


<div></div> <div>PHOENIX TECHNOLOGY SERVICES</div>		MD 1:240 Feet	
Client: Whiting Oil and Gas		MWD Gamma / ROP (5")	
Well Name: Horsetail 07F-1839			
UWID: 05-123-41771			
Licence #: 15-1782			
Province: Colorado		Country: USA	
Surface Location: Sec. 7 T10N R57W			
Longitude: 103° 47' 45.398 W Latitude: 40° 51' 13.47 N		Personnel	
Rig Name: Unit 406 Job Number: 60006 Ground Level: 4919.00 ft Kelly Bushing: 4940.00 ft Permanent Datum: Mean Sea Level Drilling Measured From: Kelly Bushing Spud Date: March 25, 2016 Bottom Hole Temp: 230.1 °F Log Start Depth: 0.00 ft Log End Depth: 14250.00 ft Data Start Depth (MD): 181.85 ft Data End Depth (MD): 14214.97 ft		Company Representative Kyle Renton  Geologist  Directional Driller(s) Martin Leafstedt  MWD Operator(s) Jason DuBose Casey Beavers	
Reference Data			
North Reference: True North Magnetic Declination: 7.44 Total Mag. Correction: 7.44			
Comments:		Leg Name  Main Leg	
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Operational Run Summary

60006

	Run 1	Run 2	Run 3			
Run Start Depth (ft)	0.00	2025.62	12155.57			
Run End Depth (ft)	2025.62	12155.57	14214.97			
Run Start Date	3/25/2016	3/26/2016	3/29/2016			
Run Start Time	6:41 AM	3:52 AM	10:40 AM			
Run End Date	3/25/2016	3/28/2016	3/30/2016			
Run End Time	12:35 PM	9:45 PM	8:39 AM			

Tool Information Summary

60006

	Run 1	Run 2	Run 3			
Gamma Probe Serial No	EGNF0034	EGNF0080	EGNF0034			
Probe Cal Ratio	1	1	1			
Gamma Scale Factor	2.85	2.85	2.85			
Tool Carrier ID (in)	4.430	4.430	4.430			
Tool Carrier OD (in)	6.630	6.630	6.630			
Survey-to-Bit (PTB) (ft)	52.23	50.30	49.11			
Gamma-to-Bit (GTB) (ft)	51.04	49.11	47.92			
Annular Pressure-to-Bit (APTB) (ft)	0.00	0.00	0.00			

Borehole Fluids and Measurements Summary

60006

	Run 1	Run 2	Run 3			
Hole Size (in)	13.50	13.50	8.50			
Casing Start Depth (ft)	0.00	0.00	0.00			
Casing End Depth (ft)	0.00	1993.00	1993.00			
Casing ID Size (in)	0.000	13.625	0.625			

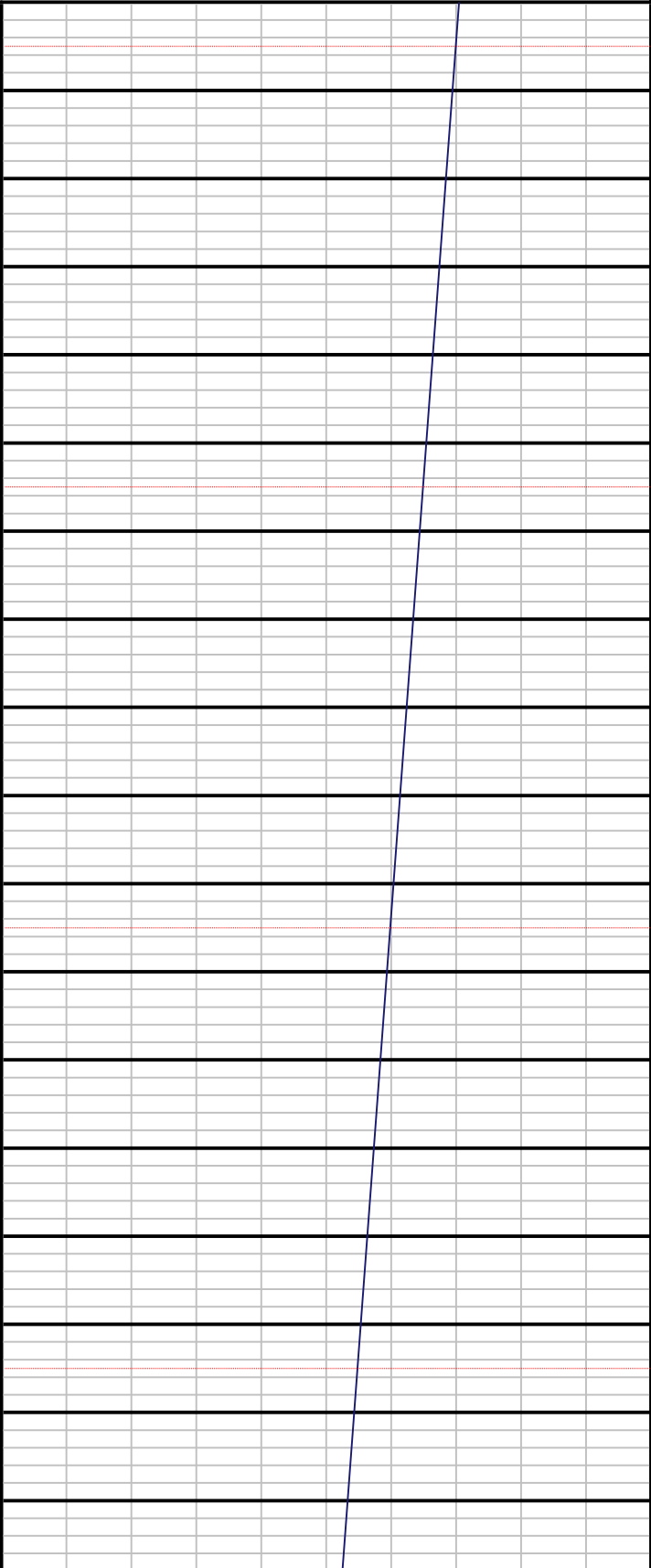
Casing Size (in)	0.000	12.625	9.625			
Mud Type	Fresh Water	Brine	Fresh Water			
Mud Weight (lb/gal)	8.6	8.6	10.0			
Mud Viscosity (s)	28	28	40			
Weighting Agent	Barite	Light Mud	Light Mud			
Mud KCL Content (%)	0.000	0.000	0.000			

Log

1:240

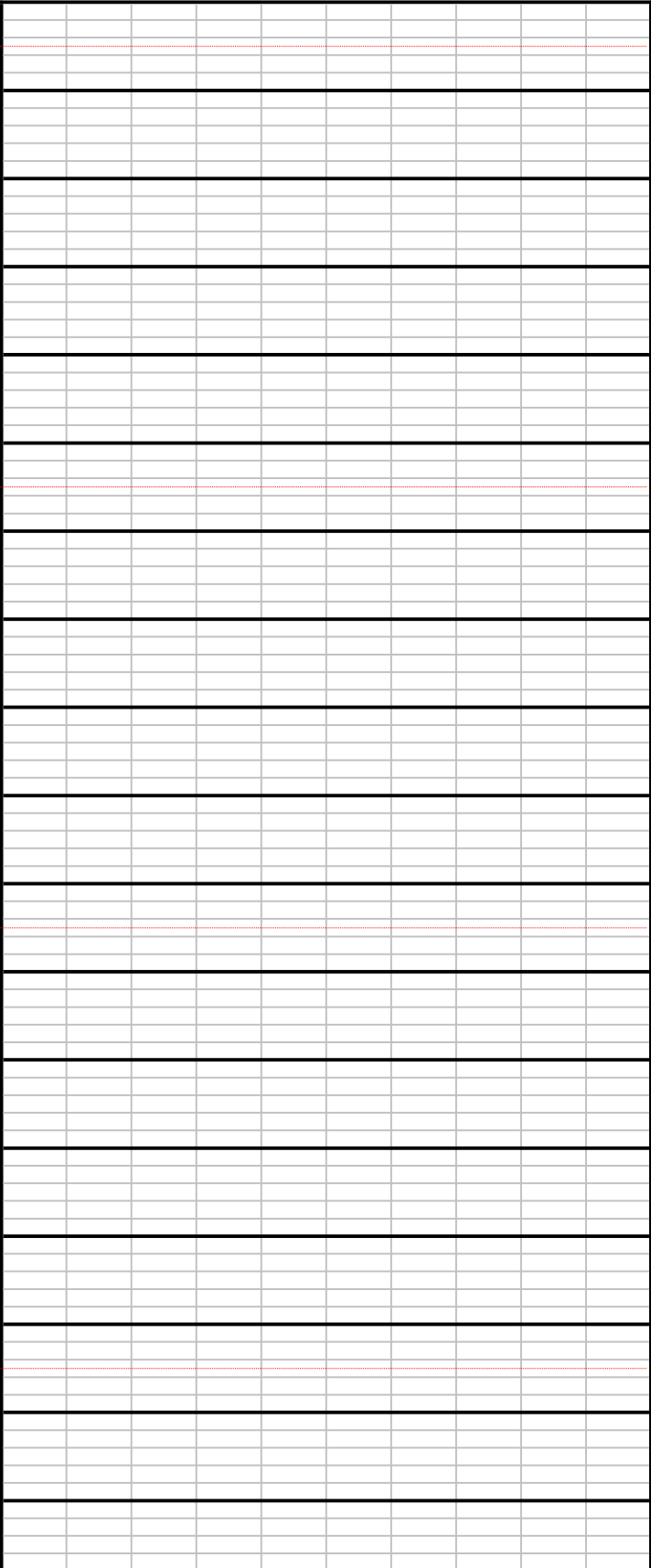
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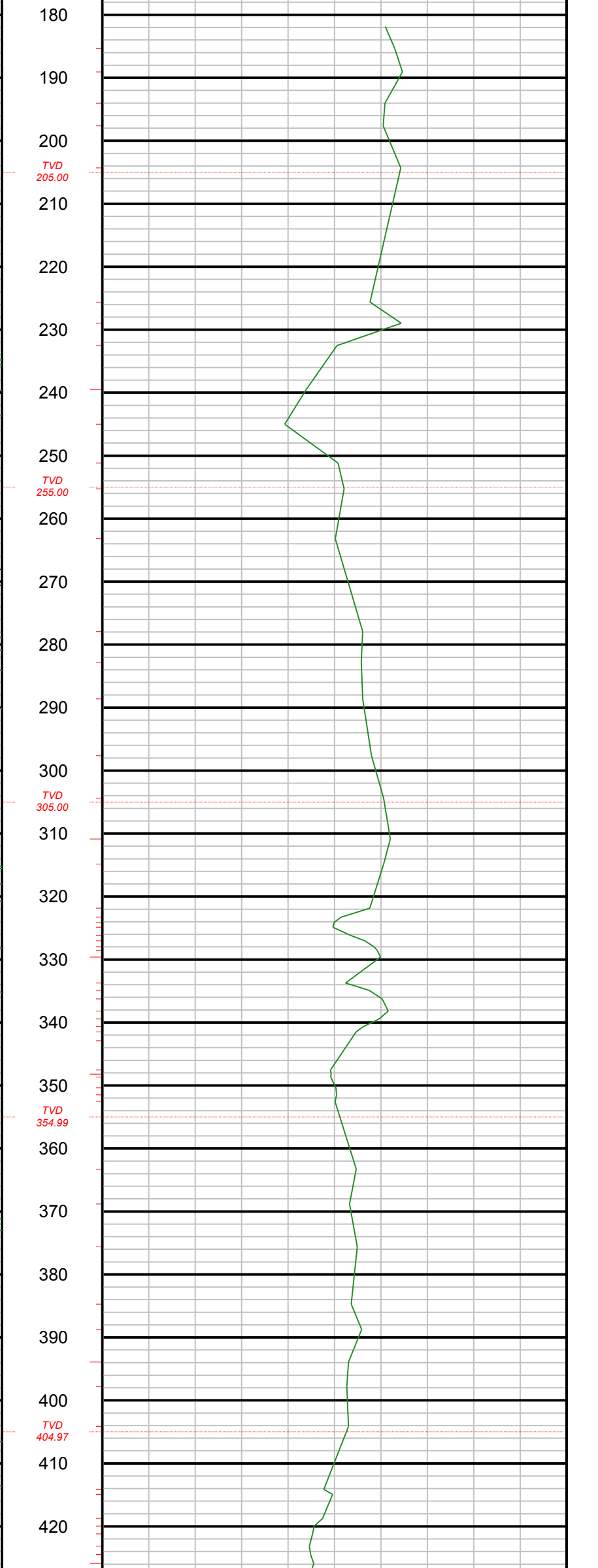
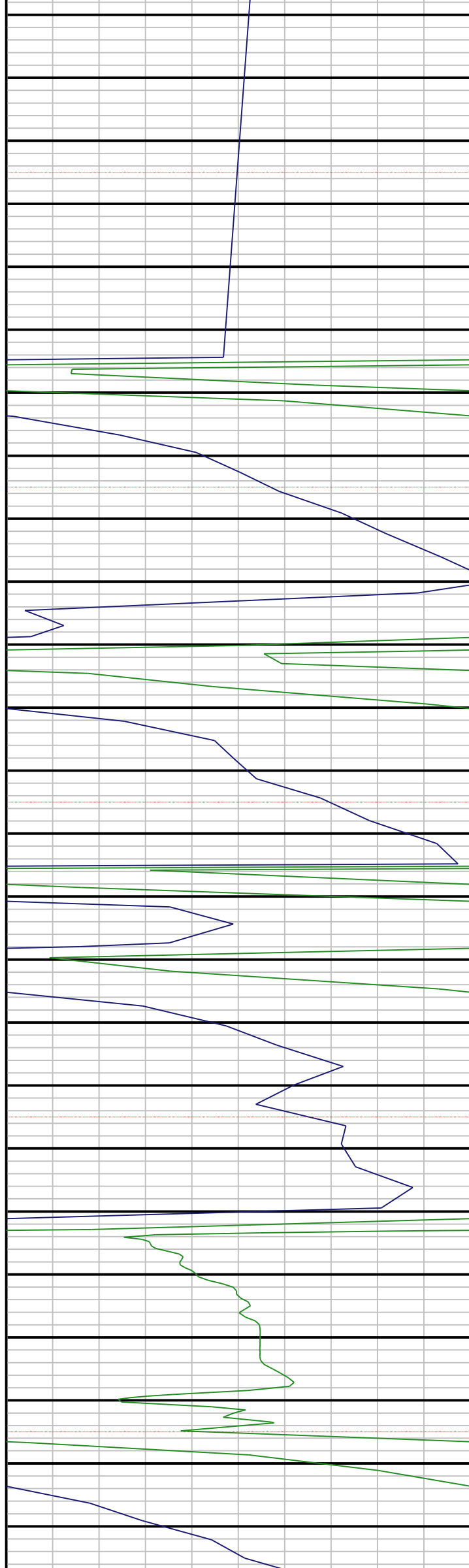
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ROP	ROP
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ROP	ROP
800	1200

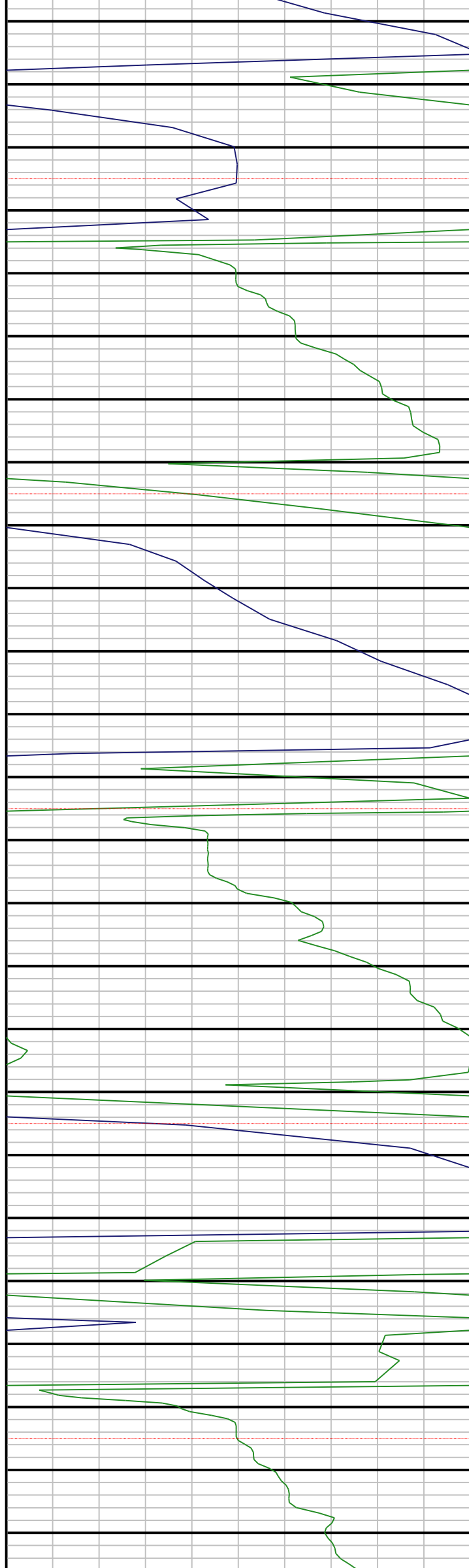


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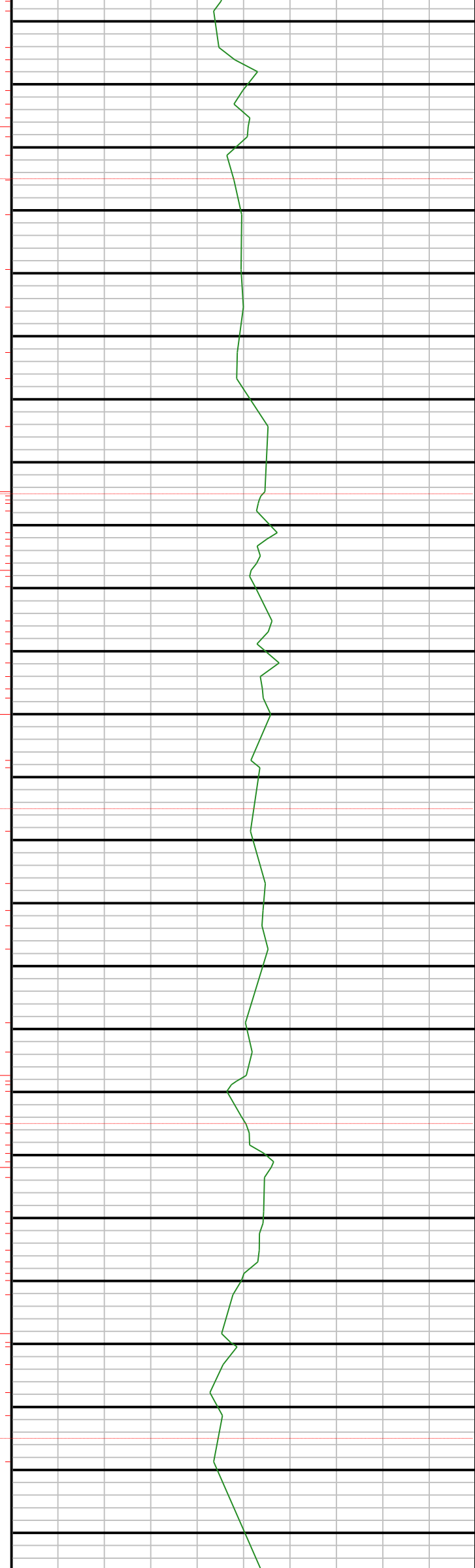


