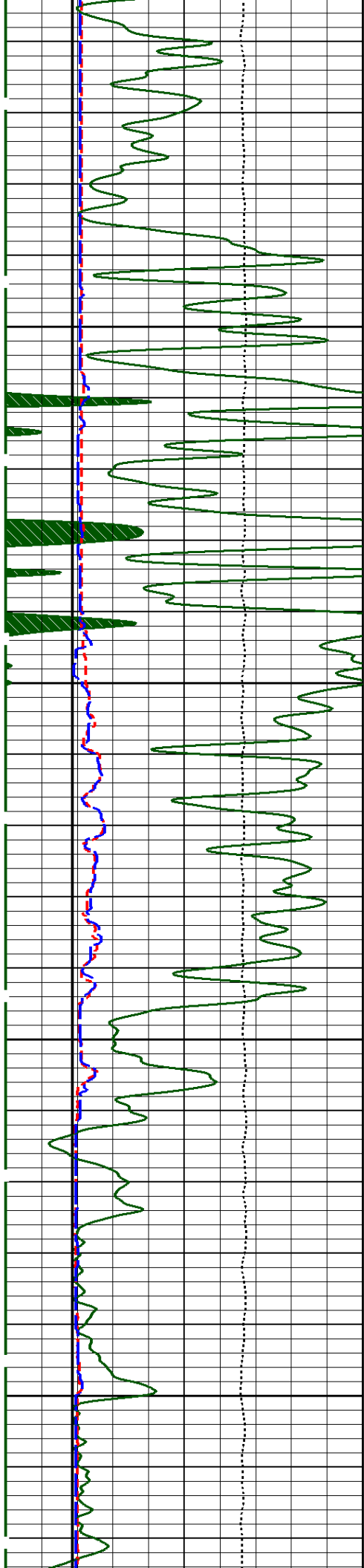


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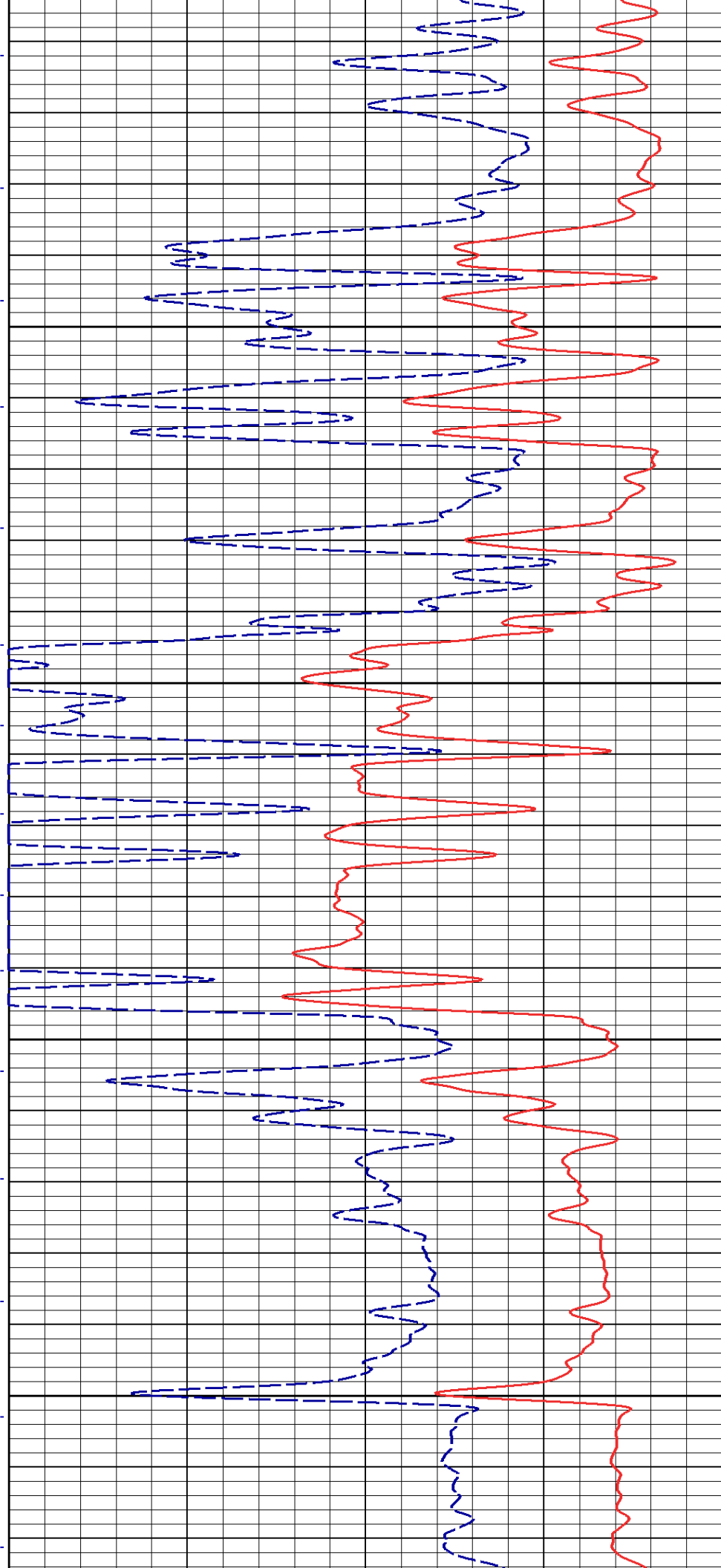
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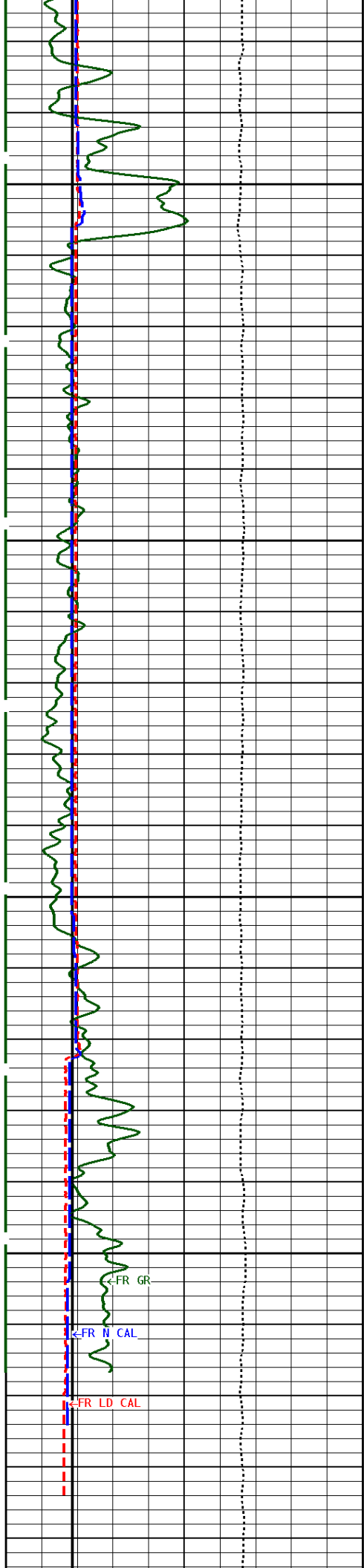




