



WELLS RANCH AA21-69-1HN ^{MD} 5":100'

Company: NOBLE ENERGY
Well Name: WELLS RANCH AA21-69-1HN
API: 05-123-37702
Rig Id: H&P 277
State: CO
County/Parish: WELD COUNTY
Country: USA
Survey Company: DRILTECH, LLC
Job number: 2014-099-IDDT-CO
JOSH CAYLOR MWD OPERATOR
MARK LARUE MWD OPERATOR

Log measurements:
Depth measured from:
Maximum temperature:

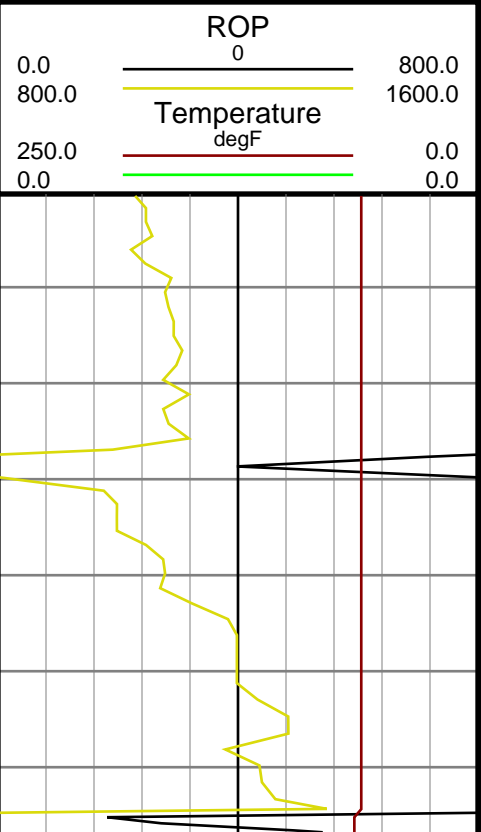
Depth Date
Start: 963 ft 3/13/2014
End: 10950 ft 3/18/2014

Casing Depth Size	Mud Type: WATER BASE	Elevations
Surface: 953 9.625	Density: 9.4	KB: 4727
Intermediate: 7198 7.0	Viscosity: 35	DF: 4751
	Rm: Rmf: Rmc:	

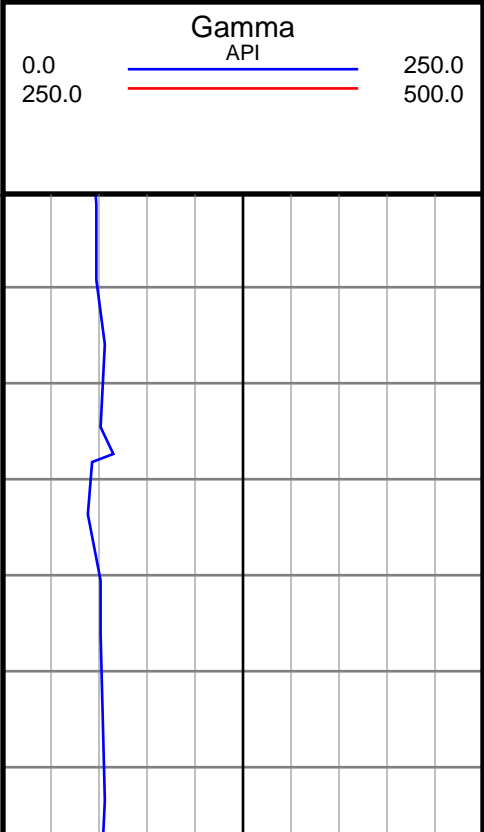
Run	Bit Size	Offsets	Gamma Survey	Start	End	Start	End	Dates
1	8 3/4	37.00	54.00	963	5349	3/13/2014	3/14/2014	
2	8 3/4	45.00	62.00	5349	7208	3/14/2014	3/15/2014	
3	6 1/8	46.00	63.00	7208	10950	3/17/2014	3/18/2014	
4								
5								
6								
7								
8								
9								
10								

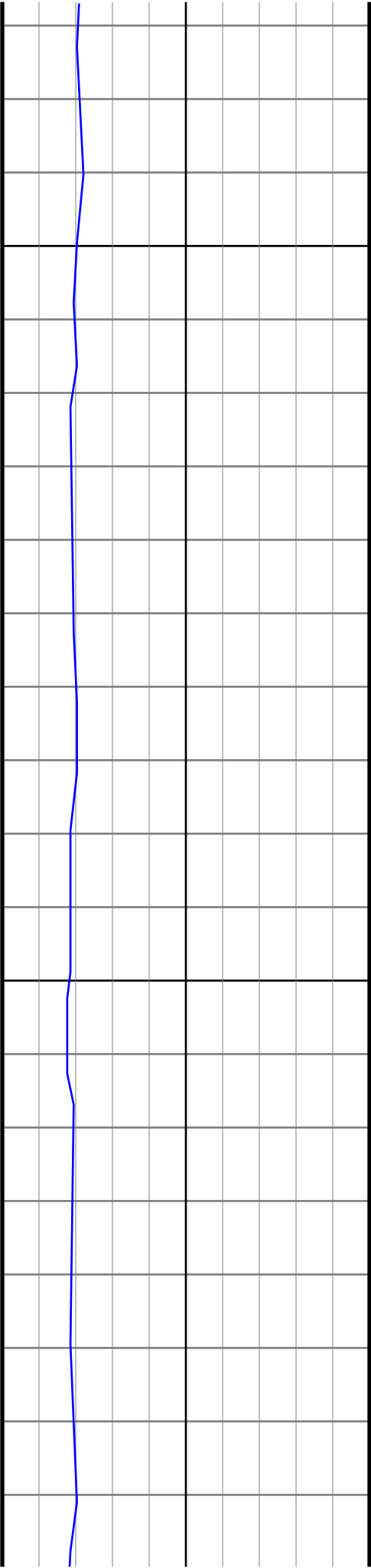
DRILTECH, LLC uses its best efforts to provide its customers with accurate information and interpretations in conjunction with services performed but will not be held liable or responsible for the accuracy of such information or interpretation.

MD



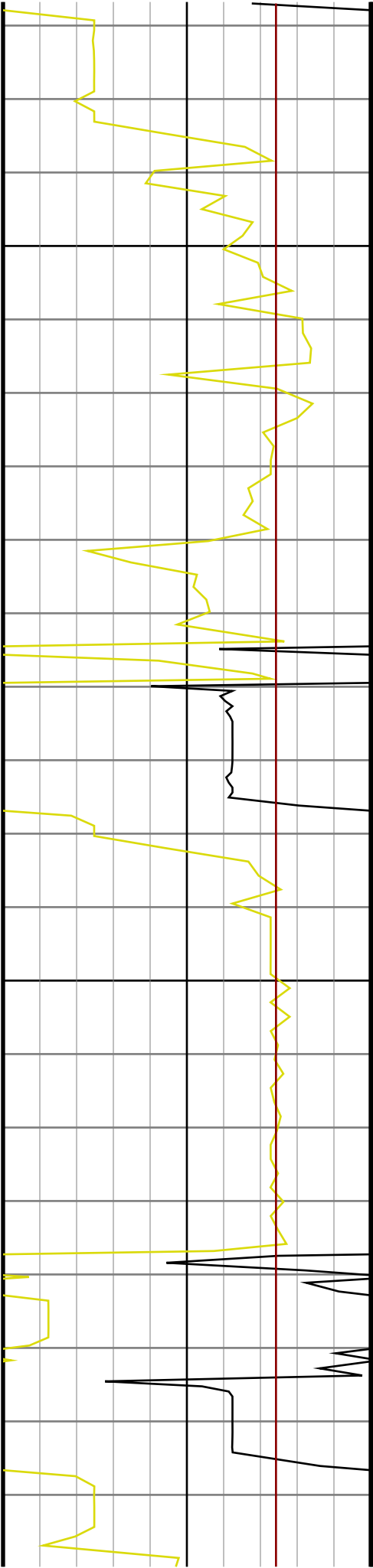
#5 MD(1115.00) Inc(0.4) Azm(212.8) TVD(1114.99)
VS(0.47) NS(1.10) EW(-0.19) TEMP(0.0)





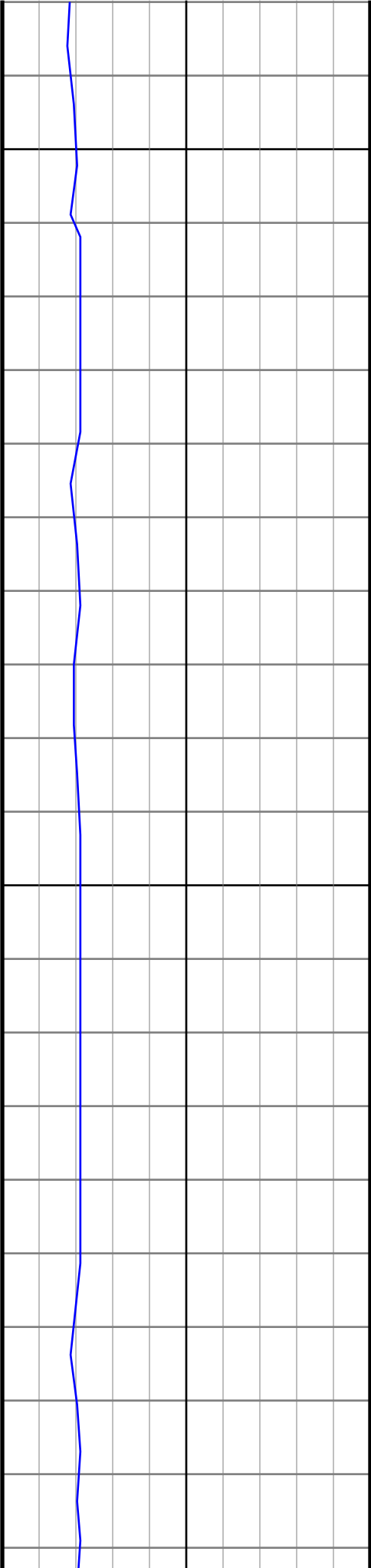
1200

1300



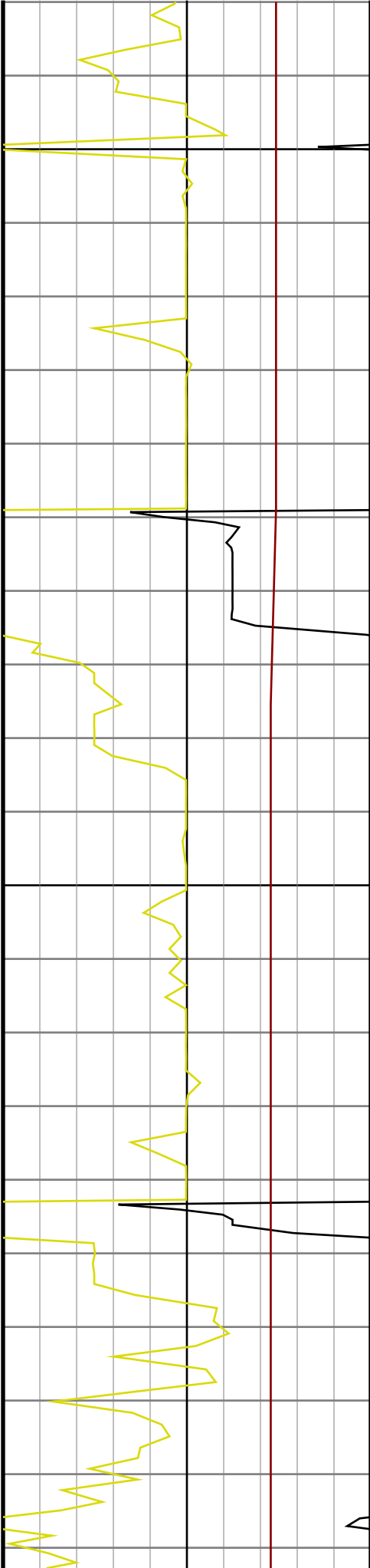
#6 MD(1209.00) Inc(0.5) Azm(215.3) TVD(1208.99)
VS(0.71) NS(0.49) EW(-0.60) TEMP(0.0)

#7 MD(1304.00) Inc(0.7) Azm(202.4) TVD(1303.98)
VS(0.93) NS(-0.39) EW(-1.06) TEMP(0.0)



1400

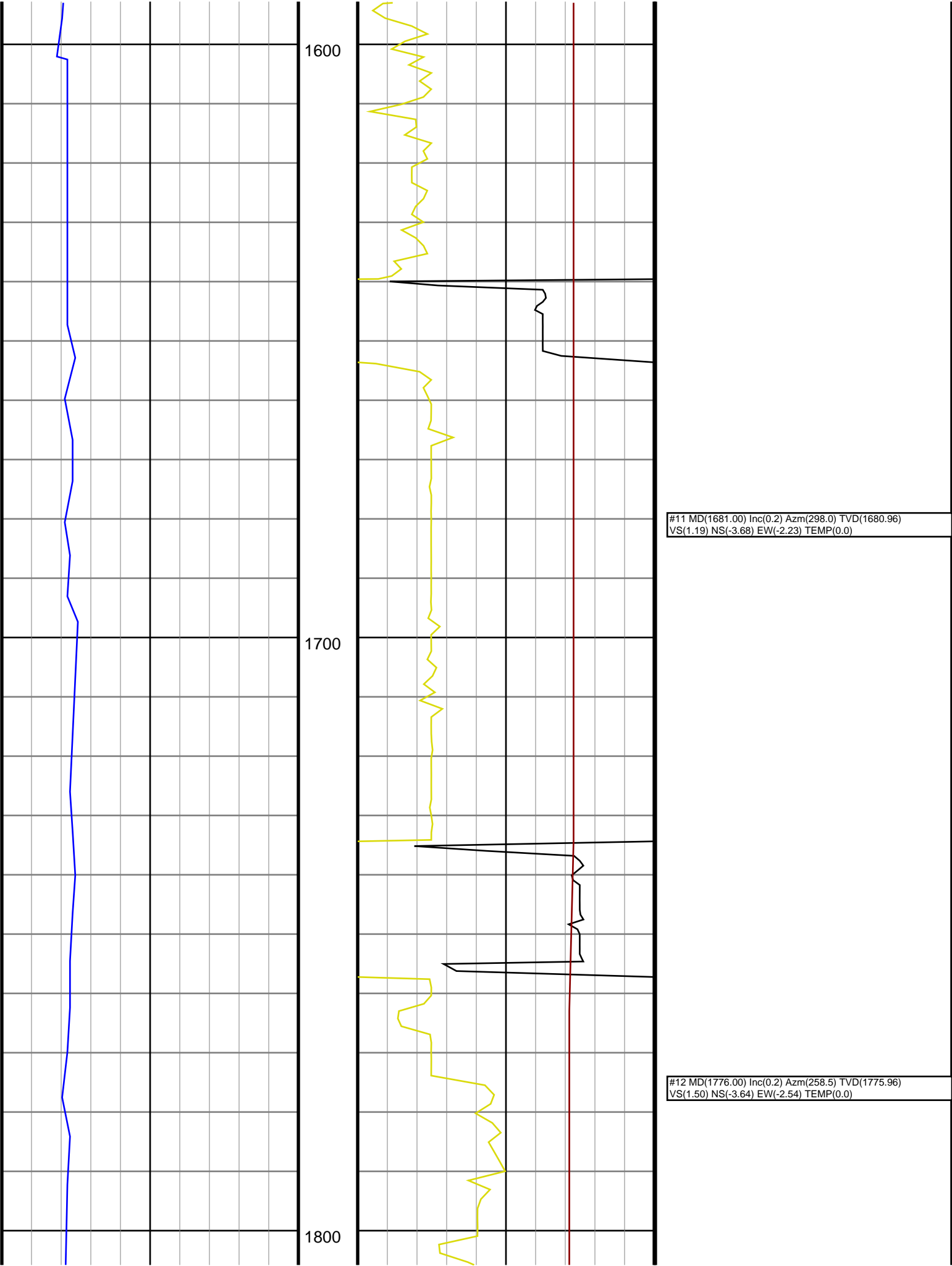
1500



#8 MD(1398.00) Inc(0.7) Azm(197.6) TVD(1397.97)
VS(1.02) NS(-1.46) EW(-1.46) TEMP(0.0)

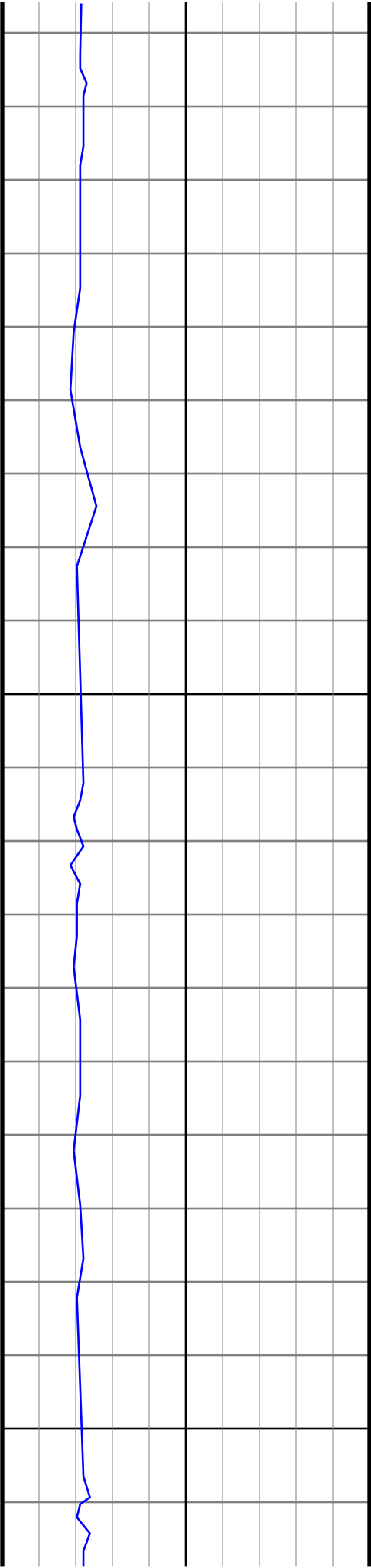
#9 MD(1492.00) Inc(0.7) Azm(191.0) TVD(1491.97)
VS(1.01) NS(-2.57) EW(-1.74) TEMP(0.0)

#10 MD(1587.00) Inc(0.4) Azm(201.1) TVD(1586.96)
VS(1.00) NS(-3.45) EW(-1.97) TEMP(0.0)



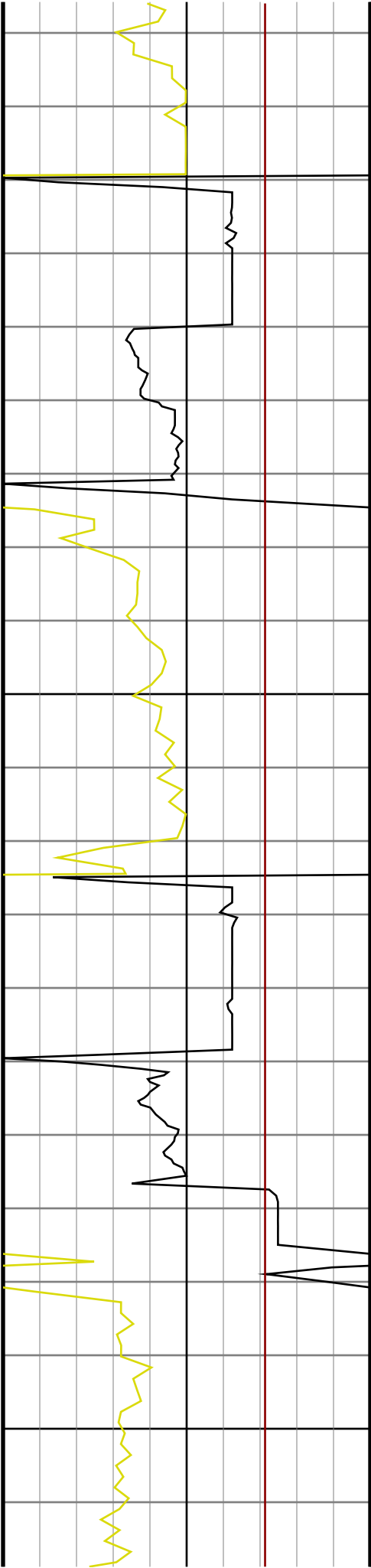
#11 MD(1681.00) Inc(0.2) Azm(298.0) TVD(1680.96)
VS(1.19) NS(-3.68) EW(-2.23) TEMP(0.0)

#12 MD(1776.00) Inc(0.2) Azm(258.5) TVD(1775.96)
VS(1.50) NS(-3.64) EW(-2.54) TEMP(0.0)



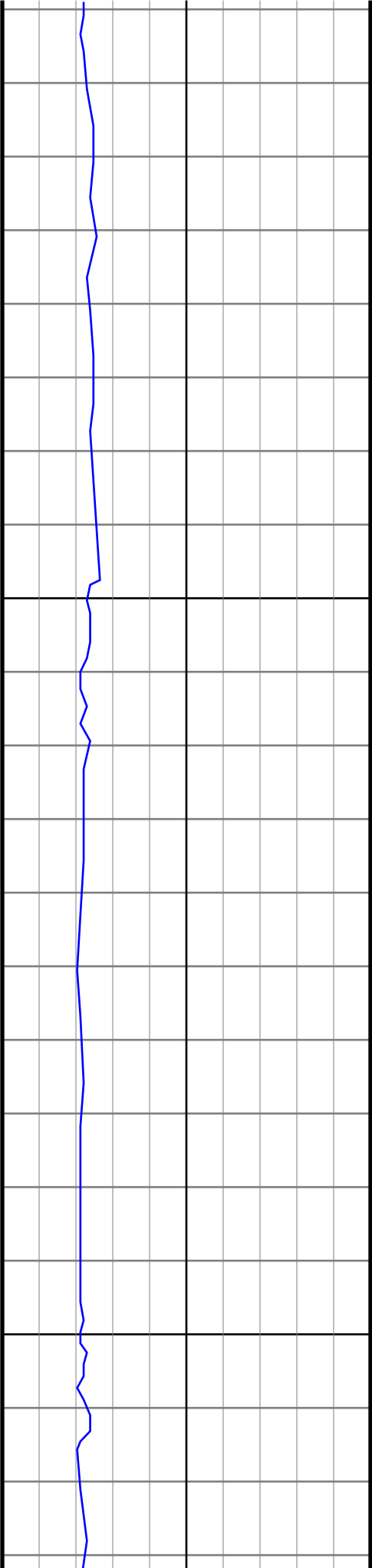
1900

2000



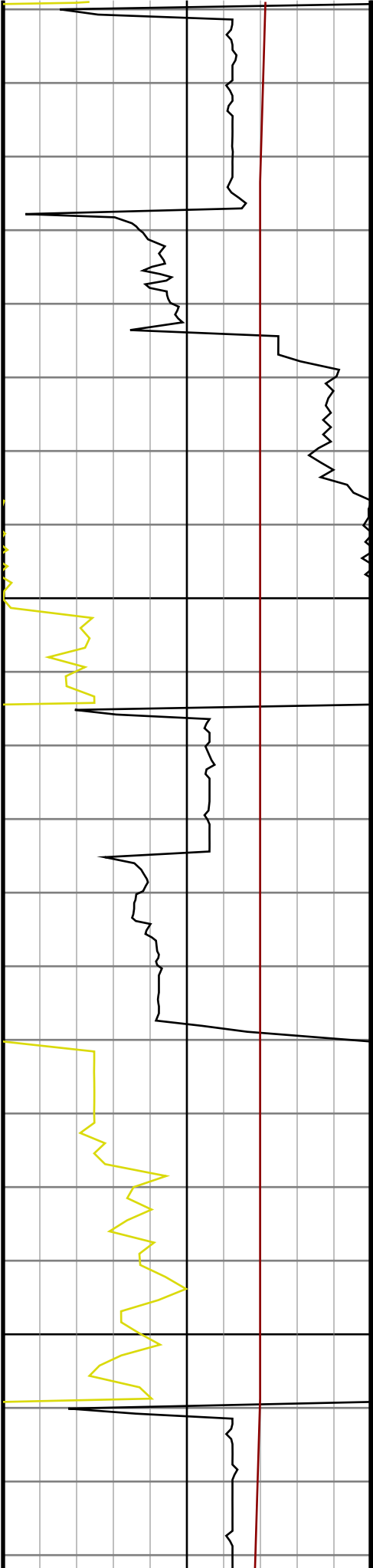
#13 MD(1871.00) Inc(1.8) Azm(356.1) TVD(1870.95)
VS(2.14) NS(-2.18) EW(-2.81) TEMP(0.0)

