

Well Name: **Coors Energy 23-25D**

Surface Location: Coors Energy 13-25D Pad Sec.25-T3N-R64W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

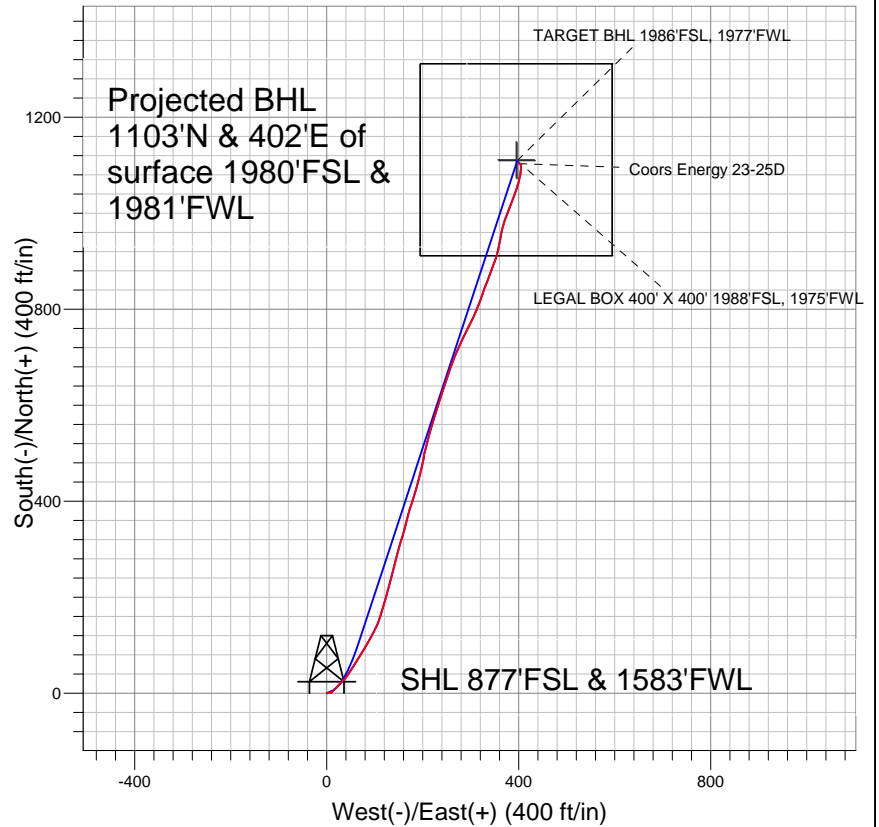
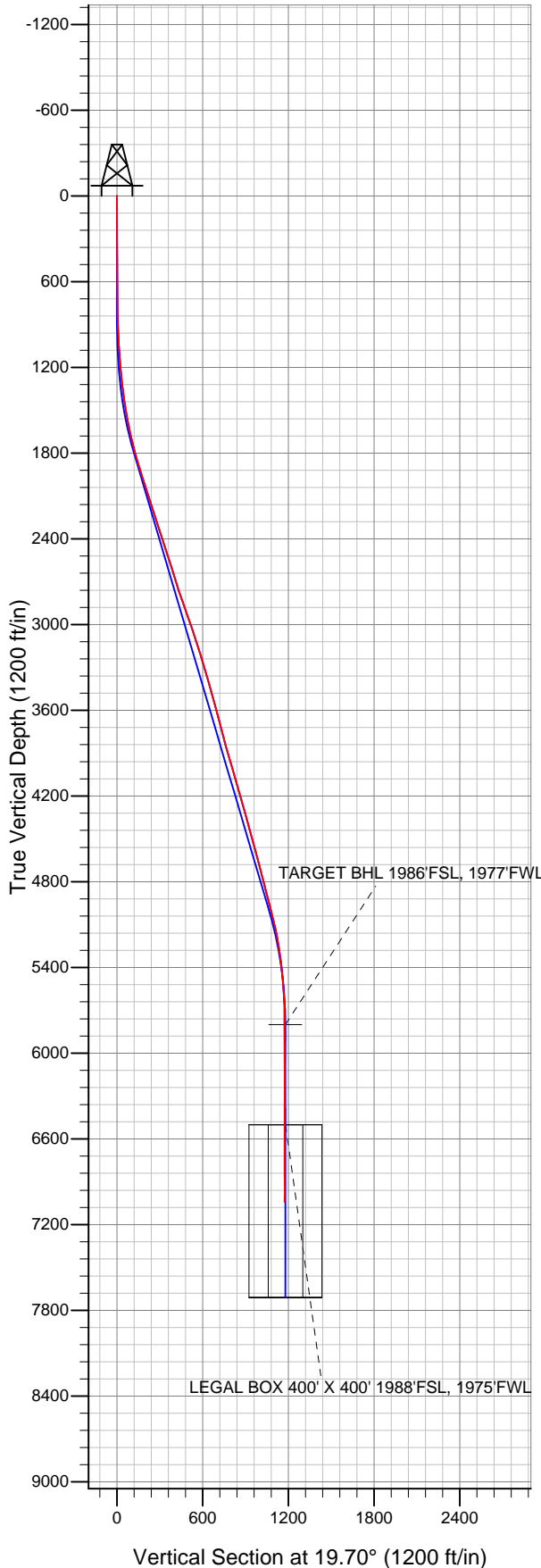
Ground Elevation: 4815.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1314184.70	3278371.92	40° 11' 29.544 N	104° 30' 12.744 W

