

Schlumberger

Company: **WHITING OIL & GAS CORPORATION**

Well: **HORSETAIL 19N-1924M-R**

Field: **WILDCAT**

County: **WELD**

State: **COLORADO**

Schlumberger

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[illegible]

Logging Date				
Run Number				
Depth Driller				
Schlumberger Depth				
Bottom Log Interval				
Top Log Interval				
Casing Driller Size @ Depth		@		
Casing Schlumberger				
Bit Size				
Type Fluid In Hole				
Density		Viscosity		
Fluid Loss		PH		
Source Of Sample				
RM @ Measured Temperature		@		
RMF @ Measured Temperature		@		
RMC @ Measured Temperature		@		
Source RMF		RMF		
RM @ MRT		RMF @ MRT	@	@
Maximum Recorded Temperatures				
Circulation Stopped		Time		
Logger On Bottom		Time		
Unit Number		Location		
Recorded By				
Witnessed By				

[illegible]

DISCLAIMER

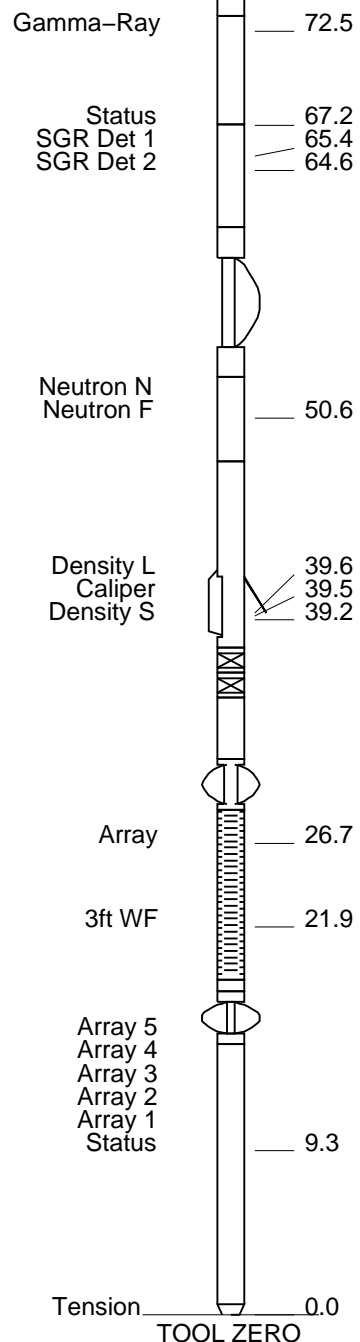
THE USE OF AND RELIANCE UPON THIS RECORDED-DATA BY THE HEREIN NAMED COMPANY (AND ANY OF ITS AFFILIATES, PARTNERS, REPRESENTATIVES, AGENTS, CONSULTANTS AND EMPLOYEES) IS SUBJECT TO THE TERMS AND CONDITIONS AGREED UPON BETWEEN SCHLUMBERGER AND THE COMPANY, INCLUDING: (a) RESTRICTIONS ON USE OF THE RECORDED-DATA; (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: SONIC OS2: SPECTRAL GAMMA RAY OS3: OS4: OS5:			OTHER SERVICES2 OS1: OS2: OS3: OS4: OS5:		
REMARKS: RUN NUMBER 1			REMARKS: RUN NUMBER 2		
LEVEL THREE VERTICAL MEMORY					
BIT DEPTH: 8232' LOGGED TO: 50					
ALL SCALES AND PRESENTATIONS PER CLIENT REQUEST					
TOOLSTRING RAN WITH SONIC CENTRALIZER,					
TWO KNUCKLES, SWIVEL, LARGE DECENTRALIZER					
IHV REPRESENTS INTEGRATED HOLE VOLUME, ft3					
ICV REPRESENTS INTEGRATED CEMENT VOLUME,					
CALCULATED FOR 7" CSG, ft3					
DEPTH REFERENCE: PIPE TALLY					
RIG: PIONEER 54					
CREW: J. TOEDTEMEIER, P. BROOKENS, R. BUCKENDORF,					
M. BUCKENDORF, J. ENGDAHL, R. MASSINGILL					
RUN 1			RUN 2		
SERVICE ORDER #:			SERVICE ORDER #:		
PROGRAM VERSION:			PROGRAM VERSION:		
FLUID LEVEL:			FLUID LEVEL:		
LOGGED INTERVAL	START	STOP	LOGGED INTERVAL	START	STOP

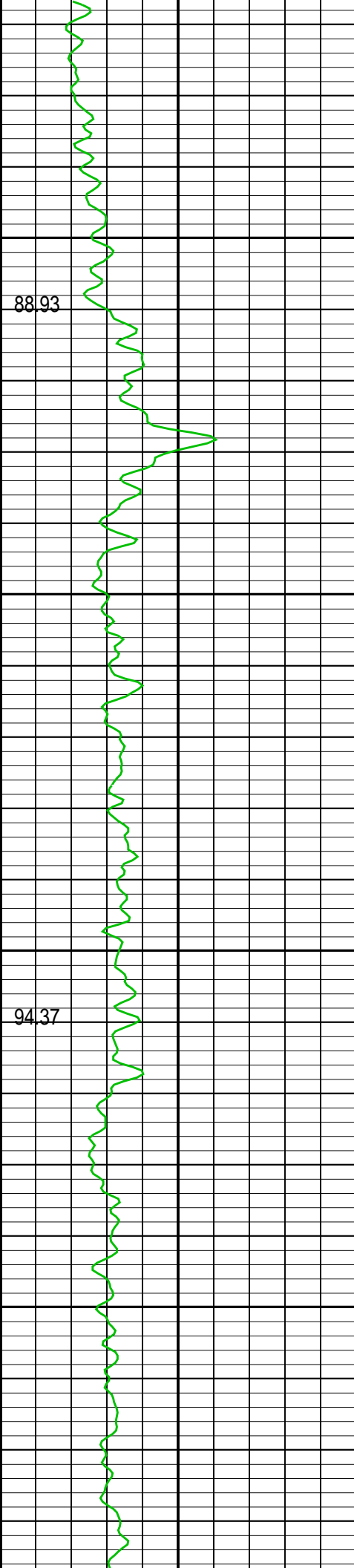
[illegible]

RUN 1		RUN 2	
SURFACE EQUIPMENT			
WITM (ThruBit)			
DOWNHOLE EQUIPMENT			
TBT-A THEAD CCL BDOT-B 26 THOT T10_1 TBUJ1 TBAT1			

TBAT2
TMG-A 8
TBSG-A 13
TILE-B
TBN-A 5
NNLS-EWA
TBD-A 24
GGLS-FZ
KAH-TB_2
KAH-TB_1
TBS-A 29
TCME-A
TBI-A 14

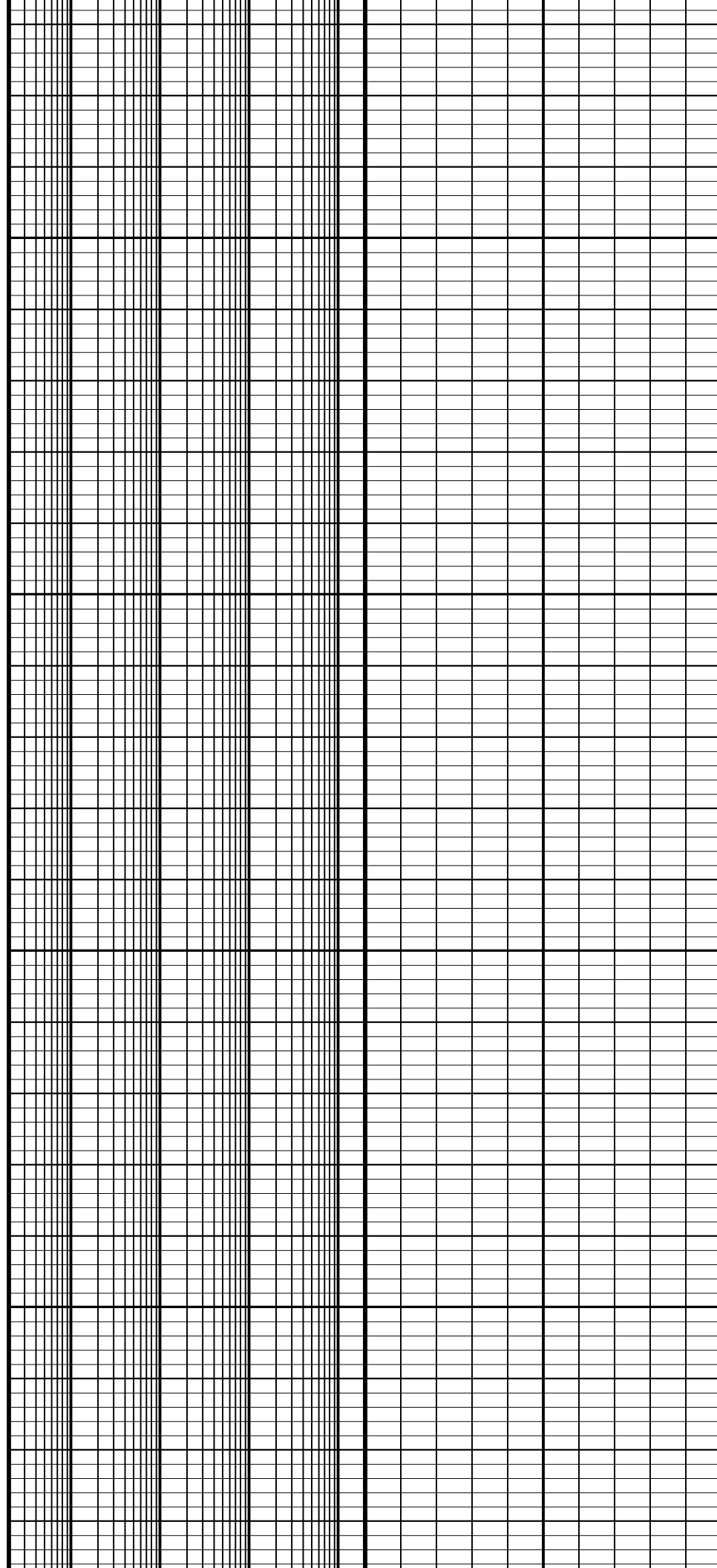


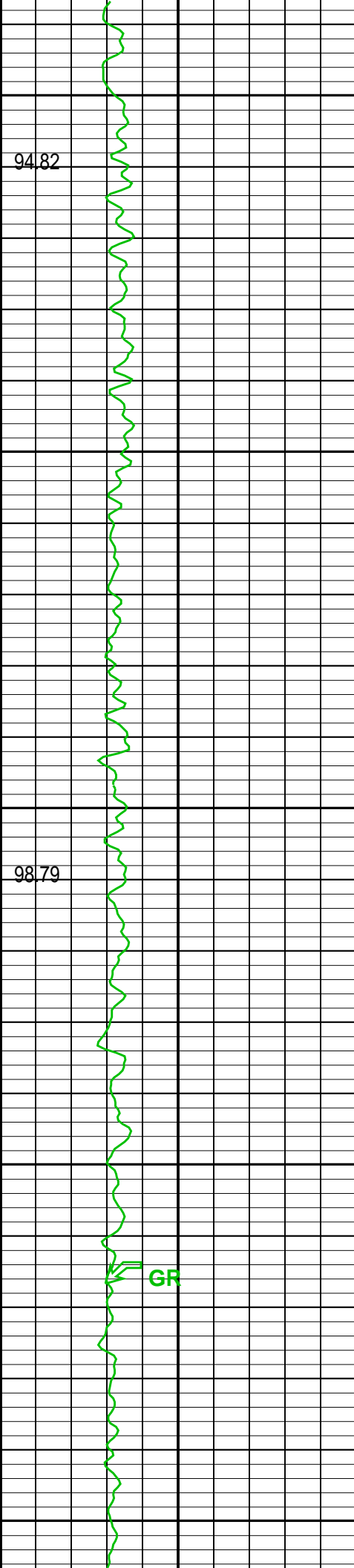
MAXIMUM STRING DIAMETER 2.13 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
ALL LENGTHS IN FEET



100

200





300

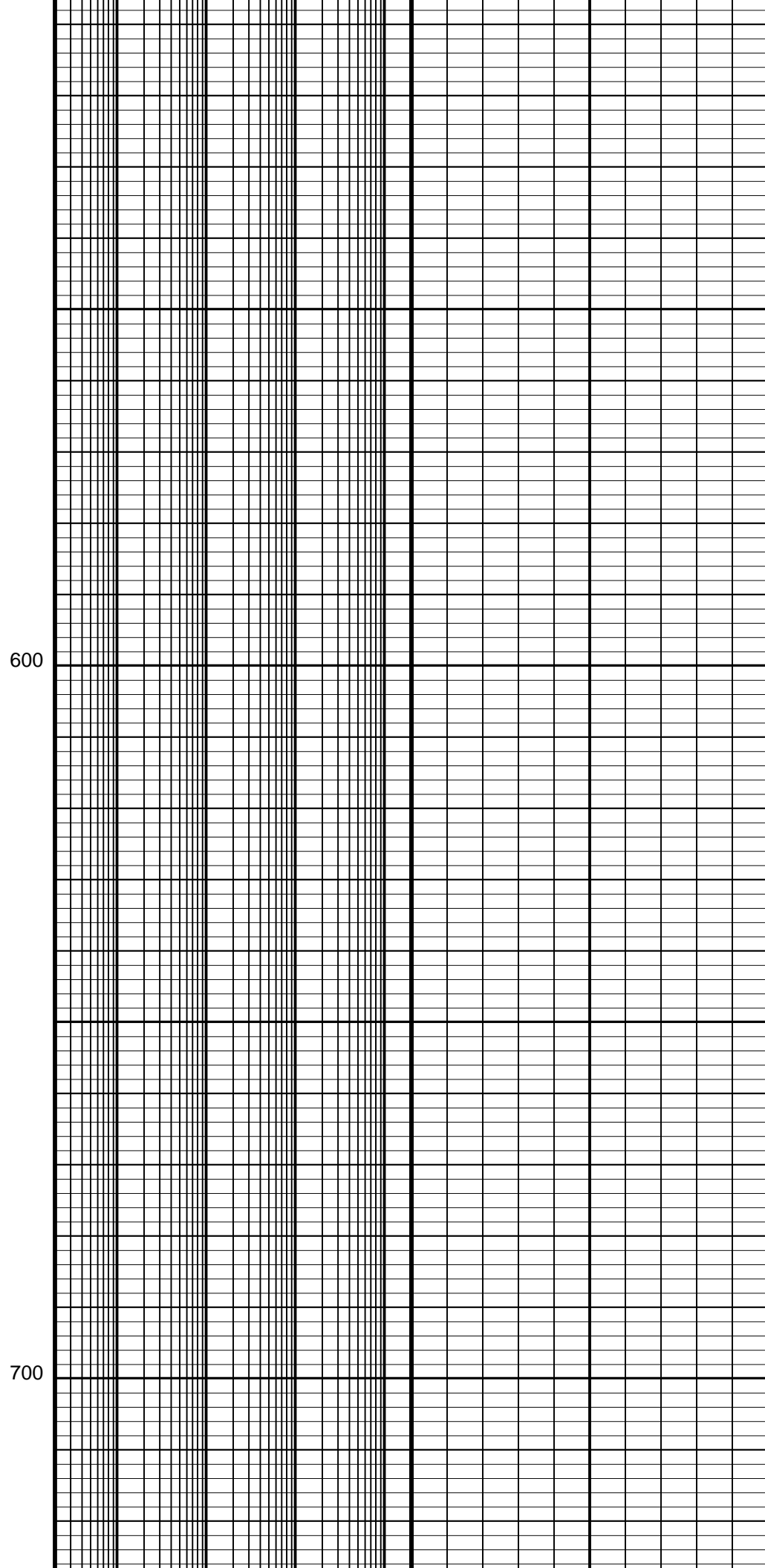
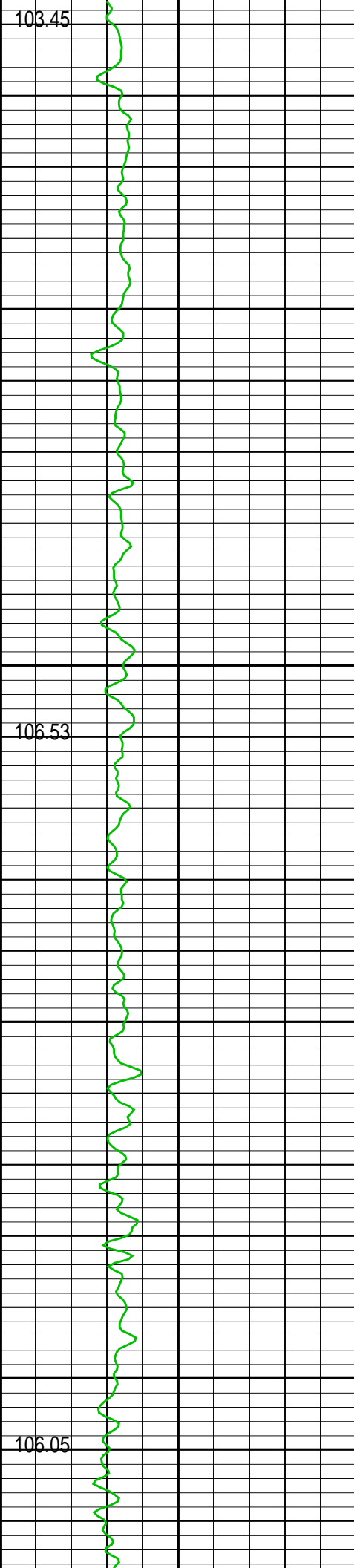
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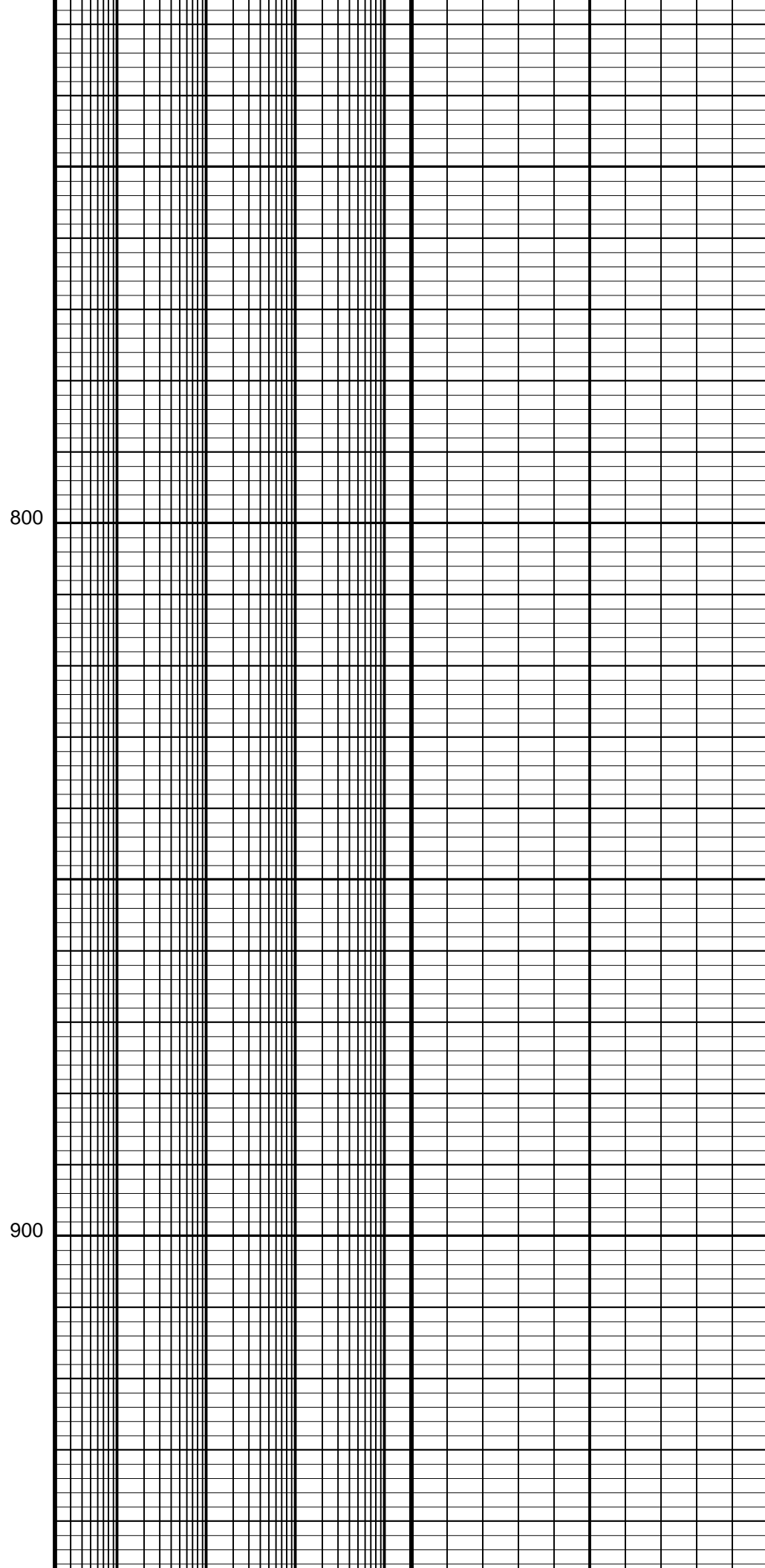
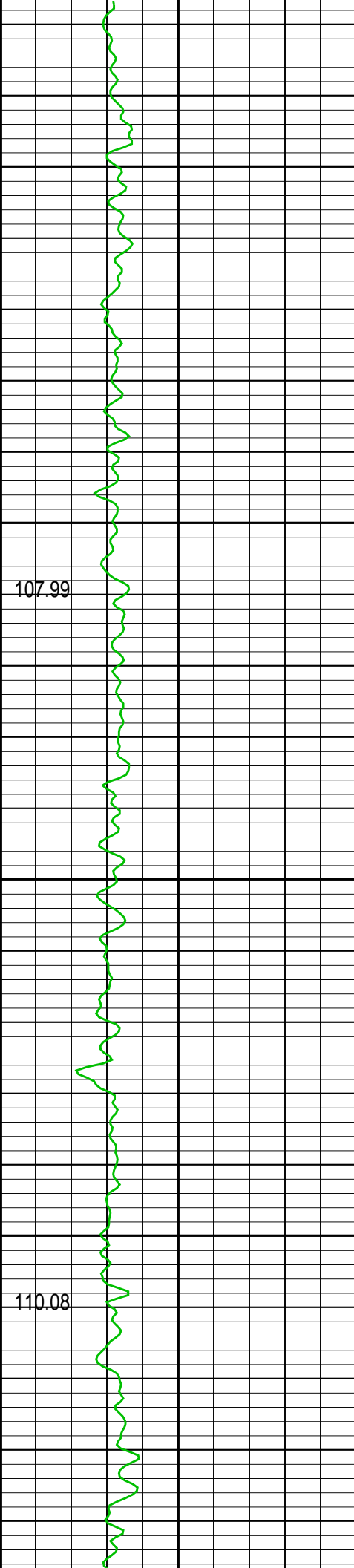
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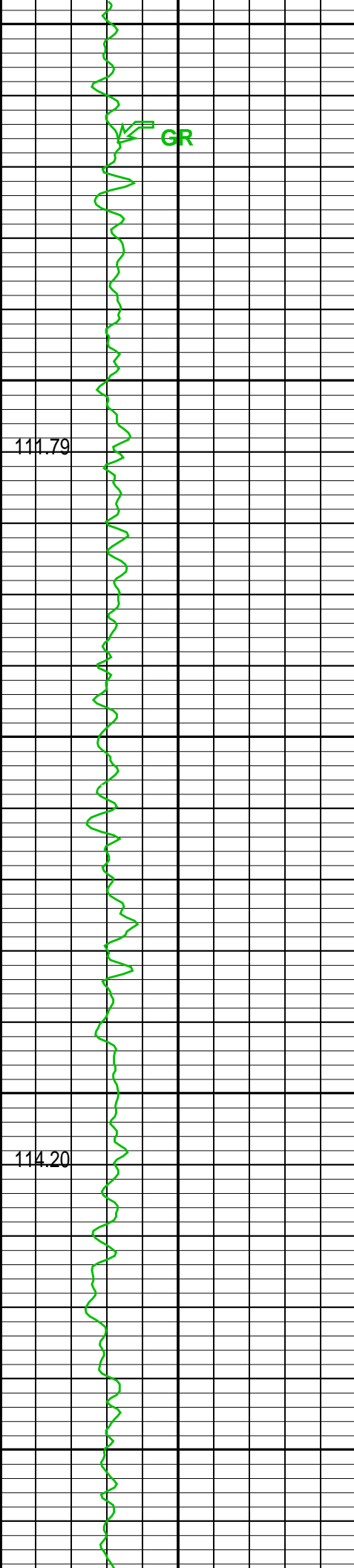
GR

