ENSIGN Directional

Hunt Federal 28X-314

TVD
5":100’

Company:	Petroleum Development Corp.
Well Name:	Hunt Federal 28X-314
API:	0512341945
County/Parish:	Weld
State:	Colorado
Country:	USA
Job number:	207-121-251
Field:	DJ Basin
Rig Id:	Ensign 121
Survey Company:	Ensign Directional Services
Company Man 1	Dean Haight
Lead Directional Driller	Brevin Williams
Rotating Directional Driller	Dave Van Doran
Night Directional Driller	Pete Moriarty/Ramon Hernandez
MWD	Ensign Directional Services

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

	Depth	Date
Start:	0 ft	12-24-2015
End:	14937 ft	1-1-2015

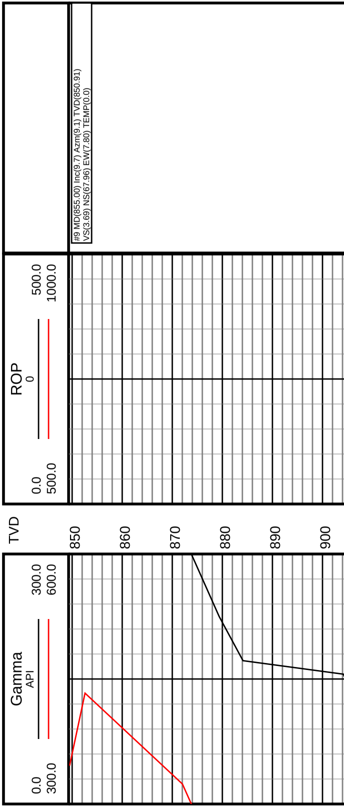
Casing	Depth	Size
Surface:	915	9 5/8
Intermediate:	7744	7

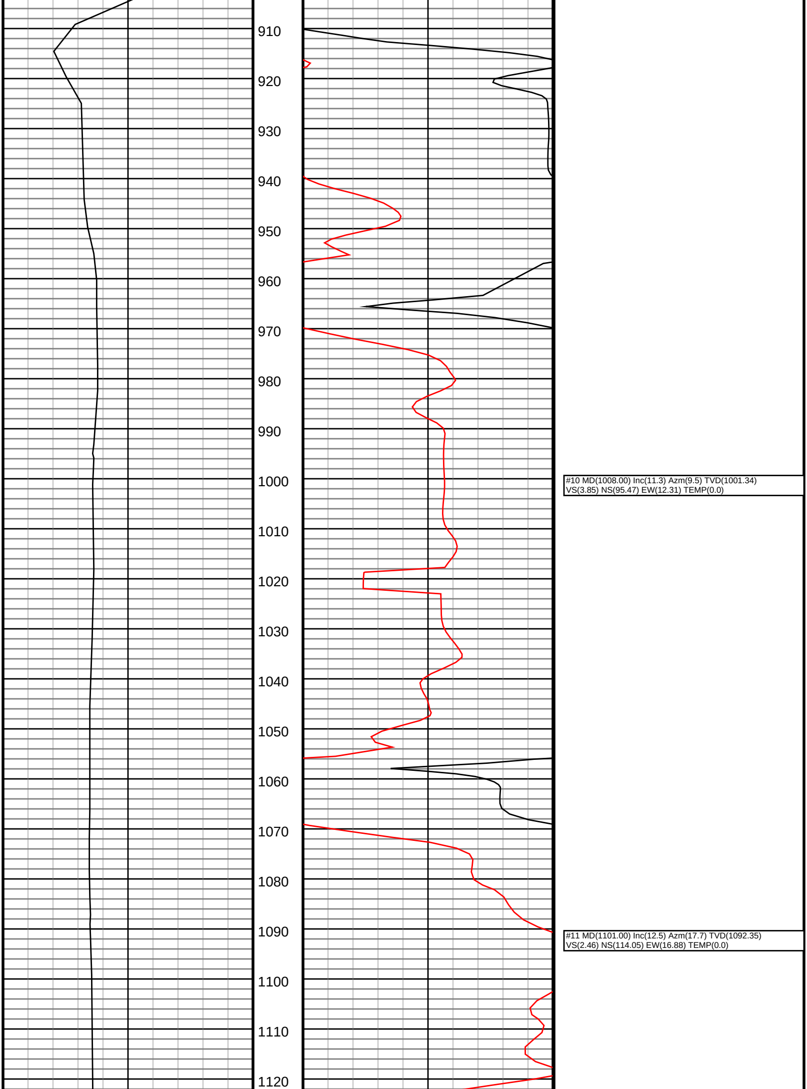
Mud Type: H2O
Density:
Viscosity:
Rm: **Rmf:** **Rmc:**

Elevations
KB: 4774.5
GL: 4761
DF: 4774.5

Run	Bit Size	Offsets		Depths		Dates	
		Gamma	Survey	Start	End	Start	End
1	12.25			0	915	12-24-2015	12-25-2015
2	8.75	61.78	56.78	915	7764	12-25-2015	12-27-2015
3	6.25	61.39	56.39	7764	14937	12-29-2015	1-1-2015
4							
5							
6							
7							
8							
9							
10							

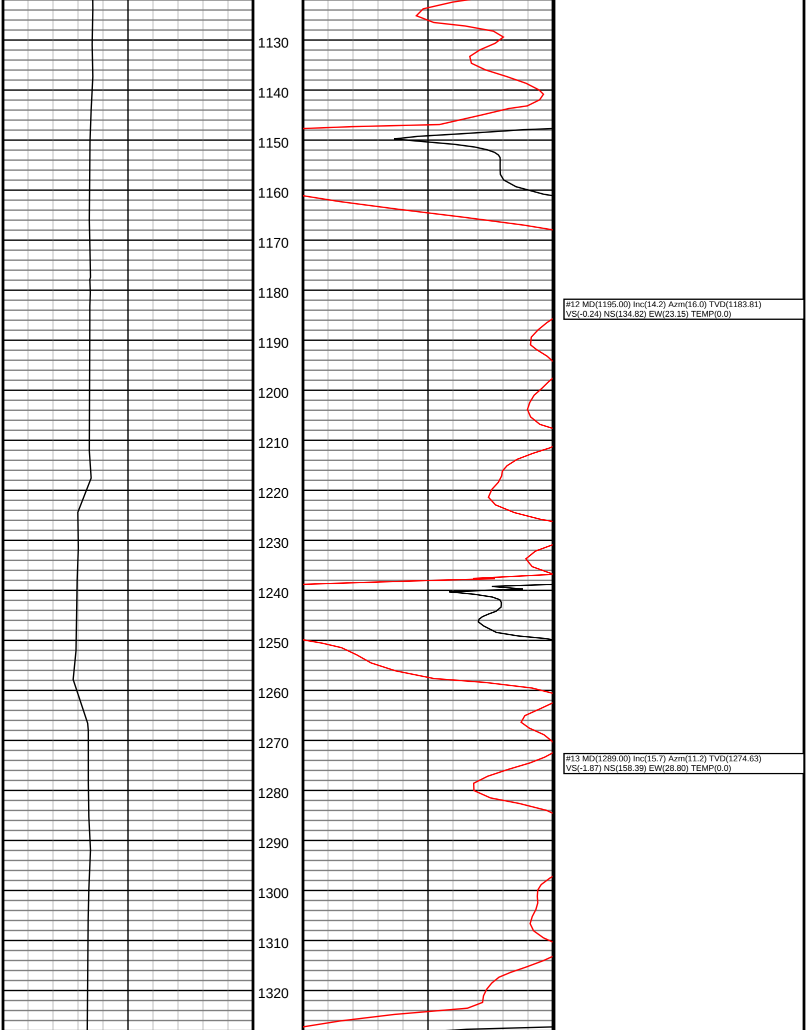
Ensign Directional Services uses its best efforts to provide its customers with accurate information and interpretations in conjunction with services performed but will not be held liable or responsible for the accuracy of such information or interpretation.





