

# PETROLEUM DEVELOPMENT CORP Weld County CO

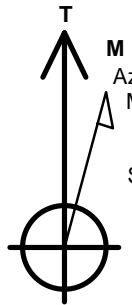
Well Name: **Spaur 10L-201**

Surface Location: Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4840.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1360227.24	3172640.32	40.320570	-104.880850	
RKB - 13' WELL @ 4853.0ft (RKB - 13')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E/W Hardline (10L-201)	1.0	2480.5	-150.6	Rectangle (Sides: L3950.0 W100.0)
SHL 345'FSL & 1583'FWL	1.0	0.0	0.0	Point
BHL 500'FNL & 1461'FWL	6992.0	4455.5	-150.6	Point

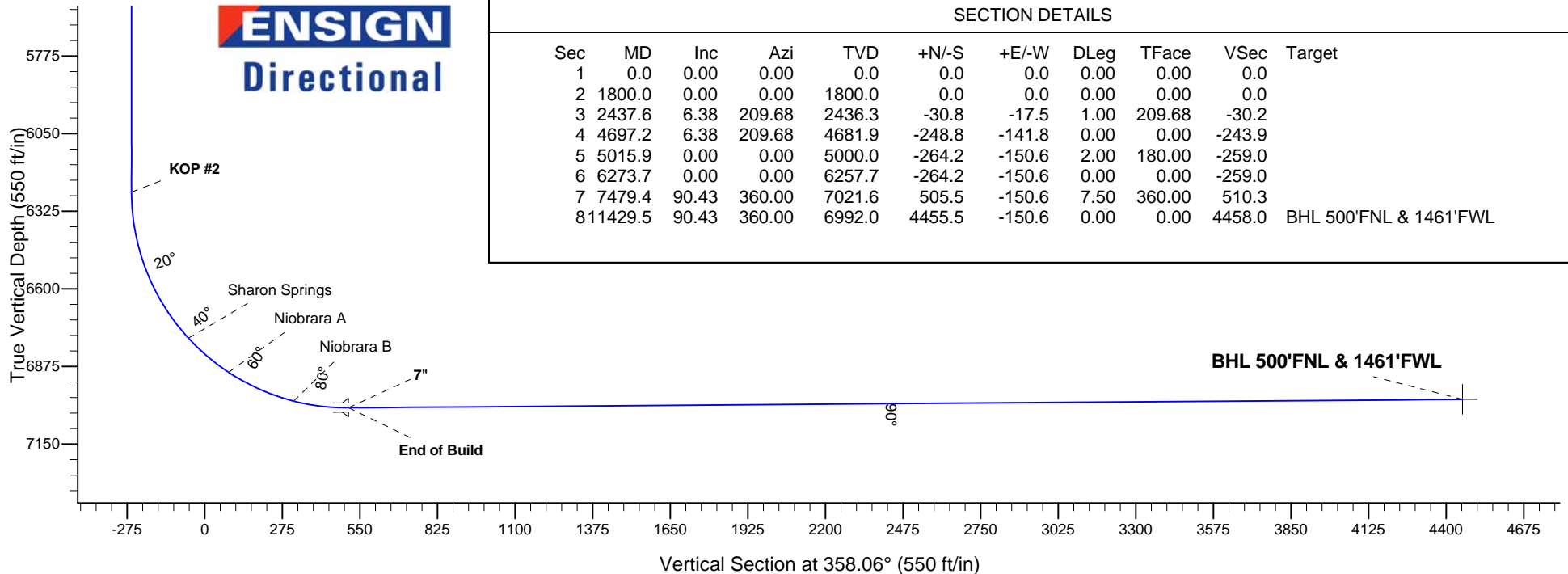
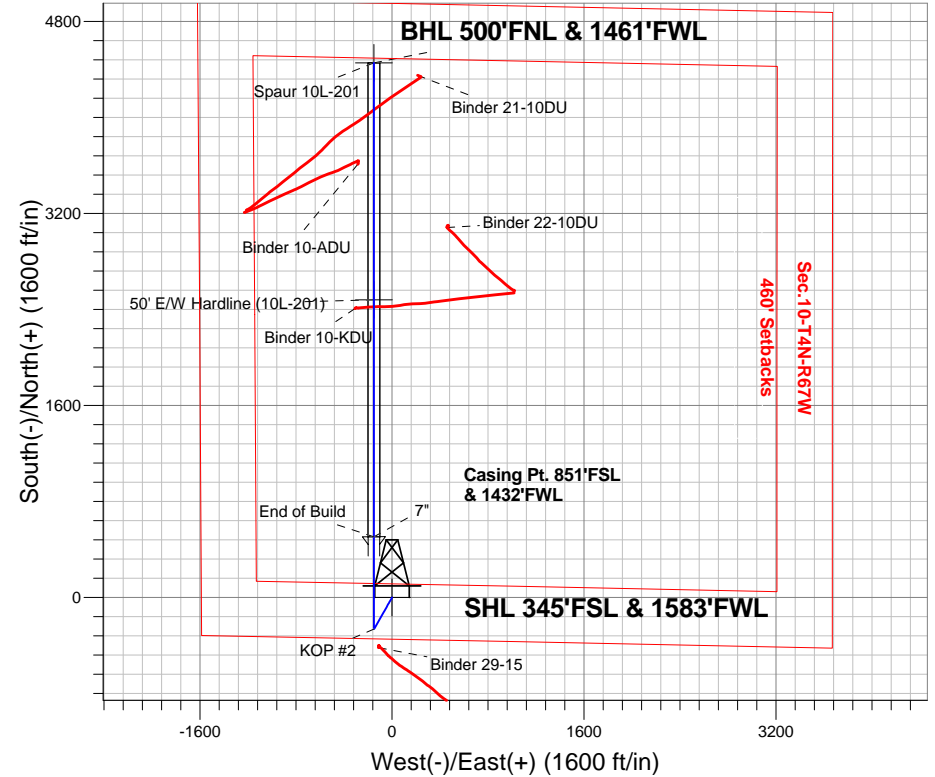


Azimuths to True North  
Magnetic North: 8.38°  
  
Magnetic Field  
Strength: 52657.3snT  
Dip Angle: 66.83°  
Date: 6/11/2015  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
1800.0	1800.0	KOP #1
6257.7	6273.7	KOP #2
7021.6	7479.4	End of Build

Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W  
Spaur 10L-201  
Plan #2 (6-10-15)





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.10-T4N-R67W**

**Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W**

**Spaur 10L-201**

**Wellbore #1**

**Plan: Plan #2 (6-10-15)**

## **Standard Planning Report**

**15 June, 2015**

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Project:</b>	SEC.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (6-10-15)		

<b>Project</b>	SEC.10-T4N-R67W, 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

Site						Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W											
Site Position:						Northing:			1,360,227.24 ft			Latitude:			40.320570		
From:			Lat/Long			Easting:			3,172,640.32 ft			Longitude:			-104.880850		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.40 °		

Well	Spaur 10L-201					
Well Position	+N/-S	0.0 ft	Northing:	1,360,227.24 ft	Latitude:	40.320570
	+E/-W	0.0 ft	Easting:	3,172,640.32 ft	Longitude:	-104.880850
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,840.0 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	6/11/2015	8.38	66.83	52,657

<b>Design</b>	Plan #2 (6-10-15)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	358.06

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,437.6	6.38	209.68	2,436.3	-30.8	-17.5	1.00	1.00	0.00	209.68	
4,697.2	6.38	209.68	4,681.9	-248.8	-141.8	0.00	0.00	0.00	0.00	
5,015.9	0.00	0.00	5,000.0	-264.2	-150.6	2.00	-2.00	0.00	180.00	
6,273.7	0.00	0.00	6,257.7	-264.2	-150.6	0.00	0.00	0.00	0.00	
7,479.4	90.43	360.00	7,021.6	505.5	-150.6	7.50	7.50	0.00	360.00	
11,429.5	90.43	360.00	6,992.0	4,455.5	-150.6	0.00	0.00	0.00	0.00	BHL 500'FNL & 146

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Project:</b>	SEC.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (6-10-15)		

Planned 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
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,900.0	1.00	209.68	1,900.0	-0.8	-0.4	-0.7	1.00	1.00	0.00
2,000.0	2.00	209.68	2,000.0	-3.0	-1.7	-3.0	1.00	1.00	0.00
2,100.0	3.00	209.68	2,099.9	-6.8	-3.9	-6.7	1.00	1.00	0.00
2,200.0	4.00	209.68	2,199.7	-12.1	-6.9	-11.9	1.00	1.00	0.00
2,300.0	5.00	209.68	2,299.4	-18.9	-10.8	-18.6	1.00	1.00	0.00
2,400.0	6.00	209.68	2,398.9	-27.3	-15.5	-26.7	1.00	1.00	0.00
2,437.6	6.38	209.68	2,436.3	-30.8	-17.5	-30.2	1.00	1.00	0.00
2,500.0	6.38	209.68	2,498.3	-36.8	-21.0	-36.1	0.00	0.00	0.00
2,600.0	6.38	209.68	2,597.7	-46.5	-26.5	-45.5	0.00	0.00	0.00
2,700.0	6.38	209.68	2,697.1	-56.1	-32.0	-55.0	0.00	0.00	0.00
2,800.0	6.38	209.68	2,796.4	-65.8	-37.5	-64.5	0.00	0.00	0.00
2,900.0	6.38	209.68	2,895.8	-75.4	-43.0	-73.9	0.00	0.00	0.00
3,000.0	6.38	209.68	2,995.2	-85.1	-48.5	-83.4	0.00	0.00	0.00
3,100.0	6.38	209.68	3,094.6	-94.7	-54.0	-92.8	0.00	0.00	0.00
3,200.0	6.38	209.68	3,194.0	-104.4	-59.5	-102.3	0.00	0.00	0.00
3,300.0	6.38	209.68	3,293.4	-114.0	-65.0	-111.7	0.00	0.00	0.00
3,400.0	6.38	209.68	3,392.7	-123.6	-70.5	-121.2	0.00	0.00	0.00
3,500.0	6.38	209.68	3,492.1	-133.3	-76.0	-130.7	0.00	0.00	0.00
3,568.3	6.38	209.68	3,560.0	-139.9	-79.7	-137.1	0.00	0.00	0.00
<b>Parkman</b>									
3,600.0	6.38	209.68	3,591.5	-142.9	-81.5	-140.1	0.00	0.00	0.00
3,700.0	6.38	209.68	3,690.9	-152.6	-87.0	-149.6	0.00	0.00	0.00
3,800.0	6.38	209.68	3,790.3	-162.2	-92.5	-159.0	0.00	0.00	0.00
3,900.0	6.38	209.68	3,889.6	-171.9	-98.0	-168.5	0.00	0.00	0.00
4,000.0	6.38	209.68	3,989.0	-181.5	-103.4	-177.9	0.00	0.00	0.00
4,100.0	6.38	209.68	4,088.4	-191.2	-108.9	-187.4	0.00	0.00	0.00
4,111.7	6.38	209.68	4,100.0	-192.3	-109.6	-188.5	0.00	0.00	0.00
<b>Sussex</b>									
4,200.0	6.38	209.68	4,187.8	-200.8	-114.4	-196.9	0.00	0.00	0.00
4,300.0	6.38	209.68	4,287.2	-210.5	-119.9	-206.3	0.00	0.00	0.00
4,400.0	6.38	209.68	4,386.5	-220.1	-125.4	-215.8	0.00	0.00	0.00
4,500.0	6.38	209.68	4,485.9	-229.8	-130.9	-225.2	0.00	0.00	0.00

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<b>Project:</b>	SEC.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (6-10-15)		

