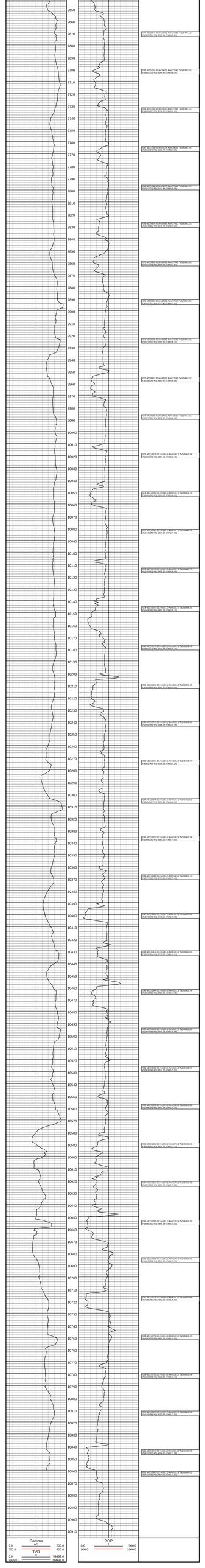

State Antelope 41-44-30HNB

MD 5":100'

Polaris Guidance Systems LLC

Company: Bonanza Creek Energy Company
Well Name: State Antelope 41-44-30HNB
UWI or LSD: 051237406
Rig Id: Ensign 128
State: Colorado
County/Parish: Weld
Country: USA
Survey Company: ENSIGN Directional
Job number:
Directional 1: Chris Saykally
Directional 2: James Allan
MWD 1: Tyler Teague
MWD 2: Luke Henkenius
Company Man: Tim Joel
Geologist:

Log measurements: Gamma
Depth measured from: 5870
Maximum temperature:

	Depth	Date
Start:	5870 ft	6/28/2013
End:	10915 ft	07/03/2013

Casing	Depth	Size
Surface:	435	9 5/8
Intermediate:	6790	7

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

Elevations
KB: 15
GL: 4576
DF: 4591

Run	Bit Size	Offsets Gamma	Offsets Survey	Depths Start	Depths End	Dates Start	Dates End
1	8 3/4	55.19	50.19	447	5842	06/26/2013	06/28/2013
2	8 3/4	55.38	50.38	5842	6800	06/28/2013	06/30/2013
3	6 1/8	55.17	50.17	6800	10915	07/01/2013	07/03/2013
4							
5							
6							
7							
8							
9							
10							

ENSIGN Directional 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.

#45 MD(5857.00) Inc(2.9) Azm(178.7) TVD(5813.94) VS(-469.97) NS(478.35) EW(216.52)

#46 MD(5889.00) Inc(6.3) Azm(188.5) TVD(5845.84) VS(-467.43) NS(475.80) EW(216.28)

#47 MD(5921.00) Inc(9.4) Azm(191.4) TVD(5877.53) VS(-463.16) NS(471.50) EW(215.50)

#48 MD(5952.00) Inc(13.6) Azm(192.1) TVD(5907.90) VS(-457.17) NS(465.45) EW(214.24)

#49 MD(5984.00) Inc(17.2) Azm(192.1) TVD(5938.75) VS(-448.93) NS(457.14) EW(212.46)

#50 MD(6015.00) Inc(19.7) Azm(190.5) TVD(5968.15) VS(-439.39) NS(447.52) EW(210.54)

#51 MD(6047.00) Inc(22.5) Azm(192.2) TVD(5998.01) VS(-428.19) NS(436.23) EW(208.27)

#52 MD(6079.00) Inc(24.3) Azm(193.1) TVD(6027.37) VS(-415.90) NS(423.83) EW(205.48)

#53 MD(6111.00) Inc(27.1) Azm(191.5) TVD(6056.20) VS(-402.47) NS(410.28) EW(202.53)

#54 MD(6143.00) Inc(30.2) Azm(188.0) TVD(6084.29) VS(-387.45) NS(395.16) EW(199.96)

#55 MD(6174.00) Inc(33.5) Azm(185.9) TVD(6110.62) VS(-371.30) NS(378.92) EW(197.99)

#56 MD(6206.00) Inc(36.1) Azm(185.0) TVD(6136.89) VS(-353.20) NS(360.75) EW(196.26)

#57 MD(6238.00) Inc(39.4) Azm(184.5) TVD(6162.19) VS(-333.75) NS(341.22) EW(194.65)

