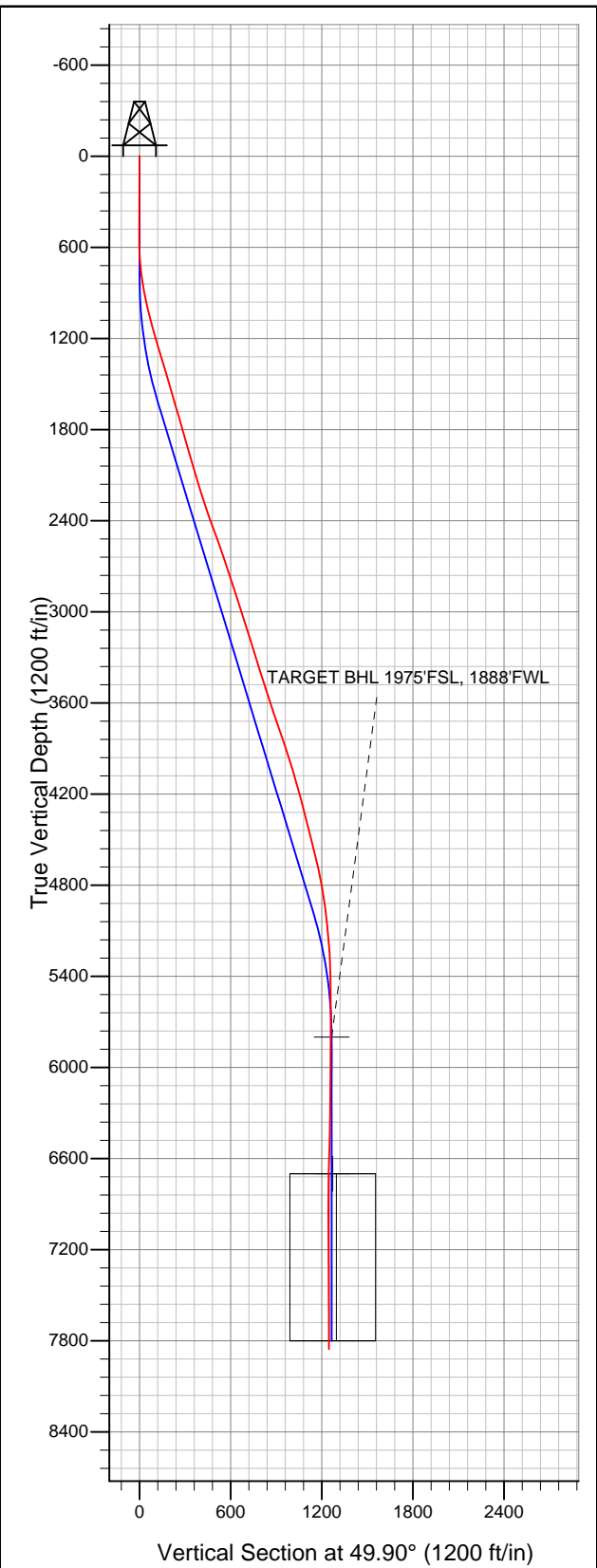




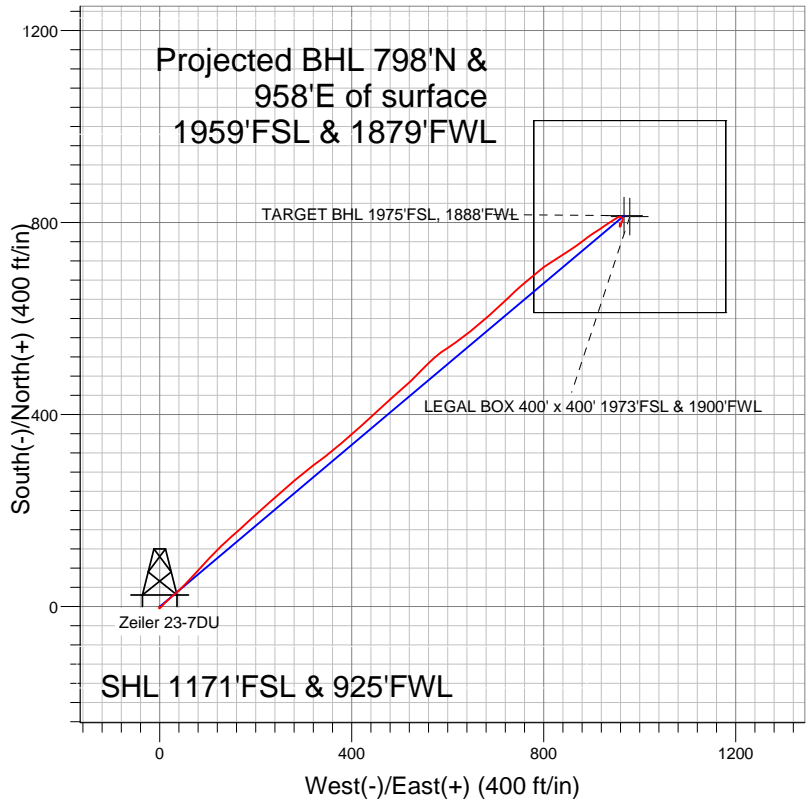
Well Name: Zeiler 23-7DU

Surface Location: Zeiler 23-7DU Pad Sec.7-T5N-R67W
North American Datum 1983 US State Plane 1983 Colorado Northern Zone
Ground Elevation: 4960.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1392755.58	3155607.21	40.410170	-104.941200	
		Original Well Elev	WELL @ 4973.0ft	(Original Well Elev)		



PETROLEUM DEVELOPMENT CORP Weld County CO



LEGEND

- Zeiler 23-7DU, Wellbore #1, Plan #2 (12-14-11) R V0
- Wellbore #1

Final Survey Plot

Projected Final Survey -
8036'MD & 7856'TVD @ 1247'VS
0.5 deg Inc 332.7deg AZ

Project: SEC.7-T5N-R67W
Site: Zeiler 23-7DU Pad Sec.7-T5N-R67W
Well: Zeiler 23-7DU
Plan: Wellbore #1



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.7-T5N-R67W

Zeiler 23-7DU Pad Sec.7-T5N-R67W

Zeiler 23-7DU

Wellbore #1

Design: Wellbore #1

Standard Survey Report

21 December, 2011

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Zeiler 23-7DU
Project:	SEC.7-T5N-R67W	TVD Reference:	WELL @ 4973.0ft (Original Well Elev)
Site:	Zeiler 23-7DU Pad Sec.7-T5N-R67W	MD Reference:	WELL @ 4973.0ft (Original Well Elev)
Well:	Zeiler 23-7DU	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	Landmark

Project	SEC.7-T5N-R67W, 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	Zeiler 23-7DU Pad Sec.7-T5N-R67W				