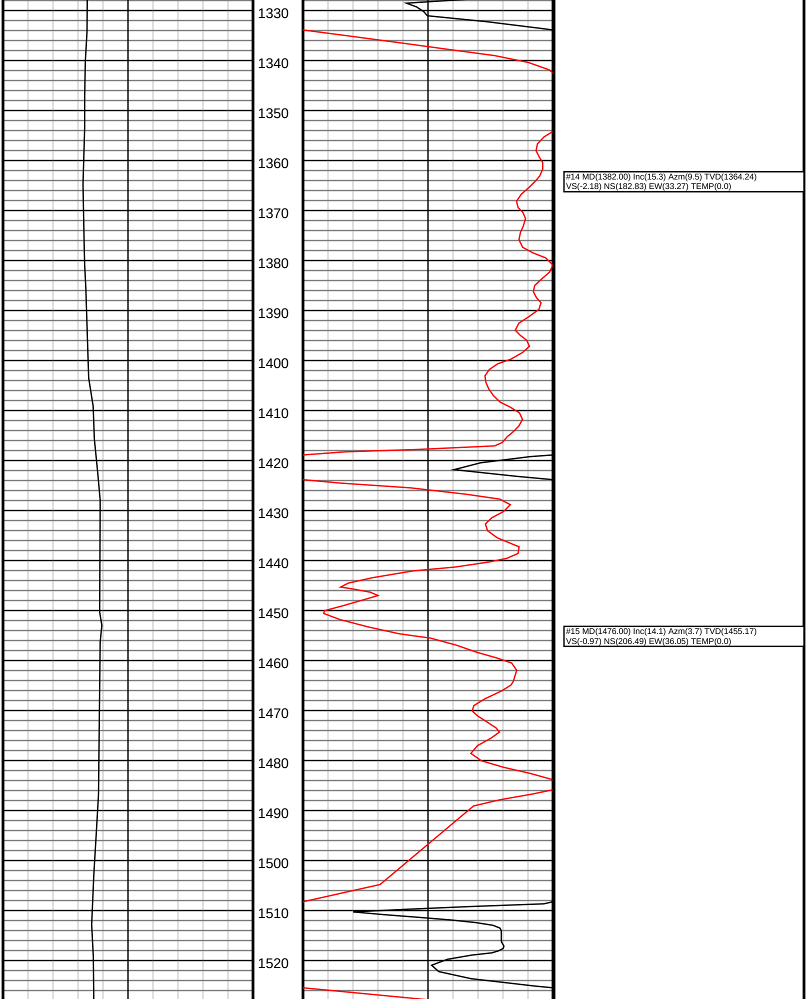
#10 MD(1008.00) Inc(11.3) Azm(9.5) TVD(1001.34)
VS(3.85) NS(95.47) EW(12.31) TEMP(0.0)

#11 MD(1101.00) Inc(12.5) Azm(17.7) TVD(1092.35)
VS(2.46) NS(114.05) EW(16.88) TEMP(0.0)



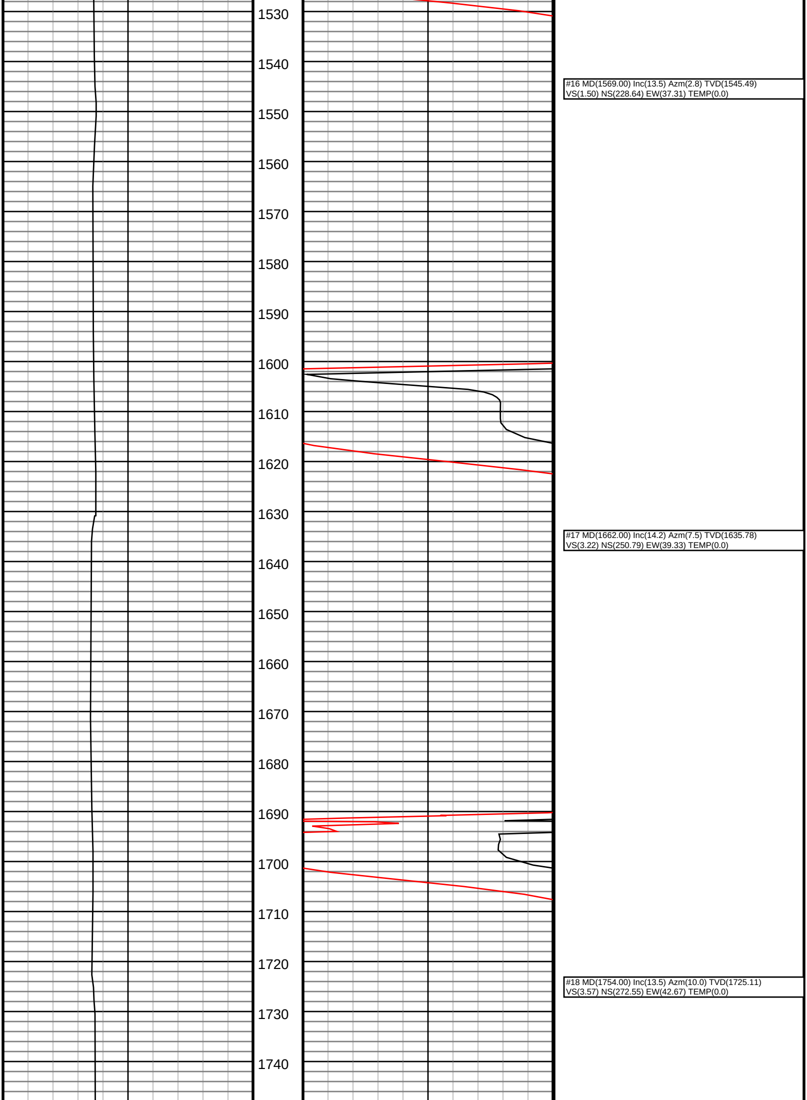
#12 MD(1195.00) Inc(14.2) Azm(16.0) TVD(1183.81)
VS(-0.24) NS(134.82) EW(23.15) TEMP(0.0)

#13 MD(1289.00) Inc(15.7) Azm(11.2) TVD(1274.63)
VS(-1.87) NS(158.39) EW(28.80) TEMP(0.0)



#14 MD(1382.00) Inc(15.3) Azm(9.5) TVD(1364.24)
VS(-2.18) NS(182.83) EW(33.27) TEMP(0.0)