94.82

98.79

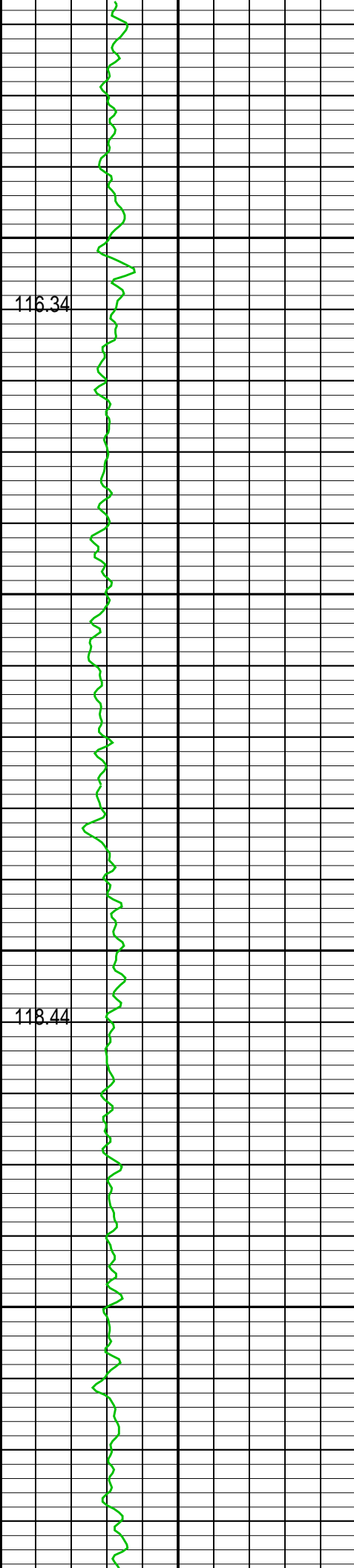






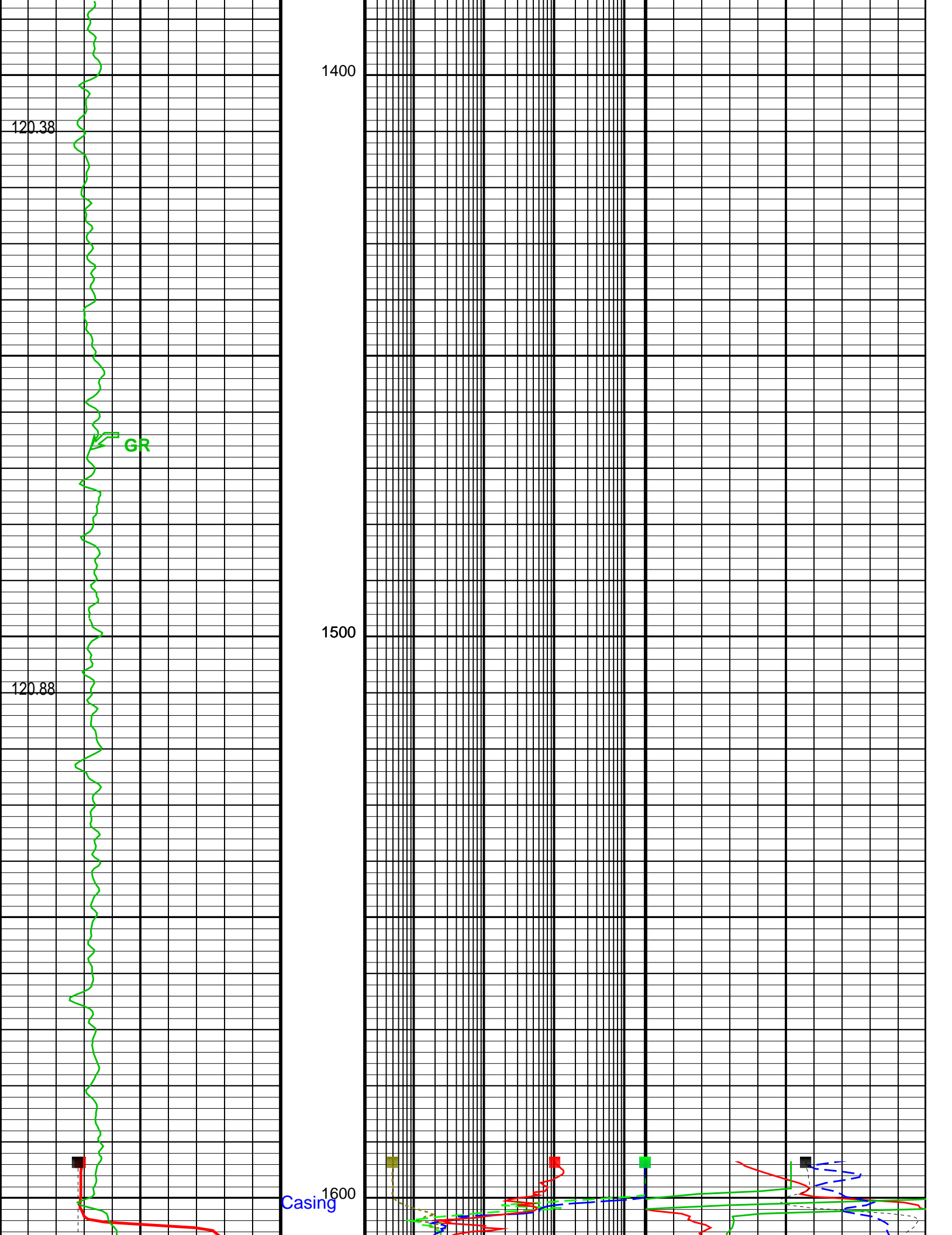
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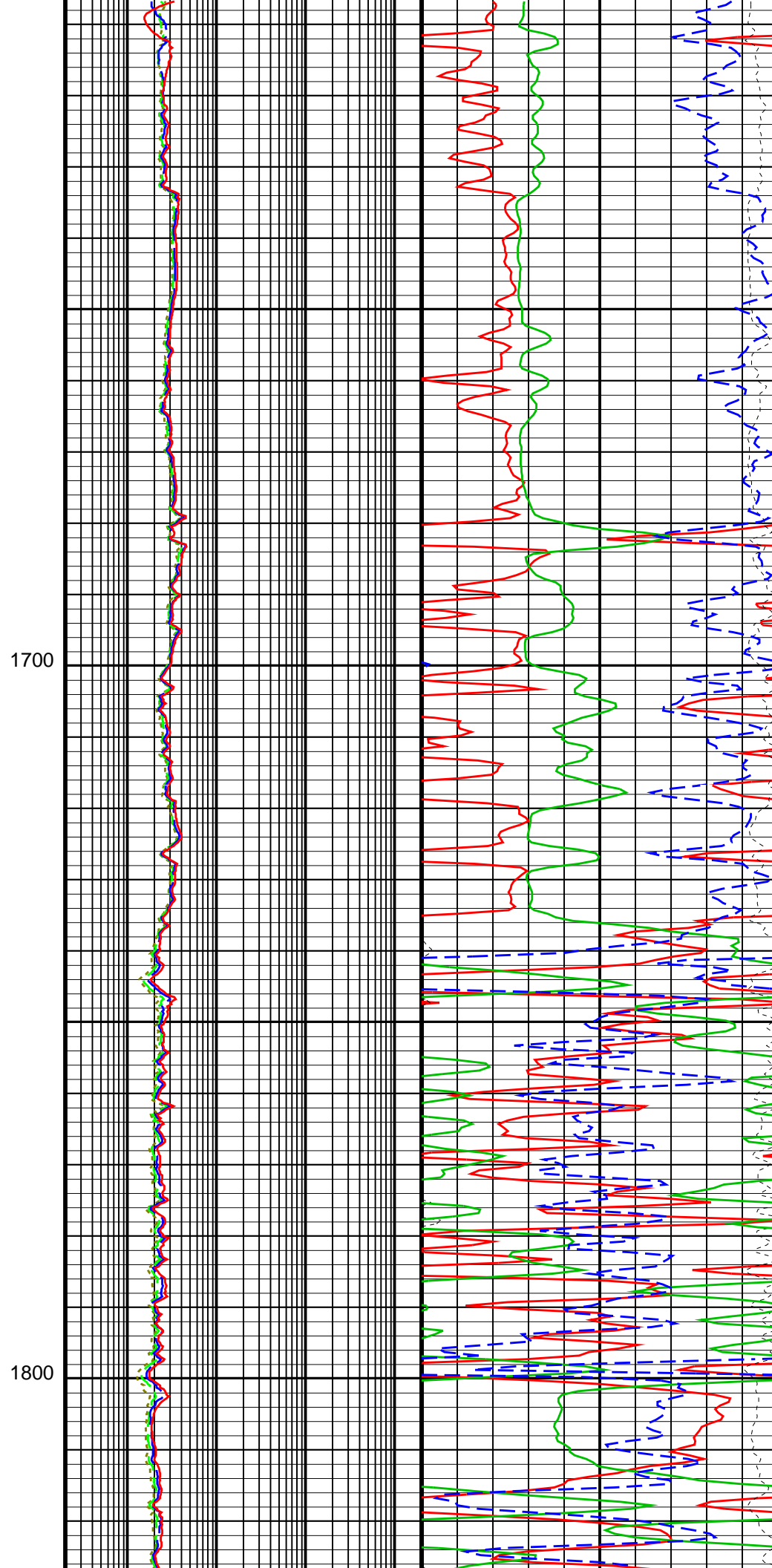
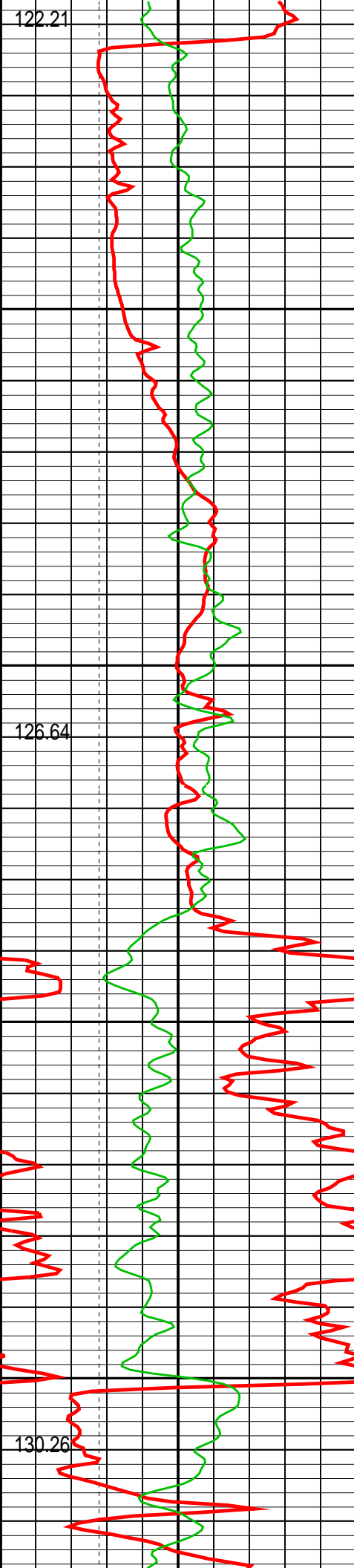
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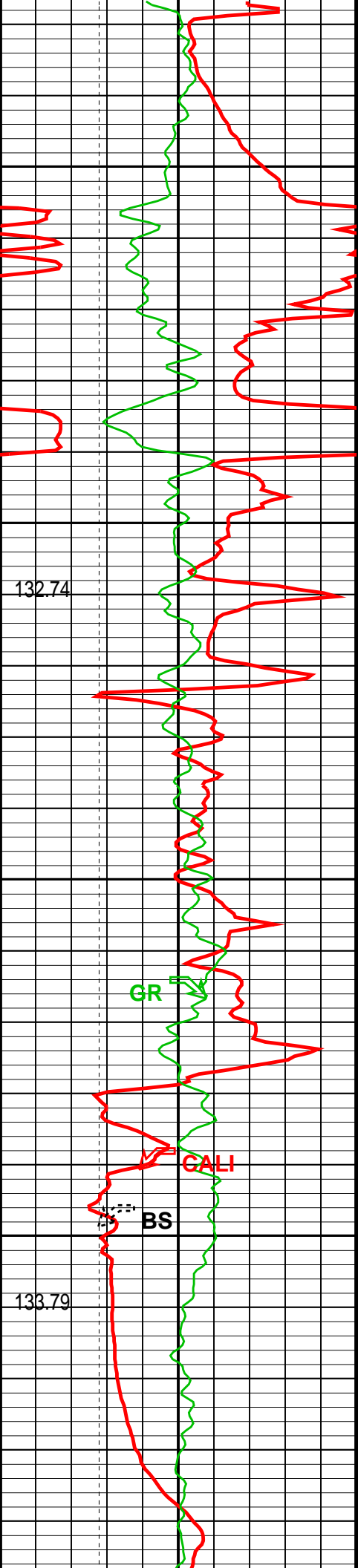


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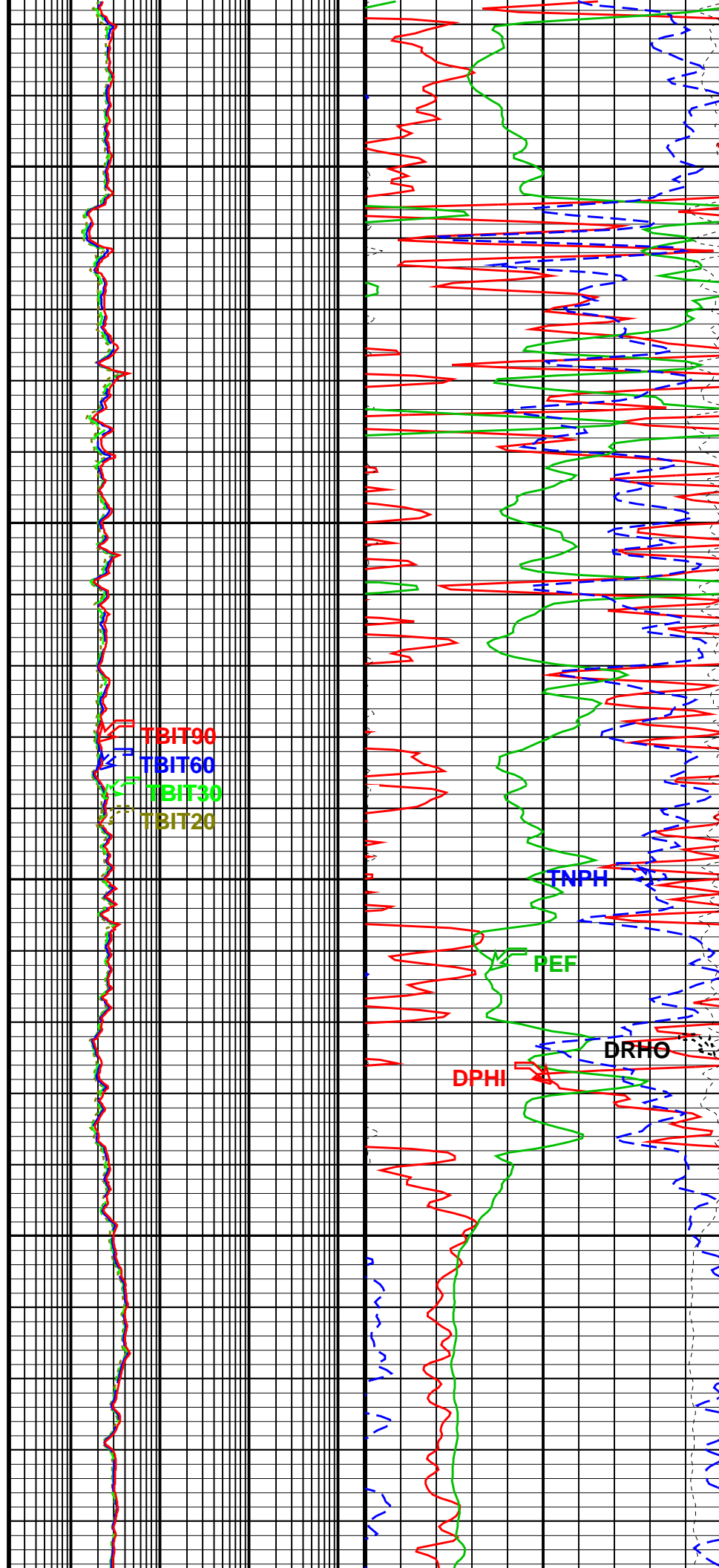


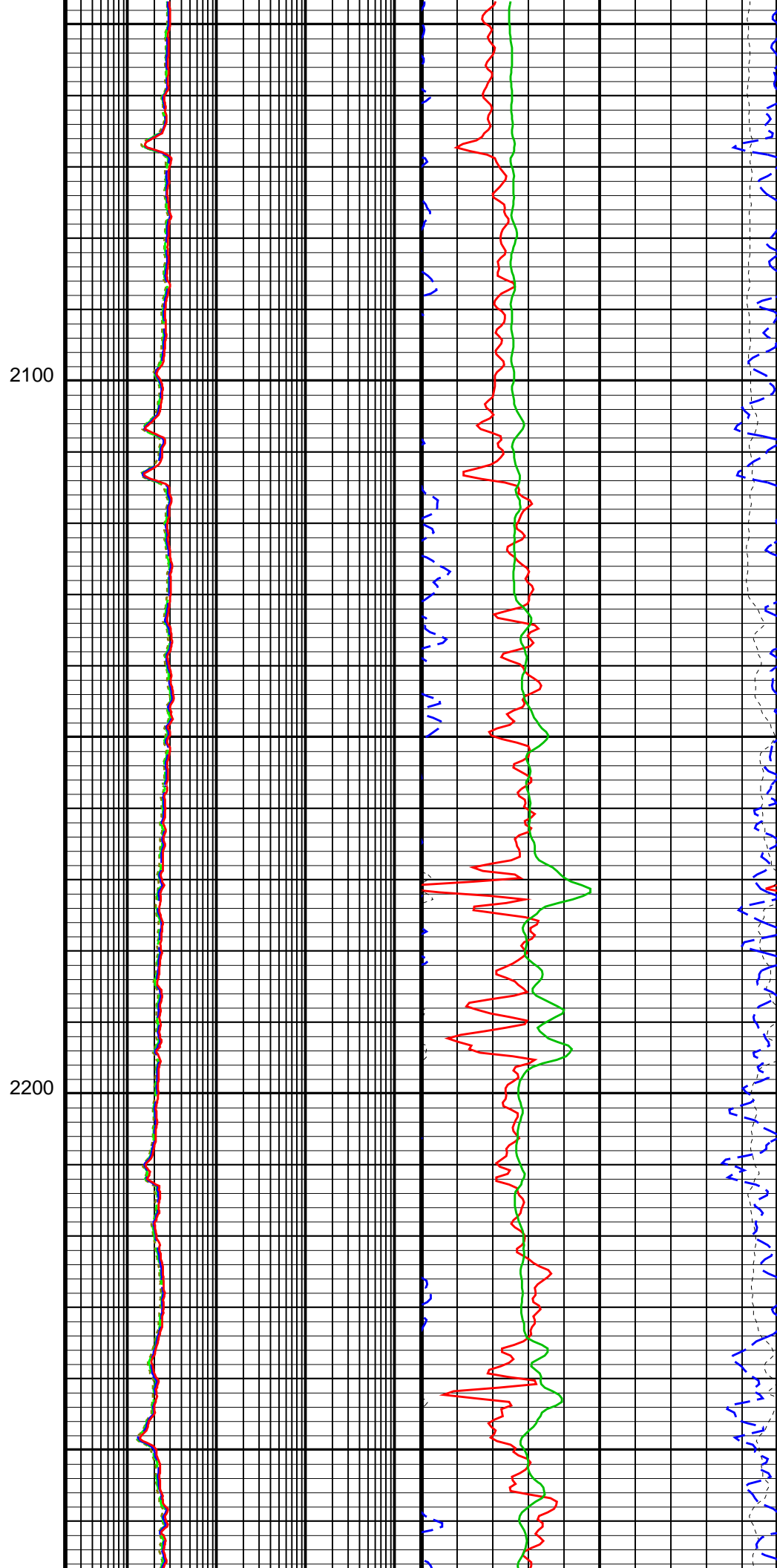
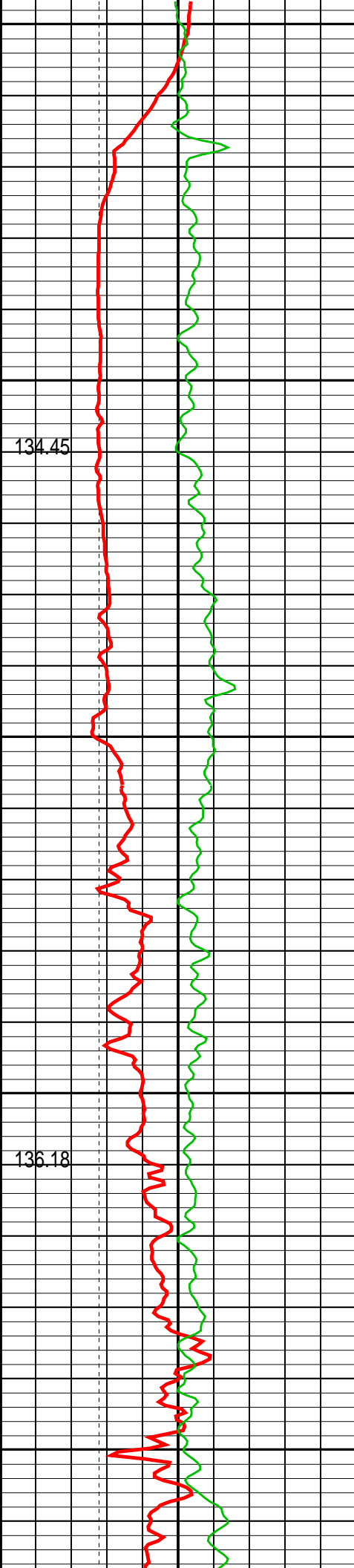


