Harold 6Y-312

TVD
2":100'

Company: Petroleum Development Corp.
Well Name: Harold 6Y-312
API: 05123457520
County/Parish: Weld
State: Colorado
Country: United States
Job number: 161-155
Field: Wattenburg
Rig Id: Ensign 161
Survey Company: Ensign
Operator: Petroleum Development Corp.
Company Man: Brady Sharp / John Falton
Daylight DD: Zach Gentry
Swing Shift DD: Tony Callow
Night DD: Eric Mays
Daylight MWD: Ryan Prue
Night MWD: Paul Wilson

Log measurements: Gamma, ROP
Depth measured from: 1651 ft
Maximum temperature:

	Depth	Date
Start:	0 ft	12-23-18
End:	17675 ft	12-30-2018

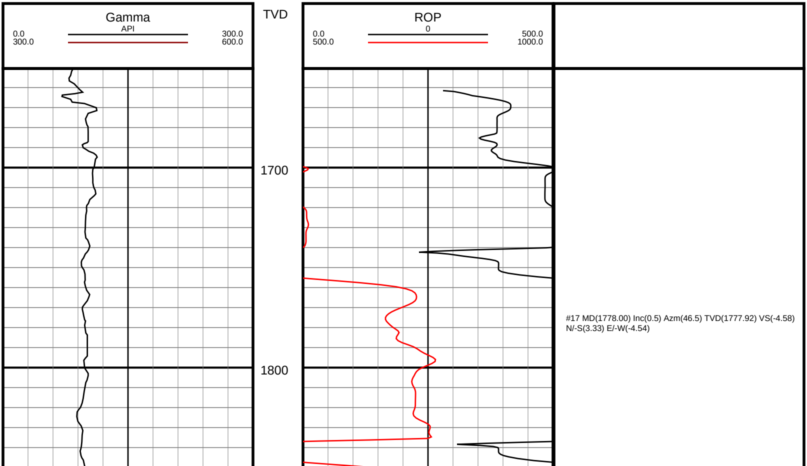
Casing	Depth	Size
Surface:	1651 ft	9 5/8"
Intermediate:		

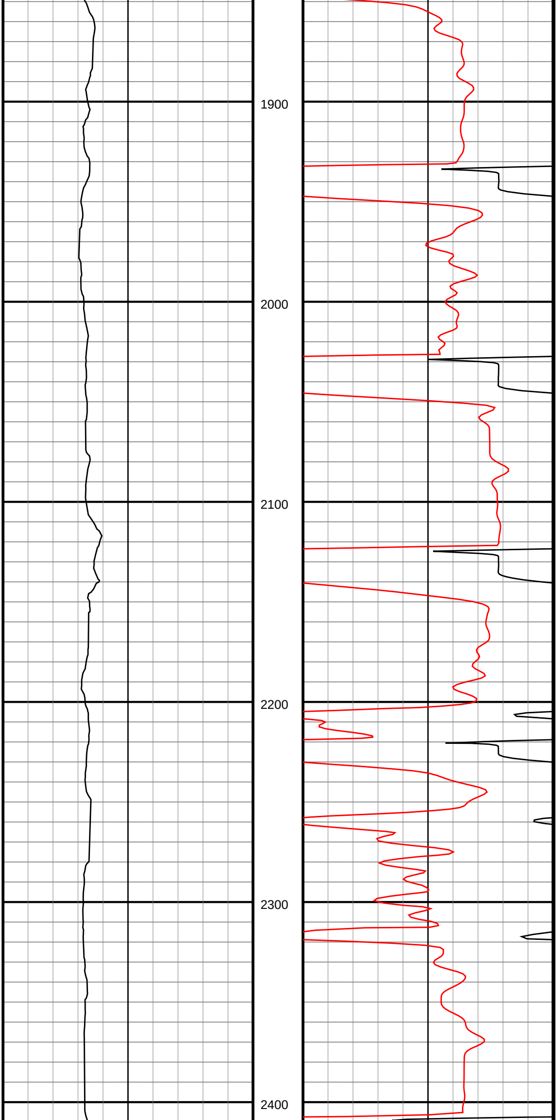
Mud Type: H2O
Density:
Viscosity:
Rm: **Rmf:** **Rmc:**

Elevations
KB: 23 ft
GL: 4788 ft
DF: 4811 ft

		Offsets		Depths		Dates	
Run	**Bit Size**	**Gamma**	**Survey**	**Start**	**End**	**Start**	**End**
1	12.25"		70.14 ft	0 ft	1655 ft	12-23-18	12-24-2018
2	8.5"	62.49 ft	57.42 ft	1655 ft	15392 ft	12-24-2018	12-28-2018
3	8.5"	62.70 ft	57.87 ft	15392 ft	17675 ft	12-28-2018	12-30-2018
4							
5							
6							
7							
8							
9							
10							

Ensign 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.





