



<<< Fold Here >>> All interpretations are opinions based on inferences from electrical or other measurements and we cannot and do not guarantee the accuracy or correctness of any interpretation, and we shall not, except in the case of gross or willful negligence on our part, be liable or responsible for any loss, costs, damages, or expenses incurred or sustained by anyone resulting from any interpretation made by any of our officers, agents or employees. These interpretations are also subject to our general terms and conditions set out in our current Price Schedule.
Comments SERVICE: LEVEL 4- HORIZONTAL MEMORY PUMPDOWN - BIT DEPTH 10930 LOG TO 3290 ALL SCALES AND PRESENTATION PER CLIENT REQUEST LIMESTONE POROSITY , 2.71 G/CC, USED FOR POROSITY CALCULATIONS LOG RAN WITH SWIVEL AND DECENTRALIZER TBHV REPRESENTS TOTAL BOREHOLE VOLUME, FT3 ABHV REPRESENTS ANNULAR BOREHOLE VOLUME, FT3, CALCULATED FOR 4.50" CASING RIGMINDER LITE AND PASON USED TO CREATE DEPTH LOG LOG DEPTH CORRELATED TO PIPE TALLY PROVIDED BY CUSTOMER RIG: UNIT 310

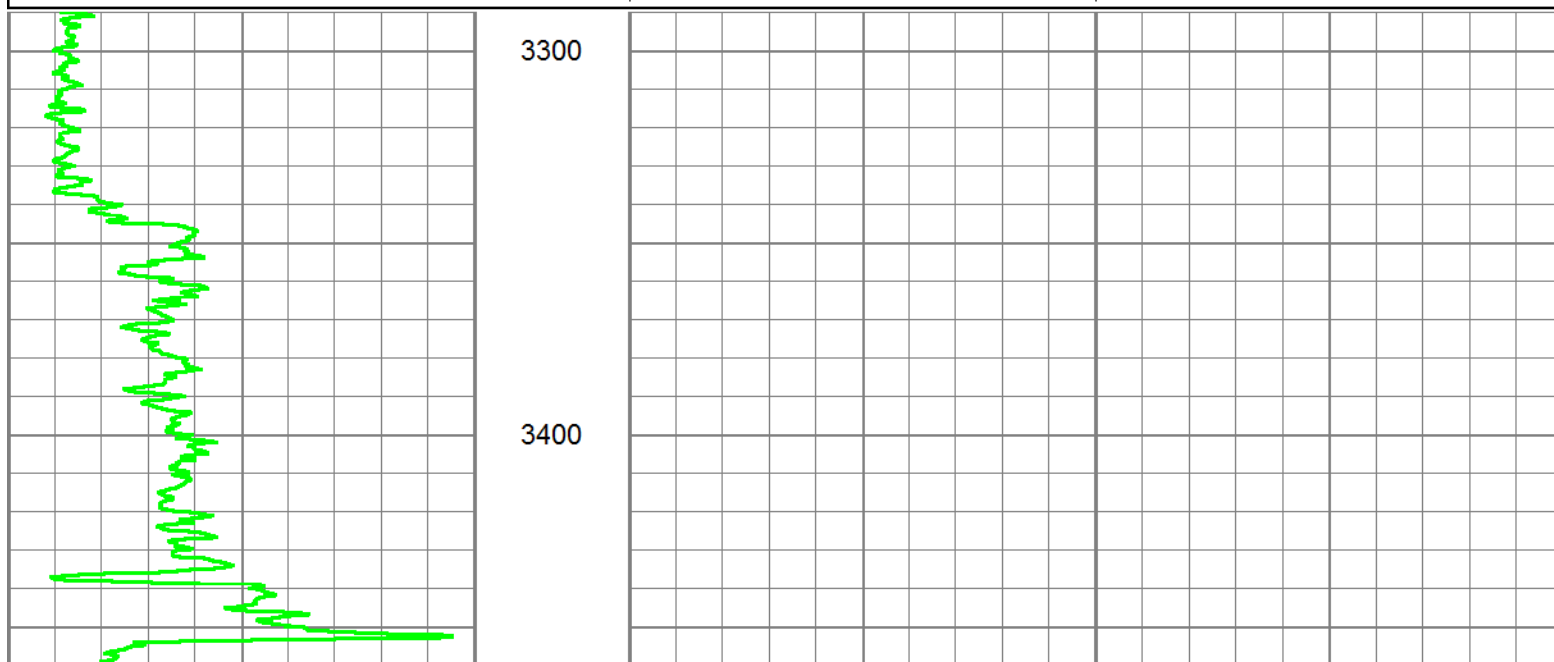
Run No.	ONE	Run No.	ONE	Run No.	ONE	Run No.	ONE	
Serial No.	PS9T	Serial No.	PS5N	Serial No.	PS43D	Serial No.	PS15R	
Model No.	PS	Model No.	PS	Model No.	PS	Model No.	PS	
Diameter	2.125	Diameter	2.125	Diameter	2.125	Diameter	2.125	
LOGGING DATA								
General Data								
Pass	Depths		Well Head	Speed	Logging Run Comments			
No.	From	To	Pressure	Ft/Min				
	10988	3290						
Pass	Scale		Scale		Scale		Scale	
No.	L	R	L	R	L	R	L	L
	0	150	30	-10	30	-10	0.2	2000
DIRECTIONAL INFORMATION								
Maximum Deviation		92.0	deg. @	8241	KOP	3830		

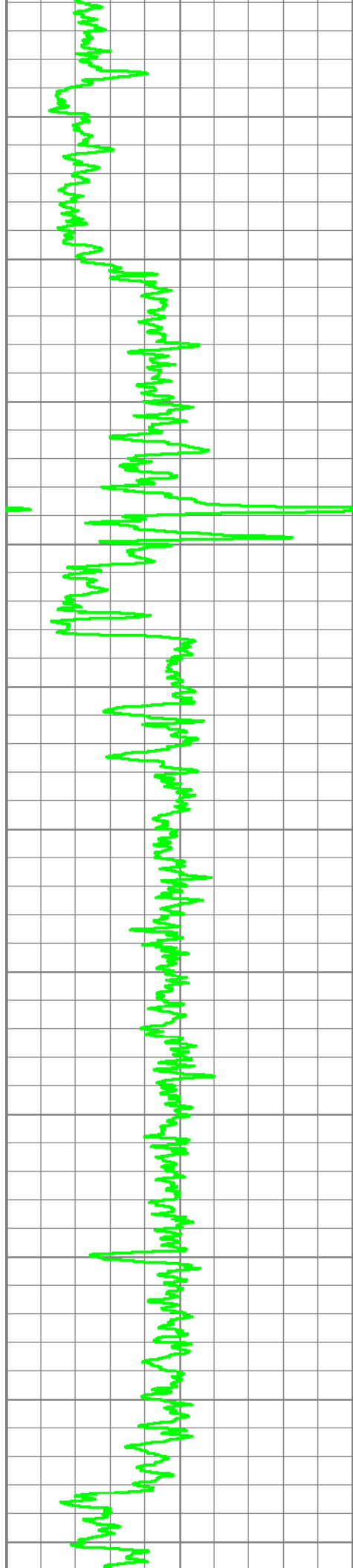


MAIN PASS

Database File: sandridge_roark_mem.db
 Dataset Pathname: proc1/pass1.2
 Presentation Format: chespk2r
 Dataset Creation: Tue Dec 27 04:19:40 2011
 Charted by: Depth in Feet scaled 1:600

0	GR (GAPI)	150	50	20in 2ft Res (Ohm-m)	500	
4	DCAL (in)	14	50	90in 2ft Res (Ohm-m)	500	
GRTEMP			1000	DEEP COND (mmho/m)		0
(degF)			0	20in 2ft Res (Ohm-m)	50	
			0	90in 2ft Res (Ohm-m)	50	





3500

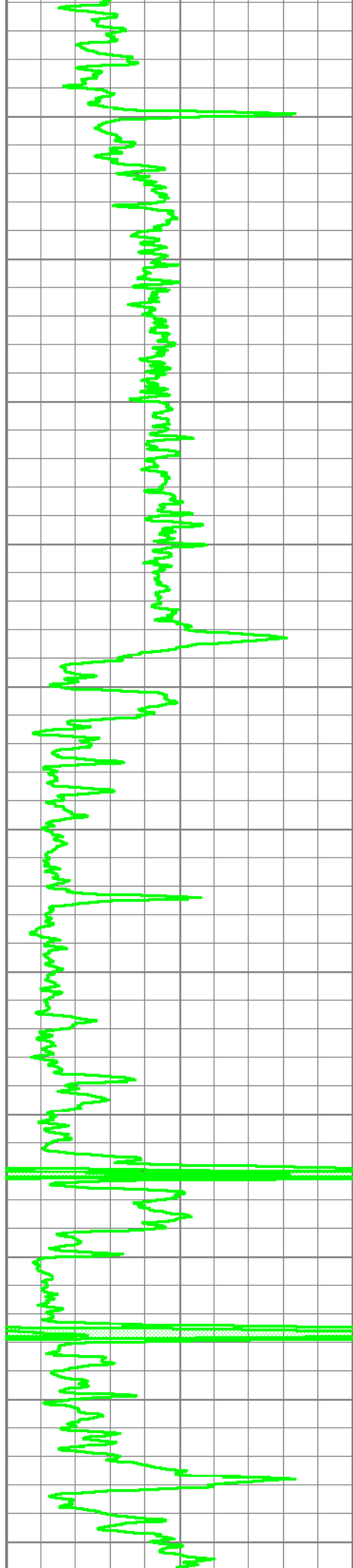
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3800

3900

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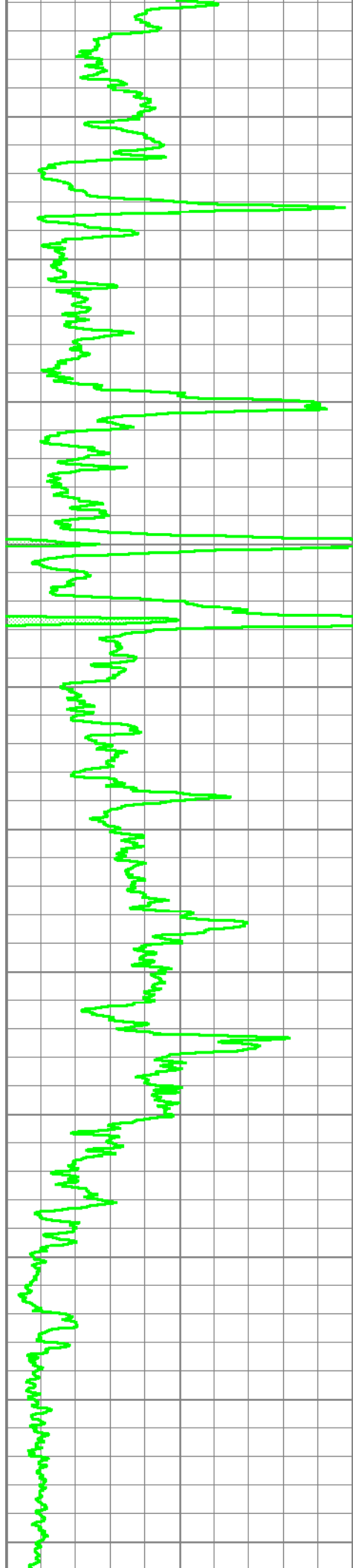
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4200

