ENSIGN Directional

jacobucci 32K-403

MD
2":100’

Company: Petroleum Development Corp.
Well Name: Jacobucci 32K-403
API: 051234116900
County/Parish: WELD
State: COLORADO
Country: UNITED STATES
Job number: 121-265
Field: WATTENBURG
Rig Id: Ensign 121
Survey Company: Ensign Directional Services
Operator: Petroleum Development Corp.
Company Man: Dean Haight/Carl Gerrard/Brady Sharp

Daylight DD: Breven Williams/Pete Moriarty
Night DD: Dave Van Dorin/Tyler Batchelder

Daylight MWD: Drew Gross/Louie Ascione
Night MWD: Lucas Henkenius/Kim Surprise

Log measurements:
Depth measured from:
Maximum temperature:

	Depth	Date
Start:	0 ft	04-19-2016
End:	ft	

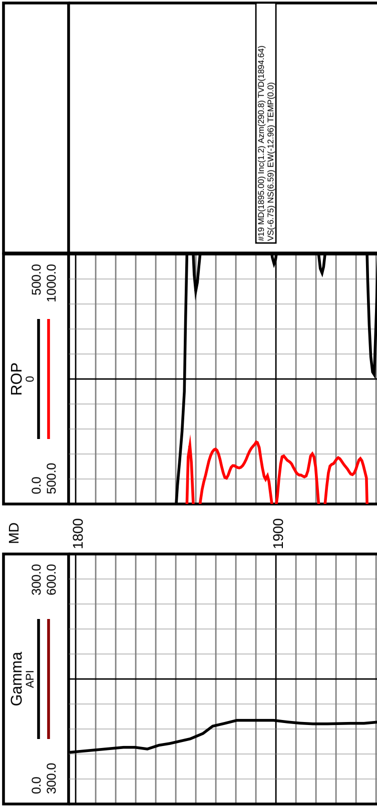
Casing	Depth	Size
Surface:	1833	9 5/8
Intermediate:		

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

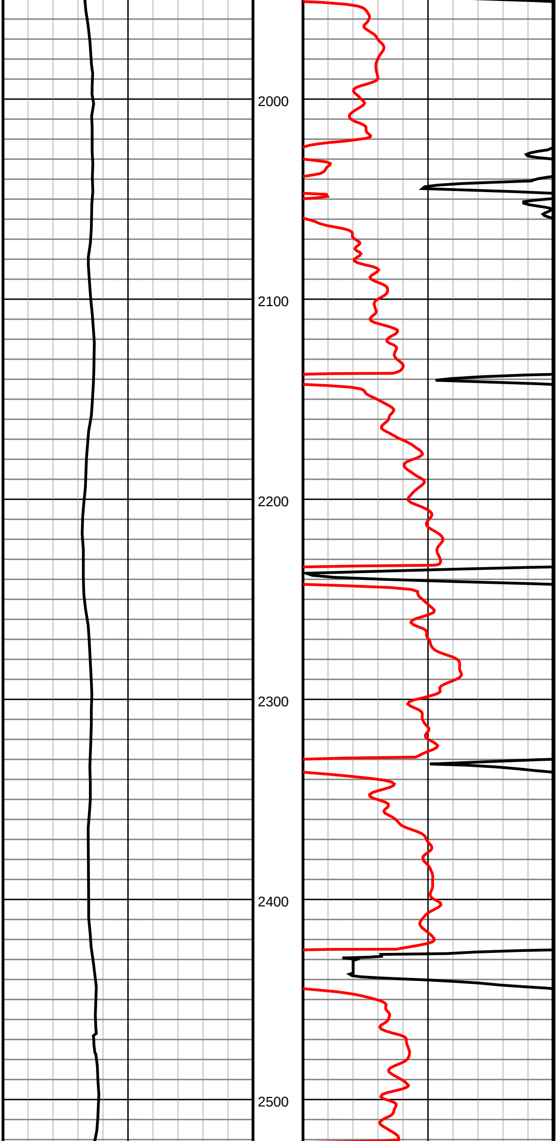
Elevations
KB: 5061.5
GL: 5048
DF: 5061.5

Run	Bit Size	Offsets		Depths		Dates	
		Gamma	Survey	Start	End	Start	End
1	12.25		52.98	0	1850	04-19-2016	04-20-2016
2	8.5	53.75	48.75	1850	7445	04-21-2016	04-22-2016
3	8.5	52.50	47.50	7445	8267	04-23-2016	04-24-2016
4	8.5	58.05	53.05	8267	13772	04-24-2016	04-28-2016
5	8.5	51.83	46.83	13772		04-29-2016	
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.



#19 MD(1895.00) Inc(1.2) Azm(290.8) TVD(1894.64) VS(-6.75) NS(6.59) EW(-12.96) TEMP(0.0)



#20 MD(1990.00) Inc(1.1) Azm(283.7) TVD(1989.62)
VS(-7.34) NS(7.16) EW(-14.77) TEMP(0.0)

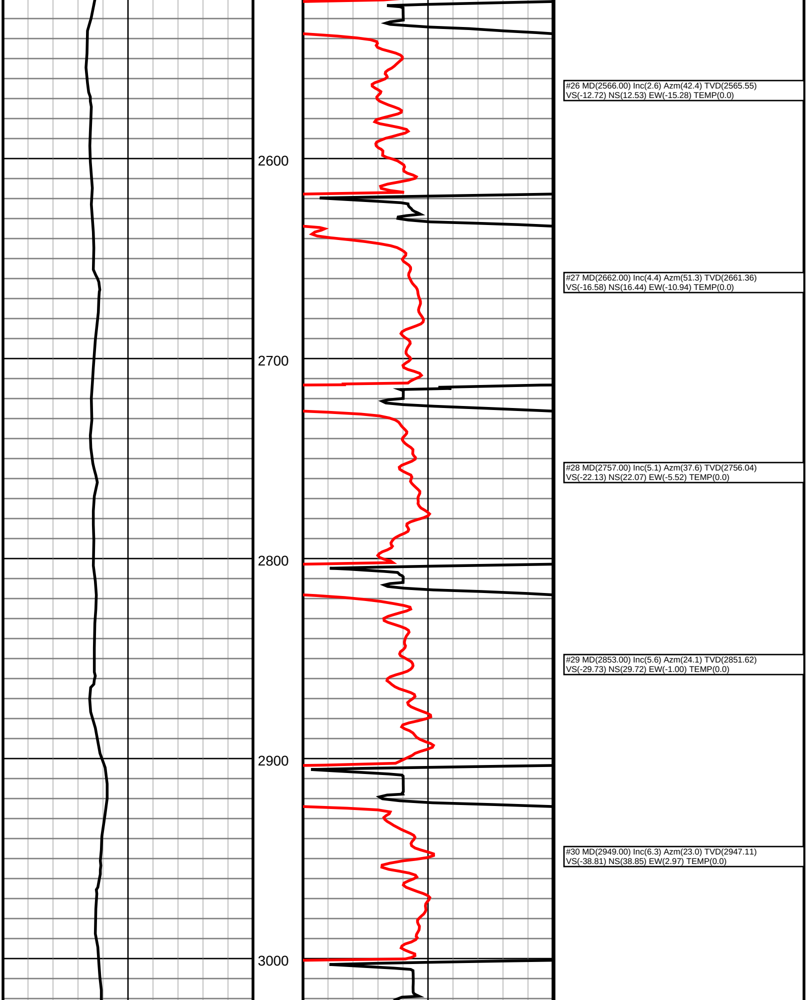
#21 MD(2086.00) Inc(0.5) Azm(252.8) TVD(2085.61)
VS(-7.46) NS(7.26) EW(-16.07) TEMP(0.0)

