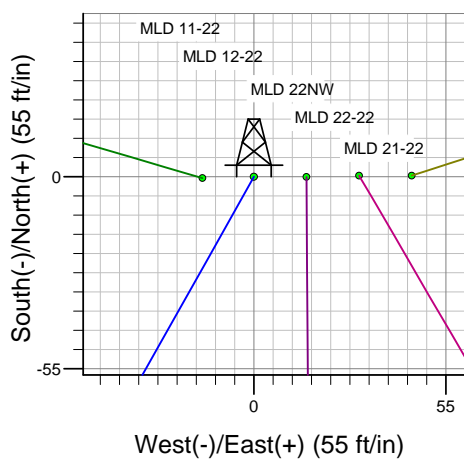
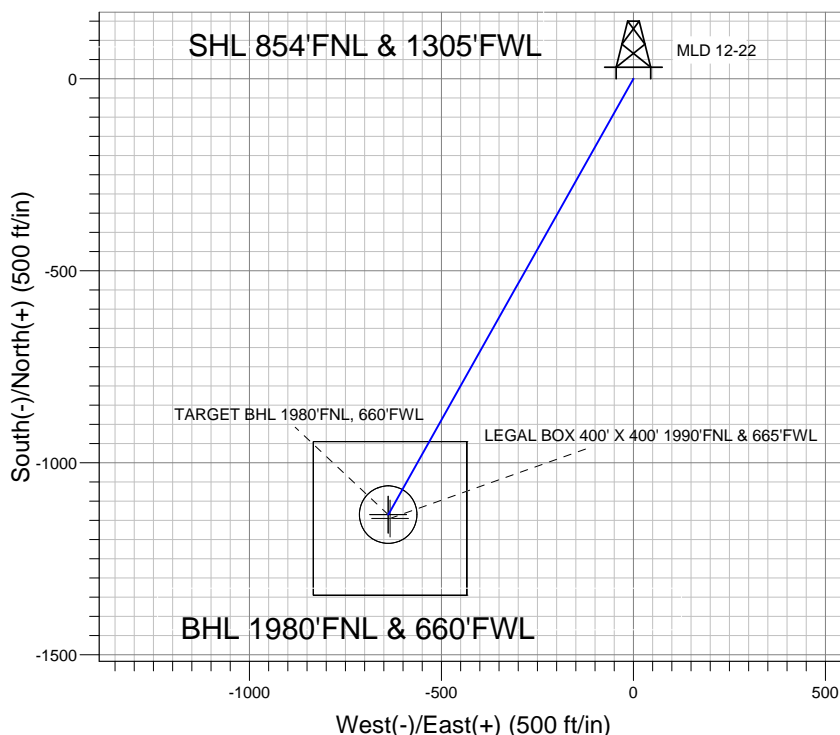
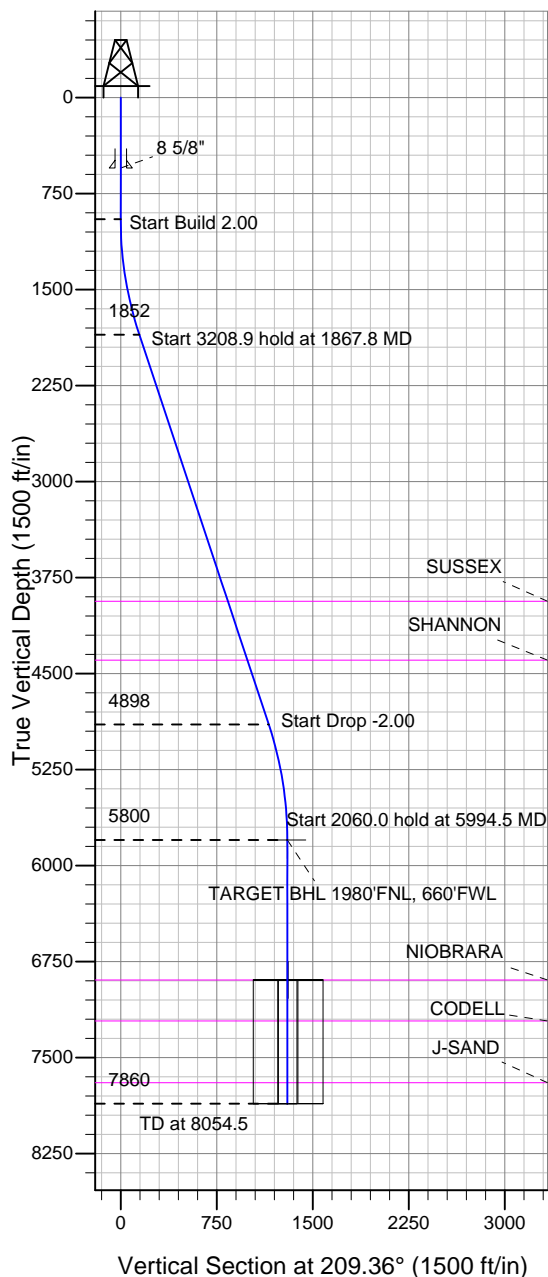


### Well Name: MLD 12-22

Surface Location: MLD 5 Pad Sec.22-T4N-R68W  
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
 Ground Elevation: 4877.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1353937.82	3141082.66	40.303855	-104.994153	
Original Well Elev WELL @ 4890.0ft (Original Well Elev)						

## Sundance Energy, Weld County, CO



MLD 5 Pad Sec.22-T4N-R68W  
 MLD 12-22  
 Plan #2 (8-02-12)  
 12:59, August 02 2012



Azimuths to True North  
 Magnetic North: 8.83°  
 Magnetic Field  
 Strength: 52938.4snT  
 Dip Angle: 66.90°  
 Date: 7/26/2012  
 Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1980'FNL, 660'FWL	5800.0	-1134.8	-638.5	40.300740	-104.996442	Point
LEGAL BOX 400' X 400' 1990'FNL & 665'FWL	6894.0	-1144.8	-633.5	40.300713	-104.996424	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 1980'FNL & 660'FWL	6894.0	-1134.8	-638.5	40.300740	-104.996442	Circle (Radius: 75.0)

### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	950.0	0.00	0.00	950.0	0.0	0.0	0.00	0.00	0.0	
3	1867.8	18.36	209.36	1852.2	-127.0	-71.5	2.00	209.36	145.8	
4	5076.7	18.36	209.36	4897.8	-1007.8	-567.0	0.00	0.00	1156.3	
5	5994.5	0.00	0.00	5800.0	-1134.8	-638.5	2.00	180.00	1302.1	TARGET BHL 1980'FNL, 660'FWL
6	8054.5	0.00	0.00	7860.0	-1134.8	-638.5	0.00	0.00	1302.1	



