



**MD**  
**1:240**  
**Feet**

**MWD Gamma / ROP (5")**

**Client:** *Whiting Oil & Gas Corporation*

**Well Name:** Razor Federal #12F-1307A

**API/UWID:** 051233872400

**County:** Weld **Field:** Wildcat

Permit #: 15-0359

**State:** Colorado **Country:** USA

**Longitude:** 103° 49' 3.66 W

Latitude: 40° 51' 16.041 N

# Personnel

**Company Representative**

K. Wilkerson/ B. Honeycutt

## Geologist

Ground Level:	4936.80 ft
Kelly Bushing:	4957.80 ft

Drill Floor: 21.00 ft

Permanent Datum: Mean Sea Level

Drilling Measured From: Kelly Bushing

Spud Date: July 19, 2015

Bottom Hole Temp: 226 °F

Log Start Depth: 0.00 ft

Log End Depth: 13850.00 ft

## Reference Data

North Reference: True North

Magnetic Declination: 7.43

Grid Convergence: 0.00

Total Mag Correction: 7.43

**Comments:**

# Main Leg

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1:240

Creation Date: July 26, 2015 01:10

	ROP	ROP
0	ft/hr	300
	ROP	ROP
300	ft/hr	600
	ROP	ROP
600	ft/hr	900
	ROP	ROP
900	ft/hr	1200

0

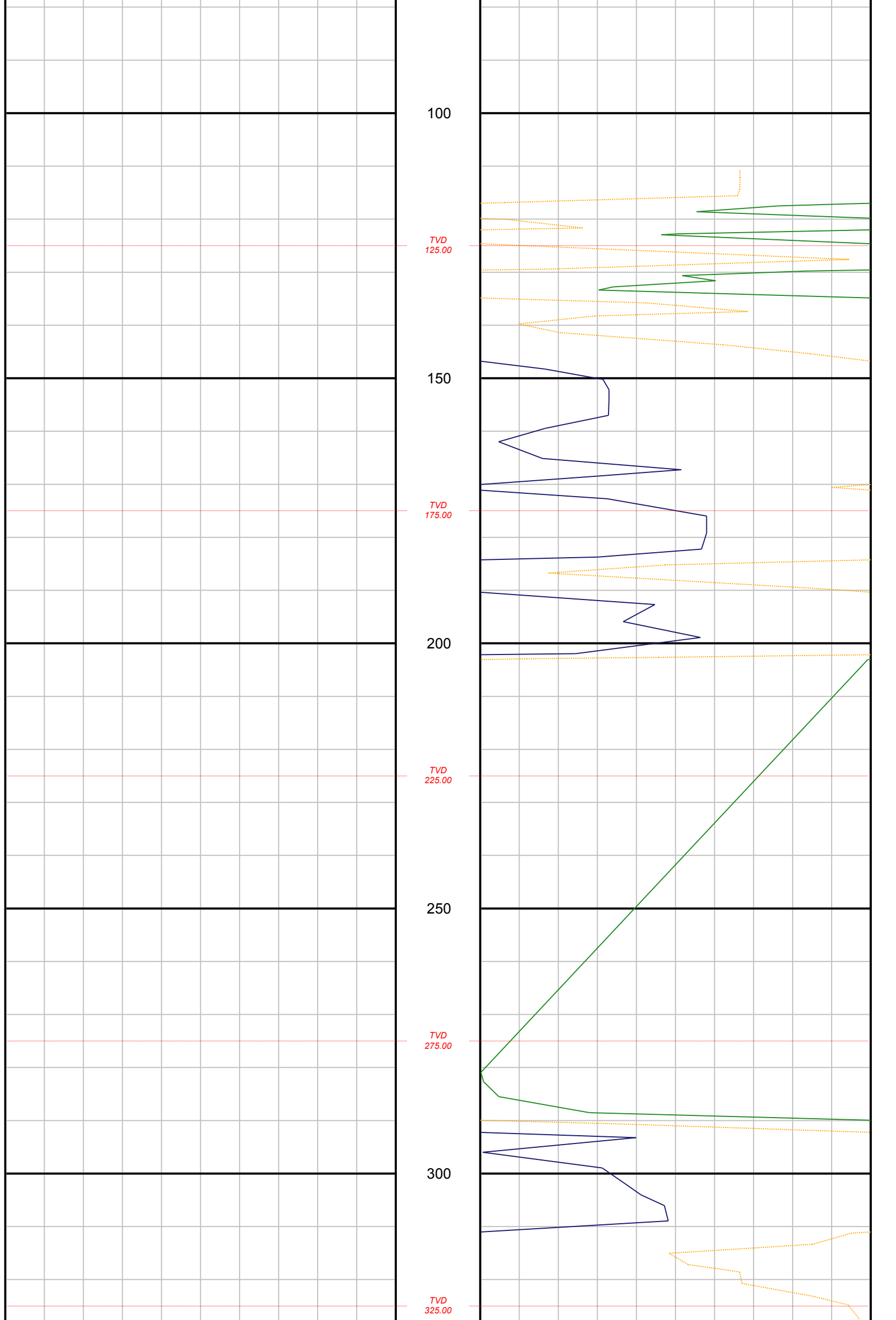
**TVD**  
**25.00**

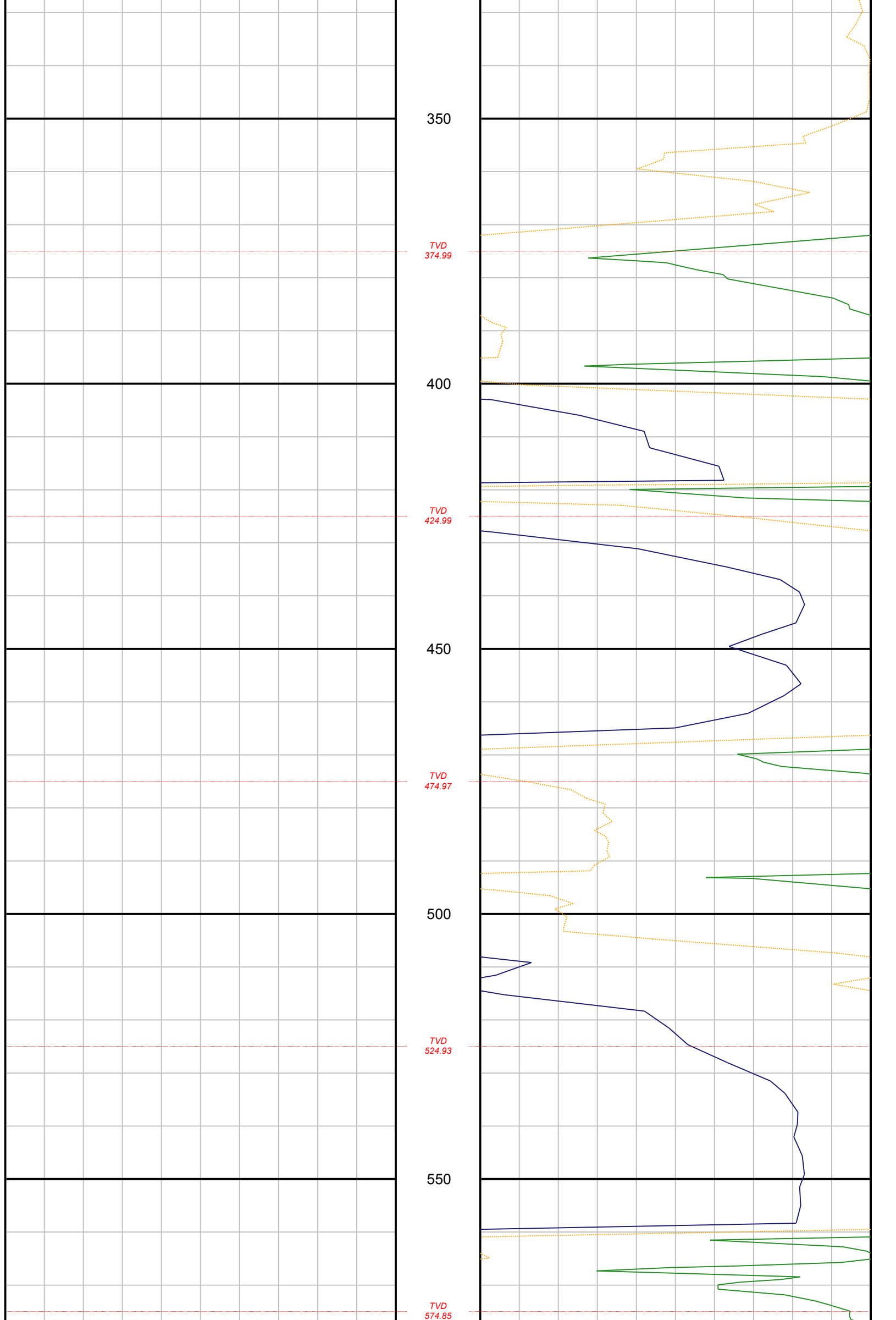
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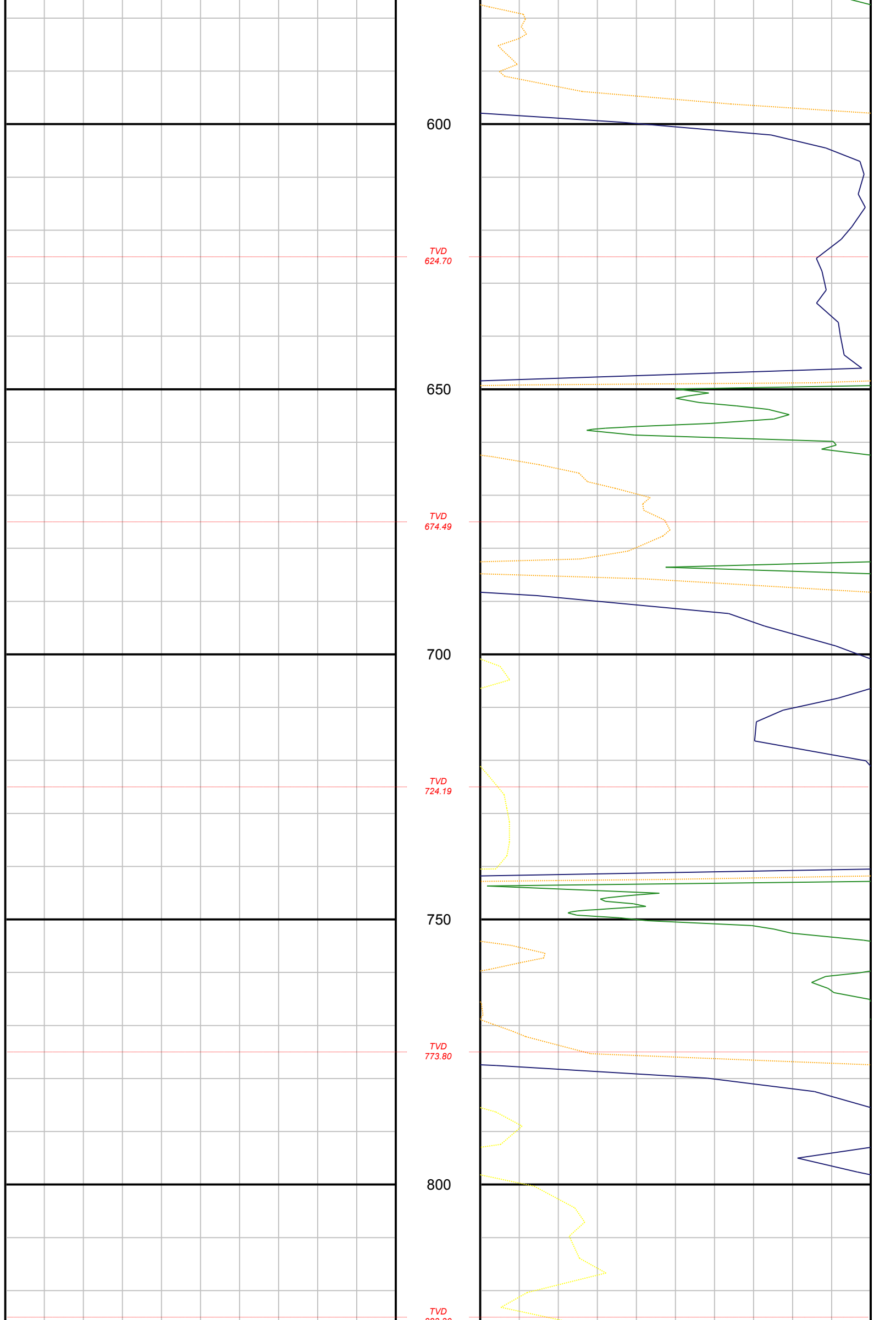
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**75.00**

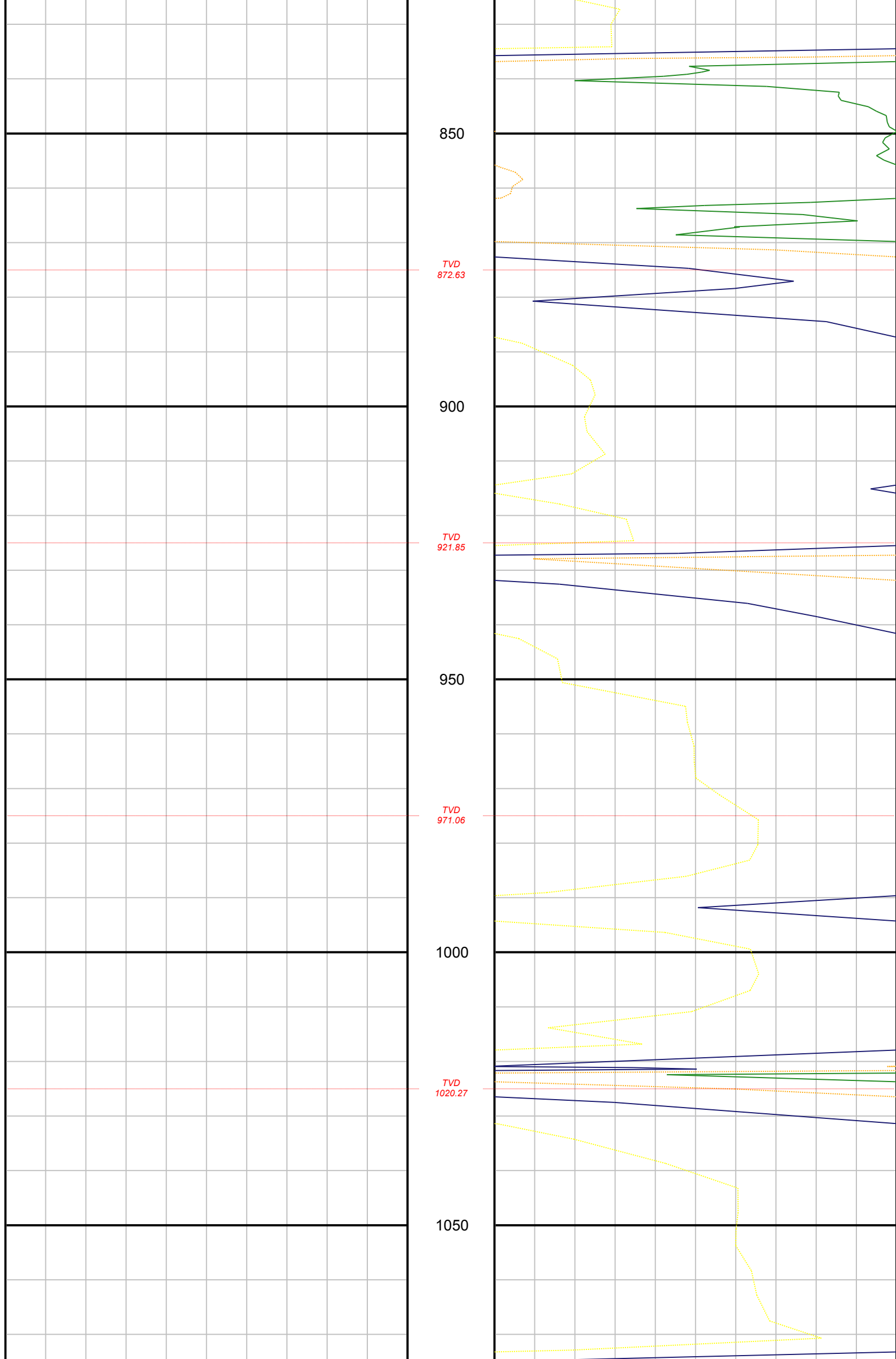
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	Gamma	Gama
200	AAPI	400
	Gamma	Gama
400	AAPI	600
	Gamma	Gama
600	AAPI	800

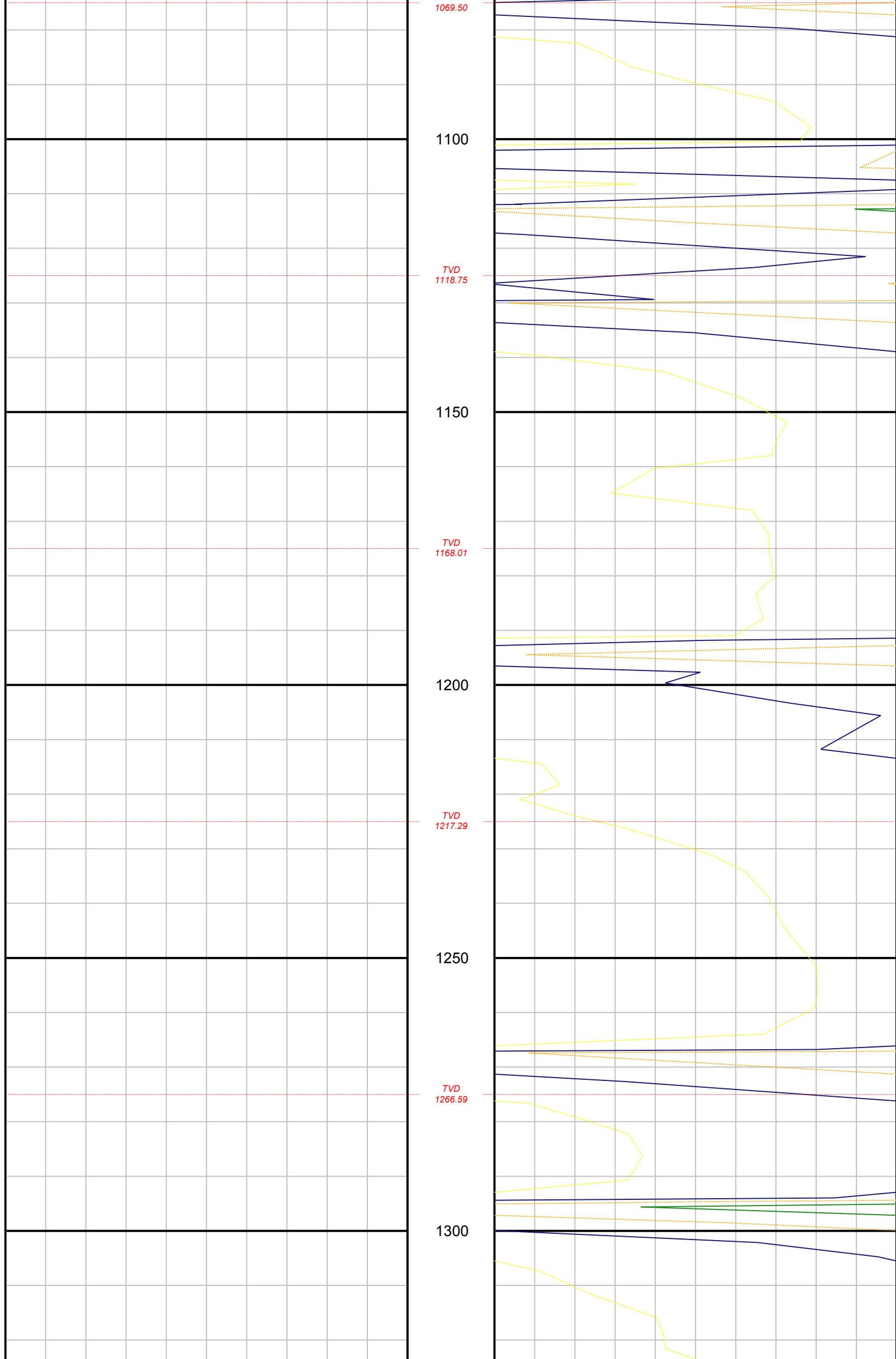
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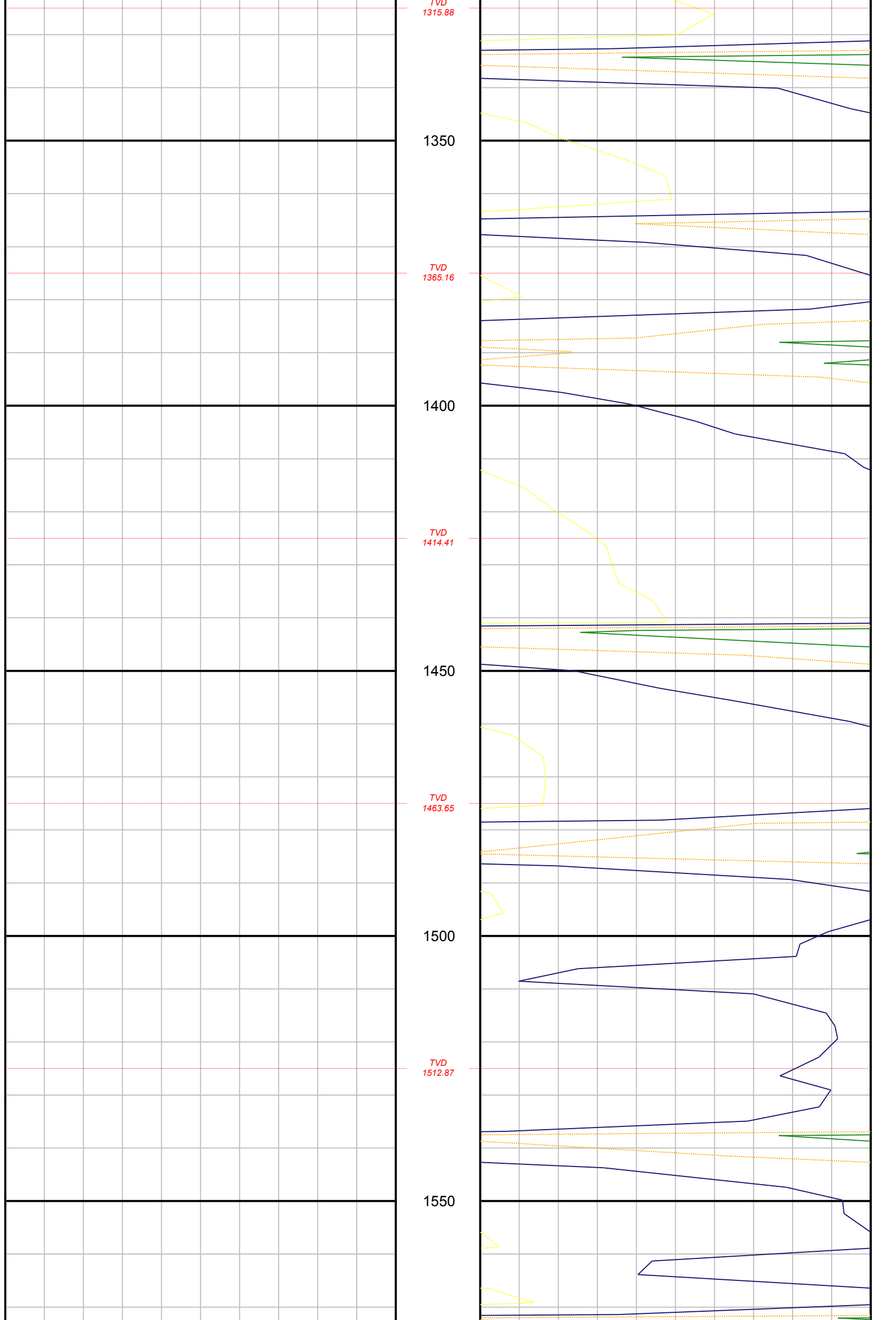