Planned 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)
4,600.0	6.38	209.68	4,585.3	-239.4	-136.4	-234.7	0.00	0.00	0.00
4,630.9	6.38	209.68	4,616.0	-242.4	-138.1	-237.6	0.00	0.00	0.00
<b>Shannon</b>									
4,697.2	6.38	209.68	4,681.9	-248.8	-141.8	-243.9	0.00	0.00	0.00
4,700.0	6.32	209.68	4,684.7	-249.1	-141.9	-244.1	2.00	-2.00	0.00
4,800.0	4.32	209.68	4,784.3	-257.1	-146.5	-252.0	2.00	-2.00	0.00
4,900.0	2.32	209.68	4,884.1	-262.2	-149.4	-257.0	2.00	-2.00	0.00
5,000.0	0.32	209.68	4,984.1	-264.2	-150.5	-258.9	2.00	-2.00	0.00
5,015.9	0.00	0.00	5,000.0	-264.2	-150.6	-259.0	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,084.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,184.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,284.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,384.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,484.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,584.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,684.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,784.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,884.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,984.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,084.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,184.1	-264.2	-150.6	-259.0	0.00	0.00	0.00
6,273.7	0.00	0.00	6,257.8	-264.2	-150.6	-259.0	0.00	0.00	0.00
<b>KOP #2</b>									
6,300.0	1.97	360.00	6,284.0	-263.7	-150.6	-258.5	7.51	7.51	0.00
6,400.0	9.47	360.00	6,383.5	-253.8	-150.6	-248.5	7.50	7.50	0.00
6,500.0	16.97	360.00	6,480.8	-230.9	-150.6	-225.7	7.50	7.50	0.00
6,600.0	24.47	360.00	6,574.2	-195.6	-150.6	-190.4	7.50	7.50	0.00
6,700.0	31.97	360.00	6,662.3	-148.3	-150.6	-143.1	7.50	7.50	0.00
6,800.0	39.47	360.00	6,743.4	-89.9	-150.6	-84.8	7.50	7.50	0.00
6,841.9	42.62	360.00	6,775.0	-62.4	-150.6	-57.3	7.50	7.50	0.00
<b>Sharon Springs</b>									
6,900.0	46.97	360.00	6,816.2	-21.5	-150.6	-16.4	7.50	7.50	0.00
7,000.0	54.47	360.00	6,879.5	55.8	-150.6	60.9	7.50	7.50	0.00
7,029.2	56.67	360.00	6,896.0	80.0	-150.6	85.0	7.50	7.50	0.00
<b>Niobrara A</b>									
7,100.0	61.97	360.00	6,932.1	140.8	-150.6	145.8	7.50	7.50	0.00
7,200.0	69.47	360.00	6,973.2	231.9	-150.6	236.8	7.50	7.50	0.00
7,283.0	75.70	360.00	6,998.0	311.1	-150.6	316.0	7.50	7.50	0.00
<b>Niobrara B</b>									
7,300.0	76.97	360.00	7,002.0	327.6	-150.6	332.5	7.50	7.50	0.00
7,400.0	84.47	360.00	7,018.1	426.2	-150.6	431.0	7.50	7.50	0.00
7,479.4	90.43	360.00	7,021.6	505.5	-150.6	510.3	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,500.0	90.43	360.00	7,021.5	526.1	-150.6	530.9	0.00	0.00	0.00
7,600.0	90.43	360.00	7,020.7	626.1	-150.6	630.8	0.00	0.00	0.00
7,700.0	90.43	360.00	7,020.0	726.1	-150.6	730.7	0.00	0.00	0.00
7,800.0	90.43	360.00	7,019.2	826.1	-150.6	830.7	0.00	0.00	0.00
7,900.0	90.43	360.00	7,018.5	926.1	-150.6	930.6	0.00	0.00	0.00
8,000.0	90.43	360.00	7,017.7	1,026.1	-150.6	1,030.6	0.00	0.00	0.00
8,100.0	90.43	360.00	7,017.0	1,126.1	-150.6	1,130.5	0.00	0.00	0.00
8,200.0	90.43	360.00	7,016.2	1,226.1	-150.6	1,230.4	0.00	0.00	0.00

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<b>Project:</b>	SEC.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (6-10-15)		

Planned 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)
8,300.0	90.43	360.00	7,015.5	1,326.0	-150.6	1,330.4	0.00	0.00	0.00
8,400.0	90.43	360.00	7,014.7	1,426.0	-150.6	1,430.3	0.00	0.00	0.00
8,500.0	90.43	360.00	7,014.0	1,526.0	-150.6	1,530.3	0.00	0.00	0.00
8,600.0	90.43	360.00	7,013.2	1,626.0	-150.6	1,630.2	0.00	0.00	0.00
8,700.0	90.43	360.00	7,012.5	1,726.0	-150.6	1,730.1	0.00	0.00	0.00
8,800.0	90.43	360.00	7,011.7	1,826.0	-150.6	1,830.1	0.00	0.00	0.00
8,900.0	90.43	360.00	7,011.0	1,926.0	-150.6	1,930.0	0.00	0.00	0.00
9,000.0	90.43	360.00	7,010.2	2,026.0	-150.6	2,030.0	0.00	0.00	0.00
9,100.0	90.43	360.00	7,009.5	2,126.0	-150.6	2,129.9	0.00	0.00	0.00
9,200.0	90.43	360.00	7,008.7	2,226.0	-150.6	2,229.8	0.00	0.00	0.00
9,300.0	90.43	360.00	7,008.0	2,326.0	-150.6	2,329.8	0.00	0.00	0.00
9,400.0	90.43	360.00	7,007.2	2,426.0	-150.6	2,429.7	0.00	0.00	0.00
9,500.0	90.43	360.00	7,006.5	2,526.0	-150.6	2,529.7	0.00	0.00	0.00
9,600.0	90.43	360.00	7,005.7	2,626.0	-150.6	2,629.6	0.00	0.00	0.00
9,700.0	90.43	360.00	7,005.0	2,726.0	-150.6	2,729.5	0.00	0.00	0.00
9,800.0	90.43	360.00	7,004.2	2,826.0	-150.6	2,829.5	0.00	0.00	0.00
9,900.0	90.43	360.00	7,003.5	2,926.0	-150.6	2,929.4	0.00	0.00	0.00
10,000.0	90.43	360.00	7,002.7	3,026.0	-150.6	3,029.4	0.00	0.00	0.00
10,100.0	90.43	360.00	7,002.0	3,126.0	-150.6	3,129.3	0.00	0.00	0.00
10,200.0	90.43	360.00	7,001.2	3,226.0	-150.6	3,229.2	0.00	0.00	0.00
10,300.0	90.43	360.00	7,000.5	3,326.0	-150.6	3,329.2	0.00	0.00	0.00
10,400.0	90.43	360.00	6,999.7	3,426.0	-150.6	3,429.1	0.00	0.00	0.00
10,500.0	90.43	360.00	6,999.0	3,526.0	-150.6	3,529.1	0.00	0.00	0.00
10,600.0	90.43	360.00	6,998.2	3,626.0	-150.6	3,629.0	0.00	0.00	0.00
10,700.0	90.43	360.00	6,997.5	3,726.0	-150.6	3,728.9	0.00	0.00	0.00
10,800.0	90.43	360.00	6,996.7	3,826.0	-150.6	3,828.9	0.00	0.00	0.00
10,900.0	90.43	360.00	6,996.0	3,926.0	-150.6	3,928.8	0.00	0.00	0.00
11,000.0	90.43	360.00	6,995.2	4,026.0	-150.6	4,028.8	0.00	0.00	0.00
11,100.0	90.43	360.00	6,994.5	4,126.0	-150.6	4,128.7	0.00	0.00	0.00
11,200.0	90.43	360.00	6,993.7	4,226.0	-150.6	4,228.6	0.00	0.00	0.00
11,300.0	90.43	360.00	6,993.0	4,326.0	-150.6	4,328.6	0.00	0.00	0.00
11,400.0	90.43	360.00	6,992.2	4,426.0	-150.6	4,428.5	0.00	0.00	0.00
11,429.5	90.43	360.00	6,992.0	4,455.5	-150.6	4,458.0	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
50' E/W Hardline (10L - hit/miss target - Shape - plan misses target center by 2485.1ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W3,950.0 H100.0 D0.0)	0.00	0.00	1.0	2,480.5	-150.6	1,362,706.51	3,172,472.41	40.327379	-104.881390
SHL 345'FSL & 1583' - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,360,227.24	3,172,640.32	40.320570	-104.880850
BHL 500'FNL & 1461' - plan hits target center - Point	0.00	0.00	6,992.0	4,455.5	-150.6	1,364,681.37	3,172,458.67	40.332800	-104.881390

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Project:</b>	SEC.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (6-10-15)		

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,479.4	7,021.6	7"	7	7-1/2

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,568.3	3,560.0	Parkman		0.00	
4,111.7	4,100.0	Sussex		0.00	
4,630.9	4,616.0	Shannon		0.00	
6,841.9	6,775.0	Sharon Springs		0.00	
7,029.2	6,896.0	Niobrara A		0.00	
7,283.0	6,998.0	Niobrara B		0.00	
	7,075.0	Niobrara C		0.00	
	7,196.0	Fort Hays		0.00	
	7,217.0	Codell		0.00	

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,800.0	1,800.0	0.0	0.0	KOP #1
6,273.7	6,257.8	-264.2	-150.6	KOP #2
7,479.4	7,021.6	505.5	-150.6	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.10-T4N-R67W**

**Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W**

**Spaur 10L-201**

**Wellbore #1**

**Plan #2 (6-10-15)**

## **Anticollision Report**

**15 June, 2015**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (6-10-15)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 6/15/2015			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,429.5	Plan #2 (6-10-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
Binder 10-NDU Pad Sec.10-T4N-R67W						
Binder 10-KDU - Wellbore #1 - Wellbore #1	9,386.0	7,136.9	154.8	88.2	2.323	CC, ES, SF
Binder 22-10DU - Wellbore #1 - Wellbore #1	10,061.7	7,036.7	612.9	533.3	7.696	CC, ES
Binder 22-10DU - Wellbore #1 - Wellbore #1	10,200.0	7,034.5	628.3	546.1	7.643	SF
Binder 12-10DU Pad Sec.10-T4N-R67W						
Binder 10-ADU - Wellbore #1 - Wellbore #1	10,587.8	7,044.9	133.1	43.7	1.489	Level 3, CC, ES, SF
Binder 21-10DU - Wellbore #1 - Wellbore #1	11,321.4	7,270.5	375.6	263.0	3.336	CC, ES, SF
Existing Wells Sec.10-T4N-R67W						
Binder 29-15 - Wellbore #1 - Wellbore #1	4,994.7	5,068.1	140.8	115.9	5.663	CC
Binder 29-15 - Wellbore #1 - Wellbore #1	5,000.0	5,073.0	140.8	115.9	5.661	ES
Binder 29-15 - Wellbore #1 - Wellbore #1	6,300.0	6,374.2	154.4	124.7	5.198	SF
Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W						
Spaur 10I-201 - Wellbore #1 - Plan #1 (6-12-15)	200.0	200.0	87.4	86.8	135.546	CC
Spaur 10I-201 - Wellbore #1 - Plan #1 (6-12-15)	300.0	299.7	87.6	86.5	80.974	ES
Spaur 10I-201 - Wellbore #1 - Plan #1 (6-12-15)	1,000.0	986.5	127.4	122.8	27.385	SF
Spaur 10I-321 - Wellbore #1 - Plan #2 (6-10-15)	400.0	400.0	72.9	71.3	47.186	CC
Spaur 10I-321 - Wellbore #1 - Plan #2 (6-10-15)	500.0	499.8	73.0	71.0	36.917	ES
Spaur 10I-321 - Wellbore #1 - Plan #2 (6-10-15)	11,429.5	11,637.4	949.2	773.2	5.394	SF
Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)	800.0	800.0	58.3	54.9	17.440	CC
Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)	900.0	899.7	58.6	54.8	15.517	ES
Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)	11,429.5	11,488.4	571.7	395.0	3.235	SF
Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)	1,000.0	1,000.0	43.7	39.5	10.309	CC
Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)	1,100.0	1,099.6	44.2	39.5	9.456	ES
Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)	11,429.5	11,554.7	300.7	131.4	1.776	SF
Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)	1,366.3	1,367.3	14.6	8.7	2.474	CC
Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)	1,400.0	1,401.0	14.6	8.5	2.412	ES
Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)	1,500.0	1,500.8	15.2	8.7	2.343	SF
Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)	1,800.0	1,801.0	14.6	6.7	1.859	CC, ES
Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)	1,900.0	1,901.0	15.3	7.1	1.856	SF
Spaur 10Q-241 - Wellbore #1 - Plan #2 (6-10-15)	766.3	767.3	29.1	26.0	9.127	CC
Spaur 10Q-241 - Wellbore #1 - Plan #2 (6-10-15)	900.0	900.8	29.5	25.7	7.807	ES
Spaur 10Q-241 - Wellbore #1 - Plan #2 (6-10-15)	11,429.5	11,494.1	884.0	707.8	5.015	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Binder 10-NDU Pad Sec.10-T4N-R67W - Binder 10-KDU - Wellbore #1 - Wellbore #1														Offset Site Error:	0.0 ft
Survey Program: 452-MWD														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
8,400.0	7,014.7	7,160.7	6,969.0	32.2	28.7	-97.95	2,411.6	-305.6	997.8	949.5	48.21	20.697			
8,500.0	7,014.0	7,158.2	6,966.5	34.0	28.7	-97.04	2,411.6	-305.6	899.1	849.1	50.04	17.968			
8,600.0	7,013.2	7,155.7	6,964.0	35.7	28.6	-96.14	2,411.6	-305.6	800.8	748.9	51.89	15.433			
8,700.0	7,012.5	7,153.2	6,961.6	37.4	28.6	-95.25	2,411.7	-305.5	703.0	649.3	53.75	13.079			
8,800.0	7,011.7	7,150.8	6,959.1	39.2	28.6	-94.35	2,411.7	-305.5	605.9	550.3	55.62	10.893			
8,900.0	7,011.0	7,148.4	6,956.7	41.0	28.6	-93.47	2,411.8	-305.5	509.9	452.4	57.50	8.867			
9,000.0	7,010.2	7,146.0	6,954.3	42.8	28.6	-92.58	2,411.8	-305.4	415.7	356.3	59.38	7.001			
9,100.0	7,009.5	7,143.6	6,951.9	44.6	28.6	-91.70	2,411.8	-305.4	325.1	263.8	61.26	5.306			
9,200.0	7,008.7	7,141.2	6,949.6	46.4	28.6	-90.83	2,411.9	-305.4	241.9	178.8	63.14	3.831			
9,300.0	7,008.0	7,138.9	6,947.2	48.2	28.6	-89.96	2,411.9	-305.3	177.0	112.0	65.02	2.723			
9,386.0	7,007.3	7,136.9	6,945.2	49.8	28.6	-89.22	2,412.0	-305.3	154.8	88.2	66.63	2.323 CC, ES, SF			
9,400.0	7,007.2	7,136.6	6,944.9	50.0	28.6	-89.10	2,412.0	-305.3	155.4	88.5	66.89	2.323			
9,500.0	7,006.5	7,134.3	6,942.6	51.9	28.6	-88.25	2,412.0	-305.3	192.2	123.5	68.75	2.796			
9,600.0	7,005.7	7,132.0	6,940.3	53.7	28.6	-87.40	2,412.0	-305.3	264.1	193.5	70.61	3.740			
9,700.0	7,005.0	7,129.7	6,938.0	55.5	28.6	-86.56	2,412.1	-305.2	350.0	277.6	72.46	4.831			
9,800.0	7,004.2	7,127.4	6,935.8	57.4	28.6	-85.73	2,412.1	-305.2	441.9	367.6	74.29	5.949			
9,900.0	7,003.5	7,125.2	6,933.5	59.3	28.6	-84.90	2,412.1	-305.2	536.7	460.6	76.12	7.051			
10,000.0	7,002.7	7,123.0	6,931.3	61.1	28.6	-84.09	2,412.2	-305.1	633.1	555.2	77.93	8.124			
10,100.0	7,002.0	7,120.8	6,929.1	63.0	28.6	-83.28	2,412.2	-305.1	730.5	650.7	79.72	9.162			
10,200.0	7,001.2	7,118.6	6,926.9	64.8	28.6	-82.48	2,412.2	-305.1	828.4	746.9	81.51	10.164			
10,300.0	7,000.5	7,116.4	6,924.8	66.7	28.6	-81.68	2,412.3	-305.0	926.8	843.6	83.28	11.130			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Binder 10-NDU Pad Sec.10-T4N-R67W - Binder 22-10DU - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 457-MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,300.0	7,008.0	7,049.1	6,960.7	48.2	19.8	91.72	3,087.7	462.2	977.6	912.0	65.60	14.902		
9,400.0	7,007.2	7,047.5	6,959.0	50.0	19.8	91.57	3,087.7	462.2	901.9	834.5	67.43	13.376		
9,500.0	7,006.5	7,045.8	6,957.4	51.9	19.8	91.42	3,087.7	462.3	831.4	762.1	69.26	12.003		
9,600.0	7,005.7	7,044.2	6,955.8	53.7	19.8	91.27	3,087.7	462.3	767.4	696.3	71.10	10.793		
9,700.0	7,005.0	7,042.6	6,954.2	55.5	19.8	91.11	3,087.7	462.3	711.7	638.8	72.94	9.757		
9,800.0	7,004.2	7,041.0	6,952.6	57.4	19.8	90.96	3,087.7	462.3	666.5	591.7	74.79	8.912		
9,900.0	7,003.5	7,039.4	6,950.9	59.3	19.8	90.81	3,087.8	462.3	633.9	557.3	76.64	8.272		
10,000.0	7,002.7	7,037.7	6,949.3	61.1	19.8	90.66	3,087.8	462.3	616.0	537.5	78.49	7.848		
10,061.7	7,002.3	7,036.7	6,948.3	62.3	19.8	90.57	3,087.8	462.4	612.9	533.3	79.64	7.696 CC, ES		
10,100.0	7,002.0	7,036.1	6,947.7	63.0	19.8	90.51	3,087.8	462.4	614.1	533.8	80.35	7.643		
10,200.0	7,001.2	7,034.5	6,946.1	64.8	19.8	90.36	3,087.8	462.4	628.3	546.1	82.21	7.643 SF		
10,300.0	7,000.5	7,032.9	6,944.5	66.7	19.8	90.21	3,087.8	462.4	657.6	573.5	84.07	7.822		
10,400.0	6,999.7	7,031.3	6,942.8	68.6	19.8	90.05	3,087.8	462.4	700.1	614.1	85.94	8.146		
10,500.0	6,999.0	7,029.6	6,941.2	70.5	19.8	89.90	3,087.8	462.4	753.5	665.7	87.81	8.581		
10,600.0	6,998.2	7,028.0	6,939.6	72.3	19.8	89.75	3,087.9	462.4	815.7	726.0	89.68	9.096		
10,700.0	6,997.5	7,026.4	6,938.0	74.2	19.8	89.60	3,087.9	462.5	884.8	793.3	91.55	9.665		
10,800.0	6,996.7	7,024.8	6,936.4	76.1	19.8	89.45	3,087.9	462.5	959.5	866.0	93.42	10.270		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Binder 12-10DU Pad Sec.10-T4N-R67W - Binder 10-ADU - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft
Survey Program: 150-MWD													Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,600.0	7,005.7	7,055.7	6,928.6	53.7	23.6	-94.40	3,613.7	-283.7	996.7	925.7	70.97	14.044	
9,700.0	7,005.0	7,054.6	6,927.5	55.5	23.6	-93.93	3,613.7	-283.7	897.7	824.8	72.83	12.325	
9,800.0	7,004.2	7,053.5	6,926.4	57.4	23.6	-93.45	3,613.7	-283.7	798.9	724.2	74.70	10.695	
9,900.0	7,003.5	7,052.4	6,925.3	59.3	23.6	-92.98	3,613.8	-283.7	700.5	624.0	76.57	9.149	
10,000.0	7,002.7	7,051.3	6,924.2	61.1	23.6	-92.51	3,613.8	-283.7	602.6	524.2	78.43	7.684	
10,100.0	7,002.0	7,050.2	6,923.1	63.0	23.6	-92.04	3,613.8	-283.7	505.6	425.3	80.30	6.296	
10,200.0	7,001.2	7,049.1	6,922.0	64.8	23.6	-91.57	3,613.8	-283.7	410.0	327.8	82.17	4.989	
10,300.0	7,000.5	7,048.0	6,920.9	66.7	23.6	-91.10	3,613.8	-283.7	317.1	233.0	84.04	3.773	
10,400.0	6,999.7	7,046.9	6,919.8	68.6	23.6	-90.63	3,613.8	-283.7	230.2	144.3	85.90	2.679	
10,500.0	6,999.0	7,045.8	6,918.7	70.5	23.6	-90.16	3,613.8	-283.7	159.5	71.7	87.77	1.817	
10,587.8	6,998.3	7,044.9	6,917.7	72.1	23.6	-89.75	3,613.8	-283.7	133.1	43.7	89.40	1.489	Level 3, CC, ES, SF
10,600.0	6,998.2	7,044.7	6,917.6	72.3	23.6	-89.69	3,613.8	-283.7	133.7	44.0	89.63	1.491	Level 3