#18 MD(1873.00) Inc(0.5) Azm(72.5) TVD(1872.92) VS(-3.91)
N/-S(3.72) E/-W(-3.87)

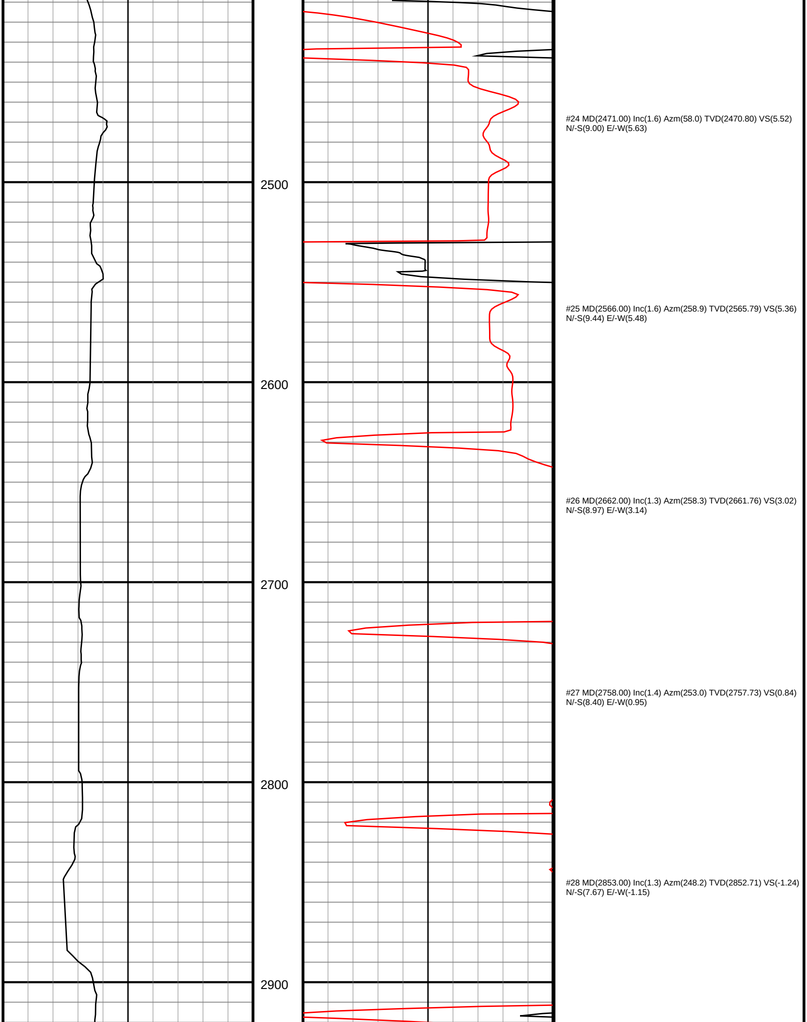
#19 MD(1969.00) Inc(0.8) Azm(81.3) TVD(1968.91) VS(-2.87)
N/-S(3.95) E/-W(-2.82)

#20 MD(2064.00) Inc(0.7) Azm(76.7) TVD(2063.90) VS(-1.69)
N/-S(4.17) E/-W(-1.63)

#21 MD(2159.00) Inc(0.8) Azm(54.9) TVD(2158.89) VS(-0.63)
N/-S(4.66) E/-W(-0.58)

#22 MD(2255.00) Inc(1.4) Azm(55.9) TVD(2254.88) VS(0.86)
N/-S(5.69) E/-W(0.93)

#23 MD(2376.00) Inc(1.6) Azm(53.0) TVD(2375.84) VS(3.40)
N/-S(7.53) E/-W(3.50)