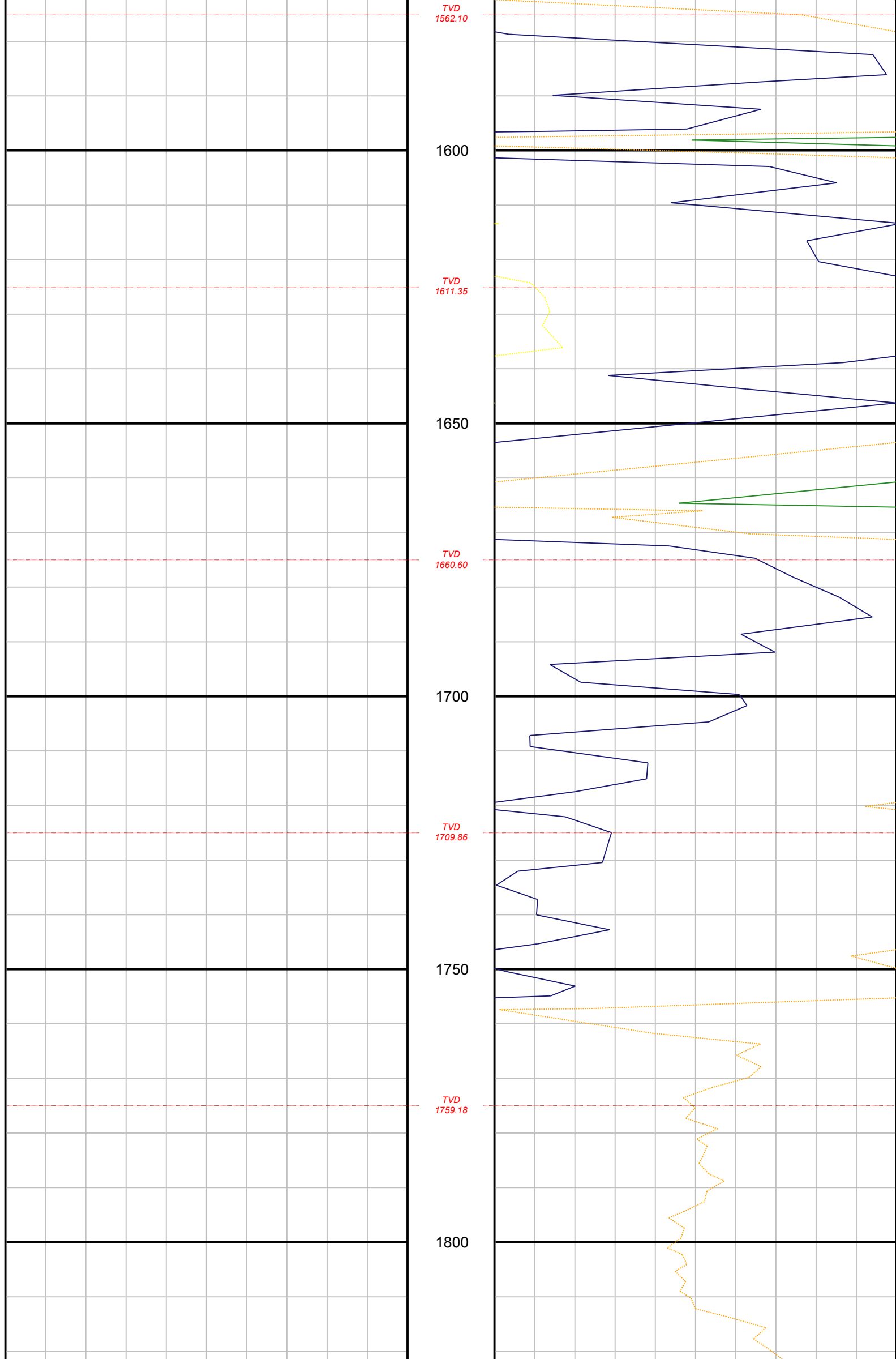




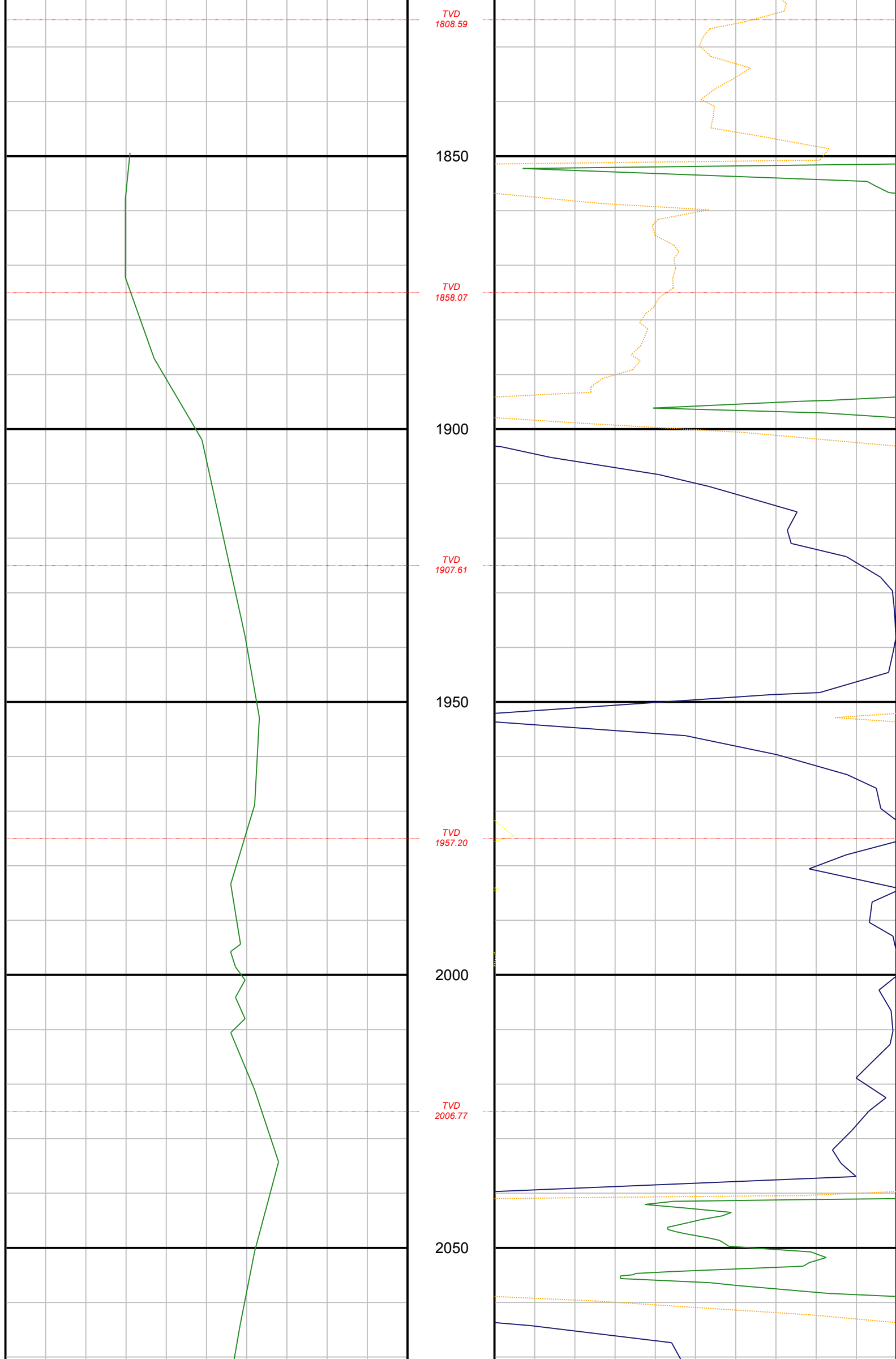


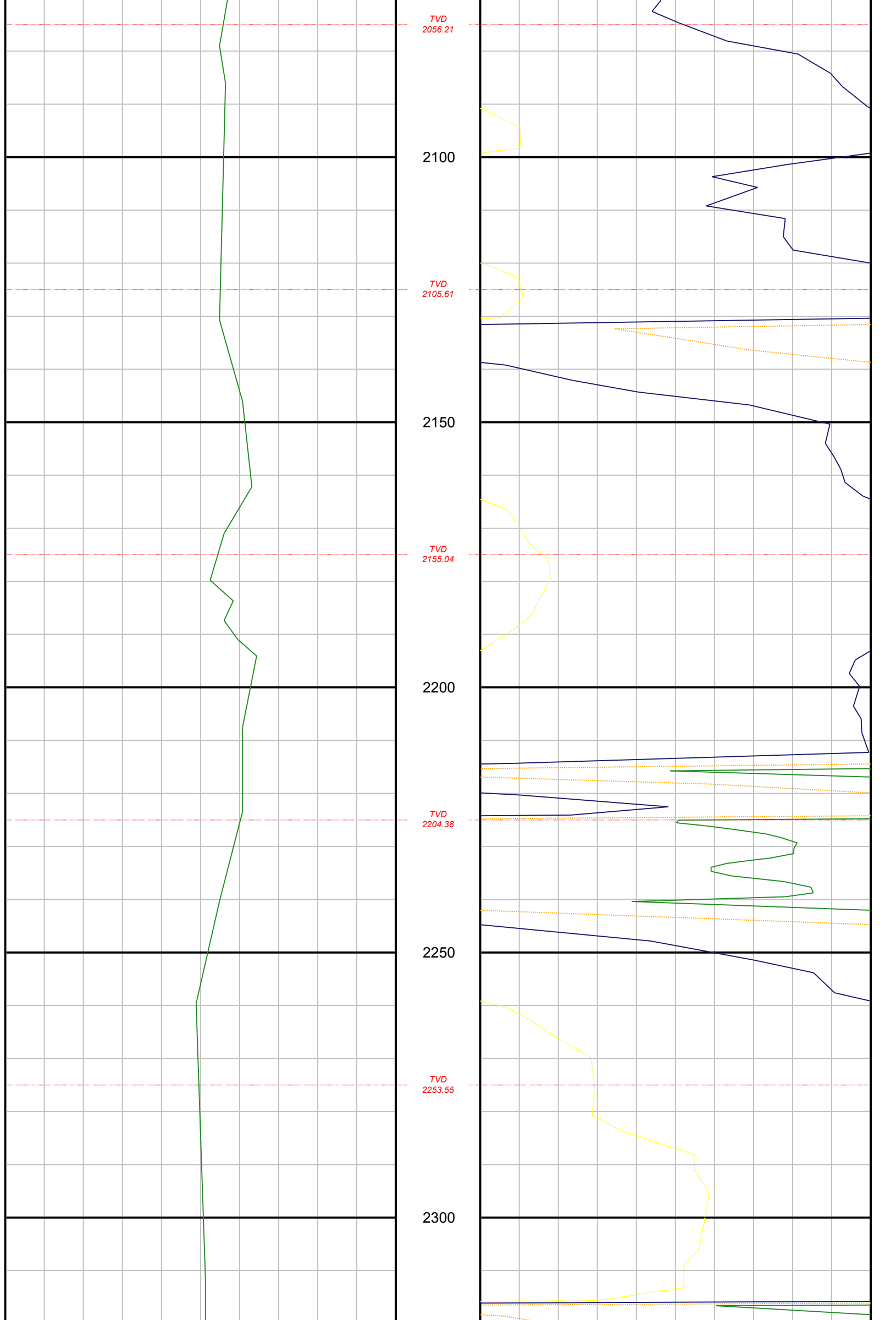


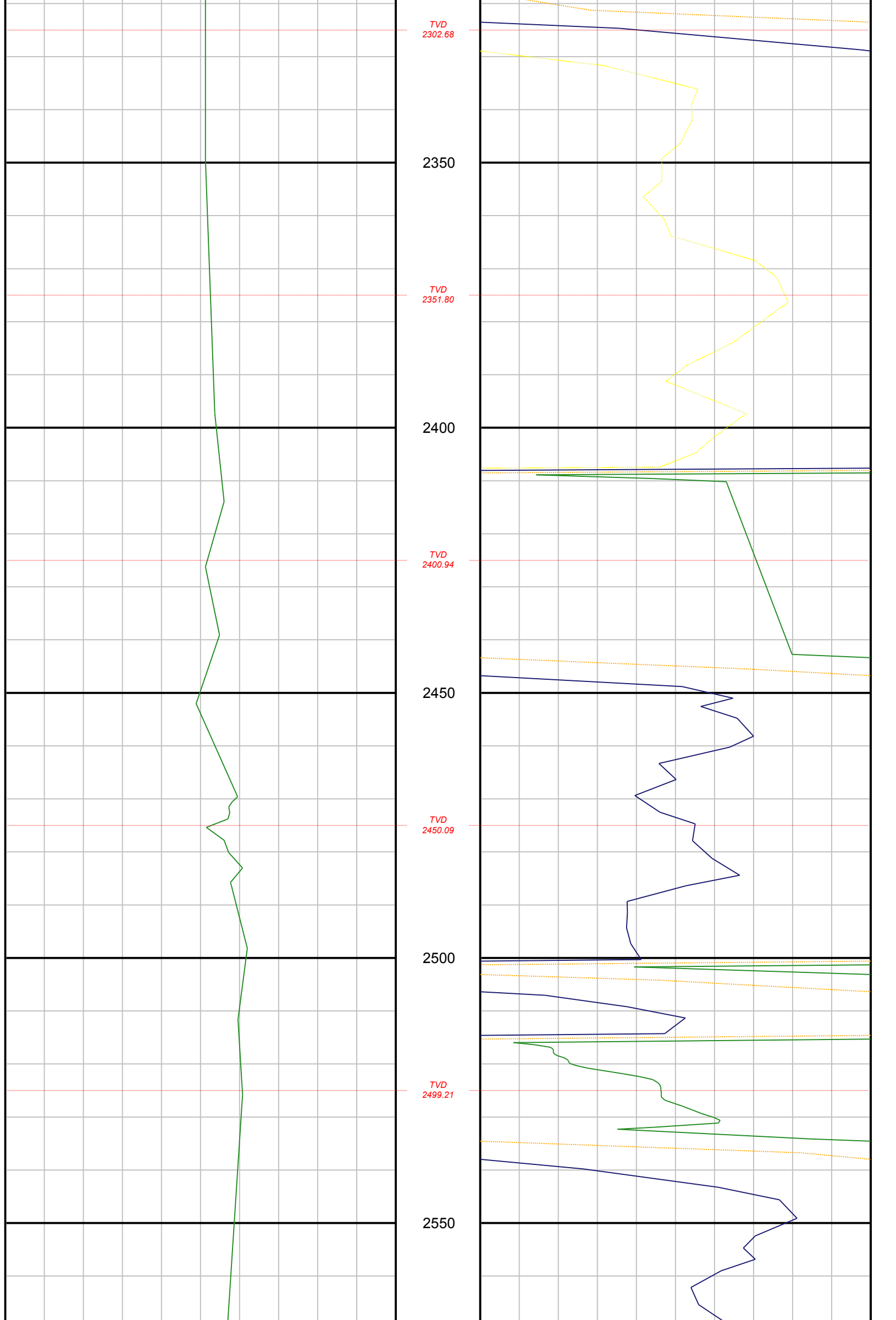


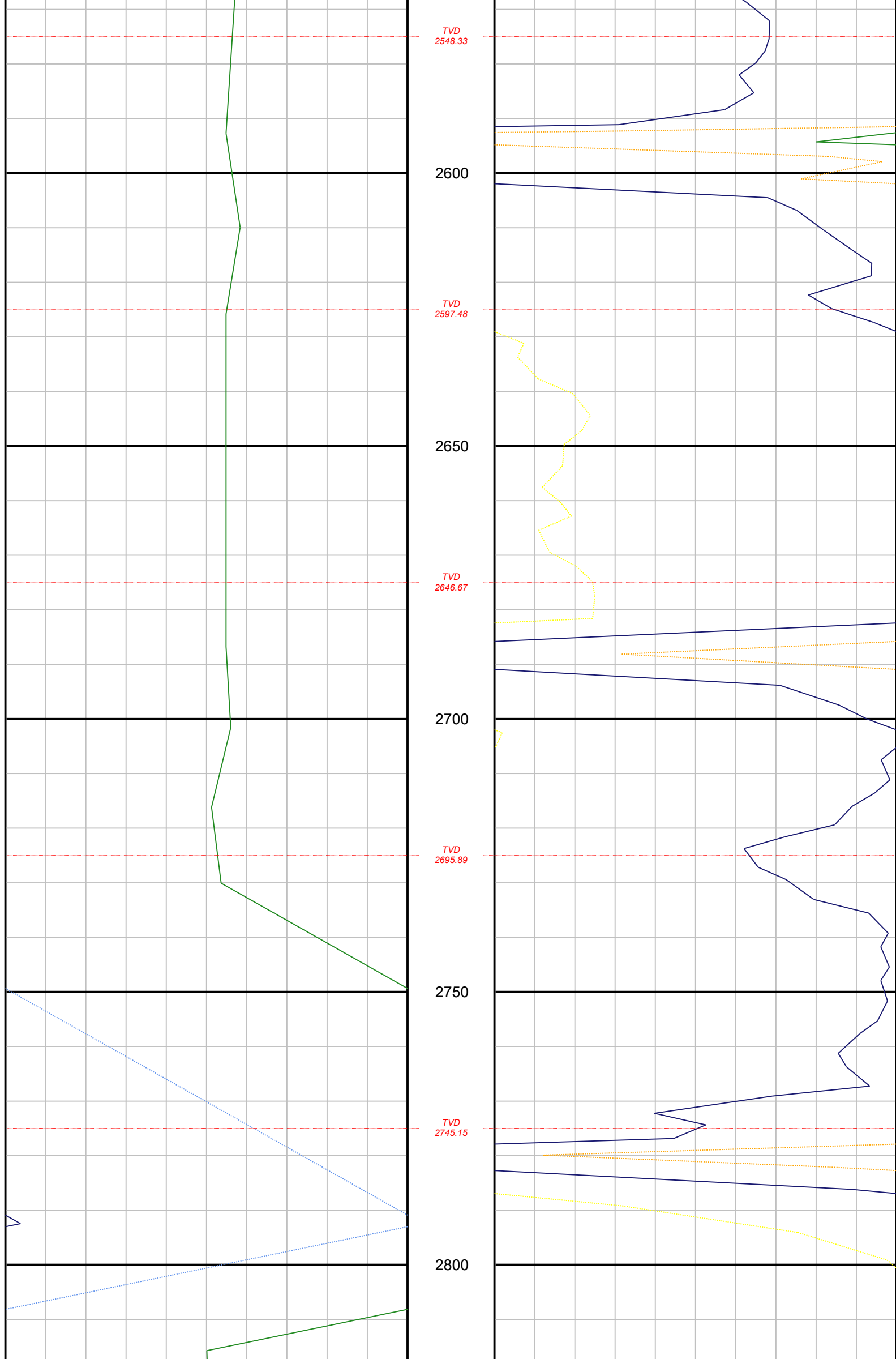


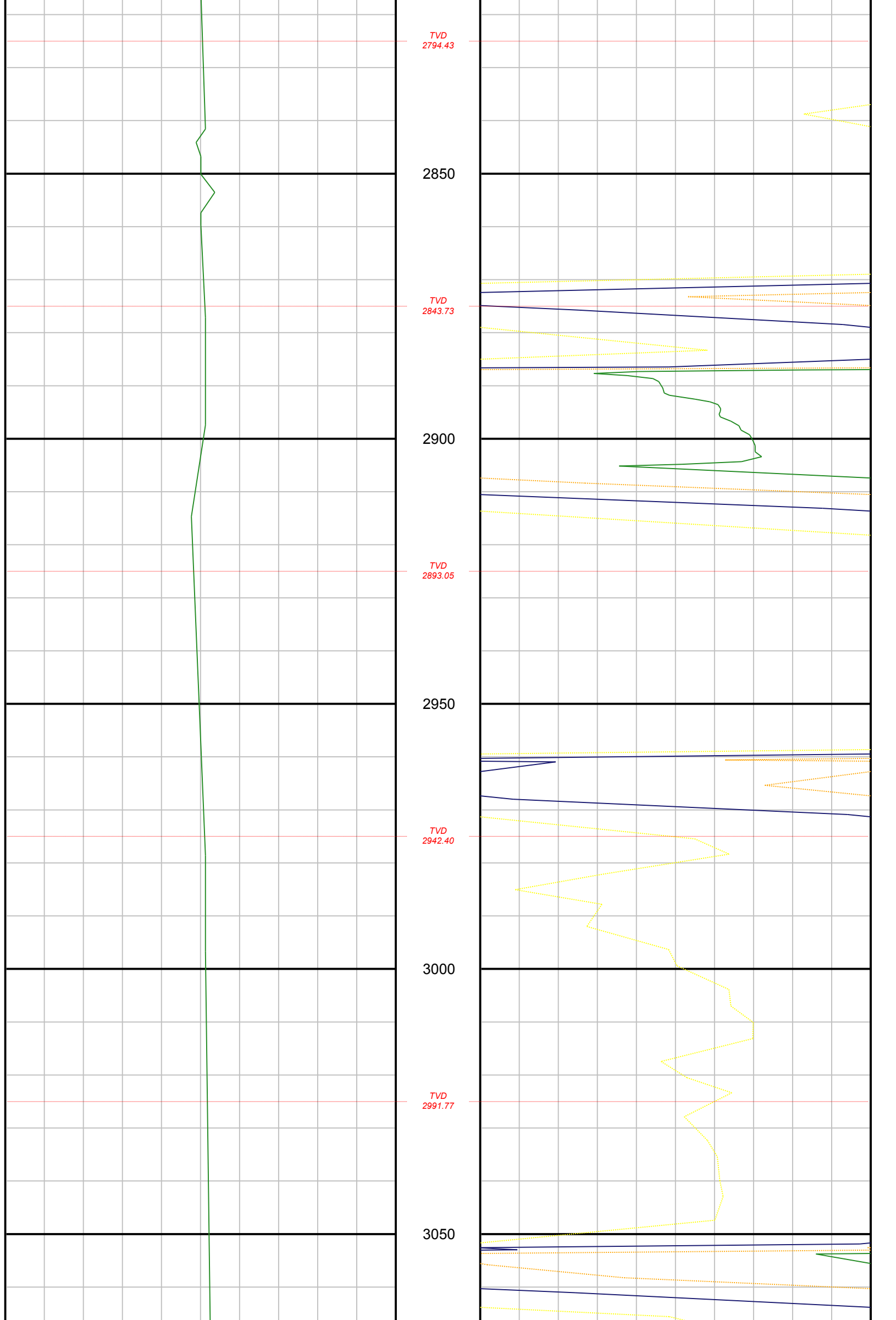


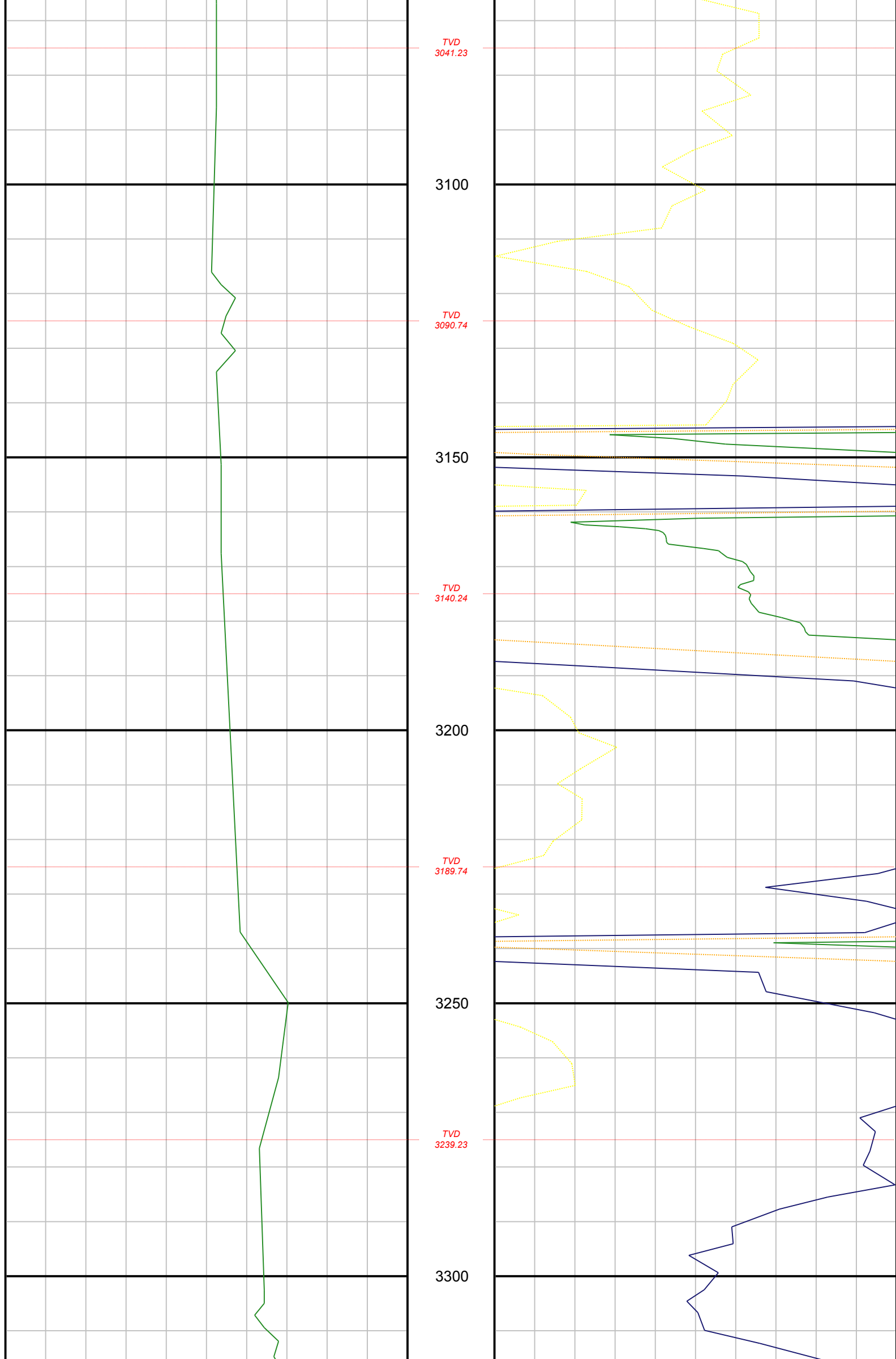


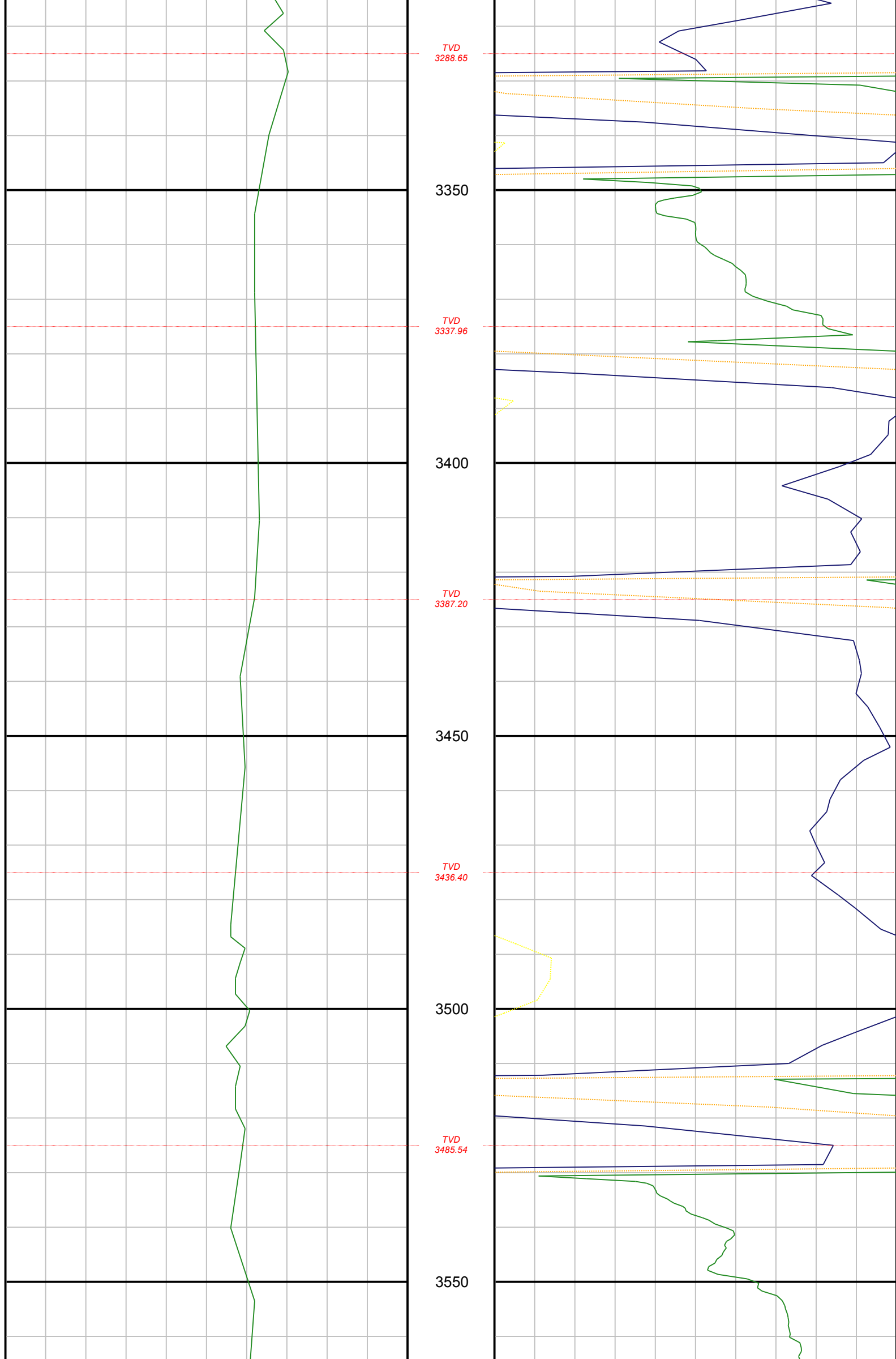


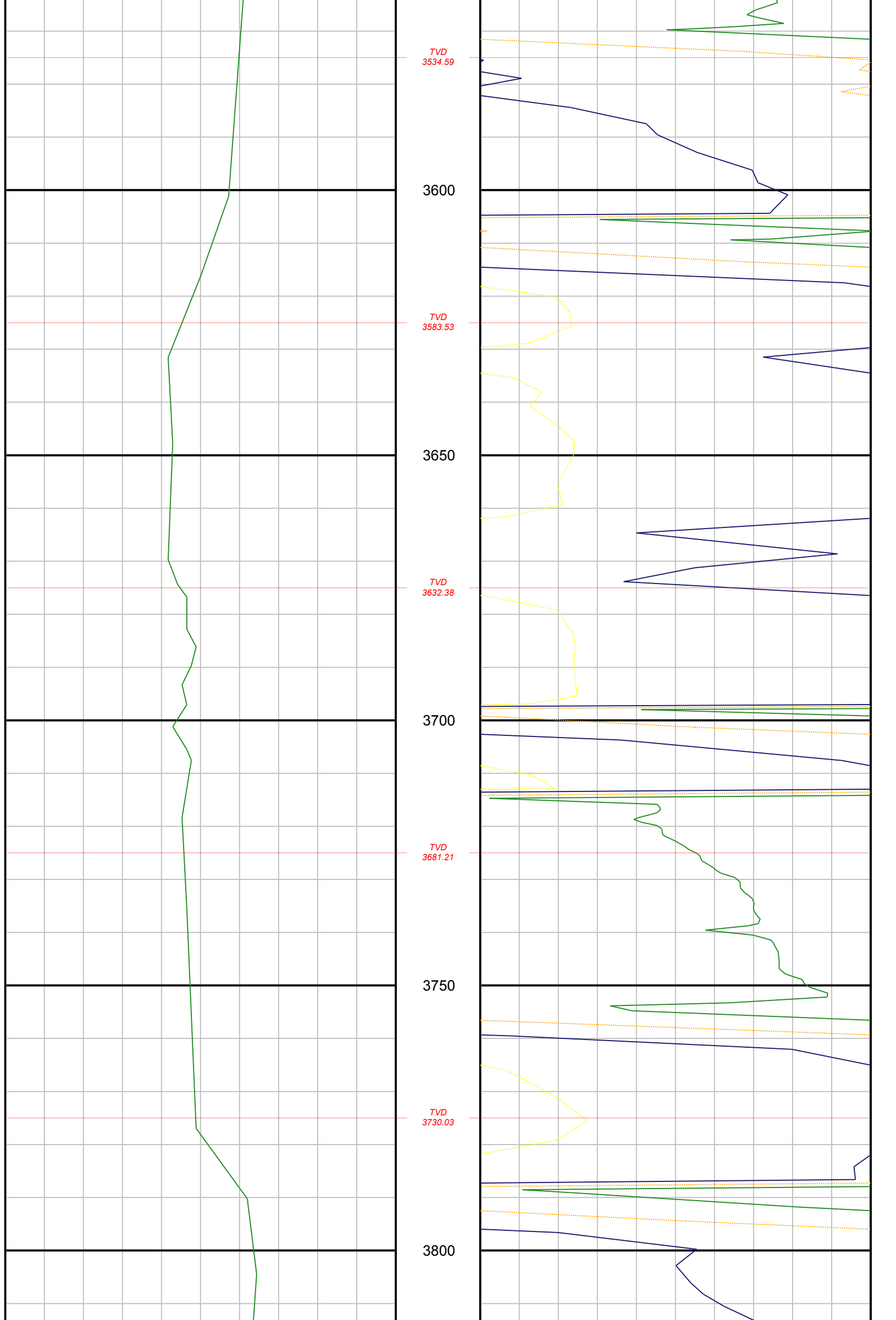




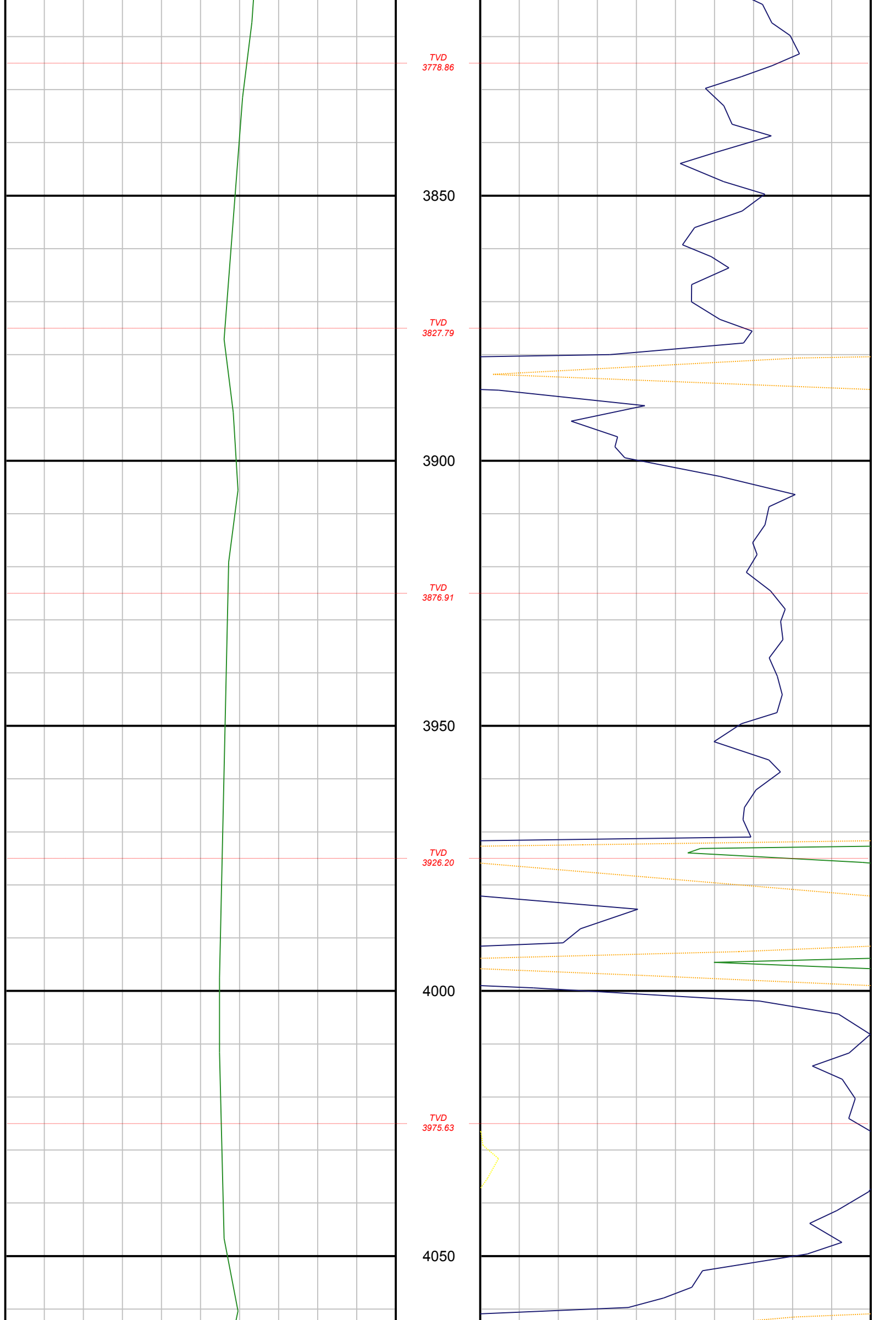