#14 MD(1965.00) Inc(3.0) Azm(9.3) TVD(1964.86)
VS(2.87) NS(1.72) EW(-2.51) TEMP(0.0)



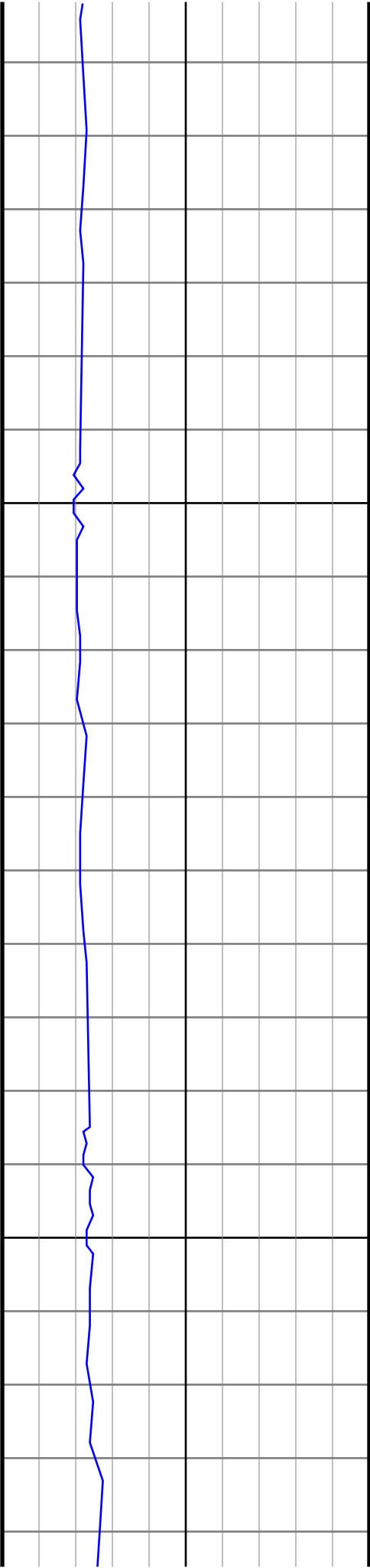
2100

2200



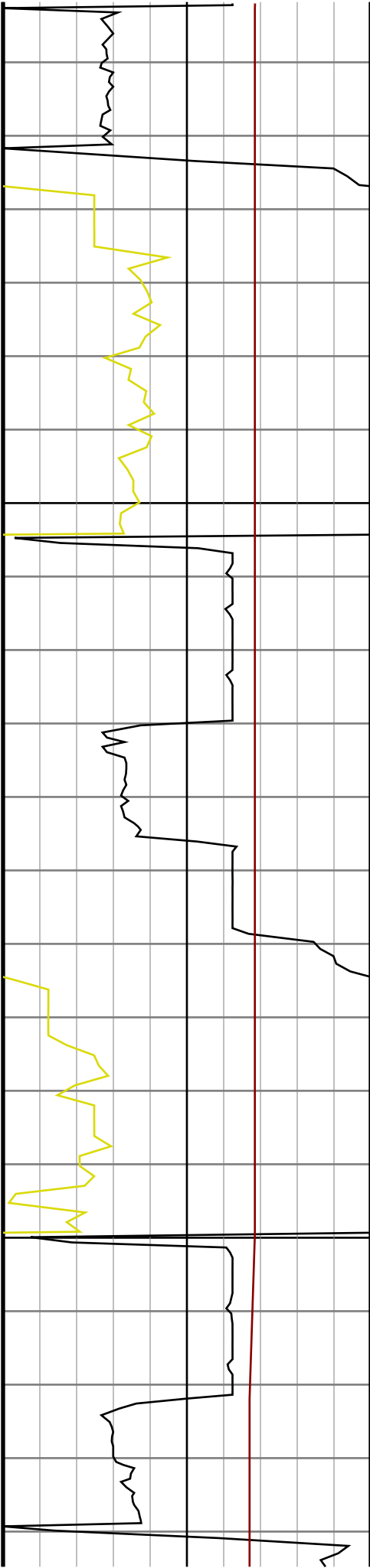
#15 MD(2060.00) Inc(4.1) Azm(2.9) TVD(2059.68)
VS(3.84) NS(7.56) EW(-1.94) TEMP(0.0)

#16 MD(2155.00) Inc(6.2) Azm(2.1) TVD(2154.29)
VS(5.72) NS(16.08) EW(-1.58) TEMP(0.0)



2300

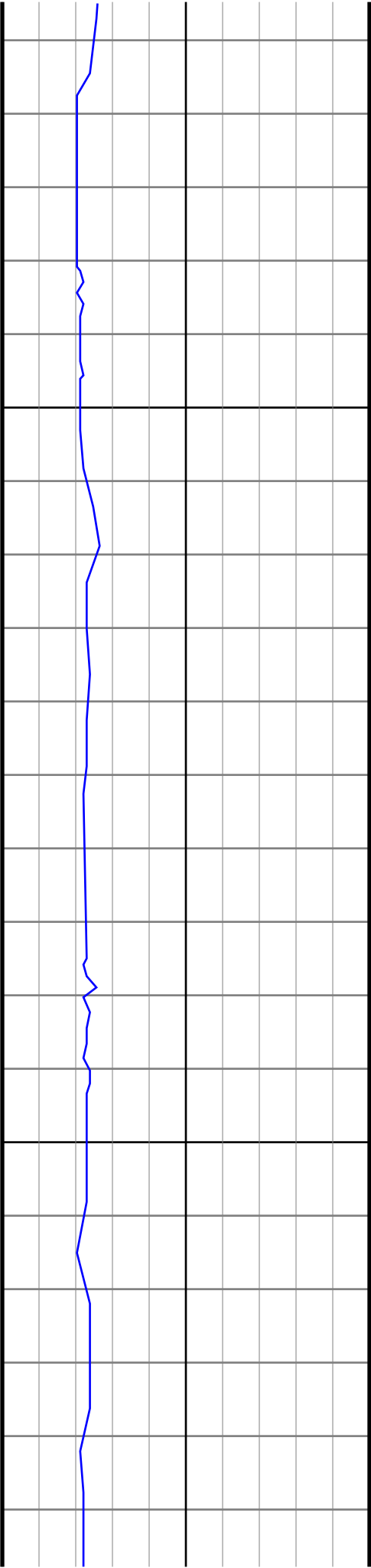
2400



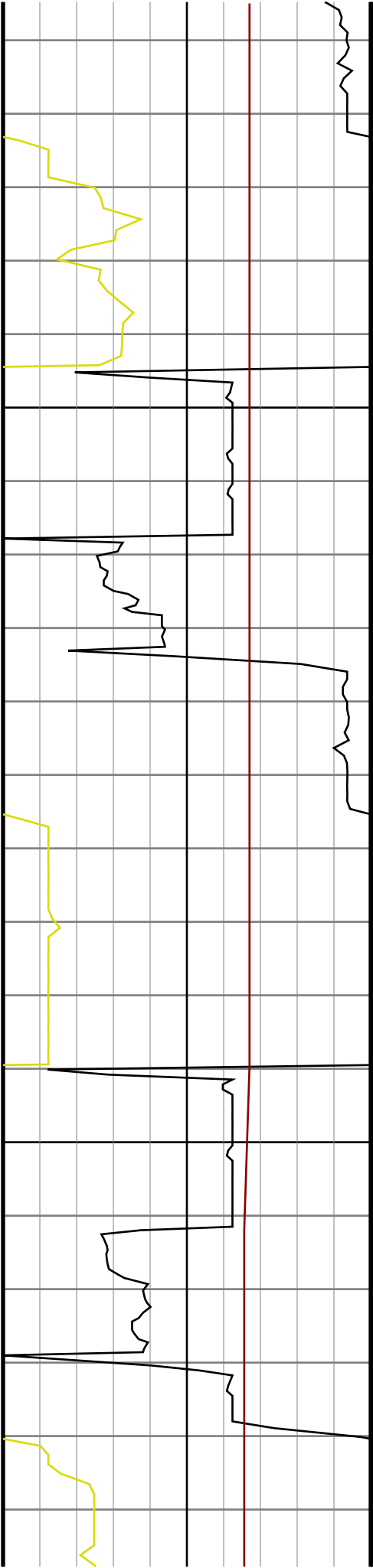
#17 MD(2249.00) Inc(7.7) Azm(4.0) TVD(2247.60)
VS(8.08) NS(27.44) EW(-0.95) TEMP(0.0)

#18 MD(2344.00) Inc(9.0) Azm(1.1) TVD(2341.59)
VS(11.12) NS(41.22) EW(-0.36) TEMP(0.0)

#19 MD(2439.00) Inc(9.5) Azm(359.9) TVD(2435.35)
VS(14.98) NS(56.49) EW(-0.23) TEMP(0.0)



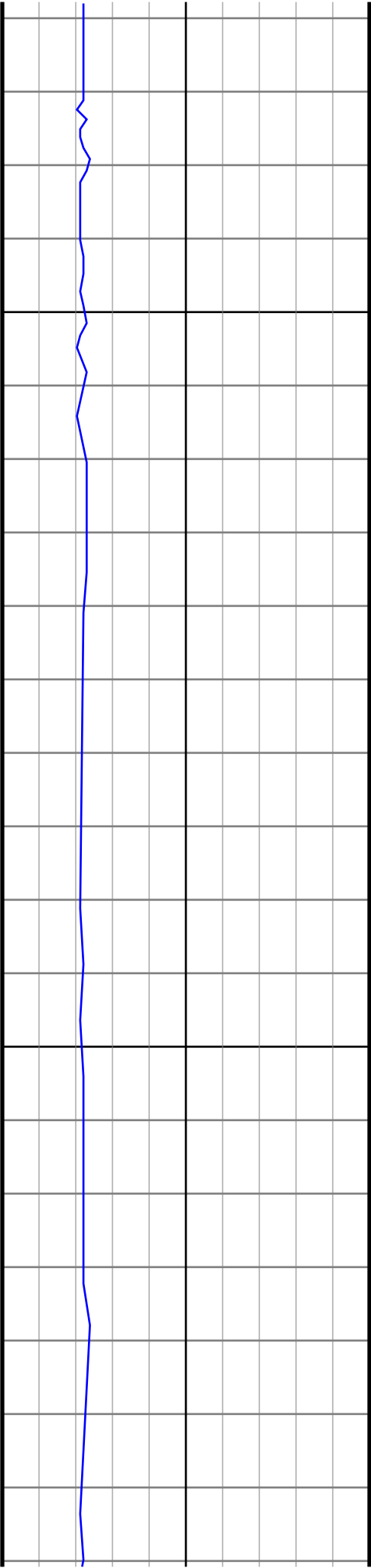
2500



#20 MD(2533.00) Inc(10.1) Azm(0.3) TVD(2527.98)
VS(19.13) NS(72.49) EW(-0.20) TEMP(0.0)

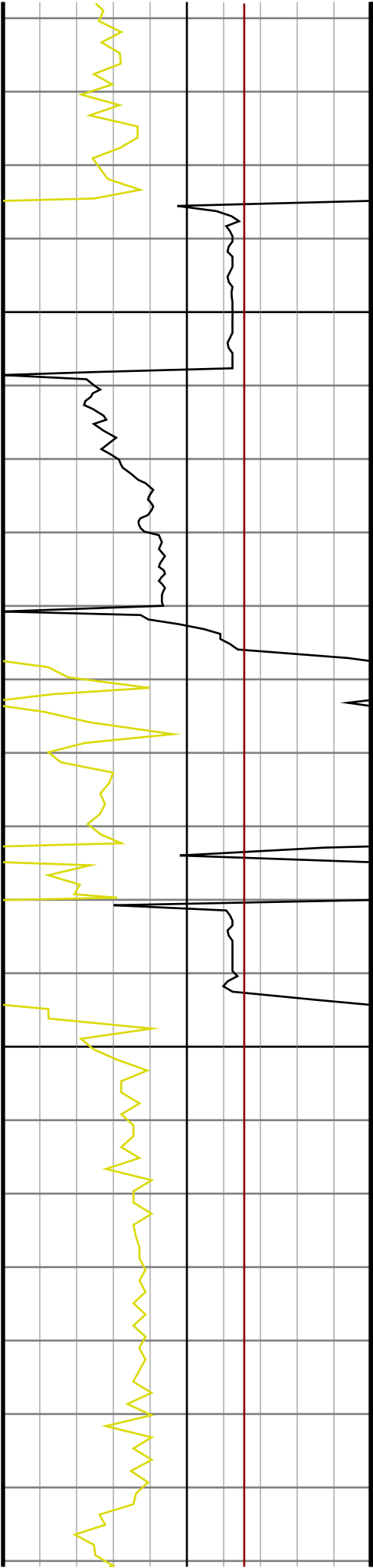
2600

#21 MD(2628.00) Inc(11.1) Azm(0.7) TVD(2621.36)
VS(23.54) NS(89.96) EW(-0.05) TEMP(0.0)



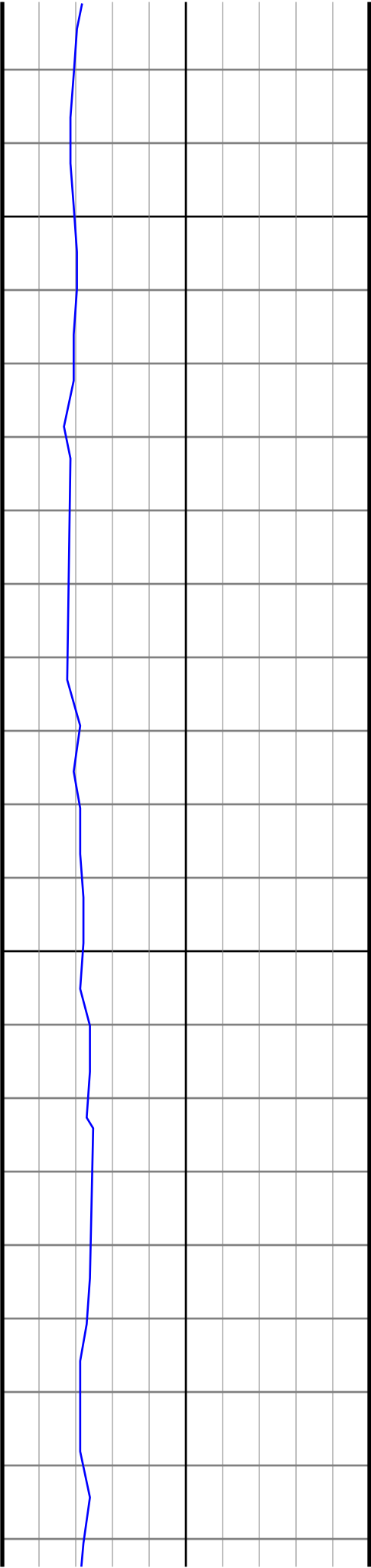
2700

2800



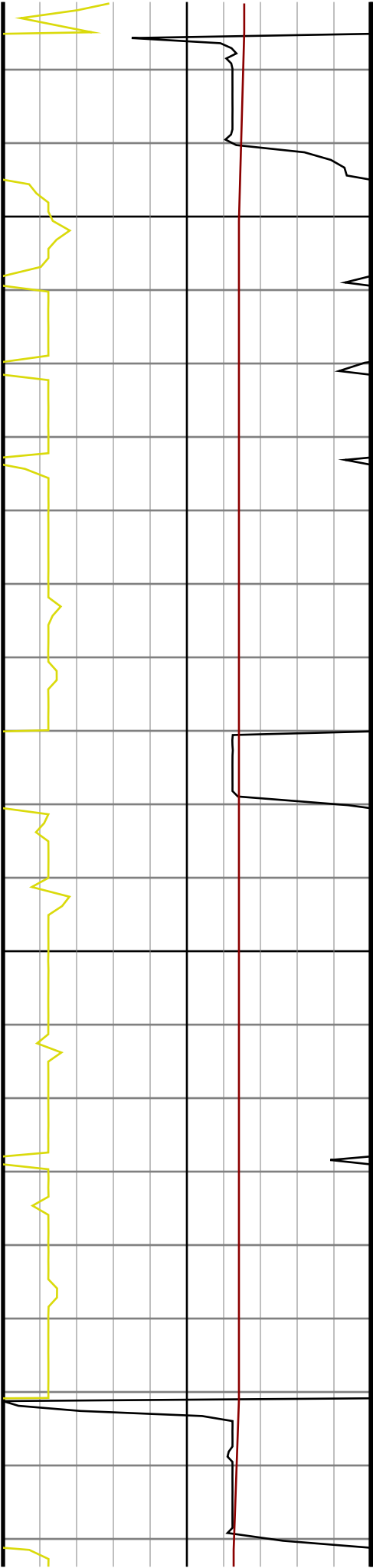
#22 MD(2723.00) Inc(13.1) Azm(6.6) TVD(2714.25)
VS(27.42) NS(109.80) EW(1.30) TEMP(0.0)

#23 MD(2817.00) Inc(13.6) Azm(6.0) TVD(2805.71)
VS(30.76) NS(131.37) EW(3.68) TEMP(0.0)



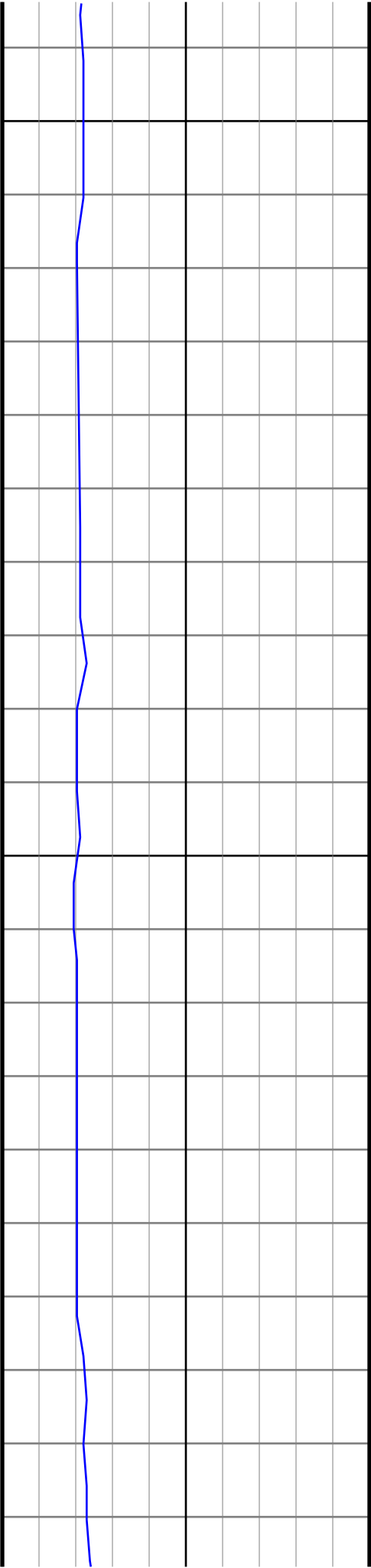
2900

3000



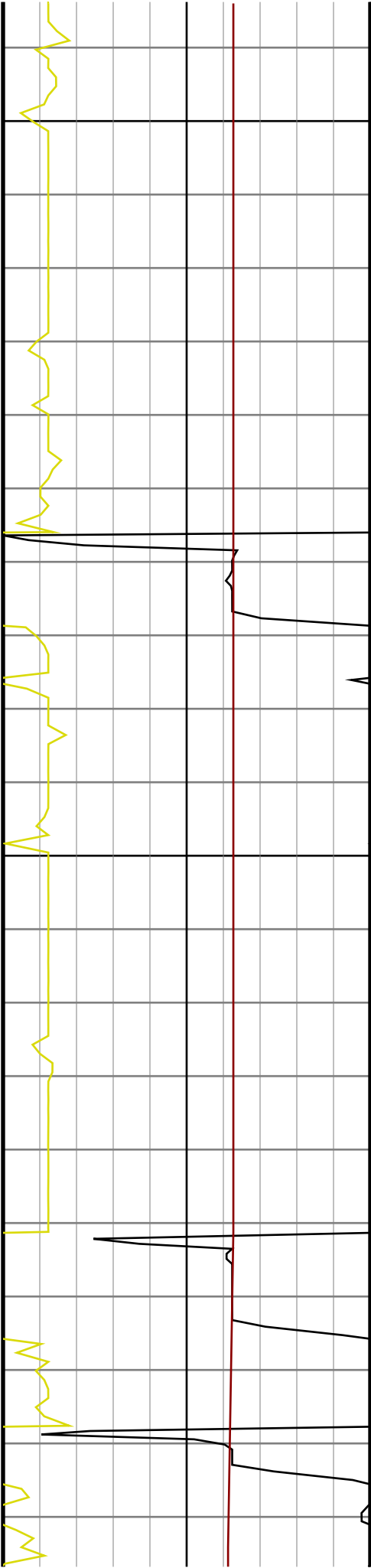
#24 MD(2912.00) Inc(13.6) Azm(5.4) TVD(2898.04)
VS(34.42) NS(153.60) EW(5.90) TEMP(0.0)

#25 MD(3006.00) Inc(13.7) Azm(5.2) TVD(2989.39)
VS(38.22) NS(175.69) EW(7.95) TEMP(0.0)



3100

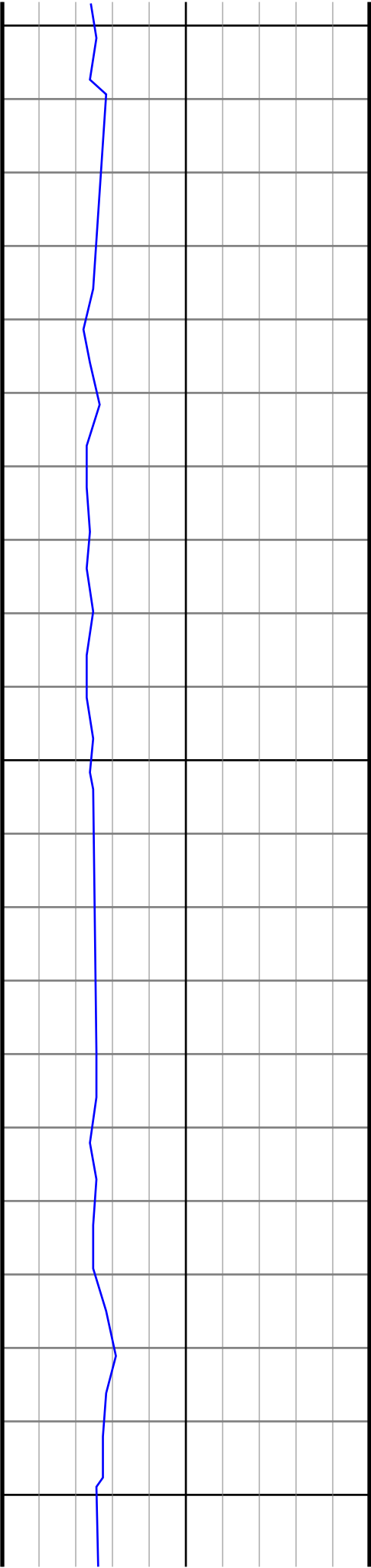
3200



#26 MD(3101.00) Inc(13.5) Azm(7.8) TVD(3081.72)
VS(41.57) NS(197.88) EW(10.47) TEMP(0.0)

#27 MD(3196.00) Inc(13.4) Azm(6.5) TVD(3174.12)
VS(44.64) NS(219.80) EW(13.22) TEMP(0.0)

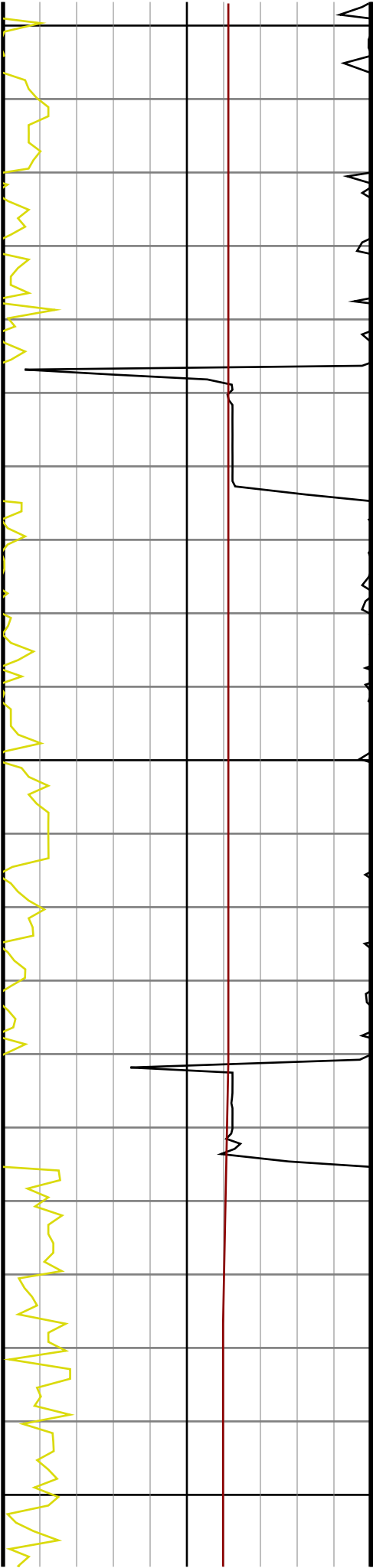
#28 MD(3291.00) Inc(13.1) Azm(7.0) TVD(3266.59)
VS(47.82) NS(241.43) EW(15.78) TEMP(0.0)