# **Sundance Energy, Weld County, CO**

**SEC.22-T4N-R68W**

**MLD 5 Pad Sec.22-T4N-R68W**

**MLD 12-22**

**Wellbore #1**

**Plan: Plan #2 (8-02-12)**

## **Standard Planning Report**

**02 August, 2012**

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
950.0	0.00	0.00	950.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,867.8	18.36	209.36	1,852.2	-127.0	-71.5	2.00	2.00	0.00	209.36	
5,076.7	18.36	209.36	4,897.8	-1,007.8	-567.0	0.00	0.00	0.00	0.00	
5,994.5	0.00	0.00	5,800.0	-1,134.8	-638.5	2.00	-2.00	0.00	180.00	TARGET BHL 1980
8,054.5	0.00	0.00	7,860.0	-1,134.8	-638.5	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well MLD 12-22
<b>Company:</b>	Sundance Energy, Weld County, CO	<b>TVD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Project:</b>	SEC.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Site:</b>	MLD 5 Pad Sec.22-T4N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	MLD 12-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (8-02-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
550.0	0.00	0.00	550.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
560.0	0.00	0.00	560.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
950.0	0.00	0.00	950.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.20	209.36	960.0	0.0	0.0	0.0	2.00	2.00	0.00
1,000.0	1.00	209.36	1,000.0	-0.4	-0.2	0.4	2.00	2.00	0.00
1,040.0	1.80	209.36	1,040.0	-1.2	-0.7	1.4	2.00	2.00	0.00
1,080.0	2.60	209.36	1,080.0	-2.6	-1.4	2.9	2.00	2.00	0.00
1,120.0	3.40	209.36	1,119.9	-4.4	-2.5	5.0	2.00	2.00	0.00
1,160.0	4.20	209.36	1,159.8	-6.7	-3.8	7.7	2.00	2.00	0.00
1,200.0	5.00	209.36	1,199.7	-9.5	-5.3	10.9	2.00	2.00	0.00
1,240.0	5.80	209.36	1,239.5	-12.8	-7.2	14.7	2.00	2.00	0.00
1,280.0	6.60	209.36	1,279.3	-16.5	-9.3	19.0	2.00	2.00	0.00
1,320.0	7.40	209.36	1,319.0	-20.8	-11.7	23.9	2.00	2.00	0.00
1,360.0	8.20	209.36	1,358.6	-25.5	-14.4	29.3	2.00	2.00	0.00
1,400.0	9.00	209.36	1,398.2	-30.7	-17.3	35.3	2.00	2.00	0.00
1,440.0	9.80	209.36	1,437.6	-36.4	-20.5	41.8	2.00	2.00	0.00
1,480.0	10.60	209.36	1,477.0	-42.6	-24.0	48.9	2.00	2.00	0.00
1,520.0	11.40	209.36	1,516.2	-49.3	-27.7	56.5	2.00	2.00	0.00
1,560.0	12.20	209.36	1,555.4	-56.4	-31.7	64.7	2.00	2.00	0.00
1,600.0	13.00	209.36	1,594.4	-64.0	-36.0	73.4	2.00	2.00	0.00
1,640.0	13.80	209.36	1,633.3	-72.1	-40.5	82.7	2.00	2.00	0.00
1,680.0	14.60	209.36	1,672.1	-80.6	-45.4	92.5	2.00	2.00	0.00
1,720.0	15.40	209.36	1,710.8	-89.6	-50.4	102.9	2.00	2.00	0.00
1,760.0	16.20	209.36	1,749.3	-99.1	-55.8	113.7	2.00	2.00	0.00
1,800.0	17.00	209.36	1,787.6	-109.1	-61.4	125.2	2.00	2.00	0.00
1,840.0	17.80	209.36	1,825.8	-119.5	-67.2	137.1	2.00	2.00	0.00
1,867.8	18.36	209.36	1,852.2	-127.0	-71.5	145.8	2.00	2.00	0.00
1,880.0	18.36	209.36	1,863.8	-130.4	-73.4	149.6	0.00	0.00	0.00
1,920.0	18.36	209.36	1,901.7	-141.4	-79.5	162.2	0.00	0.00	0.00
1,960.0	18.36	209.36	1,939.7	-152.3	-85.7	174.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well MLD 12-22
<b>Company:</b>	Sundance Energy, Weld County, CO	<b>TVD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Project:</b>	SEC.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Site:</b>	MLD 5 Pad Sec.22-T4N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	MLD 12-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (8-02-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,000.0	18.36	209.36	1,977.7	-163.3	-91.9	187.4	0.00	0.00	0.00
2,040.0	18.36	209.36	2,015.6	-174.3	-98.1	200.0	0.00	0.00	0.00
2,080.0	18.36	209.36	2,053.6	-185.3	-104.2	212.6	0.00	0.00	0.00
2,120.0	18.36	209.36	2,091.5	-196.3	-110.4	225.2	0.00	0.00	0.00
2,160.0	18.36	209.36	2,129.5	-207.2	-116.6	237.8	0.00	0.00	0.00
2,200.0	18.36	209.36	2,167.5	-218.2	-122.8	250.4	0.00	0.00	0.00
2,240.0	18.36	209.36	2,205.4	-229.2	-129.0	263.0	0.00	0.00	0.00
2,280.0	18.36	209.36	2,243.4	-240.2	-135.1	275.6	0.00	0.00	0.00
2,320.0	18.36	209.36	2,281.4	-251.1	-141.3	288.2	0.00	0.00	0.00
2,360.0	18.36	209.36	2,319.3	-262.1	-147.5	300.8	0.00	0.00	0.00
2,400.0	18.36	209.36	2,357.3	-273.1	-153.7	313.4	0.00	0.00	0.00
2,440.0	18.36	209.36	2,395.3	-284.1	-159.8	326.0	0.00	0.00	0.00
2,480.0	18.36	209.36	2,433.2	-295.1	-166.0	338.6	0.00	0.00	0.00
2,520.0	18.36	209.36	2,471.2	-306.0	-172.2	351.2	0.00	0.00	0.00
2,560.0	18.36	209.36	2,509.2	-317.0	-178.4	363.8	0.00	0.00	0.00
2,600.0	18.36	209.36	2,547.1	-328.0	-184.5	376.3	0.00	0.00	0.00
2,640.0	18.36	209.36	2,585.1	-339.0	-190.7	388.9	0.00	0.00	0.00
2,680.0	18.36	209.36	2,623.1	-350.0	-196.9	401.5	0.00	0.00	0.00
2,720.0	18.36	209.36	2,661.0	-360.9	-203.1	414.1	0.00	0.00	0.00
2,760.0	18.36	209.36	2,699.0	-371.9	-209.2	426.7	0.00	0.00	0.00
2,800.0	18.36	209.36	2,736.9	-382.9	-215.4	439.3	0.00	0.00	0.00
2,840.0	18.36	209.36	2,774.9	-393.9	-221.6	451.9	0.00	0.00	0.00
2,880.0	18.36	209.36	2,812.9	-404.8	-227.8	464.5	0.00	0.00	0.00
2,920.0	18.36	209.36	2,850.8	-415.8	-234.0	477.1	0.00	0.00	0.00
2,960.0	18.36	209.36	2,888.8	-426.8	-240.1	489.7	0.00	0.00	0.00
3,000.0	18.36	209.36	2,926.8	-437.8	-246.3	502.3	0.00	0.00	0.00
3,040.0	18.36	209.36	2,964.7	-448.8	-252.5	514.9	0.00	0.00	0.00
3,080.0	18.36	209.36	3,002.7	-459.7	-258.7	527.5	0.00	0.00	0.00
3,120.0	18.36	209.36	3,040.7	-470.7	-264.8	540.1	0.00	0.00	0.00
3,160.0	18.36	209.36	3,078.6	-481.7	-271.0	552.7	0.00	0.00	0.00
3,200.0	18.36	209.36	3,116.6	-492.7	-277.2	565.3	0.00	0.00	0.00