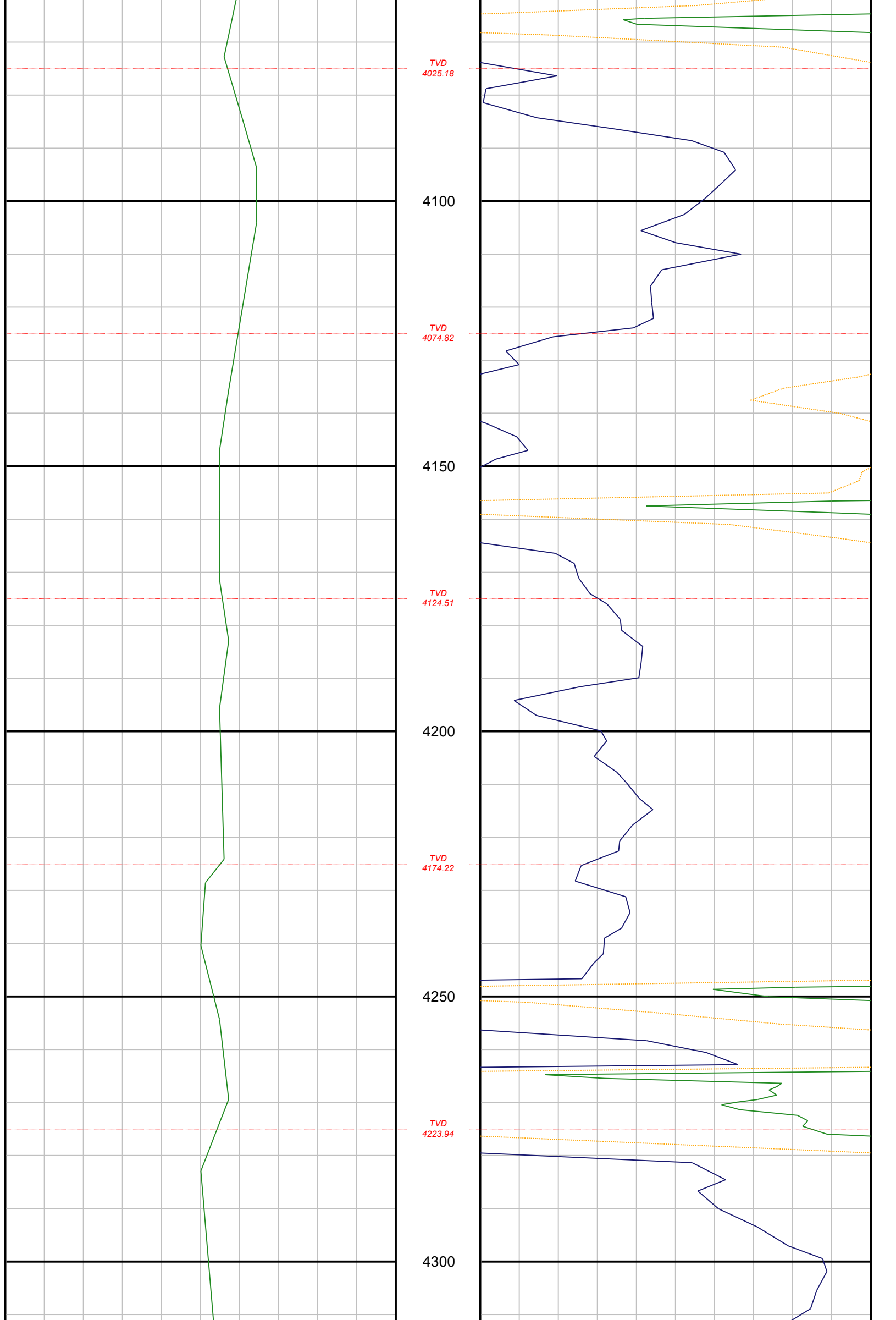


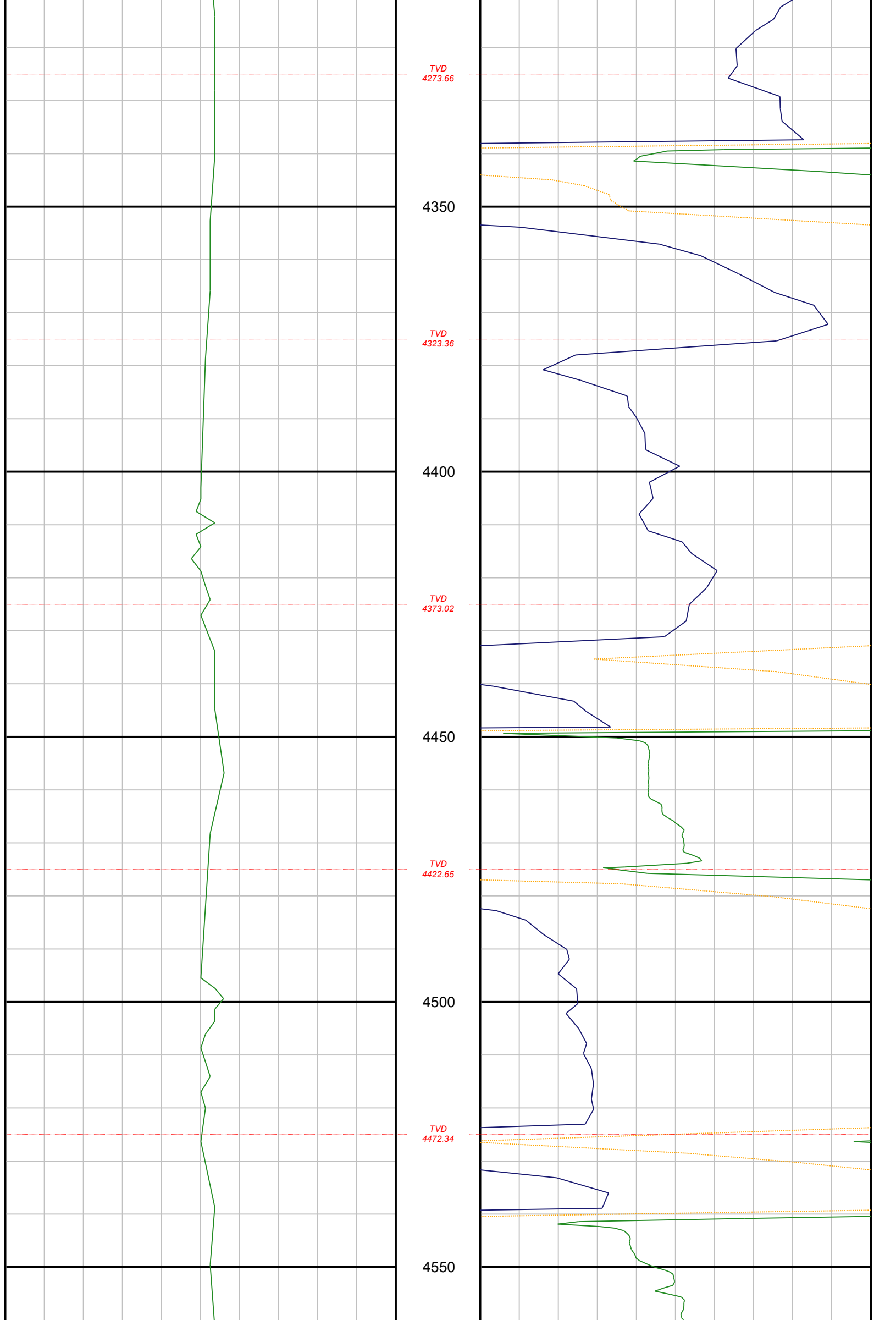


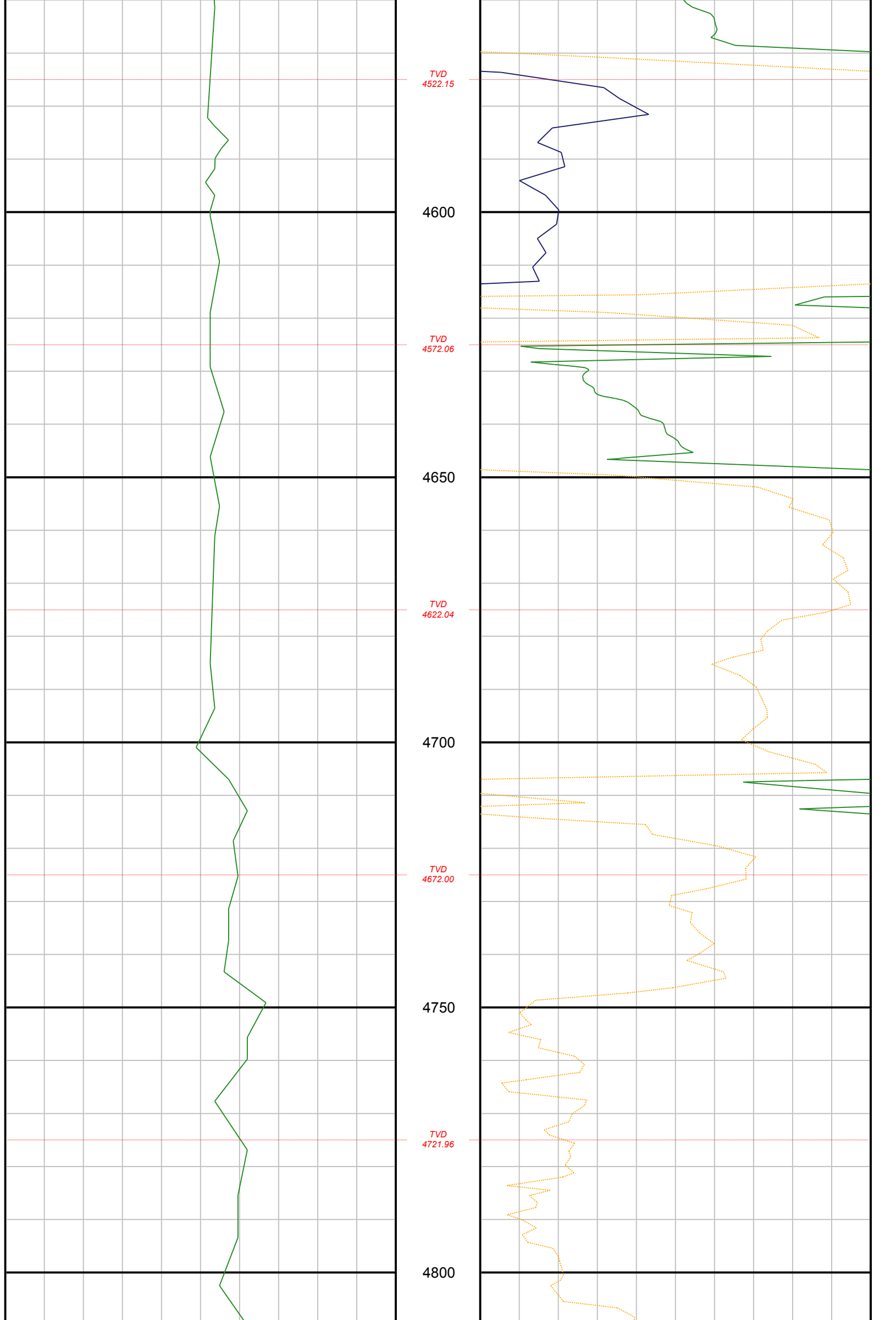


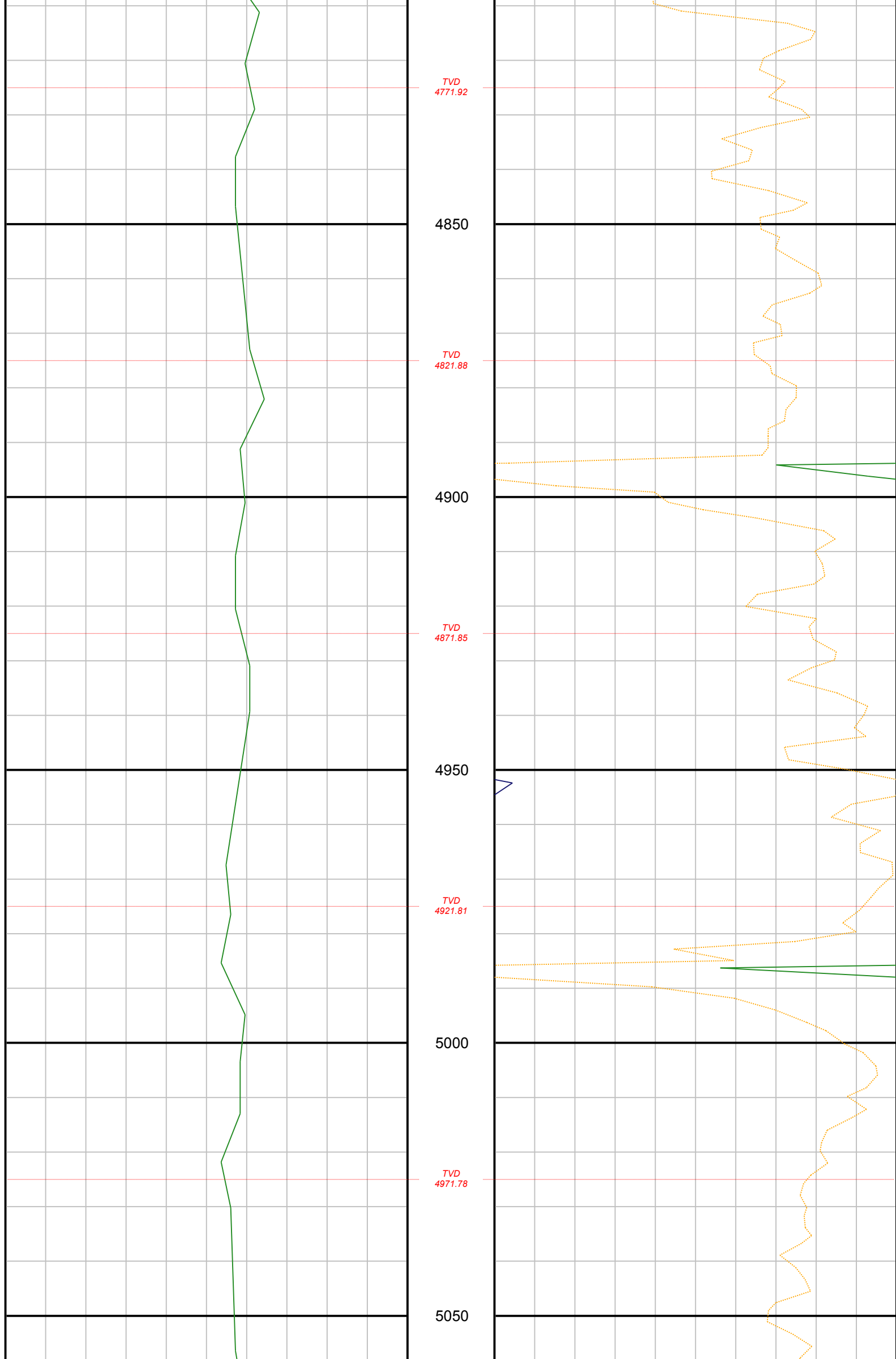


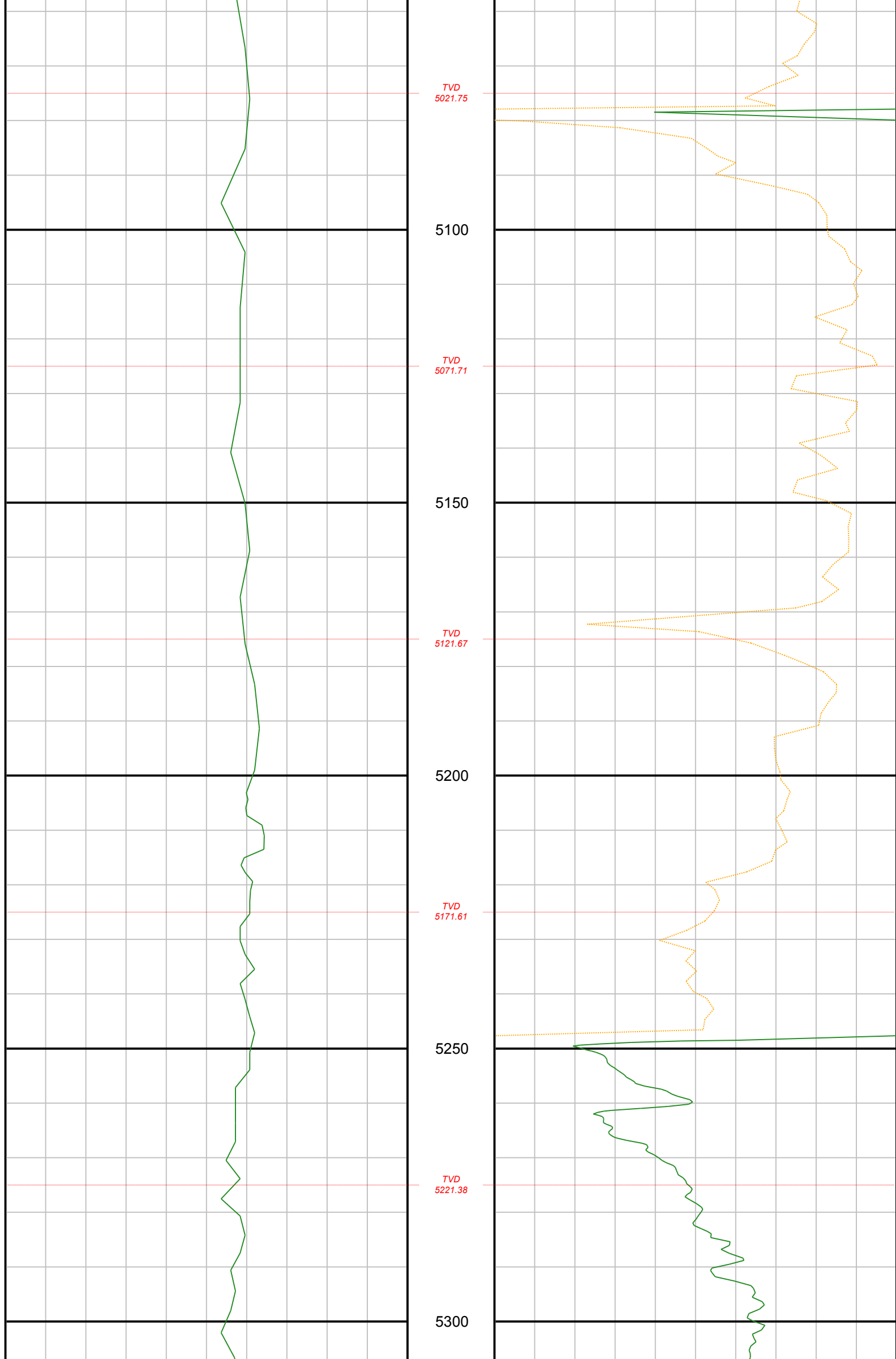


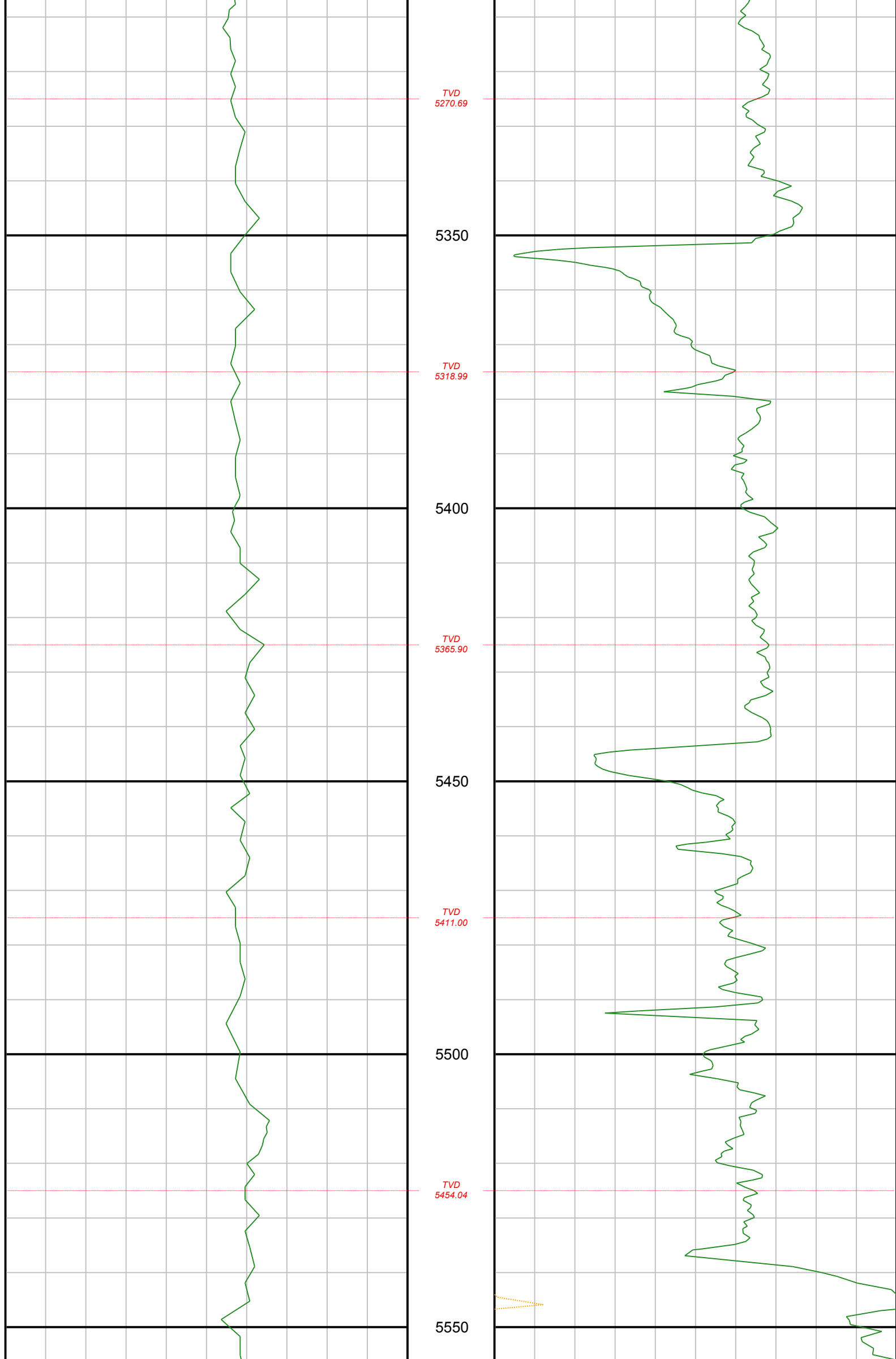


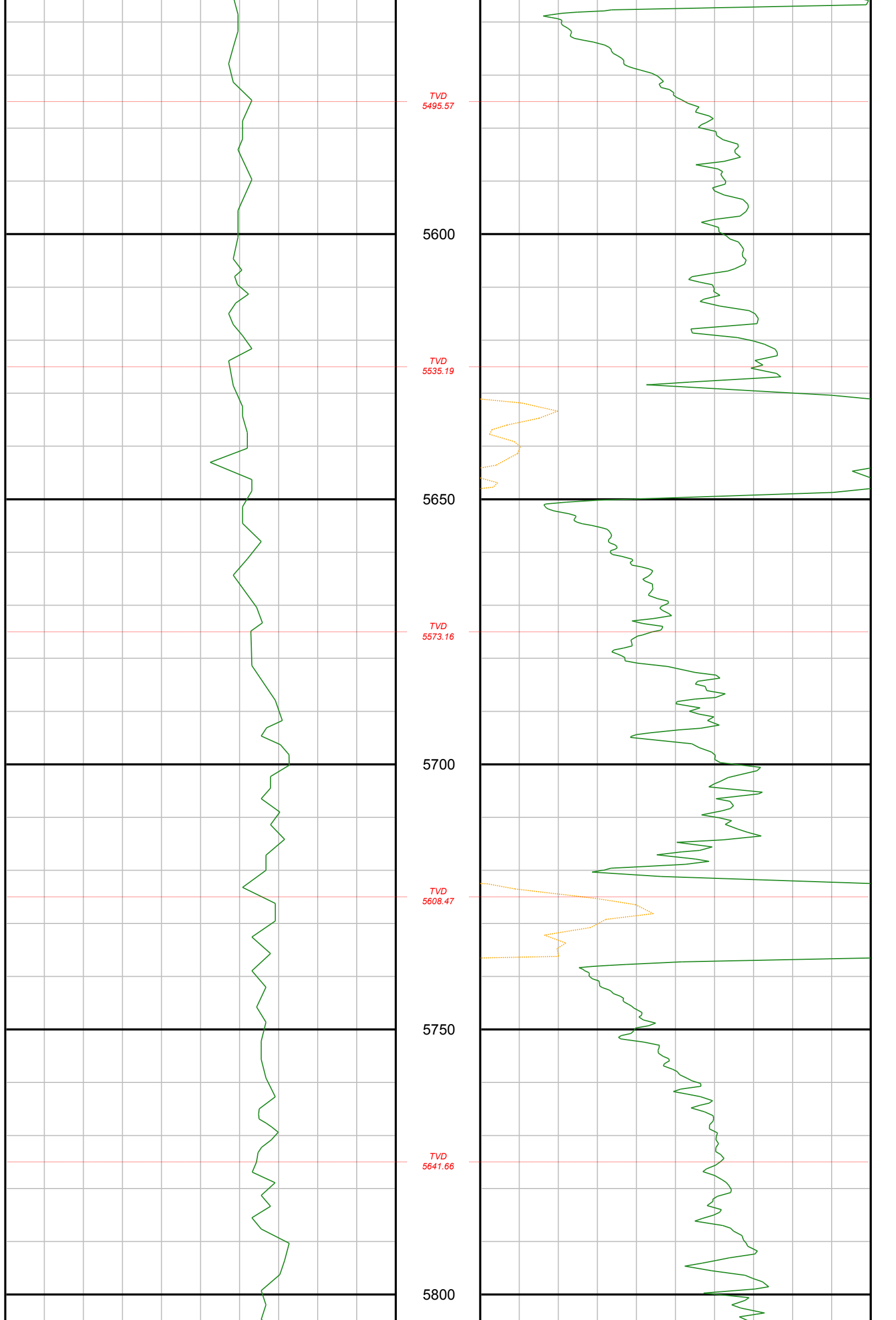




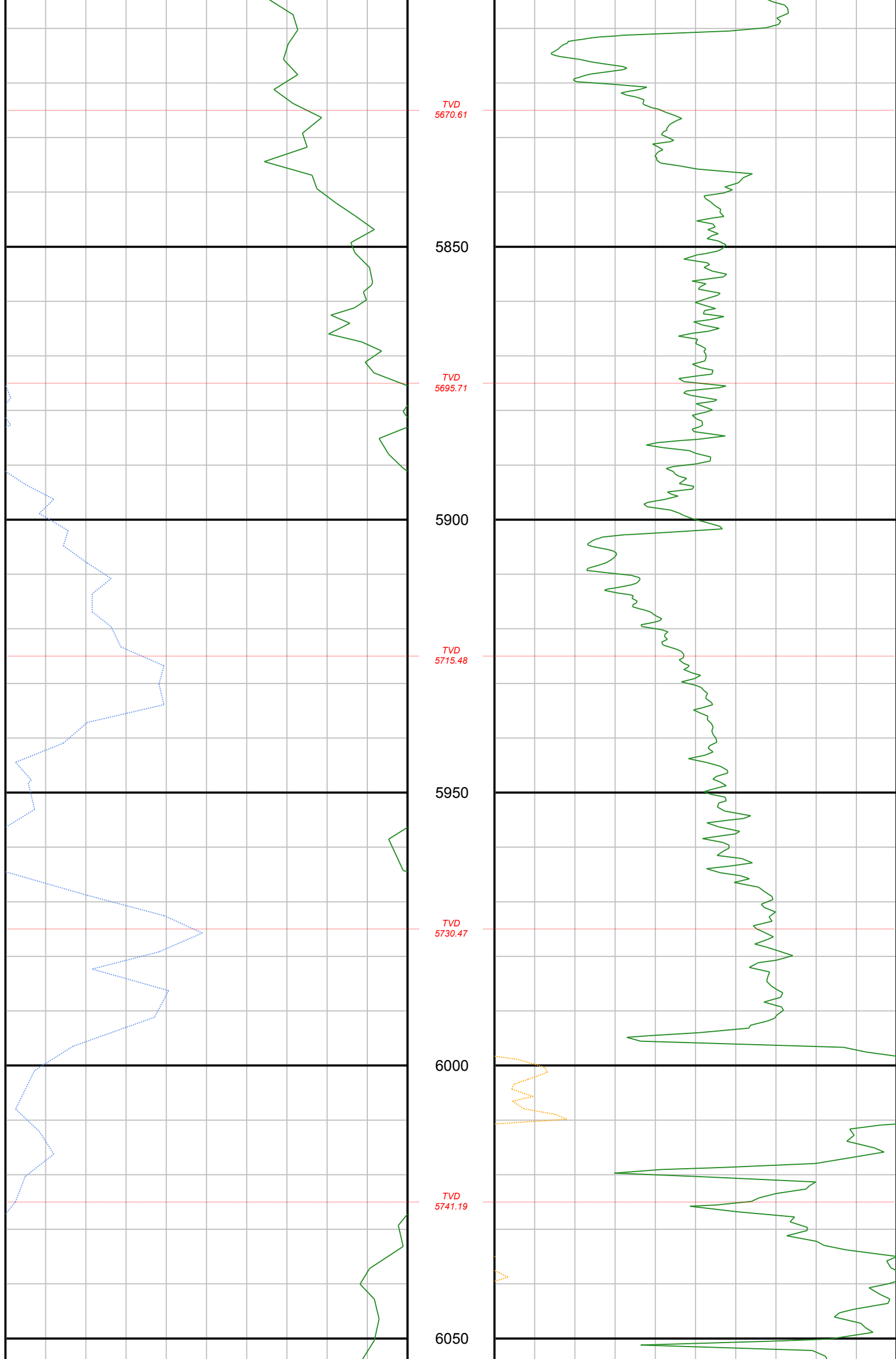


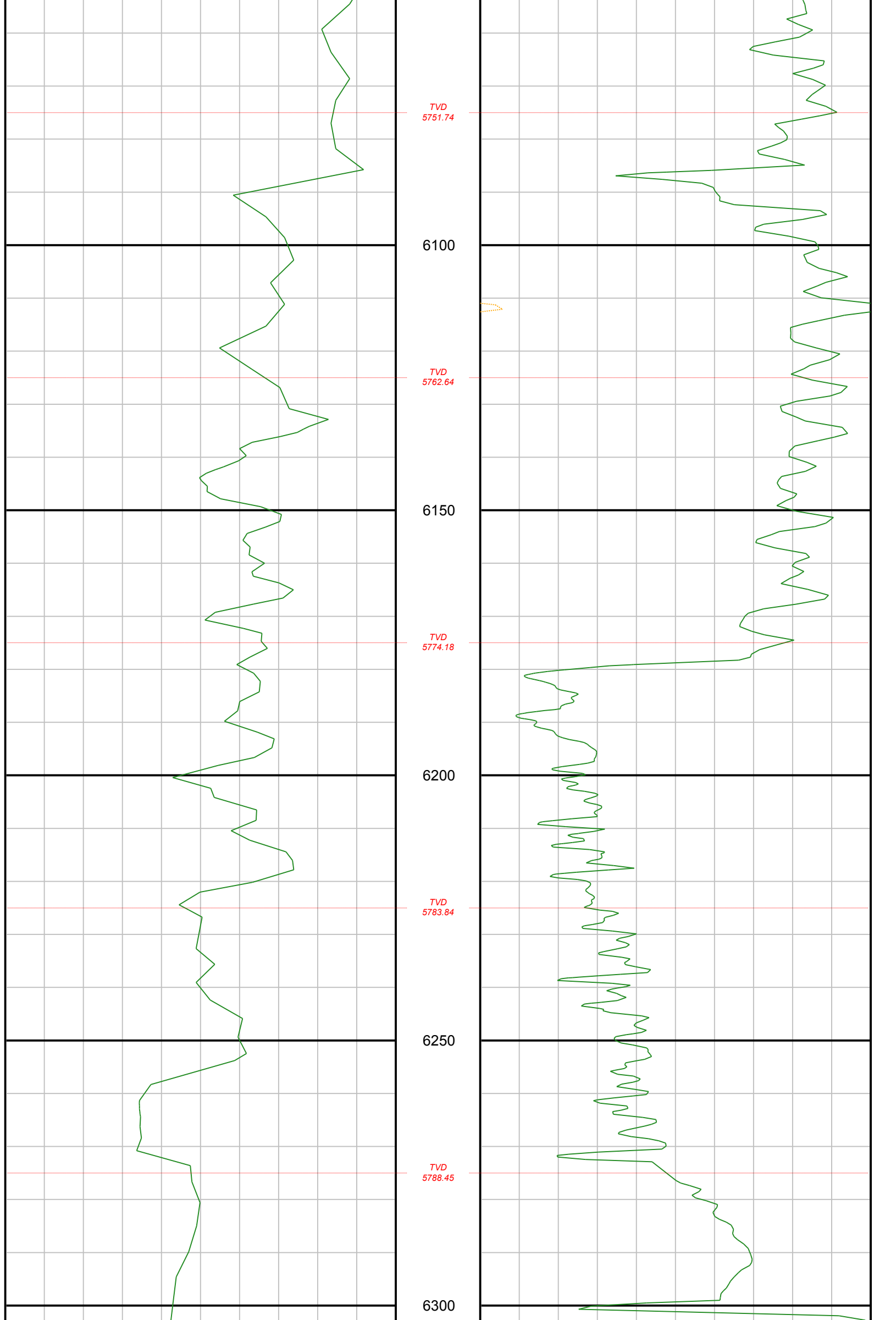


