



Precision Directional Services, Inc.

27610 Commerce Oaks Drive
Oak Ridge North, TX 77385
713-435-6250

DL2358

2":100' - MD

8/26/2014 8:17:36 PM

Oper. Company: Carrizo Oil & Gas, Inc.

Country: USA

State / Province: Colorado

County / Parish: Weld

Started: 08/21/2014 01:00 AM

API/UWI: 05-123-40028-00

Field: Niobrara CONZ'83

Well: Shull 3-35-6-90

Rig: Xtreme 19

Ended: 08/26/2014 08:15 AM

Personnel

Day Hand: Paul Brown

Night Hand: Clayton Fitzpatrick

Comp. Emp:

Location

Latitude: 40.7132111111111

Longitude: -104.054327777777

Elev. GL: 4923'

Elev. DF: 4940'

Elev. KB: 17'

Hole Data

Size	From	To
12 1/4	0	1474
8 3/4	1474	6413
6 1/8	6413	10688

Casing Data

Size	From	To
9 5/8	0	1450
7	0	6393
4.5	6393	10688

Bit Sizes

Size	From	To
12 1/4	0	1474
8 3/4	1474	6413
6 1/8	6413	10688

Mud Data

Type	Weight	Density	Viscosity	Rm	Rmf	Rmc	From	To
WBM	8.4	8.4	27 - 28	N/A	N/A	N/A	0	1474
WBM	8.4 - 9.5	8.4 - 9.5	28 - 40	N/A	N/A	N/A	1474	5662
WBM	9.6 - 9.7	9.6 - 9.7	38 - 42	N/A	N/A	N/A	5662	6413
WBM	9.6 - 9.8	9.6 - 9.8	38 - 48	N/A	N/A	N/A	6413	10688

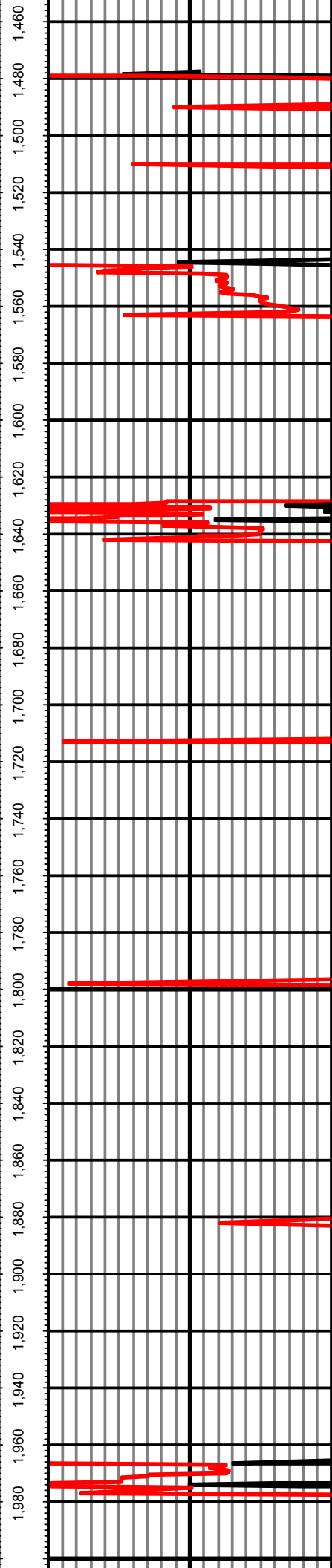
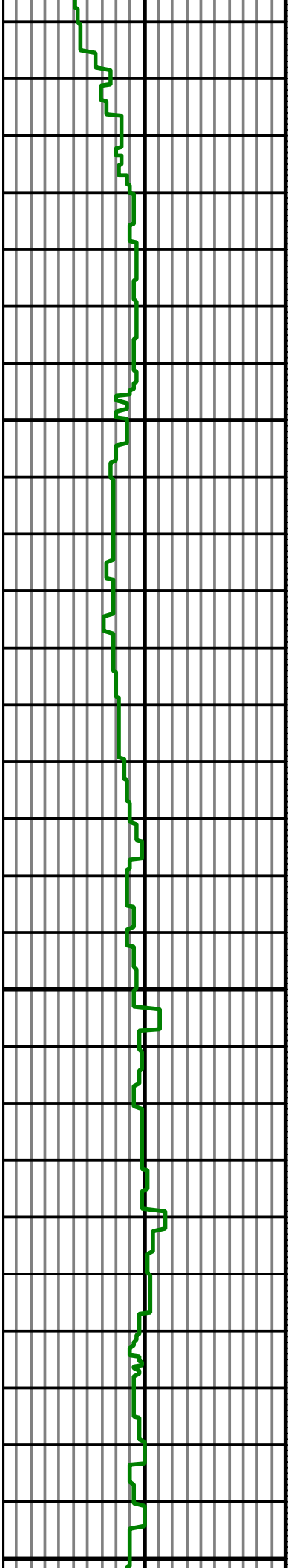
Tool Run Data

Serial Number	Gamma Offset	Resist. Offset	Start Time	Start Depth	End Time	End Depth
G2034	42	0	8/20/2014 10:00:11 PM	1474	8/22/2014 8:15:11 AM	5662
G1698	42	0	8/22/2014 9:45:46 AM	5662	8/23/2014 12:00:46 PM	6413
G1698	42	0	8/24/2014 8:30:25 AM	6413	8/26/2014 8:15:25 AM	10688

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, cost damages or expenses incurred or sustained by anyone resulting from an interpretation made by any of our officers, agents, or employees.

0.00 GR(API) 150.00 MD 0.00 ROP(FT/HR) 150.00 MD Surveys (TVD/INC/AZ)
150.00 2 300.00 FT 150.00 2 300.00 FT





TVD: 1482.78 INC: 3.80 AZ: 65.00 1,486.00

TVD: 1567.55 INC: 4.70 AZ: 61.60 1,571.00

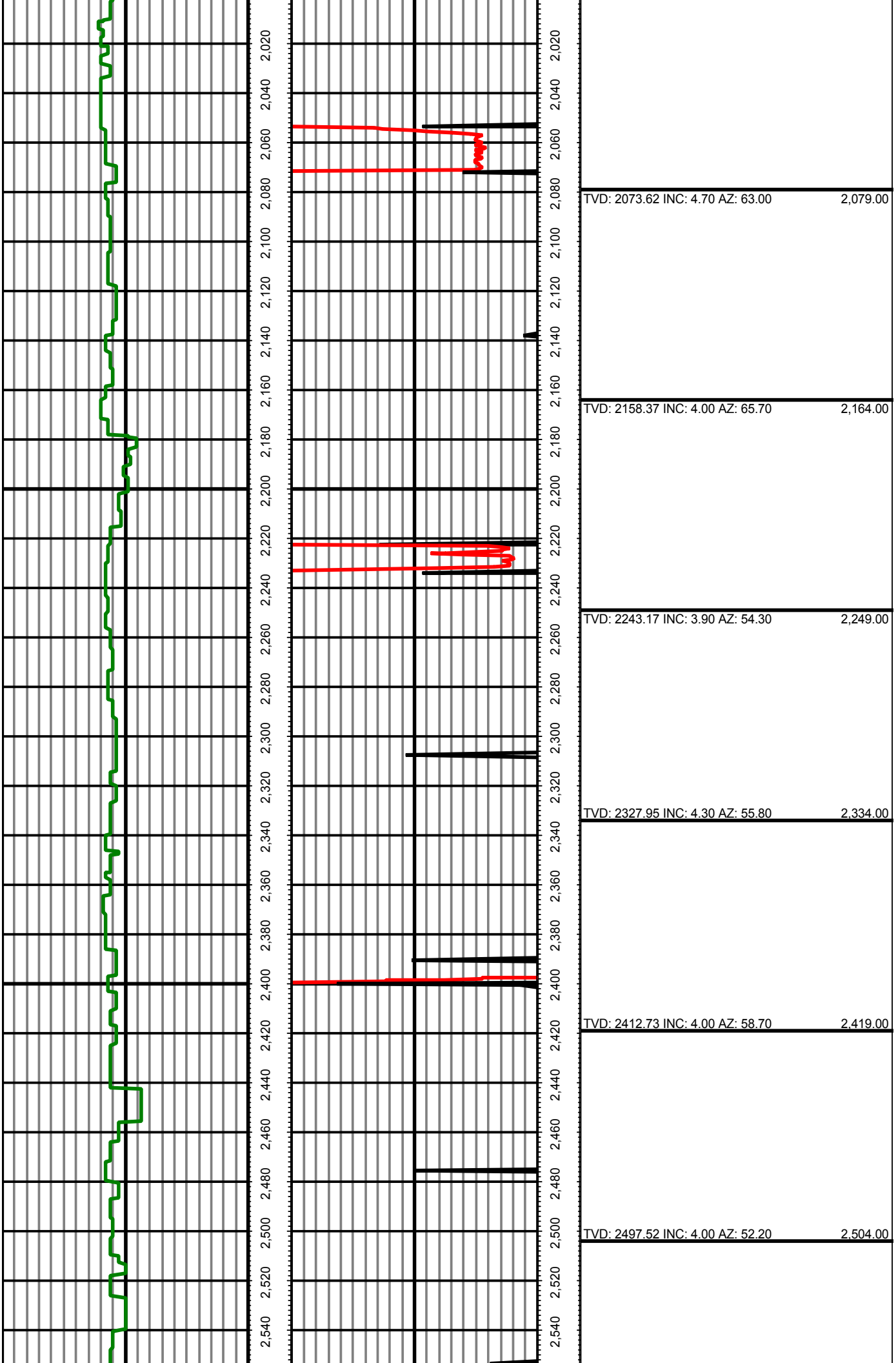
TVD: 1650.27 INC: 4.70 AZ: 52.70 1,654.00