3,240.0	18.36	209.36	3,154.6	-503.7	-283.4	577.9	0.00	0.00	0.00
3,280.0	18.36	209.36	3,192.5	-514.6	-289.5	590.5	0.00	0.00	0.00
3,320.0	18.36	209.36	3,230.5	-525.6	-295.7	603.1	0.00	0.00	0.00
3,360.0	18.36	209.36	3,268.5	-536.6	-301.9	615.7	0.00	0.00	0.00
3,400.0	18.36	209.36	3,306.4	-547.6	-308.1	628.3	0.00	0.00	0.00
3,440.0	18.36	209.36	3,344.4	-558.5	-314.3	640.9	0.00	0.00	0.00
3,480.0	18.36	209.36	3,382.3	-569.5	-320.4	653.5	0.00	0.00	0.00
3,520.0	18.36	209.36	3,420.3	-580.5	-326.6	666.1	0.00	0.00	0.00
3,560.0	18.36	209.36	3,458.3	-591.5	-332.8	678.7	0.00	0.00	0.00
3,600.0	18.36	209.36	3,496.2	-602.5	-339.0	691.3	0.00	0.00	0.00
3,640.0	18.36	209.36	3,534.2	-613.4	-345.1	703.9	0.00	0.00	0.00
3,680.0	18.36	209.36	3,572.2	-624.4	-351.3	716.5	0.00	0.00	0.00
3,720.0	18.36	209.36	3,610.1	-635.4	-357.5	729.1	0.00	0.00	0.00
3,760.0	18.36	209.36	3,648.1	-646.4	-363.7	741.7	0.00	0.00	0.00
3,800.0	18.36	209.36	3,686.1	-657.4	-369.8	754.3	0.00	0.00	0.00
3,840.0	18.36	209.36	3,724.0	-668.3	-376.0	766.8	0.00	0.00	0.00
3,880.0	18.36	209.36	3,762.0	-679.3	-382.2	779.4	0.00	0.00	0.00
3,920.0	18.36	209.36	3,800.0	-690.3	-388.4	792.0	0.00	0.00	0.00
3,960.0	18.36	209.36	3,837.9	-701.3	-394.6	804.6	0.00	0.00	0.00
4,000.0	18.36	209.36	3,875.9	-712.2	-400.7	817.2	0.00	0.00	0.00
4,040.0	18.36	209.36	3,913.9	-723.2	-406.9	829.8	0.00	0.00	0.00
4,061.2	18.36	209.36	3,934.0	-729.0	-410.2	836.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well MLD 12-22
<b>Company:</b>	Sundance Energy, Weld County, CO	<b>TVD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Project:</b>	SEC.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Site:</b>	MLD 5 Pad Sec.22-T4N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	MLD 12-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (8-02-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>SUSSEX</b>									
4,080.0	18.36	209.36	3,951.8	-734.2	-413.1	842.4	0.00	0.00	0.00
4,120.0	18.36	209.36	3,989.8	-745.2	-419.3	855.0	0.00	0.00	0.00
4,160.0	18.36	209.36	4,027.7	-756.2	-425.4	867.6	0.00	0.00	0.00
4,200.0	18.36	209.36	4,065.7	-767.1	-431.6	880.2	0.00	0.00	0.00
4,240.0	18.36	209.36	4,103.7	-778.1	-437.8	892.8	0.00	0.00	0.00
4,280.0	18.36	209.36	4,141.6	-789.1	-444.0	905.4	0.00	0.00	0.00
4,320.0	18.36	209.36	4,179.6	-800.1	-450.1	918.0	0.00	0.00	0.00
4,360.0	18.36	209.36	4,217.6	-811.0	-456.3	930.6	0.00	0.00	0.00
4,400.0	18.36	209.36	4,255.5	-822.0	-462.5	943.2	0.00	0.00	0.00
4,440.0	18.36	209.36	4,293.5	-833.0	-468.7	955.8	0.00	0.00	0.00
4,480.0	18.36	209.36	4,331.5	-844.0	-474.9	968.4	0.00	0.00	0.00
4,520.0	18.36	209.36	4,369.4	-855.0	-481.0	981.0	0.00	0.00	0.00
4,546.9	18.36	209.36	4,395.0	-862.4	-485.2	989.5	0.00	0.00	0.00
<b>SHANNON</b>									
4,560.0	18.36	209.36	4,407.4	-865.9	-487.2	993.6	0.00	0.00	0.00
4,600.0	18.36	209.36	4,445.4	-876.9	-493.4	1,006.2	0.00	0.00	0.00
4,640.0	18.36	209.36	4,483.3	-887.9	-499.6	1,018.8	0.00	0.00	0.00
4,680.0	18.36	209.36	4,521.3	-898.9	-505.7	1,031.4	0.00	0.00	0.00
4,720.0	18.36	209.36	4,559.3	-909.9	-511.9	1,044.0	0.00	0.00	0.00
4,760.0	18.36	209.36	4,597.2	-920.8	-518.1	1,056.6	0.00	0.00	0.00
4,800.0	18.36	209.36	4,635.2	-931.8	-524.3	1,069.2	0.00	0.00	0.00
4,840.0	18.36	209.36	4,673.2	-942.8	-530.4	1,081.8	0.00	0.00	0.00
4,880.0	18.36	209.36	4,711.1	-953.8	-536.6	1,094.4	0.00	0.00	0.00
4,920.0	18.36	209.36	4,749.1	-964.7	-542.8	1,107.0	0.00	0.00	0.00
4,960.0	18.36	209.36	4,787.0	-975.7	-549.0	1,119.6	0.00	0.00	0.00
5,000.0	18.36	209.36	4,825.0	-986.7	-555.2	1,132.2	0.00	0.00	0.00
5,040.0	18.36	209.36	4,863.0	-997.7	-561.3	1,144.8	0.00	0.00	0.00
5,076.7	18.36	209.36	4,897.8	-1,007.8	-567.0	1,156.3	0.00	0.00	0.00
5,080.0	18.29	209.36	4,900.9	-1,008.7	-567.5	1,157.3	2.00	-2.00	0.00
5,120.0	17.49	209.36	4,939.0	-1,019.4	-573.5	1,169.6	2.00	-2.00	0.00
5,160.0	16.69	209.36	4,977.2	-1,029.6	-579.3	1,181.4	2.00	-2.00	0.00
5,200.0	15.89	209.36	5,015.6	-1,039.4	-584.8	1,192.6	2.00	-2.00	0.00
5,240.0	15.09	209.36	5,054.2	-1,048.7	-590.0	1,203.3	2.00	-2.00	0.00
5,280.0	14.29	209.36	5,092.9	-1,057.5	-595.0	1,213.4	2.00	-2.00	0.00
5,320.0	13.49	209.36	5,131.7	-1,065.9	-599.7	1,223.0	2.00	-2.00	0.00
5,360.0	12.69	209.36	5,170.7	-1,073.8	-604.2	1,232.1	2.00	-2.00	0.00
5,400.0	11.89	209.36	5,209.7	-1,081.2	-608.3	1,240.6	2.00	-2.00	0.00
5,440.0	11.09	209.36	5,248.9	-1,088.2	-612.2	1,248.6	2.00	-2.00	0.00
5,480.0	10.29	209.36	5,288.2	-1,094.6	-615.9	1,256.0	2.00	-2.00	0.00
5,520.0	9.49	209.36	5,327.7	-1,100.6	-619.2	1,262.9	2.00	-2.00	0.00
5,560.0	8.69	209.36	5,367.2	-1,106.1	-622.3	1,269.2	2.00	-2.00	0.00
5,600.0	7.89	209.36	5,406.7	-1,111.2	-625.2	1,275.0	2.00	-2.00	0.00
5,640.0	7.09	209.36	5,446.4	-1,115.7	-627.7	1,280.2	2.00	-2.00	0.00
5,680.0	6.29	209.36	5,486.1	-1,119.8	-630.0	1,284.8	2.00	-2.00	0.00
5,720.0	5.49	209.36	5,525.9	-1,123.3	-632.0	1,288.9	2.00	-2.00	0.00
5,760.0	4.69	209.36	5,565.7	-1,126.4	-633.8	1,292.5	2.00	-2.00	0.00
5,800.0	3.89	209.36	5,605.6	-1,129.0	-635.2	1,295.5	2.00	-2.00	0.00
5,840.0	3.09	209.36	5,645.6	-1,131.2	-636.4	1,297.9	2.00	-2.00	0.00
5,880.0	2.29	209.36	5,685.5	-1,132.8	-637.4	1,299.8	2.00	-2.00	0.00
5,920.0	1.49	209.36	5,725.5	-1,134.0	-638.0	1,301.1	2.00	-2.00	0.00
5,960.0	0.69	209.36	5,765.5	-1,134.6	-638.4	1,301.9	2.00	-2.00	0.00
5,994.5	0.00	0.00	5,800.0	-1,134.8	-638.5	1,302.1	2.00	-2.00	436.45