4300

4400

4500



4600

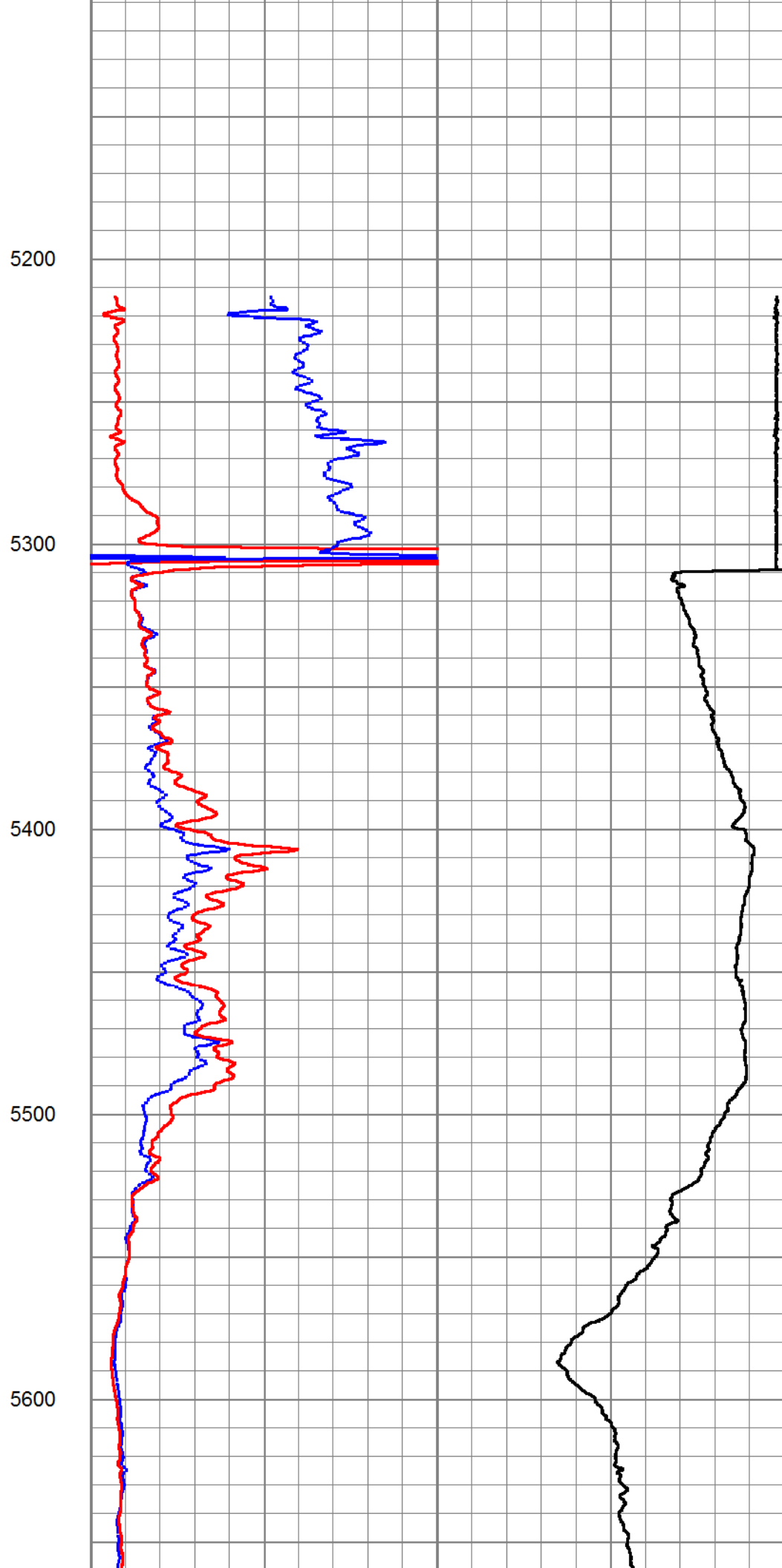
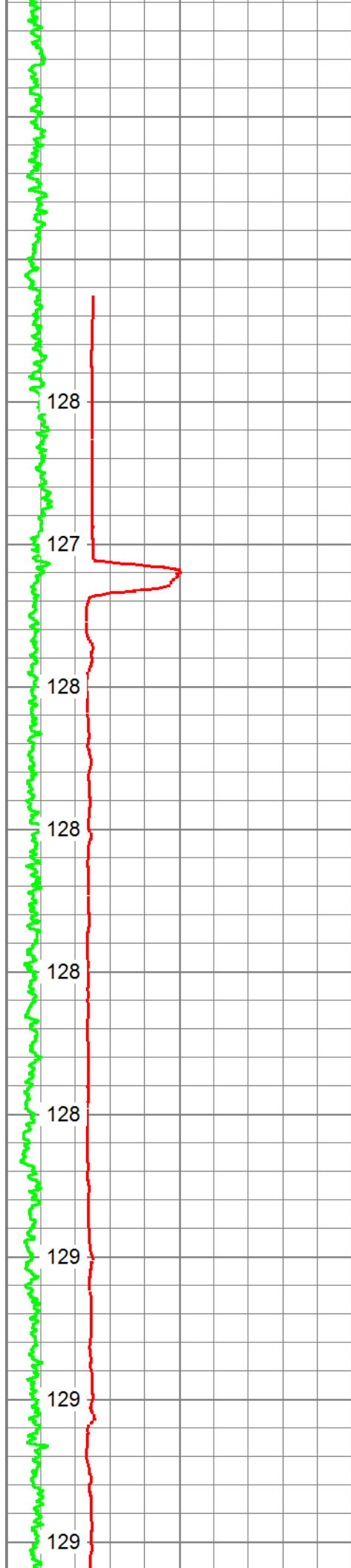
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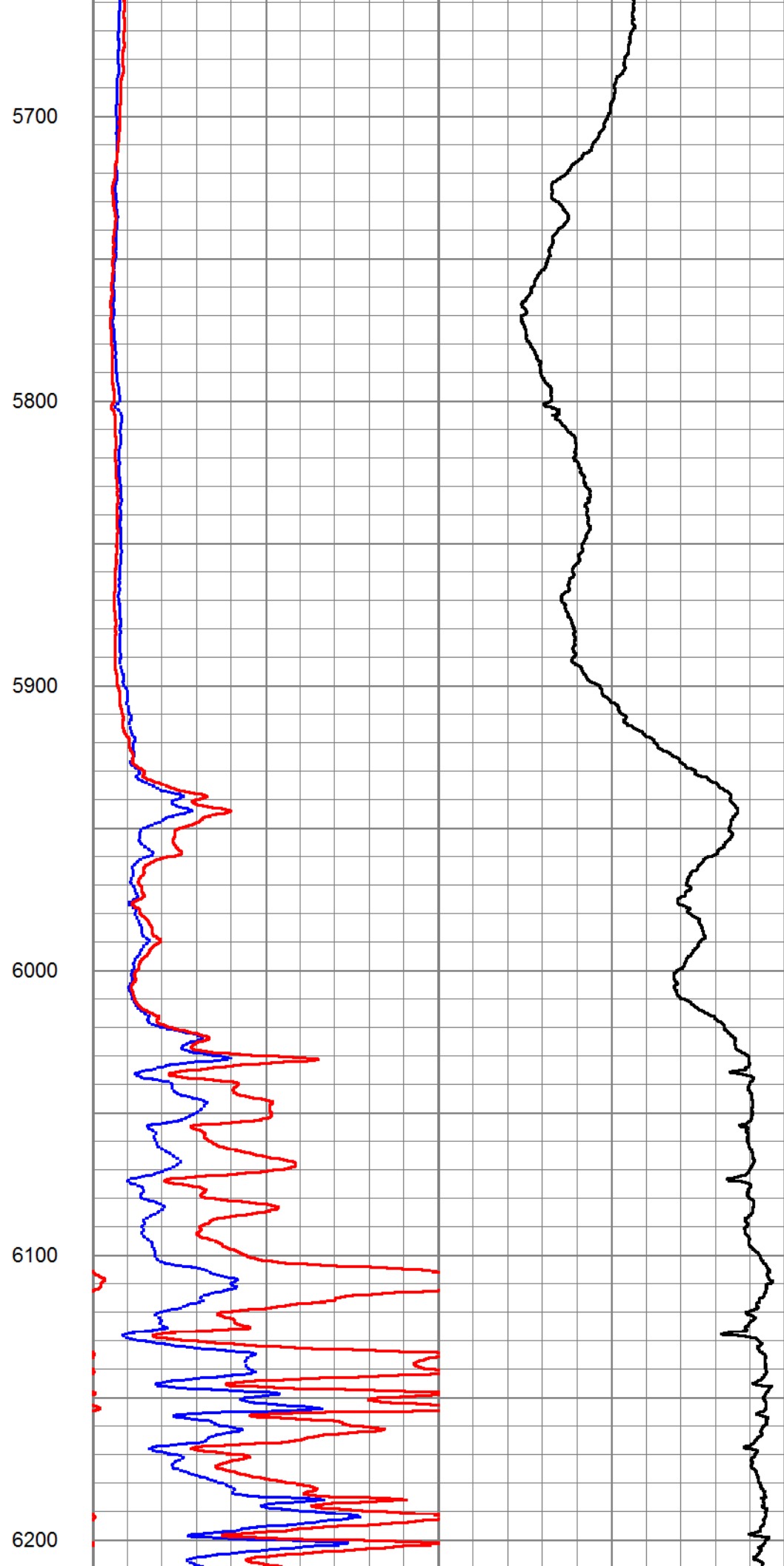
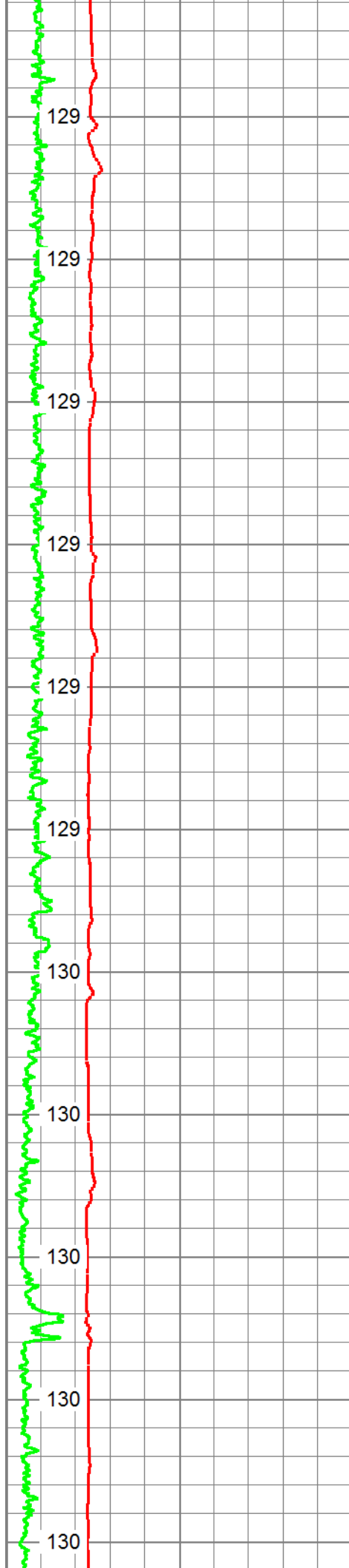
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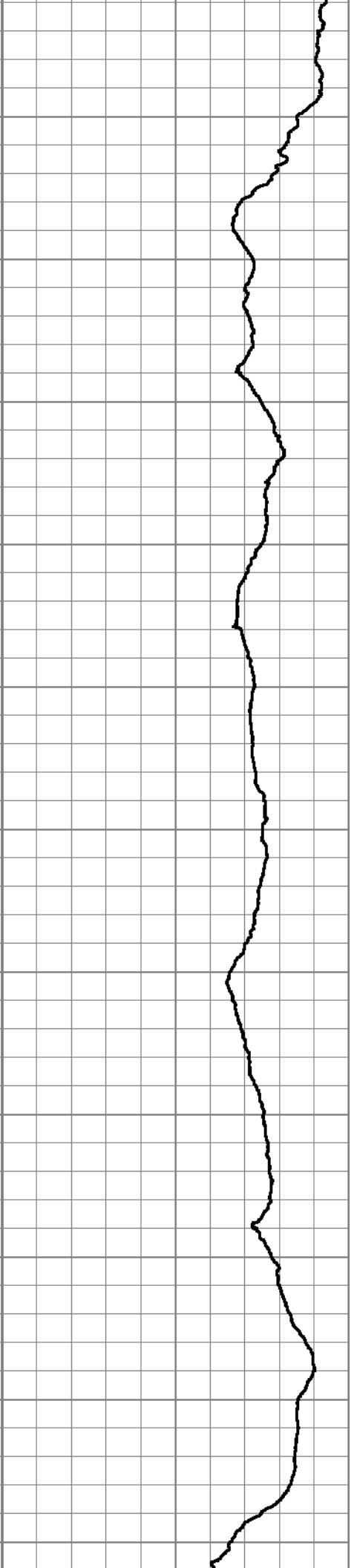
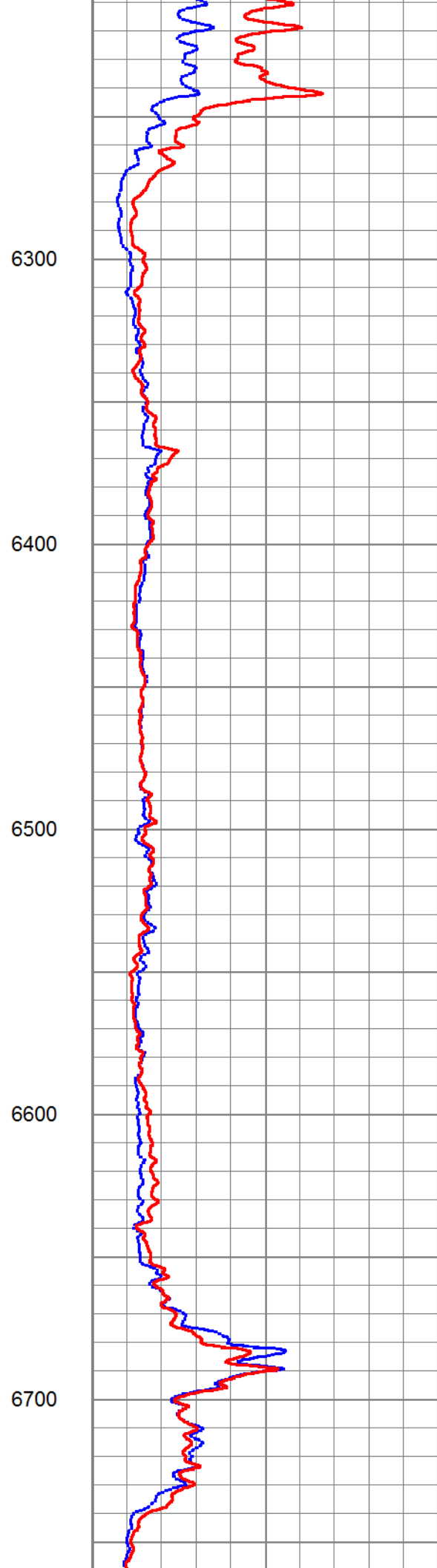
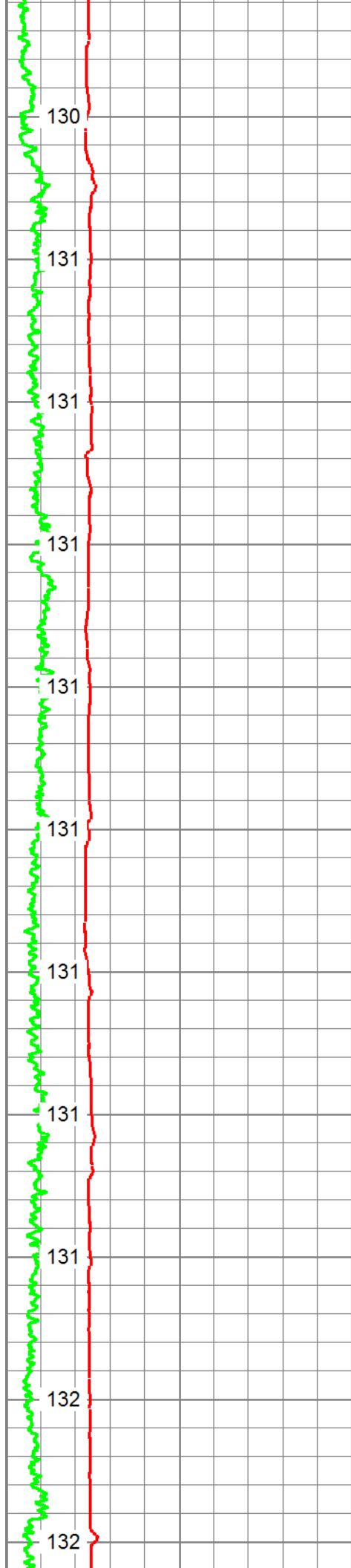
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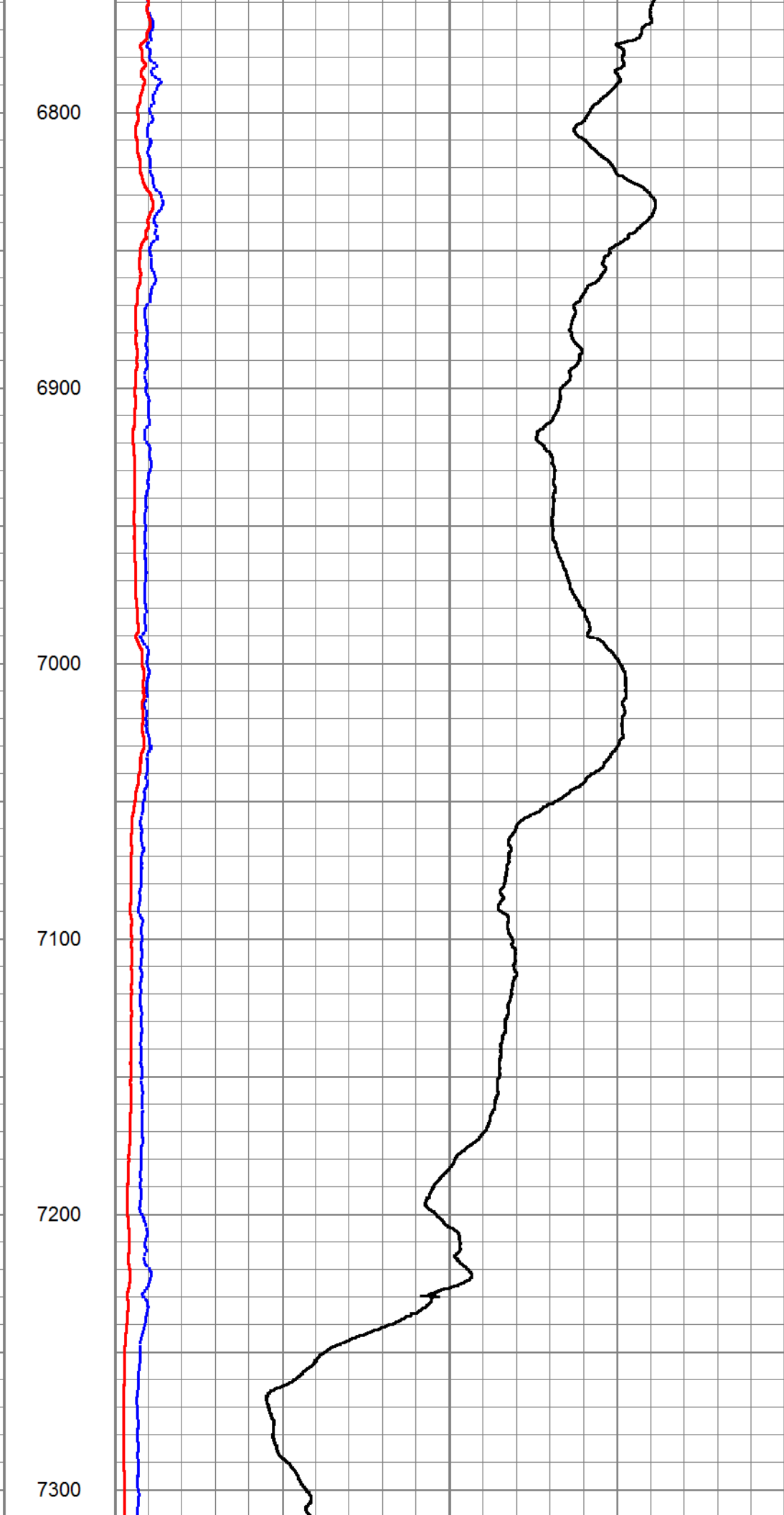
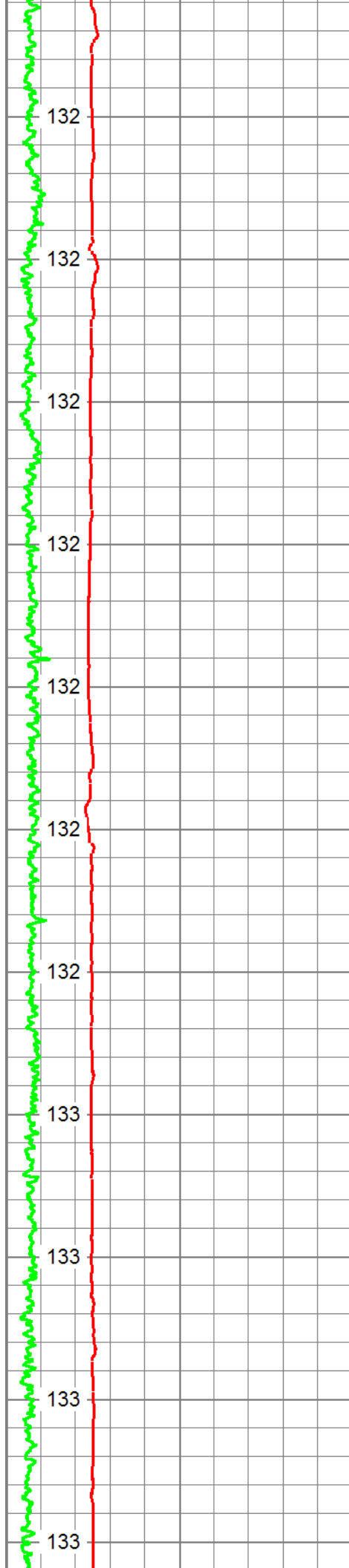
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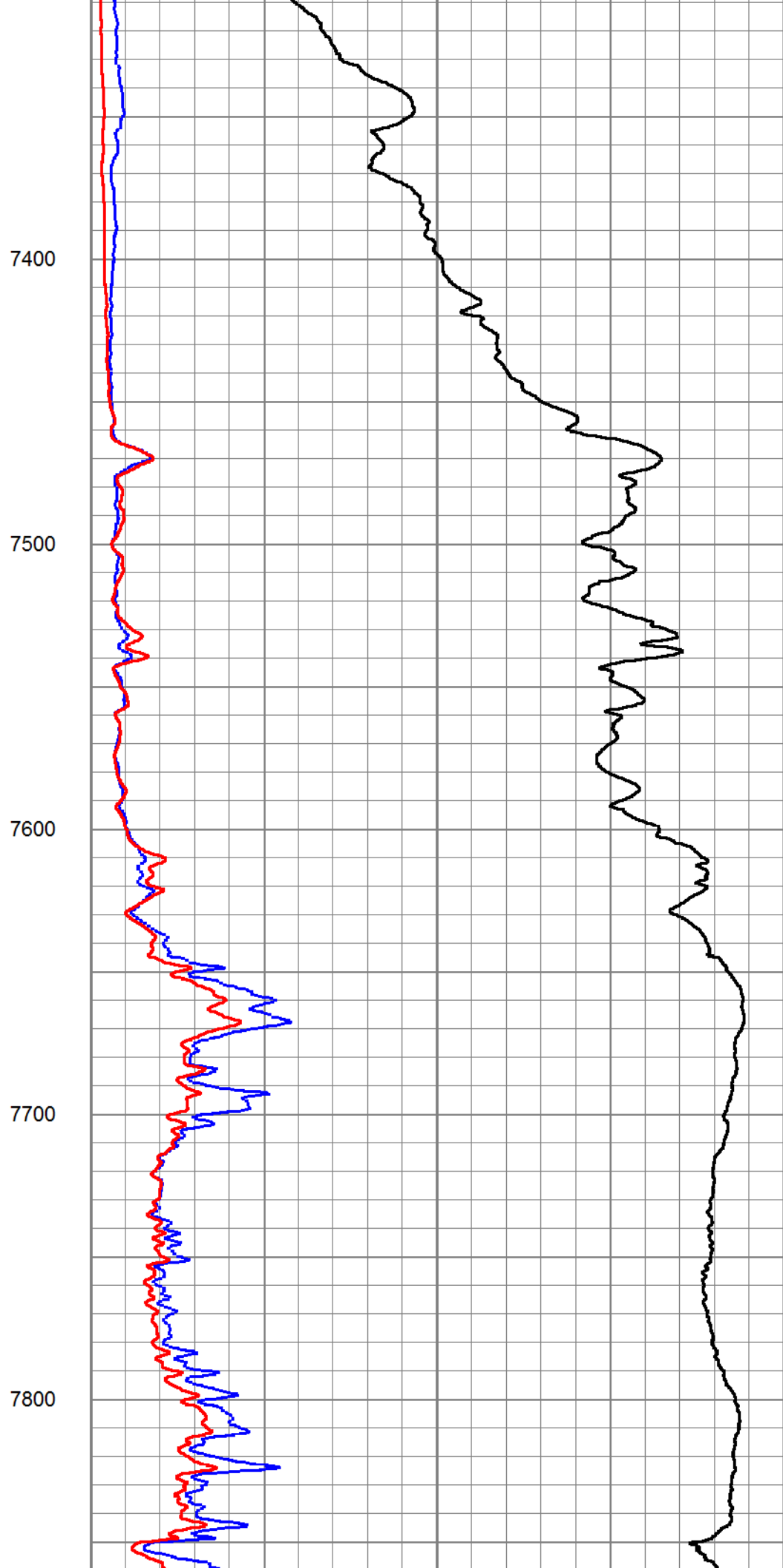
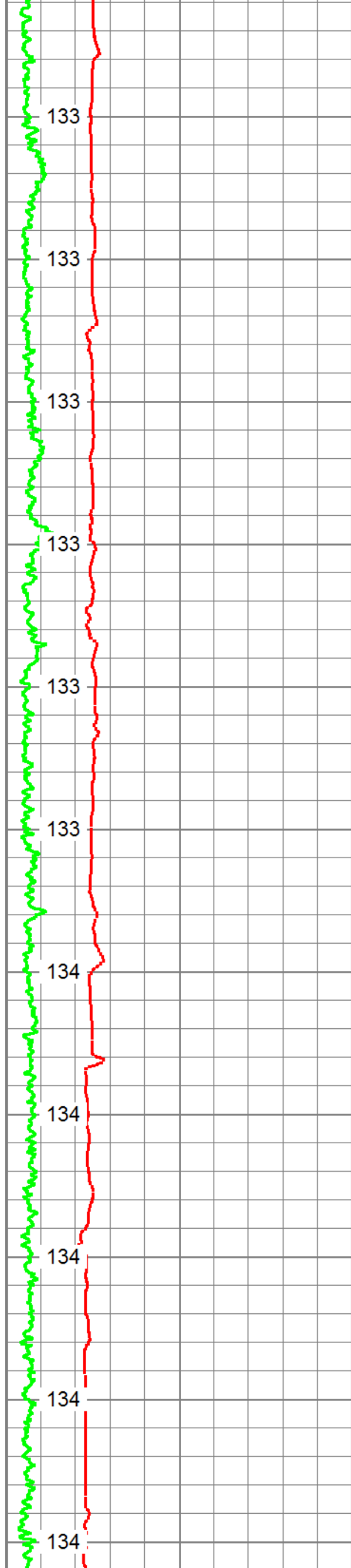
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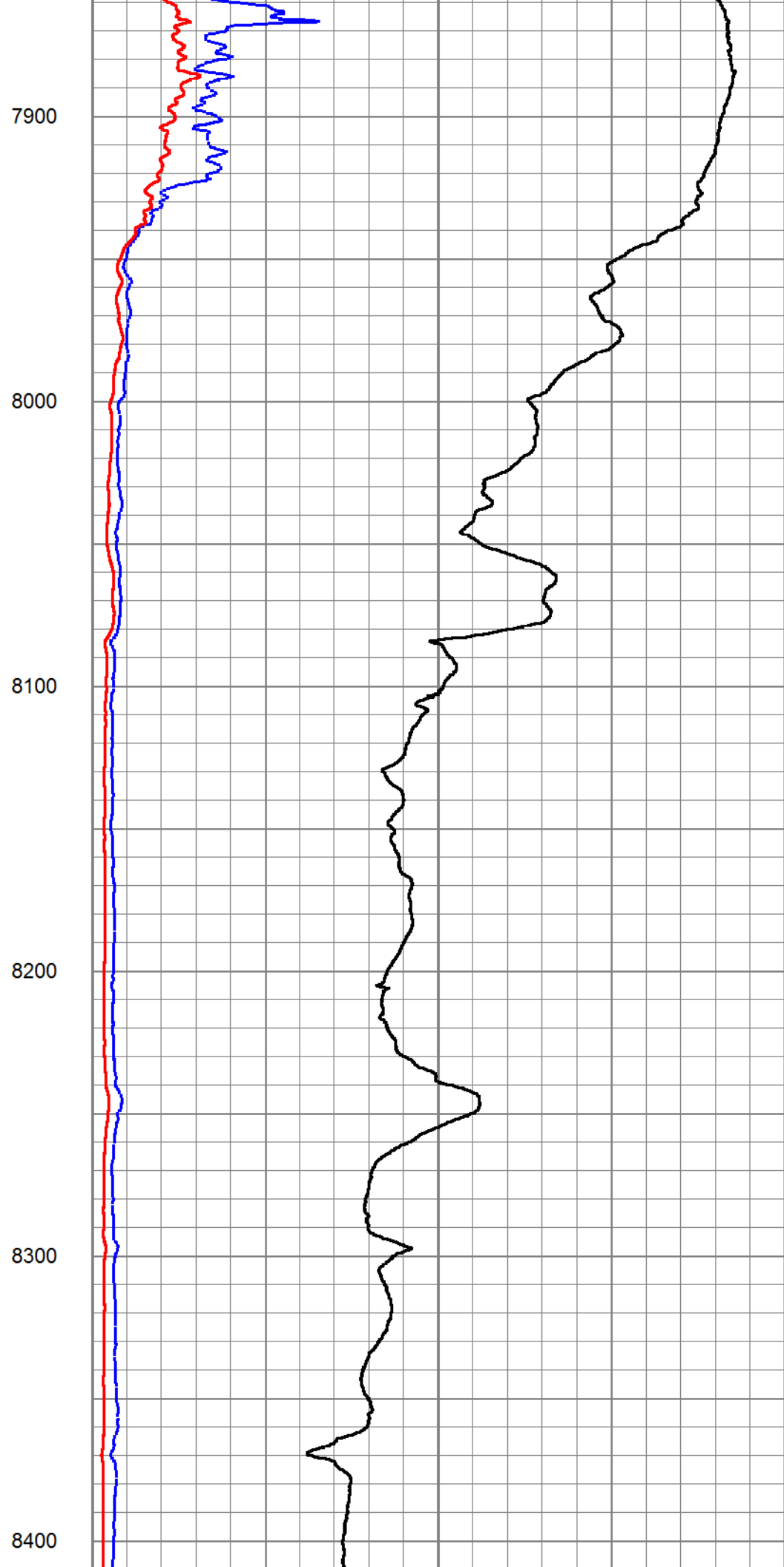
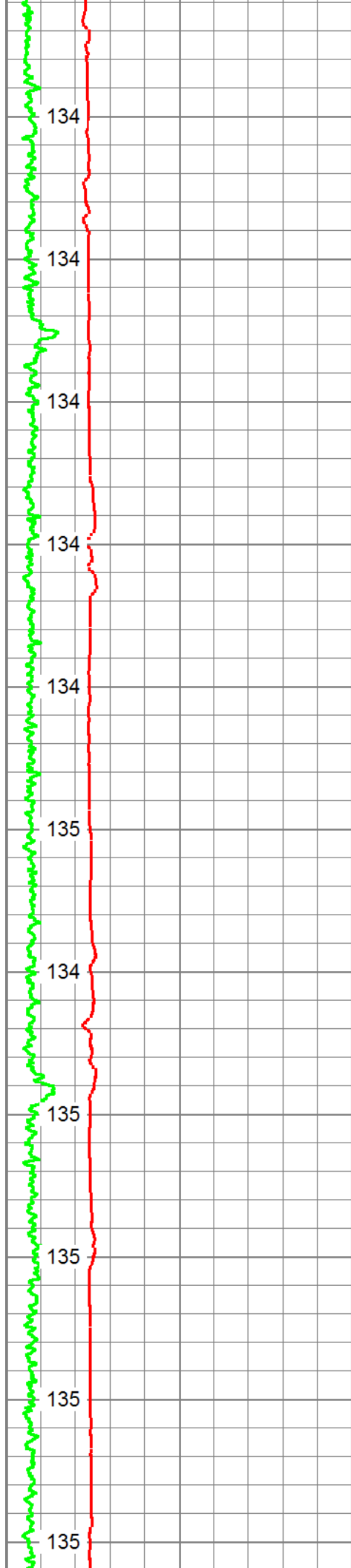


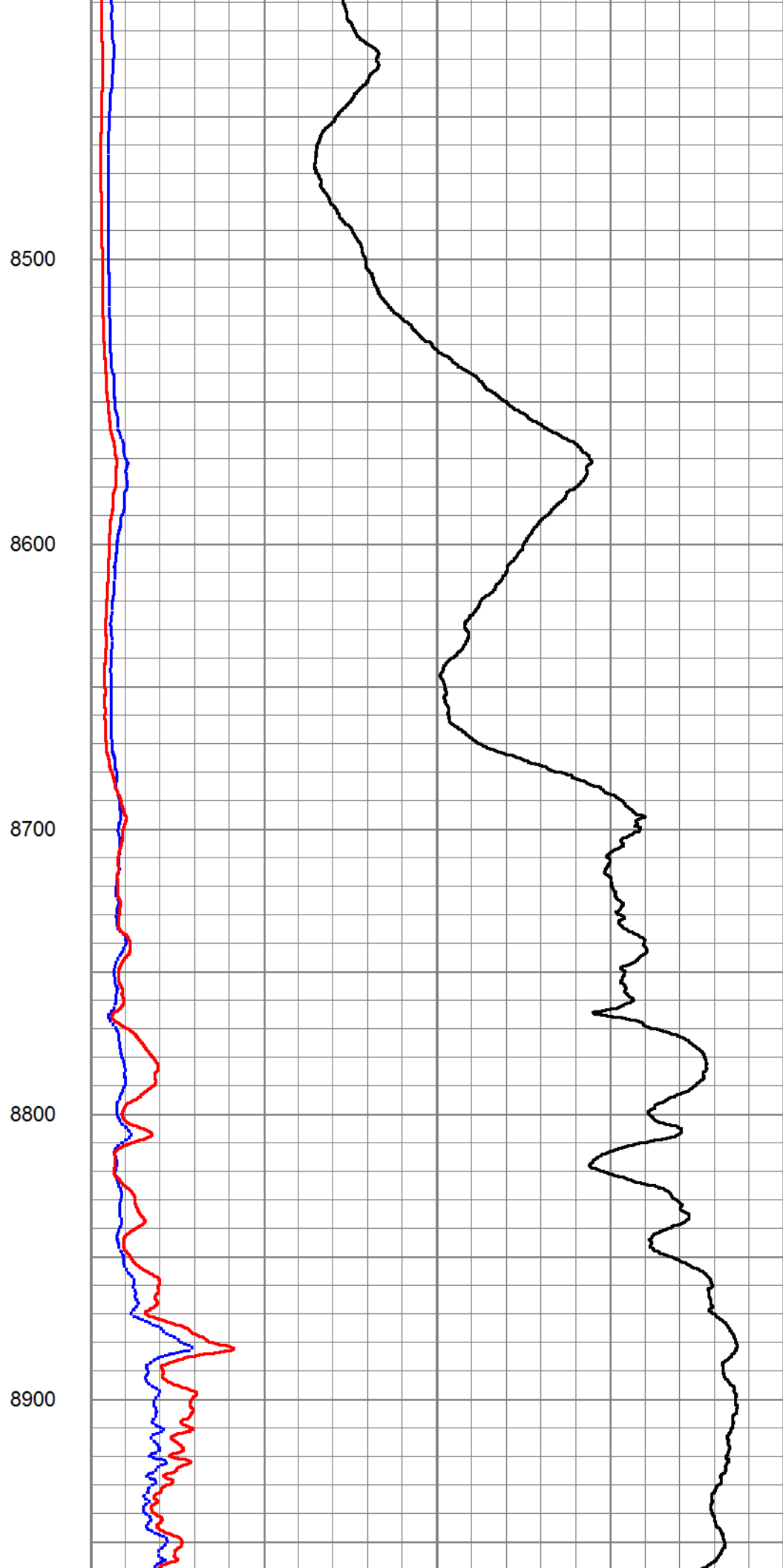
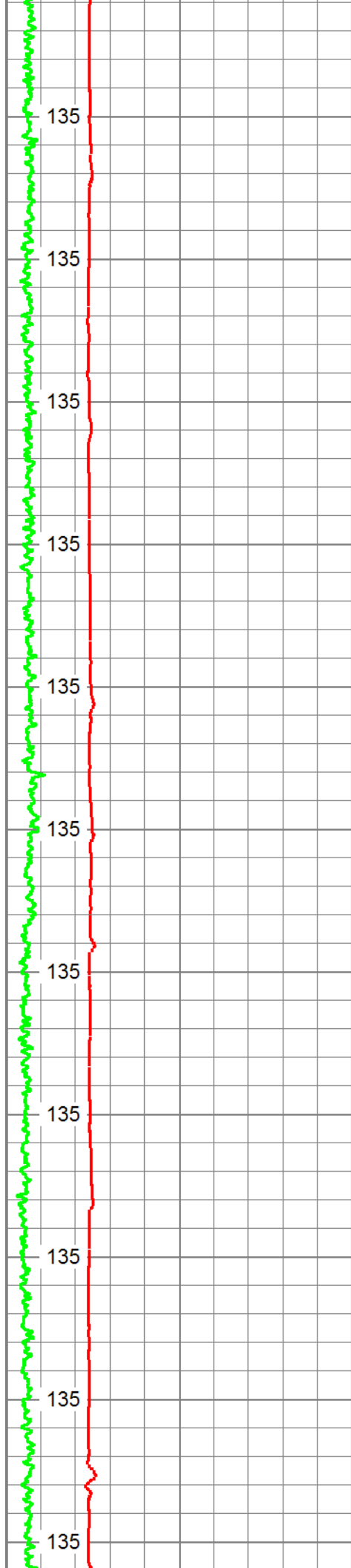