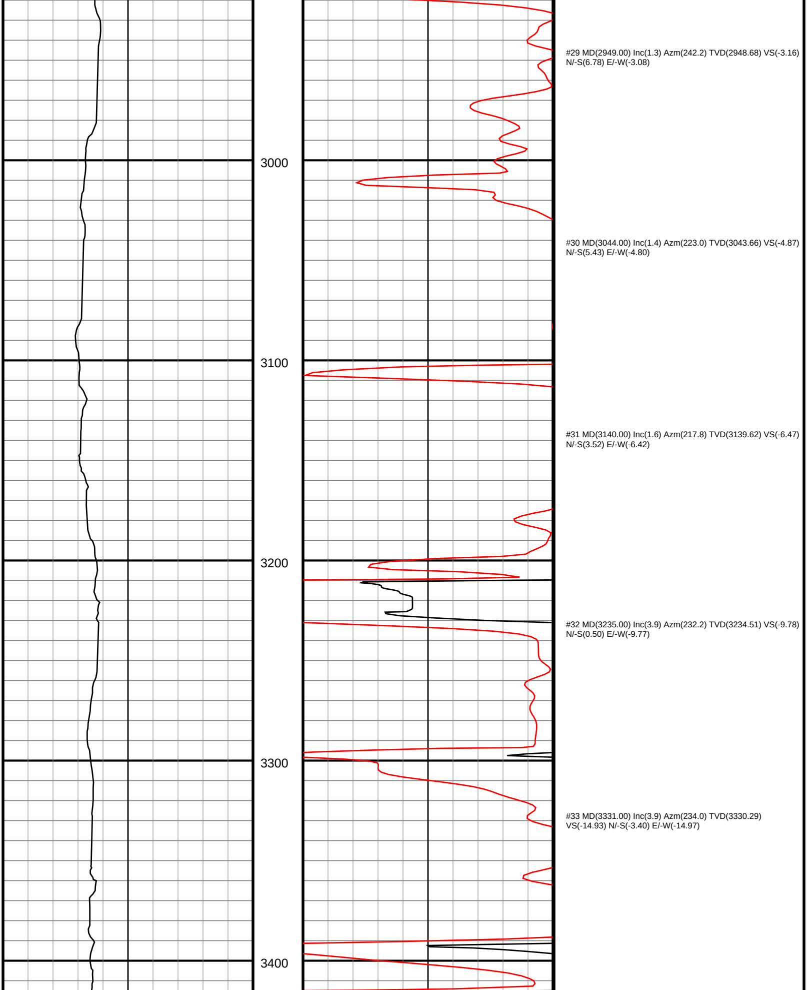
#24 MD(2471.00) Inc(1.6) Azm(58.0) TVD(2470.80) VS(5.52)
N/-S(9.00) E/-W(5.63)

#25 MD(2566.00) Inc(1.6) Azm(258.9) TVD(2565.79) VS(5.36)
N/-S(9.44) E/-W(5.48)

#26 MD(2662.00) Inc(1.3) Azm(258.3) TVD(2661.76) VS(3.02)
N/-S(8.97) E/-W(3.14)

#27 MD(2758.00) Inc(1.4) Azm(253.0) TVD(2757.73) VS(0.84)
N/-S(8.40) E/-W(0.95)

#28 MD(2853.00) Inc(1.3) Azm(248.2) TVD(2852.71) VS(-1.24)
N/-S(7.67) E/-W(-1.15)



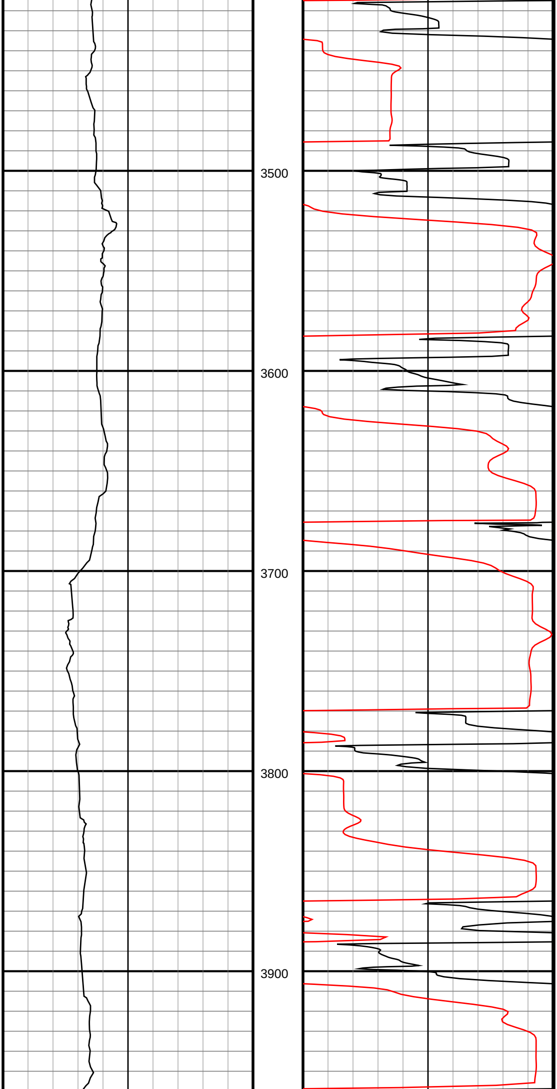
#29 MD(2949.00) Inc(1.3) Azm(242.2) TVD(2948.68) VS(-3.16)
N/-S(6.78) E/-W(-3.08)