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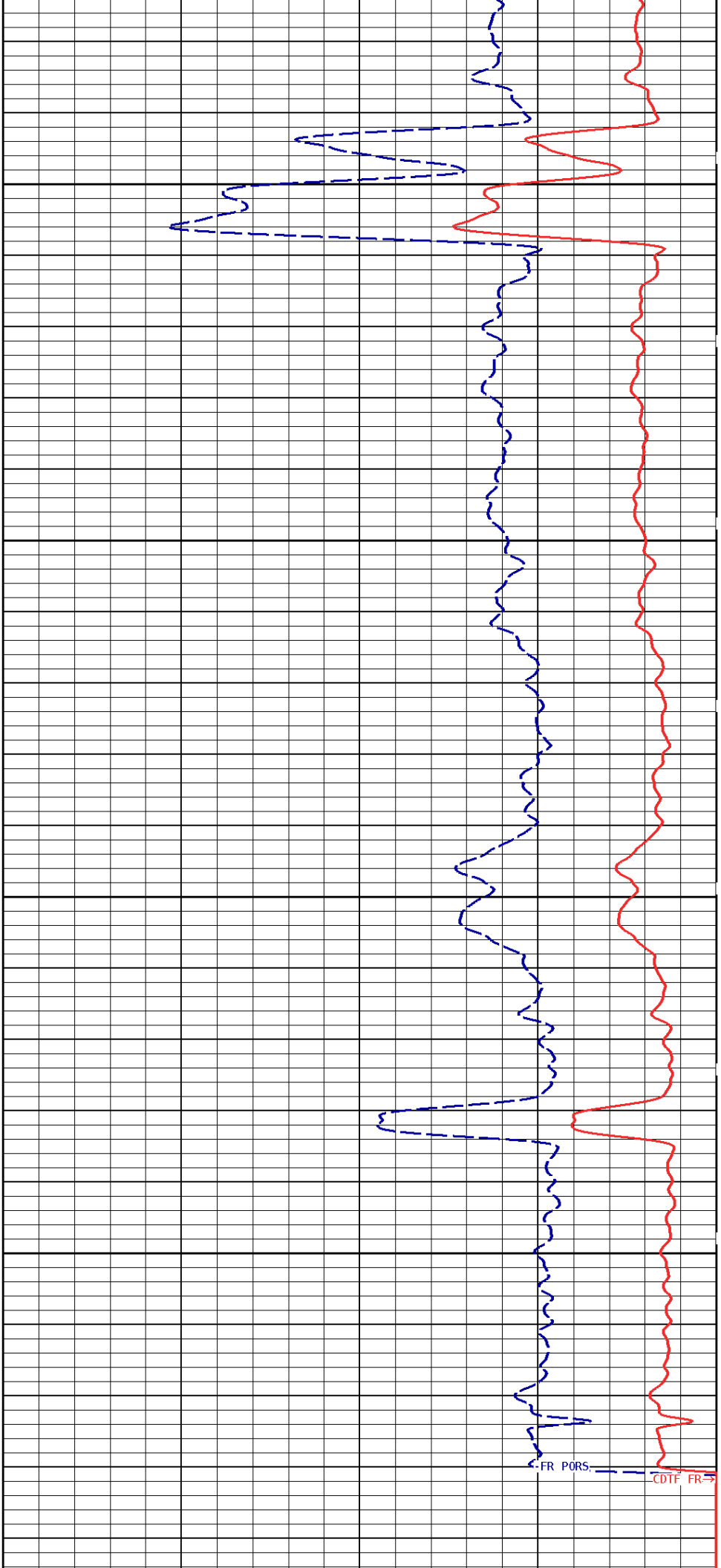
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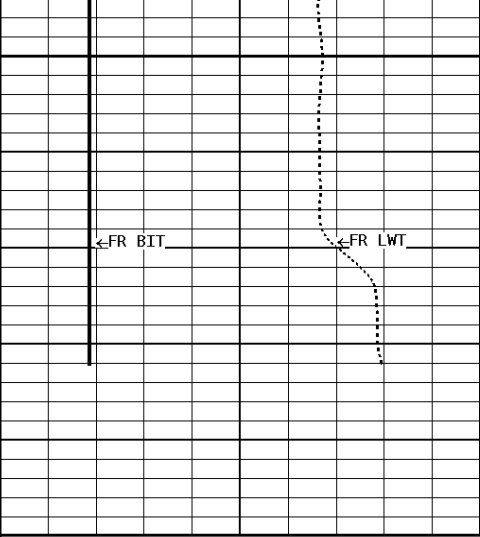