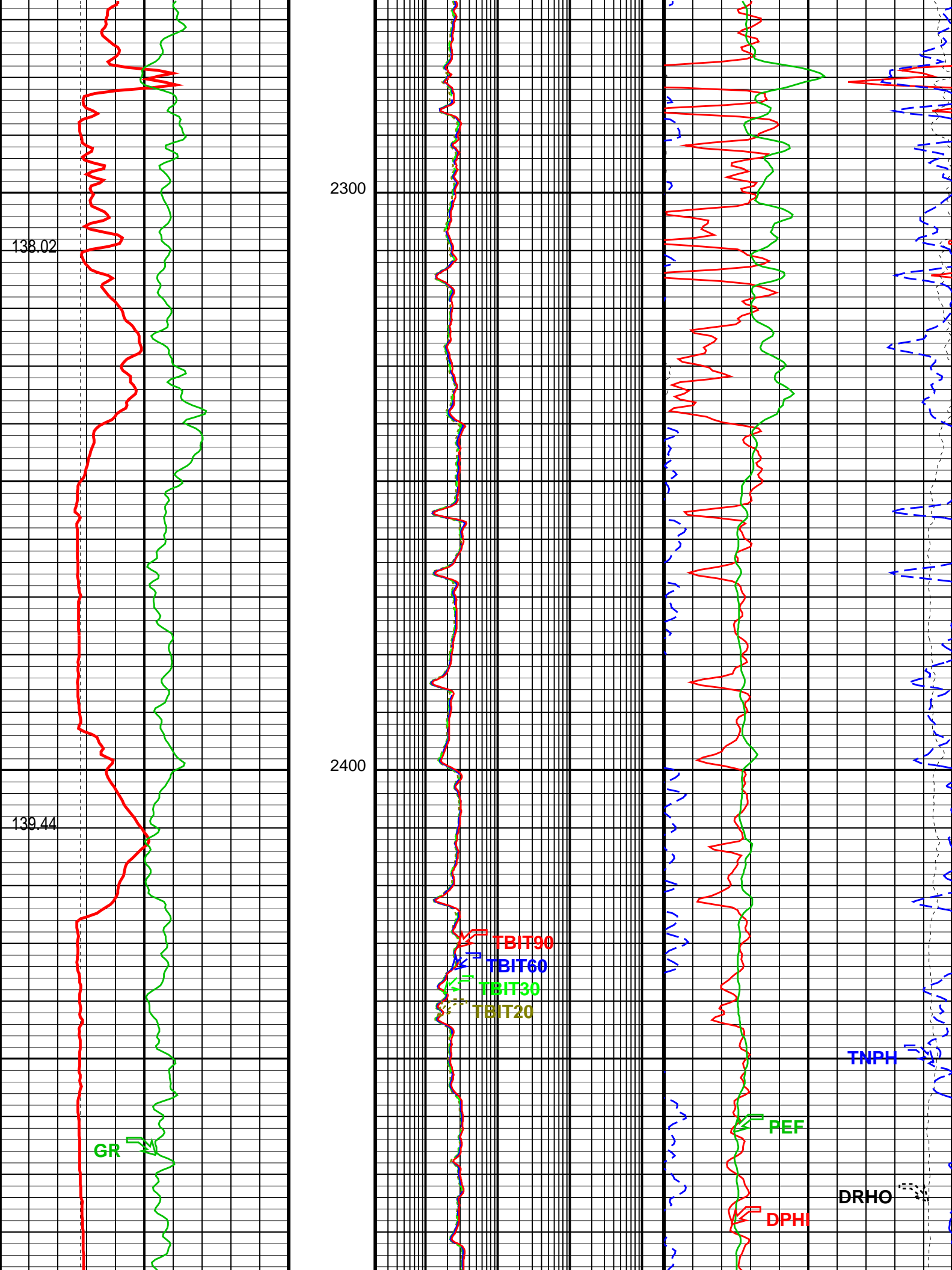


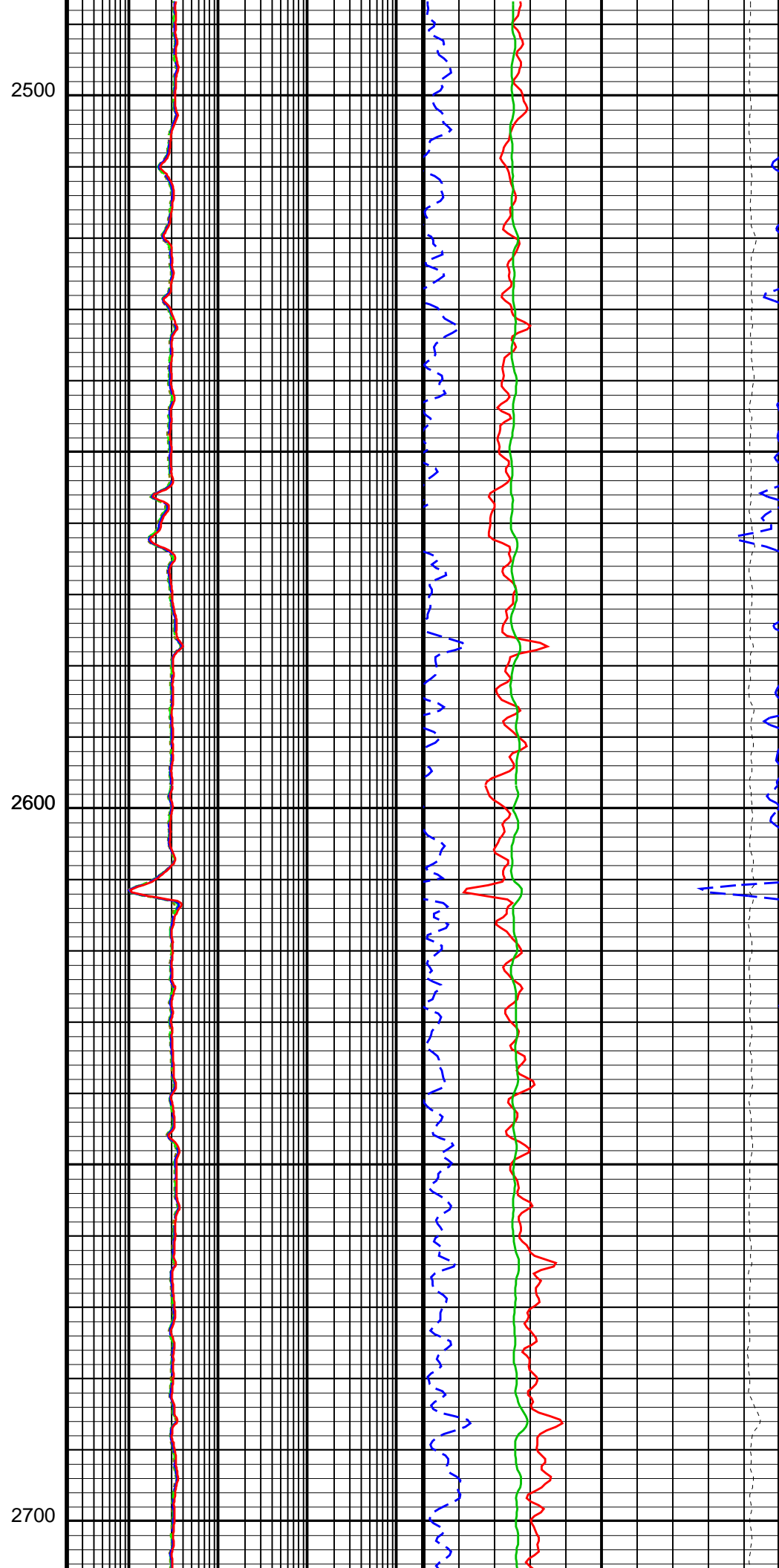
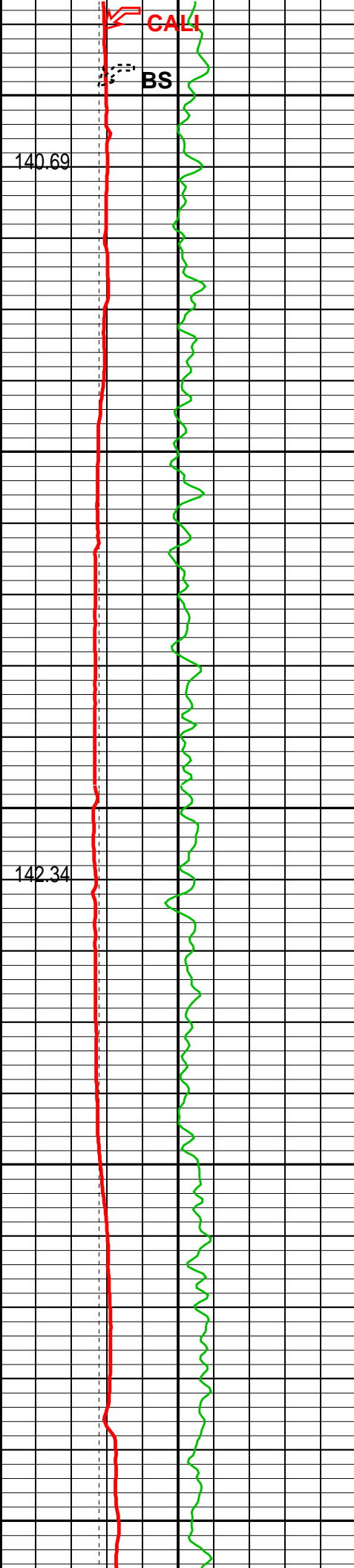
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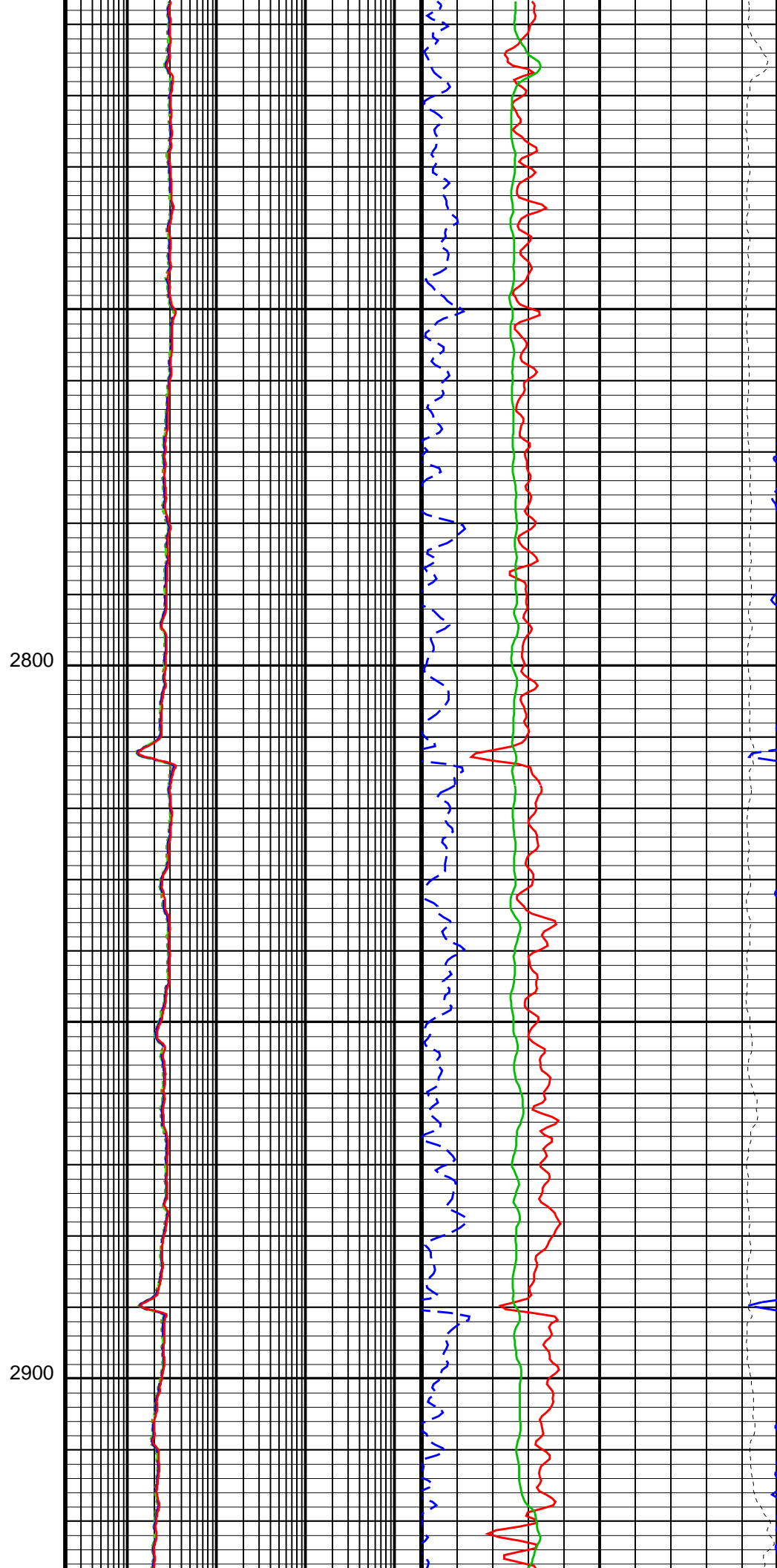
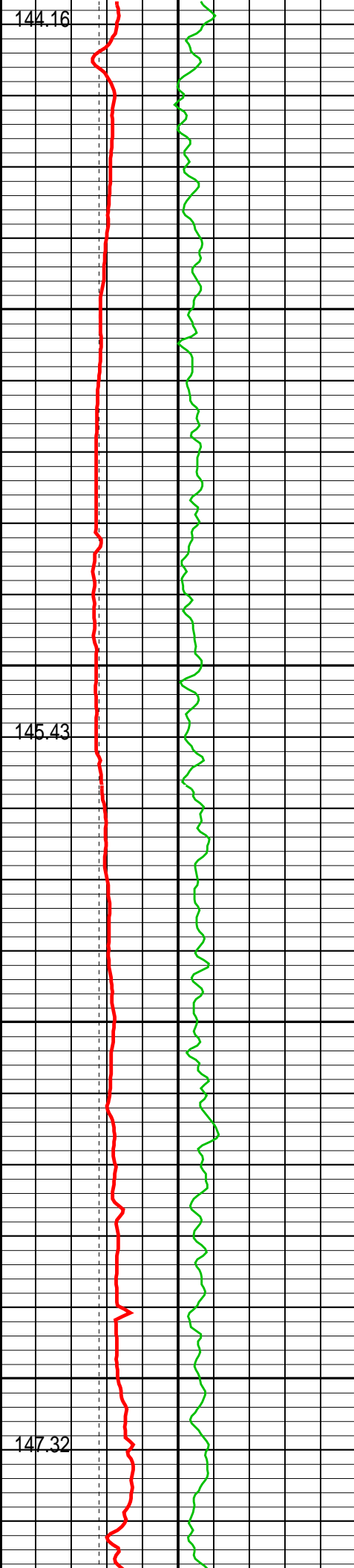
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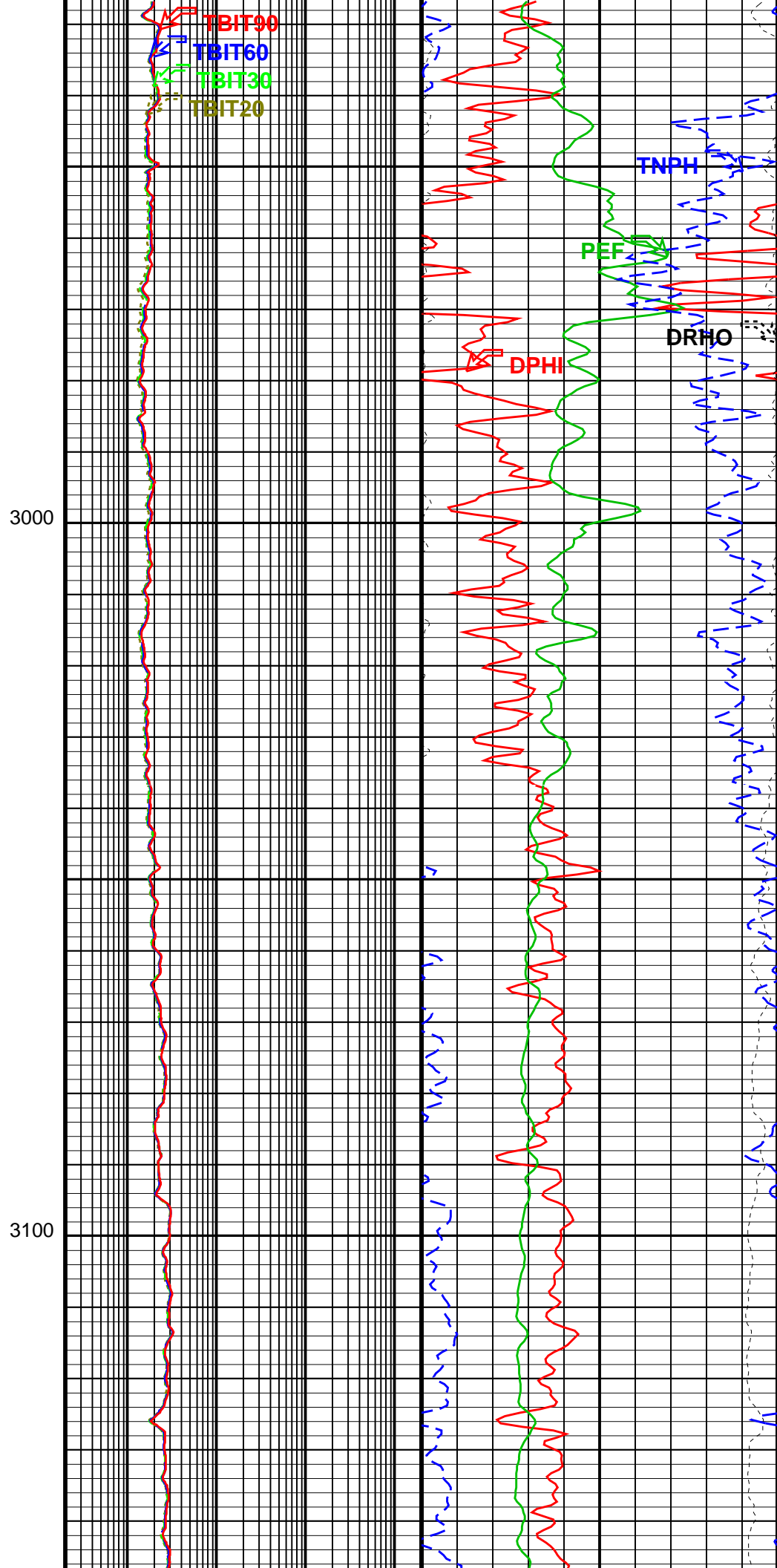
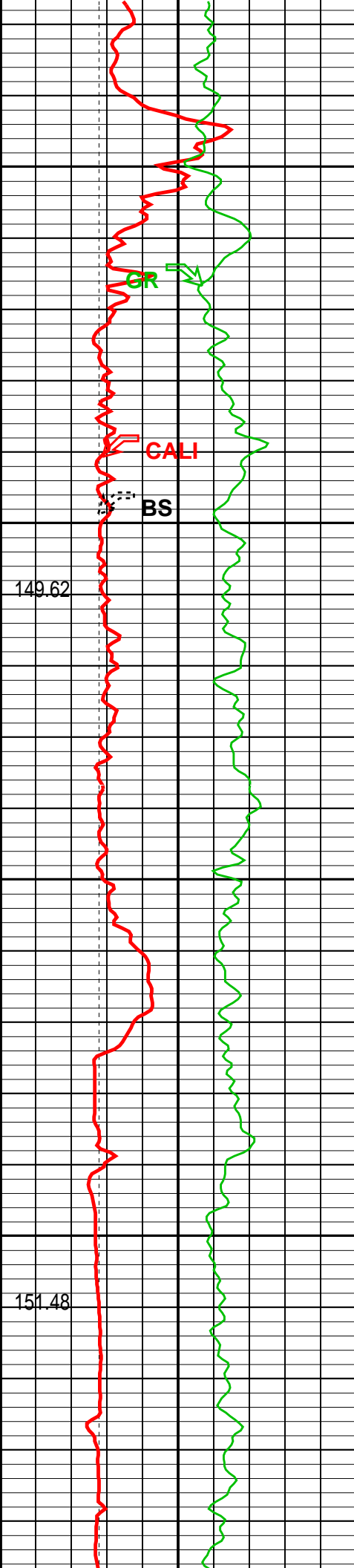


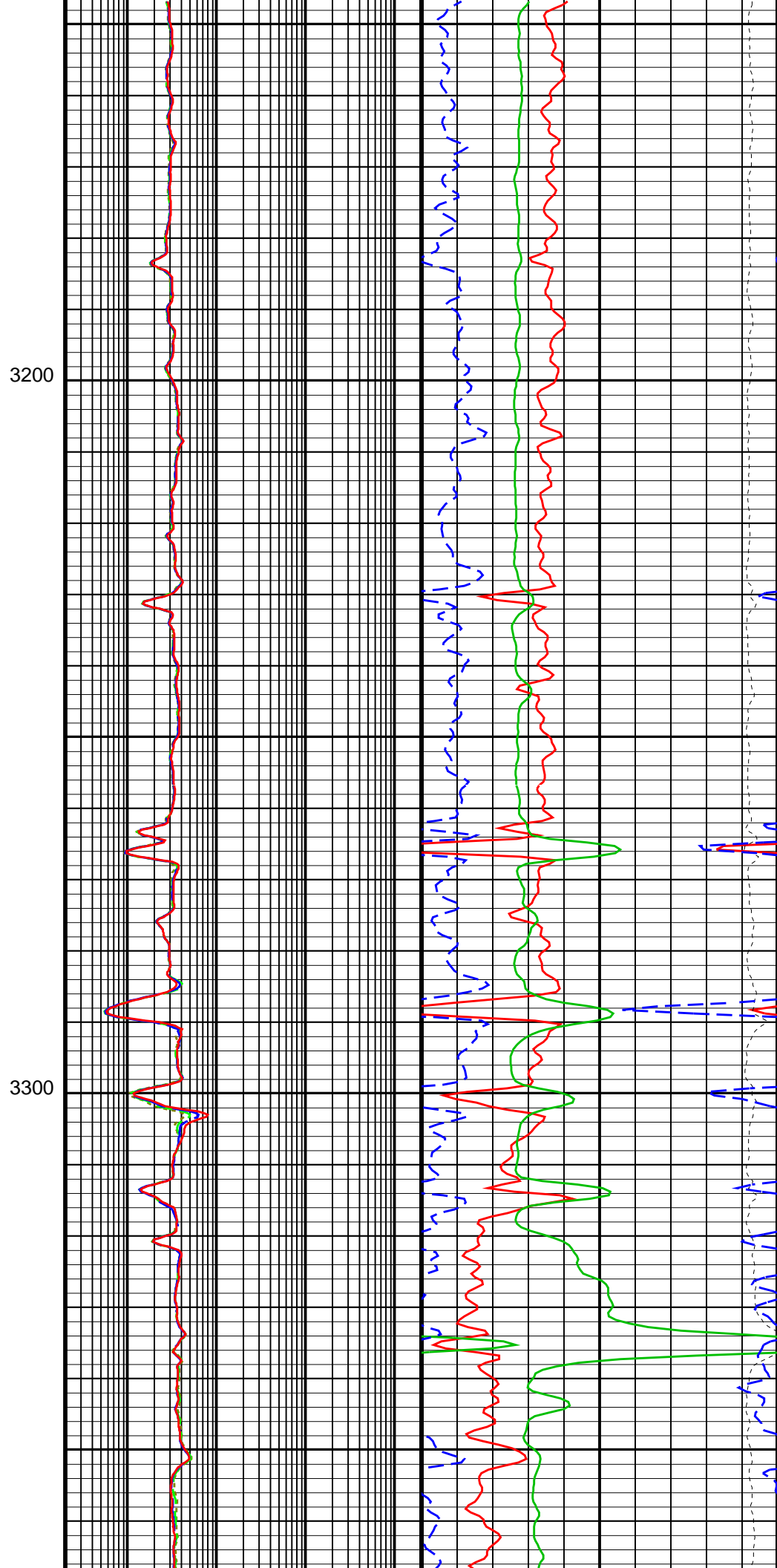
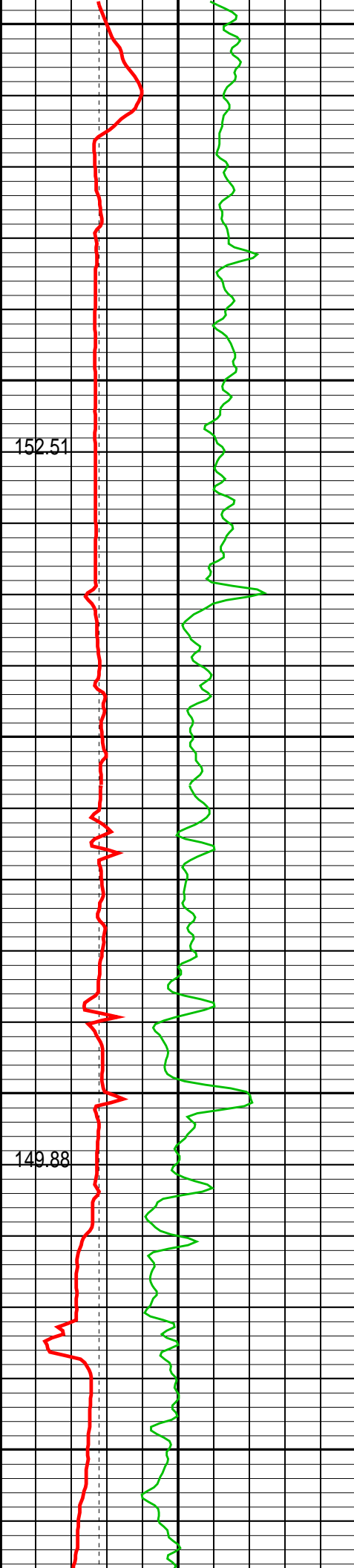


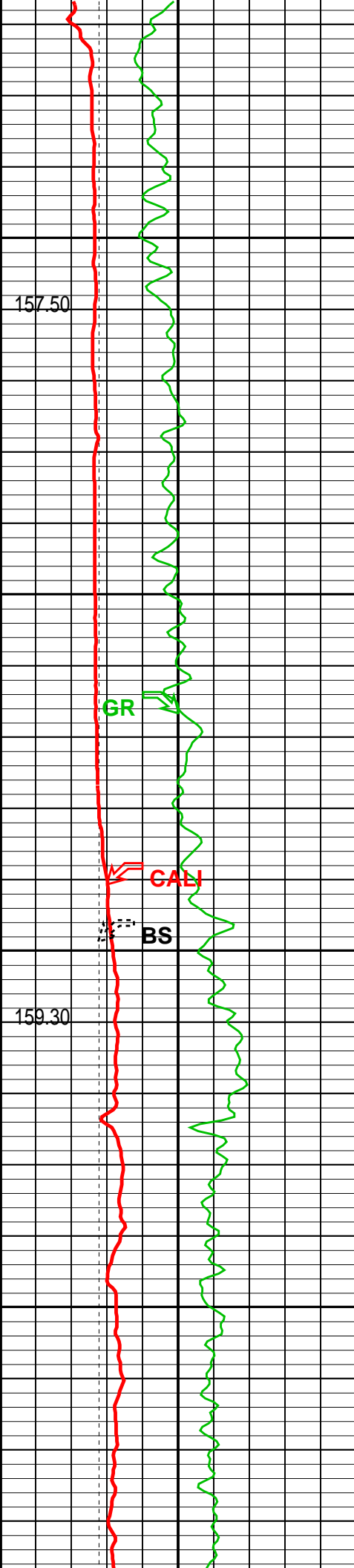






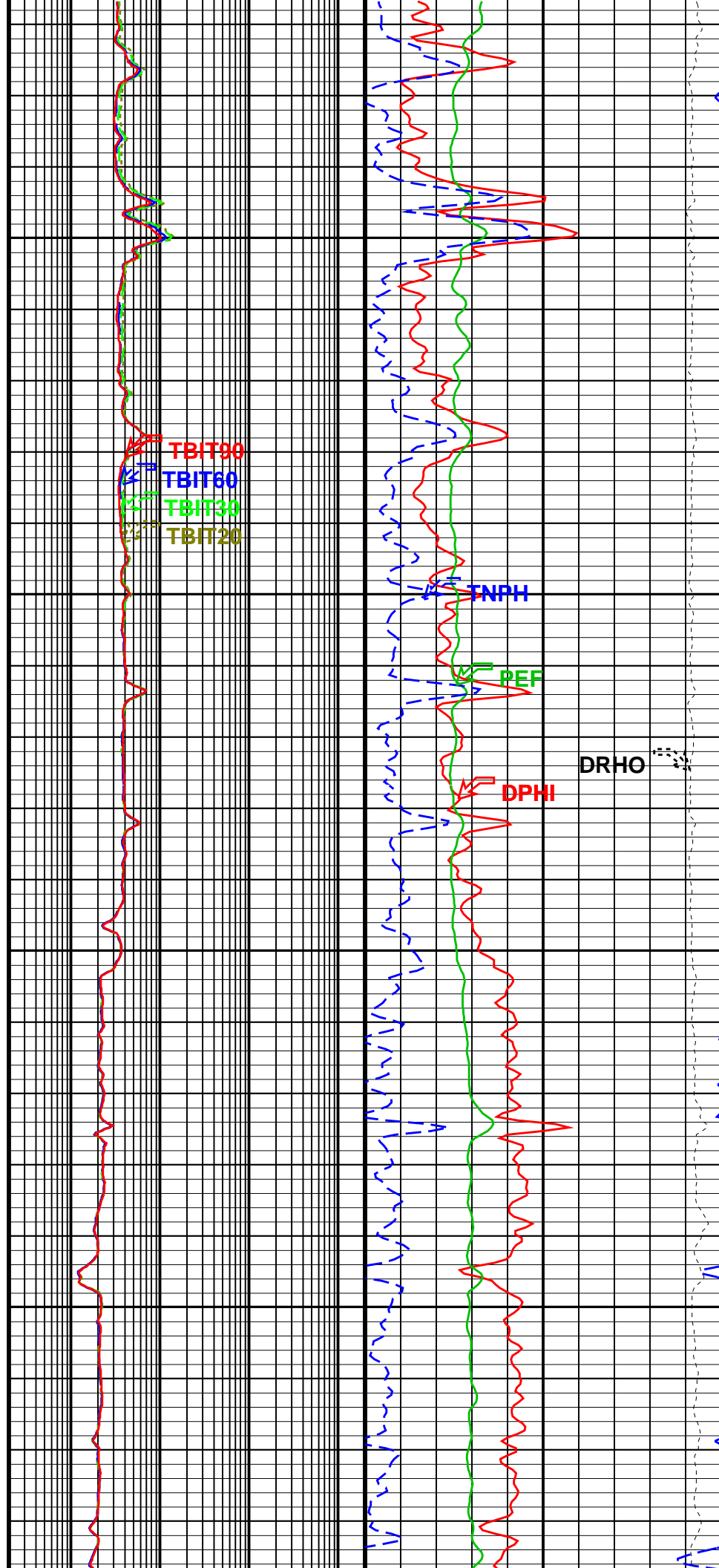


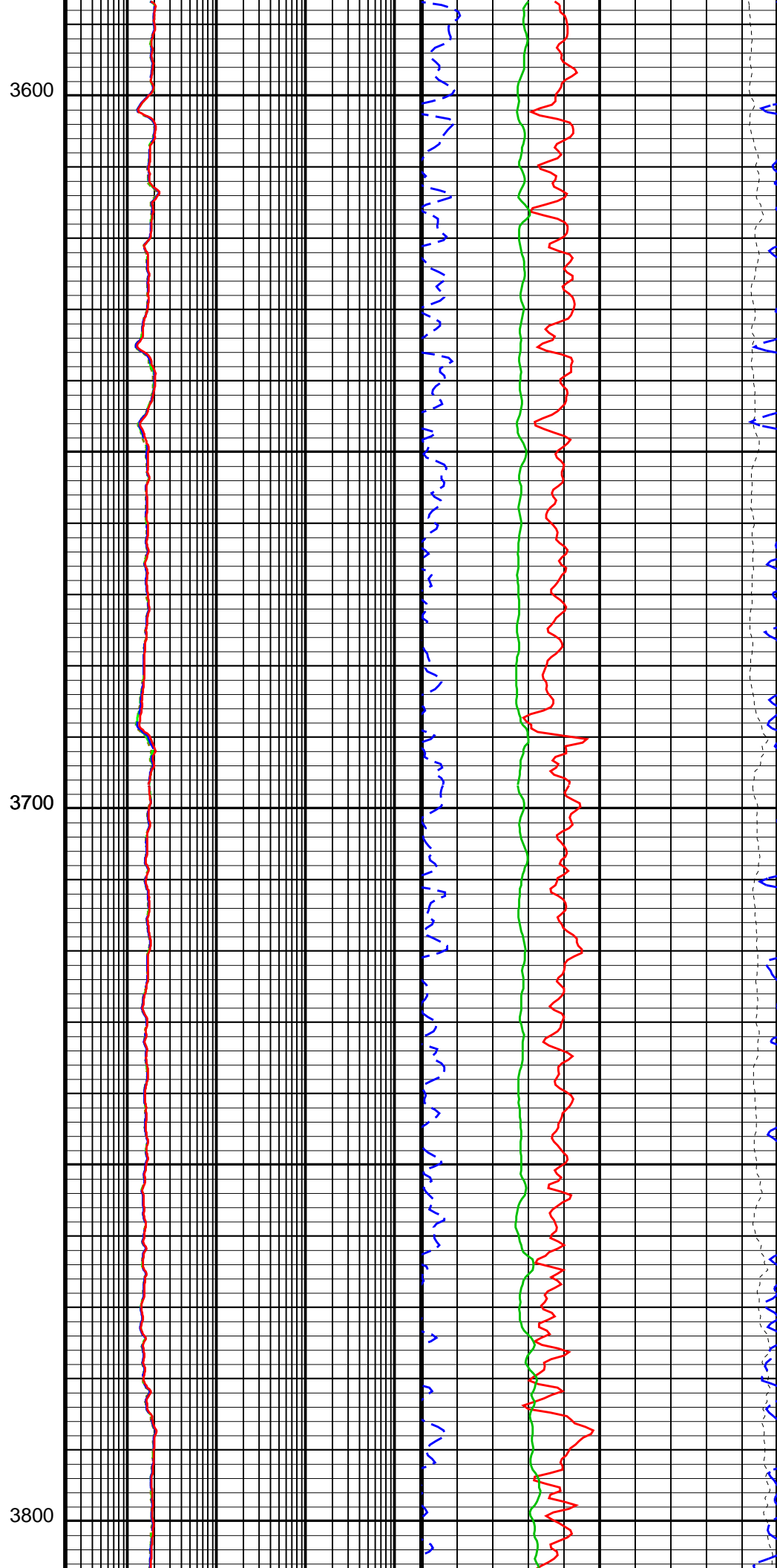
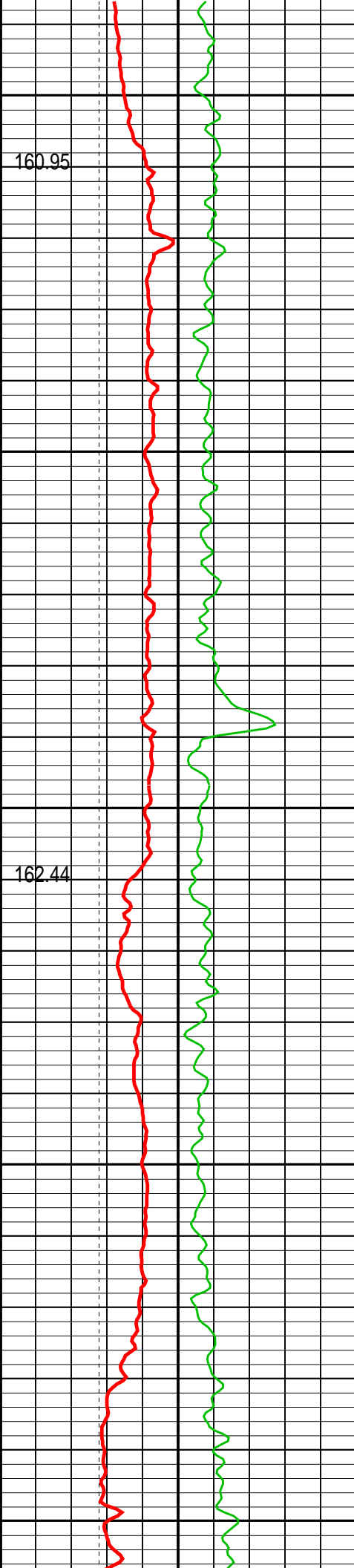


