ENSIGN Directional

Spaur 10L-241

TVD
5":100’

Company: Petroleum Development Corp.
Well Name: Spaur 10L-241
API: 051234232700
County/Parish: Weld
State: Colorado
Country: USA
Job number: 207-121-257
Field: DJ Basin
Rig Id: Ensign 121
Survey Company: Ensign Directional Services
Company Man 1 Dean Haight

Lead Directional Driller Breven Williams
Rotating Directional Driller Dave Van Dorin
Night Directional Driller Pete Moriarty

MWD Ensign Directional Services

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

	Depth	Date
Start:	0 ft	2-23-2016
End:	11466 ft	2-28-2016

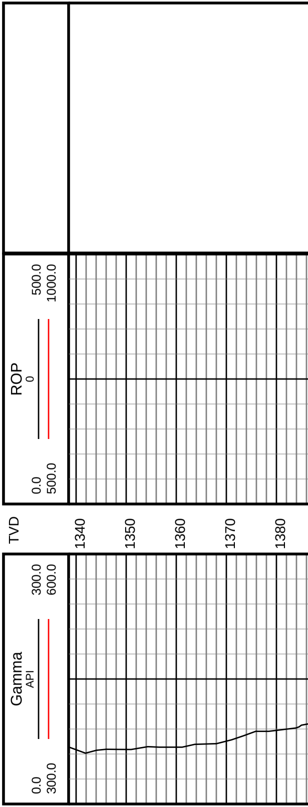
Casing	Depth	Size
Surface:	1369	9 5/8
Intermediate:		7

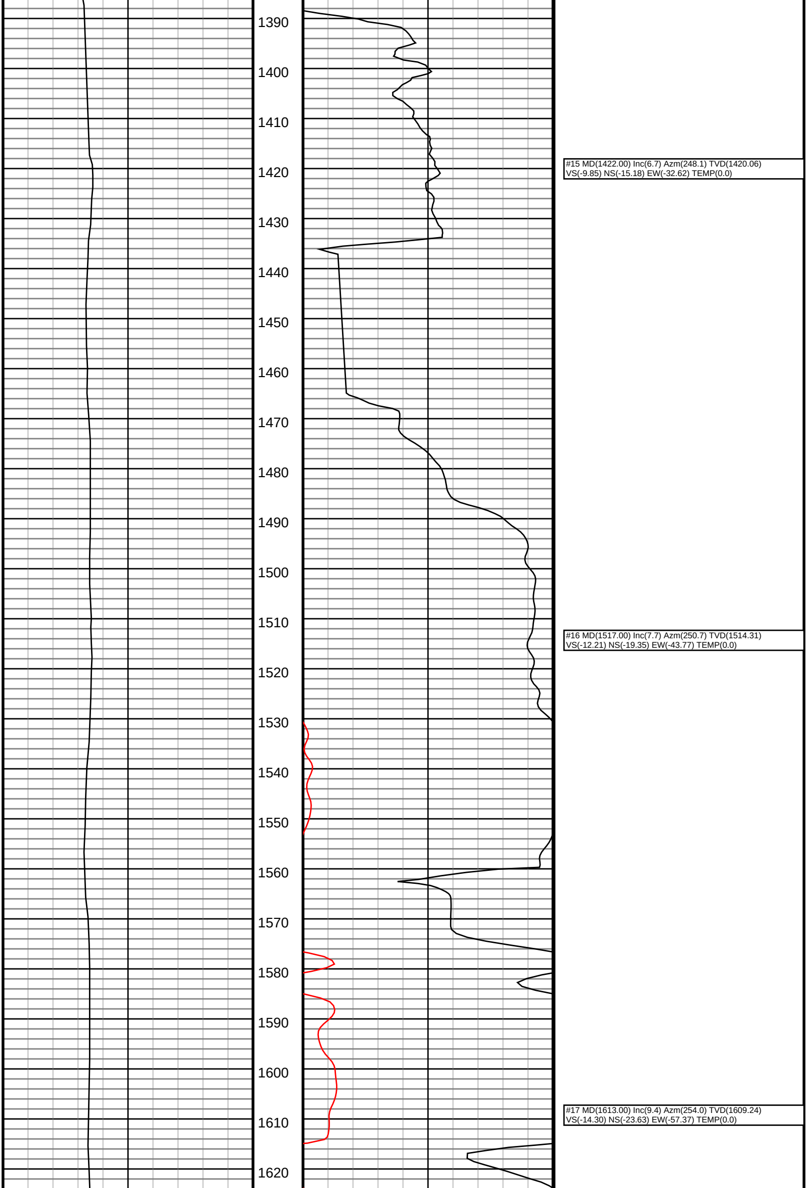
Mud Type: H2O
Density:
Viscosity:
Rm: **Rmf:** **Rmc:**

Elevations
KB: 4853.5
GL: 4840
DF: 4853.5

		Offsets		Depths		Dates	
Run	**Bit Size**	**Gamma**	**Survey**	**Start**	**End**	**Start**	**End**
1	12.25		52.03	0	1390	2-23-2016	2-23-2016
2	8.5	50.20	45.20	1390	11466	2-24-2016	2028-2016
3							
4							
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.

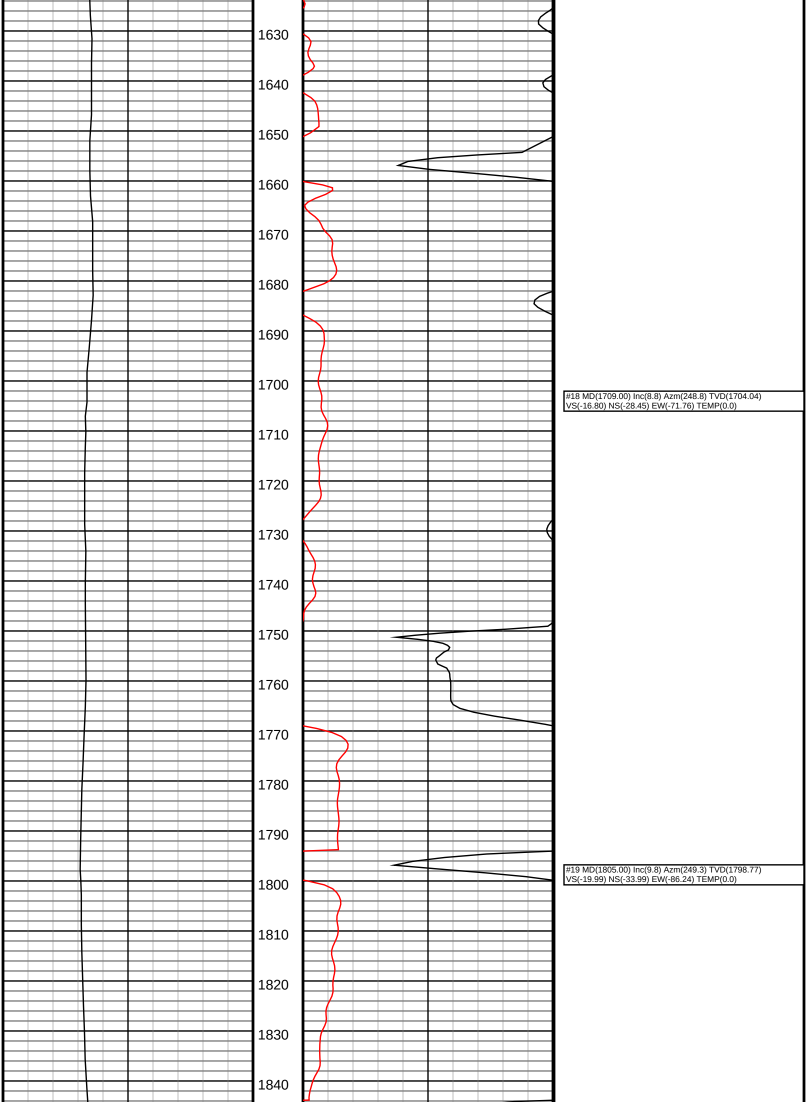




#15 MD(1422.00) Inc(6.7) Azm(248.1) TVD(1420.06)
VS(-9.85) NS(-15.18) EW(-32.62) TEMP(0.0)

