ENSIGN Directional

BERNHARDT 6G-403

TVD
5":100'

Company: PDC Energy
Well Name: BERNHARDT 6G-403
API: 051234039700
Rig Id: Ensign 124
State: Colorado
County/Parish: Weld
Country: USA
Survey Company: Ensign Directional Services
Job number: 124-167
DD1 Albert Gallegos
DD2 Tony Callow
DD3 Brett Blank
MWD1 Lucas Henkenius
MWD2 Kim Surprise
MWD 3 Caleb Schwartz

Log measurements: gamma, ROP
Depth measured from: Rig Floor
Maximum temperature:

	Depth	Date
Start:	0 ft	2-25-2015
End:	11758 ft	3-8-2015

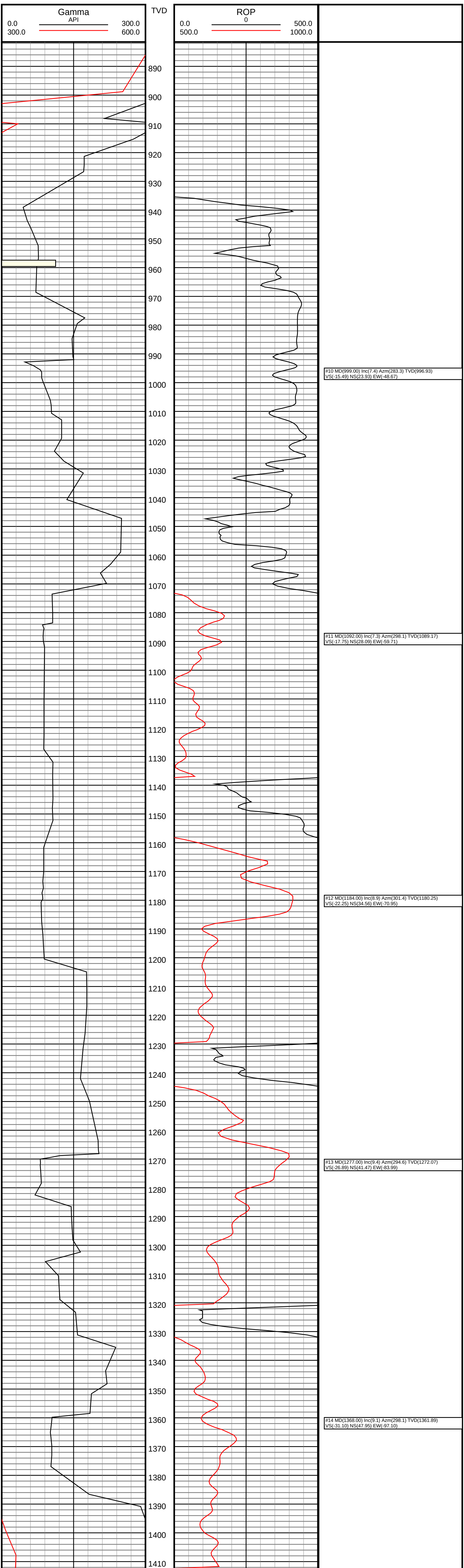
Casing	Depth	Size
Surface:	937	9 5/8
Intermediate:	7723	7

Mud Type: Water Based
Density:
Viscosity:
Rm: **Rmf:** **Rmc:**

Elevations
KB: 4735.5
GL: 4722
DF: 4735.5

Run	Bit Size	Offsets		Depths		Dates	
		Gamma	Survey	Start	End	Start	End
1	13.75		54.60	0	937	2-25-2015	2-26-2015
2	8.75	54.22	49.22	937	7723	2-28-2015	3-2-2015
3	6.5	60.90	55.90	7723	10394	3-3-2015	3-6-2015
4	6.5	60.60	55.60	10394	11758	3-7-2015	3-8-2015
5							
6							
7							
8							
9							
10							

Ensign Directional Services 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.



