

Company: Noble Energy Inc
Well Name: Fiscus Federal LD15-77HN

API: 05-123-37367

Rig Id: Precision 828

State: Colorado

County/Parish: Weld

Country: USA

Survey Company: Ensign Directional

Job number: 05-123-37367

Company Man 1 Gary Stapleton

Directional Driller 1 Tyler Batchelder

Directional Driller 2 Matt Mason

MWD 1 Mark Bigler

MWD 2 Derek Saykally

Log measurements: Gamma

Depth measured from: KB

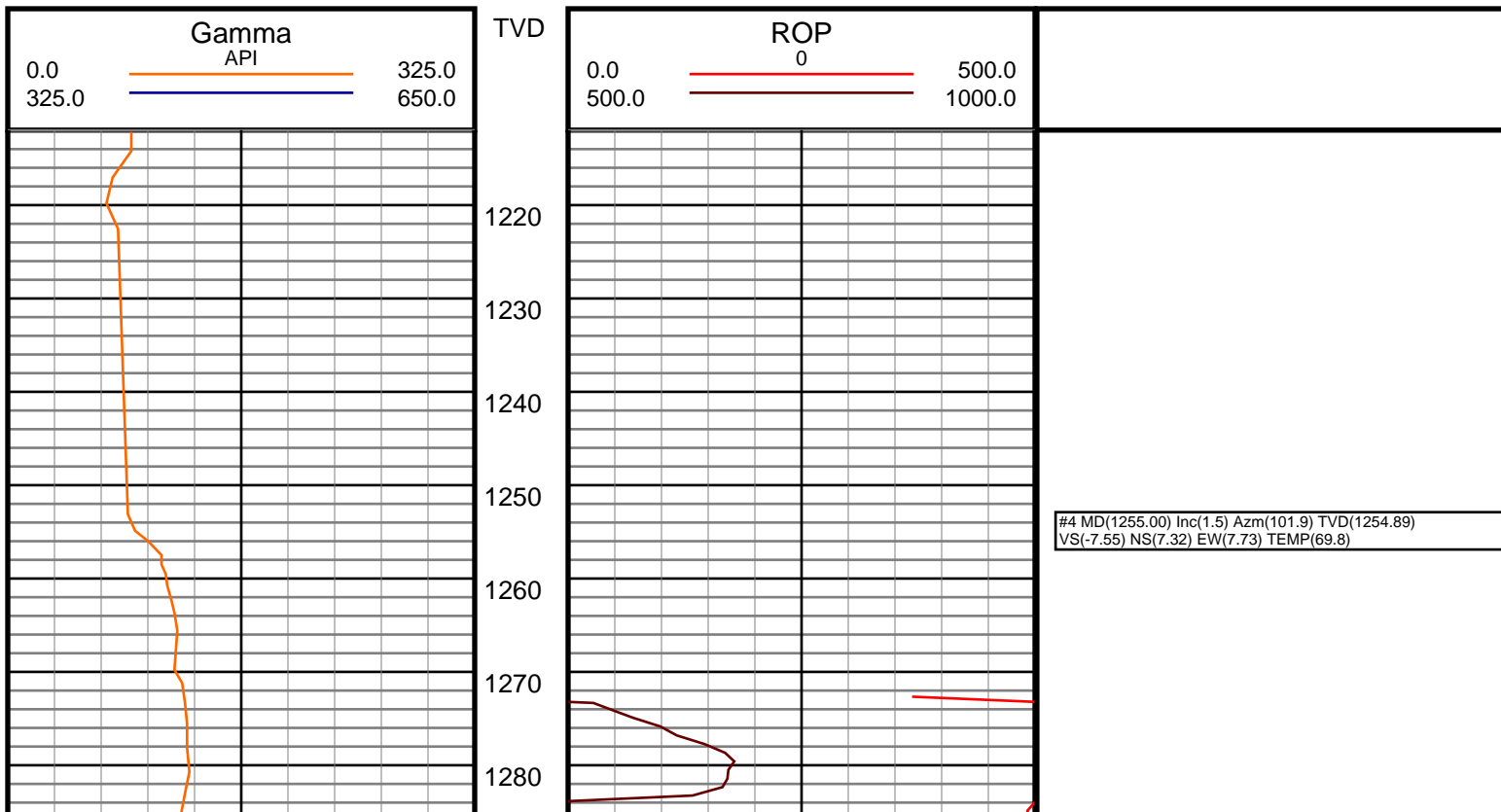
Maximum temperature:

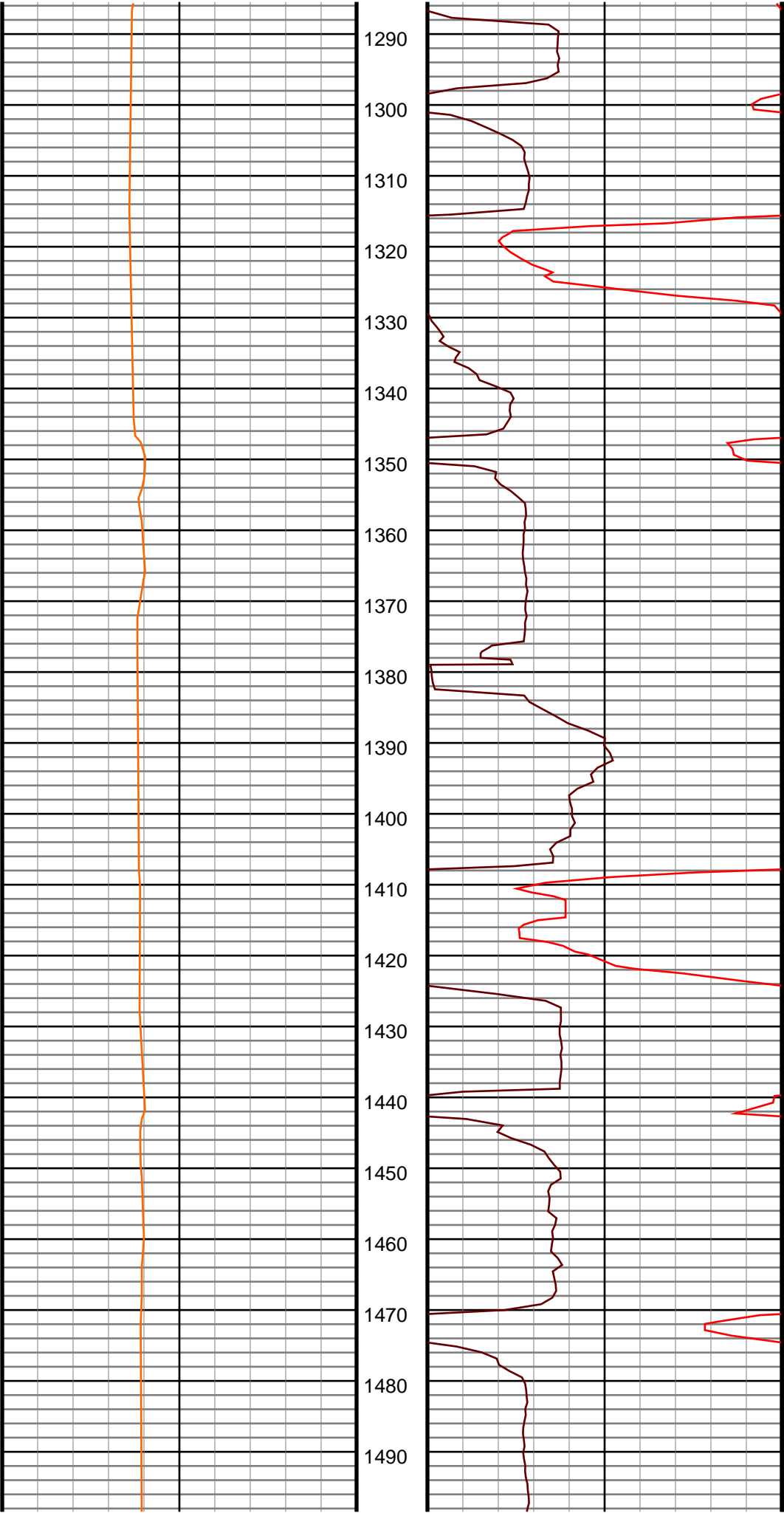
Depth Date
Start: 1220 ft 10/28/2014
End: 9006 ft 11/1/2014

| Casing | Depth | Size | Mud Type: Water Based | Elevations |
|---------------|-------|-------|-----------------------|------------|
| Surface: | 1215 | 9.625 | Density: | KB: 4755 |
| Intermediate: | 6002 | 7 | Viscosity: | GL: 4739 |
| | | | Rm: | DF: 4755 |
| | | | Rmf: | |
| | | | Rmc: | |

| Run | Bit Size | Offsets | Gamma | Survey | Start | End | Dates | Start | End |
|-----|----------|---------|-------|--------|-------|------|------------|------------|------------|
| 1 | 8 3/4 | 60.71 | 55.71 | 1220 | 6002 | 9006 | 10/28/2014 | 10/30/2014 | 10/29/2014 |
| 2 | 6 1/8 | 61.20 | 56.20 | 6002 | | | | | |
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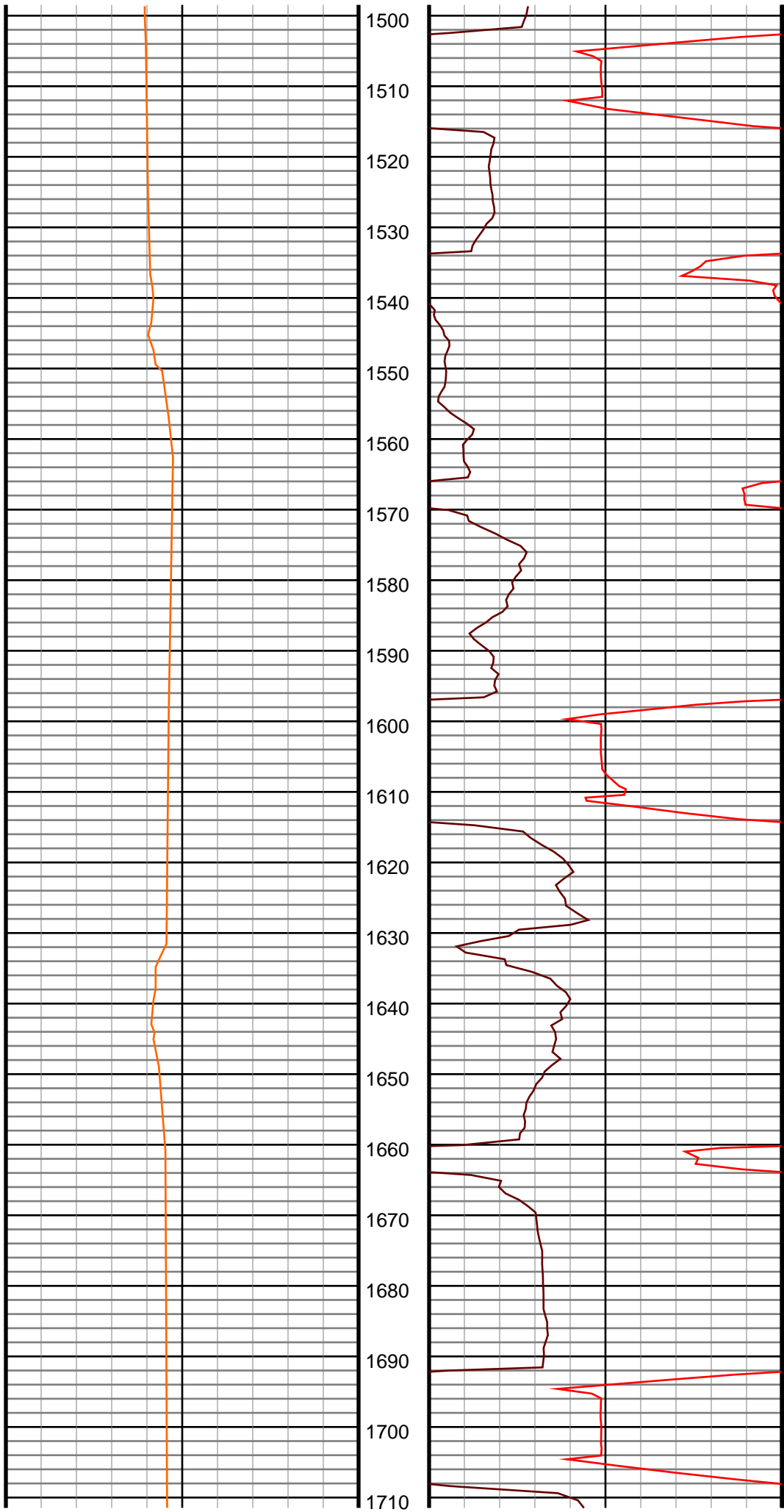
Ensign Directional uses its best efforts to provide its customers with accurate information and interpretations in conjunction with services performed but will not be held liable or responsible for the accuracy of such information or interpretation.





