

Great Western Operating Company, LLC

Location	Colorado	Slot	Slot W05 - Kodak South FD 25-241HC
Field	Wattenburg	Well	Kodak South FD 25-241HC
Installation	Kodak South	Wellbore	Kodak South FD 25-241HC (PWB)

Created by admin

Date plotted 21-Mar-2017

Plot reference is Kodak South FD 25-241HC (PWB).

Rel wellpath is Kodak South FD 25-241HC (PWPH1).

Coordinates are in Feet reference Slot W05 - Kodak South FD 25-241HC.

True Vertical Depths are reference Rig Datum.

Measured Depths are reference Rig Datum.

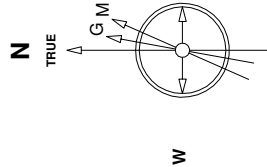
Rig Datum: Planned Datum #1

Rig Datum to Mean Sea Level: 4762.60 ft.

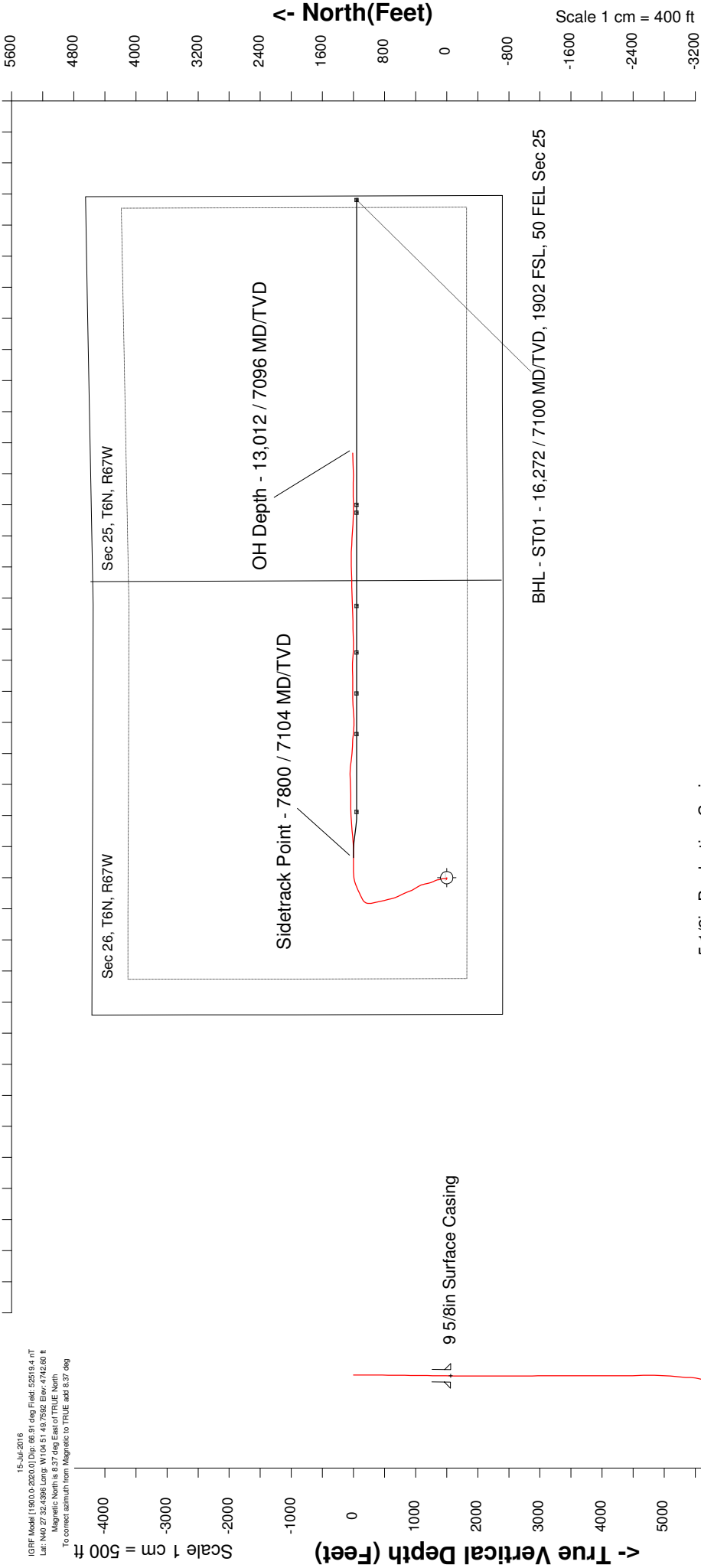
Plot North is aligned to TRUE North.