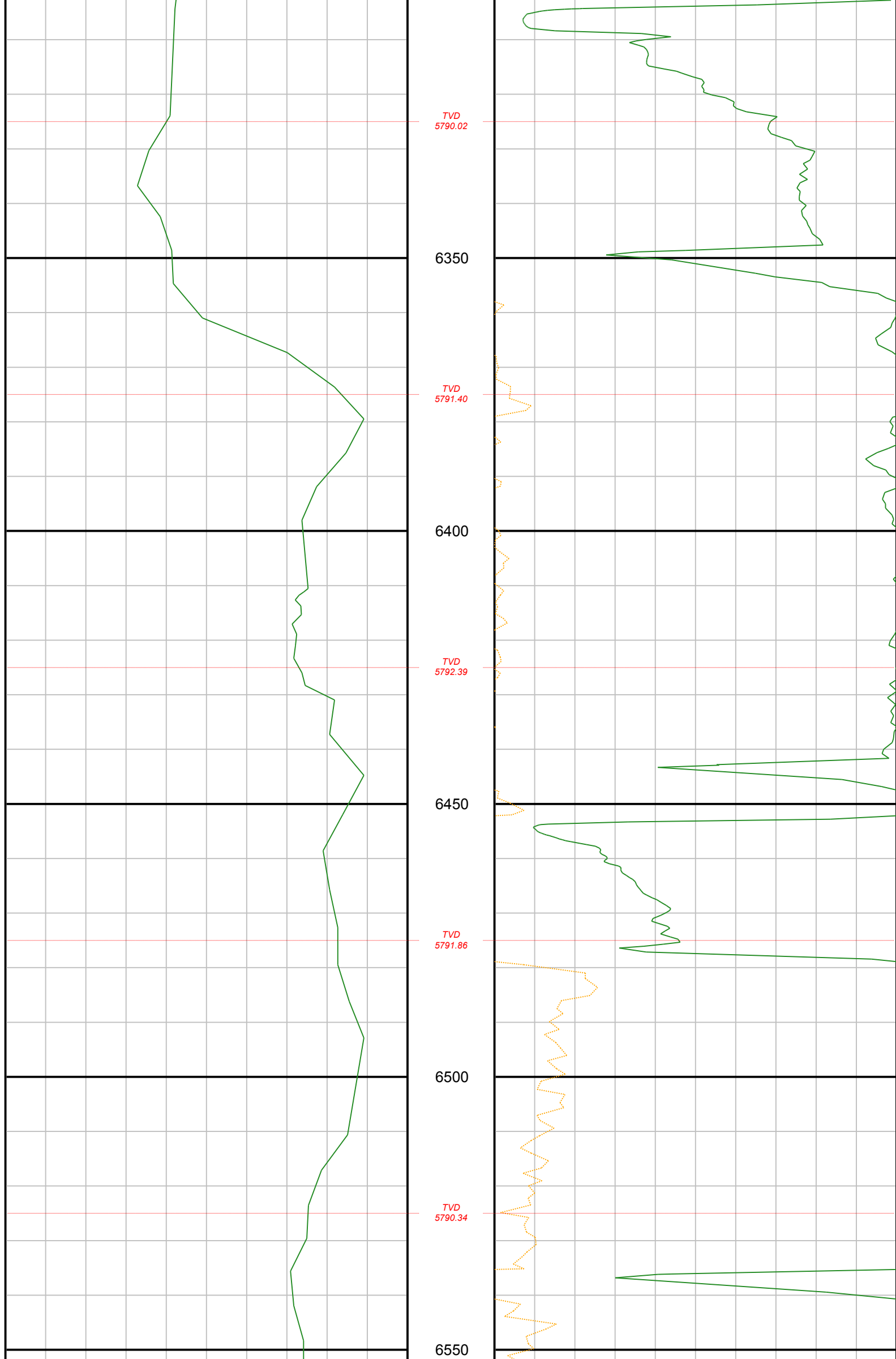


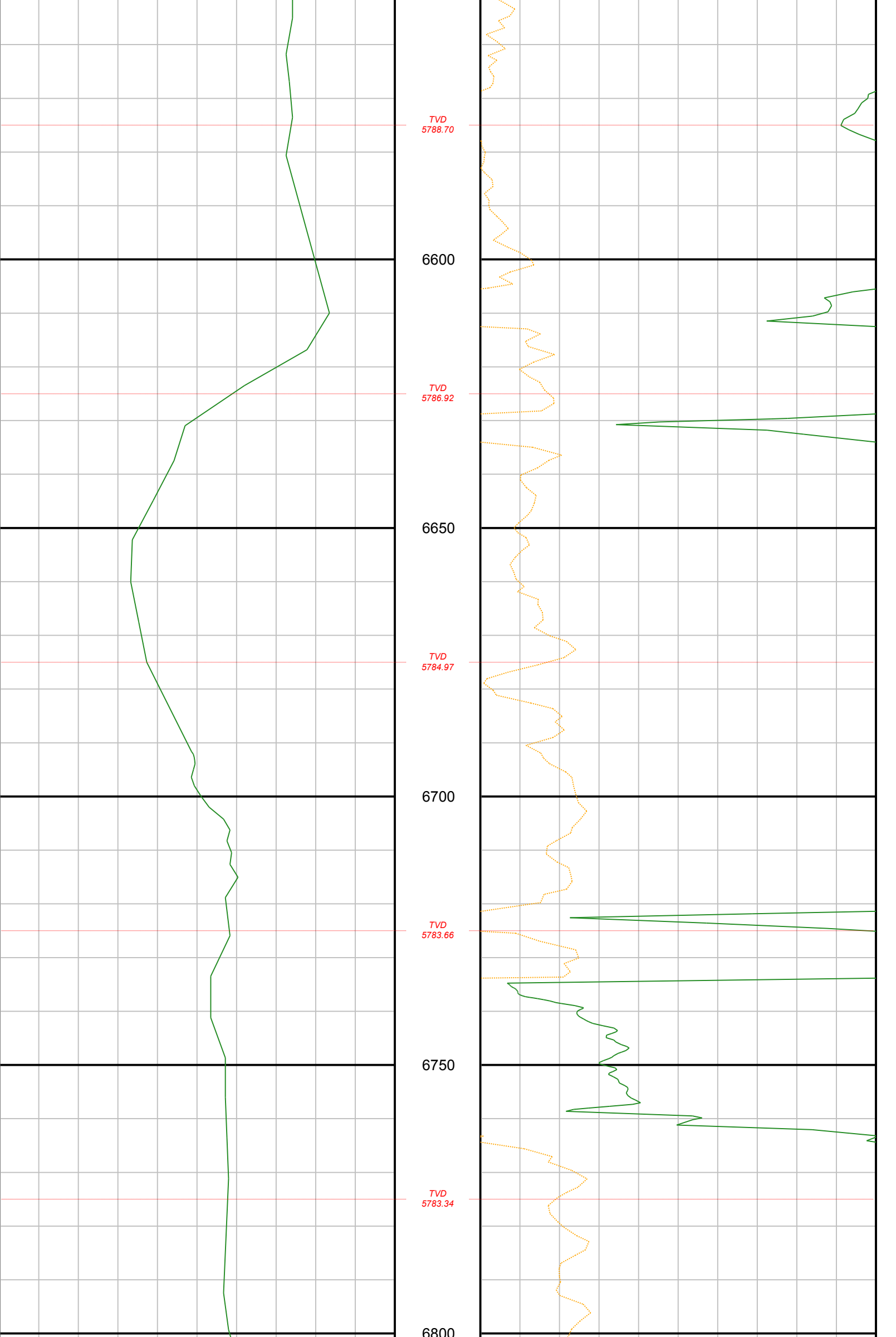


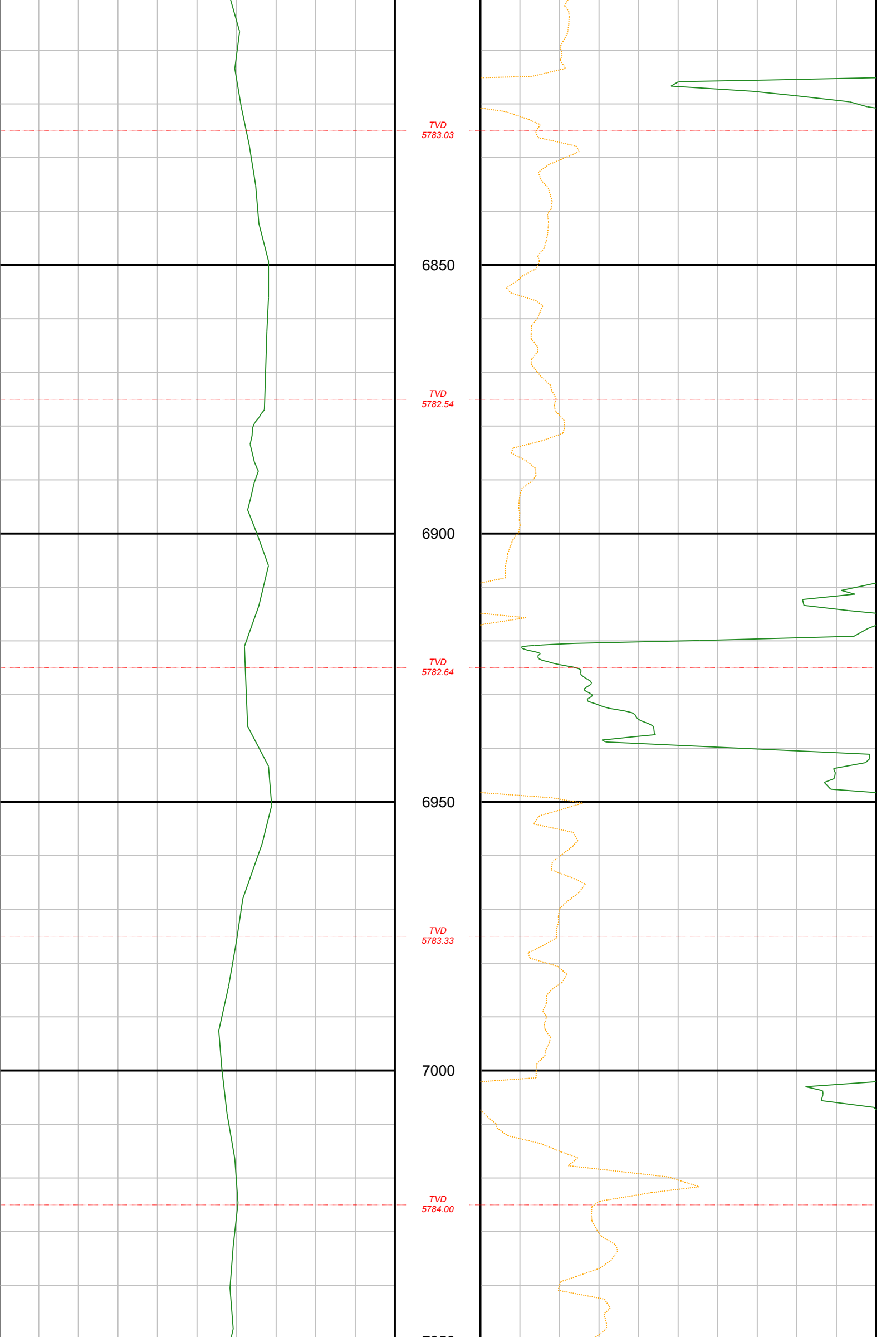














7050

TVD  
5784.38

7100

TVD  
5783.98

7150

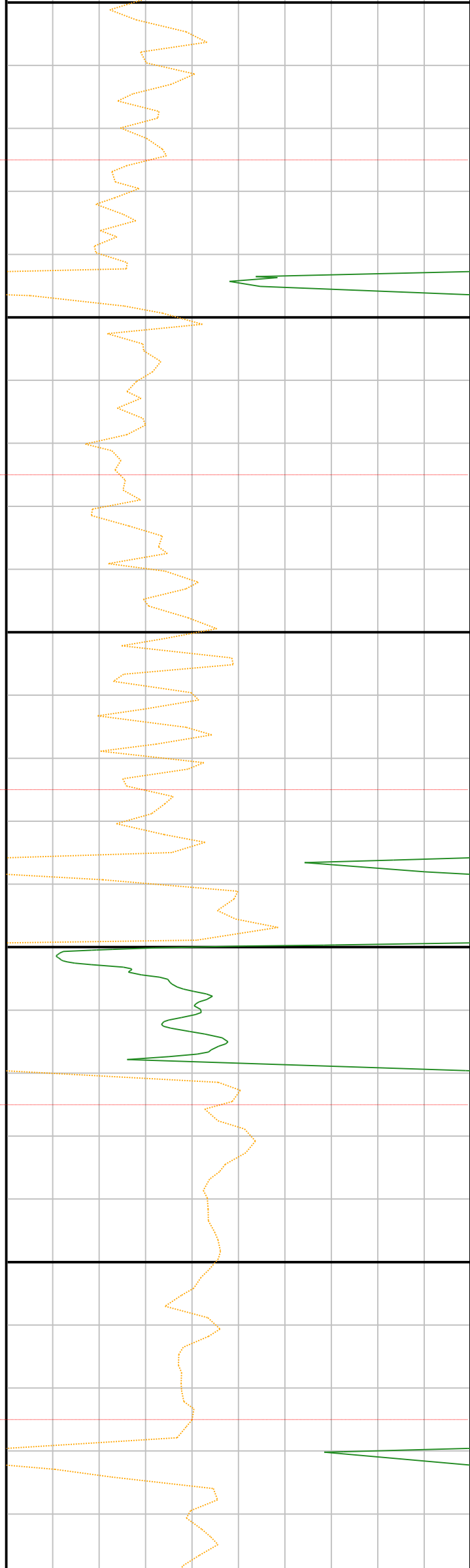
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5783.24

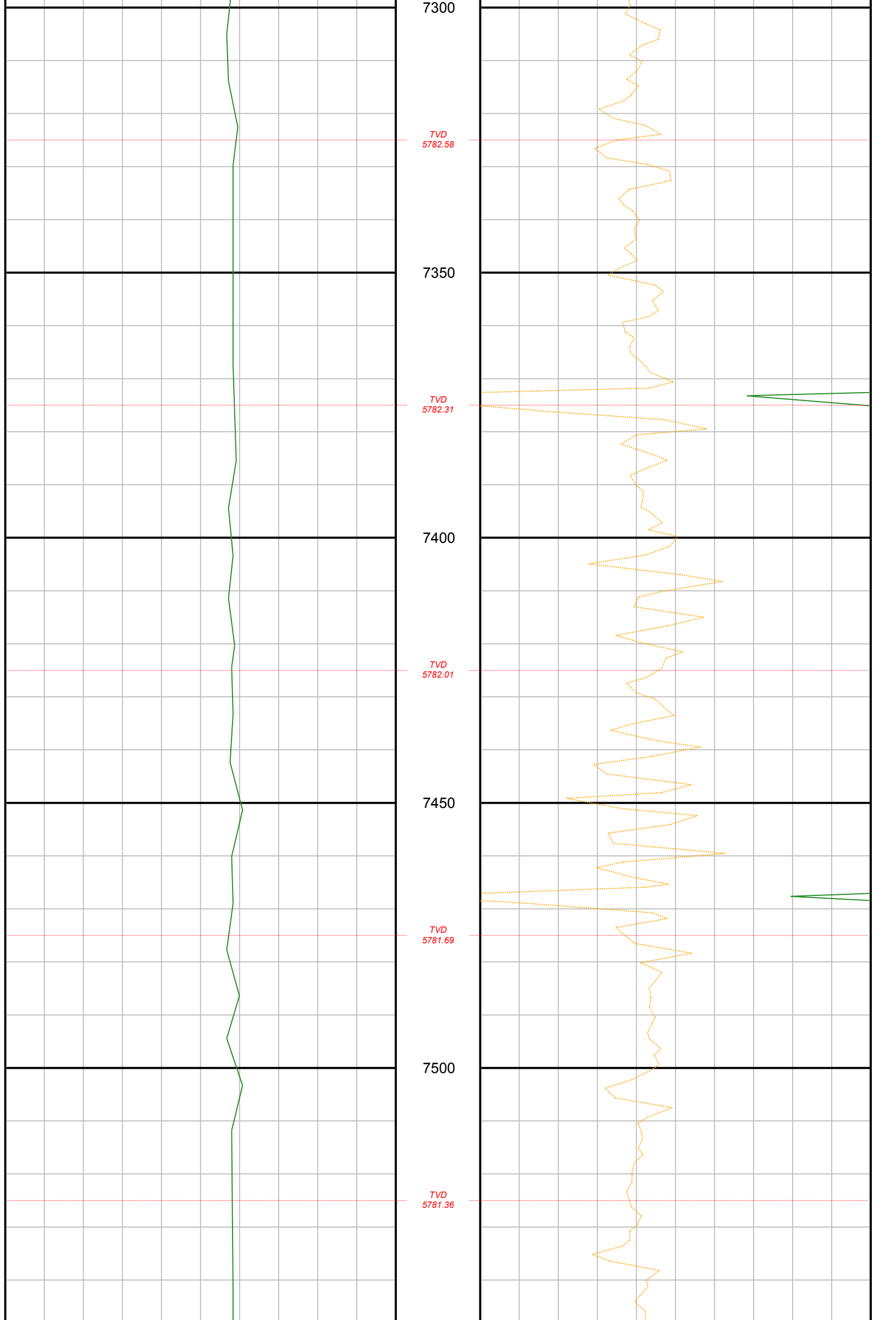
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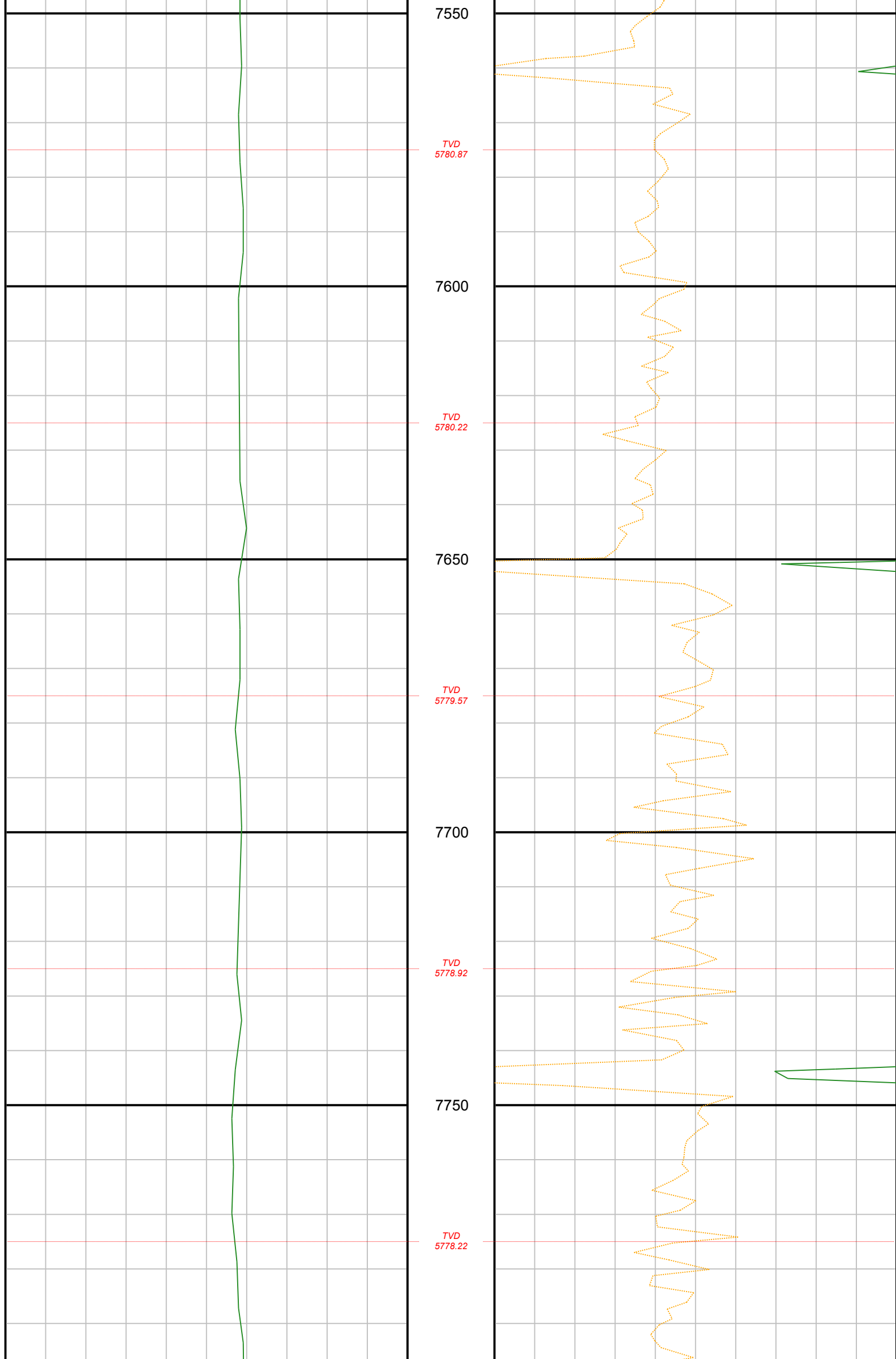
TVD  
5782.94

