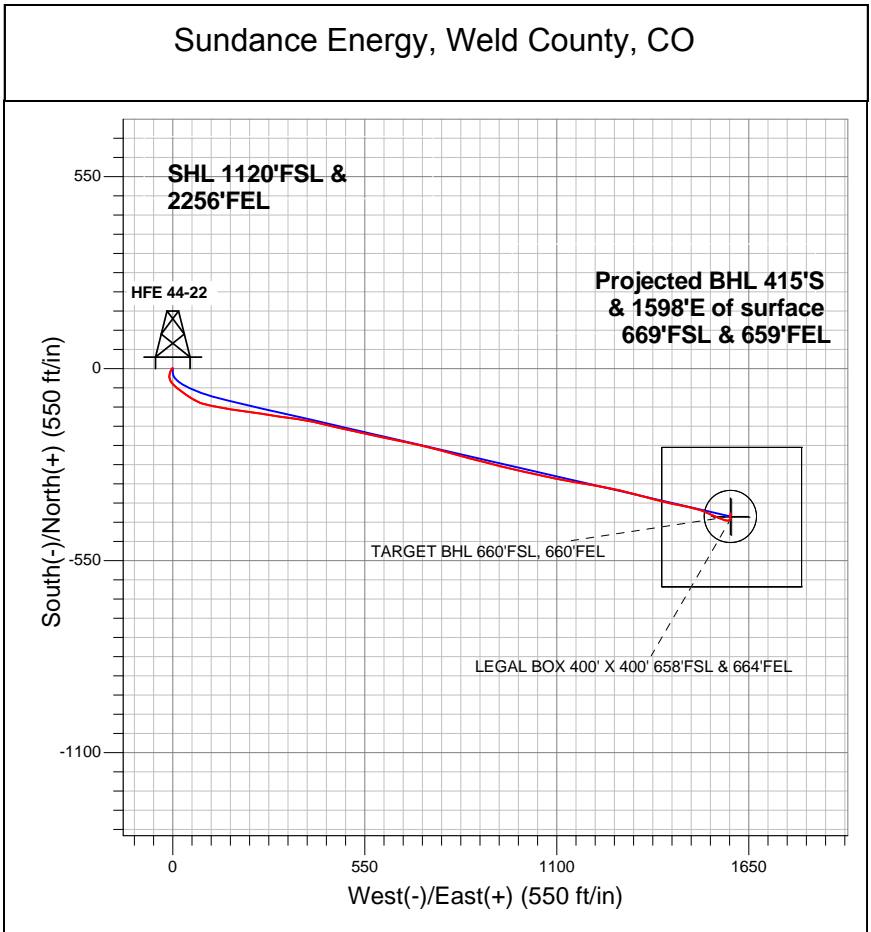
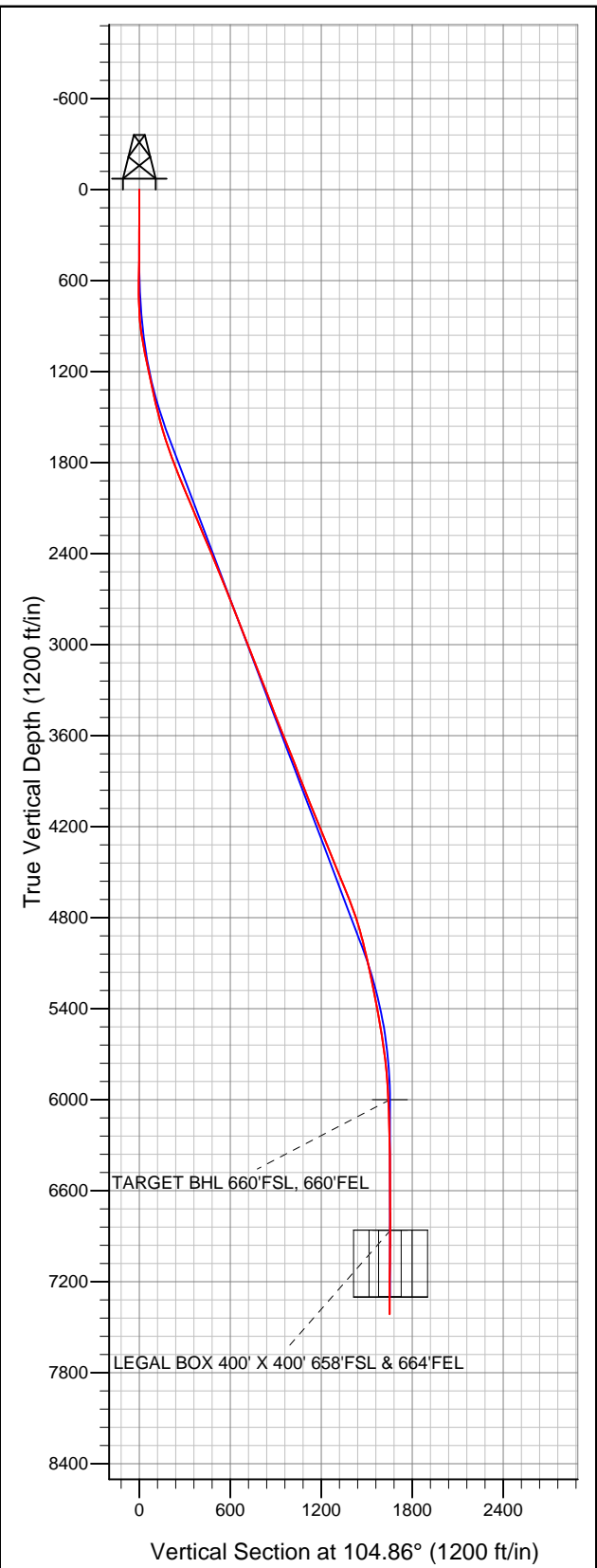