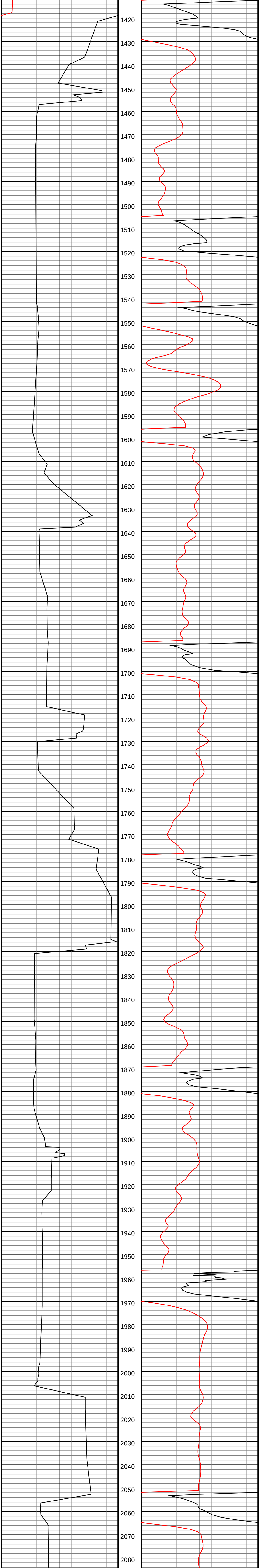
#10 MD(999.00) Inc(7.4) Azm(283.3) TVD(996.93)
VS(-15.49) NS(23.93) EW(-48.67)

#11 MD(1092.00) Inc(7.3) Azm(298.1) TVD(1089.17)
VS(-17.75) NS(28.09) EW(-59.71)

#12 MD(1184.00) Inc(8.9) Azm(301.4) TVD(1180.25)
VS(-22.25) NS(34.56) EW(-70.95)

#13 MD(1277.00) Inc(9.4) Azm(294.6) TVD(1272.07)
VS(-26.89) NS(41.47) EW(-83.99)

#14 MD(1368.00) Inc(9.1) Azm(298.1) TVD(1361.89)
VS(-31.10) NS(47.95) EW(-97.10)



#15 MD(1460.00) Inc(8.5) Azm(303.2) TVD(1452.80)
VS(-36.14) NS(55.10) EW(-109.20)

#16 MD(1552.00) Inc(10.7) Azm(308.1) TVD(1543.51)
VS(-42.94) NS(64.09) EW(-121.62)

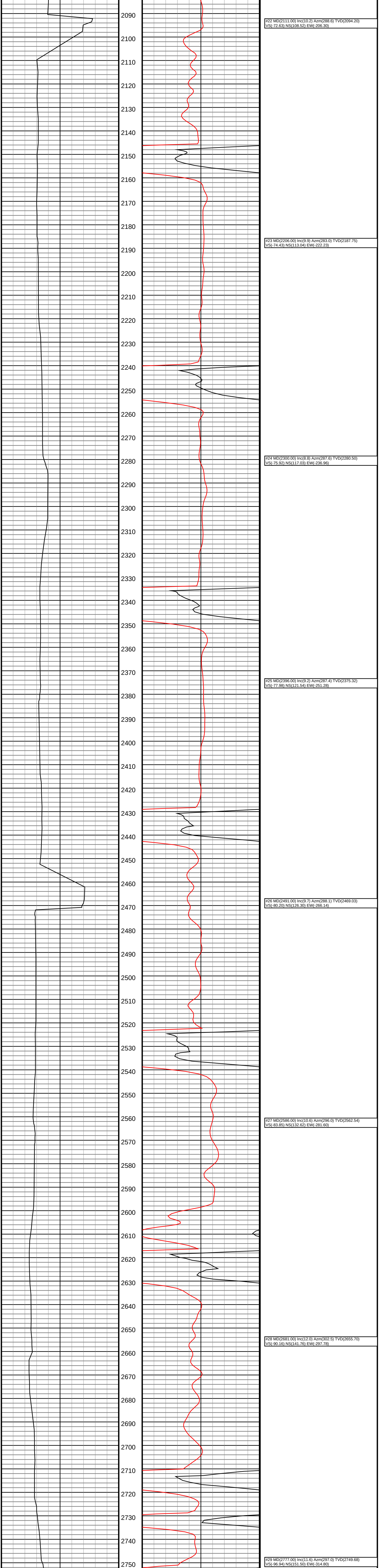
#17 MD(1644.00) Inc(9.3) Azm(300.4) TVD(1634.12)
VS(-49.65) NS(73.13) EW(-134.75)