10,700.0	6,997.5	7,043.6	6,916.5	74.2	23.6	-89.22	3,613.8	-283.7	174.1	82.6	91.49	1.903	
10,800.0	6,996.7	7,042.6	6,915.4	76.1	23.6	-88.76	3,613.8	-283.6	250.5	157.1	93.34	2.683	
10,900.0	6,996.0	7,041.5	6,914.3	78.0	23.6	-88.29	3,613.8	-283.6	339.4	244.2	95.19	3.565	
11,000.0	6,995.2	7,040.4	6,913.3	79.9	23.6	-87.83	3,613.8	-283.6	433.1	336.1	97.04	4.463	
11,100.0	6,994.5	7,039.3	6,912.2	81.7	23.6	-87.36	3,613.8	-283.6	529.2	430.3	98.88	5.352	
11,200.0	6,993.7	7,038.2	6,911.1	83.6	23.6	-86.90	3,613.8	-283.6	626.5	525.8	100.72	6.220	
11,300.0	6,993.0	7,037.2	6,910.0	85.5	23.6	-86.44	3,613.8	-283.6	724.5	621.9	102.55	7.065	
11,400.0	6,992.2	7,036.1	6,909.0	87.4	23.6	-85.98	3,613.8	-283.6	823.0	718.6	104.38	7.885	
11,429.5	6,992.0	7,035.8	6,908.6	88.0	23.6	-85.84	3,613.8	-283.6	852.1	747.2	104.92	8.122	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Binder 12-10DU Pad Sec.10-T4N-R67W - Binder 21-10DU - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 152-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
10,400.0	6,999.7	7,259.4	6,918.0	68.6	36.8	90.79	4,347.3	225.2	995.0	899.6	95.39	10.430	
10,500.0	6,999.0	7,260.6	6,919.3	70.5	36.8	90.99	4,347.3	225.1	903.2	805.9	97.26	9.286	
10,600.0	6,998.2	7,261.9	6,920.5	72.3	36.8	91.18	4,347.3	225.1	813.3	714.2	99.12	8.205	
10,700.0	6,997.5	7,263.1	6,921.8	74.2	36.8	91.37	4,347.3	225.0	726.1	625.1	100.99	7.190	
10,800.0	6,996.7	7,264.3	6,923.0	76.1	36.8	91.55	4,347.4	225.0	642.6	539.7	102.85	6.248	
10,900.0	6,996.0	7,265.6	6,924.2	78.0	36.8	91.74	4,347.4	224.9	564.5	459.8	104.72	5.390	
11,000.0	6,995.2	7,266.8	6,925.4	79.9	36.8	91.92	4,347.4	224.9	494.3	387.8	106.59	4.638	
11,100.0	6,994.5	7,267.9	6,926.6	81.7	36.8	92.10	4,347.4	224.8	436.0	327.5	108.46	4.020	
11,200.0	6,993.7	7,269.1	6,927.8	83.6	36.8	92.28	4,347.5	224.8	394.7	284.4	110.32	3.578	
11,300.0	6,993.0	7,270.3	6,928.9	85.5	36.8	92.46	4,347.5	224.7	376.2	264.0	112.19	3.353	
11,321.4	6,992.8	7,270.5	6,929.2	85.9	36.8	92.49	4,347.5	224.7	375.6	263.0	112.59	3.336 CC, ES, SF	
11,400.0	6,992.2	7,271.4	6,930.1	87.4	36.8	92.63	4,347.5	224.7	383.8	269.7	114.06	3.364	
11,429.5	6,992.0	7,271.7	6,930.4	88.0	36.8	92.68	4,347.5	224.7	390.9	276.3	114.61	3.410	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.10-T4N-R67W - Binder 29-15 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 635-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
1,400.0	1,400.0	1,628.4	1,623.3	3.0	3.1	152.15	-857.6	453.2	995.4	989.4	5.95	167.417		
1,500.0	1,500.0	1,719.0	1,711.2	3.2	3.4	152.75	-844.8	435.2	973.4	967.1	6.37	152.890		
1,600.0	1,600.0	1,822.8	1,811.9	3.5	3.8	153.47	-830.2	414.5	951.9	945.0	6.82	139.611		
1,700.0	1,700.0	1,917.3	1,903.7	3.7	4.1	154.05	-816.3	397.2	930.4	923.1	7.25	128.399		
1,800.0	1,800.0	2,023.5	2,006.8	3.9	4.6	154.66	-799.3	378.5	908.2	900.5	7.71	117.734		
1,900.0	1,900.0	2,115.2	2,095.9	4.1	5.0	-54.71	-784.4	362.4	885.5	877.1	8.37	105.770		
2,000.0	2,000.0	2,202.7	2,181.1	4.3	5.3	-54.51	-770.9	347.7	862.8	854.1	8.78	98.291		
2,100.0	2,099.9	2,298.3	2,274.2	4.5	5.7	-54.33	-756.9	331.6	840.0	830.8	9.22	91.103		
2,200.0	2,199.7	2,389.7	2,363.2	4.7	6.1	-54.14	-744.0	314.9	816.0	806.4	9.68	84.334		
2,300.0	2,299.4	2,502.9	2,473.0	4.9	6.7	-53.86	-727.9	292.7	790.5	780.3	10.23	77.283		
2,400.0	2,398.9	2,608.4	2,574.9	5.1	7.2	-53.68	-711.5	270.7	762.3	751.5	10.77	70.780		
2,500.0	2,498.3	2,705.9	2,668.9	5.3	7.7	-53.48	-695.5	250.5	732.6	721.3	11.28	64.918		
2,600.0	2,597.7	2,786.6	2,747.0	5.5	8.1	-53.29	-682.5	234.7	703.6	691.8	11.74	59.920		
2,700.0	2,697.1	2,884.4	2,841.9	5.7	8.5	-53.05	-668.2	216.4	676.3	664.0	12.27	55.101		
2,800.0	2,796.4	2,977.7	2,932.2	6.0	9.0	-52.60	-655.3	196.7	648.7	635.9	12.83	50.579		
2,900.0	2,895.8	3,064.7	3,016.7	6.2	9.4	-52.26	-643.0	179.6	621.5	608.2	13.35	46.561		
3,000.0	2,995.2	3,155.9	3,105.8	6.5	9.8	-52.03	-631.4	163.8	596.5	582.6	13.87	43.004		
3,100.0	3,094.6	3,256.9	3,204.0	6.7	10.2	-51.62	-618.1	144.7	570.4	556.0	14.46	39.447		
3,200.0	3,194.0	3,345.2	3,290.0	7.0	10.6	-51.19	-607.0	128.0	545.0	530.0	15.01	36.313		
3,300.0	3,293.4	3,432.2	3,375.2	7.3	11.0	-50.85	-597.7	113.1	521.9	506.4	15.54	33.590		
3,400.0	3,392.7	3,546.1	3,486.2	7.5	11.5	-50.21	-583.9	91.8	496.8	480.6	16.21	30.654		
3,500.0	3,492.1	3,642.2	3,579.7	7.8	11.9	-49.55	-571.6	73.0	471.1	454.3	16.82	28.005		
3,600.0	3,591.5	3,756.5	3,690.6	8.1	12.5	-48.77	-554.9	50.9	443.9	426.4	17.52	25.342		
3,700.0	3,690.9	3,859.1	3,789.1	8.4	13.1	-47.79	-536.8	28.9	413.2	394.9	18.21	22.690		
3,800.0	3,790.3	3,955.4	3,881.5	8.6	13.6	-46.74	-519.1	8.1	381.9	363.0	18.89	20.212		
3,900.0	3,889.6	4,044.2	3,966.9	8.9	14.0	-45.72	-503.0	-10.2	351.1	331.6	19.53	17.975		
4,000.0	3,989.0	4,128.0	4,048.2	9.2	14.4	-44.89	-489.8	-25.4	323.5	303.4	20.13	16.071		
4,100.0	4,088.4	4,224.4	4,142.4	9.5	14.9	-44.32	-475.4	-40.0	297.4	276.7	20.72	14.352		
4,200.0	4,187.8	4,318.0	4,234.1	9.8	15.2	-44.02	-461.6	-52.3	272.0	250.8	21.26	12.793		
4,300.0	4,287.2	4,409.5	4,324.2	10.1	15.6	-43.89	-449.3	-63.2	248.2	226.5	21.77	11.402		
4,400.0	4,386.5	4,506.3	4,419.5	10.4	15.9	-43.50	-437.4	-75.3	225.4	203.1	22.33	10.093		
4,500.0	4,485.9	4,598.7	4,510.7	10.7	16.3	-43.32	-427.1	-85.6	204.0	181.2	22.85	8.929		
4,600.0	4,585.3	4,691.7	4,602.9	11.0	16.5	-43.49	-418.6	-94.4	184.9	161.6	23.32	7.930		
4,700.0	4,684.7	4,787.8	4,698.4	11.3	16.8	-43.65	-412.4	-102.9	168.5	144.7	23.79	7.080		
4,800.0	4,784.3	4,884.4	4,794.5	11.5	17.1	-43.81	-406.3	-109.8	153.9	129.7	24.28	6.342		
4,900.0	4,884.1	4,980.1	4,890.1	11.7	17.2	-44.33	-401.5	-113.2	144.1	119.4	24.66	5.842		
4,994.7	4,978.8	5,068.1	4,978.0	11.9	17.3	-45.73	-399.4	-111.6	140.8	115.9	24.86	5.663 CC		
5,000.0	4,984.1	5,073.0	4,982.9	11.9	17.4	-45.79	-399.4	-111.5	140.8	115.9	24.87	5.661 ES		
5,100.0	5,084.1	5,171.1	5,081.0	12.1	17.4	163.10	-400.5	-109.1	142.5	117.4	25.13	5.671		
5,200.0	5,184.1	5,270.9	5,180.8	12.2	17.5	163.05	-402.6	-108.4	144.8	119.3	25.46	5.686		
5,300.0	5,284.1	5,372.0	5,281.8	12.4	17.6	163.06	-404.5	-107.8	146.6	120.8	25.80	5.684		
5,400.0	5,384.1	5,472.7	5,382.5	12.6	17.7	163.22	-405.8	-107.9	147.9	121.7	26.16	5.653		
5,500.0	5,484.1	5,572.7	5,482.6	12.8	17.9	163.61	-407.1	-108.5	148.9	122.4	26.56	5.608		
5,600.0	5,584.1	5,672.8	5,582.6	13.0	18.0	164.25	-408.5	-109.8	149.9	123.0	26.97	5.558		
5,700.0	5,684.1	5,772.8	5,682.6	13.2	18.1	165.03	-410.0	-111.6	150.9	123.5	27.40	5.507		
5,800.0	5,784.1	5,872.8	5,782.6	13.3	18.3	165.55	-411.3	-112.7	151.9	124.1	27.81	5.461		
5,900.0	5,884.1	5,973.2	5,882.9	13.5	18.4	165.88	-412.3	-113.3	152.7	124.5	28.20	5.416		
6,000.0	5,984.1	6,073.5	5,983.3	13.7	18.5	166.10	-413.0	-113.7	153.3	124.8	28.58	5.365		
6,100.0	6,084.1	6,173.9	6,083.7	13.9	18.7	166.23	-413.5	-114.0	153.7	124.8	28.95	5.309		
6,200.0	6,184.1	6,274.1	6,183.9	14.1	18.8	166.27	-413.7	-114.0	153.9	124.6	29.32	5.248		
6,247.0	6,231.0	6,321.1	6,230.9	14.2	18.9	166.31	-413.7	-114.1	154.3	124.8	29.51	5.229		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells Sec.10-T4N-R67W - Binder 29-15 - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program: 635-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)								
6,300.0	6,284.0	6,374.2	6,284.0	14.3	18.9	166.32	-413.8	-114.1	154.4	124.7	29.70	5.198 SF				
6,400.0	6,383.5	6,473.7	6,383.5	14.4	19.1	166.99	-413.8	-114.1	164.1	134.3	29.88	5.493				
6,500.0	6,480.8	6,570.5	6,480.2	14.5	19.2	168.23	-414.0	-114.1	186.6	157.0	29.66	6.292				
6,600.0	6,574.2	6,663.3	6,573.0	14.6	19.3	169.64	-414.4	-114.2	221.8	192.8	29.01	7.645				
6,700.0	6,662.3	6,751.3	6,661.0	14.6	19.5	170.87	-414.9	-114.3	269.0	241.1	27.95	9.626				
6,800.0	6,743.4	6,833.1	6,742.8	14.7	19.6	171.75	-415.1	-114.2	327.2	300.7	26.52	12.338				
6,900.0	6,816.2	6,906.9	6,816.6	14.7	19.7	172.25	-415.1	-113.9	395.3	370.5	24.82	15.930				
7,000.0	6,879.5	6,970.5	6,880.3	14.9	19.8	172.32	-415.0	-113.6	472.3	449.3	22.96	20.569				
7,100.0	6,932.1	7,022.0	6,931.7	15.3	19.8	171.86	-414.9	-113.3	557.0	535.8	21.13	26.355				
7,200.0	6,973.2	7,061.9	6,971.6	15.9	19.9	170.54	-415.0	-113.0	647.9	628.3	19.61	33.035				
7,300.0	7,002.0	7,089.6	6,999.3	16.7	19.9	167.11	-415.0	-112.9	743.6	724.6	18.98	39.167				
7,400.0	7,018.1	7,104.8	7,014.5	17.7	20.0	153.97	-415.1	-112.8	842.1	820.0	22.12	38.064				
7,500.0	7,021.5	7,107.6	7,017.3	18.8	20.0	73.48	-415.1	-112.7	941.9	907.8	34.09	27.630				