East (Feet) ->

Scale 1 cm = 400 ft



15-Jul-2016
IGRF Model [1900.0-2020.0] Dip: 66.91 deg Field: 52519.4 nT
Lat: N40 27 32.4396 Long: W104 51 43.7592 Elev: 4742.60 ft
Magnetic North is 6.37 deg East of TRUE North
To correct azimuth from Magnetic to TRUE add 5.37 deg



5 1/2in Production Casing

Sidetrack Point - 7800 / 7104 MD/TVD

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WELL PROFILE DATA

Point	MD	Inc	Azi	TVD	North	East	deg/100ft	V. Sect
KOP	7800.00	86.61	89.00	7104.42	N 1159.54	E 260.33		415.87
End of Build/Turn	8077.72	89.15	97.52	7114.72	N 1183.76	E 537.13	10.50	688.19
End of Hold	8156.82	89.15	97.52	7115.89	N 1173.41	E 615.55	0.00	764.56
Target ST Target 1	8391.99	88.85	90.00	7120.00	N 1158.00	E 850.00	10.50	994.95
Target ST Target 2	9392.19	88.85	90.00	7140.00	N 1158.00	E 1850.00	0.00	1986.26
End of Drop	9491.48	86.87	90.00	7143.71	N 1158.00	E 1949.22	6.56	2084.61
Target ST Target 3	9917.90	86.87	90.00	7167.00	N 1158.00	E 2375.00	0.00	2506.70
End of Build	10109.38	90.70	90.00	7171.07	N 1158.00	E 2566.41	6.56	2696.44
Target ST Target 3.25	10443.00	90.70	90.00	7167.00	N 1158.00	E 2900.00	0.00	3027.14
End of Drop	10478.99	89.98	90.00	7166.79	N 1158.00	E 2935.99	6.56	3062.81
Target ST Target 3.5	11043.00	89.98	90.00	7167.00	N 1158.00	E 3500.00	0.00	3621.92
End of Build	11216.37	93.45	90.00	7161.82	N 1158.00	E 3673.26	6.56	3793.67
Target ST Target 4	12244.96	93.45	90.00	7100.00	N 1158.00	E 4700.00	0.00	4811.49
End of Drop	12332.33	87.33	90.00	7099.41	N 1158.00	E 4787.32	22.97	4898.05
Target ST Target 4.5	12345.02	87.33	90.00	7100.00	N 1158.00	E 4800.00	0.00	4910.62
End of Build	12480.86	90.05	90.00	7103.11	N 1158.00	E 4935.79	6.56	5045.23
T.D. & Target BHL... 25	16271.07	90.05	90.00	7100.00	N 1158.00	E 8726.00	0.00	8802.50

BHL - ST01 - 16,272 / 7100 MD/TVD, 1902 FSL, 50 FEL Sec 25

Scale 1 cm = 500 ft

Vertical Section (Feet) ->

Azimuth 82.44 with reference 0.00 N, 0.00 E from Slot W05 - Kodak South FD 25-241HC

SYSDRILL
Wellpath Report
Wellbore: Kodak South FD 25-241HC-ST01 (PWB)
Wellpath: Kodak South FD 25-241HC-ST01 (PWP#1)

Wellbore	
Name	Kodak South FD 25-241HC-ST01 (PWB)
Created	21-Mar-2017
Last Revised	21-Mar-2017

Well	
Name	Kodak South FD 25-241HC-ST01
Government ID	
Last Revised	1-Dec-2016

Slot	
Name	Slot W05 - Kodak South FD 25-241HC
Grid Northing	1408384.523
Grid Easting	3176987.315
Latitude	N40 27 9.6300
Longitude	W104 51 50.4792
North	-2308.300
East	-55.660