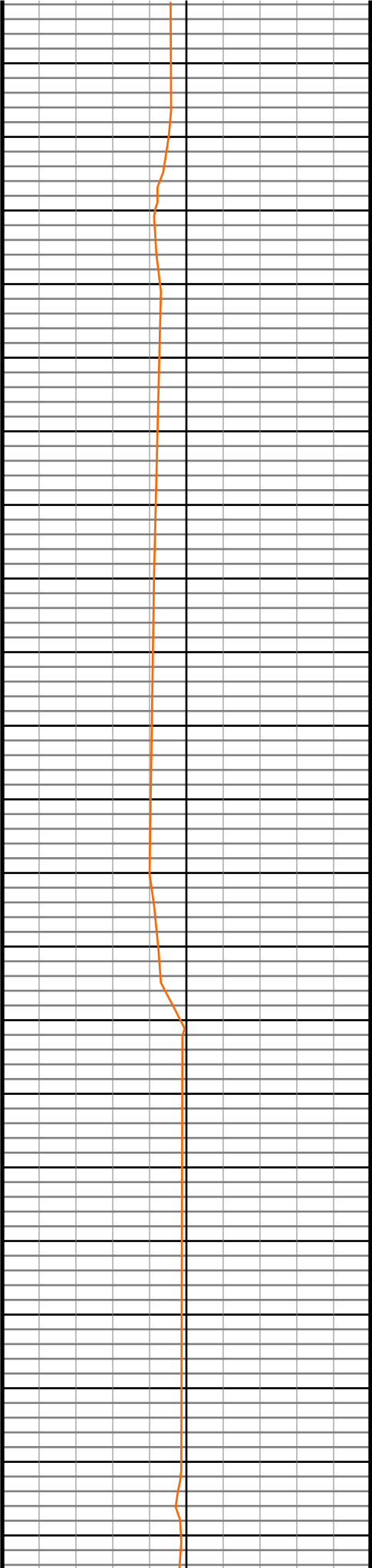
#5 MD(1349.00) Inc(1.1) Azm(312.7) TVD(1348.88)
VS(-7.93) NS(7.68) EW(8.28) TEMP(69.8)

#6 MD(1443.00) Inc(2.3) Azm(331.3) TVD(1442.84)
VS(-10.15) NS(9.95) EW(6.71) TEMP(69.8)

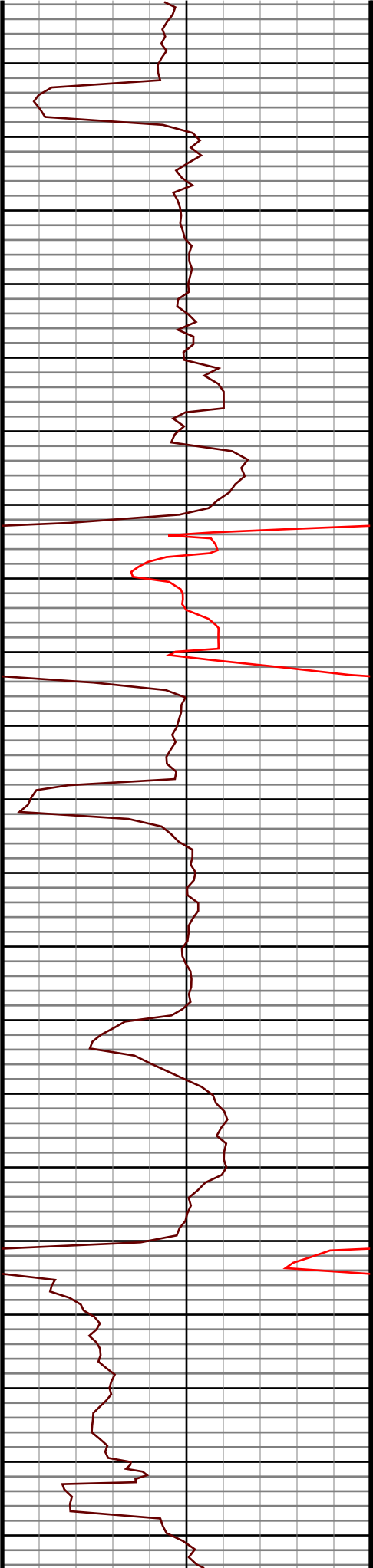


#7 MD(1538.00) Inc(3.1) Azm(320.2) TVD(1537.73)
VS(-13.71) NS(13.59) EW(4.15) TEMP(69.8)

#8 MD(1631.00) Inc(4.7) Azm(307.3) TVD(1630.52)
VS(-17.81) NS(17.83) EW(-0.49) TEMP(69.8)



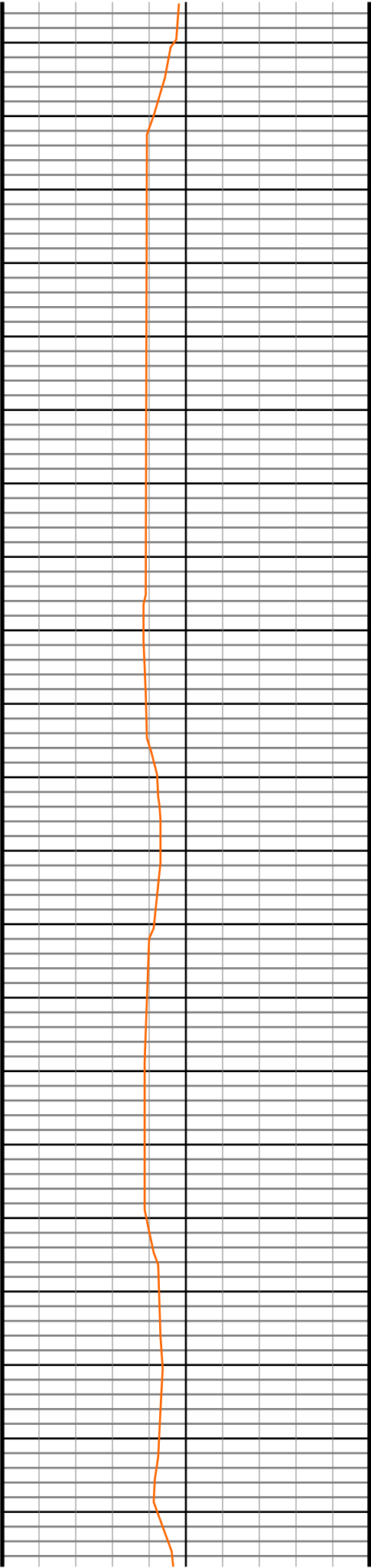
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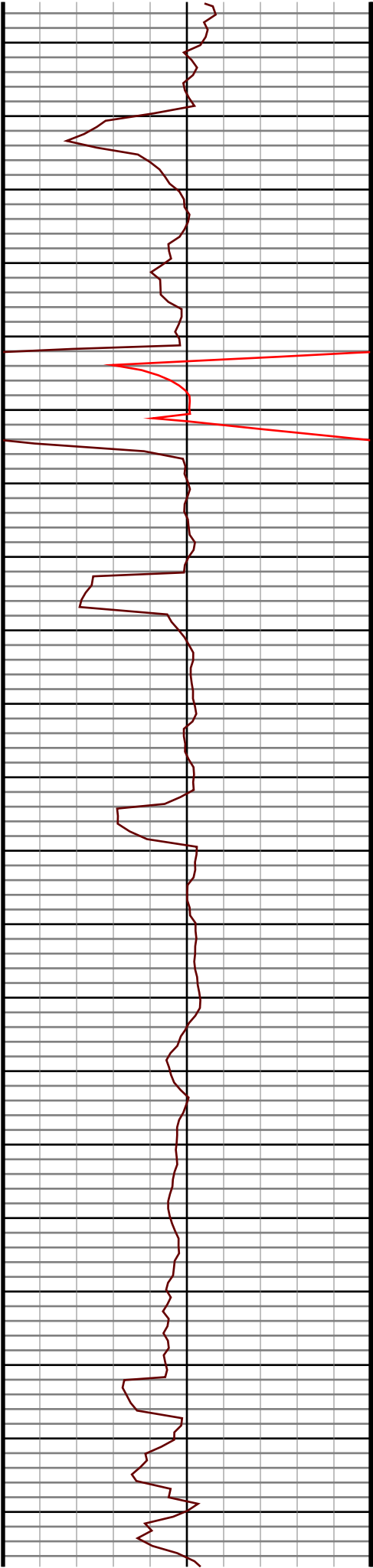
#9 MD(1726.00) Inc(6.1) Azm(301.9) TVD(1725.09)
VS(-22.61) NS(22.86) EW(-7.88) TEMP(78.8)

#10 MD(1821.00) Inc(8.0) Azm(298.6) TVD(1819.37)
VS(-28.14) NS(28.69) EW(-17.97) TEMP(80.6)

#11 MD(1916.00) Inc(7.2) Azm(293.5) TVD(1913.54)
VS(-33.33) NS(34.23) EW(-29.23) TEMP(80.6)

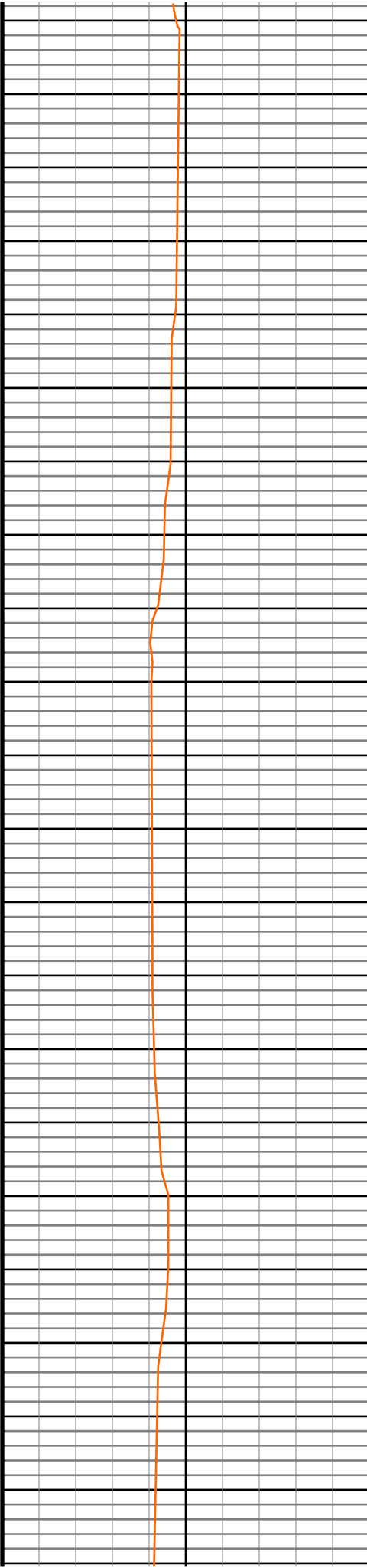


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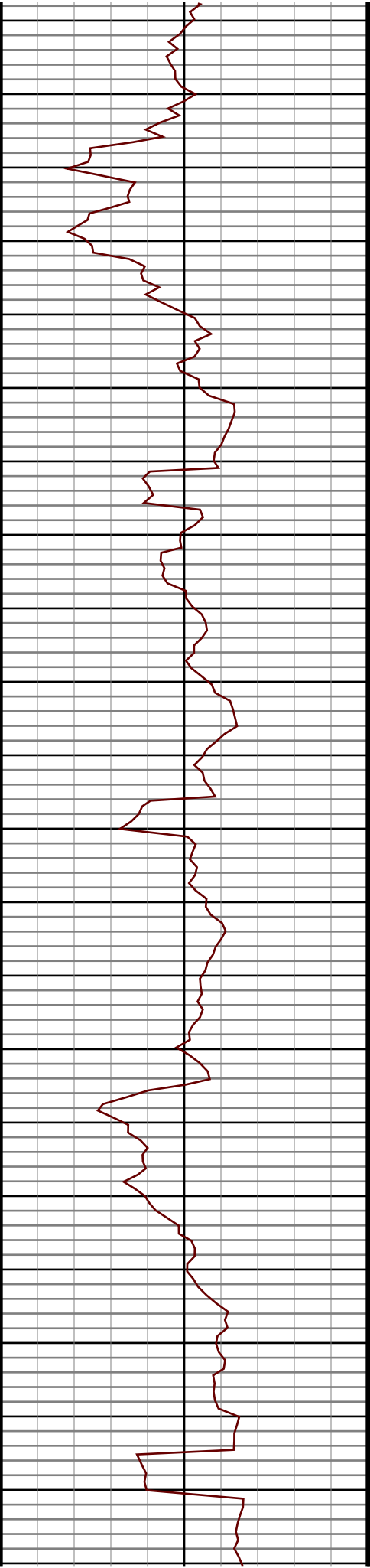