#18 MD(1736.00) Inc(10.0) Azm(301.6) TVD(1724.81)
VS(-55.29) NS(81.07) EW(-147.97)

#19 MD(1828.00) Inc(10.8) Azm(293.0) TVD(1815.31)
VS(-60.28) NS(88.63) EW(-162.70)

#20 MD(1921.00) Inc(9.8) Azm(296.9) TVD(1906.81)
VS(-64.66) NS(95.61) EW(-177.78)

#21 MD(2016.00) Inc(9.0) Azm(296.2) TVD(2000.53)
VS(-69.19) NS(102.55) EW(-191.66)



#22 MD(2111.00) Inc(10.2) Azm(288.6) TVD(2094.20)
VS(-72.63) NS(108.52) EW(-206.30)

#23 MD(2206.00) Inc(9.9) Azm(283.0) TVD(2187.75)
VS(-74.43) NS(113.04) EW(-222.23)

#24 MD(2300.00) Inc(8.8) Azm(287.6) TVD(2280.50)
VS(-75.92) NS(117.03) EW(-236.96)

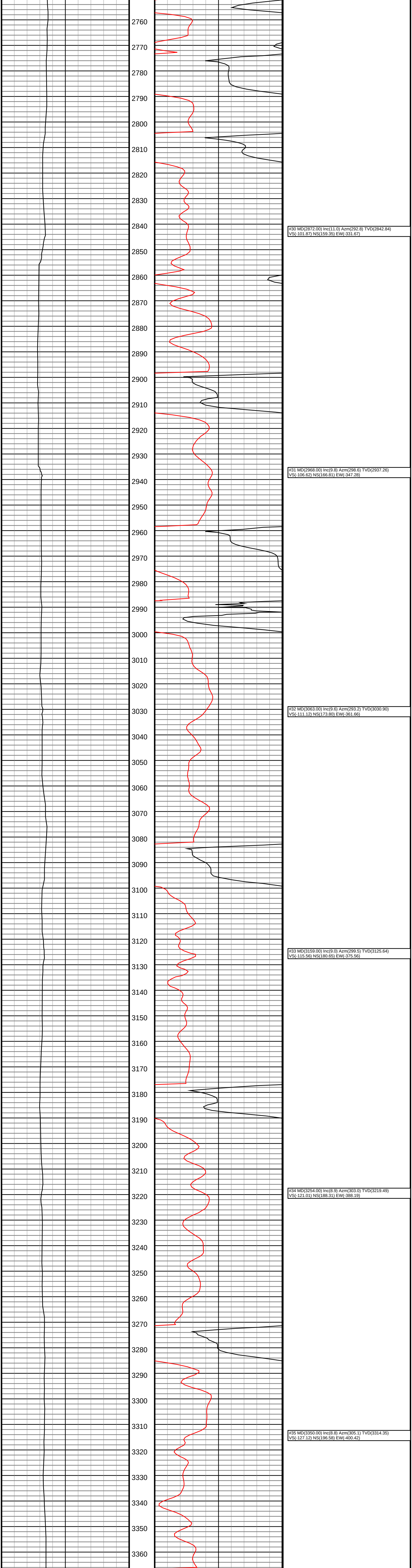
#25 MD(2396.00) Inc(9.2) Azm(287.4) TVD(2375.32)
VS(-77.98) NS(121.54) EW(-251.28)

#26 MD(2491.00) Inc(9.7) Azm(288.1) TVD(2469.03)
VS(-80.20) NS(126.30) EW(-266.14)

#27 MD(2586.00) Inc(10.6) Azm(296.0) TVD(2562.54)
VS(-83.85) NS(132.62) EW(-281.60)

#28 MD(2681.00) Inc(12.0) Azm(302.5) TVD(2655.70)
VS(-90.16) NS(141.76) EW(-297.78)

#29 MD(2777.00) Inc(11.6) Azm(297.0) TVD(2749.68)
VS(-96.94) NS(151.50) EW(-314.80)



#30 MD(2872.00) Inc(11.0) Azm(292.8) TVD(2842.84)
VS(-101.87) NS(159.35) EW(-331.67)