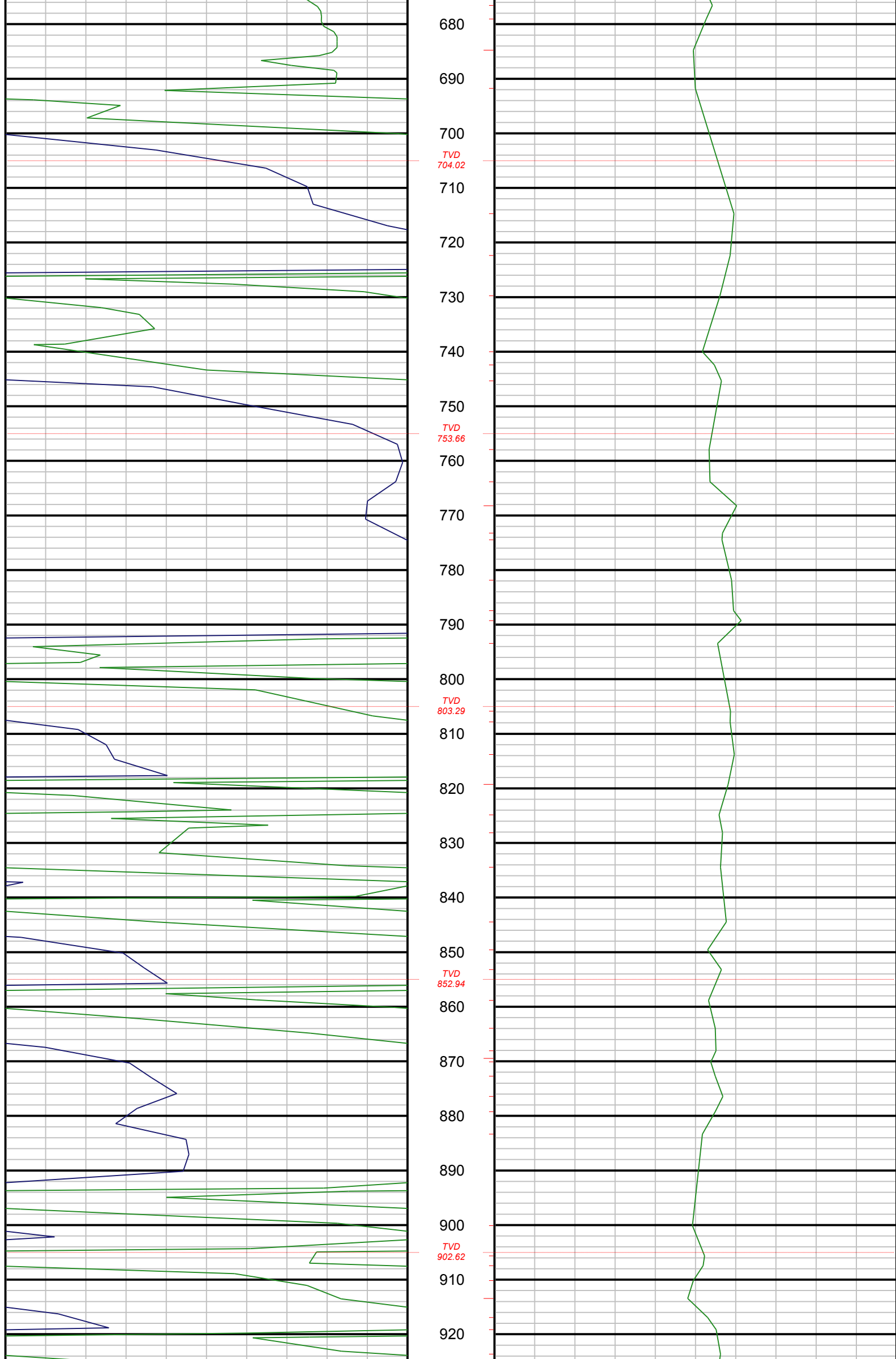


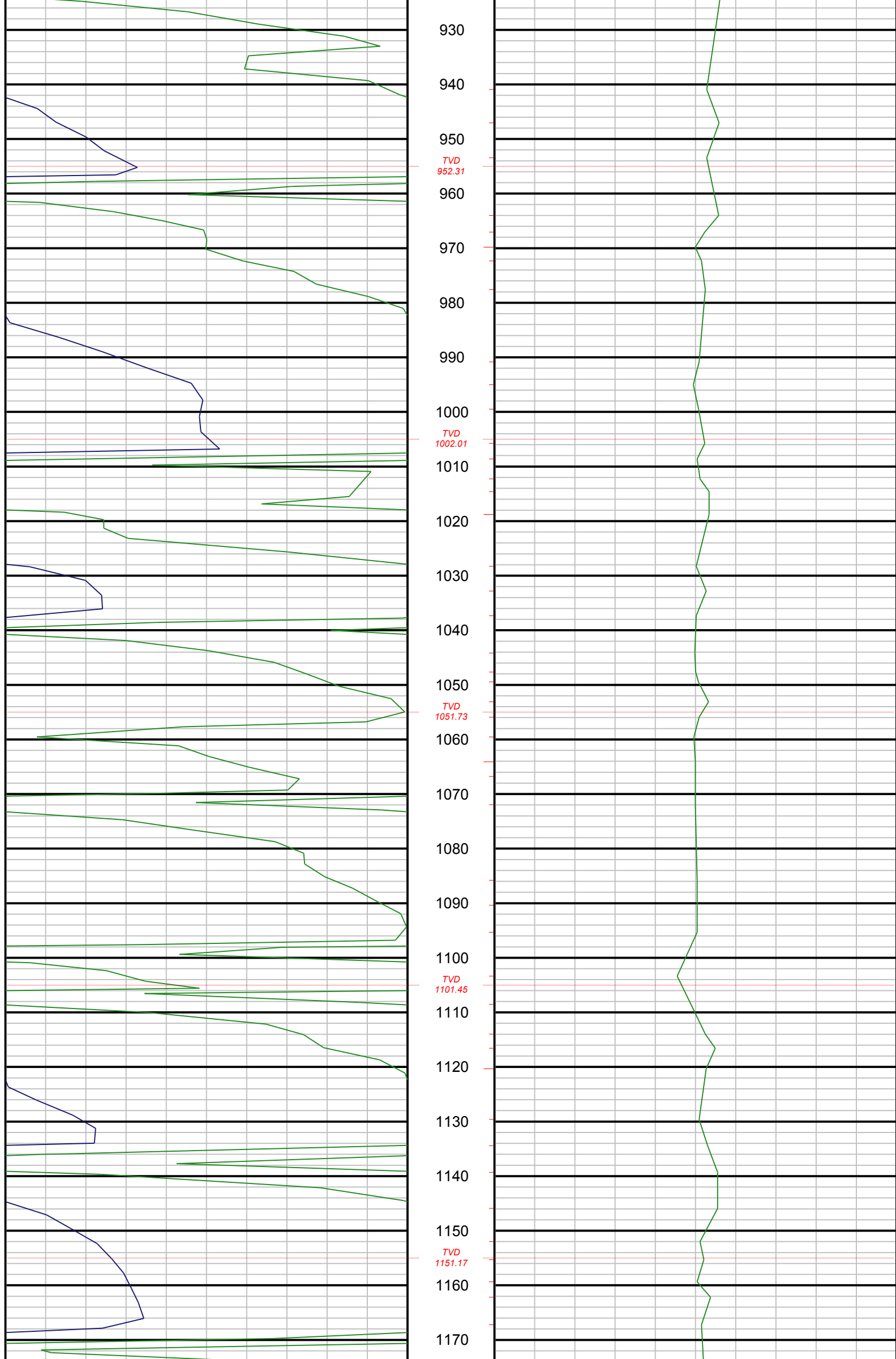


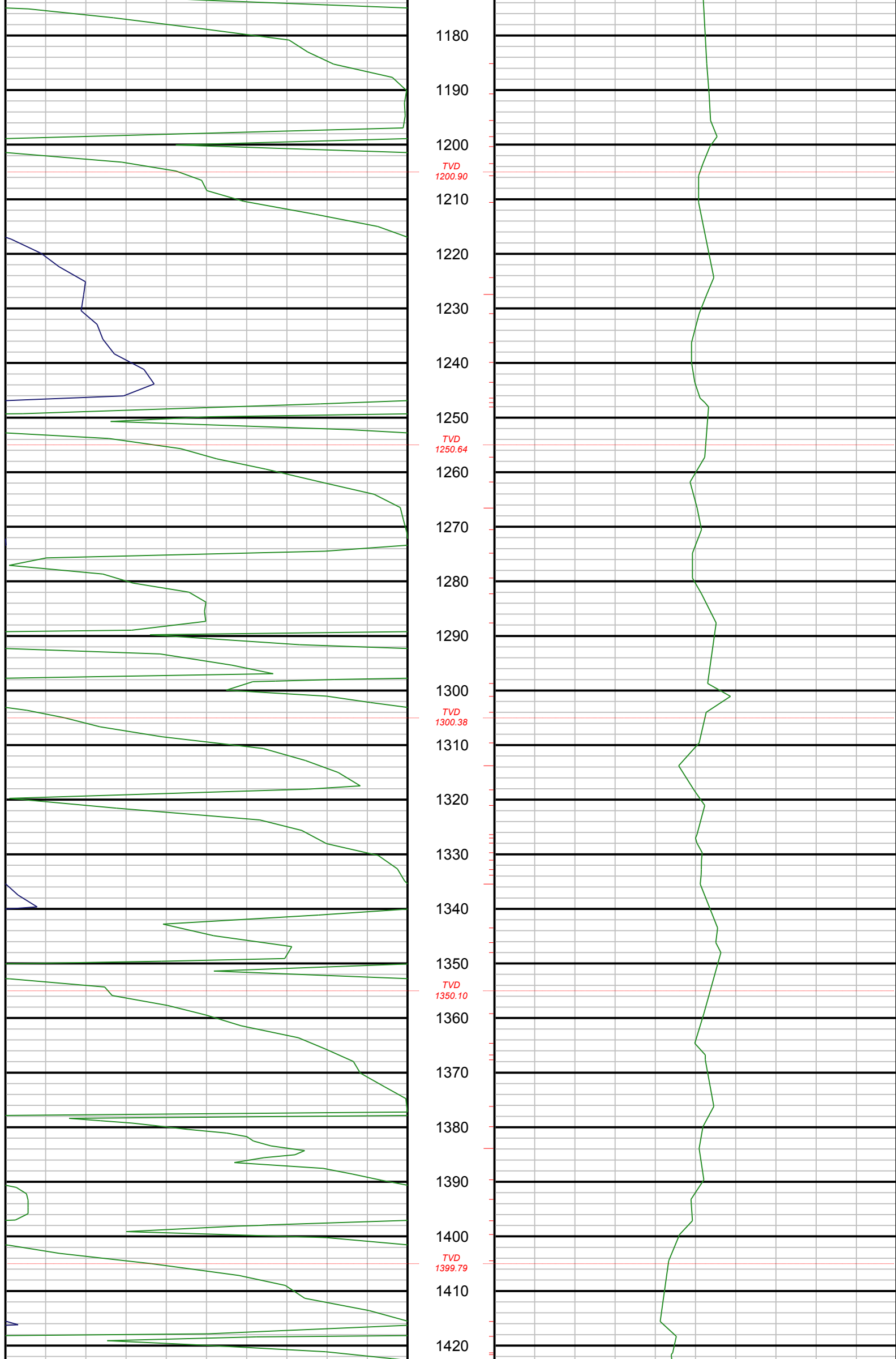
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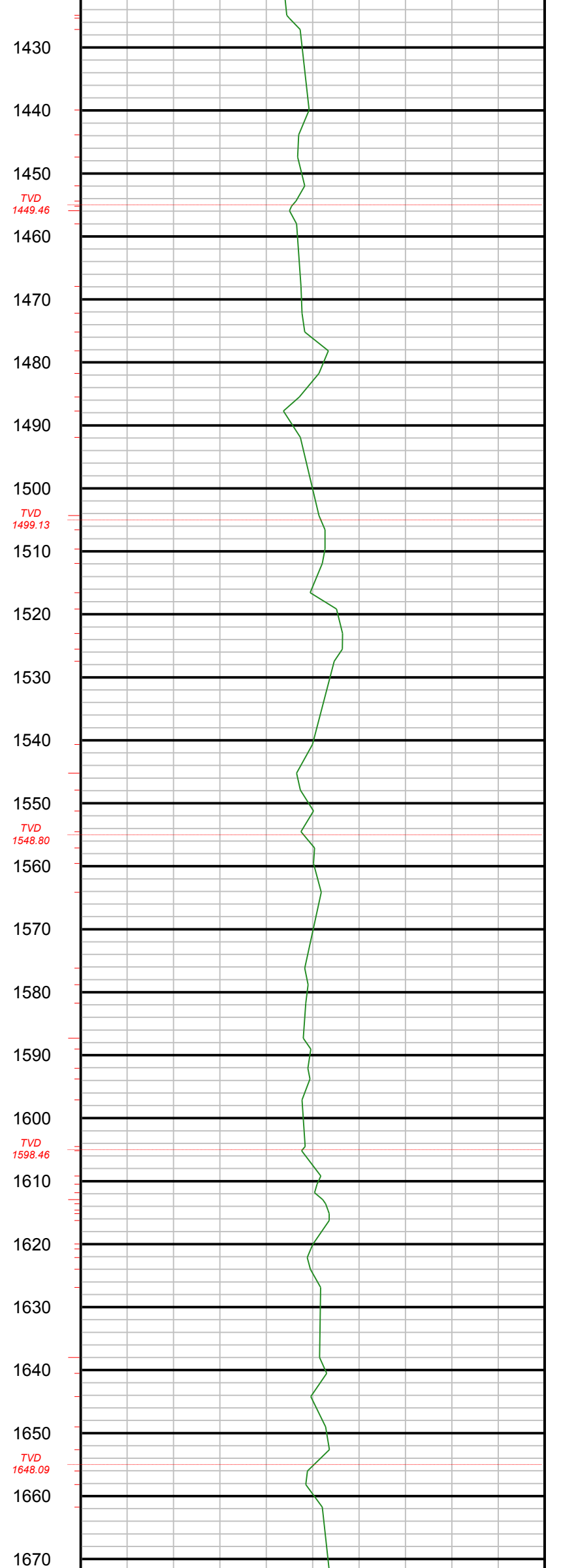
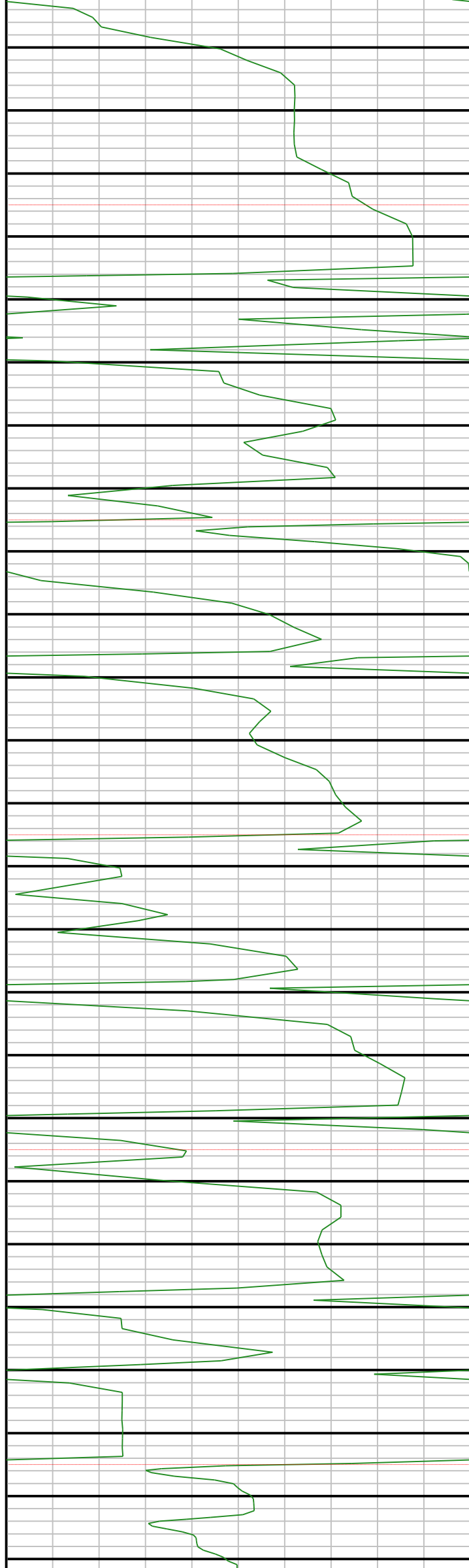
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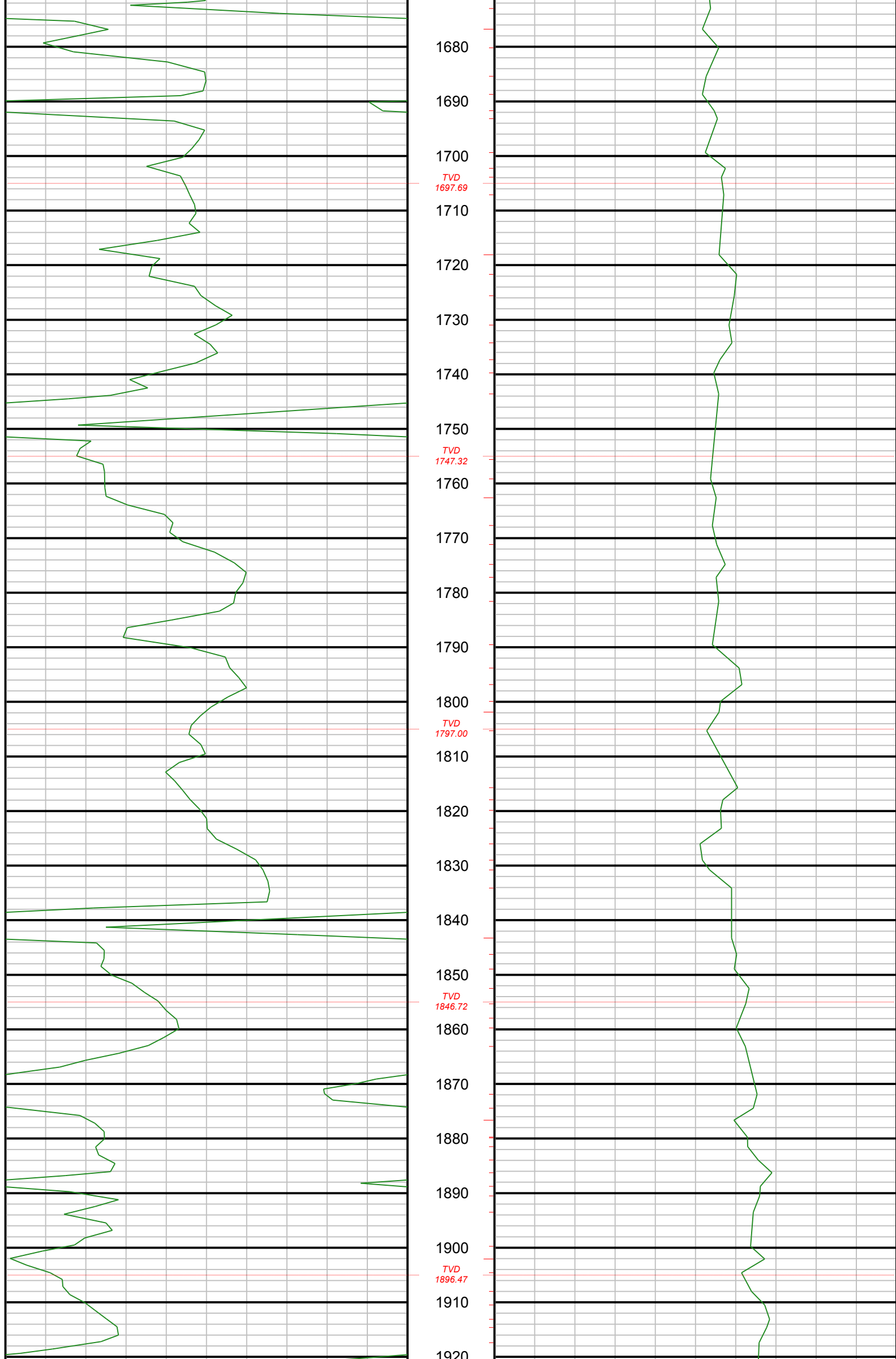


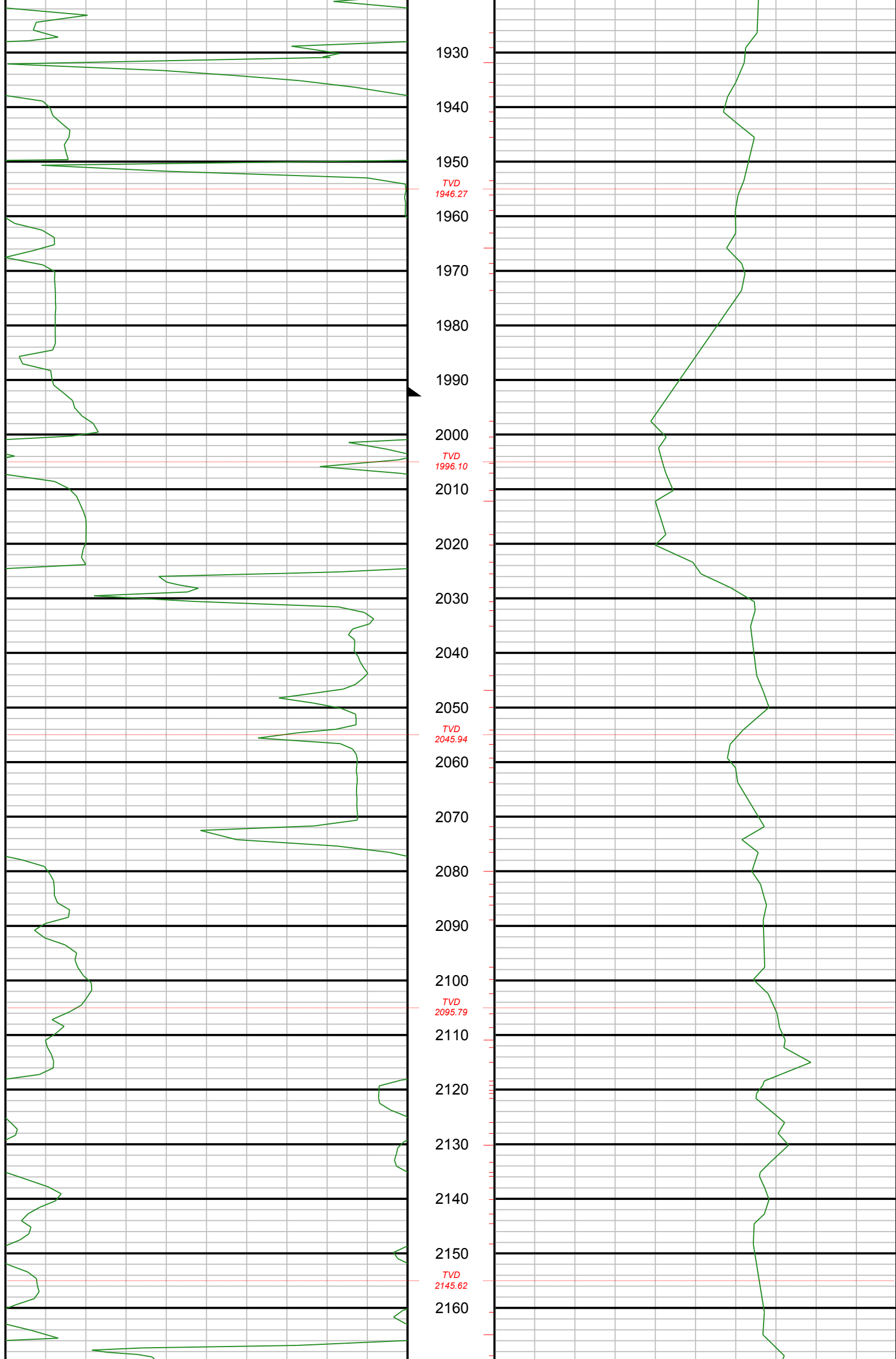




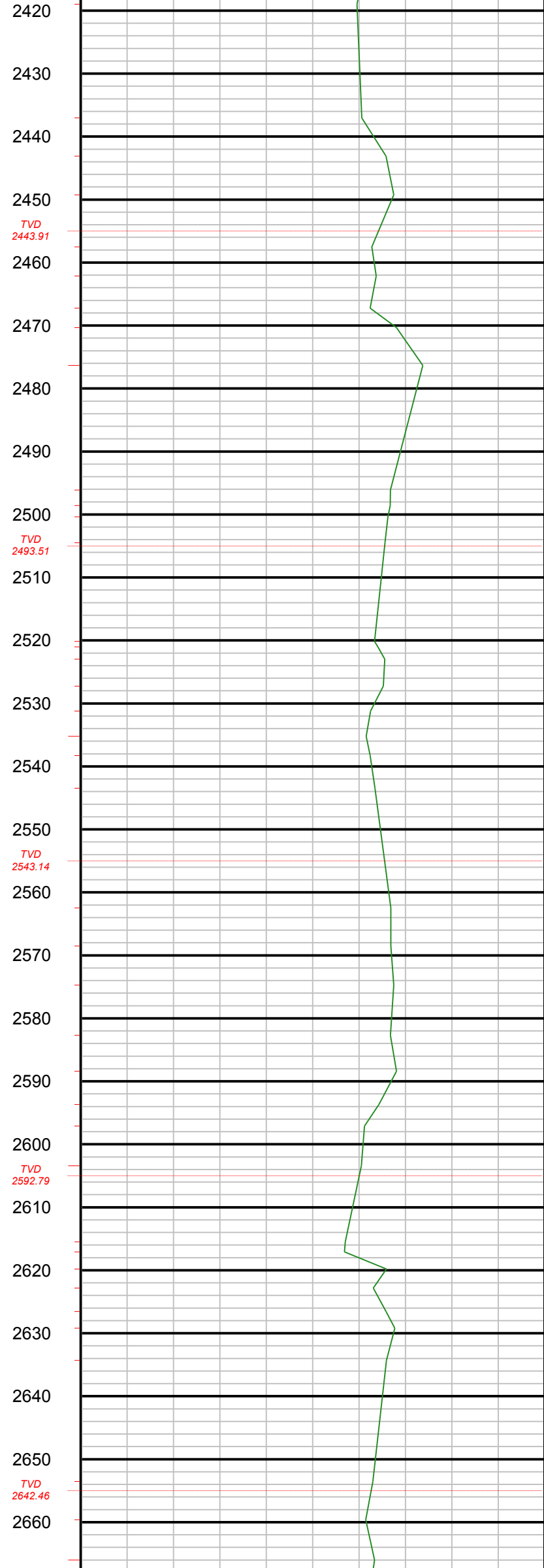
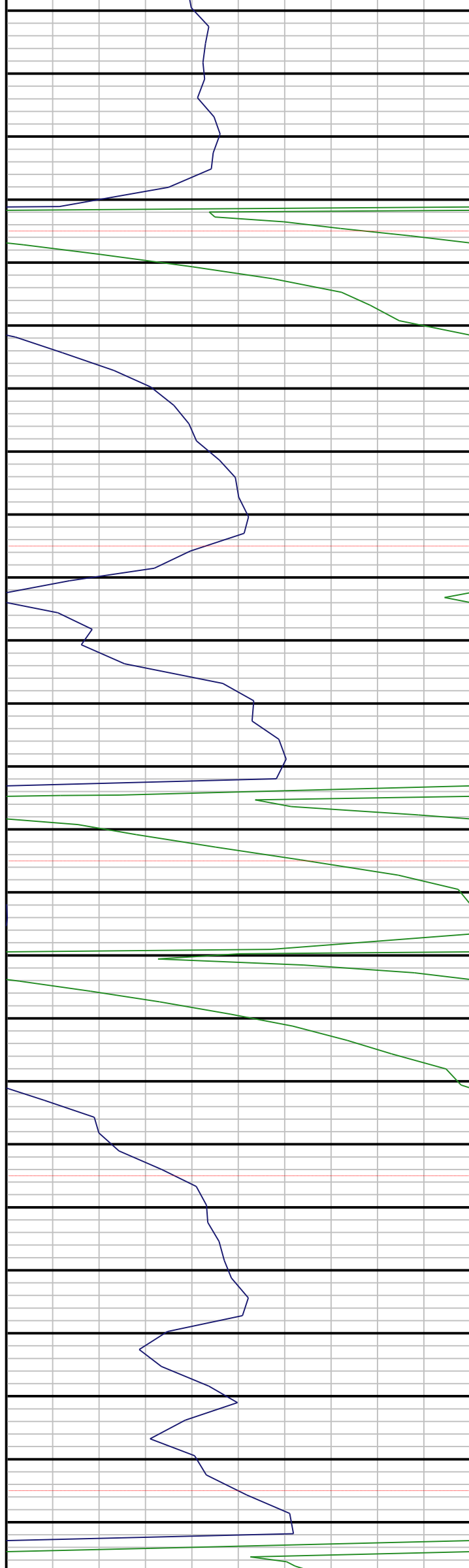