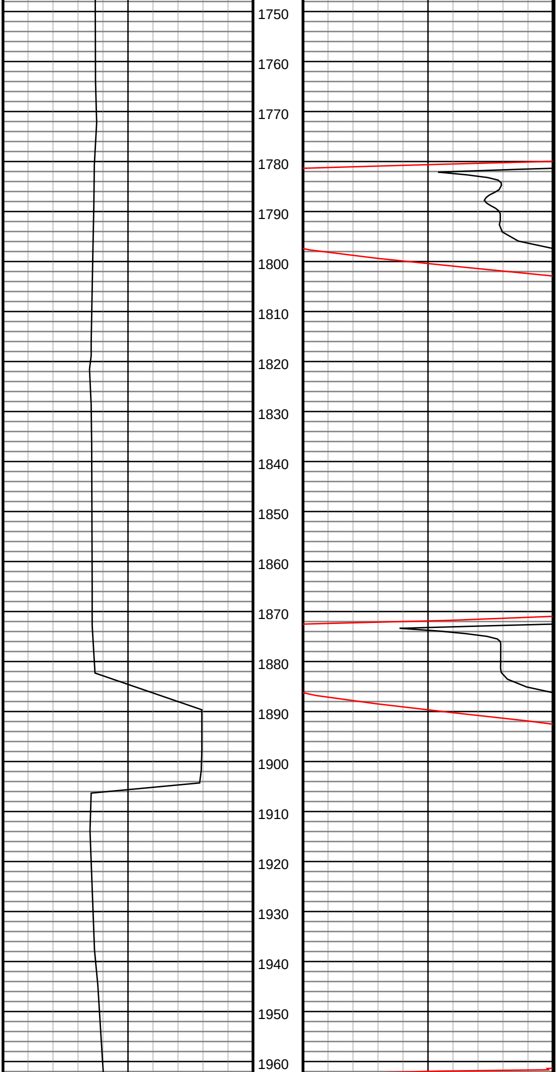
#15 MD(1476.00) Inc(14.1) Azm(3.7) TVD(1455.17)
VS(-0.97) NS(206.49) EW(36.05) TEMP(0.0)



#16 MD(1569.00) Inc(13.5) Azm(2.8) TVD(1545.49)
VS(1.50) NS(228.64) EW(37.31) TEMP(0.0)

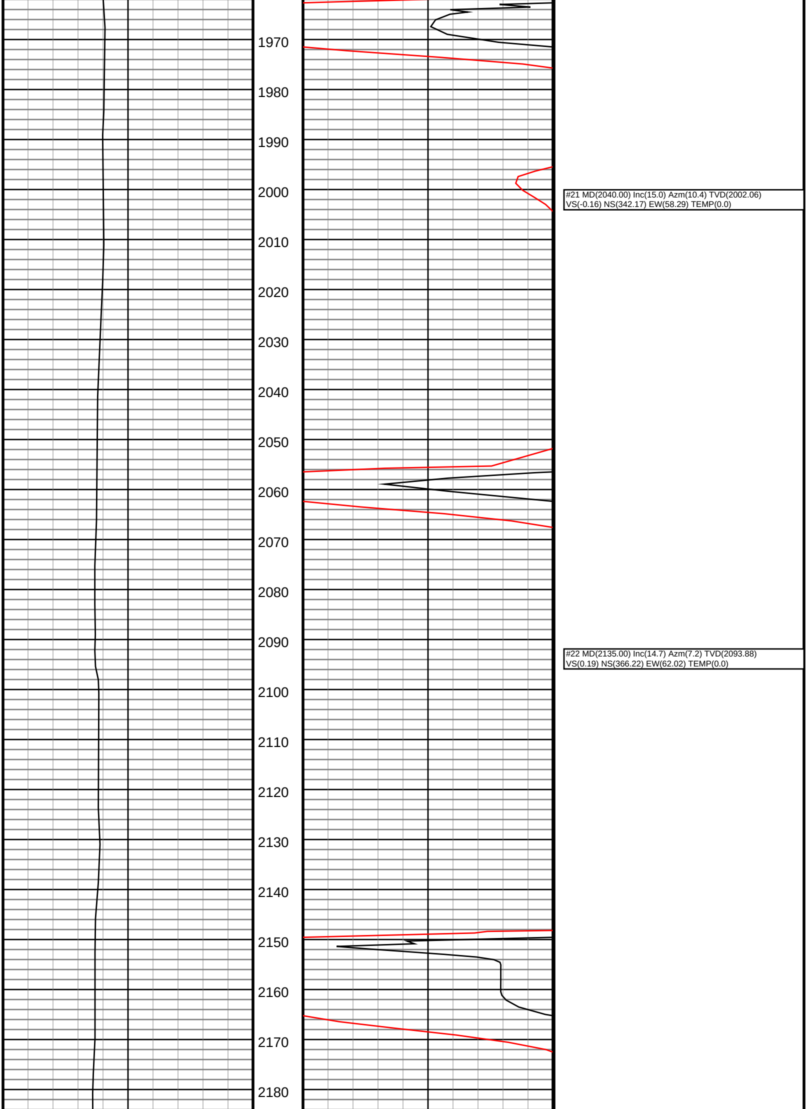
#17 MD(1662.00) Inc(14.2) Azm(7.5) TVD(1635.78)
VS(3.22) NS(250.79) EW(39.33) TEMP(0.0)

#18 MD(1754.00) Inc(13.5) Azm(10.0) TVD(1725.11)
VS(3.57) NS(272.55) EW(42.67) TEMP(0.0)



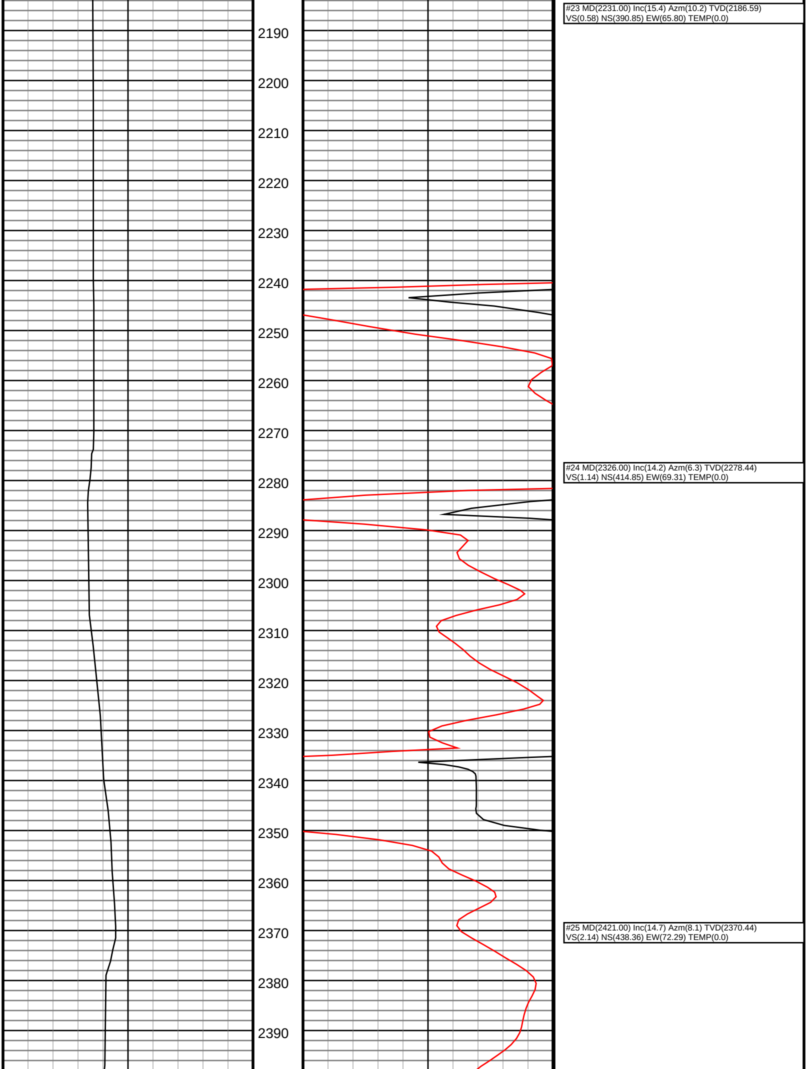
#19 MD(1847.00) Inc(14.5) Azm(12.3) TVD(1815.35)
VS(2.96) NS(294.62) EW(47.04) TEMP(0.0)