#22 MD(2182.00) Inc(0.3) Azm(324.7) TVD(2181.61)
VS(-7.54) NS(7.34) EW(-16.61) TEMP(0.0)

#23 MD(2278.00) Inc(0.4) Azm(326.4) TVD(2277.61)
VS(-8.03) NS(7.82) EW(-16.94) TEMP(0.0)

#24 MD(2374.00) Inc(0.6) Azm(9.0) TVD(2373.61)
VS(-8.81) NS(8.60) EW(-17.05) TEMP(0.0)

#25 MD(2470.00) Inc(1.1) Azm(7.0) TVD(2469.60)
VS(-10.22) NS(10.01) EW(-16.86) TEMP(0.0)



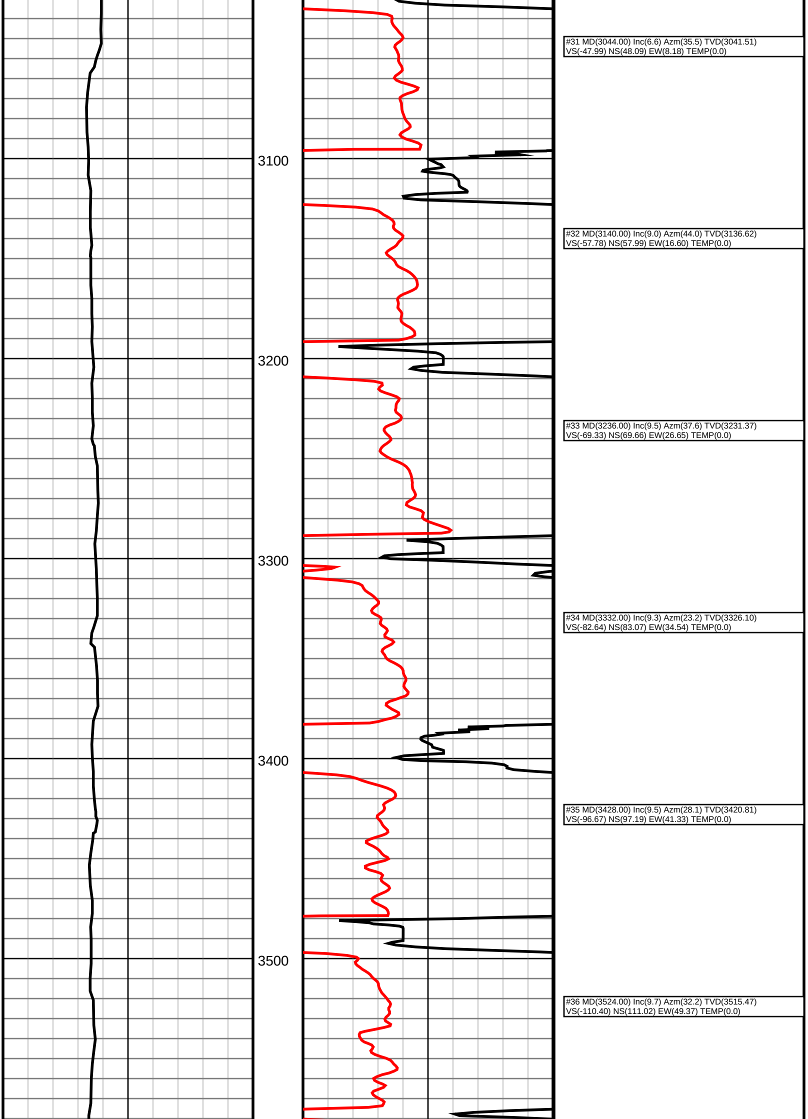
#26 MD(2566.00) Inc(2.6) Azm(42.4) TVD(2565.55)
VS(-12.72) NS(12.53) EW(-15.28) TEMP(0.0)

#27 MD(2662.00) Inc(4.4) Azm(51.3) TVD(2661.36)
VS(-16.58) NS(16.44) EW(-10.94) TEMP(0.0)

#28 MD(2757.00) Inc(5.1) Azm(37.6) TVD(2756.04)
VS(-22.13) NS(22.07) EW(-5.52) TEMP(0.0)

#29 MD(2853.00) Inc(5.6) Azm(24.1) TVD(2851.62)
VS(-29.73) NS(29.72) EW(-1.00) TEMP(0.0)

#30 MD(2949.00) Inc(6.3) Azm(23.0) TVD(2947.11)
VS(-38.81) NS(38.85) EW(2.97) TEMP(0.0)



#31 MD(3044.00) Inc(6.6) Azm(35.5) TVD(3041.51)
VS(-47.99) NS(48.09) EW(8.18) TEMP(0.0)

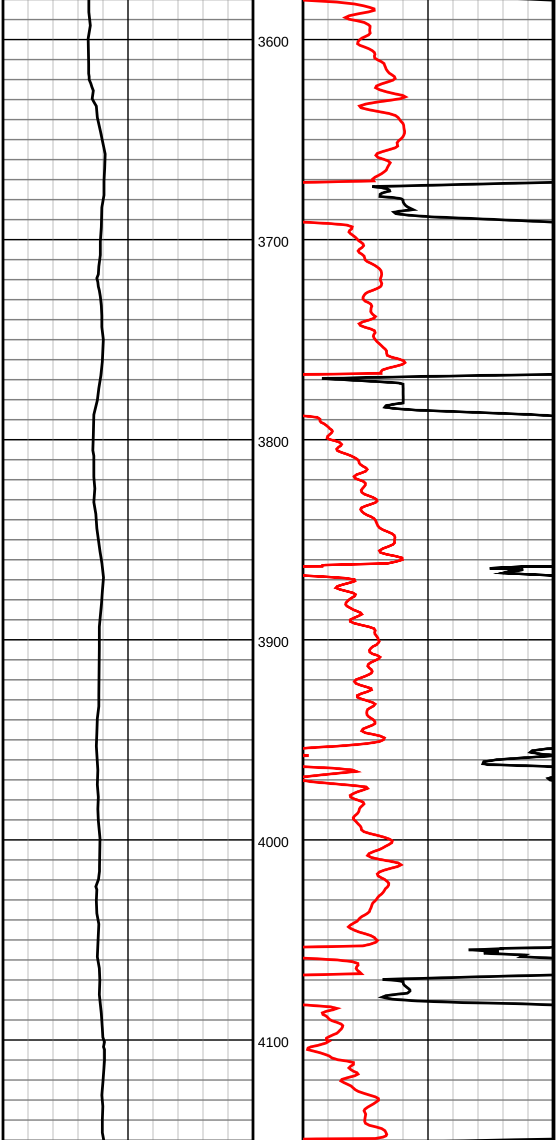
#32 MD(3140.00) Inc(9.0) Azm(44.0) TVD(3136.62)
VS(-57.78) NS(57.99) EW(16.60) TEMP(0.0)

#33 MD(3236.00) Inc(9.5) Azm(37.6) TVD(3231.37)
VS(-69.33) NS(69.66) EW(26.65) TEMP(0.0)

#34 MD(3332.00) Inc(9.3) Azm(23.2) TVD(3326.10)
VS(-82.64) NS(83.07) EW(34.54) TEMP(0.0)

#35 MD(3428.00) Inc(9.5) Azm(28.1) TVD(3420.81)
VS(-96.67) NS(97.19) EW(41.33) TEMP(0.0)

#36 MD(3524.00) Inc(9.7) Azm(32.2) TVD(3515.47)
VS(-110.40) NS(111.02) EW(49.37) TEMP(0.0)



#37 MD(3619.00) Inc(7.7) Azm(25.7) TVD(3609.37)
VS(-122.82) NS(123.53) EW(56.39) TEMP(0.0)