Well Name: HFE 44-22

Surface Location: HFE 5 Pad Sec.22-T4N-R68W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4943.0
 Northing 1350661.41 Easting 3142871.83 Latitude 40.294833 Longitude -104.987806 Slot
 Original Well Elev WELL @ 4956.0ft (Original Well Elev)

+N/-S 0.0 +E/-W 0.0



LEGEND

- ◆ HFE 44-22, Wellbore #1, Plan #1 (10-10-12) R V0
- Wellbore #1
- Survey #1

Final Survey Plot

**Projected Final Survey -
 7700'MD & 7413'TVD @ 1651'VS
 1.10 deg Inc 0.00 deg AZ**

Project: SEC.22-T4N-R68W
 Site: HFE 5 Pad Sec.22-T4N-R68W
 Well: HFE 44-22
 Plan: Wellbore #1



Directional

Sundance Energy, Weld County, CO

SEC.22-T4N-R68W

HFE 5 Pad Sec.22-T4N-R68W

HFE 44-22

Wellbore #1

Survey: Survey #1

Standard Survey Report

19 October, 2012

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well HFE 44-22
Project:	SEC.22-T4N-R68W	TVD Reference:	WELL @ 4956.0ft (Original Well Elev)
Site:	HFE 5 Pad Sec.22-T4N-R68W	MD Reference:	WELL @ 4956.0ft (Original Well Elev)
Well:	HFE 44-22	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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

Site	HFE 5 Pad Sec.22-T4N-R68W				
Site Position:		Northing:	1,350,660.89ft	Latitude:	40.294832
From:	Lat/Long	Easting:	3,142,841.99ft	Longitude:	-104.987913
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.33 °

Well	HFE 44-22					
Well Position	+N/-S	0.0 ft	Northing:	1,350,661.41 ft	Latitude:	40.294833
	+E/-W	0.0 ft	Easting:	3,142,871.83 ft	Longitude:	-104.987806
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,943.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/10/2012	8.80	66.88	52,912

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 (°)	
	6,000.0	0.0	0.0	104.86	

Survey Program	Date	10/19/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
97.0	7,700.0	Survey #1 (Wellbore #1)	MWD	MWD - Standard	

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	
97.0	0.40	303.80	97.0	0.2	-0.3	-0.3	0.41	0.41	0.00	
188.0	0.40	17.40	188.0	0.7	-0.5	-0.6	0.53	0.00	80.88	
279.0	0.40	328.60	279.0	1.2	-0.5	-0.8	0.36	0.00	-53.63	
370.0	0.80	231.90	370.0	1.1	-1.2	-1.4	1.03	0.44	-106.26	
460.0	2.10	210.60	460.0	-0.7	-2.5	-2.3	1.54	1.44	-23.67	
553.0	3.40	208.20	552.9	-4.6	-4.7	-3.4	1.40	1.40	-2.58	
610.0	4.60	206.20	609.7	-8.1	-6.5	-4.2	2.12	2.11	-3.51	
735.0	6.80	187.20	734.1	-20.0	-9.6	-4.2	2.30	1.76	-15.20	
860.0	7.60	153.30	858.2	-34.7	-6.9	2.3	3.41	0.64	-27.12	
985.0	11.30	131.30	981.5	-50.2	6.1	18.7	4.09	2.96	-17.60	
1,109.0	12.10	126.90	1,102.9	-66.0	25.6	41.7	0.97	0.65	-3.55	
1,234.0	12.40	123.30	1,225.1	-81.2	47.3	66.5	0.66	0.24	-2.88	