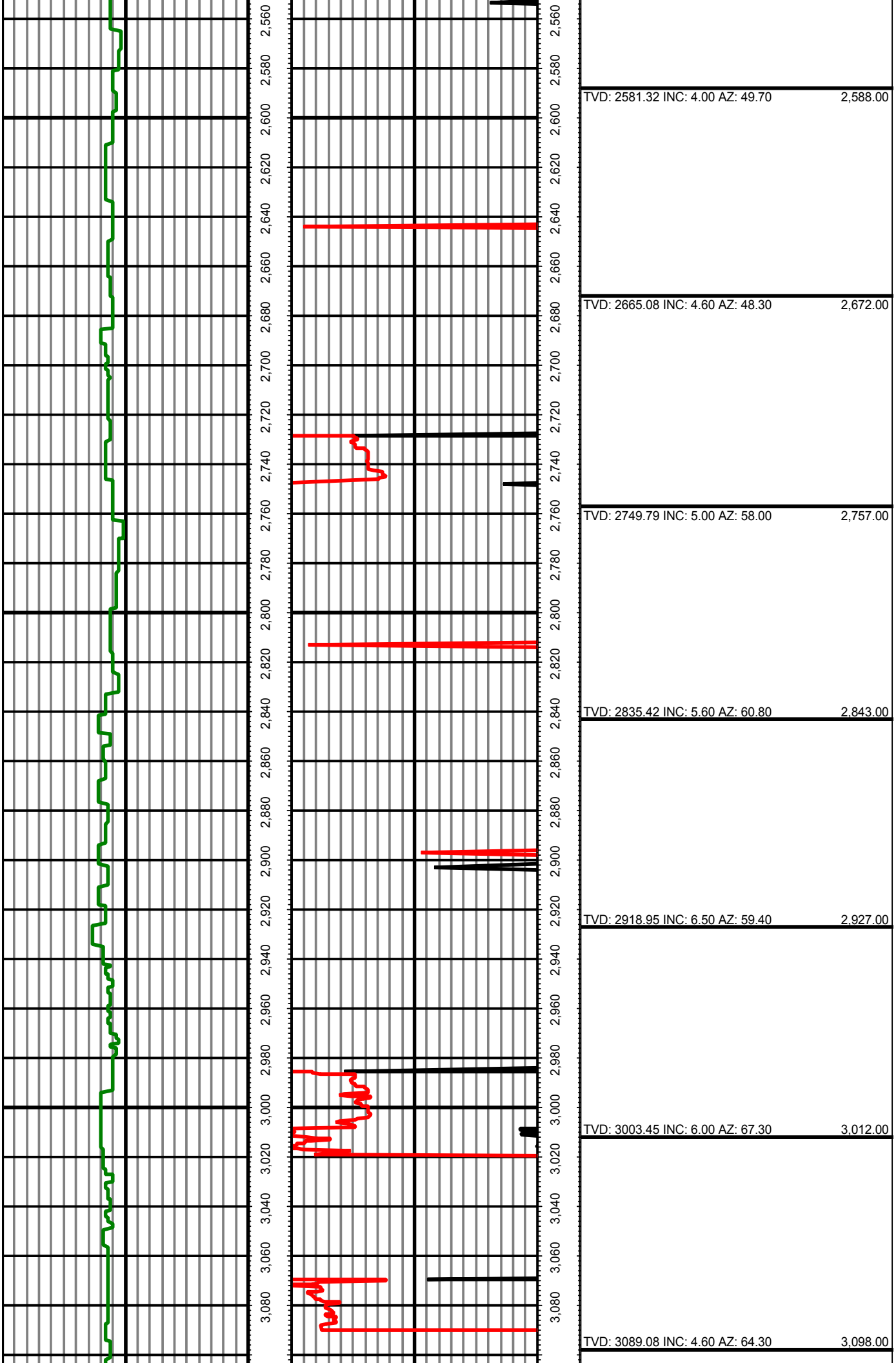
TVD: 1734.96 INC: 5.20 AZ: 49.50 1,739.00

TVD: 1819.60 INC: 5.30 AZ: 50.20 1,824.00

TVD: 1904.26 INC: 5.00 AZ: 48.60 1,909.00

TVD: 1988.93 INC: 5.10 AZ: 48.80 1,994.00





TVD: 2581.32 INC: 4.00 AZ: 49.70 2,588.00

TVD: 2665.08 INC: 4.60 AZ: 48.30 2,672.00

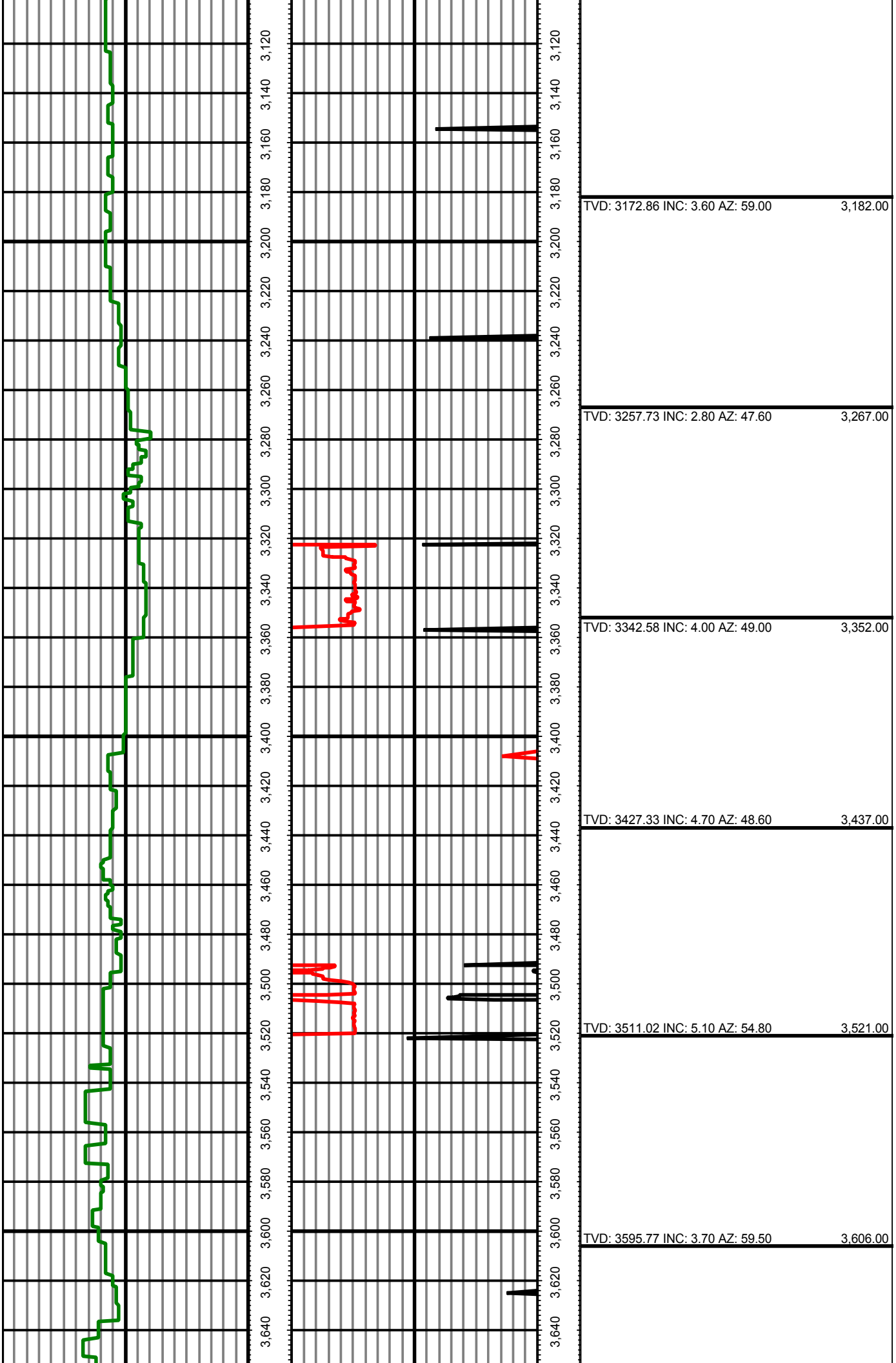
TVD: 2749.79 INC: 5.00 AZ: 58.00 2,757.00