3300

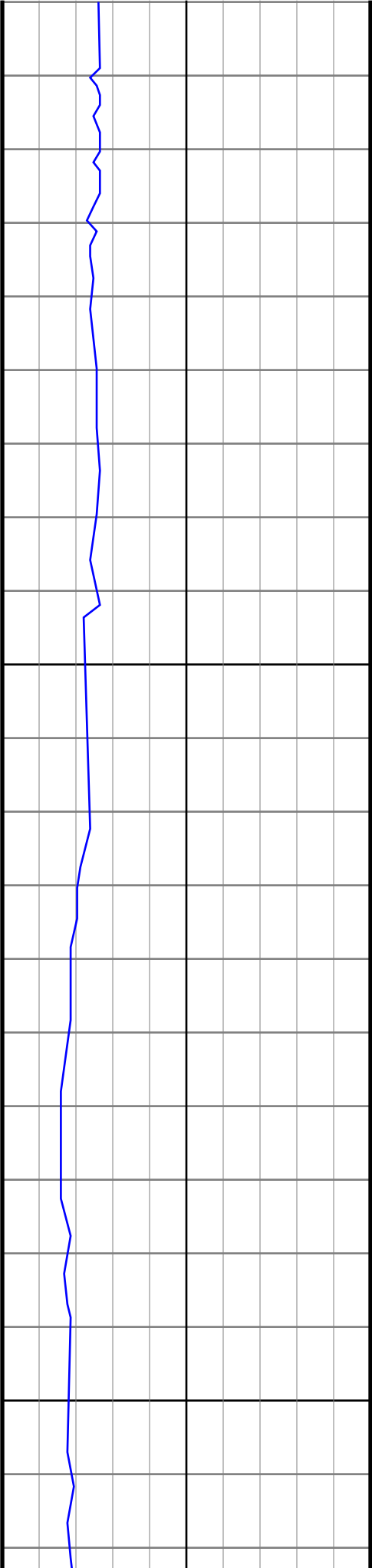
3400

3500



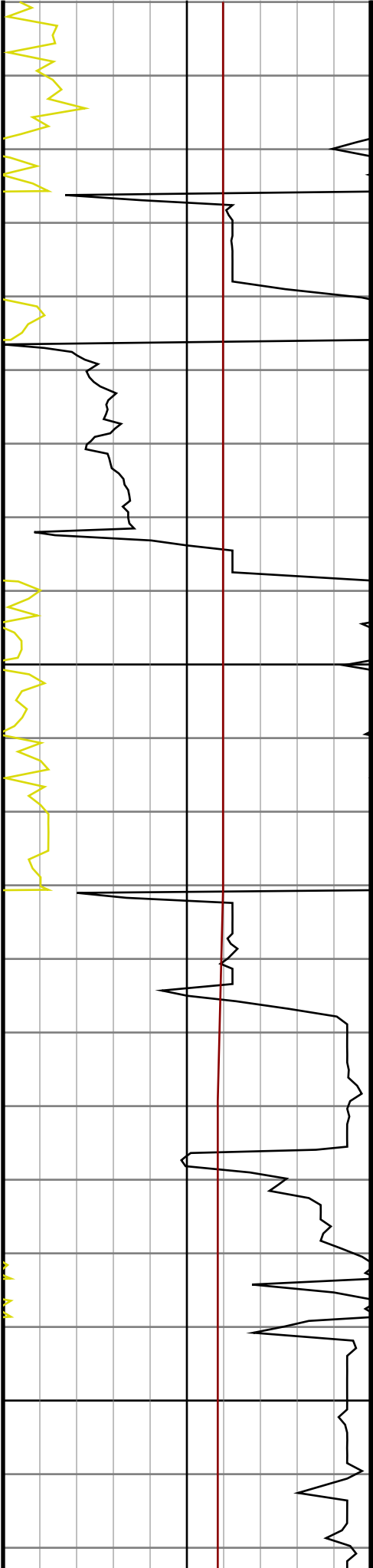
#29 MD(3386.00) Inc(11.7) Azm(6.5) TVD(3359.37)
VS(50.79) NS(261.68) EW(18.18) TEMP(0.0)

#30 MD(3481.00) Inc(10.7) Azm(5.2) TVD(3452.56)
VS(53.76) NS(280.04) EW(20.07) TEMP(0.0)



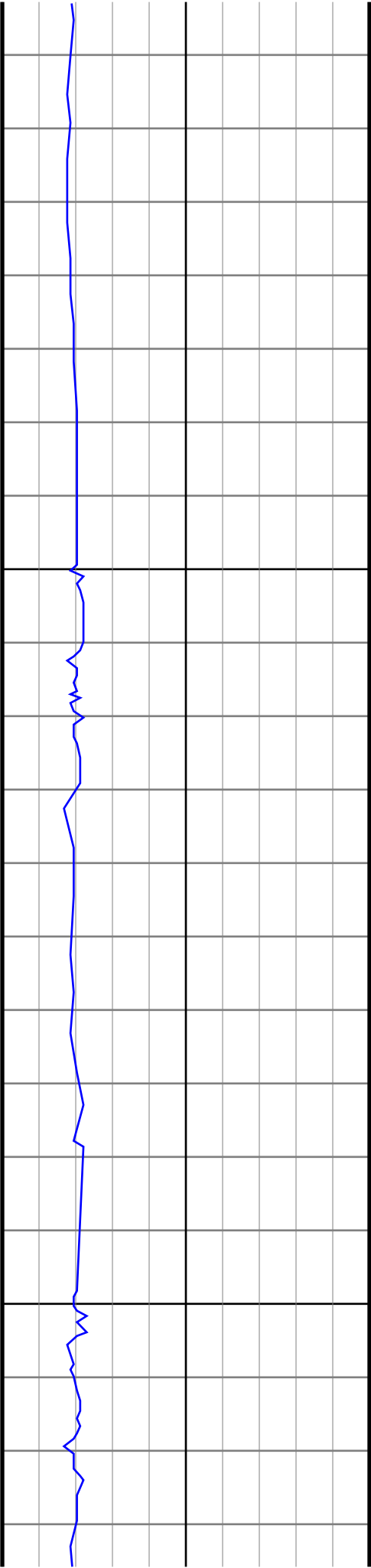
3600

3700



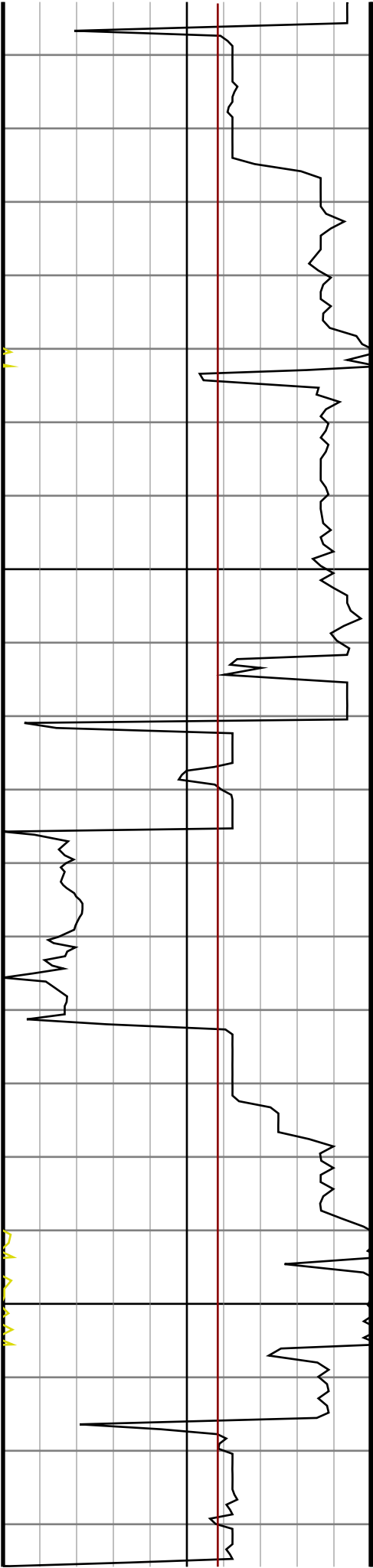
#31 MD(3575.00) Inc(12.0) Azm(0.6) TVD(3544.72)
VS(57.72) NS(298.50) EW(20.97) TEMP(0.0)

#32 MD(3670.00) Inc(12.8) Azm(359.3) TVD(3637.51)
VS(63.08) NS(318.90) EW(20.94) TEMP(0.0)



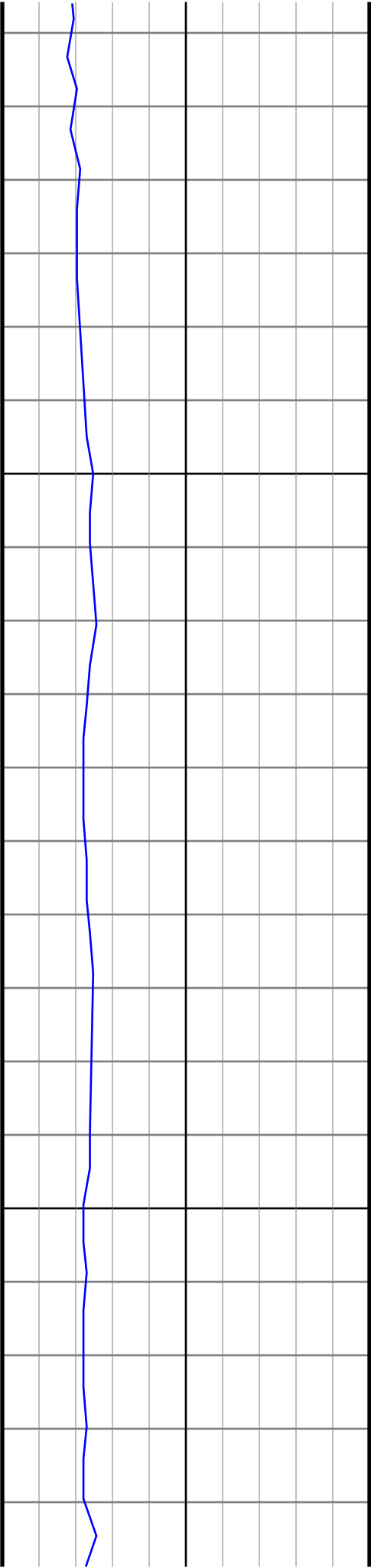
3800

3900



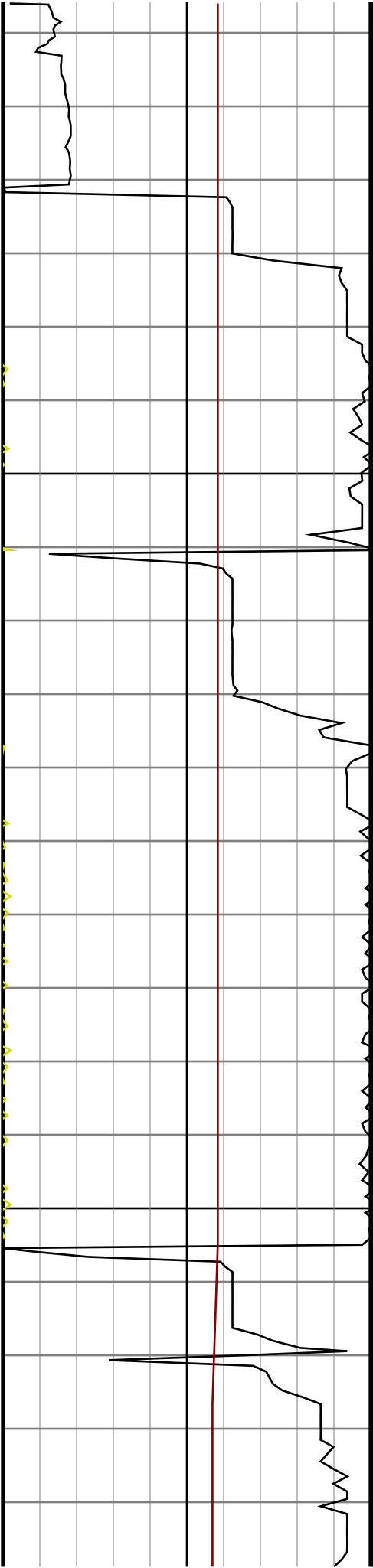
#33 MD(3765.00) Inc(13.8) Azm(358.7) TVD(3729.96)
VS(69.15) NS(340.75) EW(20.56) TEMP(0.0)

#34 MD(3860.00) Inc(14.1) Azm(5.4) TVD(3822.16)
VS(74.32) NS(363.60) EW(21.39) TEMP(0.0)



4000

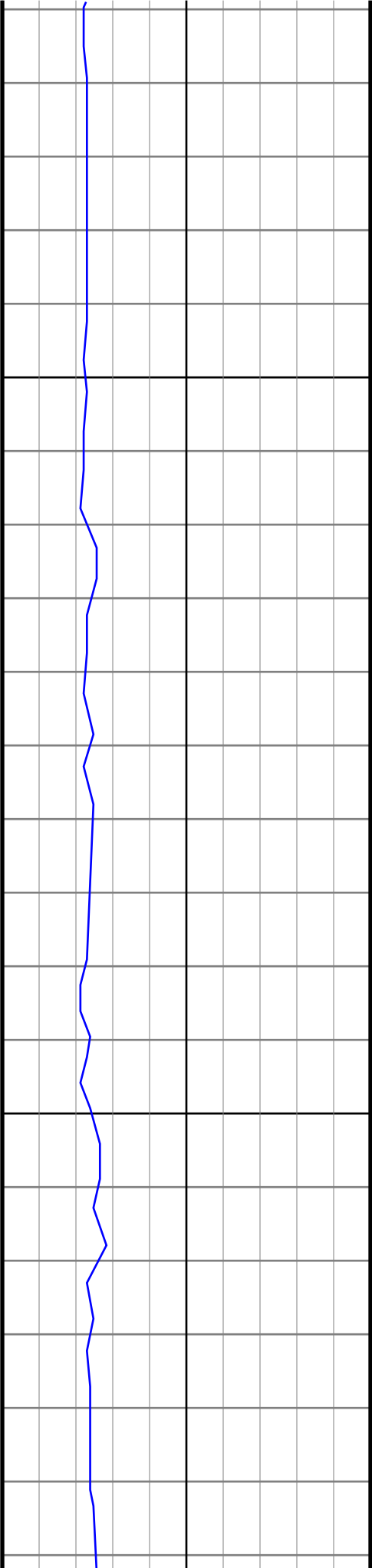
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#35 MD(3955.00) Inc(13.0) Azm(10.1) TVD(3914.52)
VS(77.22) NS(385.64) EW(24.35) TEMP(0.0)

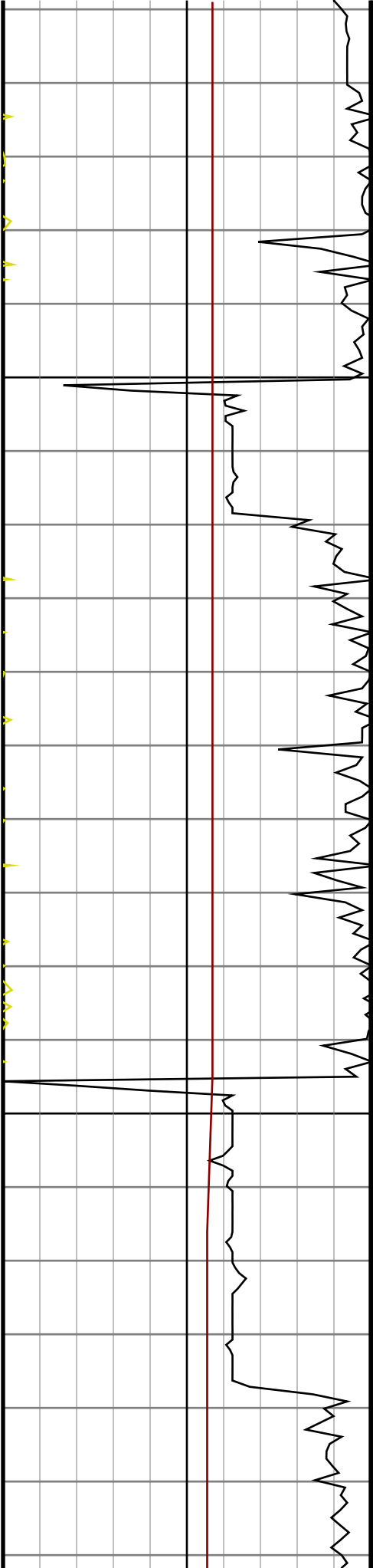
#36 MD(4049.00) Inc(12.0) Azm(9.2) TVD(4006.29)
VS(79.16) NS(405.70) EW(27.77) TEMP(0.0)

#37 MD(4144.00) Inc(11.5) Azm(10.6) TVD(4099.30)
VS(80.93) NS(424.75) EW(31.09) TEMP(0.0)



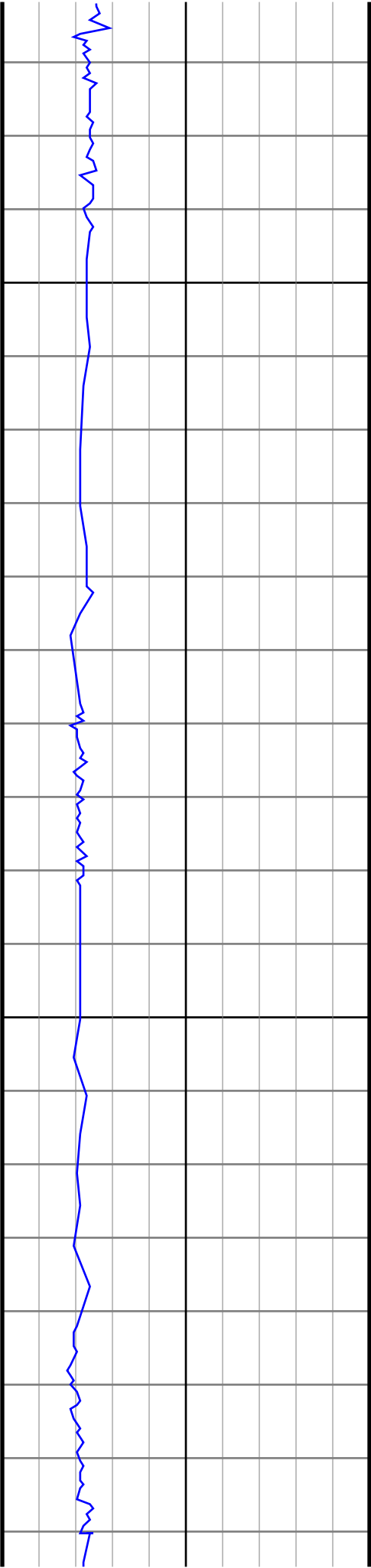
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4300



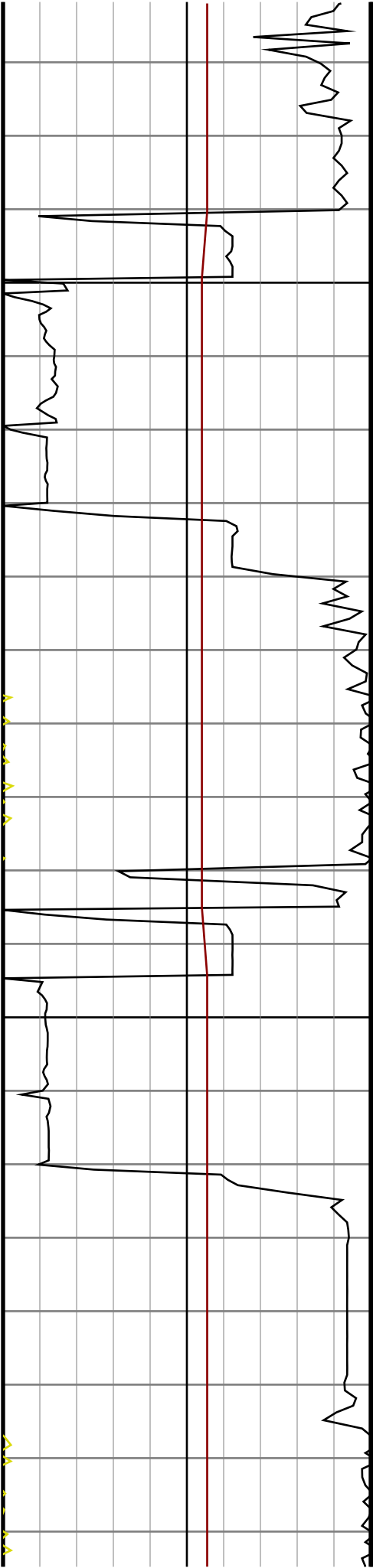
#38 MD(4239.00) Inc(10.8) Azm(11.9) TVD(4192.50)
VS(82.18) NS(442.77) EW(34.67) TEMP(0.0)

#39 MD(4333.00) Inc(9.7) Azm(10.1) TVD(4285.00)
VS(83.37) NS(459.19) EW(37.87) TEMP(0.0)



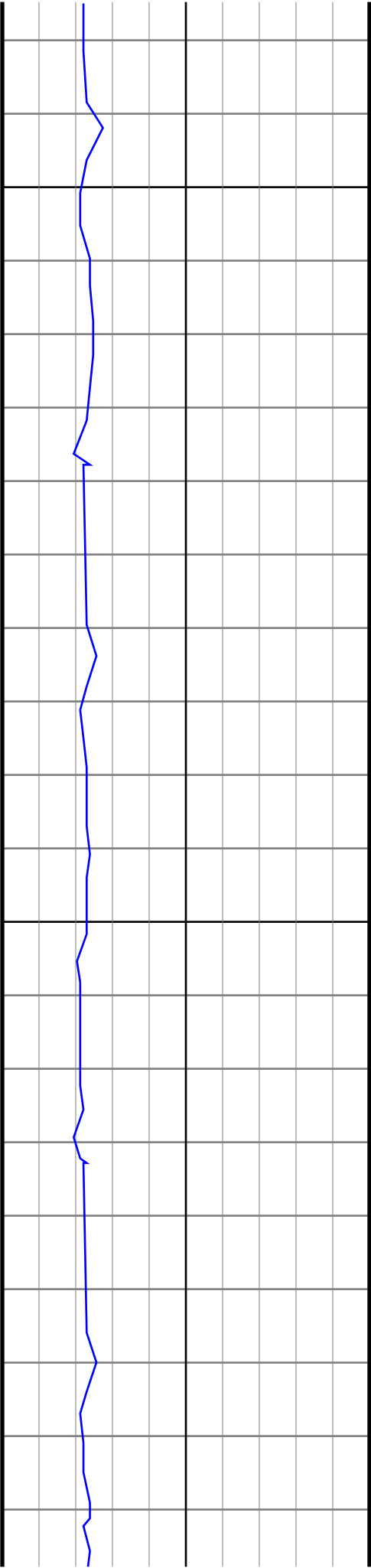
4400

4500



#40 MD(4428.00) Inc(9.5) Azm(358.0) TVD(4378.68)
VS(86.39) NS(474.90) EW(39.00) TEMP(0.0)

#41 MD(4523.00) Inc(11.6) Azm(357.6) TVD(4472.07)
VS(91.58) NS(492.28) EW(38.33) TEMP(0.0)