#30 MD(3044.00) Inc(1.4) Azm(223.0) TVD(3043.66) VS(-4.87)
N/-S(5.43) E/-W(-4.80)

#31 MD(3140.00) Inc(1.6) Azm(217.8) TVD(3139.62) VS(-6.47)
N/-S(3.52) E/-W(-6.42)

#32 MD(3235.00) Inc(3.9) Azm(232.2) TVD(3234.51) VS(-9.78)
N/-S(0.50) E/-W(-9.77)

#33 MD(3331.00) Inc(3.9) Azm(234.0) TVD(3330.29)
VS(-14.93) N/-S(-3.40) E/-W(-14.97)



#34 MD(3426.00) Inc(5.2) Azm(243.2) TVD(3424.99)
VS(-21.31) N/-S(-7.23) E/-W(-21.40)

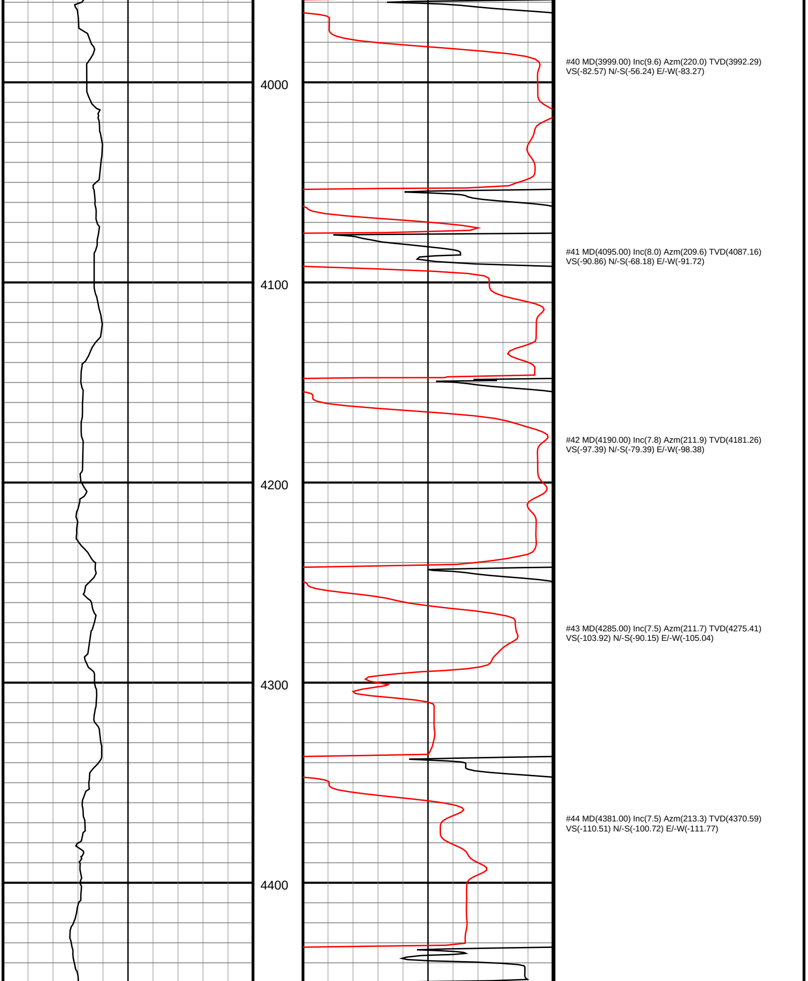
#35 MD(3521.00) Inc(6.2) Azm(240.2) TVD(3519.52)
VS(-29.53) N/-S(-11.72) E/-W(-29.68)

#36 MD(3617.00) Inc(7.9) Azm(236.2) TVD(3614.79)
VS(-39.43) N/-S(-17.96) E/-W(-39.66)