Installation	
Name	Kodak South
Easting	3177026.413
Northing	1410693.078
Map Name	<unknown>
North Alignment	True

Field	
Name	Wattensburg
Easting	41136929.757
Northing	12284170.646
Map Name	<unknown>
North Alignment	Grid

Tie Points	
Tied To	Kodak South FD 25-241HC (AWB)
MD [ft]	7800.000
Inc [deg]	86.610
Azi [deg]	89.000
TVD [ft]	7104.420
North [ft]	365.620
East [ft]	79.350

Wellpath Report							
MD[ft]	Inc[deg]	Azi[deg]	TVD[ft]	North[ft]	East[ft]	Dogleg [deg/100ft]	Vertical Section[ft]
0.000	0.000	0.000	0.000	0.000	0.000		0.000
20.000	0.000	178.470	20.000	0.000	0.000	0.000	0.000
99.000	0.310	178.470	99.000	-0.210	0.010	0.390	-0.020
191.000	0.660	244.300	191.000	-0.690	-0.470	0.660	-0.550
285.000	0.570	273.120	284.990	-0.900	-1.420	0.340	-1.530
375.000	0.570	270.660	374.990	-0.870	-2.310	0.030	-2.410
465.000	0.400	265.130	464.980	-0.890	-3.080	0.200	-3.170
555.000	0.530	272.330	554.980	-0.900	-3.800	0.160	-3.890
644.000	0.570	266.880	643.980	-0.910	-4.660	0.070	-4.740
734.000	0.530	267.940	733.970	-0.950	-5.520	0.050	-5.600
824.000	0.700	262.050	823.970	-1.040	-6.480	0.200	-6.560
914.000	0.570	265.480	913.960	-1.150	-7.470	0.150	-7.560
1004.000	0.900	274.320	1003.950	-1.130	-8.620	0.390	-8.700
1094.000	0.750	268.820	1093.950	-1.090	-9.920	0.190	-9.970
1184.000	0.480	287.450	1183.940	-0.990	-10.860	0.370	-10.900
1273.000	0.400	304.760	1272.940	-0.700	-11.480	0.170	-11.470
1363.000	0.920	284.020	1362.930	-0.350	-12.430	0.630	-12.370
1453.000	0.700	283.500	1452.920	-0.050	-13.670	0.240	-13.560
1485.000	0.660	293.080	1484.920	0.070	-14.030	0.380	-13.900
1625.000	1.020	274.600	1624.900	0.490	-16.010	0.320	-15.810
1714.000	0.630	16.220	1713.900	1.020	-16.670	1.460	-16.390
1804.000	1.080	151.750	1803.890	0.750	-16.130	1.770	-15.890
1893.000	1.530	342.320	1892.890	1.140	-16.090	2.920	-15.800
1983.000	0.390	304.570	1982.870	2.460	-16.710	1.380	-16.240
2072.000	0.920	126.280	2071.870	2.210	-16.380	1.470	-15.950
2162.000	1.420	321.980	2161.860	2.660	-16.490	2.580	-15.990
2251.000	0.890	123.680	2250.850	3.150	-16.590	2.560	-16.030
2341.000	0.810	164.530	2340.850	2.150	-15.840	0.660	-15.420
2430.000	1.110	255.920	2429.840	1.330	-16.510	1.560	-16.190
2520.000	1.370	46.130	2519.830	1.860	-16.580	2.660	-16.190
2609.000	0.970	160.080	2608.820	1.890	-15.550	2.220	-15.170
2699.000	0.990	272.790	2698.810	1.210	-16.070	1.810	-15.770
2788.000	0.980	18.760	2787.800	1.970	-16.590	1.770	-16.190
2878.000	0.510	58.580	2877.800	2.910	-16.000	0.750	-15.480
2967.000	0.370	54.300	2966.790	3.280	-15.430	0.160	-14.870
3056.000	0.060	306.210	3055.790	3.480	-15.240	0.440	-14.650
3146.000	0.000	98.450	3145.790	3.510	-15.280	0.070	-14.680
3235.000	0.170	113.680	3234.790	3.450	-15.150	0.190	-14.570
3325.000	0.120	111.170	3324.790	3.370	-14.940	0.060	-14.370
3414.000	0.110	135.320	3413.790	3.270	-14.800	0.060	-14.240
3504.000	0.090	144.900	3503.790	3.150	-14.700	0.030	-14.150
3593.000	0.030	47.430	3592.790	3.110	-14.640	0.110	-14.100
3683.000	0.170	26.140	3682.790	3.250	-14.560	0.160	-14.010
3772.000	0.040	81.980	3771.790	3.370	-14.470	0.170	-13.900

