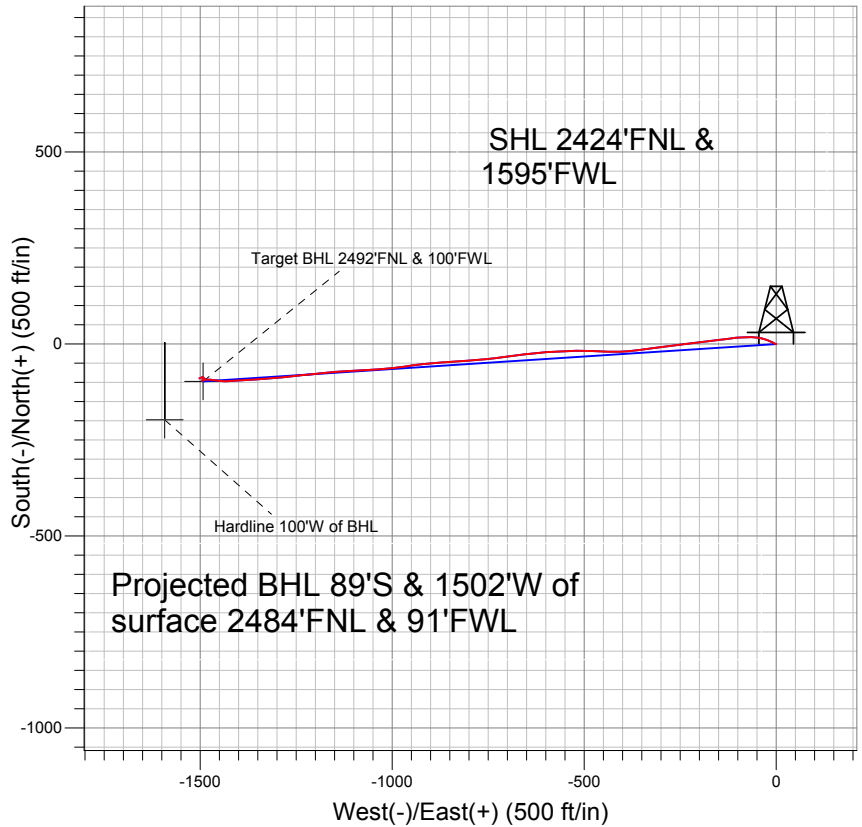
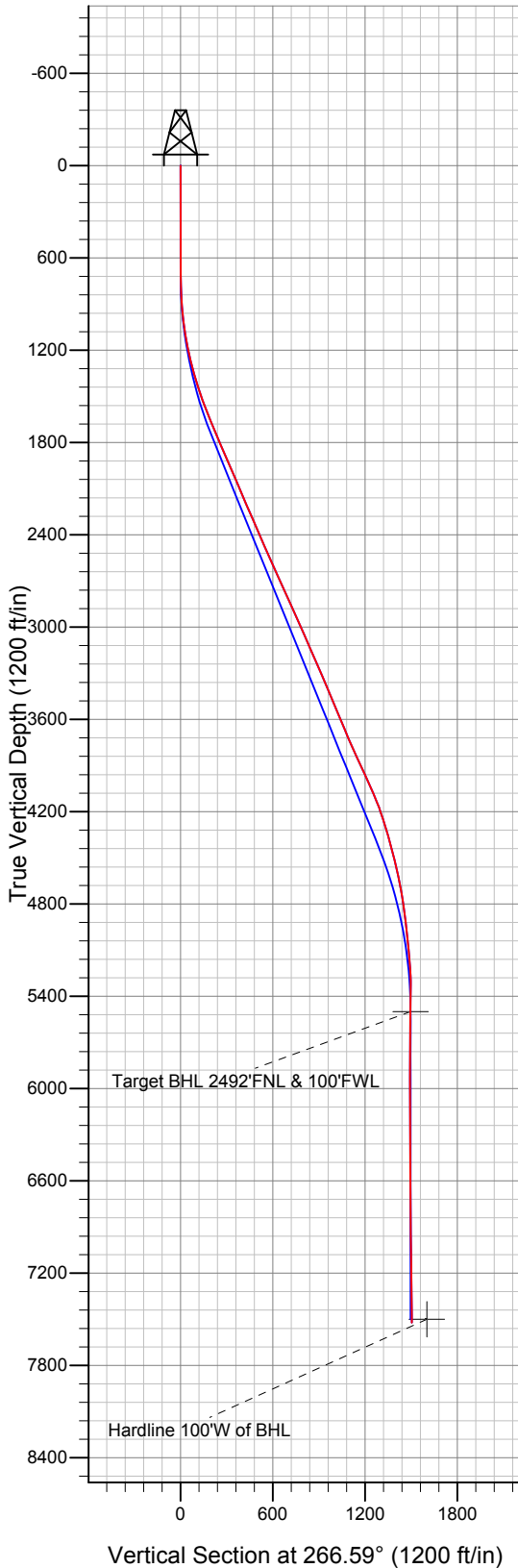


