

Well Name: MLD 43-22

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 1350662.23 Easting 3142886.89 Latitude 40.294835 Longitude -104.987752 Slot
Original Well Elev WELL @ 4956.0ft (Original Well Elev)

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

Northing
1350662.23

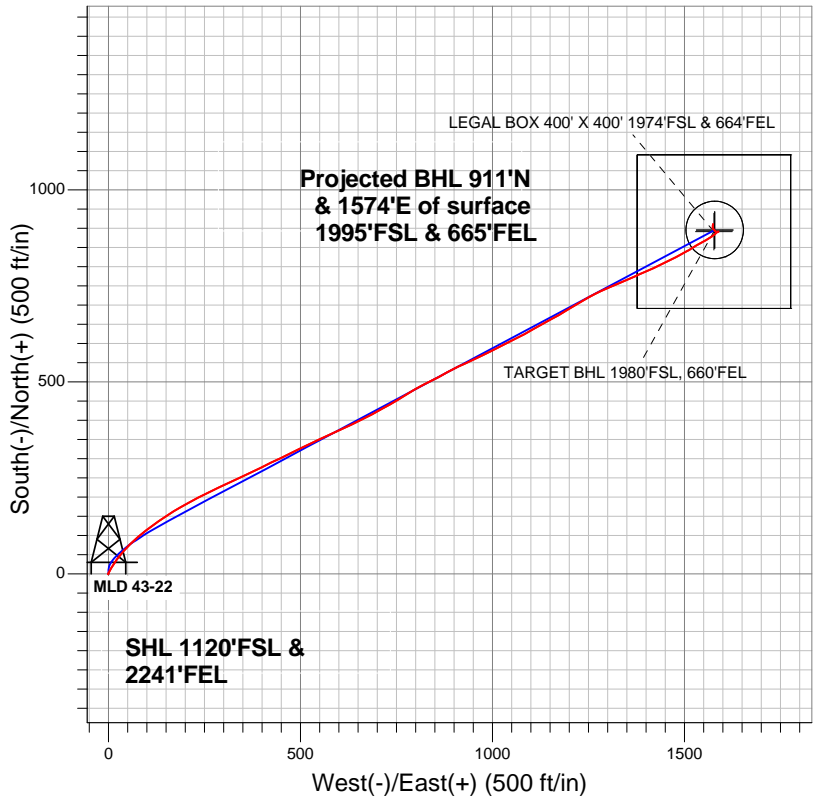
Easting
3142886.89

Latitude
40.294835

Longitude
-104.987752

Slot

Sundance Energy, Weld County, CO



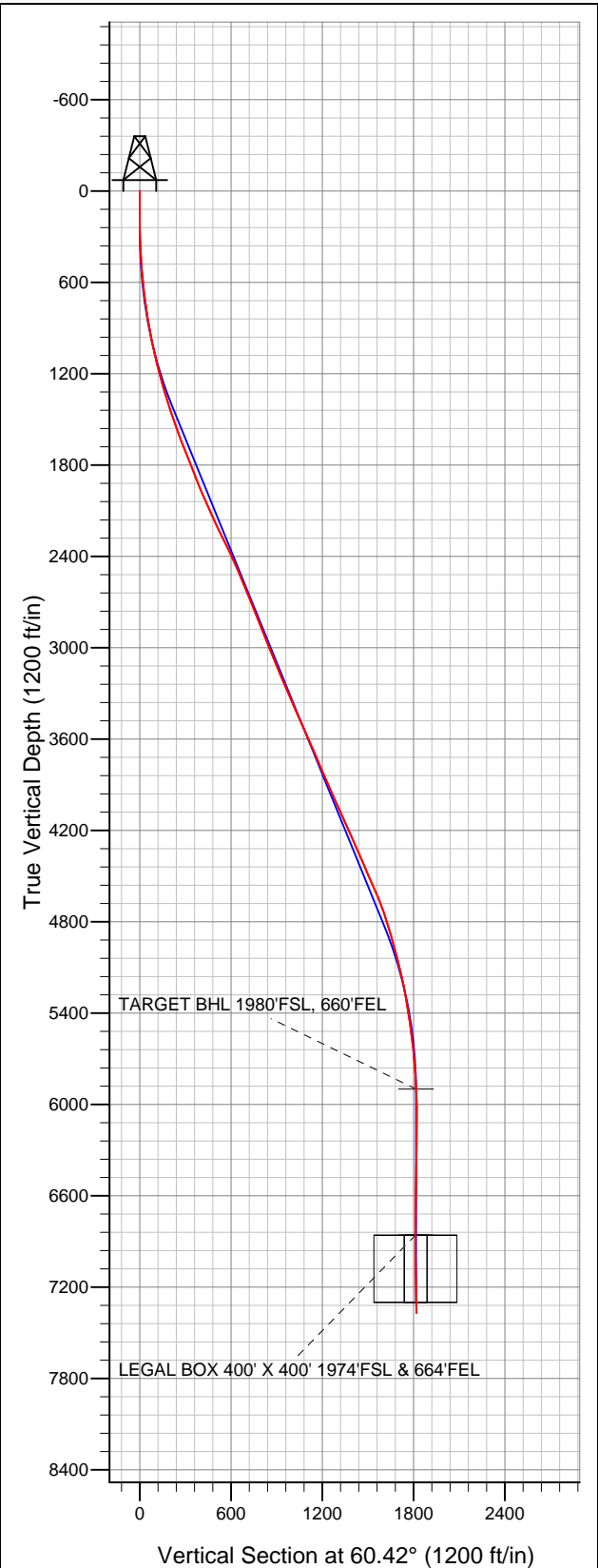
LEGEND

- △ MLD 43-22, Wellbore #1, Plan #1 (10-16-12) R V0
- Wellbore #1
- Survey #1

Final Survey Plot

**Projected Final Survey -
7706'MD & 7371'TVD @ 1819'VS
1.80 deg Inc 1.60 deg AZ**

Project: SEC.22-T4N-R68W
Site: HFE 5 Pad Sec.22-T4N-R68W
Well: MLD 43-22
Plan: Wellbore #1





Directional

Sundance Energy, Weld County, CO

SEC.22-T4N-R68W