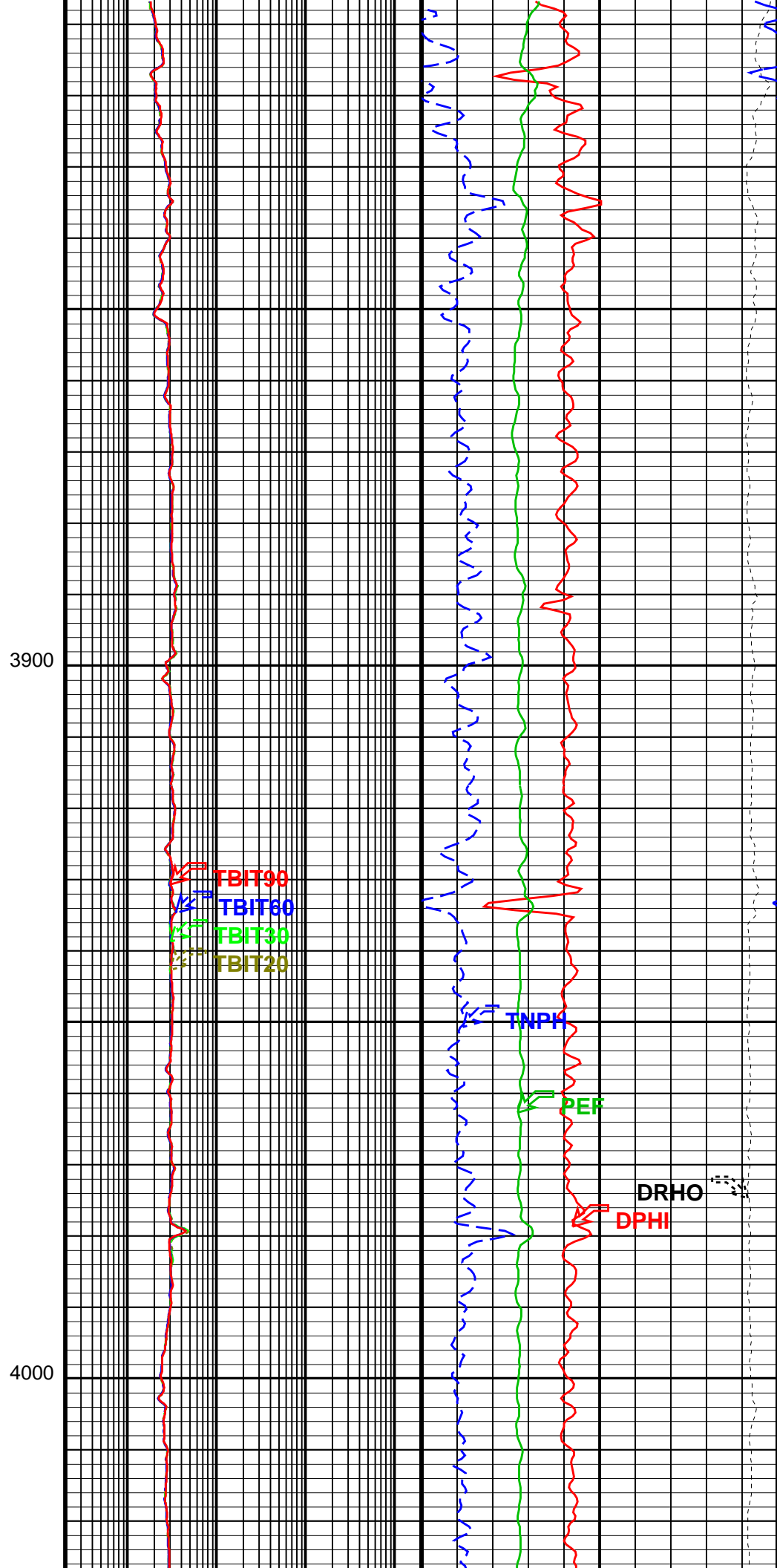
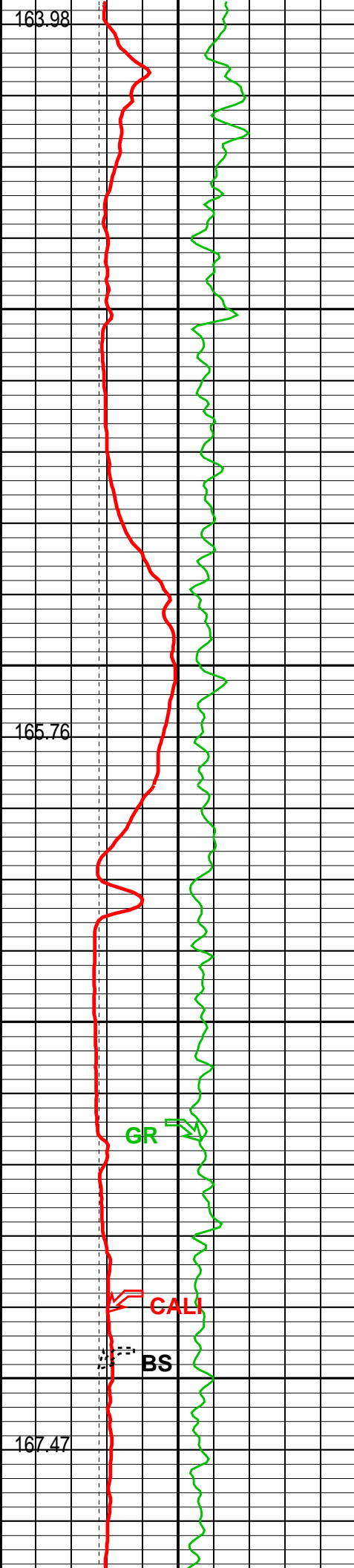


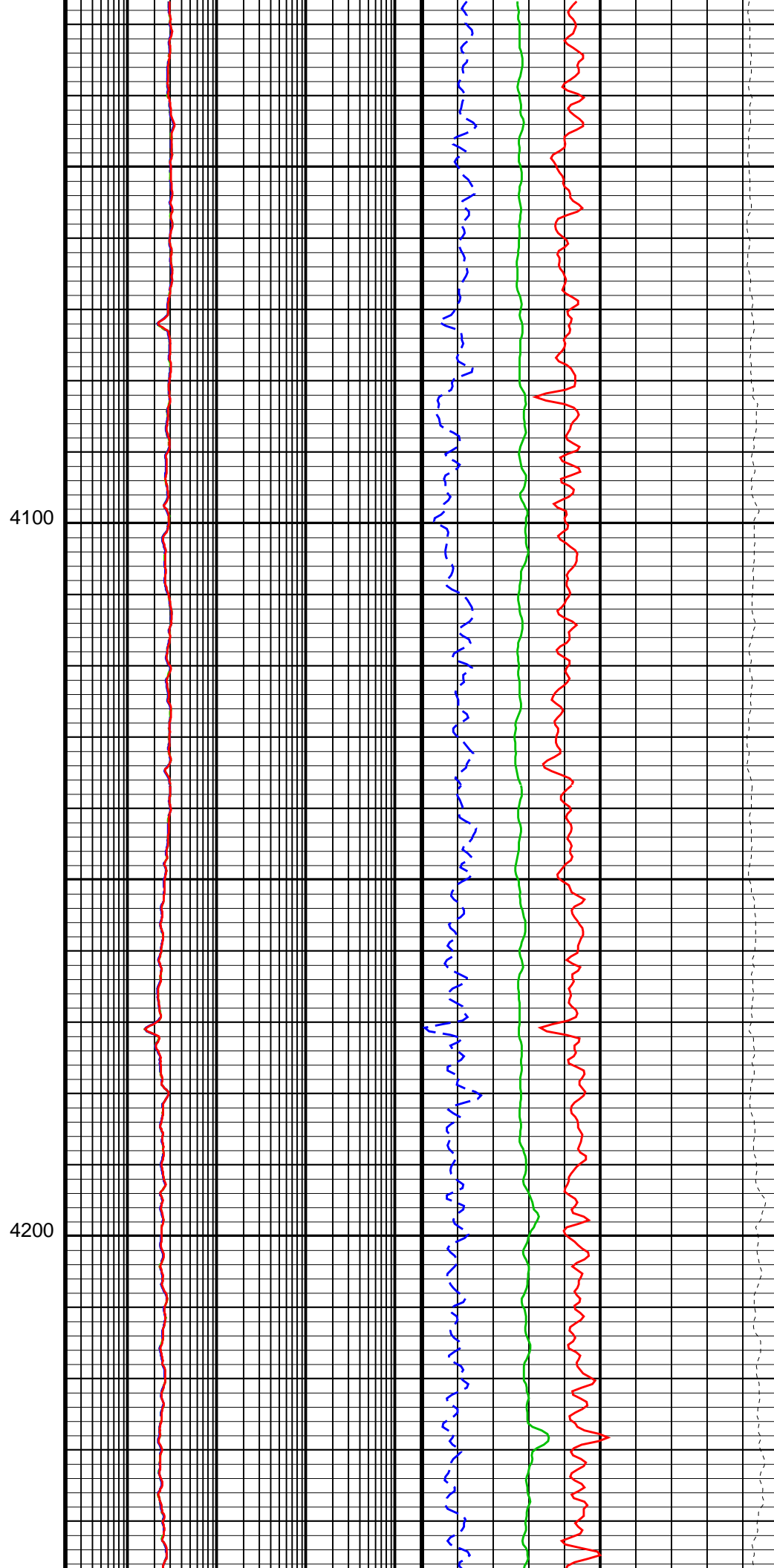
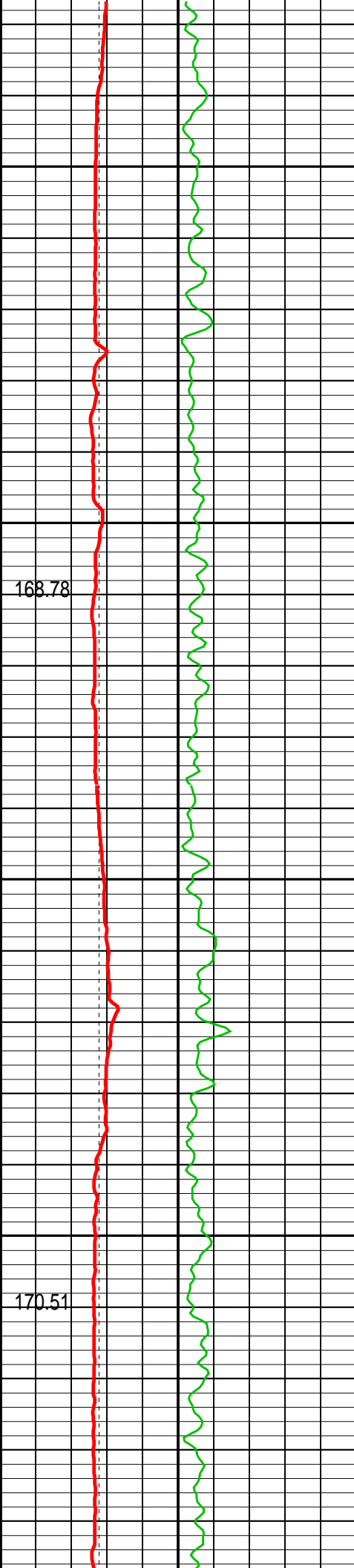
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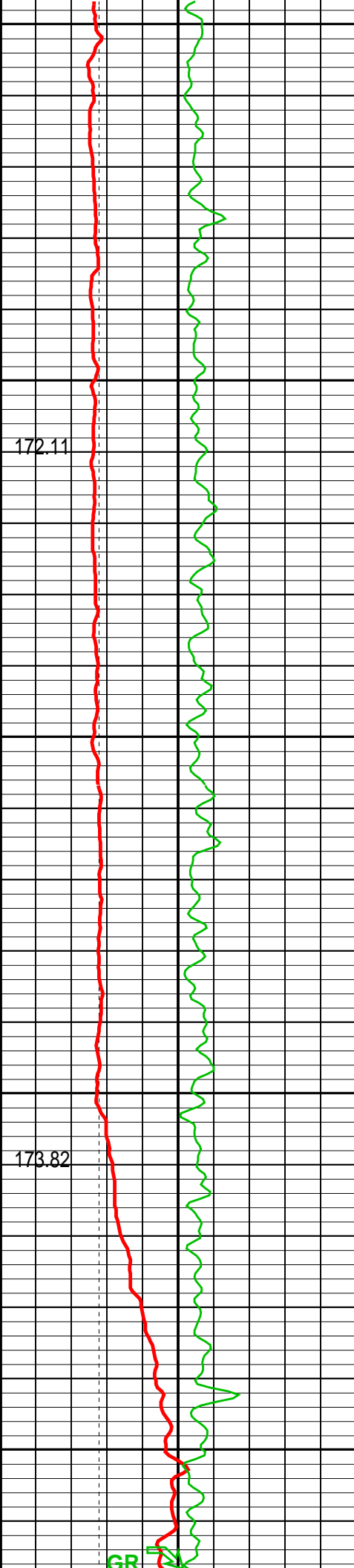
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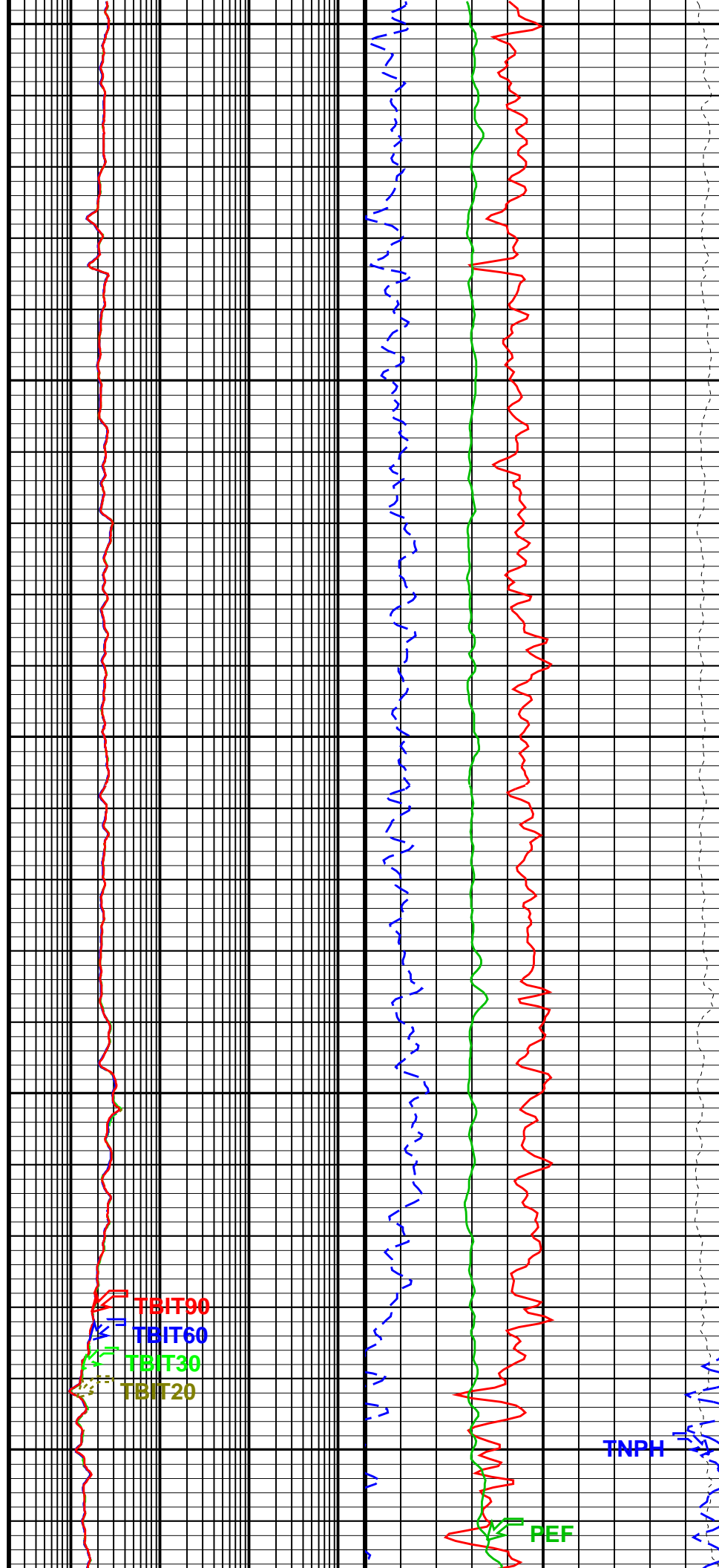


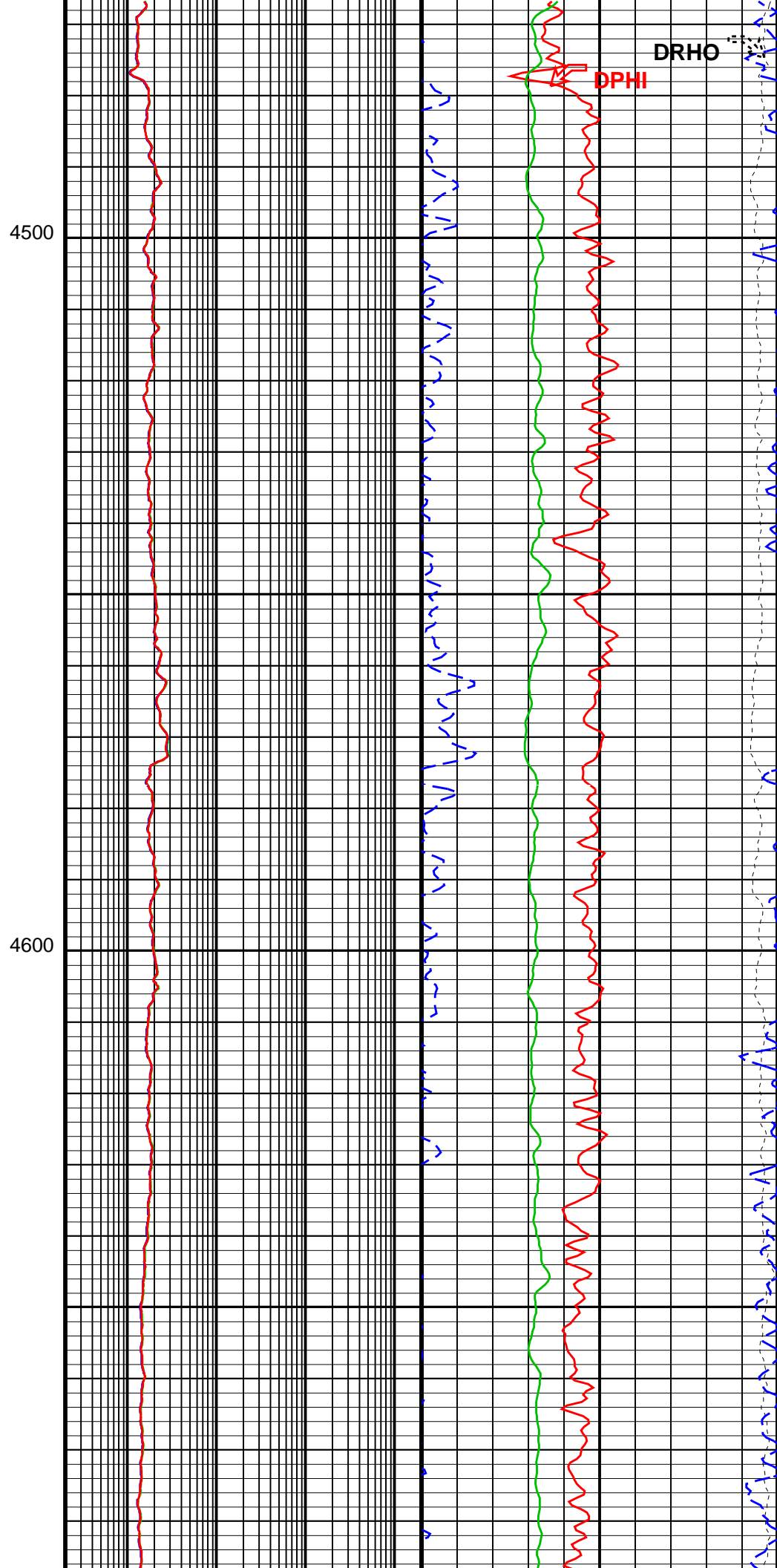
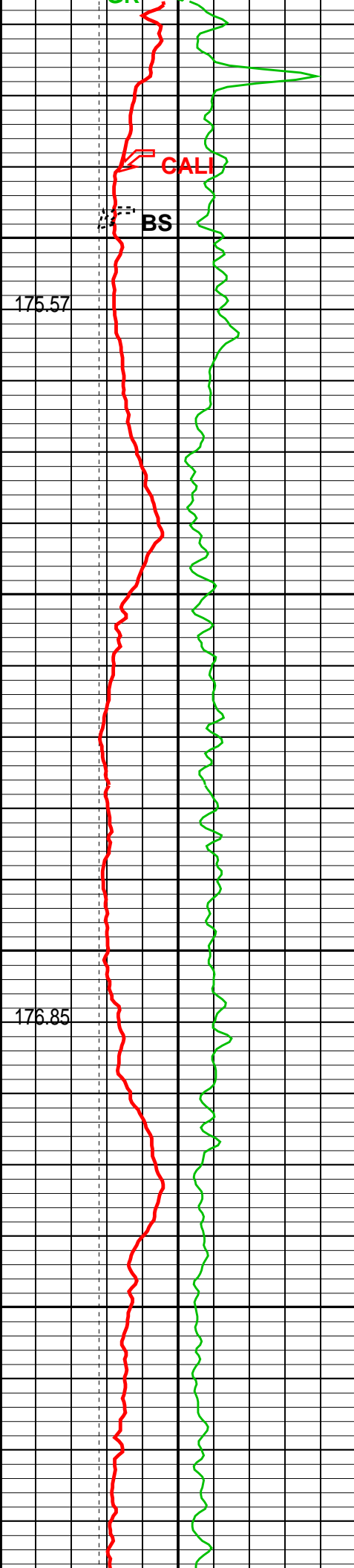