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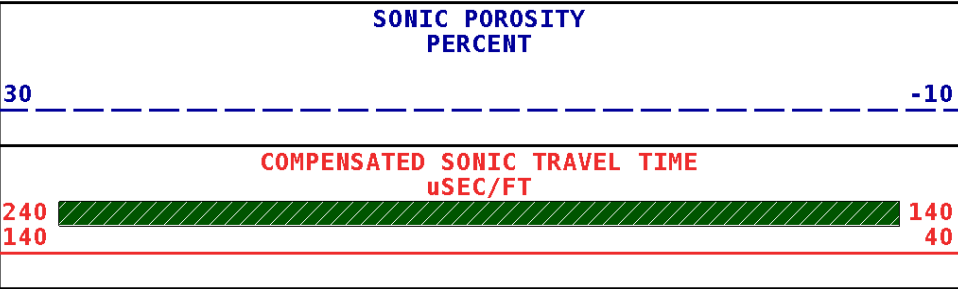
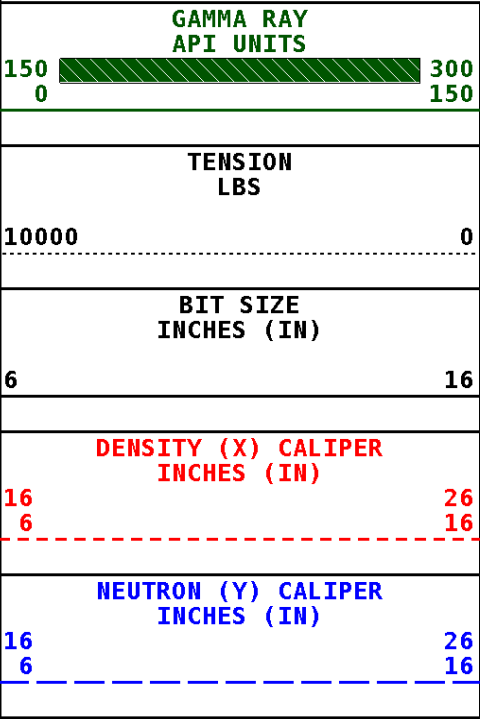




5270

File #1.1.6

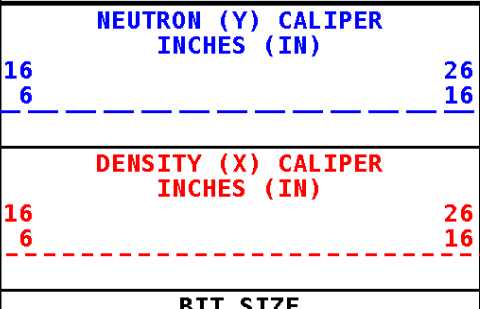
1:240 MAIN SECTION



* Borehole Zone Factors *

Zone 1	99999.0	to	0.0	Feet
Matrix Transit Time		47.5	us/ft	
Fluid Transit Time		189.0	us/ft	

Well File: MERIT DRUSSEL A-11 FEB 20 QUINT	Scale: 1:240	Format: CST-240
Segment: V1.D1.S4 REPEAT	Acquired: 2020-02/21 00:45 3.4.1-13972	
Reference: 0	Processed: 2020-02/21 01:11 3.4.1-13972	



BIT SIZE
INCHES (IN)