HFE 5 Pad Sec.22-T4N-R68W

MLD 43-22

Wellbore #1

Survey: Survey #1

Standard Survey Report

31 October, 2012

Survey	Survey 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
	110.0	0.70	251.90	110.0	-0.2	-0.6	-0.7	0.64	0.64	0.00
	218.0	0.90	22.20	218.0	0.4	-0.9	-0.6	1.35	0.19	120.65
	340.0	2.60	28.20	339.9	3.7	0.7	2.5	1.40	1.39	4.92
	460.0	4.70	28.50	459.7	10.4	4.4	8.9	1.75	1.75	0.25
	544.0	6.20	29.40	543.3	17.4	8.2	15.7	1.79	1.79	1.07
	610.0	6.20	30.10	608.9	23.6	11.8	21.9	0.11	0.00	1.06
	735.0	8.20	37.30	732.9	36.5	20.6	35.9	1.75	1.60	5.76
	860.0	10.60	40.10	856.2	52.4	33.4	54.9	1.95	1.92	2.24
	985.0	12.10	42.70	978.8	70.8	49.7	78.1	1.27	1.20	2.08
	1,109.0	12.80	47.70	1,099.9	89.6	68.6	103.9	1.04	0.56	4.03
	1,234.0	15.70	52.40	1,221.0	109.3	92.3	134.2	2.50	2.32	3.76
	1,359.0	17.10	54.20	1,340.9	130.3	120.6	169.2	1.19	1.12	1.44