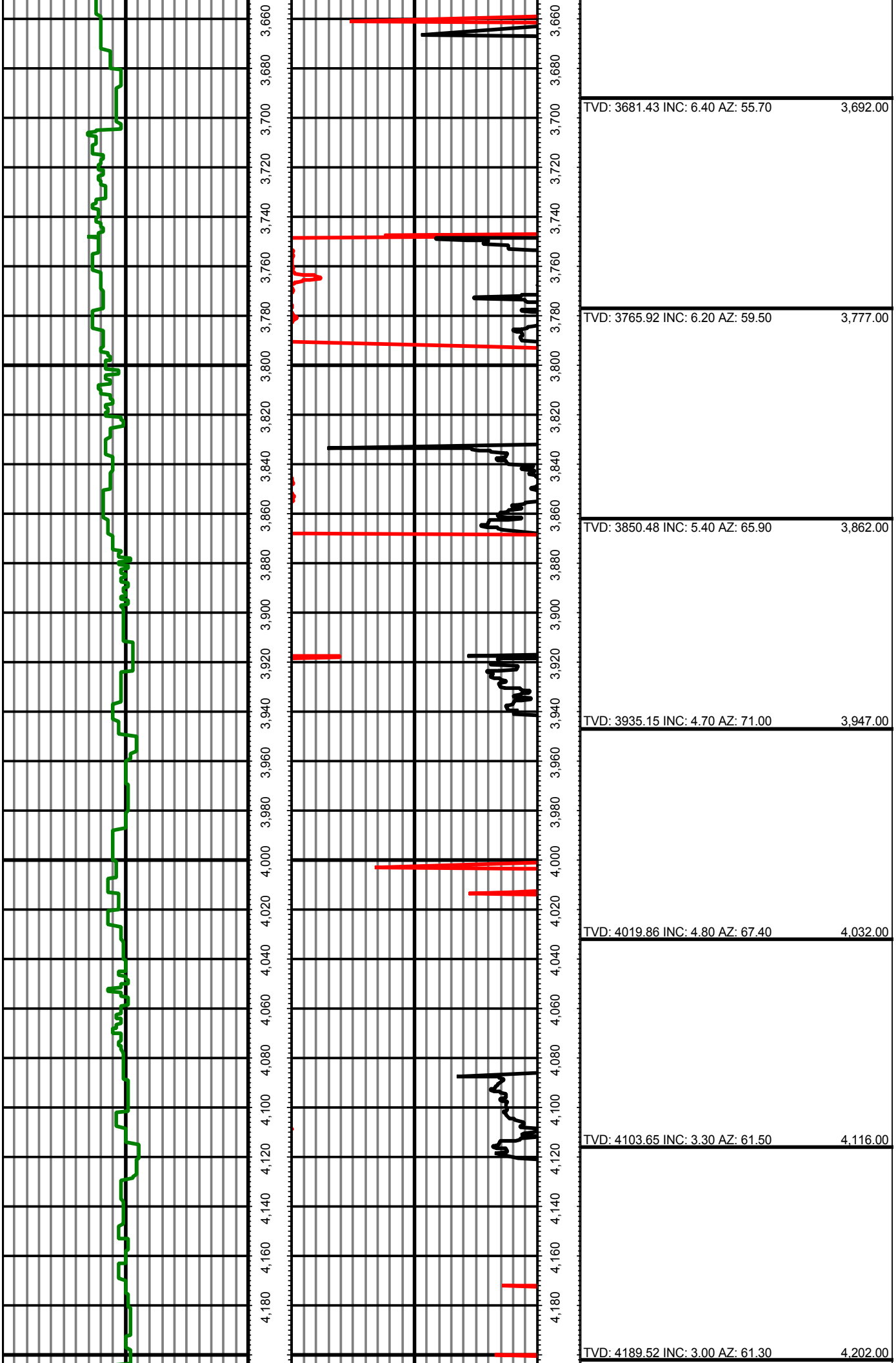
TVD: 2835.42 INC: 5.60 AZ: 60.80 2,843.00

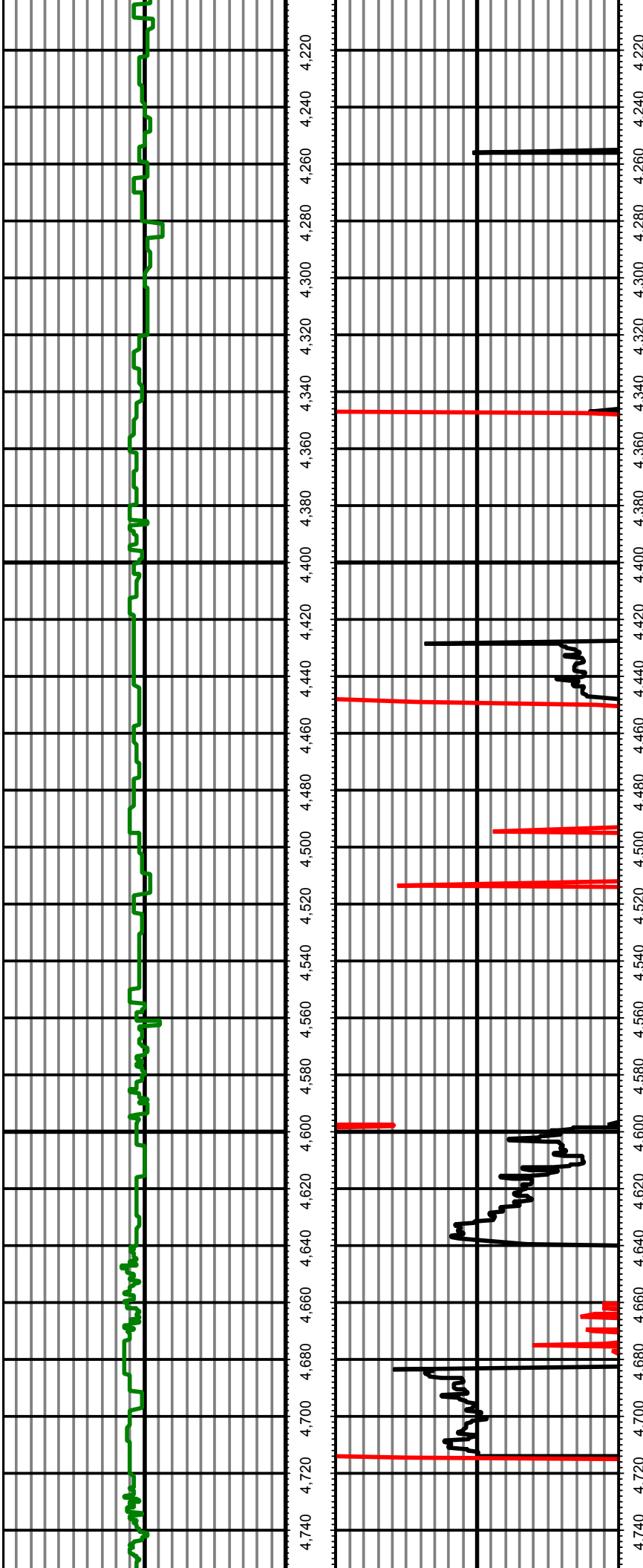
TVD: 2918.95 INC: 6.50 AZ: 59.40 2,927.00

