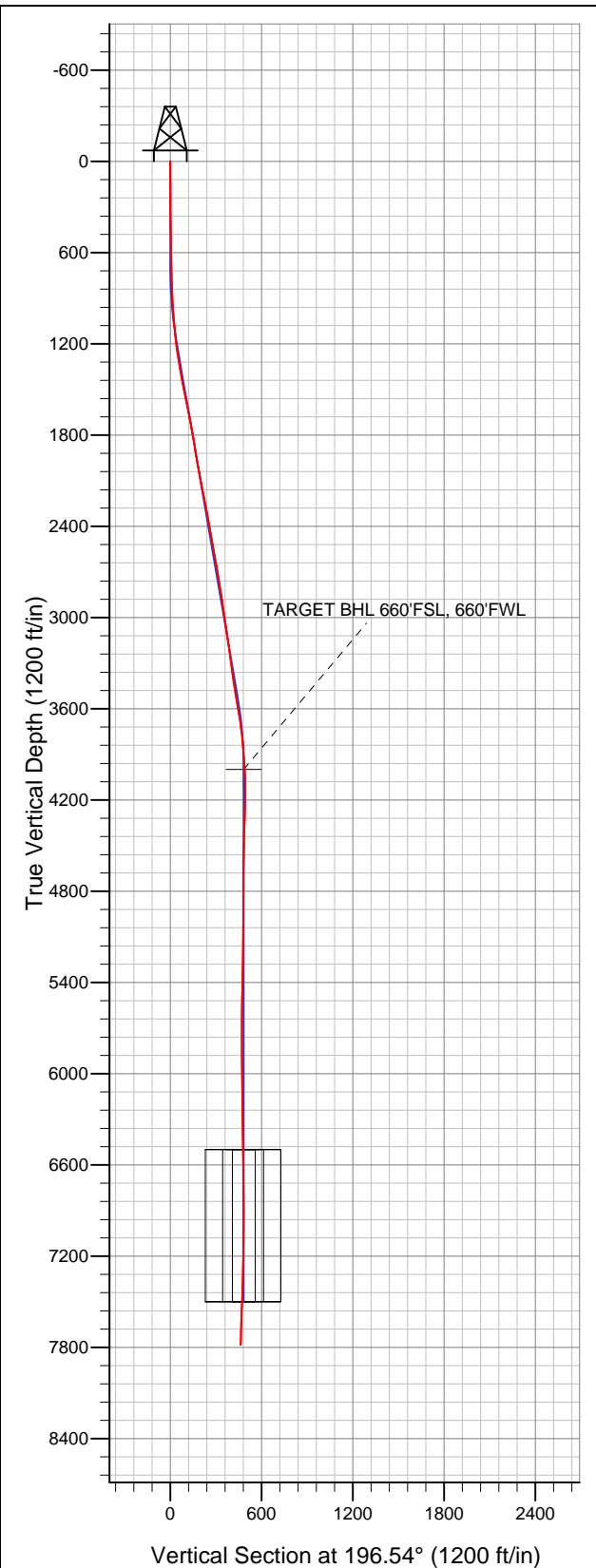


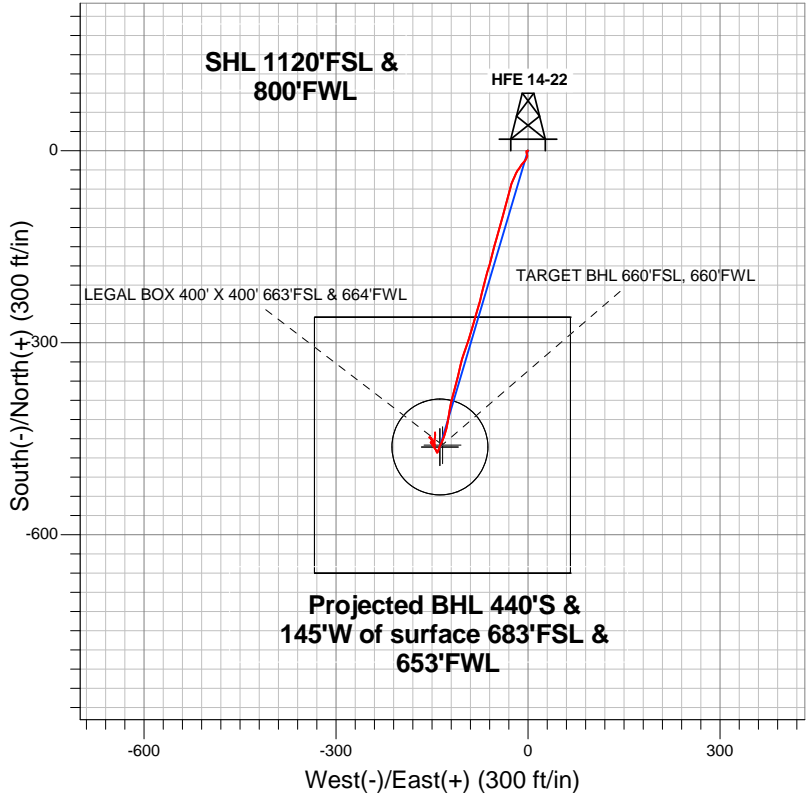
# Well Name: HFE 14-22

Surface Location: HFE 14-22 Pad Sec.22-T4N-R68W  
North American Datum 1983 US State Plane 1983Colorado Northern Zone  
Ground Elevation: 4920.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1350597.13	3140616.63	40.294692	-104.995892	
Original Well Elev		WELL @ 4933.0ft (Original Well Elev)				



## Sundance Energy, Weld County, CO



- LEGEND
- Wellbore #1
  - HFE 14-22, Wellbore #1, Plan #1 (4-10-12) V0
  - Survey #1

## Final Survey Plot

Projected Final Survey -  
7824'MD & 7784'TVD @ 463'VS  
1.80 deg Inc 0.80 deg AZ

Project: SEC.22-T4N-R68W  
Site: HFE 14-22 Pad Sec.22-T4N-R68W  
Well: HFE 14-22  
Plan: Wellbore #1



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

**SEC.22-T4N-R68W**

**HFE 14-22 Pad Sec.22-T4N-R68W**

**HFE 14-22**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**14 June, 2012**

<b>Company:</b>	Sundance Energy, Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well HFE 14-22
<b>Project:</b>	SEC.22-T4N-R68W	<b>TVD Reference:</b>	WELL @ 4933.0ft (Original Well Elev)
<b>Site:</b>	HFE 14-22 Pad Sec.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4933.0ft (Original Well Elev)
<b>Well:</b>	HFE 14-22	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

<b>Project</b>	SEC.22-T4N-R68W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site		HFE 14-22 Pad Sec.22-T4N-R68W			