#12 MD(2014.00) Inc(8.3) Azm(305.8) TVD(2010.65)
VS(-39.57) NS(40.82) EW(-40.60) TEMP(80.6)

#13 MD(2103.00) Inc(8.0) Azm(298.3) TVD(2098.75)
VS(-45.94) NS(47.51) EW(-51.26) TEMP(84.2)

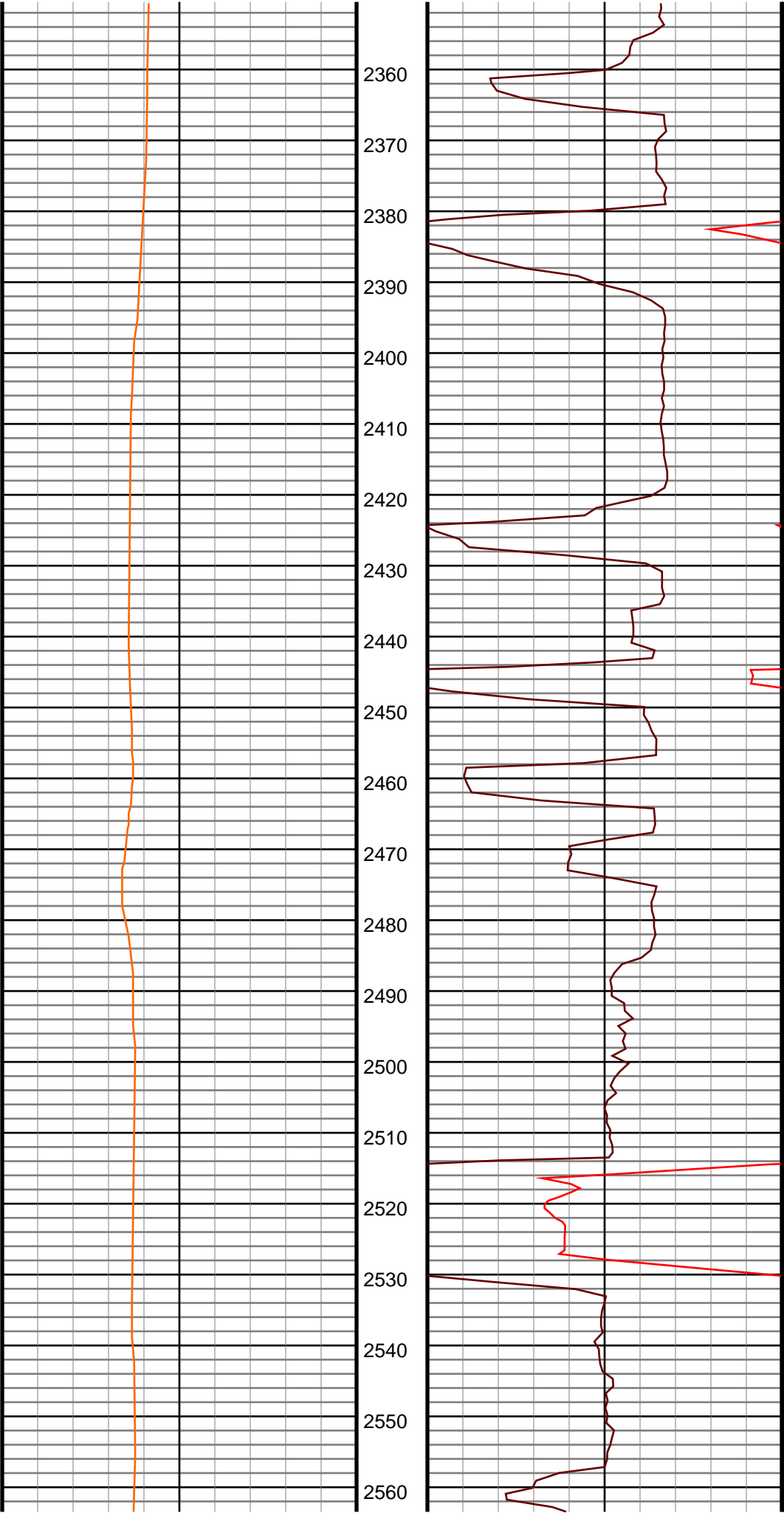


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#14 MD(2193.00) Inc(7.5) Azm(296.6) TVD(2187.93)
VS(-51.21) NS(53.11) EW(-62.03) TEMP(86.0)

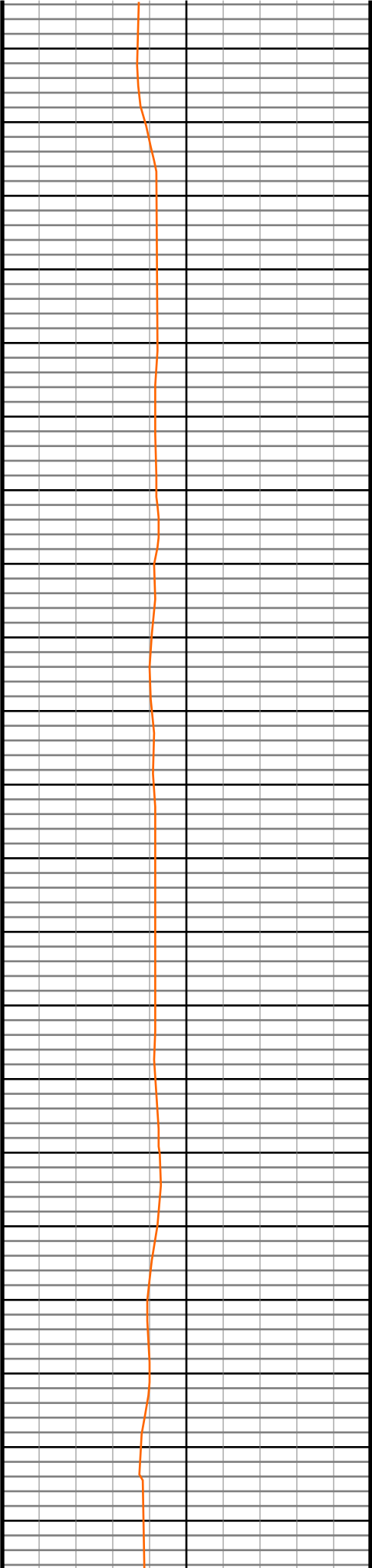
#15 MD(2283.00) Inc(7.4) Azm(294.3) TVD(2277.17)
VS(-55.91) NS(58.13) EW(-72.56) TEMP(86.0)



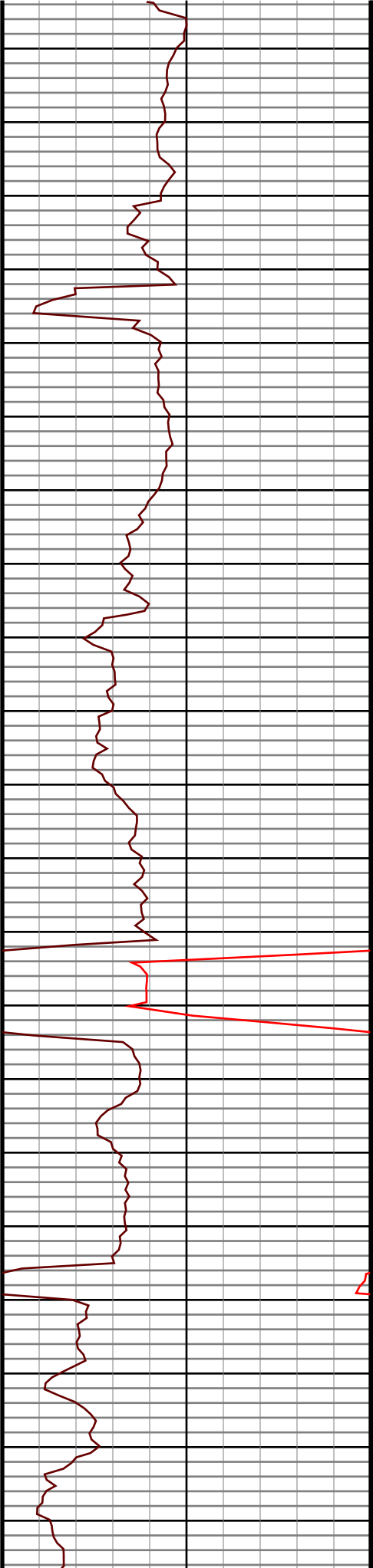
#16 MD(2373.00) Inc(7.3) Azm(292.9) TVD(2366.43)
VS(-60.20) NS(62.74) EW(-83.11) TEMP(87.8)

#17 MD(2463.00) Inc(6.3) Azm(288.4) TVD(2455.80)
VS(-63.68) NS(66.52) EW(-93.07) TEMP(87.8)

#18 MD(2552.00) Inc(7.4) Azm(300.1) TVD(2544.16)
VS(-67.81) NS(70.94) EW(-102.66) TEMP(89.6)

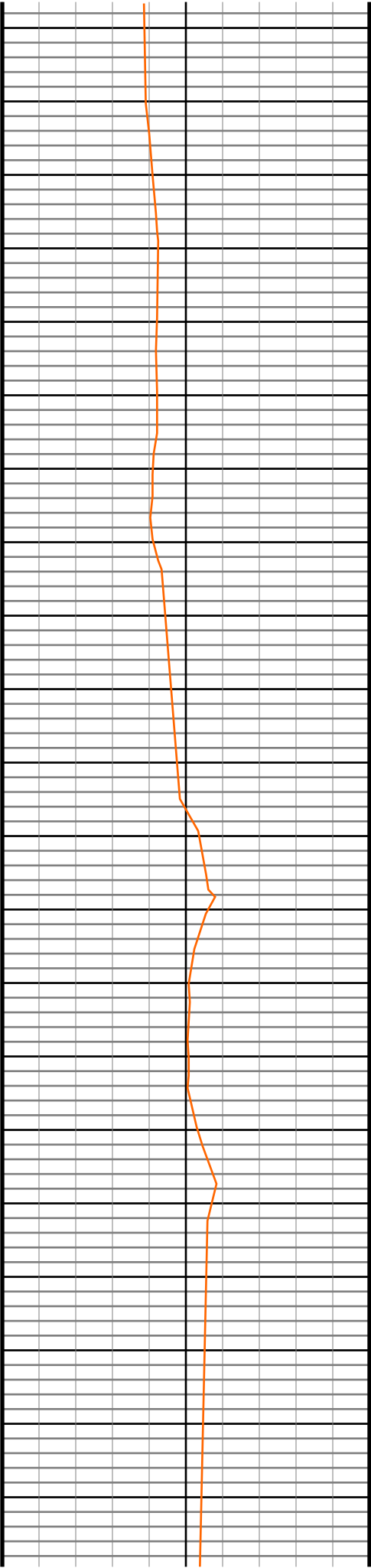


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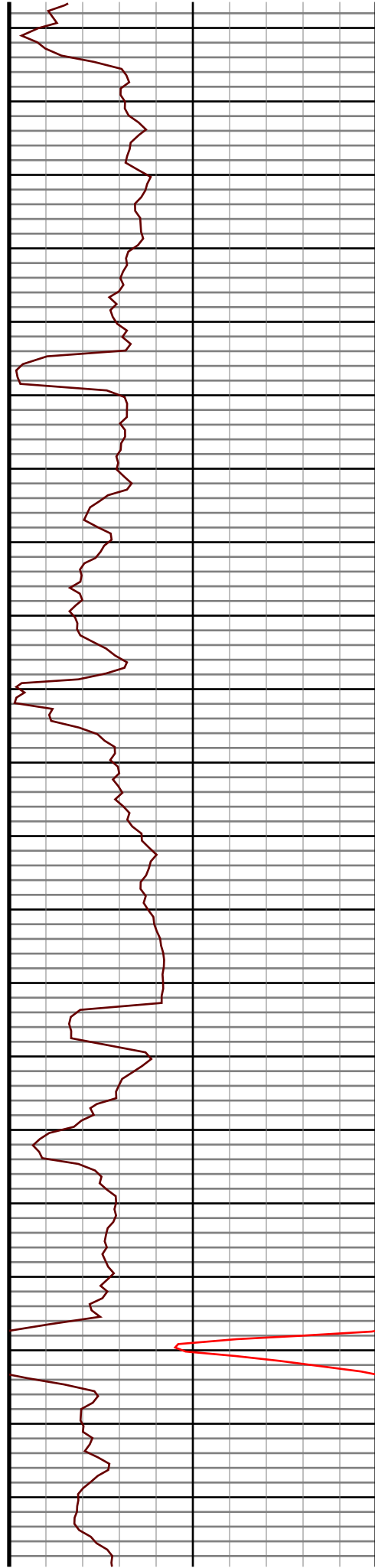