Company:	Sundance Energy, Weld County, CO	Local Co-ordinate Reference:	Well MLD 43-22
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:	MLD 43-22	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)	
1,484.0	18.80	56.80	1,459.8	152.1	152.3	207.6	1.50	1.36	2.08	
1,608.0	19.90	59.80	1,576.8	173.7	187.3	248.6	1.20	0.89	2.42	
1,733.0	21.50	62.30	1,693.8	195.0	226.0	292.8	1.46	1.28	2.00	
1,858.0	21.80	65.10	1,810.0	215.4	267.3	338.8	0.86	0.24	2.24	
1,983.0	22.10	64.20	1,925.9	235.5	309.5	385.4	0.36	0.24	-0.72	
2,108.0	23.70	65.20	2,041.0	256.2	353.5	433.9	1.32	1.28	0.80	
2,232.0	24.80	63.50	2,154.1	278.3	399.4	484.7	1.05	0.89	-1.37	
2,357.0	26.40	64.50	2,266.8	301.9	448.0	538.6	1.33	1.28	0.80	
2,482.0	25.50	63.80	2,379.2	325.8	497.2	593.2	0.76	-0.72	-0.56	
2,607.0	23.00	65.80	2,493.2	347.7	543.6	644.4	2.10	-2.00	1.60	
2,731.0	23.00	64.50	2,607.3	368.0	587.6	692.7	0.41	0.00	-1.05	
2,856.0	22.00	65.80	2,722.8	388.2	631.0	740.3	0.89	-0.80	1.04	
2,981.0	20.90	61.70	2,839.2	408.3	672.0	785.9	1.49	-0.88	-3.28	
3,106.0	22.20	61.90	2,955.4	430.0	712.4	831.8	1.04	1.04	0.16	
3,230.0	23.00	57.90	3,069.9	453.9	753.6	879.5	1.40	0.65	-3.23	
3,355.0	22.50	59.30	3,185.2	479.1	794.9	927.8	0.59	-0.40	1.12	
3,480.0	23.70	64.20	3,300.2	502.3	838.1	976.8	1.81	0.96	3.92	
3,605.0	23.00	61.00	3,414.9	525.0	882.0	1,026.3	1.16	-0.56	-2.56	
3,729.0	24.30	65.40	3,528.5	547.4	926.4	1,075.9	1.77	1.05	3.55	
3,854.0	24.30	64.50	3,642.4	569.2	973.0	1,127.2	0.30	0.00	-0.72	
3,979.0	23.00	62.60	3,756.9	591.5	1,017.9	1,177.2	1.21	-1.04	-1.52	
4,104.0	23.00	63.50	3,872.0	613.6	1,061.5	1,226.0	0.28	0.00	0.72	
4,228.0	24.10	60.00	3,985.7	637.1	1,105.1	1,275.5	1.43	0.89	-2.82	
4,353.0	24.50	61.90	4,099.6	662.1	1,150.0	1,327.0	0.70	0.32	1.52	
4,478.0	24.50	59.10	4,213.4	687.6	1,195.1	1,378.8	0.93	0.00	-2.24	
4,603.0	23.50	58.90	4,327.6	713.8	1,238.7	1,429.6	0.80	-0.80	-0.16	
4,727.0	22.90	65.60	4,441.5	736.5	1,281.9	1,478.4	2.18	-0.48	5.40	
4,852.0	24.70	66.80	4,555.9	756.9	1,328.0	1,528.5	1.49	1.44	0.96	
4,977.0	22.10	66.80	4,670.6	776.4	1,373.6	1,577.9	2.08	-2.08	0.00	
5,102.0	17.50	65.20	4,788.2	793.6	1,412.3	1,620.0	3.71	-3.68	-1.28	
5,227.0	16.10	64.50	4,907.9	808.9	1,445.0	1,656.0	1.13	-1.12	-0.56	
5,351.0	14.00	62.80	5,027.6	823.2	1,473.9	1,688.2	1.73	-1.69	-1.37	
5,476.0	13.40	60.70	5,149.1	837.2	1,500.0	1,717.8	0.62	-0.48	-1.68	
5,601.0	10.10	57.90	5,271.4	850.1	1,521.9	1,743.2	2.68	-2.64	-2.24	
5,726.0	9.60	61.60	5,394.6	860.9	1,540.4	1,764.6	0.65	-0.40	2.96	
5,850.0	7.10	59.80	5,517.3	869.6	1,556.1	1,782.6	2.03	-2.02	-1.45	
5,975.0	6.10	56.50	5,641.4	877.2	1,568.3	1,796.9	0.86	-0.80	-2.64	
6,100.0	4.30	49.60	5,765.9	883.9	1,577.4	1,808.1	1.52	-1.44	-5.52	
6,225.0	2.90	49.40	5,890.7	889.0	1,583.4	1,815.9	1.12	-1.12	-0.16	
6,234.3	2.76	49.98	5,900.0	889.3	1,583.7	1,816.3	1.53	-1.50	6.21	
TARGET BHL 1980'FSL, 660'FEL										
6,349.0	1.10	69.10	6,014.6	891.5	1,586.9	1,820.1	1.53	-1.45	16.68	
6,474.0	0.40	161.40	6,139.6	891.5	1,588.1	1,821.2	0.95	-0.56	73.84	
6,599.0	1.80	254.60	6,264.5	890.5	1,586.4	1,819.2	1.49	1.12	74.56	
6,724.0	1.40	287.10	6,389.5	890.5	1,583.0	1,816.3	0.78	-0.32	26.00	
6,848.0	2.10	316.89	6,513.4	892.6	1,580.0	1,814.7	0.91	0.56	24.02	
6,973.0	2.40	319.60	6,638.3	896.2	1,576.8	1,813.7	0.25	0.24	2.17	
7,098.0	1.80	327.70	6,763.3	899.9	1,574.0	1,813.1	0.53	-0.48	6.48	
7,194.6	0.27	278.49	6,859.9	901.2	1,573.0	1,812.8	1.70	-1.59	-50.93	
LEGAL BOX 400' X 400' 1974'FSL & 664'FEL										
7,194.8	0.27	278.49	6,860.0	901.2	1,573.0	1,812.8	0.00	0.00	0.00	
TARGET CIRCLE 1980'FSL & 660'FEL										
7,223.0	0.40	188.50	6,888.2	901.1	1,572.9	1,812.7	1.70	0.47	-318.63	
7,347.0	0.80	10.90	7,012.2	901.5	1,573.0	1,813.0	0.97	0.32	-143.23	