7250

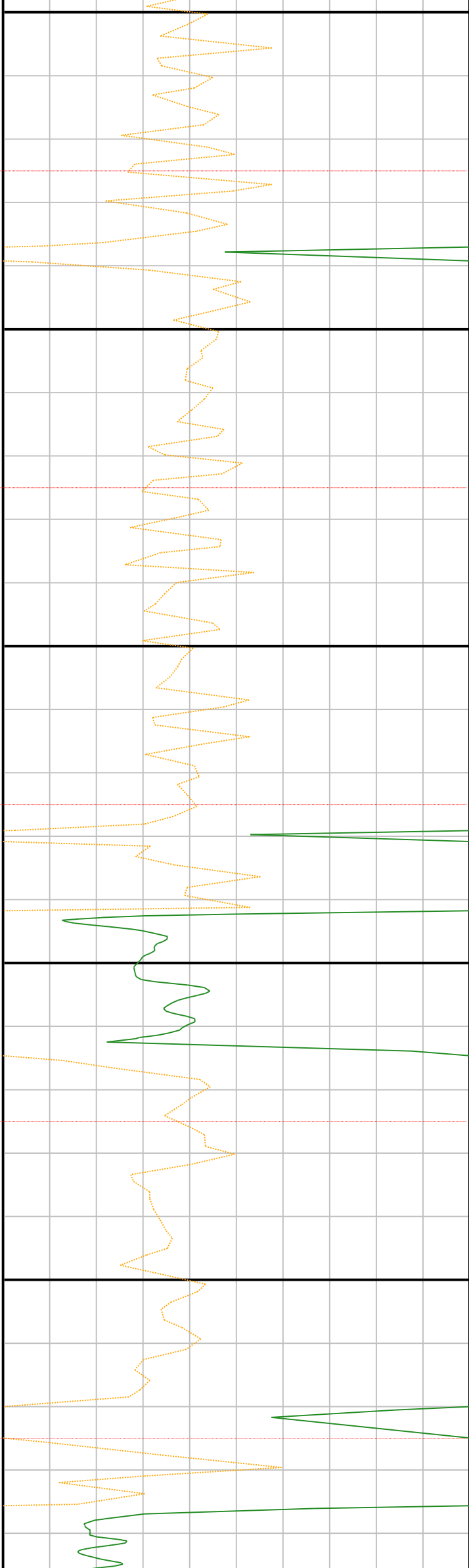
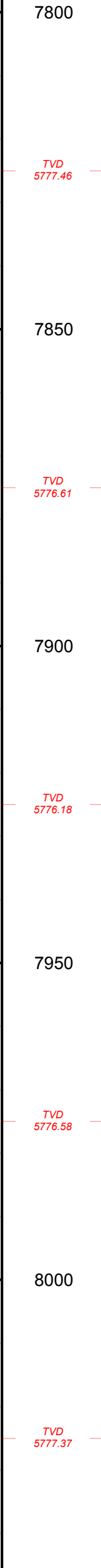
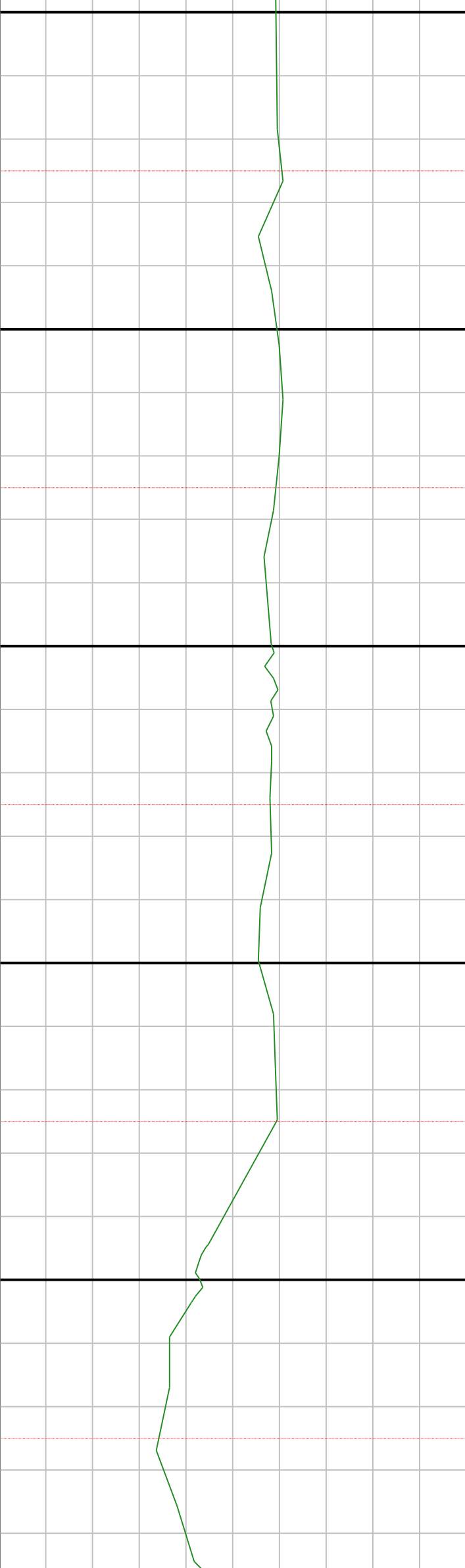
TVD  
5782.80

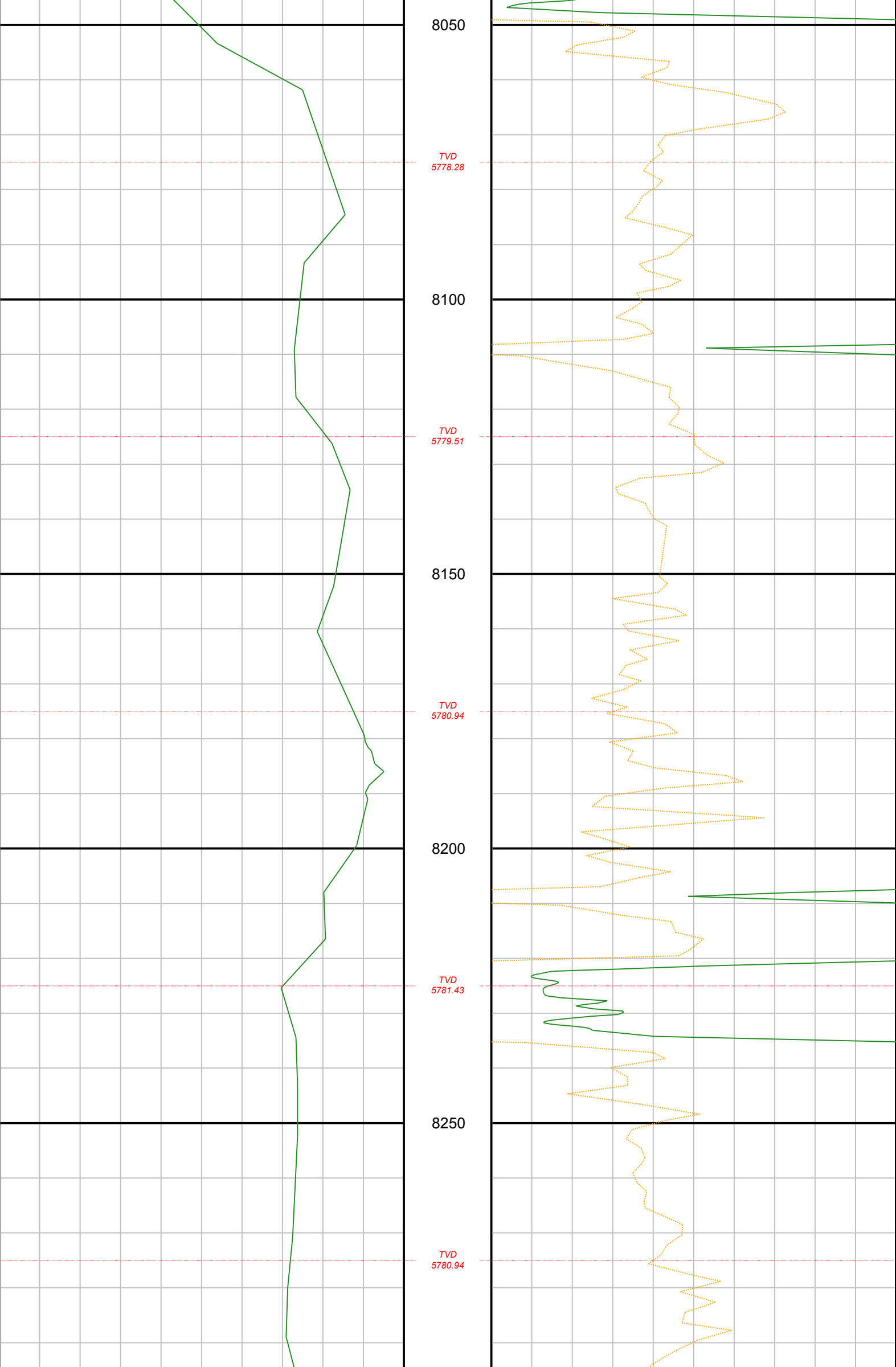


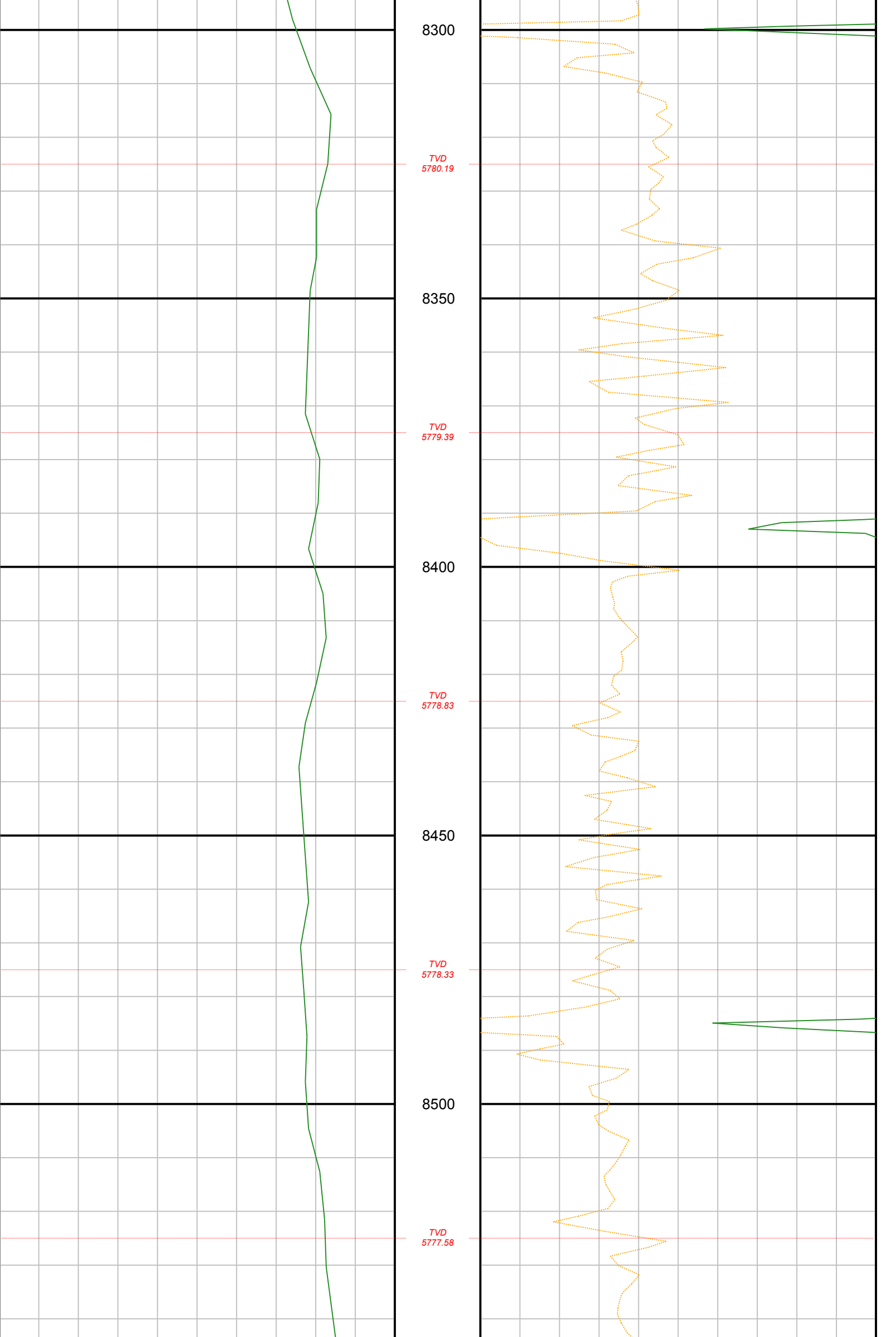


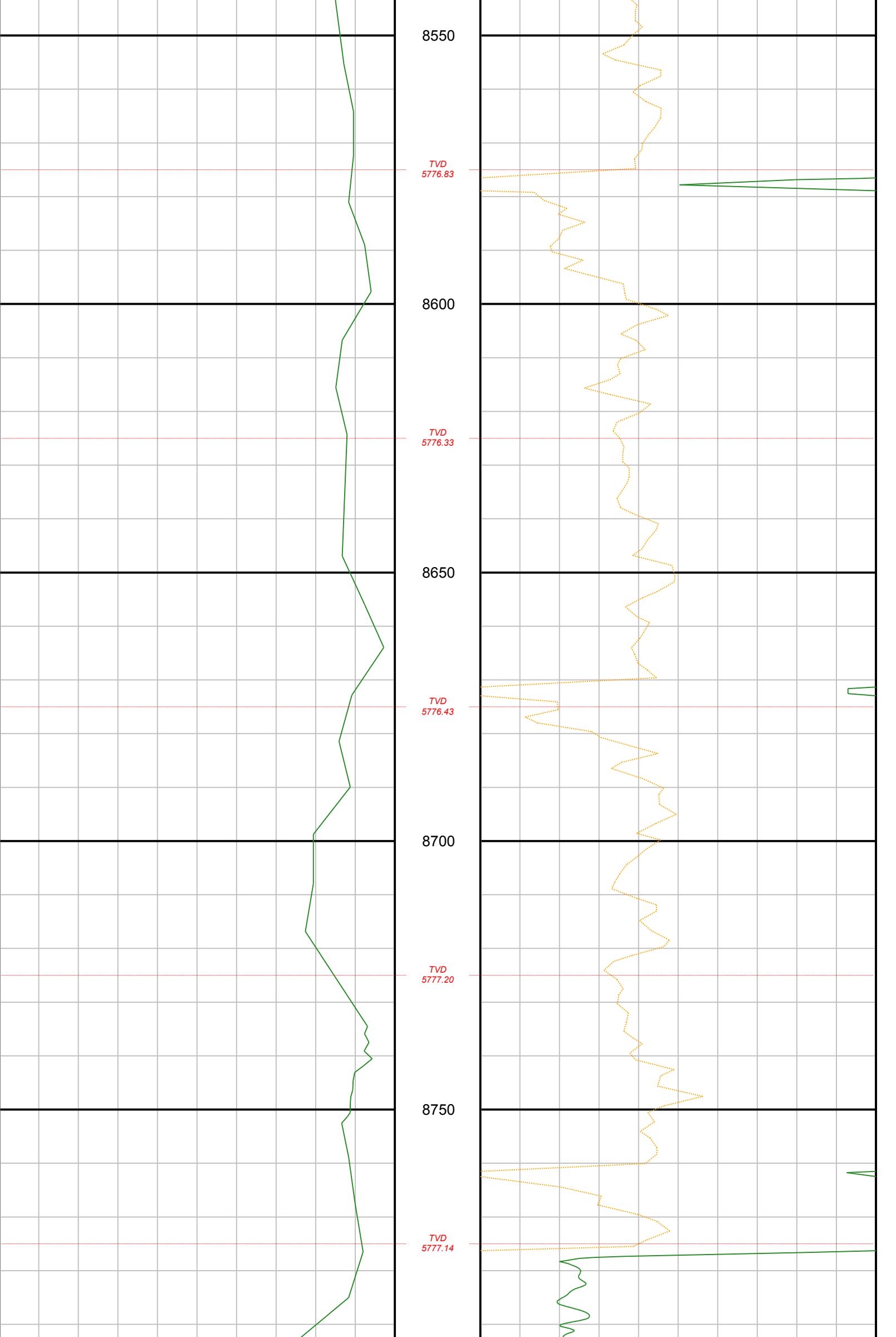


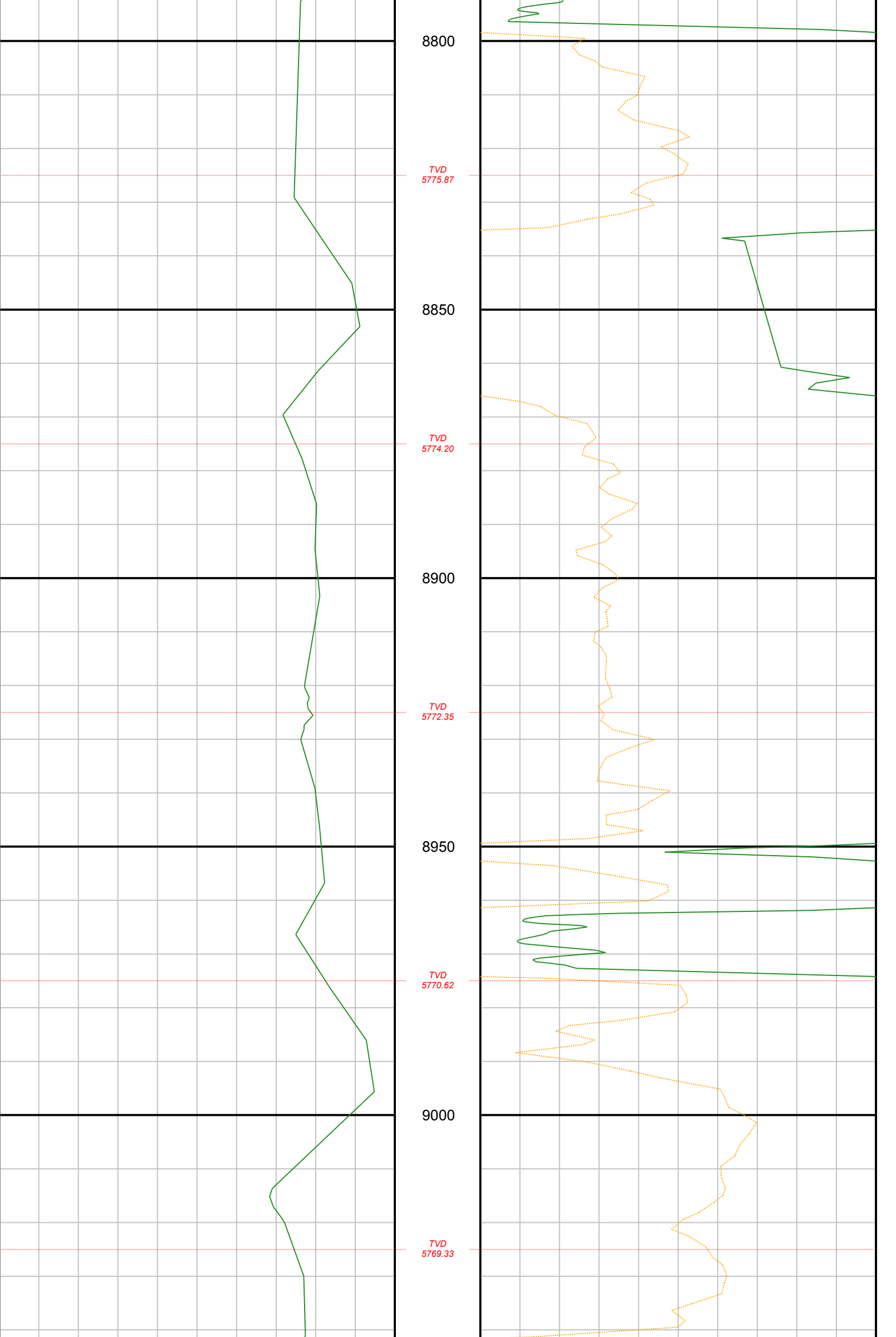


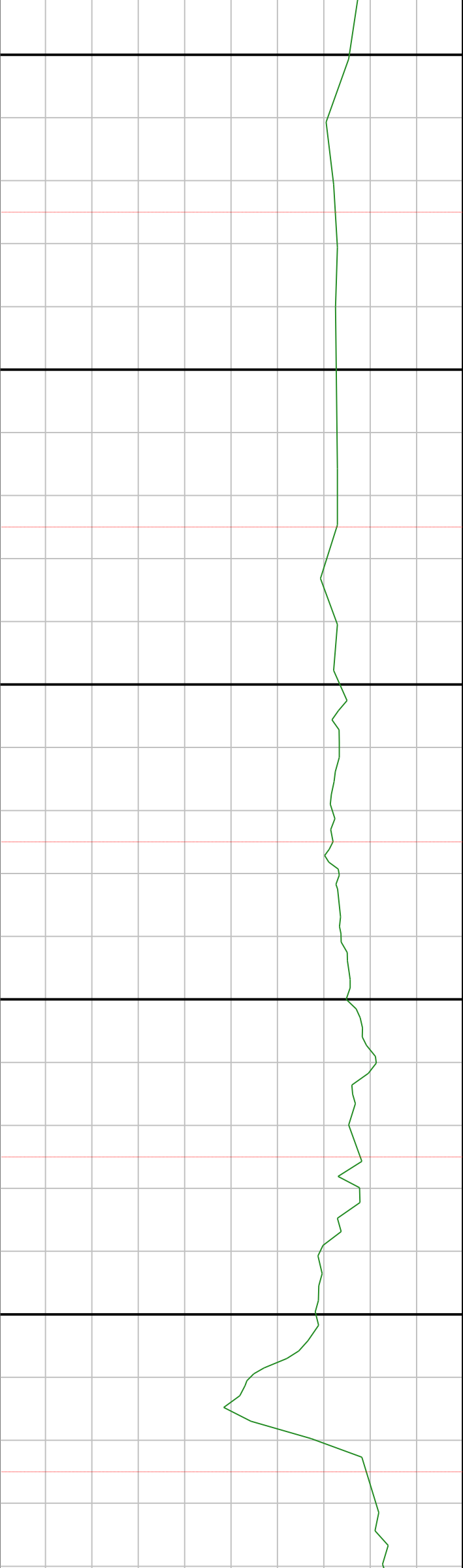












9050

TVD  
5769.09

9100

TVD  
5769.48

9150

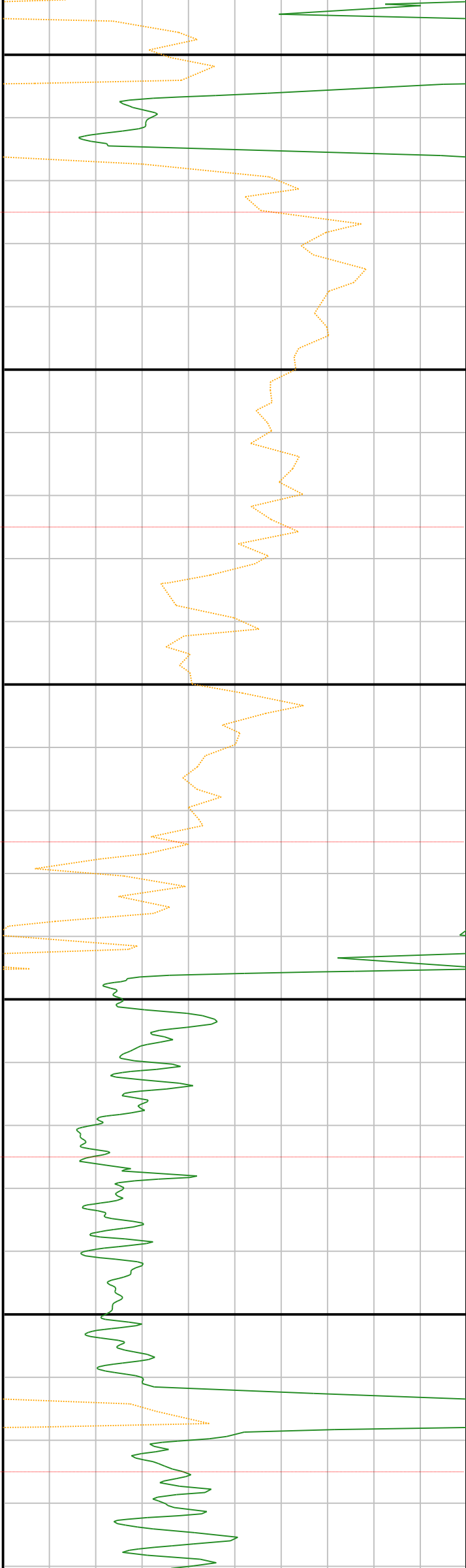
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5769.92