TVD: 3003.45 INC: 6.00 AZ: 67.30 3,012.00

TVD: 3089.08 INC: 4.60 AZ: 64.30 3,098.00







TVD: 4189.52 INC: 3.00 AZ: 61.30 4,202.00

TVD: 4274.36 INC: 4.00 AZ: 58.30 4,287.00

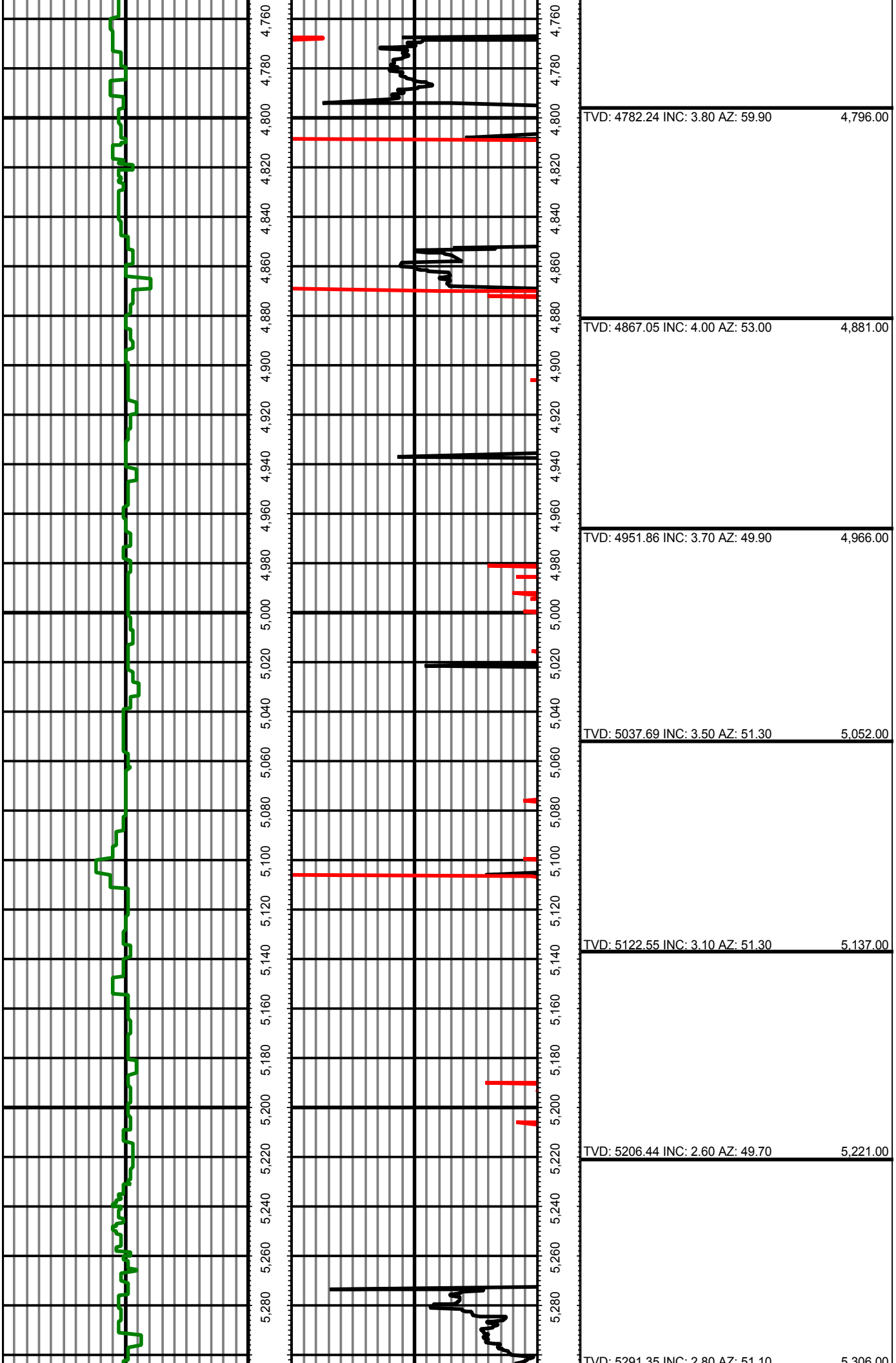
TVD: 4357.14 INC: 4.40 AZ: 63.20 4,370.00

TVD: 4441.91 INC: 4.00 AZ: 70.60 4,455.00

TVD: 4527.71 INC: 3.90 AZ: 82.60 4,541.00

TVD: 4612.54 INC: 3.30 AZ: 74.70 4,626.00

TVD: 4697.40 INC: 3.20 AZ: 63.40 4,711.00



TVD: 4782.24 INC: 3.80 AZ: 59.90 4,796.00

TVD: 4867.05 INC: 4.00 AZ: 53.00 4,881.00

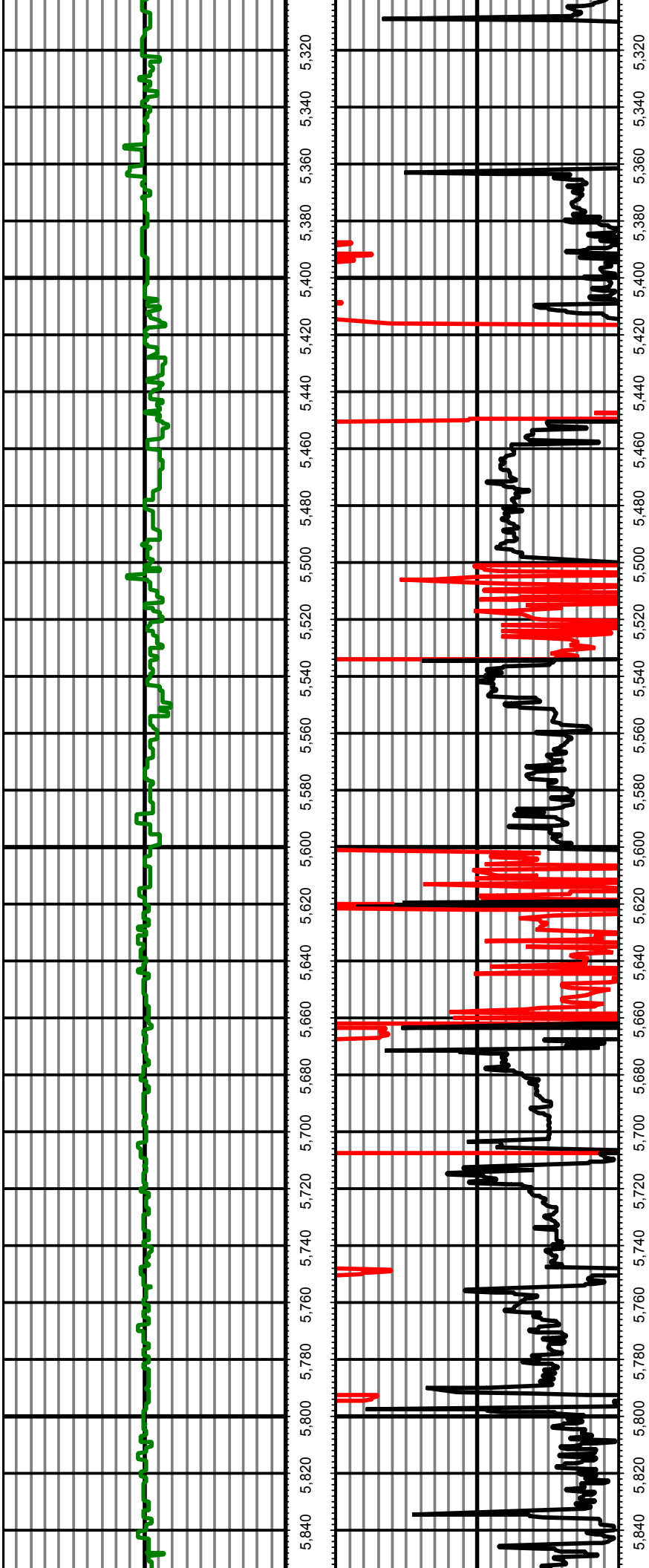
TVD: 4951.86 INC: 3.70 AZ: 49.90 4,966.00