#37 MD(3713.00) Inc(7.8) Azm(235.8) TVD(3709.89)
VS(-50.21) N/-S(-25.29) E/-W(-50.53)

#38 MD(3808.00) Inc(9.1) Azm(230.1) TVD(3803.86)
VS(-61.23) N/-S(-33.76) E/-W(-61.65)

#39 MD(3903.00) Inc(9.5) Azm(222.9) TVD(3897.61)
VS(-72.20) N/-S(-44.31) E/-W(-72.76)



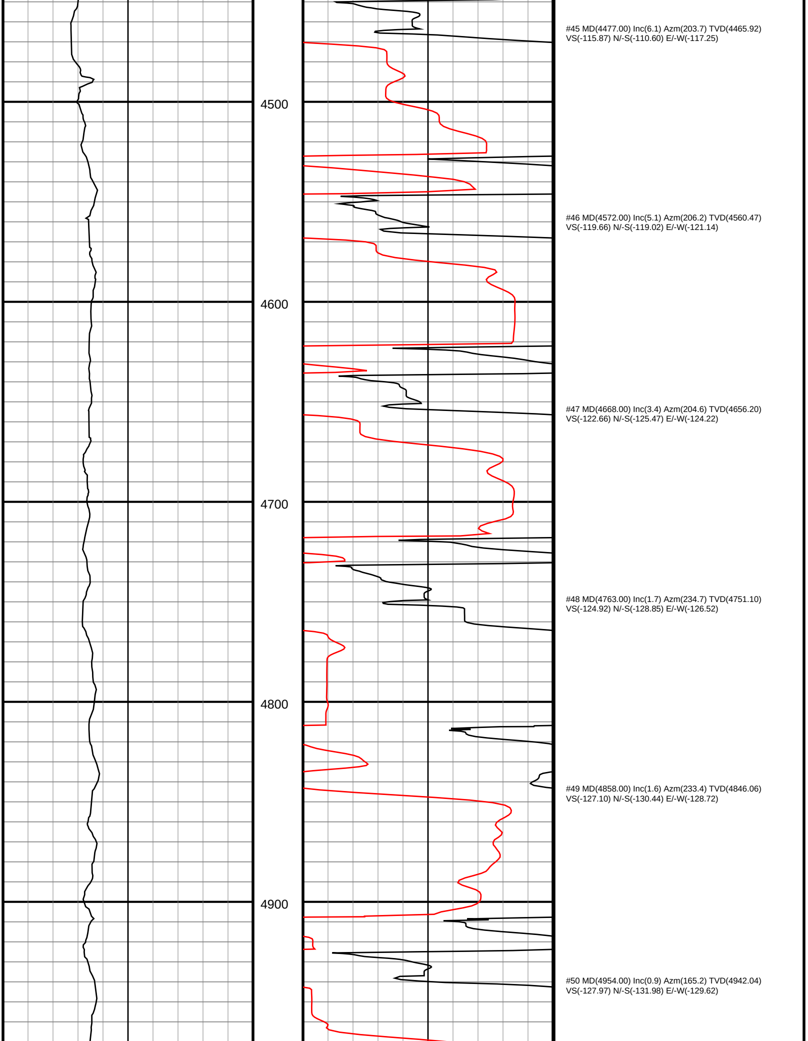
#40 MD(3999.00) Inc(9.6) Azm(220.0) TVD(3992.29)
VS(-82.57) N/-S(-56.24) E/-W(-83.27)

#41 MD(4095.00) Inc(8.0) Azm(209.6) TVD(4087.16)
VS(-90.86) N/-S(-68.18) E/-W(-91.72)

#42 MD(4190.00) Inc(7.8) Azm(211.9) TVD(4181.26)
VS(-97.39) N/-S(-79.39) E/-W(-98.38)

#43 MD(4285.00) Inc(7.5) Azm(211.7) TVD(4275.41)
VS(-103.92) N/-S(-90.15) E/-W(-105.04)

#44 MD(4381.00) Inc(7.5) Azm(213.3) TVD(4370.59)
VS(-110.51) N/-S(-100.72) E/-W(-111.77)



#45 MD(4477.00) Inc(6.1) Azm(203.7) TVD(4465.92)
VS(-115.87) N/-S(-110.60) E/-W(-117.25)