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well MLD 12-22
<b>Company:</b>	Sundance Energy, Weld County, CO	<b>TVD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Project:</b>	SEC.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Site:</b>	MLD 5 Pad Sec.22-T4N-R68W	<b>North Reference:</b>	True
<b>Well:</b>	MLD 12-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (8-02-12)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
TARGET BHL 1980'FNL, 660'FWL									
6,000.0	0.00	0.00	5,805.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,040.0	0.00	0.00	5,845.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,080.0	0.00	0.00	5,885.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,120.0	0.00	0.00	5,925.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,160.0	0.00	0.00	5,965.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,200.0	0.00	0.00	6,005.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,240.0	0.00	0.00	6,045.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,280.0	0.00	0.00	6,085.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,320.0	0.00	0.00	6,125.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,360.0	0.00	0.00	6,165.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,205.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,440.0	0.00	0.00	6,245.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,480.0	0.00	0.00	6,285.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,520.0	0.00	0.00	6,325.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,560.0	0.00	0.00	6,365.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,405.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,640.0	0.00	0.00	6,445.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,680.0	0.00	0.00	6,485.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,720.0	0.00	0.00	6,525.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,760.0	0.00	0.00	6,565.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,605.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,840.0	0.00	0.00	6,645.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,880.0	0.00	0.00	6,685.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,920.0	0.00	0.00	6,725.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
6,960.0	0.00	0.00	6,765.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,000.0	0.00	0.00	6,805.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,040.0	0.00	0.00	6,845.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,080.0	0.00	0.00	6,885.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,088.5	0.00	0.00	6,894.0	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
NIOBRARA - LEGAL BOX 400' X 400' 1990'FNL & 665'FWL - TARGET CIRCLE 1980'FNL & 660'FWL									
7,120.0	0.00	0.00	6,925.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,160.0	0.00	0.00	6,965.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,200.0	0.00	0.00	7,005.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,240.0	0.00	0.00	7,045.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,280.0	0.00	0.00	7,085.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,320.0	0.00	0.00	7,125.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,360.0	0.00	0.00	7,165.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,400.0	0.00	0.00	7,205.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,408.5	0.00	0.00	7,214.0	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
CODELL									
7,440.0	0.00	0.00	7,245.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,480.0	0.00	0.00	7,285.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,520.0	0.00	0.00	7,325.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,560.0	0.00	0.00	7,365.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,600.0	0.00	0.00	7,405.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,640.0	0.00	0.00	7,445.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,680.0	0.00	0.00	7,485.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,720.0	0.00	0.00	7,525.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,760.0	0.00	0.00	7,565.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,800.0	0.00	0.00	7,605.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,840.0	0.00	0.00	7,645.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00
7,880.0	0.00	0.00	7,685.5	-1,134.8	-638.5	1,302.1	0.00	0.00	0.00