#20 MD(1944.00) Inc(14.6) Azm(15.3) TVD(1909.24)
VS(1.19) NS(318.28) EW(52.85) TEMP(0.0)



#21 MD(2040.00) Inc(15.0) Azm(10.4) TVD(2002.06)
VS(-0.16) NS(342.17) EW(58.29) TEMP(0.0)

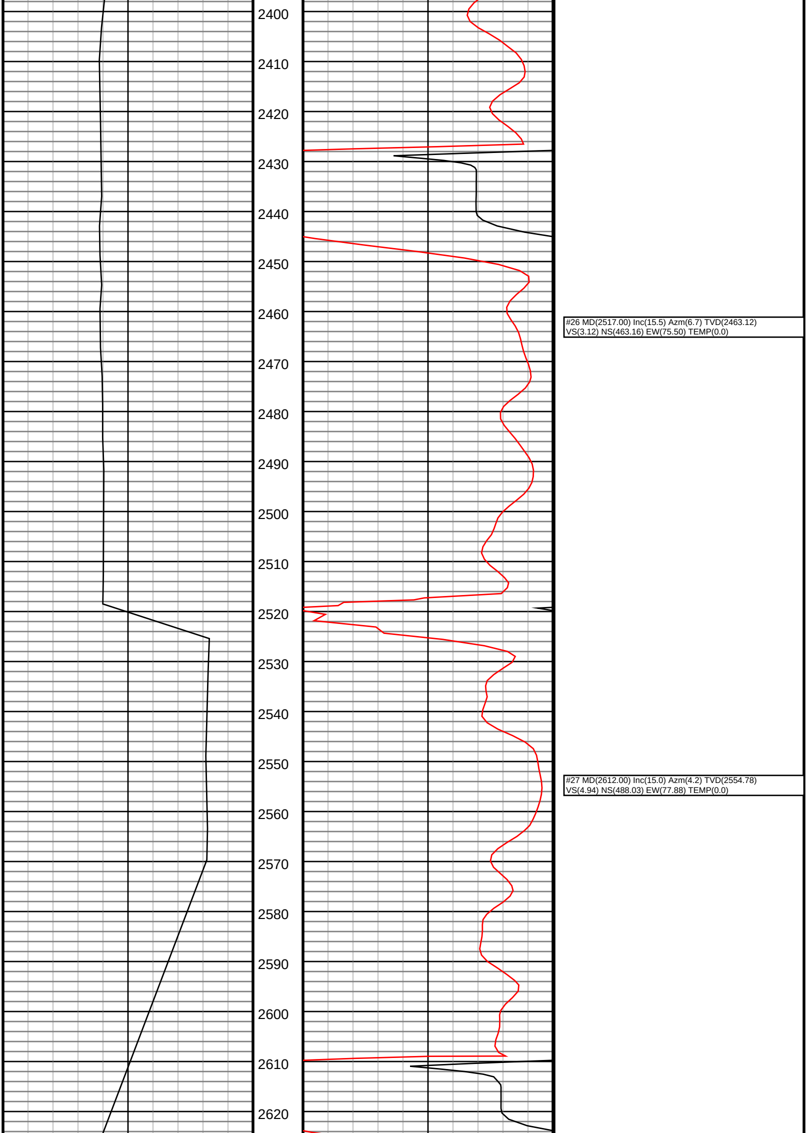
#22 MD(2135.00) Inc(14.7) Azm(7.2) TVD(2093.88)
VS(0.19) NS(366.22) EW(62.02) TEMP(0.0)



#23 MD(2231.00) Inc(15.4) Azm(10.2) TVD(2186.59)
VS(0.58) NS(390.85) EW(65.80) TEMP(0.0)

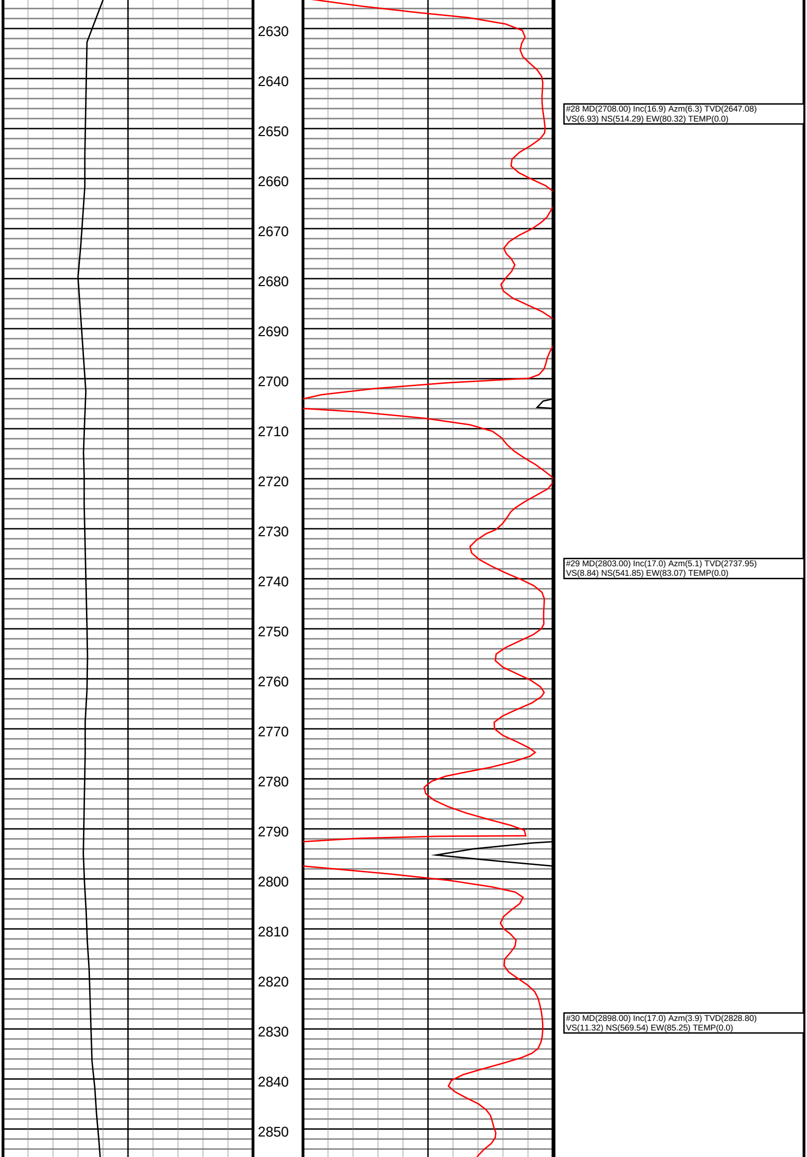
#24 MD(2326.00) Inc(14.2) Azm(6.3) TVD(2278.44)
VS(1.14) NS(414.85) EW(69.31) TEMP(0.0)