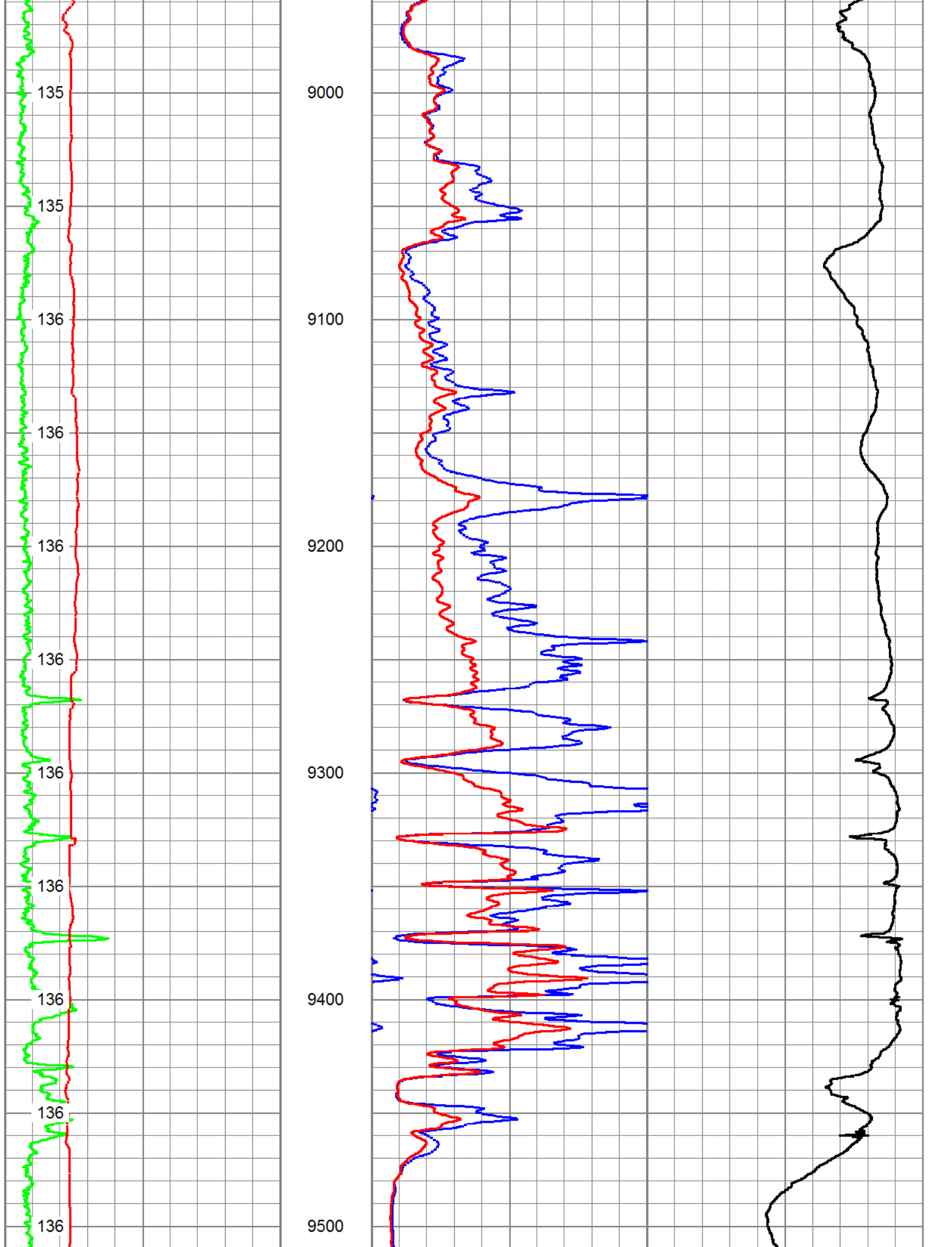


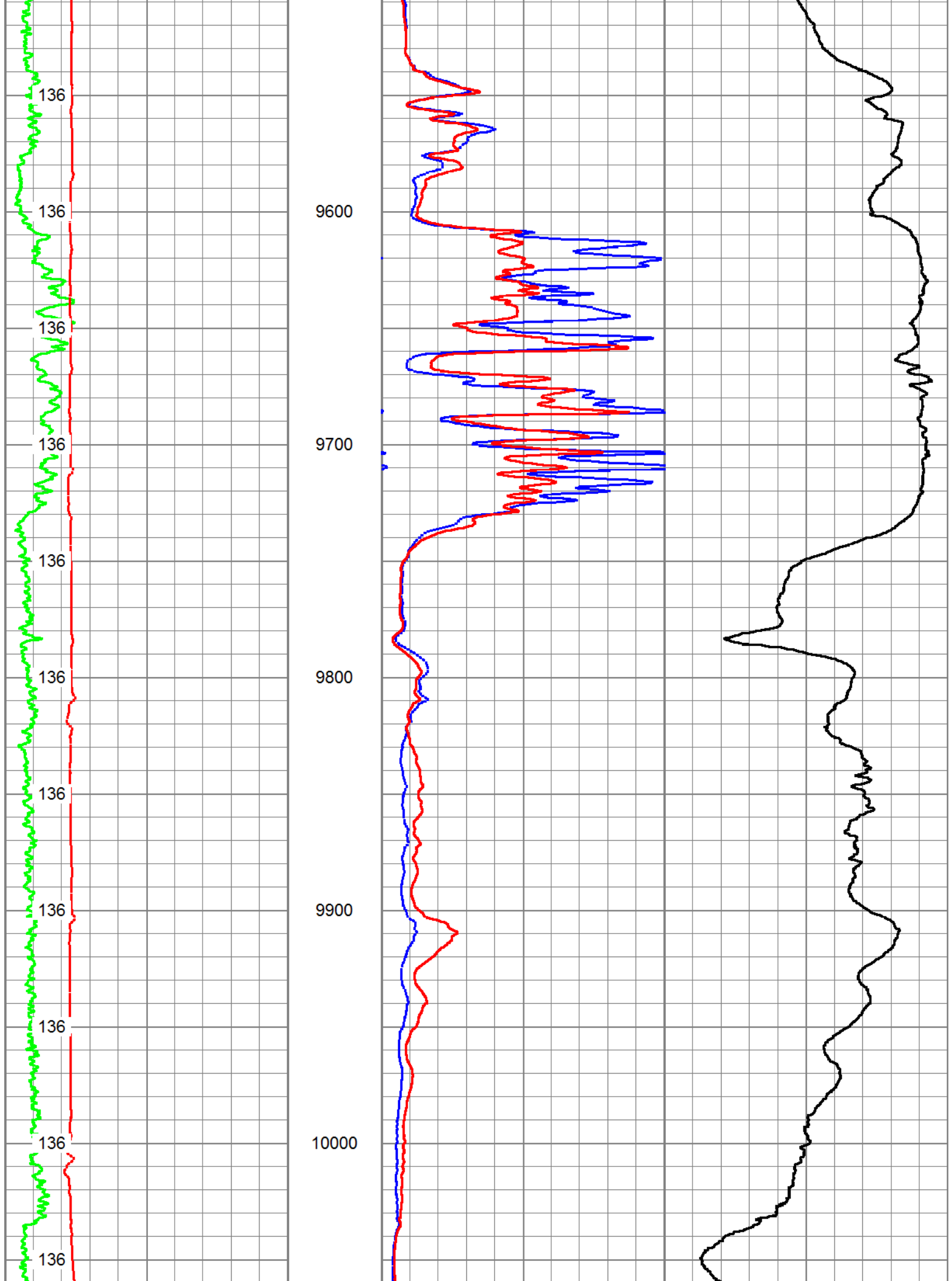


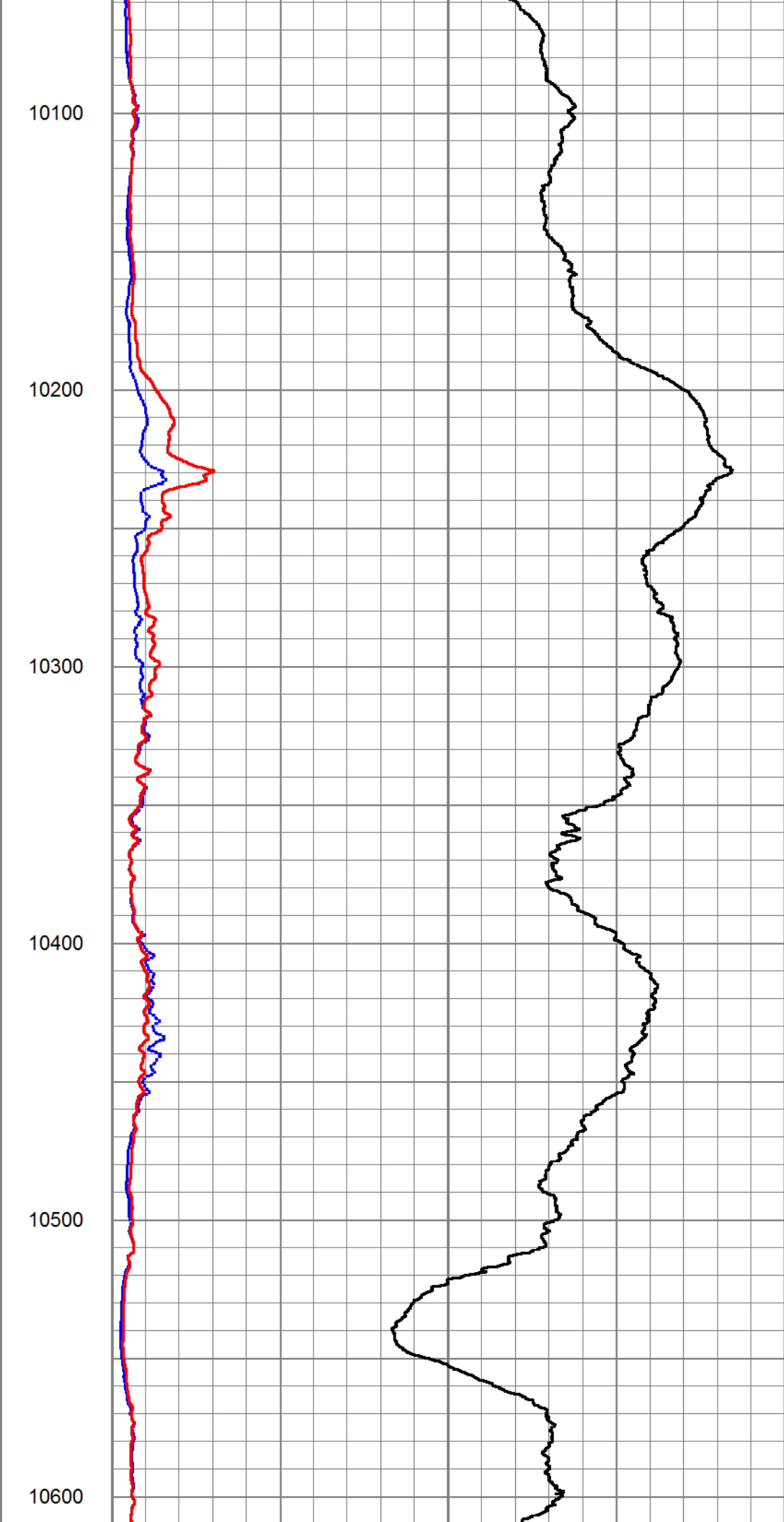
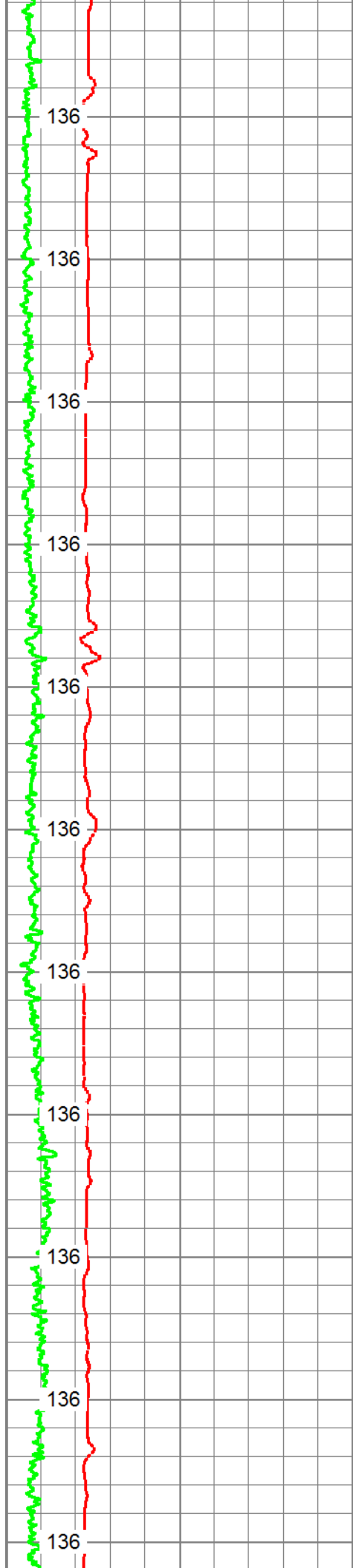


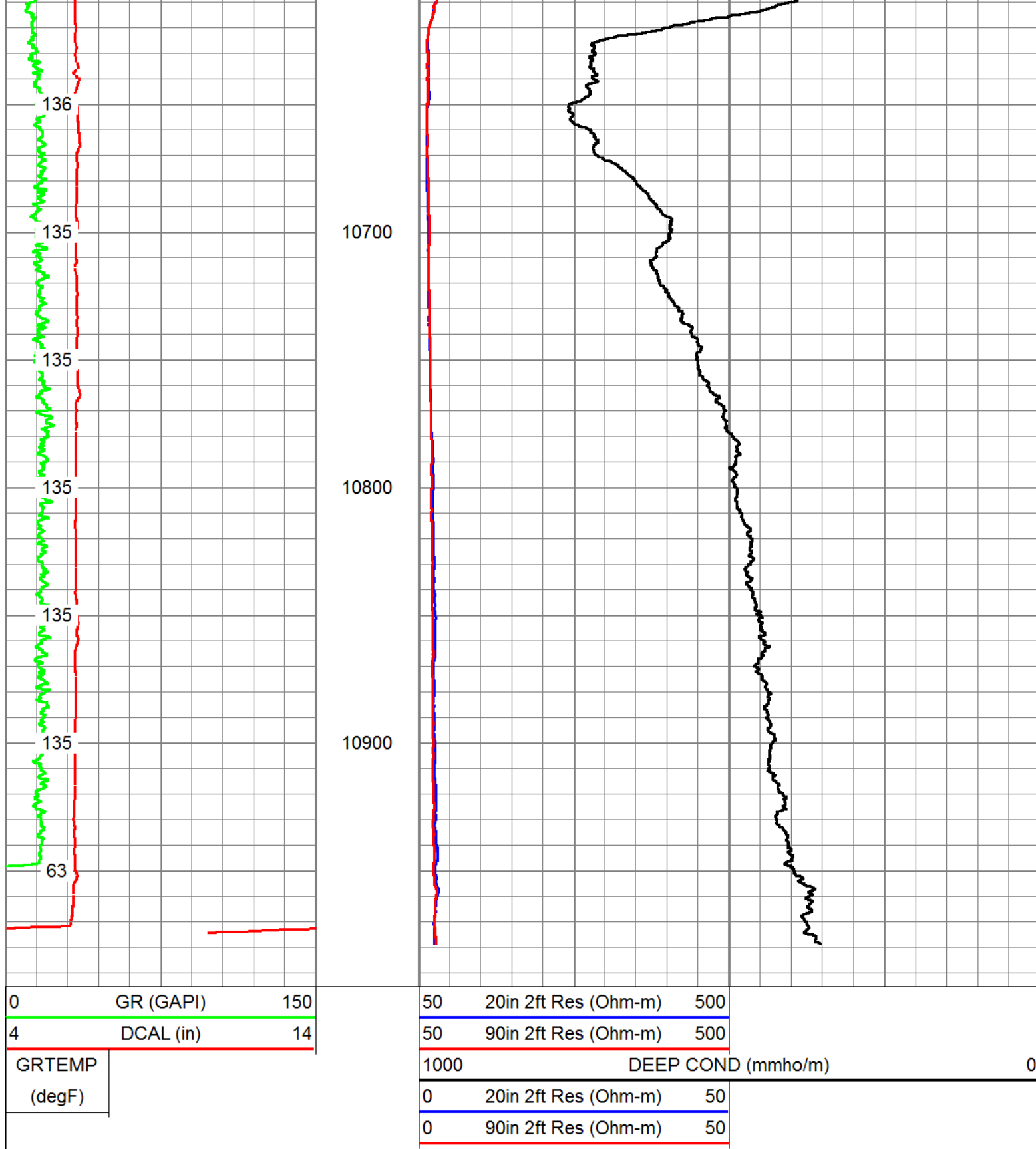








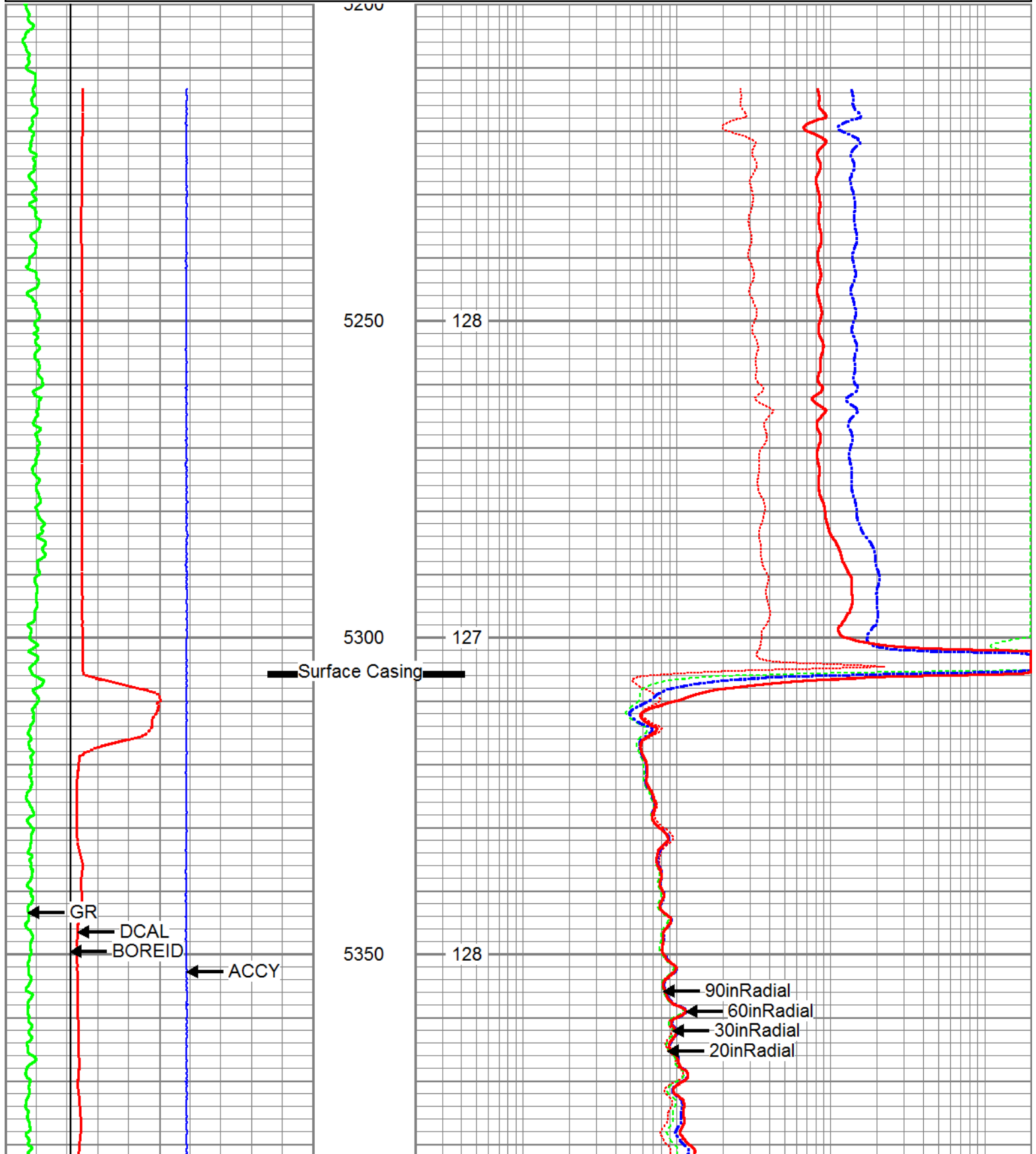


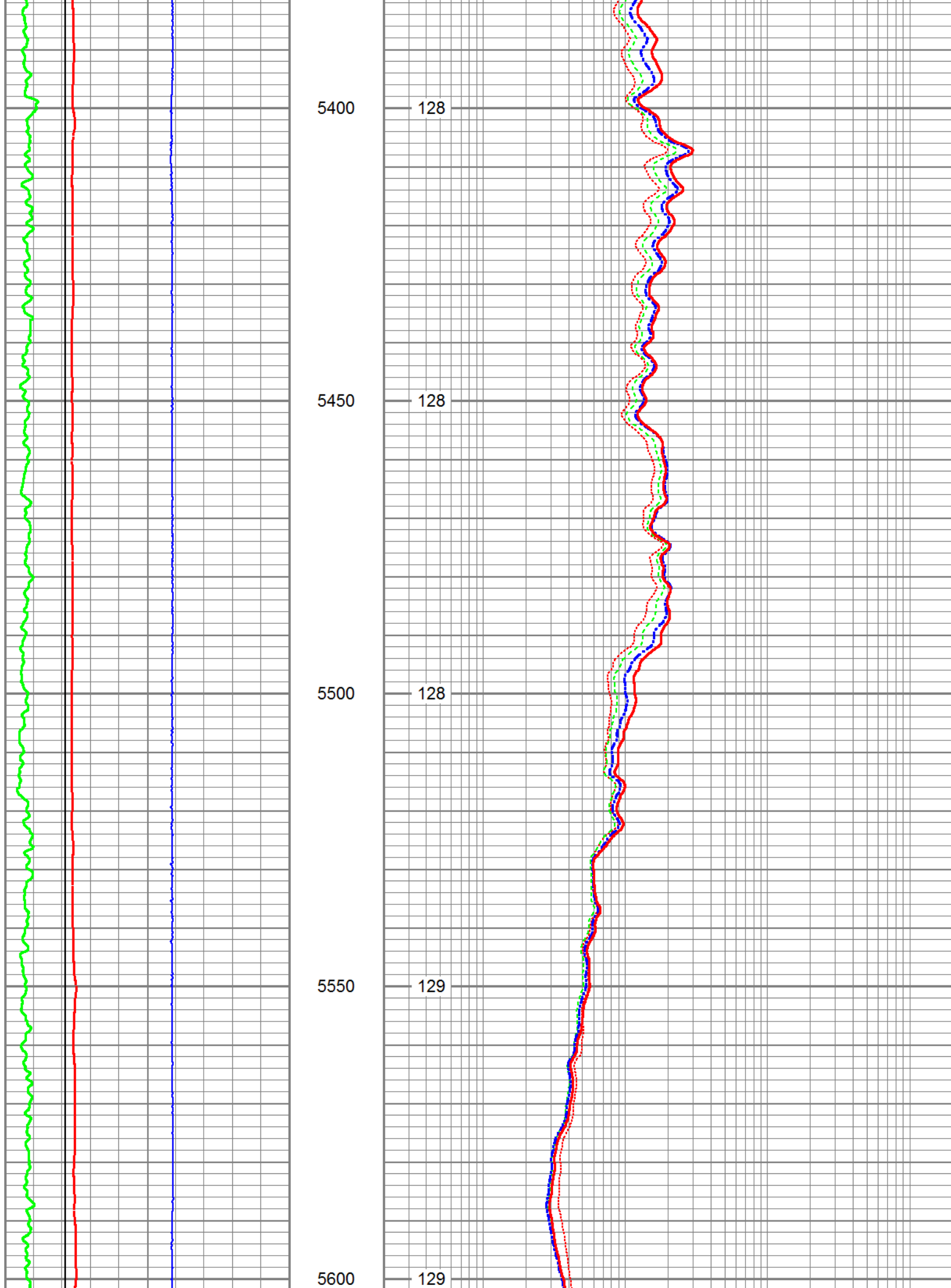


MAIN PASS

Database File: sandridge_roark_mem.db
Dataset Pathname: proc1/pass1.2
Presentation Format: ches5r10
Dataset Creation: Tue Dec 27 04:19:40 2011