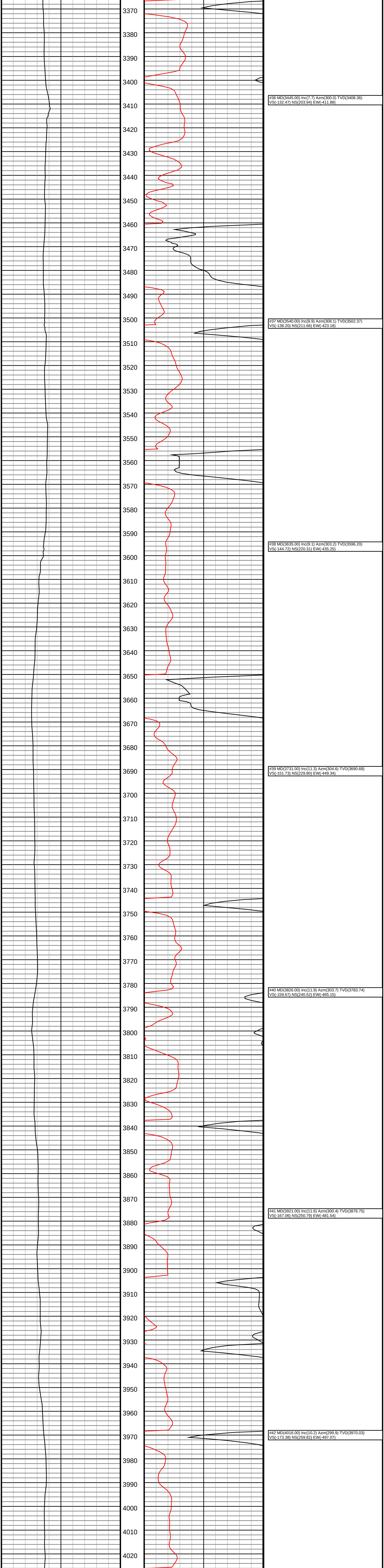
#31 MD(2968.00) Inc(9.8) Azm(298.6) TVD(2937.26)
VS(-106.62) NS(166.81) EW(-347.28)

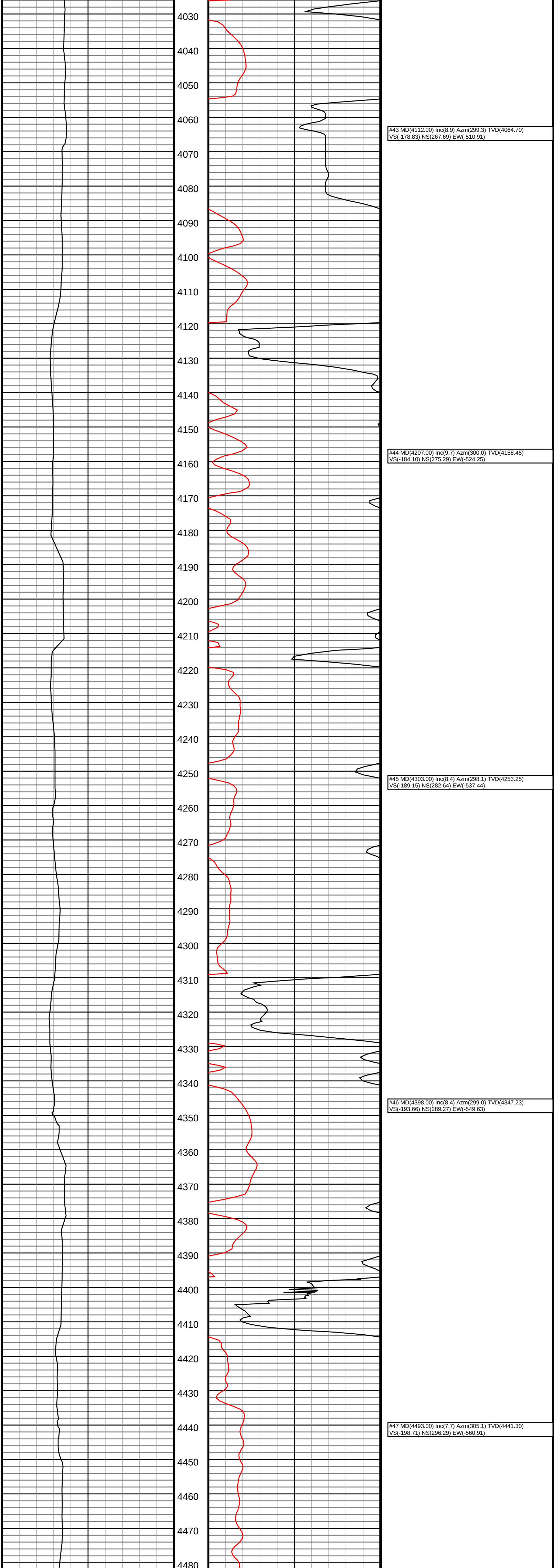
#32 MD(3063.00) Inc(9.6) Azm(293.2) TVD(3030.90)
VS(-111.12) NS(173.80) EW(-361.66)