#25 MD(2421.00) Inc(14.7) Azm(8.1) TVD(2370.44)
VS(2.14) NS(438.36) EW(72.29) TEMP(0.0)



#26 MD(2517.00) Inc(15.5) Azm(6.7) TVD(2463.12)
VS(3.12) NS(463.16) EW(75.50) TEMP(0.0)

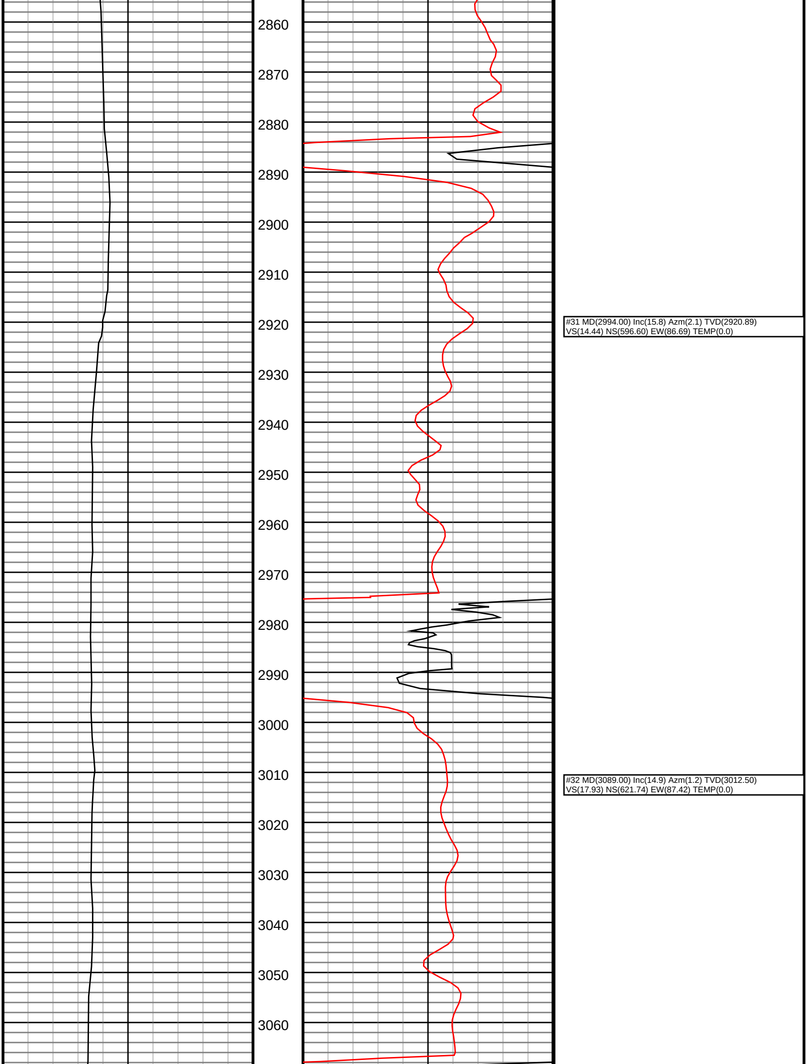
#27 MD(2612.00) Inc(15.0) Azm(4.2) TVD(2554.78)
VS(4.94) NS(488.03) EW(77.88) TEMP(0.0)



#28 MD(2708.00) Inc(16.9) Azm(6.3) TVD(2647.08)
VS(6.93) NS(514.29) EW(80.32) TEMP(0.0)

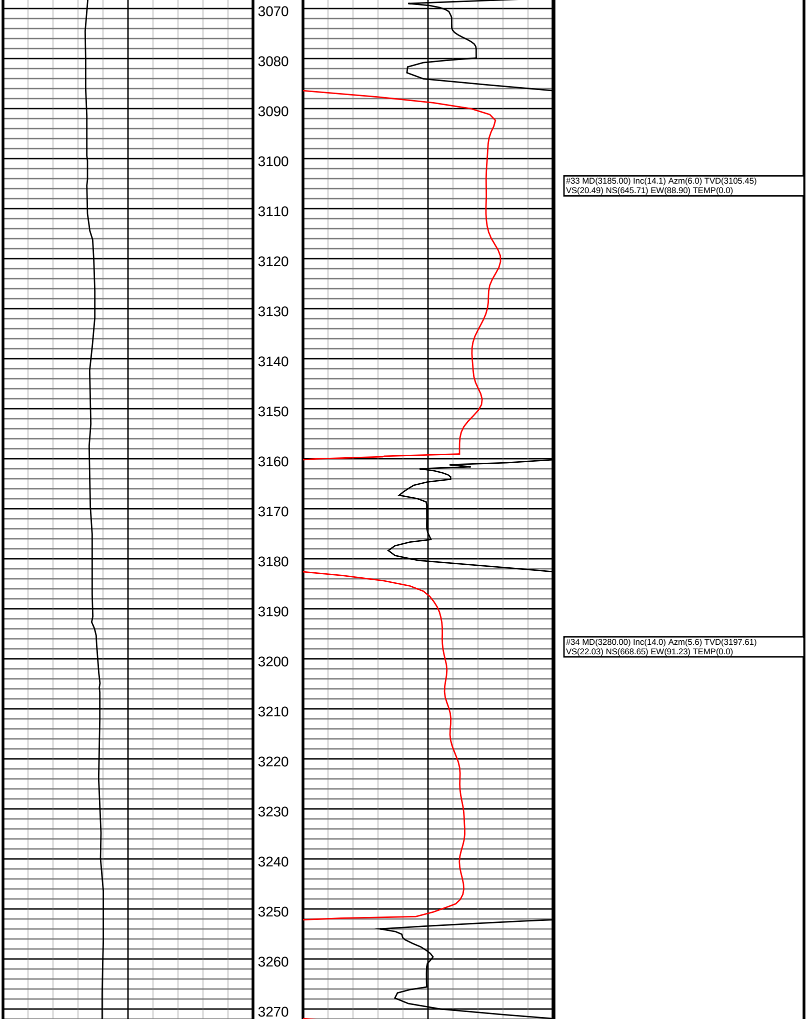
#29 MD(2803.00) Inc(17.0) Azm(5.1) TVD(2737.95)
VS(8.84) NS(541.85) EW(83.07) TEMP(0.0)

#30 MD(2898.00) Inc(17.0) Azm(3.9) TVD(2828.80)
VS(11.32) NS(569.54) EW(85.25) TEMP(0.0)