3862.000	0.090	74.060	3861.790	3.390	-14.370	0.060	-13.800
3952.000	0.260	279.580	3951.790	3.450	-14.510	0.380	-13.930
4041.000	0.120	253.840	4040.790	3.460	-14.800	0.180	-14.210
4131.000	0.160	355.560	4130.790	3.550	-14.900	0.240	-14.300
4220.000	0.040	2.370	4219.790	3.710	-14.900	0.140	-14.290
4309.000	0.100	228.570	4308.790	3.690	-14.960	0.150	-14.350
4399.000	2.180	346.110	4398.770	5.300	-15.430	2.480	-14.600
4489.000	4.020	14.840	4488.640	10.010	-15.030	2.620	-13.590
4578.000	6.540	10.990	4577.250	18.000	-13.270	2.860	-10.790
4668.000	11.060	6.490	4666.170	31.620	-11.320	5.080	-7.060
4757.000	14.420	353.020	4752.990	51.110	-11.700	5.020	-4.870
4847.000	16.230	341.960	4839.800	74.200	-16.960	3.810	-7.050
4936.000	16.400	349.680	4925.230	98.390	-23.060	2.440	-9.910
5026.000	15.870	343.780	5011.690	122.710	-28.770	1.910	-12.380
5115.000	16.960	336.160	5097.070	146.270	-37.420	2.710	-17.850
5205.000	20.540	336.400	5182.280	172.750	-49.050	3.980	-25.900
5294.000	22.750	340.950	5265.010	203.330	-60.920	3.120	-33.640
5384.000	27.520	347.860	5346.480	240.140	-70.980	6.210	-38.770
5473.000	32.040	347.480	5423.700	283.310	-80.430	5.080	-42.460
5563.000	32.180	338.100	5499.990	328.880	-94.550	5.540	-50.460
5652.000	32.250	330.440	5575.320	371.540	-115.110	4.590	-65.240
5741.000	31.560	326.430	5650.880	411.610	-139.710	2.500	-84.350
5831.000	29.740	334.240	5728.330	451.360	-162.450	4.860	-101.660
5920.000	31.930	341.320	5804.770	493.550	-179.590	4.760	-113.100
6009.000	32.150	335.830	5880.230	537.460	-196.820	3.280	-124.410
6099.000	31.920	332.770	5956.530	580.470	-217.520	1.820	-139.260
6188.000	32.110	334.630	6032.000	622.760	-238.420	1.130	-154.420
6277.000	31.980	339.940	6107.450	666.280	-256.640	3.170	-166.760
6367.000	32.170	346.580	6183.740	711.990	-270.380	3.920	-174.360
6456.000	30.170	347.080	6259.890	756.840	-280.880	2.270	-178.870
6546.000	30.160	346.750	6337.700	800.890	-291.120	0.180	-183.230
6635.000	30.350	346.100	6414.580	844.480	-301.640	0.430	-187.930
6725.000	29.940	346.670	6492.410	888.400	-312.280	0.560	-192.700
6814.000	28.880	348.210	6569.940	931.050	-321.800	1.460	-196.520
6904.000	28.770	349.890	6648.790	973.650	-330.040	0.910	-199.080
6993.000	30.570	9.940	6726.310	1017.140	-329.890	11.290	-193.220
7083.000	31.140	39.150	6804.000	1057.960	-311.140	16.520	-169.260
7172.000	34.140	60.770	6879.200	1088.110	-274.690	13.460	-129.160
7262.000	43.490	66.760	6949.270	1112.730	-224.060	11.190	-75.730
7351.000	56.640	65.650	7006.280	1140.260	-161.780	14.810	-10.370
7441.000	67.490	69.480	7048.390	1170.430	-88.370	12.630	66.370
7530.000	75.440	79.830	7076.730	1192.530	-7.140	14.180	149.800
7620.000	83.020	89.670	7093.570	1200.510	80.730	13.640	237.960
7709.000	88.280	91.300	7100.320	1199.750	169.440	6.190	325.790
7799.000	86.580	88.990	7104.360	1199.530	259.340	3.180	414.880
7800.000	86.610	89.000	7104.420	1199.540	260.330	0.000	415.870
7900.000	87.520	92.070	7109.540	1198.610	360.180	3.200	514.740
8000.000	88.430	95.140	7113.080	1192.330	459.910	3.200	612.770