616

TENSION
LBS

100000

GAMMA RAY
API UNITS

1500300

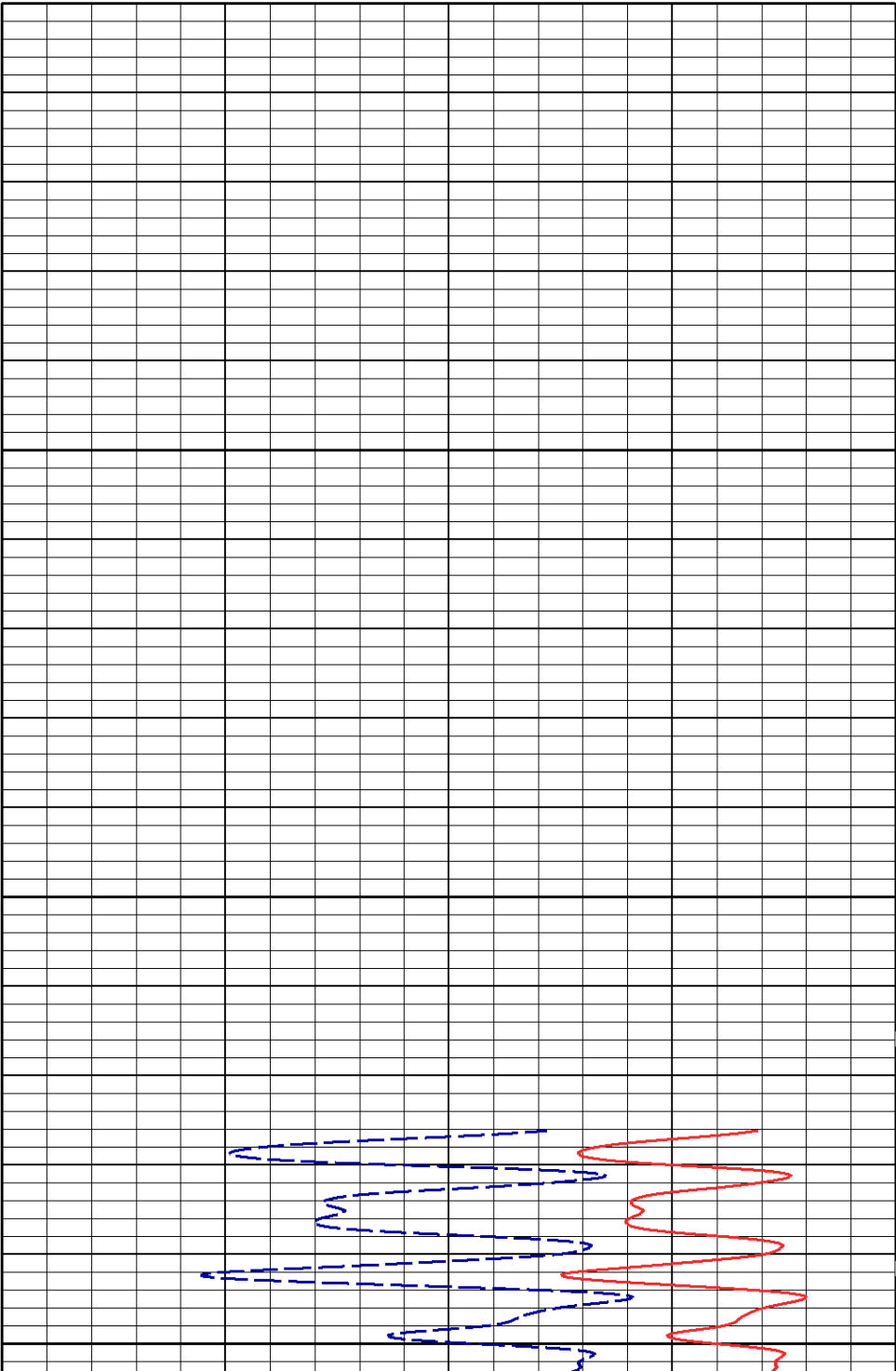
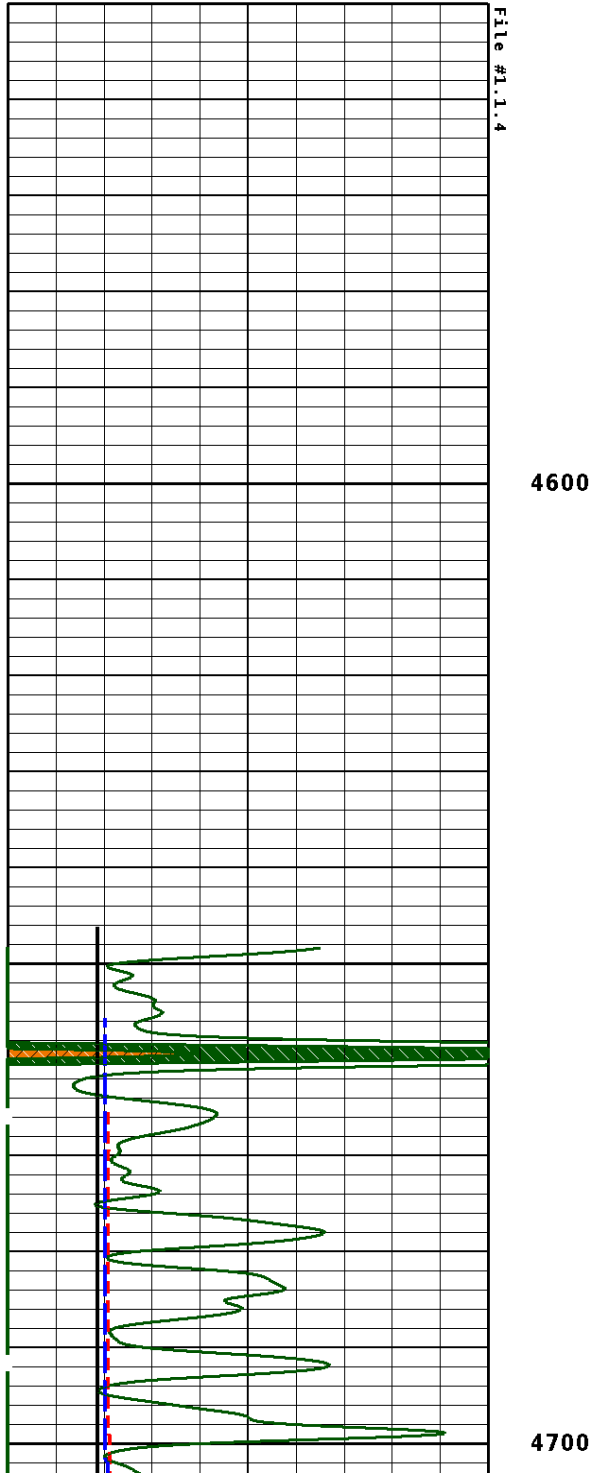
COMPENSATED SONIC TRAVEL TIME
uSEC/FT