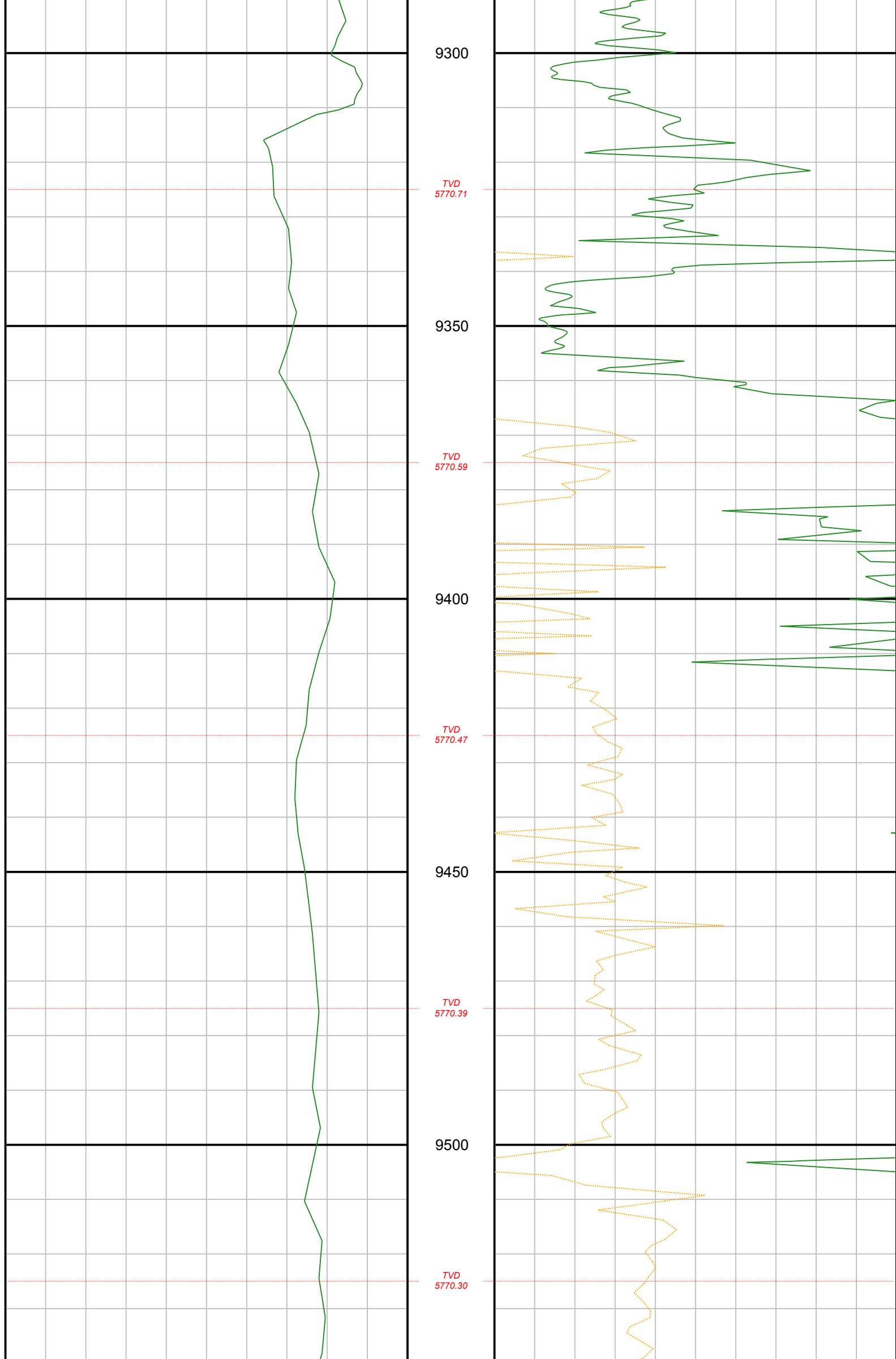
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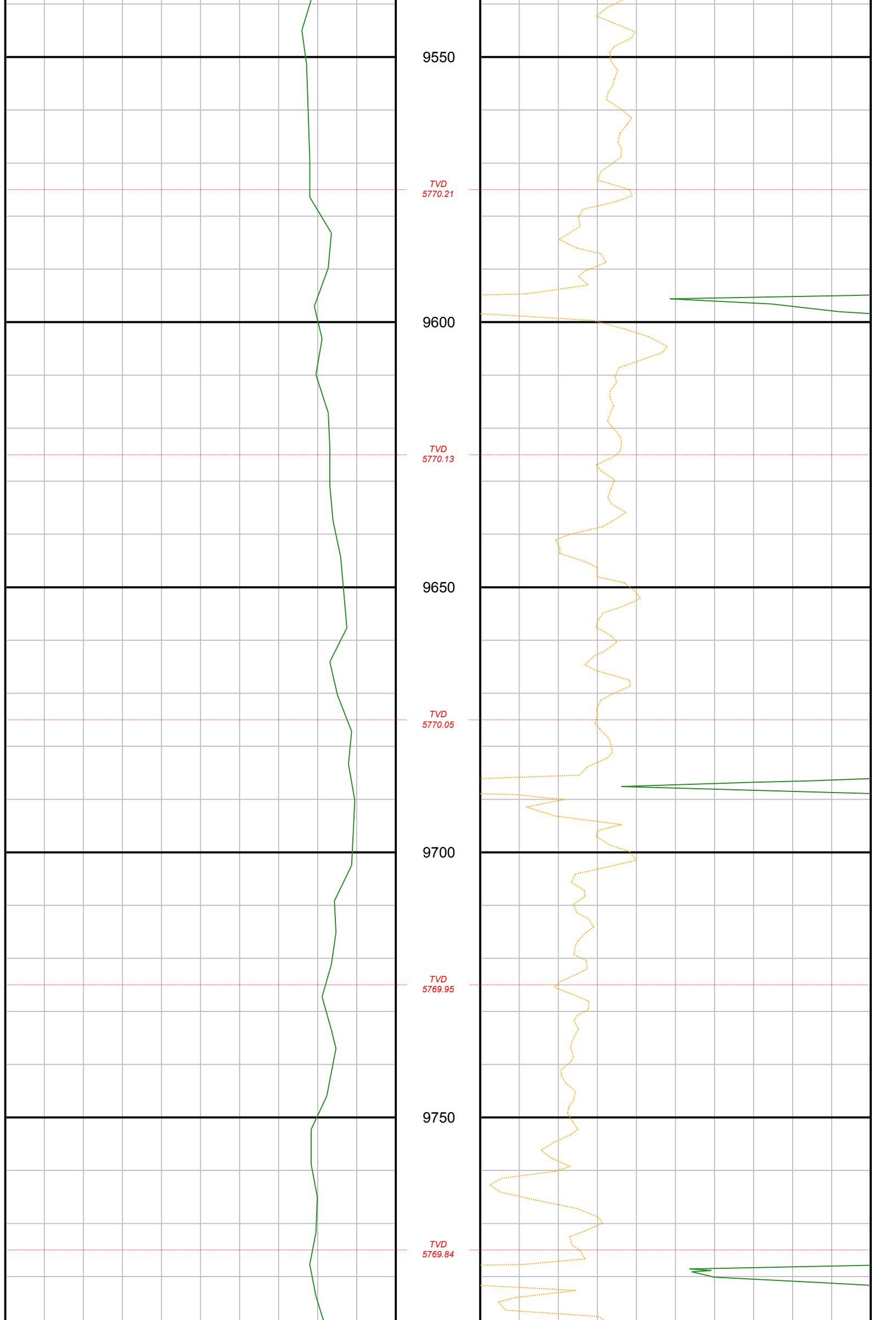
TVD  
5770.32

9250

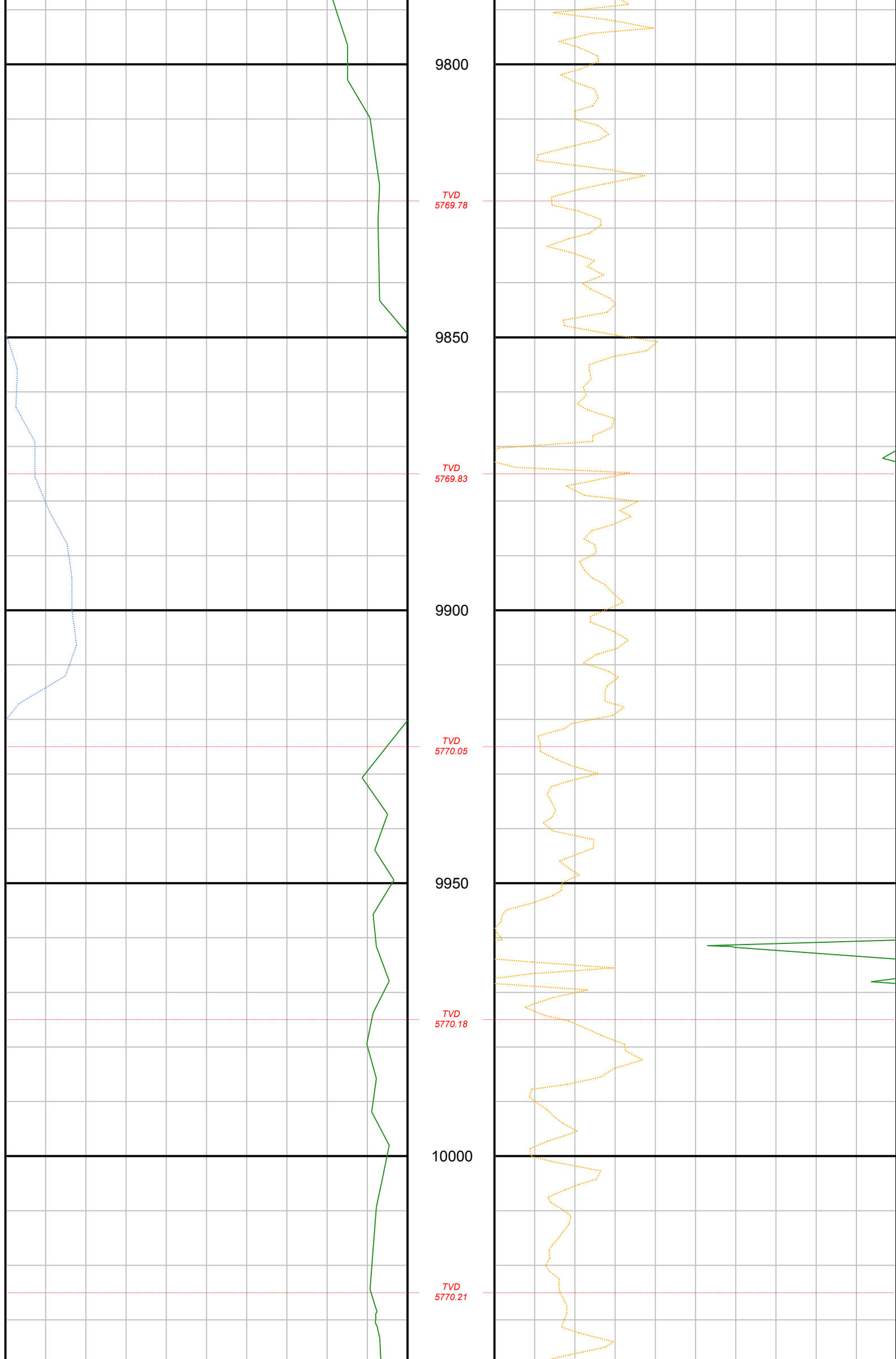
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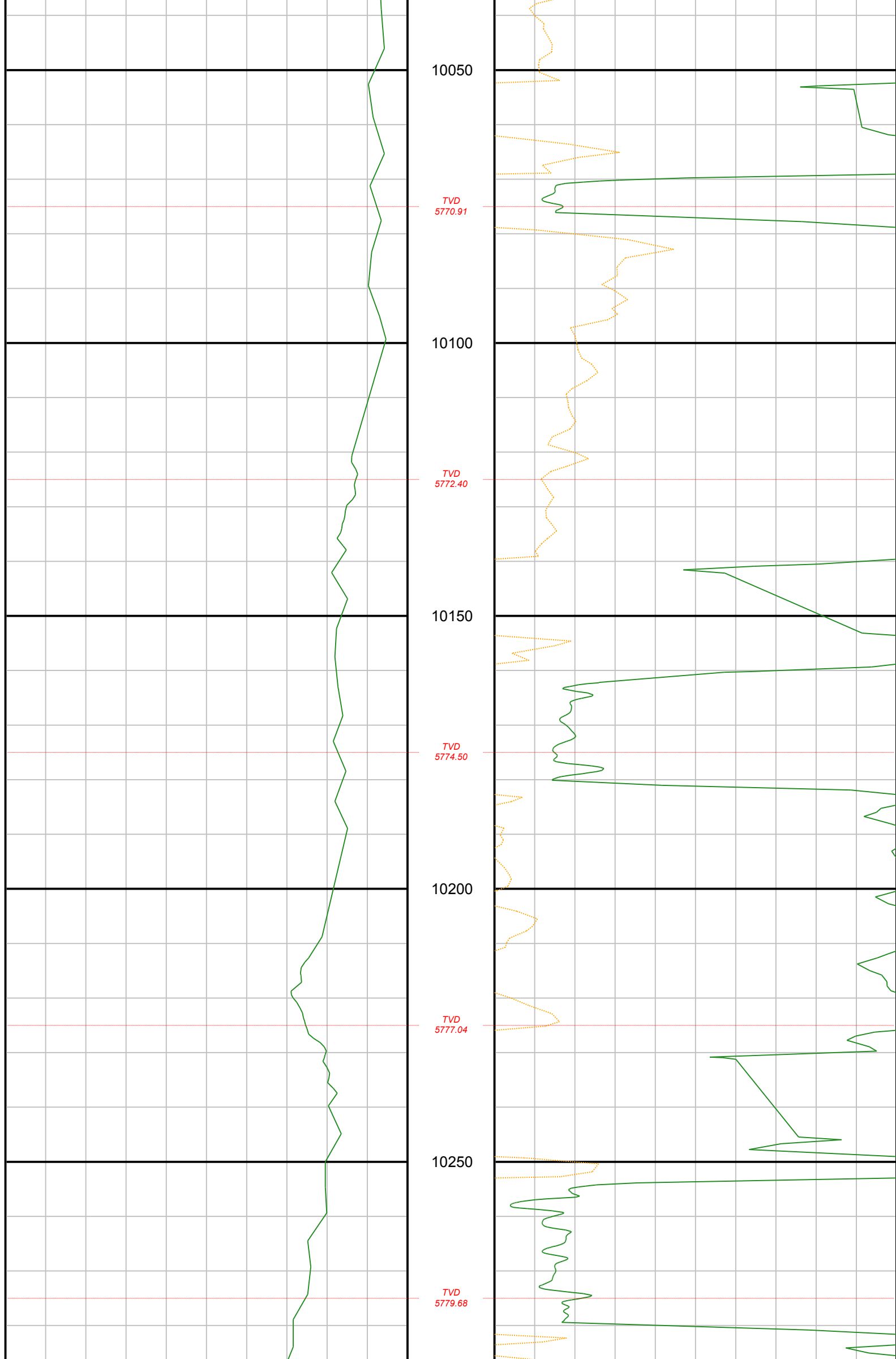