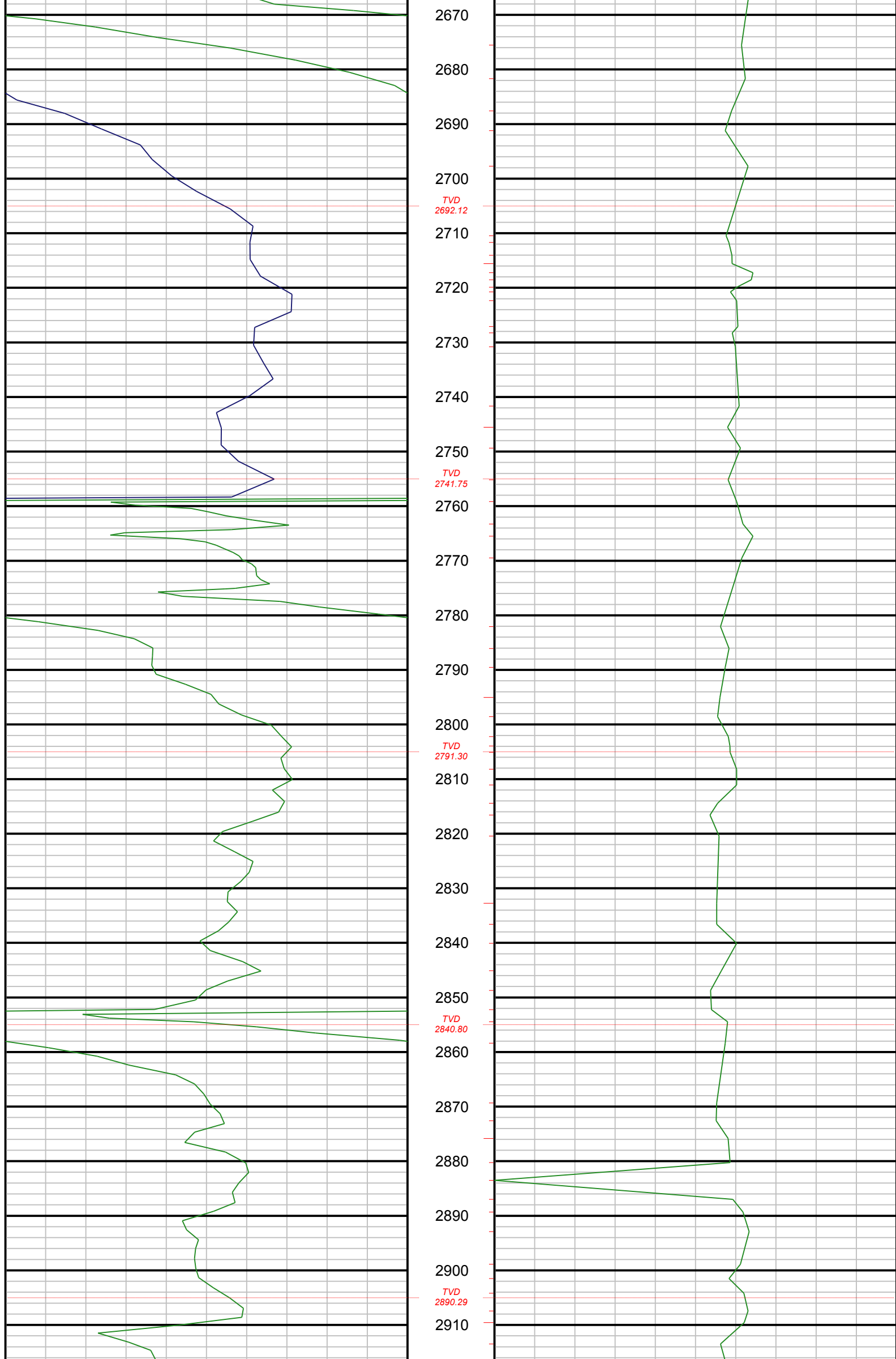


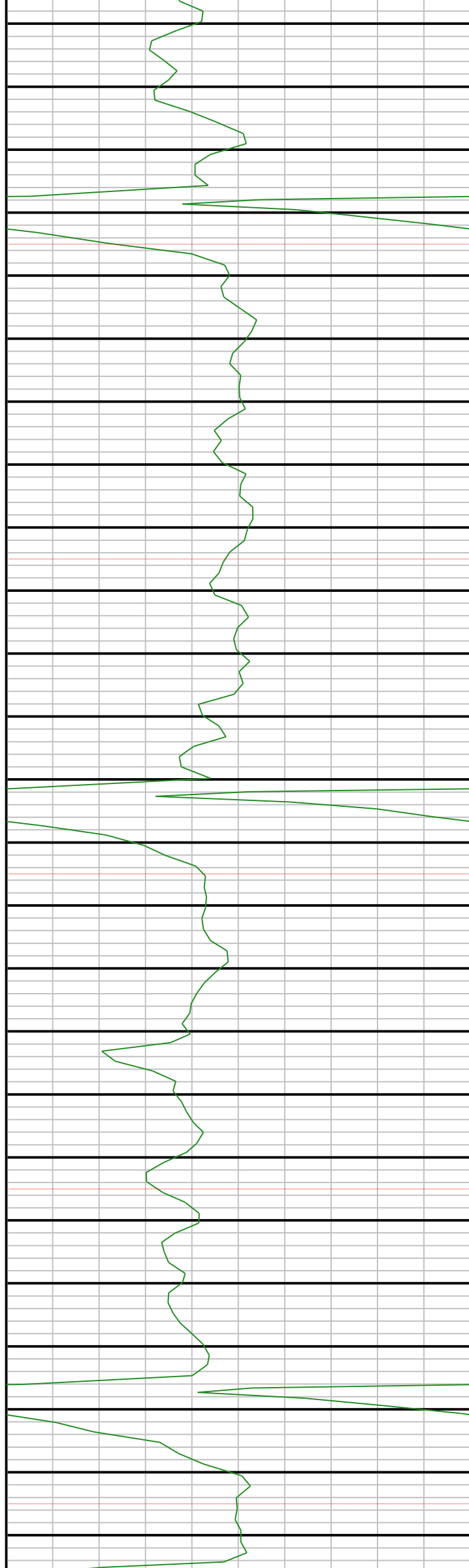












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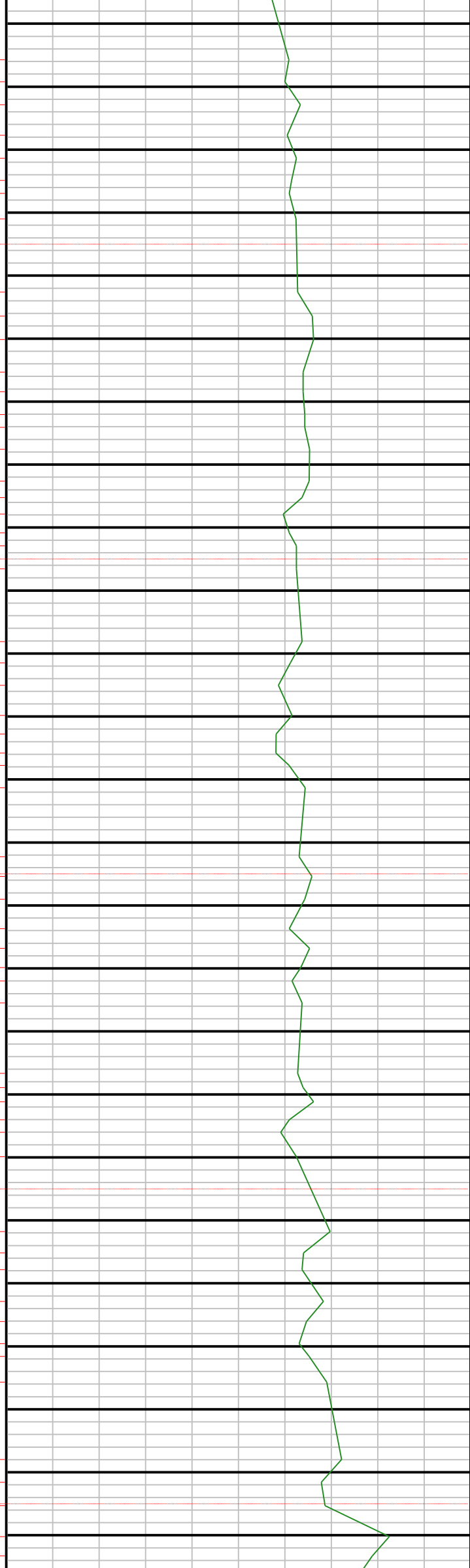
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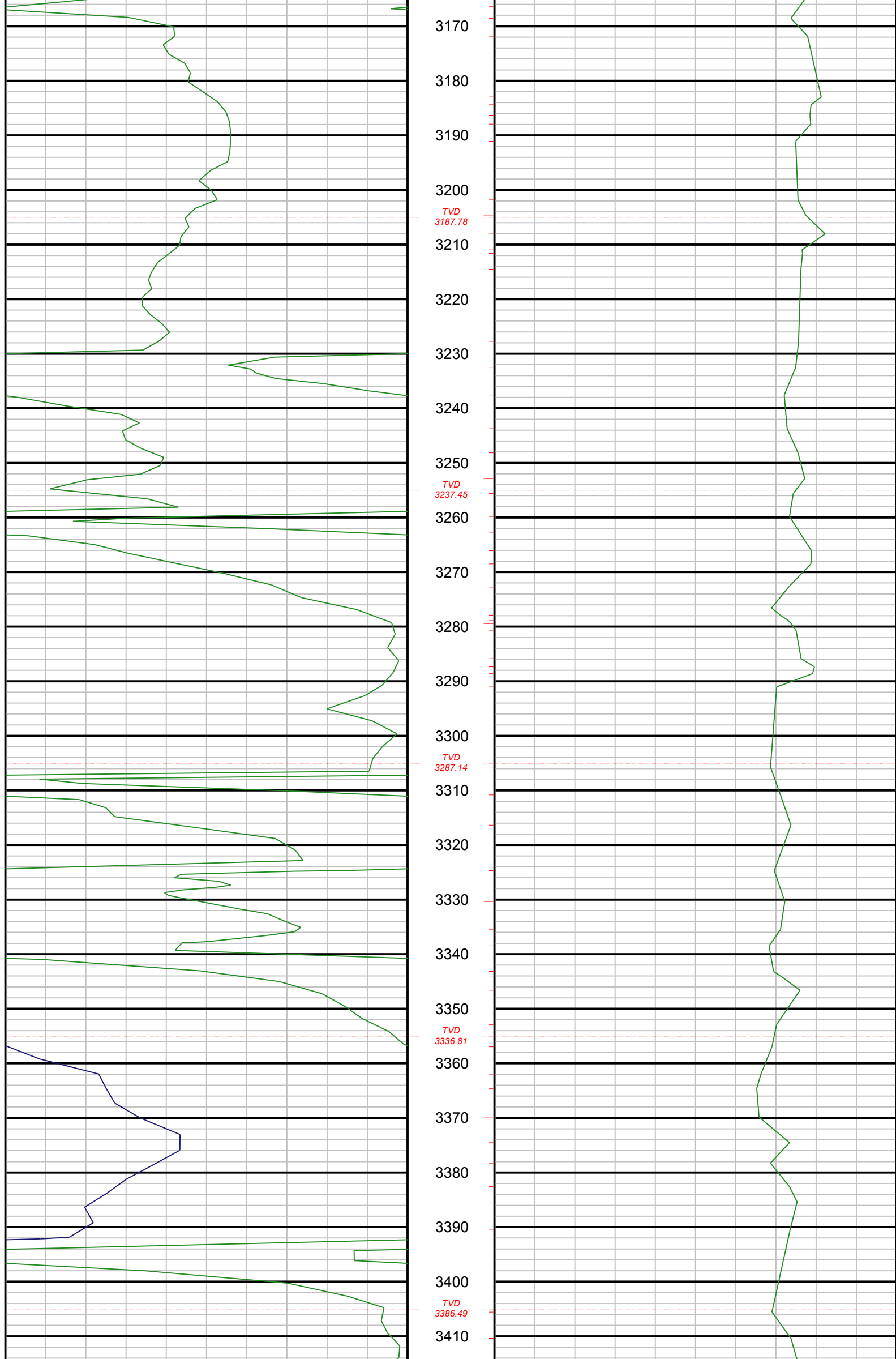
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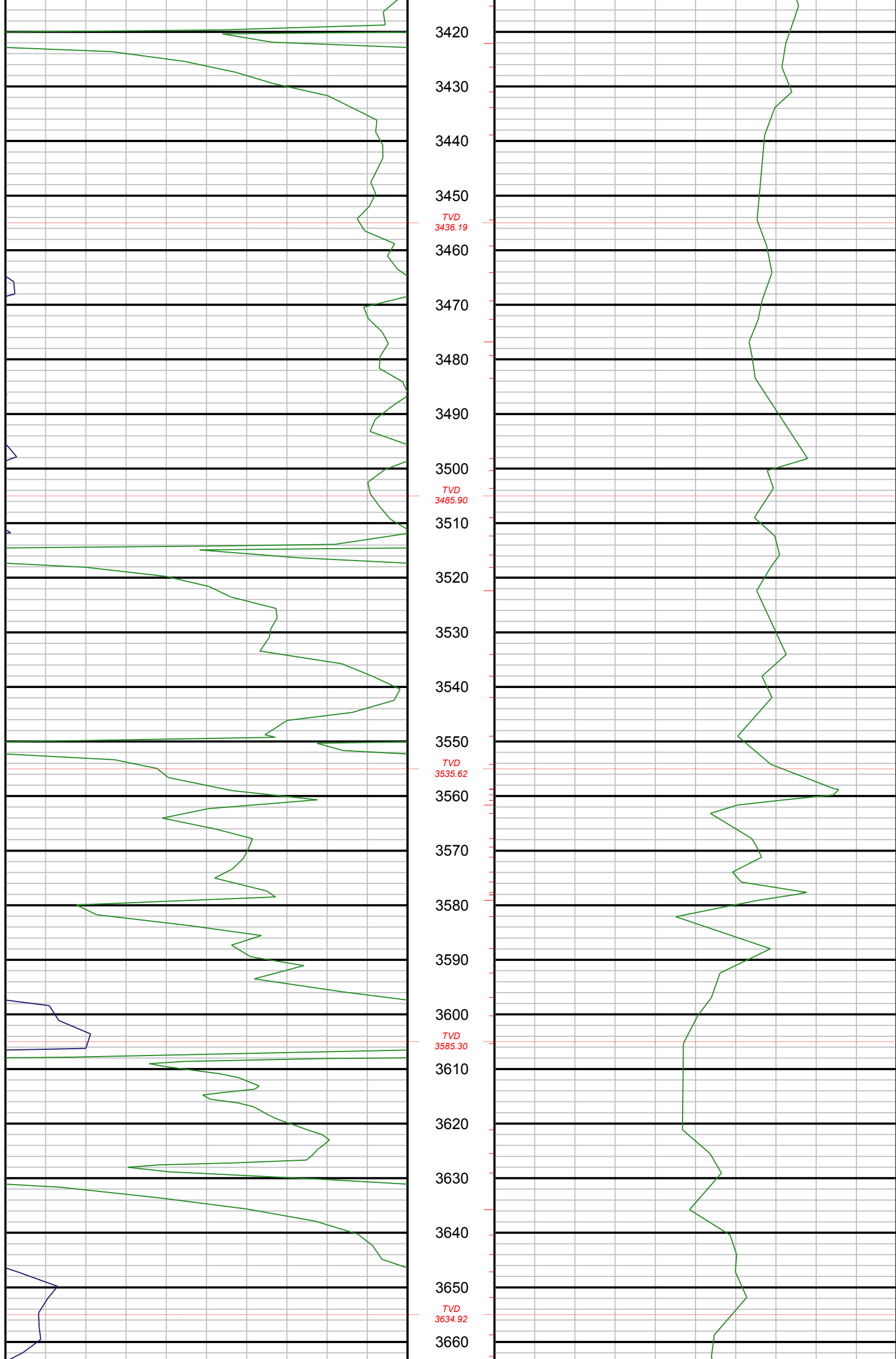
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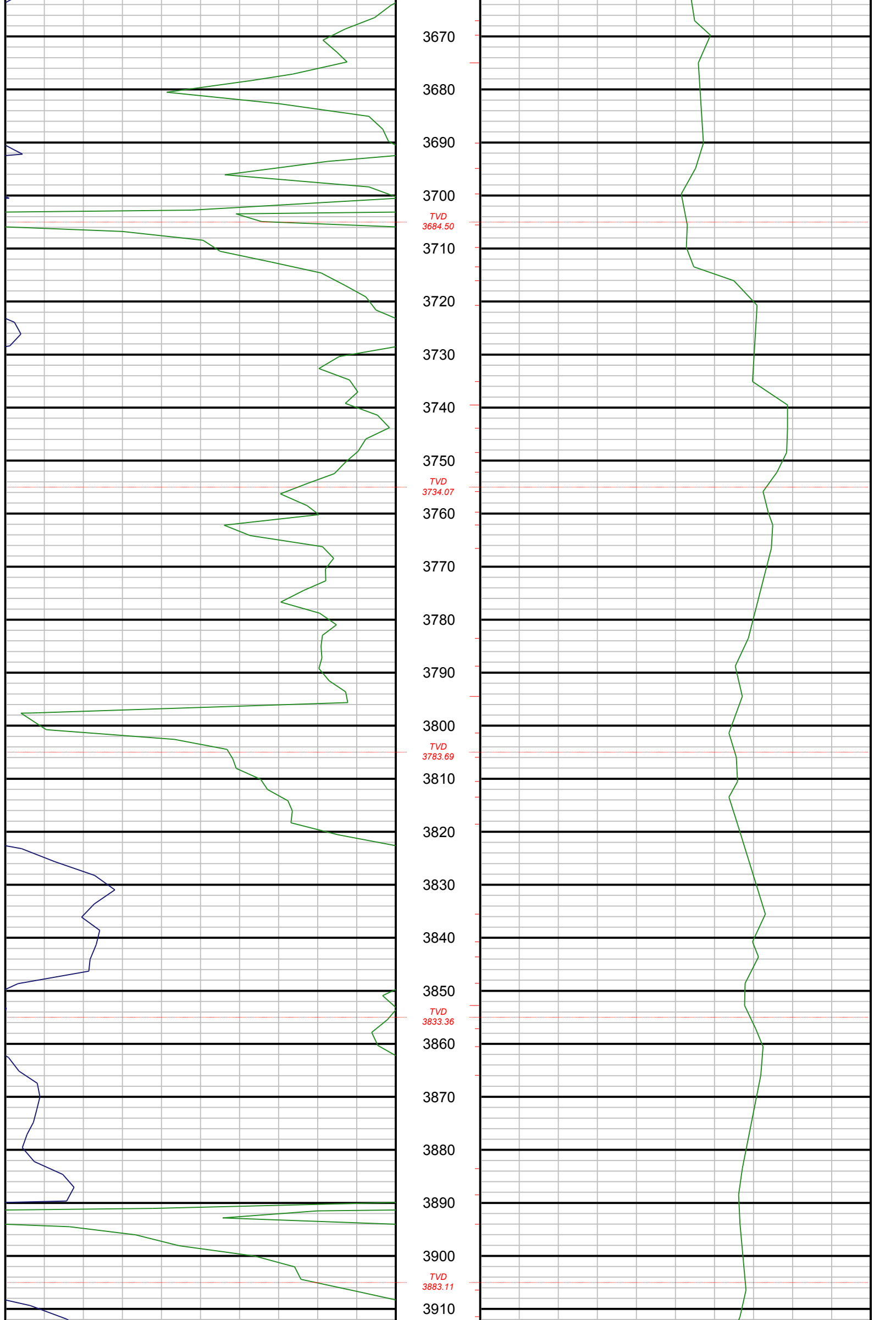
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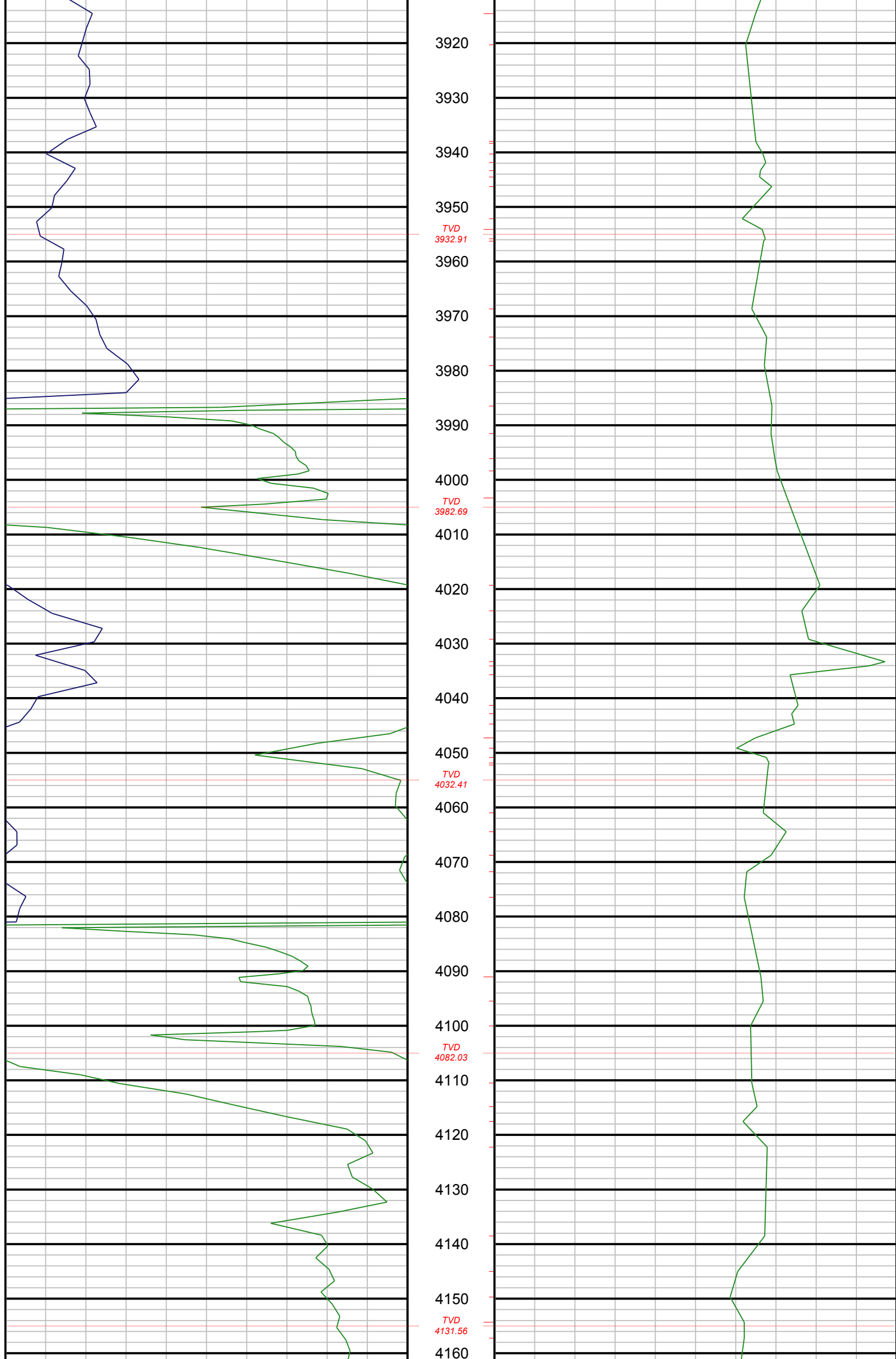


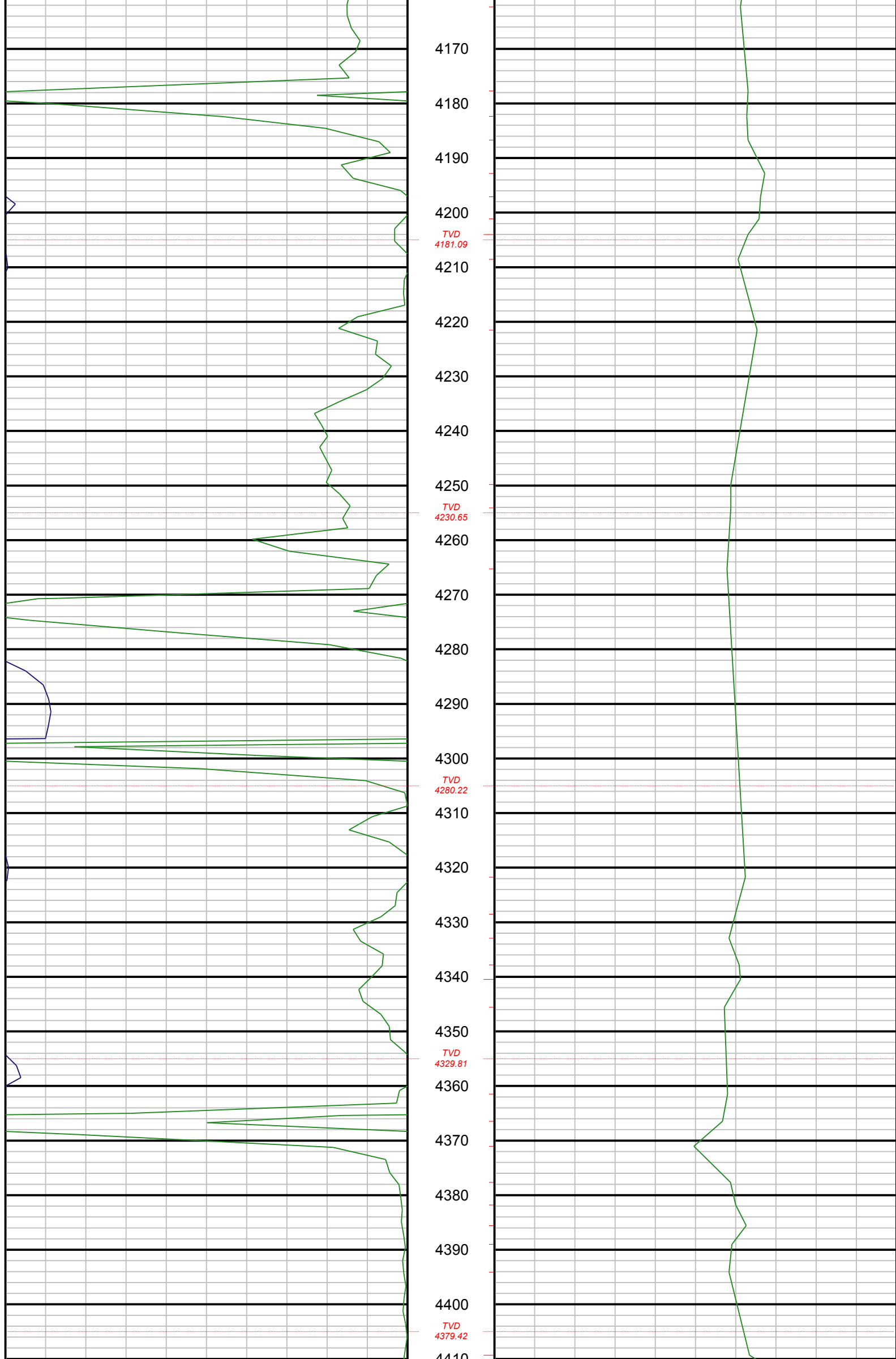


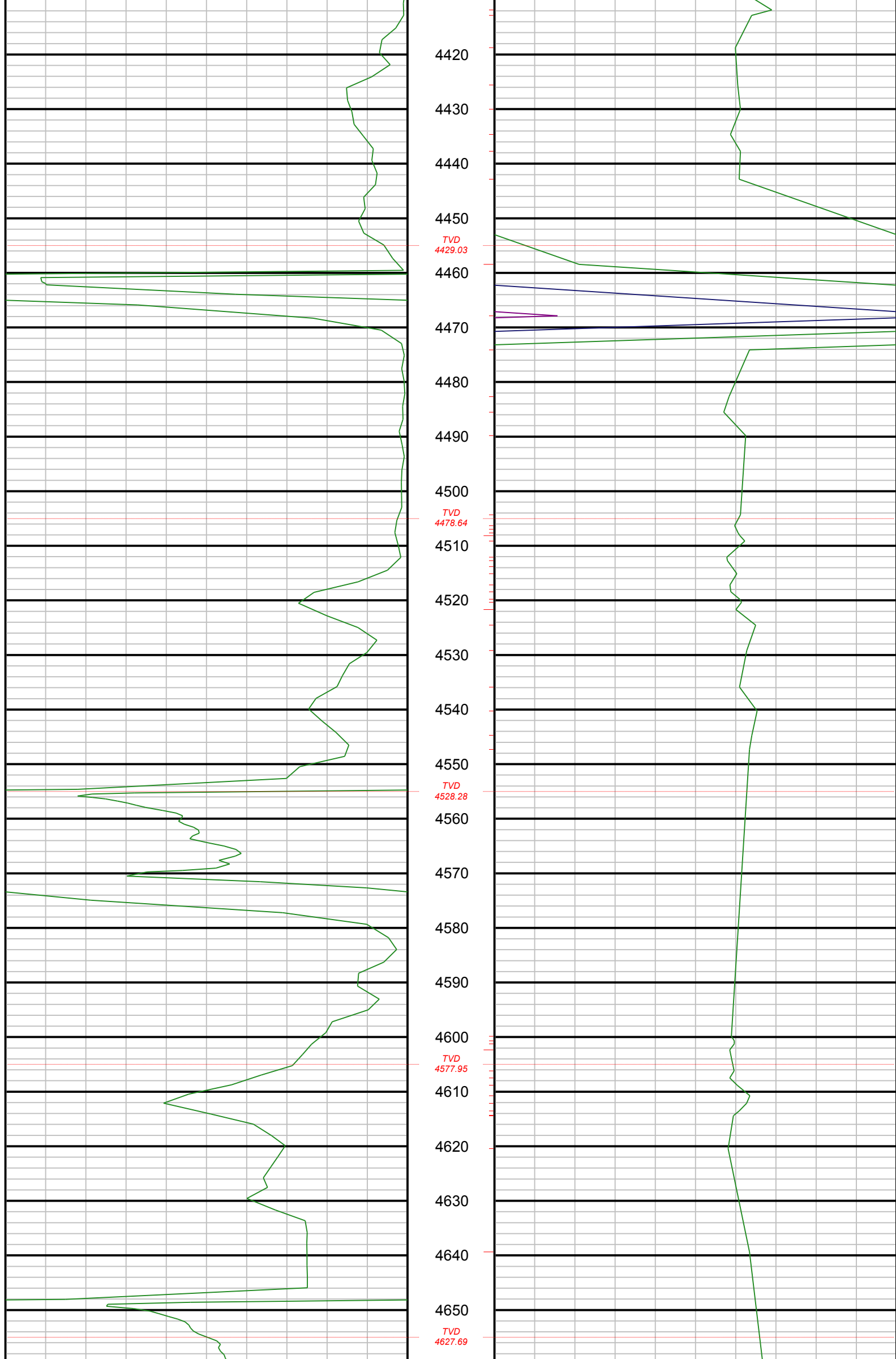


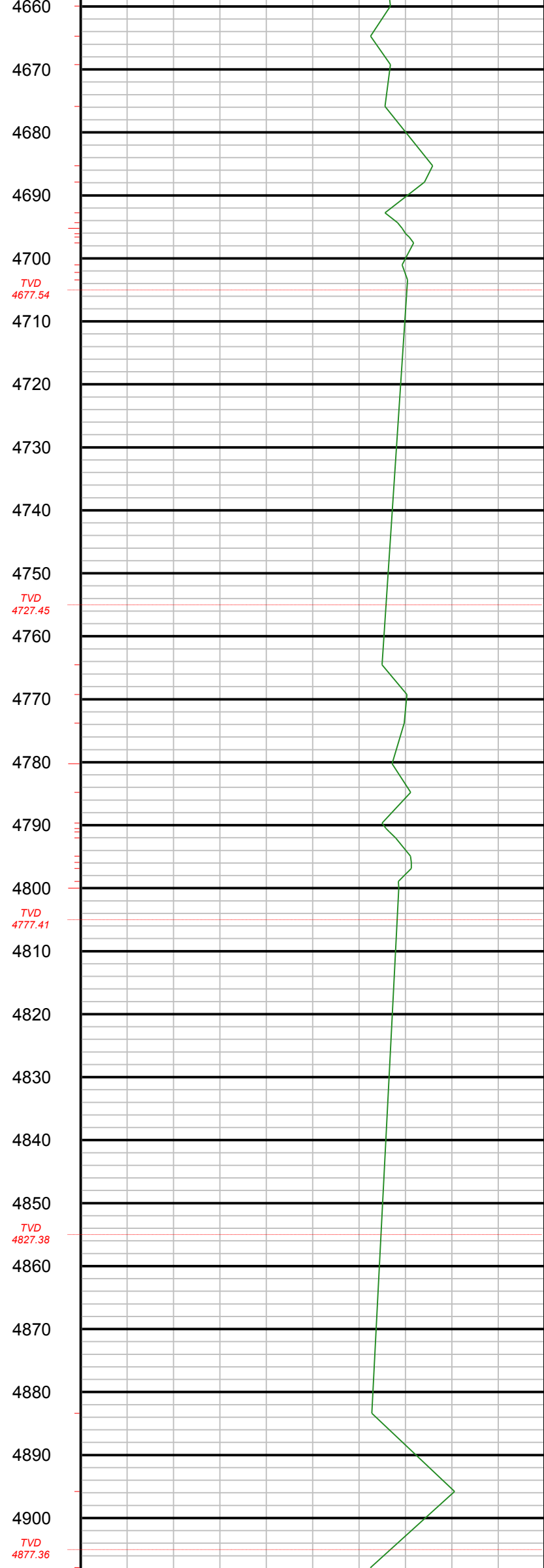
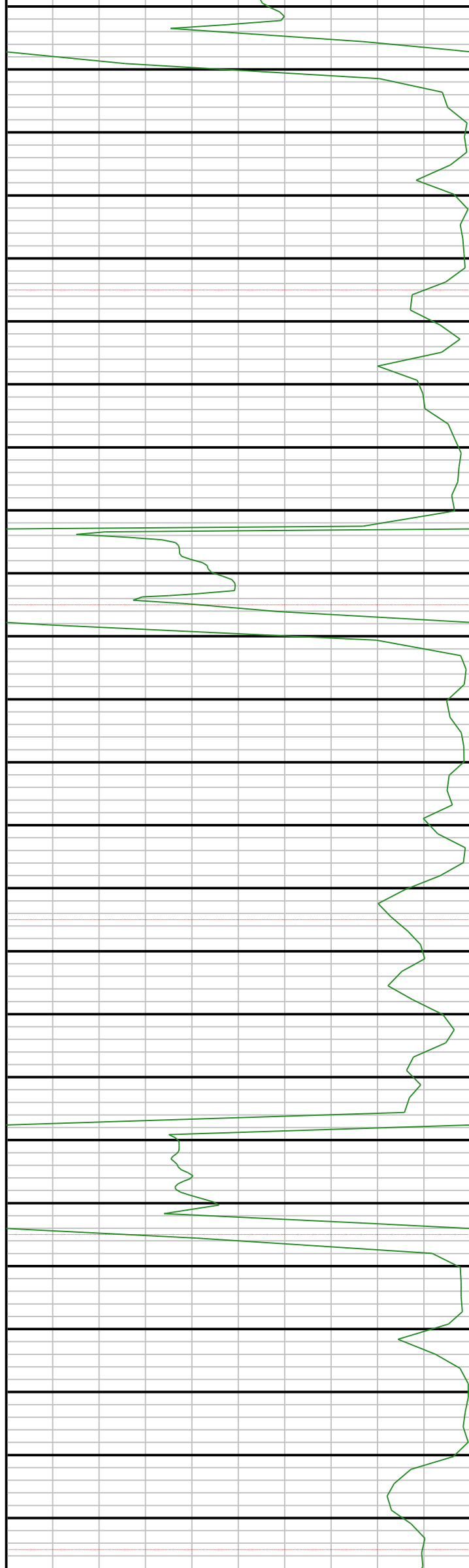