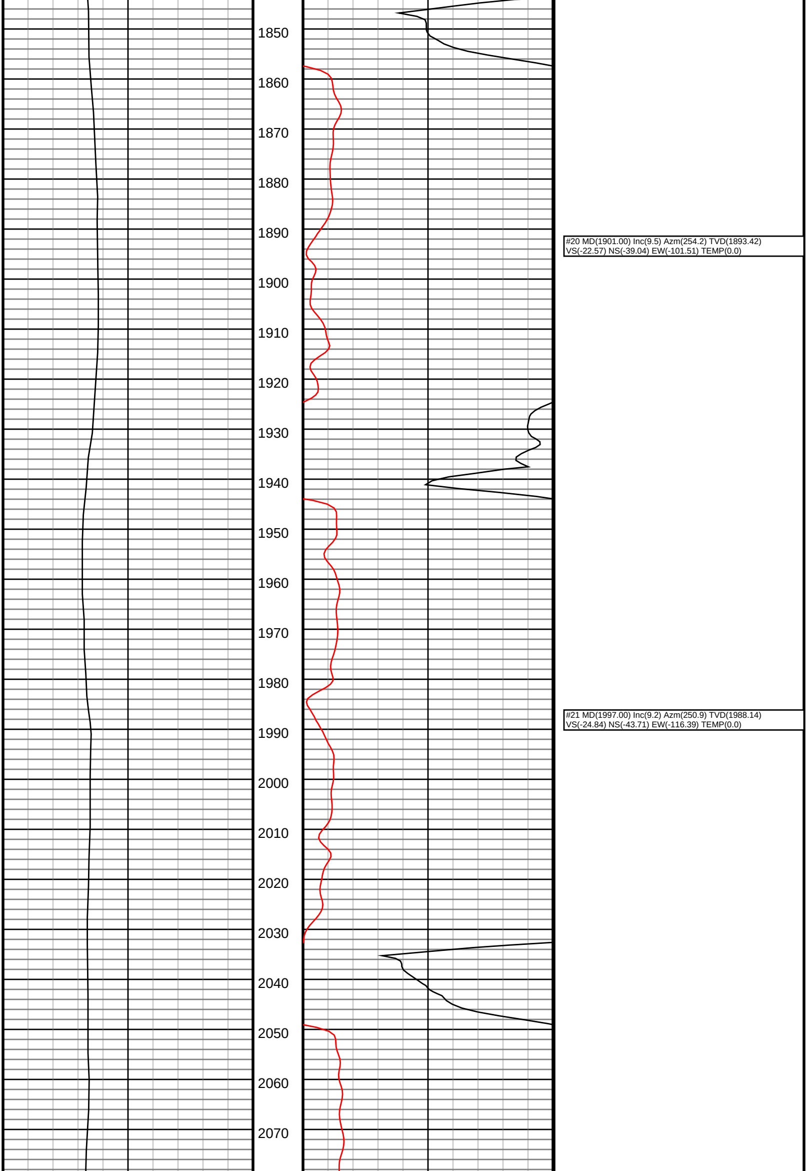
#16 MD(1517.00) Inc(7.7) Azm(250.7) TVD(1514.31)
VS(-12.21) NS(-19.35) EW(-43.77) TEMP(0.0)

#17 MD(1613.00) Inc(9.4) Azm(254.0) TVD(1609.24)
VS(-14.30) NS(-23.63) EW(-57.37) TEMP(0.0)



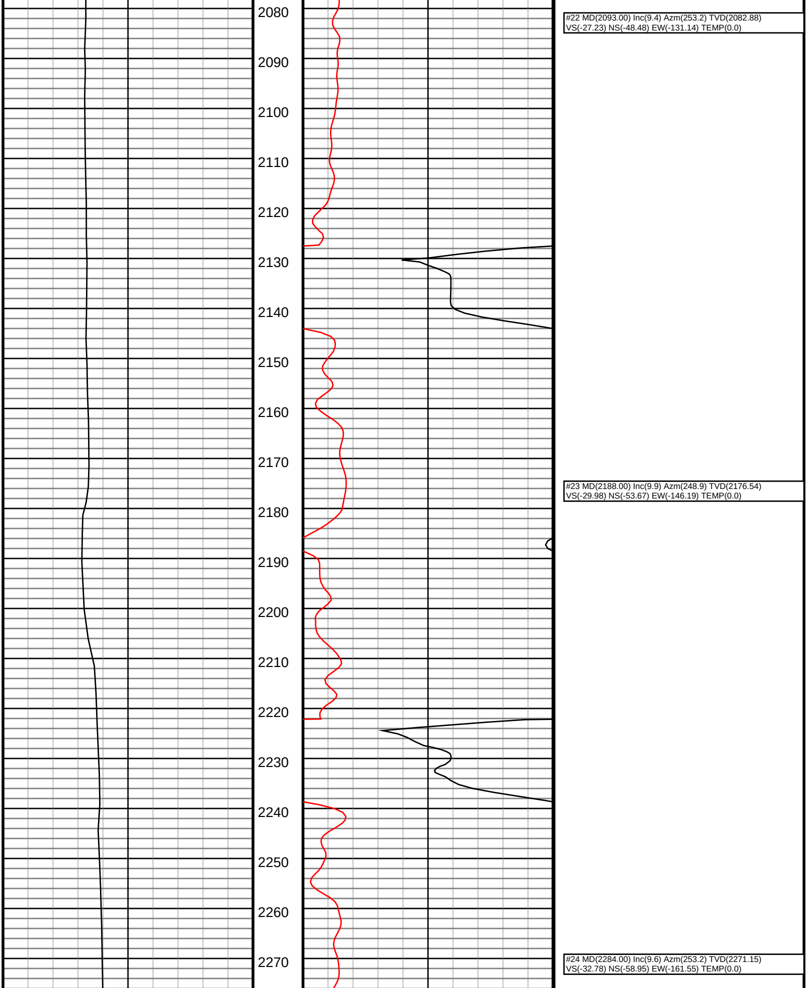
#18 MD(1709.00) Inc(8.8) Azm(248.8) TVD(1704.04)
VS(-16.80) NS(-28.45) EW(-71.76) TEMP(0.0)

#19 MD(1805.00) Inc(9.8) Azm(249.3) TVD(1798.77)
VS(-19.99) NS(-33.99) EW(-86.24) TEMP(0.0)