Site Position:		Northing:		1,350,597.13ft	
From:	Lat/Long	Easting:		Longitude:	
		3,140,616.63ft		-104.995892	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
0.0 ft		"		0.33 °	

Well	HFE 14-22					
Well Position	+N-S	0.0 ft	Northing:	1,350,597.13 ft	Latitude:	40.294692
	+E-W	0.0 ft	Easting:	3,140,616.63 ft	Longitude:	-104.995892
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,920.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/4/2012	8.85	66.89	52,948

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	4,000.0	0.0	0.0	196.54	

Survey Program		Date	6/14/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
97.0	7,824.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

Survey	Wellbore Data									
	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
	97.0	0.80	247.40	97.0	-0.3	-0.6	0.4	0.82	0.82	0.00
	220.0	0.50	272.00	220.0	-0.6	-2.0	1.1	0.33	-0.24	20.00
	342.0	0.60	158.80	342.0	-1.1	-2.3	1.7	0.75	0.08	-92.79
	464.0	1.10	180.60	464.0	-2.9	-2.0	3.4	0.48	0.41	17.87
	557.0	1.10	157.90	557.0	-4.6	-1.7	4.9	0.47	0.00	-24.41
	617.0	1.40	171.60	616.9	-5.9	-1.4	6.0	0.70	0.50	22.83
	742.0	1.00	177.10	741.9	-8.5	-1.1	8.5	0.33	-0.32	4.40
	866.0	2.60	208.70	865.9	-12.0	-2.4	12.2	1.47	1.29	25.48
	991.0	4.30	219.80	990.6	-18.1	-6.8	19.3	1.45	1.36	8.88
	1,116.0	6.00	214.70	1,115.1	-27.1	-13.5	29.8	1.41	1.36	-4.08
	1,241.0	8.10	205.00	1,239.2	-40.5	-20.9	44.7	1.93	1.68	-7.76
	1,365.0	10.10	195.70	1,361.6	-58.8	-27.6	64.3	2.00	1.61	-7.50