#58 MD(6269.00) Inc(42.3) Azm(183.8) TVD(6185.64) VS(-313.60) NS(321.00) EW(193.18)

#59 MD(6301.00) Inc(44.8) Azm(182.9) TVD(6208.83) VS(-291.66) NS(298.99) EW(191.90)

#60 MD(6333.00) Inc(45.2) Azm(182.0) TVD(6231.45) VS(-269.10) NS(276.39) EW(190.93)

#61 MD(6365.00) Inc(48.5) Azm(181.7) TVD(6253.34) VS(-245.81) NS(253.06) EW(190.18)

#62 MD(6396.00) Inc(52.1) Azm(181.5) TVD(6273.13) VS(-222.02) NS(229.22) EW(189.51)

#63 MD(6428.00) Inc(55.7) Azm(183.1) TVD(6291.99) VS(-196.25) NS(203.39) EW(188.47)

#64 MD(6460.00) Inc(58.7) Azm(183.3) TVD(6309.32) VS(-169.47) NS(176.54) EW(186.97)

#65 MD(6491.00) Inc(62.4) Azm(183.4) TVD(6324.56) VS(-142.60) NS(149.59) EW(185.39)

#66 MD(6523.00) Inc(66.6) Azm(183.1) TVD(6338.33) VS(-113.85) NS(120.76) EW(183.75)

#67 MD(6555.00) Inc(68.7) Azm(182.9) TVD(6350.50) VS(-84.38) NS(91.21) EW(182.20)

#68 MD(6587.00) Inc(69.6) Azm(182.6) TVD(6361.89) VS(-54.58) NS(61.34) EW(180.77)

#69 MD(6618.00) Inc(73.8) Azm(182.7) TVD(6371.62) VS(-25.26) NS(31.95) EW(179.41)

#70 MD(6650.00) Inc(76.9) Azm(182.9) TVD(6379.71) VS(5.58) NS(1.03) EW(177.90)

#71 MD(6682.00) Inc(80.2) Azm(182.2) TVD(6386.06) VS(36.84) NS(-30.30) EW(176.50)

#72 MD(6714.00) Inc(83.1) Azm(182.2) TVD(6390.71) VS(68.41) NS(-61.93) EW(175.29)

#73 MD(6748.00) Inc(85.5) Azm(182.6) TVD(6394.09) VS(102.13) NS(-95.73) EW(173.87)

#74 MD(6813.00) Inc(90.8) Azm(182.6) TVD(6396.18) VS(166.85) NS(-160.61) EW(170.92)

#75 MD(6845.00) Inc(91.5) Azm(182.7) TVD(6395.54) VS(198.73) NS(-192.57) EW(169.45)

#76 MD(6877.00) Inc(91.3) Azm(181.5) TVD(6394.76) VS(230.64) NS(-224.54) EW(168.27)

#77 MD(6909.00) Inc(90.9) Azm(180.6) TVD(6394.15) VS(262.58) NS(-256.53) EW(167.69)

#78 MD(6940.00) Inc(90.5) Azm(179.8) TVD(6393.77) VS(293.55) NS(-287.52) EW(167.58)

#79 MD(6972.00) Inc(89.9) Azm(179.9) TVD(6393.66) VS(325.53) NS(-319.52) EW(167.66)

#80 MD(7004.00) Inc(88.7) Azm(179.4) TVD(6394.05) VS(357.51) NS(-351.52) EW(167.86)

#81 MD(7036.00) Inc(88.5) Azm(179.1) TVD(6394.83) VS(389.50) NS(-383.51) EW(168.28)

#82 MD(7067.00) Inc(88.3) Azm(178.2) TVD(6395.69) VS(420.48) NS(-414.49) EW(169.01)

#83 MD(7099.00) Inc(88.5) Azm(177.8) TVD(6396.59) VS(452.47) NS(-446.45) EW(170.12)

#84 MD(7131.00) Inc(88.6) Azm(177.3) TVD(6397.40) VS(484.46) NS(-478.41) EW(171.49)

#85 MD(7163.00) Inc(88.9) Azm(176.9) TVD(6398.10) VS(516.45) NS(-510.36) EW(173.11)

#86 MD(7195.00) Inc(89.9) Azm(176.6) TVD(6398.43) VS(548.44) NS(-542.31) EW(174.92)

#87 MD(7226.00) Inc(90.8) Azm(176.9) TVD(6398.24) VS(579.43) NS(-573.26) EW(176.68)