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well HFE 44-22
Project:	SEC.22-T4N-R68W	TVD Reference:	WELL @ 4956.0ft (Original Well Elev)
Site:	HFE 5 Pad Sec.22-T4N-R68W	MD Reference:	WELL @ 4956.0ft (Original Well Elev)
Well:	HFE 44-22	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	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)	
1,359.0	12.90	116.70	1,347.0	-94.9	71.0	92.9	1.22	0.40	-5.28	
1,484.0	14.50	102.00	1,468.5	-104.4	98.8	122.2	3.05	1.28	-11.76	
1,608.0	16.20	99.50	1,588.1	-110.5	131.0	154.9	1.47	1.37	-2.02	
1,733.0	19.30	99.30	1,707.1	-116.7	168.6	192.9	2.48	2.48	-0.16	
1,858.0	21.30	98.60	1,824.4	-123.4	211.4	236.0	1.61	1.60	-0.56	
1,982.0	22.80	98.80	1,939.3	-130.5	257.4	282.3	1.21	1.21	0.16	
2,107.0	23.20	97.90	2,054.3	-137.6	305.8	330.8	0.43	0.32	-0.72	
2,232.0	22.60	98.30	2,169.5	-144.4	353.9	379.1	0.50	-0.48	0.32	
2,357.0	22.90	100.40	2,284.8	-152.3	401.6	427.2	0.69	0.24	1.68	
2,481.0	23.30	105.30	2,398.8	-163.1	449.0	475.8	1.58	0.32	3.95	
2,606.0	21.50	102.00	2,514.4	-174.4	495.3	523.4	1.76	-1.44	-2.64	
2,731.0	21.50	101.80	2,630.7	-183.8	540.1	569.2	0.06	0.00	-0.16	
2,856.0	21.90	102.20	2,746.9	-193.4	585.3	615.3	0.34	0.32	0.32	
2,980.0	21.70	101.30	2,862.0	-202.8	630.4	661.3	0.31	-0.16	-0.73	
3,105.0	21.50	102.50	2,978.2	-212.3	675.4	707.3	0.39	-0.16	0.96	
3,230.0	21.10	103.40	3,094.7	-222.5	719.7	752.6	0.41	-0.32	0.72	
3,355.0	21.60	104.40	3,211.1	-233.4	763.8	798.1	0.49	0.40	0.80	
3,479.0	21.30	106.20	3,326.5	-245.4	807.6	843.5	0.58	-0.24	1.45	
3,604.0	20.60	104.60	3,443.2	-257.3	850.6	888.2	0.72	-0.56	-1.28	
3,729.0	22.20	104.40	3,559.6	-268.7	894.8	933.8	1.28	1.28	-0.16	
3,854.0	22.00	103.90	3,675.4	-280.2	940.4	980.8	0.22	-0.16	-0.40	
3,978.0	21.20	103.20	3,790.7	-290.9	984.8	1,026.4	0.68	-0.65	-0.56	
4,103.0	20.90	101.30	3,907.4	-300.4	1,028.6	1,071.3	0.60	-0.24	-1.52	
4,228.0	21.50	101.80	4,023.9	-309.5	1,072.9	1,116.4	0.50	0.48	0.40	
4,353.0	22.20	102.70	4,139.9	-319.3	1,118.4	1,162.9	0.62	0.56	0.72	
4,477.0	23.30	98.30	4,254.3	-328.0	1,165.5	1,210.7	1.63	0.89	-3.55	
4,602.0	21.70	100.10	4,369.8	-335.6	1,212.7	1,258.2	1.39	-1.28	1.44	
4,727.0	21.60	101.30	4,486.0	-344.2	1,258.0	1,304.2	0.36	-0.08	0.96	
4,852.0	23.20	104.40	4,601.5	-354.8	1,304.5	1,351.8	1.59	1.28	2.48	
4,977.0	20.90	105.30	4,717.4	-366.8	1,349.8	1,398.8	1.86	-1.84	0.72	
5,101.0	17.30	105.10	4,834.5	-377.5	1,389.0	1,439.3	2.90	-2.90	-0.16	
5,226.0	14.20	100.90	4,954.8	-385.2	1,422.0	1,473.2	2.64	-2.48	-3.36	
5,351.0	12.80	101.50	5,076.4	-390.9	1,450.6	1,502.3	1.13	-1.12	0.48	
5,476.0	12.00	103.60	5,198.5	-396.7	1,476.8	1,529.1	0.73	-0.64	1.68	
5,600.0	10.60	103.60	5,320.1	-402.4	1,500.4	1,553.4	1.13	-1.13	0.00	
5,725.0	10.20	113.40	5,443.0	-409.5	1,521.7	1,575.9	1.45	-0.32	7.84	
5,850.0	9.60	114.80	5,566.2	-418.3	1,541.4	1,597.1	0.52	-0.48	1.12	
5,975.0	7.60	111.80	5,689.7	-425.7	1,558.5	1,615.6	1.64	-1.60	-2.40	
6,099.0	5.20	110.80	5,813.0	-430.8	1,571.4	1,629.3	1.94	-1.94	-0.81	
6,224.0	3.30	106.00	5,937.6	-433.8	1,580.1	1,638.5	1.55	-1.52	-3.84	
6,287.0	2.64	104.13	6,000.5	-434.6	1,583.3	1,641.8	1.05	-1.04	-2.96	
TARGET BHL 660'FSL, 660'FEL										
6,349.0	2.00	101.10	6,062.5	-435.2	1,585.7	1,644.3	1.05	-1.04	-4.89	
6,474.0	1.50	90.40	6,187.4	-435.6	1,589.5	1,648.1	0.48	-0.40	-8.56	
6,598.0	1.50	72.10	6,311.4	-435.1	1,592.7	1,651.0	0.38	0.00	-14.76	
6,723.0	1.00	43.30	6,436.3	-433.8	1,595.0	1,652.9	0.63	-0.40	-23.04	
6,848.0	1.20	18.30	6,561.3	-431.8	1,596.1	1,653.5	0.41	0.16	-20.00	
6,973.0	1.20	10.90	6,686.3	-429.3	1,596.8	1,653.5	0.12	0.00	-5.92	
7,097.0	1.20	2.10	6,810.3	-426.7	1,597.1	1,653.1	0.15	0.00	-7.10	
7,146.8	1.20	1.50	6,860.0	-425.7	1,597.1	1,652.9	0.03	0.00	-1.20	
LEGAL BOX 400' X 400' 658'FSL & 664'FEL - TARGET CIRCLE 660'FSL & 660'FEL										
7,222.0	1.20	0.60	6,935.2	-424.1	1,597.1	1,652.5	0.03	0.00	-1.20	
7,347.0	1.10	4.60	7,060.2	-421.6	1,597.3	1,652.0	0.10	-0.08	3.20	
7,472.0	1.00	4.80	7,185.2	-419.3	1,597.4	1,651.6	0.08	-0.08	0.16	