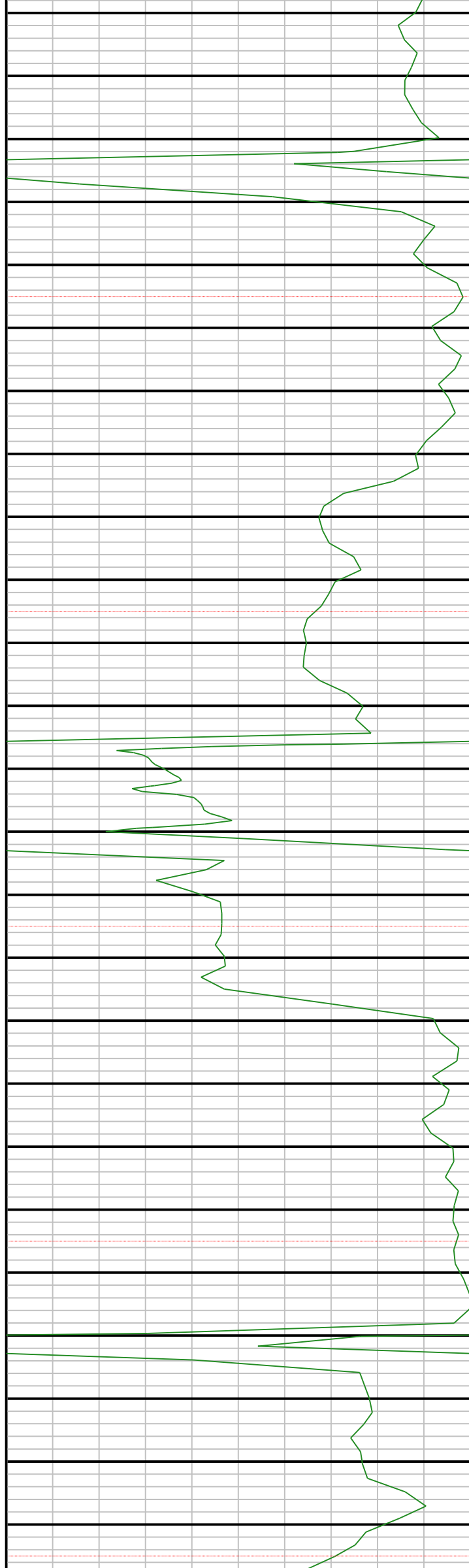








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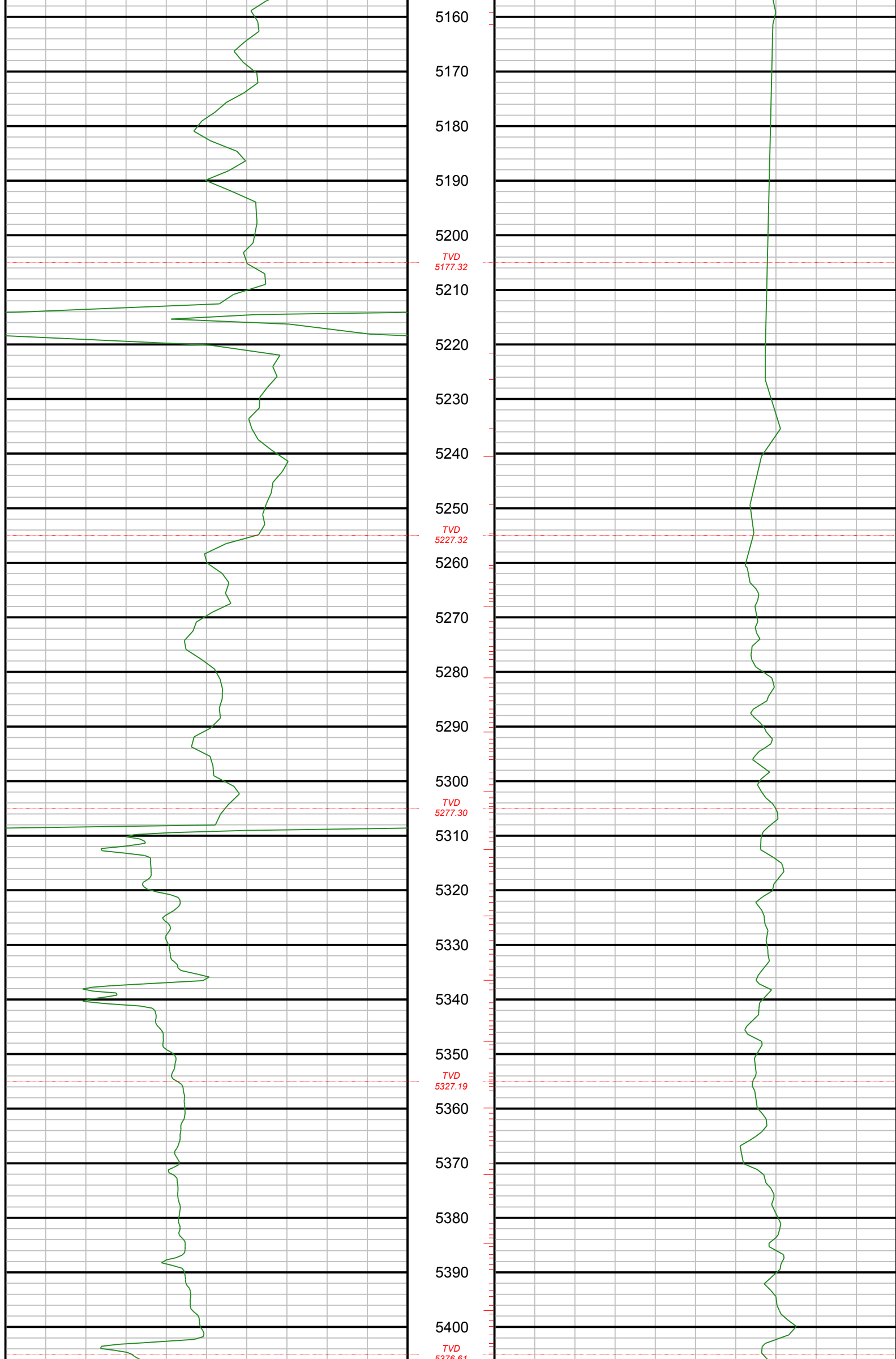
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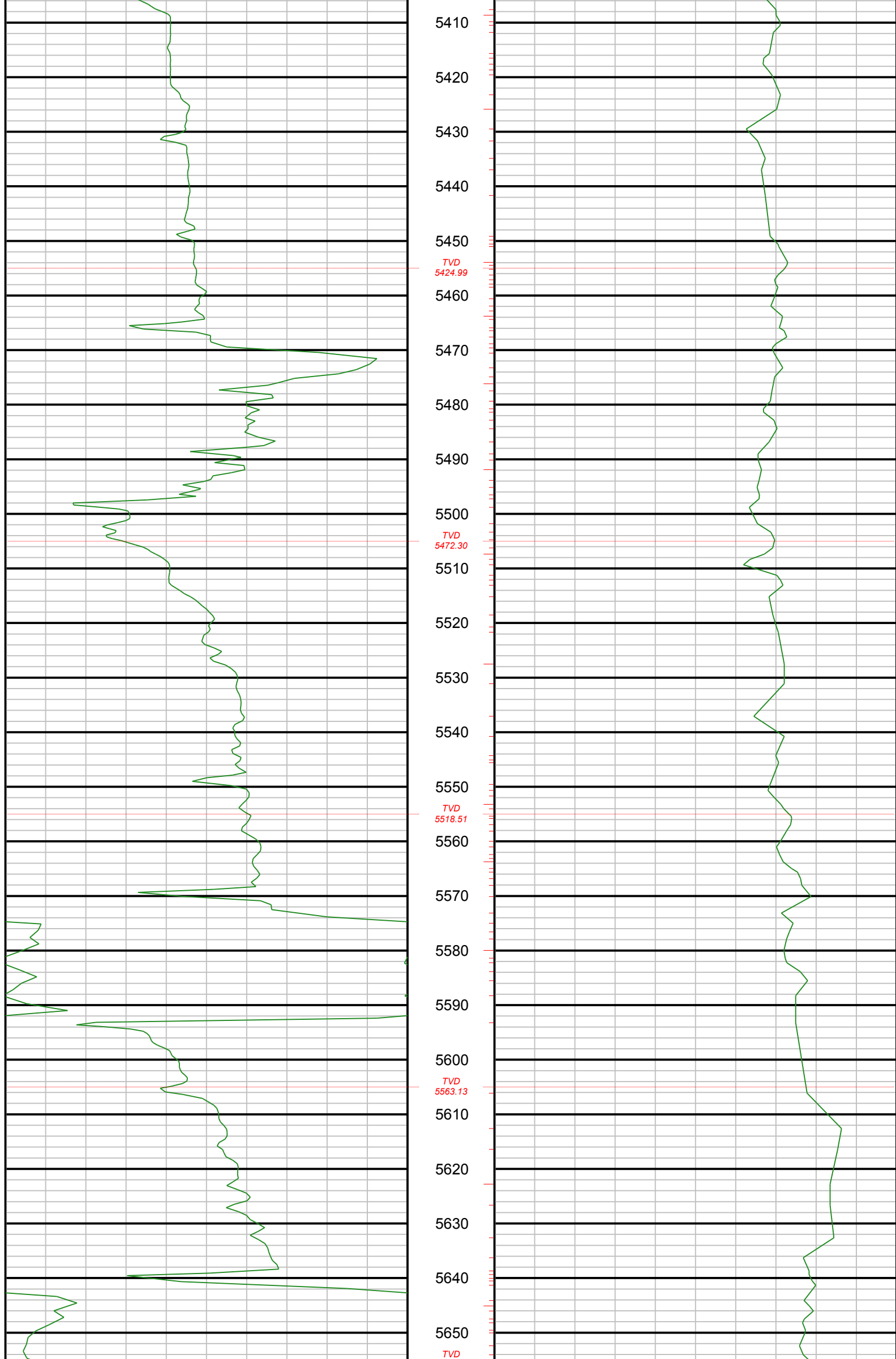
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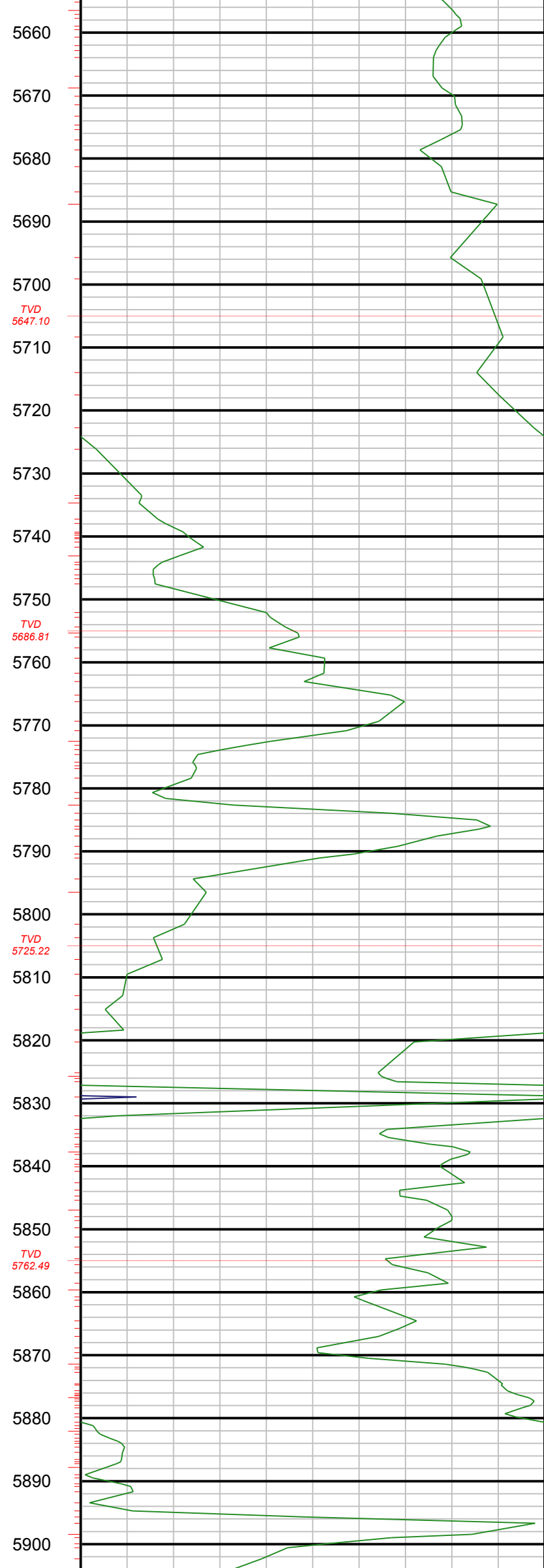
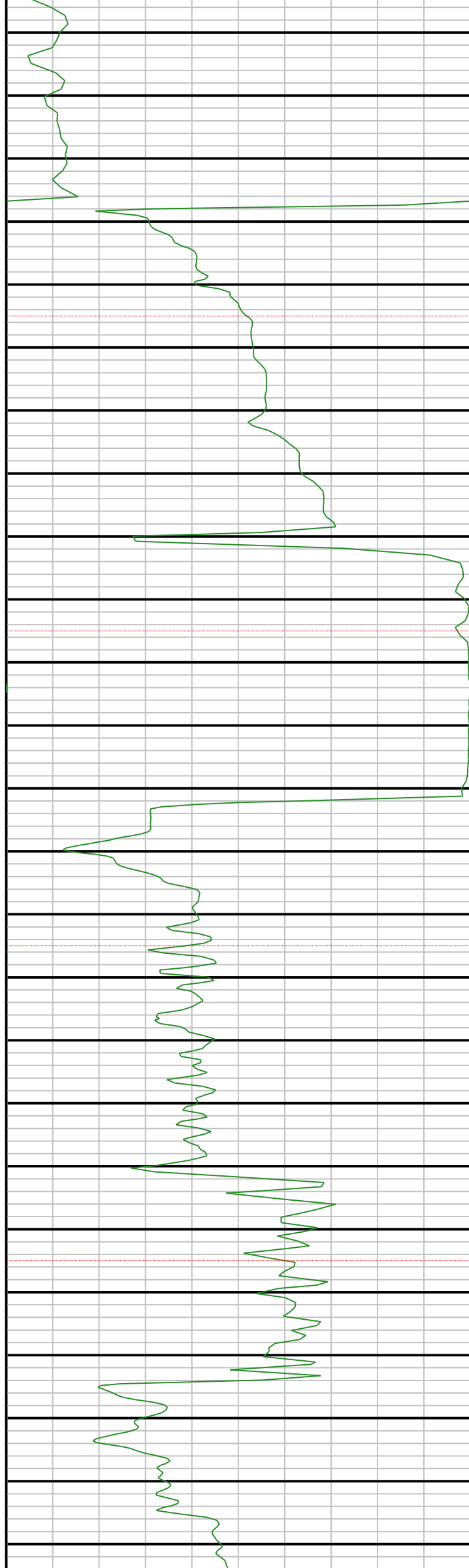
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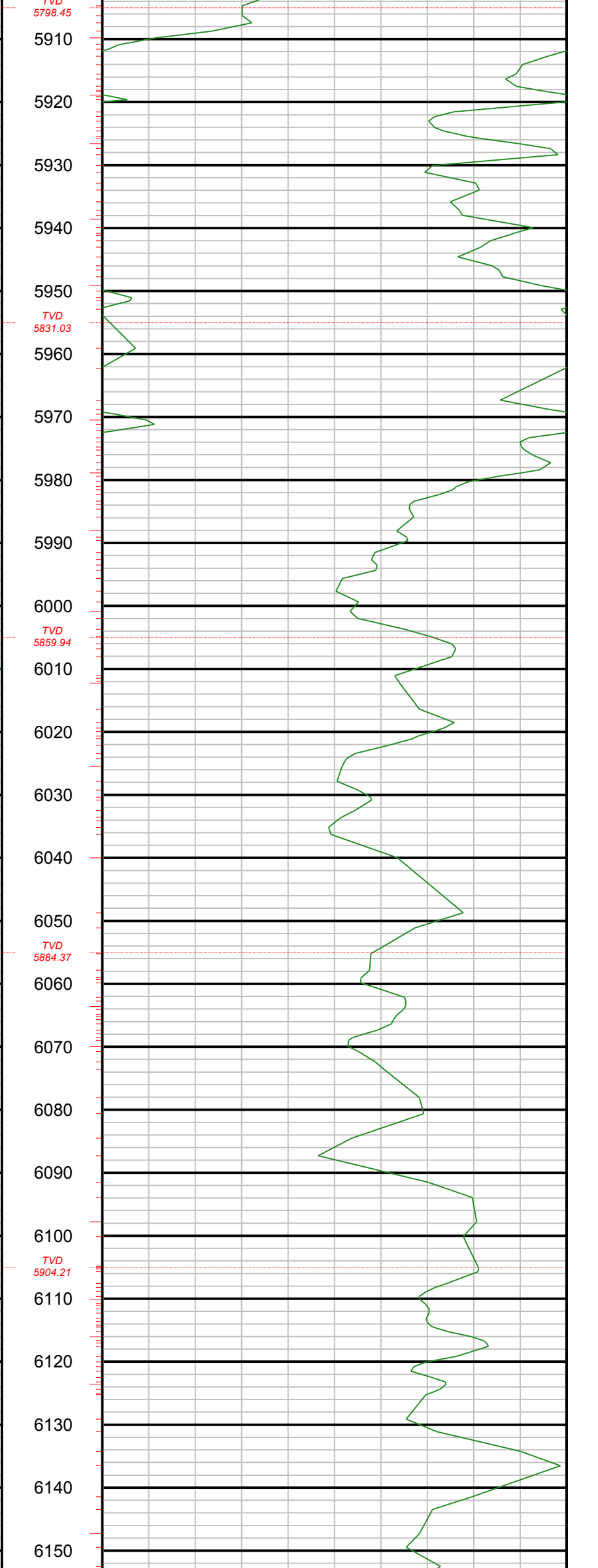
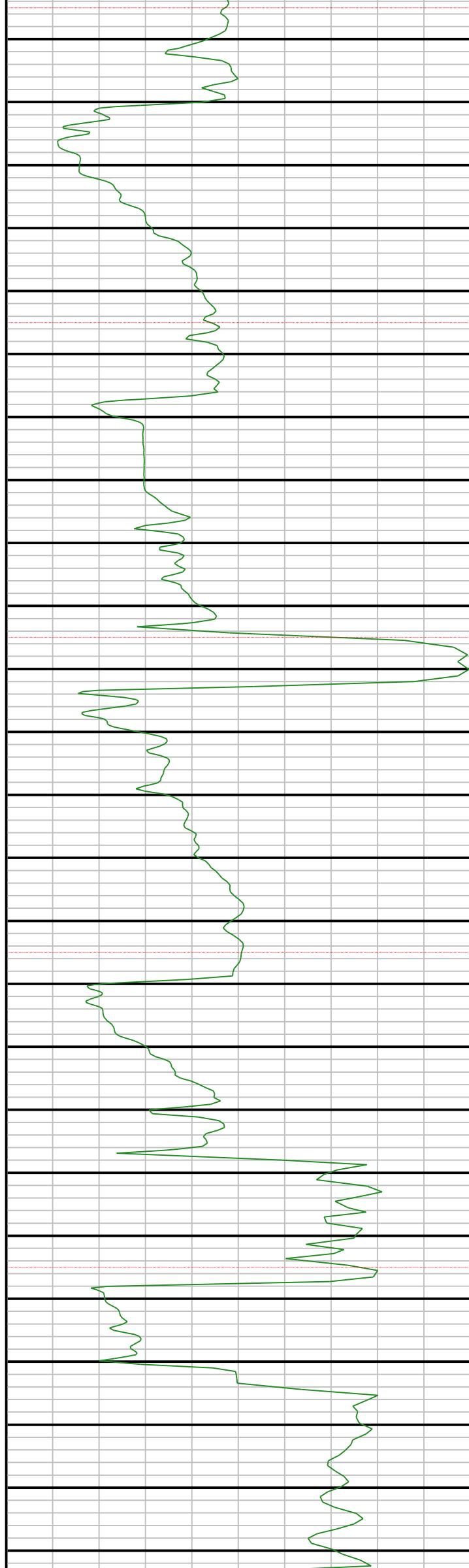


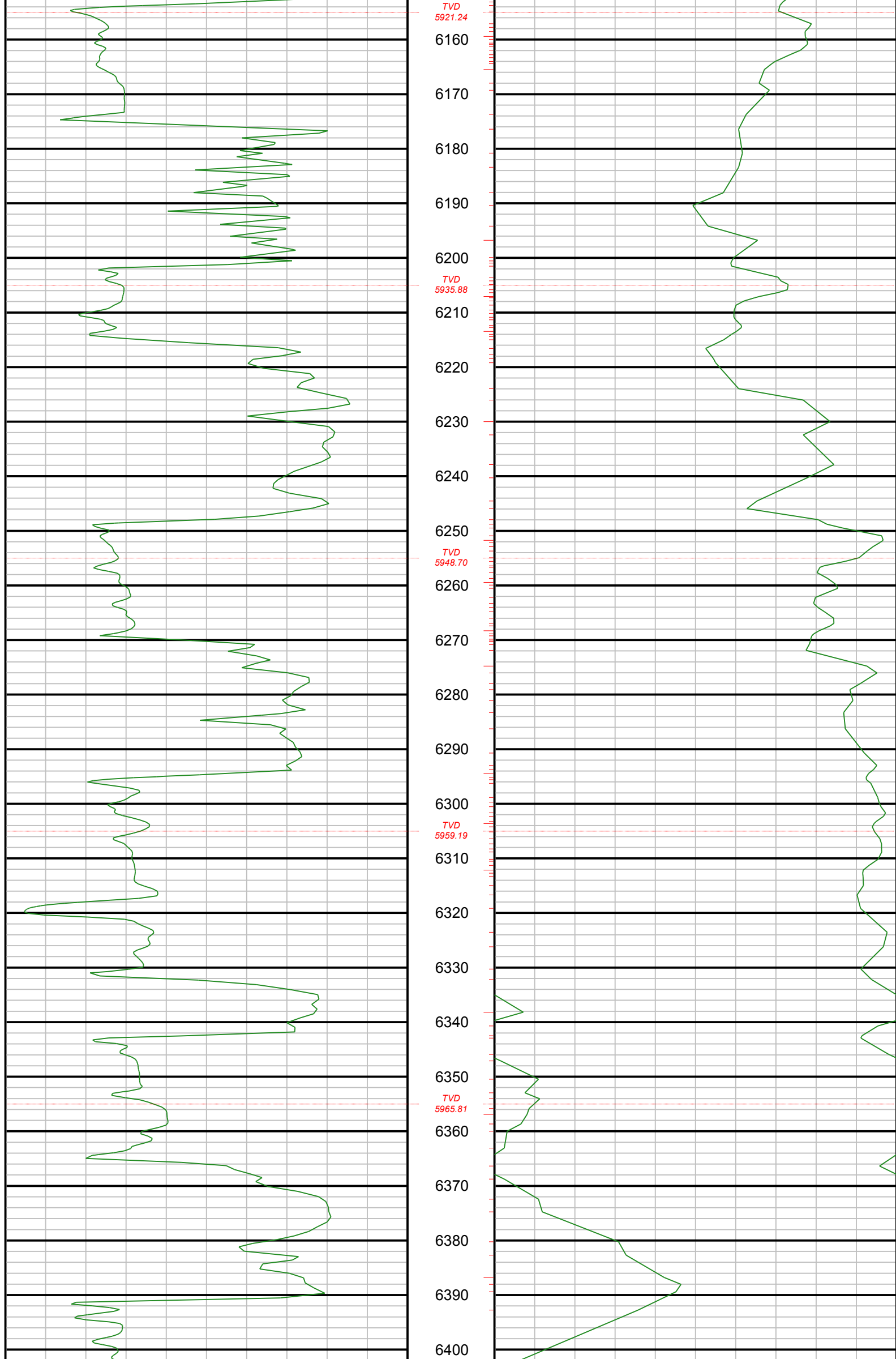


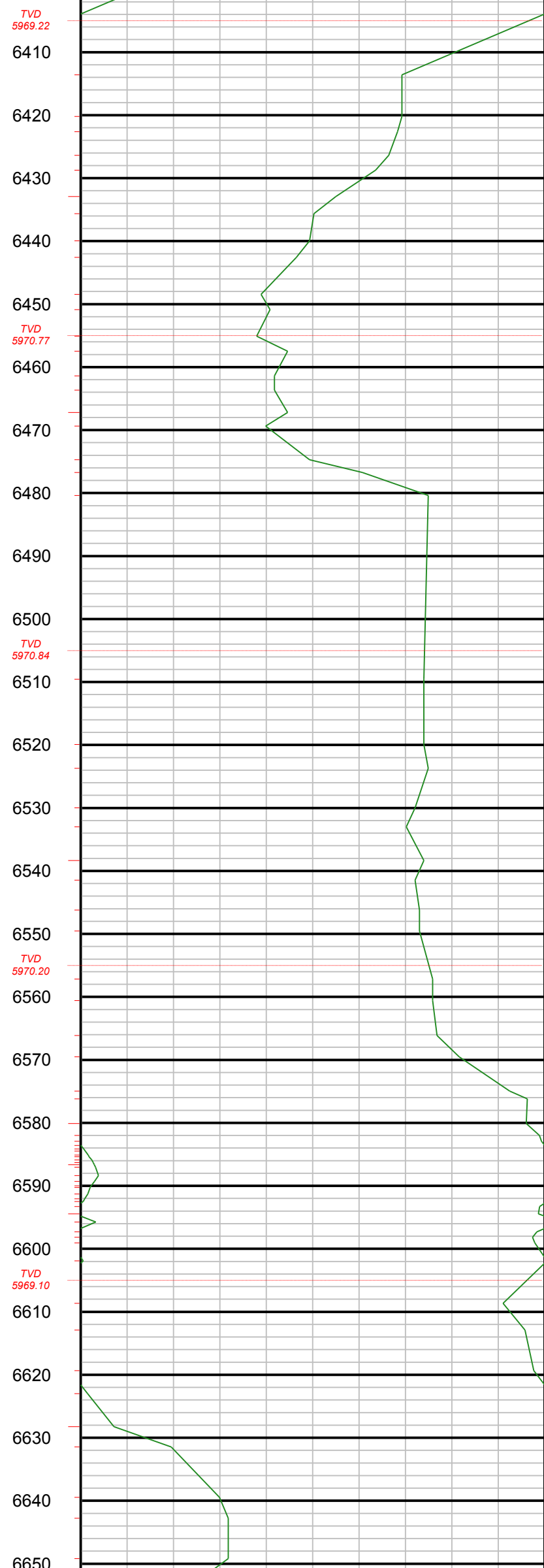
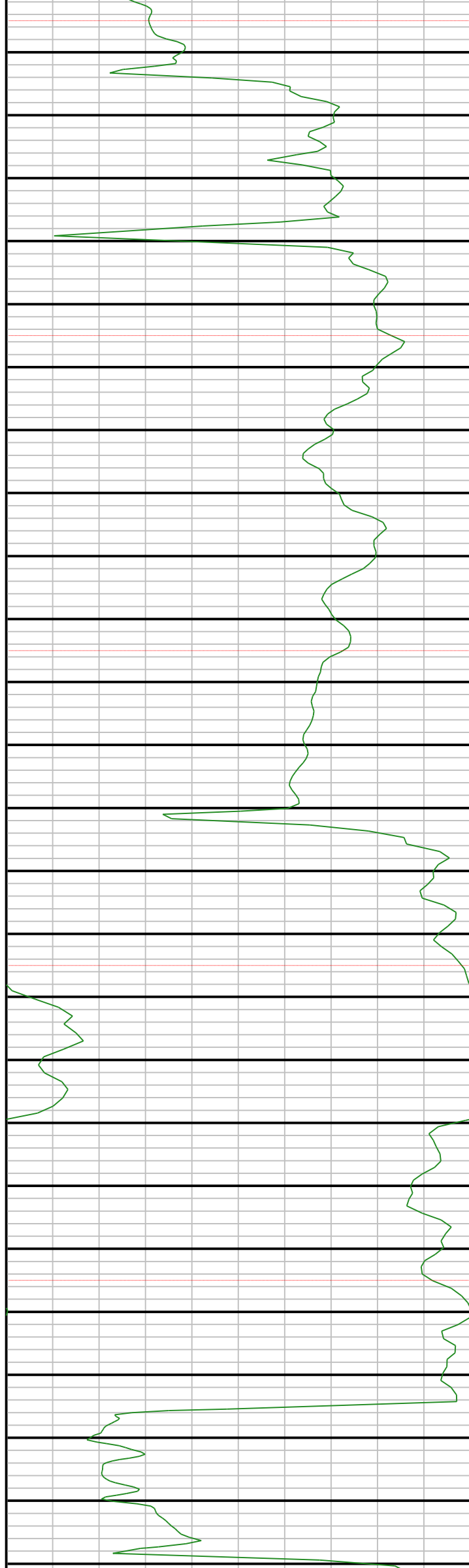


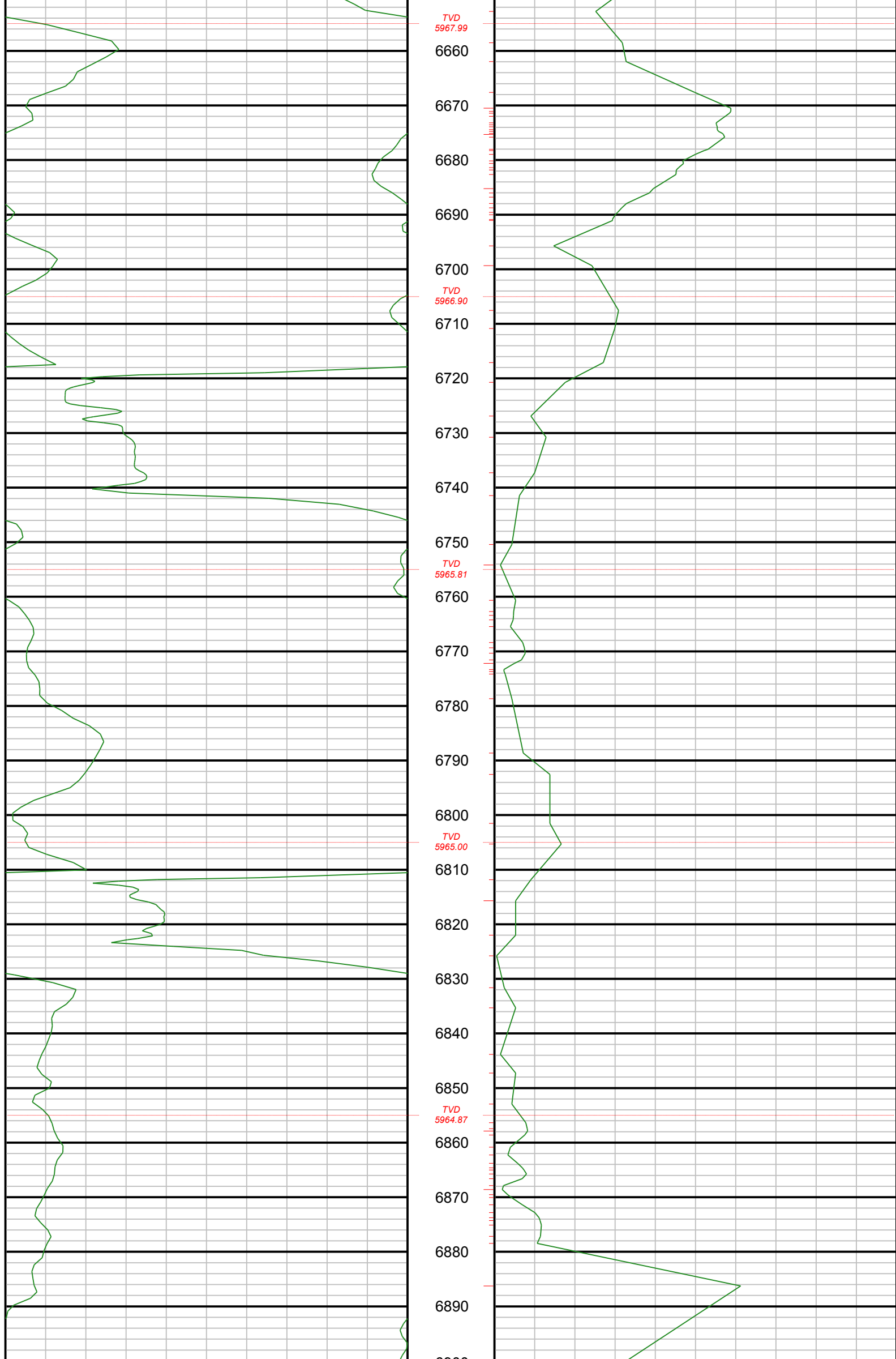


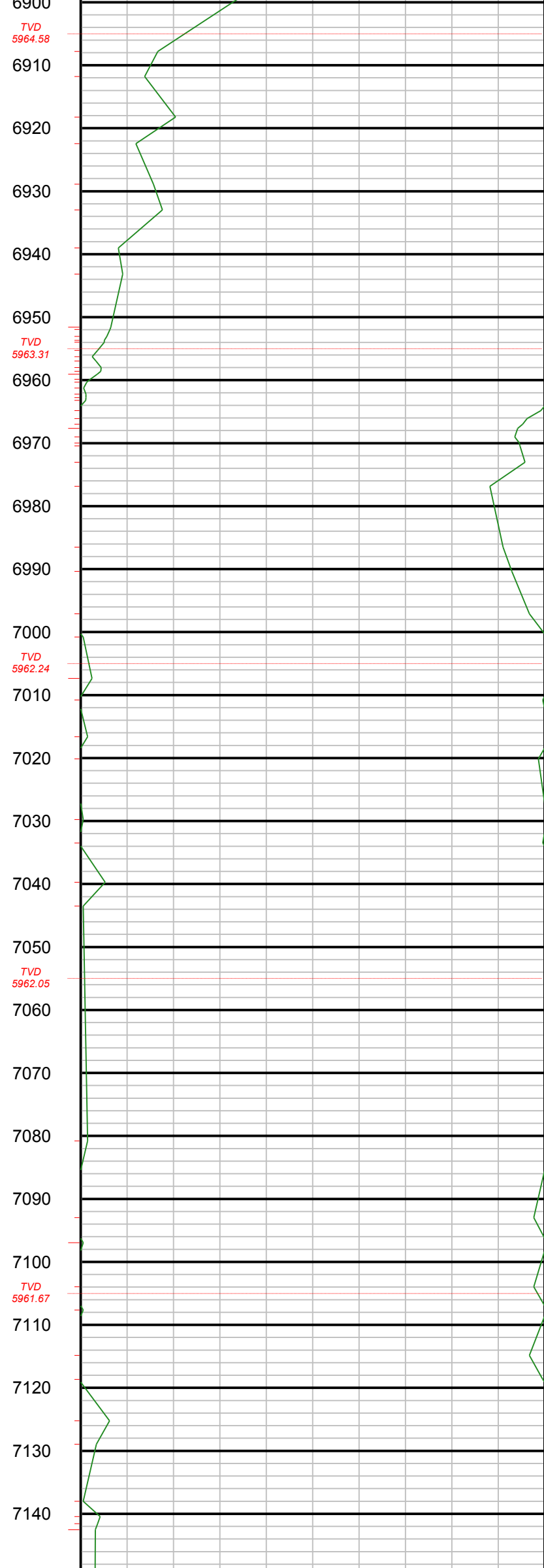
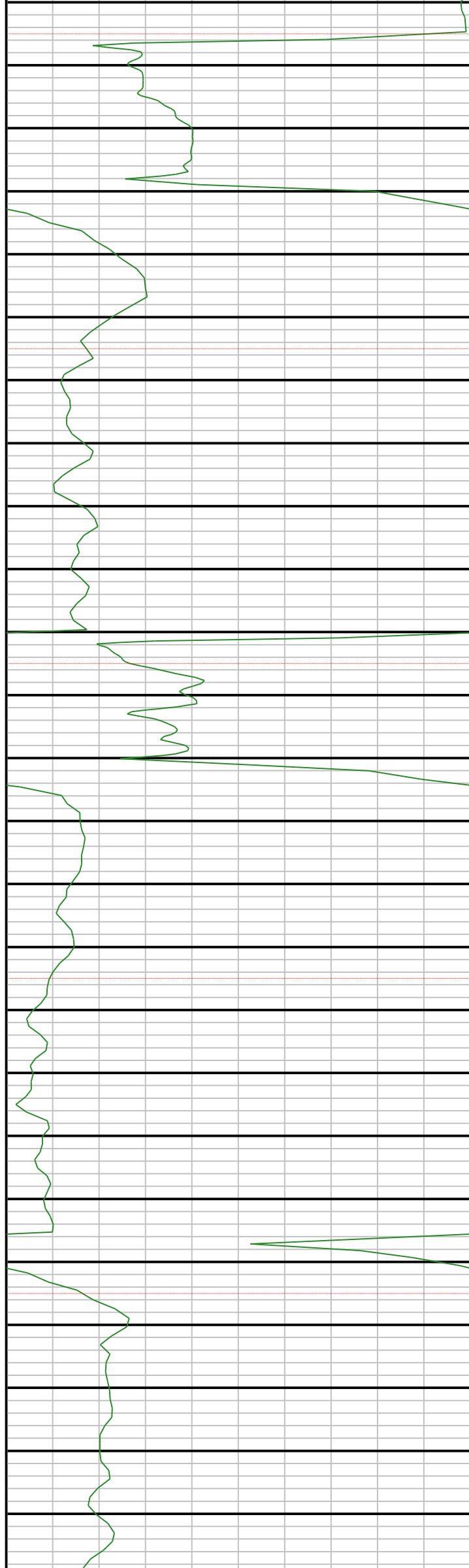