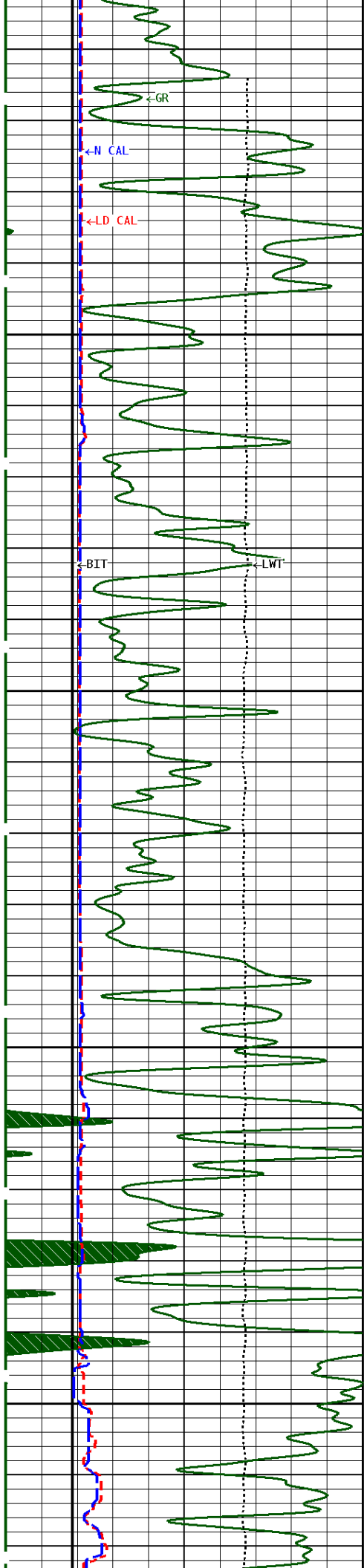
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SONIC POROSITY
PERCENT