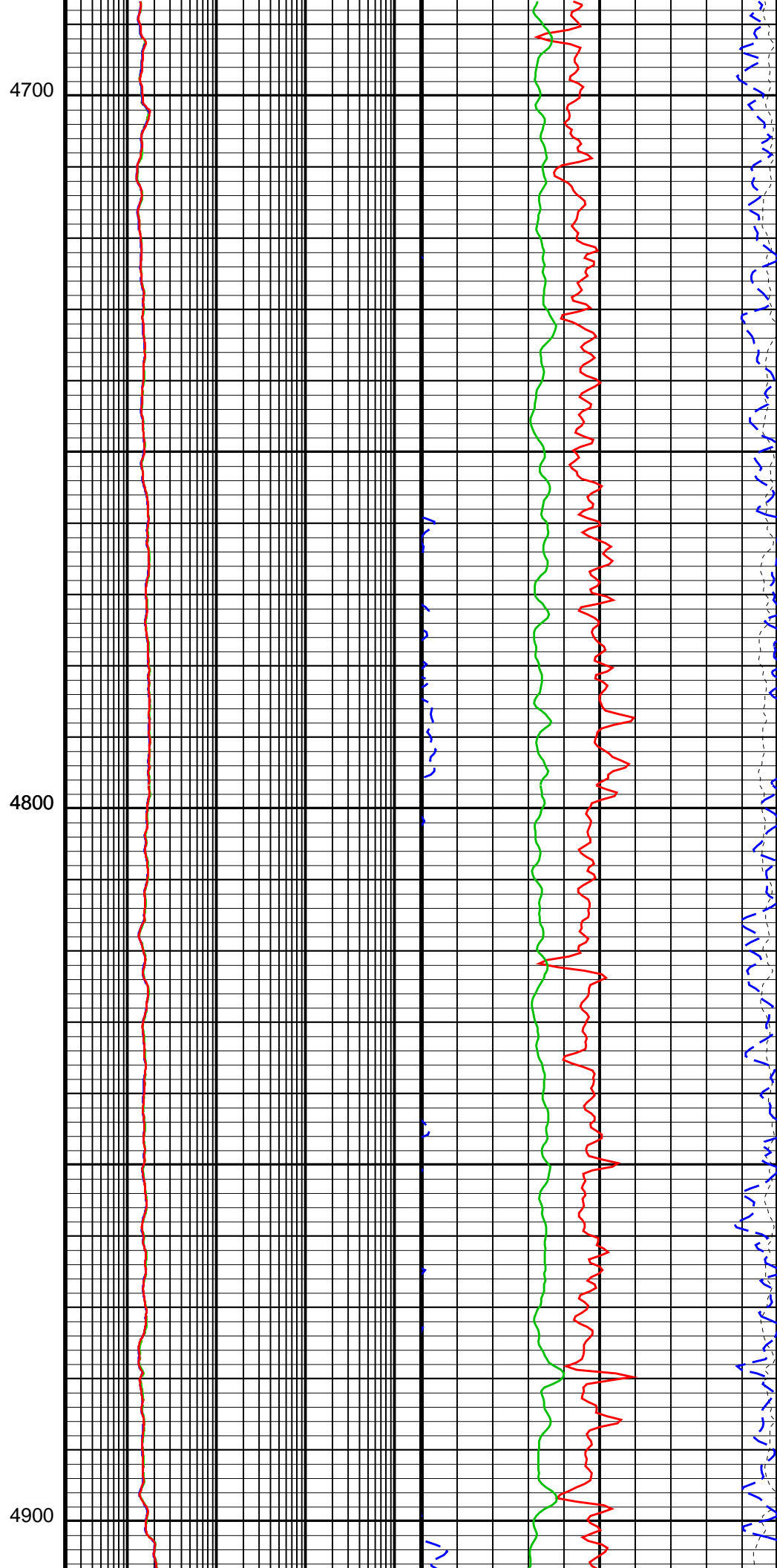
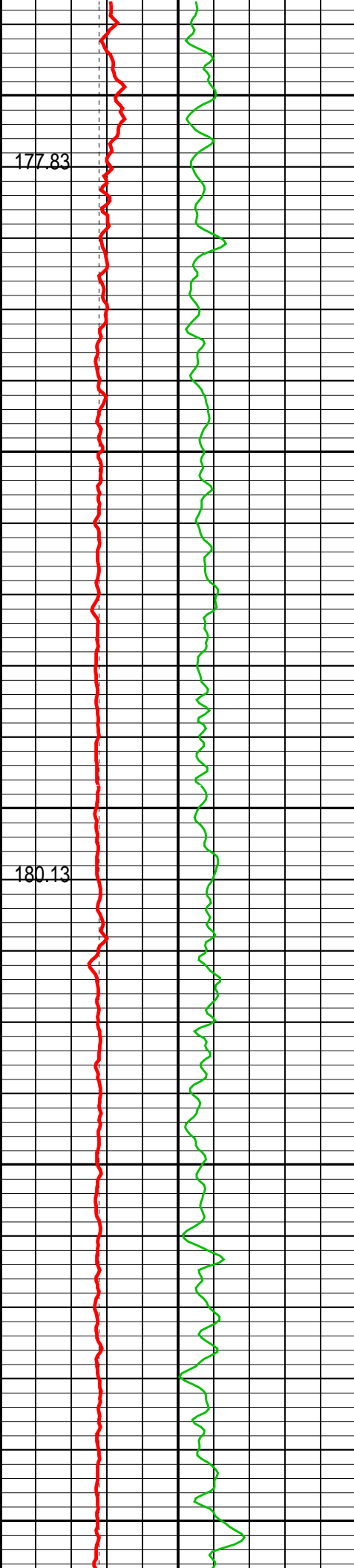


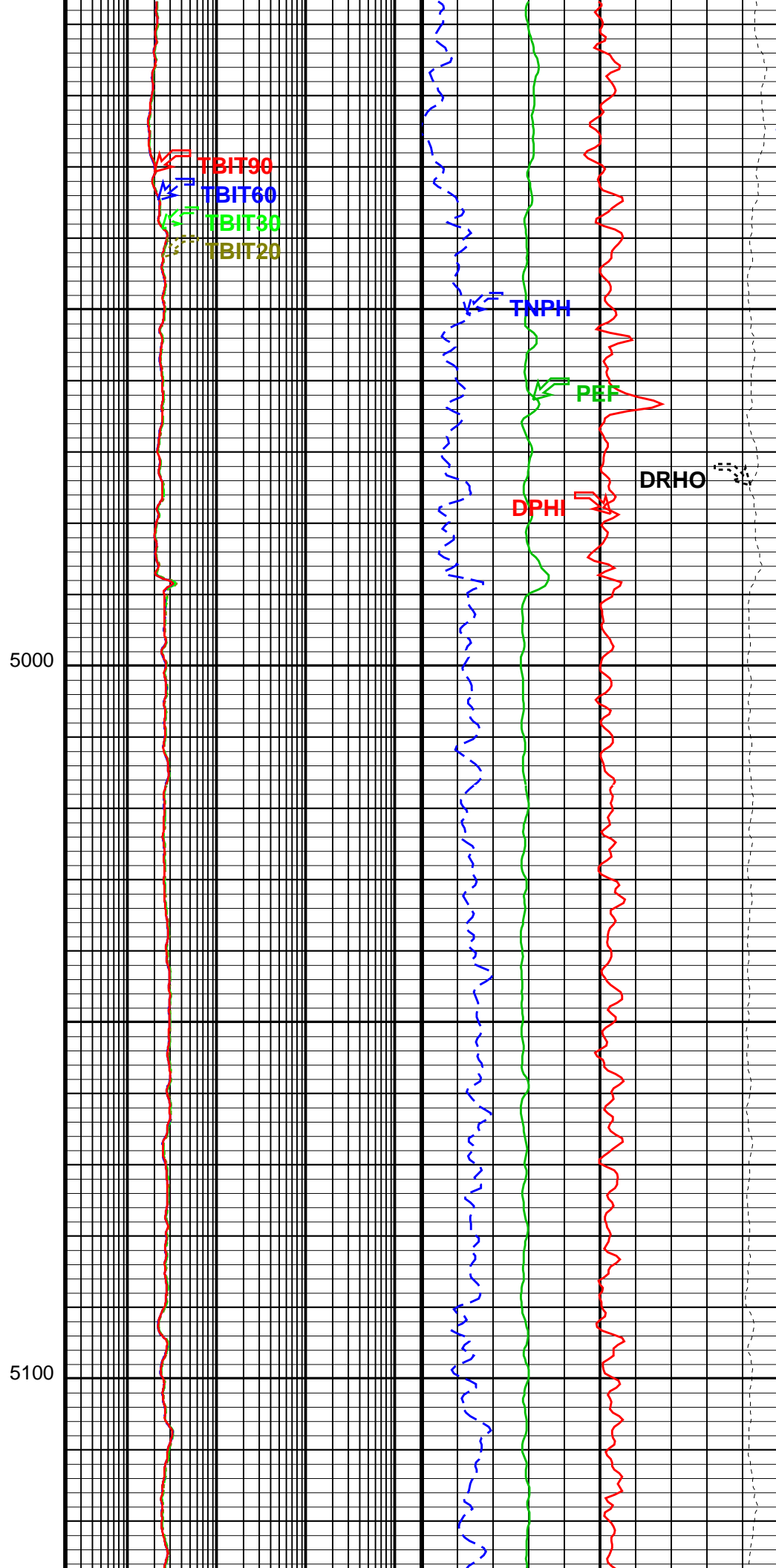
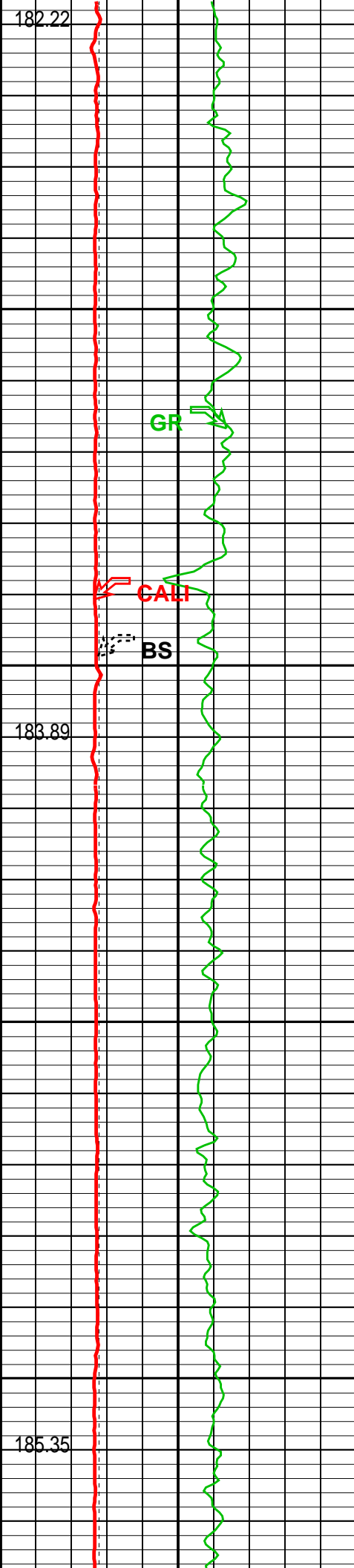
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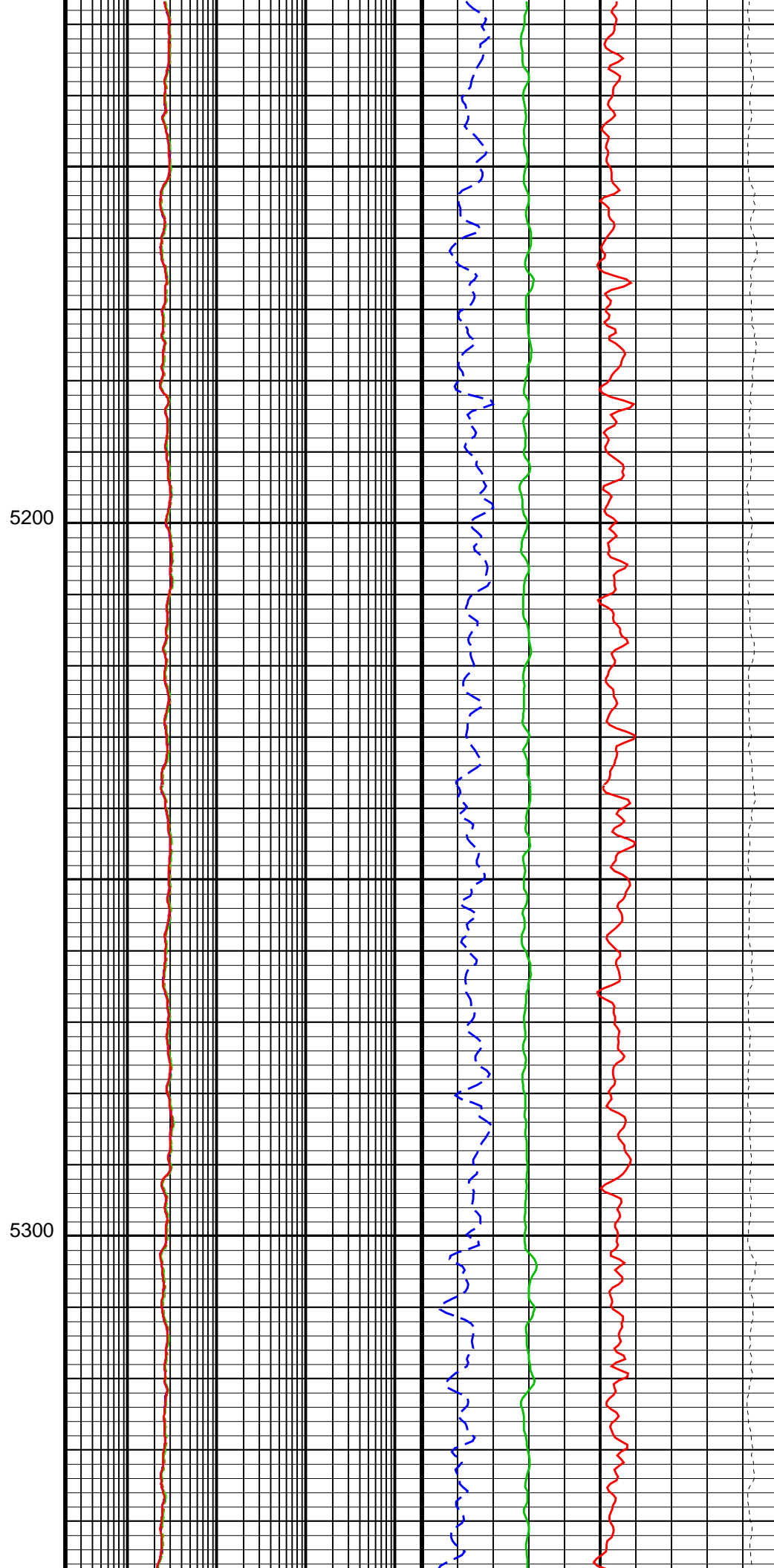
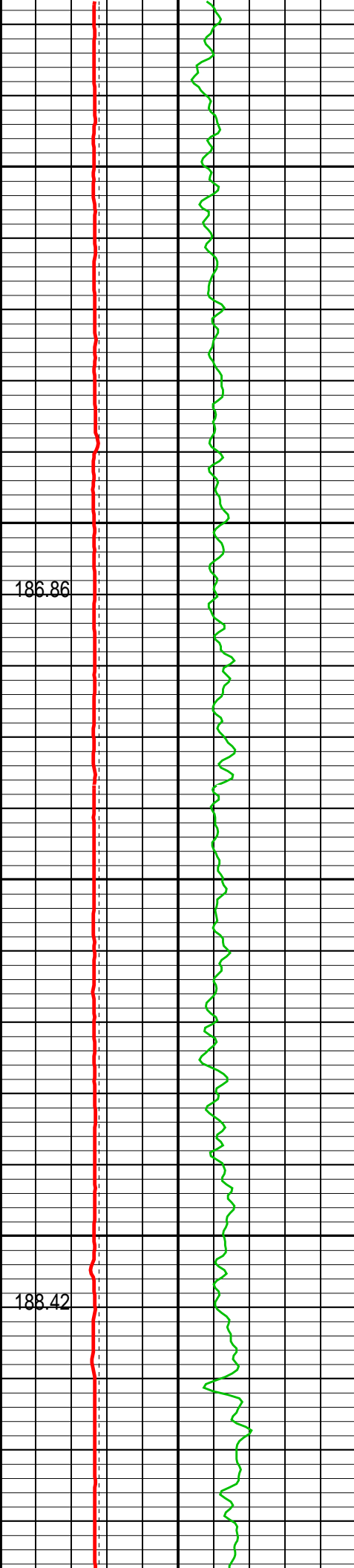
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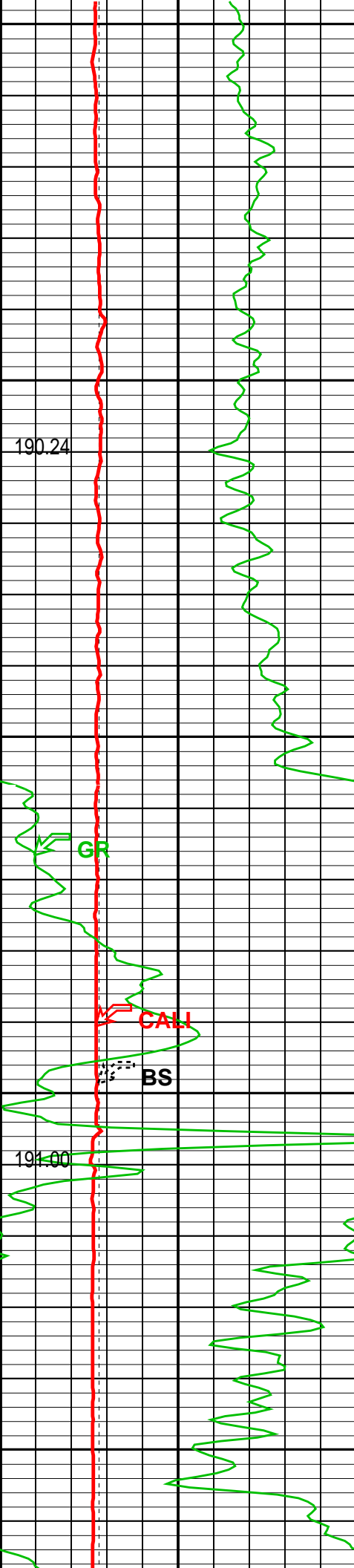