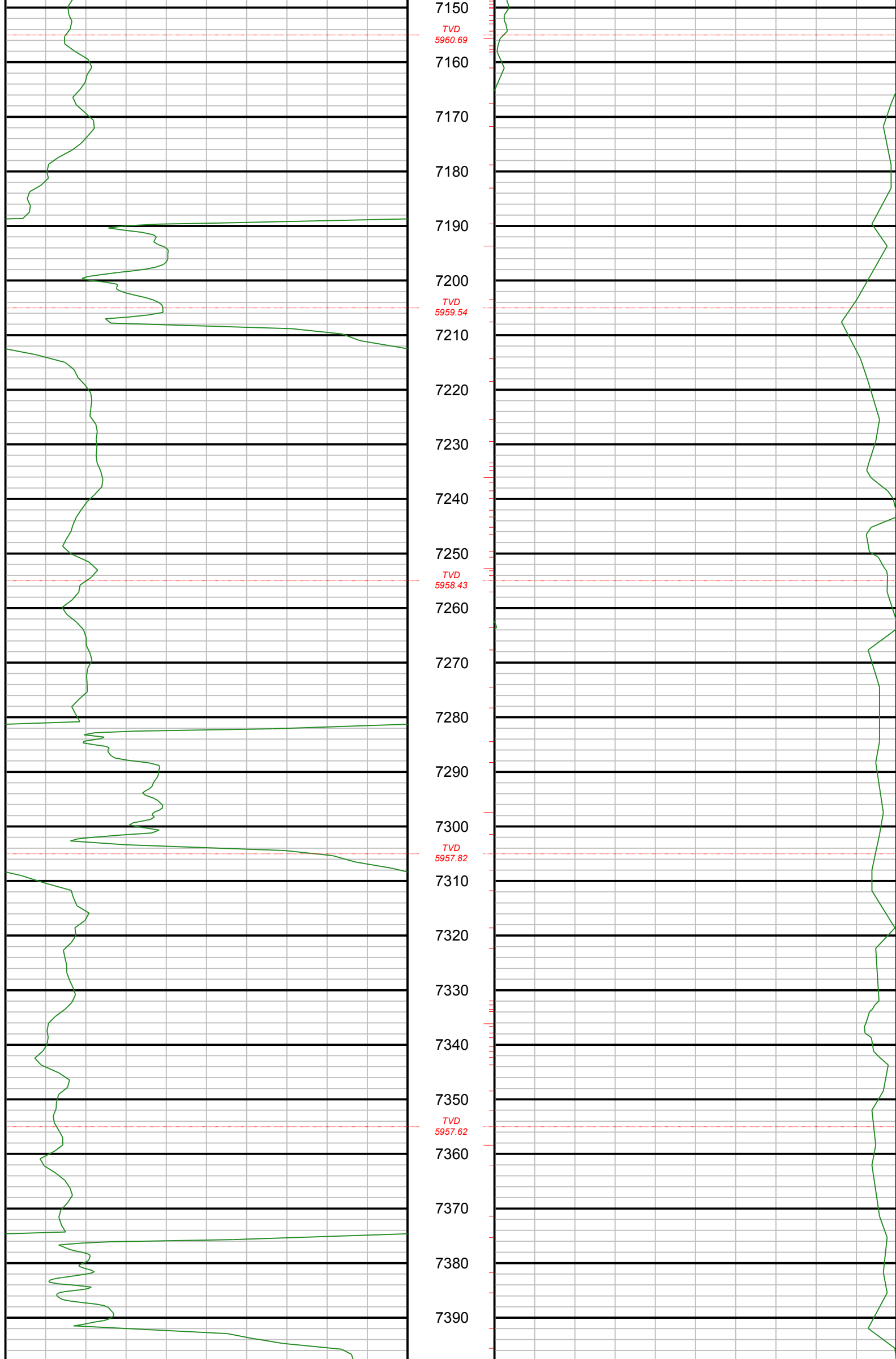


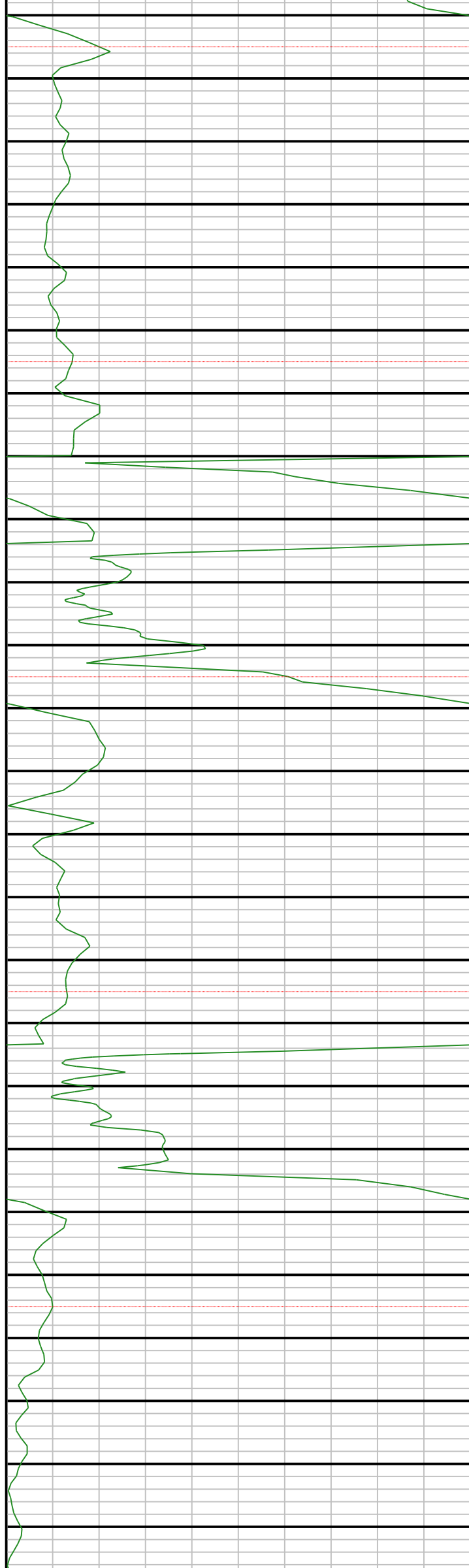




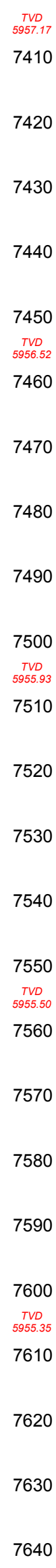






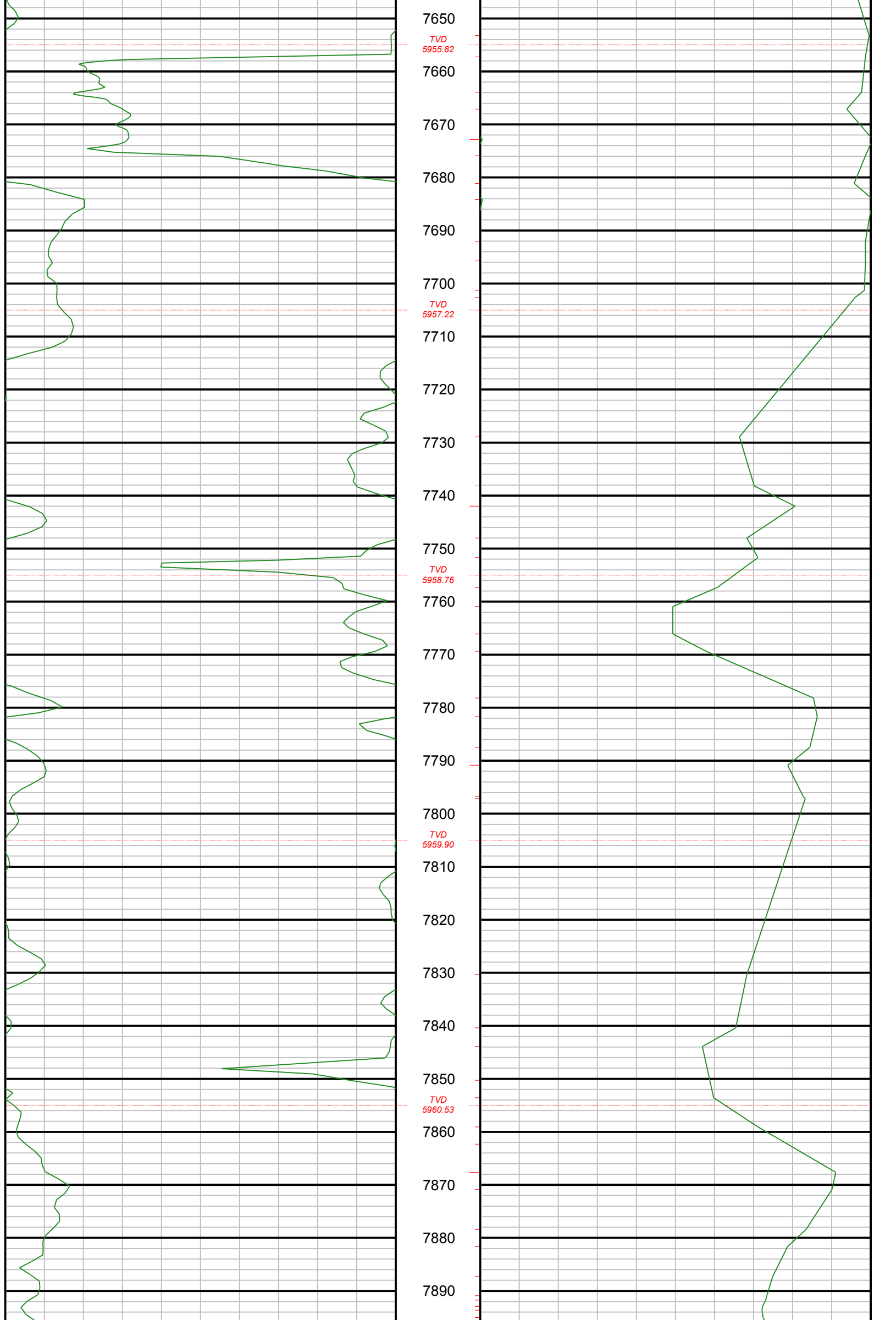


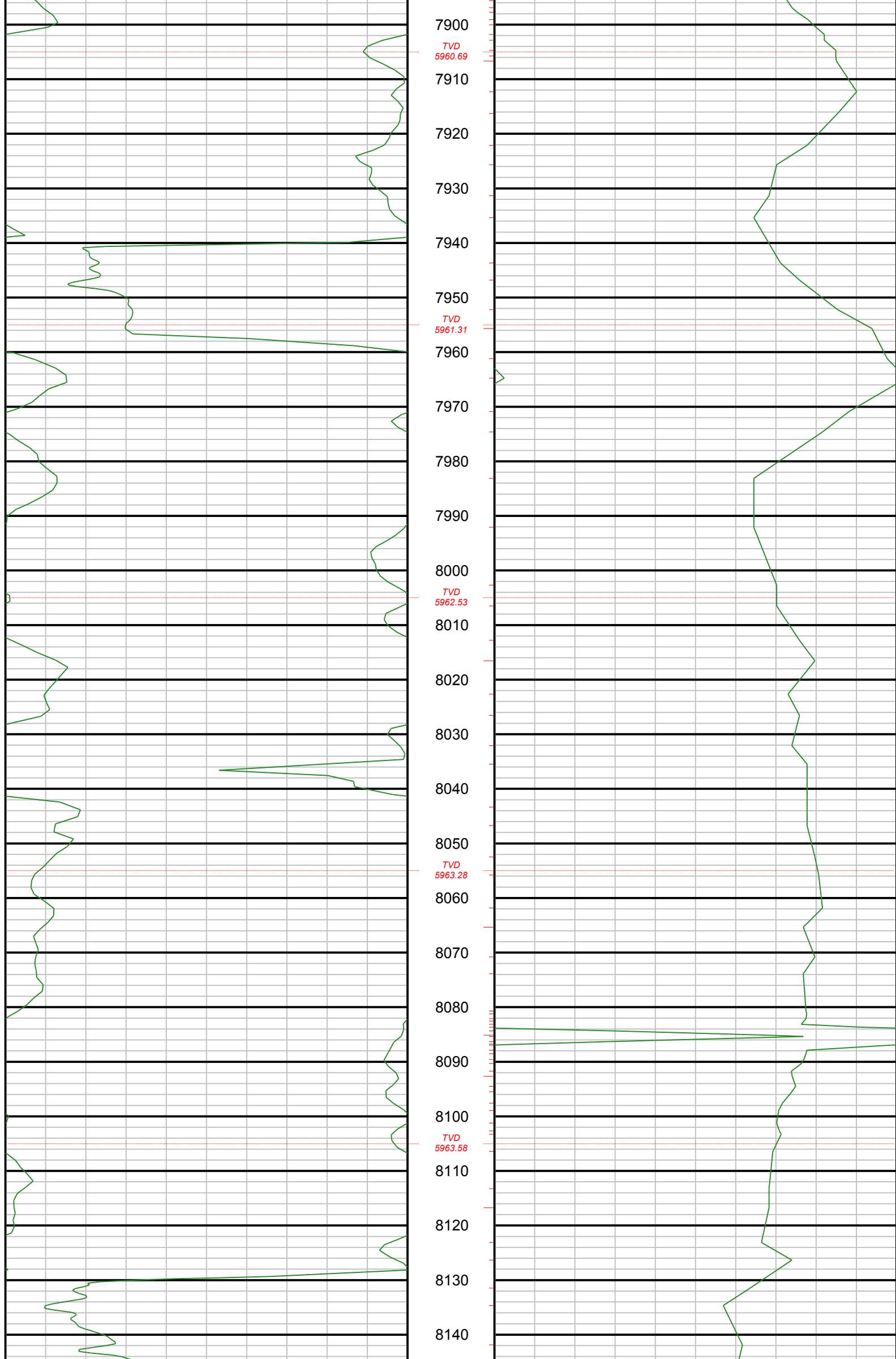
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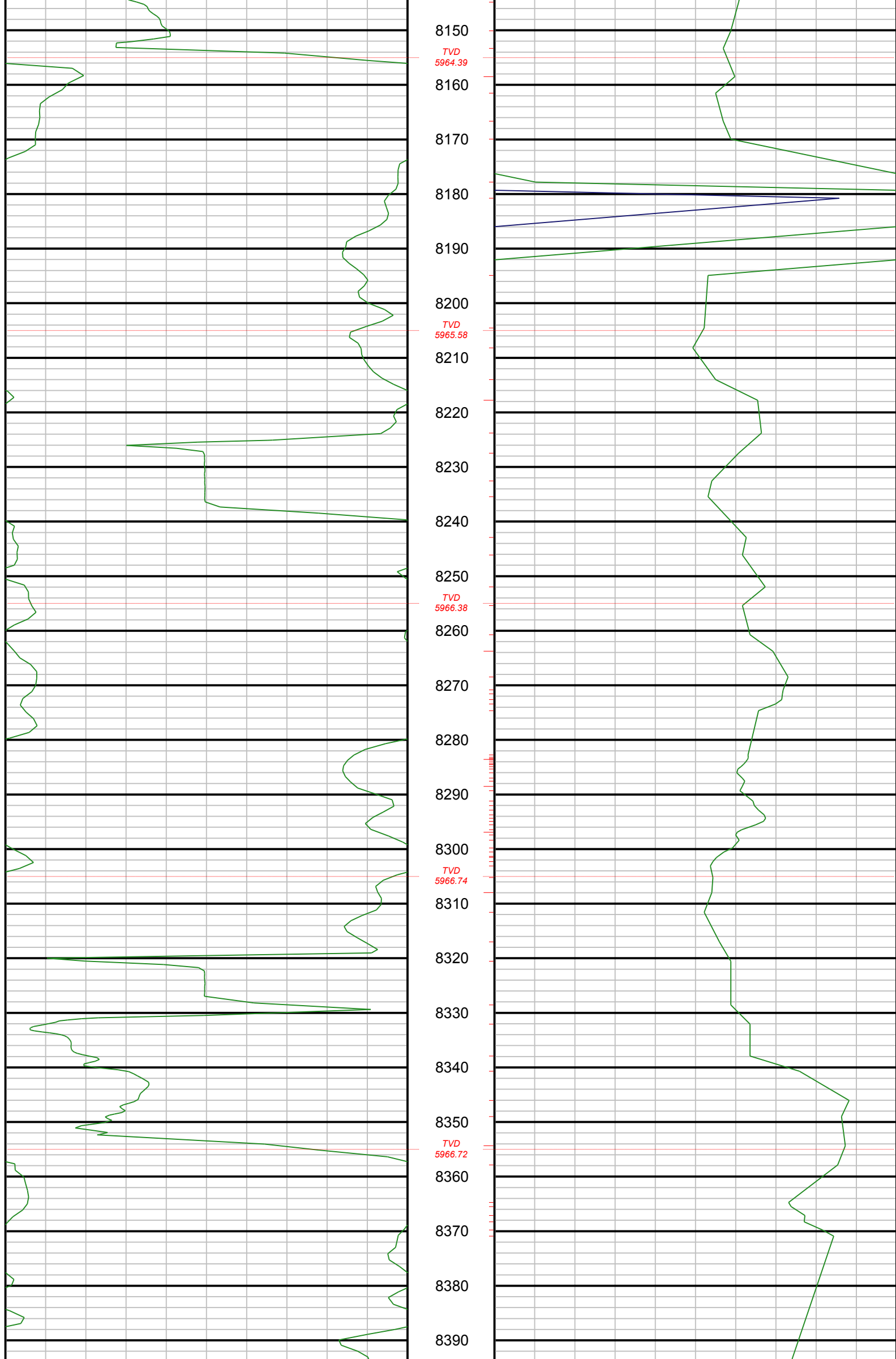


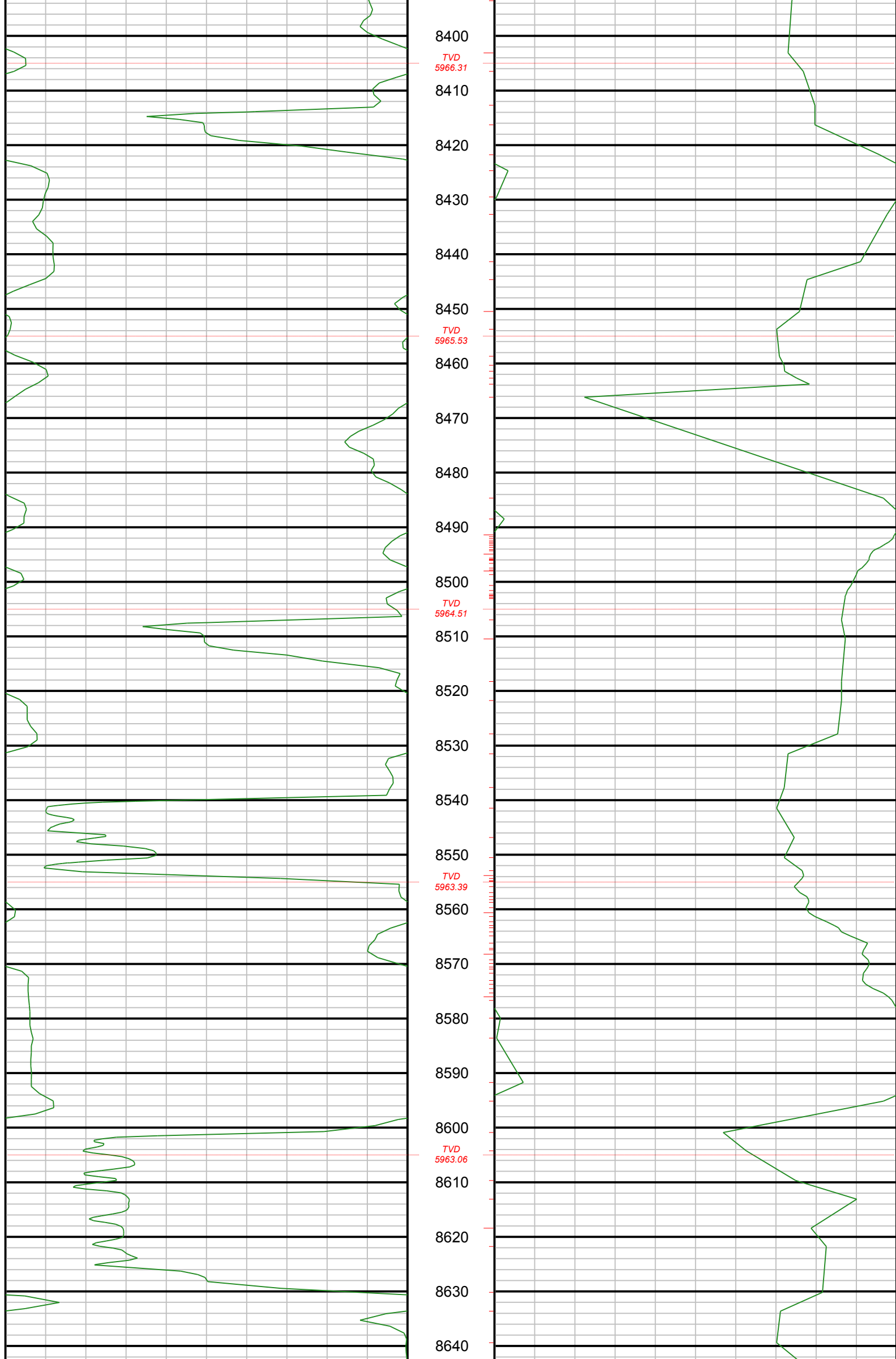
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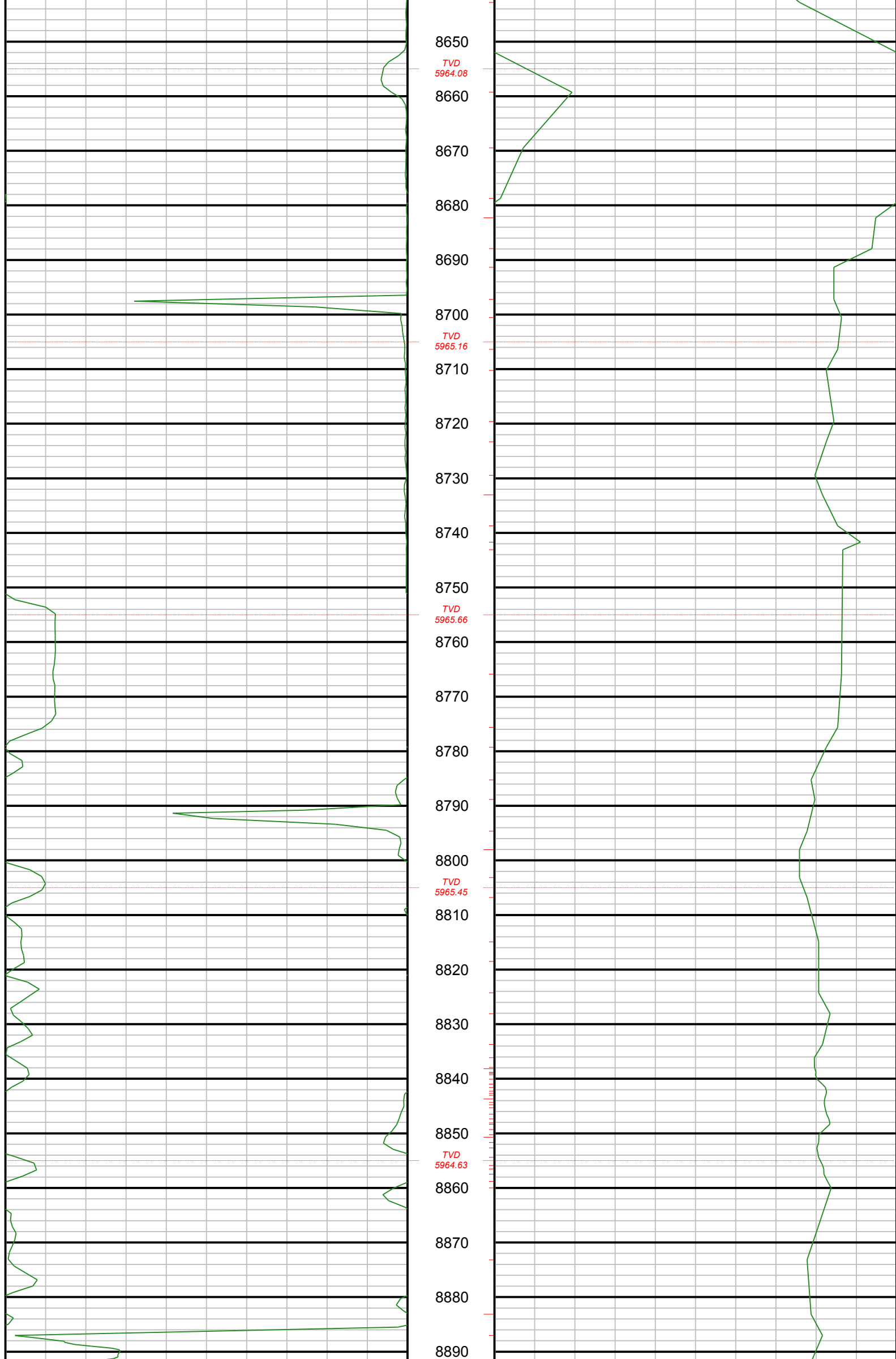