Original Well Elev WELL @ 4828.0ft (Original Well Elev)

Slot

## PETROLEUM DEVELOPMENT CORP Weld County CO



### LEGEND

- Coors Energy 23-25D, Wellbore #1, Plan #3 (5-04-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7199'MD & 7040'TVD @ 1172'VS  
0.1 deg Inc 153.0 deg AZ

Project: SEC.25-T3N-R64W  
Site: Coors Energy 13-25D Pad Sec.25-T3N-R64W  
Well: Coors Energy 23-25D  
Plan: Wellbore #1



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.25-T3N-R64W**

**Coors Energy 13-25D Pad Sec.25-T3N-R64W**

**Coors Energy 23-25D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**15 July, 2011**

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Coors Energy 23-25D
<b>Project:</b>	SEC.25-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Site:</b>	Coors Energy 13-25D Pad Sec.25-T3N-R64W	<b>MD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Well:</b>	Coors Energy 23-25D	<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.25-T3N-R64W, 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		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Coors Energy 13-25D Pad Sec.25-T3N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,314,206.56 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,278,371.68 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40° 11' 29.760 N
		<b>Longitude:</b>	104° 30' 12.744 W
		<b>Grid Convergence:</b>	0.64 °

<b>Well</b>	Coors Energy 23-25D		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft
		<b>Latitude:</b>	40° 11' 29.544 N
		<b>Longitude:</b>	104° 30' 12.744 W
		<b>Ground Level:</b>	4,815.0 ft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010	5/4/2011	8.72
			<b>Dip Angle (°)</b>
			66.93
			<b>Field Strength (nT)</b>
			53,062

<b>Design</b>	Wellbore #1		
<b>Audit Notes:</b>			
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL
		<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>
	5,800.0	0.0	0.0
		<b>Direction (°)</b>	19.70

<b>Survey Program</b>	<b>Date</b> 7/15/2011		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>
831.0	7,199.0	Survey #1 (Wellbore #1)	MWD
			<b>Description</b>
			MWD - Standard