30-10

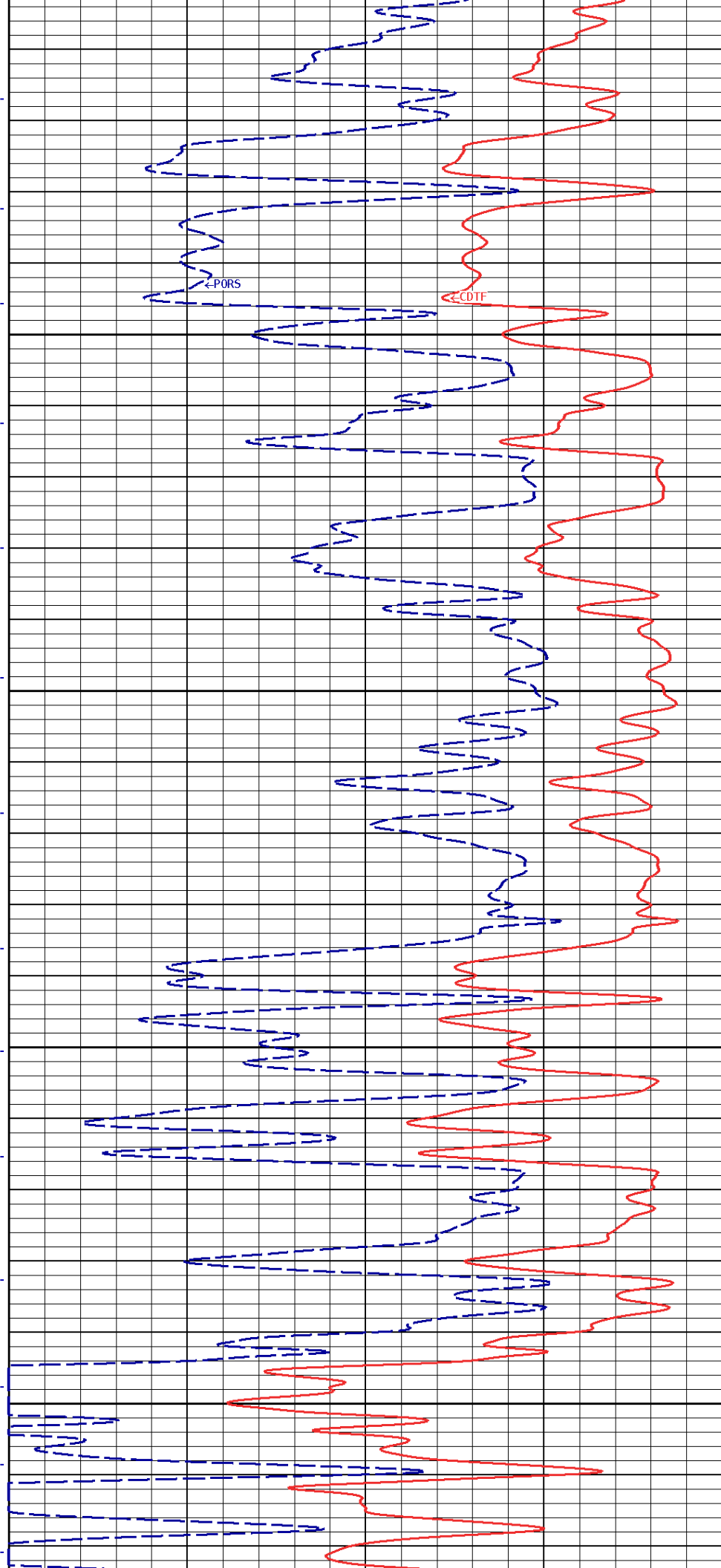
1:240 REPEAT SECTION

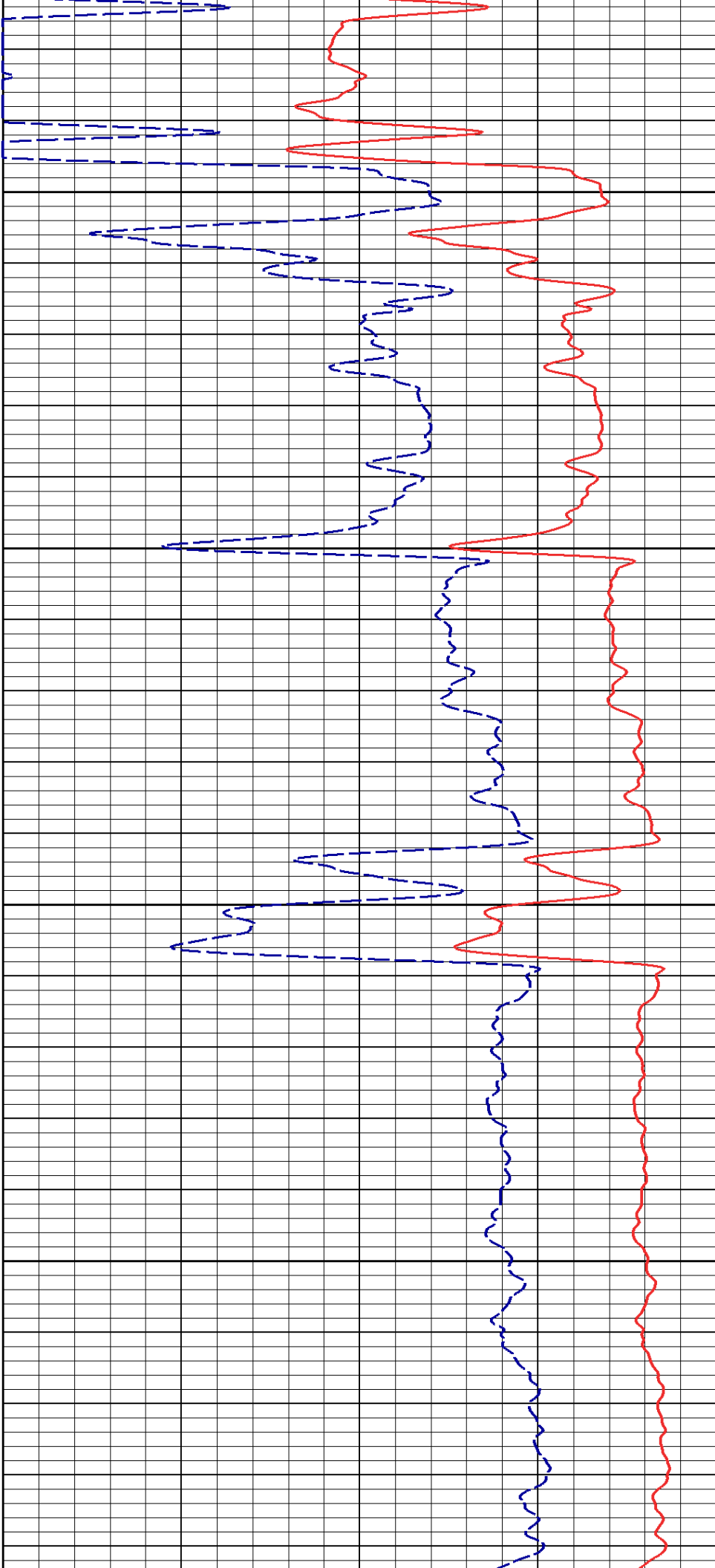




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