#19 MD(2642.00) Inc(7.4) Azm(298.5) TVD(2633.41)
VS(-73.17) NS(76.61) EW(-112.77) TEMP(91.4)

#20 MD(2732.00) Inc(7.7) Azm(311.0) TVD(2722.64)
VS(-79.60) NS(83.33) EW(-122.41) TEMP(93.2)

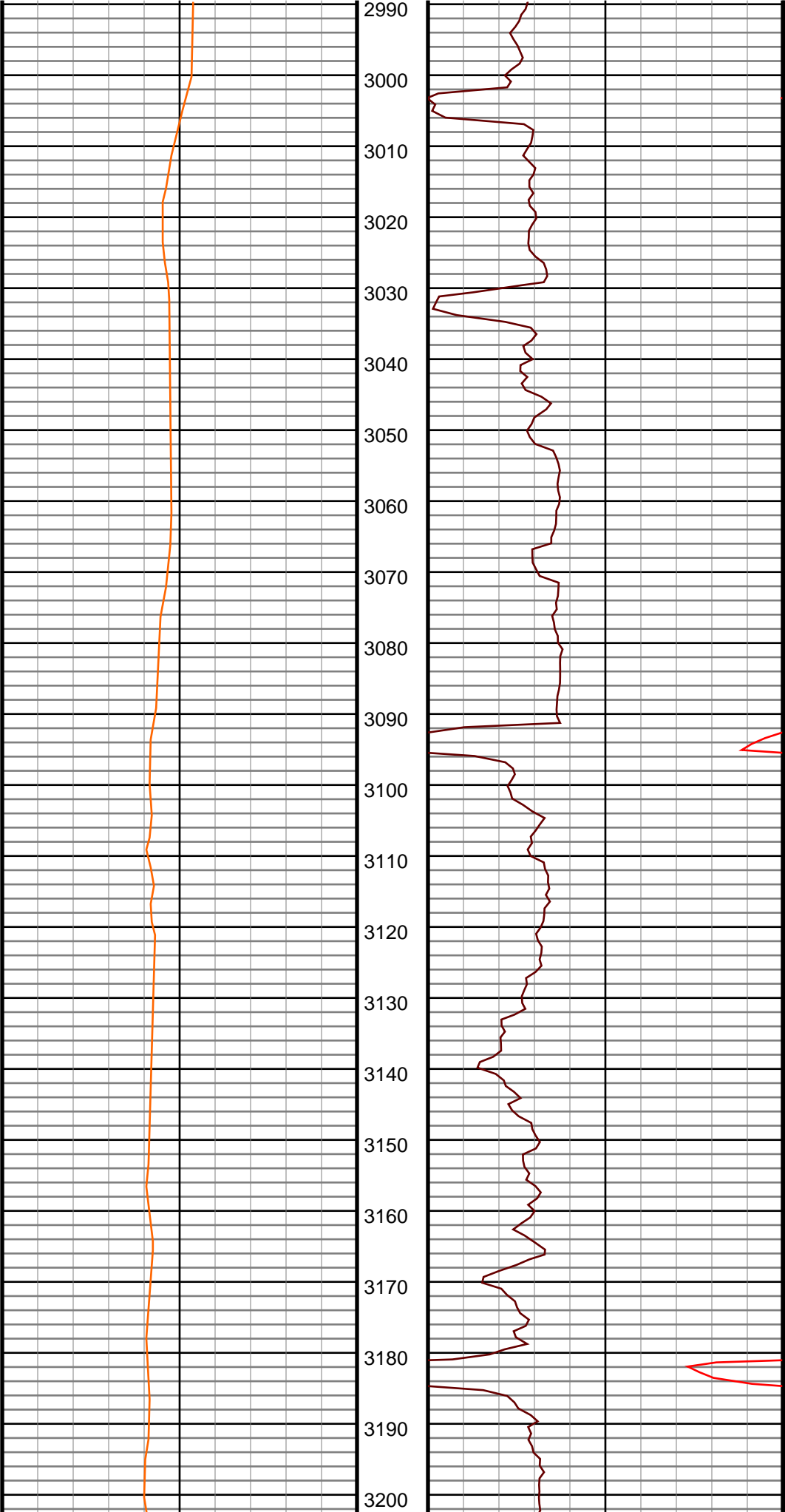


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#21 MD(2822.00) Inc(7.5) Azm(307.8) TVD(2811.85)
VS(-86.87) NS(90.89) EW(-131.60) TEMP(95.0)

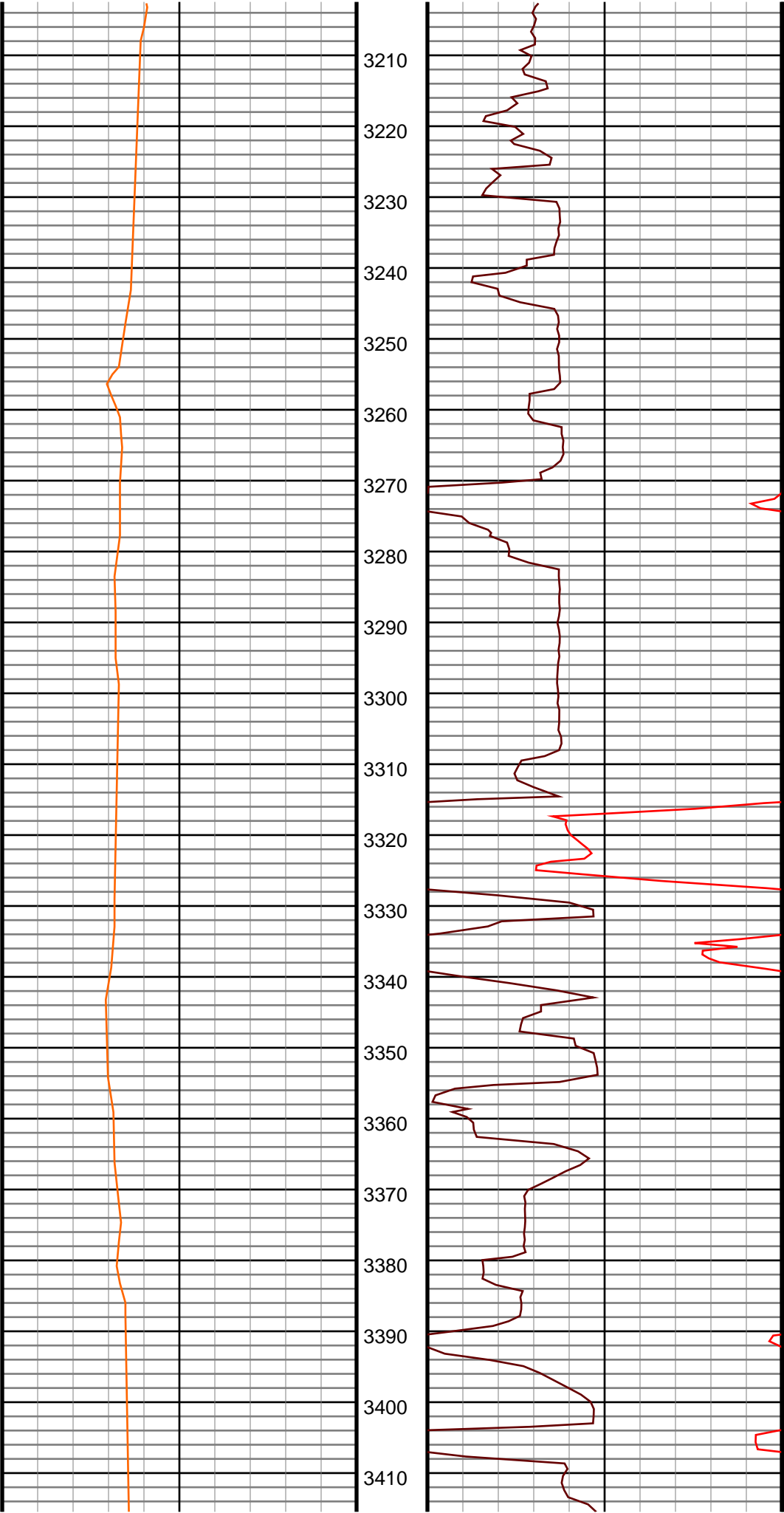
#22 MD(2912.00) Inc(7.3) Azm(304.0) TVD(2901.10)
VS(-93.38) NS(97.68) EW(-140.99) TEMP(97.0)



#23 MD(3002.00) Inc(7.6) Azm(302.0) TVD(2990.34)
VS(-99.44) NS(104.04) EW(-150.77) TEMP(96.8)

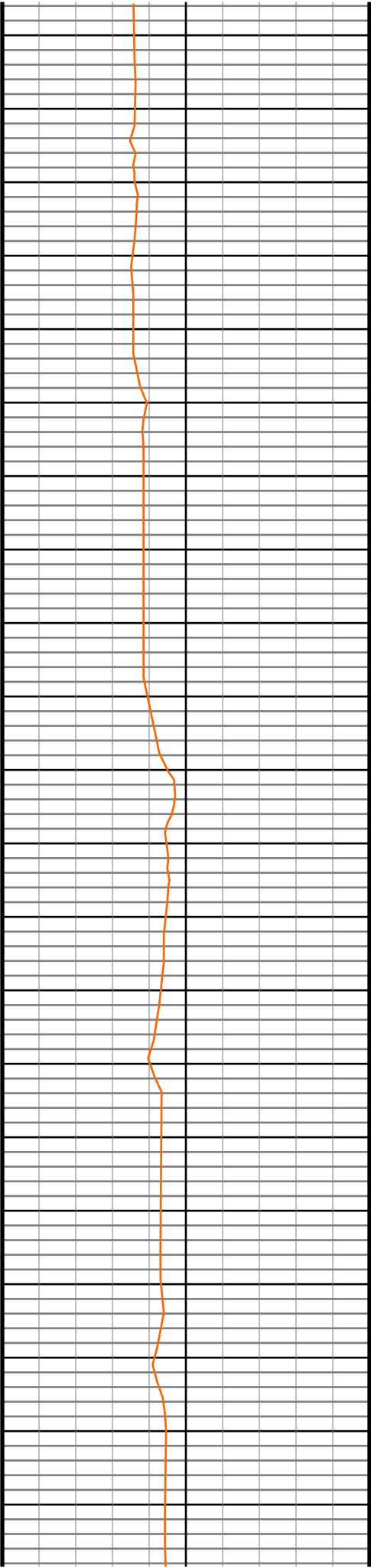
#24 MD(3091.00) Inc(7.4) Azm(299.4) TVD(3078.58)
VS(-105.06) NS(109.97) EW(-160.76) TEMP(98.6)