<b>Company:</b>	Sundance Energy, Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well HFE 14-22
<b>Project:</b>	SEC.22-T4N-R68W	<b>TVD Reference:</b>	WELL @ 4933.0ft (Original Well Elev)
<b>Site:</b>	HFE 14-22 Pad Sec.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4933.0ft (Original Well Elev)
<b>Well:</b>	HFE 14-22	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

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)	
1,490.0	11.00	194.80	1,484.5	-80.9	-33.6	87.1	0.73	0.72	-0.72	
1,615.0	11.40	195.00	1,607.1	-104.4	-39.8	111.4	0.32	0.32	0.16	
1,740.0	10.70	196.40	1,729.8	-127.5	-46.3	135.4	0.60	-0.56	1.12	
1,864.0	9.50	195.20	1,851.9	-148.4	-52.2	157.1	0.98	-0.97	-0.97	
1,989.0	9.30	193.40	1,975.2	-168.2	-57.3	177.5	0.28	-0.16	-1.44	
2,114.0	10.70	197.10	2,098.3	-189.1	-63.0	199.2	1.23	1.12	2.96	
2,239.0	11.40	193.10	2,221.0	-212.2	-69.2	223.1	0.83	0.56	-3.20	
2,363.0	10.40	195.20	2,342.7	-234.9	-74.9	246.5	0.87	-0.81	1.69	
2,488.0	10.50	196.40	2,465.7	-256.7	-81.1	269.2	0.19	0.08	0.96	
2,613.0	9.50	195.00	2,588.8	-277.6	-87.0	290.9	0.82	-0.80	-1.12	
2,738.0	9.80	199.60	2,712.0	-297.6	-93.2	311.9	0.66	0.24	3.68	
2,863.0	9.10	199.00	2,835.3	-317.0	-100.0	332.4	0.57	-0.56	-0.48	
2,987.0	8.40	192.20	2,957.9	-335.1	-105.1	351.2	1.01	-0.56	-5.48	
3,112.0	8.10	194.30	3,081.6	-352.6	-109.2	369.1	0.34	-0.24	1.68	
3,237.0	8.40	195.20	3,205.3	-369.9	-113.8	387.0	0.26	0.24	0.72	
3,362.0	7.40	194.50	3,329.1	-386.5	-118.2	404.2	0.80	-0.80	-0.56	
3,486.0	9.10	189.40	3,451.8	-403.9	-121.8	421.9	1.49	1.37	-4.11	
3,611.0	9.80	190.30	3,575.1	-424.1	-125.3	442.3	0.57	0.56	0.72	
3,736.0	8.30	197.80	3,698.5	-443.2	-130.0	461.9	1.52	-1.20	6.00	
3,861.0	5.20	205.70	3,822.7	-456.9	-135.2	476.5	2.58	-2.48	6.32	
3,985.0	3.90	199.90	3,946.3	-465.9	-139.1	486.2	1.11	-1.05	-4.68	
4,038.5	2.83	200.58	3,999.7	-468.9	-140.2	489.4	2.00	-2.00	1.27	
TARGET BHL 660'FSL, 660'FWL										
4,110.0	1.40	203.10	4,071.1	-471.3	-141.1	492.0	2.00	-2.00	3.53	
4,235.0	1.70	340.70	4,196.1	-471.0	-142.3	492.0	2.31	0.24	110.08	
4,360.0	1.70	329.70	4,321.1	-467.6	-143.9	489.3	0.26	0.00	-8.80	
4,484.0	2.50	323.90	4,445.0	-463.9	-146.4	486.4	0.67	0.65	-4.68	
4,609.0	2.10	333.20	4,569.9	-459.6	-149.1	483.0	0.44	-0.32	7.44	
4,734.0	1.20	333.50	4,694.8	-456.4	-150.7	480.4	0.72	-0.72	0.24	
4,859.0	0.40	248.60	4,819.8	-455.4	-151.7	479.7	0.98	-0.64	-67.92	