Dataset Creation: 1/25/2027 9:16:10 EST			Depth in Feet scaled 1:240		
Charted by:					
0	GR (GAPI)	150	0.2	20inRadial (Ohm-m)	2000
4	DCAL (in)	14	0.2	30inRadial (Ohm-m)	2000
4	BOREID (in)	14	0.2	60inRadial (Ohm-m)	2000
-5	ACCY	5	0.2	90inRadial (Ohm-m)	2000
			GRTEMP		
			(degF)		







5650

129

5700

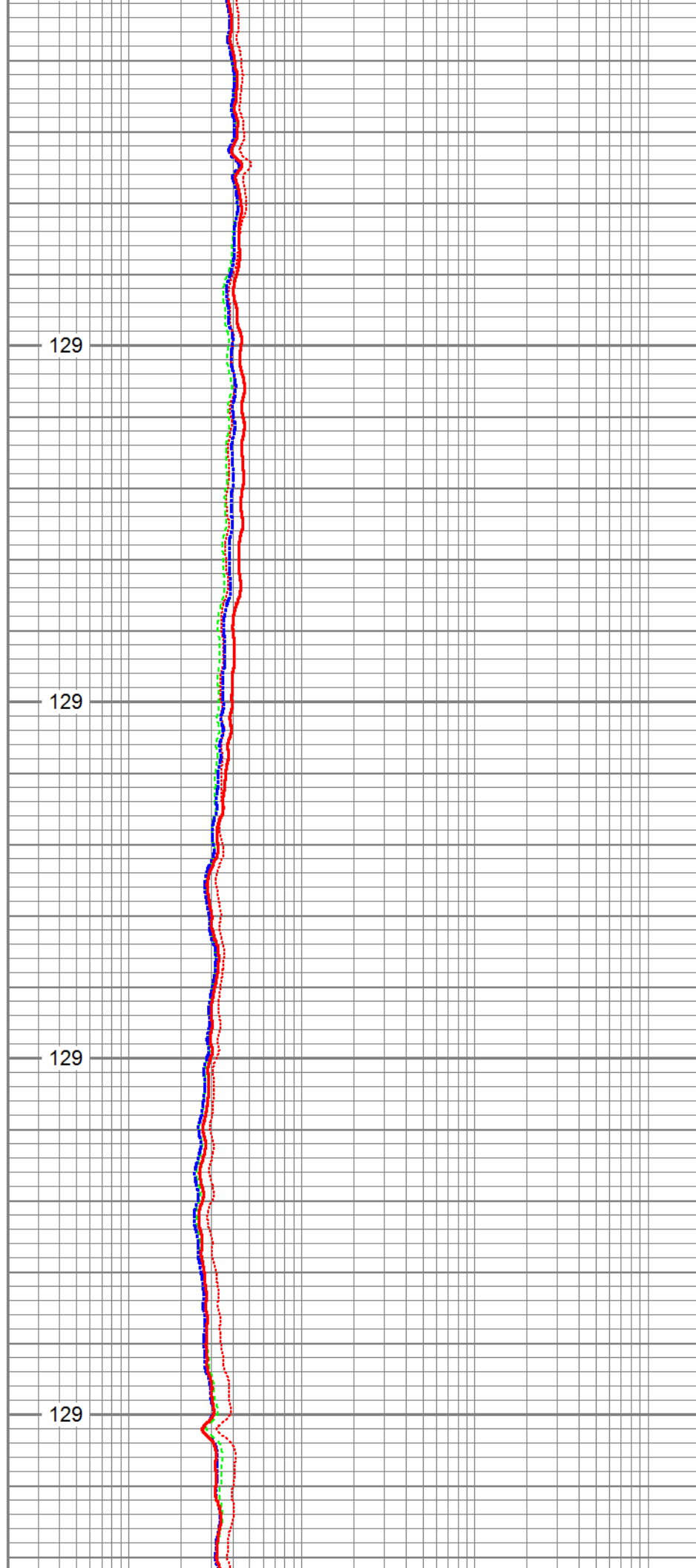
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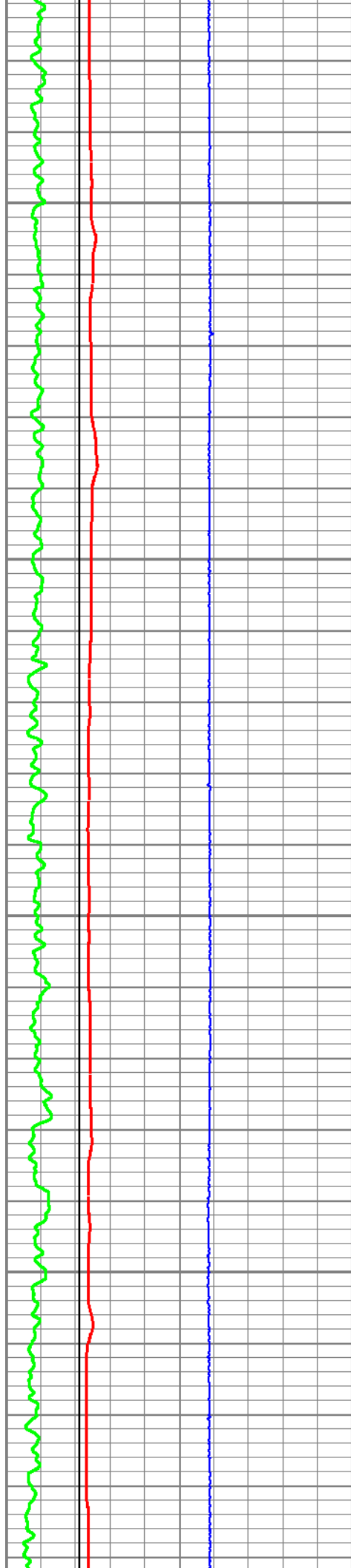
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5800

129





5850

5900

5950

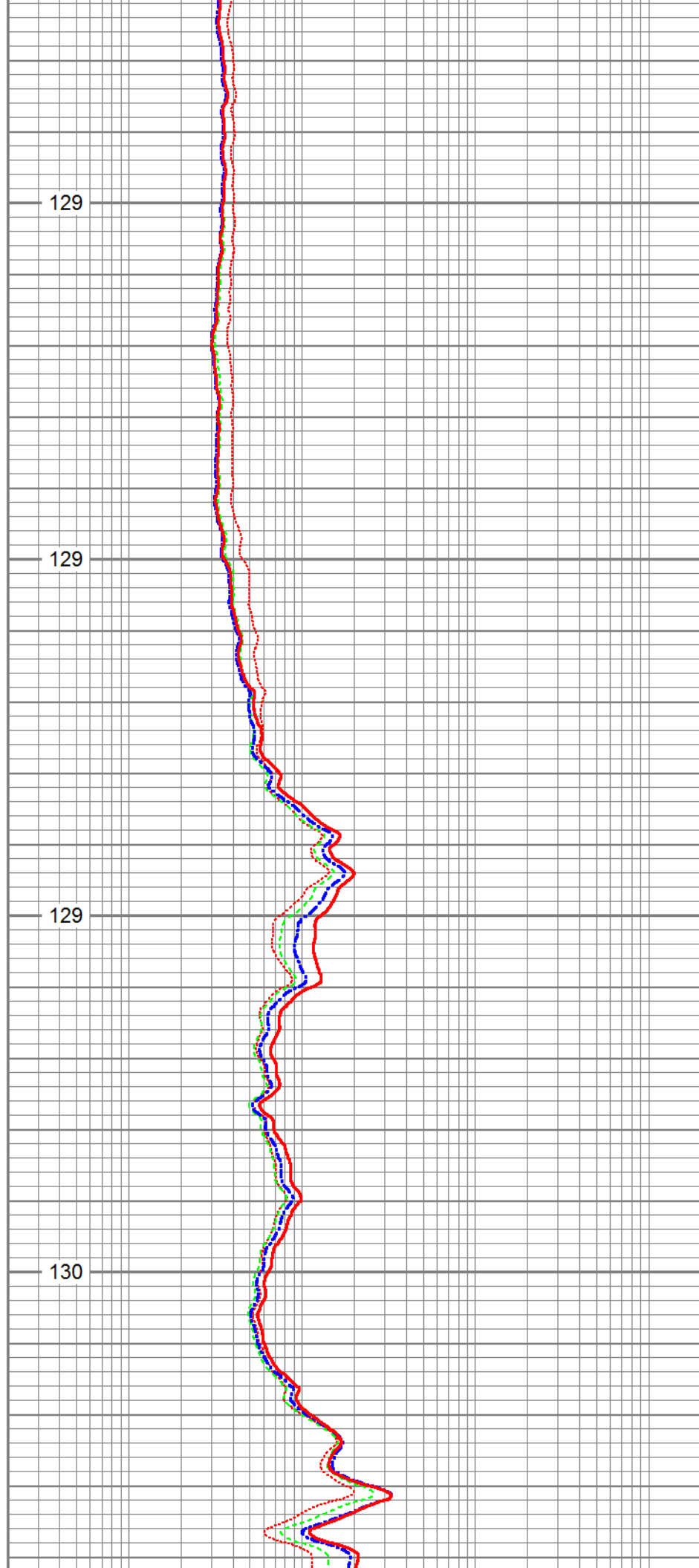
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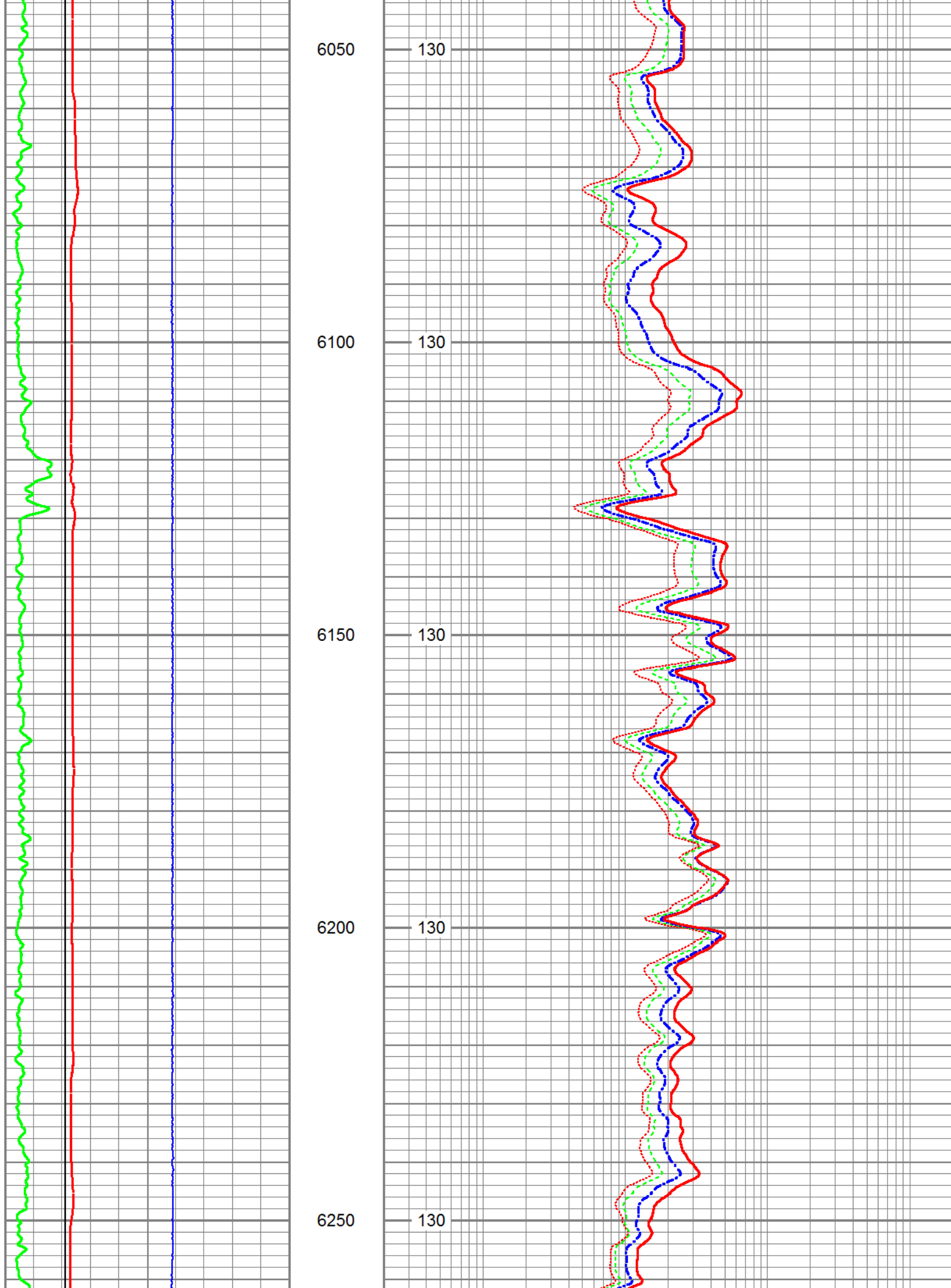
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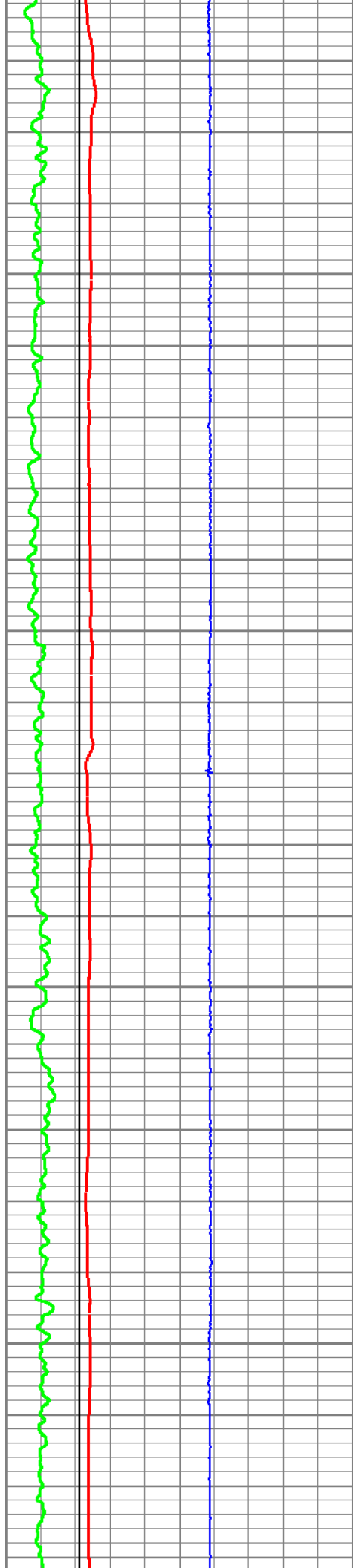
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130







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131

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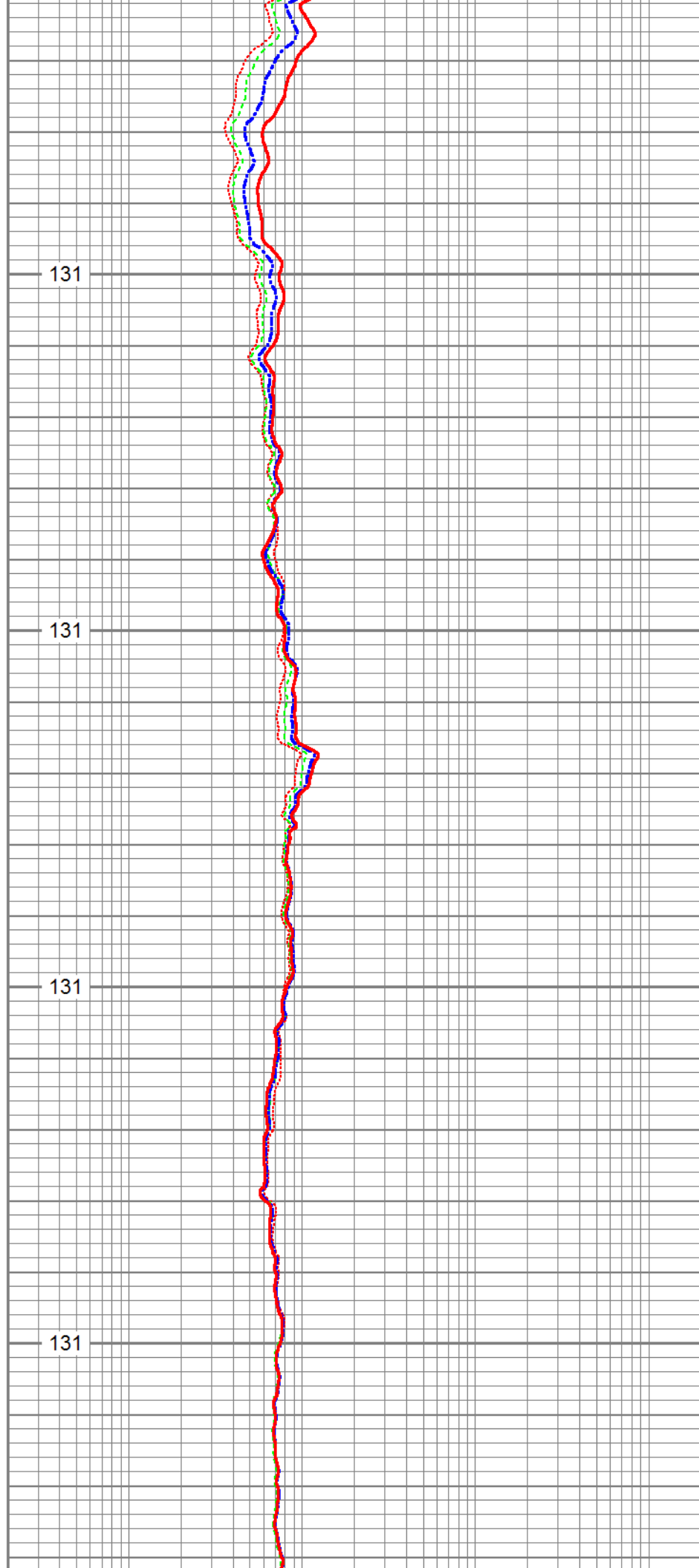
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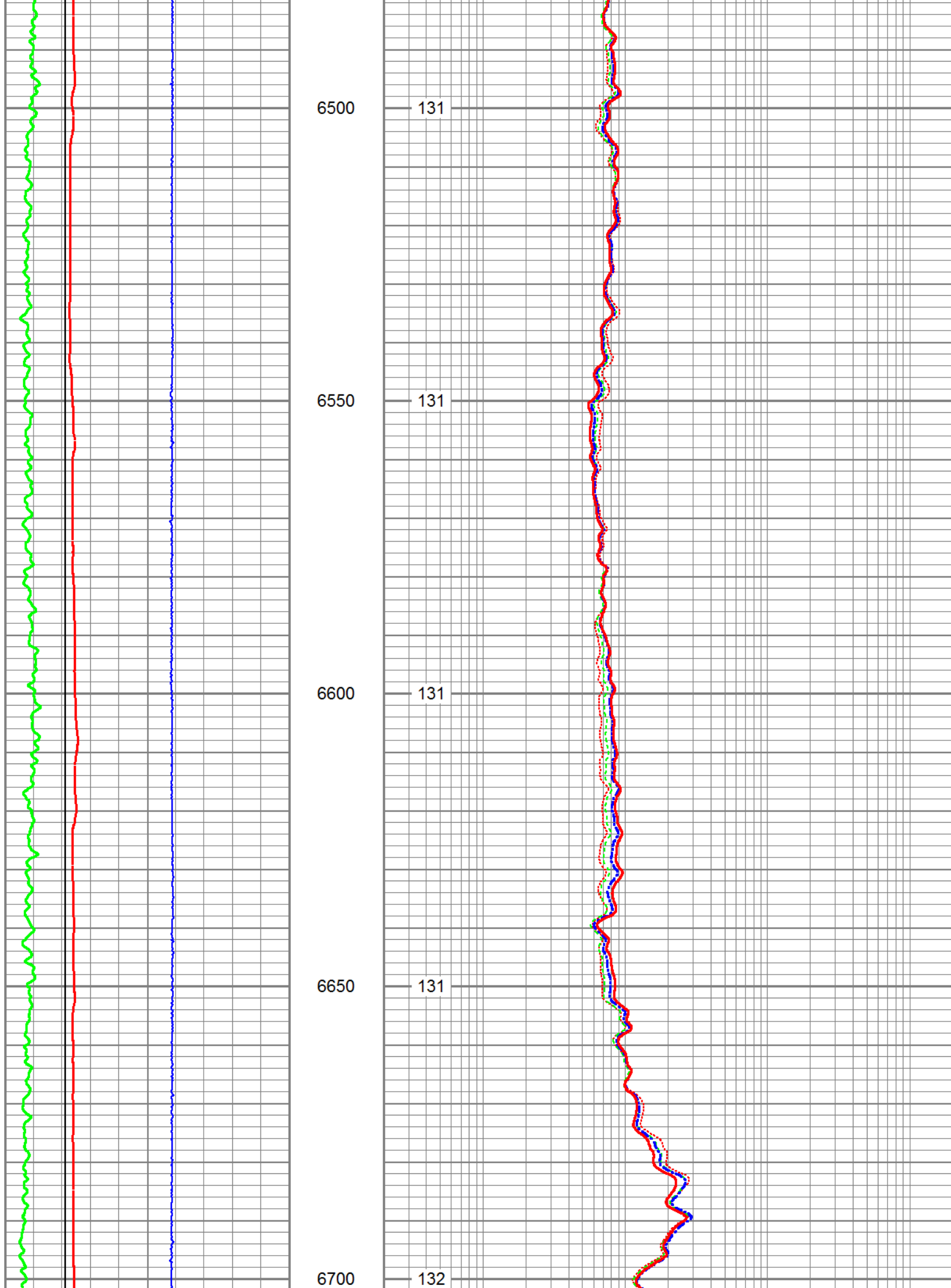
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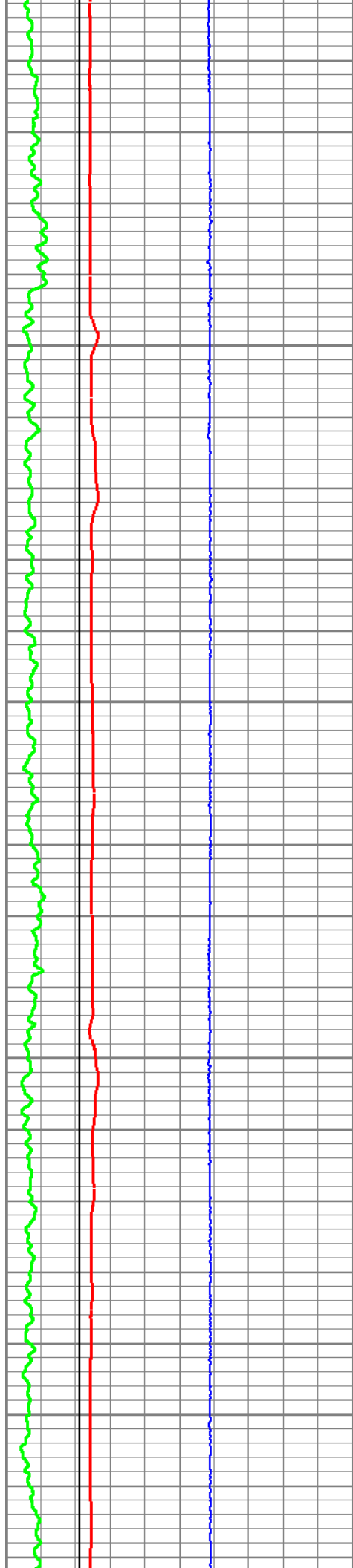
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6450