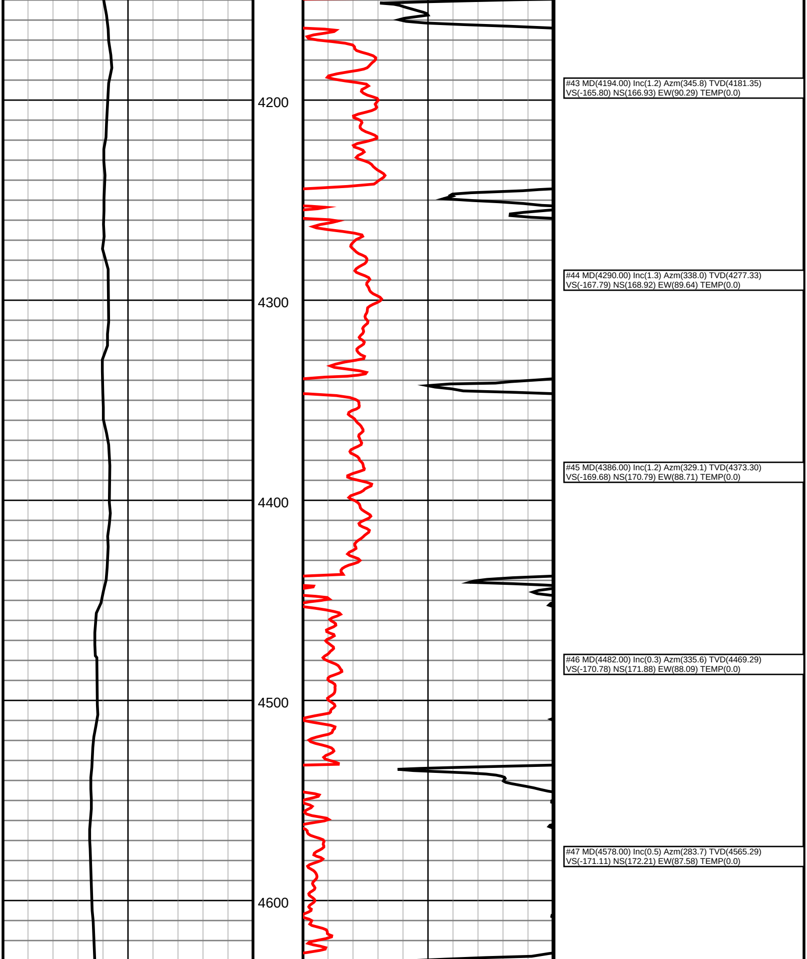
#38 MD(3715.00) Inc(6.6) Azm(35.2) TVD(3704.62)
VS(-133.05) NS(133.84) EW(62.36) TEMP(0.0)

#39 MD(3811.00) Inc(7.5) Azm(46.9) TVD(3799.90)
VS(-141.75) NS(142.63) EW(70.12) TEMP(0.0)

#40 MD(3907.00) Inc(6.4) Azm(42.2) TVD(3895.20)
VS(-149.89) NS(150.87) EW(78.29) TEMP(0.0)

#41 MD(4003.00) Inc(5.5) Azm(41.7) TVD(3990.68)
VS(-157.20) NS(158.27) EW(84.94) TEMP(0.0)

#42 MD(4098.00) Inc(3.0) Azm(30.9) TVD(4085.41)
VS(-162.68) NS(163.80) EW(89.25) TEMP(0.0)



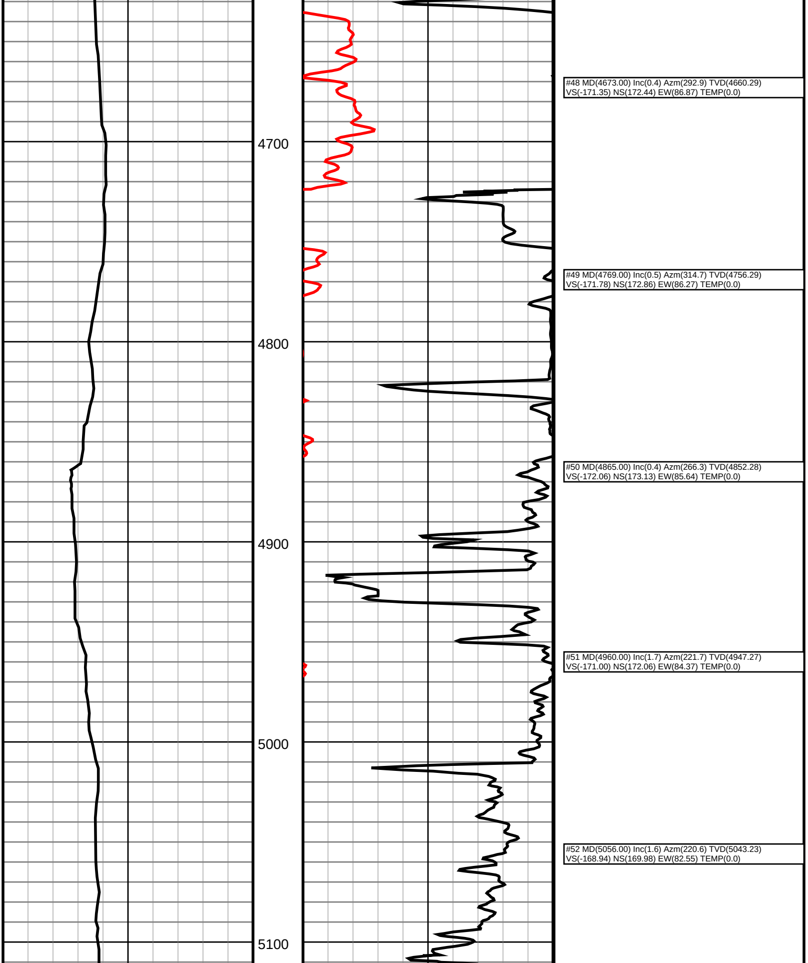
#43 MD(4194.00) Inc(1.2) Azm(345.8) TVD(4181.35)
VS(-165.80) NS(166.93) EW(90.29) TEMP(0.0)

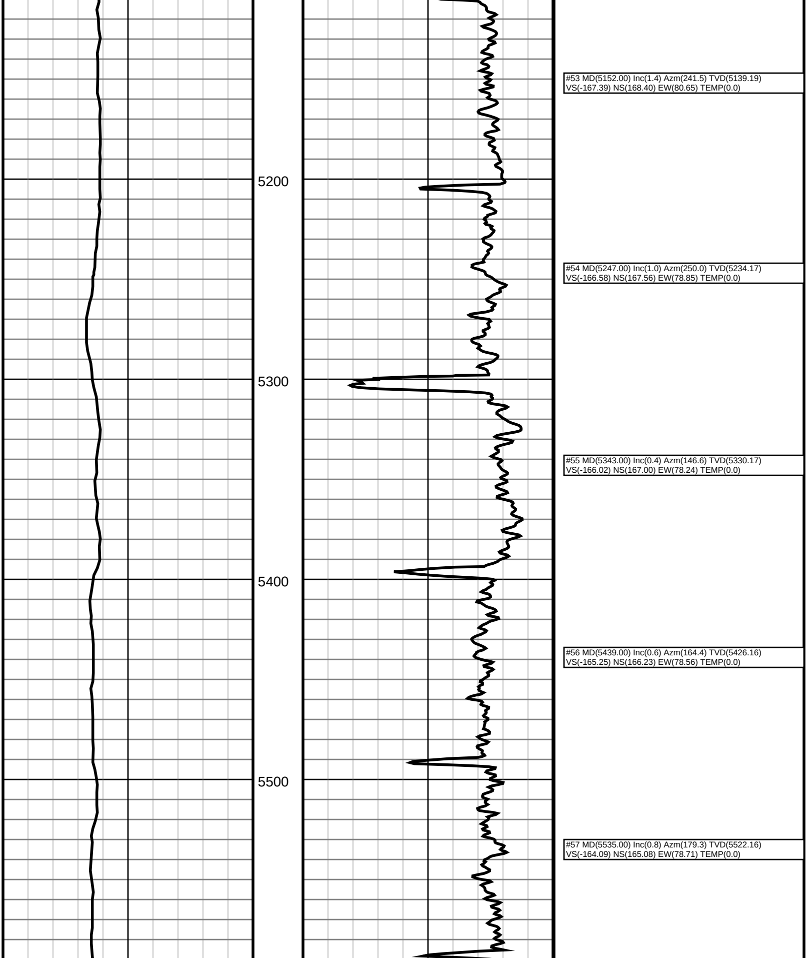
#44 MD(4290.00) Inc(1.3) Azm(338.0) TVD(4277.33)
VS(-167.79) NS(168.92) EW(89.64) TEMP(0.0)