#20 MD(1901.00) Inc(9.5) Azm(254.2) TVD(1893.42)
VS(-22.57) NS(-39.04) EW(-101.51) TEMP(0.0)

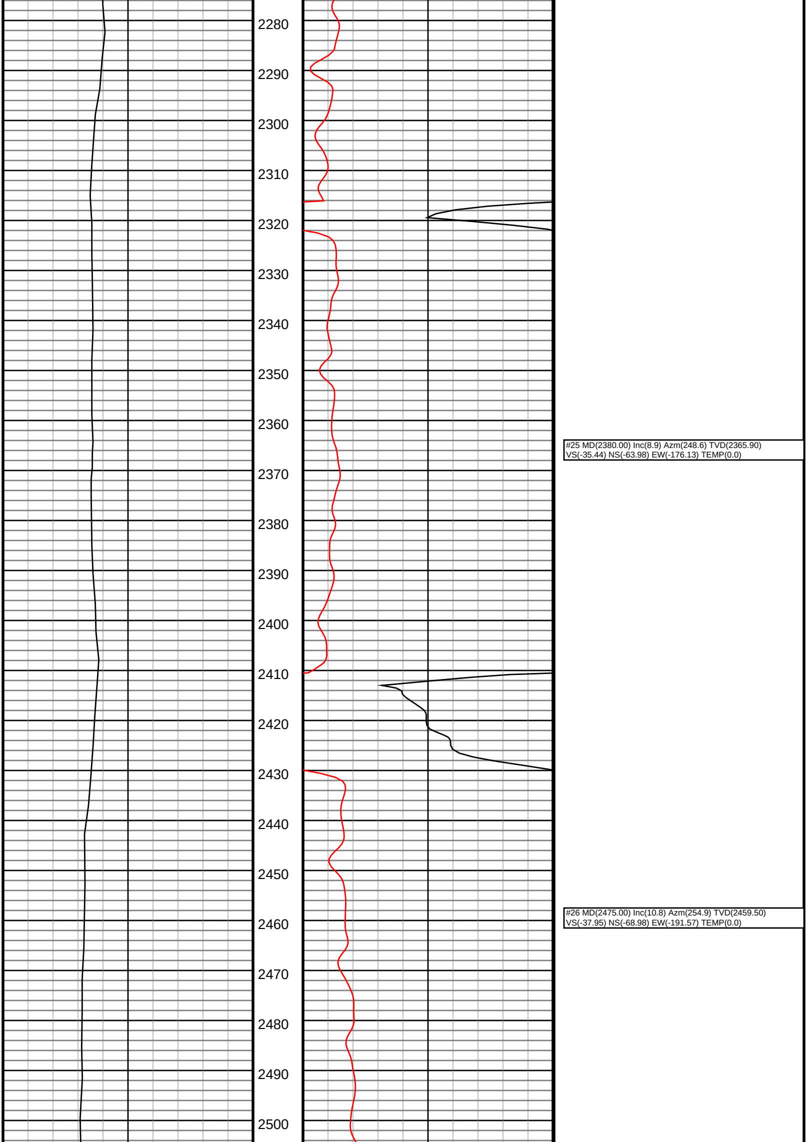
#21 MD(1997.00) Inc(9.2) Azm(250.9) TVD(1988.14)
VS(-24.84) NS(-43.71) EW(-116.39) TEMP(0.0)



#22 MD(2093.00) Inc(9.4) Azm(253.2) TVD(2082.88)
VS(-27.23) NS(-48.48) EW(-131.14) TEMP(0.0)

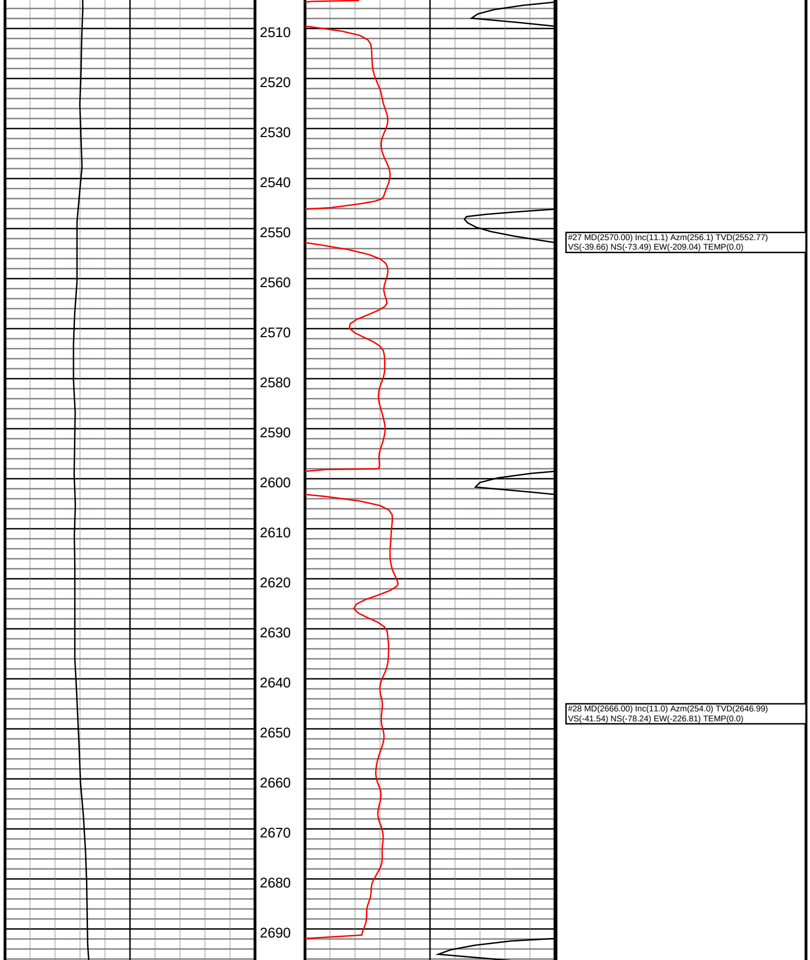
#23 MD(2188.00) Inc(9.9) Azm(248.9) TVD(2176.54)
VS(-29.98) NS(-53.67) EW(-146.19) TEMP(0.0)

#24 MD(2284.00) Inc(9.6) Azm(253.2) TVD(2271.15)
VS(-32.78) NS(-58.95) EW(-161.55) TEMP(0.0)