TVD: 5037.69 INC: 3.50 AZ: 51.30 5,052.00

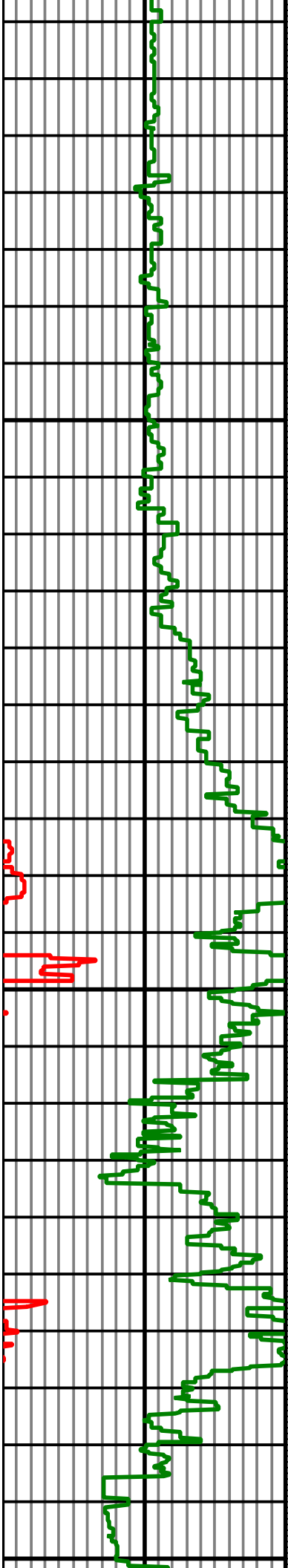
TVD: 5122.55 INC: 3.10 AZ: 51.30 5,137.00

TVD: 5206.44 INC: 2.60 AZ: 49.70 5,221.00

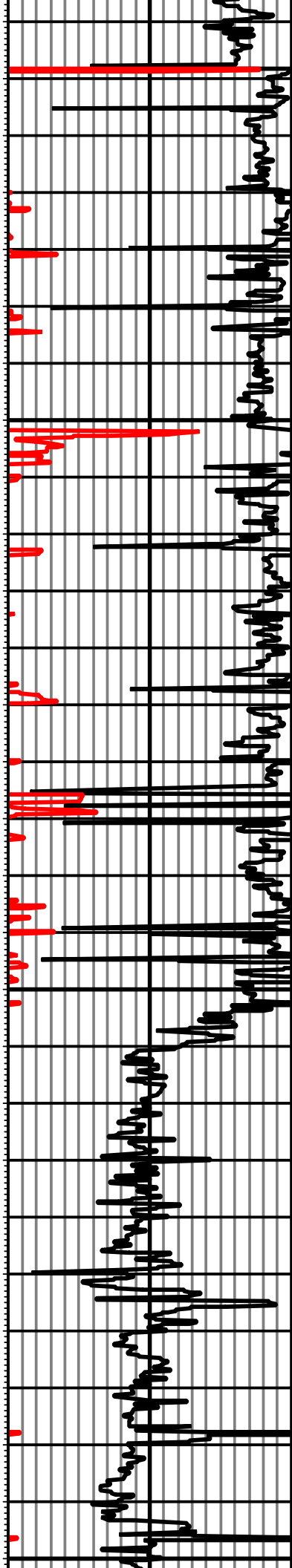
TVD: 5291.35 INC: 2.80 AZ: 51.10 5,306.00



TVD: 5291.35 INC: 2.80 AZ: 51.10	5,306.00
TVD: 5376.23 INC: 3.30 AZ: 55.70	5,391.00
TVD: 5462.08 INC: 3.50 AZ: 55.70	5,477.00
TVD: 5546.91 INC: 3.70 AZ: 52.50	5,562.00
TVD: 5588.82 INC: 3.60 AZ: 57.80	5,604.00
TVD: 5631.75 INC: 3.20 AZ: 62.70	5,647.00
TVD: 5673.69 INC: 3.50 AZ: 117.70	5,689.00
TVD: 5716.54 INC: 6.20 AZ: 153.90	5,732.00
TVD: 5759.07 INC: 10.50 AZ: 164.10	5,775.00
TVD: 5800.02 INC: 15.10 AZ: 167.10	5,817.00



5,860 5,880 5,900 5,920 5,940 5,960 5,980 6,000 6,020 6,040 6,060 6,080 6,100 6,120 6,140 6,160 6,180 6,200 6,220 6,240 6,260 6,280 6,300 6,320 6,340 6,360 6,380



5,860 5,880 5,900 5,920 5,940 5,960 5,980 6,000 6,020 6,040 6,060 6,080 6,100 6,120 6,140 6,160 6,180 6,200 6,220 6,240 6,260 6,280 6,300 6,320 6,340 6,360 6,380

TVD: 5840.18 INC: 18.90 AZ: 168.00 5,859.00

TVD: 5880.45 INC: 22.10 AZ: 168.70 5,902.00

TVD: 5919.02 INC: 24.50 AZ: 168.90 5,944.00

TVD: 5957.56 INC: 28.10 AZ: 169.60 5,987.00

TVD: 5993.99 INC: 31.60 AZ: 170.30 6,029.00

TVD: 6029.54 INC: 36.80 AZ: 172.40 6,072.00

TVD: 6062.15 INC: 41.30 AZ: 173.80 6,114.00

TVD: 6093.44 INC: 45.30 AZ: 174.00 6,157.00

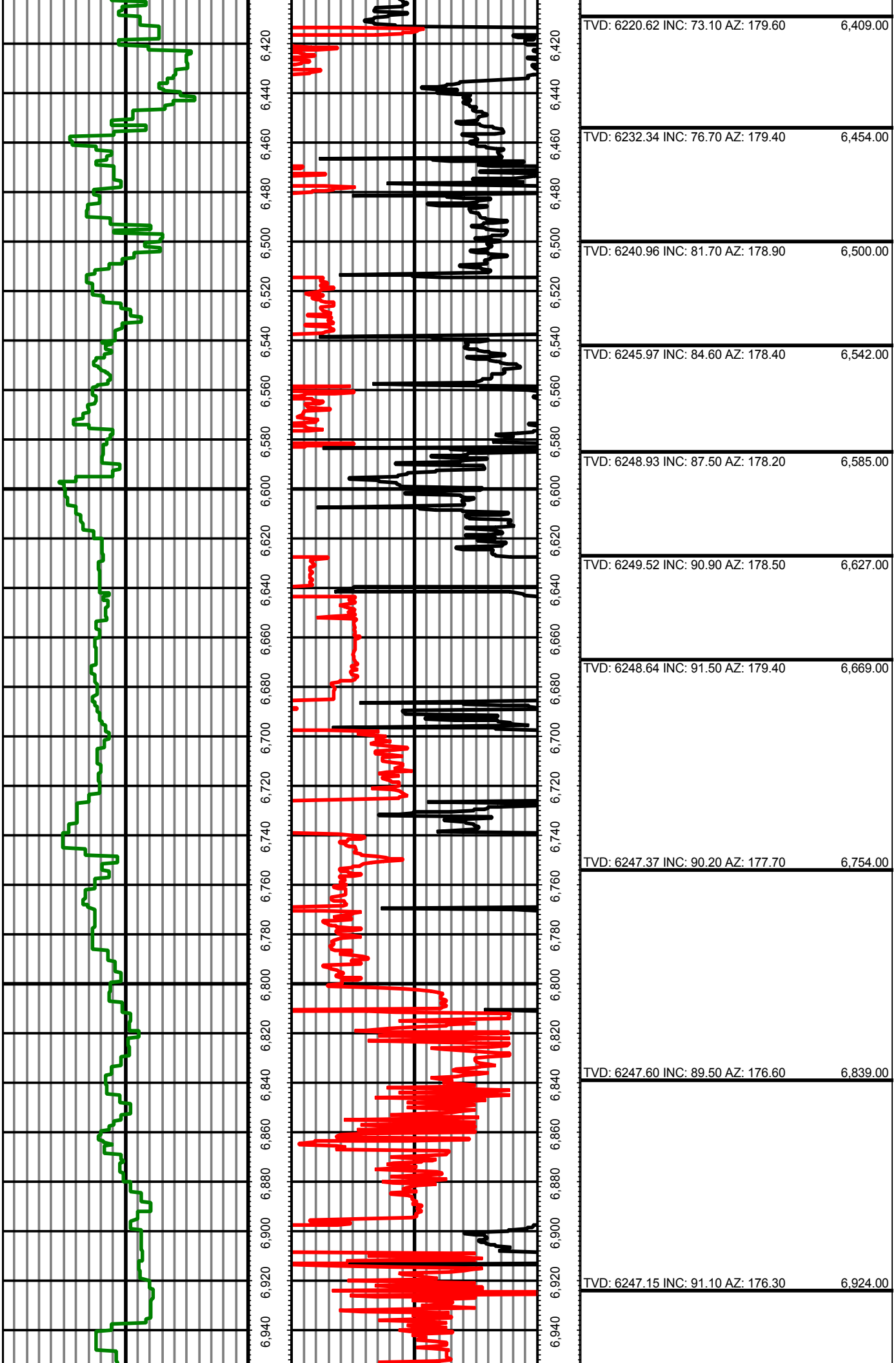
TVD: 6122.02 INC: 48.90 AZ: 174.80 6,199.00