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
831.0	1.20	84.70	830.9	0.8	8.7	3.7	0.14	0.14	0.00
926.0	3.10	46.60	925.9	2.7	11.5	6.4	2.40	2.00	-40.11
1,021.0	4.30	44.20	1,020.7	7.0	15.9	11.9	1.27	1.26	-2.53
1,116.0	4.00	46.60	1,115.4	11.8	20.8	18.1	0.36	-0.32	2.53
1,211.0	5.50	40.90	1,210.1	17.5	26.2	25.3	1.65	1.58	-6.00
1,306.0	6.50	46.30	1,304.6	24.7	33.0	34.4	1.21	1.05	5.68
1,401.0	7.90	37.90	1,398.8	33.6	40.9	45.4	1.84	1.47	-8.84
1,496.0	9.60	33.10	1,492.7	45.3	49.3	59.3	1.95	1.79	-5.05
1,591.0	11.90	30.60	1,586.0	60.4	58.6	76.6	2.47	2.42	-2.63
1,686.0	13.70	34.00	1,678.7	78.2	69.8	97.1	2.05	1.89	3.58
1,781.0	14.90	28.40	1,770.7	98.2	81.9	120.1	1.93	1.26	-5.89

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Coors Energy 23-25D
<b>Project:</b>	SEC.25-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Site:</b>	Coors Energy 13-25D Pad Sec.25-T3N-R64W	<b>MD Reference:</b>	WELL @ 4828.0ft (Original Well Elev)
<b>Well:</b>	Coors Energy 23-25D	<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)
1,876.0	16.60	30.70	1,862.2	120.7	94.7	145.5	1.91	1.79	2.42
1,971.0	17.50	21.10	1,953.0	145.7	106.8	173.1	3.11	0.95	-10.11
2,066.0	17.80	15.00	2,043.5	173.0	115.7	201.9	1.97	0.32	-6.42
2,160.0	17.20	17.20	2,133.2	200.2	123.5	230.1	0.95	-0.64	2.34
2,255.0	18.00	15.20	2,223.8	227.7	131.5	258.7	1.06	0.84	-2.11
2,350.0	18.90	14.20	2,313.9	256.8	139.1	288.7	1.00	0.95	-1.05
2,445.0	17.80	12.70	2,404.0	285.9	146.1	318.4	1.26	-1.16	-1.58
2,540.0	17.80	18.40	2,494.5	313.9	153.9	347.3	1.83	0.00	6.00
2,635.0	17.60	14.60	2,585.0	341.5	162.1	376.2	1.23	-0.21	-4.00
2,729.0	17.20	14.70	2,674.7	368.7	169.2	404.2	0.43	-0.43	0.11
2,824.0	18.80	18.50	2,765.1	396.8	177.6	433.5	2.09	1.68	4.00
2,919.0	19.30	16.10	2,854.8	426.4	186.8	464.4	0.98	0.53	-2.53
3,014.0	19.40	13.90	2,944.5	456.8	194.9	495.8	0.77	0.11	-2.32
3,109.0	19.40	10.30	3,034.1	487.7	201.6	527.1	1.26	0.00	-3.79
3,204.0	17.20	14.90	3,124.3	516.8	208.0	556.6	2.77	-2.32	4.84
3,299.0	17.40	15.90	3,215.0	544.0	215.5	584.8	0.38	0.21	1.05
3,394.0	16.70	17.60	3,305.8	570.7	223.5	612.6	0.90	-0.74	1.79
3,489.0	16.10	15.80	3,397.0	596.4	231.2	639.4	0.83	-0.63	-1.89
3,583.0	15.40	19.50	3,487.4	620.7	238.9	664.9	1.30	-0.74	3.94
3,678.0	15.10	18.40	3,579.1	644.3	247.1	689.9	0.44	-0.32	-1.16
3,773.0	15.20	18.30	3,670.8	667.9	254.9	714.7	0.11	0.11	-0.11
3,868.0	14.00	19.60	3,762.7	690.5	262.6	738.6	1.31	-1.26	1.37
3,963.0	16.40	24.60	3,854.4	713.6	272.1	763.5	2.88	2.53	5.26
4,058.0	16.40	25.10	3,945.5	737.9	283.4	790.2	0.15	0.00	0.53
4,153.0	15.80	27.90	4,036.8	761.5	295.1	816.4	1.03	-0.63	2.95