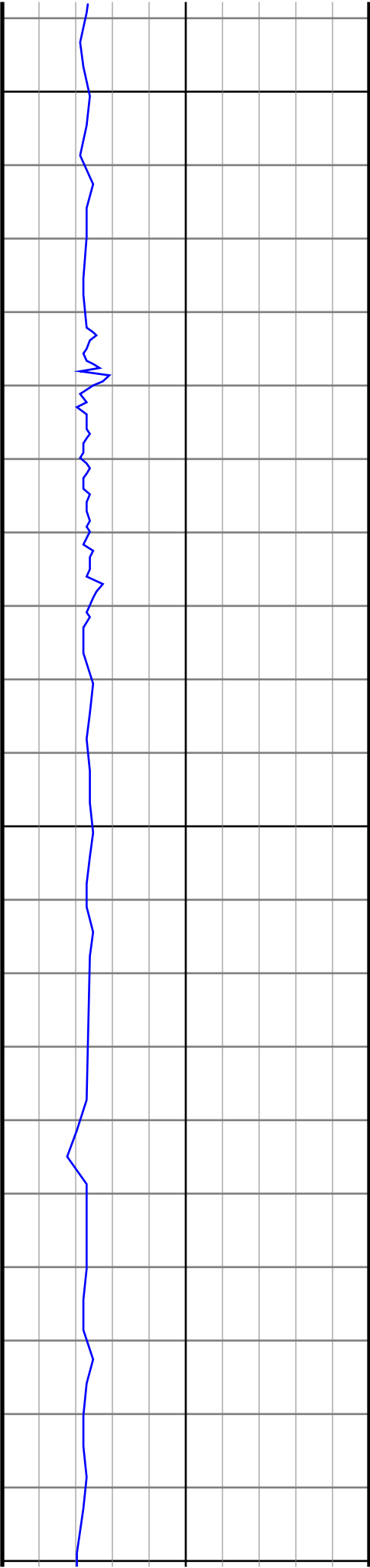
4600

4700



#42 MD(4618.00) Inc(12.2) Azm(1.9) TVD(4565.03)
VS(96.75) NS(511.86) EW(38.26) TEMP(0.0)

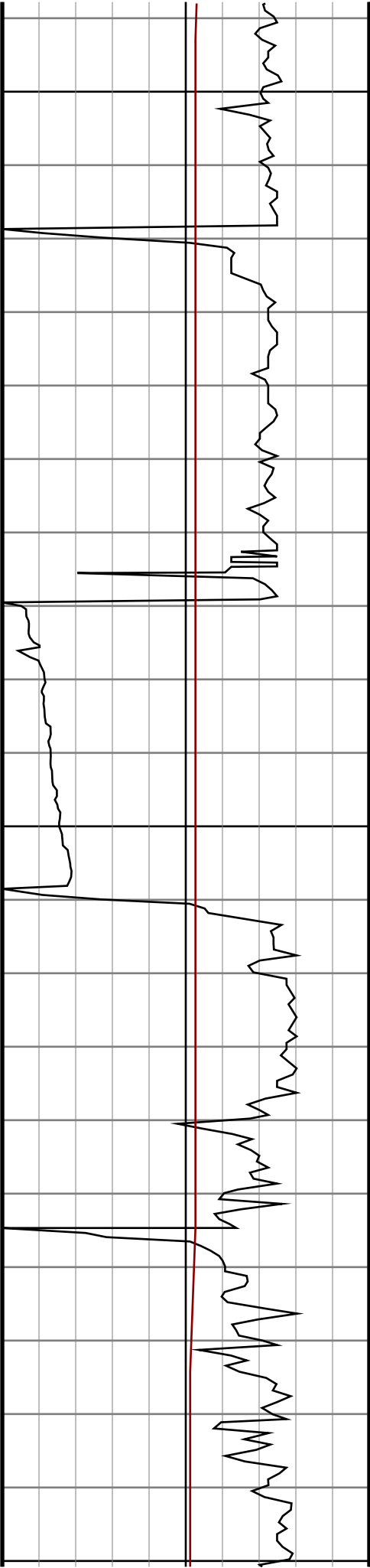
#43 MD(4712.00) Inc(11.7) Azm(2.3) TVD(4656.99)
VS(101.15) NS(531.31) EW(38.97) TEMP(0.0)



4800

4900

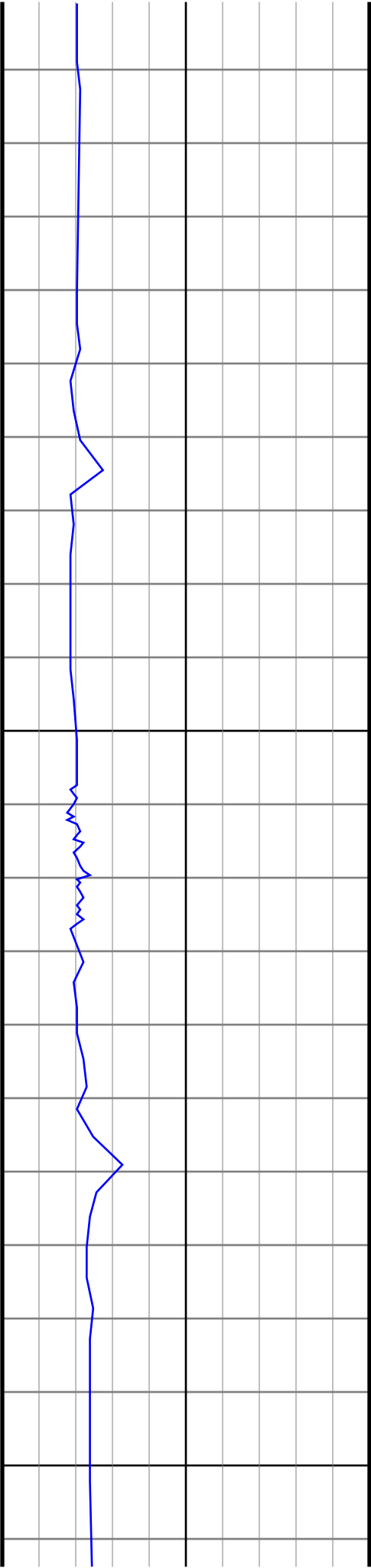
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#44 MD(4807.00) Inc(11.2) Azm(2.6) TVD(4750.10)
VS(105.29) NS(550.15) EW(39.78) TEMP(0.0)

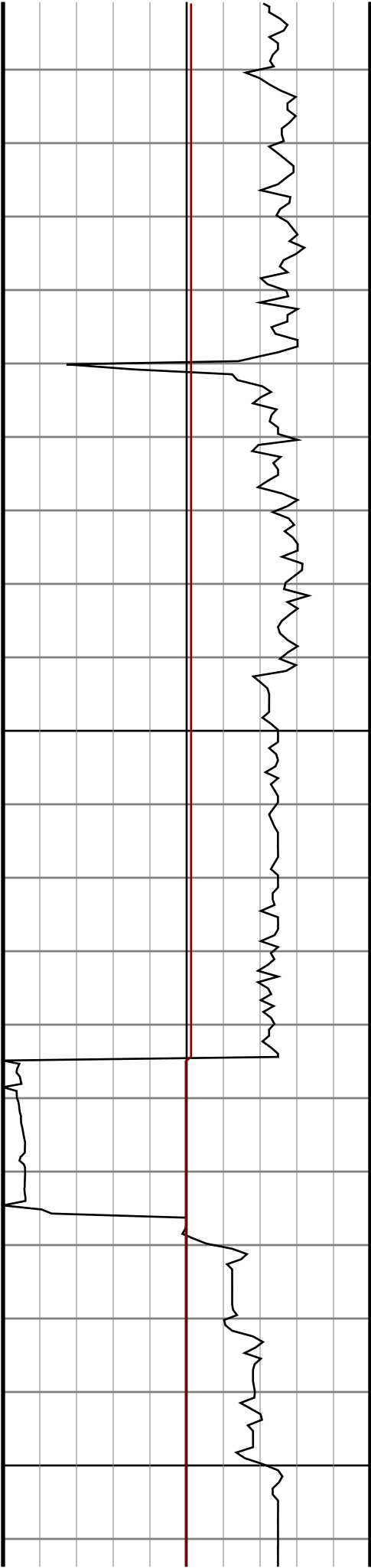
#45 MD(4902.00) Inc(11.4) Azm(13.3) TVD(4843.27)
VS(107.60) NS(568.50) EW(42.36) TEMP(0.0)

#46 MD(4996.00) Inc(11.4) Azm(17.3) TVD(4935.42)
VS(107.54) NS(586.42) EW(47.26) TEMP(0.0)



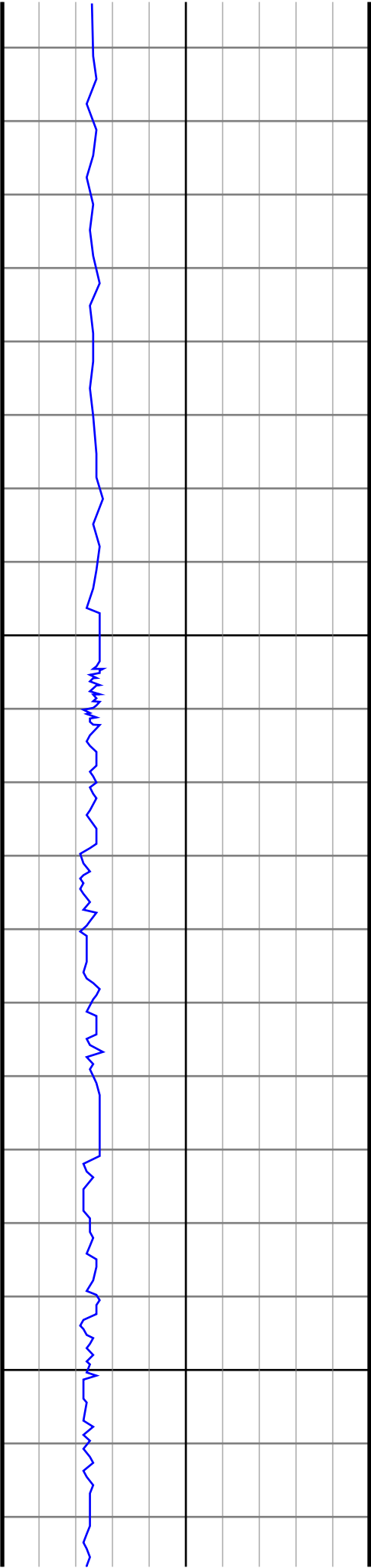
5100

5200



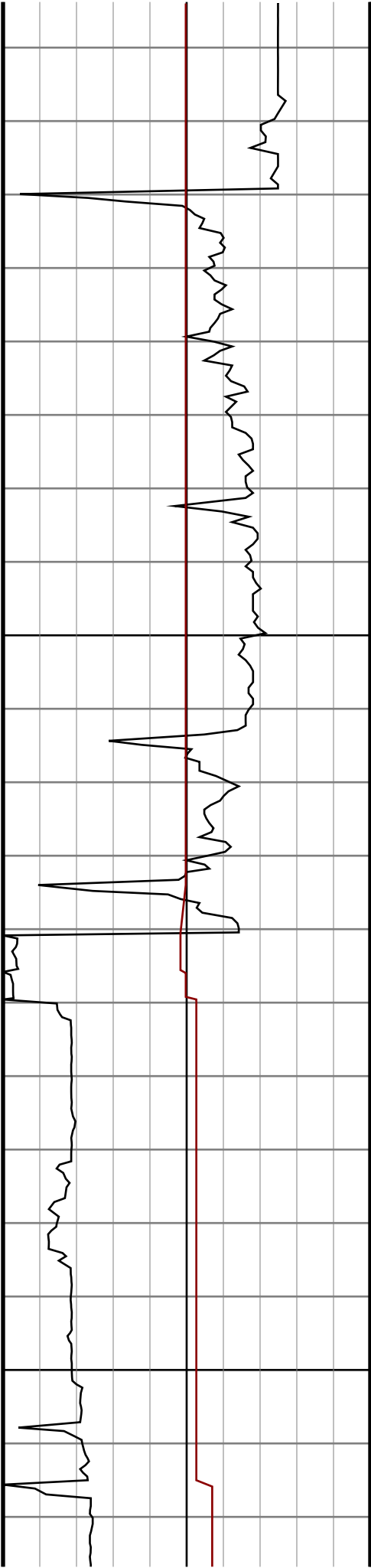
#47 MD(5091.00) Inc(11.7) Azm(17.2) TVD(5028.49)
VS(106.84) NS(604.58) EW(52.90) TEMP(0.0)

#48 MD(5186.00) Inc(11.7) Azm(9.3) TVD(5121.53)
VS(107.48) NS(623.29) EW(57.30) TEMP(0.0)



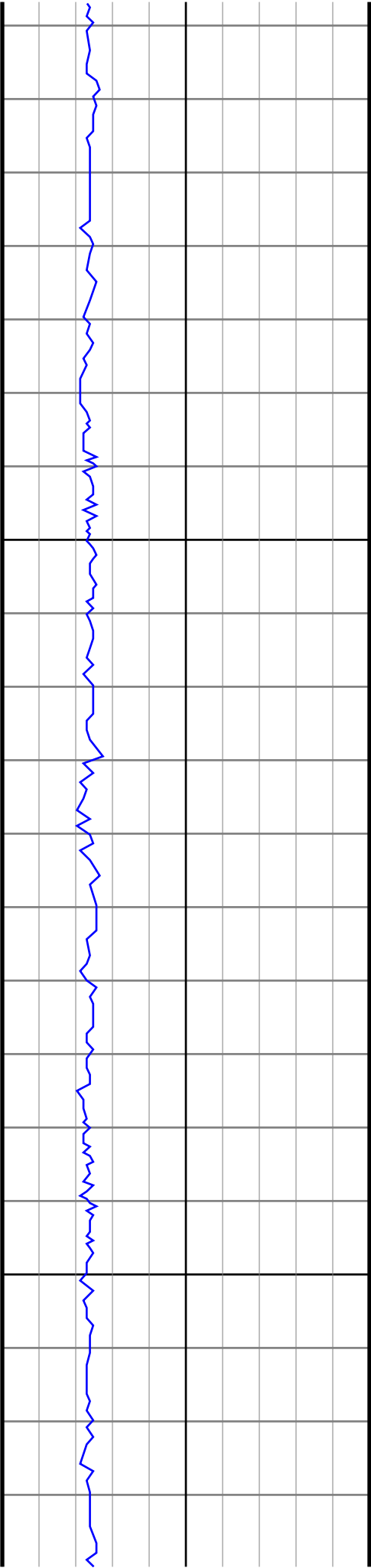
5300

5400



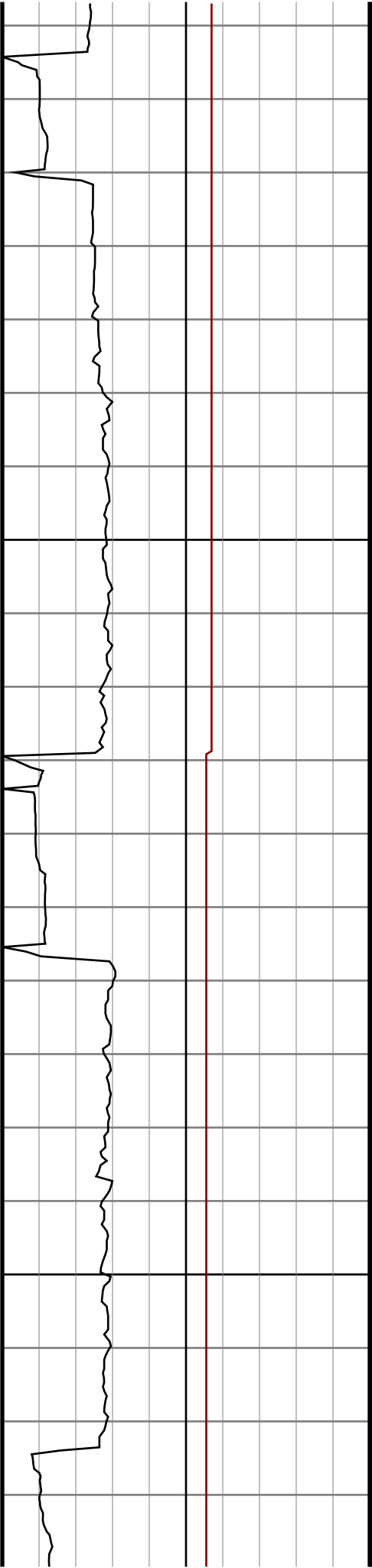
#49 MD(5281.00) Inc(10.5) Azm(9.9) TVD(5214.75)
VS(109.25) NS(641.32) EW(60.35) TEMP(0.0)

#50 MD(5373.00) Inc(9.8) Azm(8.0) TVD(5305.31)
VS(110.99) NS(657.33) EW(62.88) TEMP(0.0)



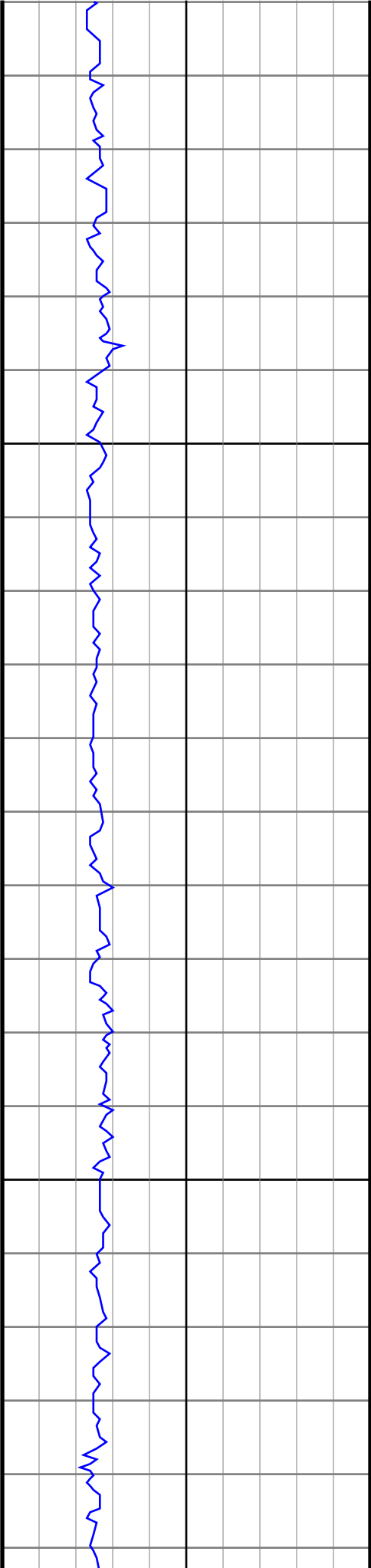
5500

5600



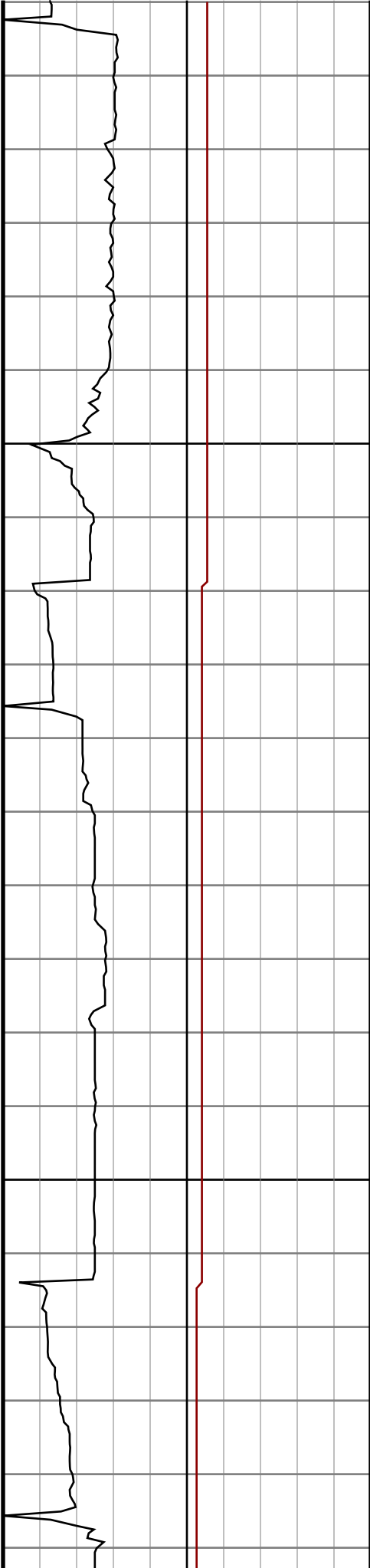
#51 MD(5468.00) Inc(10.7) Azm(1.5) TVD(5398.79)
VS(114.07) NS(674.16) EW(64.23) TEMP(0.0)

#52 MD(5563.00) Inc(11.3) Azm(353.9) TVD(5492.05)
VS(119.52) NS(692.23) EW(63.47) TEMP(0.0)



5700

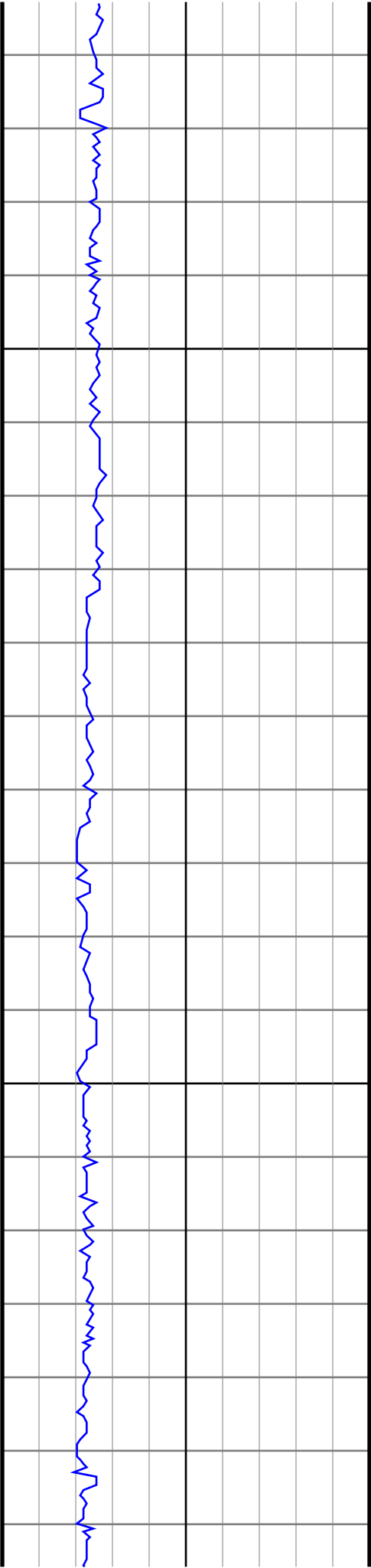
5800



#53 MD(5657.00) Inc(11.2) Azm(351.8) TVD(5584.25)
VS(126.48) NS(710.42) EW(61.19) TEMP(0.0)

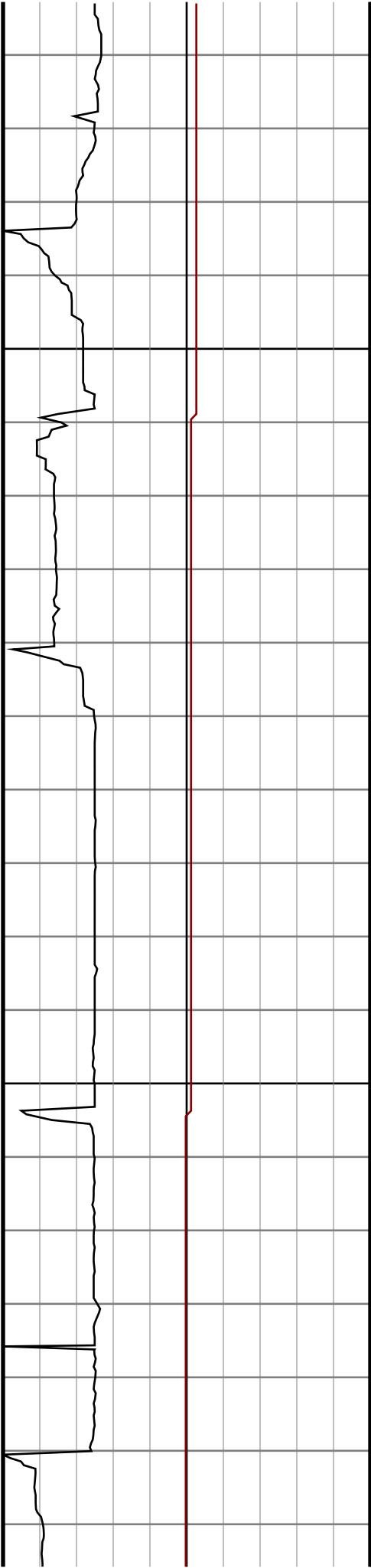
#54 MD(5752.00) Inc(10.9) Azm(355.6) TVD(5677.49)
VS(133.14) NS(728.51) EW(59.19) TEMP(0.0)

#55 MD(5847.00) Inc(11.1) Azm(358.4) TVD(5770.74)
VS(138.78) NS(746.61) EW(58.24) TEMP(0.0)