4,983.0	0.60	140.90	4,943.8	-456.1	-151.7	480.4	0.66	0.16	-86.86	
5,108.0	0.60	59.50	5,068.8	-456.2	-150.7	480.2	0.63	0.00	-65.12	
5,233.0	0.90	61.10	5,193.8	-455.4	-149.3	479.1	0.24	0.24	1.28	
5,358.0	1.60	344.40	5,318.8	-453.3	-148.9	476.9	1.32	0.56	-61.36	
5,482.0	1.80	321.60	5,442.7	-450.1	-150.5	474.3	0.56	0.16	-18.39	
5,607.0	0.80	298.50	5,567.7	-448.1	-152.5	473.0	0.89	-0.80	-18.48	
5,732.0	0.50	199.90	5,692.7	-448.2	-153.5	473.4	0.80	-0.24	-78.88	
5,857.0	0.40	7.40	5,817.7	-448.3	-153.6	473.5	0.72	-0.08	134.00	
5,982.0	0.30	294.10	5,942.7	-447.7	-153.9	473.0	0.34	-0.08	-58.64	
6,106.0	1.00	132.60	6,066.7	-448.3	-153.4	473.4	1.04	0.56	-130.24	
6,231.0	0.30	54.40	6,191.7	-448.9	-152.3	473.7	0.79	-0.56	-62.56	
6,356.0	0.80	171.10	6,316.7	-449.5	-151.9	474.2	0.78	0.40	93.36	
6,481.0	2.20	146.70	6,441.6	-452.4	-150.4	476.5	1.21	1.12	-19.52	
6,539.9	2.01	148.70	6,500.5	-454.2	-149.3	477.9	0.35	-0.33	3.39	
LEGAL BOX 400' X 400' 663'FSL & 664'FWL - TARGET CIRCLE 660'FSL & 660'FWL										
6,605.0	1.80	151.40	6,565.5	-456.1	-148.2	479.4	0.35	-0.32	4.15	
6,730.0	1.40	150.90	6,690.5	-459.2	-146.5	481.9	0.32	-0.32	-0.40	
6,855.0	0.40	149.30	6,815.5	-460.9	-145.5	483.2	0.80	-0.80	-1.28	
6,980.0	0.30	353.70	6,940.5	-460.9	-145.4	483.2	0.55	-0.08	-124.48	
7,104.0	0.90	343.90	7,064.5	-459.7	-145.7	482.1	0.49	0.48	-7.90	
7,229.0	1.20	358.00	7,189.4	-457.4	-146.0	480.1	0.32	0.24	11.28	
7,354.0	1.50	3.00	7,314.4	-454.5	-145.9	477.2	0.26	0.24	4.00	
7,479.0	1.80	8.00	7,439.3	-450.9	-145.6	473.7	0.27	0.24	4.00	
7,603.0	1.70	4.80	7,563.3	-447.1	-145.2	470.0	0.11	-0.08	-2.58	

<b>Company:</b>	Sundance Energy, Weld County, CO	<b>Local Co-ordinate Reference:</b>	Well HFE 14-22
<b>Project:</b>	SEC.22-T4N-R68W	<b>TVD Reference:</b>	WELL @ 4933.0ft (Original Well Elev)
<b>Site:</b>	HFE 14-22 Pad Sec.22-T4N-R68W	<b>MD Reference:</b>	WELL @ 4933.0ft (Original Well Elev)
<b>Well:</b>	HFE 14-22	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	Landmark

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)	
7,729.0	1.80	0.60	7,689.2	-443.3	-145.0	466.2	0.13	0.08	-3.33	
7,778.0	1.80	0.80	7,738.2	-441.8	-145.0	464.7	0.01	0.00	0.41	
7,824.0	1.80	0.80	7,784.2	-440.3	-144.9	463.4	0.00	0.00	0.00	

Checked By: _____	Approved By: _____	Date: _____
-------------------	--------------------	-------------