Formations						
	Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	4,061.2	3,934.0	SUSSEX		0.00	
	4,546.9	4,395.0	SHANNON		0.00	
	7,088.5	6,894.0	NIOBRARA		0.00	
	7,408.5	7,214.0	CODELL		0.00	
	7,891.5	7,697.0	J-SAND		0.00	





# **Sundance Energy, Weld County, CO**

**SEC.22-T4N-R68W**

**MLD 5 Pad Sec.22-T4N-R68W**

**MLD 12-22**

**Wellbore #1**

**Plan #2 (8-02-12)**

## **Anticollision Report**

**02 August, 2012**



MLD 5 Pad Sec.22-T4N-R68W - MLD 11-22 - Wellbore #1 - Plan #2 (8-02-12)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,000.0	1,977.7	1,966.5	1,953.2	5.4	5.3	125.93	46.9	-175.3	227.5	217.6	9.89	23.002		
2,100.0	2,072.6	2,061.2	2,046.5	6.0	5.7	128.64	51.5	-191.0	257.6	247.0	10.63	24.229		
2,200.0	2,167.5	2,155.9	2,139.8	6.6	6.0	130.79	56.1	-206.7	288.2	276.8	11.38	25.323		
2,300.0	2,262.4	2,250.6	2,233.1	7.2	6.4	132.52	60.7	-222.4	319.1	307.0	12.13	26.299		
2,400.0	2,357.3	2,345.3	2,326.3	7.8	6.8	133.96	65.4	-238.1	350.2	337.3	12.89	27.172		
2,500.0	2,452.2	2,440.0	2,419.6	8.4	7.1	135.15	70.0	-253.8	381.5	367.8	13.65	27.954		
2,600.0	2,547.1	2,534.7	2,512.9	9.0	7.5	136.17	74.6	-269.4	412.9	398.5	14.41	28.659		
2,700.0	2,642.0	2,629.5	2,606.2	9.6	7.9	137.04	79.2	-285.1	444.4	429.2	15.17	29.295		
2,800.0	2,736.9	2,724.2	2,699.5	10.2	8.2	137.80	83.8	-300.8	476.0	460.0	15.93	29.872		
2,900.0	2,831.9	2,818.9	2,792.7	10.9	8.6	138.47	88.5	-316.5	507.6	490.9	16.70	30.398		
3,000.0	2,926.8	2,913.6	2,886.0	11.5	9.0	139.05	93.1	-332.2	539.3	521.9	17.47	30.877		
3,100.0	3,021.7	3,008.3	2,979.3	12.1	9.3	139.57	97.7	-347.9	571.1	552.8	18.24	31.317		
3,200.0	3,116.6	3,103.0	3,072.6	12.7	9.7	140.04	102.3	-363.6	602.9	583.9	19.00	31.721		
3,300.0	3,211.5	3,197.7	3,165.9	13.4	10.1	140.46	107.0	-379.3	634.7	614.9	19.78	32.094		
3,400.0	3,306.4	3,292.4	3,259.1	14.0	10.5	140.84	111.6	-395.0	666.5	646.0	20.55	32.438		
3,500.0	3,401.3	3,387.1	3,352.4	14.6	10.8	141.19	116.2	-410.7	698.4	677.1	21.32	32.757		
3,600.0	3,496.2	3,481.8	3,445.7	15.3	11.2	141.50	120.8	-426.4	730.3	708.2	22.09	33.054		
3,700.0	3,591.2	3,576.5	3,539.0	15.9	11.6	141.79	125.4	-442.1	762.2	739.3	22.87	33.330		
3,800.0	3,686.1	3,671.2	3,632.3	16.6	12.0	142.05	130.1	-457.8	794.1	770.5	23.64	33.588		
3,900.0	3,781.0	3,765.9	3,725.5	17.2	12.3	142.30	134.7	-473.5	826.1	801.6	24.42	33.829		
4,000.0	3,875.9	3,860.6	3,818.8	17.8	12.7	142.53	139.3	-489.2	858.0	832.8	25.19	34.056		
4,100.0	3,970.8	3,955.3	3,912.1	18.5	13.1	142.74	143.9	-504.9	890.0	864.0	25.97	34.268		
4,200.0	4,065.7	4,050.0	4,005.4	19.1	13.5	142.93	148.5	-520.6	922.0	895.2	26.75	34.468		
4,300.0	4,160.6	4,144.7	4,098.7	19.8	13.8	143.12	153.2	-536.3	953.9	926.4	27.53	34.656		
4,400.0	4,255.5	4,239.4	4,192.0	20.4	14.2	143.29	157.8	-552.0	985.9	957.6	28.30	34.834		
4,500.0	4,350.4	4,334.1	4,285.2	21.0	14.6	143.45	162.4	-567.7	1,017.9	988.8	29.08	35.002		
4,600.0	4,445.4	4,428.8	4,378.5	21.7	15.0	143.60	167.0	-583.4	1,049.9	1,020.1	29.86	35.161		
4,700.0	4,540.3	4,523.6	4,471.8	22.3	15.3	143.74	171.6	-599.0	1,081.9	1,051.3	30.64	35.312		
4,800.0	4,635.2	4,628.3	4,575.1	23.0	15.7	143.93	176.5	-615.6	1,113.7	1,082.3	31.39	35.480		
4,900.0	4,730.1	4,739.1	4,685.0	23.6	16.0	144.31	180.5	-629.3	1,144.2	1,112.2	32.04	35.711		
5,000.0	4,825.0	4,850.2	4,795.6	24.3	16.2	144.88	183.4	-639.0	1,173.5	1,140.8	32.62	35.969		
5,076.7	4,897.8	4,935.5	4,880.7	24.7	16.4	145.43	184.7	-643.6	1,195.1	1,162.1	33.02	36.189		
5,100.0	4,920.0	4,961.3	4,906.6	24.9	16.4	145.69	185.0	-644.5	1,201.4	1,168.3	33.15	36.245		
5,200.0	5,015.6	5,070.4	5,015.6	25.3	16.5	146.76	185.4	-646.0	1,226.4	1,192.8	33.59	36.508		
5,300.0	5,112.3	5,167.0	5,112.3	25.7	16.7	147.64	185.4	-646.0	1,248.2	1,214.2	34.01	36.700		
5,400.0	5,209.7	5,264.5	5,209.7	26.1	16.8	148.38	185.4	-646.0	1,267.2	1,232.8	34.41	36.828		
5,500.0	5,307.9	5,362.7	5,307.9	26.4	17.0	148.99	185.4	-646.0	1,283.5	1,248.7	34.78	36.898		
5,600.0	5,406.7	5,461.5	5,406.7	26.7	17.1	149.48	185.4	-646.0	1,296.8	1,261.6	35.13	36.911		
5,700.0	5,506.0	5,560.8	5,506.0	26.9	17.3	149.85	185.4	-646.0	1,307.1	1,271.7	35.45	36.869		
5,800.0	5,605.6	5,660.4	5,605.6	27.1	17.4	150.11	185.4	-646.0	1,314.5	1,278.8	35.75	36.774		
5,900.0	5,705.5	5,760.3	5,705.5	27.2	17.6	150.26	185.4	-646.0	1,318.9	1,282.9	36.01	36.626		
5,994.5	5,800.0	5,854.8	5,800.0	27.3	17.7	-0.33	185.4	-646.0	1,320.3	1,284.0	36.24	36.433		
6,000.0	5,805.5	5,860.2	5,805.5	27.3	17.7	-0.33	185.4	-646.0	1,320.3	1,284.0	36.25	36.417		
6,100.0	5,905.5	5,960.2	5,905.5	27.4	17.9	-0.33	185.4	-646.0	1,320.3	1,283.7	36.54	36.131		
6,200.0	6,005.5	6,060.2	6,005.5	27.5	18.0	-0.33	185.4	-646.0	1,320.3	1,283.4	36.83	35.847		
6,300.0	6,105.5	6,160.2	6,105.5	27.6	18.2	-0.33	185.4	-646.0	1,320.3	1,283.1	37.12	35.564		
6,400.0	6,205.5	6,260.2	6,205.5	27.7	18.4	-0.33	185.4	-646.0	1,320.3	1,282.8	37.42	35.283		
6,500.0	6,305.5	6,360.2	6,305.5	27.8	18.5	-0.33	185.4	-646.0	1,320.3	1,282.5	37.72	35.004		
6,600.0	6,405.5	6,460.2	6,405.5	27.9	18.7	-0.33	185.4	-646.0	1,320.3	1,282.2	38.02	34.726		
6,700.0	6,505.5	6,560.2	6,505.5	28.0	18.8	-0.33	185.4	-646.0	1,320.3	1,281.9	38.32	34.450		
6,800.0	6,605.5	6,660.2	6,605.5	28.1	19.0	-0.33	185.4	-646.0	1,320.3	1,281.6	38.63	34.175		
6,900.0	6,705.5	6,760.2	6,705.5	28.1	19.2	-0.33	185.4	-646.0	1,320.3	1,281.3	38.94	33.903		