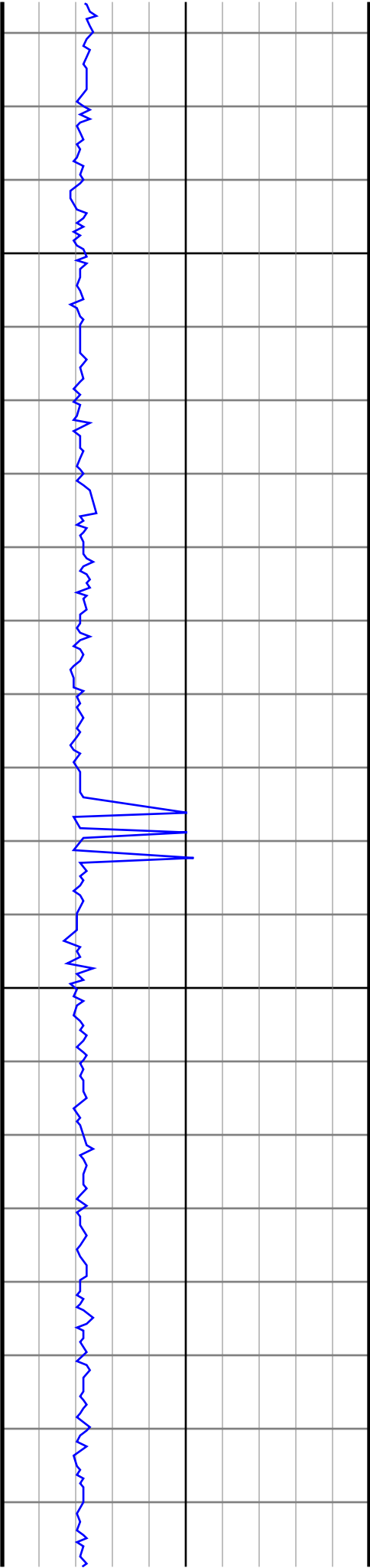
5900

6000



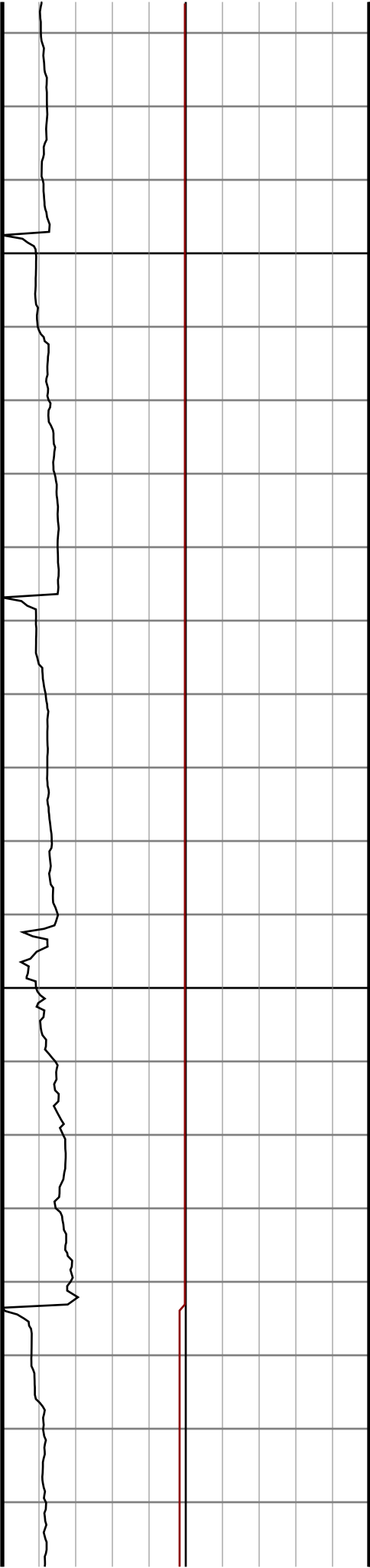
#56 MD(5941.00) Inc(11.1) Azm(6.3) TVD(5862.99)
VS(142.77) NS(764.65) EW(58.98) TEMP(0.0)

#57 MD(6037.00) Inc(9.7) Azm(2.3) TVD(5957.41)
VS(145.99) NS(781.92) EW(60.32) TEMP(0.0)



6100

6200



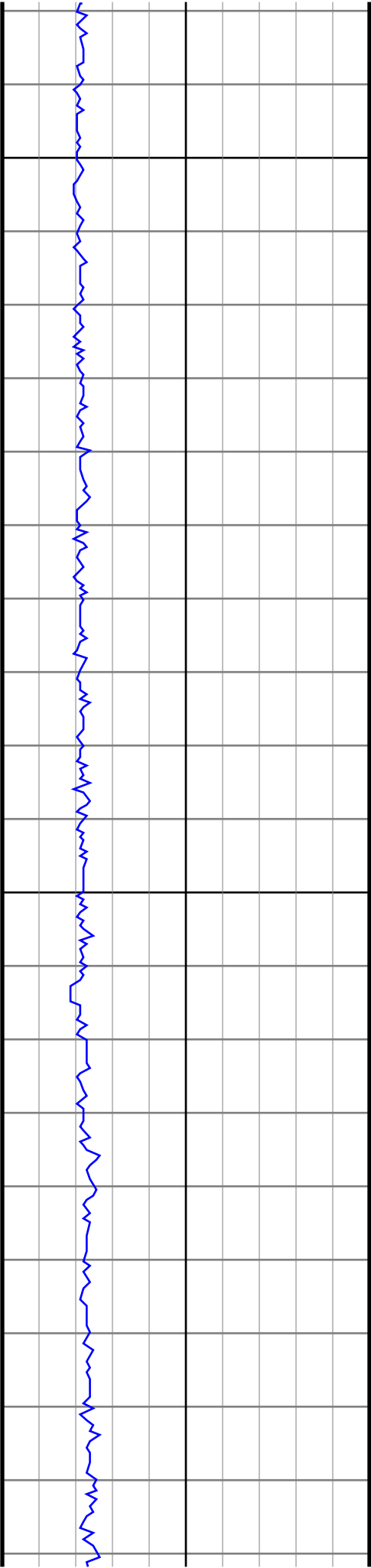
#58 MD(6084.00) Inc(12.8) Azm(352.9) TVD(6003.51)
VS(148.84) NS(791.04) EW(59.84) TEMP(0.0)

#59 MD(6132.00) Inc(16.5) Azm(346.1) TVD(6049.94)
VS(154.16) NS(802.94) EW(57.54) TEMP(0.0)

#60 MD(6179.00) Inc(20.8) Azm(344.5) TVD(6094.46)
VS(161.66) NS(817.47) EW(53.71) TEMP(0.0)

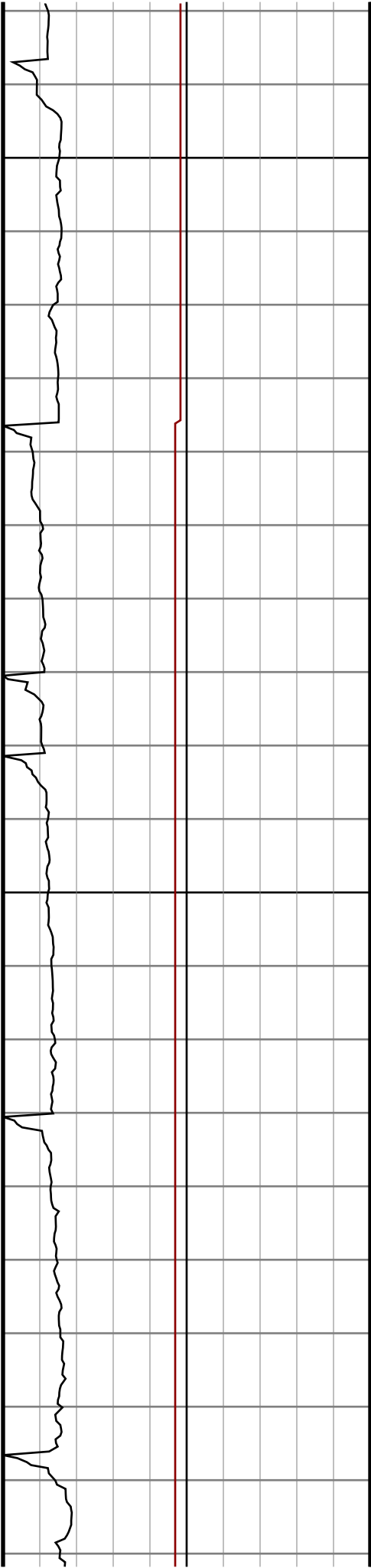
#61 MD(6226.00) Inc(24.4) Azm(344.3) TVD(6137.85)
VS(170.89) NS(834.86) EW(48.85) TEMP(0.0)

#62 MD(6274.00) Inc(29.1) Azm(344.6) TVD(6180.70)
VS(181.91) NS(855.67) EW(43.06) TEMP(0.0)



6300

6400

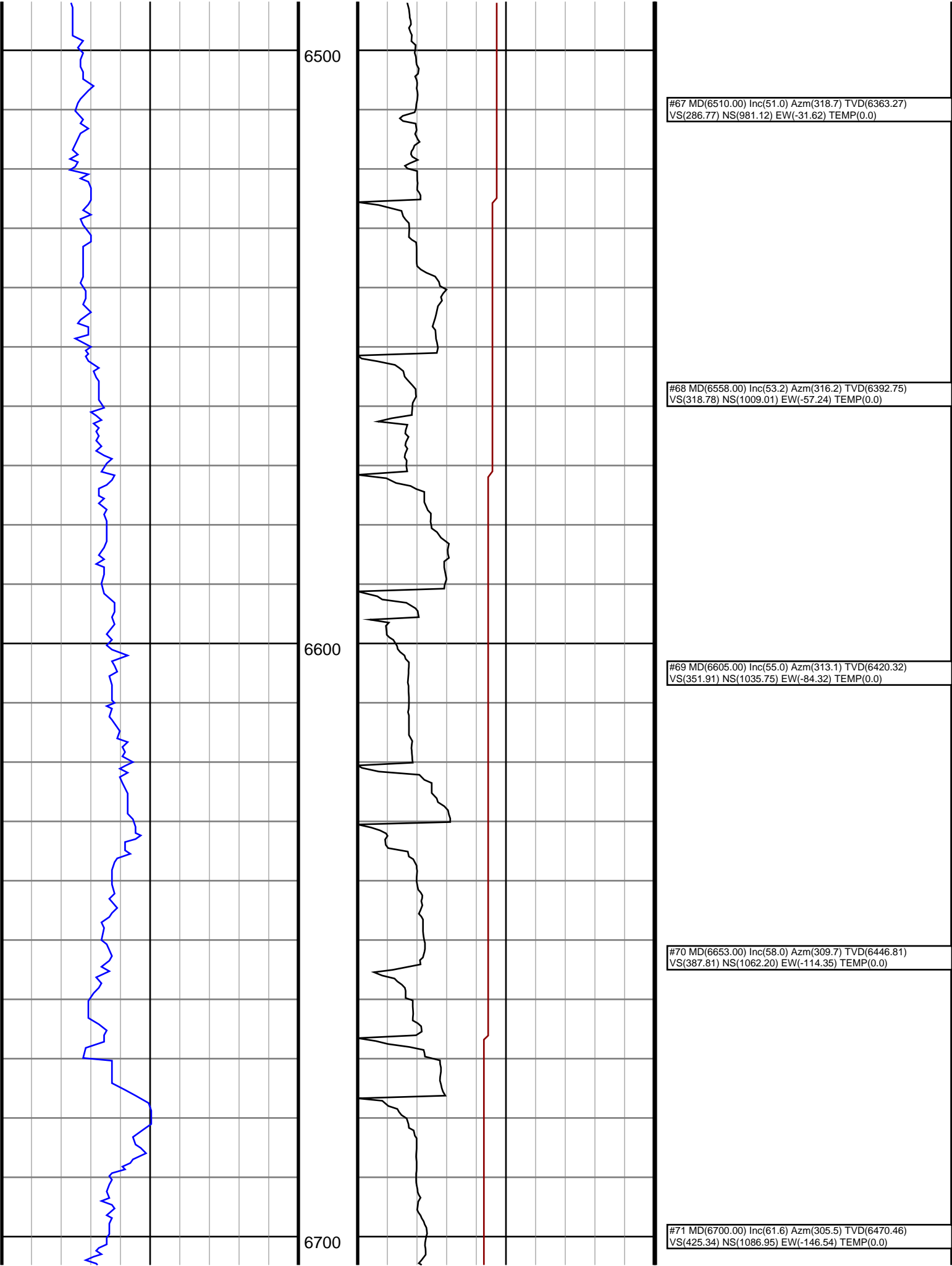


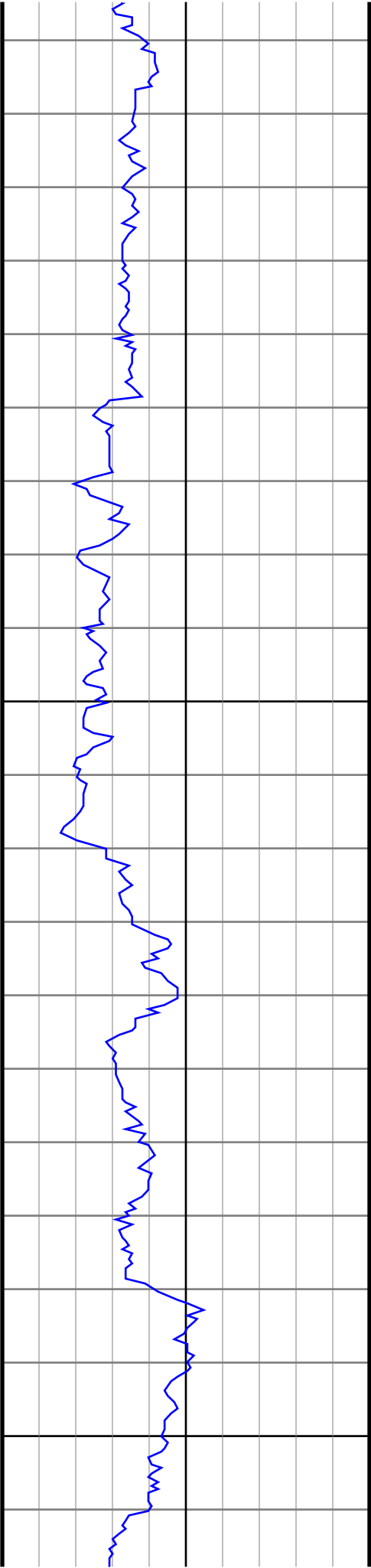
#63 MD(6321.00) Inc(32.4) Azm(338.4) TVD(6221.09)
VS(195.26) NS(878.41) EW(35.39) TEMP(0.0)

#64 MD(6368.00) Inc(36.0) Azm(332.0) TVD(6259.97)
VS(212.25) NS(902.33) EW(24.26) TEMP(0.0)

#65 MD(6416.00) Inc(40.4) Azm(327.4) TVD(6297.69)
VS(233.42) NS(927.90) EW(9.25) TEMP(0.0)

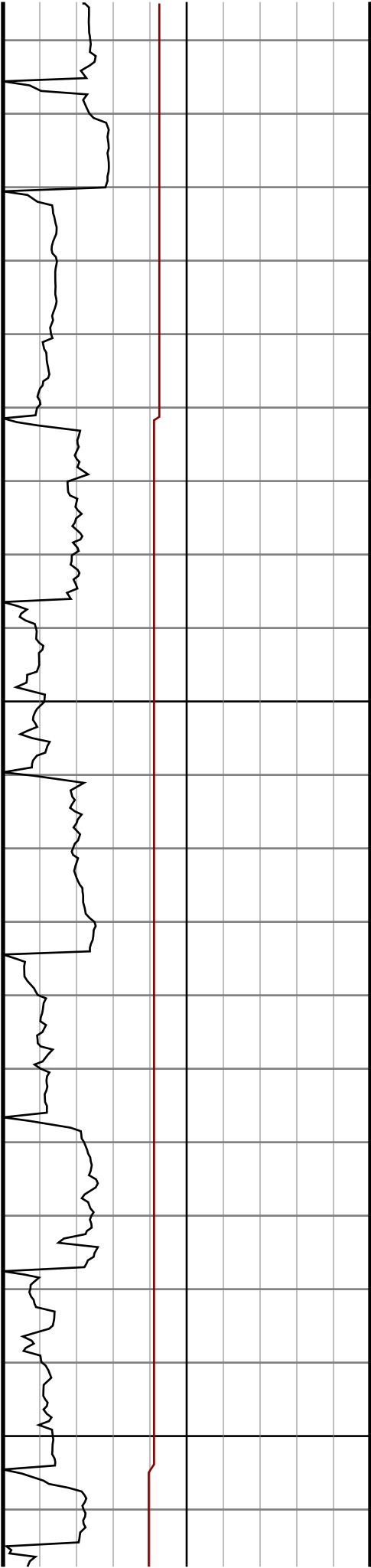
#66 MD(6463.00) Inc(45.7) Azm(322.3) TVD(6332.04)
VS(258.12) NS(954.07) EW(-9.26) TEMP(0.0)





6800

6900

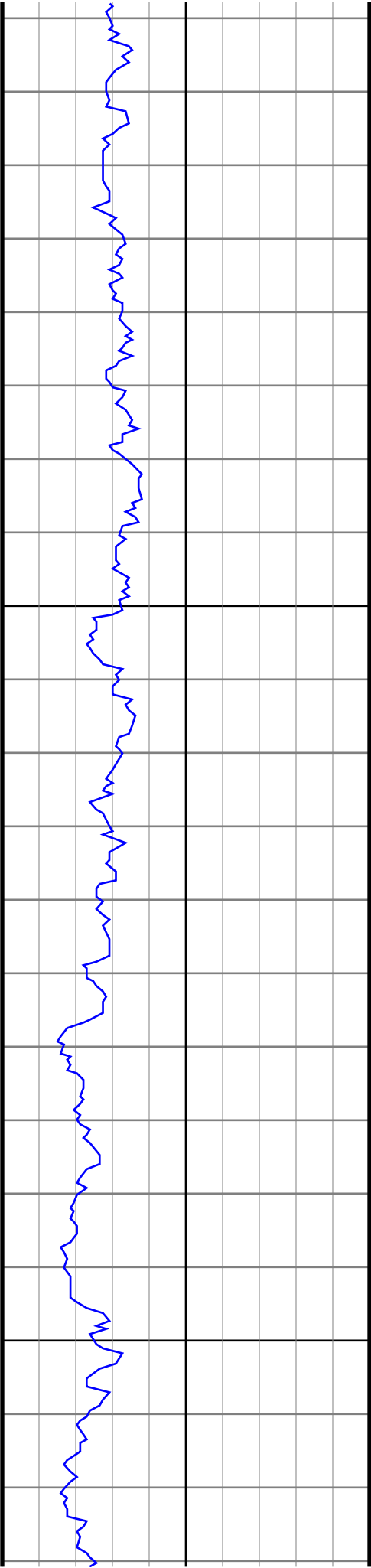


#72 MD(6747.00) Inc(64.0) Azm(301.8) TVD(6491.95)
VS(464.97) NS(1110.09) EW(-181.33) TEMP(0.0)

#73 MD(6795.00) Inc(65.4) Azm(298.9) TVD(6512.46)
VS(506.84) NS(1132.01) EW(-218.78) TEMP(0.0)

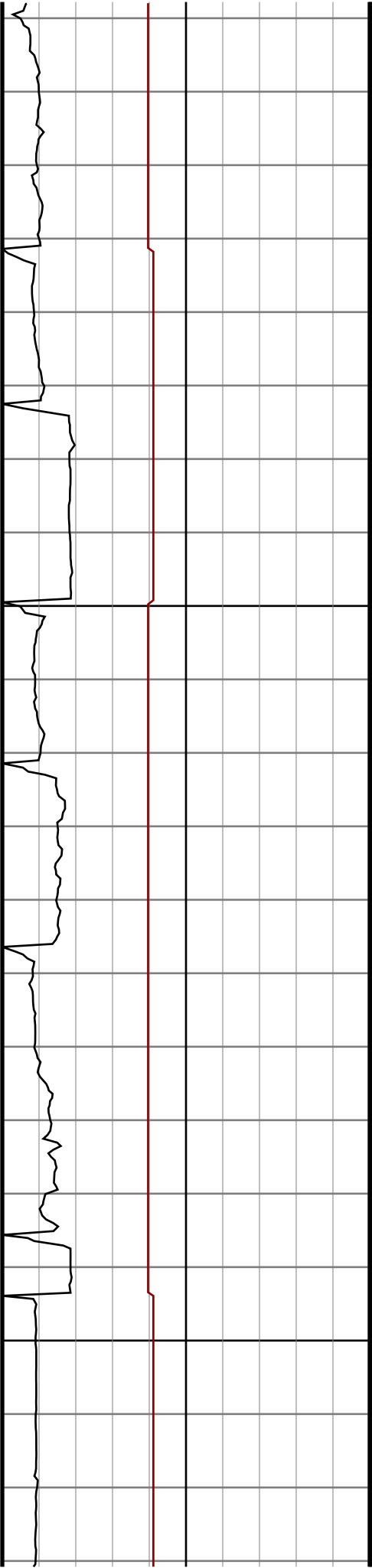
#74 MD(6842.00) Inc(66.7) Azm(295.8) TVD(6531.54)
VS(548.81) NS(1151.73) EW(-256.92) TEMP(0.0)

#75 MD(6889.00) Inc(68.2) Azm(291.7) TVD(6549.57)
VS(591.72) NS(1169.20) EW(-296.65) TEMP(0.0)



7000

7100



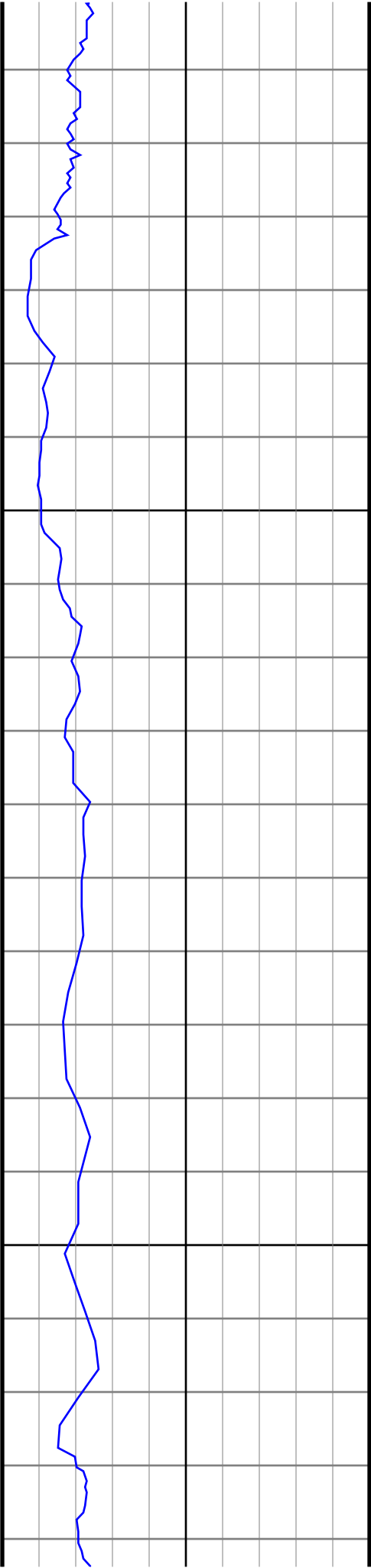
#76 MD(6937.00) Inc(70.8) Azm(286.5) TVD(6566.39)
VS(636.55) NS(1183.89) EW(-339.11) TEMP(0.0)

#77 MD(6984.00) Inc(73.4) Azm(283.0) TVD(6580.84)
VS(681.26) NS(1195.27) EW(-382.36) TEMP(0.0)

#78 MD(7031.00) Inc(76.1) Azm(281.8) TVD(6593.20)
VS(726.55) NS(1205.00) EW(-426.64) TEMP(0.0)