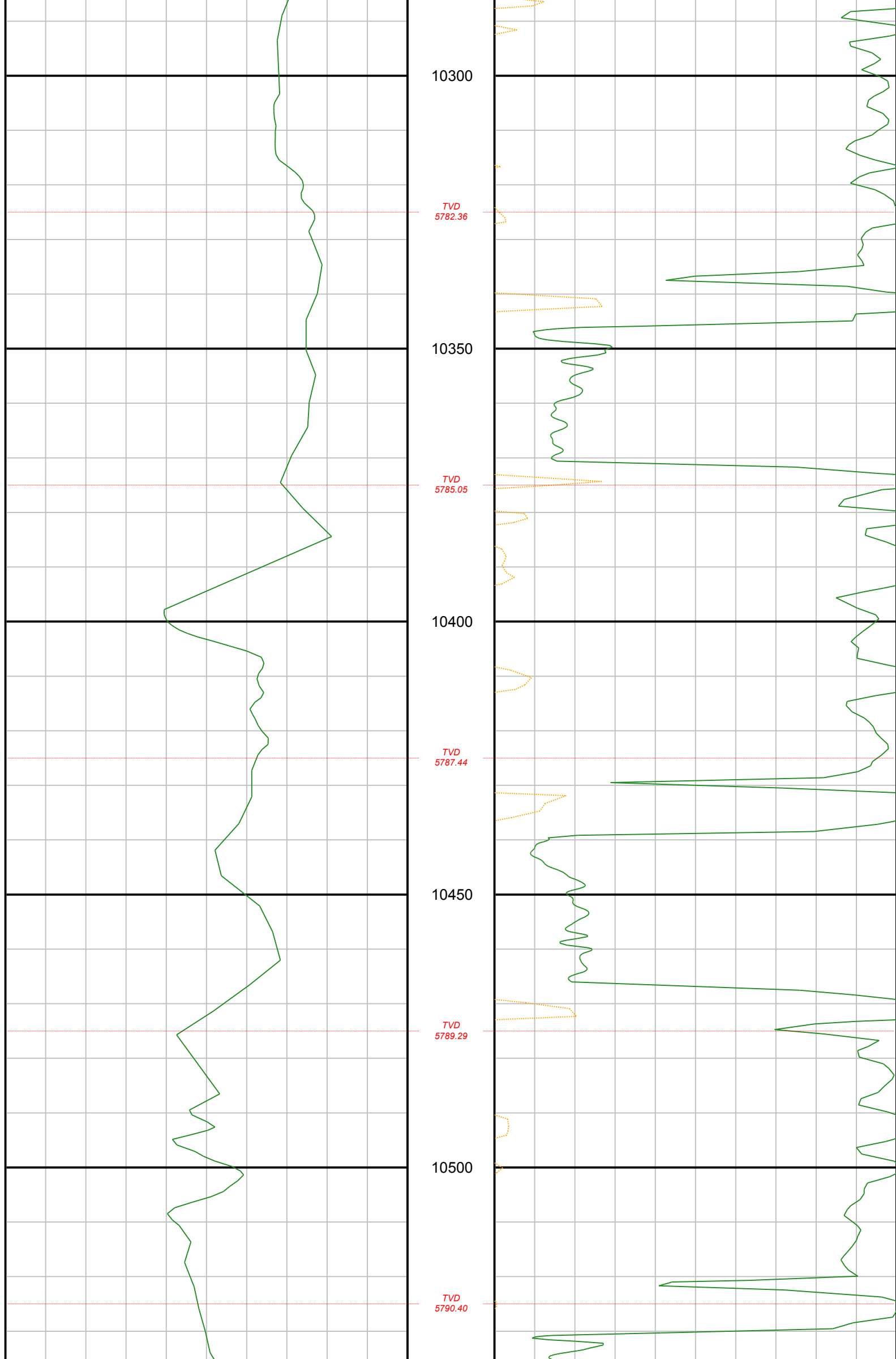


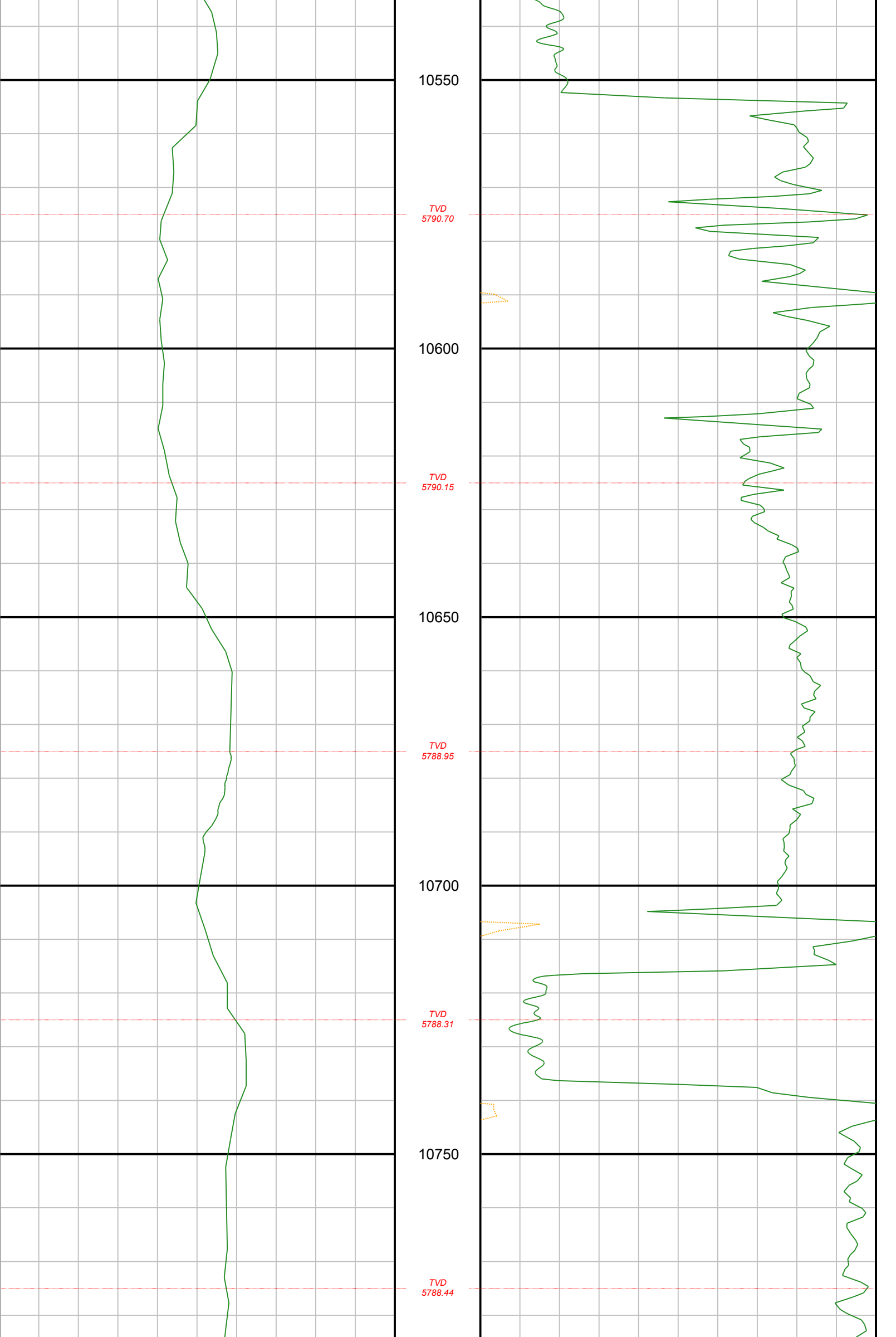


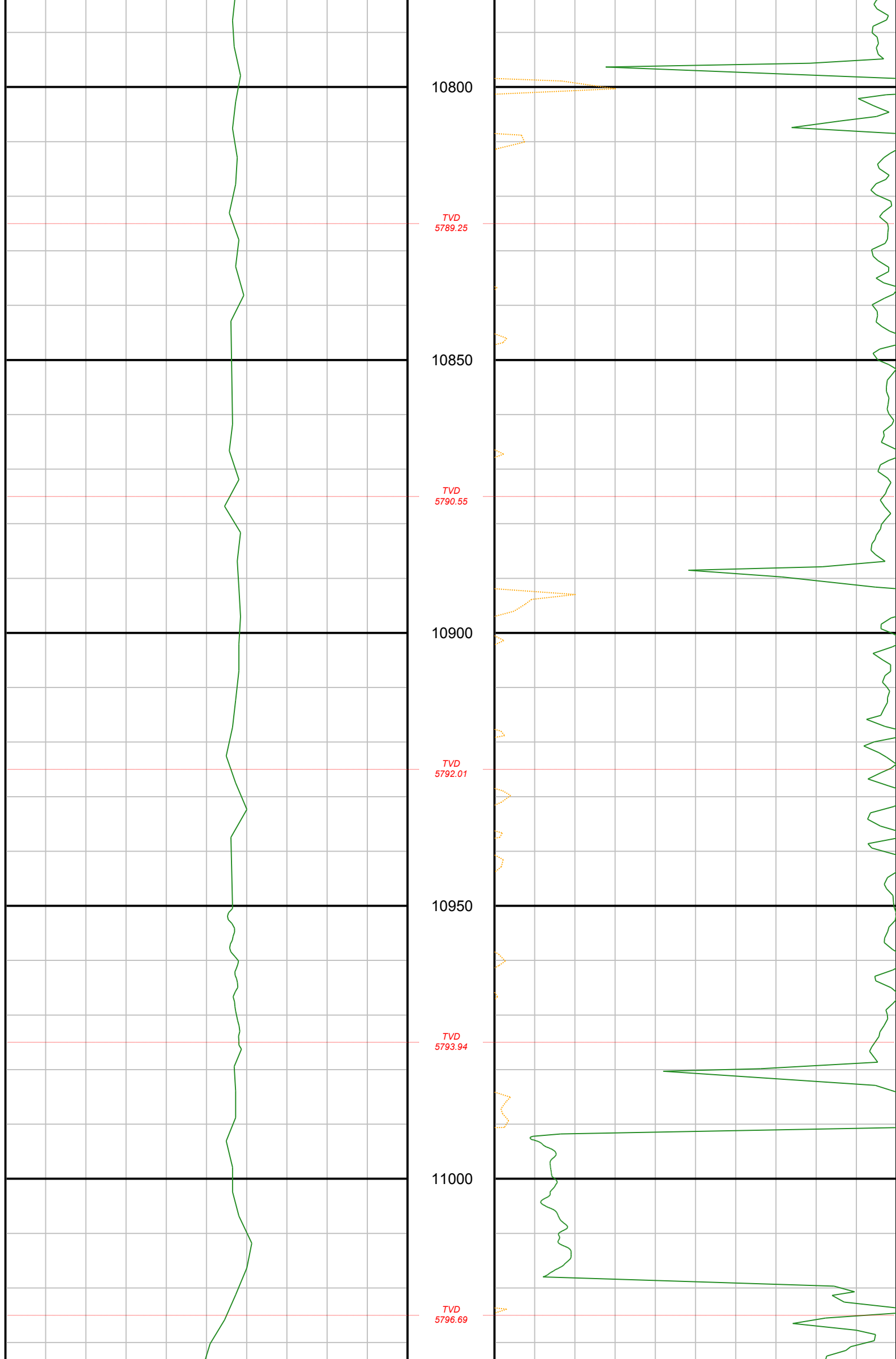


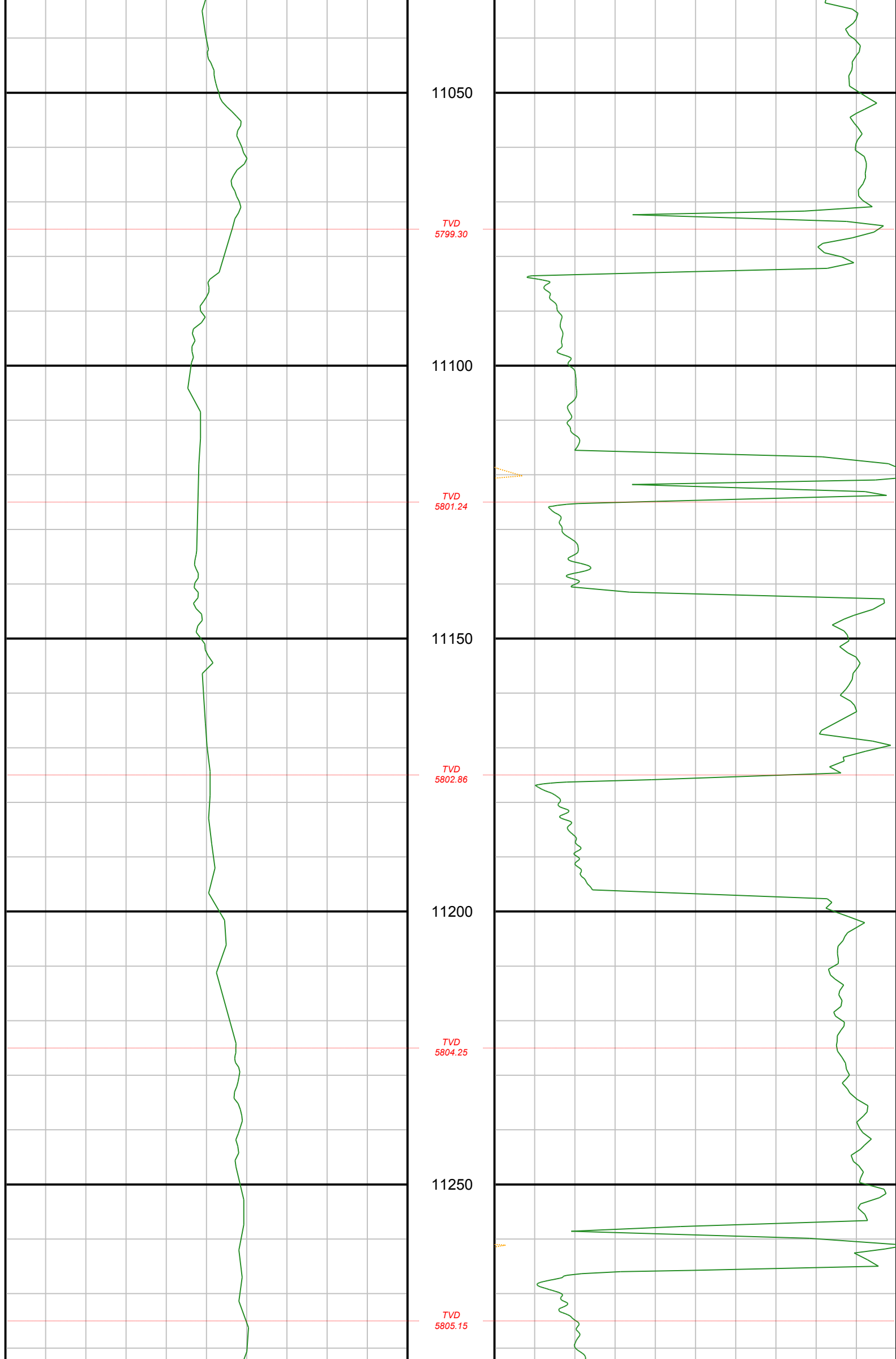


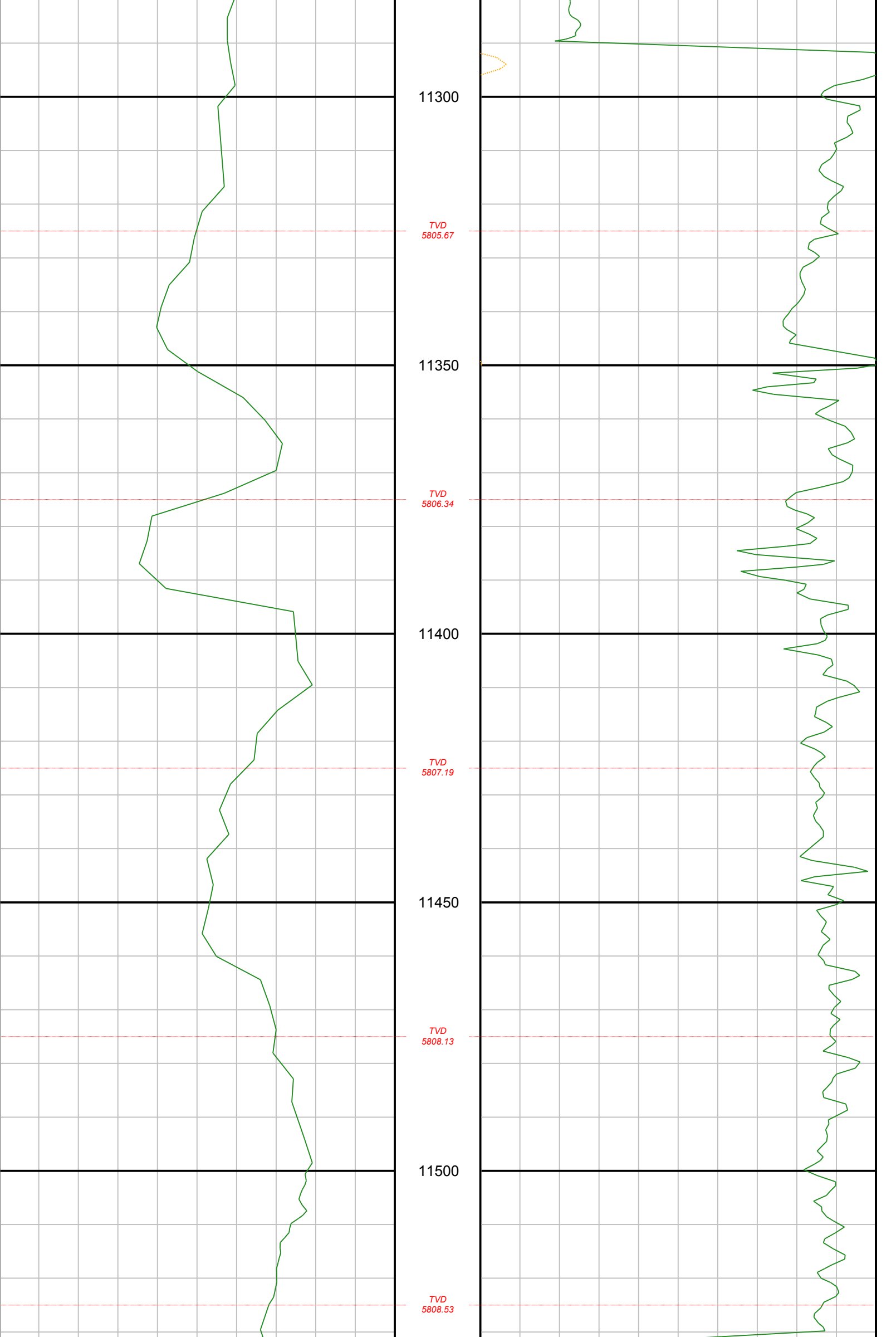


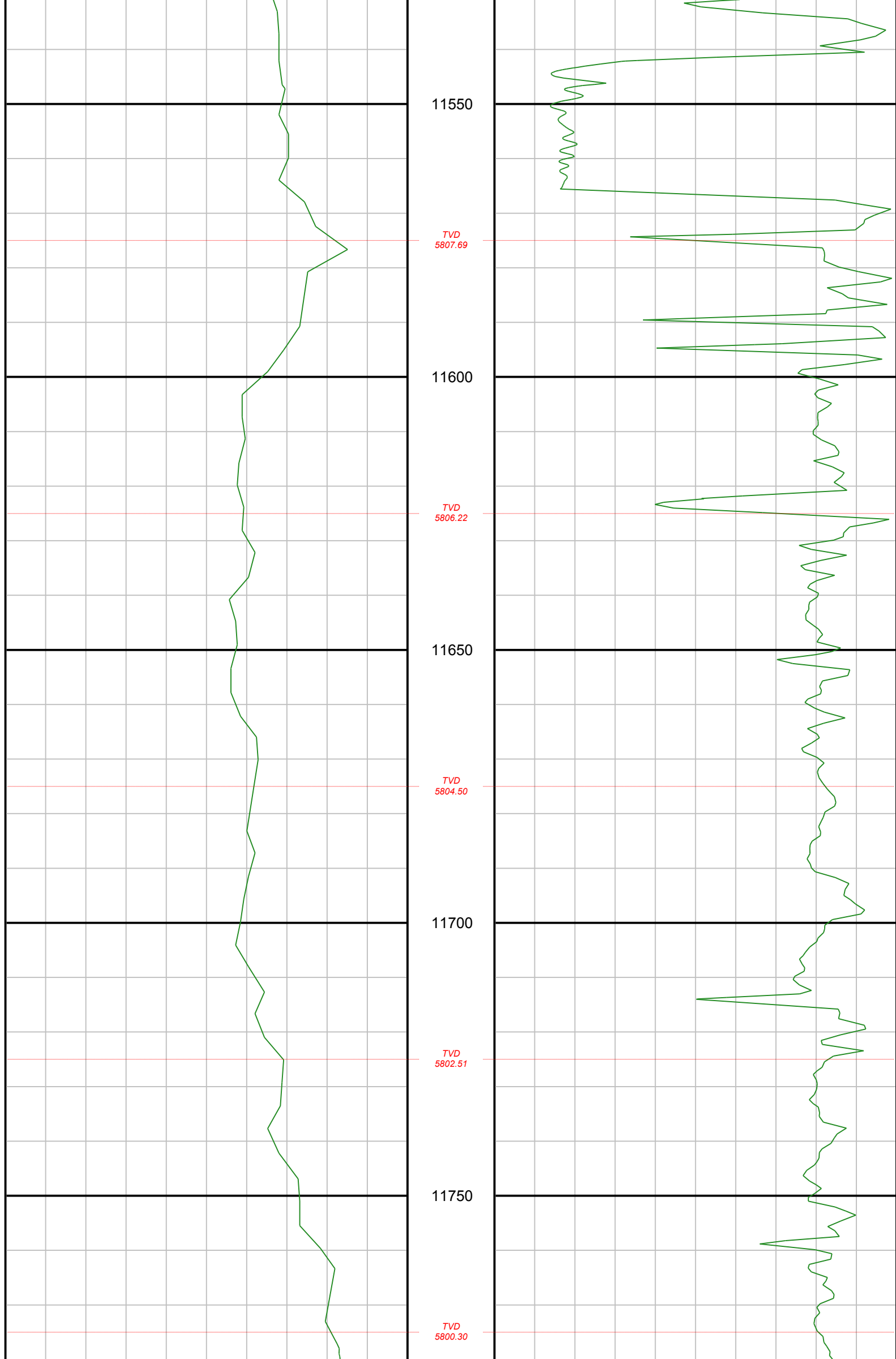




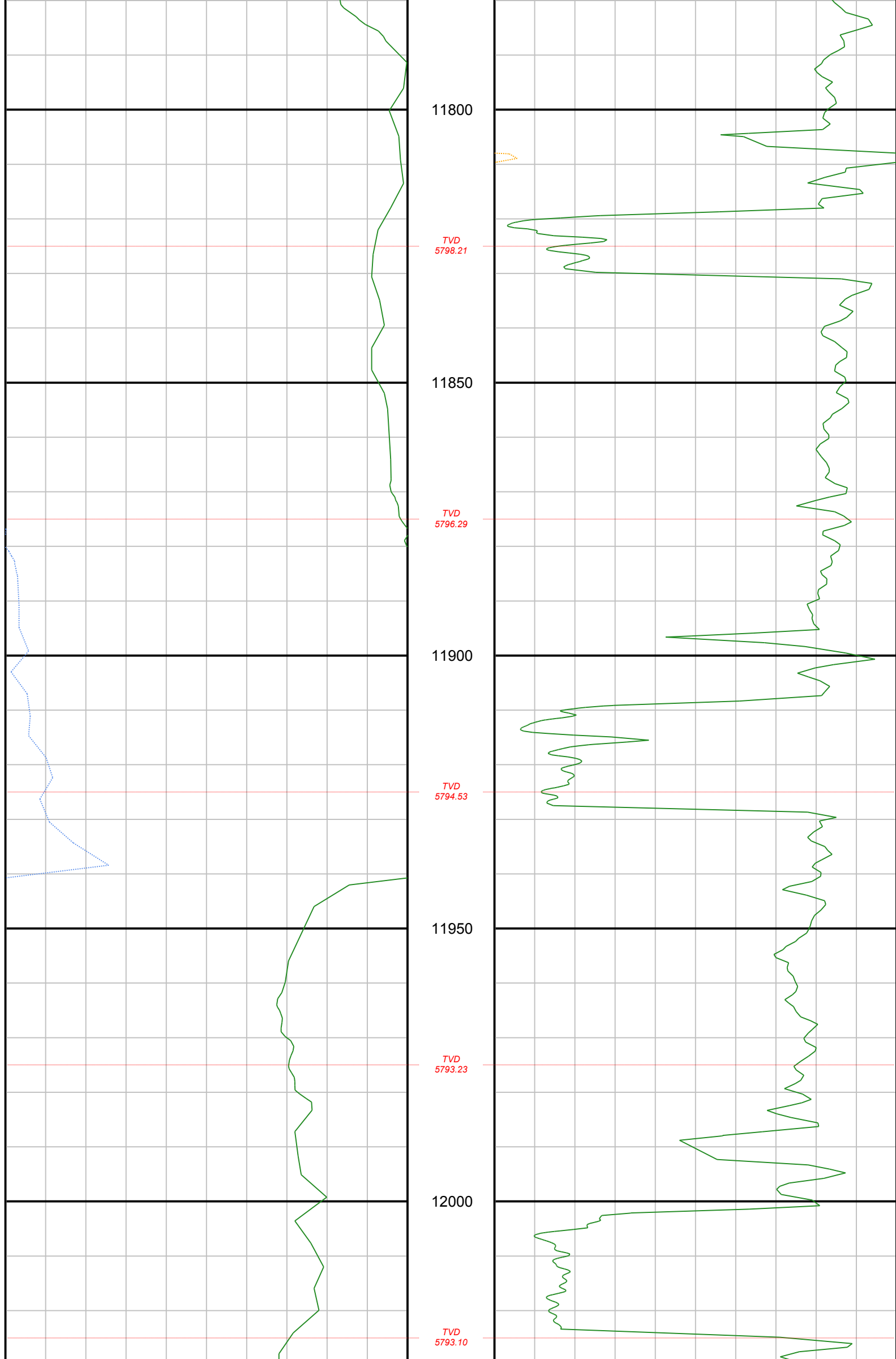


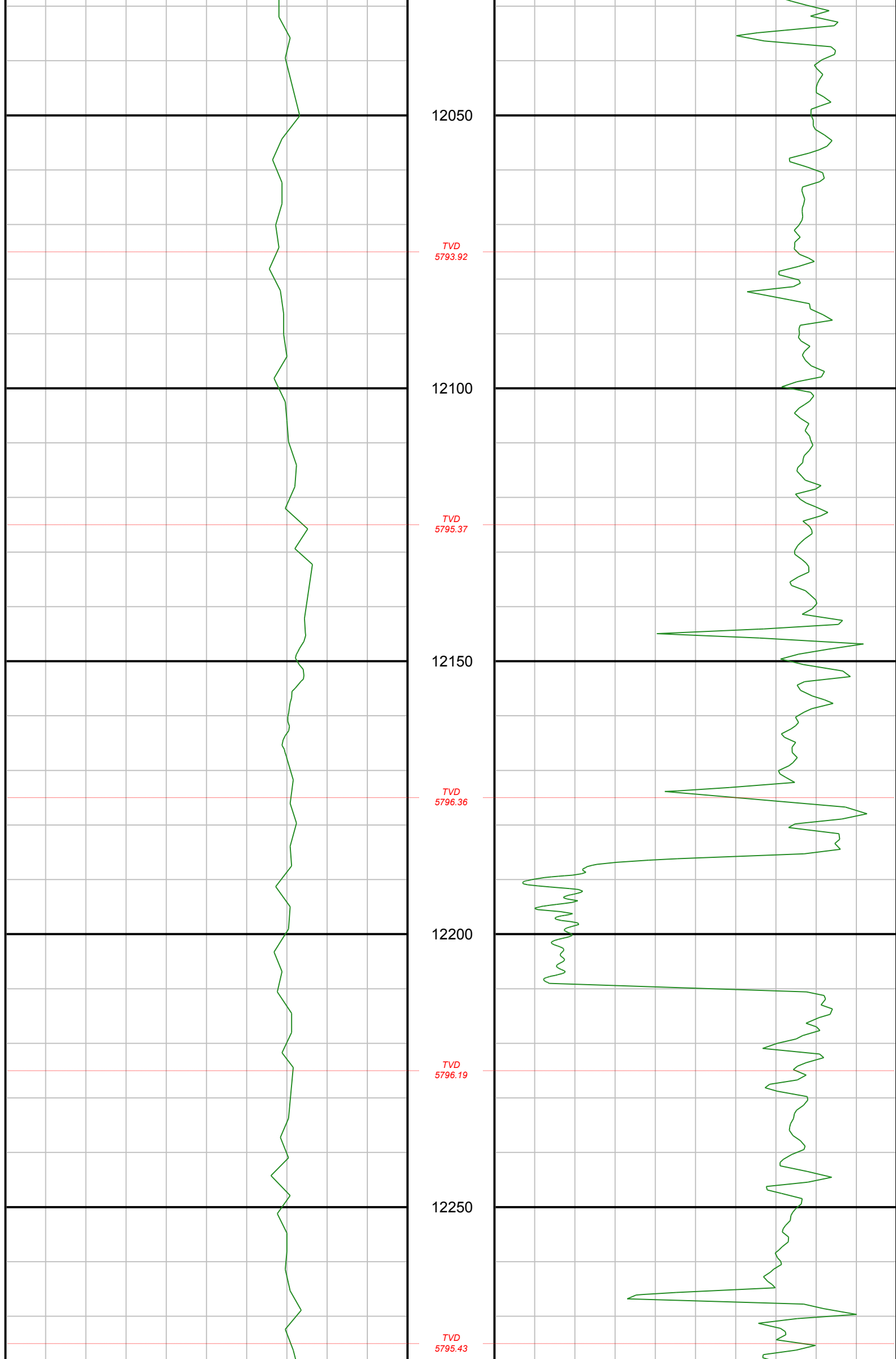


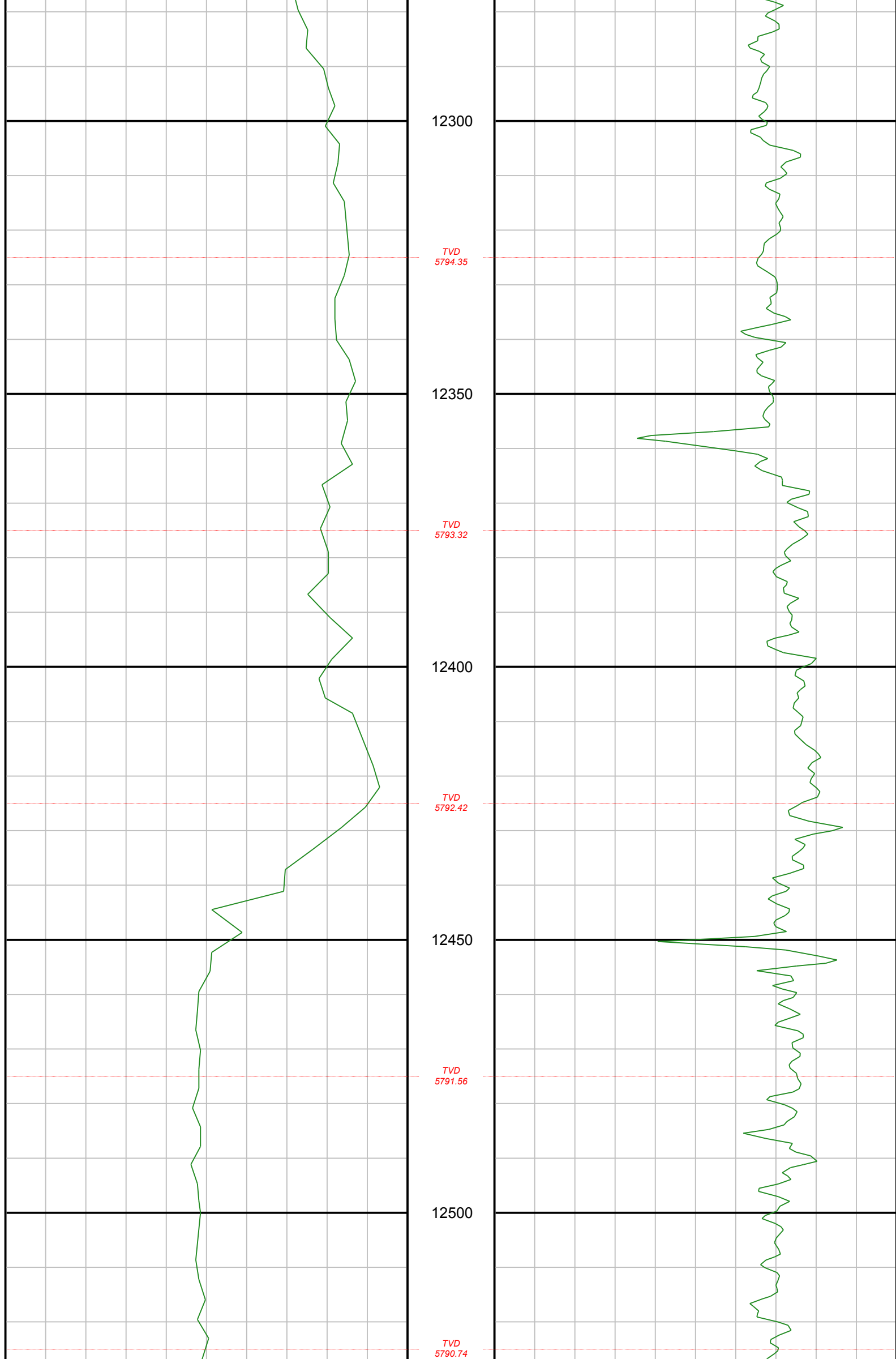


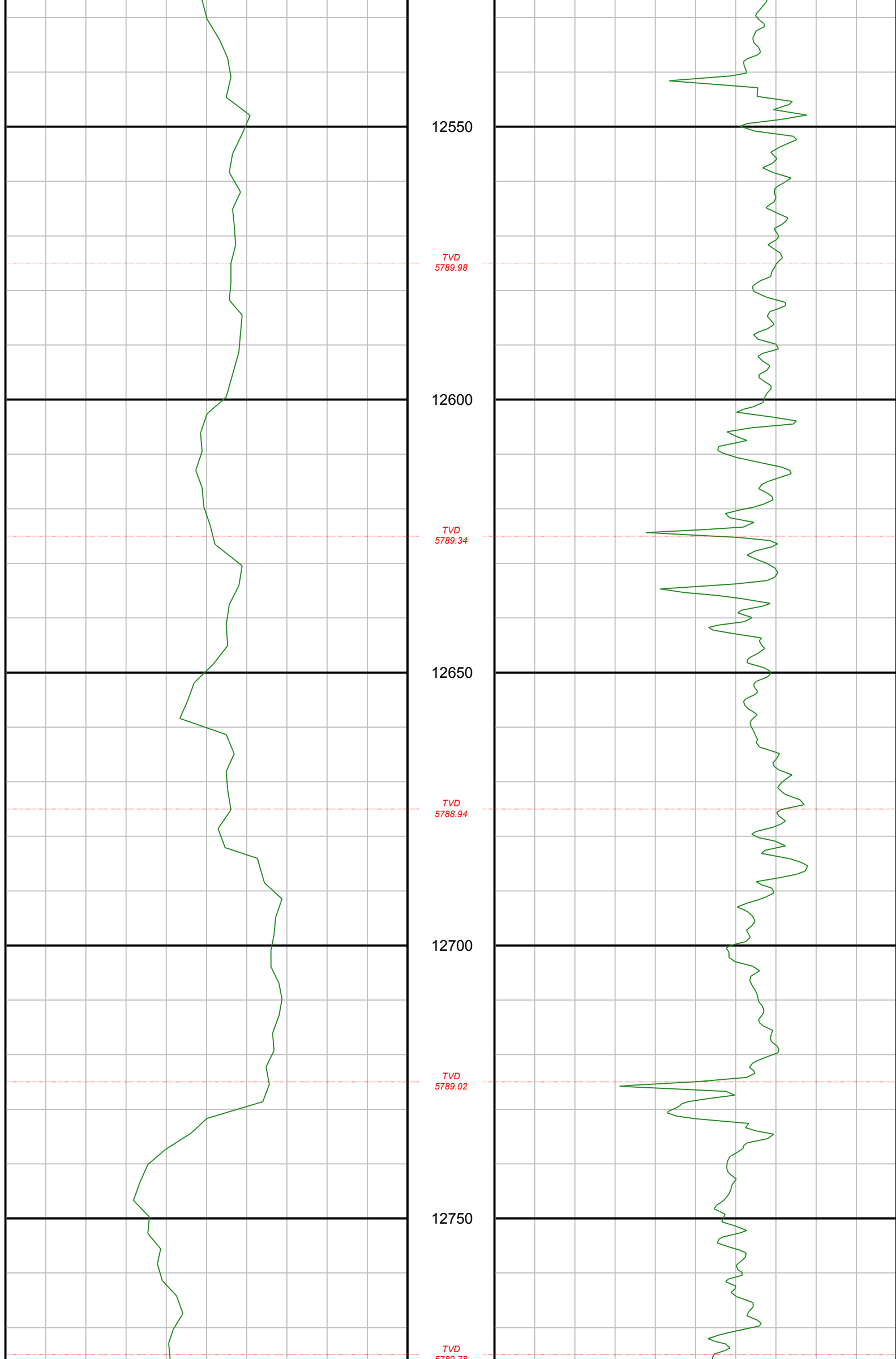


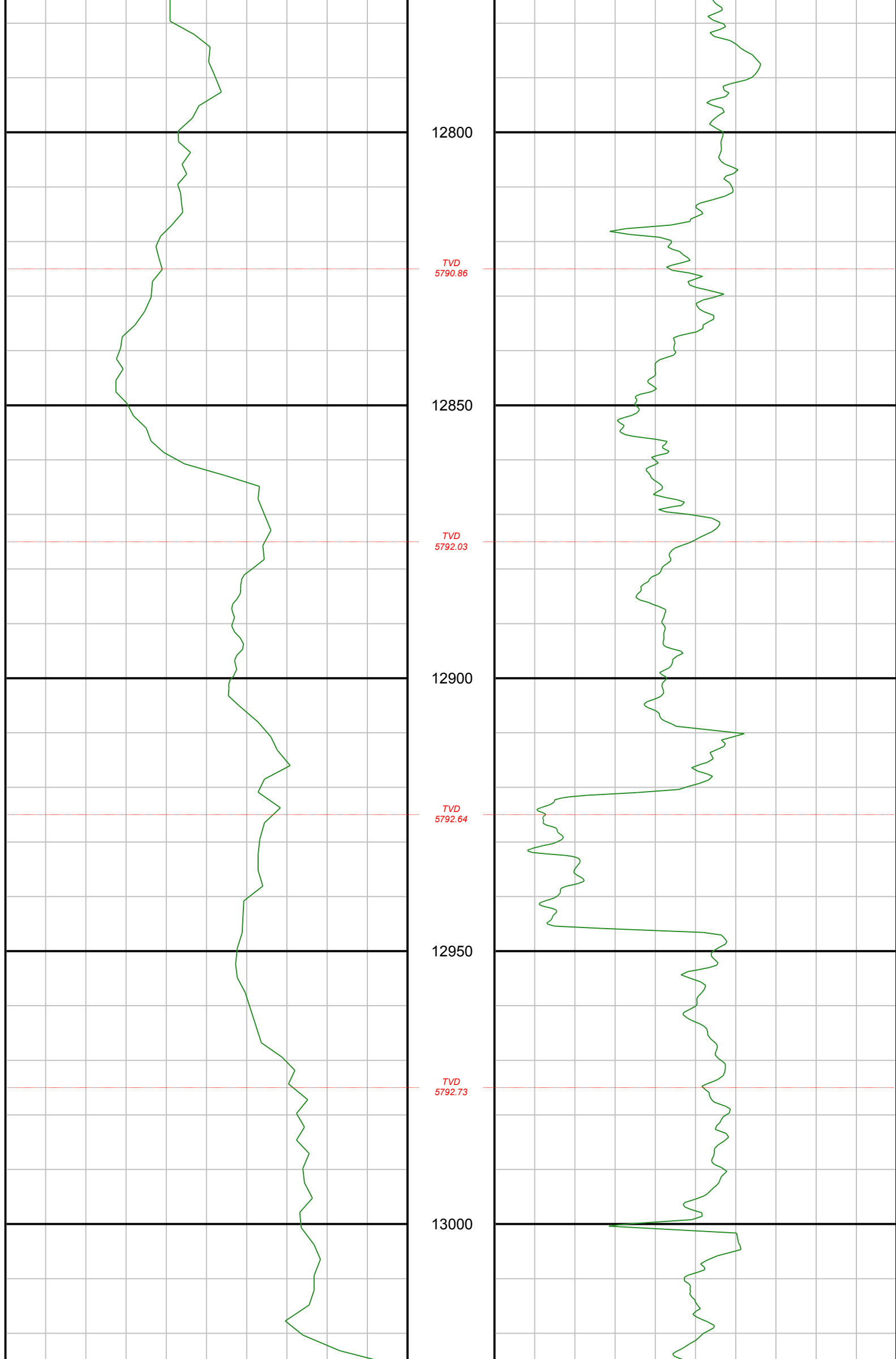


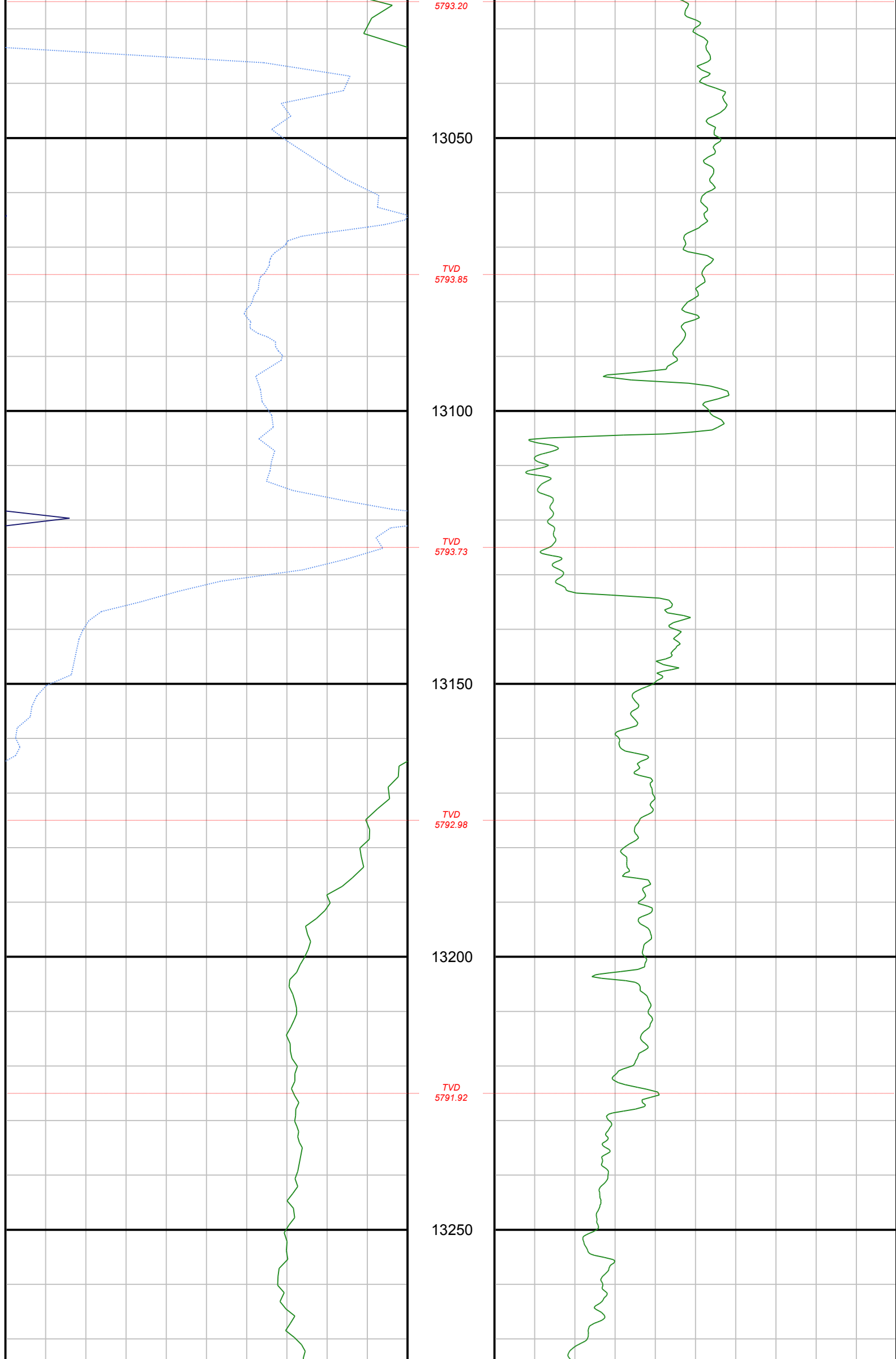


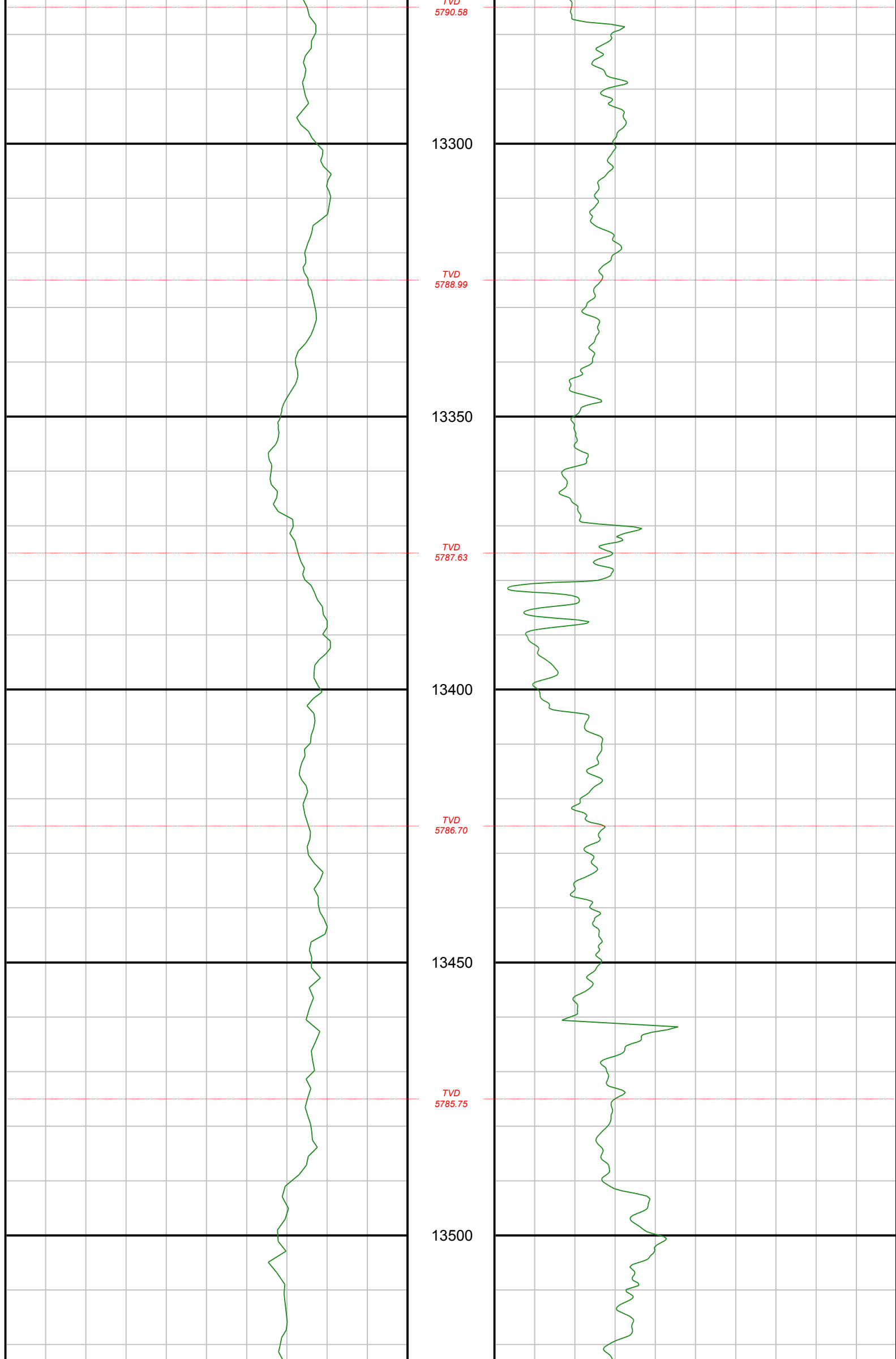


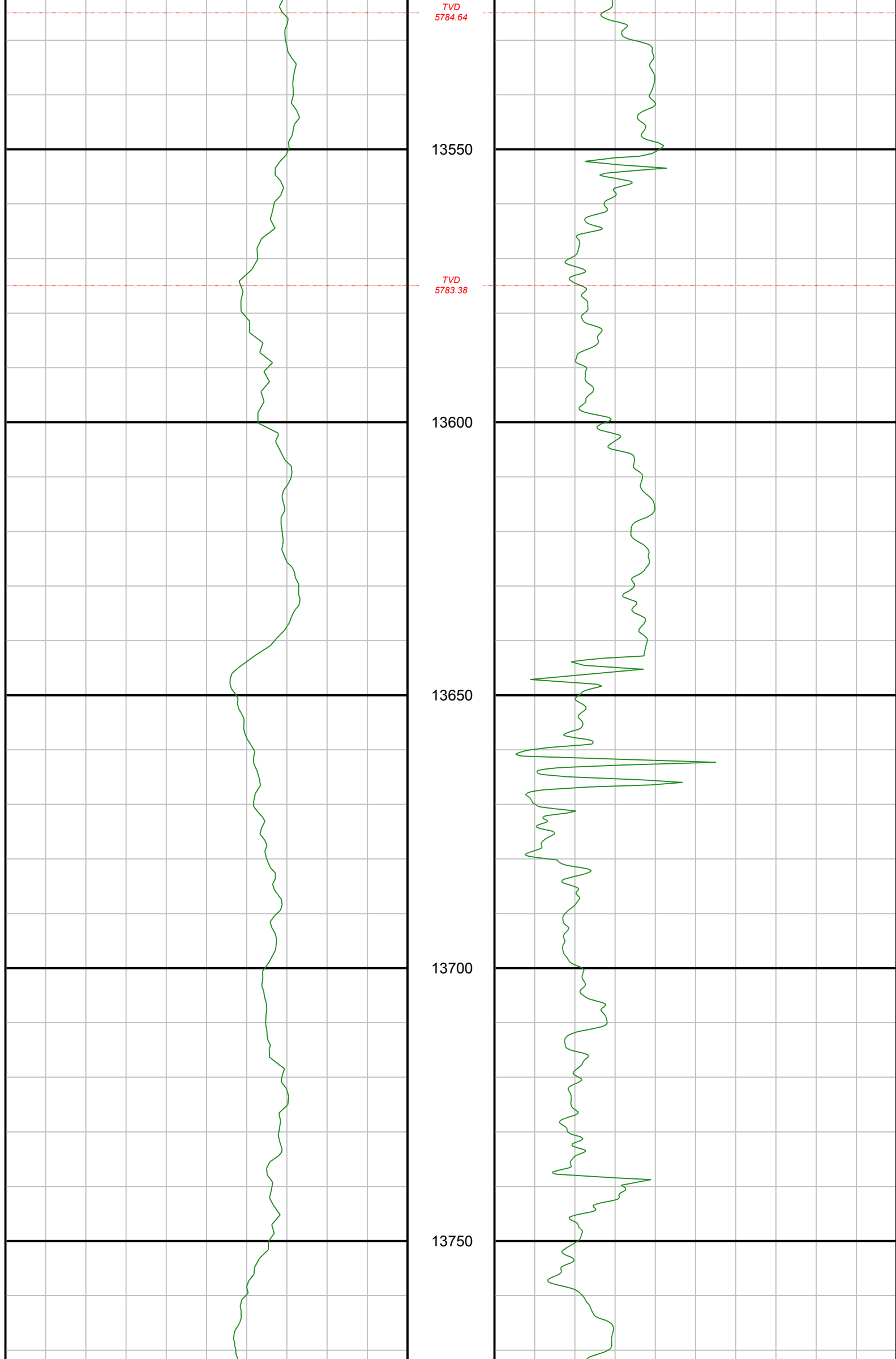




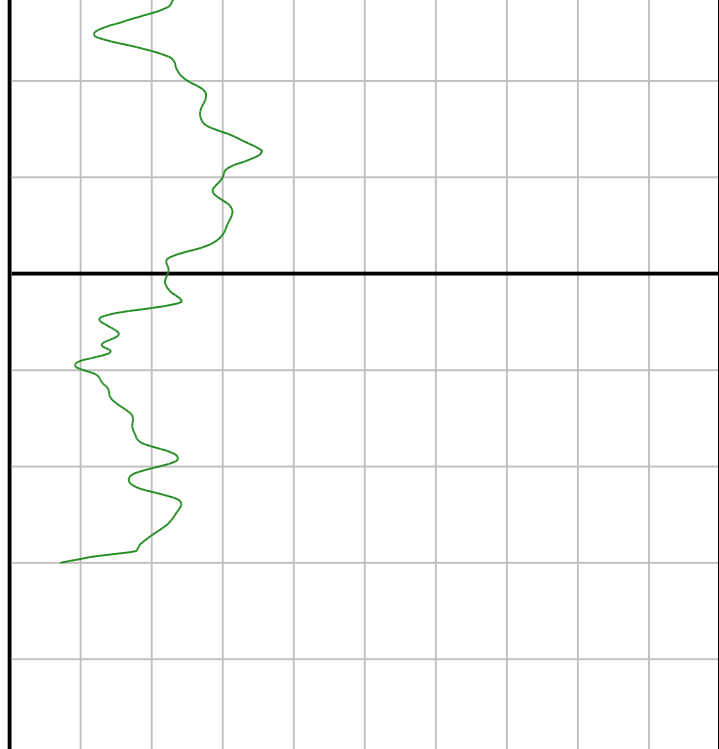
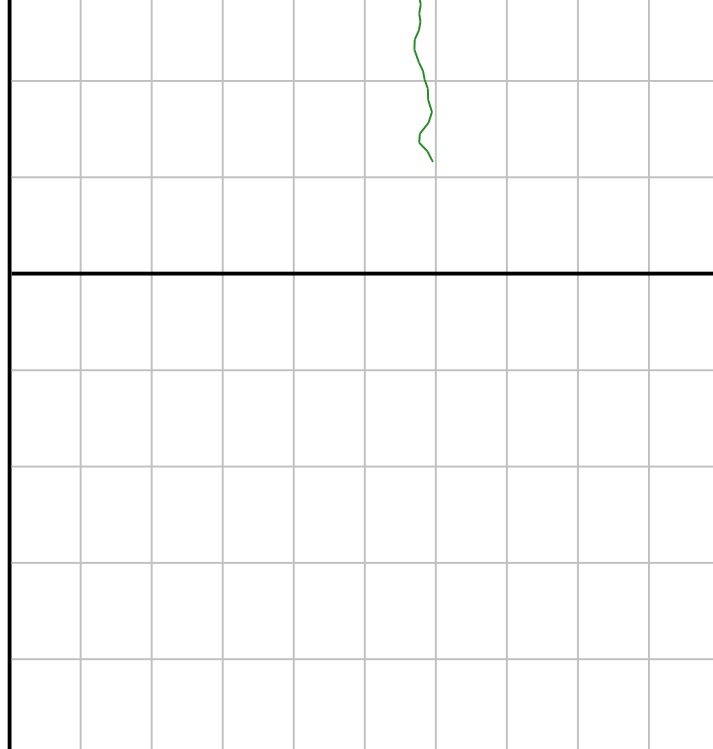












13800

13850

	Gamma	Gamma
0	AAP1	200
	Gamma	Gamma
200	AAP1	400
	Gamma	Gamma
400	AAP1	600
	Gamma	Gamma
600	AAP1	800

	ROP	ROP
0	ft/hr	300
	ROP	ROP
300	ft/hr	600
	ROP	ROP
600	ft/hr	900
	ROP	ROP
900	ft/hr	1200

## Survey Information

Seq	MD (ft)	Inc (°)	Azm (°)	TVD (ft)	V Sec (ft)	N/-S (ft)	E/-W (ft)	DLS (°/100ft)	Bld Rate (°/ft)
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	324.00	0.44	350.05	324.00	-1.24	1.23	-0.21	0.14	0.00
3	417.00	0.89	81.62	416.99	-1.64	1.68	0.44	1.08	0.00
4	509.00	2.46	87.65	508.95	-1.61	1.87	3.12	1.71	0.02
5	601.00	4.39	92.07	600.78	-1.11	1.82	8.61	2.12	0.02
6	694.00	6.19	89.34	693.38	-0.34	1.75	17.18	1.95	0.02
7	786.00	7.73	89.80	784.70	0.50	1.83	28.33	1.67	0.02
8	879.00	10.09	89.41	876.57	1.57	1.93	42.73	2.54	0.03
9	971.00	10.30	88.43	967.12	2.60	2.24	59.01	0.30	0.00
10	1064.00	9.96	87.27	1058.67	3.33	2.85	75.36	0.43	0.00
11	1156.00	9.91	86.79	1149.29	3.81	3.68	91.21	0.11	0.00
12	1248.00	9.53	85.82	1239.97	4.08	4.67	106.71	0.45	0.00
13	1340.00	9.77	88.86	1330.67	4.64	5.39	122.11	0.61	0.00
14	1432.00	10.00	89.56	1421.30	5.72	5.60	137.90	0.28	0.00
15	1524.00	10.12	90.71	1511.89	7.07	5.56	153.97	0.25	0.00
16	1616.00	9.93	93.63	1602.48	8.98	4.96	169.97	0.59	0.00
17	1709.00	9.91	93.24	1694.09	11.25	4.00	185.96	0.08	0.00
18	1801.00	8.83	90.07	1784.87	12.93	3.54	200.93	1.30	-0.01
19	1844.00	8.29	90.35	1827.39	13.48	3.52	207.33	1.26	-0.01
20	1982.00	7.10	90.58	1964.14	15.14	3.37	225.80	0.86	-0.01
21	2074.00	9.09	81.71	2055.22	15.21	4.36	238.68	2.55	0.02
22	2166.00	8.48	75.53	2146.15	13.60	7.11	252.44	1.22	-0.01
23	2258.00	10.73	73.38	2236.85	10.68	11.25	267.22	2.48	0.02
24	2350.00	10.78	70.15	2327.24	6.66	16.62	283.52	0.66	0.00
25	2442.00	10.56	81.28	2417.65	3.82	20.82	299.95	2.25	0.00
26	2534.00	10.87	88.66	2508.05	3.74	22.31	316.95	1.53	0.00
27	2626.00	10.47	86.41	2598.46	4.41	23.03	333.97	0.63	0.00
28	2718.00	10.00	85.24	2689.00	4.56	24.22	350.27	0.56	-0.01
29	2810.00	9.71	83.76	2779.64	4.35	25.72	365.94	0.42	0.00
30	2994.00	9.20	93.57	2961.15	6.05	26.49	396.05	0.92	0.00
31	3086.00	7.99	92.77	3052.12	7.94	25.73	409.78	1.32	-0.01
32	3269.00	8.22	85.35	3233.30	9.60	26.17	435.52	0.58	0.00
33	3361.00	9.84	71.54	3324.16	7.74	29.20	449.54	2.93	0.02
34	3454.00	10.25	61.45	3415.74	2.50	35.67	464.34	1.94	0.00
35	3546.00	11.09	66.83	3506.16	-3.61	43.06	479.67	1.42	0.01

- *Tie-in Point*

	3638.00	12.35	73.14	3596.24	-6.49	49.40	497.22	1.95	0.01
37	3730.00	12.50	82.35	3686.09	-11.07	53.58	516.50	2.16	0.00
38	3822.00	12.47	91.79	3775.93	-10.46	54.59	536.30	2.22	0.00
39	3914.00	10.45	90.71	3866.09	-8.55	54.18	554.58	2.21	-0.02
40	4005.00	8.51	87.56	3955.84	-7.51	54.36	569.56	2.21	-0.02
41	4097.00	6.83	83.25	4047.02	-7.44	55.30	581.79	1.93	-0.02
42	4189.00	6.19	82.60	4138.42	-7.87	56.58	592.14	0.70	-0.01
43	4281.00	5.99	81.49	4229.90	-8.42	57.93	601.81	0.25	0.00
44	4373.00	6.38	76.99	4321.37	-9.48	59.79	611.54	0.68	0.00
45	4465.00	7.28	98.02	4412.73	-8.93	60.12	622.29	2.87	0.01
46	4557.00	5.07	129.87	4504.22	-4.79	56.70	631.19	4.34	-0.02
47	4649.00	2.03	191.64	4596.05	-0.38	52.50	633.98	4.87	-0.03
48	4741.00	2.42	212.50	4687.99	2.73	49.27	632.61	0.97	0.00
49	4833.00	2.24	197.32	4779.91	5.95	45.91	631.03	0.70	0.00
50	4925.00	2.05	183.86	4871.85	9.24	42.55	630.38	0.58	0.00
51	5017.00	2.02	173.79	4963.79	12.49	39.30	630.45	0.39	0.00
52	5109.00	2.43	160.04	5055.72	15.99	35.85	631.29	0.73	0.00
53	5201.00	2.15	159.33	5147.65	19.53	32.41	632.56	0.31	0.00
54	5293.00	8.36	160.10	5239.21	27.65	24.50	635.45	6.75	0.07
55	5339.00	13.92	164.98	5284.33	36.33	16.00	638.02	12.25	0.12
56	5385.00	18.39	165.59	5328.50	48.93	3.62	641.27	9.72	0.10
57	5431.00	23.81	167.54	5371.40	65.30	-12.48	645.08	11.88	0.12
58	5477.00	28.03	170.05	5412.77	85.27	-32.21	648.95	9.48	0.09
59	5523.00	33.10	173.05	5452.37	108.60	-55.34	652.34	11.51	0.11
60	5569.00	34.31	171.91	5490.63	134.10	-80.64	655.68	2.97	0.03
61	5615.00	39.26	171.74	5527.46	161.58	-107.90	659.60	10.76	0.11
62	5661.00	40.79	171.71	5562.69	191.11	-137.17	663.86	3.33	0.03
63	5707.00	46.11	171.98	5596.07	222.67	-168.48	668.34	11.57	0.12
64	5753.00	47.98	170.27	5627.42	256.25	-201.74	673.54	4.89	0.04
65	5799.00	54.90	171.99	5656.07	292.10	-237.26	679.06	15.32	0.15
66	5845.00	58.80	175.86	5681.23	330.58	-275.54	683.11	11.02	0.08
67	5891.00	65.96	176.55	5702.54	371.31	-316.18	685.79	15.62	0.16
68	5937.00	70.46	180.24	5719.62	413.94	-358.86	686.97	12.29	0.10
69	5983.00	77.57	182.26	5732.28	457.89	-403.04	685.99	16.02	0.15
70	6029.00	77.97	182.13	5742.02	502.52	-447.96	684.27	0.91	0.01
71	6075.00	77.65	182.14	5751.74	547.16	-492.89	682.59	0.70	-0.01
72	6122.00	77.19	181.36	5761.97	592.74	-538.74	681.19	1.89	-0.01
73	6168.00	76.24	180.69	5772.54	637.29	-583.50	680.39	2.50	-0.02
74	6215.00	79.94	178.68	5782.24	683.13	-629.48	680.65	8.92	0.08