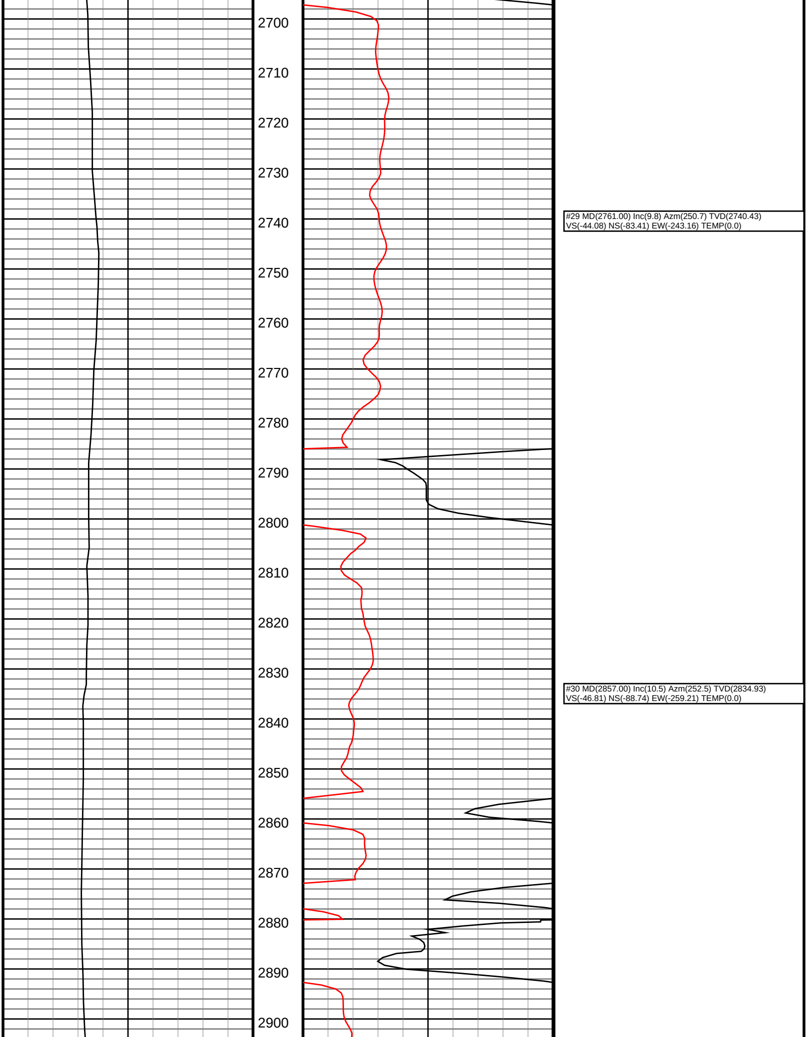
#25 MD(2380.00) Inc(8.9) Azm(248.6) TVD(2365.90)
VS(-35.44) NS(-63.98) EW(-176.13) TEMP(0.0)

#26 MD(2475.00) Inc(10.8) Azm(254.9) TVD(2459.50)
VS(-37.95) NS(-68.98) EW(-191.57) TEMP(0.0)



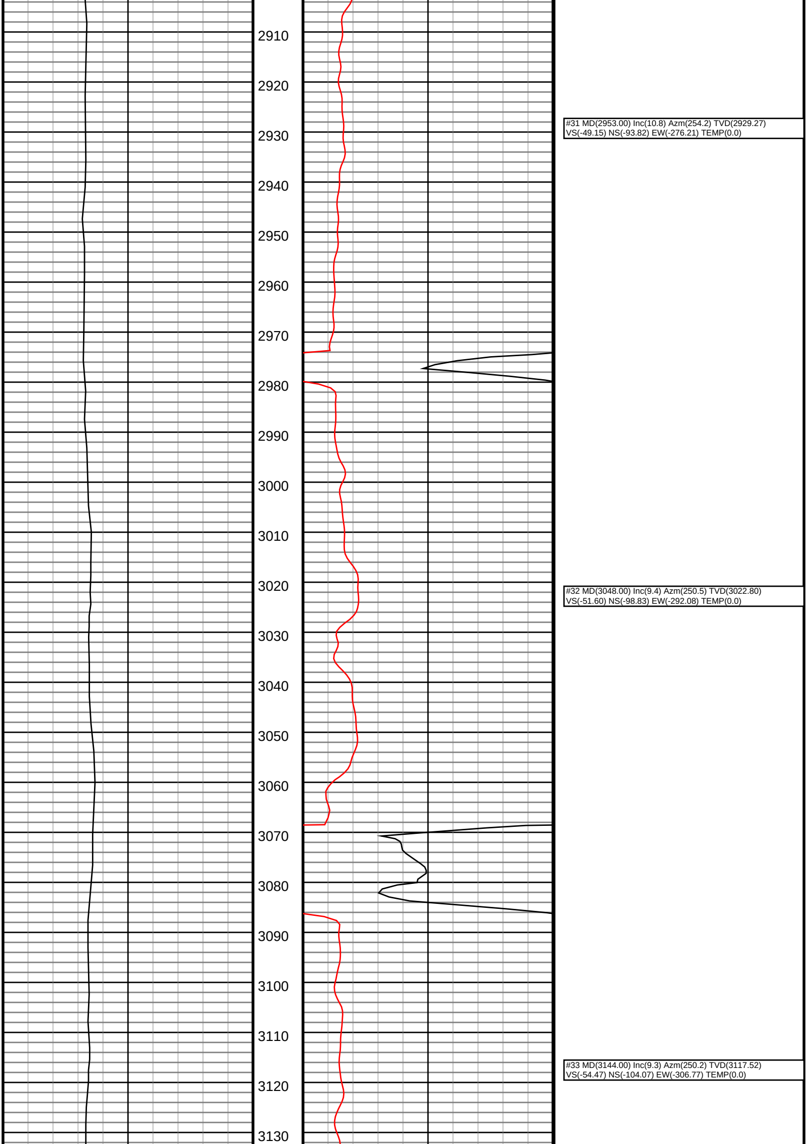
#27 MD(2570.00) Inc(11.1) Azm(256.1) TVD(2552.77)
VS(-39.66) NS(-73.49) EW(-209.04) TEMP(0.0)

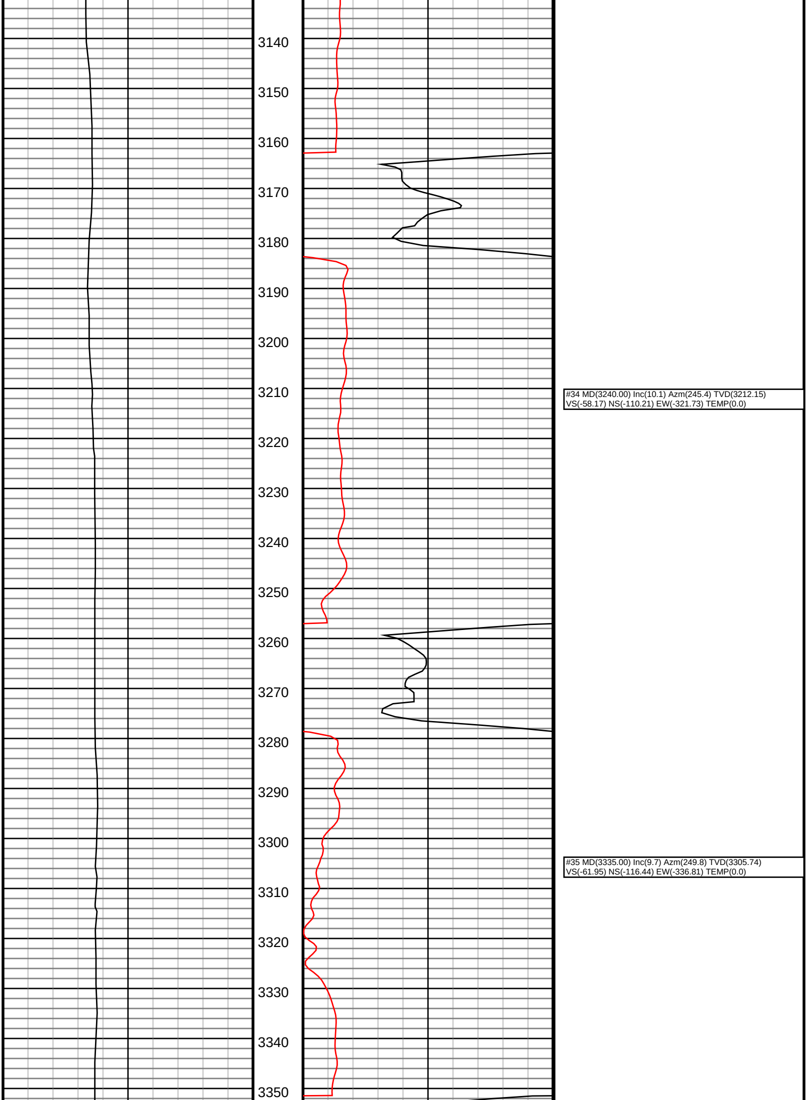
#28 MD(2666.00) Inc(11.0) Azm(254.0) TVD(2646.99)
VS(-41.54) NS(-78.24) EW(-226.81) TEMP(0.0)