#25 MD(3181.00) Inc(7.4) Azm(296.4) TVD(3167.83)
VS(-110.17) NS(115.39) EW(-171.00) TEMP(100.4)

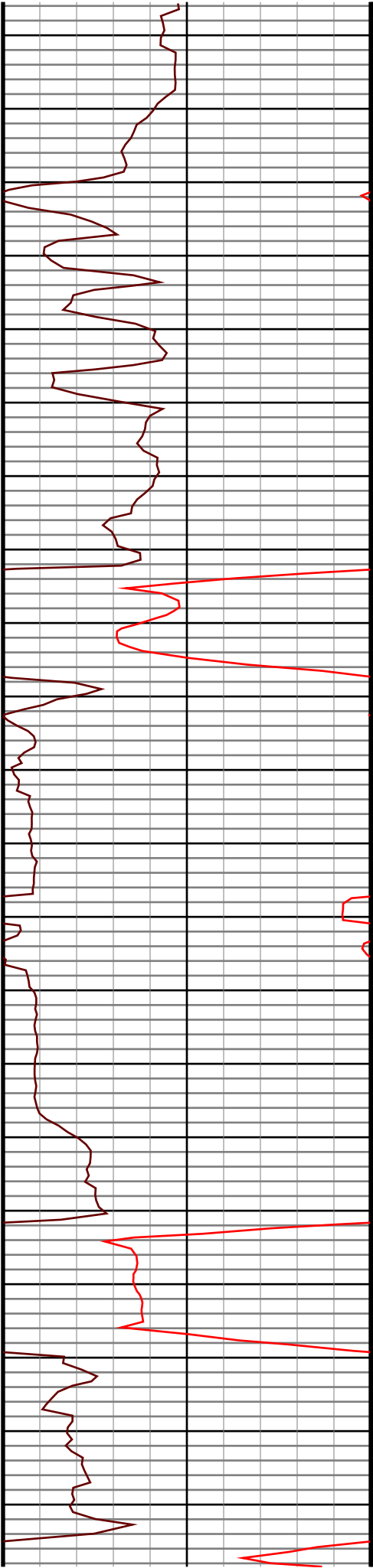


#26 MD(3271.00) Inc(7.6) Azm(294.6) TVD(3257.06)
VS(-114.91) NS(120.44) EW(-181.60) TEMP(102.2)

#27 MD(3361.00) Inc(7.1) Azm(299.4) TVD(3346.32)
VS(-119.80) NS(125.65) EW(-191.86) TEMP(104.0)



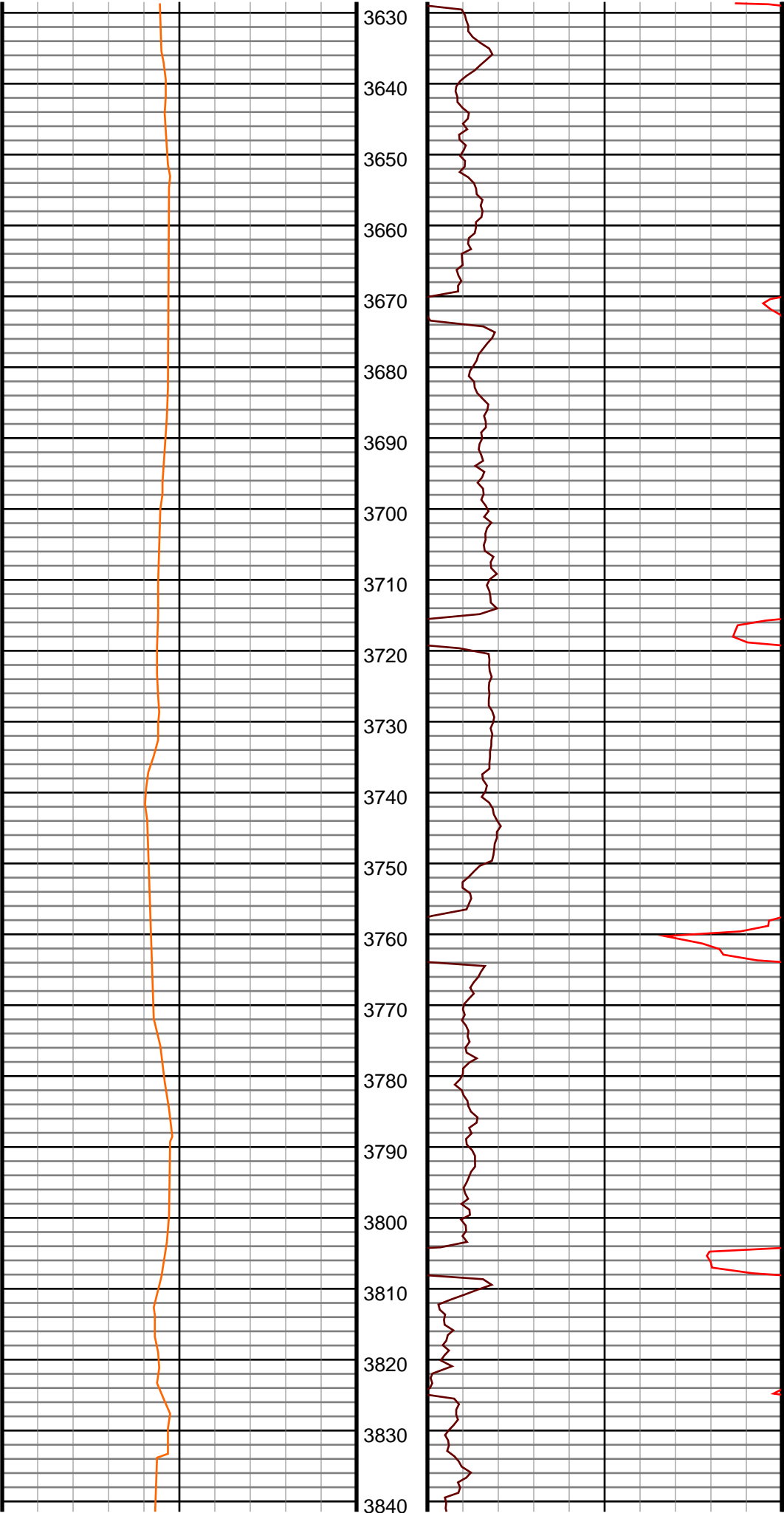
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#28 MD(3451.00) Inc(7.1) Azm(299.1) TVD(3435.63)
VS(-124.94) NS(131.09) EW(-201.56) TEMP(104.0)

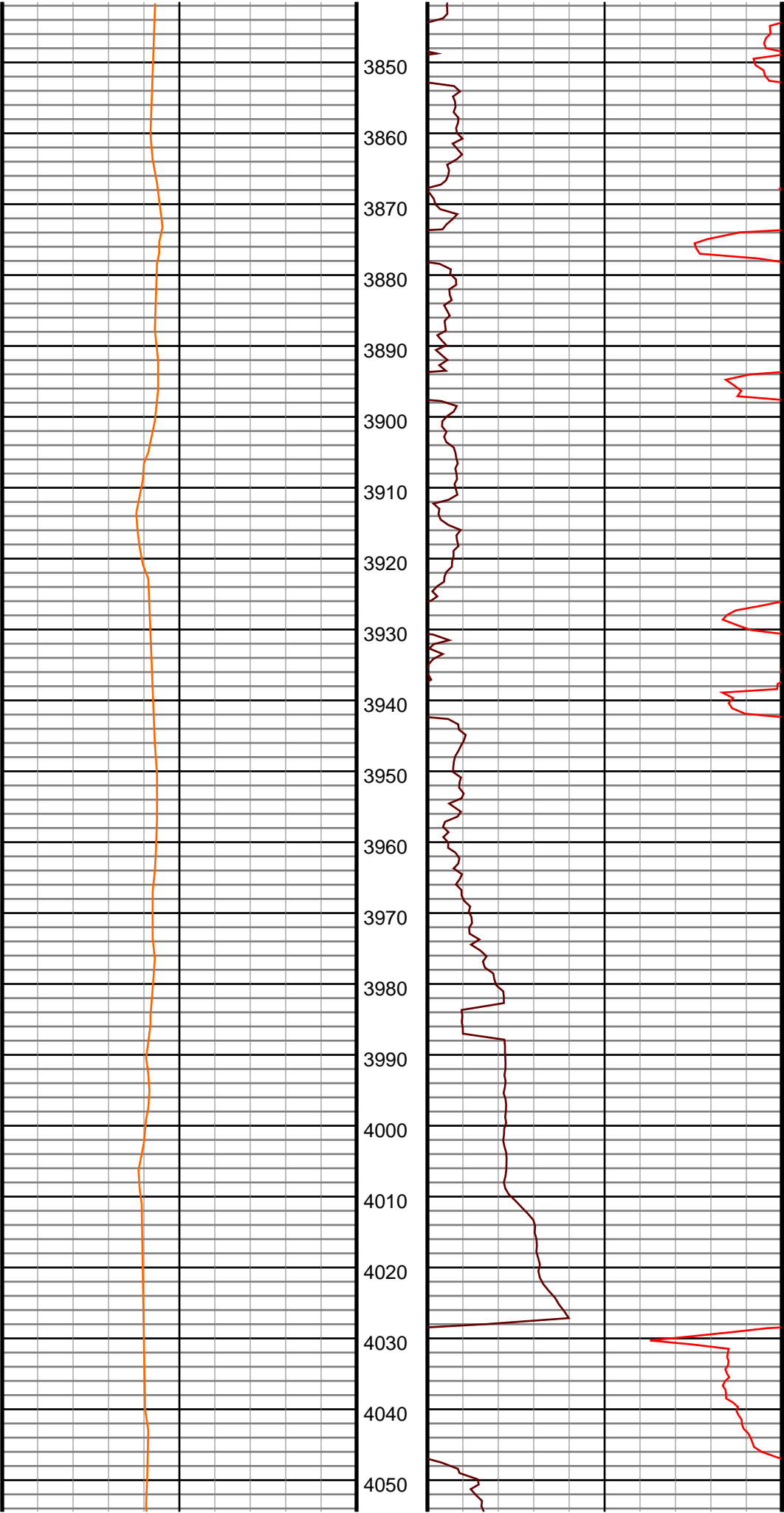
#29 MD(3541.00) Inc(7.7) Azm(301.1) TVD(3524.88)
VS(-130.46) NS(136.91) EW(-211.59) TEMP(105.8)

#30 MD(3630.00) Inc(8.1) Azm(314.6) TVD(3613.04)
VS(-137.65) NS(144.39) EW(-221.16) TEMP(107.6)