4,248.0	16.10	24.50	4,128.1	784.9	306.6	842.3	1.03	0.32	-3.58
4,343.0	15.80	21.20	4,219.5	808.9	316.7	868.4	1.01	-0.32	-3.47
4,438.0	14.90	18.90	4,311.1	832.5	325.4	893.5	1.14	-0.95	-2.42
4,533.0	16.00	20.80	4,402.7	856.3	334.0	918.8	1.27	1.16	2.00
4,628.0	15.80	21.30	4,494.0	880.6	343.3	944.8	0.26	-0.21	0.53
4,723.0	15.30	18.30	4,585.5	904.6	352.0	970.3	1.00	-0.53	-3.16
4,818.0	14.20	11.60	4,677.4	927.9	358.2	994.3	2.13	-1.16	-7.05
4,913.0	15.10	10.10	4,769.3	951.5	362.8	1,018.1	1.03	0.95	-1.58
5,006.0	13.40	14.70	4,859.5	973.8	367.6	1,040.8	2.19	-1.83	4.95
5,101.0	15.10	22.10	4,951.6	996.0	375.1	1,064.1	2.62	1.79	7.79
5,196.0	14.90	20.40	5,043.3	1,018.9	384.0	1,088.7	0.51	-0.21	-1.79
5,291.0	12.00	20.50	5,135.7	1,039.6	391.7	1,110.8	3.05	-3.05	0.11
5,386.0	9.20	16.70	5,229.1	1,056.1	397.3	1,128.2	3.04	-2.95	-4.00
5,480.0	7.60	15.70	5,322.1	1,069.3	401.2	1,141.9	1.71	-1.70	-1.06
5,575.0	6.40	7.80	5,416.4	1,080.6	403.6	1,153.4	1.62	-1.26	-8.32
5,670.0	4.70	5.70	5,510.9	1,089.7	404.7	1,162.3	1.80	-1.79	-2.21
5,765.0	3.50	1.80	5,605.7	1,096.5	405.2	1,168.9	1.30	-1.26	-4.11
5,860.0	1.20	330.30	5,700.6	1,100.2	404.8	1,172.3	2.69	-2.42	-33.16
5,955.0	0.60	304.20	5,795.6	1,101.4	403.9	1,173.1	0.75	-0.63	-27.47
5,959.5	0.58	305.55	5,800.1	1,101.4	403.8	1,173.1	0.61	-0.53	29.91
TARGET BHL 1986°FSL, 1977°FWL									
6,050.0	0.30	16.40	5,890.6	1,101.9	403.5	1,173.4	0.61	-0.31	78.29
6,145.0	0.20	298.70	5,985.6	1,102.2	403.5	1,173.7	0.34	-0.11	-81.79
6,239.0	0.10	227.30	6,079.6	1,102.2	403.3	1,173.7	0.21	-0.11	-75.96
6,334.0	0.20	353.30	6,174.6	1,102.3	403.2	1,173.7	0.29	0.11	132.63
6,429.0	0.10	297.40	6,269.6	1,102.5	403.1	1,173.9	0.17	-0.11	-58.84
6,525.0	0.40	269.20	6,365.6	1,102.6	402.7	1,173.8	0.33	0.31	-29.38
6,619.0	0.30	294.50	6,459.6	1,102.7	402.1	1,173.7	0.19	-0.11	26.91

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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)
6,659.5	0.18	308.17	6,500.0	1,102.8	402.0	1,173.7	0.33	-0.30	33.77
LEGAL BOX 400' X 400' 1988'FSL, 1975'FWL									
6,714.0	0.10	20.90	6,554.6	1,102.9	401.9	1,173.8	0.33	-0.15	133.39
6,809.0	0.10	353.00	6,649.6	1,103.0	401.9	1,174.0	0.05	0.00	-29.37
6,904.0	0.20	272.80	6,744.6	1,103.1	401.8	1,174.0	0.22	0.11	-84.42
6,999.0	0.10	317.60	6,839.6	1,103.2	401.6	1,174.0	0.15	-0.11	47.16
7,094.0	0.00	281.00	6,934.6	1,103.2	401.5	1,174.0	0.11	-0.11	0.00
7,199.0	0.10	153.00	7,039.6	1,103.2	401.5	1,173.9	0.10	0.10	0.00

Checked By: _____	Approved By: _____	Date: _____
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