#45 MD(4386.00) Inc(1.2) Azm(329.1) TVD(4373.30)
VS(-169.68) NS(170.79) EW(88.71) TEMP(0.0)

#46 MD(4482.00) Inc(0.3) Azm(335.6) TVD(4469.29)
VS(-170.78) NS(171.88) EW(88.09) TEMP(0.0)

#47 MD(4578.00) Inc(0.5) Azm(283.7) TVD(4565.29)
VS(-171.11) NS(172.21) EW(87.58) TEMP(0.0)





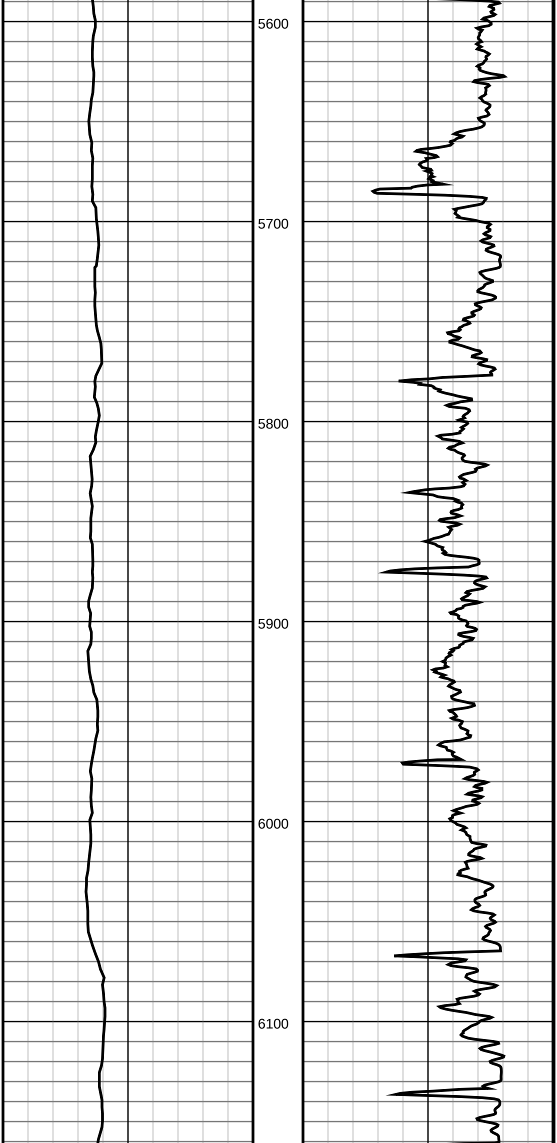
#53 MD(5152.00) Inc(1.4) Azm(241.5) TVD(5139.19)
VS(-167.39) NS(168.40) EW(80.65) TEMP(0.0)

#54 MD(5247.00) Inc(1.0) Azm(250.0) TVD(5234.17)
VS(-166.58) NS(167.56) EW(78.85) TEMP(0.0)

#55 MD(5343.00) Inc(0.4) Azm(146.6) TVD(5330.17)
VS(-166.02) NS(167.00) EW(78.24) TEMP(0.0)

#56 MD(5439.00) Inc(0.6) Azm(164.4) TVD(5426.16)
VS(-165.25) NS(166.23) EW(78.56) TEMP(0.0)

#57 MD(5535.00) Inc(0.8) Azm(179.3) TVD(5522.16)
VS(-164.09) NS(165.08) EW(78.71) TEMP(0.0)



#58 MD(5631.00) Inc(0.8) Azm(165.2) TVD(5618.15)
VS(-162.77) NS(163.76) EW(78.89) TEMP(0.0)

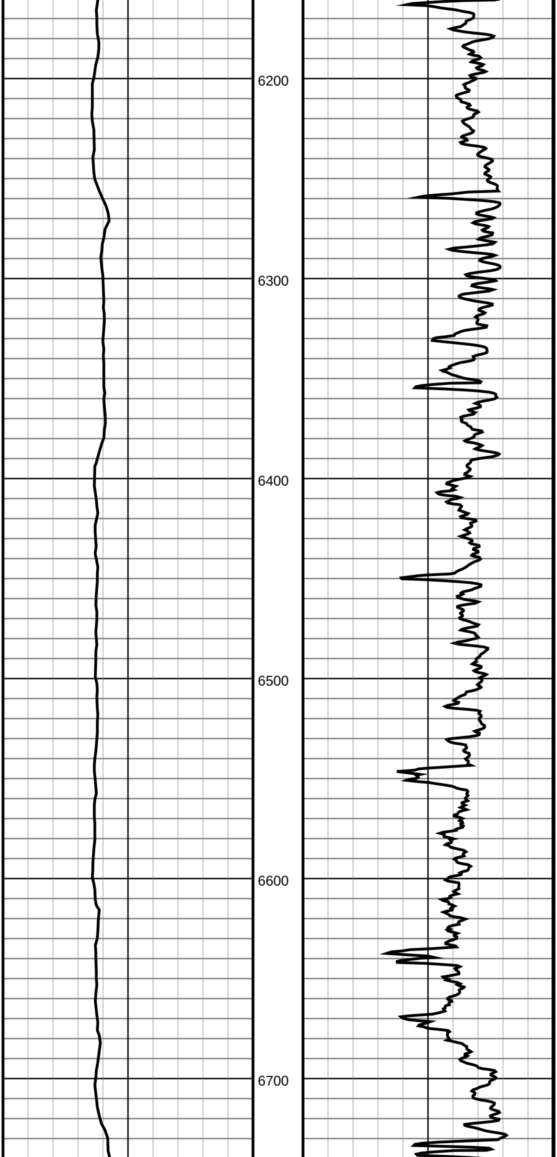
#59 MD(5726.00) Inc(1.0) Azm(170.0) TVD(5713.14)
VS(-161.31) NS(162.30) EW(79.20) TEMP(0.0)

#60 MD(5822.00) Inc(0.8) Azm(174.6) TVD(5809.12)
VS(-159.82) NS(160.81) EW(79.41) TEMP(0.0)

#61 MD(5918.00) Inc(1.1) Azm(165.4) TVD(5905.11)
VS(-158.25) NS(159.25) EW(79.70) TEMP(0.0)

#62 MD(6014.00) Inc(0.7) Azm(150.1) TVD(6001.10)
VS(-156.85) NS(157.85) EW(80.23) TEMP(0.0)

#63 MD(6110.00) Inc(0.3) Azm(129.2) TVD(6097.09)
VS(-156.17) NS(157.19) EW(80.72) TEMP(0.0)



#64 MD(6206.00) Inc(0.1) Azm(99.3) TVD(6193.09)
VS(-156.00) NS(157.01) EW(80.99) TEMP(0.0)