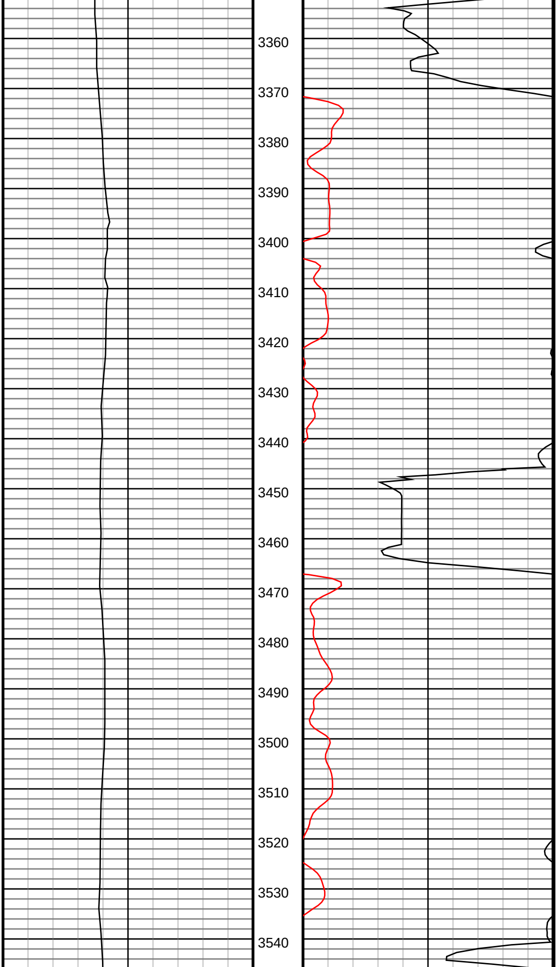


#29 MD(2761.00) Inc(9.8) Azm(250.7) TVD(2740.43)
VS(-44.08) NS(-83.41) EW(-243.16) TEMP(0.0)

#30 MD(2857.00) Inc(10.5) Azm(252.5) TVD(2834.93)
VS(-46.81) NS(-88.74) EW(-259.21) TEMP(0.0)