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-201 - Wellbore #1 - Plan #1 (6-12-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-87.4	0.0	87.4					
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-87.4	0.0	87.4	87.2	0.20	447.146		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-87.4	0.0	87.4	86.8	0.65	135.546 CC		
300.0	300.0	299.7	299.7	0.5	0.5	-179.16	-87.6	-1.3	87.6	86.5	1.08	80.974 ES		
400.0	400.0	399.3	399.2	0.8	0.8	-176.65	-88.1	-5.2	88.2	86.7	1.52	57.931		
500.0	500.0	498.6	498.3	1.0	1.0	-172.58	-88.9	-11.6	89.6	87.6	1.98	45.199		
600.0	600.0	597.4	596.7	1.2	1.2	-167.16	-90.0	-20.5	92.3	89.9	2.47	37.446		
700.0	700.0	695.8	694.4	1.4	1.5	-160.76	-91.4	-31.9	96.9	94.0	2.98	32.581		
800.0	800.0	793.5	791.1	1.7	1.8	-153.86	-93.1	-45.7	104.0	100.5	3.51	29.620		
900.0	900.0	890.4	886.7	1.9	2.2	-146.98	-95.0	-61.8	114.1	110.0	4.07	28.012		
1,000.0	1,000.0	986.5	980.9	2.1	2.6	-140.54	-97.3	-80.1	127.4	122.8	4.65	27.385 SF		
1,100.0	1,100.0	1,081.5	1,073.7	2.3	3.0	-134.80	-99.8	-100.5	144.1	138.8	5.25	27.464		
1,200.0	1,200.0	1,175.4	1,164.9	2.6	3.5	-129.83	-102.6	-122.9	163.9	158.1	5.85	28.040		
1,300.0	1,300.0	1,268.2	1,254.3	2.8	3.9	-125.63	-105.6	-147.3	186.9	180.4	6.45	28.957		
1,400.0	1,400.0	1,360.6	1,342.8	3.0	4.5	-122.07	-108.8	-173.6	212.7	205.6	7.07	30.099		
1,500.0	1,500.0	1,456.1	1,434.1	3.2	5.0	-119.11	-112.2	-201.5	239.9	232.2	7.70	31.175		
1,600.0	1,600.0	1,551.7	1,525.4	3.5	5.6	-116.75	-115.7	-229.5	267.6	259.3	8.32	32.172		
1,700.0	1,700.0	1,647.2	1,616.8	3.7	6.2	-114.83	-119.1	-257.4	295.6	286.7	8.93	33.084		
1,800.0	1,800.0	1,742.8	1,708.1	3.9	6.8	-113.24	-122.5	-285.4	323.9	314.3	9.55	33.915		
1,900.0	1,900.0	1,838.5	1,799.5	4.1	7.4	38.33	-126.0	-313.3	351.7	342.9	8.80	39.959		
2,000.0	2,000.0	1,934.5	1,891.3	4.3	8.0	39.55	-129.4	-341.4	378.4	369.1	9.24	40.953		
2,100.0	2,099.9	2,030.7	1,983.2	4.5	8.6	40.75	-132.9	-369.6	404.0	394.3	9.68	41.731		
2,200.0	2,199.7	2,127.2	2,075.4	4.7	9.2	41.95	-136.4	-397.8	428.5	418.4	10.13	42.321		
2,300.0	2,299.4	2,223.8	2,167.8	4.9	9.8	43.16	-139.8	-426.0	452.0	441.5	10.58	42.745		
2,400.0	2,398.9	2,320.7	2,260.3	5.1	10.4	44.38	-143.3	-454.3	474.6	463.5	11.03	43.016		
2,500.0	2,498.3	2,417.6	2,352.9	5.3	11.0	45.70	-146.8	-482.7	496.4	484.9	11.50	43.181		
2,600.0	2,597.7	2,514.5	2,445.5	5.5	11.6	46.97	-150.3	-511.0	518.4	506.4	11.97	43.310		
2,700.0	2,697.1	2,611.4	2,538.2	5.7	12.2	48.14	-153.8	-539.3	540.6	528.1	12.45	43.405		
2,800.0	2,796.4	2,708.3	2,630.8	6.0	12.8	49.22	-157.3	-567.7	563.0	550.0	12.95	43.469		
2,900.0	2,895.8	2,805.3	2,723.4	6.2	13.4	50.21	-160.8	-596.0	585.6	572.1	13.46	43.507		
3,000.0	2,995.2	2,902.2	2,816.0	6.5	14.1	51.14	-164.2	-624.4	608.3	594.3	13.98	43.521		
3,100.0	3,094.6	2,999.1	2,908.7	6.7	14.7	51.99	-167.7	-652.7	631.2	616.7	14.50	43.515		
3,200.0	3,194.0	3,096.1	3,001.3	7.0	15.3	52.79	-171.2	-681.0	654.2	639.1	15.04	43.493		
3,300.0	3,293.4	3,193.0	3,093.9	7.3	15.9	53.53	-174.7	-709.4	677.3	661.7	15.59	43.457		
3,400.0	3,392.7	3,289.9	3,186.5	7.5	16.5	54.22	-178.2	-737.7	700.5	684.4	16.14	43.409		
3,500.0	3,492.1	3,386.8	3,279.2	7.8	17.1	54.87	-181.7	-766.0	723.8	707.1	16.70	43.352		
3,600.0	3,591.5	3,483.8	3,371.8	8.1	17.7	55.48	-185.2	-794.4	747.2	730.0	17.26	43.288		
3,700.0	3,690.9	3,580.7	3,464.4	8.4	18.3	56.05	-188.6	-822.7	770.7	752.8	17.83	43.218		
3,800.0	3,790.3	3,677.6	3,557.0	8.6	18.9	56.59	-192.1	-851.1	794.2	775.8	18.41	43.143		
3,900.0	3,889.6	3,774.5	3,649.7	8.9	19.6	57.10	-195.6	-879.4	817.8	798.8	18.99	43.065		
4,000.0	3,989.0	3,871.5	3,742.3	9.2	20.2	57.58	-199.1	-907.7	841.5	821.9	19.58	42.984		
4,100.0	4,088.4	3,968.4	3,834.9	9.5	20.8	58.03	-202.6	-936.1	865.2	845.0	20.17	42.901		
4,200.0	4,187.8	4,065.3	3,927.5	9.8	21.4	58.46	-206.1	-964.4	888.9	868.2	20.76	42.818		
4,300.0	4,287.2	4,162.2	4,020.2	10.1	22.0	58.87	-209.6	-992.8	912.7	891.4	21.36	42.734		
4,400.0	4,386.5	4,259.2	4,112.8	10.4	22.6	59.25	-213.0	-1,021.1	936.6	914.6	21.96	42.649		
4,500.0	4,485.9	4,356.1	4,205.4	10.7	23.2	59.62	-216.5	-1,049.4	960.5	937.9	22.56	42.566		
4,600.0	4,585.3	4,453.0	4,298.0	11.0	23.8	59.97	-220.0	-1,077.8	984.4	961.2	23.17	42.482		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10I-321 - Wellbore #1 - Plan #2 (6-10-15)												Offset Site Error: 0.0 ft		
Survey Program: 0-MWD												Offset Well Error: 0.0 ft		
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-72.9	0.0	72.9					
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-72.9	0.0	72.9	72.7	0.20	372.604		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-72.9	0.0	72.9	72.2	0.65	112.950		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-72.9	0.0	72.9	71.8	1.09	66.564		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-72.9	0.0	72.9	71.3	1.54	47.186 CC		
500.0	500.0	499.8	499.8	1.0	1.0	-179.33	-73.0	-0.9	73.0	71.0	1.98	36.917 ES		
600.0	600.0	599.5	599.4	1.2	1.2	-177.34	-73.5	-3.4	73.6	71.2	2.41	30.567		
700.0	700.0	699.0	698.9	1.4	1.4	-174.10	-74.3	-7.7	74.7	71.8	2.85	26.229		
800.0	800.0	798.4	798.1	1.7	1.6	-169.76	-75.4	-13.6	76.6	73.3	3.30	23.220		
900.0	900.0	897.6	897.0	1.9	1.9	-164.54	-76.8	-21.2	79.7	76.0	3.77	21.172		
1,000.0	1,000.0	996.5	995.4	2.1	2.1	-158.76	-78.5	-30.5	84.3	80.1	4.25	19.864		
1,100.0	1,100.0	1,095.0	1,093.3	2.3	2.4	-152.79	-80.5	-41.4	90.8	86.0	4.74	19.150		
1,200.0	1,200.0	1,193.1	1,190.5	2.6	2.7	-146.95	-82.8	-53.9	99.2	94.0	5.25	18.915		
1,300.0	1,300.0	1,290.7	1,287.1	2.8	3.0	-141.49	-85.4	-67.9	109.9	104.1	5.76	19.065		
1,400.0	1,400.0	1,387.8	1,382.9	3.0	3.3	-136.58	-88.3	-83.5	122.7	116.4	6.29	19.516		
1,500.0	1,500.0	1,484.3	1,477.9	3.2	3.7	-132.26	-91.4	-100.6	137.7	130.9	6.82	20.195		
1,600.0	1,600.0	1,580.3	1,571.9	3.5	4.1	-128.53	-94.8	-119.1	154.8	147.5	7.36	21.045		
1,700.0	1,700.0	1,675.5	1,665.0	3.7	4.5	-125.32	-98.5	-139.0	174.0	166.1	7.90	22.020		
1,800.0	1,800.0	1,771.1	1,758.1	3.9	4.9	-122.55	-102.5	-160.6	195.0	186.6	8.45	23.079		
1,900.0	1,900.0	1,867.3	1,851.5	4.1	5.4	30.10	-106.6	-183.0	216.5	208.1	8.41	25.741		
2,000.0	2,000.0	1,964.8	1,946.2	4.3	5.8	32.24	-110.8	-205.7	236.9	228.1	8.83	26.831		
2,100.0	2,099.9	2,062.5	2,041.2	4.5	6.3	34.24	-115.0	-228.5	256.1	246.9	9.25	27.693		
2,200.0	2,199.7	2,160.4	2,136.3	4.7	6.8	36.16	-119.2	-251.3	274.3	264.6	9.67	28.356		
2,300.0	2,299.4	2,258.5	2,231.5	4.9	7.3	38.05	-123.5	-274.2	291.4	281.3	10.10	28.845		
2,400.0	2,398.9	2,356.7	2,326.9	5.1	7.8	39.92	-127.7	-297.0	307.4	296.9	10.54	29.178		
2,500.0	2,498.3	2,454.9	2,422.4	5.3	8.3	41.83	-131.9	-319.9	322.8	311.8	10.98	29.390		
2,600.0	2,597.7	2,553.1	2,517.8	5.5	8.8	43.61	-136.1	-342.8	338.4	327.0	11.44	29.573		
2,700.0	2,697.1	2,651.4	2,613.3	5.7	9.3	45.23	-140.4	-365.7	354.3	342.4	11.91	29.735		
2,800.0	2,796.4	2,749.6	2,708.7	6.0	9.8	46.72	-144.6	-388.6	370.5	358.1	12.40	29.878		
2,900.0	2,895.8	2,847.9	2,804.1	6.2	10.3	48.08	-148.8	-411.5	386.8	373.9	12.89	30.001		
3,000.0	2,995.2	2,946.1	2,899.6	6.5	10.8	49.33	-153.0	-434.4	403.4	390.0	13.40	30.106		
3,100.0	3,094.6	3,044.4	2,995.0	6.7	11.3	50.48	-157.3	-457.3	420.2	406.2	13.92	30.193		
3,200.0	3,194.0	3,142.6	3,090.5	7.0	11.8	51.55	-161.5	-480.2	437.1	422.6	14.44	30.266		
3,300.0	3,293.4	3,240.9	3,185.9	7.3	12.3	52.53	-165.7	-503.1	454.1	439.1	14.97	30.326		
3,400.0	3,392.7	3,339.1	3,281.4	7.5	12.8	53.44	-169.9	-526.0	471.3	455.8	15.52	30.373		
3,500.0	3,492.1	3,437.4	3,376.8	7.8	13.3	54.29	-174.2	-548.9	488.5	472.5	16.07	30.411		
3,600.0	3,591.5	3,535.6	3,472.3	8.1	13.8	55.09	-178.4	-571.8	505.9	489.3	16.62	30.439		
3,700.0	3,690.9	3,633.8	3,567.7	8.4	14.3	55.83	-182.6	-594.7	523.4	506.2	17.18	30.460		
3,800.0	3,790.3	3,732.1	3,663.2	8.6	14.8	56.52	-186.8	-617.6	540.9	523.2	17.75	30.475		
3,900.0	3,889.6	3,830.3	3,758.6	8.9	15.3	57.17	-191.1	-640.5	558.5	540.2	18.32	30.484		
4,000.0	3,989.0	3,928.6	3,854.1	9.2	15.8	57.77	-195.3	-663.4	576.2	557.3	18.90	30.488		
4,100.0	4,088.4	4,026.8	3,949.5	9.5	16.3	58.35	-199.5	-686.3	593.9	574.4	19.48	30.488		
4,200.0	4,187.8	4,125.1	4,044.9	9.8	16.8	58.89	-203.7	-709.2	611.7	591.7	20.07	30.485		
4,300.0	4,287.2	4,223.3	4,140.4	10.1	17.3	59.40	-208.0	-732.1	629.6	608.9	20.66	30.478		
4,400.0	4,386.5	4,321.6	4,235.8	10.4	17.8	59.88	-212.2	-755.0	647.4	626.2	21.25	30.470		
4,500.0	4,485.9	4,419.8	4,331.3	10.7	18.3	60.33	-216.4	-777.9	665.4	643.5	21.84	30.459		
4,600.0	4,585.3	4,518.1	4,426.7	11.0	18.8	60.76	-220.7	-800.8	683.3	660.9	22.44	30.447		
4,700.0	4,684.7	4,616.3	4,522.2	11.3	19.4	61.18	-224.9	-823.7	701.3	678.3	23.04	30.434		
4,800.0	4,784.3	4,714.4	4,617.5	11.5	19.9	61.78	-229.1	-846.6	720.2	696.6	23.58	30.540		
4,900.0	4,884.1	4,812.3	4,712.6	11.7	20.4	62.15	-233.3	-869.4	740.7	716.7	24.08	30.760		