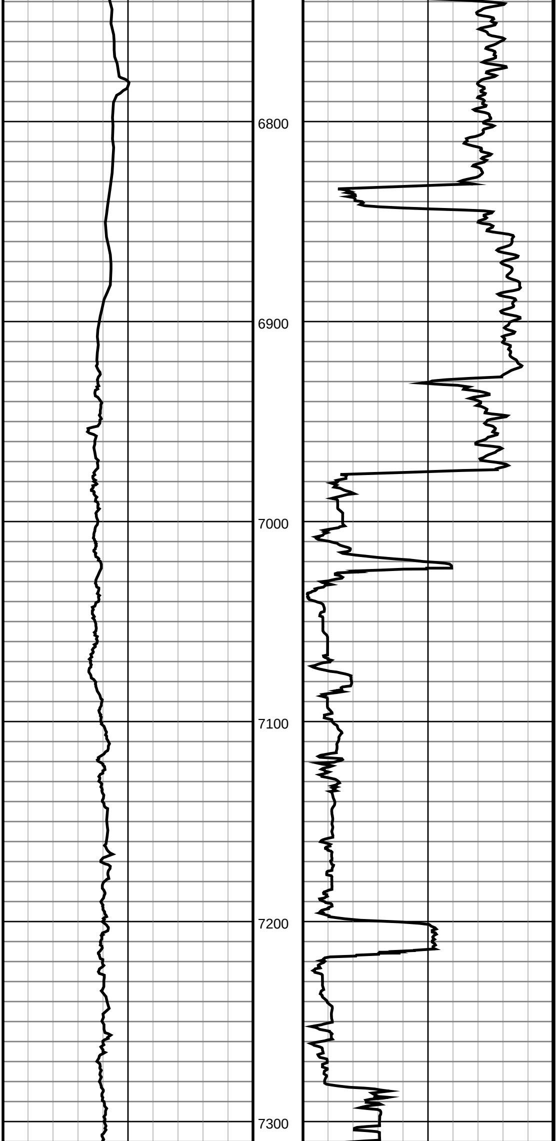
#65 MD(6301.00) Inc(0.4) Azm(234.3) TVD(6288.09)
VS(-155.79) NS(156.81) EW(80.81) TEMP(0.0)

#66 MD(6397.00) Inc(0.2) Azm(350.3) TVD(6384.09)
VS(-155.77) NS(156.78) EW(80.50) TEMP(0.0)

#67 MD(6493.00) Inc(0.6) Azm(330.7) TVD(6480.09)
VS(-156.37) NS(157.38) EW(80.23) TEMP(149.3)

#68 MD(6589.00) Inc(0.9) Azm(358.6) TVD(6576.08)
VS(-157.57) NS(158.57) EW(79.97) TEMP(149.3)

#69 MD(6685.00) Inc(0.7) Azm(349.1) TVD(6672.07)
VS(-158.90) NS(159.90) EW(79.84) TEMP(149.3)



#70 MD(6781.00) Inc(1.1) Azm(9.1) TVD(6768.06)
VS(-160.39) NS(161.39) EW(79.87) TEMP(149.3)

#71 MD(6877.00) Inc(1.1) Azm(83.2) TVD(6864.05)
VS(-161.39) NS(162.41) EW(80.93) TEMP(149.3)

#72 MD(6924.00) Inc(1.1) Azm(69.8) TVD(6911.04)
VS(-161.59) NS(162.62) EW(81.80) TEMP(164.1)

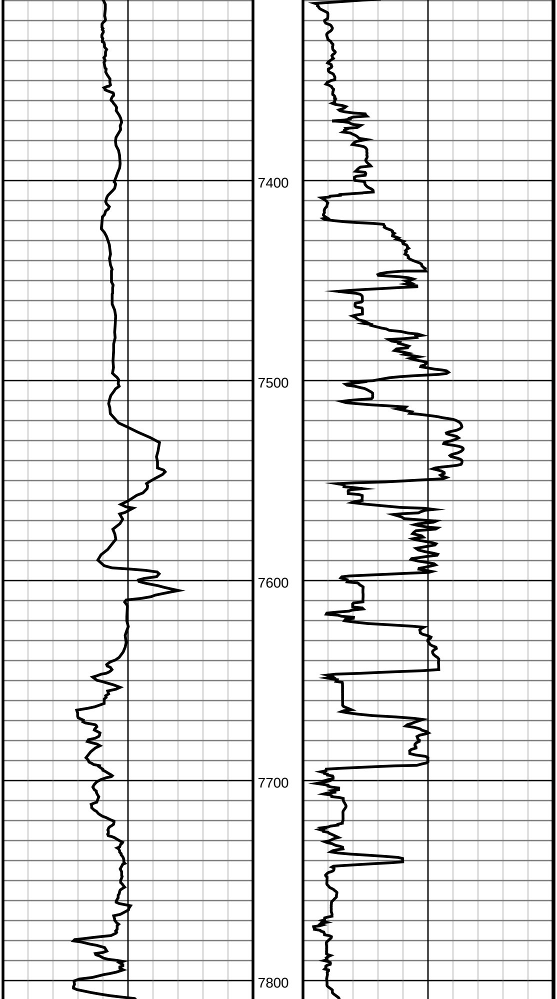
#73 MD(6972.00) Inc(1.2) Azm(115.0) TVD(6959.03)
VS(-161.53) NS(162.56) EW(82.69) TEMP(149.3)

#74 MD(7068.00) Inc(8.0) Azm(175.3) TVD(7054.69)
VS(-154.41) NS(155.47) EW(84.15) TEMP(149.3)

#75 MD(7163.00) Inc(19.4) Azm(179.3) TVD(7146.84)
VS(-131.97) NS(133.03) EW(84.89) TEMP(149.3)

#76 MD(7210.00) Inc(22.2) Azm(177.2) TVD(7190.77)
VS(-115.29) NS(116.35) EW(85.42) TEMP(149.3)

#77 MD(7259.00) Inc(26.5) Azm(181.2) TVD(7235.40)
VS(-95.10) NS(96.17) EW(85.64) TEMP(149.3)



#78 MD(7355.00) Inc(34.8) Azm(184.8) TVD(7317.93)
VS(-46.34) NS(47.37) EW(82.90) TEMP(149.3)

#79 MD(7403.00) Inc(35.8) Azm(183.9) TVD(7357.10)
VS(-18.71) NS(19.71) EW(80.79) TEMP(178.9)

#80 MD(7450.00) Inc(36.1) Azm(181.6) TVD(7395.15)
VS(8.83) NS(-7.85) EW(79.47) TEMP(149.3)

#81 MD(7499.00) Inc(36.3) Azm(178.4) TVD(7434.69)
VS(37.76) NS(-36.78) EW(79.48) TEMP(149.3)

#82 MD(7546.00) Inc(36.1) Azm(178.4) TVD(7472.62)
VS(65.52) NS(-64.53) EW(80.25) TEMP(149.3)