<b>Company:</b>	Sundance Energy, Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well MLD 12-22
<b>Project:</b>	SEC.22-T4N-R68W	<b>TVD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Reference Site:</b>	MLD 5 Pad Sec.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MLD 12-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (8-02-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> MLD 5 Pad Sec.22-T4N-R68W - MLD 11-22 - Wellbore #1 - Plan #2 (8-02-12)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,000.0	6,805.5	6,860.2	6,805.5	28.2	19.4	-0.33	185.4	-646.0	1,320.3	1,281.0	39.26	33.633	
7,100.0	6,905.5	6,960.2	6,905.5	28.3	19.5	-0.33	185.4	-646.0	1,320.3	1,280.7	39.57	33.365	
7,200.0	7,005.5	7,060.2	7,005.5	28.4	19.7	-0.33	185.4	-646.0	1,320.3	1,280.4	39.89	33.099	
7,300.0	7,105.5	7,160.2	7,105.5	28.6	19.9	-0.33	185.4	-646.0	1,320.3	1,280.1	40.21	32.835	
7,400.0	7,205.5	7,260.2	7,205.5	28.7	20.0	-0.33	185.4	-646.0	1,320.3	1,279.7	40.53	32.573	
7,500.0	7,305.5	7,360.2	7,305.5	28.8	20.2	-0.33	185.4	-646.0	1,320.3	1,279.4	40.86	32.314	
7,600.0	7,405.5	7,460.2	7,405.5	28.9	20.4	-0.33	185.4	-646.0	1,320.3	1,279.1	41.19	32.057	
7,700.0	7,505.5	7,560.2	7,505.5	29.0	20.6	-0.33	185.4	-646.0	1,320.3	1,278.8	41.52	31.802	
7,800.0	7,605.5	7,660.2	7,605.5	29.1	20.7	-0.33	185.4	-646.0	1,320.3	1,278.4	41.85	31.550	
7,900.0	7,705.5	7,760.2	7,705.5	29.2	20.9	-0.33	185.4	-646.0	1,320.3	1,278.1	42.18	31.300	
8,000.0	7,805.5	7,860.2	7,805.5	29.3	21.1	-0.33	185.4	-646.0	1,320.3	1,277.7	42.52	31.052	
8,054.5	7,860.0	7,914.8	7,860.0	29.4	21.2	-0.33	185.4	-646.0	1,320.3	1,277.6	42.70	30.918	