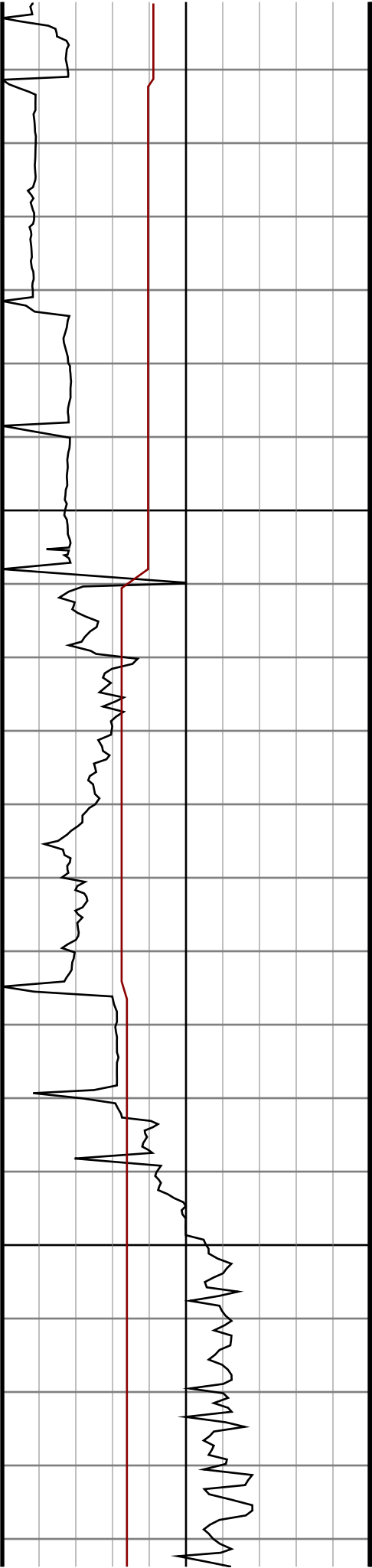
#79 MD(7079.00) Inc(79.8) Azm(278.3) TVD(6603.23)
VS(773.29) NS(1213.18) EW(-472.85) TEMP(0.0)

#80 MD(7126.00) Inc(82.1) Azm(273.8) TVD(6610.62)
VS(819.11) NS(1218.06) EW(-518.99) TEMP(0.0)



7200

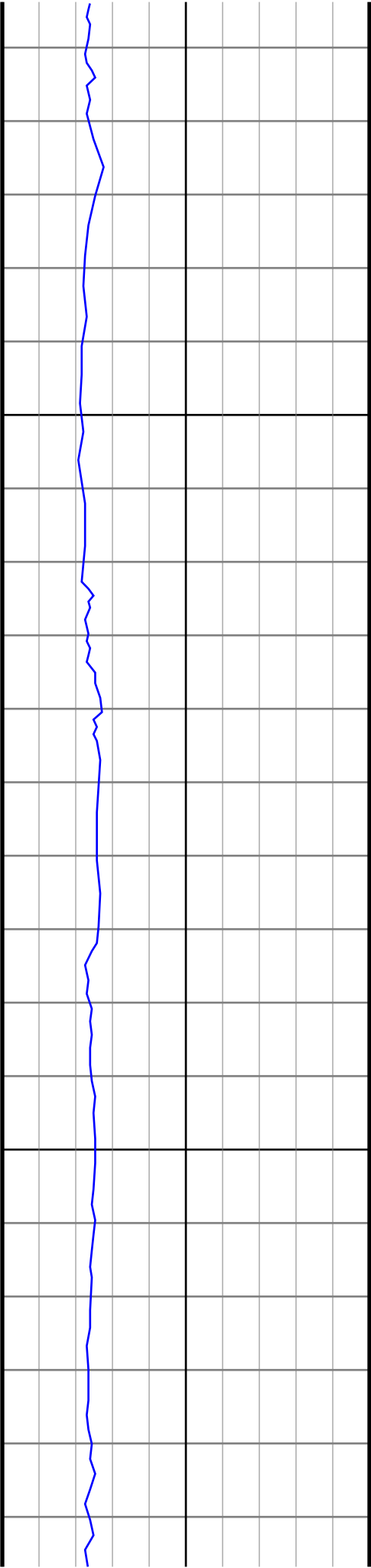
7300



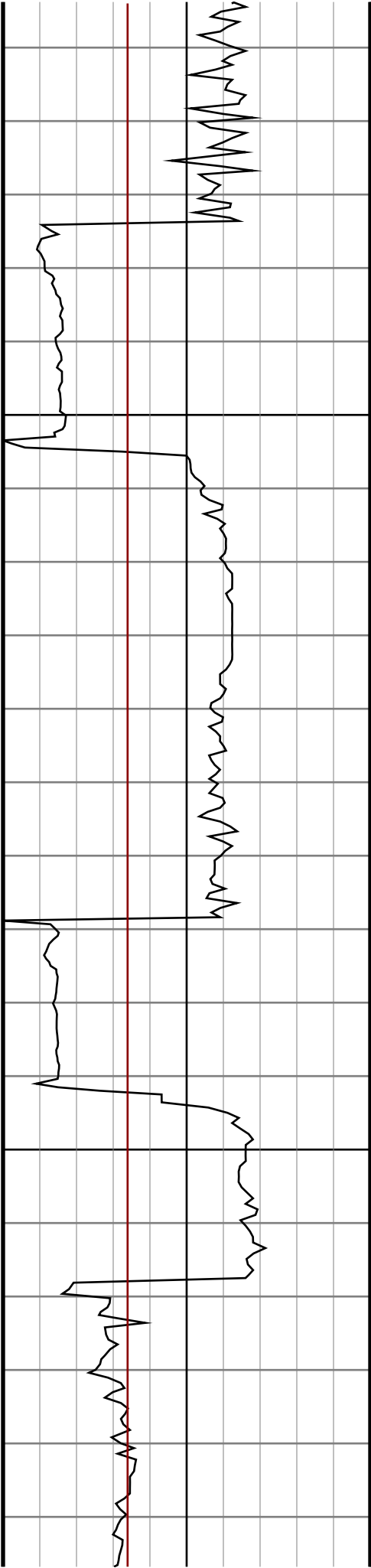
#81 MD(7146.00) Inc(83.3) Azm(272.1) TVD(6613.16)
VS(838.50) NS(1219.08) EW(-538.80) TEMP(0.0)

#82 MD(7217.00) Inc(84.3) Azm(270.6) TVD(6620.83)
VS(907.04) NS(1220.74) EW(-609.36) TEMP(0.0)

#83 MD(7311.00) Inc(84.3) Azm(269.2) TVD(6630.17)
VS(997.29) NS(1220.58) EW(-702.89) TEMP(0.0)



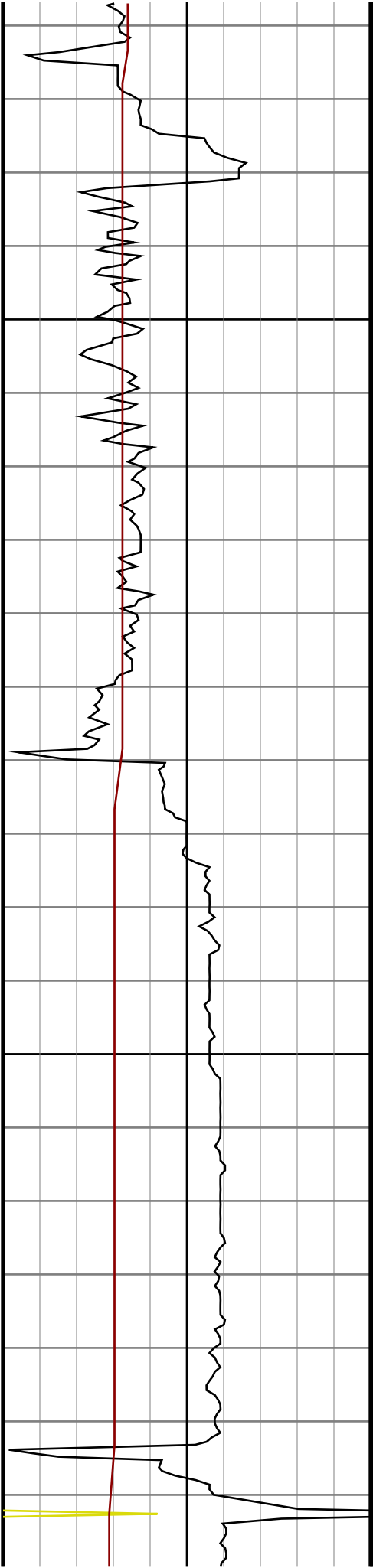
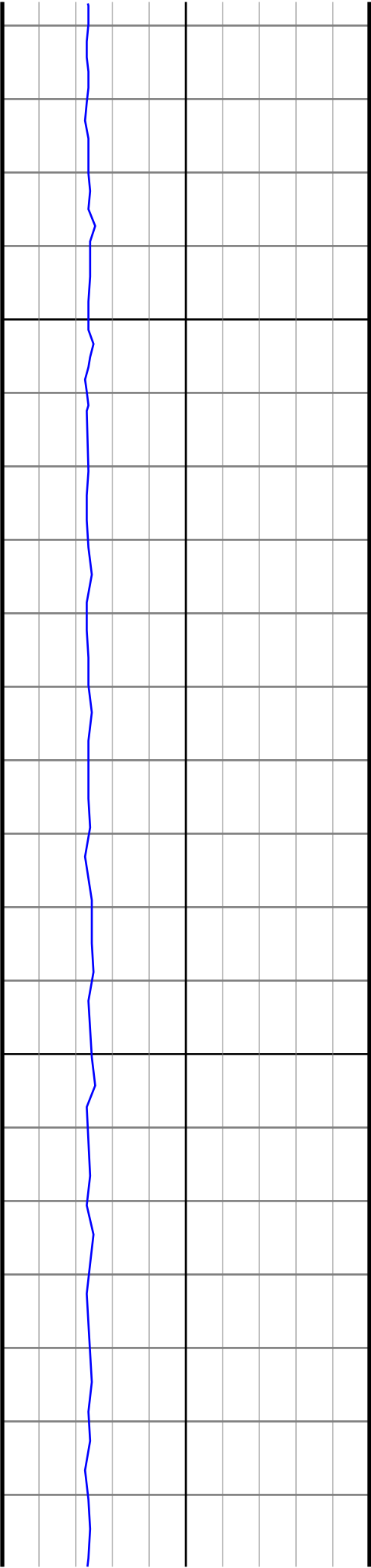
7400



#84 MD(7406.00) Inc(86.5) Azm(269.8) TVD(6637.79)
VS(1088.47) NS(1219.76) EW(-797.58) TEMP(0.0)

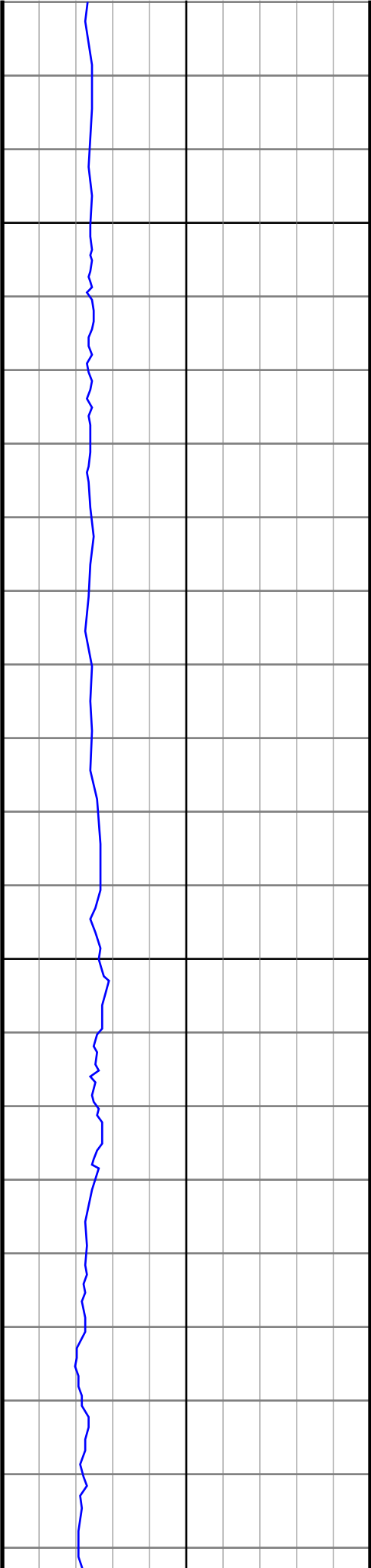
7500

#85 MD(7500.00) Inc(89.1) Azm(270.0) TVD(6641.39)
VS(1179.09) NS(1219.59) EW(-891.50) TEMP(0.0)



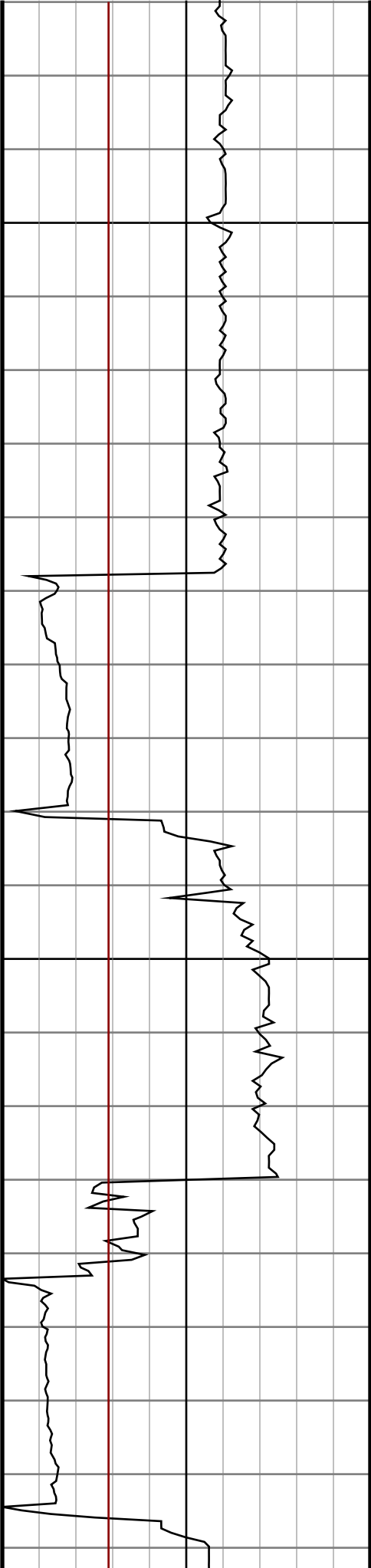
#86 MD(7595.00) Inc(89.0) Azm(270.3) TVD(6642.97)
VS(1270.84) NS(1219.84) EW(-986.49) TEMP(0.0)

#87 MD(7689.00) Inc(88.9) Azm(270.8) TVD(6644.69)
VS(1361.80) NS(1220.74) EW(-1080.47) TEMP(0.0)



7800

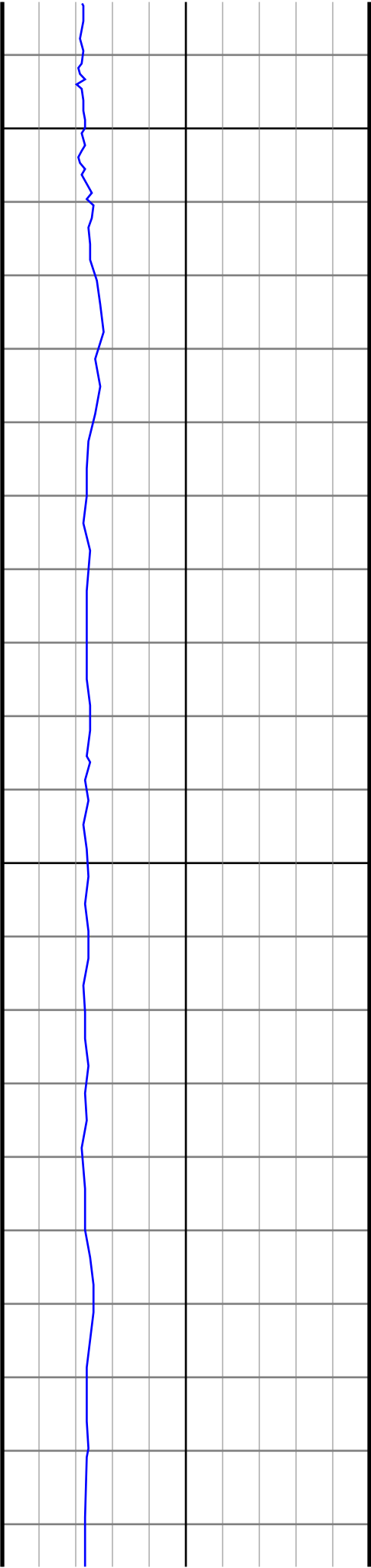
7900



#88 MD(7784.00) Inc(89.0) Azm(273.2) TVD(6646.43)
VS(1454.29) NS(1224.06) EW(-1175.39) TEMP(0.0)

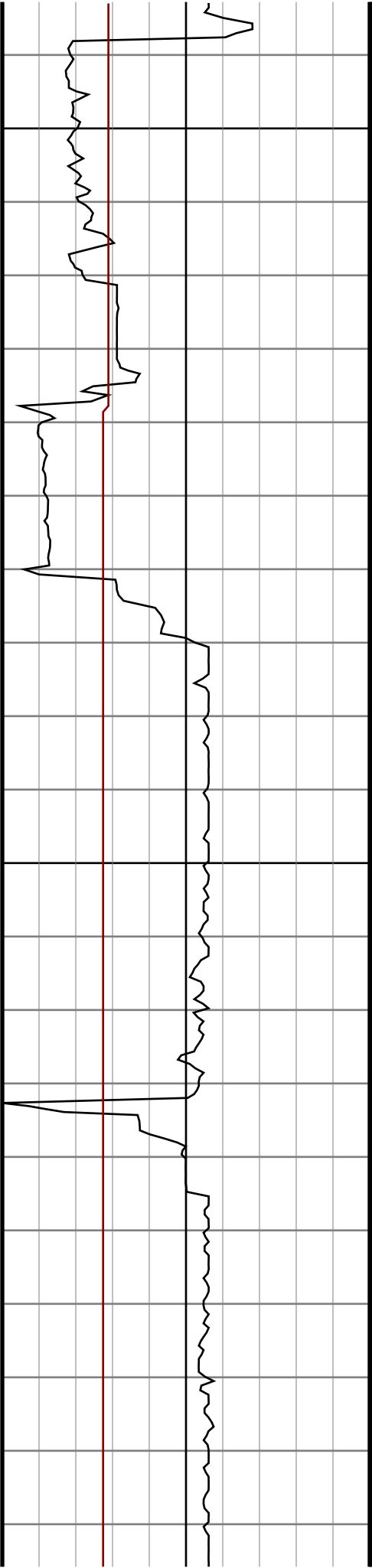
#89 MD(7878.00) Inc(90.5) Azm(272.0) TVD(6646.84)
VS(1546.04) NS(1228.32) EW(-1269.28) TEMP(0.0)

#90 MD(7973.00) Inc(92.2) Azm(268.7) TVD(6644.61)
VS(1637.85) NS(1228.90) EW(-1364.24) TEMP(0.0)



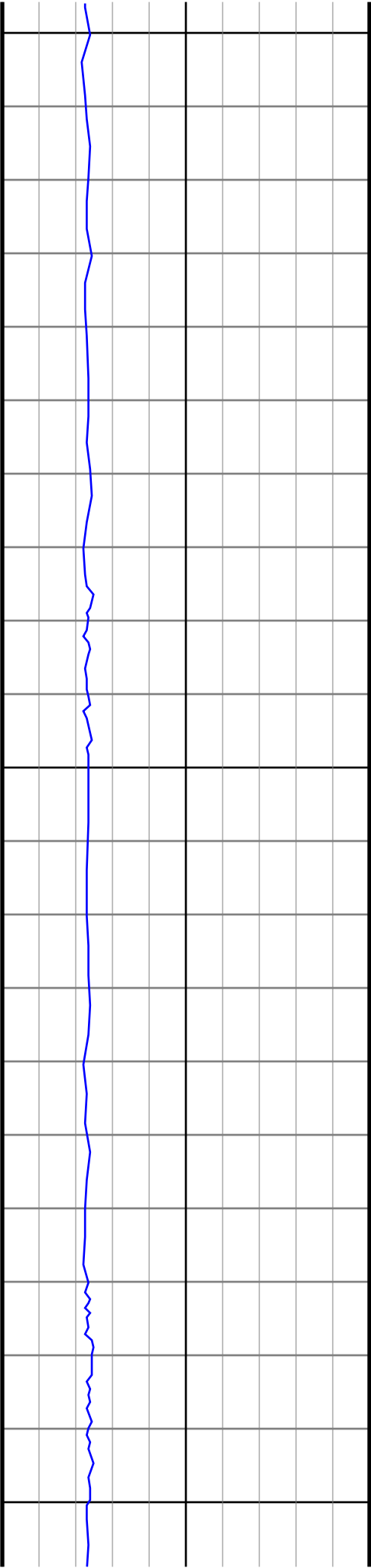
8000

8100



#91 MD(8068.00) Inc(90.1) Azm(266.8) TVD(6642.70)
VS(1728.48) NS(1225.17) EW(-1459.14) TEMP(0.0)

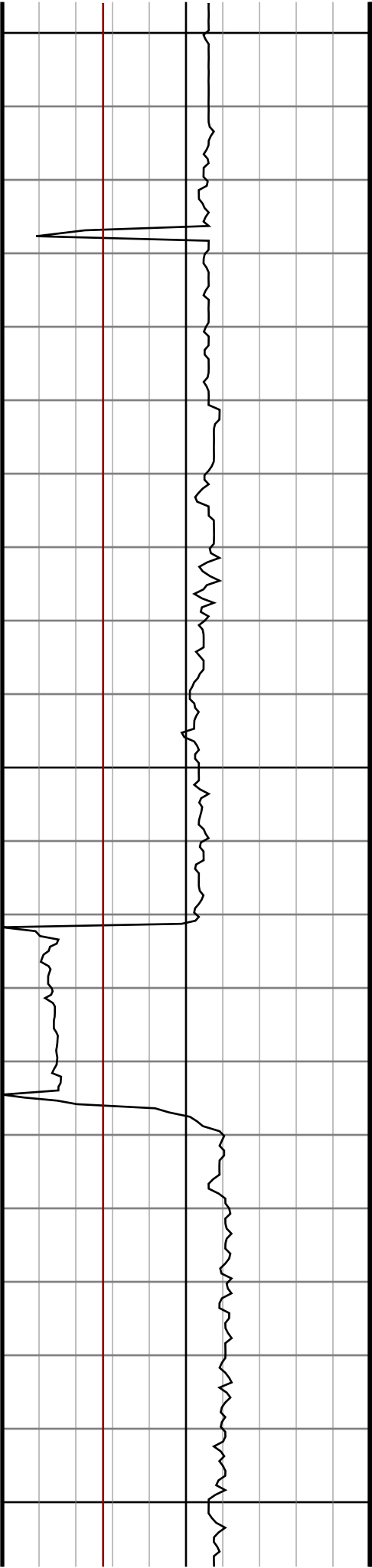
#92 MD(8163.00) Inc(89.7) Azm(266.4) TVD(6642.86)
VS(1818.55) NS(1219.54) EW(-1553.97) TEMP(0.0)