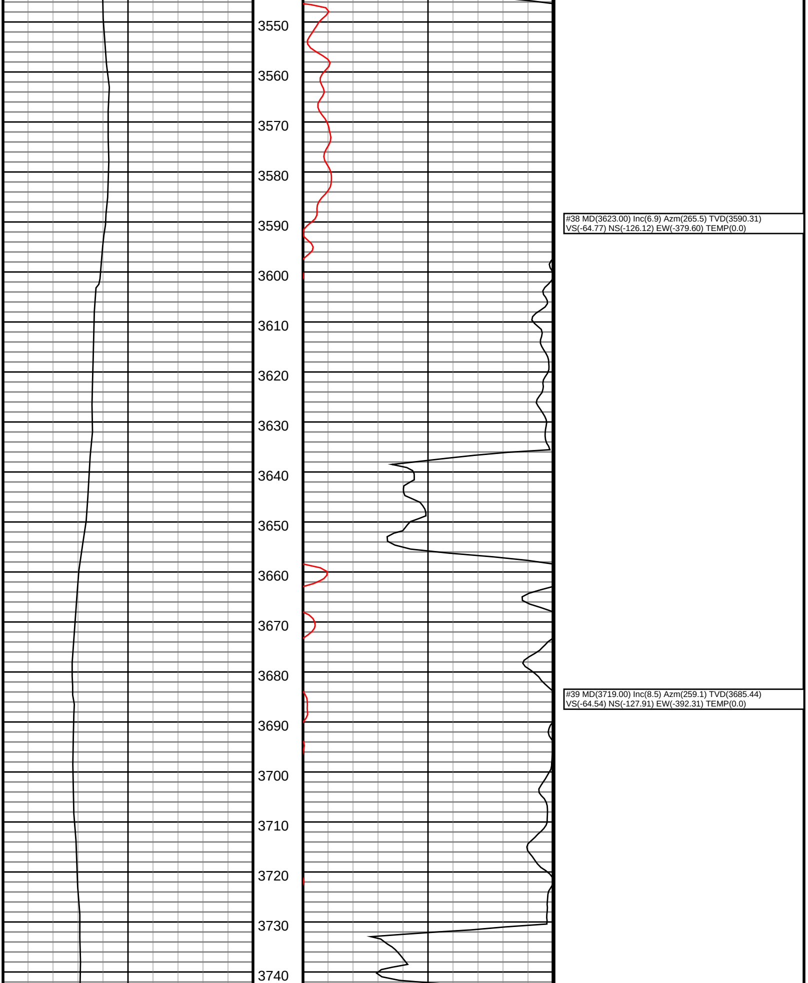






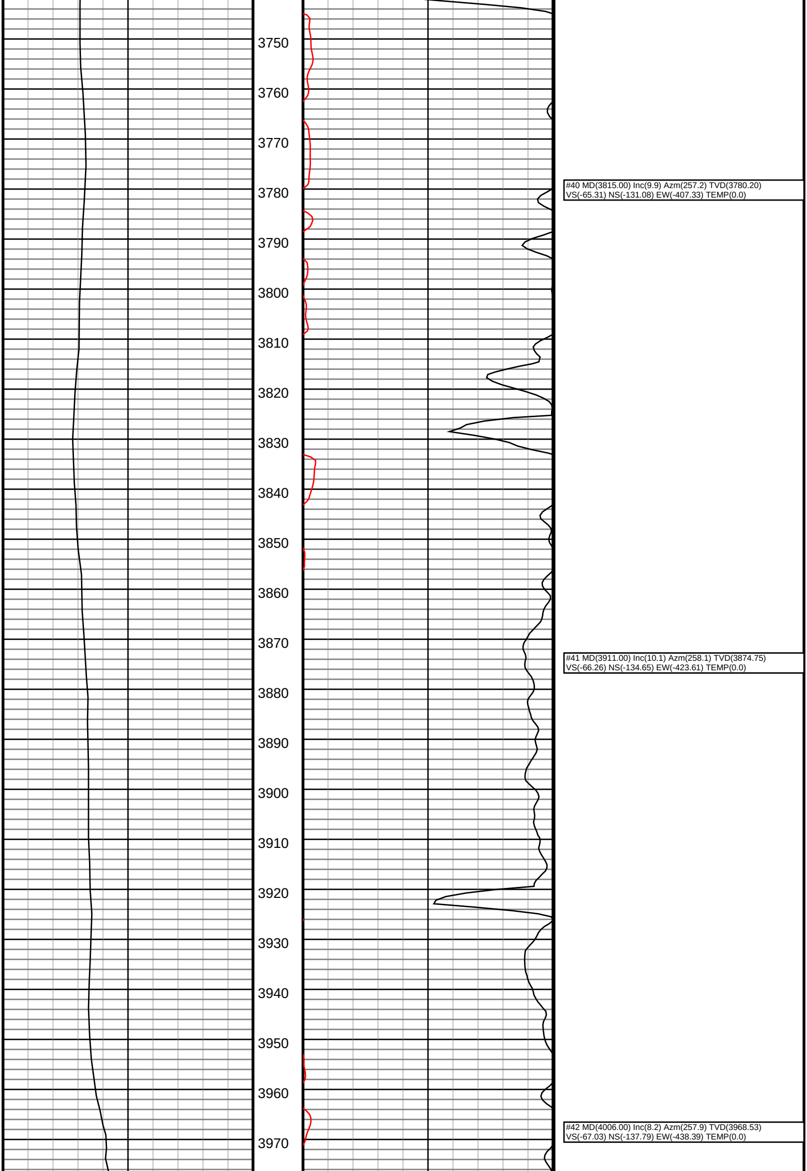
#36 MD(3431.00) Inc(9.4) Azm(250.9) TVD(3400.41)
VS(-64.88) NS(-121.80) EW(-351.81) TEMP(0.0)

#37 MD(3527.00) Inc(8.8) Azm(264.9) TVD(3495.21)
VS(-65.74) NS(-125.01) EW(-366.53) TEMP(0.0)



#38 MD(3623.00) Inc(6.9) Azm(265.5) TVD(3590.31)
VS(-64.77) NS(-126.12) EW(-379.60) TEMP(0.0)

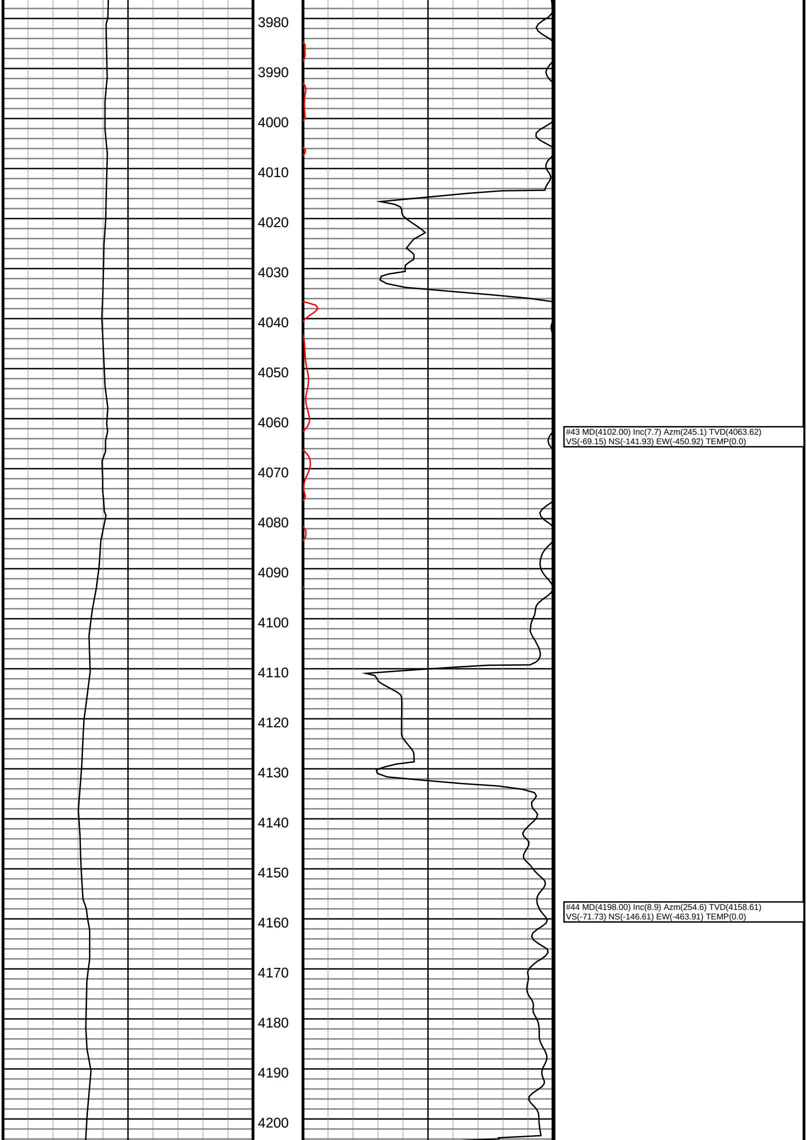
#39 MD(3719.00) Inc(8.5) Azm(259.1) TVD(3685.44)
VS(-64.54) NS(-127.91) EW(-392.31) TEMP(0.0)

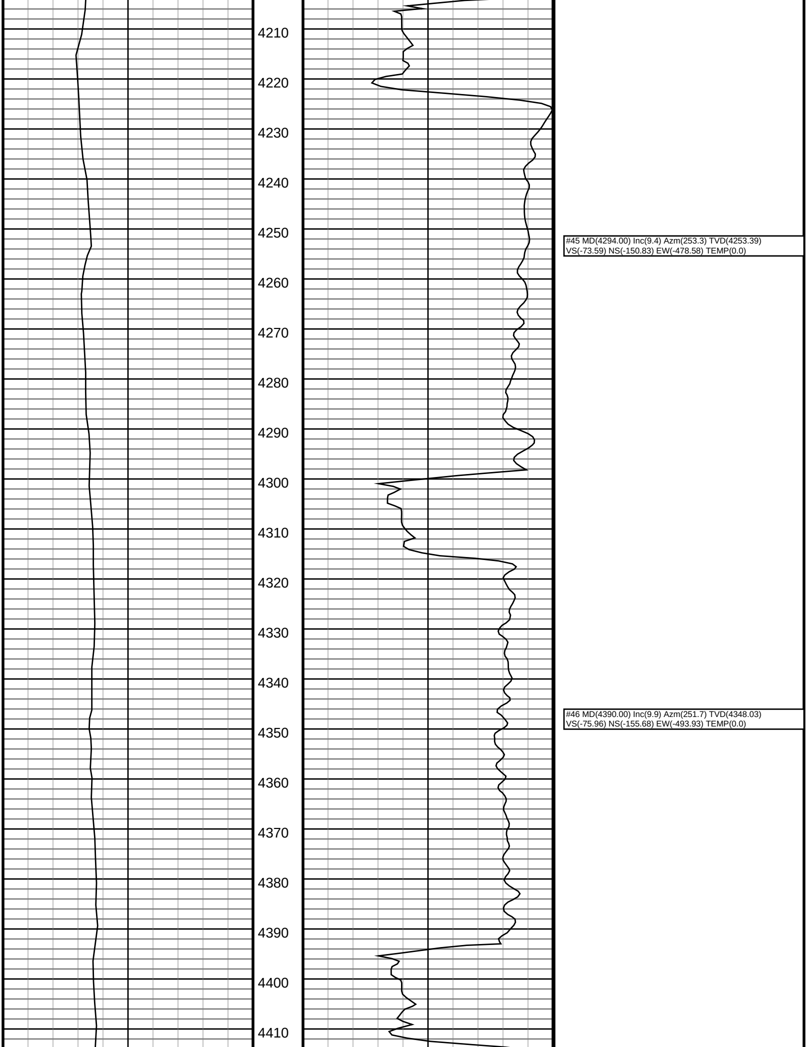


#40 MD(3815.00) Inc(9.9) Azm(257.2) TVD(3780.20)
VS(-65.31) NS(-131.08) EW(-407.33) TEMP(0.0)