131







6750

132

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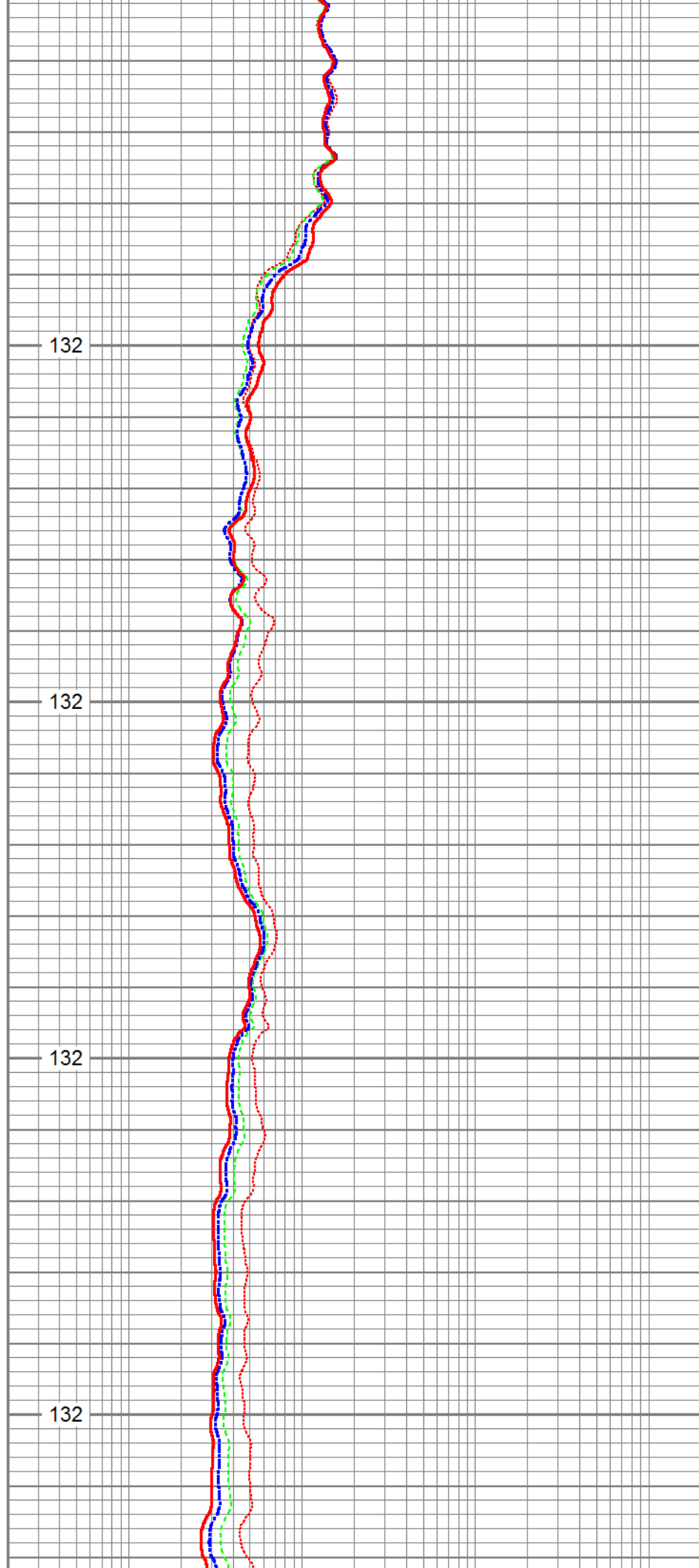
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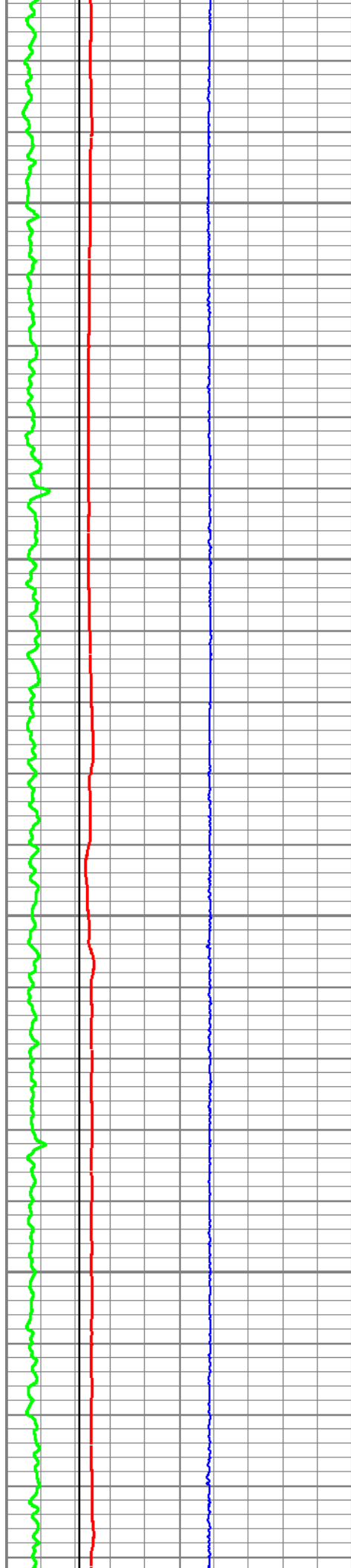
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132





6950

7000

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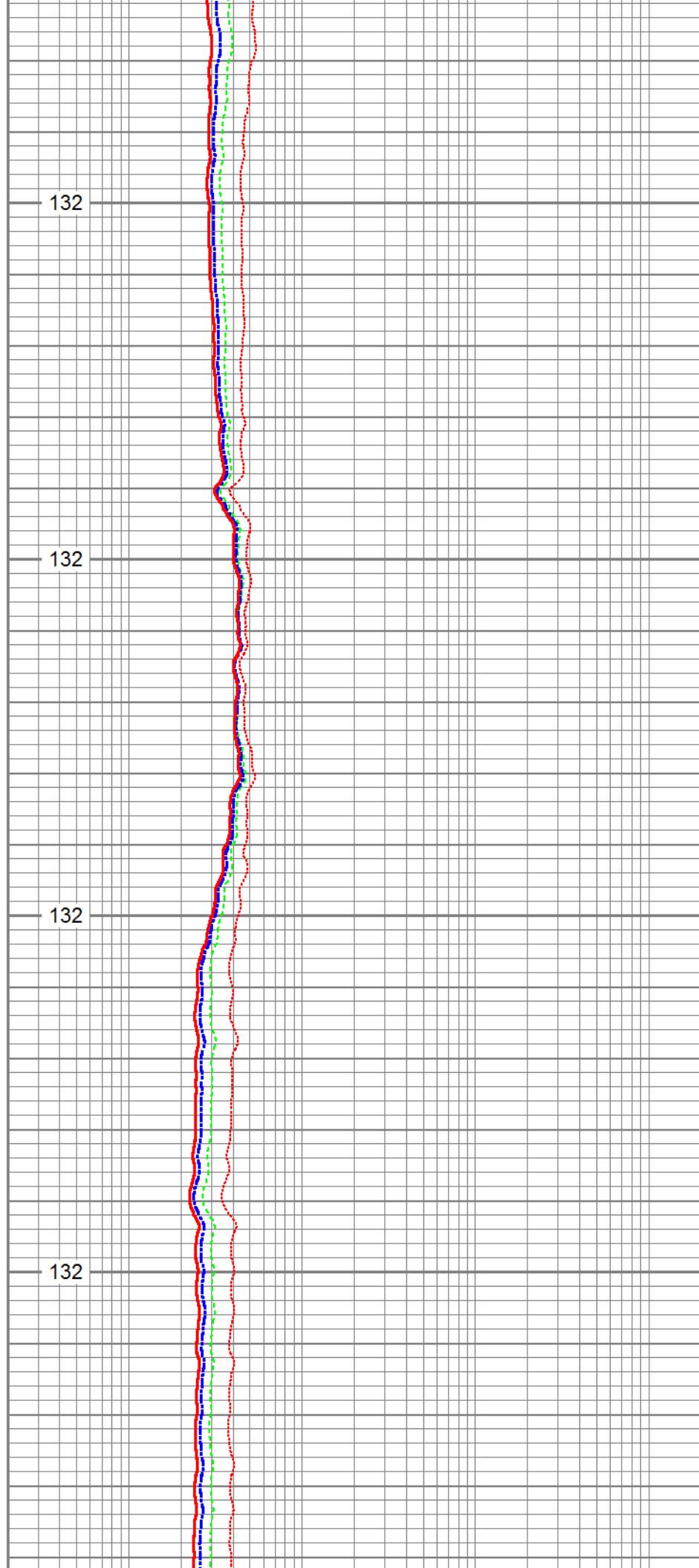
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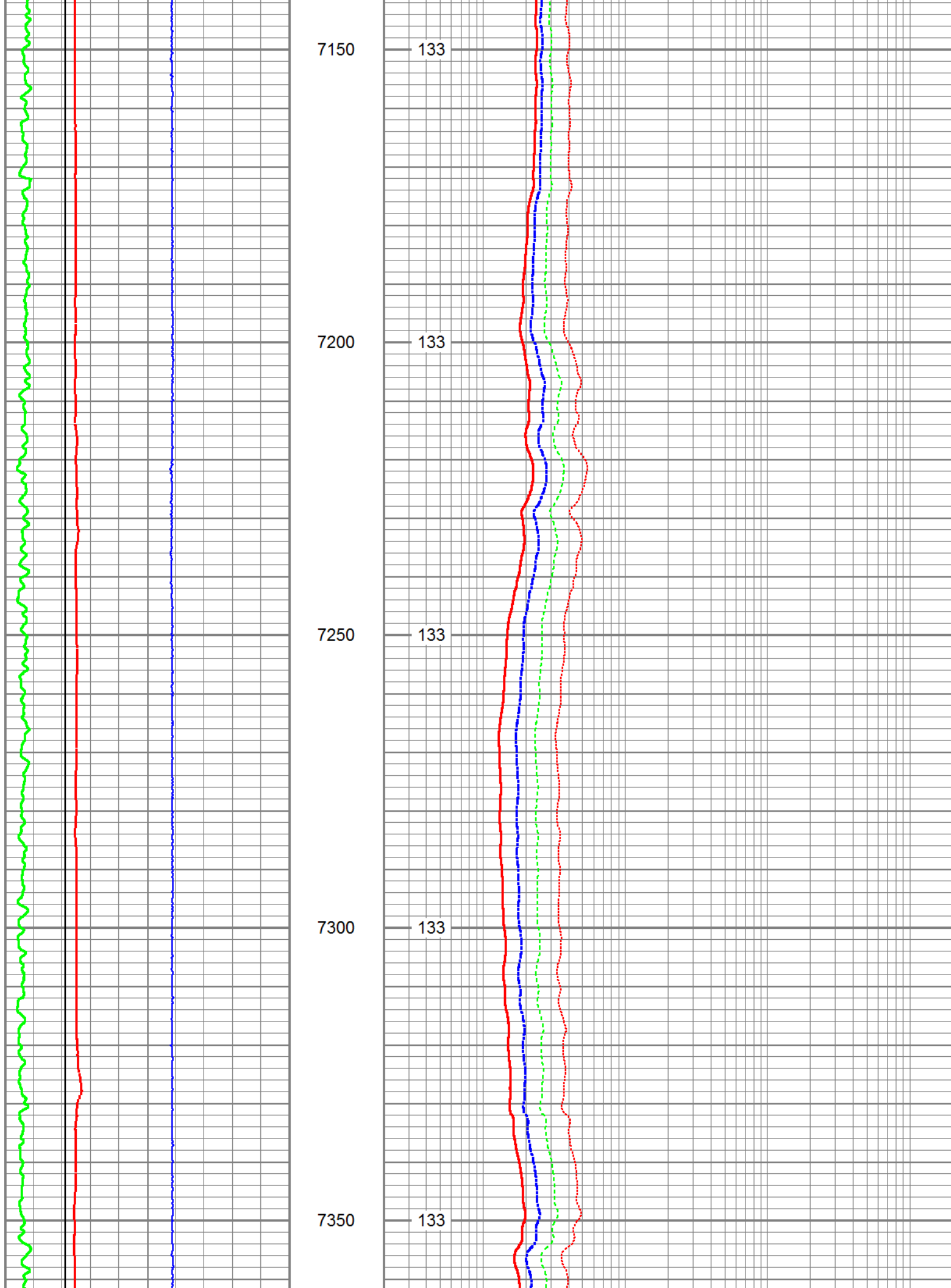
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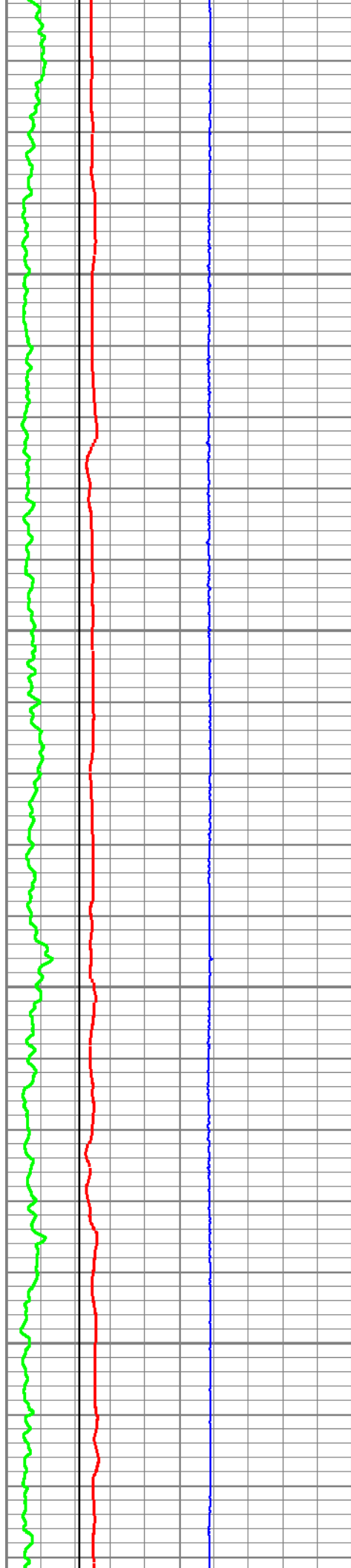
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132







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7500

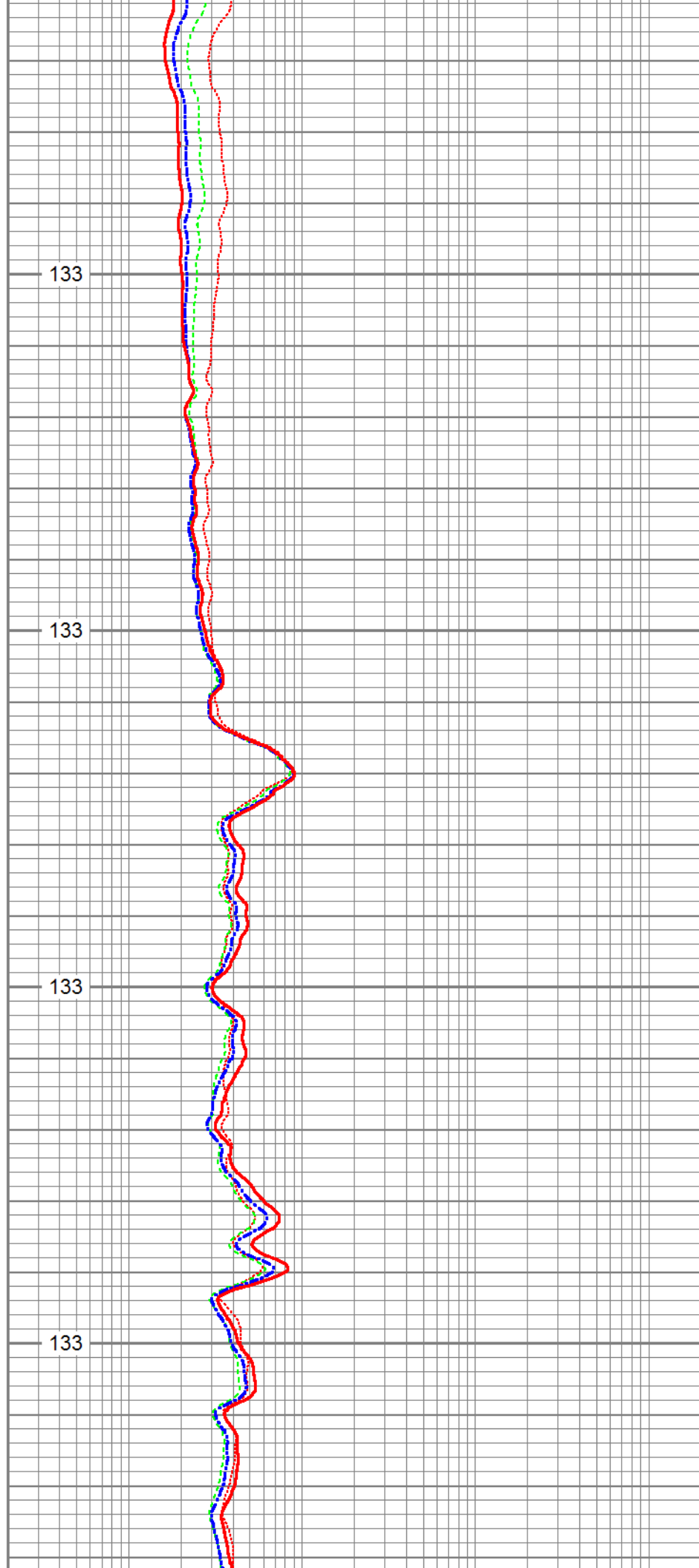
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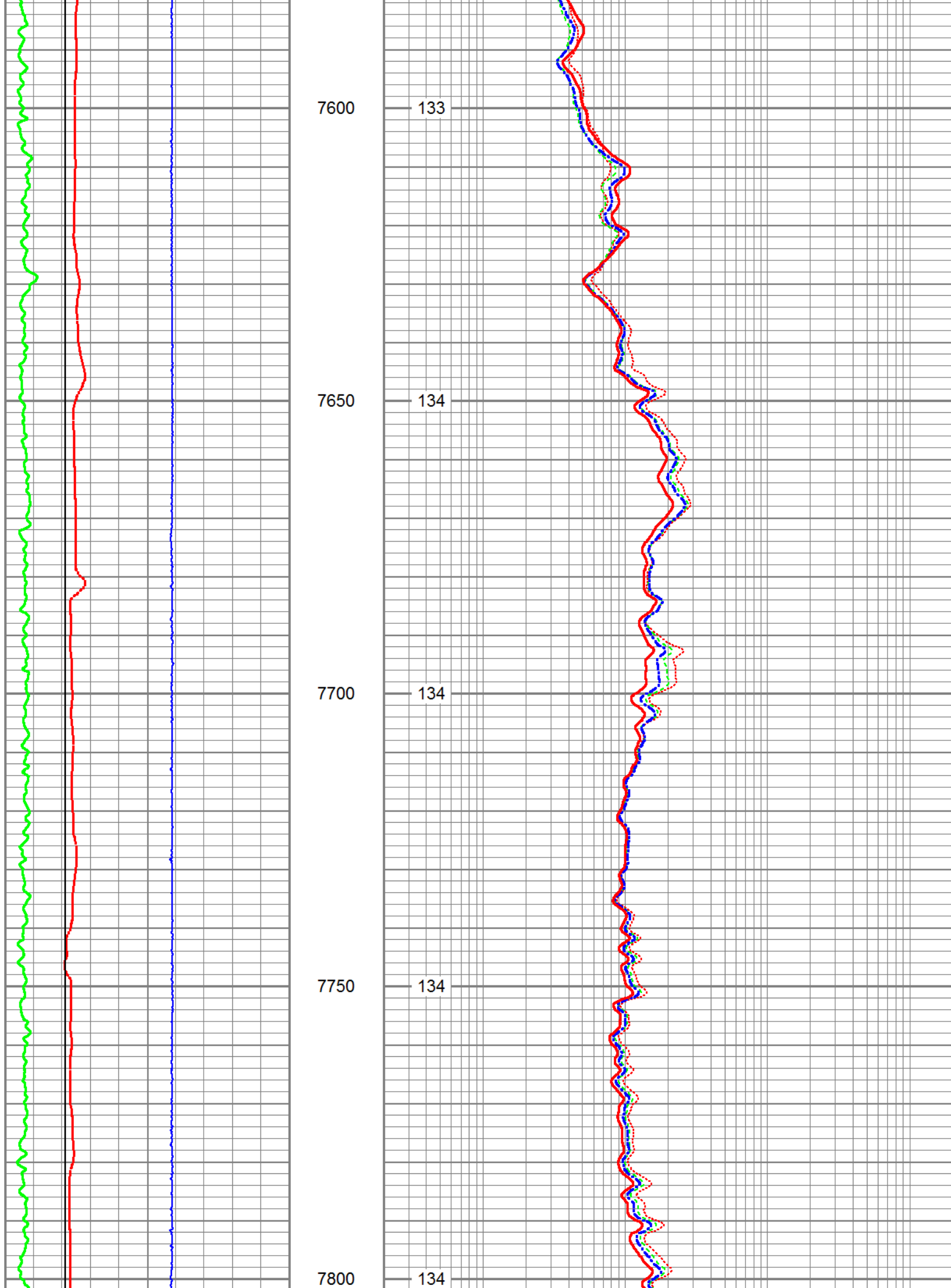
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7850