#88 MD(7258.00) Inc(89.9) Azm(176.2) TVD(6398.05) VS(611.42) NS(-605.20) EW(178.61)

#89 MD(7290.00) Inc(89.1) Azm(176.4) TVD(6398.33) VS(643.41) NS(-637.13) EW(180.67)

#90 MD(7322.00) Inc(89.4) Azm(176.2) TVD(6398.74) VS(675.39) NS(-669.06) EW(182.74)

#91 MD(7353.00) Inc(90.0) Azm(175.7) TVD(6398.91) VS(706.37) NS(-699.99) EW(184.93)

#92 MD(7385.00) Inc(90.7) Azm(175.4) TVD(6398.71) VS(738.35) NS(-731.89) EW(187.41)

#93 MD(7417.00) Inc(90.7) Azm(175.5) TVD(6398.32) VS(770.32) NS(-763.78) EW(189.95)

#94 MD(7448.00) Inc(90.8) Azm(175.5) TVD(6397.91) VS(801.29) NS(-794.69) EW(192.38)

#95 MD(7480.00) Inc(90.7) Azm(176.8) TVD(6397.50) VS(833.27) NS(-826.61) EW(194.53)

#96 MD(7512.00) Inc(90.7) Azm(176.6) TVD(6397.10) VS(865.26) NS(-858.56) EW(196.37)

#97 MD(7544.00) Inc(89.9) Azm(177.1) TVD(6396.94) VS(897.25) NS(-890.51) EW(198.13)

#98 MD(7576.00) Inc(89.6) Azm(176.8) TVD(6397.08) VS(929.25) NS(-922.46) EW(199.83)

#99 MD(7607.00) Inc(90.1) Azm(176.9) TVD(6397.16) VS(960.25) NS(-953.41) EW(201.53)

#100 MD(7639.00) Inc(90.4) Azm(176.9) TVD(6397.02) VS(992.24) NS(-985.37) EW(203.26)

#101 MD(7671.00) Inc(90.6) Azm(177.5) TVD(6396.74) VS(1024.24) NS(-1017.33) EW(204.83)

#102 MD(7702.00) Inc(90.6) Azm(177.6) TVD(6396.41) VS(1055.23) NS(-1048.30) EW(206.15)

#103 MD(7734.00) Inc(89.7) Azm(176.9) TVD(6396.33) VS(1087.23) NS(-1080.26) EW(207.69)

#104 MD(7766.00) Inc(89.1) Azm(178.4) TVD(6396.67) VS(1119.23) NS(-1112.23) EW(209.00)

#105 MD(7798.00) Inc(90.7) Azm(180.1) TVD(6396.72) VS(1151.22) NS(-1144.22) EW(209.42)

#106 MD(7830.00) Inc(90.7) Azm(182.2) TVD(6396.33) VS(1183.16) NS(-1176.21) EW(208.78)

#107 MD(7862.00) Inc(89.5) Azm(182.9) TVD(6396.27) VS(1215.05) NS(-1208.18) EW(207.35)

#108 MD(7893.00) Inc(88.0) Azm(182.7) TVD(6396.95) VS(1245.93) NS(-1239.14) EW(205.84)

#109 MD(7925.00) Inc(87.9) Azm(182.4) TVD(6398.10) VS(1277.80) NS(-1271.08) EW(204.42)

#110 MD(7957.00) Inc(87.9) Azm(182.2) TVD(6399.27) VS(1309.69) NS(-1303.04) EW(203.13)

#111 MD(7989.00) Inc(88.0) Azm(181.5) TVD(6400.41) VS(1341.59) NS(-1335.00) EW(202.10)

#112 MD(8020.00) Inc(89.2) Azm(181.3) TVD(6401.17) VS(1372.52) NS(-1365.98) EW(201.34)

#113 MD(8052.00) Inc(90.7) Azm(180.6) TVD(6401.20) VS(1404.47) NS(-1397.97) EW(200.81)

#114 MD(8084.00) Inc(91.0) Azm(179.8) TVD(6400.72) VS(1436.44) NS(-1429.97) EW(200.70)

#115 MD(8115.00) Inc(91.1) Azm(178.7) TVD(6400.16) VS(1467.43) NS(-1460.96) EW(201.11)

#116 MD(8147.00) Inc(90.9) Azm(179.2) TVD(6399.60) VS(1499.42) NS(-1492.95) EW(201.69)