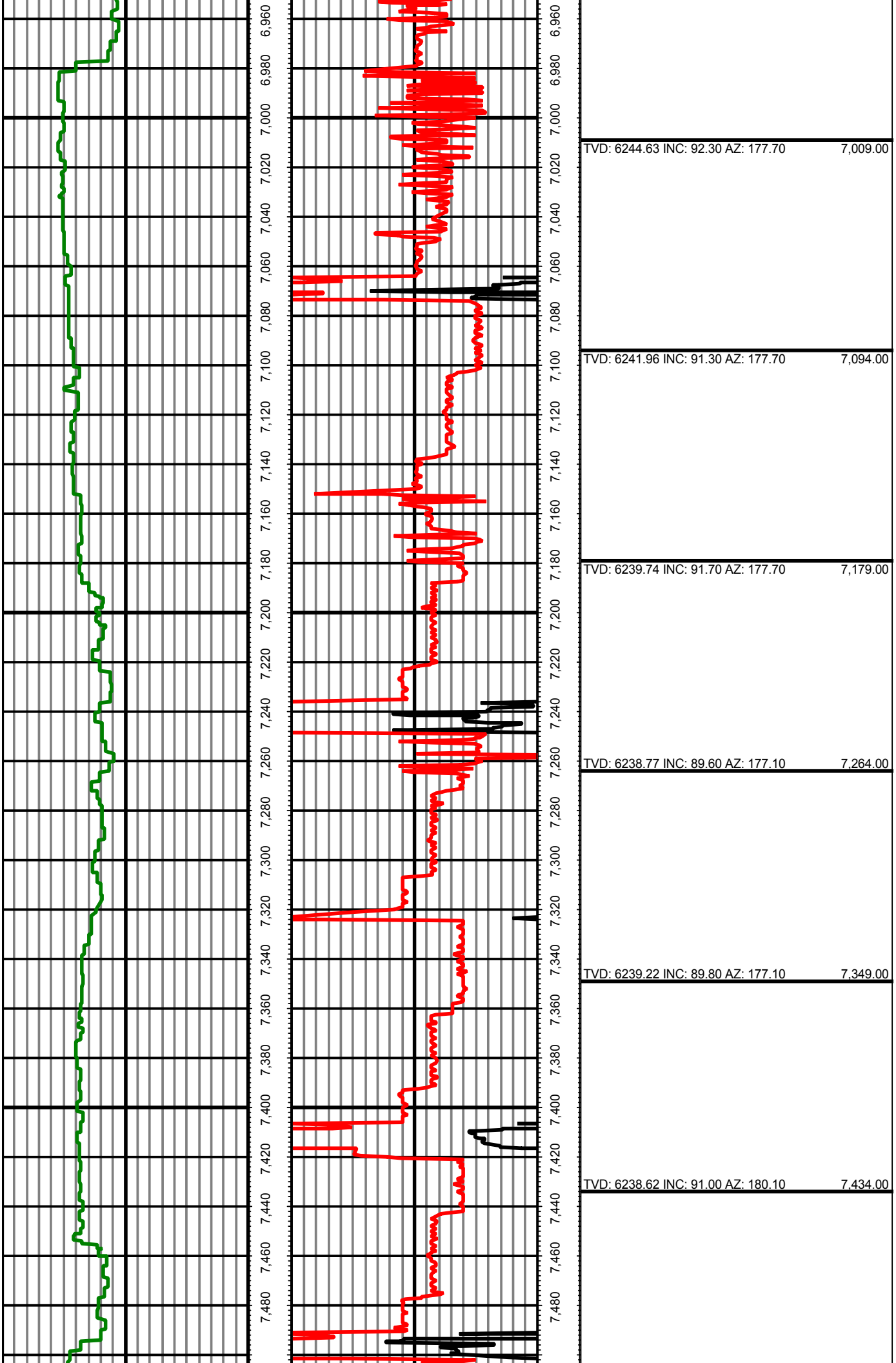
TVD: 6148.96 INC: 53.50 AZ: 174.70 6,242.00

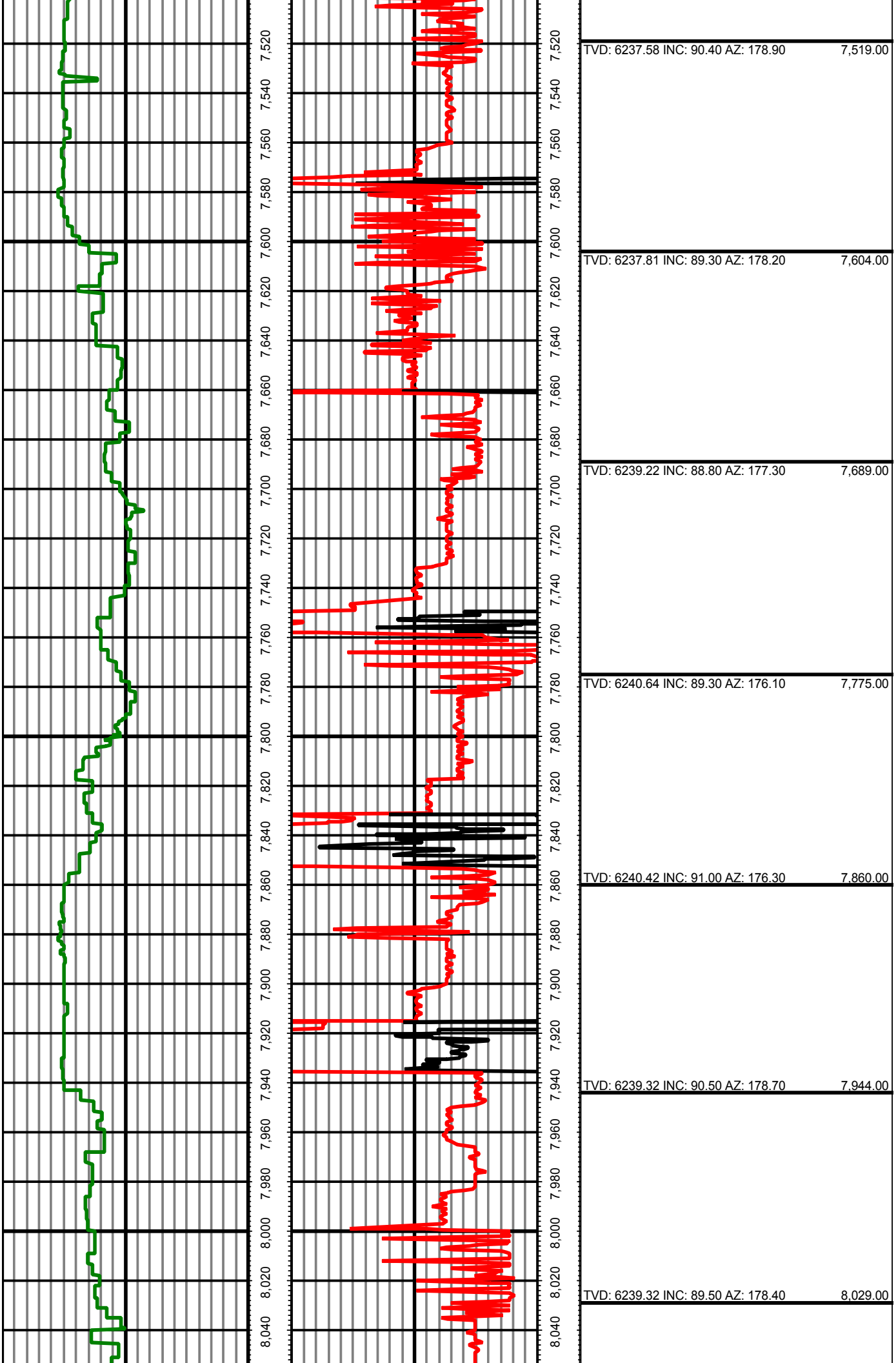
TVD: 6172.52 INC: 60.00 AZ: 175.20 6,285.00