Site Position:		Northing:	1,392,755.59ft	Latitude:	40.410170
From:	Lat/Long	Easting:	3,155,607.21 ft	Longitude:	-104.941200
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.36 °

Well	Zeiler 23-7DU					
Well Position	+N-S	0.0 ft	Northing:	1,392,755.58 ft	Latitude:	40.410170
	+E-W	0.0 ft	Easting:	3,155,607.21 ft	Longitude:	-104.941200
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,960.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/14/2011	8.85	67.02	53,088

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 (°)
	0.0	0.0	0.0	49.90

Survey Program	Date	12/21/2011			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
455.0	8,036.0	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
455.0	0.90	199.40	455.0	-3.4	-1.2	-3.1	0.20	0.20	0.00
548.0	0.90	83.70	548.0	-4.0	-0.7	-3.1	1.64	0.00	-124.41
641.0	3.30	39.80	640.9	-1.8	1.7	0.1	2.93	2.58	-47.20
734.0	5.60	44.80	733.6	3.4	6.6	7.3	2.51	2.47	5.38
827.0	8.40	46.20	825.9	11.4	14.7	18.6	3.02	3.01	1.51
921.0	10.80	50.00	918.6	21.8	26.5	34.3	2.64	2.55	4.04
1,014.0	13.70	46.80	1,009.5	34.9	41.2	54.0	3.20	3.12	-3.44
1,107.0	15.60	44.20	1,099.4	51.4	57.9	77.4	2.16	2.04	-2.80
1,200.0	17.10	41.00	1,188.7	70.7	75.6	103.4	1.88	1.61	-3.44
1,293.0	16.30	43.70	1,277.8	90.5	93.6	129.9	1.20	-0.86	2.90
1,387.0	16.60	44.10	1,367.9	109.6	112.0	156.3	0.34	0.32	0.43