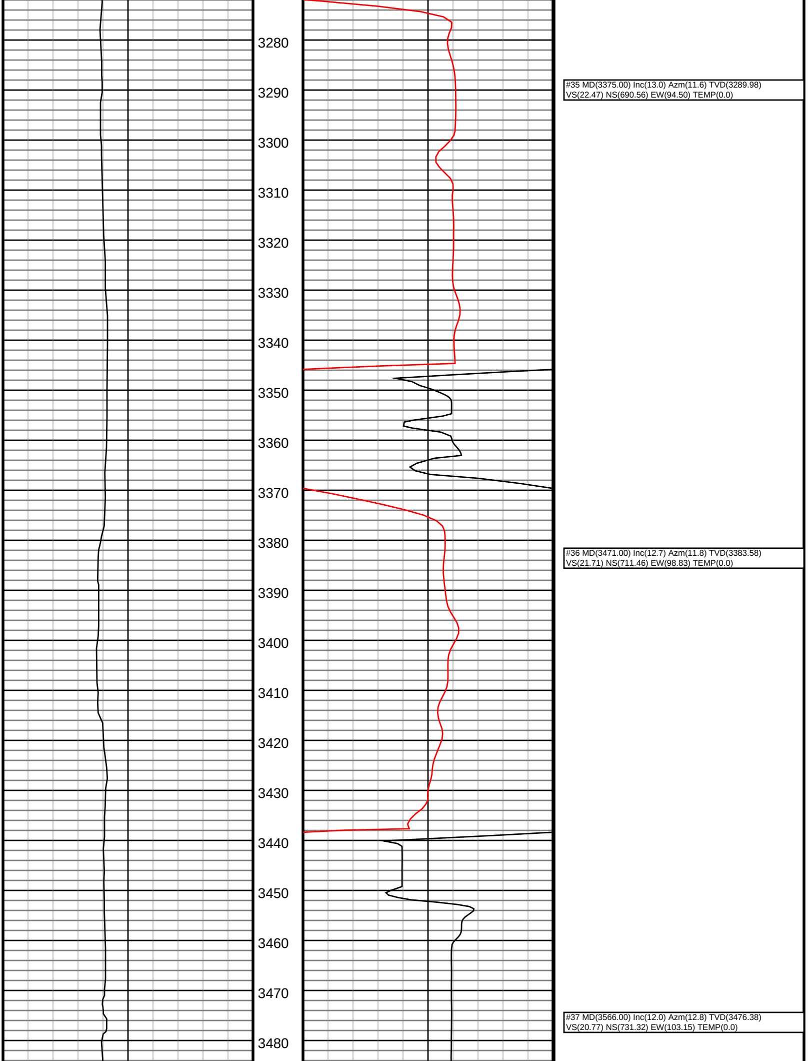
#31 MD(2994.00) Inc(15.8) Azm(2.1) TVD(2920.89)
VS(14.44) NS(596.60) EW(86.69) TEMP(0.0)

#32 MD(3089.00) Inc(14.9) Azm(1.2) TVD(3012.50)
VS(17.93) NS(621.74) EW(87.42) TEMP(0.0)



#33 MD(3185.00) Inc(14.1) Azm(6.0) TVD(3105.45)
VS(20.49) NS(645.71) EW(88.90) TEMP(0.0)

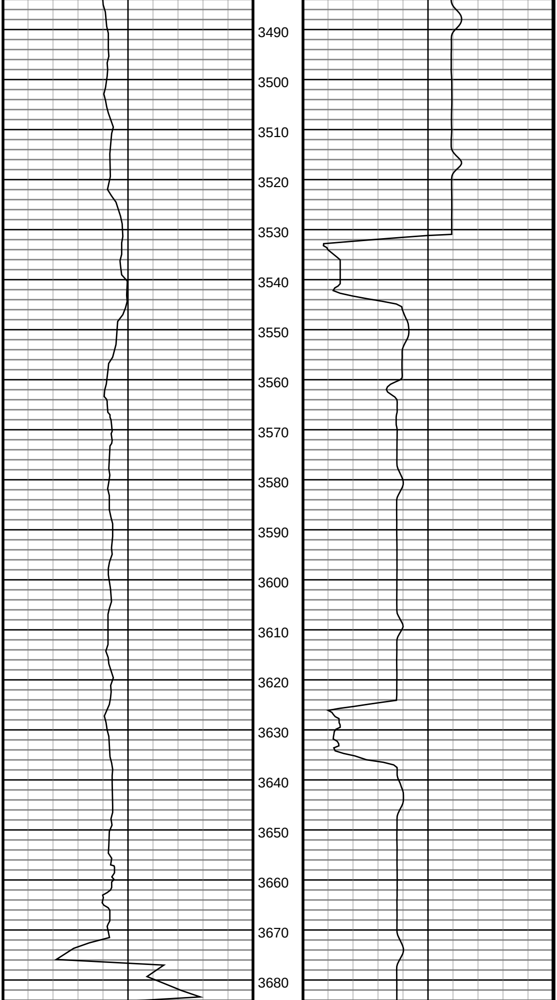
#34 MD(3280.00) Inc(14.0) Azm(5.6) TVD(3197.61)
VS(22.03) NS(668.65) EW(91.23) TEMP(0.0)



#35 MD(3375.00) Inc(13.0) Azm(11.6) TVD(3289.98)
VS(22.47) NS(690.56) EW(94.50) TEMP(0.0)

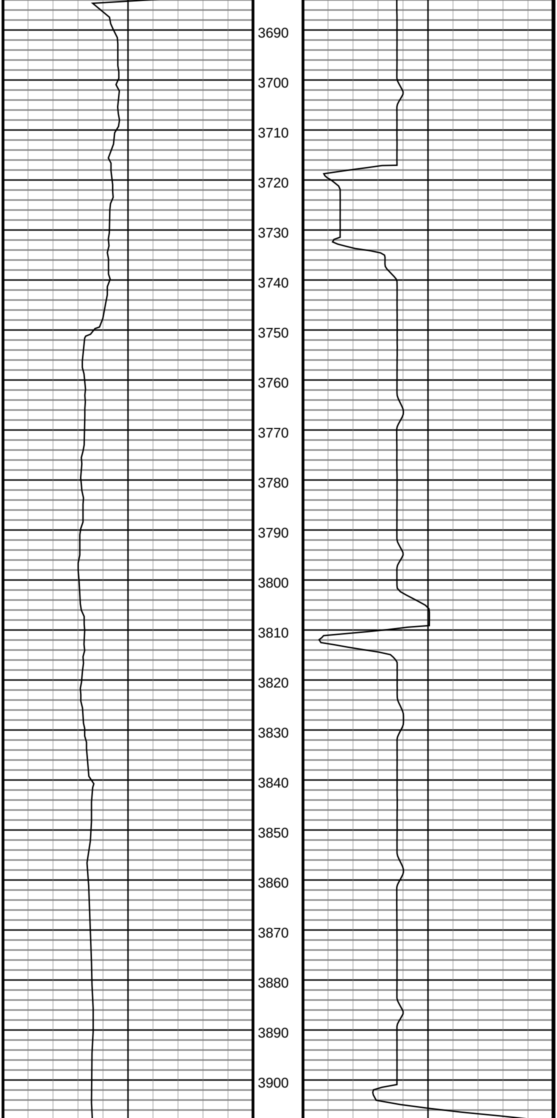
#36 MD(3471.00) Inc(12.7) Azm(11.8) TVD(3383.58)
VS(21.71) NS(711.46) EW(98.83) TEMP(0.0)