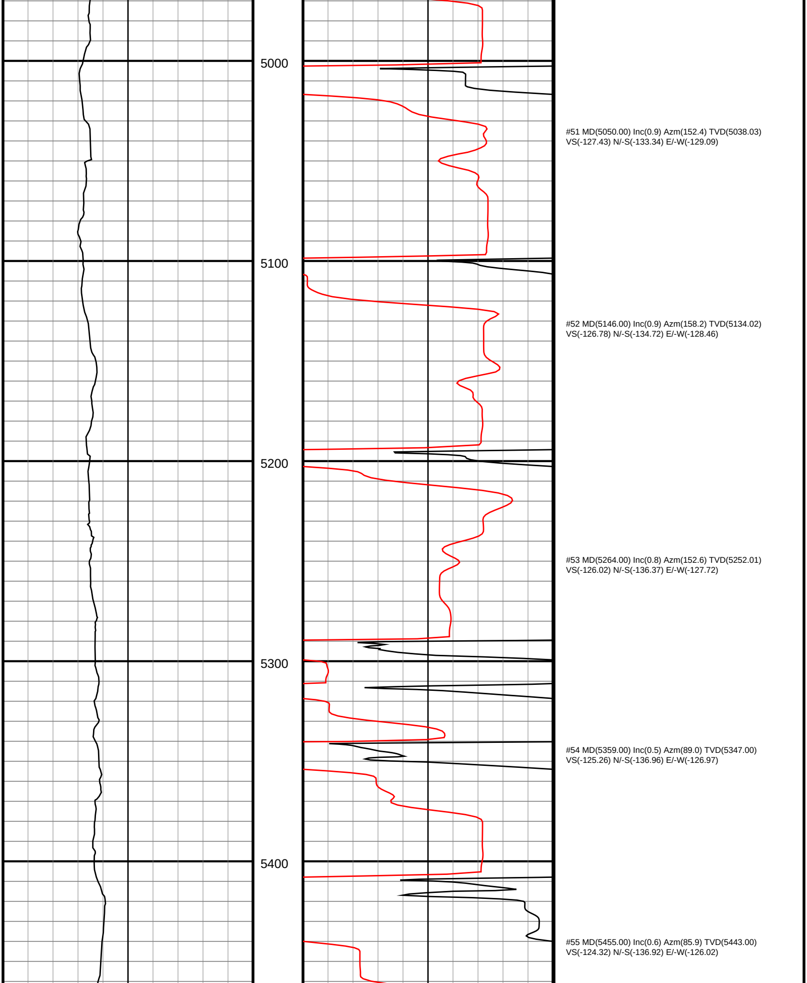
#46 MD(4572.00) Inc(5.1) Azm(206.2) TVD(4560.47)
VS(-119.66) N/-S(-119.02) E/-W(-121.14)

#47 MD(4668.00) Inc(3.4) Azm(204.6) TVD(4656.20)
VS(-122.66) N/-S(-125.47) E/-W(-124.22)

#48 MD(4763.00) Inc(1.7) Azm(234.7) TVD(4751.10)
VS(-124.92) N/-S(-128.85) E/-W(-126.52)

#49 MD(4858.00) Inc(1.6) Azm(233.4) TVD(4846.06)
VS(-127.10) N/-S(-130.44) E/-W(-128.72)

#50 MD(4954.00) Inc(0.9) Azm(165.2) TVD(4942.04)
VS(-127.97) N/-S(-131.98) E/-W(-129.62)