8100.000	89.150	97.520	7115.050	1180.850	559.220	0.000	709.700
8200.000	89.090	96.140	7116.560	1168.280	658.410	3.200	806.380
8300.000	88.970	92.940	7118.250	1160.360	758.070	3.200	904.130
8391.990	88.850	90.000	7120.000	1158.000	850.000	3.200	994.950
8400.000	88.850	90.000	7120.160	1158.000	858.010	0.000	1002.890
8500.000	88.850	90.000	7122.160	1158.000	957.990	0.000	1102.010
8600.000	88.850	90.000	7124.160	1158.000	1057.970	0.000	1201.120
8700.000	88.850	90.000	7126.160	1158.000	1157.950	0.000	1300.230
8800.000	88.850	90.000	7128.160	1158.000	1257.930	0.000	1399.340
8900.000	88.850	90.000	7130.160	1158.000	1357.910	0.000	1498.450
9000.000	88.850	90.000	7132.160	1158.000	1457.890	0.000	1597.560
9100.000	88.850	90.000	7134.160	1158.000	1557.870	0.000	1696.670
9200.000	88.850	90.000	7136.160	1158.000	1657.850	0.000	1795.780
9300.000	88.850	90.000	7138.160	1158.000	1757.830	0.000	1894.890
9392.190	88.850	90.000	7140.000	1158.000	1850.000	0.000	1986.260
9400.000	88.700	90.000	7140.170	1158.000	1857.810	2.000	1994.010
9500.000	86.870	90.000	7144.170	1158.000	1957.730	0.000	2093.050
9600.000	86.870	90.000	7149.630	1158.000	2057.580	0.000	2192.030
9700.000	86.870	90.000	7155.100	1158.000	2157.430	0.000	2291.020
9800.000	86.870	90.000	7160.560	1158.000	2257.280	0.000	2390.000
9900.000	86.870	90.000	7166.020	1158.000	2357.130	0.000	2488.980
9917.900	86.870	90.000	7167.000	1158.000	2375.000	0.000	2506.700
10000.000	88.510	90.000	7170.310	1158.000	2457.030	2.000	2588.020
10100.000	90.510	90.000	7171.160	1158.000	2557.020	2.000	2687.140
10200.000	90.700	90.000	7169.960	1158.000	2657.020	0.000	2786.260
10300.000	90.700	90.000	7168.740	1158.000	2757.010	0.000	2885.390
10400.000	90.700	90.000	7167.520	1158.000	2857.000	0.000	2984.510
10443.000	90.700	90.000	7167.000	1158.000	2900.000	0.000	3027.140
10500.000	89.980	90.000	7166.800	1158.000	2957.000	0.000	3083.640
10600.000	89.980	90.000	7166.830	1158.000	3057.000	0.000	3182.770
10700.000	89.980	90.000	7166.870	1158.000	3157.000	0.000	3281.900
10800.000	89.980	90.000	7166.910	1158.000	3257.000	0.000	3381.030
10900.000	89.980	90.000	7166.950	1158.000	3357.000	0.000	3480.160
11000.000	89.980	90.000	7166.980	1158.000	3457.000	0.000	3579.290
11043.000	89.980	90.000	7167.000	1158.000	3500.000	0.000	3621.920
11100.000	91.120	90.000	7166.450	1158.000	3557.000	2.000	3678.420
11200.000	93.120	90.000	7162.760	1158.000	3656.920	2.000	3777.480
11300.000	93.450	90.000	7156.790	1158.000	3756.740	0.000	3876.430
11400.000	93.450	90.000	7150.780	1158.000	3856.560	0.000	3975.380
11500.000	93.450	90.000	7144.770	1158.000	3956.380	0.000	4074.340
11600.000	93.450	90.000	7138.760	1158.000	4056.200	0.000	4173.290
11700.000	93.450	90.000	7132.750	1158.000	4156.020	0.000	4272.240
11800.000	93.450	90.000	7126.740	1158.000	4255.840	0.000	4371.190
11900.000	93.450	90.000	7120.730	1158.000	4355.660	0.000	4470.140
12000.000	93.450	90.000	7114.720	1158.000	4455.480	0.000	4569.090
12100.000	93.450	90.000	7108.710	1158.000	4555.300	0.000	4668.050
12200.000	93.450	90.000	7102.700	1158.000	4655.120	0.000	4767.000