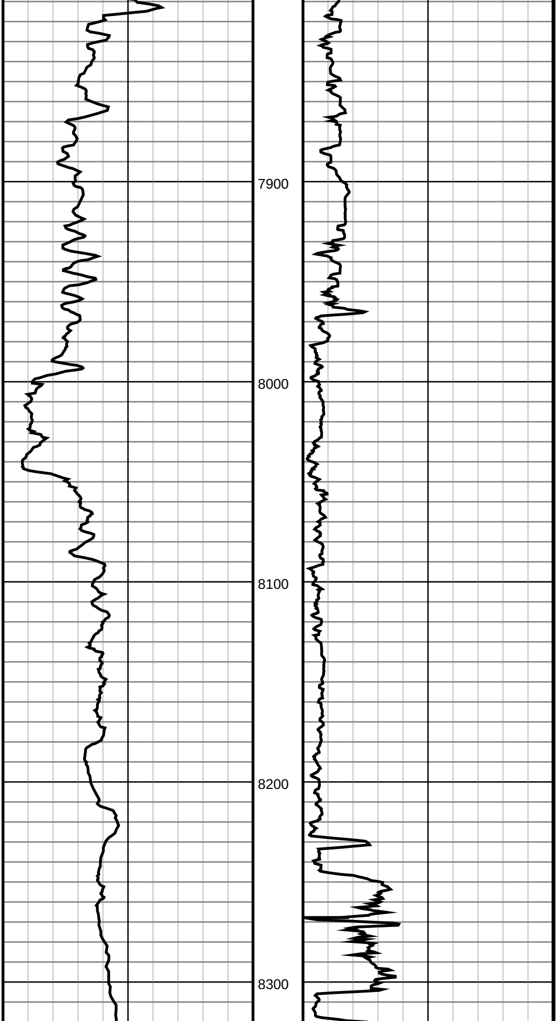
#83 MD(7595.00) Inc(35.7) Azm(177.4) TVD(7512.31)
VS(94.24) NS(-93.24) EW(81.30) TEMP(149.3)

#84 MD(7642.00) Inc(35.0) Azm(173.5) TVD(7550.65)
VS(121.36) NS(-120.33) EW(83.45) TEMP(149.3)

#85 MD(7691.00) Inc(34.2) Azm(175.1) TVD(7590.99)
VS(149.07) NS(-148.02) EW(86.22) TEMP(149.3)

#86 MD(7738.00) Inc(35.3) Azm(175.8) TVD(7629.60)
VS(175.80) NS(-174.72) EW(88.34) TEMP(149.3)

#87 MD(7786.00) Inc(40.1) Azm(176.0) TVD(7667.57)
VS(205.10) NS(-203.99) EW(90.44) TEMP(149.3)



#88 MD(7834.00) Inc(44.6) Azm(178.1) TVD(7703.04)
VS(237.40) NS(-236.27) EW(92.07) TEMP(149.3)

#89 MD(7882.00) Inc(50.0) Azm(180.2) TVD(7735.58)
VS(272.66) NS(-271.53) EW(92.57) TEMP(149.3)

#90 MD(7930.00) Inc(55.8) Azm(179.8) TVD(7764.52)
VS(310.92) NS(-309.80) EW(92.57) TEMP(149.3)

#91 MD(7978.00) Inc(59.9) Azm(177.7) TVD(7790.06)
VS(351.55) NS(-350.41) EW(93.48) TEMP(149.3)

#92 MD(8026.00) Inc(66.0) Azm(178.3) TVD(7811.88)
VS(394.26) NS(-393.12) EW(94.96) TEMP(149.3)

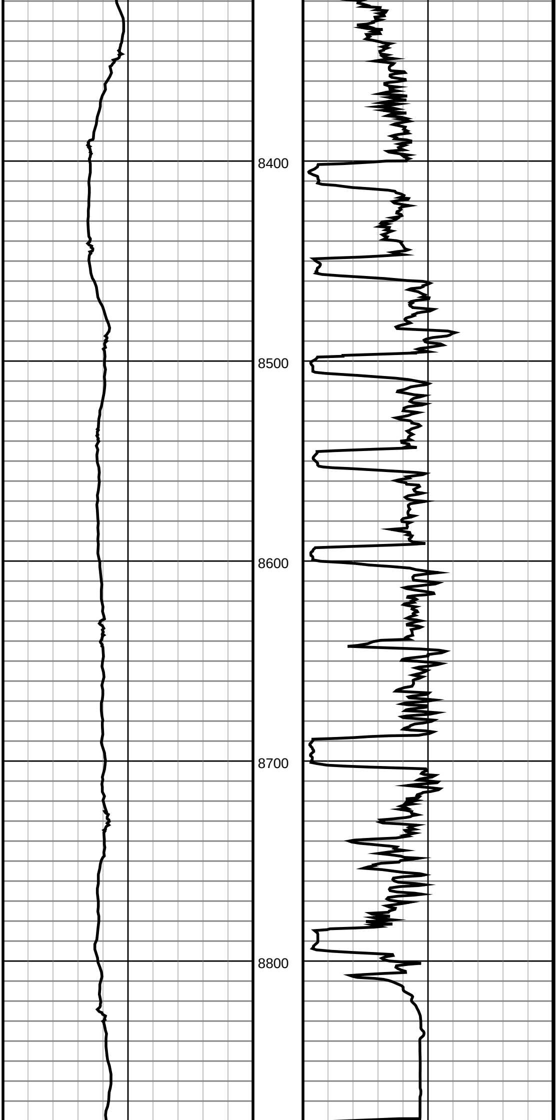
#93 MD(8074.00) Inc(71.1) Azm(178.6) TVD(7829.43)
VS(438.92) NS(-437.76) EW(96.17) TEMP(149.3)

#94 MD(8121.00) Inc(76.3) Azm(177.9) TVD(7842.61)
VS(484.01) NS(-482.84) EW(97.55) TEMP(149.3)

#95 MD(8169.00) Inc(82.8) Azm(178.8) TVD(7851.32)
VS(531.18) NS(-529.99) EW(98.90) TEMP(149.3)

#96 MD(8217.00) Inc(88.8) Azm(179.0) TVD(7854.83)
VS(579.03) NS(-577.83) EW(99.82) TEMP(149.3)

#97 MD(8248.00) Inc(90.2) Azm(177.9) TVD(7855.10)
VS(610.02) NS(-608.82) EW(100.66) TEMP(164.1)



#98 MD(8344.00) Inc(90.2) Azm(175.1) TVD(7854.76)
VS(705.90) NS(-704.63) EW(106.52) TEMP(149.3)

#99 MD(8392.00) Inc(90.8) Azm(175.6) TVD(7854.35)
VS(753.78) NS(-752.47) EW(110.41) TEMP(149.3)

#100 MD(8440.00) Inc(90.9) Azm(176.7) TVD(7853.63)
VS(801.70) NS(-800.36) EW(113.63) TEMP(164.1)

#101 MD(8488.00) Inc(90.7) Azm(177.7) TVD(7852.96)
VS(849.67) NS(-848.29) EW(115.98) TEMP(164.1)

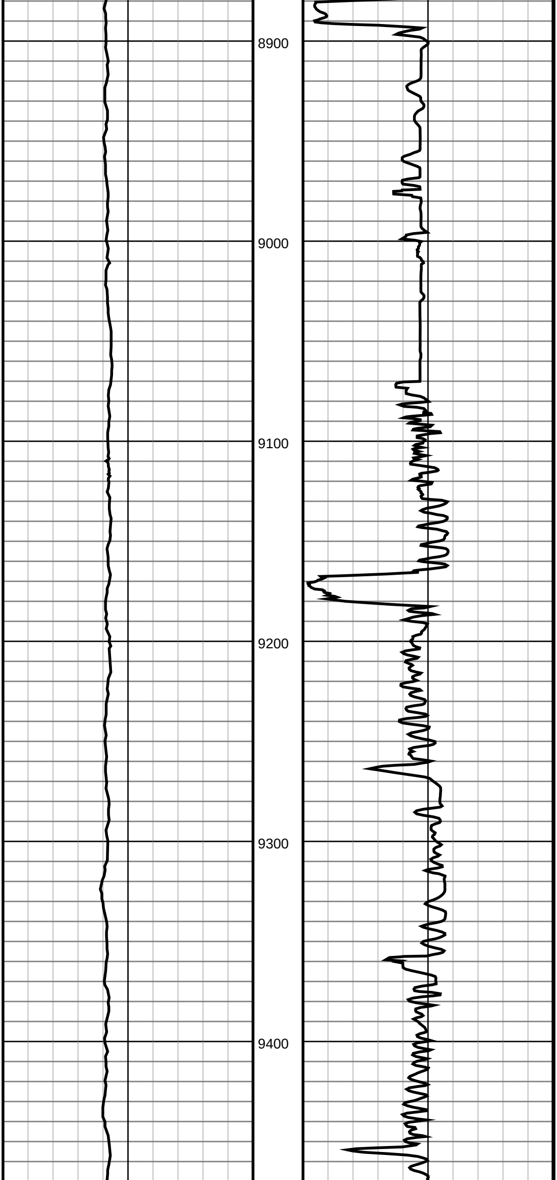
#102 MD(8536.00) Inc(91.2) Azm(178.6) TVD(7852.17)
VS(897.65) NS(-896.26) EW(117.53) TEMP(164.1)