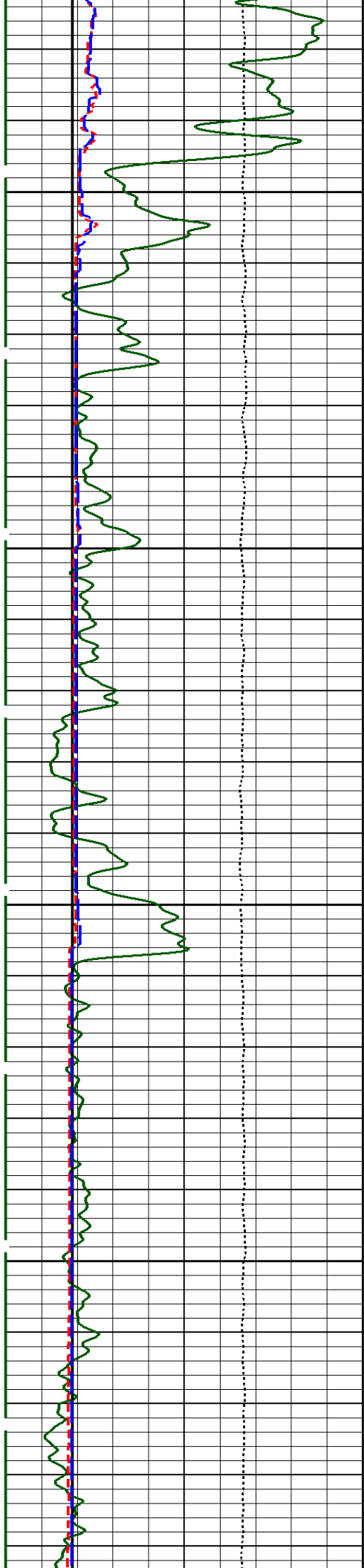
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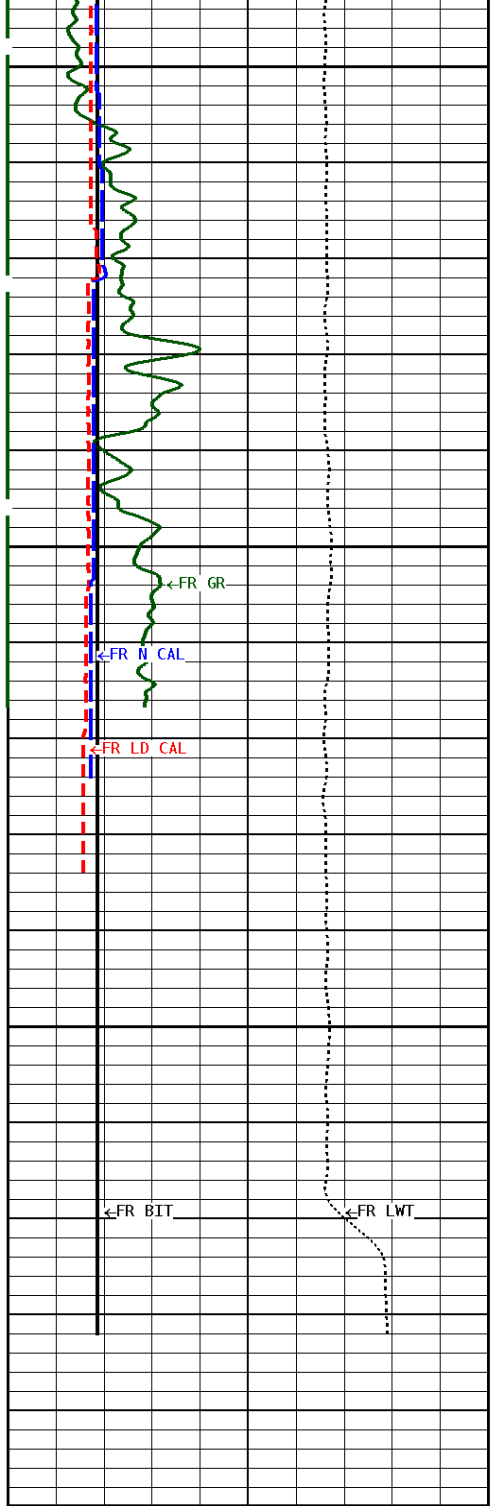