#41 MD(3911.00) Inc(10.1) Azm(258.1) TVD(3874.75)
VS(-66.26) NS(-134.65) EW(-423.61) TEMP(0.0)

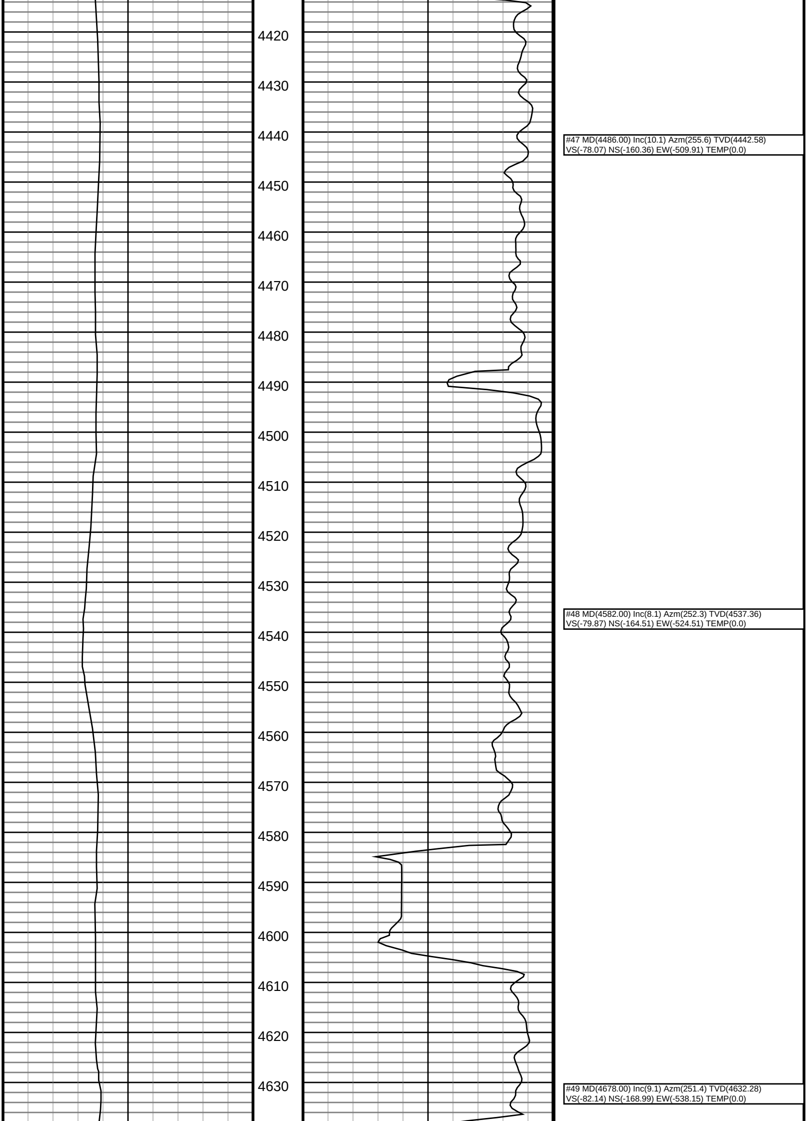
#42 MD(4006.00) Inc(8.2) Azm(257.9) TVD(3968.53)
VS(-67.03) NS(-137.79) EW(-438.39) TEMP(0.0)





#45 MD(4294.00) Inc(9.4) Azm(253.3) TVD(4253.39)
VS(-73.59) NS(-150.83) EW(-478.58) TEMP(0.0)

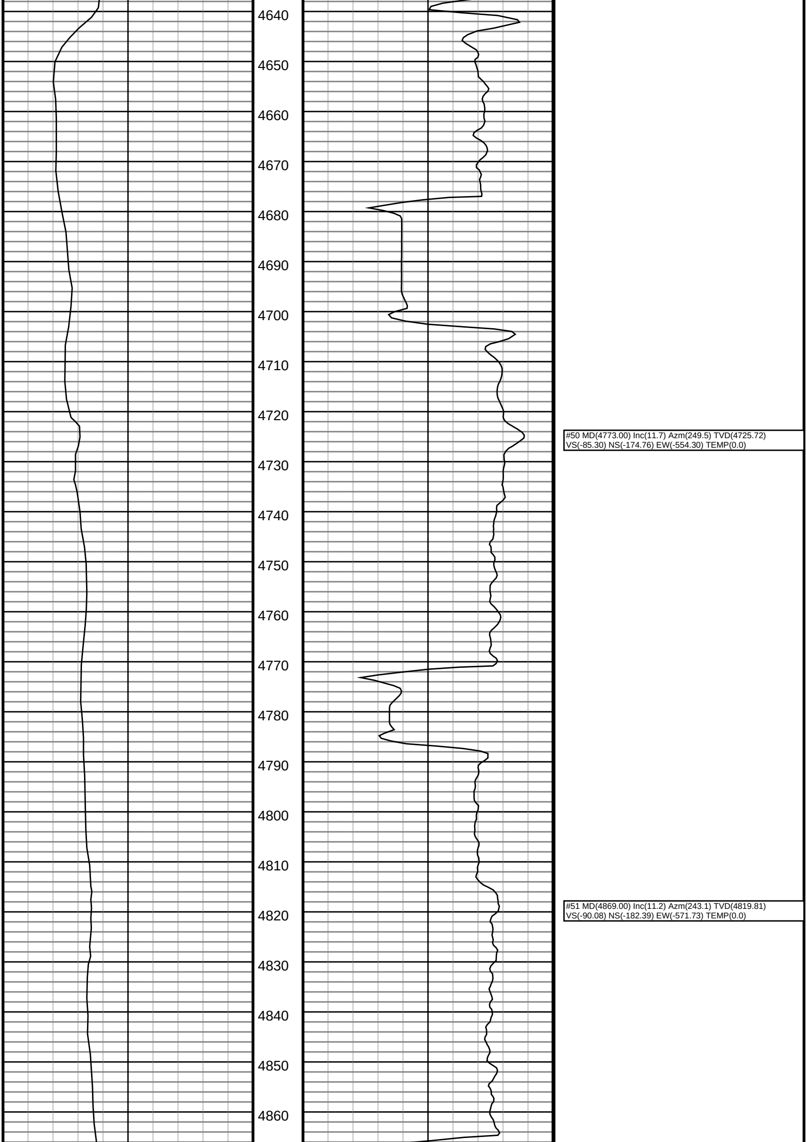
#46 MD(4390.00) Inc(9.9) Azm(251.7) TVD(4348.03)
VS(-75.96) NS(-155.68) EW(-493.93) TEMP(0.0)