#37 MD(3566.00) Inc(12.0) Azm(12.8) TVD(3476.38)
VS(20.77) NS(731.32) EW(103.15) TEMP(0.0)



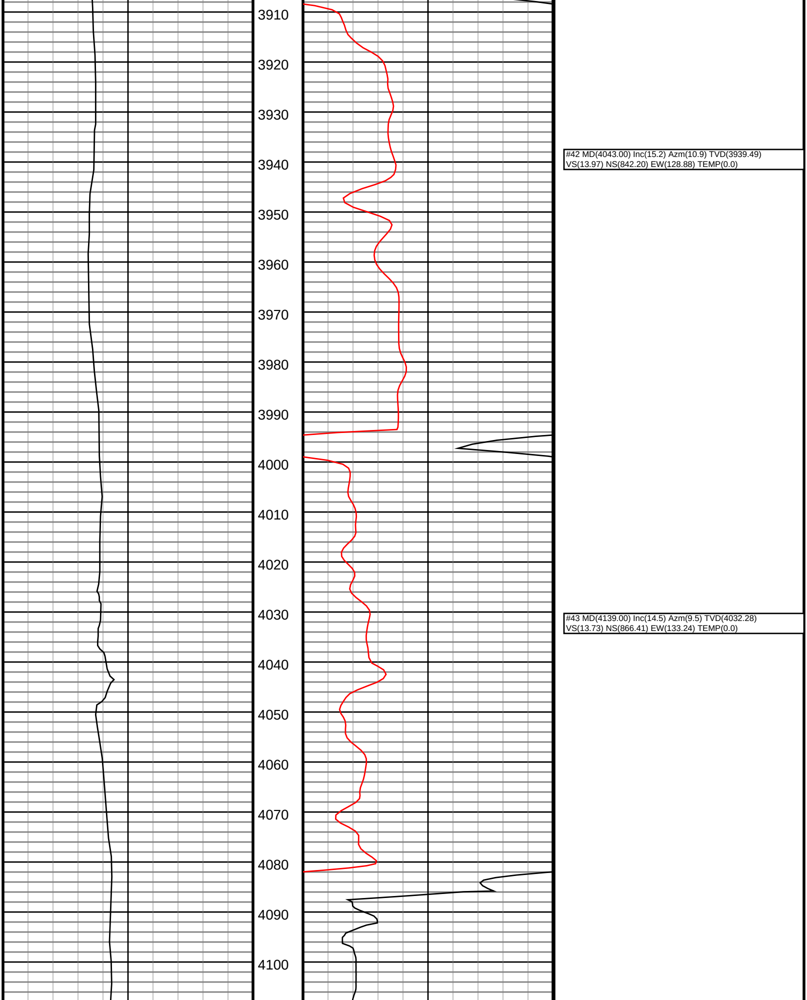
#38 MD(3662.00) Inc(12.8) Azm(16.2) TVD(3570.14)
VS(19.00) NS(751.26) EW(108.33) TEMP(0.0)

#39 MD(3757.00) Inc(12.8) Azm(15.3) TVD(3662.78)
VS(16.76) NS(771.52) EW(114.04) TEMP(0.0)



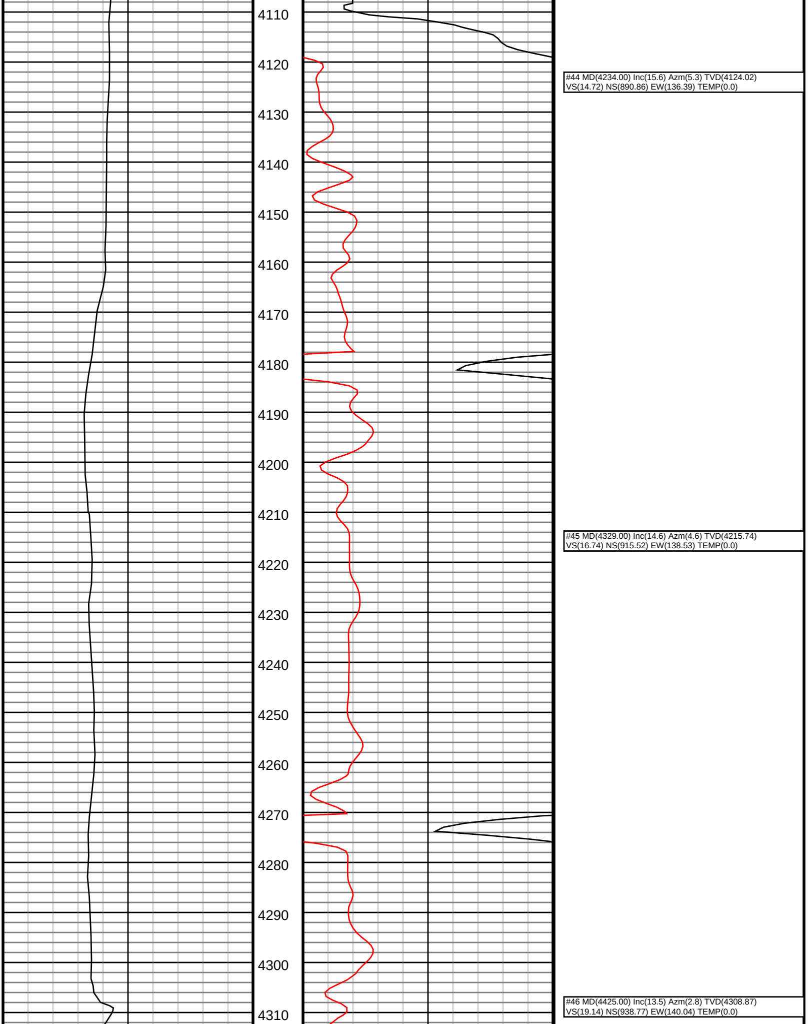
#40 MD(3852.00) Inc(14.8) Azm(10.2) TVD(3755.04)
VS(15.61) NS(793.61) EW(118.97) TEMP(0.0)

#41 MD(3948.00) Inc(15.1) Azm(12.5) TVD(3847.79)
VS(14.86) NS(817.89) EW(123.85) TEMP(0.0)



#42 MD(4043.00) Inc(15.2) Azm(10.9) TVD(3939.49)
VS(13.97) NS(842.20) EW(128.88) TEMP(0.0)

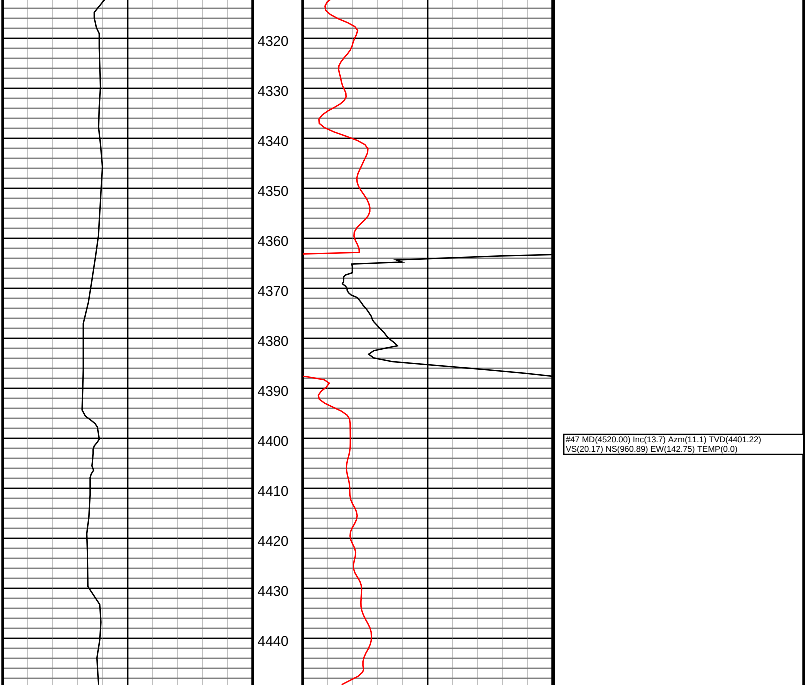
#43 MD(4139.00) Inc(14.5) Azm(9.5) TVD(4032.28)
VS(13.73) NS(866.41) EW(133.24) TEMP(0.0)