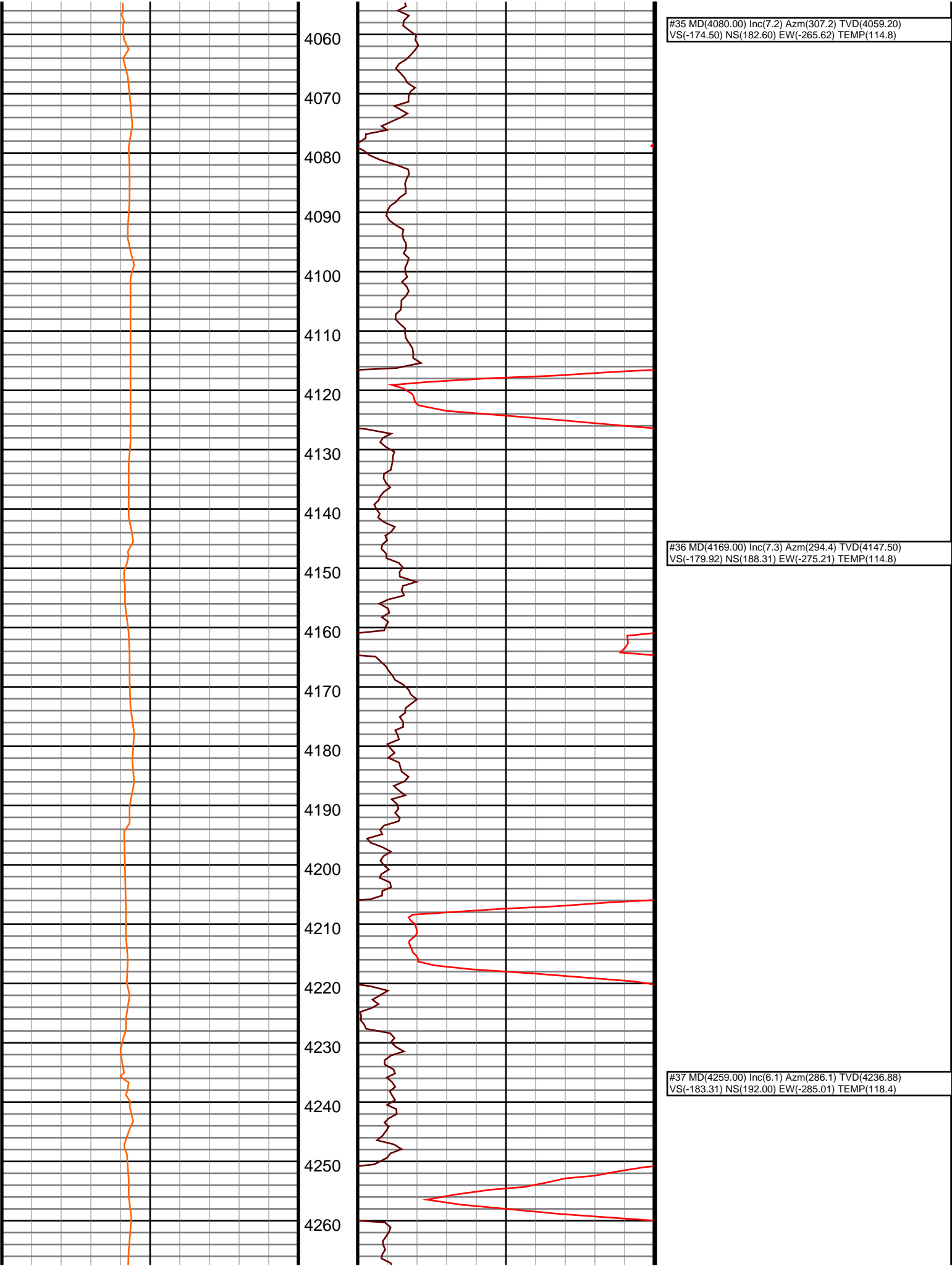
#31 MD(3720.00) Inc(7.7) Azm(312.3) TVD(3702.19)
VS(-145.88) NS(152.90) EW(-230.13) TEMP(109.4)

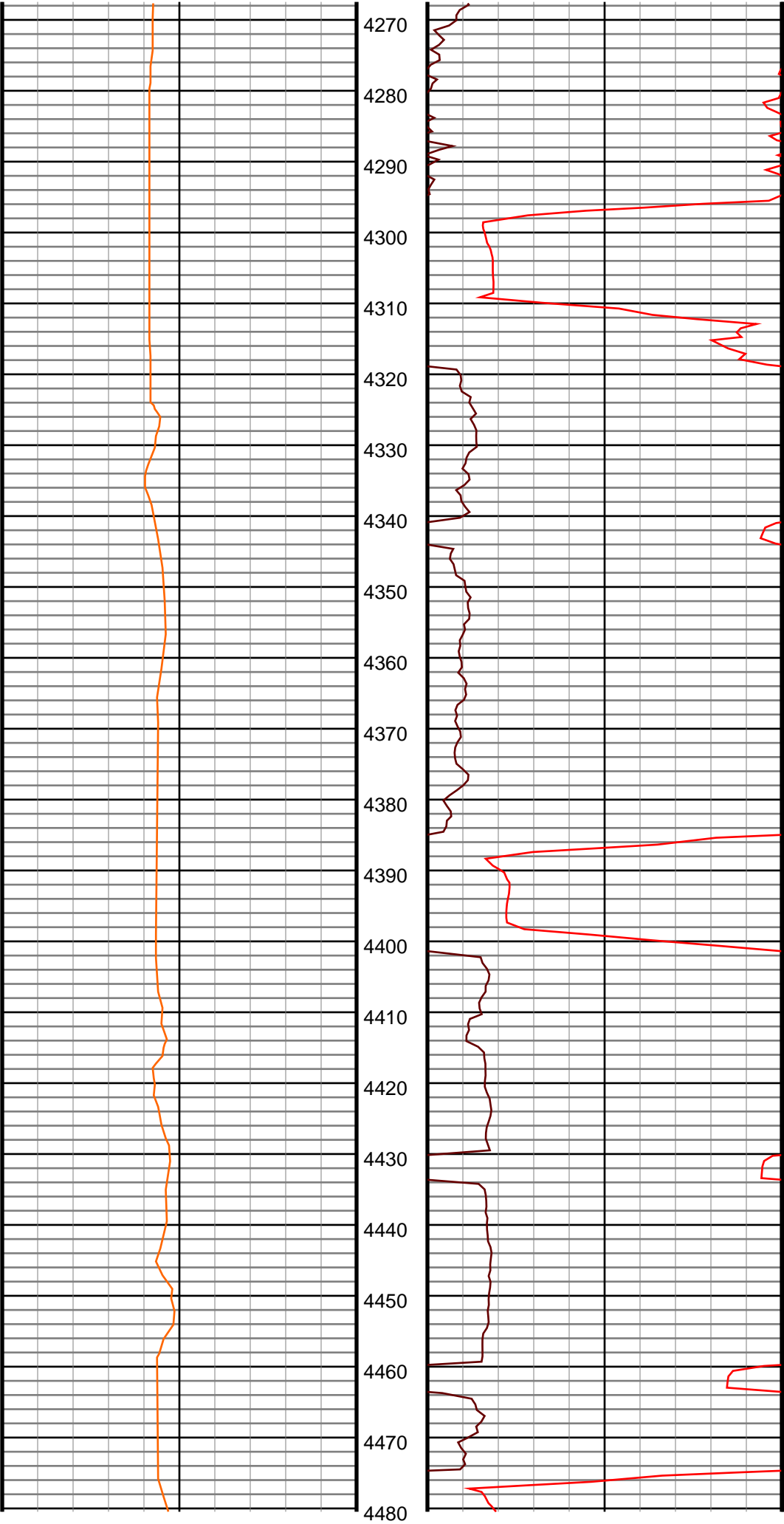
#32 MD(3810.00) Inc(7.3) Azm(311.0) TVD(3791.42)
VS(-153.42) NS(160.71) EW(-238.91) TEMP(111.2)



#33 MD(3900.00) Inc(7.3) Azm(309.2) TVD(3880.69)
VS(-160.52) NS(168.07) EW(-247.65) TEMP(113.0)

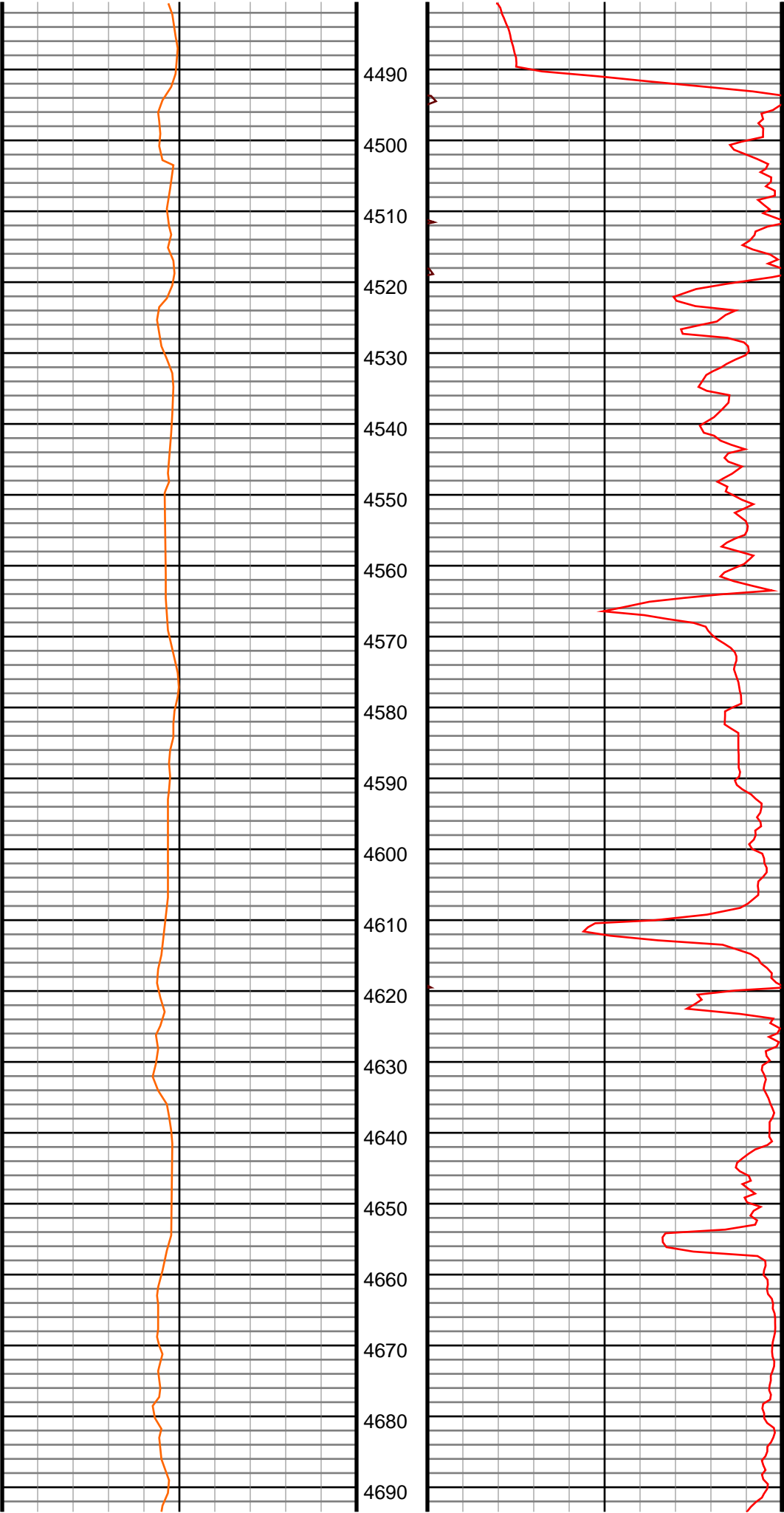
#34 MD(3990.00) Inc(7.5) Azm(309.7) TVD(3969.94)
VS(-167.61) NS(175.44) EW(-256.60) TEMP(114.8)





#38 MD(4349.00) Inc(3.8) Azm(284.8) TVD(4326.54)
VS(-185.17) NS(194.09) EW(-292.49) TEMP(116.6)

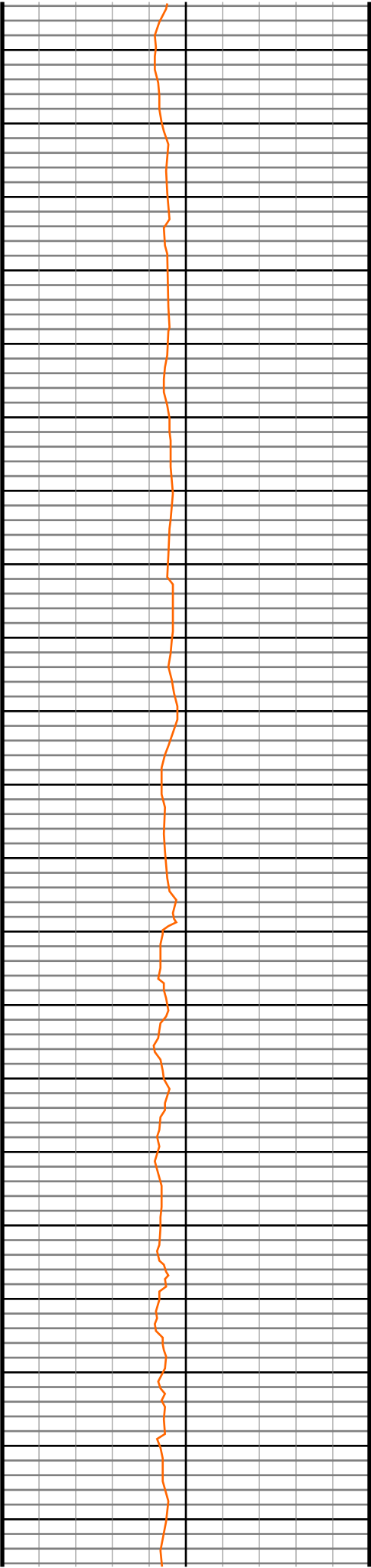
#39 MD(4439.00) Inc(2.9) Azm(261.3) TVD(4416.39)
VS(-185.43) NS(194.50) EW(-297.62) TEMP(118.4)