7900

7950

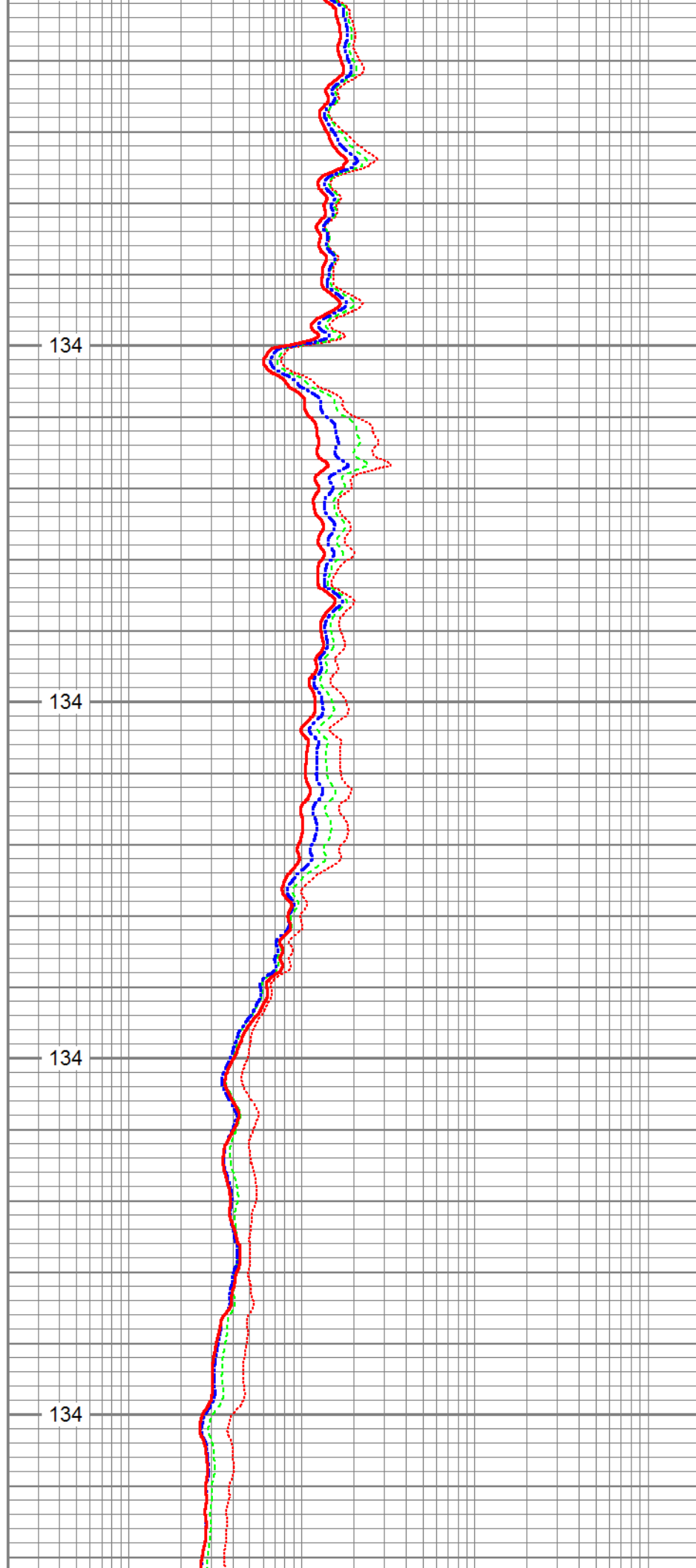
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134

134





8050

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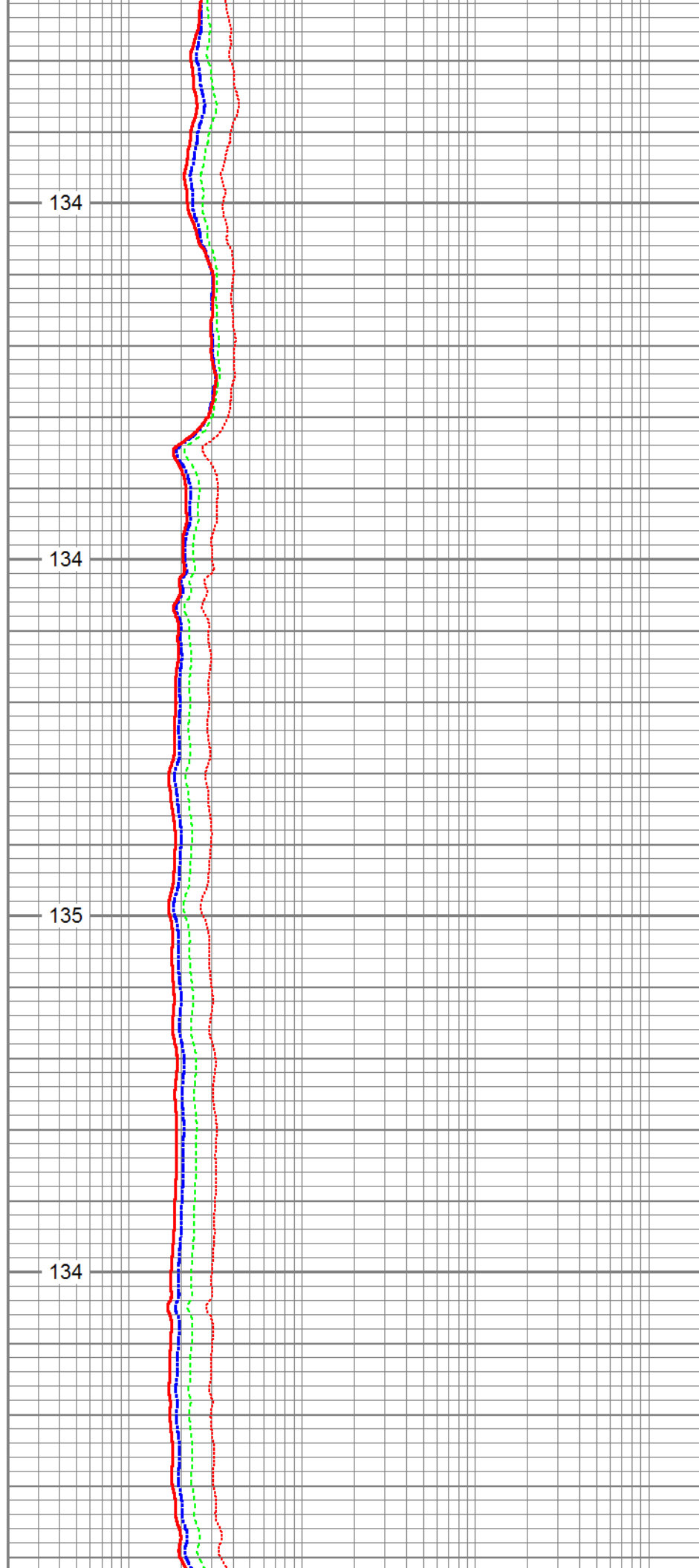
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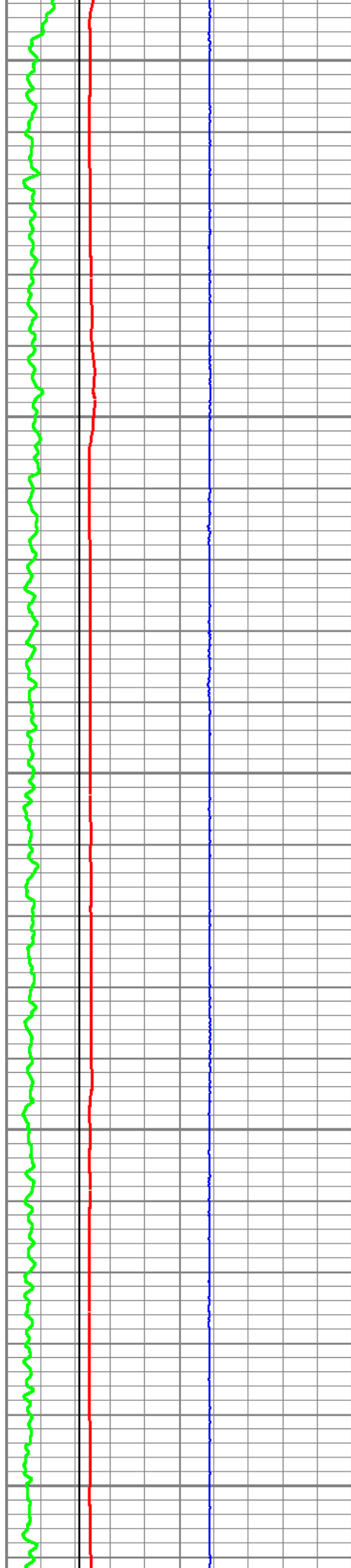
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8200

134





8250

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8300

135

8350

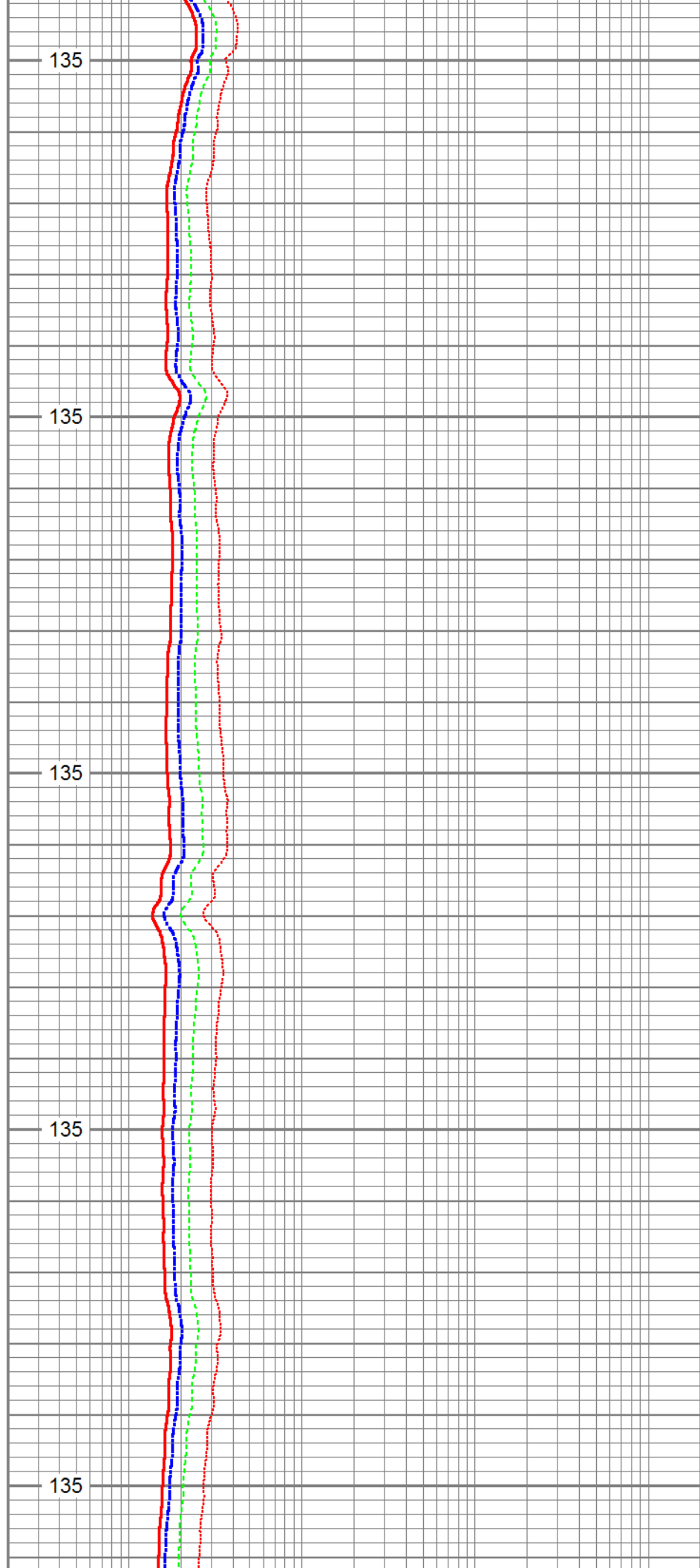
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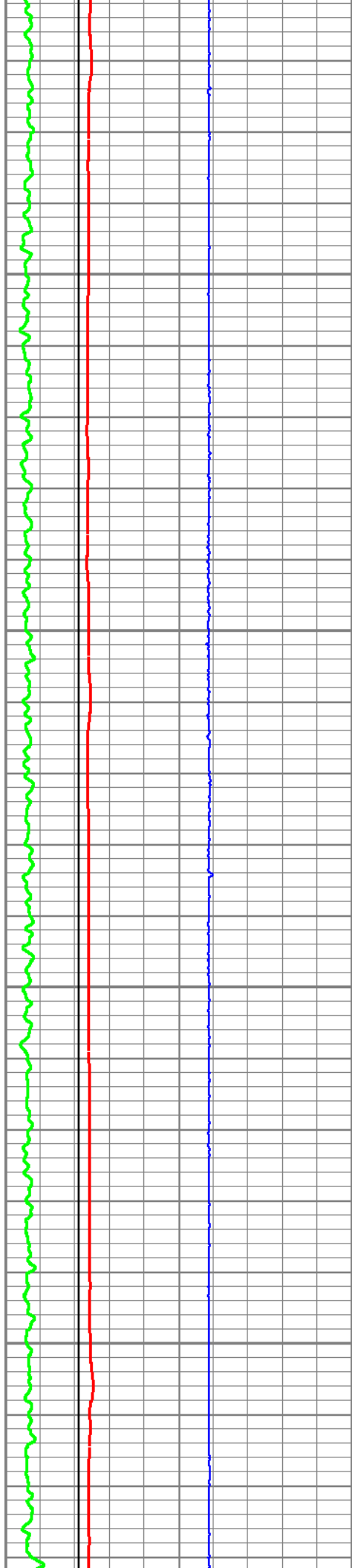
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8450

135





8500

8550

8600

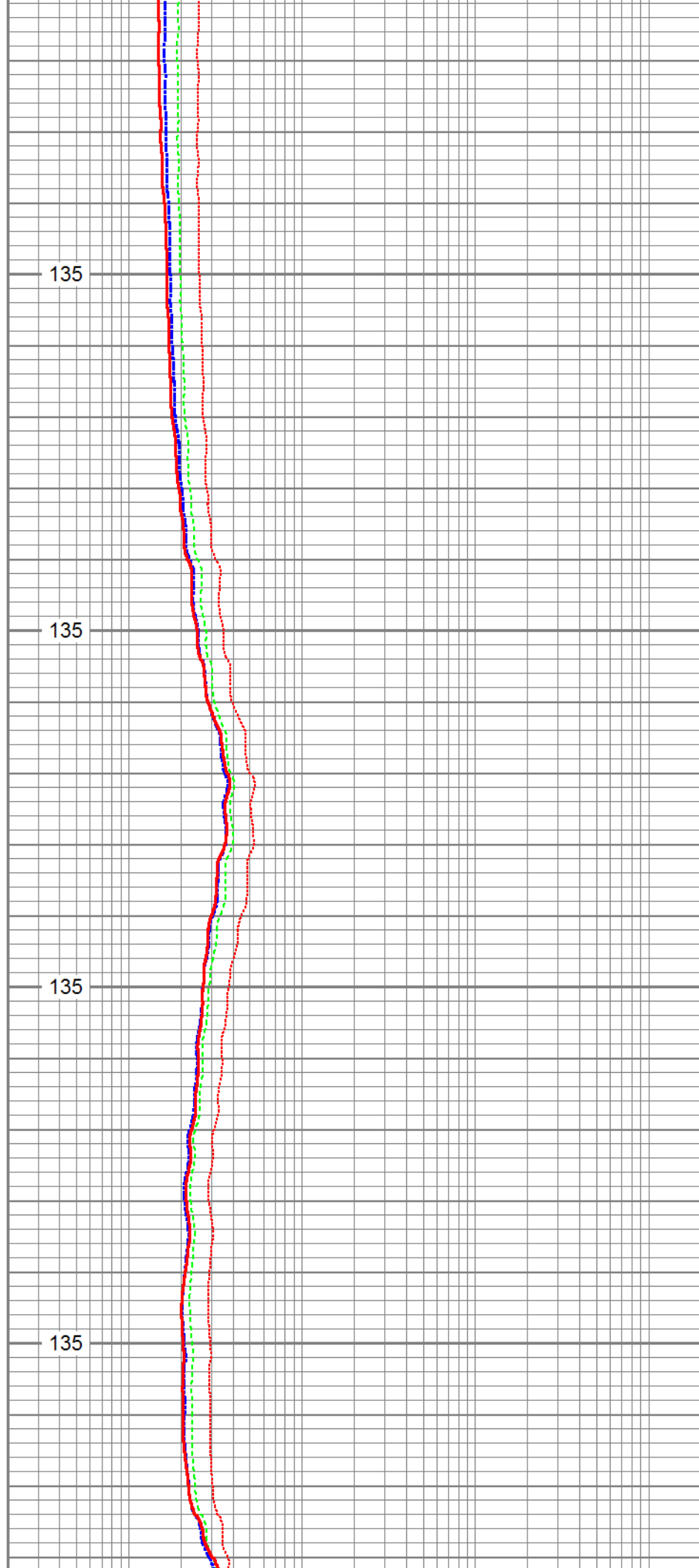
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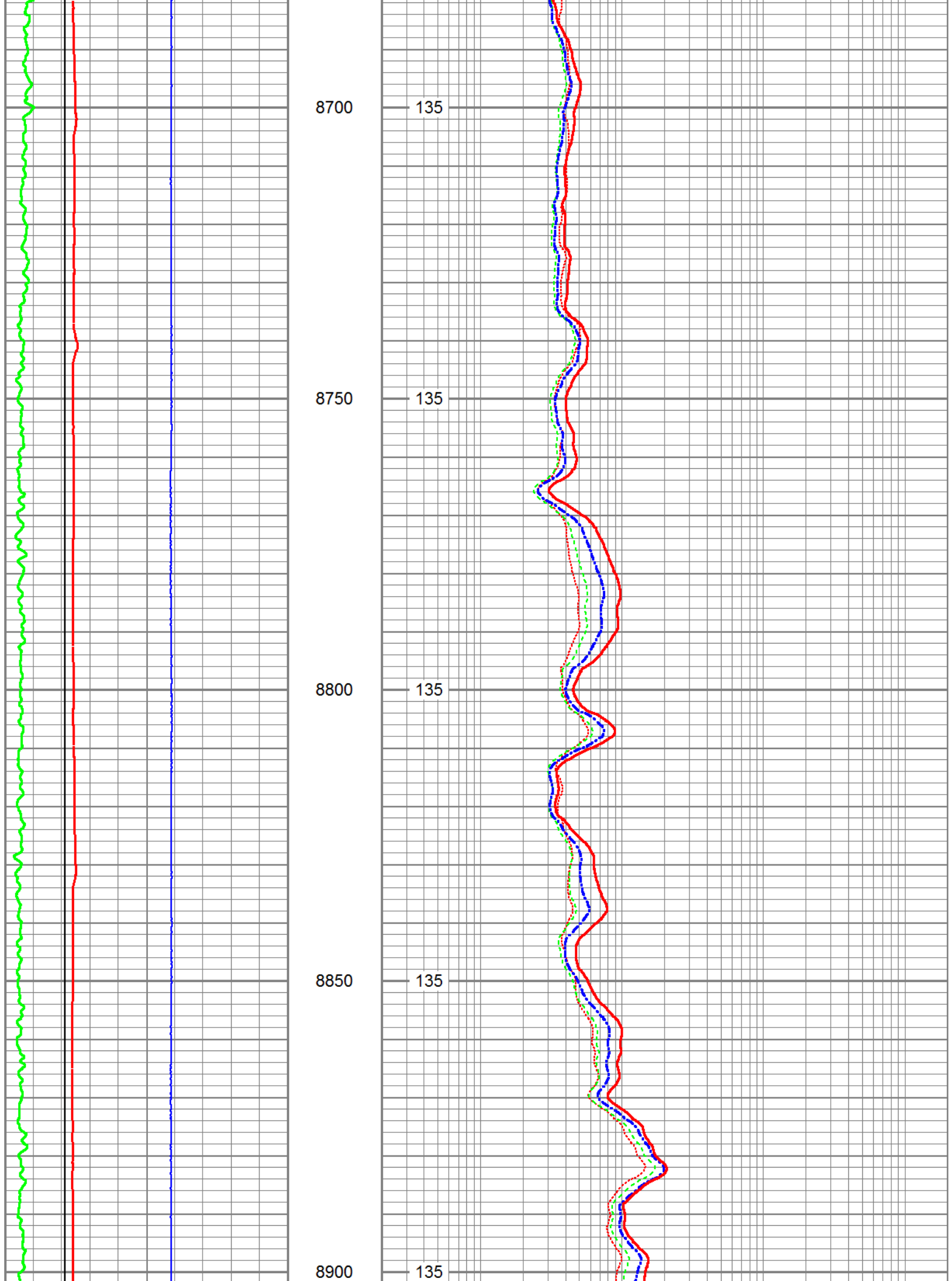
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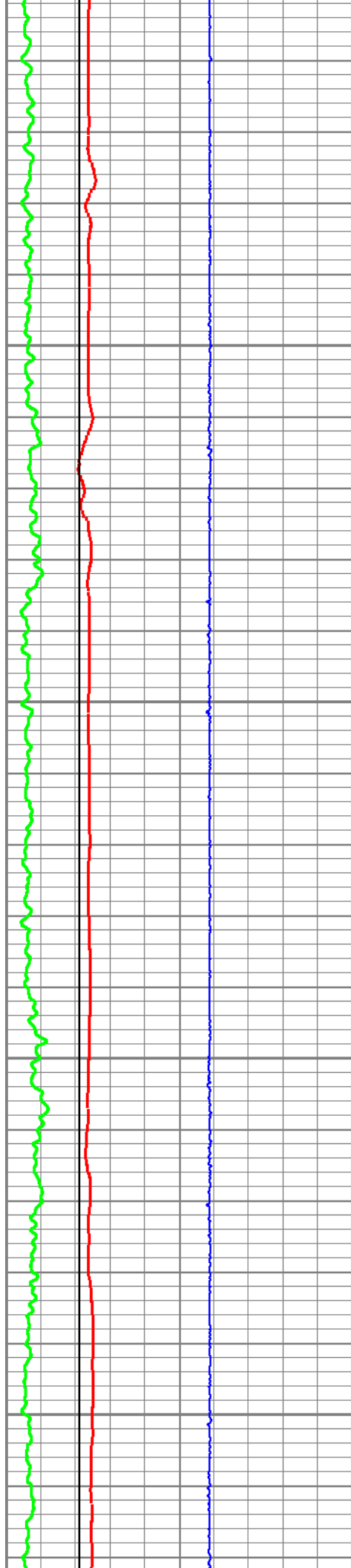
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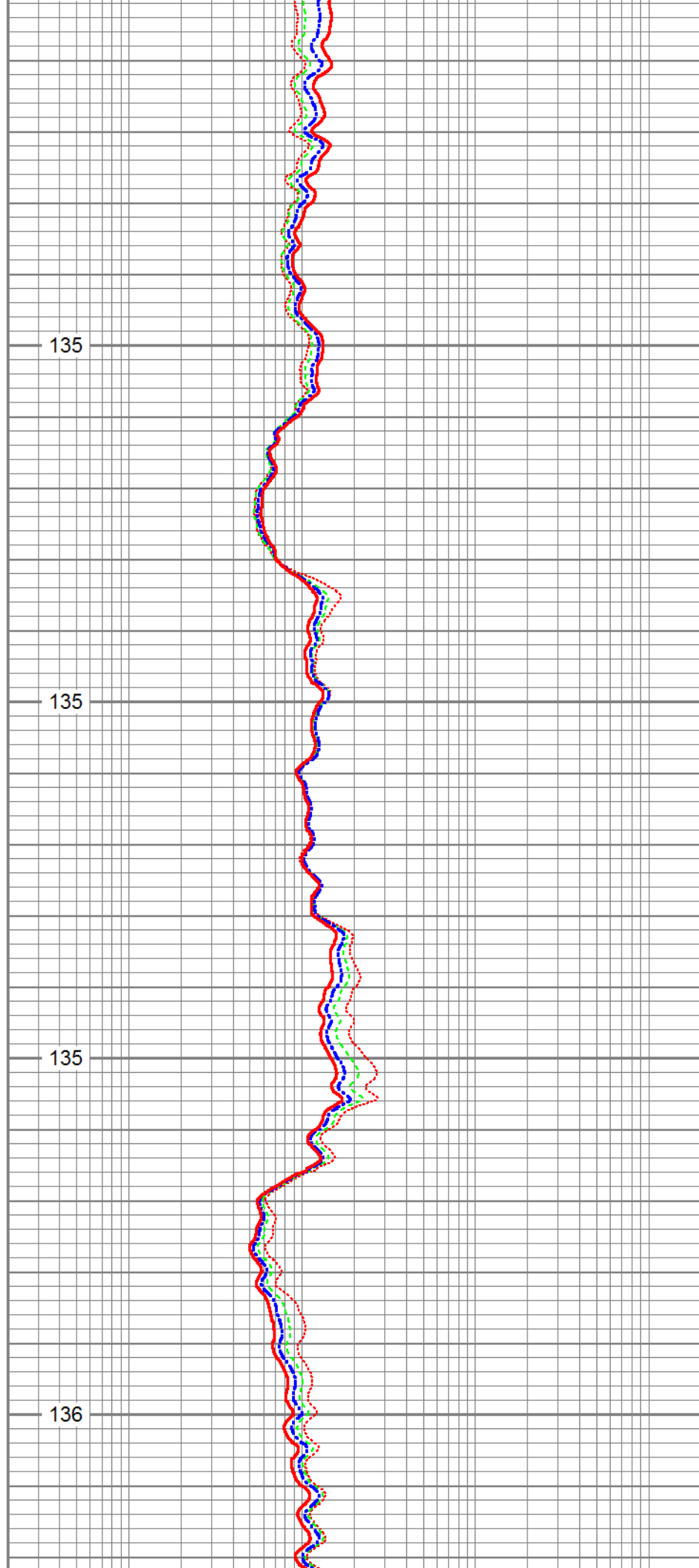
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9050