75	6239.00	83.97	177.88	5785.60	706.86	-653.23	681.36	17.11	0.17
76	6294.00	88.52	175.45	5789.20	761.71	-708.00	684.56	9.37	0.08
77	6387.00	88.35	175.22	5791.74	854.67	-800.65	692.12	0.31	0.00
78	6481.00	91.71	176.85	5791.69	948.65	-894.41	698.62	3.97	0.04
79	6573.00	91.93	175.79	5788.77	1040.59	-986.17	704.52	1.18	0.00
80	6666.00	92.32	175.36	5785.32	1133.52	-1078.83	711.69	0.62	0.00
81	6759.00	90.08	178.25	5783.37	1226.45	-1171.65	716.87	3.93	-0.02
82	6852.00	90.70	178.61	5782.74	1319.31	-1264.61	719.42	0.77	0.01
83	6944.00	89.13	180.42	5782.88	1411.05	-1356.60	720.20	2.60	-0.02
84	7037.00	89.30	179.62	5784.15	1503.73	-1449.59	720.16	0.88	0.00
85	7131.00	91.04	180.88	5783.87	1597.37	-1543.59	719.75	2.29	0.02
86	7224.00	90.11	182.30	5782.94	1689.81	-1636.54	717.17	1.83	-0.01
87	7317.00	90.28	185.17	5782.62	1781.79	-1729.34	711.12	3.09	0.00
88	7409.00	90.36	183.67	5782.11	1872.62	-1821.06	704.03	1.63	0.00
89	7502.00	90.36	184.28	5781.52	1964.56	-1913.83	697.58	0.66	0.00
90	7595.00	90.76	184.97	5780.62	2056.32	-2006.52	690.08	0.86	0.00
91	7688.00	90.73	184.63	5779.41	2148.04	-2099.19	682.30	0.37	0.00
92	7781.00	90.84	184.94	5778.13	2239.76	-2191.86	674.54	0.35	0.00
93	7874.00	91.01	185.15	5776.63	2331.40	-2284.49	666.37	0.29	0.00
94	7967.00	89.19	183.40	5776.47	2423.26	-2377.22	659.43	2.71	-0.02
95	8060.00	88.94	179.76	5777.99	2515.67	-2470.16	656.87	3.92	0.00
96	8152.00	88.15	178.47	5780.32	2607.44	-2562.11	658.29	1.64	-0.01
97	8245.00	90.64	179.34	5781.30	2700.24	-2655.08	660.07	2.84	0.03
98	8338.00	91.01	179.76	5779.97	2792.97	-2748.07	660.80	0.60	0.00
99	8431.00	90.45	178.53	5778.78	2885.75	-2841.05	662.18	1.45	-0.01
100	8524.00	91.01	178.56	5777.60	2978.60	-2934.01	664.55	0.60	0.01
101	8617.00	90.48	177.81	5776.39	3071.47	-3026.96	667.49	0.99	-0.01
102	8709.00	88.83	176.34	5776.94	3163.42	-3118.83	672.19	2.40	-0.02
103	8801.00	91.62	177.92	5776.58	3255.36	-3210.70	676.79	3.49	0.03
104	8894.00	92.18	179.47	5773.50	3348.14	-3303.62	678.91	1.77	0.01
105	8986.00	91.85	180.80	5770.26	3439.76	-3395.56	678.69	1.49	0.00

106	9078.00	89.58	180.78	5769.11	3531.32	-3487.54	677.42	2.47	-0.02
107	9171.00	89.47	180.42	5769.88	3623.92	-3580.53	676.45	0.40	0.00
108	9263.00	89.69	180.08	5770.56	3715.57	-3672.53	676.05	0.44	0.00
109	9358.00	90.20	180.53	5770.65	3810.21	-3767.53	675.54	0.72	0.01
110	9450.00	90.08	180.56	5770.42	3901.83	-3859.52	674.67	0.13	0.00
111	9542.00	90.11	180.21	5770.27	3993.46	-3951.52	674.05	0.38	0.00
112	9635.00	90.08	180.18	5770.12	4086.12	-4044.52	673.73	0.05	0.00
113	9727.00	90.14	180.41	5769.94	4177.77	-4136.52	673.26	0.26	0.00
114	9819.00	90.06	180.55	5769.78	4269.40	-4228.51	672.49	0.18	0.00
115	9912.00	89.69	180.01	5769.98	4362.05	-4321.51	672.03	0.70	0.00
116	10004.00	90.08	182.76	5770.17	4453.52	-4413.48	669.81	3.02	0.00
117	10096.00	88.32	188.52	5771.45	4543.97	-4504.98	660.77	6.55	-0.02
118	10188.00	87.09	188.29	5775.14	4633.50	-4595.92	647.34	1.36	-0.01
119	10280.00	86.92	185.28	5779.95	4723.53	-4687.14	636.48	3.27	0.00
120	10373.00	86.92	182.04	5784.94	4815.40	-4779.80	630.56	3.48	0.00
121	10465.00	88.07	179.20	5788.97	4906.90	-4871.70	629.56	3.33	0.01
122	10558.00	89.80	178.82	5790.69	4999.69	-4964.66	631.17	1.90	0.02
123	10650.00	91.62	179.64	5789.55	5091.46	-5056.64	632.41	2.17	0.02
124	10742.00	89.97	181.15	5788.28	5183.08	-5148.63	631.77	2.43	-0.02
125	10834.00	88.55	181.39	5789.47	5274.57	-5240.59	629.73	1.57	-0.02
126	10926.00	88.24	185.34	5792.04	5365.61	-5332.38	624.34	4.30	0.00
127	11018.00	86.50	186.51	5796.27	5455.93	-5423.79	614.85	2.28	-0.02
128	11110.00	87.96	183.32	5800.71	5546.52	-5515.33	606.98	3.81	0.02
129	11202.00	88.38	179.38	5803.65	5637.94	-5607.24	604.82	4.30	0.00
130	11294.00	89.50	176.96	5805.35	5729.80	-5699.17	607.75	2.90	0.01
131	11385.00	89.05	177.35	5806.50	5820.75	-5790.05	612.27	0.65	0.00
132	11477.00	88.88	176.24	5808.17	5912.70	-5881.89	617.41	1.22	0.00
133	11569.00	91.51	174.94	5807.85	6004.69	-5973.60	624.49	3.19	0.03
134	11661.00	92.04	174.77	5805.00	6096.64	-6065.19	632.73	0.60	0.01
135	11753.00	92.60	175.27	5801.28	6188.56	-6156.77	640.71	0.82	0.01
136	11844.00	92.21	176.39	5797.46	6279.48	-6247.44	647.32	1.30	0.00
137	11936.00	91.90	178.34	5794.16	6371.35	-6339.28	651.55	2.14	0.00
138	12028.00	89.38	179.51	5793.13	6463.15	-6431.25	653.27	3.02	-0.03
139	12120.00	88.04	177.40	5795.21	6554.98	-6523.19	655.75	2.72	-0.01
140	12212.00	90.56	177.46	5796.33	6646.91	-6615.08	659.88	2.74	0.03
141	12304.00	91.32	178.65	5794.82	6738.78	-6707.01	663.00	1.53	0.01
142	12396.00	91.03	178.99	5792.93	6830.59	-6798.97	664.89	0.49	0.00
143	12488.00	90.95	178.88	5791.34	6922.39	-6890.94	666.60	0.15	0.00
144	12579.00	90.84	178.84	5789.92	7013.21	-6981.91	668.41	0.13	0.00
145	12671.00	90.36	177.71	5788.96	7105.07	-7073.87	671.18	1.33	-0.01
146	12763.00	88.91	175.65	5789.55	7197.04	-7165.70	676.51	2.74	-0.02
147	12855.00	88.55	175.39	5791.58	7289.02	-7257.40	683.70	0.48	0.00
148	12947.00	90.08	176.67	5792.68	7381.00	-7349.17	690.06	2.17	0.02
149	13039.00	88.99	174.76	5793.43	7472.99	-7440.90	696.94	2.39	-0.01
150	13131.00	90.73	179.10	5793.66	7564.92	-7532.74	701.86	5.08	0.02
151	13223.00	91.37	179.14	5791.97	7656.70	-7624.72	703.28	0.70	0.01
152	13315.00	91.93	178.93	5789.32	7748.47	-7716.66	704.82	0.65	0.01
153	13407.00	90.95	180.18	5787.01	7840.18	-7808.63	705.54	1.73	-0.01
154	13499.00	91.26	179.81	5785.23	7931.86	-7900.61	705.55	0.52	0.00
155	13591.00	91.59	179.94	5782.95	8023.54	-7992.58	705.75	0.39	0.00