#40 MD(4529.00) Inc(0.2) Azm(154.9) TVD(4506.35)
VS(-184.88) NS(194.02) EW(-299.81) TEMP(116.6)

#41 MD(4619.00) Inc(0.8) Azm(197.7) TVD(4596.35)
VS(-184.13) NS(193.28) EW(-299.93) TEMP(120.2)

#42 MD(4708.00) Inc(0.5) Azm(188.6) TVD(4685.34)
VS(-183.15) NS(192.30) EW(-300.18) TEMP(120.2)



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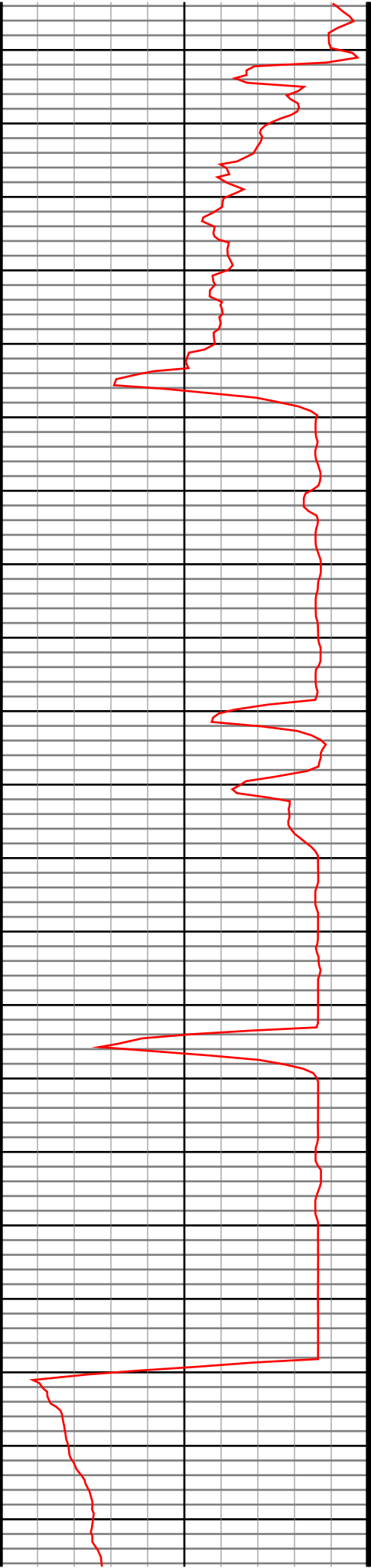
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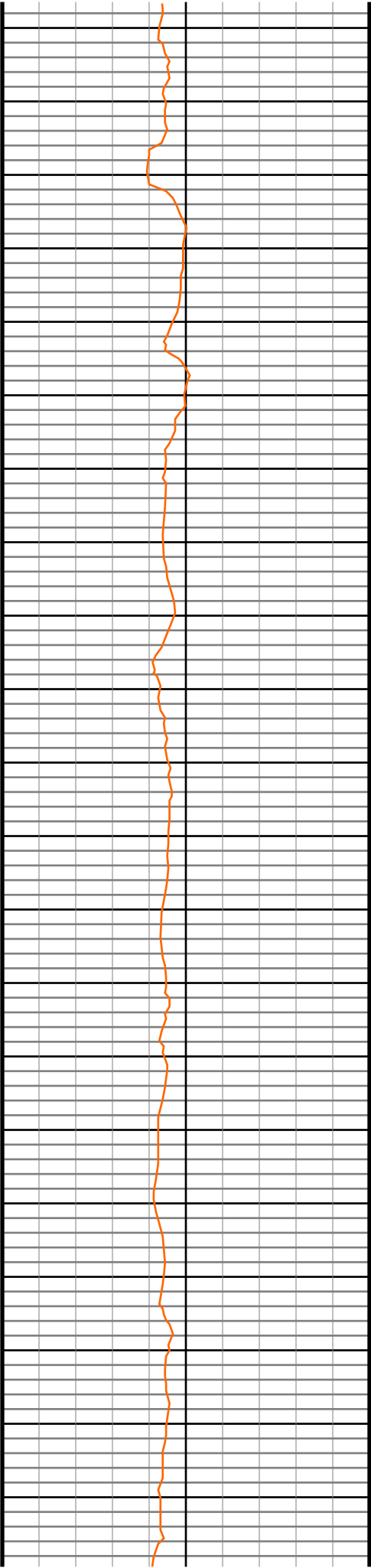
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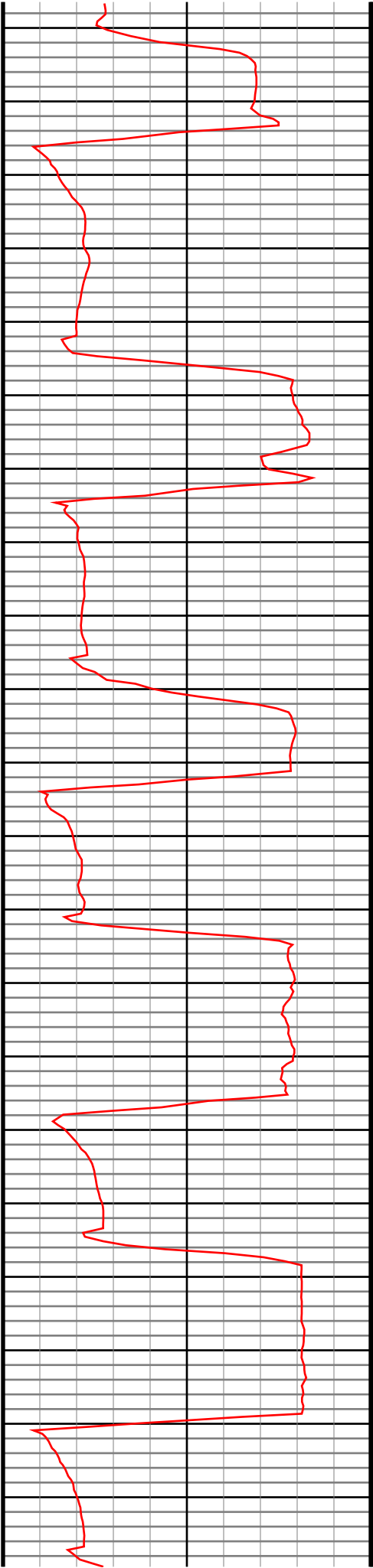
#43 MD(4798.00) Inc(0.5) Azm(209.1) TVD(4775.34)
VS(-182.41) NS(191.57) EW(-300.43) TEMP(122.0)

#44 MD(4843.00) Inc(0.3) Azm(205.1) TVD(4820.34)
VS(-182.13) NS(191.29) EW(-300.57) TEMP(123.8)

#45 MD(4888.00) Inc(0.6) Azm(190.5) TVD(4865.34)
VS(-181.79) NS(190.95) EW(-300.67) TEMP(123.8)



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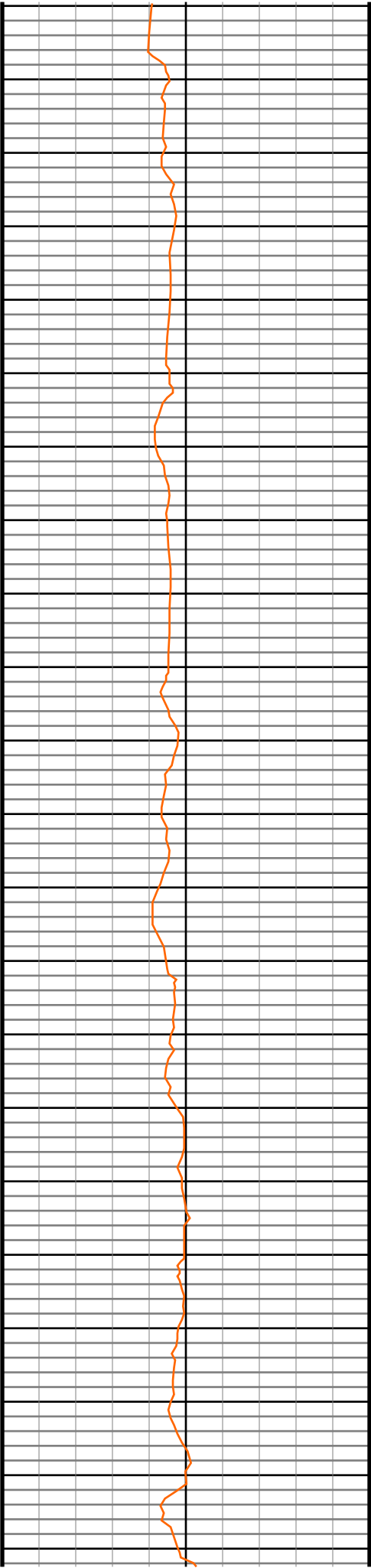
#46 MD(4933.00) Inc(4.4) Azm(180.0) TVD(4910.29)
VS(-179.83) NS(188.99) EW(-300.71) TEMP(125.6)

#47 MD(4978.00) Inc(8.1) Azm(178.3) TVD(4955.01)
VS(-174.94) NS(184.10) EW(-300.62) TEMP(125.6)

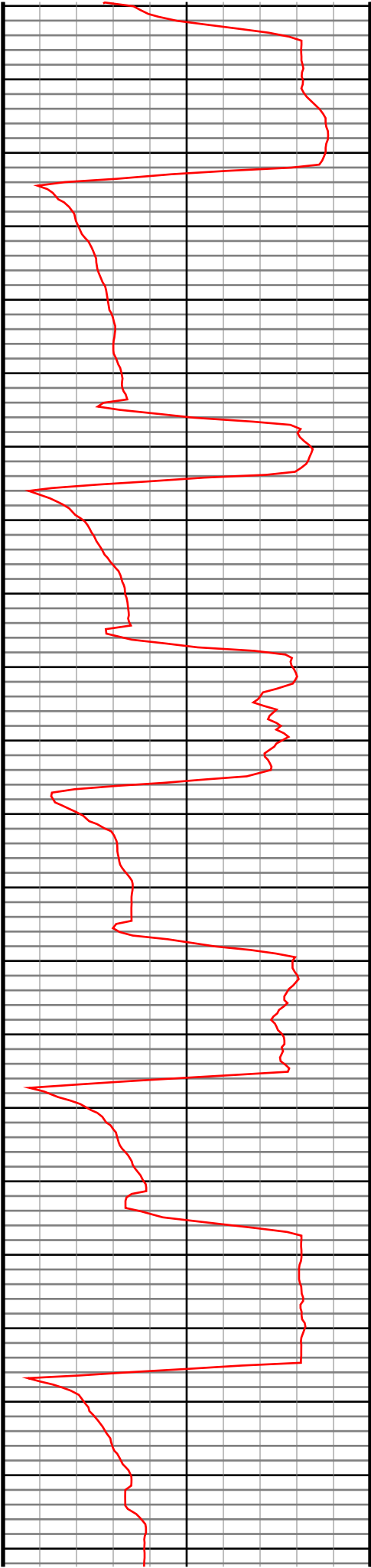
#48 MD(5023.00) Inc(11.0) Azm(187.6) TVD(4999.38)
VS(-167.50) NS(176.67) EW(-301.09) TEMP(127.4)

#49 MD(5067.00) Inc(13.2) Azm(183.0) TVD(5042.41)
VS(-158.30) NS(167.49) EW(-301.91) TEMP(127.4)

#50 MD(5112.00) Inc(14.9) Azm(184.7) TVD(5086.06)
VS(-147.39) NS(156.59) EW(-302.65) TEMP(129.2)