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Zeiler 23-7DU
Project:	SEC.7-T5N-R67W	TVD Reference:	WELL @ 4973.0ft (Original Well Elev)
Site:	Zeiler 23-7DU Pad Sec.7-T5N-R67W	MD Reference:	WELL @ 4973.0ft (Original Well Elev)
Well:	Zeiler 23-7DU	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)
1,480.0	16.80	45.60	1,457.0	128.6	130.9	182.9	0.51	0.22	1.61
1,573.0	15.70	49.70	1,546.3	146.1	150.1	208.9	1.71	-1.18	4.41
1,667.0	16.40	46.90	1,636.6	163.4	169.5	234.9	1.11	0.74	-2.98
1,760.0	16.40	47.20	1,725.8	181.3	188.7	261.1	0.09	0.00	0.32
1,853.0	15.70	49.50	1,815.2	198.4	207.9	286.8	1.02	-0.75	2.47
1,946.0	16.00	48.40	1,904.7	215.1	227.1	312.2	0.46	0.32	-1.18
2,039.0	16.40	47.10	1,994.0	232.5	246.3	338.1	0.58	0.43	-1.40
2,133.0	16.40	49.10	2,084.2	250.3	266.0	364.7	0.60	0.00	2.13
2,225.0	17.40	51.40	2,172.2	267.3	286.6	391.4	1.31	1.09	2.50
2,318.0	17.90	51.80	2,260.8	284.9	308.7	419.6	0.55	0.54	0.43
2,411.0	18.50	52.60	2,349.2	302.7	331.6	448.6	0.70	0.65	0.86
2,504.0	20.60	51.40	2,436.8	321.8	356.1	479.7	2.30	2.26	-1.29
2,597.0	20.40	49.60	2,523.9	342.5	381.3	512.3	0.71	-0.22	-1.94
2,690.0	18.40	47.50	2,611.6	363.0	404.4	543.2	2.28	-2.15	-2.26
2,783.0	18.80	48.60	2,699.8	382.8	426.5	572.8	0.57	0.43	1.18
2,876.0	18.40	48.00	2,787.9	402.5	448.6	602.5	0.48	-0.43	-0.65
2,969.0	17.50	46.80	2,876.4	421.9	469.7	631.1	1.05	-0.97	-1.29
3,062.0	17.50	47.80	2,965.1	440.9	490.3	659.0	0.32	0.00	1.08
3,155.0	18.00	49.20	3,053.6	459.7	511.5	687.4	0.71	0.54	1.51
3,248.0	17.50	44.00	3,142.2	479.1	532.1	715.6	1.79	-0.54	-5.59
3,341.0	17.60	45.10	3,230.9	499.1	551.8	743.6	0.37	0.11	1.18
3,434.0	17.50	48.90	3,319.6	518.2	572.3	771.6	1.24	-0.11	4.09
3,527.0	17.50	56.50	3,408.3	535.1	594.5	799.4	2.46	0.00	8.17
3,620.0	17.50	54.70	3,497.0	550.9	617.6	827.3	0.58	0.00	-1.94
3,714.0	18.40	51.00	3,586.4	568.4	640.6	856.2	1.54	0.96	-3.94
3,807.0	18.70	50.40	3,674.6	587.2	663.5	885.8	0.38	0.32	-0.65
3,900.0	19.10	48.70	3,762.5	606.7	686.4	915.9	0.73	0.43	-1.83
3,994.0	18.70	46.80	3,851.5	627.2	709.0	946.3	0.78	-0.43	-2.02
4,087.0	17.80	46.30	3,939.8	647.2	730.1	975.4	0.98	-0.97	-0.54
4,180.0	16.90	48.20	4,028.6	666.0	750.5	1,003.1	1.14	-0.97	2.04
4,273.0	16.80	50.60	4,117.6	683.6	770.9	1,030.0	0.76	-0.11	2.58
4,366.0	14.90	50.80	4,207.0	699.7	790.6	1,055.4	2.04	-2.04	0.22
4,459.0	14.60	56.60	4,297.0	713.7	809.7	1,079.0	1.62	-0.32	6.24
4,553.0	14.10	58.30	4,388.0	726.2	829.3	1,102.1	0.70	-0.53	1.81
4,645.0	14.00	56.90	4,477.3	738.2	848.1	1,124.2	0.39	-0.11	-1.52
4,739.0	14.10	54.30	4,568.5	751.1	867.0	1,146.9	0.68	0.11	-2.77
4,832.0	13.80	53.10	4,658.7	764.3	885.0	1,169.3	0.45	-0.32	-1.29
4,925.0	11.40	55.40	4,749.5	776.2	901.5	1,189.5	2.64	-2.58	2.47
5,018.0	9.30	56.20	4,841.0	785.6	915.3	1,206.2	2.26	-2.26	0.86
5,111.0	7.60	57.30	4,933.0	793.1	926.7	1,219.7	1.84	-1.83	1.18
5,204.0	6.60	57.30	5,025.2	799.3	936.4	1,231.1	1.08	-1.08	0.00
5,297.0	5.20	55.80	5,117.8	804.6	944.4	1,240.6	1.51	-1.51	-1.61
5,390.0	4.40	57.60	5,210.4	808.9	950.9	1,248.3	0.88	-0.86	1.94
5,483.0	2.60	67.50	5,303.3	811.6	955.8	1,253.9	2.03	-1.94	10.65
5,576.0	1.40	114.50	5,396.2	811.9	958.8	1,256.4	2.08	-1.29	50.54
5,669.0	1.20	120.60	5,489.2	811.0	960.7	1,257.2	0.26	-0.22	6.56
5,762.0	0.90	125.90	5,582.2	810.0	962.1	1,257.7	0.34	-0.32	5.70
5,855.0	0.90	122.80	5,675.1	809.2	963.3	1,258.1	0.05	0.00	-3.33
5,948.0	0.70	138.10	5,768.1	808.4	964.3	1,258.3	0.31	-0.22	16.45
5,979.8	0.58	144.97	5,800.0	808.1	964.5	1,258.3	0.44	-0.37	21.59
TARGET BHL 1975'FSL, 1888'FWL									
6,041.0	0.40	168.70	5,861.1	807.6	964.7	1,258.2	0.44	-0.30	38.79
6,134.0	0.70	178.10	5,954.1	806.8	964.8	1,257.7	0.34	0.32	10.11