Offset Design													Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	15.1	15.1	15.1	0.00	N/A			
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	15.1	15.1	14.8	0.22	67.010			
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	15.1	15.1	14.4	0.67	22.337			
300.0	300.0	300.0	300.0	0.6	0.6	90.05	0.0	15.1	15.1	13.9	1.12	13.402			
400.0	400.0	400.0	400.0	0.8	0.8	90.05	0.0	15.1	15.1	13.5	1.57	9.573			
500.0	500.0	500.0	500.0	1.0	1.0	90.05	0.0	15.1	15.1	13.0	2.02	7.446			
600.0	600.0	600.0	600.0	1.2	1.2	90.05	0.0	15.1	15.1	12.6	2.47	6.092			
700.0	700.0	700.0	700.0	1.5	1.5	90.05	0.0	15.1	15.1	12.1	2.92	5.155			
800.0	800.0	800.0	800.0	1.7	1.7	90.05	0.0	15.1	15.1	11.7	3.37	4.467			
900.0	900.0	900.0	900.0	1.9	1.9	90.05	0.0	15.1	15.1	11.2	3.82	3.942			
950.0	950.0	950.0	950.0	2.0	2.0	90.05	0.0	15.1	15.1	11.0	4.05	3.723 CC, ES			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-120.74	0.0	15.1	15.3	11.0	4.26	3.590 SF			
1,100.0	1,099.9	1,099.9	1,099.9	2.3	2.4	-130.67	0.0	15.1	17.3	12.7	4.66	3.721			
1,200.0	1,199.7	1,199.7	1,199.7	2.5	2.6	-144.20	0.0	15.1	22.5	17.4	5.06	4.446			
1,300.0	1,299.1	1,299.1	1,299.1	2.7	2.8	-155.27	0.0	15.1	31.6	26.1	5.47	5.775			
1,400.0	1,398.2	1,398.2	1,398.2	2.9	3.0	-162.68	0.0	15.1	44.6	38.7	5.88	7.593			
1,500.0	1,496.6	1,496.6	1,496.6	3.2	3.3	-167.43	0.0	15.1	61.4	55.1	6.28	9.778			
1,600.0	1,594.4	1,594.4	1,594.4	3.5	3.5	-170.53	0.0	15.1	81.9	75.2	6.69	12.241			
1,700.0	1,691.5	1,691.5	1,691.5	3.9	3.7	-172.62	0.0	15.1	105.8	98.7	7.09	14.923			
1,800.0	1,787.6	1,787.6	1,787.6	4.4	3.9	-174.09	0.0	15.1	133.2	125.7	7.49	17.778			
1,867.8	1,852.2	1,852.2	1,852.2	4.7	4.1	-174.84	0.0	15.1	153.7	145.9	7.76	19.795			
1,900.0	1,882.7	1,882.7	1,882.7	4.9	4.1	-175.16	0.0	15.1	163.8	155.9	7.91	20.703			
2,000.0	1,977.7	1,977.7	1,977.7	5.4	4.3	-175.94	0.0	15.1	195.2	186.8	8.38	23.308			
2,100.0	2,072.6	2,077.7	2,077.7	6.0	4.5	-176.37	-1.1	15.1	225.8	217.0	8.83	25.563			
2,200.0	2,167.5	2,181.0	2,180.9	6.6	4.7	-176.26	-5.7	15.1	253.6	244.4	9.28	27.342			
2,300.0	2,262.4	2,285.9	2,285.5	7.2	4.9	-175.72	-14.3	15.1	278.6	268.8	9.73	28.622			
2,400.0	2,357.3	2,392.3	2,391.1	7.8	5.1	-174.85	-26.8	15.2	300.5	290.3	10.21	29.432			
2,500.0	2,452.2	2,499.9	2,497.3	8.4	5.3	-173.67	-43.5	15.3	319.6	308.8	10.72	29.818			
2,600.0	2,547.1	2,601.5	2,597.2	9.0	5.6	-172.39	-62.2	15.4	336.4	325.1	11.24	29.920			
2,700.0	2,642.0	2,699.8	2,693.8	9.6	5.8	-171.24	-80.5	15.5	353.2	341.4	11.79	29.964			
2,800.0	2,736.9	2,798.1	2,790.4	10.2	6.1	-170.20	-98.7	15.7	370.1	357.8	12.35	29.965			
2,900.0	2,831.9	2,896.5	2,887.1	10.9	6.4	-169.26	-117.0	15.8	387.2	374.2	12.94	29.931			
3,000.0	2,926.8	2,994.8	2,983.7	11.5	6.7	-168.39	-135.3	15.9	404.3	390.8	13.54	29.869			
3,100.0	3,021.7	3,093.2	3,080.3	12.1	7.0	-167.59	-153.6	16.0	421.5	407.4	14.15	29.785			
3,200.0	3,116.6	3,191.5	3,177.0	12.7	7.3	-166.85	-171.9	16.1	438.8	424.1	14.78	29.685			
3,300.0	3,211.5	3,289.8	3,273.6	13.4	7.6	-166.17	-190.1	16.2	456.2	440.8	15.43	29.571			
3,400.0	3,306.4	3,388.2	3,370.2	14.0	8.0	-165.54	-208.4	16.3	473.6	457.5	16.08	29.449			
3,500.0	3,401.3	3,486.5	3,466.8	14.6	8.3	-164.96	-226.7	16.4	491.1	474.3	16.75	29.321			
3,600.0	3,496.2	3,584.9	3,563.5	15.3	8.7	-164.41	-245.0	16.5	508.6	491.2	17.43	29.188			
3,700.0	3,591.2	3,683.2	3,660.1	15.9	9.0	-163.91	-263.3	16.6	526.2	508.1	18.11	29.053			
3,800.0	3,686.1	3,781.6	3,756.7	16.6	9.4	-163.43	-281.5	16.7	543.8	525.0	18.80	28.918			
3,900.0	3,781.0	3,879.9	3,853.4	17.2	9.8	-162.98	-299.8	16.9	561.4	541.9	19.50	28.783			
4,000.0	3,875.9	3,978.2	3,950.0	17.8	10.1	-162.56	-318.1	17.0	579.1	558.8	20.21	28.649			
4,100.0	3,970.8	4,076.6	4,046.6	18.5	10.5	-162.17	-336.4	17.1	596.7	575.8	20.93	28.517			
4,200.0	4,065.7	4,174.9	4,143.2	19.1	10.9	-161.80	-354.7	17.2	614.5	592.8	21.65	28.388			
4,300.0	4,160.6	4,273.3	4,239.9	19.8	11.3	-161.45	-372.9	17.3	632.2	609.8	22.37	28.261			
4,400.0	4,255.5	4,371.6	4,336.5	20.4	11.7	-161.12	-391.2	17.4	650.0	626.9	23.10	28.138			
4,500.0	4,350.4	4,470.0	4,433.1	21.0	12.0	-160.80	-409.5	17.5	667.7	643.9	23.83	28.018			
4,600.0	4,445.4	4,559.6	4,521.3	21.7	12.4	-160.56	-425.7	17.6	685.9	661.4	24.51	27.983			
4,700.0	4,540.3	4,644.0	4,604.7	22.3	12.6	-160.50	-438.5	17.7	705.9	680.8	25.12	28.103			
4,800.0	4,635.2	4,727.7	4,687.8	23.0	12.8	-160.58	-448.9	17.7	727.9	702.2	25.67	28.350			
4,900.0	4,730.1	4,810.6	4,770.3	23.6	13.0	-160.80	-456.7	17.8	751.6	725.5	26.19	28.705			