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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
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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)	
7,472.0	1.60	5.80	7,137.2	904.1	1,573.3	1,814.6	0.65	0.64		-4.08
7,597.0	1.80	5.00	7,262.2	907.8	1,573.7	1,816.7	0.16	0.16		-0.64
7,660.0	1.80	1.60	7,325.1	909.8	1,573.8	1,817.8	0.17	0.00		-5.40
7,706.0	1.80	1.60	7,371.1	911.2	1,573.8	1,818.5	0.00	0.00		0.00

Wellbore Targets										
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
TARGET BHL 1980'F:		0.00	0.00	5,900.0	895.9	1,578.5	1,351,567.18	3,144,460.17	40.297294	-104.982093
- survey misses target center by 8.4ft at 6234.3ft MD (5900.0 TVD, 889.3 N, 1583.7 E)										
- Point										
LEGAL BOX 400' X 400'		0.00	0.00	6,860.0	891.9	1,576.5	1,351,563.18	3,144,458.14	40.297283	-104.982100
- survey misses target center by 9.9ft at 7194.7ft MD (6860.0 TVD, 901.2 N, 1573.0 E)										
- Rectangle (sides W400.0 H400.0 D440.0)										
TARGET CIRCLE 198'		0.00	0.00	6,860.0	895.9	1,578.5	1,351,567.18	3,144,460.17	40.297294	-104.982093
- survey misses target center by 7.7ft at 7194.7ft MD (6860.0 TVD, 901.2 N, 1573.0 E)										
- Circle (radius 75.0)										

Checked By: _____	Approved By: _____	Date: _____
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