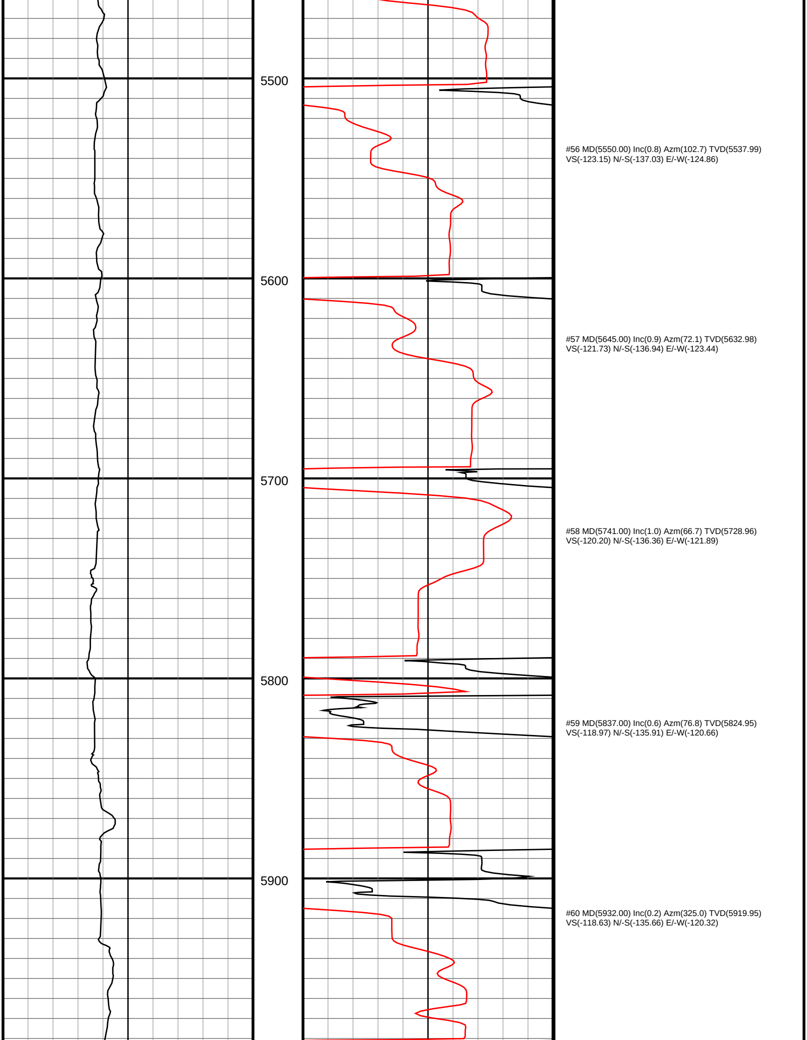
#51 MD(5050.00) Inc(0.9) Azm(152.4) TVD(5038.03)
VS(-127.43) N/-S(-133.34) E/-W(-129.09)

#52 MD(5146.00) Inc(0.9) Azm(158.2) TVD(5134.02)
VS(-126.78) N/-S(-134.72) E/-W(-128.46)

#53 MD(5264.00) Inc(0.8) Azm(152.6) TVD(5252.01)
VS(-126.02) N/-S(-136.37) E/-W(-127.72)

#54 MD(5359.00) Inc(0.5) Azm(89.0) TVD(5347.00)
VS(-125.26) N/-S(-136.96) E/-W(-126.97)

#55 MD(5455.00) Inc(0.6) Azm(85.9) TVD(5443.00)
VS(-124.32) N/-S(-136.92) E/-W(-126.02)



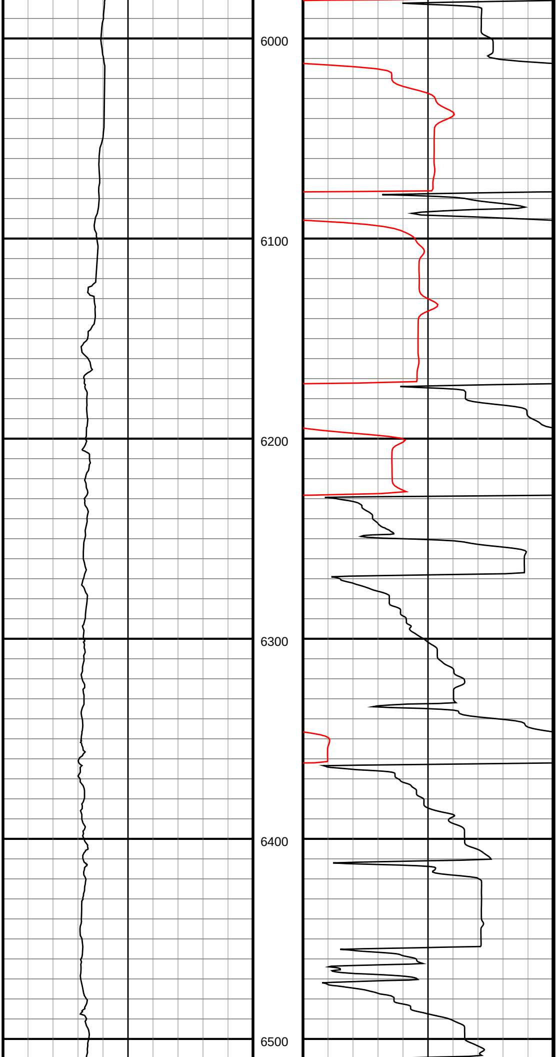
#56 MD(5550.00) Inc(0.8) Azm(102.7) TVD(5537.99)
VS(-123.15) N/-S(-137.03) E/-W(-124.86)