## PETROLEUM DEVELOPMENT CORP Weld County CO



### LEGEND

- △ Anderson 2GD, Wellbore #1, Plan #1 (8-20-10) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 7802'MD & 7523'TVD @ 1505' VS  
 0.4 deg Inc 255.8 deg AZ

Project: SEC.2-T6N-R66W  
 Site: Anderson 2GD Pad Sec.2-T6N-R66W  
 Well: Anderson 2GD  
 Plan: Wellbore #1



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.2-T6N-R66W**

**Anderson 2GD Pad Sec.2-T6N-R66W**

**Anderson 2GD**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**21 December, 2010**

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Site Anderson 2GD Pad Sec.2-T6N-R66W
<b>Project:</b>	SEC.2-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4888.0ft (Original Well Elev)
<b>Site:</b>	Anderson 2GD Pad Sec.2-T6N-R66W	<b>MD Reference:</b>	WELL @ 4888.0ft (Original Well Elev)
<b>Well:</b>	Anderson 2GD	<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.2-T6N-R66W, 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	Anderson 2GD Pad Sec.2-T6N-R66W				
Site Position:		Northing:	1,432,293.22 ft	Latitude:	40° 31' 3.432 N
From:	Lat/Long	Easting:	3,208,734.72 ft	Longitude:	104° 44' 57.192 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.49 °

Well	Anderson 2GD					
Well Position	+N-S	0.0 ft	Northing:	1,432,293.21 ft	Latitude:	40° 31' 3.432 N
	+E-W	0.0 ft	Easting:	3,208,734.72 ft	Longitude:	104° 44' 57.192 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,875.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	8/20/2010	8.98	67.18	53,281

<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>	<b>Direction (°)</b>	
	0.0	0.0	0.0	266.59	

<b>Survey Program</b>	<b>Date</b>	12/21/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
701.0	7,802.0	Survey #1 (Wellbore #1)	MWD	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
701.0	0.20	261.00	701.0	-0.2	-1.2	1.2	0.03	0.03	0.00
795.0	2.10	292.10	795.0	0.4	-3.0	2.9	2.05	2.02	33.09
888.0	4.40	298.20	887.8	2.7	-7.7	7.5	2.50	2.47	6.56
981.0	6.80	295.60	980.4	6.8	-15.8	15.4	2.59	2.58	-2.80
1,074.0	9.10	289.70	1,072.5	11.7	-27.7	26.9	2.62	2.47	-6.34
1,167.0	11.50	280.60	1,164.0	15.9	-43.7	42.7	3.11	2.58	-9.78
1,261.0	13.30	270.70	1,255.8	17.7	-63.8	62.6	2.96	1.91	-10.53
1,354.0	15.70	267.30	1,345.8	17.2	-87.0	85.8	2.74	2.58	-3.66
1,447.0	17.80	263.20	1,434.9	15.0	-113.7	112.6	2.59	2.26	-4.41
1,540.0	19.60	262.10	1,523.0	11.1	-143.3	142.4	1.97	1.94	-1.18
1,633.0	21.50	264.10	1,610.0	7.2	-175.7	174.9	2.18	2.04	2.15