#33 MD(3159.00) Inc(9.0) Azm(299.5) TVD(3125.64)
VS(-115.56) NS(180.65) EW(-375.56)

#34 MD(3254.00) Inc(8.9) Azm(303.0) TVD(3219.49)
VS(-121.01) NS(188.31) EW(-388.19)

#35 MD(3350.00) Inc(8.8) Azm(305.1) TVD(3314.35)
VS(-127.12) NS(196.58) EW(-400.42)





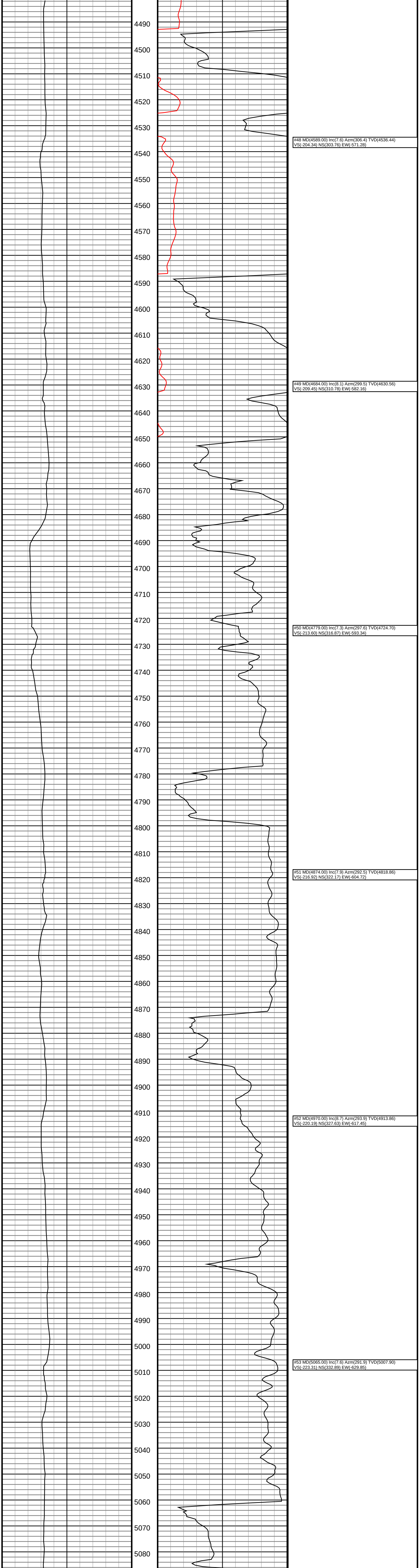
#43 MD(4112.00) Inc(8.9) Azm(299.3) TVD(4064.70)
VS(-178.83) NS(267.69) EW(-510.91)