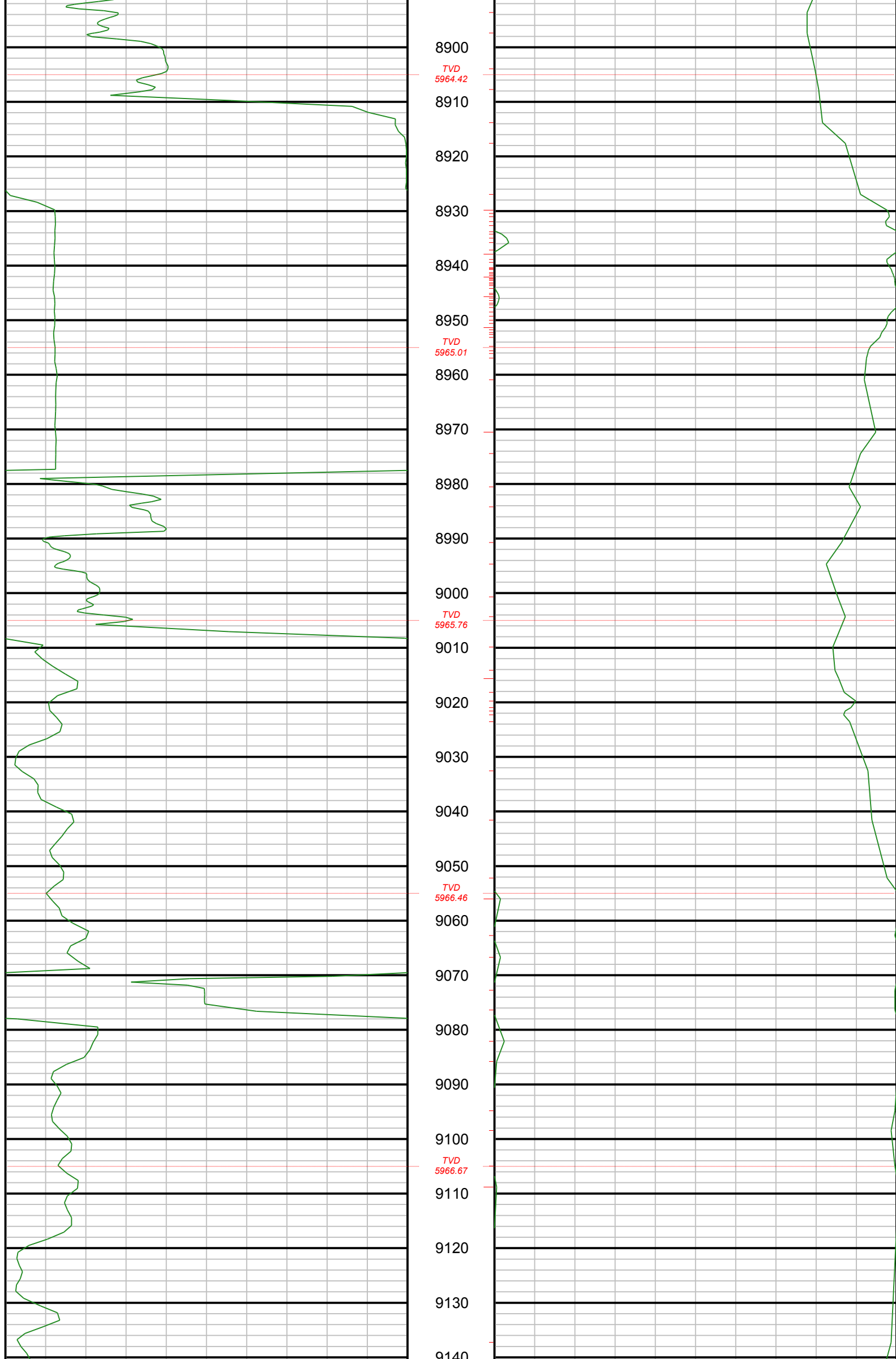


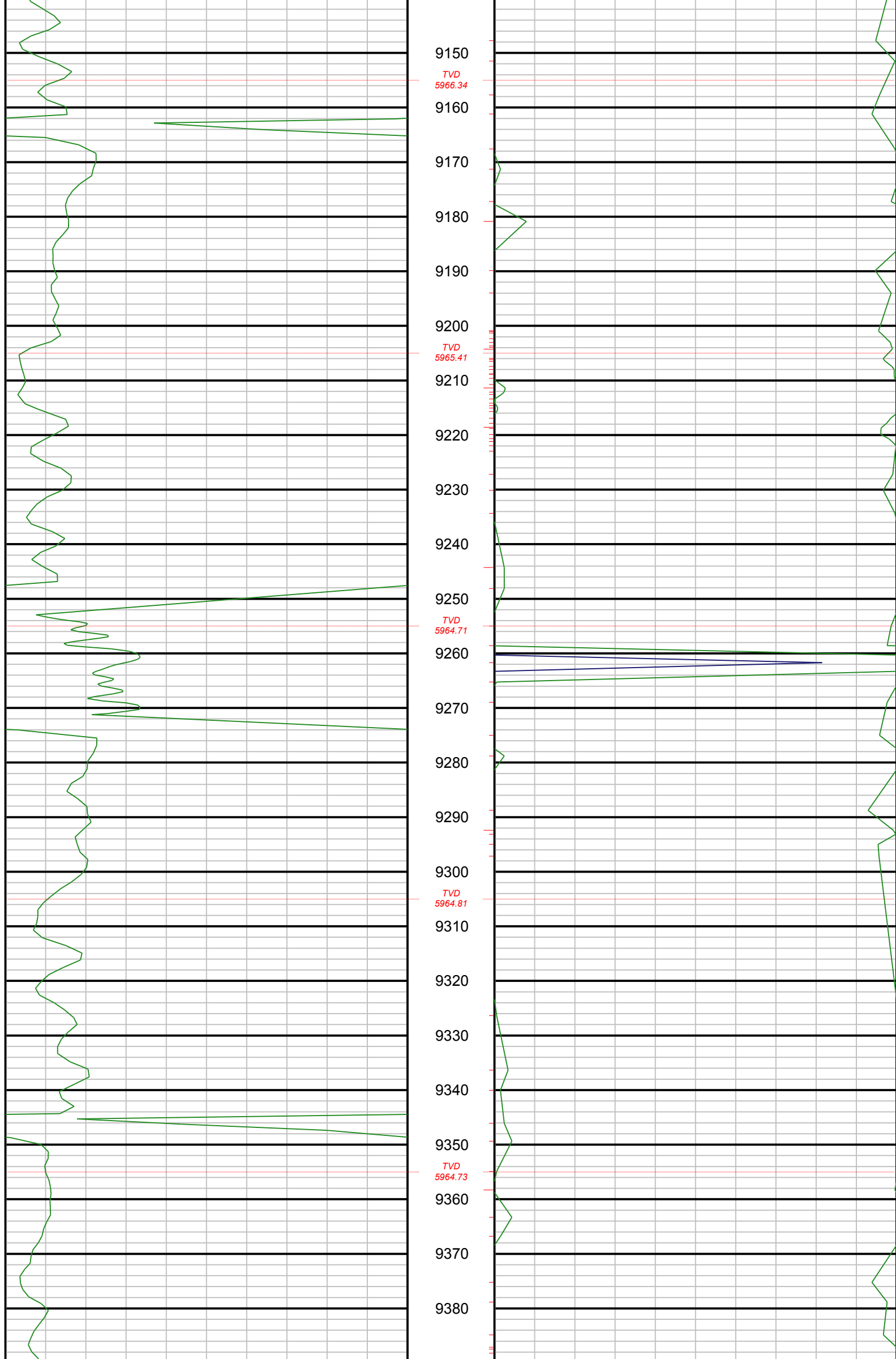


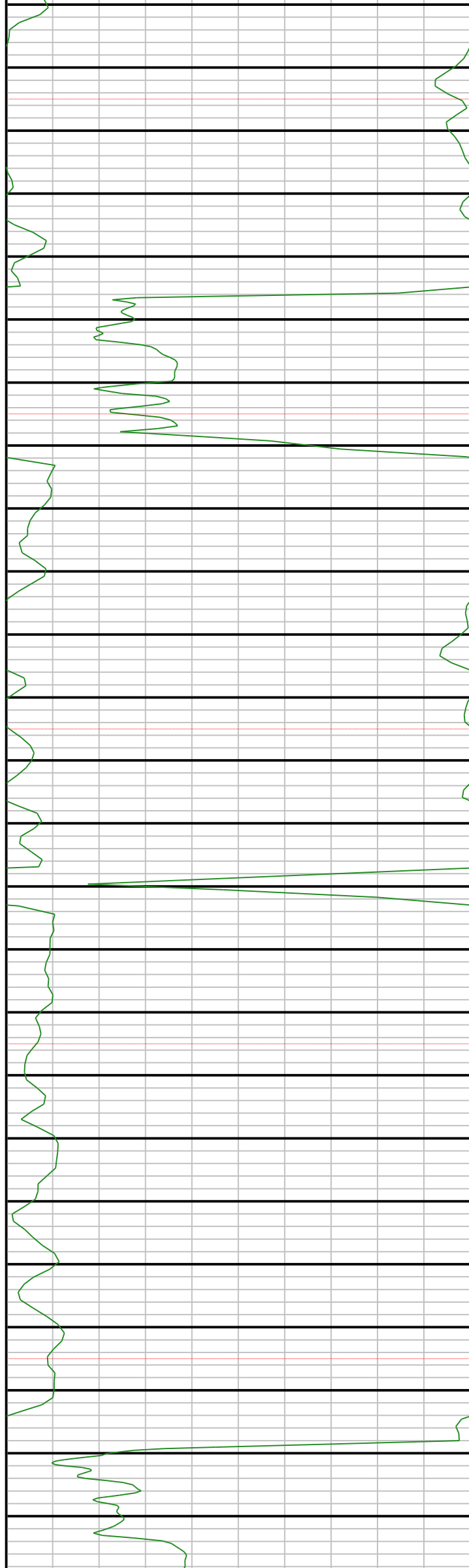






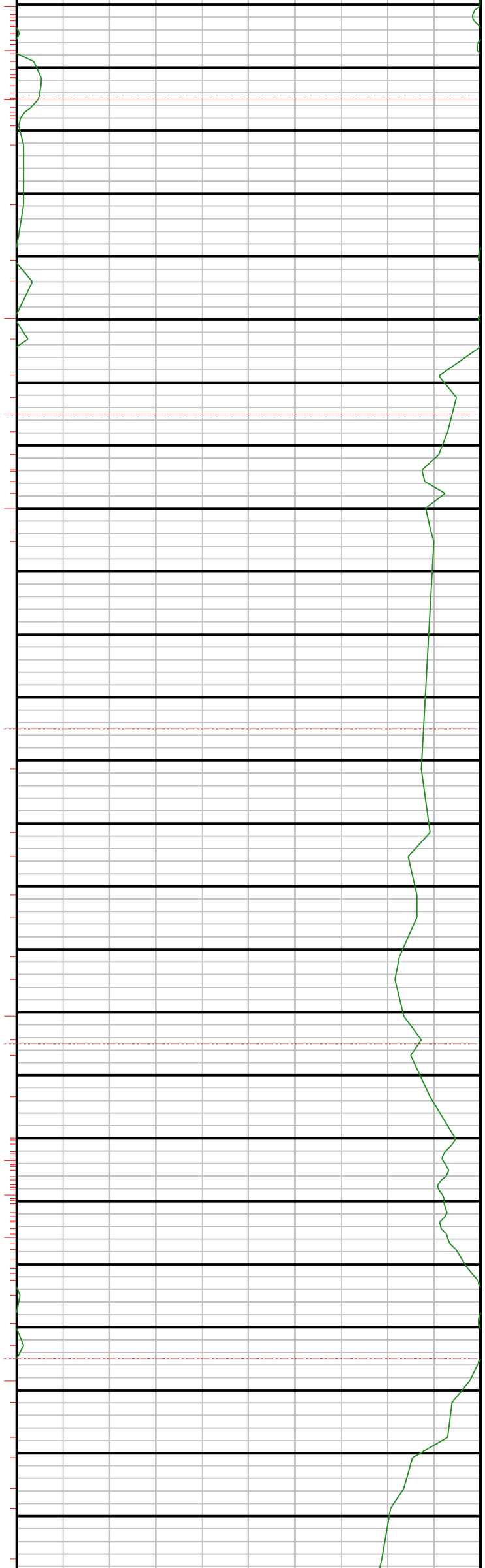




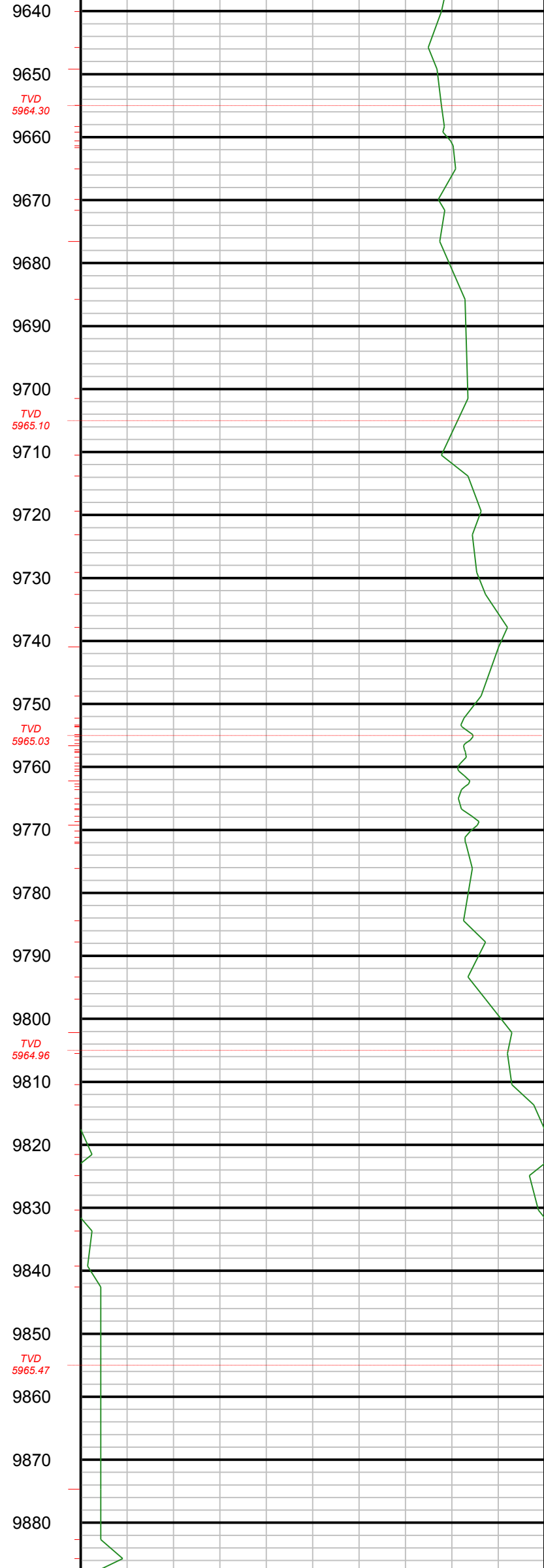
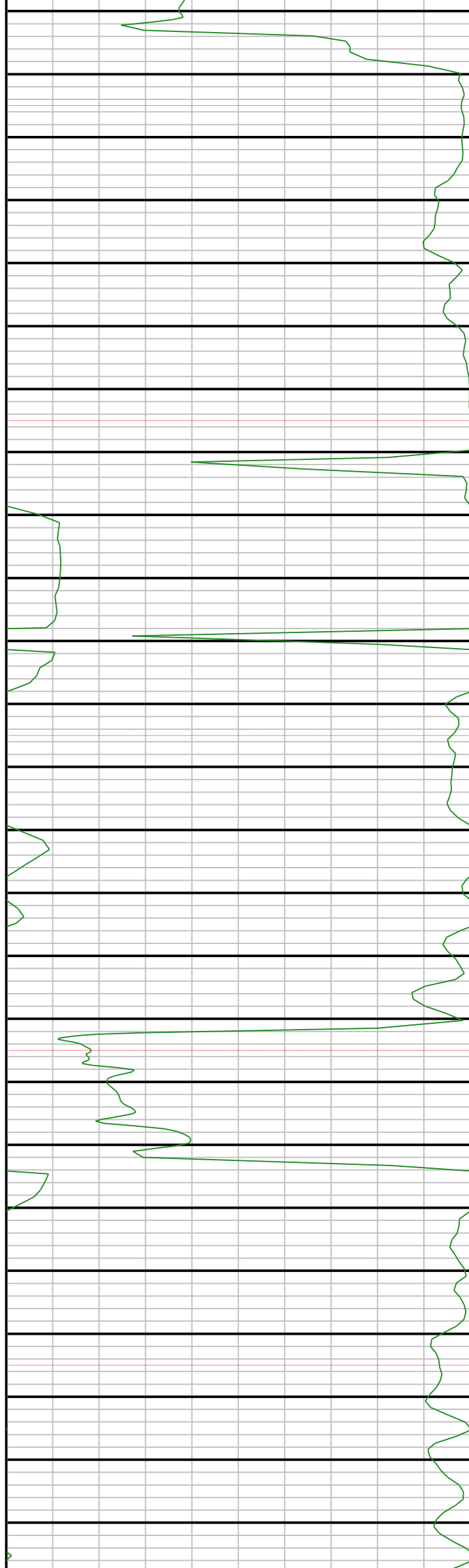


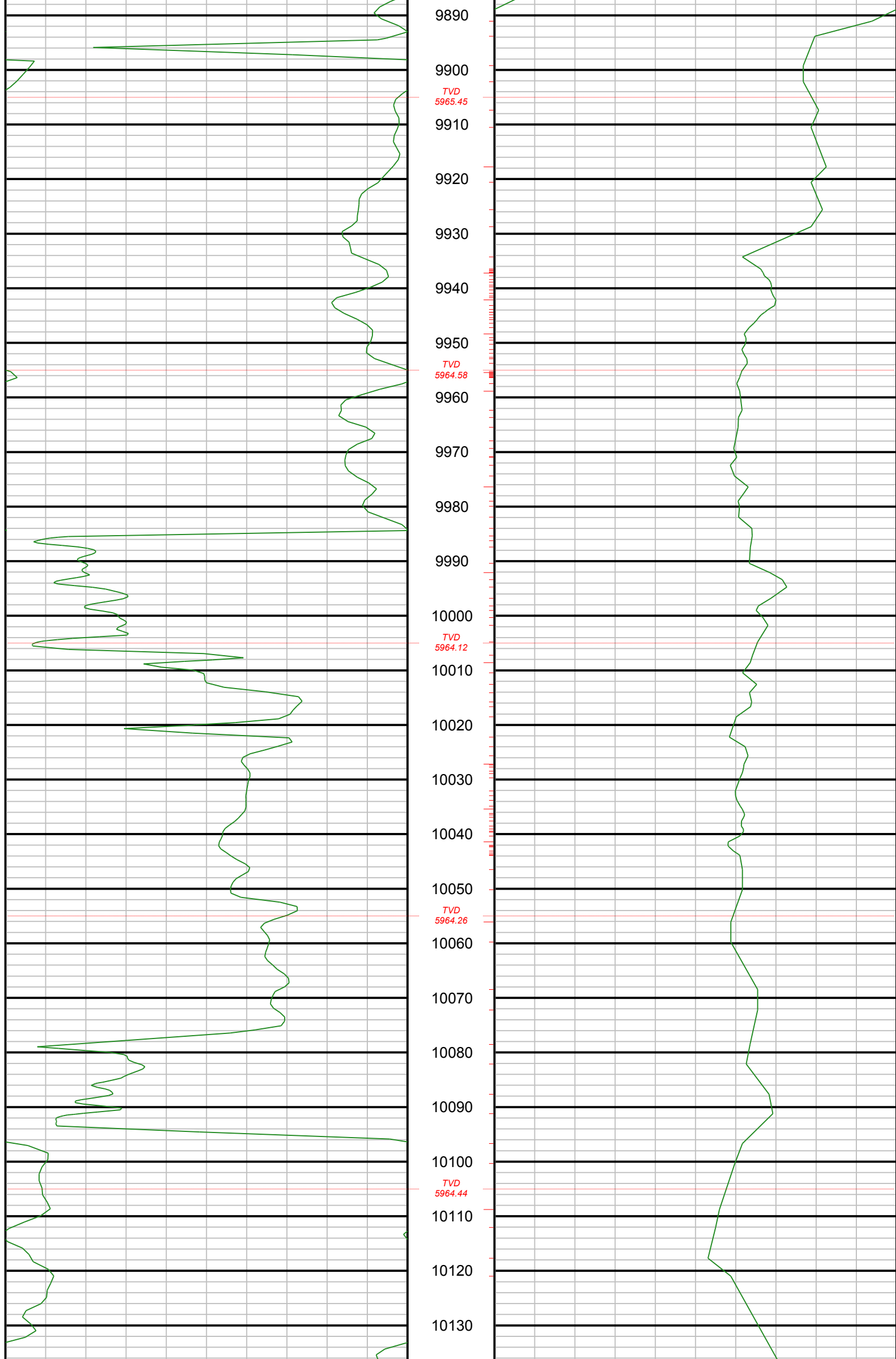
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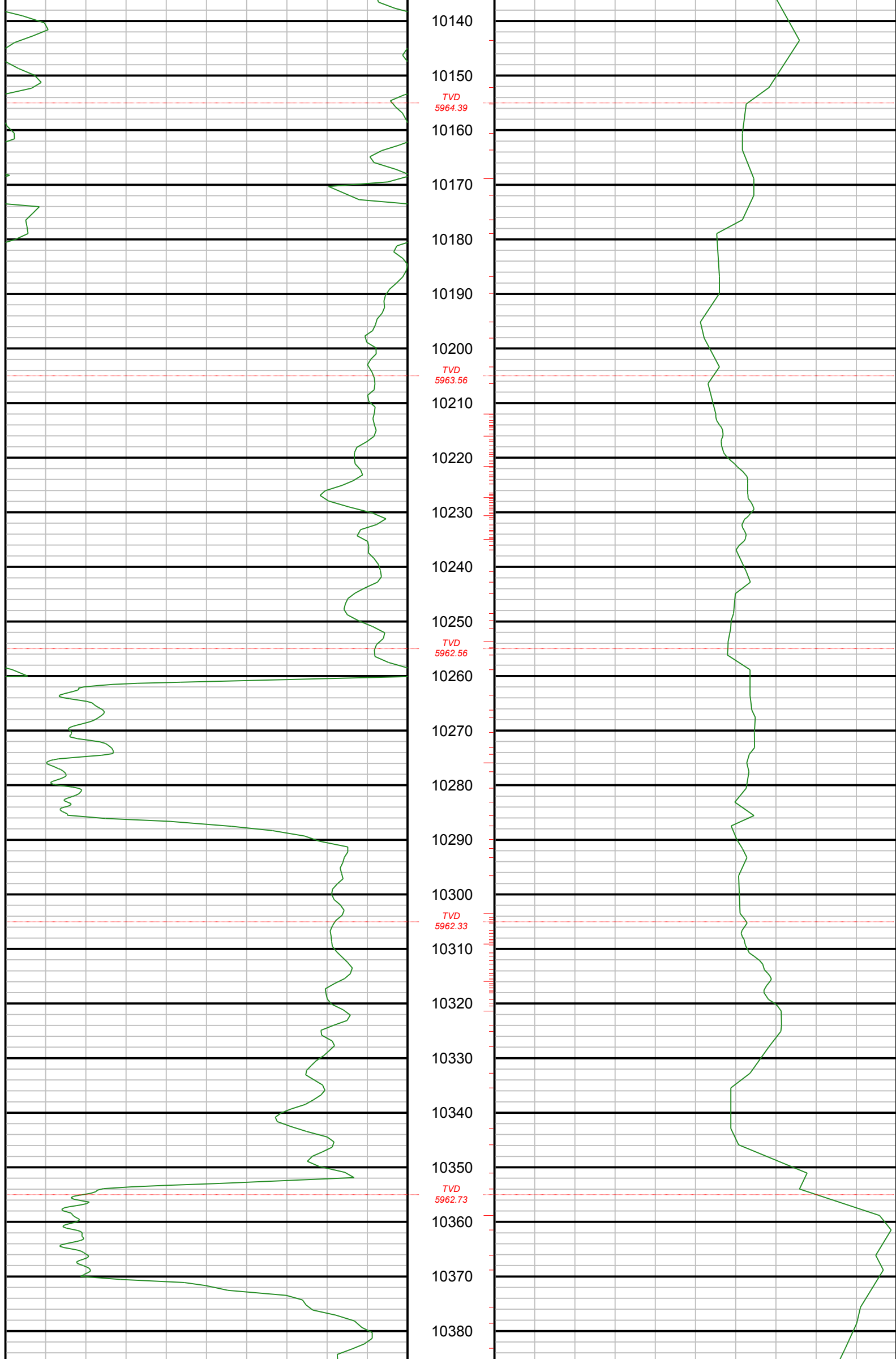
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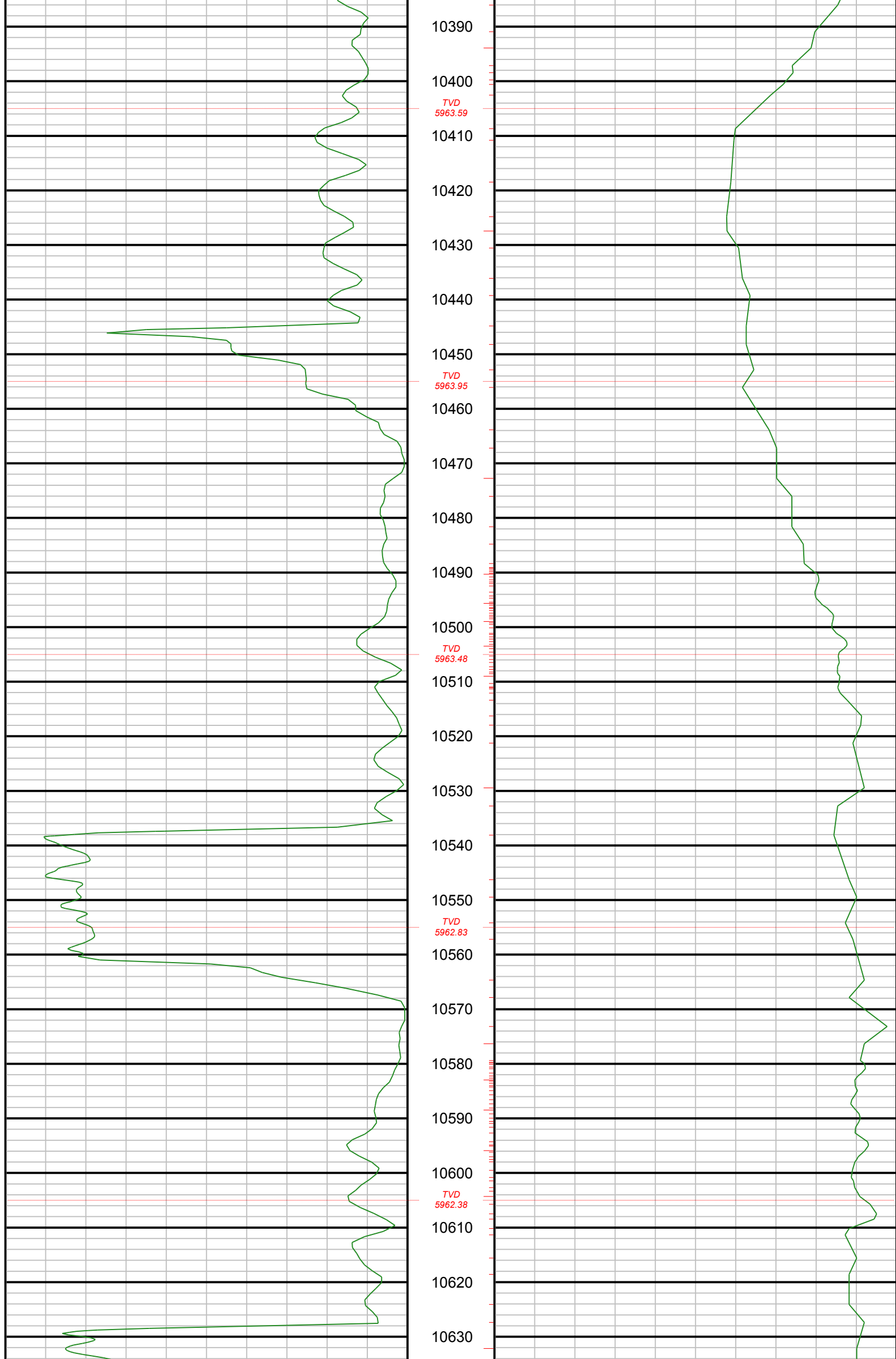