135

9100

136





9150

9200

9250

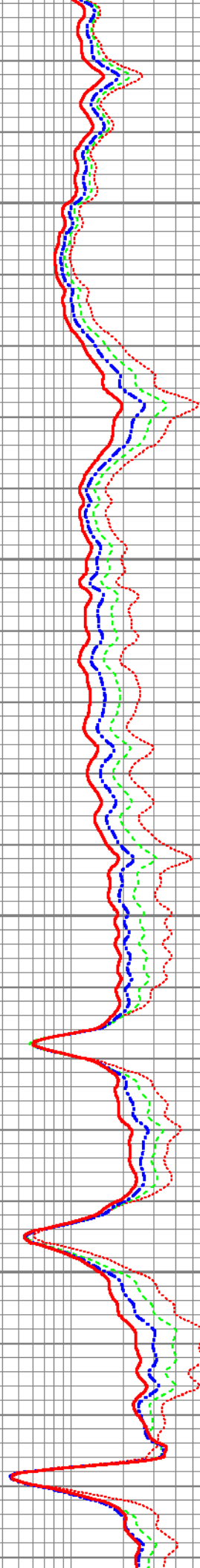
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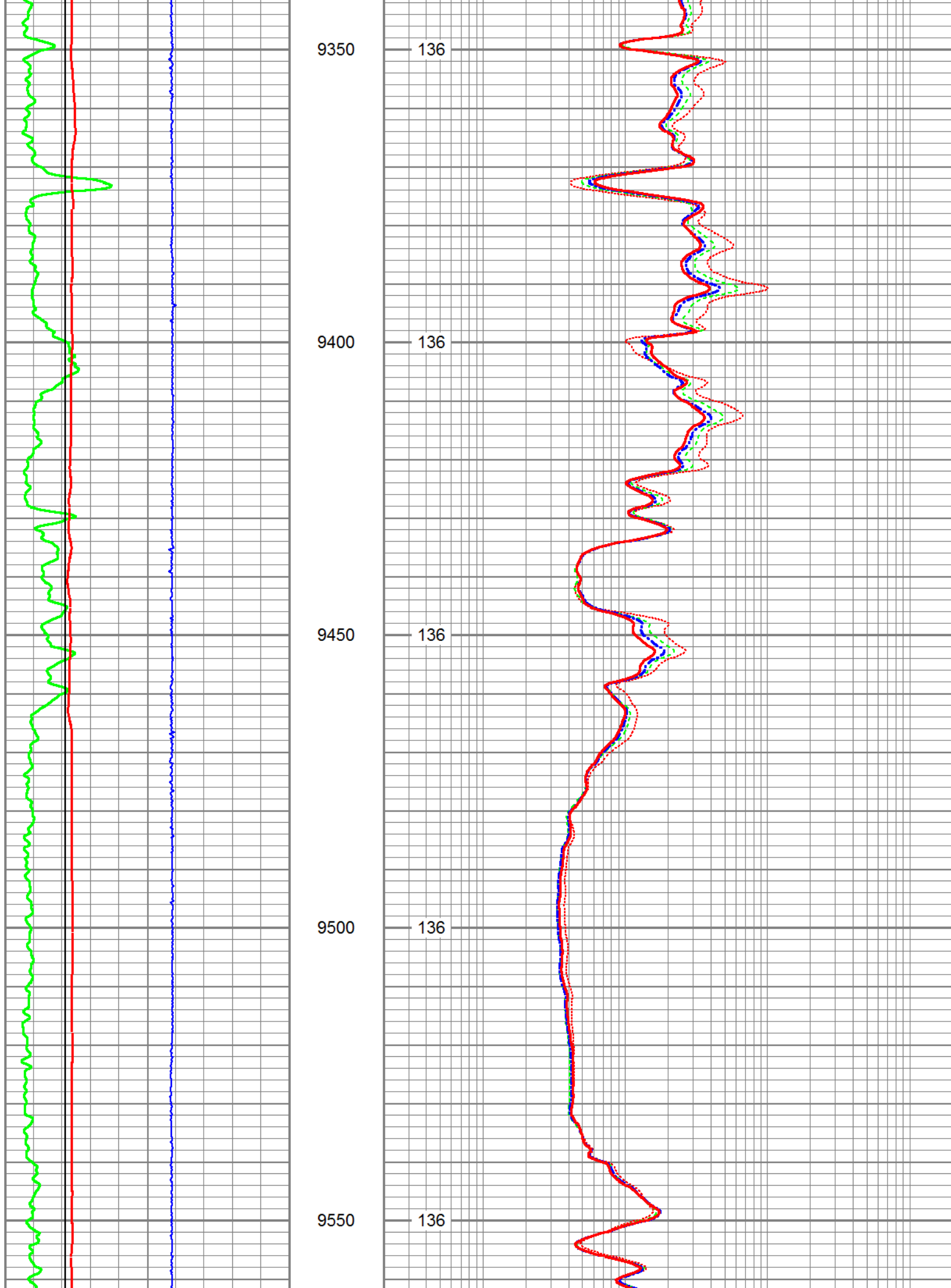
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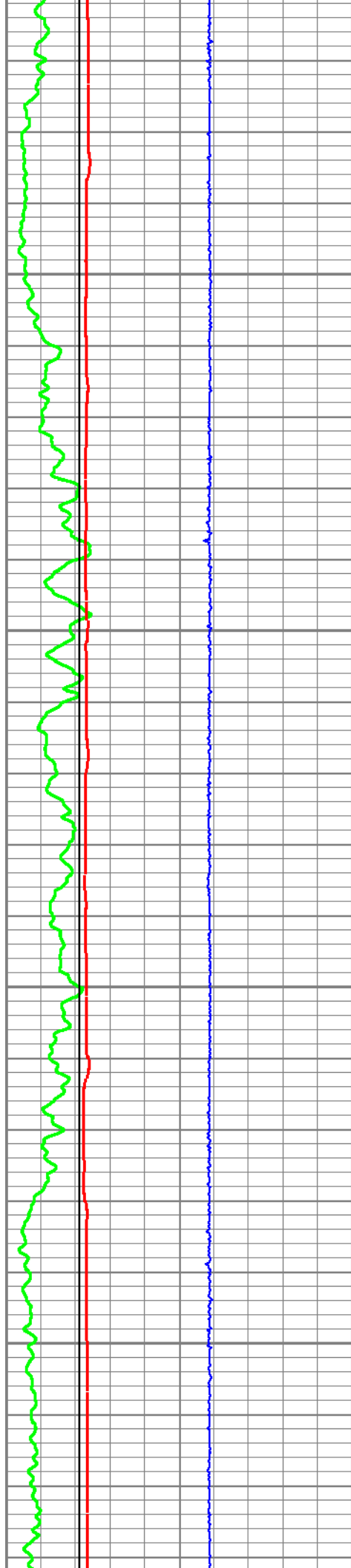
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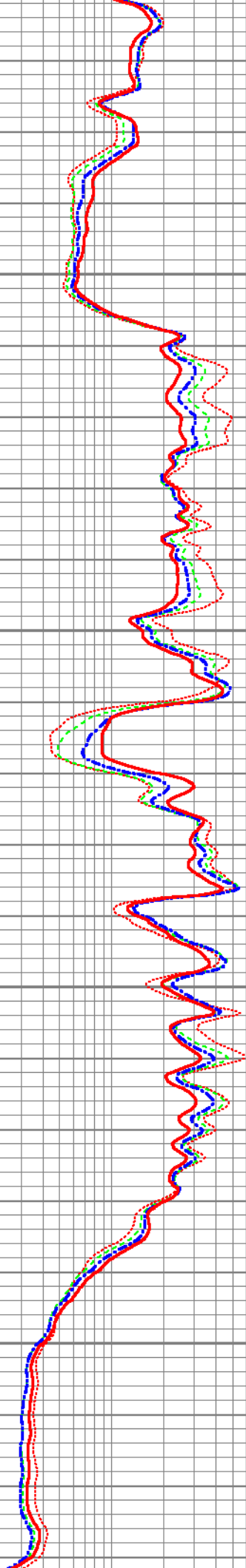
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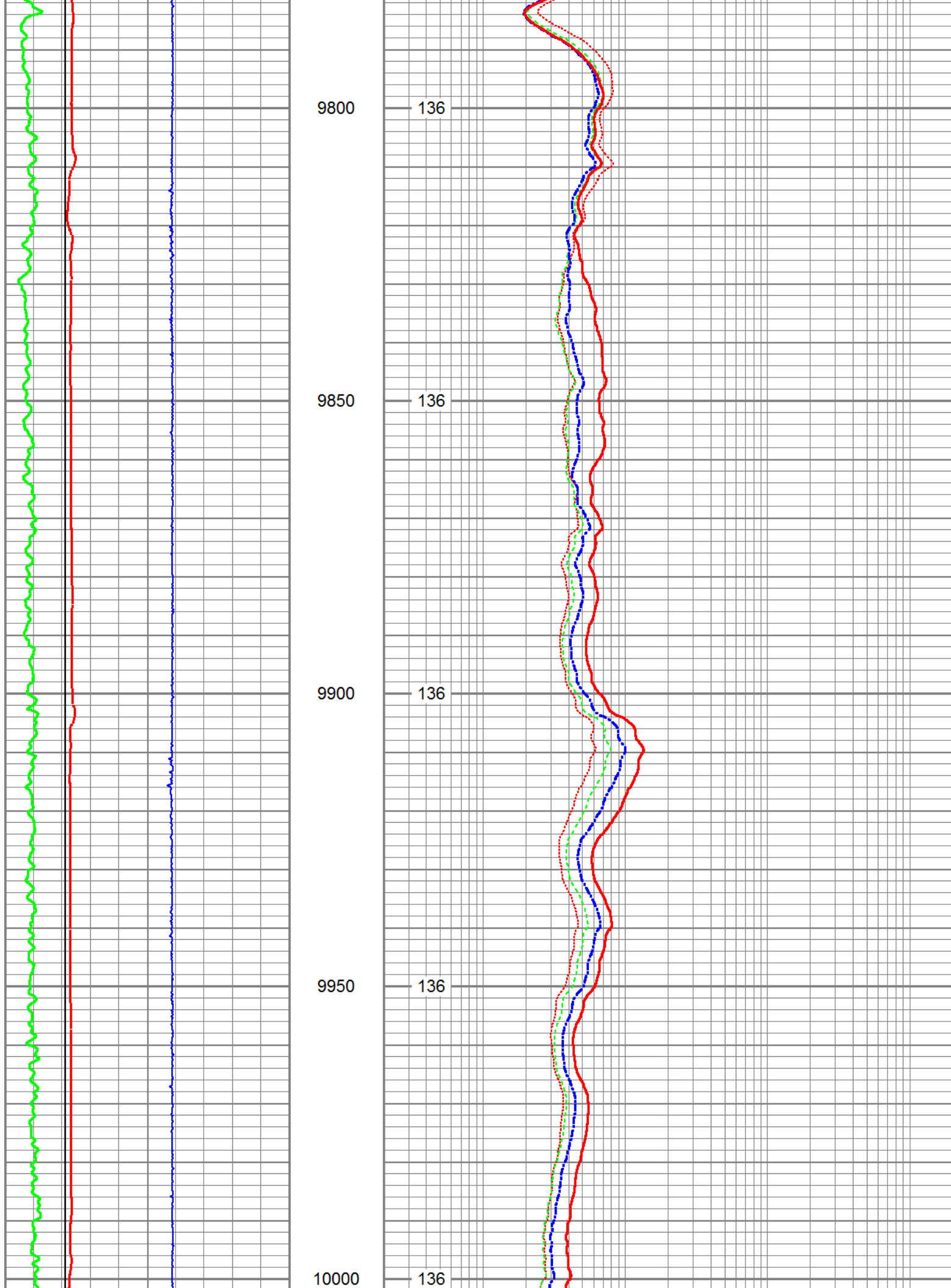
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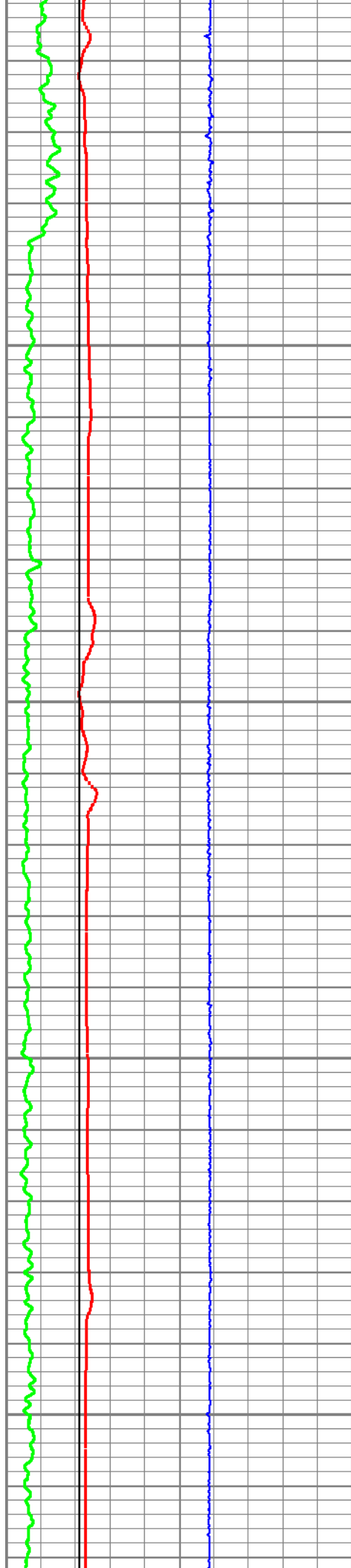
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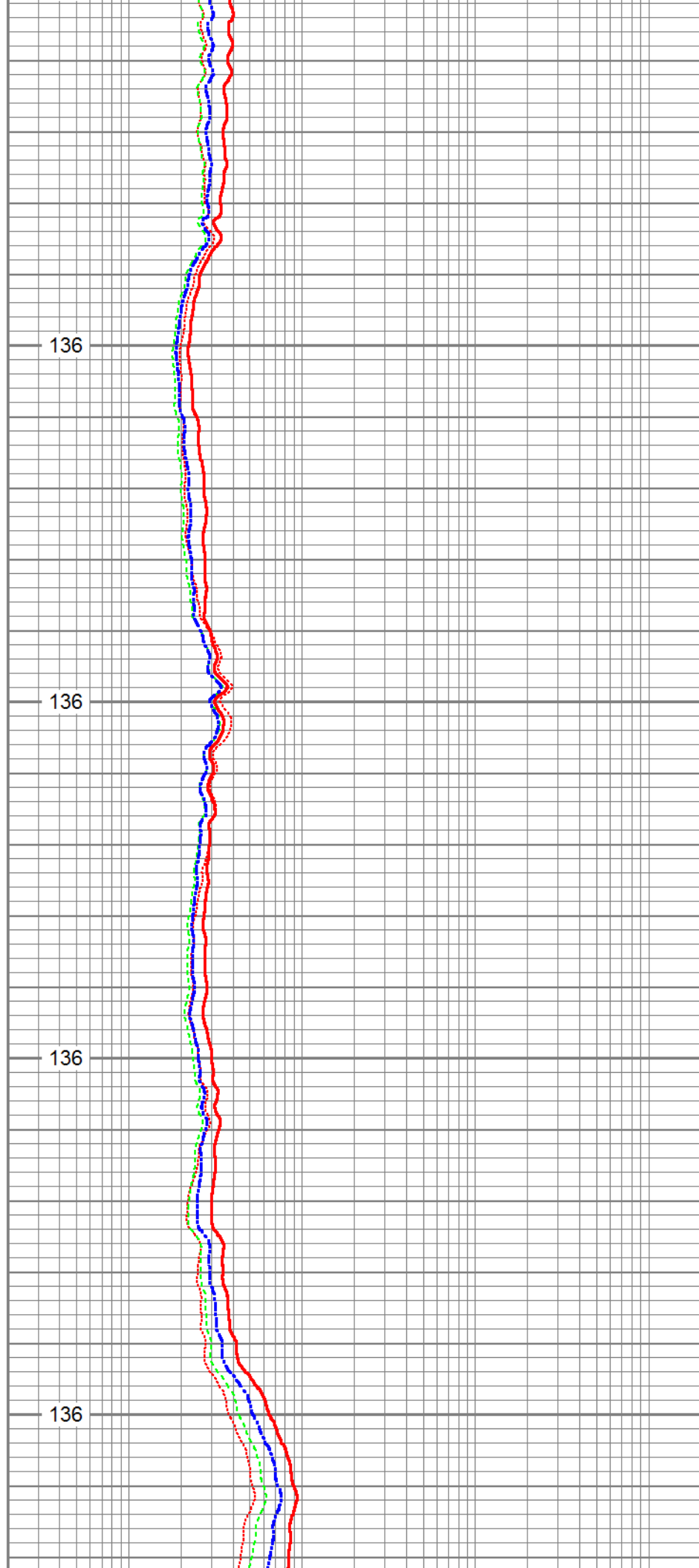
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10200