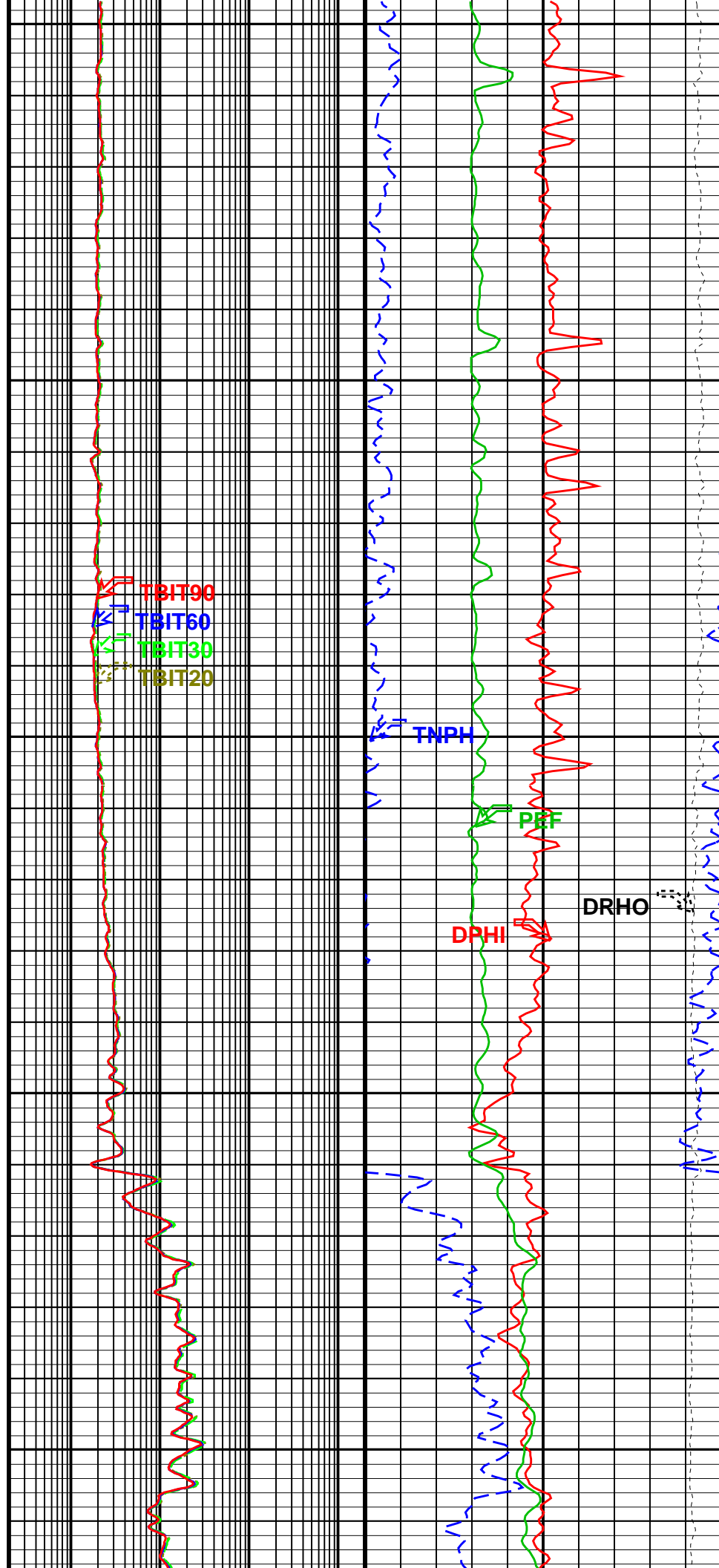


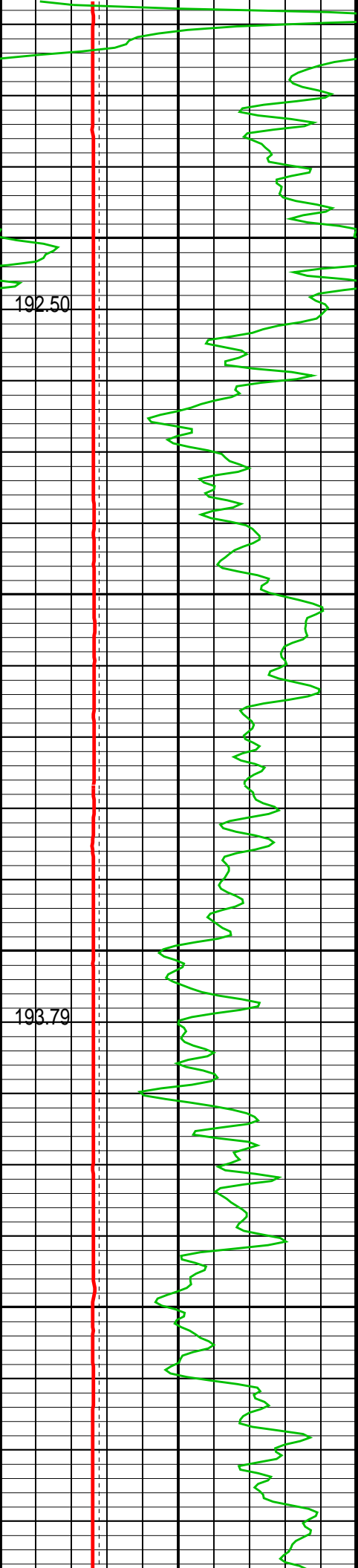




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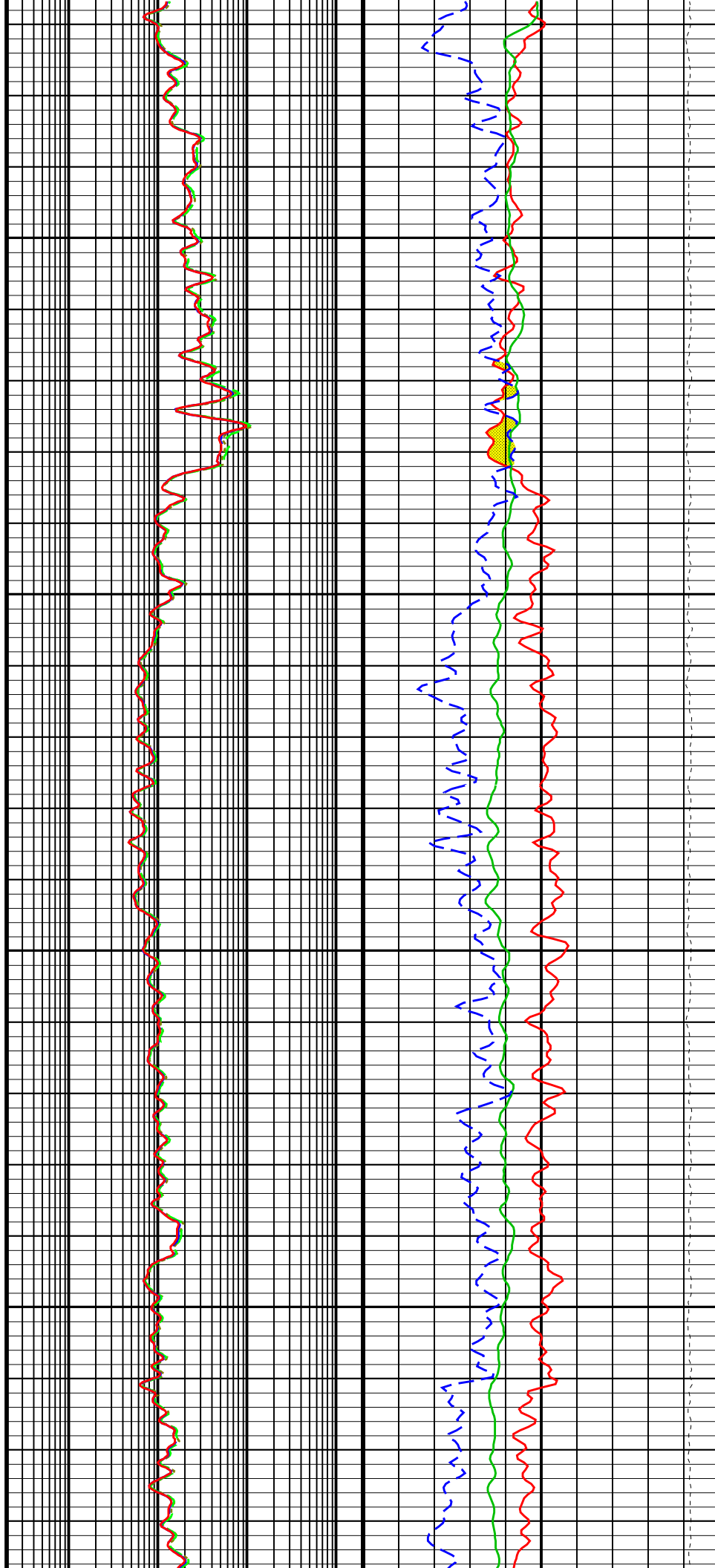
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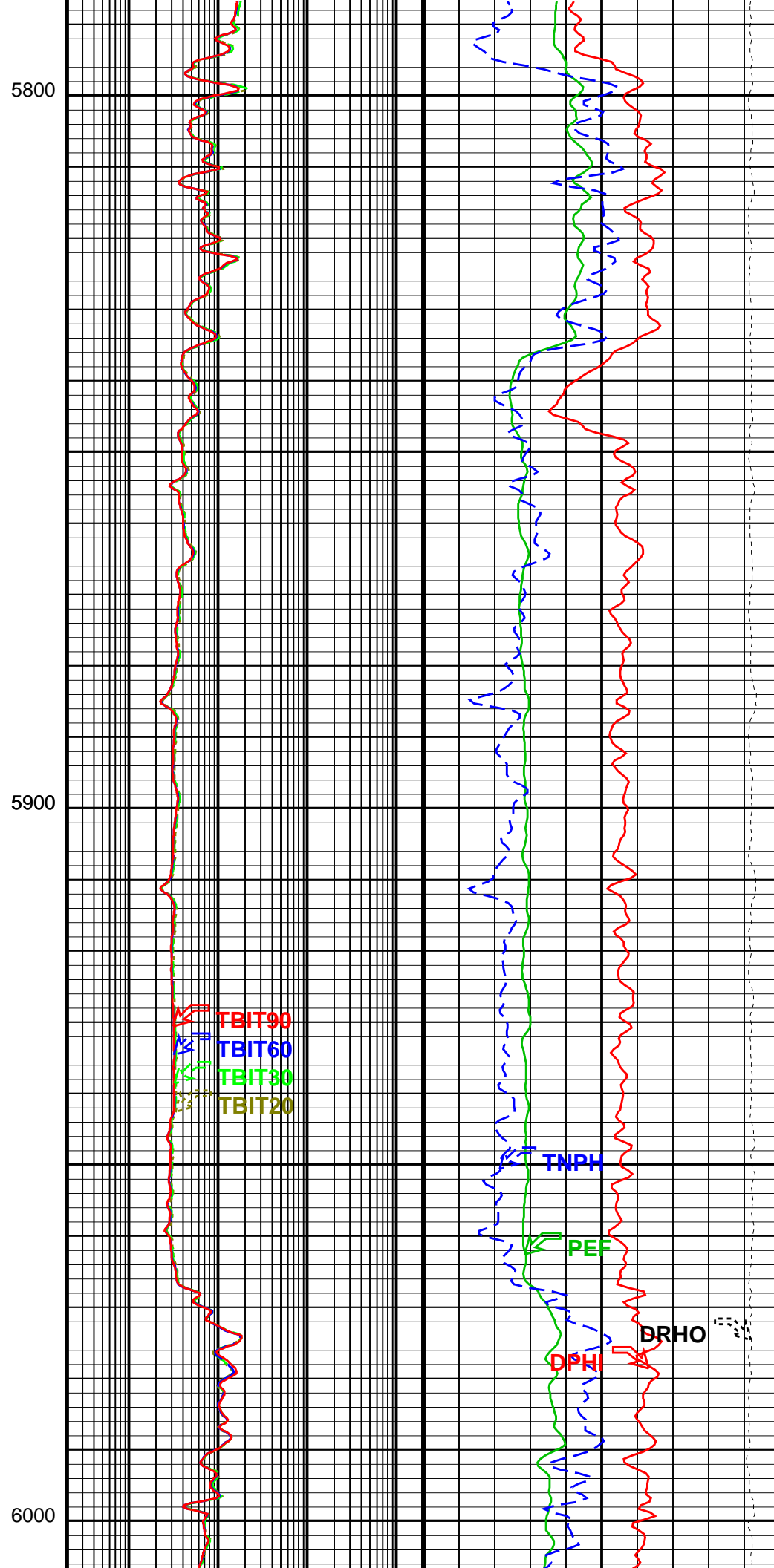
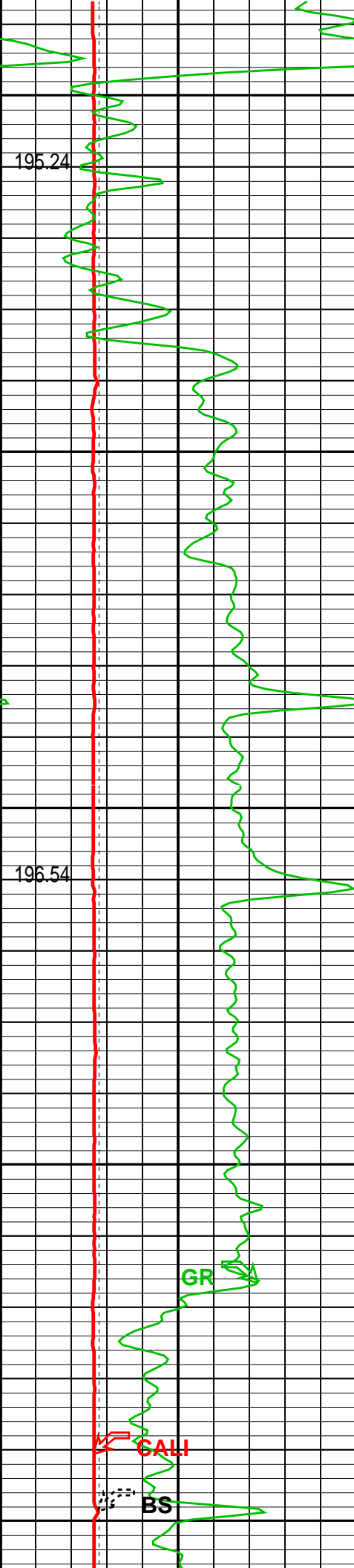


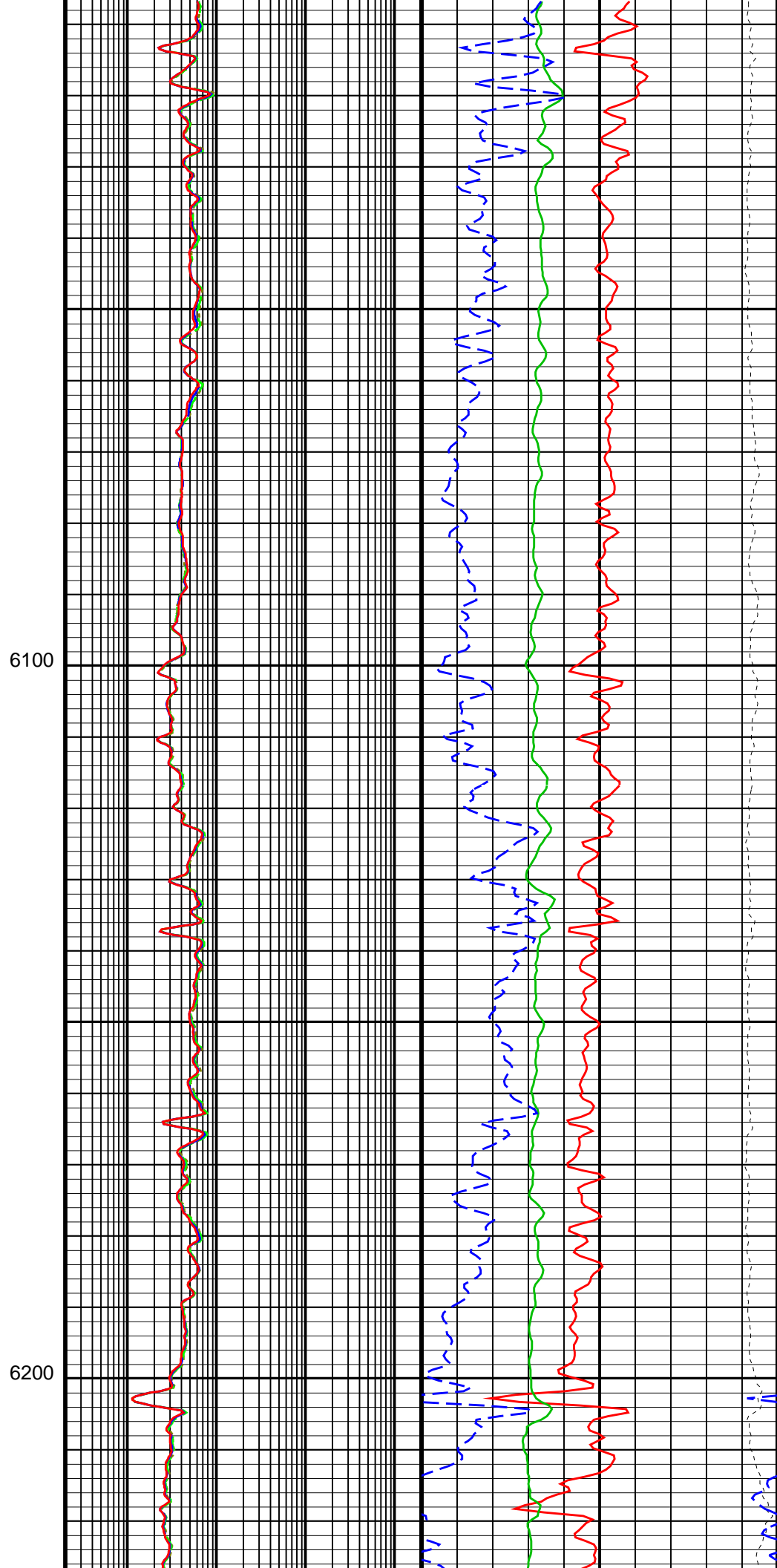
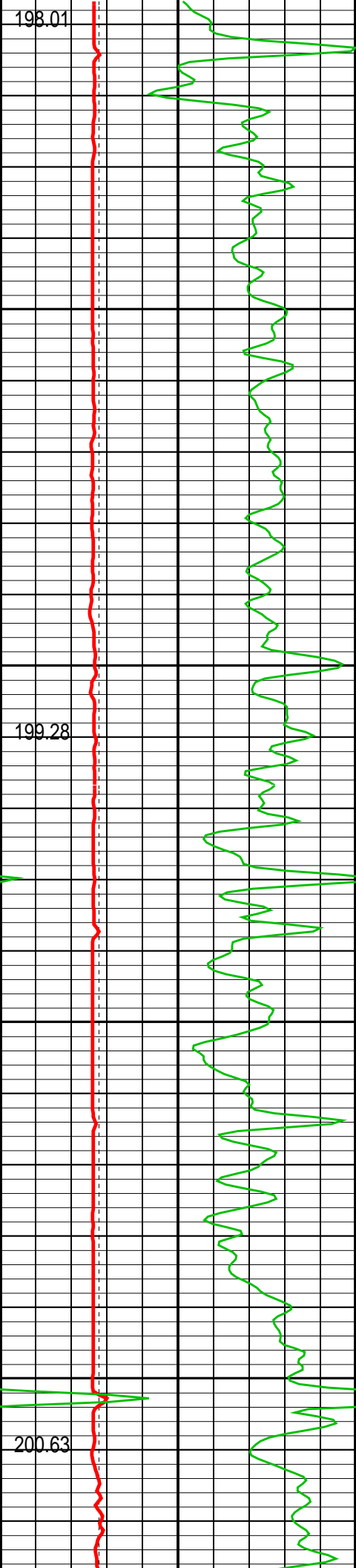


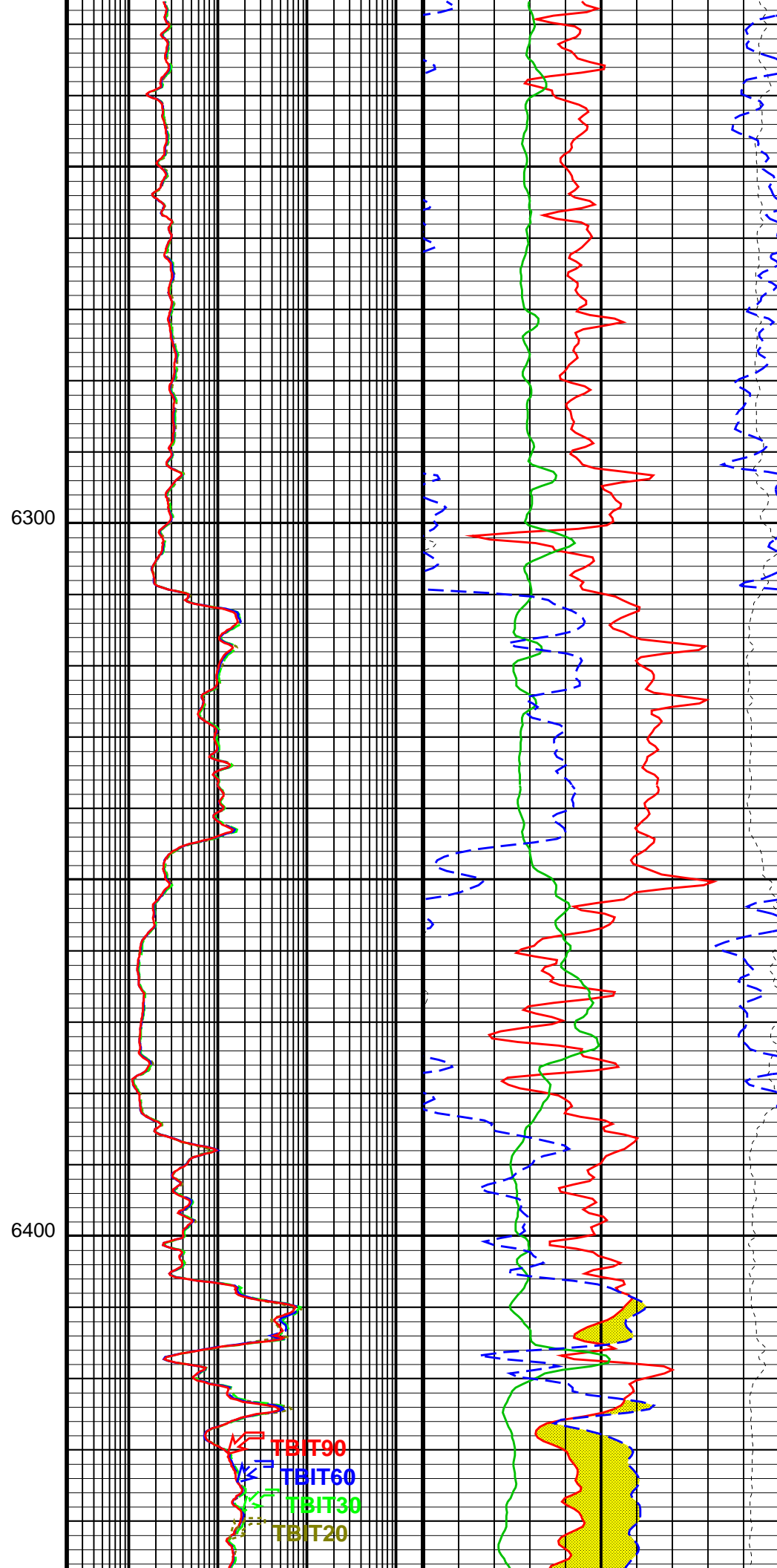
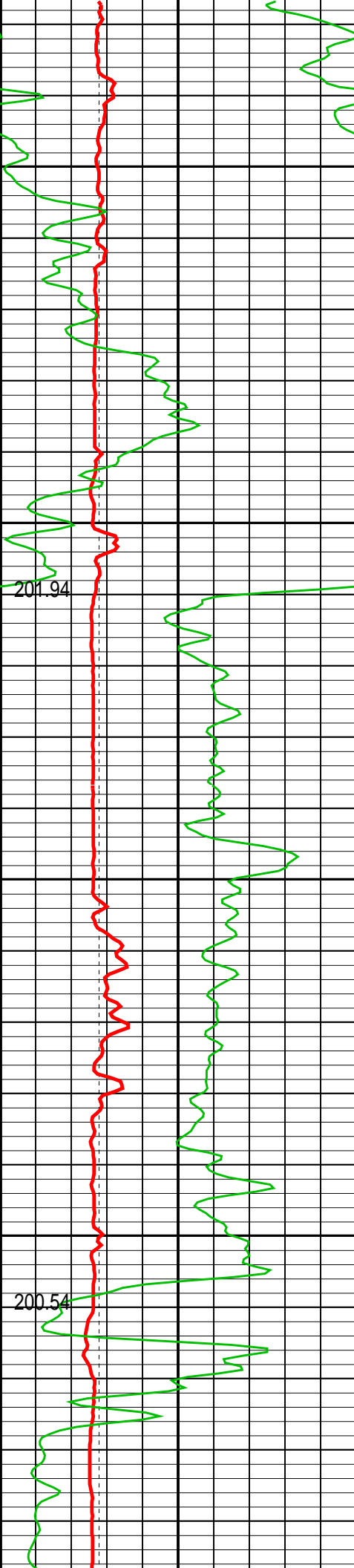
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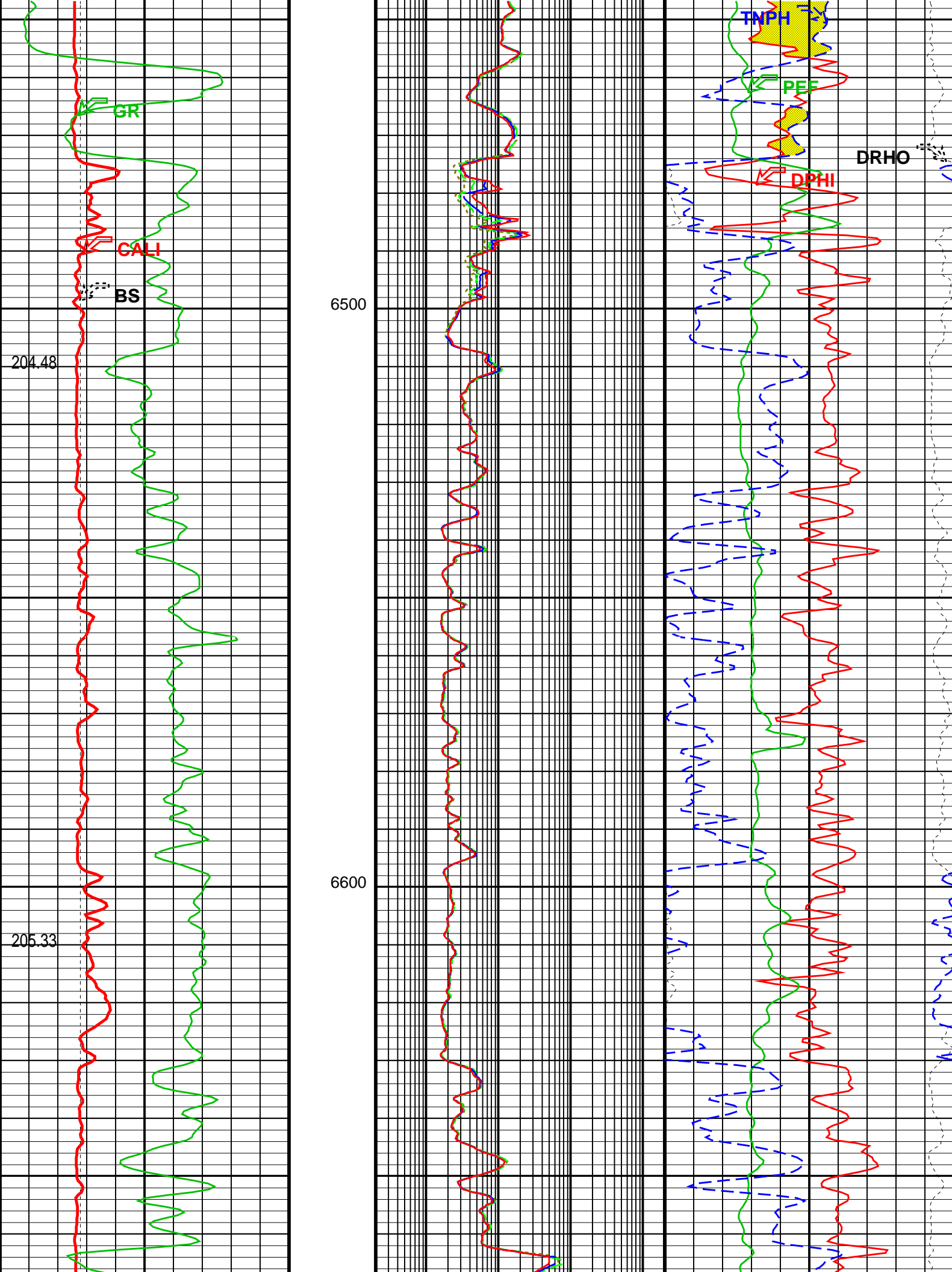
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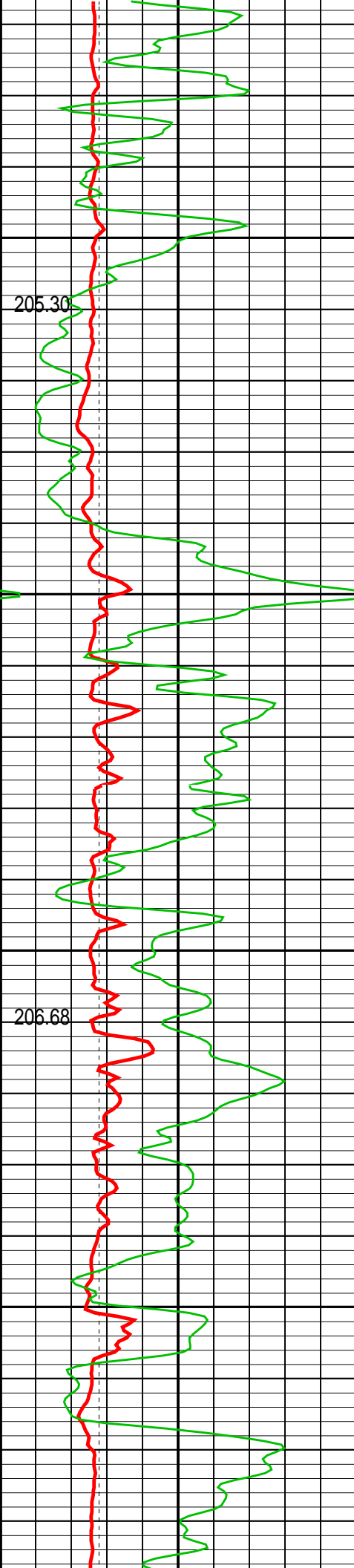