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#51 MD(5157.00) Inc(16.9) Azm(181.3) TVD(5129.34)
VS(-135.07) NS(144.29) EW(-303.27) TEMP(129.2)

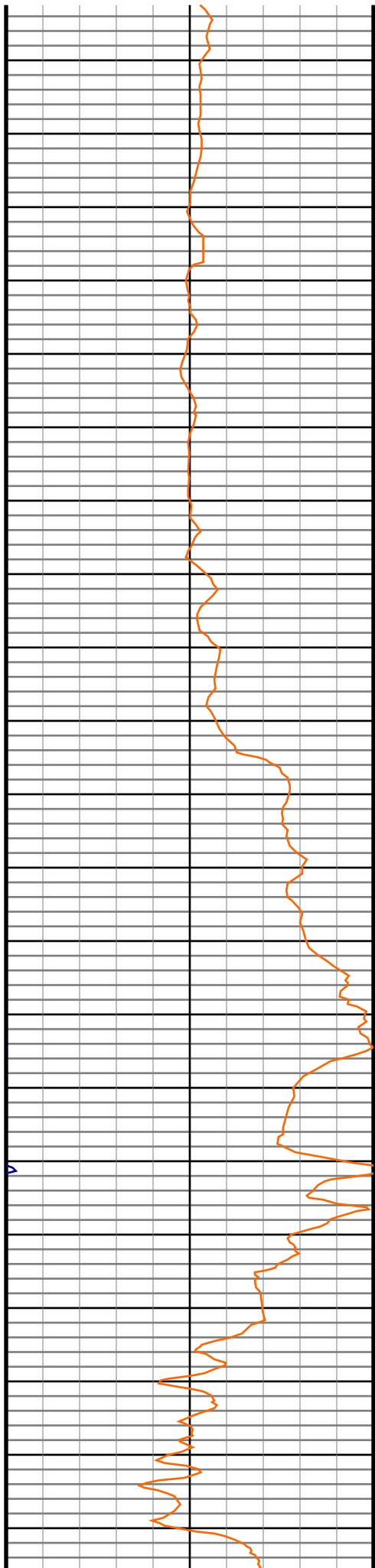
#52 MD(5202.00) Inc(21.5) Azm(177.0) TVD(5171.82)
VS(-120.30) NS(129.51) EW(-302.99) TEMP(131.0)

#53 MD(5247.00) Inc(25.0) Azm(173.1) TVD(5213.16)
VS(-102.67) NS(111.82) EW(-301.42) TEMP(132.8)

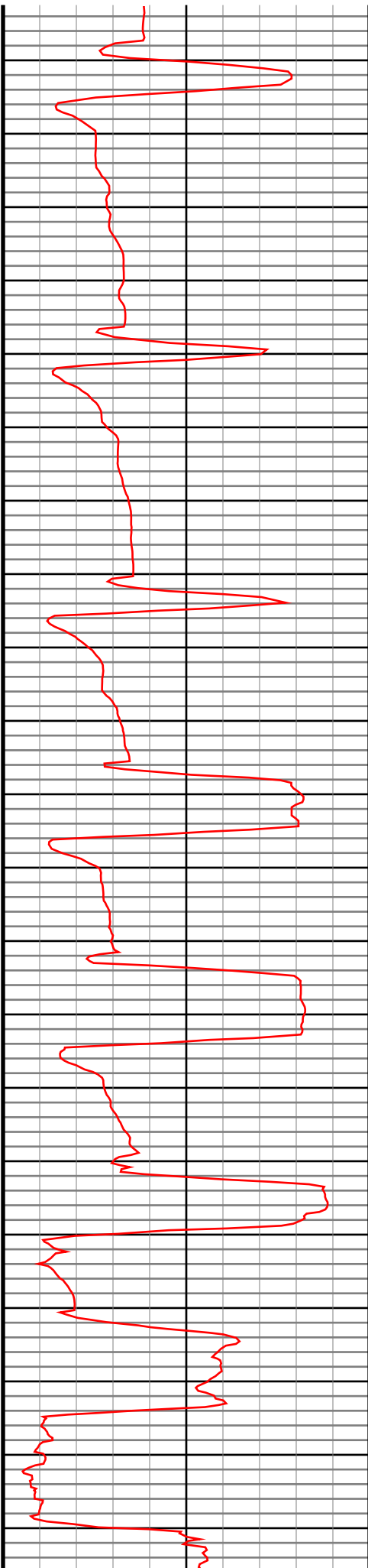
#54 MD(5292.00) Inc(27.2) Azm(171.7) TVD(5253.57)
VS(-83.14) NS(92.20) EW(-298.79) TEMP(132.8)

#55 MD(5337.00) Inc(28.4) Azm(172.7) TVD(5293.38)
VS(-62.44) NS(71.41) EW(-295.94) TEMP(134.6)

#56 MD(5382.00) Inc(31.3) Azm(175.9) TVD(5332.41)
VS(-40.24) NS(49.13) EW(-293.75) TEMP(134.6)



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#57 MD(5427.00) Inc(36.4) Azm(178.9) TVD(5369.77)
VS(-15.26) NS(24.10) EW(-292.65) TEMP(134.6)

#58 MD(5472.00) Inc(42.4) Azm(181.0) TVD(5404.53)
VS(13.28) NS(-4.44) EW(-292.66) TEMP(136.4)

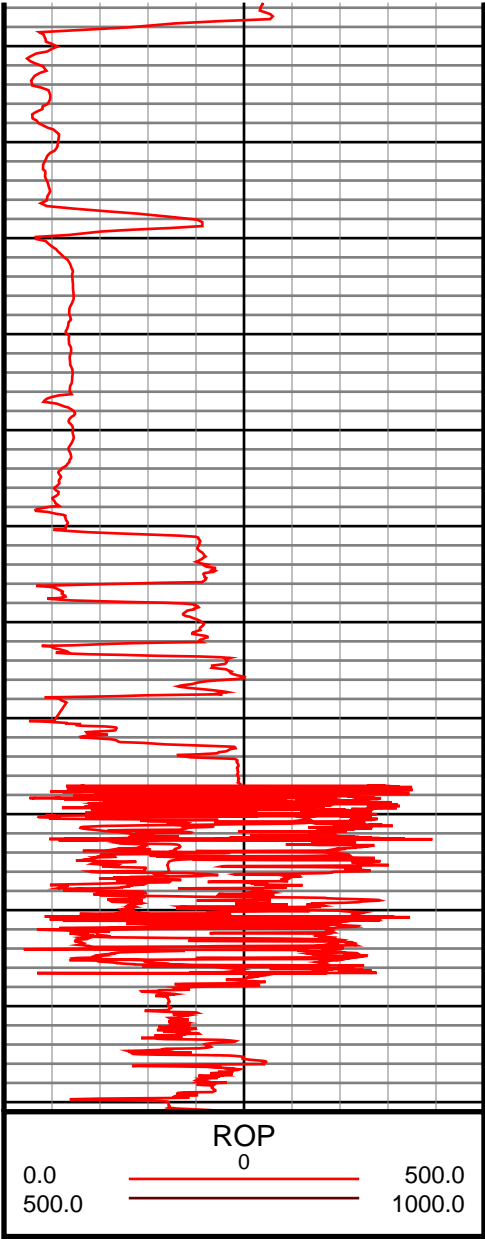
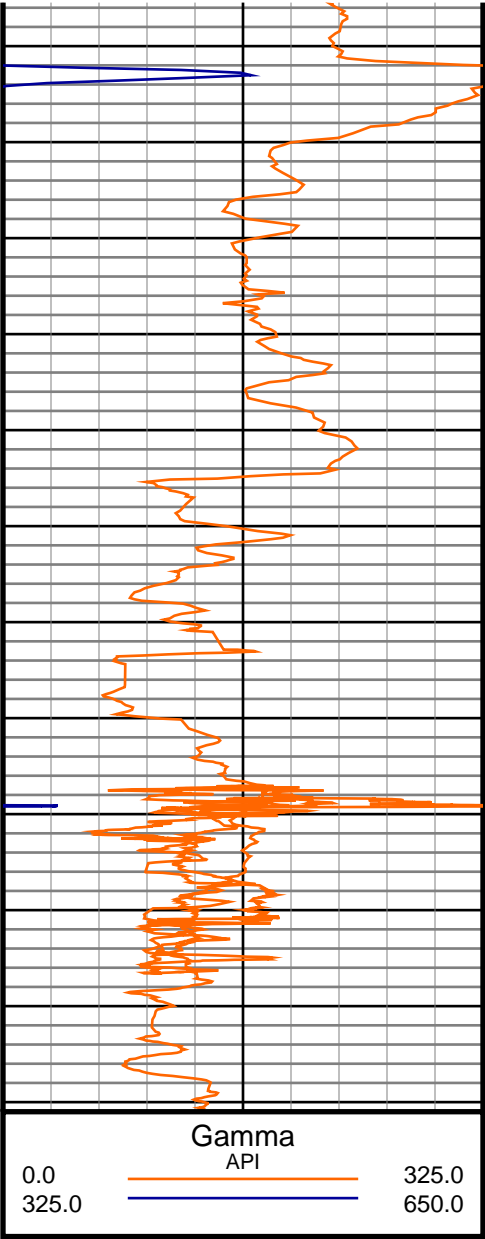
#59 MD(5517.00) Inc(47.8) Azm(180.1) TVD(5436.28)
VS(45.13) NS(-36.30) EW(-292.96) TEMP(138.2)

#60 MD(5562.00) Inc(51.6) Azm(177.4) TVD(5465.39)
VS(79.39) NS(-70.60) EW(-292.19) TEMP(140.0)

#61 MD(5607.00) Inc(55.6) Azm(176.3) TVD(5492.08)
VS(115.47) NS(-106.76) EW(-290.19) TEMP(140.0)

#62 MD(5651.00) Inc(57.6) Azm(177.8) TVD(5516.30)
VS(152.08) NS(-143.44) EW(-288.30) TEMP(141.8)

#63 MD(5697.00) Inc(58.1) Azm(179.7) TVD(5540.78)
VS(190.97) NS(-182.38) EW(-287.45) TEMP(136.4)



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| #64 MD(5741.00) Inc(61.7) Azm(180.3) TVD(5562.85) VS(229.01) NS(-220.44) EW(-287.46) TEMP(136.4) |
| #65 MD(5786.00) Inc(68.5) Azm(180.3) TVD(5581.78) VS(269.79) NS(-261.23) EW(-287.67) TEMP(141.8) |
| #66 MD(5831.00) Inc(77.0) Azm(178.7) TVD(5595.12) VS(312.70) NS(-304.16) EW(-287.28) TEMP(141.8) |
| #67 MD(5876.00) Inc(80.7) Azm(177.5) TVD(5603.82) VS(356.75) NS(-348.28) EW(-285.82) TEMP(143.6) |
| #69 MD(5944.00) Inc(83.1) Azm(178.1) TVD(5613.27) VS(423.93) NS(-415.57) EW(-283.29) TEMP(143.6) |
| #70 MD(6037.00) Inc(83.0) Azm(178.3) TVD(5624.53) VS(516.07) NS(-507.84) EW(-280.39) TEMP(150.8) |
| #104 MD(9176.00) Inc(90.0) Azm(177.2) TVD(5629.38) VS(3645.49) NS(-3642.54) EW(-152.89) TEMP(194.0) |
| #106 MD(9356.00) Inc(87.2) Azm(177.4) TVD(5635.03) VS(3824.88) NS(-3822.25) EW(-144.88) TEMP(190.4) |
| #107 MD(9446.00) Inc(87.2) Azm(177.7) TVD(5639.43) VS(3914.54) NS(-3912.06) EW(-141.04) TEMP(192.2) |
| #108 MD(9536.00) Inc(86.7) Azm(177.0) TVD(5644.22) VS(4004.14) NS(-4001.84) EW(-136.88) TEMP(195.8) |
| #109 MD(9625.00) Inc(86.4) Azm(177.4) TVD(5649.57) VS(4092.71) NS(-4090.57) EW(-132.54) TEMP(197.6) |
| #110 MD(9715.00) Inc(86.4) Azm(176.5) TVD(5655.22) VS(4182.21) NS(-4180.26) EW(-127.77) TEMP(197.6) |