#117 MD(8179.00) Inc(89.7) Azm(181.2) TVD(6399.43) VS(1531.39) NS(-1524.95) EW(201.58)

#118 MD(8211.00) Inc(89.1) Azm(183.1) TVD(6399.76) VS(1563.30) NS(-1556.92) EW(200.38)

#119 MD(8243.00) Inc(88.7) Azm(183.6) TVD(6400.38) VS(1595.14) NS(-1588.86) EW(198.51)

#120 MD(8274.00) Inc(89.3) Azm(183.8) TVD(6400.92) VS(1625.98) NS(-1619.79) EW(196.51)

#121 MD(8306.00) Inc(89.4) Azm(182.6) TVD(6401.28) VS(1657.84) NS(-1651.74) EW(194.72)

#122 MD(8338.00) Inc(89.5) Azm(182.6) TVD(6401.59) VS(1689.73) NS(-1683.71) EW(193.27)

#123 MD(8370.00) Inc(89.7) Azm(182.6) TVD(6401.81) VS(1721.62) NS(-1715.67) EW(191.82)

#124 MD(8401.00) Inc(90.2) Azm(182.0) TVD(6401.84) VS(1752.52) NS(-1746.65) EW(190.58)

#125 MD(8433.00) Inc(90.2) Azm(181.7) TVD(6401.73) VS(1784.45) NS(-1778.63) EW(189.54)

#126 MD(8464.00) Inc(90.7) Azm(181.3) TVD(6401.49) VS(1815.38) NS(-1809.62) EW(188.73)

#127 MD(8496.00) Inc(90.7) Azm(181.2) TVD(6401.09) VS(1847.32) NS(-1841.61) EW(188.03)

#128 MD(8528.00) Inc(91.4) Azm(180.8) TVD(6400.51) VS(1879.27) NS(-1873.60) EW(187.46)

#129 MD(8560.00) Inc(92.2) Azm(180.9) TVD(6399.50) VS(1911.21) NS(-1905.58) EW(167.03)

#130 MD(8591.00) Inc(91.9) Azm(181.9) TVD(6398.39) VS(1942.14) NS(-1936.55) EW(186.30)

#131 MD(8623.00) Inc(91.1) Azm(183.4) TVD(6397.56) VS(1974.01) NS(-1968.50) EW(184.82)

#132 MD(8655.00) Inc(89.8) Azm(184.2) TVD(6397.30) VS(2005.84) NS(-2000.43) EW(182.70)

#133 MD(8687.00) Inc(89.8) Azm(184.3) TVD(6397.42) VS(2037.64) NS(-2032.34) EW(180.33)

#134 MD(8719.00) Inc(90.1) Azm(183.8) TVD(6397.44) VS(2069.46) NS(-2064.26) EW(178.07)

#135 MD(8751.00) Inc(90.3) Azm(184.0) TVD(6397.33) VS(2101.28) NS(-2096.19) EW(175.89)

#136 MD(8782.00) Inc(89.9) Azm(183.4) TVD(6397.28) VS(2132.12) NS(-2127.12) EW(173.89)

#137 MD(8813.00) Inc(89.9) Azm(183.1) TVD(6397.33) VS(2162.98) NS(-2158.07) EW(172.13)

#138 MD(8845.00) Inc(90.1) Azm(182.9) TVD(6397.33) VS(2194.85) NS(-2190.03) EW(170.46)

#139 MD(8877.00) Inc(90.3) Azm(182.6) TVD(6397.22) VS(2226.74) NS(-2221.99) EW(168.92)

#140 MD(8909.00) Inc(89.6) Azm(181.5) TVD(6397.25) VS(2258.65) NS(-2253.97) EW(167.78)

#141 MD(8940.00) Inc(89.9) Azm(181.5) TVD(6397.38) VS(2289.59) NS(-2284.96) EW(166.97)

#142 MD(8972.00) Inc(89.8) Azm(181.0) TVD(6397.47) VS(2321.53) NS(-2316.95) EW(166.27)

#143 MD(9004.00) Inc(90.4) Azm(181.0) TVD(6397.41) VS(2353.48) NS(-2348.95) EW(165.71)

#144 MD(9036.00) Inc(91.0) Azm(180.8) TVD(6397.02) VS(2385.44) NS(-2380.94) EW(165.21)

#145 MD(9067.00) Inc(89.9) Azm(179.8) TVD(6396.78) VS(2416.41) NS(-2411.94) EW(165.05)