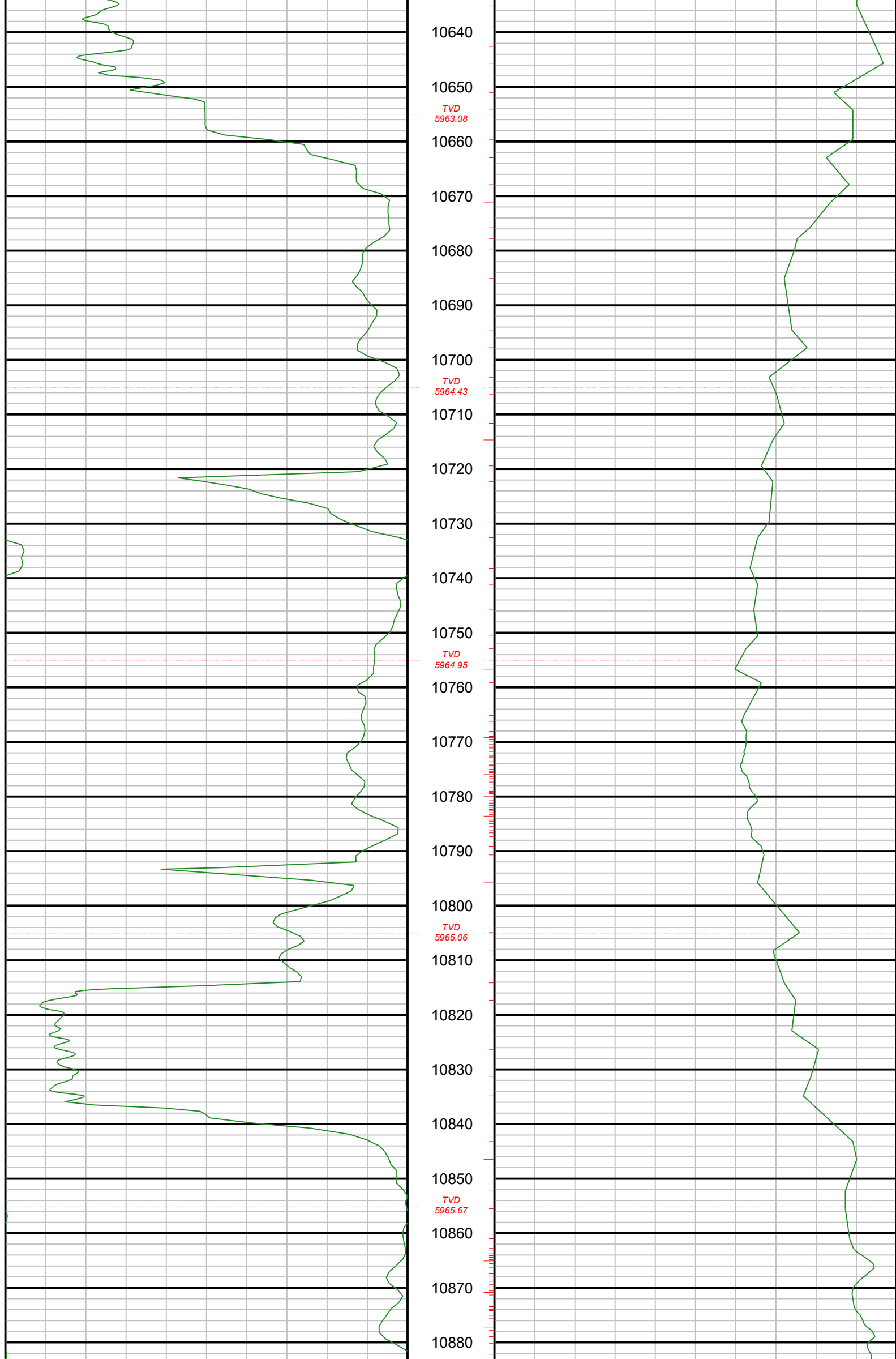


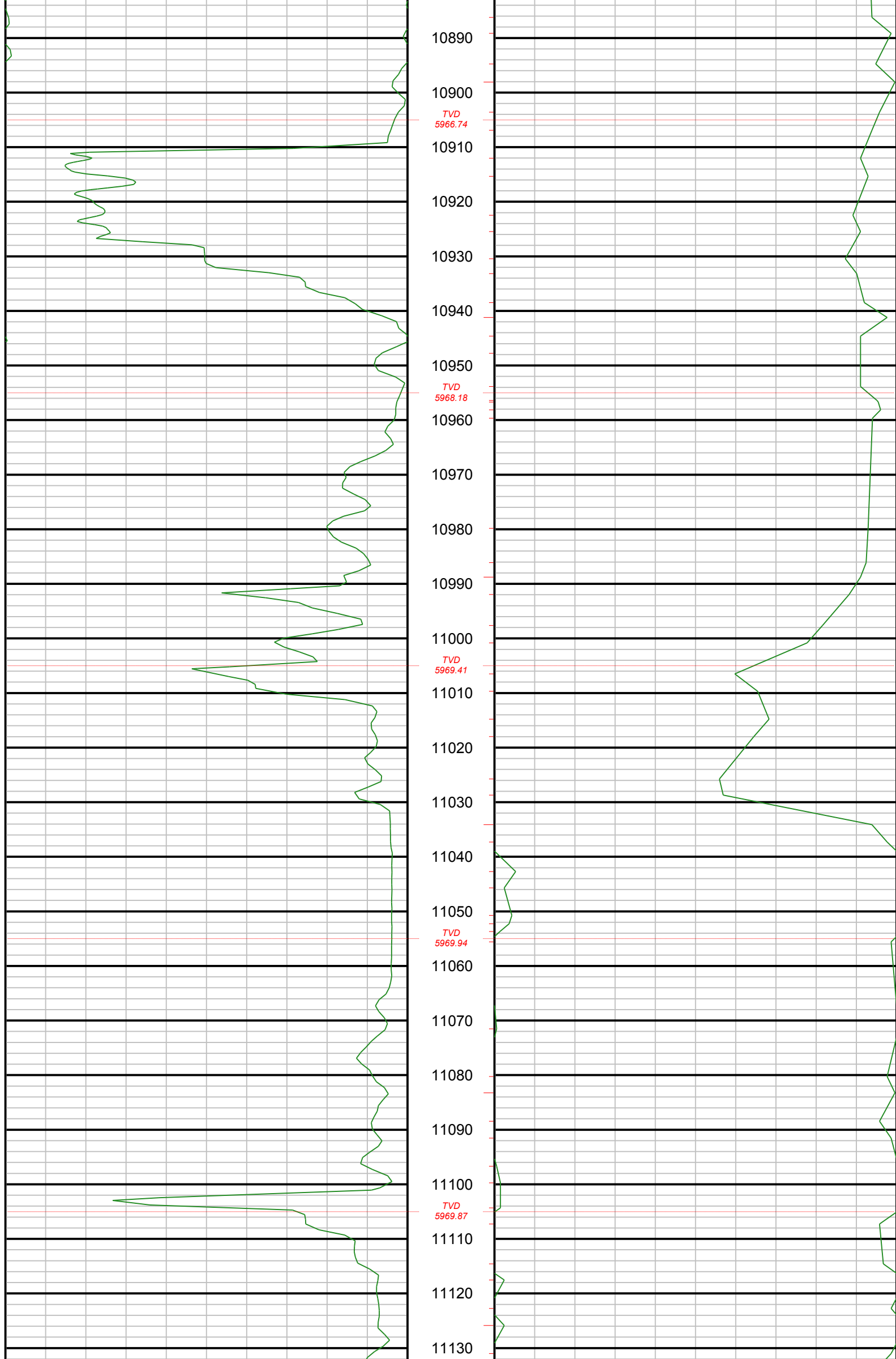


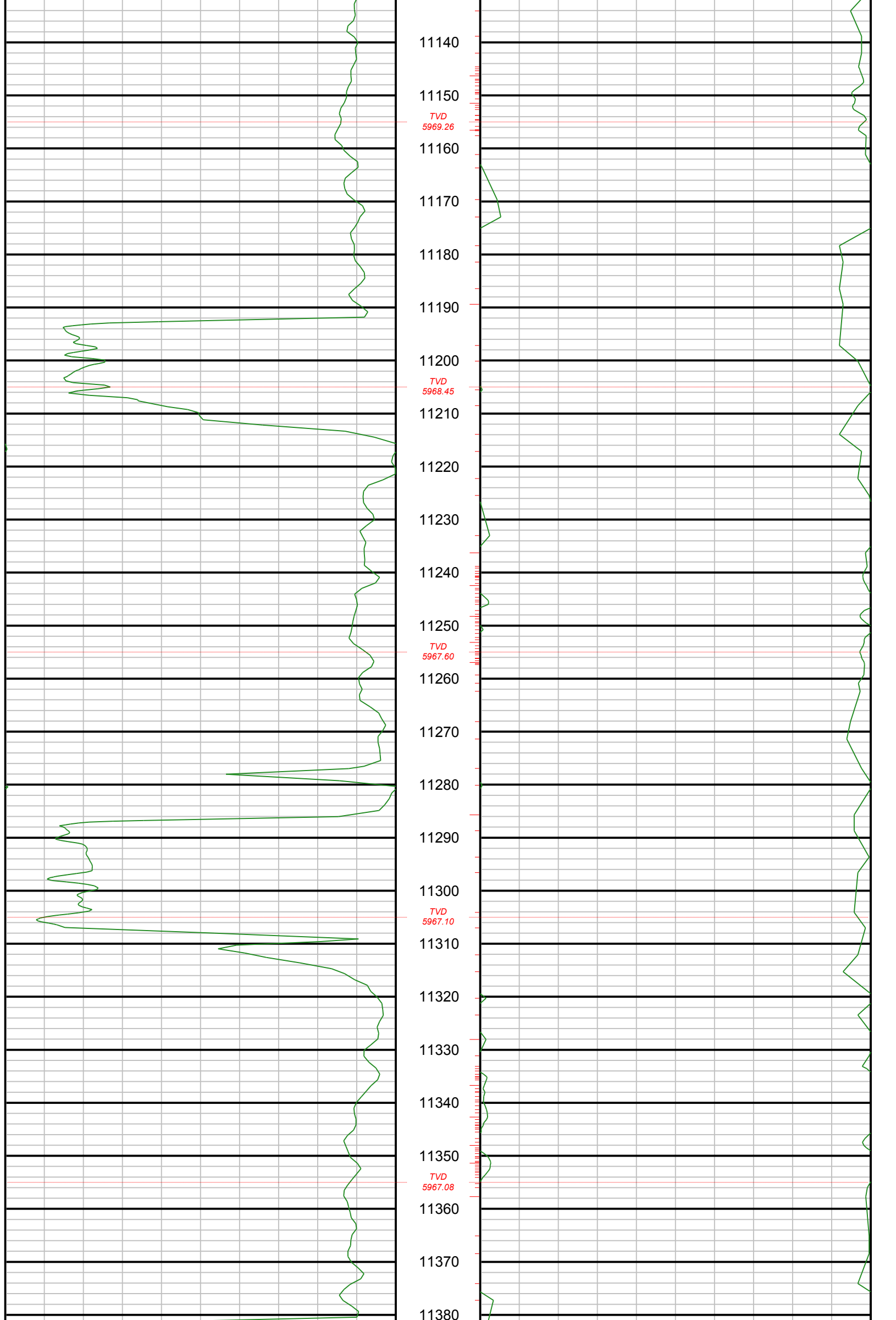


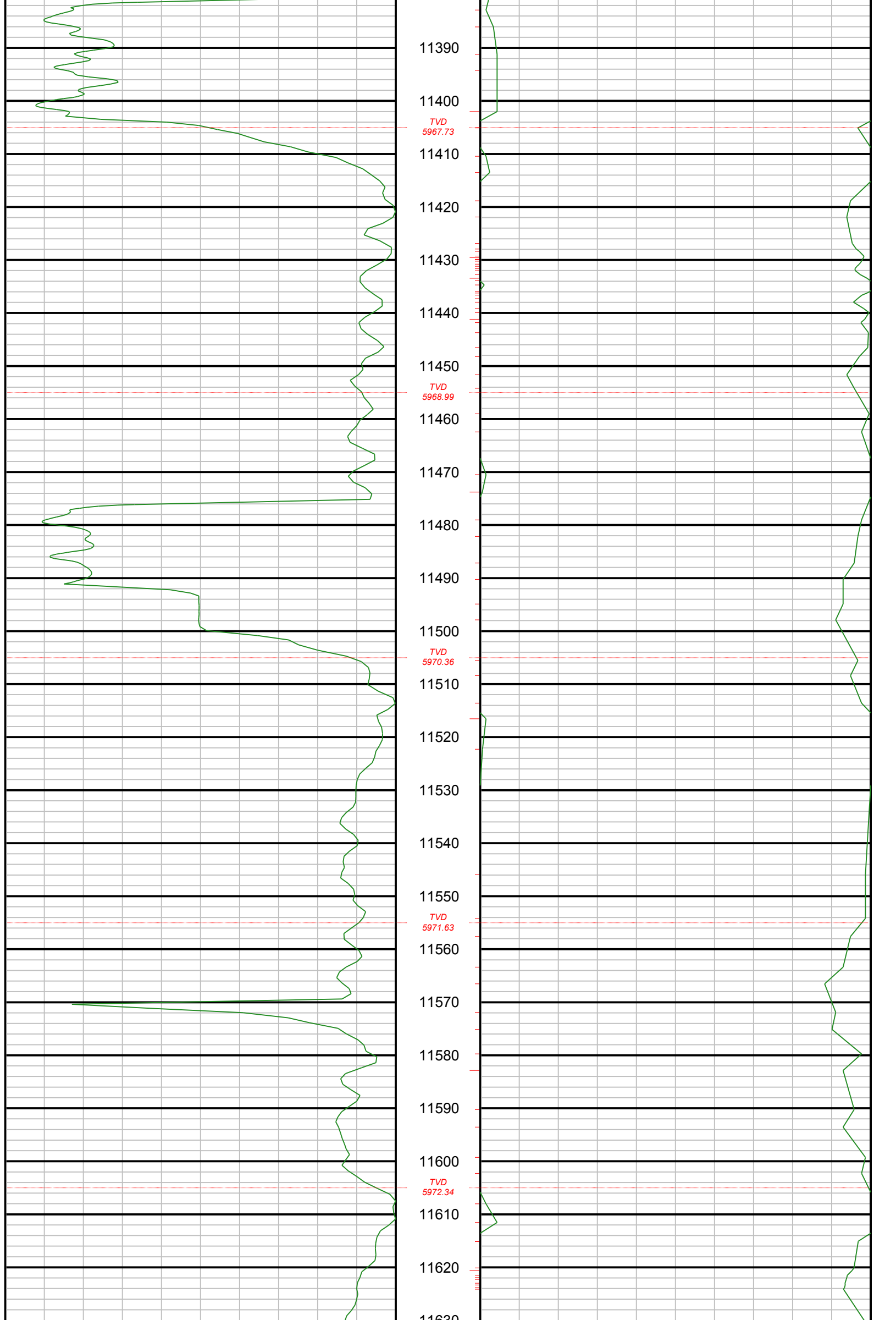




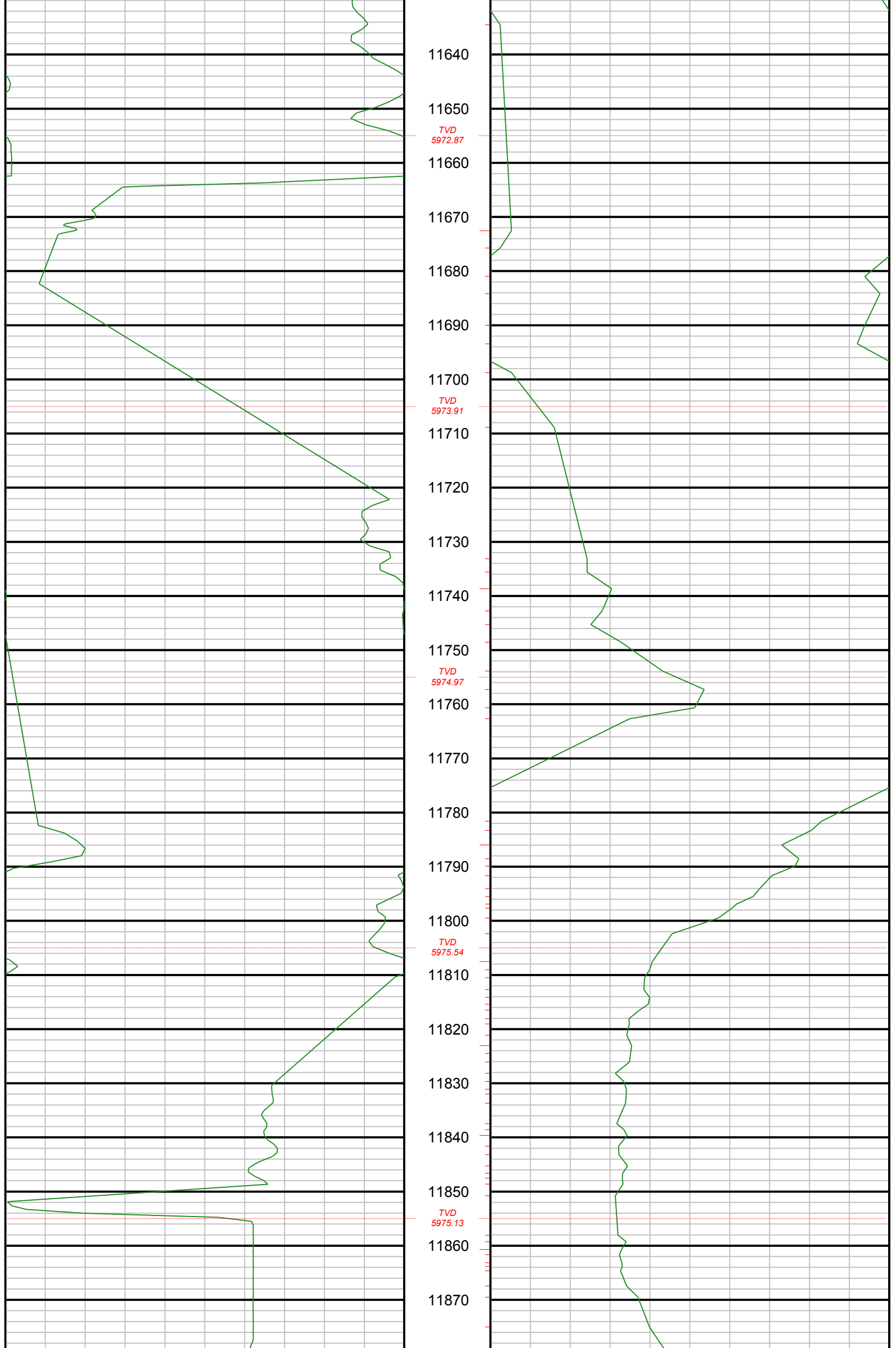


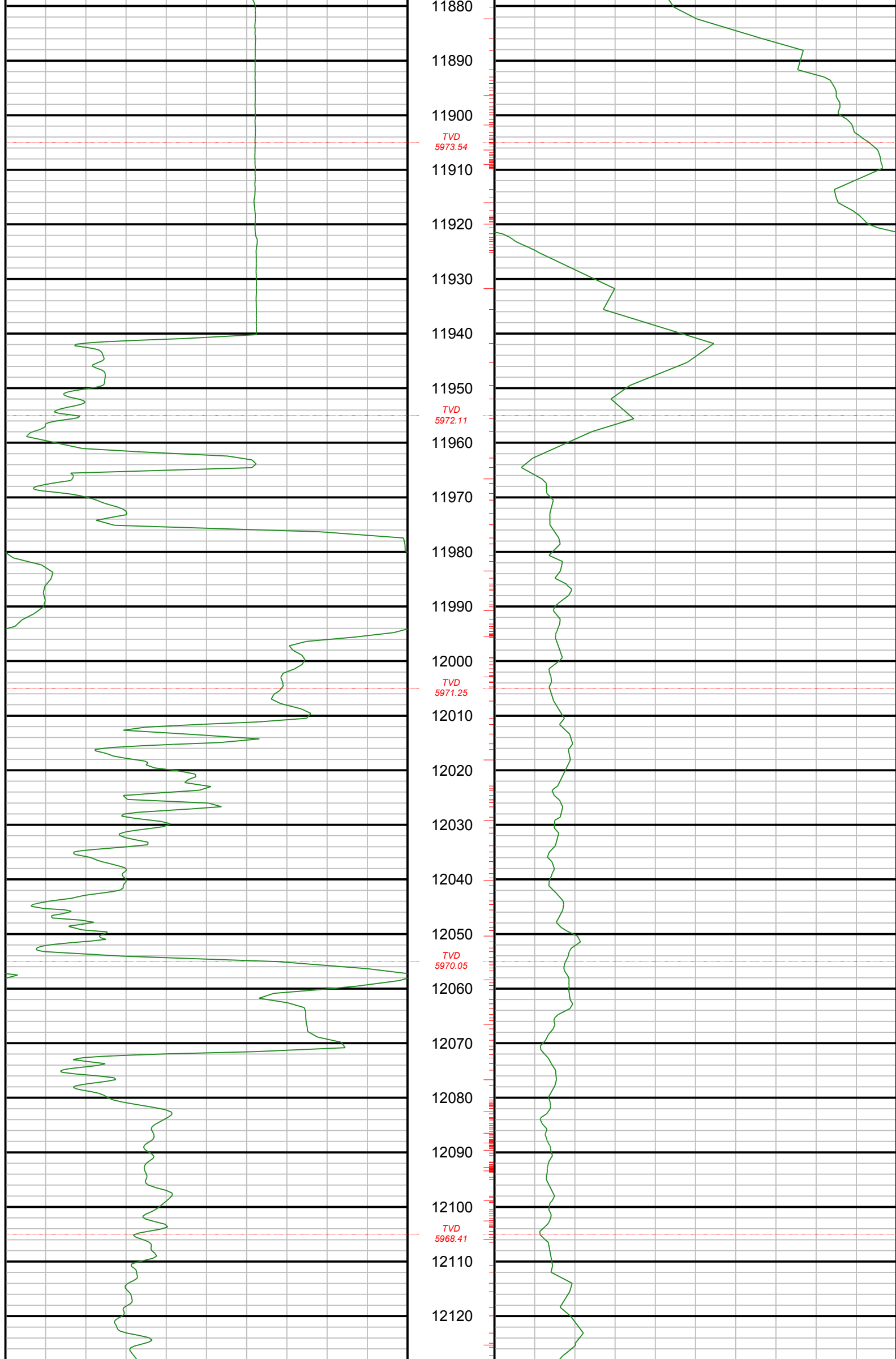


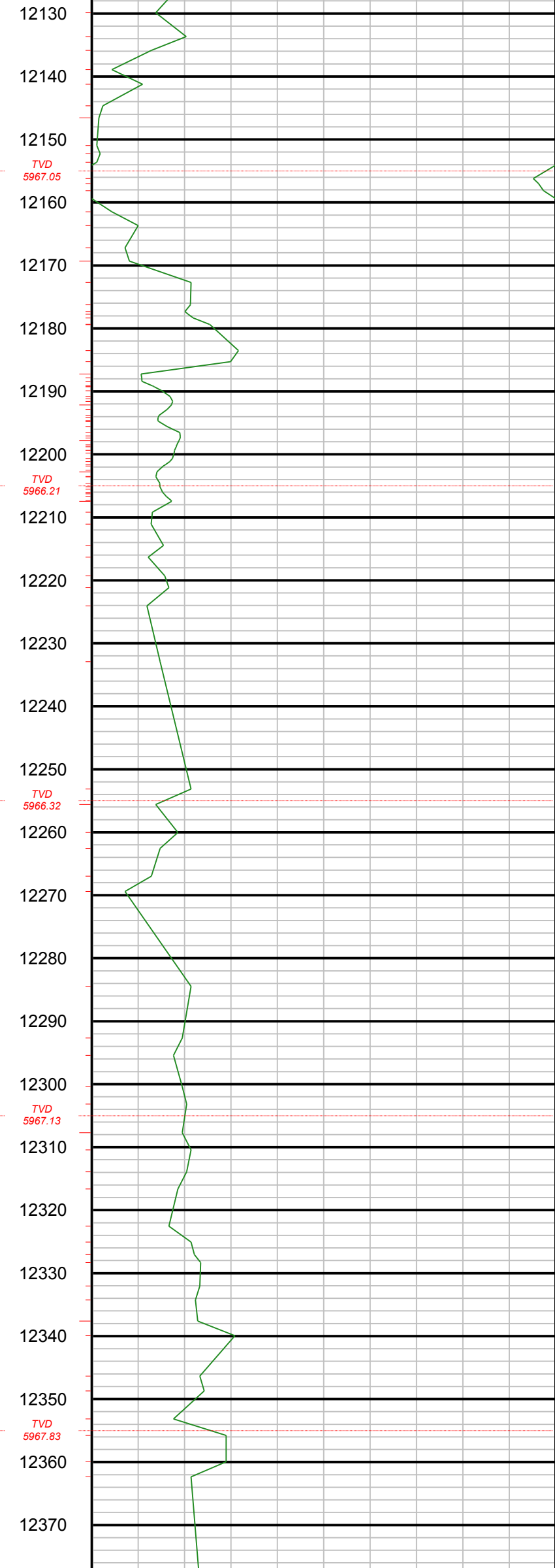
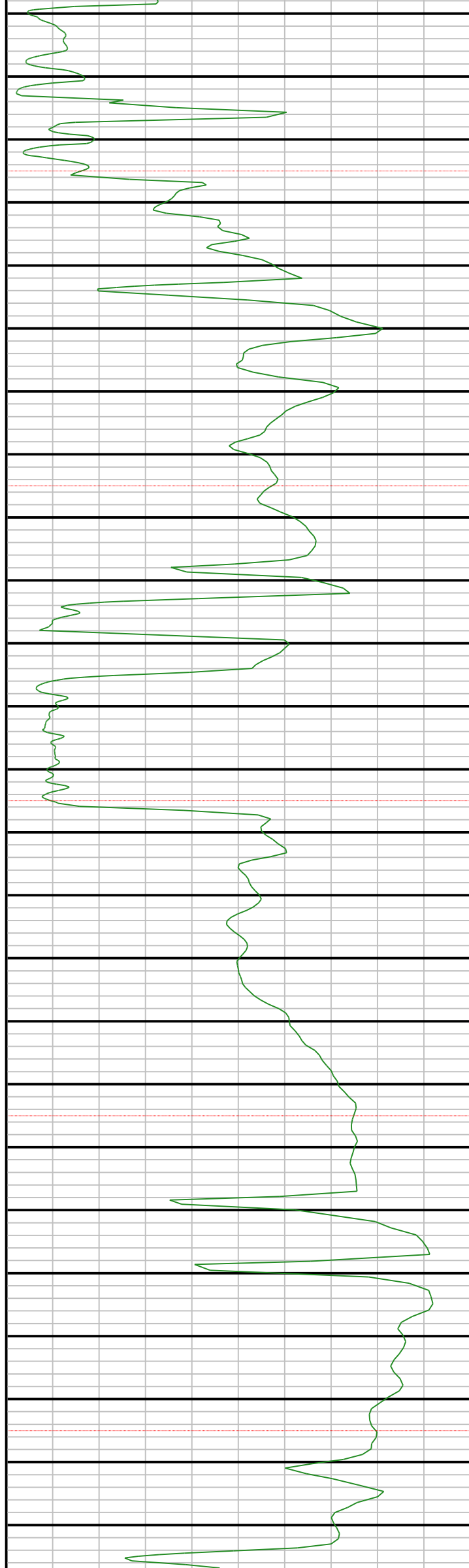


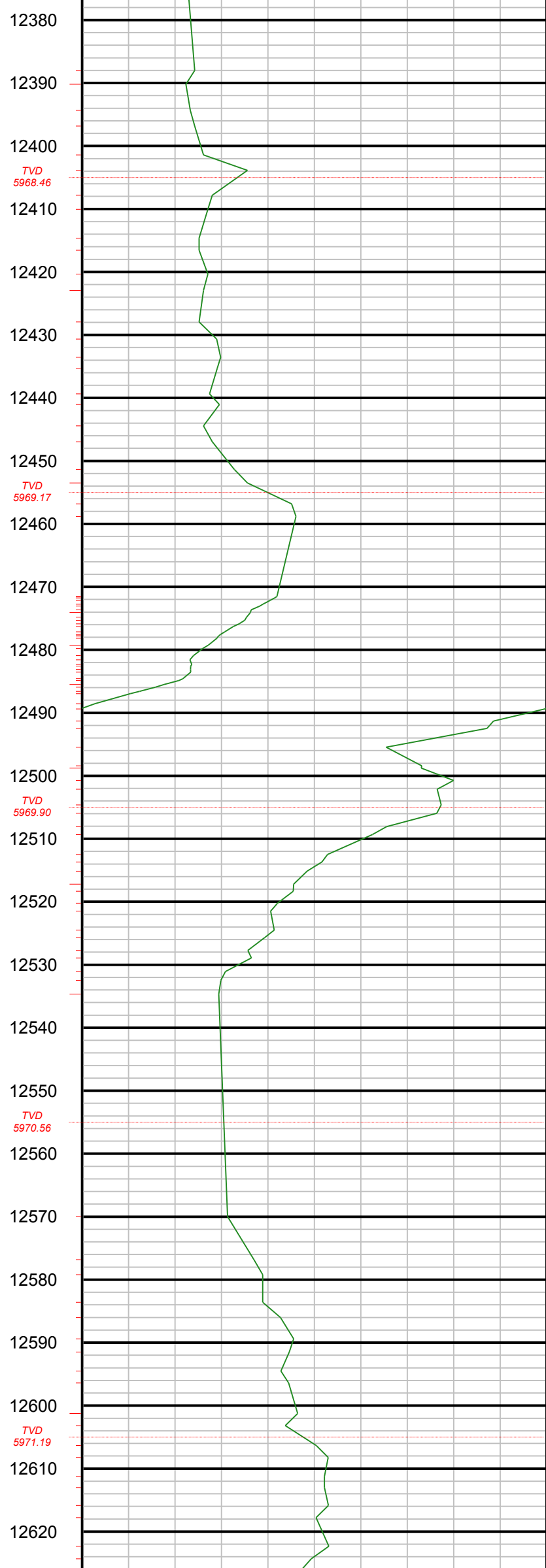
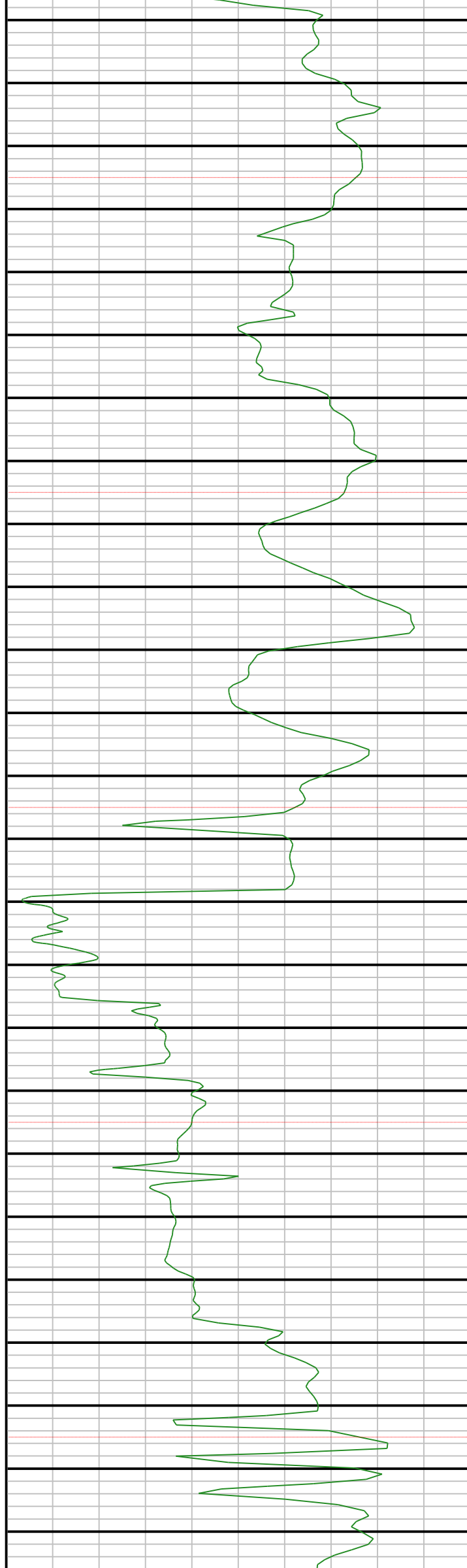