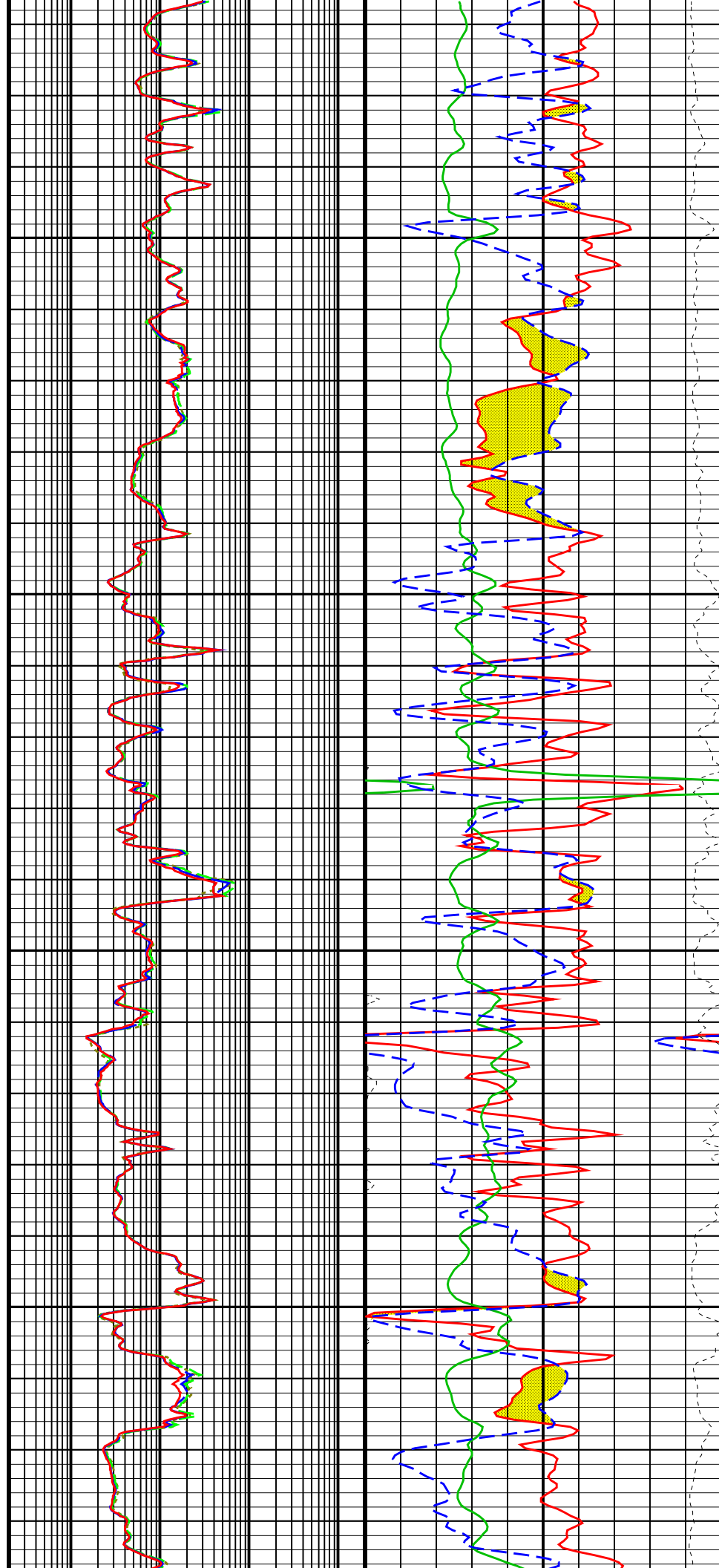


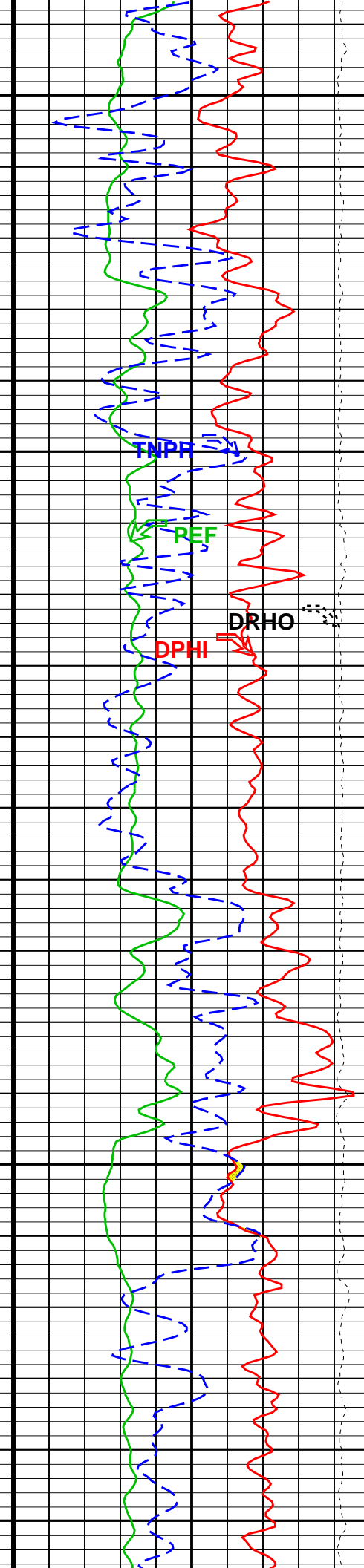
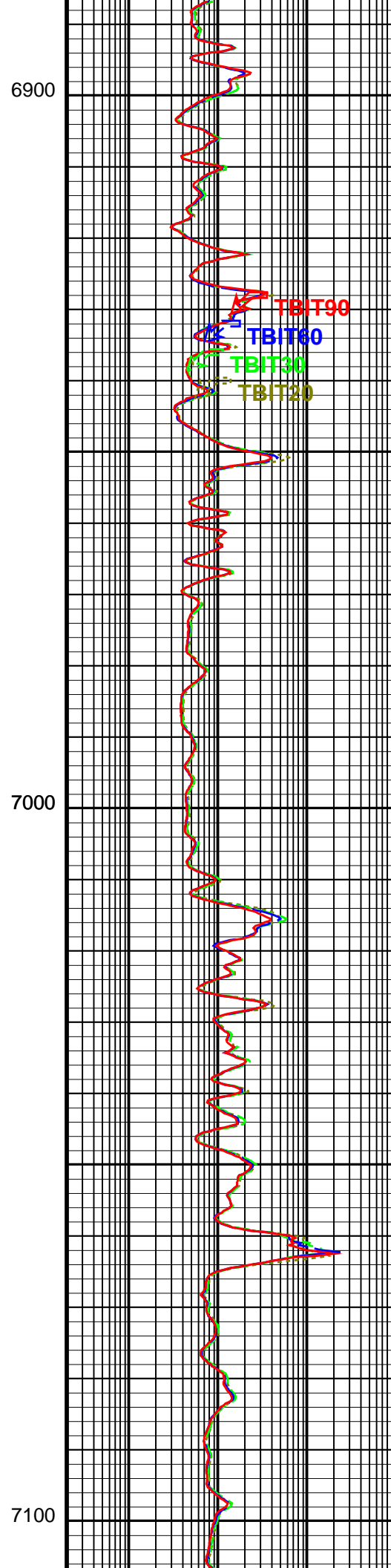
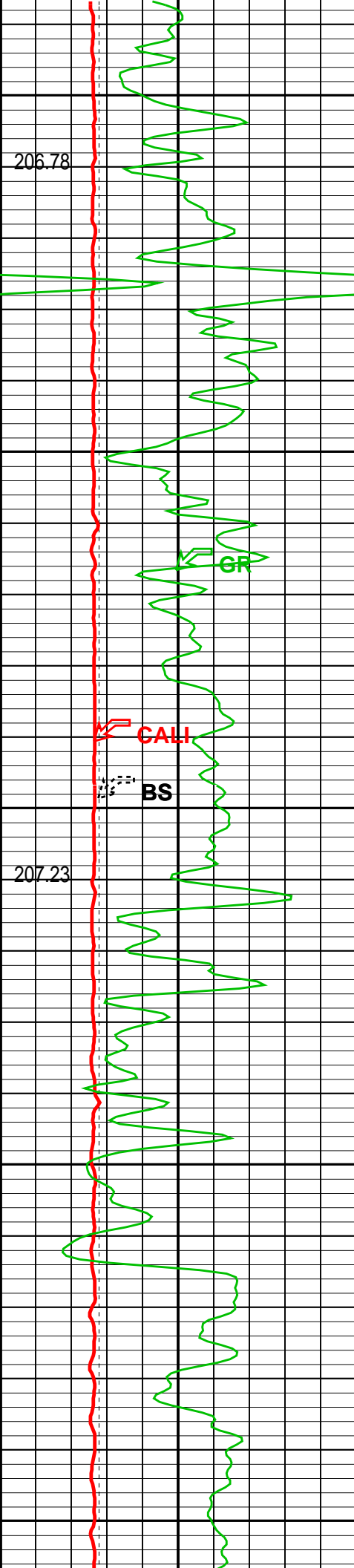


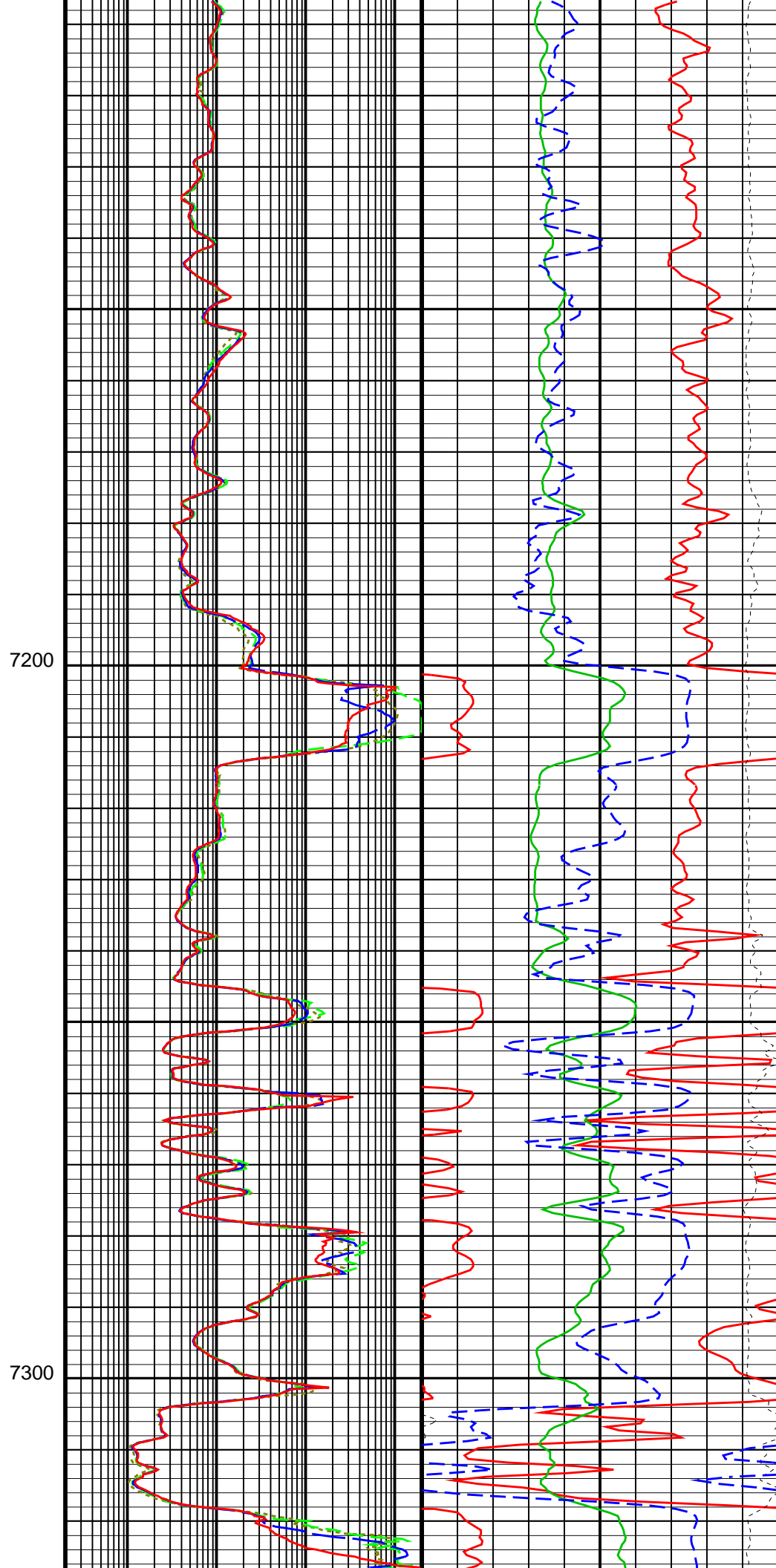
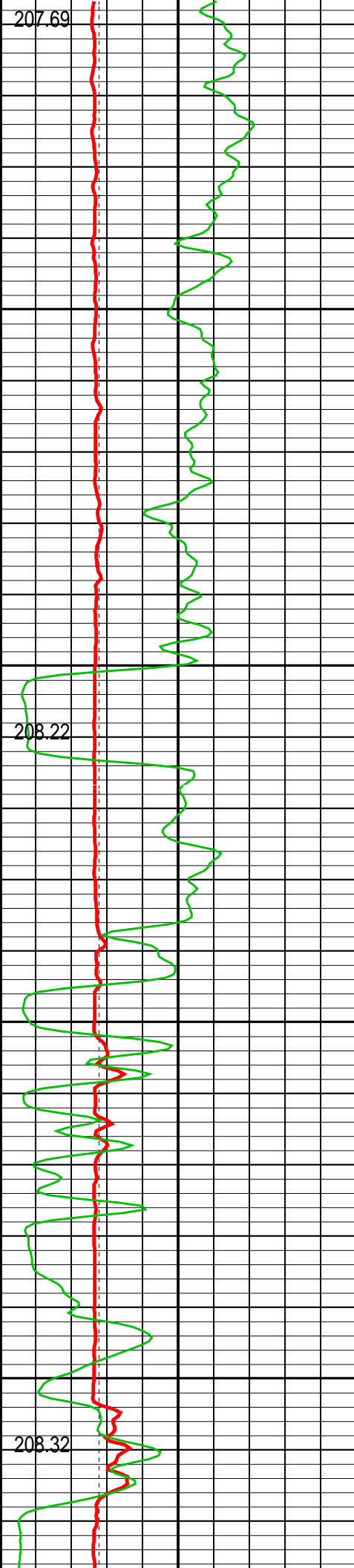


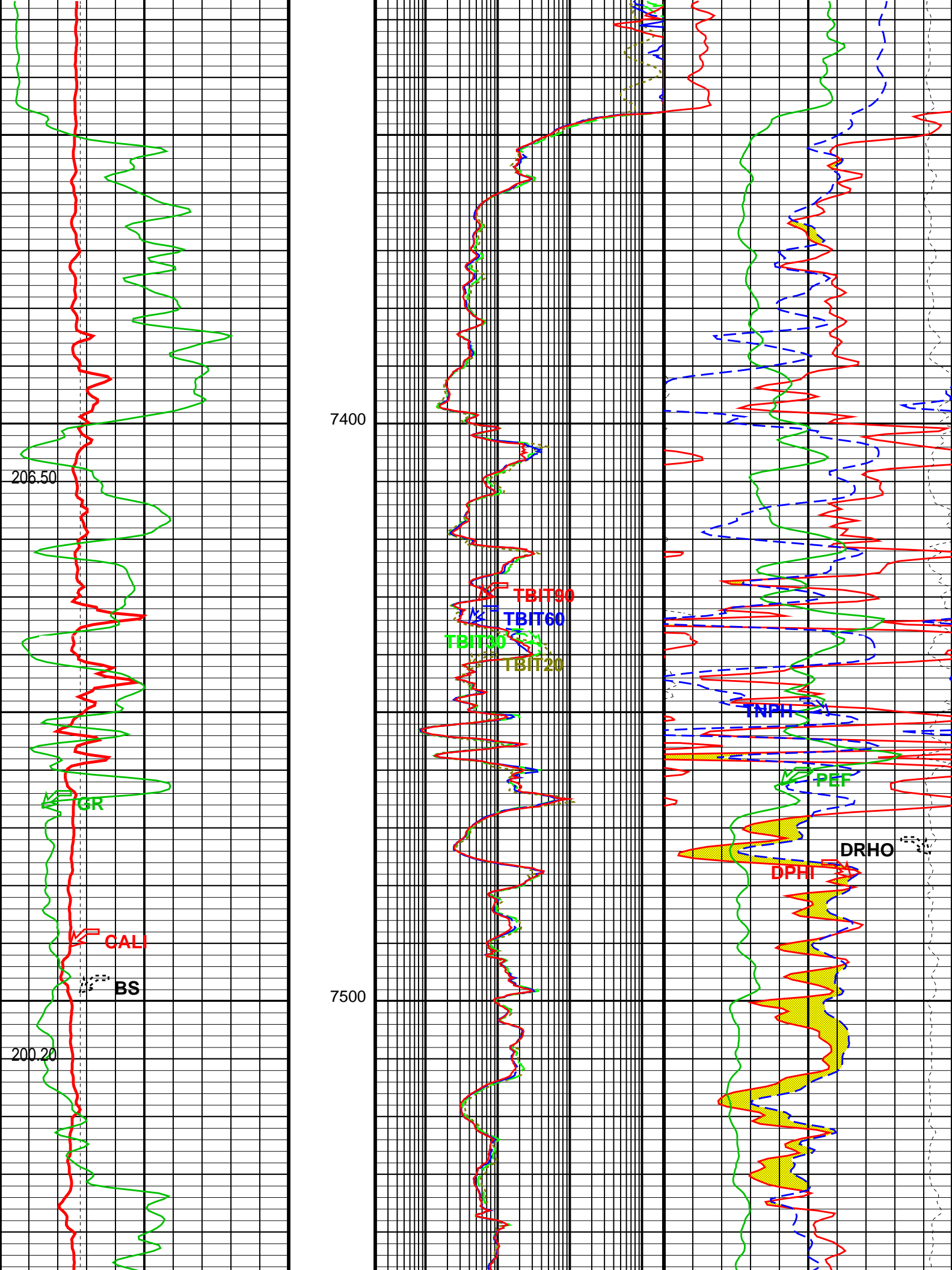
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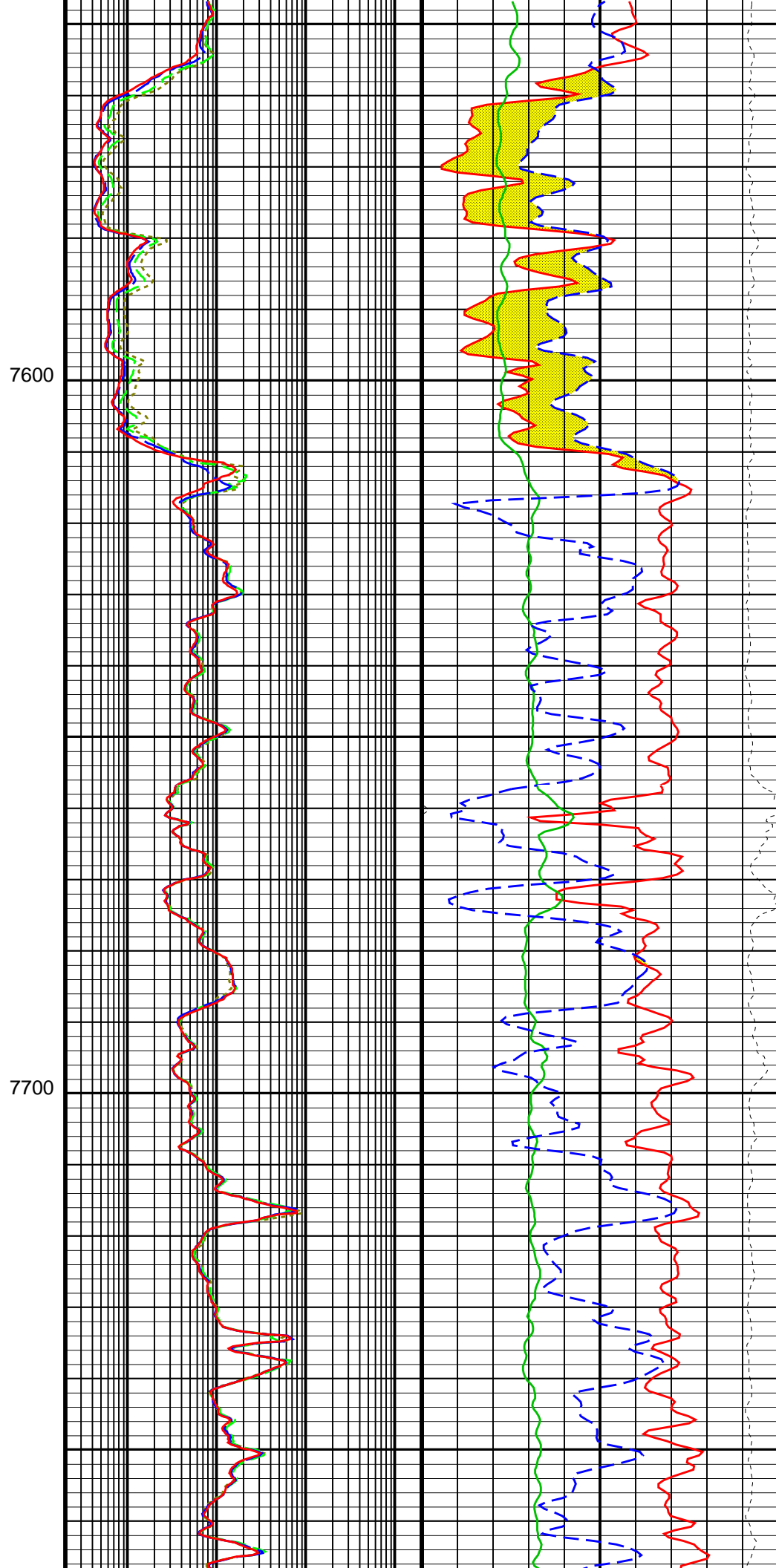
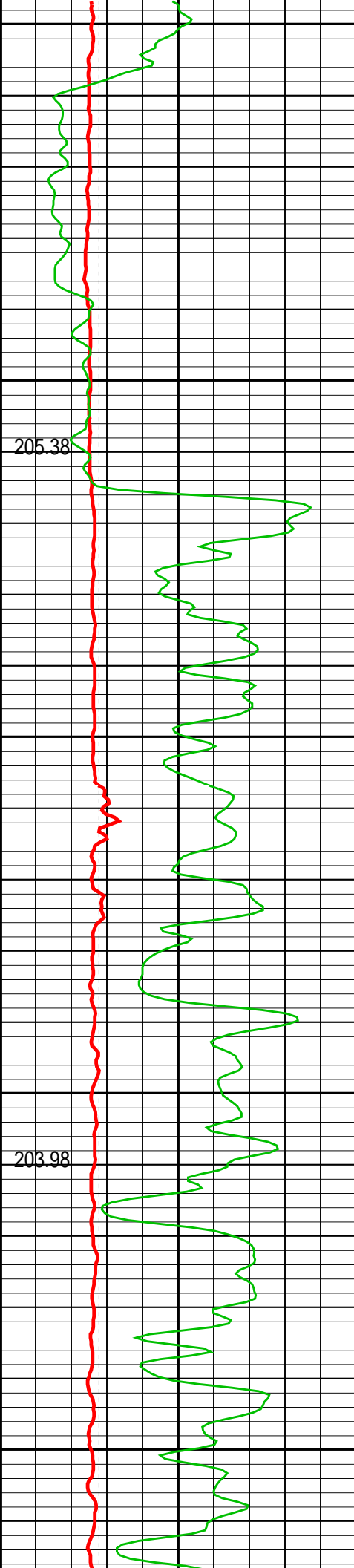
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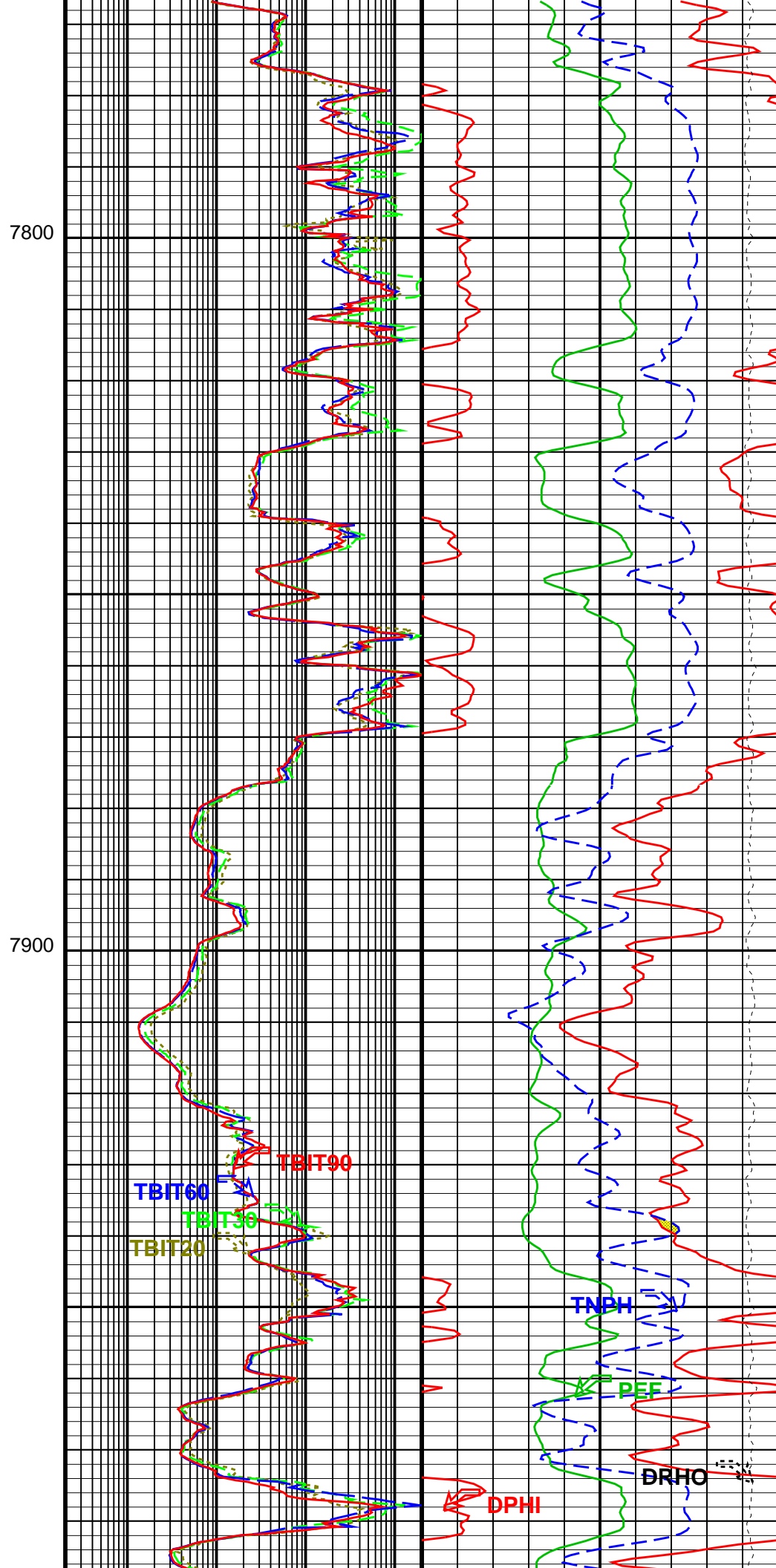
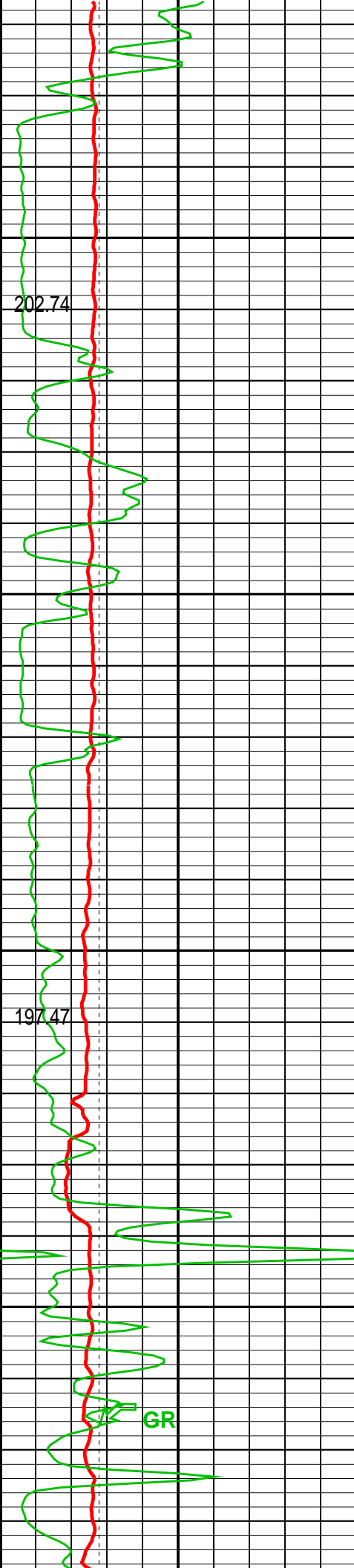