#44 MD(4234.00) Inc(15.6) Azm(5.3) TVD(4124.02)
VS(14.72) NS(890.86) EW(136.39) TEMP(0.0)

#45 MD(4329.00) Inc(14.6) Azm(4.6) TVD(4215.74)
VS(16.74) NS(915.52) EW(138.53) TEMP(0.0)

#46 MD(4425.00) Inc(13.5) Azm(2.8) TVD(4308.87)
VS(19.14) NS(938.77) EW(140.04) TEMP(0.0)



#47 MD(4520.00) Inc(13.7) Azm(11.1) TVD(4401.22)
VS(20.17) NS(960.89) EW(142.75) TEMP(0.0)

#48 MD(4615.00) Inc(14.6) Azm(8.3) TVD(4493.33)
VS(20.16) NS(983.77) EW(146.65) TEMP(0.0)

#49 MD(4711.00) Inc(14.4) Azm(3.5) TVD(4586.28)
VS(21.72) NS(1007.66) EW(149.12) TEMP(0.0)

#50 MD(4806.00) Inc(15.6) Azm(4.6) TVD(4678.04)
VS(24.11) NS(1032.19) EW(150.87) TEMP(0.0)

#51 MD(4902.00) Inc(16.3) Azm(9.7) TVD(4770.35)
VS(25.23) NS(1058.33) EW(154.17) TEMP(0.0)

#52 MD(4997.00) Inc(17.0) Azm(8.4) TVD(4861.37)
VS(25.52) NS(1085.21) EW(158.45) TEMP(0.0)

#53 MD(5093.00) Inc(15.9) Azm(7.5) TVD(4953.43)
VS(26.31) NS(1112.14) EW(162.21) TEMP(0.0)

#54 MD(5188.00) Inc(15.7) Azm(10.2) TVD(5044.85)
VS(26.67) NS(1137.69) EW(166.19) TEMP(0.0)

#55 MD(5283.00) Inc(13.7) Azm(8.1) TVD(5136.73)
VS(26.85) NS(1161.48) EW(170.05) TEMP(0.0)

#56 MD(5379.00) Inc(14.0) Azm(12.6) TVD(5229.94)
VS(26.55) NS(1184.07) EW(174.19) TEMP(0.0)

#57 MD(5474.00) Inc(13.2) Azm(14.4) TVD(5322.28)
VS(25.06) NS(1205.79) EW(179.39) TEMP(0.0)

#58 MD(5570.00) Inc(11.2) Azm(13.3) TVD(5416.11)
VS(23.56) NS(1225.48) EW(184.26) TEMP(0.0)

#59 MD(5665.00) Inc(11.3) Azm(18.1) TVD(5509.28)
VS(21.60) NS(1243.31) EW(189.28) TEMP(0.0)

#60 MD(5761.00) Inc(9.2) Azm(17.6) TVD(5603.75)
VS(19.15) NS(1259.56) EW(194.52) TEMP(0.0)

#61 MD(5856.00) Inc(7.7) Azm(20.9) TVD(5697.71)
VS(16.86) NS(1272.75) EW(199.09) TEMP(0.0)

#62 MD(5952.00) Inc(7.6) Azm(6.5) TVD(5792.87)
VS(15.95) NS(1285.06) EW(202.10) TEMP(0.0)

#63 MD(6047.00) Inc(7.3) Azm(18.3) TVD(5887.07)
VS(15.38) NS(1297.04) EW(204.70) TEMP(0.0)

#64 MD(6143.00) Inc(5.8) Azm(11.4) TVD(5982.44)
VS(14.32) NS(1307.58) EW(207.58) TEMP(0.0)

#65 MD(6238.00) Inc(3.9) Azm(9.3) TVD(6077.10)
VS(14.19) NS(1315.48) EW(209.05) TEMP(134.5)

#66 MD(6333.00) Inc(1.2) Azm(293.2) TVD(6172.01)
VS(15.17) NS(1319.06) EW(208.66) TEMP(134.5)

#67 MD(6429.00) Inc(1.1) Azm(284.8) TVD(6267.99)
VS(17.07) NS(1319.69) EW(206.84) TEMP(149.3)

#68 MD(6524.00) Inc(4.9) Azm(279.5) TVD(6362.85)
VS(22.04) NS(1320.59) EW(201.96) TEMP(149.3)

#69 MD(6620.00) Inc(13.8) Azm(283.0) TVD(6457.48)
VS(37.60) NS(1323.85) EW(186.73) TEMP(149.3)

#70 MD(6715.00) Inc(21.3) Azm(276.1) TVD(6548.00)
VS(66.17) NS(1328.24) EW(158.49) TEMP(149.3)

#71 MD(6810.00) Inc(26.3) Azm(267.9) TVD(6634.92)
VS(104.04) NS(1329.31) EW(120.26) TEMP(149.3)

#72 MD(6906.00) Inc(31.1) Azm(270.3) TVD(6719.10)
VS(149.35) NS(1328.66) EW(74.19) TEMP(149.3)

#73 MD(7001.00) Inc(36.7) Azm(271.9) TVD(6797.92)
VS(201.73) NS(1329.73) EW(21.24) TEMP(164.1)

#74 MD(7097.00) Inc(40.5) Azm(269.1) TVD(6872.94)
VS(260.83) NS(1330.19) EW(-38.63) TEMP(164.1)

#75 MD(7192.00) Inc(47.4) Azm(266.5) TVD(6941.30)
VS(325.29) NS(1327.56) EW(-104.46) TEMP(164.1)

#76 MD(7288.00) Inc(53.7) Azm(266.5) TVD(7002.27)
VS(397.44) NS(1323.04) EW(-178.41) TEMP(164.1)

#77 MD(7383.00) Inc(59.4) Azm(267.9) TVD(7054.61)
VS(474.82) NS(1319.20) EW(-257.55) TEMP(164.1)

#78 MD(7478.00) Inc(67.7) Azm(268.2) TVD(7096.89)
VS(558.07) NS(1316.32) EW(-342.48) TEMP(164.1)

#79 MD(7525.00) Inc(72.9) Azm(270.2) TVD(7112.73)
VS(601.57) NS(1315.71) EW(-386.71) TEMP(164.1)

#154 MD(14454.00) Inc(91.9) Azm(270.7) TVD(7121.09)
VS(7426.27) NS(1312.03) EW(-7309.78) TEMP(252.9)