136





10250

136

10300

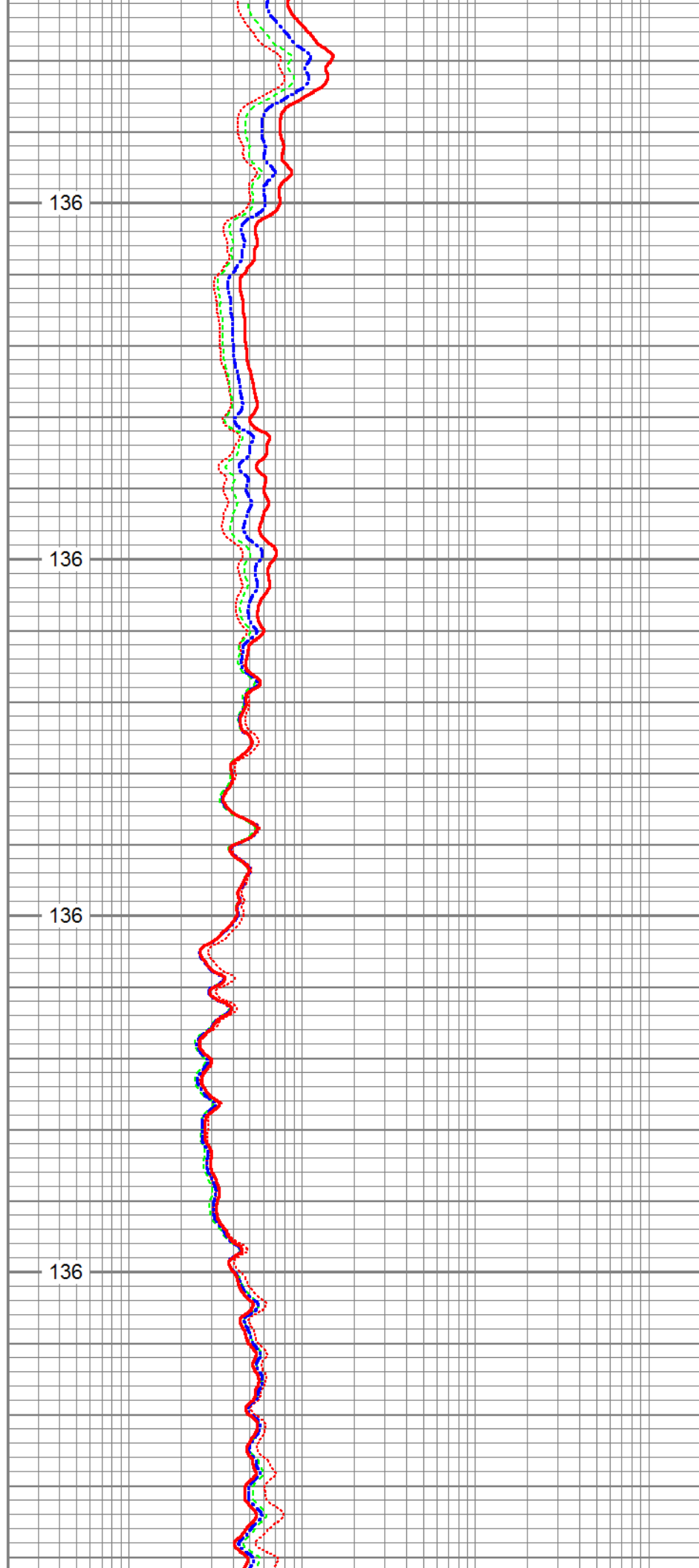
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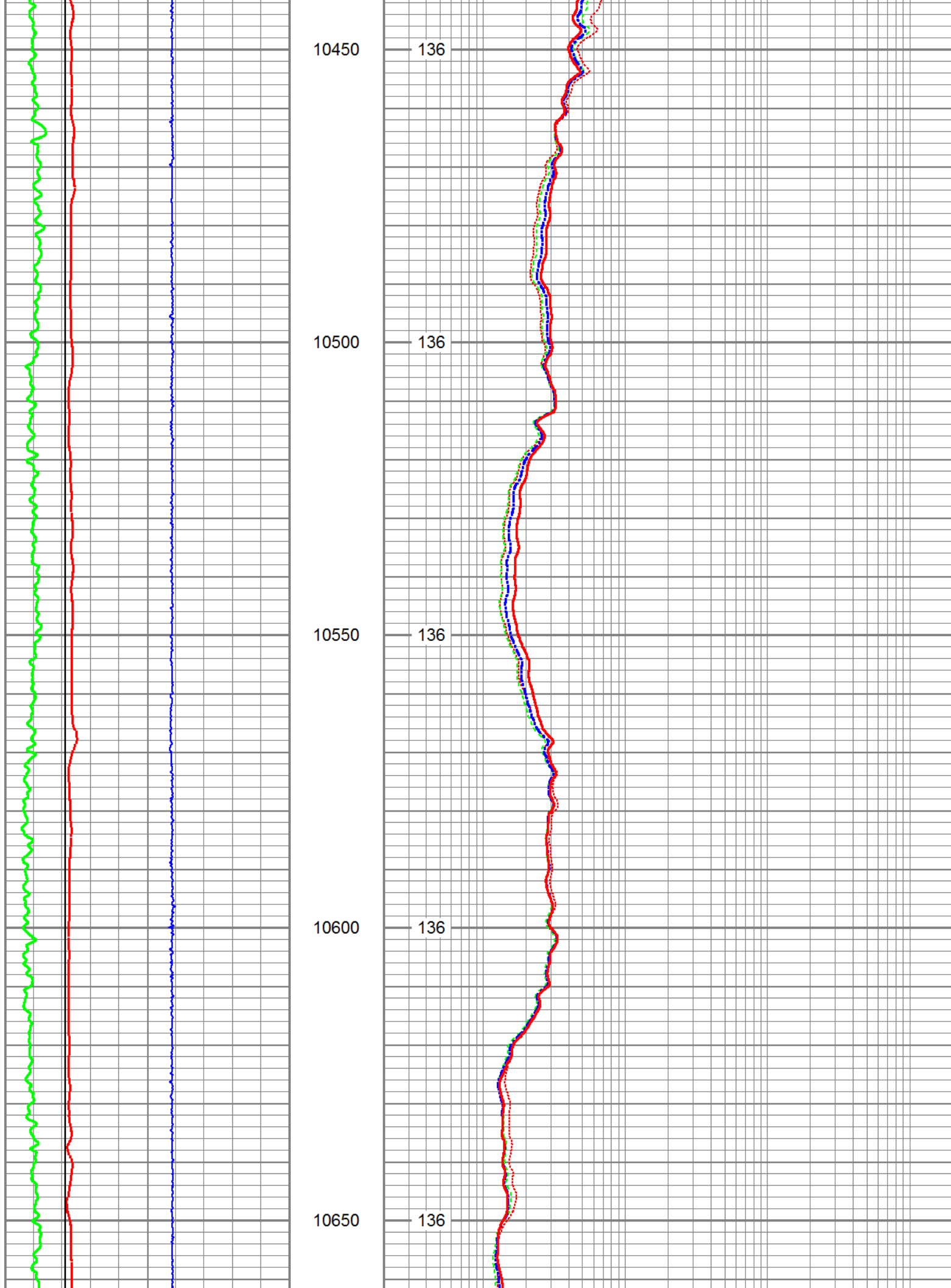
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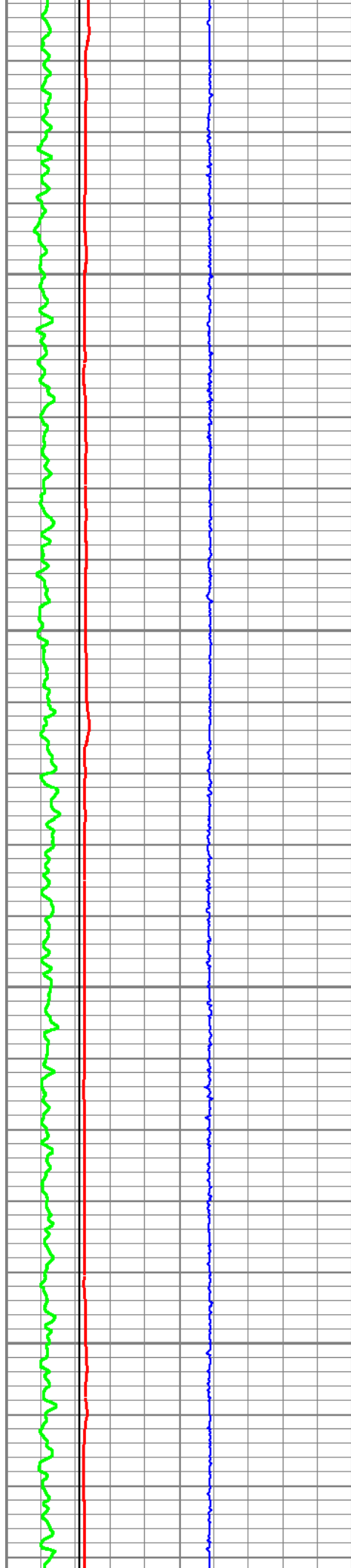
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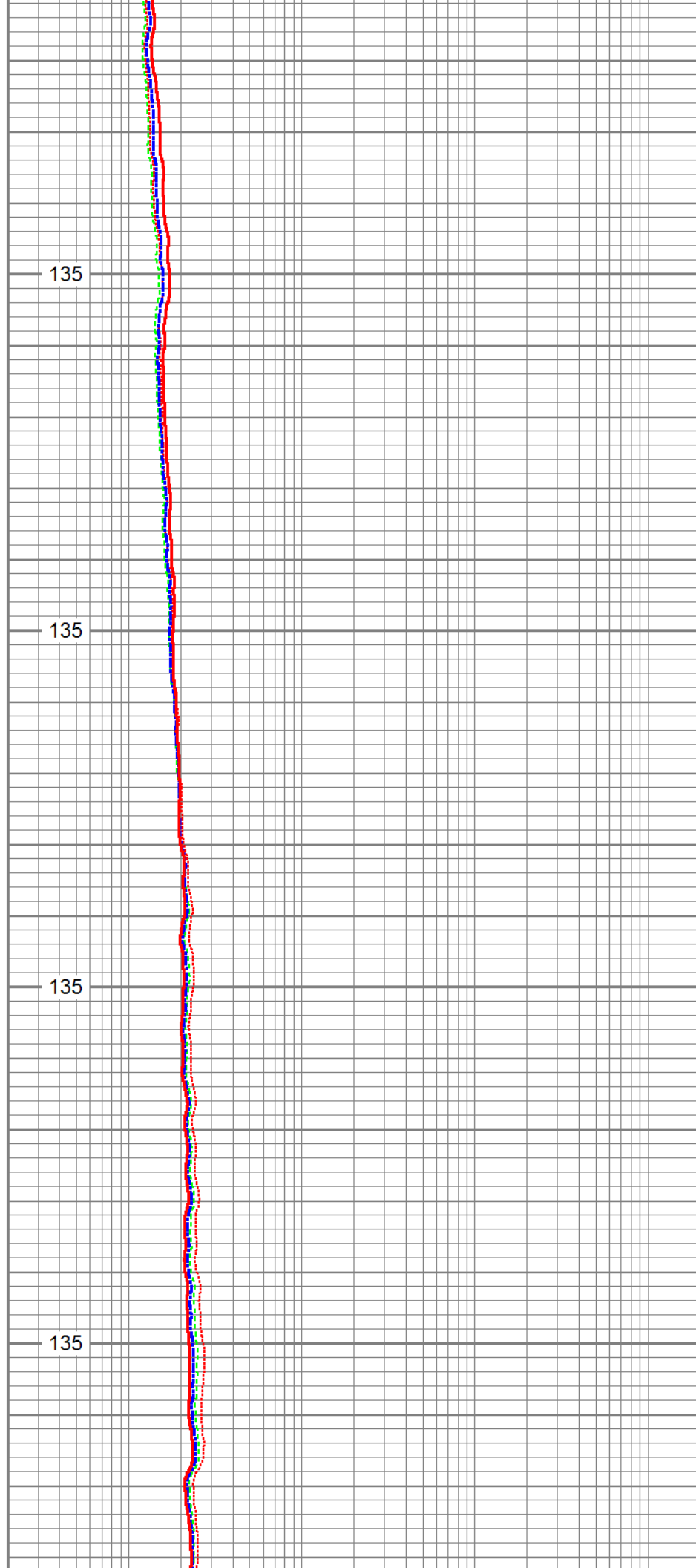
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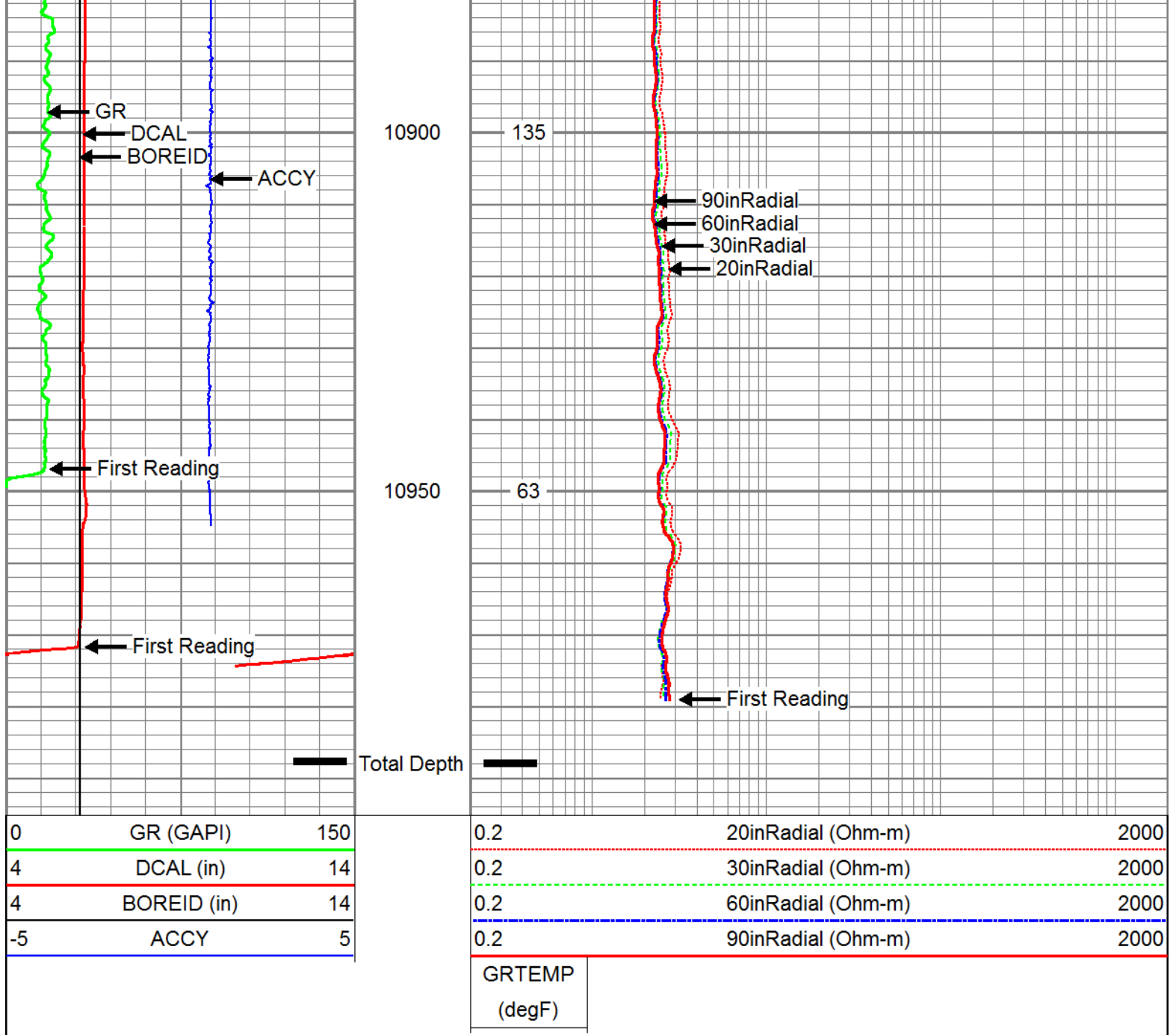
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135





Log Variables

Database: C:\Warrior\Data\sandridge_roark_mem.db
Dataset: field/well/proc1/pass1.2

Top - Bottom

BHCOR	BHFL_TYPE	BHFLRES	BHFLRESSRC	BHIDSRC	BOREID	BOTTEMP
On	WBM	Ohm-m	MUDCELL	CURVE	in	degF
		1			6.125	136
CASED?	CASEOD	CASETHCK	CEMWATERSA	CMNTTHCK	DPORSEL	FLUIDDEN
No	in	in	kppm	in	RHOB	g/cc
	4.5	0	0	0		1
FRMSALIN	LATNOR	MATRXDEN	MUDSALIN	MudWgt	NPORSEL	PERFS
kppm		g/cc	kppm	lb/gal	Limestone	
0	Off	2.71	2.4	8.5		0
RESTMPSRC	SO	SRFTEMP	SZCOR	TDEPTH	TMPCOR	TOOLPOS
INTERNAL	in	degF	On	ft	On	Free
	0.5	65		11024		

INTERVAL	0.5	0.5	0.5	0.5	0.5	0.5
XXXX						
0						

Calibration Report				
Database File:	sandridge_roark_mem.db			
Dataset Pathname:	proc1/pass1.2			
Dataset Creation:	Tue Dec 27 04:19:40 2011			
ThruBit Induction Calibration Report				
Tool Model-Serial Number:		PS-PS15R		
Shop Calibration Performed:		Thu Nov 10 09:38:49 2011		
BASELINE				
	R	Expected	X	Expected
Freq 1				
A1	-417.8250	[-500.00, -400.00]	329.9160	[-500.00, 500.00]
A2	-154.1520	[-180.00, -100.00]	320.8960	[-500.00, 500.00]
A3	-27.1791	[-50.00, -10.00]	118.0040	[-500.00, 500.00]
A4	-15.2621	[-30.00, -10.00]	210.8810	[-500.00, 500.00]
A5	-14.0909	[-30.00, -10.00]	133.3950	[-500.00, 500.00]
Freq 2				
A1	-208.6100	[-280.00, -180.00]	176.1060	[-500.00, 500.00]
A2	-101.0310	[-130.00, -50.00]	183.0740	[-500.00, 500.00]
A3	-19.9612	[-50.00, -10.00]	26.2084	[-500.00, 500.00]
A4	-19.1637	[-30.00, -10.00]	49.2072	[-500.00, 500.00]
A5	-18.9754	[-30.00, -10.00]	-9.8844	[-500.00, 500.00]
Freq 3				
A1	-126.1940	[-180.00, -80.00]	51.2481	[-500.00, 500.00]
A2	-76.5958	[-130.00, -30.00]	93.8526	[-500.00, 500.00]
A3	-15.9679	[-50.00, -10.00]	-37.2778	[-500.00, 500.00]
A4	-20.6942	[-30.00, -10.00]	-60.1132	[-500.00, 500.00]
A5	-21.3110	[-30.00, -10.00]	-114.0130	[-500.00, 500.00]
Freq 4				
A1	-65.8297	[-120.00, -40.00]	-133.1330	[-500.00, 500.00]
A2	-55.2755	[-110.00, -10.00]	-26.0355	[-500.00, 500.00]
A3	-12.8051	[-50.00, -10.00]	-131.6610	[-500.00, 500.00]
A4	-24.1008	[-30.00, -10.00]	-225.7640	[-500.00, 500.00]
A5	-26.9759	[-30.00, -10.00]	-289.0310	[-500.00, 500.00]

CALIBRATION COEFFICIENTS				
	R	Expected	X	Expected
Freq 1				
A1	0.9972	[0.95, 1.05]	-0.0025	[-0.05, 0.05]
A2	0.9886	[0.95, 1.05]	0.0011	[-0.05, 0.05]
A3	0.9949	[0.95, 1.05]	-0.0059	[-0.05, 0.05]
A4	0.9928	[0.95, 1.05]	0.0051	[-0.05, 0.05]
A5	0.9928	[0.95, 1.05]	0.0031	[-0.05, 0.05]

Freq 2				
A1	0.9917	[0.95, 1.05]	-0.0105	[-0.05, 0.05]
A2	0.9826	[0.95, 1.05]	-0.0076	[-0.05, 0.05]
A3	0.9830	[0.95, 1.05]	-0.0075	[-0.05, 0.05]
A4	0.9880	[0.95, 1.05]	-0.0041	[-0.05, 0.05]
A5	0.9882	[0.95, 1.05]	-0.0062	[-0.05, 0.05]
Freq 3				
A1	1.0045	[0.95, 1.05]	-0.0063	[-0.05, 0.05]
A2	0.9955	[0.95, 1.05]	-0.0036	[-0.05, 0.05]
A3	0.9959	[0.95, 1.05]	-0.0040	[-0.05, 0.05]
A4	1.0001	[0.95, 1.05]	-0.0007	[-0.05, 0.05]
A5	1.0004	[0.95, 1.05]	-0.0021	[-0.05, 0.05]
Freq 4				
A1	0.9953	[0.95, 1.05]	-0.0067	[-0.05, 0.05]
A2	0.9866	[0.95, 1.05]	-0.0043	[-0.05, 0.05]
A3	0.9893	[0.95, 1.05]	-0.0066	[-0.05, 0.05]
A4	0.9924	[0.95, 1.05]	-0.0017	[-0.05, 0.05]
A5	0.9960	[0.95, 1.05]	-0.0048	[-0.05, 0.05]
Temperature	18.0181 degC			

ThruBit Density Calibration Report

Tool Model-Serial Number: PS-PS43D

Source Number:

Shop Calibration Performed: Tue Dec 13 10:45:08 2011

REFERENCE

	Density	Units
Aluminium	2.607	g/cc
Magnesium	1.752	g/cc

READINGS

Outputs	Counts	Units	Expected
SS1 Background	141.87	cps	[130.00, 170.00]
LS1 Background	146.11	cps	[130.00, 170.00]
LS4 Background	30.60	cps	[27.00, 35.00]
SS1 Aluminium	4523.56	cps	[4500.00, 5500.00]
LS1 Aluminium	911.31	cps	[750.00, 950.00]
LS4 Aluminium	984.60	cps	[843.00, 1068.00]
SS1 Magnesium	7532.66	cps	[7000.00, 9000.00]
LS1 Magnesium	5978.32	cps	[5250.00, 6250.00]
LS1 Al + Fe	777.64	cps	[650.00, 800.00]
LS4 Al + Fe	437.33	cps	[382.00, 471.00]

RESULTS

SS Slope	1.64	[1.52, 1.77]
LS Slope	0.42	[0.38, 0.45]
PEF K Factor	4.878	[3.510, 6.170]
PEF B Factor	-0.499	[-0.700, -0.410]

RESULTS

Reference	Reading	Units
12.00	1880.20	in
9.00	2035.44	in
6.00	2192.23	in

DENSITY PRE-SURVEY CHECK Performed:

Mon Dec 26 14:02:59 2011

Outputs	Counts	Units	Expected
SS1 Background	142.73	cps	[137.62, 146.13]
LS1 Background	148.09	cps	[141.73, 150.49]
LS4 Background	33.73	cps	[28.77, 32.44]

CALIPER PRE-SURVEY CHECK Performed:

Tue Dec 20 11:03:38 2011

Reference	Readings	Units	Expected
6.00	6.01	in	[5.80, 6.20]

Compensated Neutron Calibration Report

Tool Model-Serial Number:
Source Number:

PS-PS05N

Calibration Tank Temperature:
Shop Calibration Performed:

59.6 degF
Sat Dec 10 11:01:18 2011

BACKGROUND MEASUREMENT

Outputs	Measured	Units	Expected
SS Counts	0.0	cps	<10
LS Counts	0.0	cps	<4

WATER TANK REFERENCE

Outputs	Measured	Units	Expected
SS Counts	3620.8	cps	
LS Counts	120.0	cps	
Tank Ratio Ref	30.9580	SS/LS	
Tank Ratio	30.1801	SS/LS	
Tank Ratio Gain	1.0258		[0.85, 1.15]

ALUMINUM SLEEVE REFERENCE

Outputs	Measured	Units	Expected
SS Counts	41289.3	cps	
LS Counts	2866.0	cps	

LS Counts	3888.0	cps	
AI Ratio Ref	10.797	SS/LS	
AI Ratio	10.955	SS/LS	
AI Ratio Gain	0.99		[0.90, 1.10]
Sleeve Porosity	14.46	pu	

PRE-SURVEY BACKGROUND CHECK Performed:		Mon Dec 26 14:08:03 2011	
Outputs	Measured	Units	Expected
SS Counts	4.5	cps	<10
LS Counts	10.7	cps	<4

Gamma Ray Calibration Report			
Tool Model-Serial Number:	PS-PS09T		
Performed:	Sat Dec 10 11:22:08 2011		
Calibrator Value:	162.7	GAPI	
Background Reading:	72.7	cps	
Calibrator Reading:	442.7	cps	
Sensitivity:	0.3757	GAPI/cps	

Inclinometer Calibration Report					
Performed:	Sun Jun 13 14:33:21 1993				
	Low Read.	High Read.	Low Ref.	High Ref.	
X Accelerometer	0.00	1.00	0.00	1.00	gee
Y Accelerometer	0.00	1.00	0.00	1.00	gee
Z Accelerometer	0.00	1.00	0.00	1.00	gee

Sensor	Offset (ft)	Schematic	Description	Len (ft)	OD (in)	Wt (lb)
Thrubit	66.92		Cablehead-S	2.31	2.13	5.00
Thrubit	64.61		Solid Weakpoint			
			PSBDOT	3.87	2.25	35.00
Thrubit	60.75		HangOff_Tool	5.00	2.38	60.00
Thrubit	55.75		Universal Joint	1.46	2.06	15.00
Thrubit	54.29		10-1	0.88	2.13	3.95
TBBAT	53.41		TBBAT-A (PS07B) Thrubit Battery	6.13	2.13	38.20

TBBAT2	47.29			TBBAT2-A (PS10B) ThruBit Battery	6.13	2.13	40.00
TMG	41.16						
GR	41.04						
GRTEMP	40.20			TMG-PS (PS09T) ThruBit Telemetry Gamma Ray	6.13	2.13	45.00
ThruBit	35.04			Decentralizer Decentralizer (Small)	4.50	2.13	70.00
CNLSC	28.60			TBN-PS (PS05N) ThruBit Neutron	4.77	2.13	63.00
LSW1	18.04			TBD-PS (PS43D) ThruBit Density	10.48	2.13	91.00
DCAL	17.13						
A1_P	10.60						
A2_P	10.10						
A3_P	9.35						
A4_P	8.35			TBI-PS (PS15R) ThruBit Induction	15.29	2.13	94.00
A5_P	6.60						
Dataset: sandridge_roark_mem.db: field/well/proc1/pass1.2 Total Length: 66.92 ft Total Weight: 560.15 lb O.D.: 2.38 in							

	Company	SANDRIDGE ENERGY
	Well	ROARK 1-31H
	Field	WALDRON
	County	BARBER
	State	KANSAS

		MAIN PASS
Database File:	sandridge_roark_mem.db	
Dataset Pathname:	proc1/pass1.2	
Presentation Format:	chespk1r	
Dataset Creation:	Tue Dec 27 04:19:40 2011	

0	GR (GAPI)	150
4	DCAL (in)	14

GRTEMP
(degF)

20in 2ft Res	
50 (Ohm-m)	500

90in 2ft Res	
50 (Ohm-m)	500

1000 DEEP COND (mmho/m) 0

20in 2ft Res	
0 (Ohm-m)	50

90in 2ft Res	
0 (Ohm-m)	50