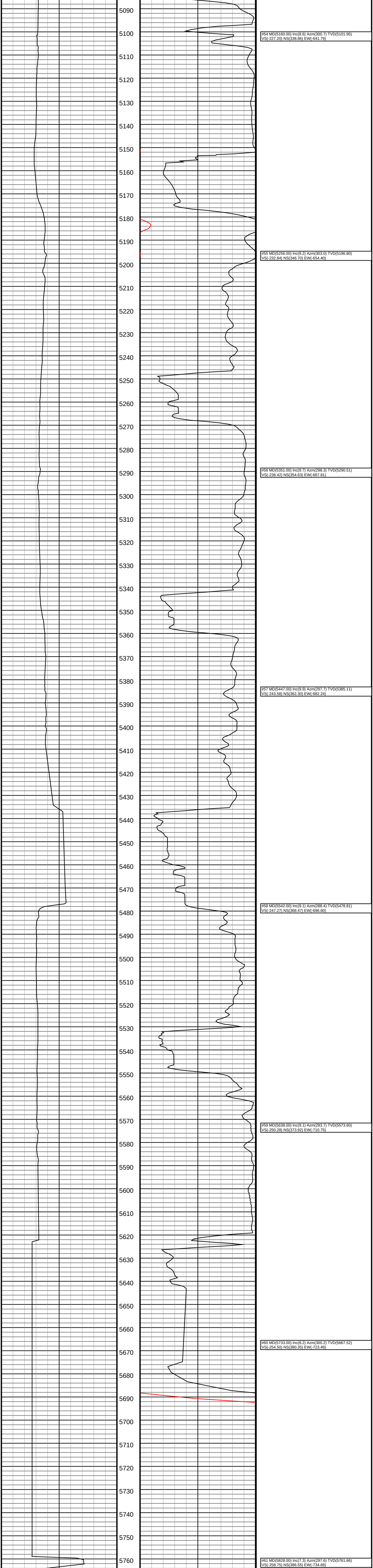
#44 MD(4207.00) Inc(9.7) Azm(300.0) TVD(4158.45)
VS(-184.10) NS(275.29) EW(-524.25)

#45 MD(4303.00) Inc(8.4) Azm(298.1) TVD(4253.25)
VS(-189.15) NS(282.64) EW(-537.44)

#46 MD(4398.00) Inc(8.4) Azm(299.0) TVD(4347.23)
VS(-193.66) NS(289.27) EW(-549.63)

#47 MD(4493.00) Inc(7.7) Azm(305.1) TVD(4441.30)
VS(-198.71) NS(296.29) EW(-560.91)





#54 MD(5160.00) Inc(8.6) Azm(300.7) TVD(5101.95)
VS(-227.20) NS(338.86) EW(-641.79)

#55 MD(5256.00) Inc(9.2) Azm(303.0) TVD(5196.80)
VS(-232.84) NS(346.70) EW(-654.40)

#56 MD(5351.00) Inc(9.7) Azm(298.3) TVD(5290.51)
VS(-238.42) NS(354.63) EW(-667.81)

#57 MD(5447.00) Inc(9.9) Azm(297.7) TVD(5385.11)
VS(-243.58) NS(362.30) EW(-682.24)

#58 MD(5542.00) Inc(9.1) Azm(288.4) TVD(5478.81)
VS(-247.27) NS(368.47) EW(-696.60)

#59 MD(5638.00) Inc(9.1) Azm(293.7) TVD(5573.60)
VS(-250.28) NS(373.92) EW(-710.75)

#60 MD(5733.00) Inc(8.2) Azm(300.2) TVD(5667.52)
VS(-254.50) NS(380.35) EW(-723.49)

#61 MD(5828.00) Inc(7.3) Azm(297.6) TVD(5761.66)
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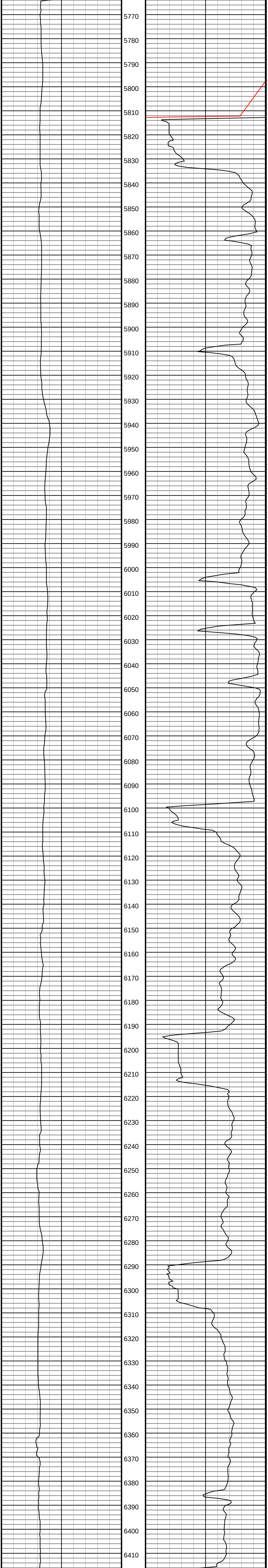