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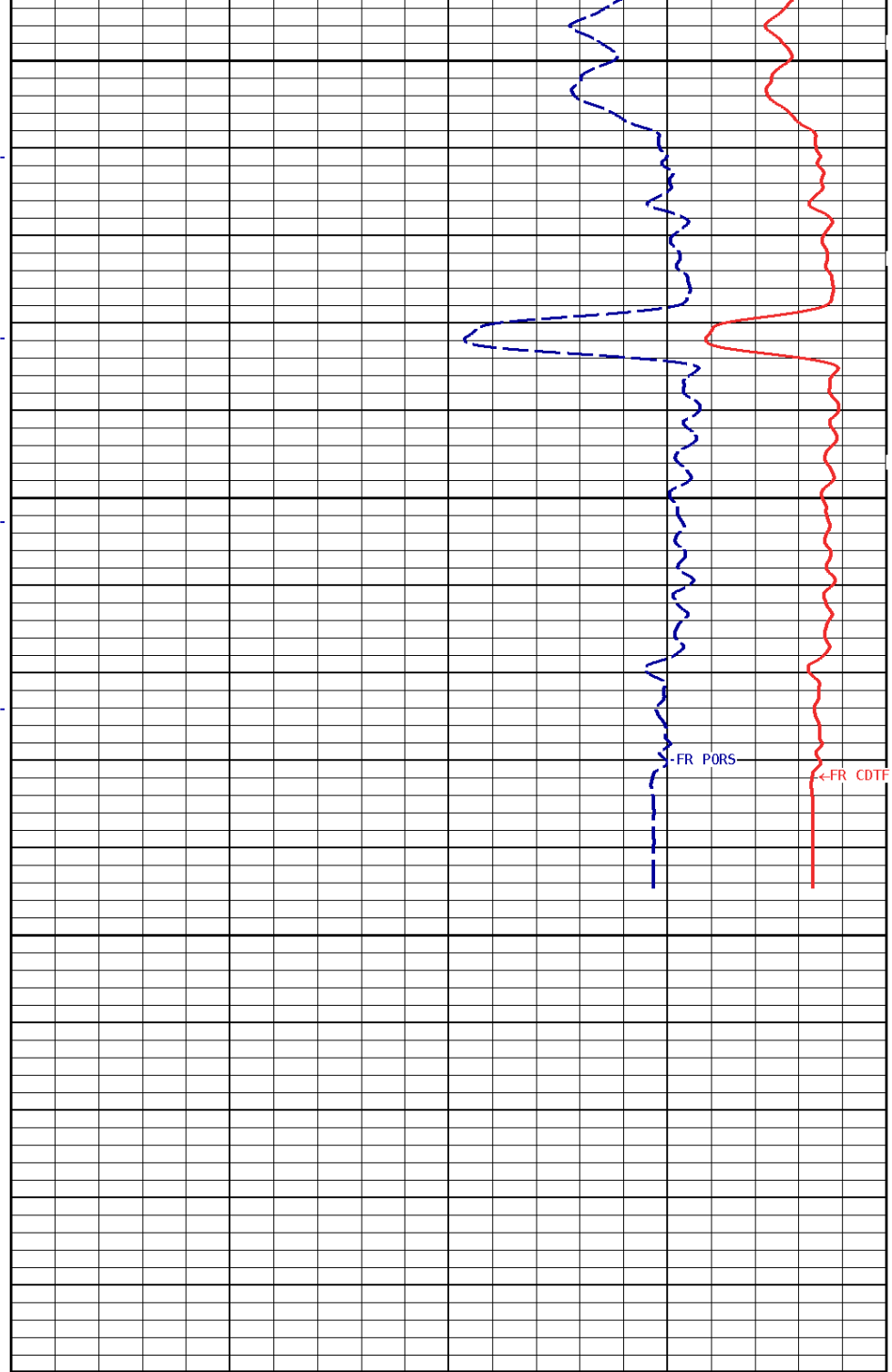
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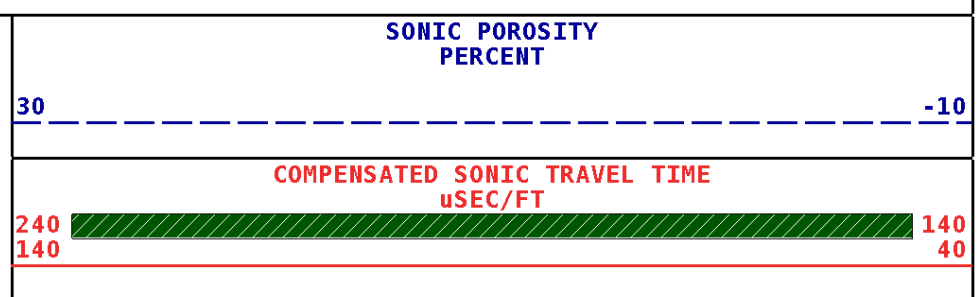
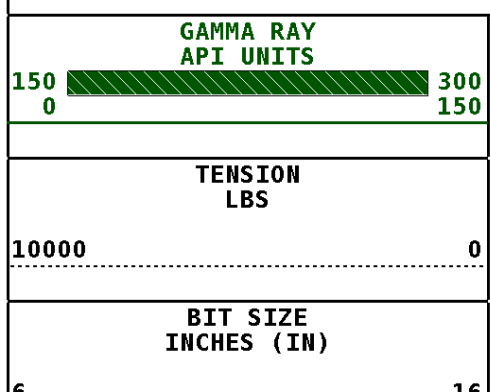


5200

5269



1:240 REPEAT SECTION



0	16
DENSITY (X) CALIPER INCHES (IN)	
16	26
6	16
NEUTRON (Y) CALIPER INCHES (IN)	
16	26
6	16

*** Borehole Zone Factors ***

Zone 1	99999.0	to	0.0	Feet
Matrix Transit Time			47.5	us/ft
Fluid Transit Time			189.0	us/ft

*** Calibration Summary ***

Shop Calibration GRT-B					
Performed : 24-JUN-2019			Time : 12:20		
Sensor Suite : GR-GR5			ID : GRT-BC-038		
	Measured	Units	Calibrated	Units	
	Background	Jig	Jig		
GR	36	266	CPS	160	GRAPI

Shop Calibration CST-AD					
Performed : 09-FEB-2020			Time : 05:45		
Sensor Suite : SON-ANA			ID : CST-AB-21		
Transit Time					
T/R Pair	Measured		Calibrated	Units	
T1R1	205.0		208.5	uS	
T2R2	205.0		208.5	uS	
T1R2	326.3		322.5	uS	
T2R1	326.3		322.5	uS	
Amplitude					
T/R Pair	Measured		Calibrated	Units	
T1R1	90.00		90.00	mV	
T2R2	90.00		90.00	mV	
T1R2	78.00		78.00	mV	
T2R1	78.00		78.00	mV	