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Site Anderson 2GD Pad Sec.2-T6N-R66W
<b>Project:</b>	SEC.2-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4888.0ft (Original Well Elev)
<b>Site:</b>	Anderson 2GD Pad Sec.2-T6N-R66W	<b>MD Reference:</b>	WELL @ 4888.0ft (Original Well Elev)
<b>Well:</b>	Anderson 2GD	<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)
1,727.0	23.00	263.00	1,697.0	3.2	-211.1	210.5	1.66	1.60	-1.17
1,820.0	23.30	262.40	1,782.5	-1.4	-247.3	247.0	0.41	0.32	-0.65
1,913.0	23.40	262.70	1,867.9	-6.2	-283.9	283.7	0.17	0.11	0.32
2,006.0	23.60	262.60	1,953.2	-10.9	-320.6	320.7	0.22	0.22	-0.11
2,099.0	23.30	262.80	2,038.5	-15.6	-357.4	357.6	0.33	-0.32	0.22
2,192.0	23.00	265.90	2,124.1	-19.2	-393.7	394.2	1.35	-0.32	3.33
2,285.0	23.10	271.30	2,209.6	-20.1	-430.1	430.5	2.28	0.11	5.81
2,378.0	24.00	272.10	2,294.9	-19.0	-467.2	467.5	1.03	0.97	0.86
2,471.0	23.40	270.80	2,380.0	-18.1	-504.6	504.8	0.86	-0.65	-1.40
2,564.0	24.00	267.60	2,465.2	-18.6	-542.0	542.1	1.53	0.65	-3.44
2,657.0	23.90	267.00	2,550.2	-20.4	-579.7	579.9	0.28	-0.11	-0.65
2,751.0	24.40	264.80	2,636.0	-23.1	-618.0	618.3	1.10	0.53	-2.34
2,844.0	24.40	263.40	2,720.7	-27.1	-656.2	656.7	0.62	0.00	-1.51
2,937.0	24.10	262.20	2,805.5	-31.9	-694.1	694.8	0.62	-0.32	-1.29
3,030.0	24.30	263.30	2,890.3	-36.7	-731.9	732.8	0.53	0.22	1.18
3,124.0	24.70	264.30	2,975.8	-40.9	-770.7	771.8	0.61	0.43	1.06
3,217.0	23.20	266.40	3,060.8	-44.0	-808.3	809.5	1.85	-1.61	2.26
3,310.0	23.20	266.40	3,146.3	-46.3	-844.9	846.1	0.00	0.00	0.00
3,403.0	24.10	264.60	3,231.5	-49.2	-882.1	883.4	1.24	0.97	-1.94
3,497.0	23.30	265.30	3,317.6	-52.5	-919.7	921.2	0.90	-0.85	0.74
3,590.0	23.20	261.80	3,403.0	-56.7	-956.2	957.8	1.49	-0.11	-3.76
3,683.0	22.70	262.20	3,488.6	-61.7	-992.1	994.0	0.56	-0.54	0.43
3,776.0	22.70	265.30	3,574.4	-65.6	-1,027.7	1,029.8	1.29	0.00	3.33
3,870.0	22.80	267.80	3,661.1	-67.8	-1,064.0	1,066.2	1.03	0.11	2.66
3,963.0	23.10	266.90	3,746.8	-69.5	-1,100.2	1,102.4	0.50	0.32	-0.97
4,056.0	24.30	265.10	3,831.9	-72.1	-1,137.5	1,139.8	1.51	1.29	-1.94
4,149.0	25.00	264.80	3,916.5	-75.5	-1,176.2	1,178.6	0.76	0.75	-0.32
4,242.0	25.00	263.60	4,000.7	-79.5	-1,215.3	1,217.8	0.55	0.00	-1.29
4,336.0	23.10	264.80	4,086.6	-83.4	-1,253.4	1,256.1	2.09	-2.02	1.28
4,429.0	20.30	263.90	4,173.0	-86.7	-1,287.6	1,290.5	3.03	-3.01	-0.97