#62 MD(5924.00) Inc(7.8) Azm(300.4) TVD(5856.82)
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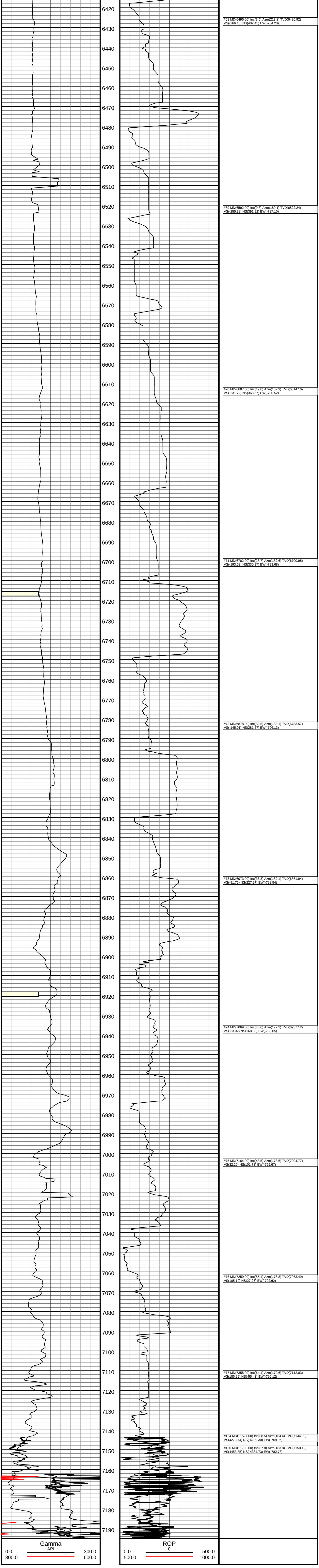
#63 MD(6019.00) Inc(6.6) Azm(293.9) TVD(5951.07)
VS(-266.59) NS(398.15) EW(-756.27)

#64 MD(6115.00) Inc(5.5) Azm(291.1) TVD(6046.54)
VS(-268.87) NS(402.04) EW(-765.61)

#65 MD(6210.00) Inc(3.8) Azm(278.9) TVD(6141.22)
VS(-269.74) NS(404.17) EW(-772.96)

#66 MD(6306.00) Inc(1.8) Azm(304.8) TVD(6237.11)
VS(-270.35) NS(405.52) EW(-777.35)

#67 MD(6401.00) Inc(2.6) Azm(249.8) TVD(6332.05)
VS(-269.91) NS(405.63) EW(-780.59)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#69 MD(6592.00) Inc(9.8) Azm(189.1) TVD(6522.24) VS(-255.32) NS(391.92) EW(-787.10)
#70 MD(6687.00) Inc(19.0) Azm(187.9) TVD(6614.16) VS(-231.72) NS(368.57) EW(-790.52)
#71 MD(6782.00) Inc(28.7) Azm(182.6) TVD(6700.95) VS(-193.53) NS(330.37) EW(-793.68)
#72 MD(6878.00) Inc(32.5) Azm(183.1) TVD(6783.57) VS(-145.01) NS(281.57) EW(-796.13)
#73 MD(6973.00) Inc(36.3) Azm(182.1) TVD(6861.94) VS(-91.75) NS(227.97) EW(-798.54)
#74 MD(7069.00) Inc(40.6) Azm(177.2) TVD(6937.12) VS(-33.02) NS(168.33) EW(-798.05)
#75 MD(7164.00) Inc(48.5) Azm(178.6) TVD(7004.77) VS(32.20) NS(101.78) EW(-795.67)
#76 MD(7259.00) Inc(55.1) Azm(176.8) TVD(7063.49) VS(105.19) NS(27.23) EW(-792.62)
#77 MD(7355.00) Inc(64.1) Azm(179.6) TVD(7112.03) VS(186.29) NS(-55.43) EW(-790.12)
#124 MD(11527.00) Inc(88.5) Azm(184.4) TVD(7144.09) VS(4278.74) NS(-4209.30) EW(-769.96)
#126 MD(11703.00) Inc(87.8) Azm(183.8) TVD(7150.12) VS(4453.85) NS(-4384.73) EW(-782.73)
Gamma
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