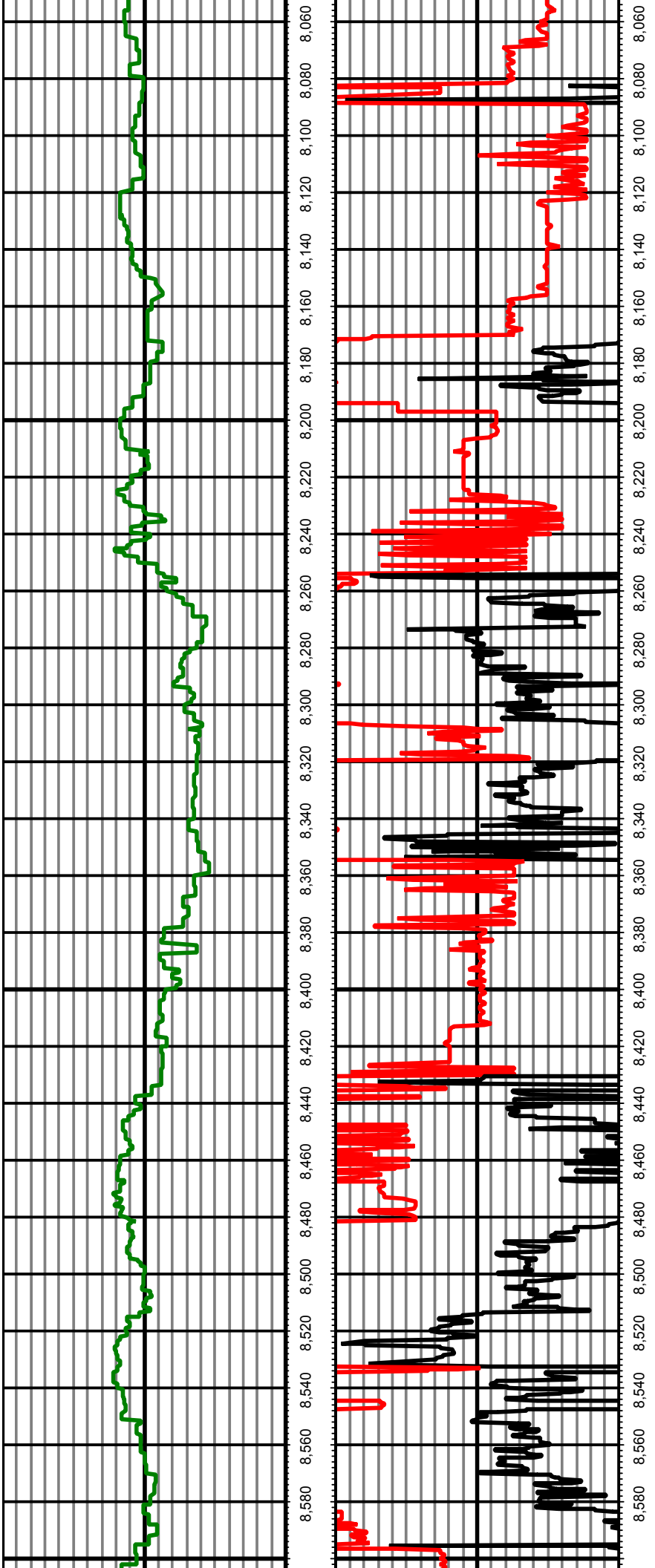
TVD: 6191.81 INC: 65.30 AZ: 175.40 6,327.00

TVD: 6202.82 INC: 68.40 AZ: 176.60 6,355.00









TVD: 6240.06 INC: 89.50 AZ: 177.50 8,114.00

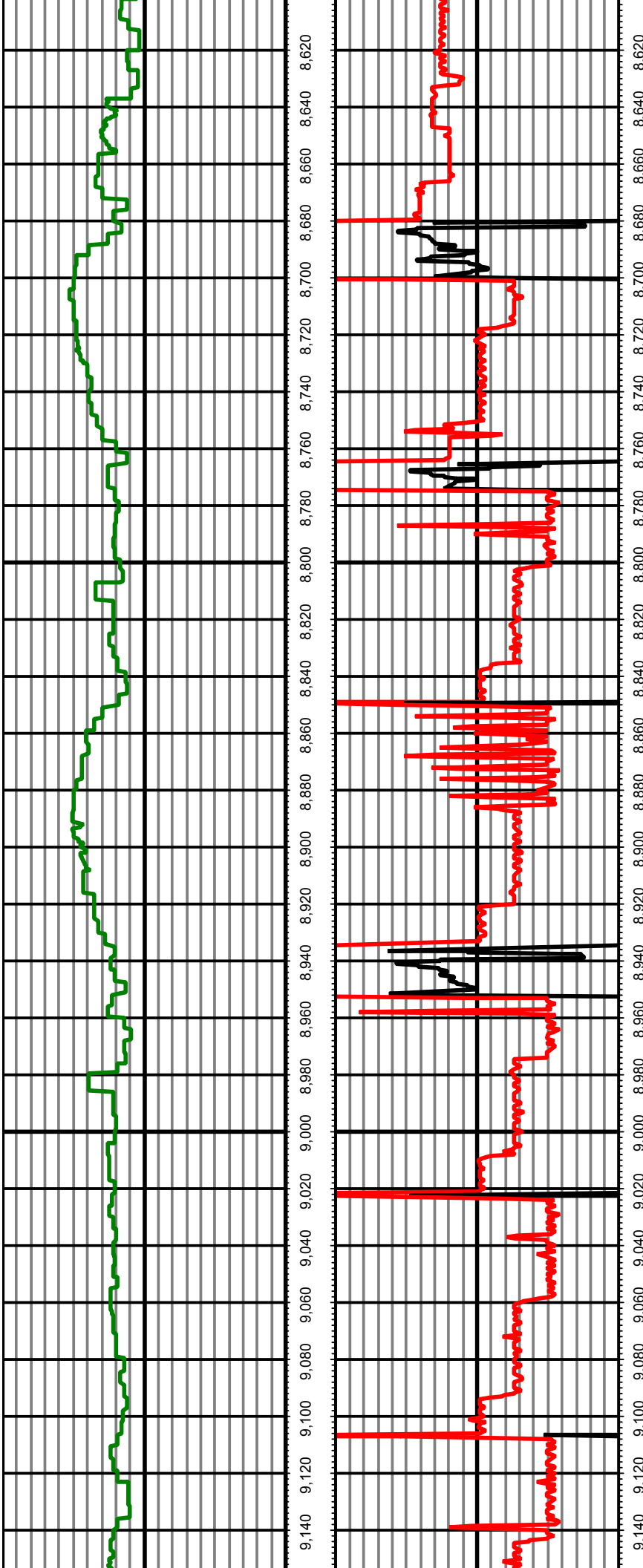
TVD: 6241.77 INC: 88.20 AZ: 178.40 8,199.00