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Well:	Zeiler 23-7DU	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)
6,227.0	0.60	198.50	6,047.1	805.7	964.7	1,256.9	0.27	-0.11	21.94
6,319.0	0.60	205.20	6,139.1	804.8	964.3	1,256.1	0.08	0.00	7.28
6,412.0	0.70	220.70	6,232.1	804.0	963.8	1,255.1	0.22	0.11	16.67
6,505.0	1.00	209.00	6,325.1	802.8	963.0	1,253.7	0.37	0.32	-12.58
6,598.0	0.90	200.00	6,418.1	801.4	962.4	1,252.3	0.19	-0.11	-9.68
6,691.0	1.70	190.30	6,511.1	799.4	961.9	1,250.6	0.89	0.86	-10.43
6,784.0	2.40	191.90	6,604.0	796.1	961.2	1,248.1	0.76	0.75	1.72
6,877.0	1.50	205.40	6,697.0	793.1	960.3	1,245.4	1.08	-0.97	14.52
6,879.6	1.47	205.66	6,699.6	793.1	960.3	1,245.3	1.17	-1.14	9.84
LEGAL BOX 400' x 400' 1973'FSL & 1900'FWL									
6,970.0	0.50	233.40	6,789.9	791.8	959.4	1,243.9	1.17	-1.07	30.69
7,063.0	0.40	242.80	6,882.9	791.4	958.8	1,243.2	0.13	-0.11	10.11
7,156.0	0.30	317.50	6,975.9	791.4	958.4	1,242.8	0.46	-0.11	80.32
7,250.0	0.30	331.80	7,069.9	791.8	958.1	1,242.9	0.08	0.00	15.21
7,343.0	0.70	12.90	7,162.9	792.6	958.1	1,243.4	0.55	0.43	44.19
7,436.0	0.60	13.60	7,255.9	793.6	958.3	1,244.2	0.11	-0.11	0.75
7,530.0	0.50	34.80	7,349.9	794.4	958.7	1,245.0	0.24	-0.11	22.55
7,623.0	0.30	3.20	7,442.9	795.0	958.9	1,245.6	0.31	-0.22	-33.98
7,716.0	0.40	355.90	7,535.9	795.6	958.9	1,245.9	0.12	0.11	-7.85
7,810.0	0.40	8.50	7,629.9	796.2	958.9	1,246.4	0.09	0.00	13.40
7,904.0	0.40	326.00	7,723.9	796.8	958.8	1,246.7	0.31	0.00	-45.21
7,989.0	0.50	332.70	7,808.9	797.4	958.5	1,246.8	0.13	0.12	7.88
8,036.0	0.50	332.70	7,855.9	797.8	958.3	1,246.9	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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