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<b>Company:</b>	Sundance Energy, Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well MLD 12-22
<b>Project:</b>	SEC.22-T4N-R68W	<b>TVD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Reference Site:</b>	MLD 5 Pad Sec.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MLD 12-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (8-02-12)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> MLD 5 Pad Sec.22-T4N-R68W - MLD 22NW - Wellbore #1 - Plan #2 (8-02-12)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,825.0	4,900.0	4,859.5	24.3	13.2	-161.18	-462.5	17.8	777.4	750.7	26.66	29.155	
5,076.7	4,897.8	4,954.6	4,914.0	24.7	13.3	-161.48	-464.6	17.8	798.3	771.3	26.99	29.582	
5,100.0	4,920.0	4,973.3	4,932.8	24.9	13.4	-161.63	-465.1	17.8	804.8	777.7	27.09	29.708	
5,200.0	5,015.6	5,056.2	5,015.6	25.3	13.5	-162.31	-465.9	17.9	831.9	804.4	27.48	30.273	
5,300.0	5,112.3	5,152.8	5,112.3	25.7	13.7	-162.98	-465.9	17.9	856.5	828.6	27.85	30.755	
5,400.0	5,209.7	5,250.3	5,209.7	26.1	13.8	-163.53	-465.9	17.9	877.9	849.7	28.20	31.127	
5,500.0	5,307.9	5,348.5	5,307.9	26.4	14.0	-163.97	-465.9	17.9	896.0	867.5	28.54	31.393	
5,600.0	5,406.7	5,447.3	5,406.7	26.7	14.1	-164.32	-465.9	17.9	910.9	882.1	28.86	31.561	
5,700.0	5,506.0	5,546.6	5,506.0	26.9	14.3	-164.58	-465.9	17.9	922.5	893.3	29.16	31.637	
5,800.0	5,605.6	5,646.2	5,605.6	27.1	14.5	-164.77	-465.9	17.9	930.7	901.3	29.43	31.625	
5,900.0	5,705.5	5,746.1	5,705.5	27.2	14.6	-164.87	-465.9	17.9	935.6	905.9	29.67	31.528	
5,994.5	5,800.0	5,840.6	5,800.0	27.3	14.8	44.46	-465.9	17.9	937.1	907.2	29.89	31.351	
6,000.0	5,805.5	5,846.0	5,805.5	27.3	14.8	44.46	-465.9	17.9	937.1	907.2	29.91	31.332	
6,100.0	5,905.5	5,946.0	5,905.5	27.4	15.0	44.46	-465.9	17.9	937.1	906.8	30.24	30.991	
6,200.0	6,005.5	6,046.0	6,005.5	27.5	15.2	44.46	-465.9	17.9	937.1	906.5	30.57	30.655	
6,300.0	6,105.5	6,146.0	6,105.5	27.6	15.3	44.46	-465.9	17.9	937.1	906.2	30.90	30.323	
6,400.0	6,205.5	6,246.0	6,205.5	27.7	15.5	44.46	-465.9	17.9	937.1	905.8	31.24	29.995	
6,500.0	6,305.5	6,346.0	6,305.5	27.8	15.7	44.46	-465.9	17.9	937.1	905.5	31.58	29.672	
6,600.0	6,405.5	6,446.0	6,405.5	27.9	15.9	44.46	-465.9	17.9	937.1	905.2	31.92	29.354	
6,700.0	6,505.5	6,546.0	6,505.5	28.0	16.0	44.46	-465.9	17.9	937.1	904.8	32.27	29.040	
6,800.0	6,605.5	6,646.0	6,605.5	28.1	16.2	44.46	-465.9	17.9	937.1	904.5	32.62	28.730	
6,900.0	6,705.5	6,746.0	6,705.5	28.1	16.4	44.46	-465.9	17.9	937.1	904.1	32.97	28.425	
7,000.0	6,805.5	6,846.0	6,805.5	28.2	16.6	44.46	-465.9	17.9	937.1	903.8	33.32	28.125	
7,100.0	6,905.5	6,946.0	6,905.5	28.3	16.8	44.46	-465.9	17.9	937.1	903.4	33.67	27.828	
7,200.0	7,005.5	7,046.0	7,005.5	28.4	16.9	44.46	-465.9	17.9	937.1	903.1	34.03	27.537	
7,300.0	7,105.5	7,146.0	7,105.5	28.6	17.1	44.46	-465.9	17.9	937.1	902.7	34.39	27.249	
7,400.0	7,205.5	7,246.0	7,205.5	28.7	17.3	44.46	-465.9	17.9	937.1	902.3	34.75	26.966	
7,500.0	7,305.5	7,346.0	7,305.5	28.8	17.5	44.46	-465.9	17.9	937.1	902.0	35.11	26.688	
7,600.0	7,405.5	7,446.0	7,405.5	28.9	17.7	44.46	-465.9	17.9	937.1	901.6	35.48	26.413	
7,700.0	7,505.5	7,546.0	7,505.5	29.0	17.9	44.46	-465.9	17.9	937.1	901.2	35.84	26.143	
7,800.0	7,605.5	7,646.0	7,605.5	29.1	18.1	44.46	-465.9	17.9	937.1	900.9	36.21	25.877	
7,900.0	7,705.5	7,746.0	7,705.5	29.2	18.3	44.46	-465.9	17.9	937.1	900.5	36.58	25.615	
8,000.0	7,805.5	7,846.0	7,805.5	29.3	18.4	44.46	-465.9	17.9	937.1	900.1	36.96	25.357	
8,054.5	7,860.0	7,900.6	7,860.0	29.4	18.5	44.46	-465.9	17.9	937.1	899.9	37.16	25.219	

<b>Company:</b>	Sundance Energy, Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well MLD 12-22
<b>Project:</b>	SEC.22-T4N-R68W	<b>TVD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Reference Site:</b>	MLD 5 Pad Sec.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MLD 12-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (8-02-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4890.0ft (Original Well Elev) Coordinates are relative to: MLD 12-22  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.33°



<b>Company:</b>	Sundance Energy, Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well MLD 12-22
<b>Project:</b>	SEC.22-T4N-R68W	<b>TVD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Reference Site:</b>	MLD 5 Pad Sec.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4890.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	MLD 12-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #2 (8-02-12)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4890.0ft (Original Well Elev) Coordinates are relative to: MLD 12-22  
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone  
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