#103 MD(8584.00) Inc(91.6) Azm(179.3) TVD(7850.99)
VS(945.63) NS(-944.24) EW(118.41) TEMP(164.1)

#104 MD(8631.00) Inc(91.0) Azm(179.7) TVD(7849.93)
VS(992.62) NS(-991.23) EW(118.82) TEMP(164.1)

#105 MD(8727.00) Inc(90.9) Azm(180.5) TVD(7848.34)
VS(1088.60) NS(-1087.21) EW(118.65) TEMP(164.1)

#106 MD(8823.00) Inc(88.8) Azm(180.0) TVD(7848.59)
VS(1184.58) NS(-1183.20) EW(118.23) TEMP(164.1)



#107 MD(8919.00) Inc(90.0) Azm(181.4) TVD(7849.59)
VS(1280.54) NS(-1279.19) EW(117.06) TEMP(178.9)

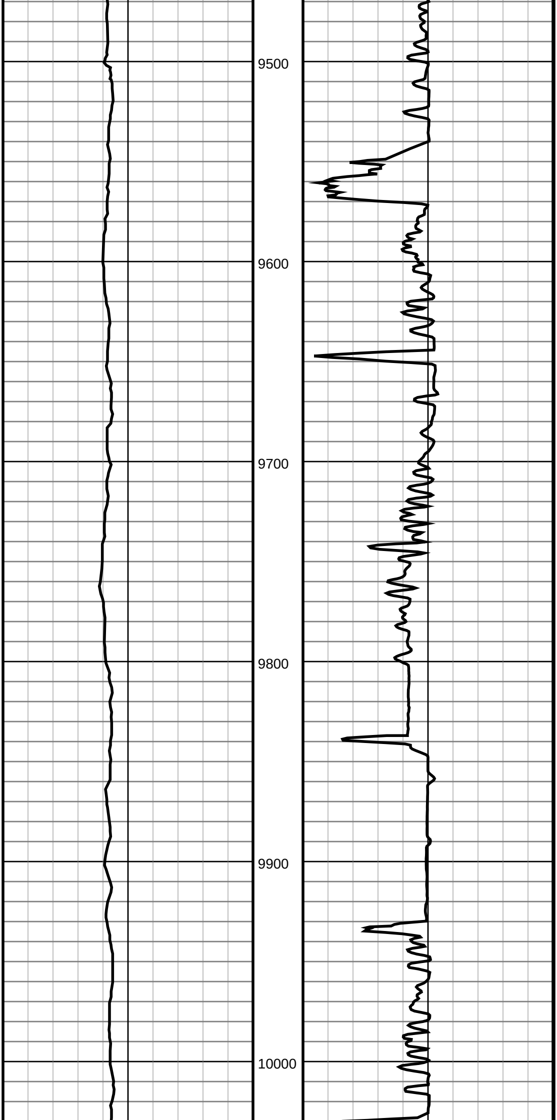
#108 MD(9014.00) Inc(90.4) Azm(181.2) TVD(7849.26)
VS(1375.48) NS(-1374.16) EW(114.90) TEMP(178.9)

#109 MD(9110.00) Inc(90.0) Azm(180.4) TVD(7848.93)
VS(1471.45) NS(-1470.15) EW(113.56) TEMP(178.9)

#110 MD(9206.00) Inc(90.2) Azm(182.3) TVD(7848.76)
VS(1567.38) NS(-1566.12) EW(111.30) TEMP(178.9)

#111 MD(9302.00) Inc(90.5) Azm(181.9) TVD(7848.17)
VS(1663.26) NS(-1662.05) EW(107.78) TEMP(178.9)

#112 MD(9398.00) Inc(90.2) Azm(181.2) TVD(7847.59)
VS(1759.18) NS(-1758.02) EW(105.19) TEMP(178.9)



#113 MD(9493.00) Inc(89.8) Azm(180.5) TVD(7847.59)
VS(1854.15) NS(-1853.00) EW(103.78) TEMP(178.9)

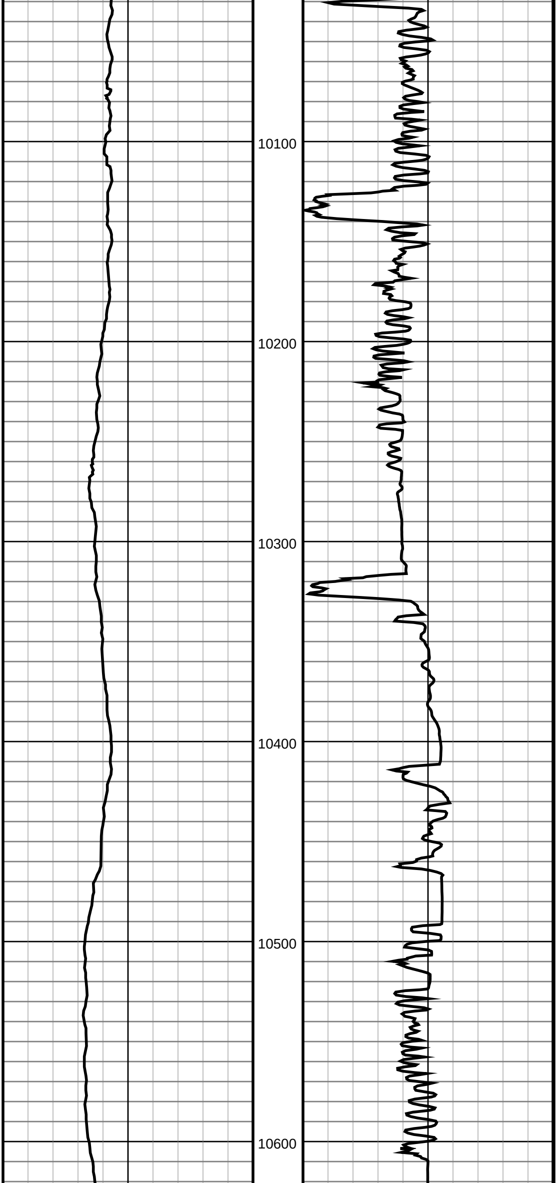
#114 MD(9589.00) Inc(89.5) Azm(182.1) TVD(7848.17)
VS(1950.08) NS(-1948.97) EW(101.60) TEMP(178.9)

#115 MD(9686.00) Inc(90.2) Azm(182.6) TVD(7848.43)
VS(2046.94) NS(-2045.89) EW(97.62) TEMP(178.9)

#116 MD(9781.00) Inc(89.2) Azm(181.4) TVD(7848.92)
VS(2141.83) NS(-2140.83) EW(94.31) TEMP(178.9)

#117 MD(9877.00) Inc(89.2) Azm(180.9) TVD(7850.26)
VS(2237.77) NS(-2236.80) EW(92.38) TEMP(178.9)

#118 MD(9973.00) Inc(89.3) Azm(180.4) TVD(7851.52)
VS(2333.74) NS(-2332.79) EW(91.29) TEMP(193.7)