TVD: 6242.95 INC: 90.20 AZ: 179.10 8,284.00

TVD: 6241.47 INC: 91.80 AZ: 178.20 8,369.00

TVD: 6239.14 INC: 91.30 AZ: 176.80 8,455.00

TVD: 6236.47 INC: 92.30 AZ: 180.10 8,540.00



TVD: 6232.84 INC: 92.60 AZ: 179.10 8,625.00

TVD: 6230.76 INC: 90.20 AZ: 178.20 8,710.00

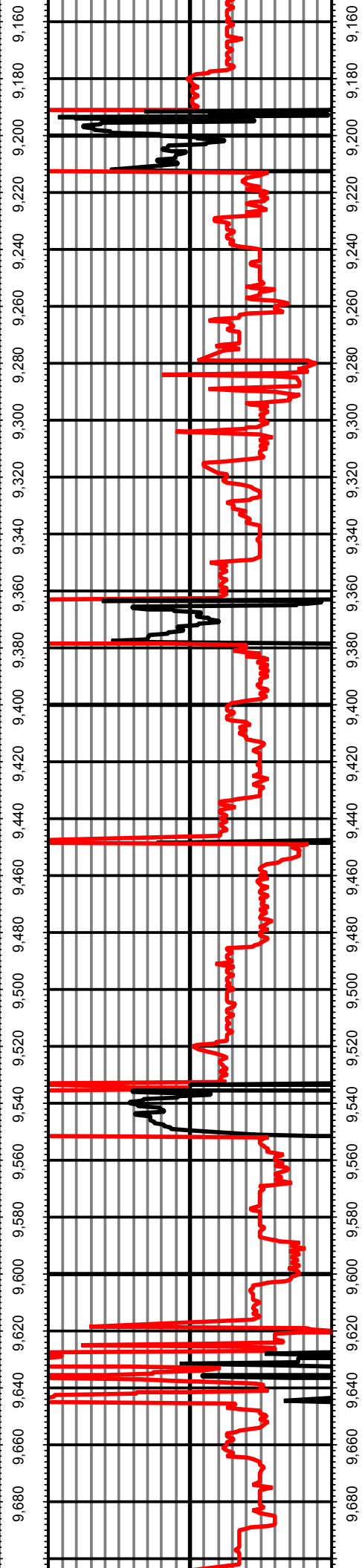
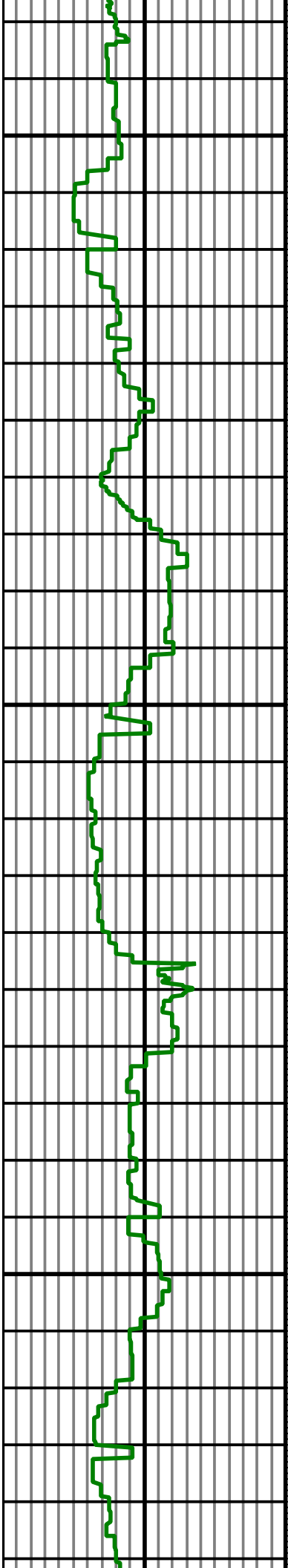
TVD: 6230.17 INC: 90.60 AZ: 178.20 8,795.00

TVD: 6228.83 INC: 91.20 AZ: 177.50 8,880.00

TVD: 6227.57 INC: 90.50 AZ: 179.80 8,965.00

TVD: 6227.50 INC: 89.60 AZ: 178.50 9,051.00

TVD: 6228.83 INC: 88.60 AZ: 177.10 9,136.00



TVD: 6228.69 INC: 91.60 AZ: 178.90 9,221.00

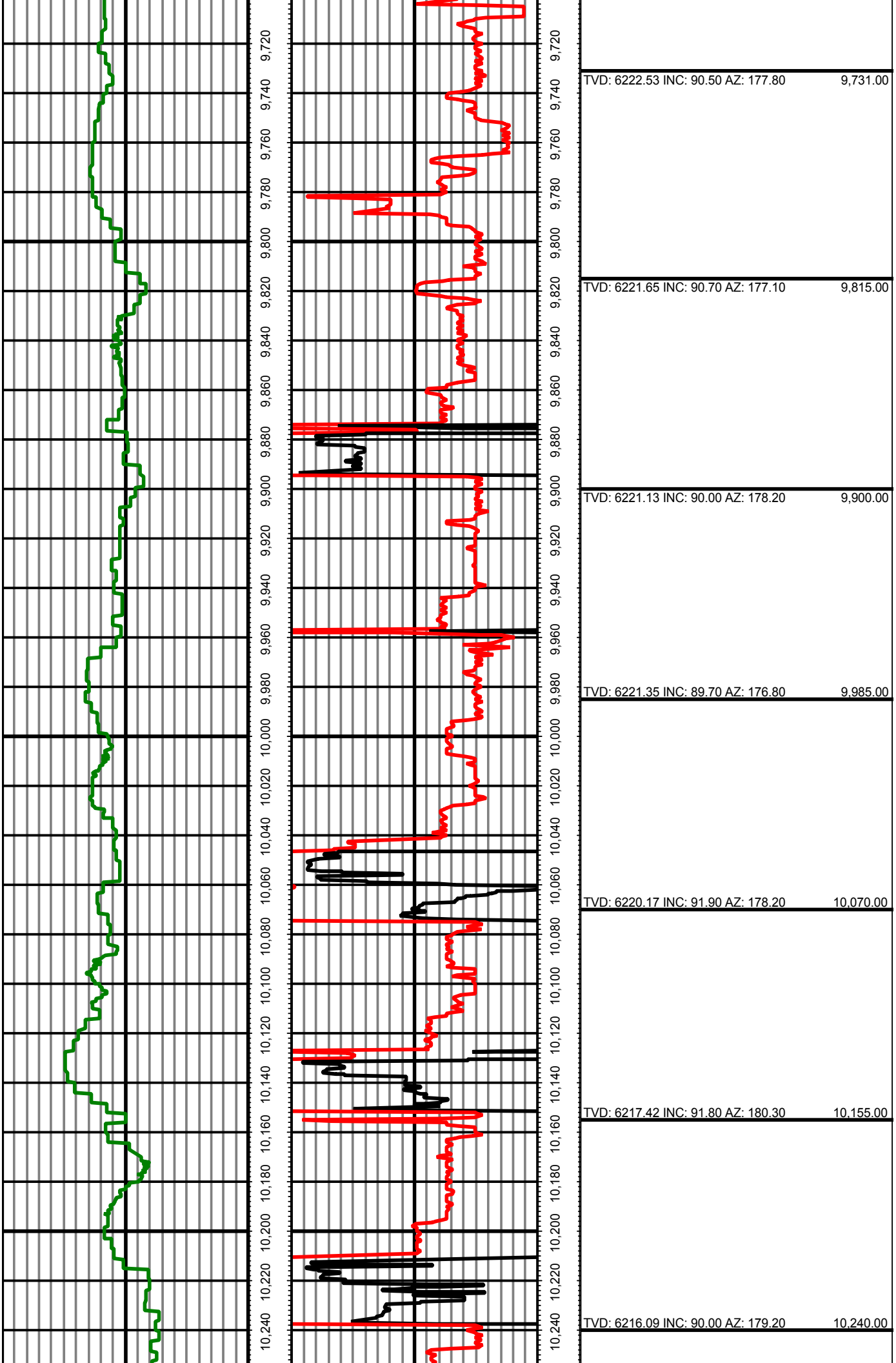
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TVD: 6222.01 INC: 91.40 AZ: 178.20 9,476.00

TVD: 6221.86 INC: 88.80 AZ: 178.00 9,561.00

TVD: 6222.83 INC: 89.90 AZ: 178.50 9,646.00



TVD: 6222.53 INC: 90.50 AZ: 177.80 9,731.00

TVD: 6221.65 INC: 90.70 AZ: 177.10 9,815.00

TVD: 6221.13 INC: 90.00 AZ: 178.20 9,900.00

TVD: 6221.35 INC: 89.70 AZ: 176.80 9,985.00

TVD: 6220.17 INC: 91.90 AZ: 178.20 10,070.00

TVD: 6217.42 INC: 91.80 AZ: 180.30 10,155.00

TVD: 6216.09 INC: 90.00 AZ: 179.20 10,240.00