8200

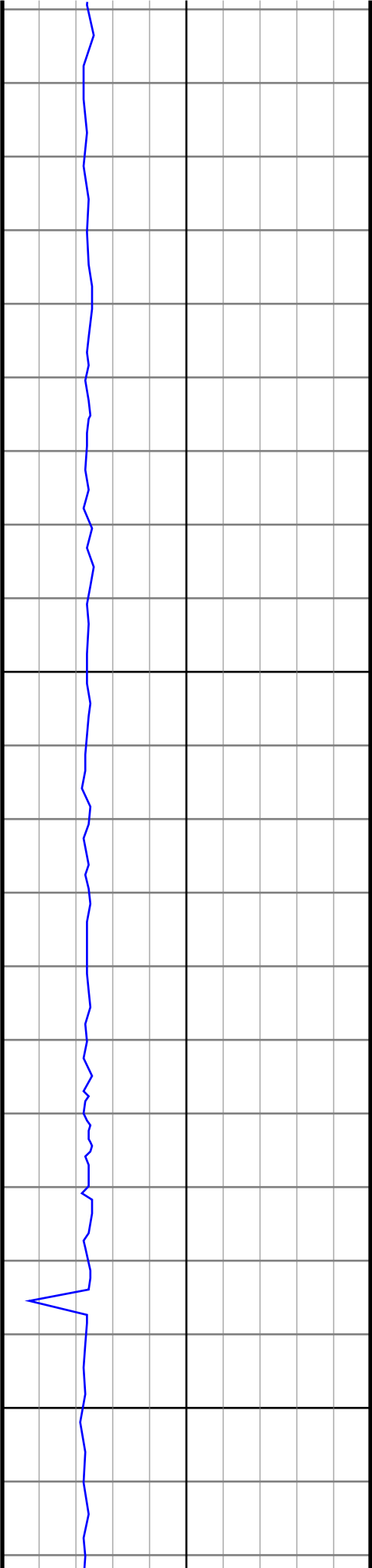
8300

8400



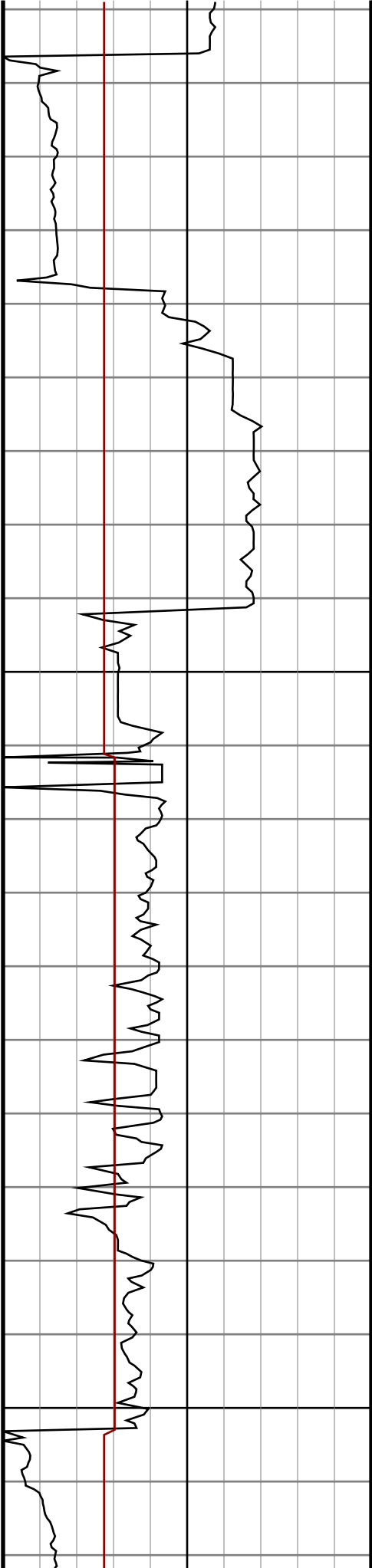
#93 MD(8257.00) Inc(90.3) Azm(265.7) TVD(6642.86)
VS(1907.38) NS(1213.06) EW(-1647.75) TEMP(0.0)

#94 MD(8352.00) Inc(89.4) Azm(265.6) TVD(6643.11)
VS(1996.93) NS(1205.86) EW(-1742.47) TEMP(0.0)



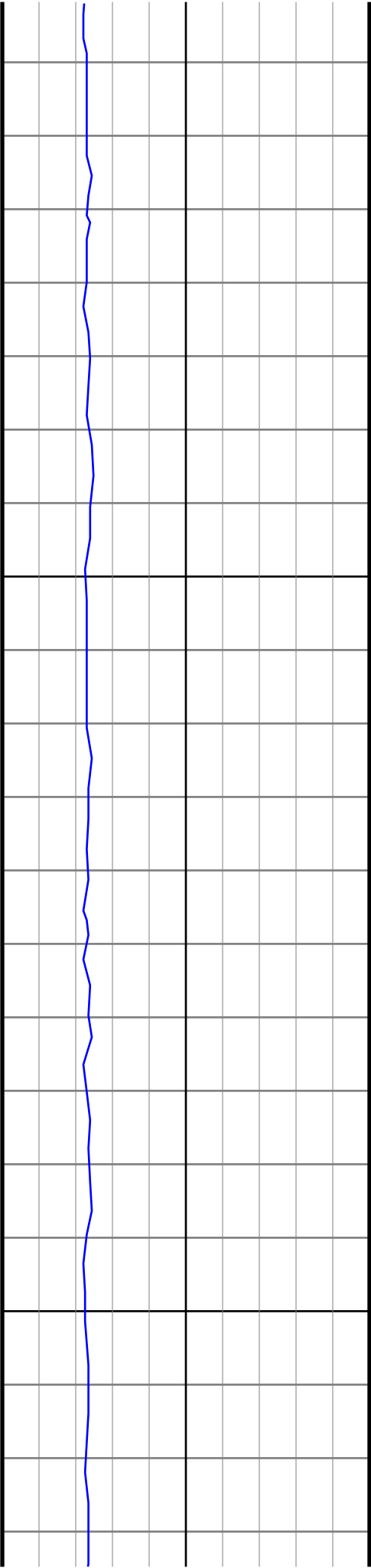
8500

8600



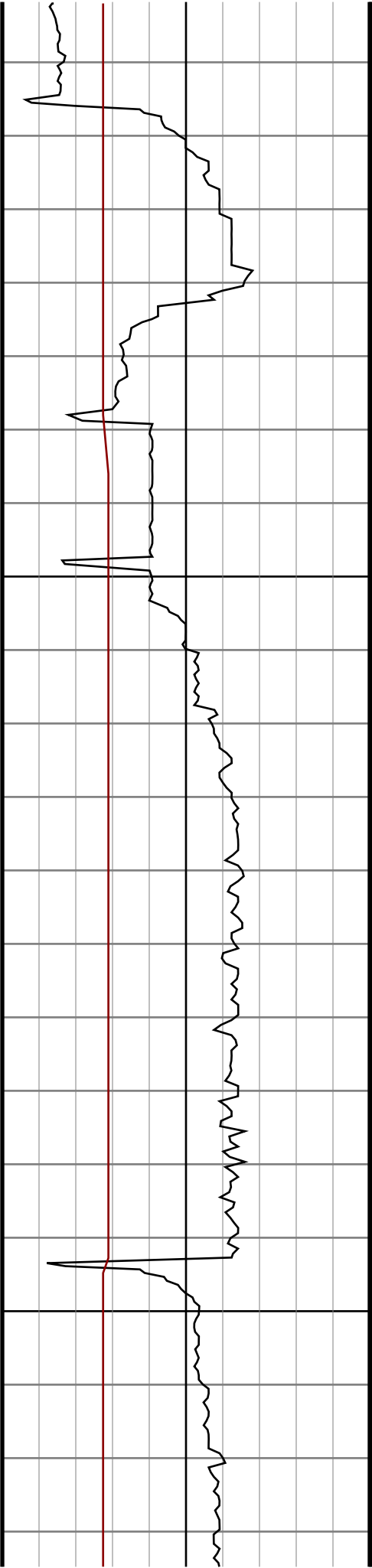
#95 MD(8446.00) Inc(89.0) Azm(268.1) TVD(6644.43)
VS(2086.17) NS(1200.69) EW(-1836.31) TEMP(0.0)

#96 MD(8541.00) Inc(90.0) Azm(269.3) TVD(6645.25)
VS(2177.28) NS(1198.54) EW(-1931.28) TEMP(0.0)



8700

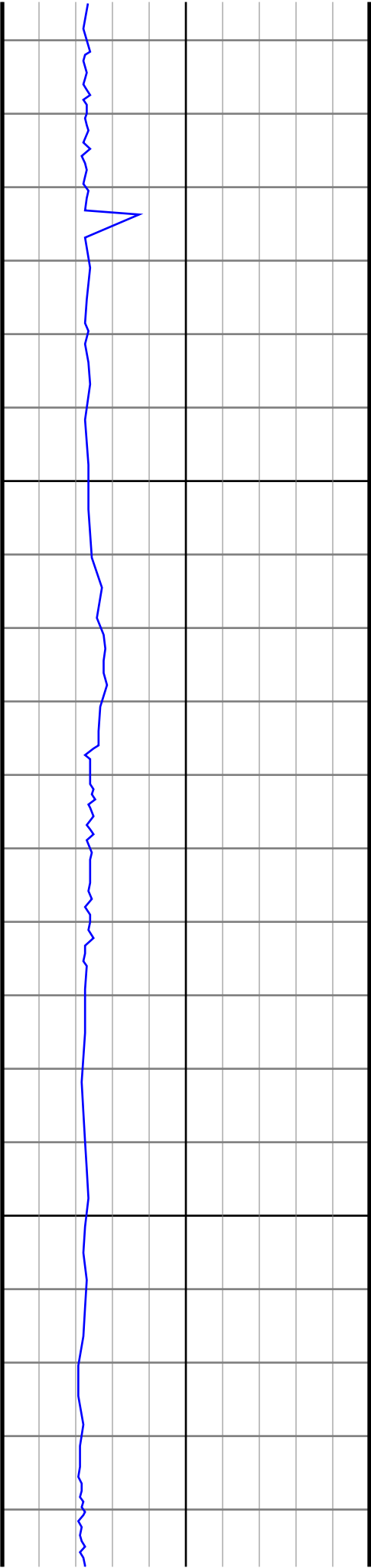
8800



#97 MD(8635.00) Inc(87.4) Azm(266.3) TVD(6647.39)
VS(2266.97) NS(1194.93) EW(-2025.17) TEMP(0.0)

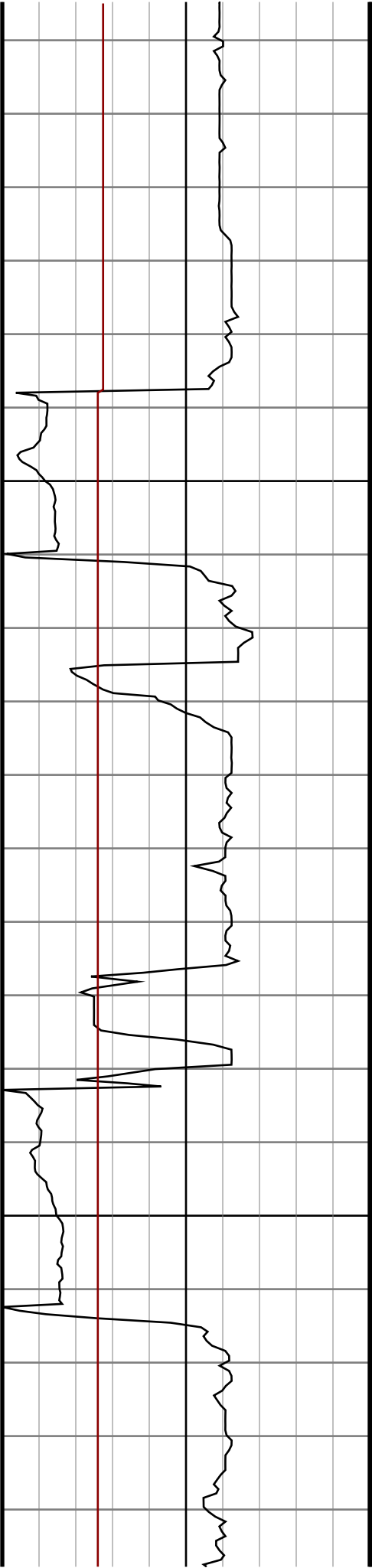
#98 MD(8729.00) Inc(89.1) Azm(266.4) TVD(6650.26)
VS(2355.91) NS(1188.95) EW(-2118.93) TEMP(0.0)

#99 MD(8823.00) Inc(91.3) Azm(267.7) TVD(6649.93)
VS(2445.26) NS(1184.12) EW(-2212.80) TEMP(0.0)



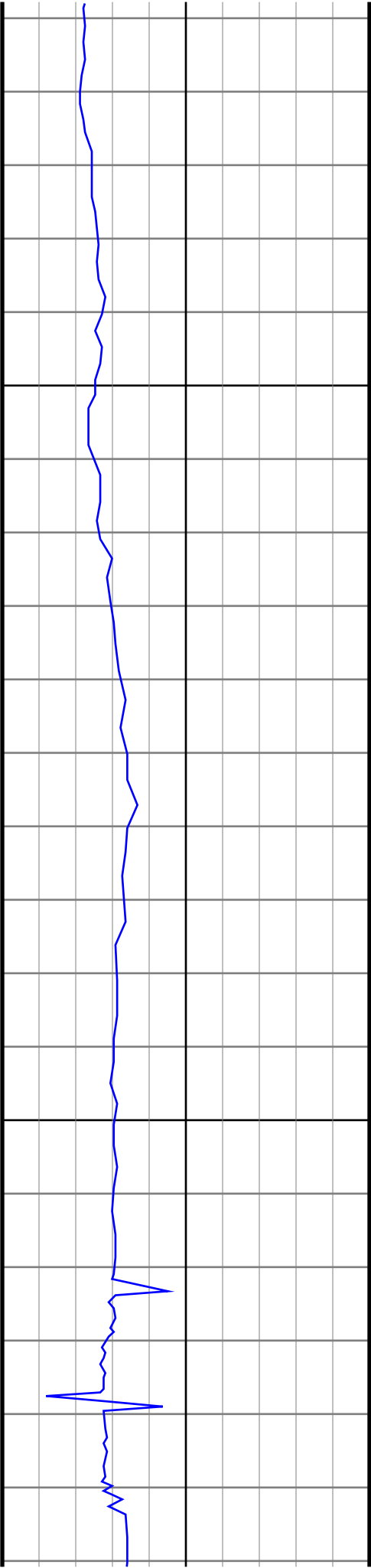
8900

9000



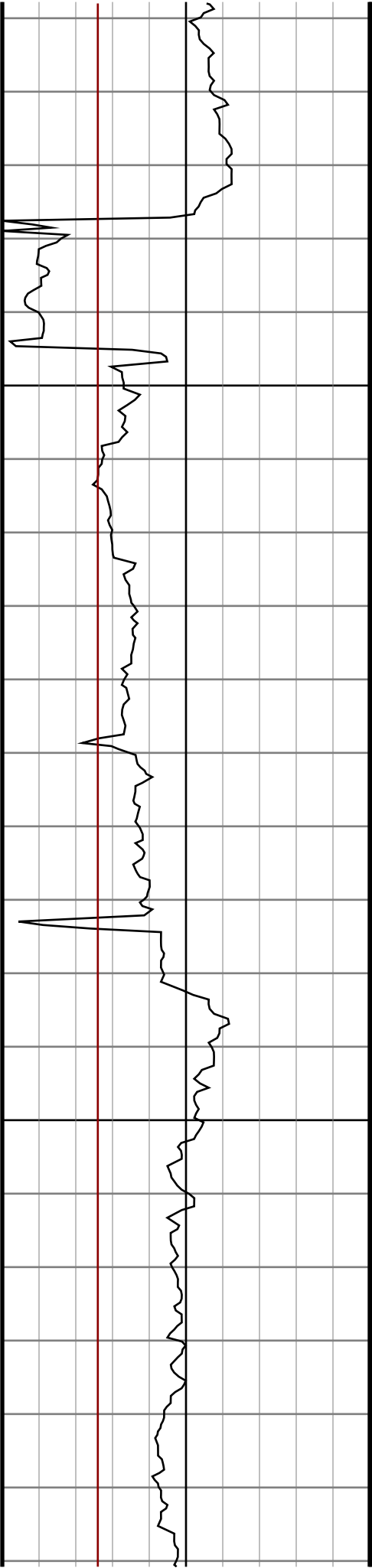
#100 MD(8917.00) Inc(91.7) Azm(269.0) TVD(6647.47)
VS(2535.22) NS(1181.41) EW(-2306.72) TEMP(0.0)

#101 MD(9011.00) Inc(88.5) Azm(267.3) TVD(6647.31)
VS(2625.10) NS(1178.38) EW(-2400.66) TEMP(0.0)



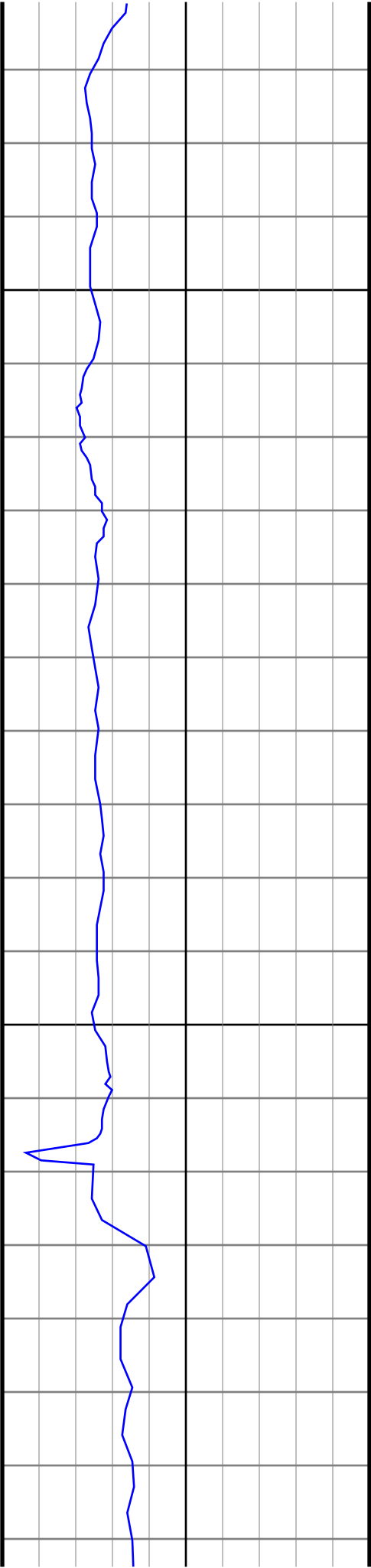
9100

9200



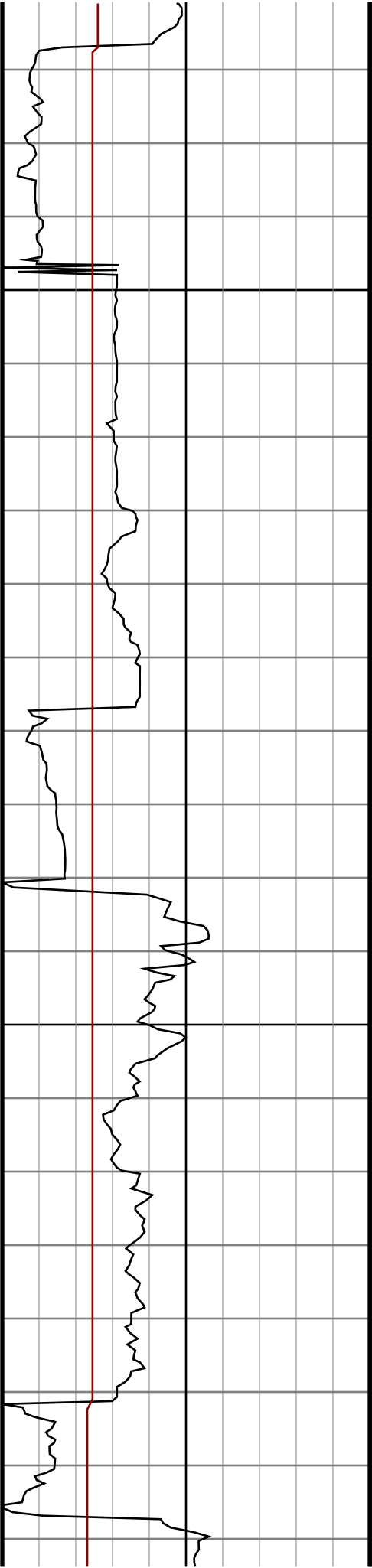
#102 MD(9105.00) Inc(86.8) Azm(266.5) TVD(6651.16)
VS(2714.30) NS(1173.30) EW(-2494.44) TEMP(0.0)

#103 MD(9200.00) Inc(86.8) Azm(266.4) TVD(6656.46)
VS(2804.15) NS(1167.42) EW(-2589.11) TEMP(0.0)



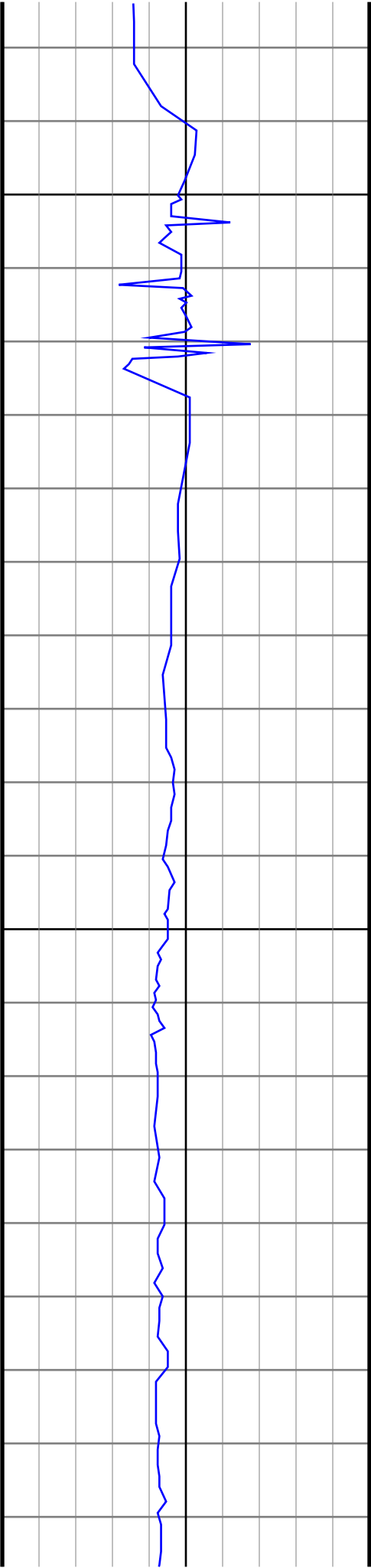
9300

9400



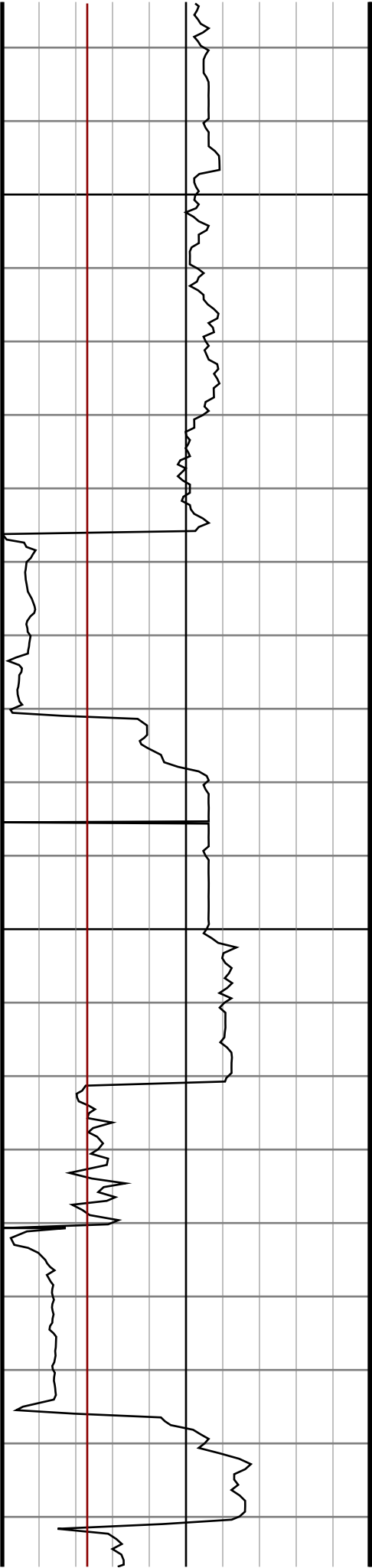
#104 MD(9294.00) Inc(85.3) Azm(269.5) TVD(6662.94)
VS(2893.72) NS(1164.07) EW(-2682.81) TEMP(0.0)

#105 MD(9389.00) Inc(87.0) Azm(271.3) TVD(6669.32)
VS(2985.38) NS(1164.73) EW(-2777.59) TEMP(0.0)



9500

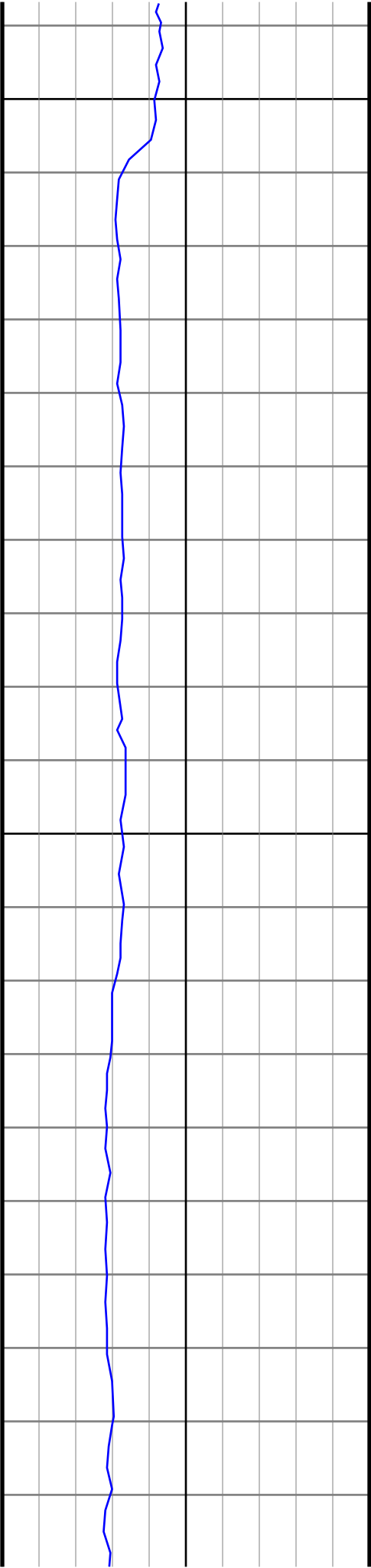
9600



#106 MD(9483.00) Inc(87.8) Azm(271.4) TVD(6673.58)
VS(3076.58) NS(1166.94) EW(-2871.46) TEMP(0.0)