#146 MD(9099.00) Inc(90.5) Azm(179.9) TVD(6396.67) VS(2448.39) NS(-2443.94) EW(165.13)

#147 MD(9131.00) Inc(89.3) Azm(178.7) TVD(6396.72) VS(2480.38) NS(-2475.94) EW(165.52)

#148 MD(9162.00) Inc(89.6) Azm(178.5) TVD(6397.02) VS(2511.37) NS(-2506.92) EW(166.28)

#149 MD(9194.00) Inc(89.8) Azm(178.2) TVD(6397.19) VS(2543.37) NS(-2538.91) EW(167.20)

#150 MD(9226.00) Inc(89.9) Azm(178.0) TVD(6397.27) VS(2575.37) NS(-2570.89) EW(168.26)

#151 MD(9258.00) Inc(90.7) Azm(177.8) TVD(6397.10) VS(2607.37) NS(-2602.87) EW(169.43)

#152 MD(9290.00) Inc(89.7) Azm(177.6) TVD(6396.99) VS(2639.37) NS(-2634.84) EW(170.72)

#153 MD(9321.00) Inc(89.4) Azm(177.6) TVD(6397.23) VS(2670.37) NS(-2665.82) EW(172.02)

#154 MD(9353.00) Inc(89.3) Azm(177.5) TVD(6397.60) VS(2702.36) NS(-2697.78) EW(173.38)

#155 MD(9385.00) Inc(89.2) Azm(176.9) TVD(6398.02) VS(2734.36) NS(-2729.74) EW(174.95)

#156 MD(9417.00) Inc(88.9) Azm(176.2) TVD(6398.55) VS(2766.35) NS(-2761.68) EW(176.87)

#157 MD(9448.00) Inc(89.0) Azm(176.1) TVD(6399.12) VS(2797.33) NS(-2792.61) EW(178.95)

#158 MD(9480.00) Inc(89.3) Azm(177.3) TVD(6399.59) VS(2829.32) NS(-2824.55) EW(180.79)

#159 MD(9512.00) Inc(89.6) Azm(178.5) TVD(6399.90) VS(2861.31) NS(-2856.53) EW(181.97)

#160 MD(9543.00) Inc(90.0) Azm(178.7) TVD(6400.01) VS(2892.31) NS(-2887.52) EW(182.72)

#161 MD(9575.00) Inc(90.0) Azm(178.0) TVD(6400.01) VS(2924.31) NS(-2919.50) EW(183.65)

#162 MD(9607.00) Inc(89.7) Azm(178.0) TVD(6400.09) VS(2956.31) NS(-2951.48) EW(184.76)

#163 MD(9639.00) Inc(90.0) Azm(178.2) TVD(6400.17) VS(2988.31) NS(-2983.46) EW(185.82)

#164 MD(9671.00) Inc(90.2) Azm(178.9) TVD(6400.12)
VS(3020.31) NS(-3015.45) EW(186.63)

#165 MD(9702.00) Inc(90.7) Azm(179.8) TVD(6399.87)
VS(3051.30) NS(-3046.45) EW(186.99)

#166 MD(9734.00) Inc(91.1) Azm(179.9) TVD(6399.37)
VS(3083.27) NS(-3078.45) EW(187.07)

#167 MD(9766.00) Inc(91.0) Azm(180.5) TVD(6398.78)
VS(3115.24) NS(-3110.44) EW(186.96)

#168 MD(9798.00) Inc(90.7) Azm(179.4) TVD(6398.31)
VS(3147.22) NS(-3142.44) EW(186.99)

#169 MD(9829.00) Inc(89.6) Azm(179.1) TVD(6398.23)
VS(3178.21) NS(-3173.43) EW(187.39)

#170 MD(9861.00) Inc(88.9) Azm(179.9) TVD(6398.65)
VS(3210.19) NS(-3205.43) EW(187.67)

#171 MD(9893.00) Inc(88.8) Azm(179.4) TVD(6399.29)
VS(3242.17) NS(-3237.42) EW(187.87)

#172 MD(9925.00) Inc(88.9) Azm(178.9) TVD(6399.93)
VS(3274.15) NS(-3269.41) EW(188.34)

#173 MD(9957.00) Inc(89.0) Azm(179.9) TVD(6400.52)
VS(3306.14) NS(-3301.40) EW(188.68)

#174 MD(9988.00) Inc(89.2) Azm(180.3) TVD(6401.01)
VS(3337.11) NS(-3332.40) EW(188.62)