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well HFE 44-22
Project:	SEC.22-T4N-R68W	TVD Reference:	WELL @ 4956.0ft (Original Well Elev)
Site:	HFE 5 Pad Sec.22-T4N-R68W	MD Reference:	WELL @ 4956.0ft (Original Well Elev)
Well:	HFE 44-22	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

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)
7,596.0	1.10	0.70	7,309.2	-417.0	1,597.6	1,651.1	0.10	0.08	-3.31
7,654.0	1.10	0.00	7,367.2	-415.9	1,597.6	1,650.8	0.02	0.00	-1.21
7,700.0	1.10	0.00	7,413.2	-415.0	1,597.6	1,650.6	0.00	0.00	0.00

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET BHL 660'FS - hit/miss target - Shape - Point	0.00	0.00	6,000.0	-423.6	1,597.0	1,350,247.04	3,144,471.22	40.293670	-104.982081
- survey misses target center by 17.6ft at 6287.0ft MD (6000.5 TVD, -434.6 N, 1583.3 E)									
LEGAL BOX 400' X 400' - survey misses target center by 3.9ft at 7146.7ft MD (6860.0 TVD, -425.7 N, 1597.1 E) - Rectangle (sides W400.0 H400.0 D440.0)	0.00	0.00	6,860.0	-425.6	1,601.0	1,350,245.09	3,144,475.19	40.293665	-104.982067
TARGET CIRCLE 660' - survey misses target center by 2.0ft at 7146.8ft MD (6860.0 TVD, -425.7 N, 1597.1 E) - Circle (radius 75.0)	0.00	0.00	6,860.0	-423.6	1,597.0	1,350,247.04	3,144,471.22	40.293670	-104.982081

Checked By: _____	Approved By: _____	Date: _____
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