#57 MD(5645.00) Inc(0.9) Azm(72.1) TVD(5632.98)
VS(-121.73) N/-S(-136.94) E/-W(-123.44)

#58 MD(5741.00) Inc(1.0) Azm(66.7) TVD(5728.96)
VS(-120.20) N/-S(-136.36) E/-W(-121.89)

#59 MD(5837.00) Inc(0.6) Azm(76.8) TVD(5824.95)
VS(-118.97) N/-S(-135.91) E/-W(-120.66)

#60 MD(5932.00) Inc(0.2) Azm(325.0) TVD(5919.95)
VS(-118.63) N/-S(-135.66) E/-W(-120.32)



#61 MD(6028.00) Inc(0.1) Azm(348.7) TVD(6015.95)
VS(-118.76) N/-S(-135.39) E/-W(-120.45)

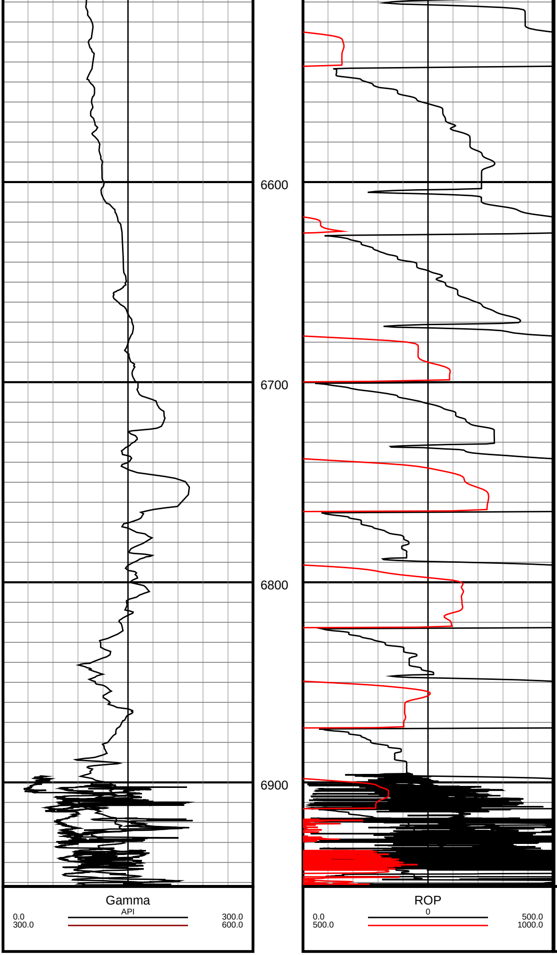
#62 MD(6123.00) Inc(0.3) Azm(37.0) TVD(6110.95)
VS(-118.65) N/-S(-135.10) E/-W(-120.33)

#63 MD(6219.00) Inc(0.6) Azm(10.8) TVD(6206.95)
VS(-118.43) N/-S(-134.43) E/-W(-120.10)

#64 MD(6315.00) Inc(8.2) Azm(101.0) TVD(6302.62)
VS(-111.63) N/-S(-135.25) E/-W(-113.31)

#65 MD(6411.00) Inc(16.4) Azm(96.6) TVD(6396.34)
VS(-91.36) N/-S(-138.11) E/-W(-93.08)

#66 MD(6506.00) Inc(20.3) Azm(95.9) TVD(6486.48)
VS(-61.57) N/-S(-141.34) E/-W(-63.32)



#67 MD(6602.00) Inc(27.6) Azm(92.5) TVD(6574.17)
VS(-22.73) N/-S(-144.03) E/-W(-24.52)

#68 MD(6698.00) Inc(38.4) Azm(95.0) TVD(6654.61) VS(29.33)
N/-S(-147.59) E/-W(27.50)

#69 MD(6793.00) Inc(47.0) Azm(94.3) TVD(6724.36) VS(93.54)
N/-S(-152.75) E/-W(91.65)

#70 MD(6889.00) Inc(52.1) Azm(90.7) TVD(6786.63)
VS(166.52) N/-S(-155.82) E/-W(164.60)

#71 MD(6985.00) Inc(57.2) Azm(88.2) TVD(6842.16)
VS(244.76) N/-S(-155.01) E/-W(242.86)

#183 MD(17615.00) Inc(91.1) Azm(90.8) TVD(6896.72)
VS(10847.83) N/-S(-147.68) E/-W(10846.83)