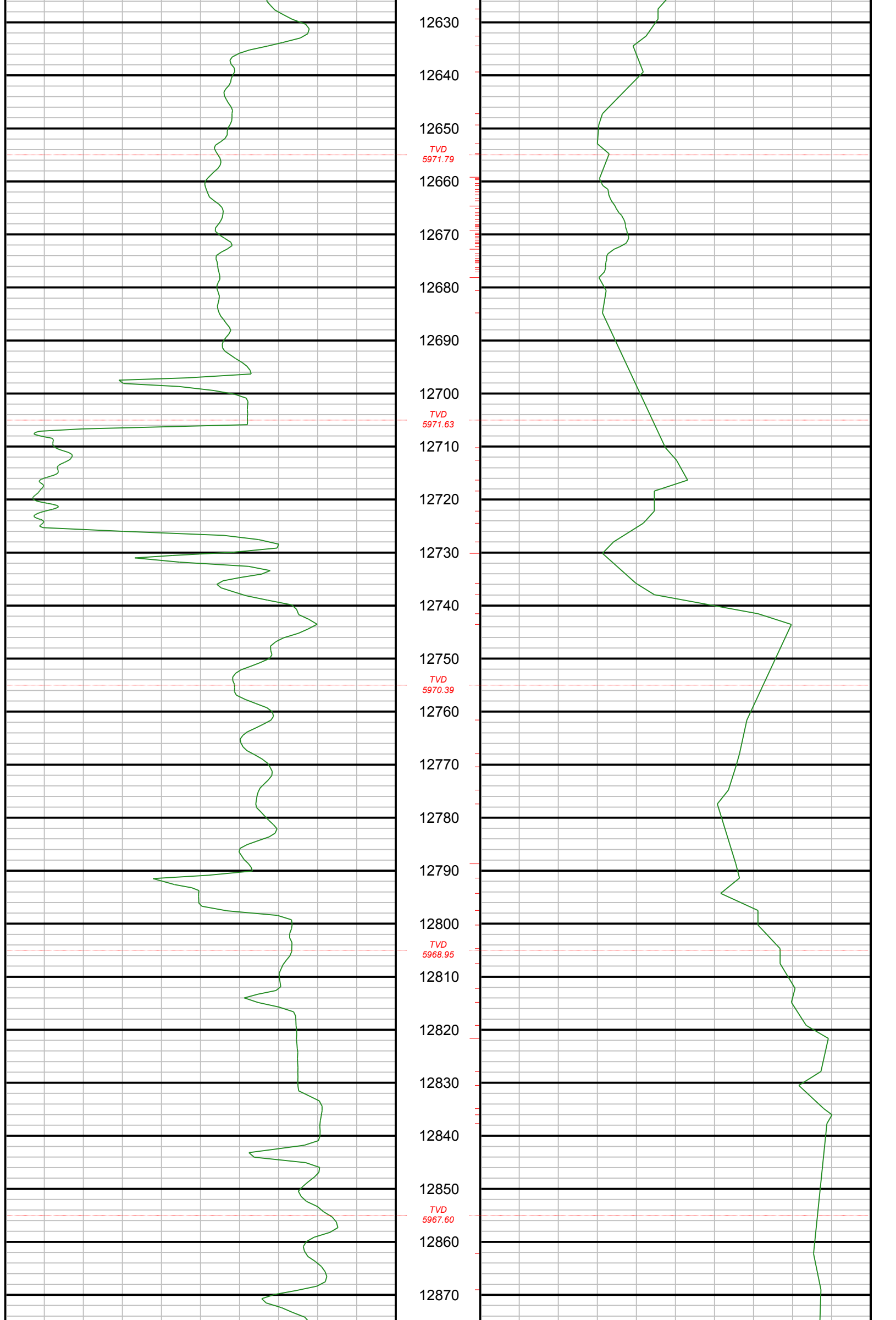


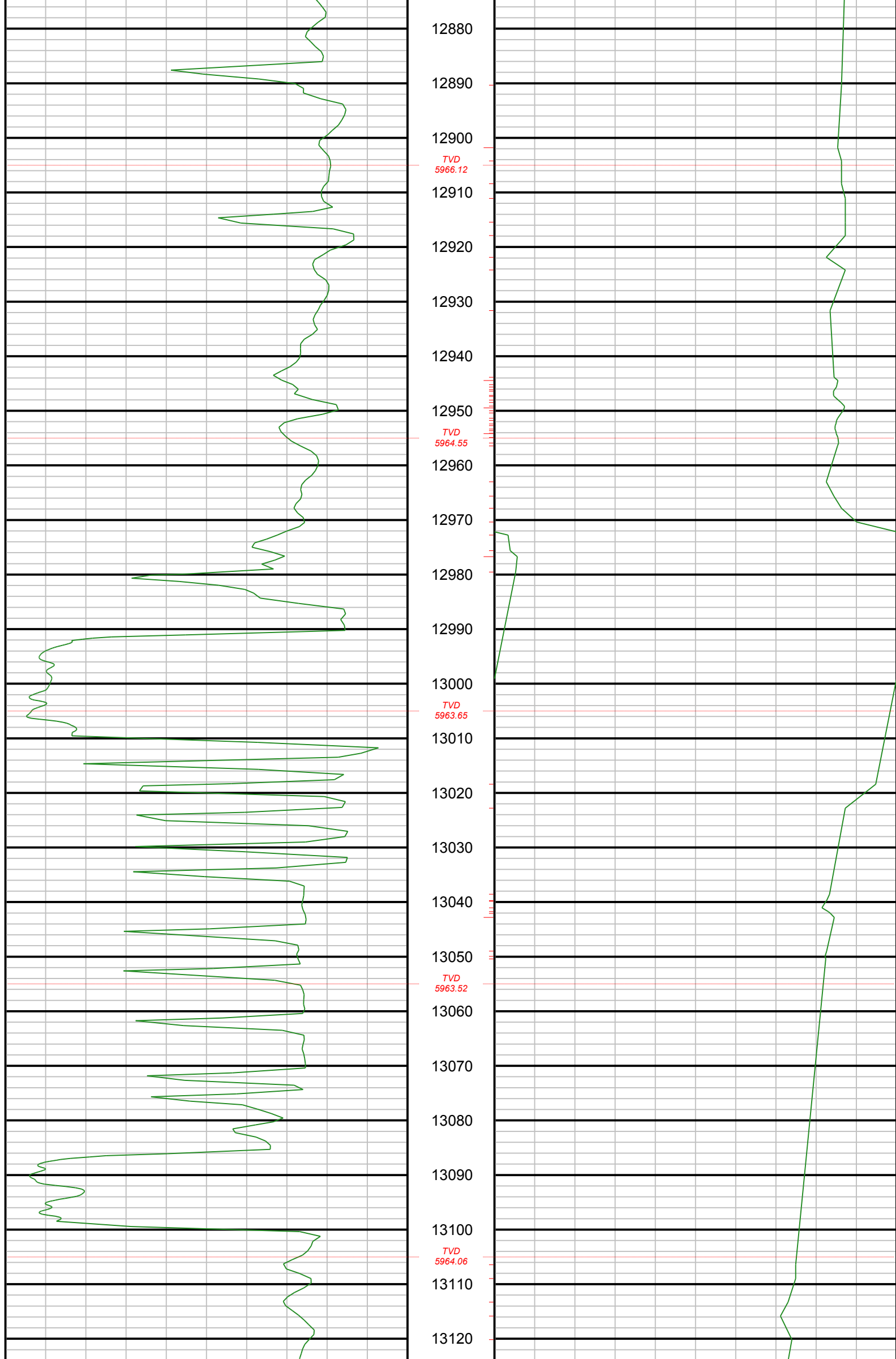


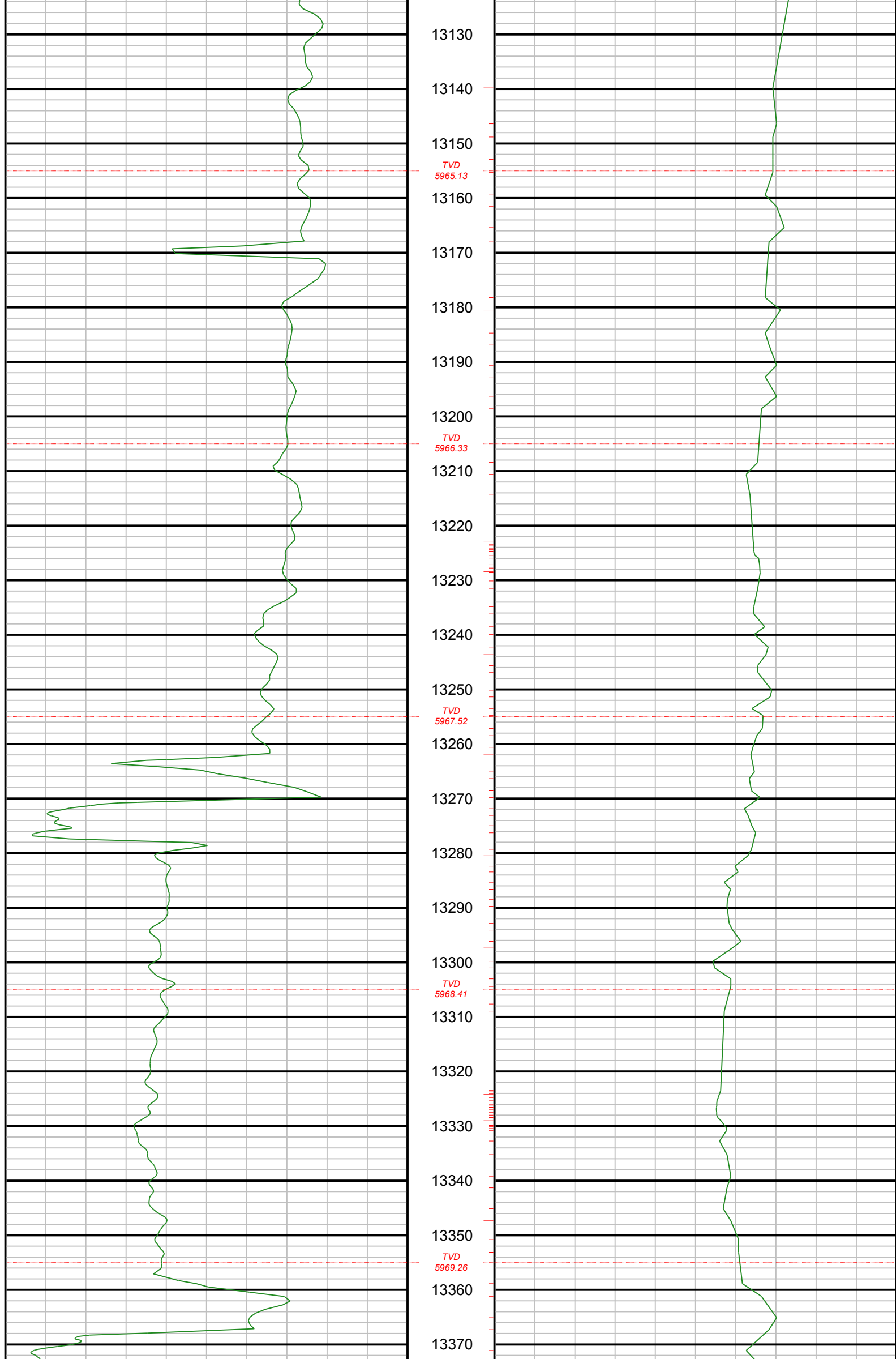


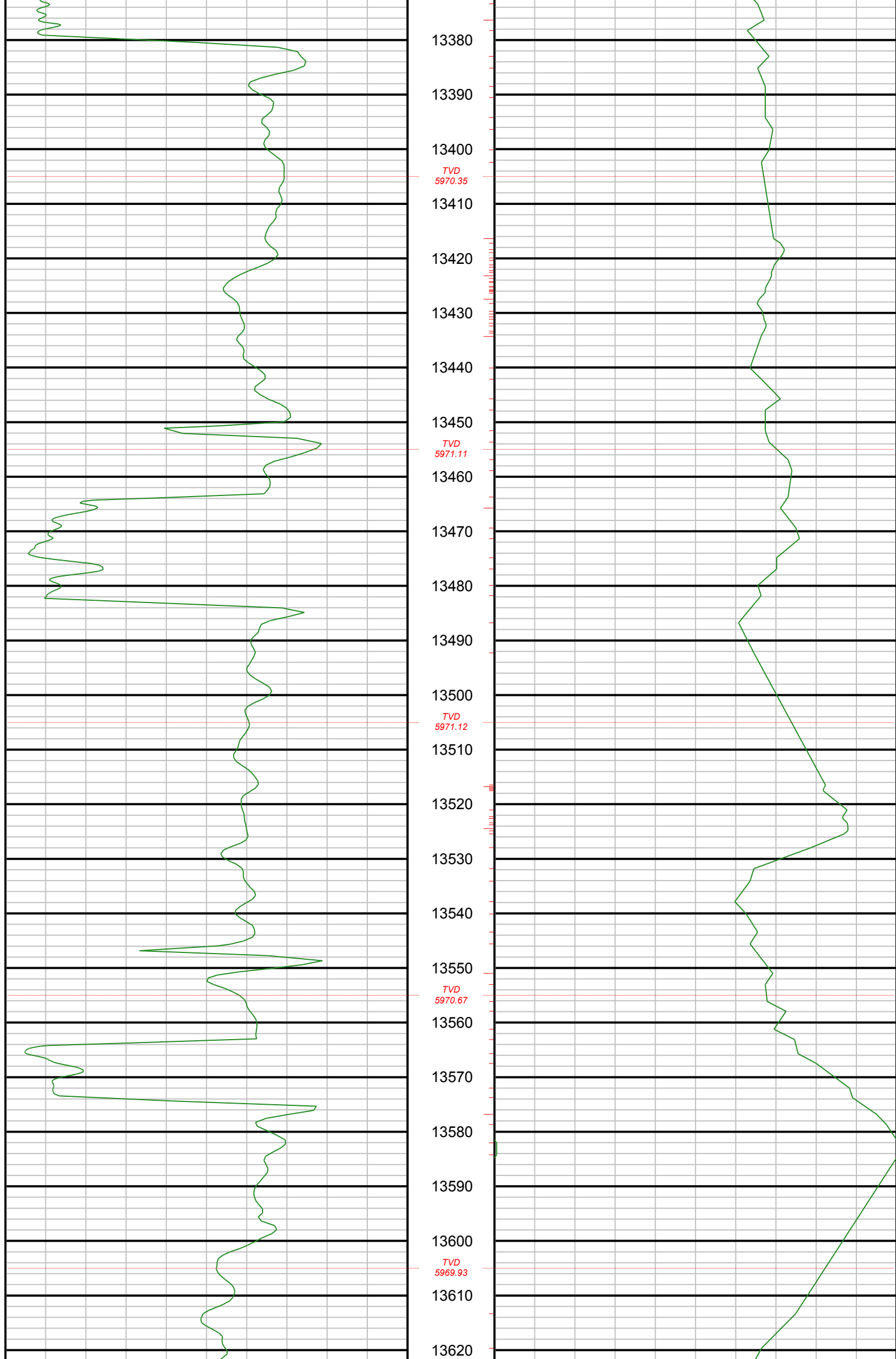




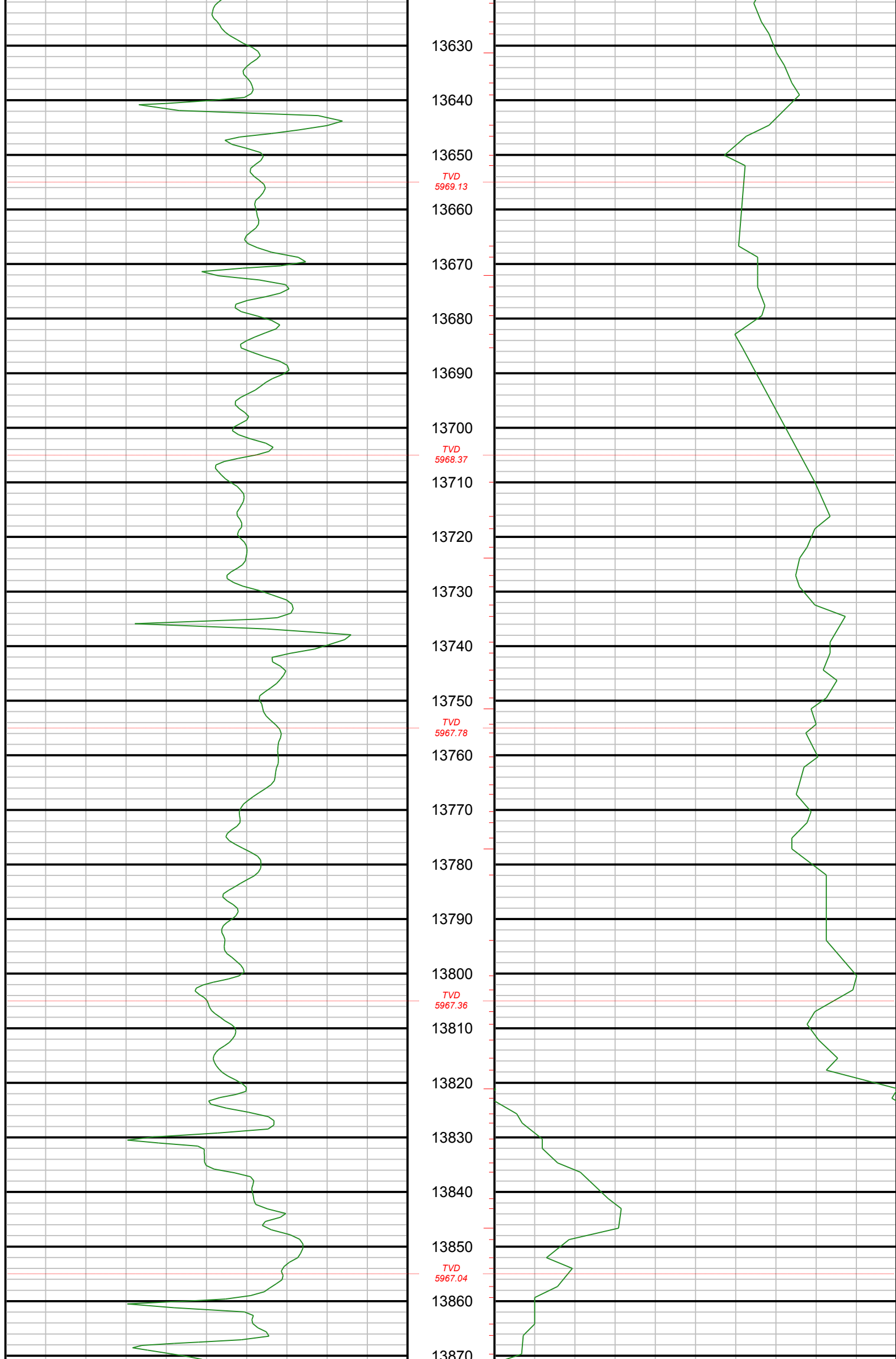


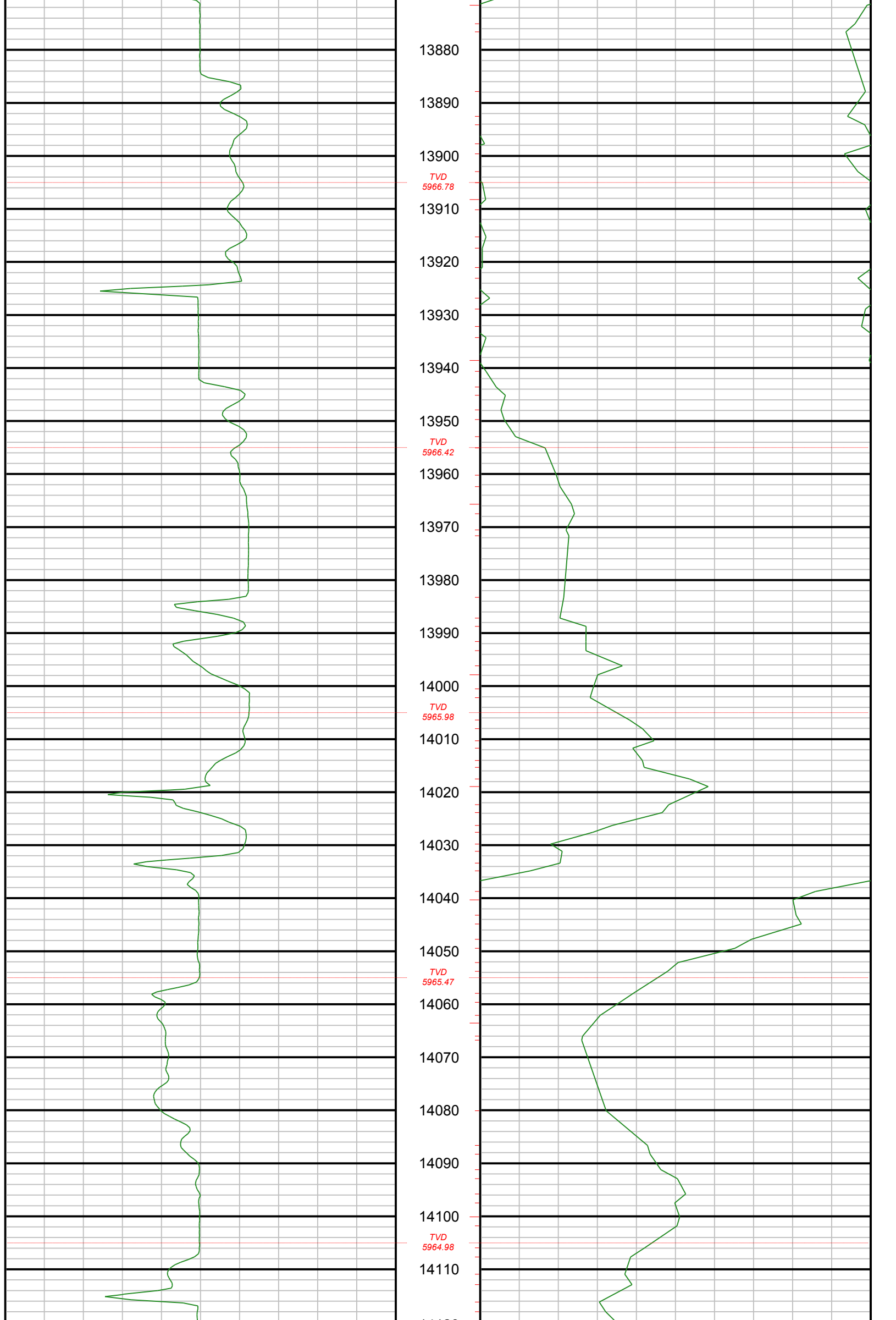


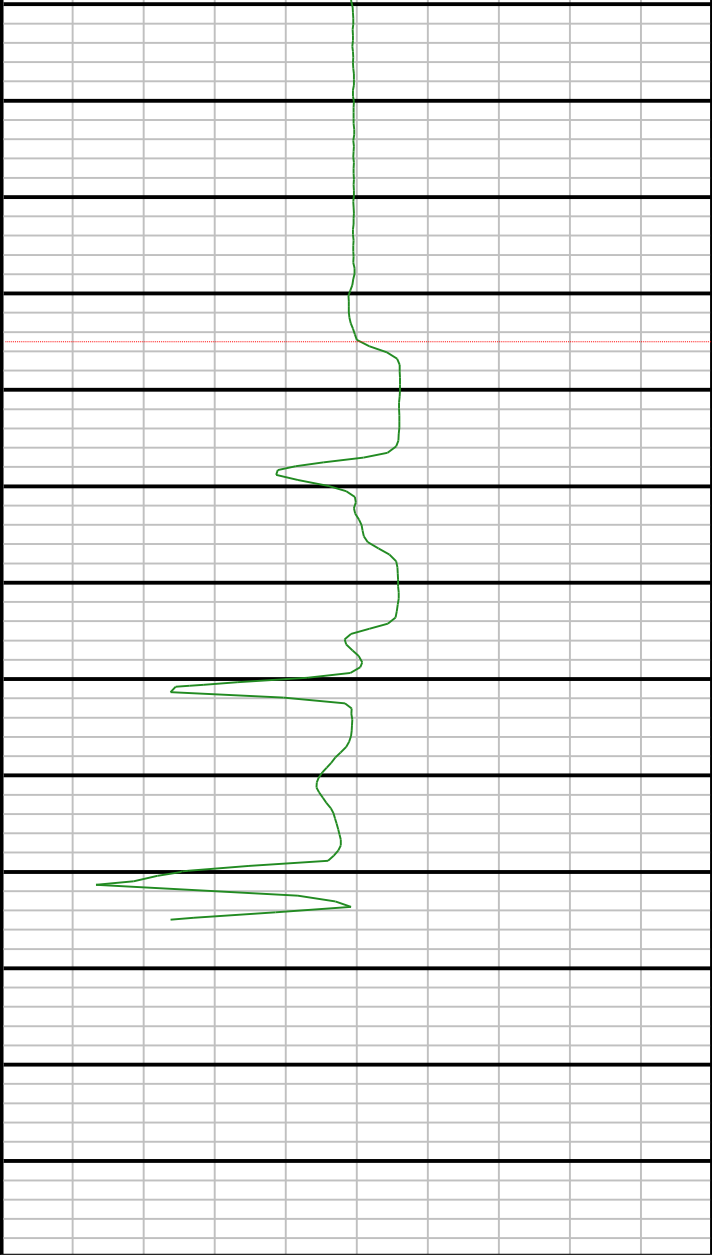




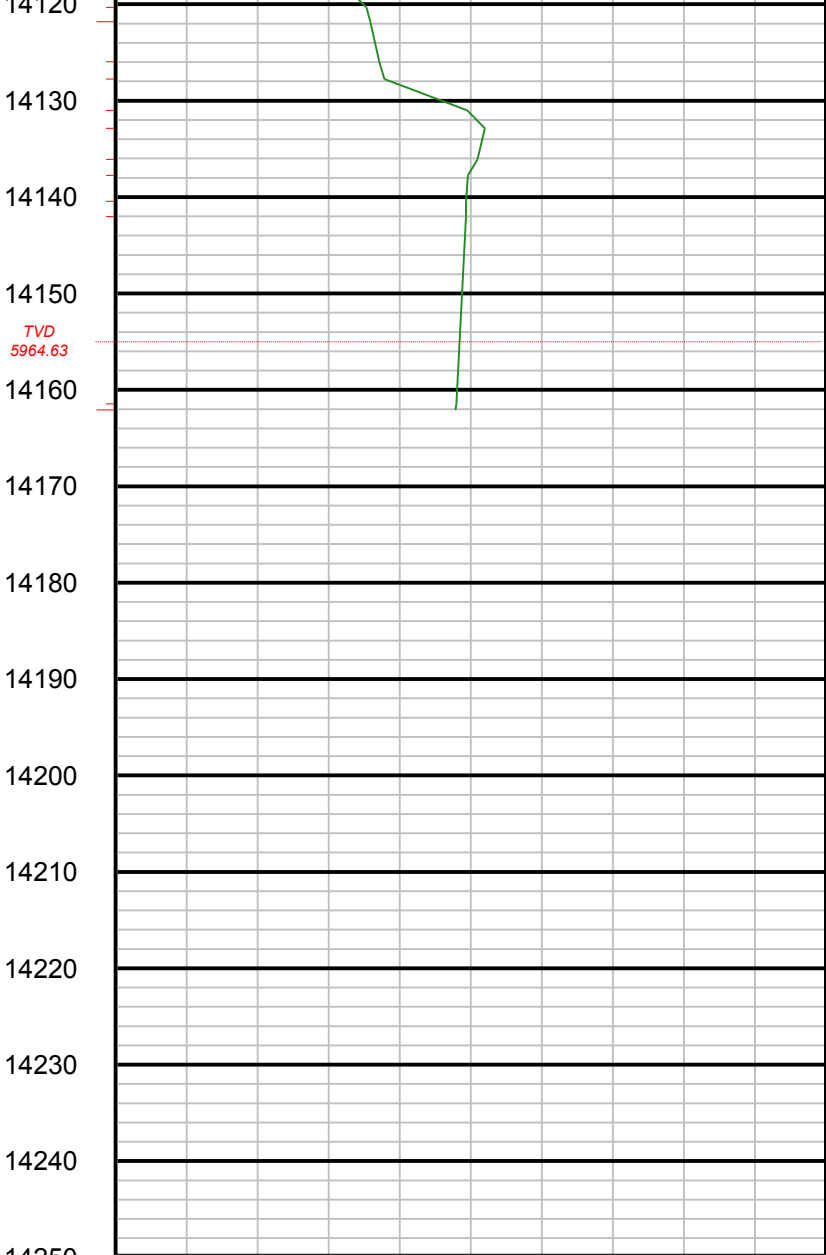








ROP		ROP
0	ft/hr	400
ROP		ROP
400	ft/hr	800
ROP		ROP
800	ft/hr	1200



Gamma		Gama
0	A-API	150
Gamma		Gama
150	A-API	300
Gamma		Gama
300	A-API	450
Gamma		Gama
450	A-API	600