12244.960	93.450	90.000	7100.000	1158.000	4700.000	0.000	4811.490
12300.000	89.590	90.000	7098.540	1158.000	4755.010	7.000	4866.020
12345.020	87.330	90.000	7100.000	1158.000	4800.000	0.000	4910.620
12400.000	88.430	90.000	7102.030	1158.000	4854.940	2.000	4965.080
12500.000	90.050	90.000	7103.090	1158.000	4954.930	0.000	5064.210
12600.000	90.050	90.000	7103.010	1158.000	5054.930	0.000	5163.340
12700.000	90.050	90.000	7102.930	1158.000	5154.930	0.000	5262.470
12800.000	90.050	90.000	7102.850	1158.000	5254.930	0.000	5361.600
12900.000	90.050	90.000	7102.760	1158.000	5354.930	0.000	5460.730
13000.000	90.050	90.000	7102.680	1158.000	5454.930	0.000	5559.860
13100.000	90.050	90.000	7102.600	1158.000	5554.930	0.000	5658.990
13200.000	90.050	90.000	7102.520	1158.000	5654.930	0.000	5758.120
13300.000	90.050	90.000	7102.440	1158.000	5754.930	0.000	5857.250
13400.000	90.050	90.000	7102.350	1158.000	5854.930	0.000	5956.380
13500.000	90.050	90.000	7102.270	1158.000	5954.930	0.000	6055.510
13600.000	90.050	90.000	7102.190	1158.000	6054.930	0.000	6154.650
13700.000	90.050	90.000	7102.110	1158.000	6154.930	0.000	6253.780
13800.000	90.050	90.000	7102.030	1158.000	6254.930	0.000	6352.910
13900.000	90.050	90.000	7101.940	1158.000	6354.930	0.000	6452.040
14000.000	90.050	90.000	7101.860	1158.000	6454.930	0.000	6551.170
14100.000	90.050	90.000	7101.780	1158.000	6554.930	0.000	6650.300
14200.000	90.050	90.000	7101.700	1158.000	6654.930	0.000	6749.430
14300.000	90.050	90.000	7101.620	1158.000	6754.930	0.000	6848.560
14400.000	90.050	90.000	7101.530	1158.000	6854.930	0.000	6947.690
14500.000	90.050	90.000	7101.450	1158.000	6954.930	0.000	7046.820
14600.000	90.050	90.000	7101.370	1158.000	7054.930	0.000	7145.950
14700.000	90.050	90.000	7101.290	1158.000	7154.930	0.000	7245.090
14800.000	90.050	90.000	7101.210	1158.000	7254.930	0.000	7344.220
14900.000	90.050	90.000	7101.120	1158.000	7354.930	0.000	7443.350
15000.000	90.050	90.000	7101.040	1158.000	7454.930	0.000	7542.480
15100.000	90.050	90.000	7100.960	1158.000	7554.930	0.000	7641.610
15200.000	90.050	90.000	7100.880	1158.000	7654.930	0.000	7740.740
15300.000	90.050	90.000	7100.800	1158.000	7754.930	0.000	7839.870
15400.000	90.050	90.000	7100.710	1158.000	7854.930	0.000	7939.000
15500.000	90.050	90.000	7100.630	1158.000	7954.930	0.000	8038.130
15600.000	90.050	90.000	7100.550	1158.000	8054.930	0.000	8137.260
15700.000	90.050	90.000	7100.470	1158.000	8154.930	0.000	8236.390
15800.000	90.050	90.000	7100.390	1158.000	8254.930	0.000	8335.520
15900.000	90.050	90.000	7100.300	1158.000	8354.930	0.000	8434.660
16000.000	90.050	90.000	7100.220	1158.000	8454.930	0.000	8533.790
16100.000	90.050	90.000	7100.140	1158.000	8554.930	0.000	8632.920
16200.000	90.050	90.000	7100.060	1158.000	8654.930	0.000	8732.050
16271.070	90.050	90.000	7100.000	1158.000	8726.000	0.000	8802.500