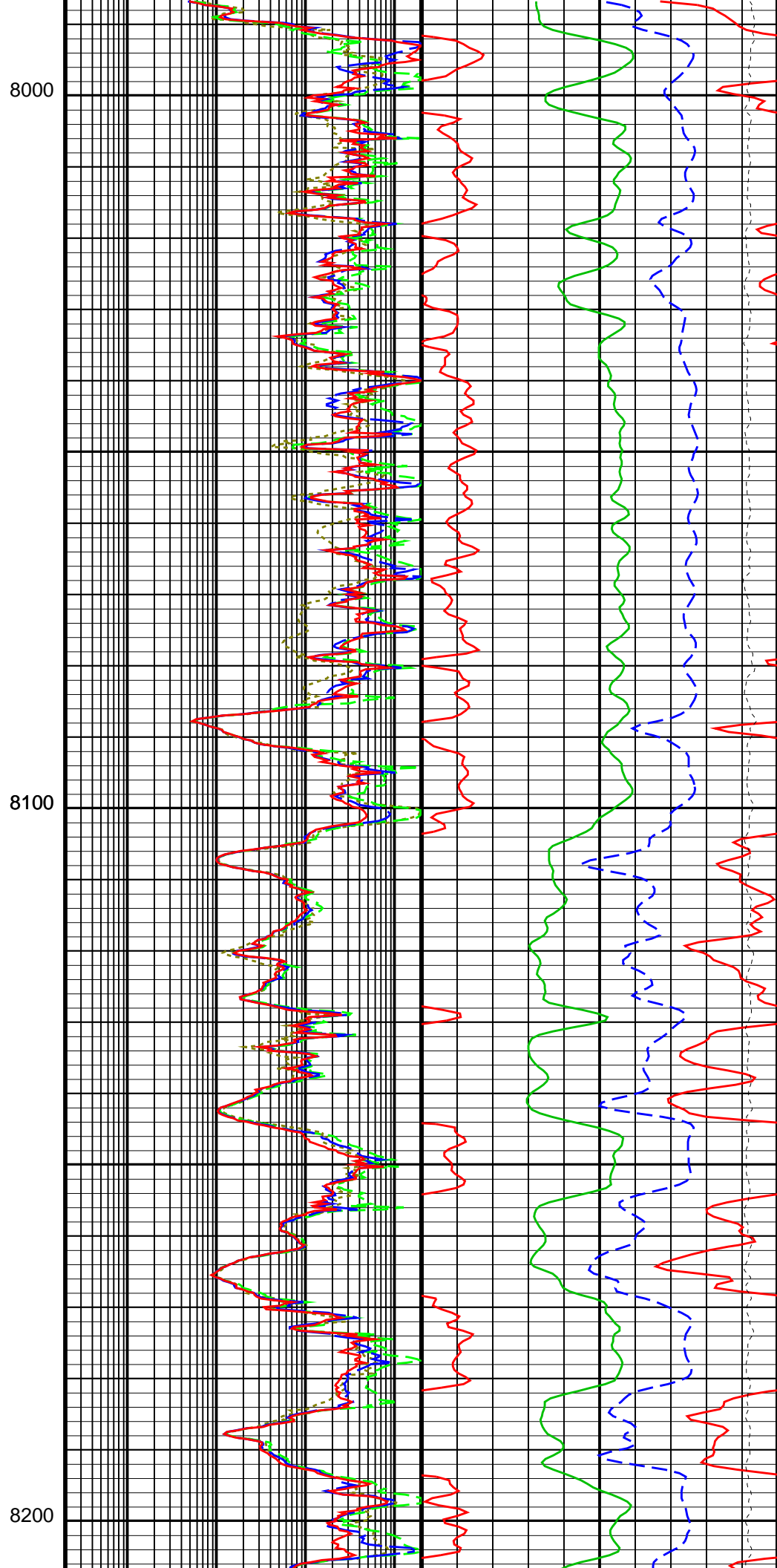
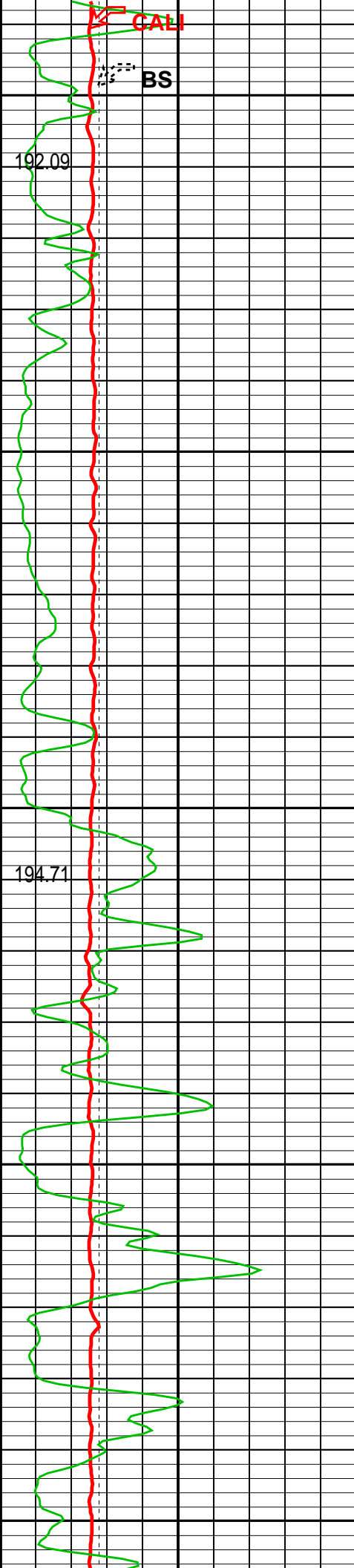


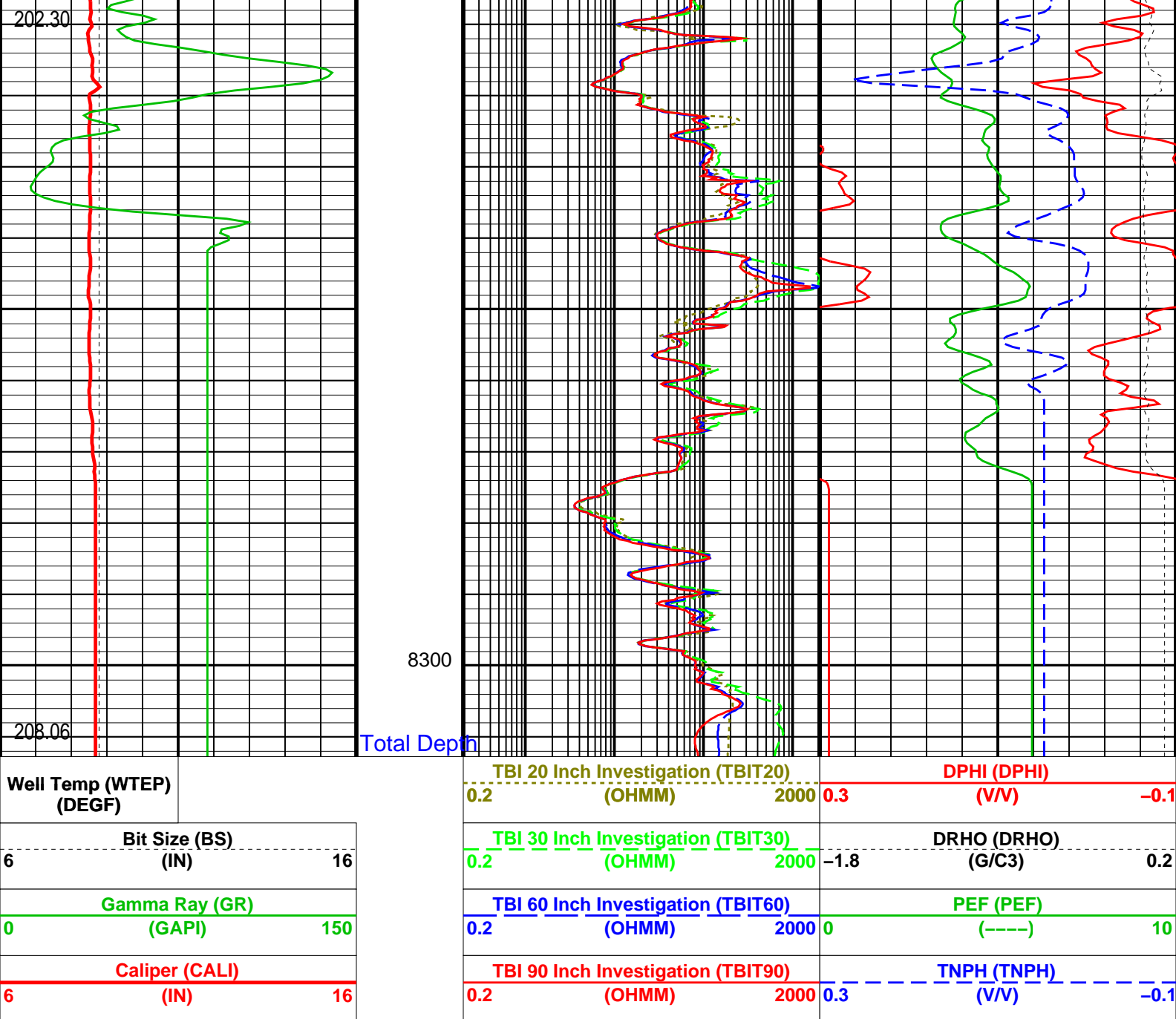












Parameters

DLIS Name	Description	Value	
TBT-A: ThruBit String			
BHS	Borehole Status	OPEN	
BSCO	Borehole Salinity Correction Enabled? (for TBN)	NO	
CSAL	Cement Salinity	0.000	ppm
CSID	Casing Size I.D.	8.924	in
DHC	Density Hole Correction	CALIPER	
FD	Fluid Density	1.000	g/cm3
FSAL	Formation Salinity	0.000	ppm
FSCO	Formation Salinity Correction Enabled? (for TBN)	NO	
MATR	Rock Matrix for Neutron Porosity Corrections	LIME	
MDEN	Matrix Density	2.710	g/cm3
MT	Mud Type (for TBN and TBI correction)	WBM	
MWCO	Mud Weight Correction Enabled? (for TBN)	NO	
SOCO	Stand-Off Correction Enabled? (for TBN)	NO	
SOFF	TBN Standoff	0.000	in
TBD_CAL_BLOCK	TBD Calibration Block Type	THRUBIT	
TBD_SPIKE_REJECT	TBD Spike Detection Option	CORRECT	
TBD_SPIKE_THRESHOLD	TBD Attenuation Change Threshold for Spike Detection	5.000	%
TBI_ALGO	TBI Algorithm Selection	AIT	
TBI_BHC_OP	Borehole Correction Option (for TBI)	CALIPER	
TBI_CALTYP	TBI Mastercal Type	THRUBIT	
TBI_REPL_ARRAY_DEST	TBI: Replace This Array	NONE	
TBI_REPL_ARRAY_SOURCE	TBI: With This Array	NONE	
TBI_TC_OP	Induction Temperature Correction Option	LOWER	

TBN_ALGO	Induction Temperature Correction Option	SCHMID	
TBN_BHC_OP	Borehole Correction Option (for TBN)	CALIPER	
TBN_CAL_TANK	TBN Calibration Tank Type	THRUBIT	
TBN_FILTER	Filter Length	3_POINT	
TBN_PRES_OP	Pressure Correction Enabled? (for TBN)	NO	
TBN_TEMP_OP	Temperature Correction Enabled? (for TBN)	NO	
TBN_WPRE	Well Pressure (for TBN)	14.696	psi
WMUD	Mud Weight	10.050	lbm/gal
HOLEV: Integrated Hole/Cement Volume			
BHS	Borehole Status	OPEN	
MATR	Rock Matrix for Neutron Porosity Corrections	LIME	
System and Miscellaneous			
BS	Bit Size	8.750	in
BSAL	Borehole Salinity	1000.0	ppm
CSIZ	Current Casing Size	9.625	in

Format: TB_TCOM Vertical Scale: 5" per 100' Graphics File Created: 13-Dec-2014 22:27

OP System Version: 19C2-270

TBT SRPC-5307-ThruBit

Input DLIS Files

DEFAULT ThruBit_025PUP FN:20 PRODUCER 13-Dec-2014 22:18 8312.7 FT 48.7 FT

Schlumberger

CALIBRATIONS









MAXIS Field Log

ThruBit String / Equipment Identification

Primary Equipment:









































Induction Resistivity	TBI - A	14
Sonic	TBS - A	29
Density	TBD - A	24
Gamma-Ray Logging Source	GGLS - FZ	
Thermal Neutron	TBN - A	5
Neutron Logging Source	NNLS - EWA	
Spectral GR	TBSG - A	13
Telemetry Memory GR	TMG - A	8




Auxiliary Equipment:





ThruBit String Master Calibration					
TBI Master Calibration Sonde Errors					
Freq 1, A1, R	Value	Nominal	Freq 1, A1, X	Value	Nominal
	-443.386	-457.000		35.8213	300.000
Freq 1, A2, R	Value	Nominal	Freq 1, A2, X	Value	Nominal
	-142.556	-141.000		3.48780	320.000
Freq 1, A3, R	Value	Nominal	Freq 1, A3, X	Value	Nominal
	-28.4814	-28.0000		50.6850	50.0000
Freq 1, A4, R	Value	Nominal	Freq 1, A4, X	Value	Nominal
	-15.1835	-16.0000		282.529	300.000





























-24.0000 (Minimum)	(Nominal)	-8.00000 (Maximum)		25.0000 (Minimum)	(Nominal)	575.000 (Maximum)	
Freq 1, A5, R		Value	Nominal	Freq 1, A5, X		Value	Nominal
		-13.0608	-14.0000			135.630	150.000
-21.0000 (Minimum)	(Nominal)	-7.00000 (Maximum)		25.0000 (Minimum)	(Nominal)	300.000 (Maximum)	
Freq 2, A1, R		Value	Nominal	Freq 2, A1, X		Value	Nominal
		-228.677	-237.000			-11.6484	150.000
-313.000 (Minimum)	(Nominal)	-186.000 (Maximum)		-375.000 (Minimum)	(Nominal)	675.000 (Maximum)	
Freq 2, A2, R		Value	Nominal	Freq 2, A2, X		Value	Nominal
		-92.3298	-92.0000			-27.6569	160.000
-126.000 (Minimum)	(Nominal)	-76.0000 (Maximum)		-100.000 (Minimum)	(Nominal)	425.000 (Maximum)	
Freq 2, A3, R		Value	Nominal	Freq 2, A3, X		Value	Nominal
		-20.7663	-21.0000			-16.7829	-20.0000
-28.0000 (Minimum)	(Nominal)	-13.0000 (Maximum)		-325.000 (Minimum)	(Nominal)	250.000 (Maximum)	
Freq 2, A4, R		Value	Nominal	Freq 2, A4, X		Value	Nominal
		-18.4470	-20.0000			99.2009	100.000
-28.0000 (Minimum)	(Nominal)	-10.0000 (Maximum)		-75.0000 (Minimum)	(Nominal)	275.000 (Maximum)	
Freq 2, A5, R		Value	Nominal	Freq 2, A5, X		Value	Nominal
		-18.3613	-20.0000			-6.02465	-25.0000
-27.0000 (Minimum)	(Nominal)	-10.0000 (Maximum)		-125.000 (Minimum)	(Nominal)	100.000 (Maximum)	
Freq 3, A1, R		Value	Nominal	Freq 3, A1, X		Value	Nominal
		-143.488	-149.000			-84.3063	25.0000
-213.000 (Minimum)	(Nominal)	-108.000 (Maximum)		-375.000 (Minimum)	(Nominal)	425.000 (Maximum)	
Freq 3, A2, R		Value	Nominal	Freq 3, A2, X		Value	Nominal
		-69.8780	-70.0000			-63.9249	70.0000
-101.000 (Minimum)	(Nominal)	-57.0000 (Maximum)		-125.000 (Minimum)	(Nominal)	250.000 (Maximum)	
Freq 3, A3, R		Value	Nominal	Freq 3, A3, X		Value	Nominal
		-17.1798	-17.0000			-68.3308	-90.0000
-23.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-300.000 (Minimum)	(Nominal)	125.000 (Maximum)	
Freq 3, A4, R		Value	Nominal	Freq 3, A4, X		Value	Nominal
		-20.6548	-22.0000			-20.7417	-50.0000
-31.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-200.000 (Minimum)	(Nominal)	100.000 (Maximum)	
Freq 3, A5, R		Value	Nominal	Freq 3, A5, X		Value	Nominal
		-21.5533	-22.0000			-109.059	-110.000
-32.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-250.000 (Minimum)	(Nominal)	0 (Maximum)	
Freq 4, A1, R		Value	Nominal	Freq 4, A1, X		Value	Nominal
		-79.0503	-80.0000			-216.096	-190.000
-128.000 (Minimum)	(Nominal)	-54.0000 (Maximum)		-450.000 (Minimum)	(Nominal)	75.0000 (Maximum)	
Freq 4, A2, R		Value	Nominal	Freq 4, A2, X		Value	Nominal
		-50.2664	-50.0000			-129.964	-75.0000
-80.0000 (Minimum)	(Nominal)	-41.0000 (Maximum)		-200.000 (Minimum)	(Nominal)	50.0000 (Maximum)	
Freq 4, A3, R		Value	Nominal	Freq 4, A3, X		Value	Nominal
		-13.7559	-14.0000			-150.816	-190.000
-19.0000 (Minimum)	(Nominal)	-8.00000 (Maximum)		-350.000 (Minimum)	(Nominal)	-25.0000 (Maximum)	
Freq 4, A4, R		Value	Nominal	Freq 4, A4, X		Value	Nominal
		-23.6177	-25.0000			-195.441	-235.000
-37.0000 (Minimum)	(Nominal)	-11.0000 (Maximum)		-400.000 (Minimum)	(Nominal)	-75.0000 (Maximum)	
Freq 4, A5, R		Value	Nominal	Freq 4, A5, X		Value	Nominal
		-27.2398	-28.0000			-281.125	-300.000



-43.0000 (Minimum)	(Nominal)	-12.0000 (Maximum)		-475.000 (Minimum)	(Nominal)	-100.000 (Maximum)	
Master: 26-Nov-2014 11:53							

ThruBit String Master Calibration							
TBI Master Calibration COMPLEX GAINS							
Freq 1, R	Value	Nominal	Freq 1, X	Value	Nominal		
	1.003	1.000		-0.0002245	0		
	1.003	1.000		0.001410	0		
	1.007	1.000		-0.007156	0		
	0.9967	1.000		0.003115	0		
	1.003	1.000		-0.0007491	0		
0.9500 (Minimum)	(Nominal)	1.050 (Maximum)		-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)	
Freq 2, R	Value	Nominal	Freq 2, X	Value	Nominal		
	0.9968	1.000		-0.009233	0		
	0.9965	1.000		-0.008014	0		
	0.9937	1.000		-0.008754	0		
	0.9911	1.000		-0.005932	0		
	0.9978	1.000		-0.01136	0		
0.9500 (Minimum)	(Nominal)	1.050 (Maximum)		-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)	
Freq 3, R	Value	Nominal	Freq 3, X	Value	Nominal		
	1.005	1.000		-0.004493	0		
	1.005	1.000		-0.003378	0		
	1.002	1.000		-0.004313	0		
	0.9991	1.000		-0.001445	0		
	1.007	1.000		-0.007069	0		
0.9500 (Minimum)	(Nominal)	1.050 (Maximum)		-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)	
Freq 4, R	Value	Nominal	Freq 4, X	Value	Nominal		
	1.004	1.000		-0.006248	0		
	1.003	1.000		-0.005342	0		
	1.002	1.000		-0.008158	0		
	0.9977	1.000		-0.002925	0		
	1.014	1.000		-0.01246	0		
0.9300 (Minimum)	(Nominal)	1.070 (Maximum)		-0.05000 (Minimum)	(Nominal)	0.05000 (Maximum)	
Master: 26-Nov-2014 11:53							

ThruBit String Master Calibration								
TBD Caliper Master Calibration								
Caliper 12in Ring IN	Value	Nominal	Caliper 9in Ring IN	Value	Nominal	Caliper 6in Ring IN	Value	Nominal
	1870.0	1949.8		2029.5	2096.7		2189.2	2285.7
1799.8 (Minimum)	(Nominal)	2099.8 (Maximum)	1946.7 (Minimum)	(Nominal)	2246.7 (Maximum)	2135.7 (Minimum)	(Nominal)	2435.7 (Maximum)
Master: 20-Sep-2014 11:13								

ThruBit String Master Calibration						
TBD Density Master Calibration. Ti Window, ThruBit blocks						
LS1 Background CPS	Value	Nominal	SS1 Background CPS	Value	Nominal	
	140.22	143.00		153.31	143.00	
100.00 (Minimum)	(Nominal)	186.00 (Maximum)	100.00 (Minimum)	(Nominal)	186.00 (Maximum)	
LS2 Background CPS	Value	Nominal	SS2 Background CPS	Value	Nominal	
	36.3909	37.0000		40.1750	38.0000	
26.0000 (Minimum)	(Nominal)	48.0000 (Maximum)	27.0000 (Minimum)	(Nominal)	50.0000 (Maximum)	

(Minimum)	(Nominal)	(Maximum)	(Minimum)	(Nominal)	(Maximum)
LS3 Background CPS			SS3 Background CPS		
	22.0162	22.0000		24.5551	23.0000
15.0000 (Minimum)	(Nominal)	29.0000 (Maximum)	16.0000 (Minimum)	(Nominal)	30.0000 (Maximum)
LS4 Background CPS			SS4 Background CPS		
	30.44	30.00		33.8994	31.0000
20.00 (Minimum)	(Nominal)	40.00 (Maximum)	22.0000 (Minimum)	(Nominal)	40.0000 (Maximum)
LS1 Aluminium CPS			SS1 Aluminium CPS		
	1111.3	1210.0		7318.47	7850.00
850.00 (Minimum)	(Nominal)	1570.0 (Maximum)	5500.00 (Minimum)	(Nominal)	10200.0 (Maximum)
LS2 Aluminium CPS			SS2 Aluminium CPS		
	1019.31	1110.00		3744.85	4000.00
780.000 (Minimum)	(Nominal)	1440.00 (Maximum)	2800.00 (Minimum)	(Nominal)	5200.00 (Maximum)
LS3 Aluminium CPS			SS3 Aluminium CPS		
	943.622	1010.00		3152.41	3350.00
710.000 (Minimum)	(Nominal)	1300.00 (Maximum)	2350.00 (Minimum)	(Nominal)	4360.00 (Maximum)
LS4 Aluminium CPS			SS4 Aluminium CPS		
	708.60	760.00		3026.2451	3230.0000
530.00 (Minimum)	(Nominal)	990.00 (Maximum)	2260.0000 (Minimum)	(Nominal)	4200.0000 (Maximum)
LS1 Al + Sleeve CPS			SS1 Al + Sleeve CPS		
	896.59	970.00		5726.00	6160.00
680.00 (Minimum)	(Nominal)	1260.0 (Maximum)	4300.00 (Minimum)	(Nominal)	8000.00 (Maximum)
LS2 Al + Sleeve CPS			SS2 Al + Sleeve CPS		
	752.479	830.000		2826.24	3050.00
580.000 (Minimum)	(Nominal)	1080.00 (Maximum)	2130.00 (Minimum)	(Nominal)	4000.00 (Maximum)
LS3 Al + Sleeve CPS			SS3 Al + Sleeve CPS		
	590.007	650.000		2026.41	2190.00
460.000 (Minimum)	(Nominal)	850.000 (Maximum)	1533.00 (Minimum)	(Nominal)	2850.00 (Maximum)
LS4 Al + Sleeve CPS			SS4 Al + Sleeve CPS		
	375.36	420.00		1606.04	1700.00
300.00 (Minimum)	(Nominal)	550.00 (Maximum)	1190.00 (Minimum)	(Nominal)	2200.00 (Maximum)
LS1 Magnesium CPS			SS1 Magnesium CPS		
	7475.90	8100.00		12081.0	12740.0
5670.00 (Minimum)	(Nominal)	10530.0 (Maximum)	8920.00 (Minimum)	(Nominal)	16560.0 (Maximum)
LS2 Magnesium CPS			SS2 Magnesium CPS		
	6957.24	7650.00		6301.64	6670.00
5360.00 (Minimum)	(Nominal)	9950.00 (Maximum)	4670.00 (Minimum)	(Nominal)	8670.00 (Maximum)
LS3 Magnesium CPS			SS3 Magnesium CPS		
	6228.36	6800.00		5162.76	5400.00
4760.00 (Minimum)	(Nominal)	8840.00 (Maximum)	3780.00 (Minimum)	(Nominal)	7020.00 (Maximum)
LS4 Magnesium CPS			SS4 Magnesium CPS		
	4440.72	4850.00		5000.98	5240.00
3400.00 (Minimum)	(Nominal)	6300.00 (Maximum)	3670.00 (Minimum)	(Nominal)	6810.00 (Maximum)
Master: 9-Dec-2014 10:51					

ThruBit String Master Calibration					
Thermal Neutron Master Calibration					
TNF, Background CPS			TNN, Background CPS		
	0.35	1.0		0.23	1.0
0 (Minimum)	(Nominal)	2.0 (Maximum)	0 (Minimum)	(Nominal)	2.0 (Maximum)

TNF, Tank CPS			Value	Nominal	TNN, Tank CPS			Value	Nominal
			60.83	96.00				1788.0	2860.0
25.00 (Minimum)	(Nominal)	200.0 (Maximum)			750.00 (Minimum)	(Nominal)	5700.0 (Maximum)		
TNF, Tank + AI Sleeve CPS			Value	Nominal	TNN, Tank + AI Sleeve CPS			Value	Nominal
			1888.2	3040.0				19977.4	32350.0
727.00 (Minimum)	(Nominal)	6080.0 (Maximum)			8000.00 (Minimum)	(Nominal)	64700.0 (Maximum)		
Tank + AI Sleeve Ratio			Value	Nominal	Tank + AI Sleeve Porosity PU			Value	Nominal
			11.143	10.797				14.46	14.40
10.300 (Minimum)	(Nominal)	11.300 (Maximum)			13.40 (Minimum)	(Nominal)	15.40 (Maximum)		
Tank, Ratio			Value	Nominal	Tank, Temperature DEGF			Value	Nominal
			29.395	30.958				75.0	70.0
28.000 (Minimum)	(Nominal)	34.000 (Maximum)			20.0 (Minimum)	(Nominal)	120 (Maximum)		
Master: 8-Dec-2014 14:10									

ThruBit String Master Calibration							
TMG Accelerometer Calibration							
Minimum Ax, m/s2		Value	Nominal	Maximum Ax, m/s2		Value	Nominal
<div>NOT DONE</div>		N/A	-9.810	<div>NOT DONE</div>		N/A	9.810
-10.81 (Minimum)	(Nominal)	-8.810 (Maximum)		8.810 (Minimum)	(Nominal)	10.81 (Maximum)	
Minimum Ay, m/s2		Value	Nominal	Maximum Ay, m/s2		Value	Nominal
<div>NOT DONE</div>		N/A	-9.810	<div>NOT DONE</div>		N/A	9.810
-10.81 (Minimum)	(Nominal)	-8.810 (Maximum)		8.810 (Minimum)	(Nominal)	10.81 (Maximum)	
Minimum Az, m/s2		Value	Nominal	Maximum Az, m/s2		Value	Nominal
<div>NOT DONE</div>		N/A	0	<div>NOT DONE</div>		N/A	9.810
-1.000 (Minimum)	(Nominal)	1.000 (Maximum)		8.810 (Minimum)	(Nominal)	10.81 (Maximum)	
RB Offset, degrees		Value	Nominal				
<div>NOT DONE</div>		N/A	0				
-360.0 (Minimum)	(Nominal)	360.0 (Maximum)					
Master: Calibration not done							

ThruBit String Master Calibration						
TMG Gamma-Ray Calibration						
GR Background GAPI		Value	Nominal	GR Jig-Background GAPI		Nominal
<div>NOT DONE</div>		N/A	30.00	<div>NOT DONE</div>		152.0
0 (Minimum)	(Nominal)	120.0 (Maximum)		121.6 (Minimum)	(Nominal)	182.4 (Maximum)
Master: Calibration not done						

Company: **WHITING OIL & GAS CORPORATION**

Schlumberger

Well: **HORSETAIL 19N-1924M-R**

Field: **WILDCAT**

County: **WELD**

State: **COLORADO**

ARRAY INDUCTION

DENSITY / NEUTRON
GAMMA RAY MEMORY LOG