#175 MD(10020.00) Inc(89.8) Azm(180.3) TVD(6401.28)
VS(3369.08) NS(-3364.40) EW(188.45)

#176 MD(10052.00) Inc(90.4) Azm(181.3) TVD(6401.23)
VS(3401.04) NS(-3396.39) EW(188.01)

#177 MD(10083.00) Inc(90.7) Azm(181.3) TVD(6400.93)
VS(3431.98) NS(-3427.39) EW(187.30)

#178 MD(10115.00) Inc(91.3) Azm(181.3) TVD(6400.37)
VS(3463.92) NS(-3459.37) EW(186.58)

#179 MD(10147.00) Inc(91.1) Azm(181.7) TVD(6399.70)
VS(3495.85) NS(-3491.35) EW(185.74)

#180 MD(10179.00) Inc(90.2) Azm(181.9) TVD(6399.34)
VS(3527.77) NS(-3523.34) EW(184.74)

#181 MD(10211.00) Inc(89.5) Azm(182.0) TVD(6399.42)
VS(3559.69) NS(-3555.32) EW(183.65)

#182 MD(10242.00) Inc(88.5) Azm(182.4) TVD(6399.96)
VS(3590.59) NS(-3586.29) EW(182.46)

#183 MD(10274.00) Inc(88.6) Azm(181.9) TVD(6400.77)
VS(3622.49) NS(-3618.26) EW(181.26)

#184 MD(10306.00) Inc(88.7) Azm(181.3) TVD(6401.53)
VS(3654.42) NS(-3650.23) EW(180.36)

#185 MD(10337.00) Inc(88.9) Azm(180.8) TVD(6402.18)
VS(3685.36) NS(-3681.22) EW(179.80)

#186 MD(10369.00) Inc(89.2) Azm(180.6) TVD(6402.71)
VS(3717.32) NS(-3713.22) EW(179.40)

#187 MD(10401.00) Inc(90.1) Azm(181.0) TVD(6402.90)
VS(3749.28) NS(-3745.21) EW(178.96)

#188 MD(10432.00) Inc(90.3) Azm(181.9) TVD(6402.80)
VS(3780.21) NS(-3776.20) EW(178.17)

#189 MD(10464.00) Inc(89.9) Azm(181.3) TVD(6402.74)
VS(3812.15) NS(-3808.19) EW(177.28)

#190 MD(10496.00) Inc(89.9) Azm(181.2) TVD(6402.80)
VS(3844.09) NS(-3840.18) EW(176.58)

#191 MD(10528.00) Inc(90.8) Azm(181.0) TVD(6402.60)
VS(3876.04) NS(-3872.17) EW(175.97)

#192 MD(10559.00) Inc(91.5) Azm(180.8) TVD(6401.98)
VS(3906.99) NS(-3903.16) EW(175.48)

#193 MD(10591.00) Inc(90.8) Azm(179.8) TVD(6401.34)
VS(3938.95) NS(-3935.16) EW(175.31)

#194 MD(10623.00) Inc(89.0) Azm(178.9) TVD(6401.39)
VS(3970.94) NS(-3967.15) EW(175.68)

#195 MD(10655.00) Inc(88.1) Azm(179.9) TVD(6402.20)
VS(4002.92) NS(-3999.14) EW(176.01)

#196 MD(10686.00) Inc(88.8) Azm(179.9) TVD(6403.04)
VS(4033.89) NS(-4030.13) EW(176.07)

#197 MD(10718.00) Inc(89.6) Azm(181.0) TVD(6403.49)
VS(4065.85) NS(-4062.12) EW(175.81)

#198 MD(10750.00) Inc(91.0) Azm(182.6) TVD(6403.32)
VS(4097.77) NS(-4094.11) EW(174.81)

#199 MD(10782.00) Inc(91.8) Azm(182.2) TVD(6402.54)
VS(4129.66) NS(-4126.07) EW(173.47)

#200 MD(10813.00) Inc(91.7) Azm(181.3) TVD(6401.59)
VS(4160.58) NS(-4157.04) EW(172.52)

#201 MD(10845.00) Inc(91.2) Azm(181.0) TVD(6400.78)
VS(4192.52) NS(-4189.02) EW(171.88)

#202 MD(10863.00) Inc(91.1) Azm(181.3) TVD(6400.42)
VS(4210.48) NS(-4207.01) EW(171.52)