Comments

MD[ft]	7800.000
TVD[ft]	7104.420
North[ft]	1199.540
East[ft]	260.330
Comment	Sidetrack Point - 7800 / 7104 MD/TVD

Hole Sections

Diameter [in]	Start MD[ft]	Start TVD[ft]	Start North[ft]	Start East[ft]	End MD[ft]	End TVD[ft]	End North[ft]	End East[ft]	Wellbore
13 1/2	0.000	0.000	0.000	0.000	1563.000	1562.910	0.360	-15.010	Kodak South FD 25-241HC
8 1/2	1563.000	1562.910	0.360	-15.010	7800.000	7104.420	1199.540	260.330	Kodak South FD 25-241HC
8 1/2	7800.000	7104.420	1199.540	260.330	16271.070	7100.000	1158.000	8726.000	Kodak South FD 25-241HC-ST01

Casings

Name	Top MD[ft]	Top TVD[ft]	Top North[ft]	Top East[ft]	Shoe MD[ft]	Shoe TVD[ft]	Shoe North[ft]	Shoe East[ft]	Wellbore
9 5/8in Surface Casing	0.000	0.000	0.000	0.000	1536.000	1562.910	0.360	-15.010	Kodak South FD 25-241HC
5 1/2in Production Casing	0.000	0.000	0.000	0.000	16271.070	7100.000	1158.000	8726.000	Kodak South FD 25-241HC-ST01

Targets

Name	North[ft]	East[ft]	TVD[ft]	Latitude	Longitude	Easting	Northing	Last Revised
ST Target 1	1158.000	850.000	7120.000	N40 27 21.0727	W104 51 39.4835	3177828.960	1409548.540	17-Feb-2016
ST Target 2	1158.000	1850.000	7140.000	N40 27 21.0721	W104 51 26.5475	3178828.890	1409555.720	17-Feb-2016
ST Target 3	1158.000	2375.000	7167.000	N40 27 21.0717	W104 51 19.7560	3179353.860	1409559.480	17-Feb-2016
ST Target 3.25	1158.000	2900.000	7167.000	N40 27 21.0711	W104 51 12.9646	3179878.820	1409563.250	17-Feb-2016
ST Target 3.5	1158.000	3500.000	7167.000	N40 27 21.0704	W104 51 5.2030	3180478.780	1409567.550	17-Feb-2016
ST Target 4	1158.000	4700.000	7100.000	N40 27 21.0684	W104 50 49.6797	3181678.710	1409576.160	17-Feb-2016
ST Target 4.5	1158.000	4800.000	7100.000	N40 27 21.0682	W104 50 48.3861	3181778.700	1409576.870	17-Feb-2016
BHL - ST01 - 16,272 / 7100	1158.000	8726.000	7100.000	N40 27 21.0576	W104 49 57.5991	3185704.450	1409605.030	17-Feb-2016

Survey Tool Program

Reference	239168.000
Survey Name	
MD[ft]	7800.000
TVD[ft]	7104.420
Survey Tool	WdW Rate Gyro
Error Model	Standard