5,000.0	4,984.1	4,909.8	4,807.3	11.9	20.9	62.32	-237.5	-892.2	762.9	738.3	24.54	31.089		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10I-321 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,100.0	5,084.1	5,006.9	4,901.7	12.1	21.4	-88.31	-241.7	-914.8	786.0	761.1	24.97	31.481		
5,200.0	5,184.1	5,104.1	4,996.1	12.2	21.9	-88.66	-245.9	-937.4	809.2	783.8	25.39	31.867		
5,300.0	5,284.1	5,201.2	5,090.4	12.4	22.4	-89.00	-250.0	-960.1	832.5	806.7	25.82	32.237		
5,400.0	5,384.1	5,298.4	5,184.8	12.6	22.9	-89.31	-254.2	-982.7	855.8	829.5	26.26	32.594		
5,500.0	5,484.1	5,395.5	5,279.2	12.8	23.4	-89.61	-258.4	-1,005.4	879.0	852.4	26.69	32.936		
5,600.0	5,584.1	5,517.0	5,397.5	13.0	23.9	-89.95	-263.4	-1,032.7	901.6	874.5	27.16	33.199		
5,700.0	5,684.1	5,660.0	5,538.0	13.2	24.4	-90.26	-268.3	-1,058.8	919.9	892.3	27.62	33.308		
5,800.0	5,784.1	5,805.4	5,682.0	13.3	24.8	-90.47	-271.8	-1,078.3	933.3	905.3	28.07	33.248		
5,900.0	5,884.1	5,952.5	5,828.5	13.5	25.0	-90.61	-274.1	-1,090.6	941.8	913.3	28.51	33.034		
6,000.0	5,984.1	6,100.5	5,976.4	13.7	25.2	-90.66	-275.0	-1,095.6	945.1	916.2	28.93	32.666		
6,100.0	6,084.1	6,208.1	6,084.1	13.9	25.3	-90.66	-275.1	-1,095.7	945.2	915.9	29.30	32.257		
6,200.0	6,184.1	6,308.1	6,184.1	14.1	25.5	-90.66	-275.1	-1,095.7	945.2	915.5	29.66	31.867		
6,249.5	6,233.6	6,357.7	6,233.6	14.2	25.5	-90.68	-275.1	-1,095.7	945.2	915.4	29.84	31.680		
6,300.0	6,284.0	6,408.1	6,284.0	14.3	25.6	-90.69	-275.1	-1,095.7	945.2	915.2	30.02	31.490		
6,400.0	6,383.5	6,508.6	6,384.5	14.4	25.7	-91.22	-274.1	-1,095.7	945.3	915.1	30.27	31.234		
6,500.0	6,480.8	6,611.5	6,486.6	14.5	25.8	-91.91	-262.0	-1,095.7	945.7	915.2	30.42	31.090		
6,600.0	6,574.2	6,716.0	6,587.6	14.6	25.8	-92.56	-235.8	-1,095.7	946.1	915.6	30.51	31.013		
6,700.0	6,662.3	6,822.0	6,685.6	14.6	25.9	-93.17	-195.4	-1,095.7	946.6	916.0	30.59	30.944		
6,800.0	6,743.4	6,929.7	6,778.4	14.7	25.9	-93.73	-140.9	-1,095.7	947.1	916.4	30.74	30.812		
6,900.0	6,816.2	7,038.8	6,863.6	14.7	25.9	-94.22	-73.0	-1,095.7	947.7	916.7	31.03	30.538		
7,000.0	6,879.5	7,149.2	6,939.1	14.9	26.0	-94.64	7.4	-1,095.7	948.2	916.7	31.55	30.051		
7,100.0	6,932.1	7,260.6	7,002.8	15.3	26.1	-94.97	98.8	-1,095.7	948.7	916.3	32.38	29.301		
7,200.0	6,973.2	7,373.0	7,052.9	15.9	26.3	-95.20	199.2	-1,095.7	949.0	915.5	33.54	28.292		
7,300.0	7,002.0	7,485.9	7,087.8	16.7	26.6	-95.34	306.5	-1,095.7	949.2	914.2	35.07	27.068		
7,400.0	7,018.1	7,599.0	7,106.6	17.7	27.1	-95.37	417.9	-1,095.7	949.3	912.4	36.93	25.707		
7,500.0	7,021.5	7,707.9	7,109.6	18.8	27.7	-95.33	526.7	-1,095.7	949.2	910.2	39.06	24.303		
7,600.0	7,020.7	7,807.9	7,108.9	20.0	28.4	-95.33	626.7	-1,095.7	949.2	907.8	41.41	22.923		
7,700.0	7,020.0	7,907.9	7,108.1	21.3	29.3	-95.33	726.7	-1,095.7	949.2	905.3	43.97	21.589		
7,800.0	7,019.2	8,007.9	7,107.4	22.7	30.2	-95.33	826.7	-1,095.7	949.2	902.5	46.70	20.326		
7,900.0	7,018.5	8,107.9	7,106.6	24.2	31.3	-95.33	926.7	-1,095.7	949.2	899.7	49.58	19.146		
8,000.0	7,017.7	8,207.9	7,105.9	25.7	32.5	-95.33	1,026.7	-1,095.7	949.2	896.7	52.58	18.054		
8,100.0	7,017.0	8,307.9	7,105.1	27.3	33.7	-95.33	1,126.7	-1,095.7	949.2	893.6	55.68	17.049		
8,200.0	7,016.2	8,407.9	7,104.4	28.9	35.1	-95.33	1,226.7	-1,095.7	949.2	890.4	58.86	16.127		
8,300.0	7,015.5	8,507.9	7,103.6	30.6	36.5	-95.33	1,326.7	-1,095.7	949.2	887.1	62.12	15.281		
8,400.0	7,014.7	8,607.9	7,102.9	32.2	37.9	-95.33	1,426.7	-1,095.7	949.2	883.8	65.44	14.506		
8,500.0	7,014.0	8,707.9	7,102.1	34.0	39.4	-95.33	1,526.7	-1,095.7	949.2	880.4	68.81	13.796		
8,600.0	7,013.2	8,807.9	7,101.4	35.7	40.9	-95.33	1,626.7	-1,095.7	949.2	877.0	72.22	13.143		
8,700.0	7,012.5	8,907.9	7,100.6	37.4	42.5	-95.33	1,726.7	-1,095.7	949.2	873.6	75.68	12.543		
8,800.0	7,011.7	9,007.9	7,099.9	39.2	44.1	-95.33	1,826.7	-1,095.7	949.2	870.1	79.17	11.990		
8,900.0	7,011.0	9,107.9	7,099.1	41.0	45.7	-95.33	1,926.7	-1,095.7	949.2	866.5	82.68	11.480		
9,000.0	7,010.2	9,207.9	7,098.4	42.8	47.3	-95.33	2,026.7	-1,095.7	949.2	863.0	86.23	11.008		
9,100.0	7,009.5	9,307.9	7,097.6	44.6	49.0	-95.33	2,126.7	-1,095.7	949.2	859.4	89.80	10.571		
9,200.0	7,008.7	9,407.9	7,096.9	46.4	50.7	-95.33	2,226.7	-1,095.7	949.2	855.8	93.39	10.165		
9,300.0	7,008.0	9,507.9	7,096.1	48.2	52.4	-95.33	2,326.7	-1,095.7	949.2	852.2	96.99	9.787		
9,400.0	7,007.2	9,607.9	7,095.4	50.0	54.1	-95.33	2,426.7	-1,095.7	949.2	848.6	100.61	9.434		
9,500.0	7,006.5	9,707.9	7,094.6	51.9	55.8	-95.33	2,526.7	-1,095.7	949.2	845.0	104.25	9.105		
9,600.0	7,005.7	9,807.9	7,093.9	53.7	57.5	-95.33	2,626.7	-1,095.7	949.2	841.3	107.90	8.797		
9,700.0	7,005.0	9,907.9	7,093.1	55.5	59.3	-95.33	2,726.7	-1,095.7	949.2	837.7	111.56	8.508		
9,800.0	7,004.2	10,007.9	7,092.4	57.4	61.1	-95.33	2,826.7	-1,095.7	949.2	834.0	115.23	8.237		
9,900.0	7,003.5	10,107.9	7,091.6	59.3	62.8	-95.33	2,926.7	-1,095.7	949.2	830.3	118.92	7.982		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	7,002.7	10,207.9	7,090.9	61.1	64.6	-95.33	3,026.7	-1,095.7	949.2	826.6	122.61	7.742	
10,100.0	7,002.0	10,307.9	7,090.1	63.0	66.4	-95.33	3,126.7	-1,095.7	949.2	822.9	126.31	7.515	
10,200.0	7,001.2	10,407.9	7,089.4	64.8	68.2	-95.33	3,226.7	-1,095.7	949.2	819.2	130.01	7.301	
10,300.0	7,000.5	10,507.9	7,088.6	66.7	70.0	-95.33	3,326.7	-1,095.7	949.2	815.5	133.72	7.098	
10,400.0	6,999.7	10,607.9	7,087.9	68.6	71.8	-95.33	3,426.7	-1,095.7	949.2	811.8	137.44	6.906	
10,500.0	6,999.0	10,707.9	7,087.1	70.5	73.6	-95.33	3,526.6	-1,095.7	949.2	808.1	141.17	6.724	
10,600.0	6,998.2	10,807.9	7,086.4	72.3	75.4	-95.33	3,626.6	-1,095.7	949.2	804.3	144.90	6.551	
10,700.0	6,997.5	10,907.9	7,085.6	74.2	77.3	-95.33	3,726.6	-1,095.7	949.2	800.6	148.63	6.386	
10,800.0	6,996.7	11,007.9	7,084.9	76.1	79.1	-95.33	3,826.6	-1,095.7	949.2	796.9	152.37	6.230	
10,900.0	6,996.0	11,107.9	7,084.1	78.0	80.9	-95.33	3,926.6	-1,095.7	949.2	793.1	156.11	6.080	
11,000.0	6,995.2	11,207.9	7,083.4	79.9	82.7	-95.33	4,026.6	-1,095.7	949.2	789.4	159.86	5.938	
11,100.0	6,994.5	11,307.9	7,082.6	81.7	84.6	-95.33	4,126.6	-1,095.7	949.2	785.6	163.61	5.802	
11,200.0	6,993.7	11,407.9	7,081.9	83.6	86.4	-95.33	4,226.6	-1,095.7	949.2	781.9	167.37	5.672	
11,300.0	6,993.0	11,507.9	7,081.1	85.5	88.3	-95.33	4,326.6	-1,095.7	949.2	778.1	171.12	5.547	
11,400.0	6,992.2	11,607.9	7,080.4	87.4	90.1	-95.33	4,426.6	-1,095.7	949.2	774.3	174.88	5.428	
11,429.5	6,992.0	11,637.4	7,080.2	88.0	90.7	-95.33	4,456.2	-1,095.7	949.2	773.2	175.99	5.394 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-58.3	0.0	58.3				
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-58.3	0.0	58.3	58.1	0.20	298.083	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-58.3	0.0	58.3	57.6	0.65	90.360	
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-58.3	0.0	58.3	57.2	1.09	53.251	
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-58.3	0.0	58.3	56.7	1.54	37.749	
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-58.3	0.0	58.3	56.3	1.99	29.237	
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-58.3	0.0	58.3	55.8	2.44	23.858	
700.0	700.0	700.0	700.0	1.4	1.4	180.00	-58.3	0.0	58.3	55.4	2.89	20.150	
800.0	800.0	800.0	800.0	1.7	1.7	180.00	-58.3	0.0	58.3	54.9	3.34	17.440 CC	
900.0	900.0	899.7	899.7	1.9	1.9	-179.19	-58.5	-0.8	58.6	54.8	3.77	15.517 ES	
1,000.0	1,000.0	999.3	999.3	2.1	2.1	-176.81	-59.3	-3.3	59.4	55.2	4.19	14.168	
1,100.0	1,100.0	1,098.8	1,098.7	2.3	2.3	-173.00	-60.6	-7.4	61.1	56.4	4.62	13.211	
1,200.0	1,200.0	1,198.2	1,197.8	2.6	2.5	-168.05	-62.4	-13.2	63.8	58.7	5.06	12.607	
1,300.0	1,300.0	1,297.2	1,296.6	2.8	2.7	-162.34	-64.7	-20.6	68.0	62.5	5.51	12.331	
1,400.0	1,400.0	1,396.0	1,395.0	3.0	3.0	-156.32	-67.5	-29.6	73.8	67.9	5.97	12.362	
1,500.0	1,500.0	1,494.5	1,492.8	3.2	3.2	-150.43	-70.7	-40.1	81.7	75.2	6.45	12.669	
1,600.0	1,600.0	1,592.5	1,590.0	3.5	3.5	-144.95	-74.5	-52.3	91.6	84.6	6.93	13.215	
1,700.0	1,700.0	1,690.1	1,686.5	3.7	3.8	-140.08	-78.7	-65.9	103.6	96.1	7.42	13.959	
1,800.0	1,800.0	1,787.6	1,782.8	3.9	4.1	-135.84	-83.4	-81.0	117.6	109.7	7.92	14.850	
1,900.0	1,900.0	1,886.3	1,880.1	4.1	4.4	18.00	-88.3	-96.7	131.6	123.5	8.19	16.075	
2,000.0	2,000.0	1,985.2	1,977.6	4.3	4.8	21.07	-93.2	-112.4	144.5	135.9	8.59	16.824	
2,100.0	2,099.9	2,084.3	2,075.3	4.5	5.1	23.87	-98.1	-128.2	156.1	147.1	8.99	17.365	
2,200.0	2,199.7	2,183.4	2,173.0	4.7	5.5	26.55	-103.0	-143.9	166.5	157.1	9.40	17.723	
2,300.0	2,299.4	2,282.7	2,270.9	4.9	5.8	29.18	-107.9	-159.7	175.8	165.9	9.81	17.924	
2,400.0	2,398.9	2,382.0	2,368.8	5.1	6.2	31.82	-112.8	-175.5	183.8	173.6	10.22	17.988	
2,500.0	2,498.3	2,481.3	2,466.8	5.3	6.6	34.49	-117.7	-191.3	191.1	180.5	10.65	17.950	
2,600.0	2,597.7	2,580.7	2,564.8	5.5	6.9	37.00	-122.6	-207.1	198.7	187.6	11.09	17.919	
2,700.0	2,697.1	2,680.0	2,662.7	5.7	7.3	39.32	-127.5	-222.9	206.7	195.1	11.54	17.902	
2,800.0	2,796.4	2,779.4	2,760.7	6.0	7.7	41.47	-132.4	-238.6	214.9	202.9	12.01	17.896	