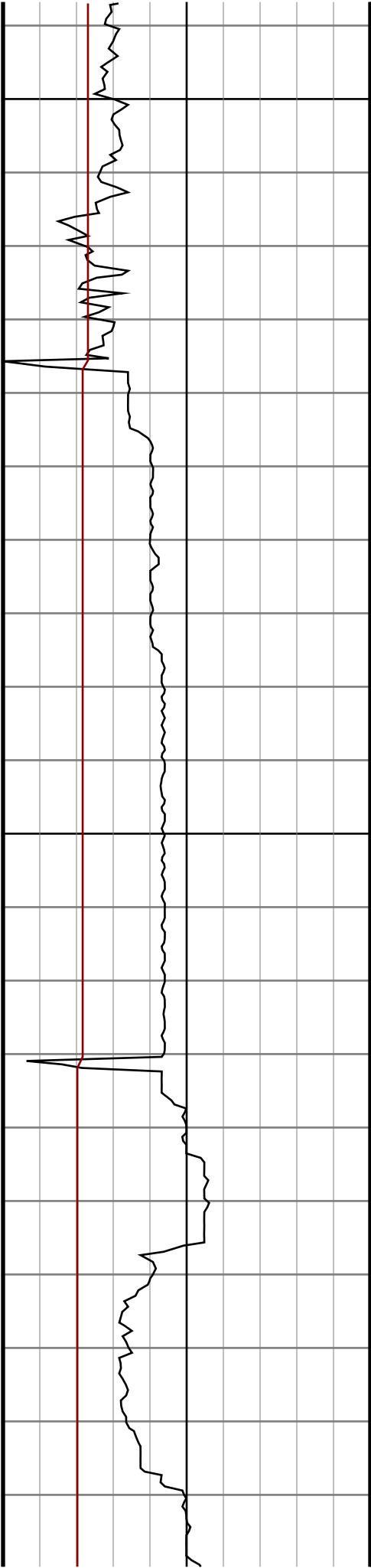
#107 MD(9577.00) Inc(88.7) Azm(271.4) TVD(6676.45)
VS(3167.84) NS(1169.24) EW(-2965.39) TEMP(0.0)

#108 MD(9672.00) Inc(91.0) Azm(270.8) TVD(6676.70)
VS(3260.00) NS(1171.06) EW(-3060.37) TEMP(0.0)



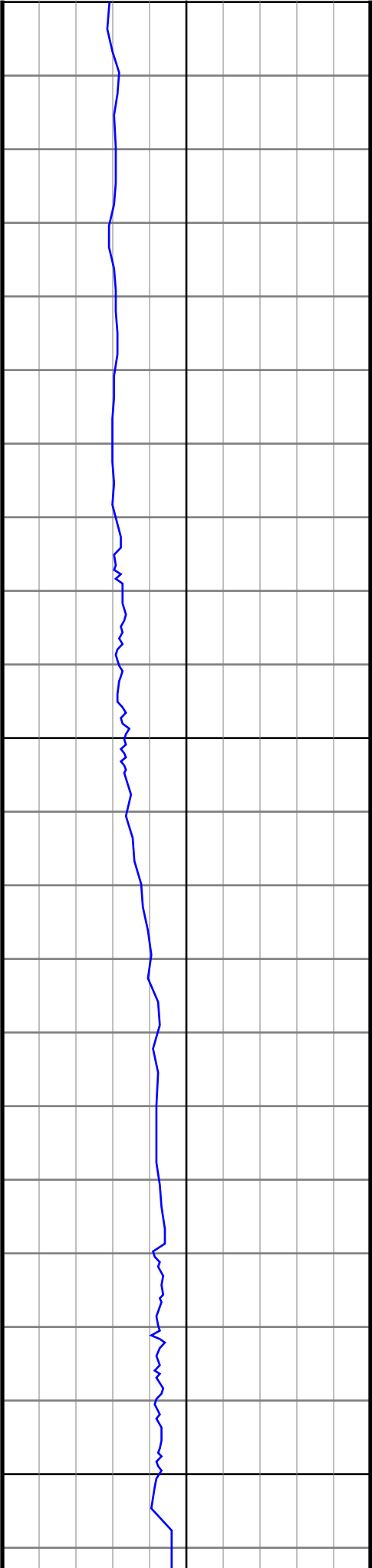
9700

9800



#109 MD(9766.00) Inc(90.7) Azm(270.1) TVD(6675.31)
VS(3350.91) NS(1171.80) EW(-3154.35) TEMP(0.0)

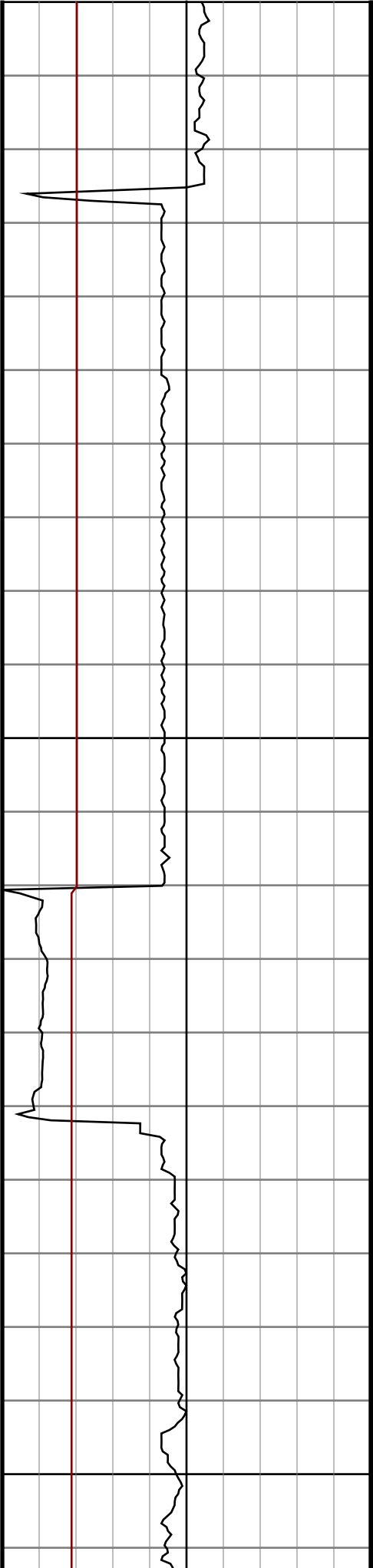
#110 MD(9860.00) Inc(91.4) Azm(269.7) TVD(6673.58)
VS(3441.59) NS(1171.64) EW(-3248.34) TEMP(0.0)



9900

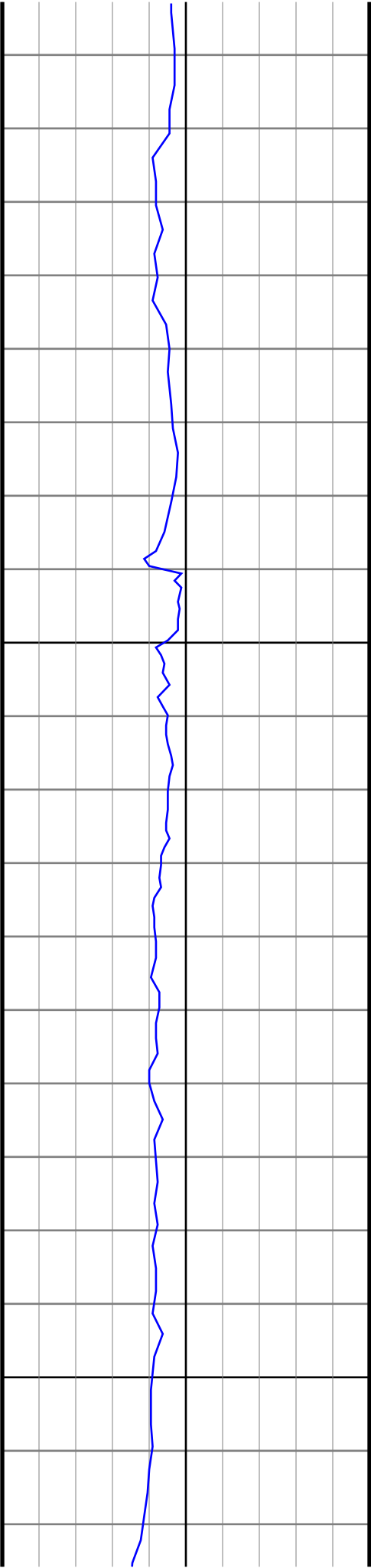
10000

10100



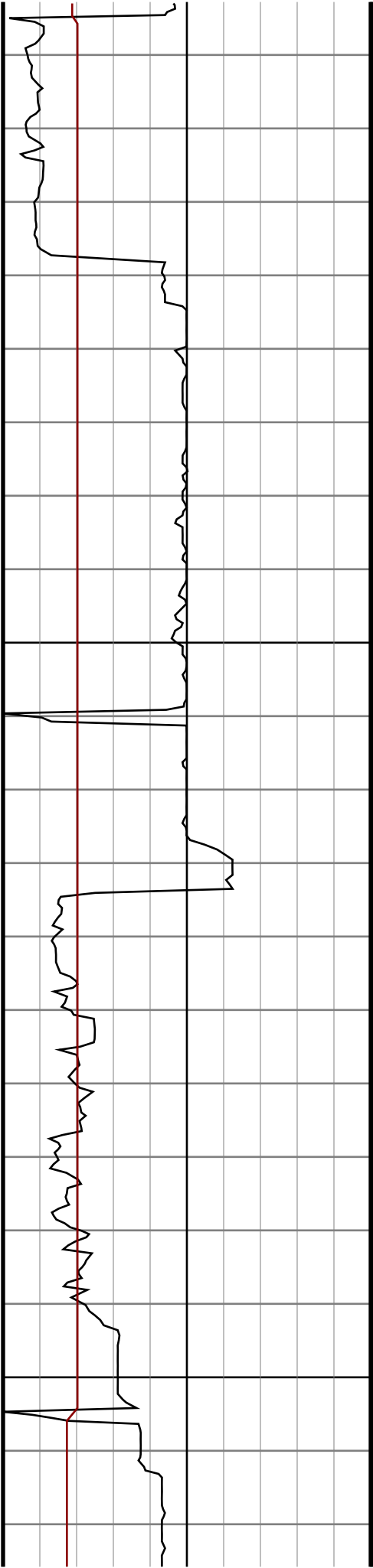
#111 MD(9954.00) Inc(92.6) Azm(269.5) TVD(6670.30)
VS(3532.10) NS(1170.98) EW(-3342.27) TEMP(0.0)

#112 MD(10049.00) Inc(90.7) Azm(267.8) TVD(6667.57)
VS(3623.15) NS(1168.74) EW(-3437.20) TEMP(0.0)



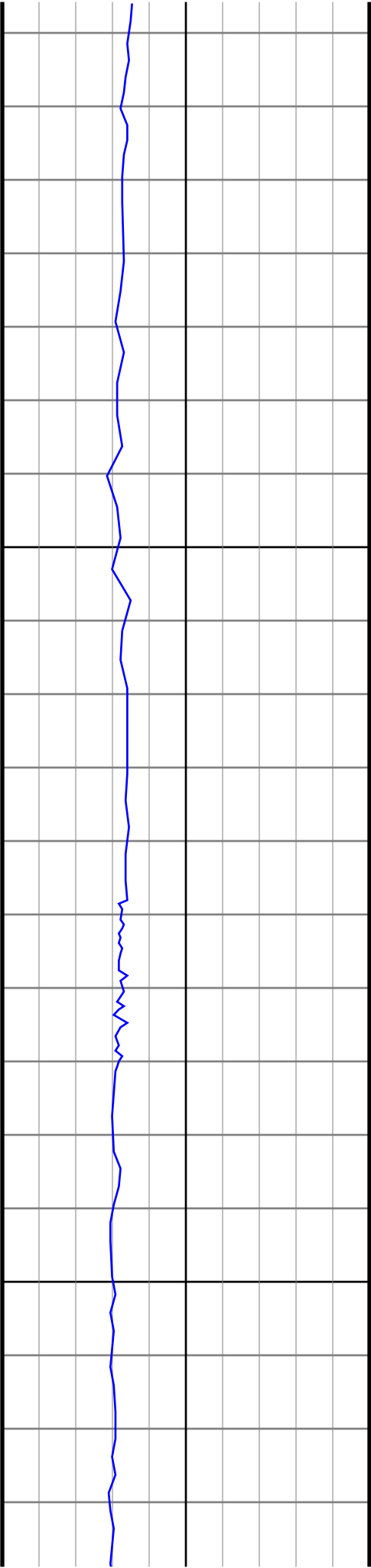
10200

10300



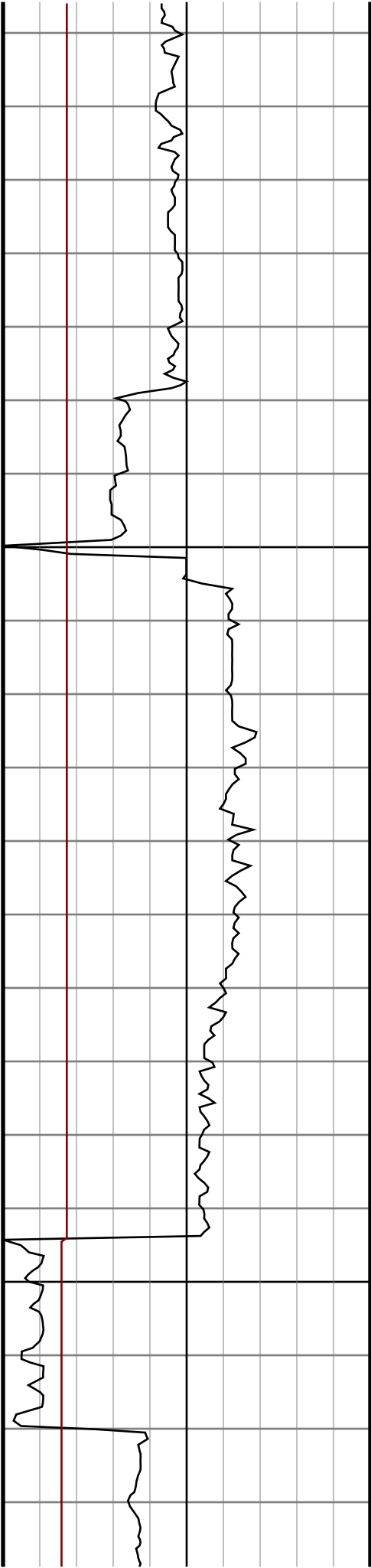
#113 MD(10144.00) Inc(89.2) Azm(268.5) TVD(6667.65)
VS(3714.00) NS(1165.68) EW(-3532.15) TEMP(0.0)

#114 MD(10239.00) Inc(89.5) Azm(268.8) TVD(6668.73)
VS(3805.08) NS(1163.44) EW(-3627.11) TEMP(0.0)



10400

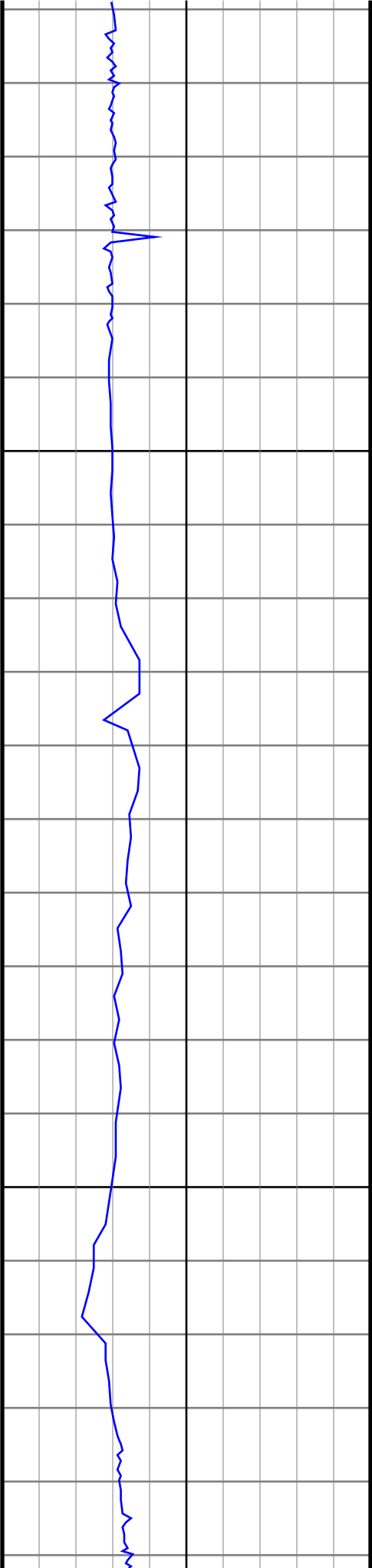
10500



#115 MD(10334.00) Inc(89.4) Azm(268.6) TVD(6669.64)
VS(3896.20) NS(1161.28) EW(-3722.09) TEMP(0.0)

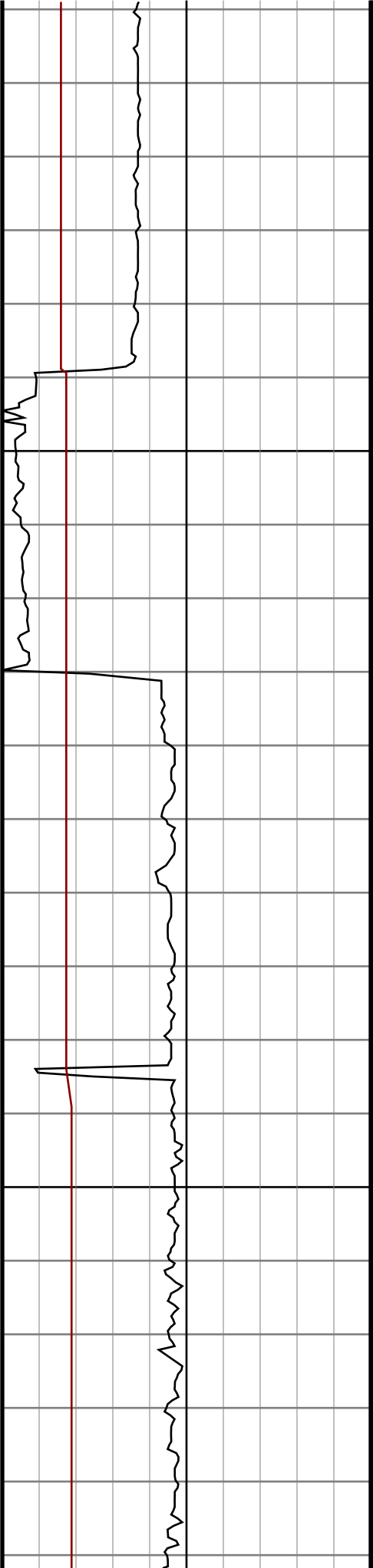
#116 MD(10428.00) Inc(89.4) Azm(267.8) TVD(6670.63)
VS(3986.11) NS(1158.33) EW(-3816.03) TEMP(0.0)

#117 MD(10523.00) Inc(90.5) Azm(268.8) TVD(6670.71)
VS(4077.04) NS(1155.51) EW(-3910.99) TEMP(0.0)



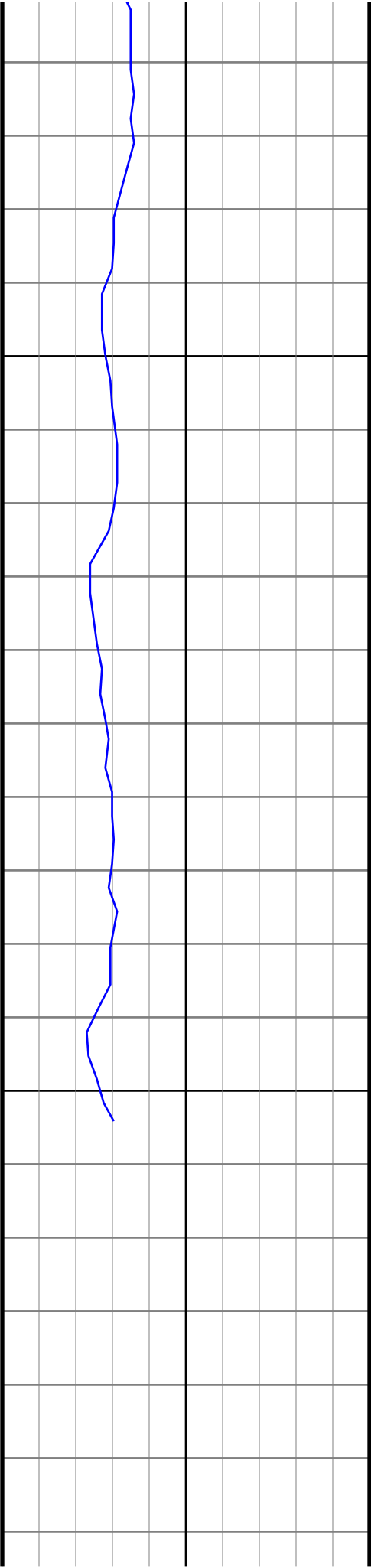
10600

10700



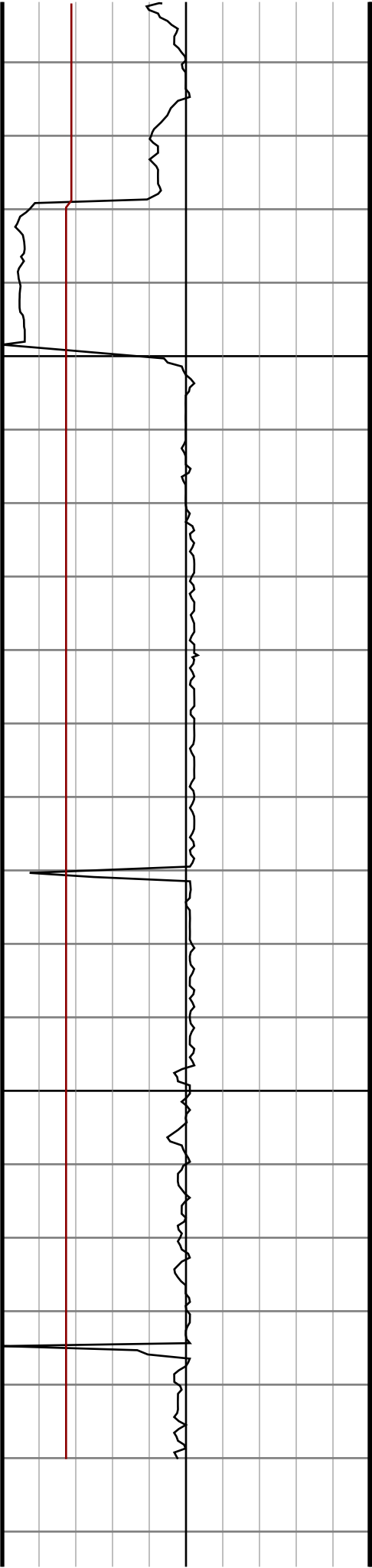
#118 MD(10618.00) Inc(89.6) Azm(271.1) TVD(6670.63)
VS(4168.71) NS(1155.43) EW(-4005.98) TEMP(0.0)

#119 MD(10713.00) Inc(90.0) Azm(271.4) TVD(6670.96)
VS(4260.93) NS(1157.50) EW(-4100.96) TEMP(0.0)



10800

10900



#120 MD(10807.00) Inc(87.9) Azm(270.8) TVD(6672.68)
VS(4352.10) NS(1159.31) EW(-4194.92) TEMP(0.0)

#121 MD(10887.00) Inc(88.4) Azm(270.8) TVD(6675.26)
VS(4429.57) NS(1160.42) EW(-4274.87) TEMP(0.0)

#122 MD(10950.00) Inc(88.4) Azm(270.8) TVD(6677.02)
VS(4490.58) NS(1161.30) EW(-4337.84) TEMP(0.0)