4,522.0	17.60	266.20	4,260.9	-89.4	-1,317.7	1,320.6	3.01	-2.90	2.47
4,615.0	16.40	265.70	4,349.9	-91.3	-1,344.8	1,347.8	1.30	-1.29	-0.54
4,708.0	15.00	265.90	4,439.4	-93.1	-1,369.9	1,373.0	1.51	-1.51	0.22
4,801.0	13.30	266.00	4,529.6	-94.7	-1,392.6	1,395.7	1.83	-1.83	0.11
4,894.0	11.90	267.40	4,620.3	-95.9	-1,412.8	1,416.0	1.54	-1.51	1.51
4,988.0	10.10	268.20	4,712.6	-96.6	-1,430.7	1,433.9	1.92	-1.91	0.85
5,081.0	8.60	273.80	4,804.4	-96.4	-1,445.8	1,449.0	1.88	-1.61	6.02
5,175.0	7.40	279.00	4,897.4	-95.0	-1,458.8	1,461.9	1.49	-1.28	5.53
5,268.0	6.20	276.90	4,989.8	-93.5	-1,469.7	1,472.7	1.32	-1.29	-2.26
5,361.0	5.40	270.80	5,082.3	-92.8	-1,479.1	1,482.0	1.08	-0.86	-6.56
5,454.0	4.30	268.70	5,175.0	-92.8	-1,486.9	1,489.8	1.20	-1.18	-2.26
5,548.0	2.90	254.00	5,268.8	-93.6	-1,492.8	1,495.7	1.77	-1.49	-15.64
5,641.0	1.30	174.10	5,361.7	-95.3	-1,494.9	1,497.9	3.19	-1.72	-85.91
5,734.0	0.90	69.90	5,454.7	-96.1	-1,494.1	1,497.2	1.89	-0.43	-112.04
5,779.3	0.94	66.38	5,500.0	-95.8	-1,493.4	1,496.5	0.16	0.10	-7.77
Target BHL 2492'FNL & 100'FWL									
5,920.0	1.10	57.40	5,640.7	-94.6	-1,491.2	1,494.2	0.16	0.11	-6.38
6,104.0	0.70	26.10	5,824.7	-92.6	-1,489.3	1,492.1	0.34	-0.22	-17.01
6,290.0	0.70	336.20	6,010.7	-90.6	-1,489.2	1,492.0	0.32	0.00	-26.83
6,476.0	0.40	314.20	6,196.7	-89.1	-1,490.1	1,492.8	0.19	-0.16	-11.83
6,662.0	0.50	283.80	6,382.7	-88.4	-1,491.4	1,494.0	0.14	0.05	-16.34
6,848.0	0.40	327.40	6,568.7	-87.7	-1,492.5	1,495.1	0.19	-0.05	23.44
7,034.0	0.50	330.00	6,754.6	-86.4	-1,493.3	1,495.8	0.05	0.05	1.40

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Site Anderson 2GD Pad Sec.2-T6N-R66W
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<b>Well:</b>	Anderson 2GD	<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)
7,222.0	0.90	235.40	6,942.6	-86.6	-1,494.9	1,497.4	0.57	0.21	-50.32
7,409.0	0.80	244.80	7,129.6	-88.0	-1,497.3	1,499.9	0.09	-0.05	5.03
7,595.0	0.90	254.10	7,315.6	-88.9	-1,499.9	1,502.5	0.09	0.05	5.00
7,752.0	0.40	255.80	7,472.6	-89.4	-1,501.6	1,504.3	0.32	-0.32	1.08
7,780.2	0.40	255.80	7,500.8	-89.4	-1,501.8	1,504.4	0.00	0.00	0.00
<b>Hardline 100'W of BHL</b>									
7,802.0	0.40	255.80	7,522.6	-89.5	-1,501.9	1,504.6	0.00	0.00	0.00

Checked By: _____	Approved By: _____	Date: _____
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