2,900.0	2,895.8	2,878.7	2,858.6	6.2	8.0	43.46	-137.3	-254.4	223.4	211.0	12.49	17.895	
3,000.0	2,995.2	2,978.1	2,956.6	6.5	8.4	45.30	-142.2	-270.2	232.2	219.3	12.98	17.898	
3,100.0	3,094.6	3,077.4	3,054.6	6.7	8.8	47.00	-147.1	-286.0	241.2	227.8	13.48	17.902	
3,200.0	3,194.0	3,176.8	3,152.5	7.0	9.2	48.58	-152.0	-301.8	250.4	236.4	13.99	17.907	
3,300.0	3,293.4	3,276.1	3,250.5	7.3	9.6	50.05	-156.9	-317.6	259.8	245.3	14.50	17.912	
3,400.0	3,392.7	3,375.5	3,348.4	7.5	9.9	51.42	-161.8	-333.4	269.3	254.3	15.03	17.916	
3,500.0	3,492.1	3,474.8	3,446.4	7.8	10.3	52.69	-166.7	-349.2	279.0	263.4	15.57	17.920	
3,600.0	3,591.5	3,574.1	3,544.4	8.1	10.7	53.88	-171.6	-365.0	288.8	272.7	16.12	17.923	
3,700.0	3,690.9	3,673.5	3,642.3	8.4	11.1	54.99	-176.5	-380.8	298.7	282.1	16.67	17.925	
3,800.0	3,790.3	3,772.8	3,740.3	8.6	11.5	56.02	-181.4	-396.5	308.8	291.5	17.22	17.926	
3,900.0	3,889.6	3,872.2	3,838.2	8.9	11.9	56.99	-186.3	-412.3	318.9	301.1	17.79	17.927	
4,000.0	3,989.0	3,971.5	3,936.2	9.2	12.2	57.91	-191.2	-428.1	329.1	310.7	18.36	17.927	
4,100.0	4,088.4	4,070.9	4,034.2	9.5	12.6	58.76	-196.1	-443.9	339.4	320.4	18.93	17.927	
4,200.0	4,187.8	4,170.2	4,132.1	9.8	13.0	59.57	-201.0	-459.7	349.7	330.2	19.51	17.926	
4,300.0	4,287.2	4,269.6	4,230.1	10.1	13.4	60.33	-205.9	-475.5	360.1	340.0	20.09	17.925	
4,400.0	4,386.5	4,368.9	4,328.0	10.4	13.8	61.05	-210.8	-491.3	370.6	349.9	20.68	17.924	
4,500.0	4,485.9	4,468.3	4,426.0	10.7	14.2	61.73	-215.7	-507.1	381.1	359.9	21.27	17.923	
4,600.0	4,585.3	4,567.6	4,524.0	11.0	14.6	62.37	-220.6	-522.9	391.7	369.9	21.86	17.921	
4,700.0	4,684.7	4,666.9	4,621.9	11.3	15.0	62.98	-225.5	-538.7	402.3	379.9	22.45	17.920	
4,800.0	4,784.3	4,766.3	4,719.8	11.5	15.3	63.53	-230.4	-554.4	413.8	390.9	22.98	18.011	
4,900.0	4,884.1	4,865.4	4,817.6	11.7	15.7	63.67	-235.2	-570.2	426.9	403.4	23.45	18.203	
5,000.0	4,984.1	4,964.2	4,915.1	11.9	16.1	63.44	-240.1	-585.9	441.5	417.6	23.87	18.492	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,084.1	5,062.9	5,012.3	12.1	16.5	-87.56	-245.0	-601.6	457.1	432.8	24.27	18.835		
5,200.0	5,184.1	5,161.5	5,109.5	12.2	16.9	-88.24	-249.9	-617.3	472.8	448.2	24.66	19.171		
5,300.0	5,284.1	5,260.1	5,206.8	12.4	17.3	-88.87	-254.7	-632.9	488.6	463.6	25.06	19.496		
5,400.0	5,384.1	5,358.7	5,304.0	12.6	17.7	-89.47	-259.6	-648.6	504.5	479.0	25.46	19.811		
5,500.0	5,484.1	5,457.3	5,401.2	12.8	18.0	-90.03	-264.4	-664.3	520.3	494.5	25.87	20.115		
5,600.0	5,584.1	5,555.9	5,498.5	13.0	18.4	-90.55	-269.3	-679.9	536.3	510.0	26.28	20.409		
5,700.0	5,684.1	5,671.2	5,612.4	13.2	18.8	-91.09	-274.6	-696.9	551.2	524.5	26.68	20.660		
5,800.0	5,784.1	5,793.4	5,733.8	13.3	19.1	-91.49	-278.7	-710.2	562.1	535.1	27.07	20.765		
5,900.0	5,884.1	5,916.5	5,856.6	13.5	19.3	-91.73	-281.3	-718.7	569.0	541.6	27.47	20.718		
6,000.0	5,984.1	6,040.2	5,980.3	13.7	19.5	-91.82	-282.4	-722.0	571.8	543.9	27.86	20.521		
6,100.0	6,084.1	6,144.0	6,084.1	13.9	19.6	-91.82	-282.4	-722.1	571.8	543.6	28.24	20.249		
6,200.0	6,184.1	6,244.0	6,184.1	14.1	19.8	-91.82	-282.4	-722.1	571.8	543.2	28.61	19.986		
6,300.0	6,284.0	6,344.8	6,284.8	14.3	19.9	-91.81	-281.8	-722.1	571.8	542.8	28.98	19.731		
6,400.0	6,383.5	6,447.1	6,386.5	14.4	20.0	-91.74	-270.9	-722.1	571.8	542.5	29.27	19.538		
6,500.0	6,480.8	6,549.4	6,485.7	14.5	20.1	-91.64	-246.5	-722.1	571.8	542.3	29.45	19.414		
6,600.0	6,574.2	6,651.5	6,580.7	14.6	20.1	-91.51	-209.2	-722.1	571.7	542.2	29.58	19.331		
6,700.0	6,662.3	6,753.4	6,669.6	14.6	20.1	-91.36	-159.7	-722.1	571.7	542.0	29.70	19.249		
6,800.0	6,743.4	6,855.1	6,751.1	14.7	20.1	-91.18	-98.9	-722.1	571.7	541.8	29.90	19.120		
6,900.0	6,816.2	6,956.5	6,823.5	14.7	20.2	-90.98	-28.1	-722.1	571.6	541.4	30.25	18.895		
7,000.0	6,879.5	7,057.6	6,885.8	14.9	20.2	-90.77	51.5	-722.1	571.6	540.7	30.84	18.531		
7,100.0	6,932.1	7,158.5	6,936.9	15.3	20.4	-90.54	138.4	-722.1	571.6	539.8	31.74	18.007		
7,200.0	6,973.2	7,259.0	6,976.0	15.9	20.6	-90.30	230.9	-722.1	571.5	538.6	32.98	17.331		
7,300.0	7,002.0	7,359.2	7,002.6	16.7	21.1	-90.06	327.4	-722.1	571.5	537.0	34.57	16.535		
7,326.1	7,007.5	7,385.3	7,007.5	17.0	21.2	-90.00	353.1	-722.1	571.5	536.5	35.05	16.305		
7,400.0	7,018.1	7,459.1	7,016.3	17.7	21.7	-89.82	426.3	-722.1	571.5	535.1	36.48	15.669		
7,500.0	7,021.5	7,558.9	7,017.9	18.8	22.5	-89.64	526.0	-722.1	571.5	532.9	38.66	14.783		
7,600.0	7,020.7	7,658.9	7,016.9	20.0	23.5	-89.62	626.0	-722.1	571.5	530.5	41.08	13.913		
7,700.0	7,020.0	7,758.9	7,015.9	21.3	24.7	-89.59	726.0	-722.1	571.6	527.9	43.70	13.080		
7,800.0	7,019.2	7,858.9	7,014.9	22.7	25.9	-89.56	826.0	-722.1	571.6	525.1	46.49	12.295		
7,900.0	7,018.5	7,958.9	7,013.9	24.2	27.2	-89.54	926.0	-722.1	571.6	522.1	49.41	11.567		
8,000.0	7,017.7	8,058.9	7,012.9	25.7	28.7	-89.51	1,026.0	-722.1	571.6	519.1	52.46	10.895		
8,100.0	7,017.0	8,158.9	7,011.9	27.3	30.1	-89.49	1,126.0	-722.1	571.6	516.0	55.61	10.279		
8,200.0	7,016.2	8,258.9	7,010.8	28.9	31.6	-89.46	1,226.0	-722.1	571.6	512.7	58.83	9.715		
8,300.0	7,015.5	8,358.9	7,009.8	30.6	33.2	-89.43	1,326.0	-722.1	571.6	509.4	62.13	9.199		
8,400.0	7,014.7	8,458.9	7,008.8	32.2	34.8	-89.41	1,426.0	-722.1	571.6	506.1	65.49	8.728		
8,500.0	7,014.0	8,558.9	7,007.8	34.0	36.4	-89.38	1,526.0	-722.1	571.6	502.7	68.89	8.296		
8,600.0	7,013.2	8,658.9	7,006.8	35.7	38.1	-89.35	1,626.0	-722.1	571.6	499.2	72.35	7.901		
8,700.0	7,012.5	8,758.9	7,005.8	37.4	39.8	-89.33	1,726.0	-722.1	571.6	495.7	75.83	7.537		
8,800.0	7,011.7	8,858.9	7,004.8	39.2	41.5	-89.30	1,826.0	-722.1	571.6	492.2	79.35	7.203		
8,900.0	7,011.0	8,958.9	7,003.8	41.0	43.2	-89.28	1,926.0	-722.1	571.6	488.7	82.90	6.895		
9,000.0	7,010.2	9,058.9	7,002.7	42.8	44.9	-89.25	2,026.0	-722.1	571.6	485.1	86.47	6.610		
9,100.0	7,009.5	9,158.9	7,001.7	44.6	46.7	-89.22	2,125.9	-722.1	571.6	481.5	90.07	6.346		
9,200.0	7,008.7	9,258.9	7,000.7	46.4	48.4	-89.20	2,225.9	-722.1	571.6	477.9	93.68	6.101		
9,300.0	7,008.0	9,358.9	6,999.7	48.2	50.2	-89.17	2,325.9	-722.1	571.6	474.3	97.32	5.874		
9,400.0	7,007.2	9,458.9	6,998.7	50.0	52.0	-89.14	2,425.9	-722.1	571.6	470.6	100.96	5.661		
9,500.0	7,006.5	9,558.9	6,997.7	51.9	53.8	-89.12	2,525.9	-722.1	571.6	467.0	104.62	5.463		
9,600.0	7,005.7	9,658.9	6,996.7	53.7	55.6	-89.09	2,625.9	-722.1	571.6	463.3	108.30	5.278		
9,700.0	7,005.0	9,758.9	6,995.7	55.5	57.4	-89.07	2,725.9	-722.1	571.6	459.6	111.98	5.105		
9,800.0	7,004.2	9,858.9	6,994.6	57.4	59.2	-89.04	2,825.9	-722.1	571.6	455.9	115.67	4.942		
9,900.0	7,003.5	9,958.9	6,993.6	59.3	61.0	-89.01	2,925.9	-722.1	571.6	452.2	119.38	4.788		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.0	7,002.7	10,058.9	6,992.6	61.1	62.9	-88.99	3,025.9	-722.1	571.6	448.5	123.09	4.644		
10,100.0	7,002.0	10,158.9	6,991.6	63.0	64.7	-88.96	3,125.9	-722.1	571.6	444.8	126.81	4.508		
10,200.0	7,001.2	10,258.9	6,990.6	64.8	66.5	-88.93	3,225.9	-722.1	571.6	441.1	130.53	4.379		
10,300.0	7,000.5	10,358.9	6,989.6	66.7	68.4	-88.91	3,325.9	-722.1	571.6	437.4	134.27	4.258		
10,400.0	6,999.7	10,458.9	6,988.6	68.6	70.2	-88.88	3,425.9	-722.1	571.6	433.6	138.00	4.142		
10,500.0	6,999.0	10,558.9	6,987.6	70.5	72.1	-88.86	3,525.9	-722.1	571.7	429.9	141.75	4.033		
10,600.0	6,998.2	10,658.9	6,986.5	72.3	73.9	-88.83	3,625.9	-722.1	571.7	426.2	145.49	3.929		
10,700.0	6,997.5	10,758.9	6,985.5	74.2	75.8	-88.80	3,725.9	-722.1	571.7	422.4	149.25	3.830		
10,800.0	6,996.7	10,858.9	6,984.5	76.1	77.6	-88.78	3,825.9	-722.1	571.7	418.7	153.00	3.736		
10,900.0	6,996.0	10,958.9	6,983.5	78.0	79.5	-88.75	3,925.9	-722.1	571.7	414.9	156.76	3.647		
11,000.0	6,995.2	11,058.9	6,982.5	79.9	81.4	-88.72	4,025.8	-722.1	571.7	411.2	160.53	3.561		
11,100.0	6,994.5	11,158.9	6,981.5	81.7	83.2	-88.70	4,125.8	-722.1	571.7	407.4	164.29	3.480		
11,200.0	6,993.7	11,258.9	6,980.5	83.6	85.1	-88.67	4,225.8	-722.1	571.7	403.6	168.07	3.402		
11,300.0	6,993.0	11,358.9	6,979.5	85.5	87.0	-88.65	4,325.8	-722.1	571.7	399.9	171.84	3.327		
11,400.0	6,992.2	11,458.9	6,978.4	87.4	88.9	-88.62	4,425.8	-722.1	571.7	396.1	175.61	3.255		
11,429.5	6,992.0	11,488.4	6,978.1	88.0	89.4	-88.61	4,455.3	-722.1	571.7	395.0	176.73	3.235 SF		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-43.7	0.0	43.7					
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-43.7	0.0	43.7	43.5	0.20	223.604		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-43.7	0.0	43.7	43.1	0.65	67.783		
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-43.7	0.0	43.7	42.6	1.09	39.946		
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-43.7	0.0	43.7	42.2	1.54	28.317		
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-43.7	0.0	43.7	41.7	1.99	21.932		
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-43.7	0.0	43.7	41.3	2.44	17.897		
700.0	700.0	700.0	700.0	1.4	1.4	-180.00	-43.7	0.0	43.7	40.8	2.89	15.115		
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-43.7	0.0	43.7	40.4	3.34	13.082		