#119 MD(10069.00) Inc(89.3) Azm(179.7) TVD(7852.69)
VS(2429.72) NS(-2428.78) EW(91.21) TEMP(193.7)

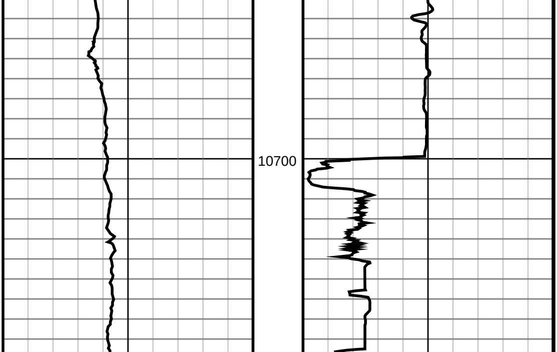
#120 MD(10165.00) Inc(90.0) Azm(180.5) TVD(7853.28)
VS(2525.71) NS(-2524.78) EW(91.04) TEMP(178.9)

#121 MD(10260.00) Inc(89.8) Azm(180.0) TVD(7853.45)
VS(2620.70) NS(-2619.77) EW(90.62) TEMP(193.7)

#122 MD(10356.00) Inc(90.6) Azm(180.2) TVD(7853.11)
VS(2716.68) NS(-2715.77) EW(90.46) TEMP(178.9)

#123 MD(10452.00) Inc(90.8) Azm(179.8) TVD(7851.94)
VS(2812.67) NS(-2811.76) EW(90.46) TEMP(193.7)

#124 MD(10547.00) Inc(90.0) Azm(178.4) TVD(7851.28)
VS(2907.66) NS(-2906.75) EW(91.95) TEMP(193.7)



#125 MD(10643.00) Inc(89.4) Azm(177.4) TVD(7851.78)
VS(3003.63) NS(-3002.68) EW(95.47) TEMP(193.7)

#126 MD(10739.00) Inc(89.7) Azm(178.6) TVD(7852.53)
VS(3099.60) NS(-3098.62) EW(98.82) TEMP(178.9)

#127 MD(10835.00) Inc(89.3) Azm(178.4) TVD(7853.37) VS(3195.59) NS(-3194.58) EW(101.33) TEMP(178.9)

#128 MD(10931.00) Inc(88.7) Azm(179.1) TVD(7855.05) VS(3291.57) NS(-3290.54) EW(103.42) TEMP(193.7)

#129 MD(11026.00) Inc(89.2) Azm(180.4) TVD(7856.79) VS(3386.55) NS(-3385.52) EW(103.84) TEMP(193.7)

#130 MD(11122.00) Inc(89.8) Azm(180.7) TVD(7857.62) VS(3482.52) NS(-3481.51) EW(102.92) TEMP(193.7)

#131 MD(11218.00) Inc(91.4) Azm(180.7) TVD(7856.62) VS(3578.48) NS(-3577.50) EW(101.74) TEMP(193.7)

#132 MD(11313.00) Inc(91.6) Azm(180.5) TVD(7854.13) VS(3673.43) NS(-3672.46) EW(100.75) TEMP(193.7)

#133 MD(11410.00) Inc(91.5) Azm(180.2) TVD(7851.51) VS(3770.37) NS(-3769.42) EW(100.16) TEMP(193.7)

#134 MD(11505.00) Inc(92.0) Azm(180.0) TVD(7848.61) VS(3865.32) NS(-3864.38) EW(99.99) TEMP(193.7)

#135 MD(11602.00) Inc(89.4) Azm(179.7) TVD(7847.42) VS(3962.30) NS(-3961.36) EW(100.25) TEMP(193.7)

#136 MD(11698.00) Inc(89.9) Azm(180.9) TVD(7848.01) VS(4058.28) NS(-4057.36) EW(99.74) TEMP(193.7)

#137 MD(11793.00) Inc(90.2) Azm(180.7) TVD(7847.93) VS(4153.25) NS(-4152.35) EW(98.42) TEMP(193.7)

#138 MD(11889.00) Inc(90.0) Azm(179.7) TVD(7847.76) VS(4249.23) NS(-4248.35) EW(98.08) TEMP(193.7)

#139 MD(11985.00) Inc(89.5) Azm(179.0) TVD(7848.18) VS(4345.23) NS(-4344.34) EW(99.17) TEMP(193.7)

#140 MD(12081.00) Inc(90.7) Azm(180.0) TVD(7848.01) VS(4441.23) NS(-4440.33) EW(100.01) TEMP(193.7)

#141 MD(12177.00) Inc(90.5) Azm(179.5) TVD(7847.00) VS(4537.22) NS(-4536.32) EW(100.43) TEMP(193.7)

#142 MD(12273.00) Inc(89.3) Azm(179.8) TVD(7847.17) VS(4633.22) NS(-4632.32) EW(101.01) TEMP(193.7)

#143 MD(12368.00) Inc(89.5) Azm(179.5) TVD(7848.17) VS(4728.21) NS(-4727.31) EW(101.59) TEMP(193.7)

#144 MD(12464.00) Inc(90.4) Azm(180.5) TVD(7848.25) VS(4824.20) NS(-4823.31) EW(101.59) TEMP(193.7)

#145 MD(12560.00) Inc(89.9) Azm(179.7) TVD(7848.00) VS(4920.19) NS(-4919.31) EW(101.43) TEMP(193.7)

#146 MD(12656.00) Inc(89.2) Azm(179.5) TVD(7848.75) VS(5016.18) NS(-5015.30) EW(102.10) TEMP(193.7)

#147 MD(12752.00) Inc(90.2) Azm(180.2) TVD(7849.26) VS(5112.18) NS(-5111.30) EW(102.35) TEMP(193.7)

#148 MD(12848.00) Inc(89.7) Azm(179.7) TVD(7849.34) VS(5208.17) NS(-5207.30) EW(102.43) TEMP(193.7)

#149 MD(12944.00) Inc(90.1) Azm(180.0) TVD(7849.51) VS(5304.16) NS(-5303.30) EW(102.68) TEMP(193.7)

#150 MD(13040.00) Inc(90.3) Azm(179.5) TVD(7849.17) VS(5400.16) NS(-5399.30) EW(103.10) TEMP(193.7)

#151 MD(13136.00) Inc(90.3) Azm(179.0) TVD(7848.67) VS(5496.16) NS(-5495.29) EW(104.36) TEMP(208.5)

#152 MD(13232.00) Inc(90.0) Azm(179.7) TVD(7848.42) VS(5592.16) NS(-5591.28) EW(105.45) TEMP(193.7)

#153 MD(13328.00) Inc(90.9) Azm(179.3) TVD(7847.66) VS(5688.15) NS(-5687.27) EW(106.28) TEMP(193.7)

#154 MD(13424.00) Inc(90.0) Azm(179.0) TVD(7846.91) VS(5784.15) NS(-5783.26) EW(107.71) TEMP(193.7)

#155 MD(13519.00) Inc(90.7) Azm(179.1) TVD(7846.33) VS(5879.14) NS(-5878.24) EW(109.28) TEMP(193.7)

#156 MD(13615.00) Inc(89.9) Azm(179.0) TVD(7845.83) VS(5975.14) NS(-5974.23) EW(110.88) TEMP(193.7)

#157 MD(13711.00) Inc(90.4) Azm(178.6) TVD(7845.58) VS(6071.14) NS(-6070.20) EW(112.89) TEMP(193.7)

#158 MD(13806.00) Inc(90.0) Azm(177.5) TVD(7845.24) VS(6166.11) NS(-6165.15) EW(116.12) TEMP(193.7)

#159 MD(13901.00) Inc(92.2) Azm(179.8) TVD(7843.42) VS(6261.08) NS(-6260.09) EW(118.36) TEMP(193.7)