#47 MD(4486.00) Inc(10.1) Azm(255.6) TVD(4442.58)
VS(-78.07) NS(-160.36) EW(-509.91) TEMP(0.0)

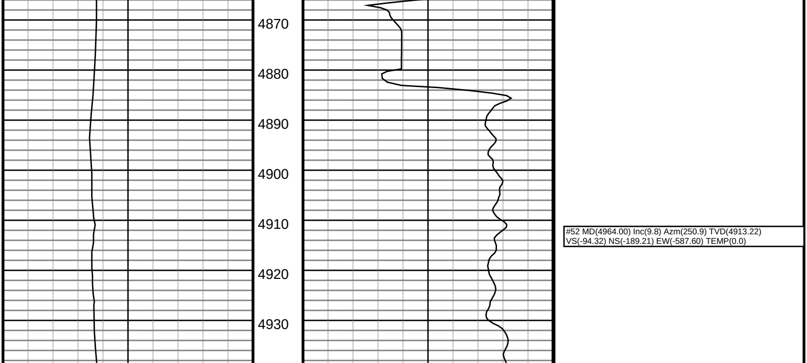
#48 MD(4582.00) Inc(8.1) Azm(252.3) TVD(4537.36)
VS(-79.87) NS(-164.51) EW(-524.51) TEMP(0.0)

#49 MD(4678.00) Inc(9.1) Azm(251.4) TVD(4632.28)
VS(-82.14) NS(-168.99) EW(-538.15) TEMP(0.0)



#50 MD(4773.00) Inc(11.7) Azm(249.5) TVD(4725.72)
VS(-85.30) NS(-174.76) EW(-554.30) TEMP(0.0)

#51 MD(4869.00) Inc(11.2) Azm(243.1) TVD(4819.81)
VS(-90.08) NS(-182.39) EW(-571.73) TEMP(0.0)



#52 MD(4964.00) Inc(9.8) Azm(250.9) TVD(4913.22)
VS(-94.32) NS(-189.21) EW(-587.60) TEMP(0.0)

#53 MD(5060.00) Inc(10.3) Azm(252.1) TVD(5007.75)
VS(-97.06) NS(-194.52) EW(-603.48) TEMP(0.0)

#54 MD(5156.00) Inc(9.9) Azm(260.5) TVD(5102.26)
VS(-98.45) NS(-198.52) EW(-619.79) TEMP(0.0)

#55 MD(5252.00) Inc(10.1) Azm(255.6) TVD(5196.81)
VS(-99.29) NS(-201.98) EW(-636.09) TEMP(0.0)

#56 MD(5347.00) Inc(10.2) Azm(254.0) TVD(5290.32)
VS(-101.08) NS(-206.37) EW(-652.24) TEMP(0.0)

#57 MD(5443.00) Inc(7.4) Azm(255.4) TVD(5385.18)
VS(-102.71) NS(-210.27) EW(-666.40) TEMP(0.0)

#58 MD(5539.00) Inc(7.5) Azm(255.4) TVD(5480.37)
VS(-103.91) NS(-213.41) EW(-678.44) TEMP(0.0)

#59 MD(5635.00) Inc(6.9) Azm(248.6) TVD(5575.62)
VS(-105.75) NS(-217.09) EW(-689.87) TEMP(0.0)

#60 MD(5731.00) Inc(4.8) Azm(248.6) TVD(5671.11)
VS(-107.84) NS(-220.66) EW(-698.98) TEMP(0.0)

#61 MD(5827.00) Inc(3.5) Azm(241.7) TVD(5766.86)
VS(-109.66) NS(-223.51) EW(-705.30) TEMP(0.0)

#62 MD(5923.00) Inc(2.0) Azm(247.2) TVD(5862.74)
VS(-111.03) NS(-225.55) EW(-709.43) TEMP(0.0)

#63 MD(6019.00) Inc(1.6) Azm(216.2) TVD(5958.70)
VS(-112.37) NS(-227.28) EW(-711.76) TEMP(0.0)

#64 MD(6114.00) Inc(1.0) Azm(228.9) TVD(6053.67)
VS(-113.74) NS(-228.90) EW(-713.17) TEMP(208.5)

#65 MD(6239.00) Inc(0.5) Azm(228.7) TVD(6178.66)
VS(-114.61) NS(-229.98) EW(-714.40) TEMP(134.5)

#66 MD(6335.00) Inc(5.3) Azm(352.8) TVD(6274.53)
VS(-110.40) NS(-225.85) EW(-715.27) TEMP(134.5)

#67 MD(6431.00) Inc(14.1) Azm(0.6) TVD(6369.07)
VS(-94.41) NS(-209.73) EW(-715.71) TEMP(134.5)

#68 MD(6527.00) Inc(20.4) Azm(359.0) TVD(6460.71)
VS(-66.29) NS(-181.28) EW(-715.88) TEMP(134.5)

#69 MD(6622.00) Inc(28.8) Azm(356.0) TVD(6547.01)
VS(-27.03) NS(-141.82) EW(-717.77) TEMP(149.3)

#70 MD(6718.00) Inc(37.5) Azm(0.9) TVD(6627.32)
VS(24.90) NS(-89.43) EW(-718.92) TEMP(149.3)

#71 MD(6814.00) Inc(40.0) Azm(0.6) TVD(6702.18)
VS(84.10) NS(-29.35) EW(-718.14) TEMP(149.3)

#72 MD(6910.00) Inc(48.5) Azm(2.3) TVD(6770.89)
VS(149.89) NS(37.55) EW(-716.37) TEMP(149.3)

#73 MD(7006.00) Inc(55.5) Azm(359.9) TVD(6829.96)
VS(224.31) NS(113.13) EW(-715.00) TEMP(149.3)

#74 MD(7101.00) Inc(57.7) Azm(359.0) TVD(6882.25)
VS(302.74) NS(192.43) EW(-715.77) TEMP(149.3)

#75 MD(7197.00) Inc(61.7) Azm(357.9) TVD(6930.68)
VS(384.90) NS(275.27) EW(-718.02) TEMP(149.3)

#76 MD(7292.00) Inc(67.1) Azm(357.9) TVD(6971.71)
VS(469.91) NS(360.85) EW(-721.16) TEMP(149.3)

#77 MD(7340.00) Inc(72.3) Azm(358.3) TVD(6988.36)
VS(514.56) NS(405.83) EW(-722.65) TEMP(149.3)

#78 MD(7388.00) Inc(77.1) Azm(358.4) TVD(7001.02)
VS(560.46) NS(452.10) EW(-723.98) TEMP(149.3)

#114 MD(10648.00) Inc(89.1) Azm(0.2) TVD(7011.81)
VS(3774.94) NS(3709.71) EW(-708.15) TEMP(178.9)

#116 MD(10840.00) Inc(89.9) Azm(359.1) TVD(7016.00)
VS(3964.66) NS(3901.65) EW(-709.24) TEMP(193.7)

#122 MD(11421.00) Inc(91.0) Azm(357.6) TVD(7020.88)
VS(4540.04) NS(4482.47) EW(-720.76) TEMP(193.7)