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-43.7	0.0	43.7	39.9	3.79	11.531		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-43.7	0.0	43.7	39.5	4.24	10.309 CC		
1,100.0	1,100.0	1,099.6	1,099.6	2.3	2.3	-179.02	-44.1	-0.8	44.2	39.5	4.67	9.456 ES		
1,200.0	1,200.0	1,199.2	1,199.1	2.6	2.5	-176.18	-45.4	-3.0	45.5	40.4	5.08	8.954		
1,300.0	1,300.0	1,298.6	1,298.5	2.8	2.7	-171.84	-47.5	-6.8	48.0	42.5	5.50	8.720		
1,400.0	1,400.0	1,397.9	1,397.6	3.0	2.9	-166.52	-50.4	-12.1	51.9	46.0	5.94	8.743		
1,500.0	1,500.0	1,496.9	1,496.3	3.2	3.1	-160.82	-54.2	-18.8	57.5	51.1	6.38	9.011		
1,600.0	1,600.0	1,595.6	1,594.6	3.5	3.4	-155.25	-58.7	-27.1	64.9	58.0	6.83	9.504		
1,700.0	1,700.0	1,694.5	1,692.9	3.7	3.6	-150.23	-64.0	-36.6	74.1	66.8	7.28	10.168		
1,800.0	1,800.0	1,793.9	1,791.6	3.9	3.9	-146.24	-69.4	-46.4	83.9	76.2	7.75	10.830		
1,900.0	1,900.0	1,893.3	1,890.4	4.1	4.1	7.28	-74.8	-56.2	93.2	85.1	8.10	11.511		
2,000.0	2,000.0	1,992.9	1,989.3	4.3	4.4	10.06	-80.3	-66.0	101.0	92.6	8.49	11.905		
2,100.0	2,099.9	2,092.6	2,088.4	4.5	4.7	12.64	-85.7	-75.8	107.4	98.5	8.88	12.091		
2,200.0	2,199.7	2,192.4	2,187.5	4.7	5.0	15.15	-91.1	-85.7	112.2	102.9	9.28	12.097		
2,300.0	2,299.4	2,292.2	2,286.7	4.9	5.2	17.71	-96.6	-95.5	115.6	105.9	9.68	11.947		
2,400.0	2,398.9	2,392.0	2,385.9	5.1	5.5	20.41	-102.0	-105.3	117.6	107.5	10.08	11.664		
2,500.0	2,498.3	2,491.8	2,485.1	5.3	5.8	23.29	-107.5	-115.2	118.5	108.0	10.49	11.290		
2,600.0	2,597.7	2,591.6	2,584.3	5.5	6.1	26.15	-112.9	-125.0	119.6	108.7	10.92	10.949		
2,700.0	2,697.1	2,691.5	2,683.4	5.7	6.4	28.94	-118.4	-134.8	121.0	109.6	11.36	10.650		
2,800.0	2,796.4	2,791.3	2,782.6	6.0	6.7	31.67	-123.8	-144.7	122.7	110.9	11.81	10.388		
2,900.0	2,895.8	2,891.1	2,881.8	6.2	7.0	34.31	-129.2	-154.5	124.6	112.4	12.27	10.157		
3,000.0	2,995.2	2,990.9	2,981.0	6.5	7.3	36.87	-134.7	-164.3	126.8	114.1	12.74	9.954		
3,100.0	3,094.6	3,090.7	3,080.2	6.7	7.6	39.34	-140.1	-174.2	129.3	116.1	13.23	9.774		
3,200.0	3,194.0	3,190.6	3,179.4	7.0	7.9	41.71	-145.6	-184.0	132.0	118.3	13.73	9.616		
3,300.0	3,293.4	3,290.4	3,278.5	7.3	8.2	43.98	-151.0	-193.8	134.9	120.7	14.24	9.475		
3,400.0	3,392.7	3,390.2	3,377.7	7.5	8.5	46.16	-156.5	-203.7	138.0	123.3	14.76	9.351		
3,500.0	3,492.1	3,490.0	3,476.9	7.8	8.8	48.23	-161.9	-213.5	141.3	126.0	15.29	9.242		
3,600.0	3,591.5	3,589.8	3,576.1	8.1	9.1	50.21	-167.4	-223.3	144.8	129.0	15.83	9.145		
3,700.0	3,690.9	3,689.6	3,675.3	8.4	9.4	52.10	-172.8	-233.2	148.4	132.0	16.38	9.059		
3,800.0	3,790.3	3,789.5	3,774.5	8.6	9.7	53.89	-178.2	-243.0	152.2	135.3	16.95	8.983		
3,900.0	3,889.6	3,889.3	3,873.6	8.9	10.0	55.59	-183.7	-252.8	156.2	138.6	17.51	8.917		
4,000.0	3,989.0	3,989.1	3,972.8	9.2	10.3	57.21	-189.1	-262.7	160.2	142.1	18.09	8.858		
4,100.0	4,088.4	4,088.9	4,072.0	9.5	10.7	58.75	-194.6	-272.5	164.4	145.7	18.67	8.807		
4,200.0	4,187.8	4,188.7	4,171.2	9.8	11.0	60.21	-200.0	-282.3	168.7	149.5	19.26	8.762		
4,300.0	4,287.2	4,288.5	4,270.4	10.1	11.3	61.60	-205.5	-292.2	173.1	153.3	19.85	8.723		
4,400.0	4,386.5	4,388.4	4,369.5	10.4	11.6	62.91	-210.9	-302.0	177.6	157.2	20.44	8.689		
4,500.0	4,485.9	4,488.2	4,468.7	10.7	11.9	64.17	-216.3	-311.8	182.2	161.2	21.04	8.659		
4,600.0	4,585.3	4,588.0	4,567.9	11.0	12.2	65.36	-221.8	-321.7	186.9	165.2	21.65	8.634		
4,700.0	4,684.7	4,687.8	4,667.1	11.3	12.5	66.49	-227.2	-331.5	191.6	169.4	22.25	8.613		
4,800.0	4,784.3	4,787.6	4,766.3	11.5	12.8	67.17	-232.7	-341.3	197.2	174.4	22.77	8.658		
4,900.0	4,884.1	4,887.4	4,865.4	11.7	13.1	66.94	-238.1	-351.2	204.1	180.8	23.23	8.786		
5,000.0	4,984.1	4,986.9	4,964.3	11.9	13.4	65.89	-243.5	-361.0	212.4	188.8	23.61	8.995		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)										Offset Site Error:		0.0 ft	
Survey Program: 0-MWD												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,100.0	5,084.1	5,086.3	5,063.1	12.1	13.7	-86.04	-249.0	-370.8	221.7	197.8	23.96	9.253			
5,200.0	5,184.1	5,185.7	5,161.8	12.2	14.1	-87.56	-254.4	-380.6	231.3	207.0	24.32	9.511			
5,300.0	5,284.1	5,285.0	5,260.5	12.4	14.4	-88.95	-259.8	-390.4	241.0	216.3	24.68	9.766			
5,400.0	5,384.1	5,384.4	5,359.2	12.6	14.7	-90.23	-265.2	-400.1	250.8	225.8	25.04	10.016			
5,500.0	5,484.1	5,483.8	5,458.0	12.8	15.0	-91.42	-270.6	-409.9	260.8	235.4	25.41	10.262			
5,600.0	5,584.1	5,583.1	5,556.7	13.0	15.3	-92.52	-276.1	-419.7	270.8	245.0	25.79	10.502			
5,700.0	5,684.1	5,690.1	5,663.1	13.2	15.6	-93.51	-281.3	-429.1	279.9	253.7	26.16	10.700			
5,800.0	5,784.1	5,799.7	5,772.5	13.3	15.8	-94.11	-284.6	-435.2	285.6	259.1	26.52	10.773			
5,900.0	5,884.1	5,909.7	5,882.4	13.5	16.0	-94.34	-286.0	-437.7	287.9	261.1	26.88	10.710			
6,000.0	5,984.1	6,011.3	5,984.1	13.7	16.1	-94.35	-286.0	-437.7	288.0	260.7	27.27	10.562			
6,100.0	6,084.1	6,111.3	6,084.1	13.9	16.3	-94.35	-286.0	-437.7	288.0	260.3	27.64	10.419			
6,200.0	6,184.1	6,211.3	6,184.1	14.1	16.4	-94.35	-286.0	-437.7	288.0	260.0	28.02	10.279			
6,249.4	6,233.4	6,260.6	6,233.4	14.2	16.5	-94.43	-286.0	-437.7	288.0	259.8	28.20	10.214			
6,300.0	6,284.0	6,311.3	6,284.0	14.3	16.6	-94.43	-286.0	-437.7	288.0	259.6	28.39	10.146			
6,400.0	6,383.5	6,412.2	6,385.0	14.4	16.8	-96.20	-285.2	-437.7	288.9	260.3	28.60	10.099			
6,500.0	6,480.8	6,516.6	6,488.6	14.5	16.9	-98.46	-273.2	-437.7	290.4	261.7	28.70	10.117			
6,600.0	6,574.2	6,622.8	6,591.3	14.6	17.0	-100.56	-246.6	-437.7	292.2	263.4	28.72	10.171			
6,700.0	6,662.3	6,730.6	6,690.8	14.6	17.0	-102.46	-205.3	-437.7	294.2	265.4	28.72	10.240			
6,800.0	6,743.4	6,840.0	6,784.8	14.7	17.0	-104.14	-149.6	-437.7	296.2	267.4	28.77	10.296			
6,900.0	6,816.2	6,950.8	6,870.9	14.7	17.0	-105.54	-80.0	-437.7	298.1	269.2	28.93	10.303			
7,000.0	6,879.5	7,062.8	6,946.8	14.9	17.0	-106.66	2.3	-437.7	299.8	270.5	29.32	10.225			
7,100.0	6,932.1	7,175.8	7,010.4	15.3	17.1	-107.47	95.5	-437.7	301.1	271.1	29.99	10.039			
7,200.0	6,973.2	7,289.4	7,059.7	15.9	17.4	-107.95	197.8	-437.7	301.9	270.8	31.03	9.707			
7,300.0	7,002.0	7,403.4	7,093.5	16.7	18.1	-108.10	306.5	-437.7	302.1	269.6	32.47	9.325			
7,400.0	7,018.1	7,517.3	7,110.7	17.7	19.1	-107.92	419.0	-437.7	301.8	267.5	34.30	8.799			
7,500.0	7,021.5	7,625.1	7,112.6	18.8	20.3	-107.60	526.8	-437.7	301.3	264.9	36.41	8.274			
7,600.0	7,020.7	7,725.1	7,111.8	20.0	21.5	-107.59	626.8	-437.7	301.3	262.5	38.73	7.779			
7,700.0	7,020.0	7,825.1	7,111.0	21.3	22.8	-107.58	726.8	-437.7	301.2	260.0	41.24	7.304			
7,800.0	7,019.2	7,925.1	7,110.2	22.7	24.2	-107.58	826.8	-437.7	301.2	257.3	43.92	6.858			
7,900.0	7,018.5	8,025.1	7,109.4	24.2	25.6	-107.57	926.8	-437.7	301.2	254.5	46.74	6.444			
8,000.0	7,017.7	8,125.1	7,108.6	25.7	27.1	-107.56	1,026.8	-437.7	301.2	251.5	49.68	6.063			
8,100.0	7,017.0	8,225.1	7,107.8	27.3	28.7	-107.55	1,126.8	-437.7	301.2	248.5	52.71	5.714			
8,200.0	7,016.2	8,325.1	7,107.0	28.9	30.3	-107.54	1,226.8	-437.7	301.2	245.3	55.82	5.395			
8,300.0	7,015.5	8,425.1	7,106.2	30.6	31.9	-107.53	1,326.8	-437.7	301.1	242.2	58.99	5.105			
8,400.0	7,014.7	8,525.1	7,105.4	32.2	33.6	-107.52	1,426.8	-437.7	301.1	238.9	62.23	4.839			
8,500.0	7,014.0	8,625.1	7,104.6	34.0	35.3	-107.51	1,526.8	-437.7	301.1	235.6	65.51	4.596			
8,600.0	7,013.2	8,725.1	7,103.8	35.7	37.0	-107.50	1,626.8	-437.7	301.1	232.3	68.83	4.374			
8,700.0	7,012.5	8,825.1	7,103.0	37.4	38.7	-107.49	1,726.8	-437.7	301.1	228.9	72.19	4.170			
8,800.0	7,011.7	8,925.1	7,102.2	39.2	40.4	-107.48	1,826.8	-437.7	301.1	225.5	75.59	3.983			
8,900.0	7,011.0	9,025.1	7,101.4	41.0	42.2	-107.47	1,926.8	-437.7	301.0	222.0	79.00	3.811			
9,000.0	7,010.2	9,125.1	7,100.6	42.8	44.0	-107.46	2,026.8	-437.7	301.0	218.6	82.45	3.651			
9,100.0	7,009.5	9,225.1	7,099.8	44.6	45.8	-107.45	2,126.8	-437.7	301.0	215.1	85.91	3.504			
9,200.0	7,008.7	9,325.1	7,099.0	46.4	47.6	-107.44	2,226.7	-437.7	301.0	211.6	89.39	3.367			
9,300.0	7,008.0	9,425.1	7,098.1	48.2	49.4	-107.43	2,326.7	-437.7	301.0	208.1	92.89	3.240			
9,400.0	7,007.2	9,525.1	7,097.3	50.0	51.2	-107.42	2,426.7	-437.7	301.0	204.6	96.40	3.122			
9,500.0	7,006.5	9,625.1	7,096.5	51.9	53.0	-107.41	2,526.7	-437.7	301.0	201.0	99.93	3.012			
9,600.0	7,005.7	9,725.1	7,095.7	53.7	54.8	-107.40	2,626.7	-437.7	300.9	197.5	103.47	2.908			
9,700.0	7,005.0	9,825.1	7,094.9	55.5	56.7	-107.39	2,726.7	-437.7	300.9	193.9	107.02	2.812			
9,800.0	7,004.2	9,925.1	7,094.1	57.4	58.5	-107.39	2,826.7	-437.7	300.9	190.3	110.58	2.721			
9,900.0	7,003.5	10,025.1	7,093.3	59.3	60.3	-107.38	2,926.7	-437.7	300.9	186.7	114.15	2.636			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,000.0	7,002.7	10,125.1	7,092.5	61.1	62.2	-107.37	3,026.7	-437.7	300.9	183.2	117.73	2.556	
10,100.0	7,002.0	10,225.1	7,091.7	63.0	64.0	-107.36	3,126.7	-437.7	300.9	179.6	121.31	2.480	
10,200.0	7,001.2	10,325.1	7,090.9	64.8	65.9	-107.35	3,226.7	-437.7	300.8	175.9	124.90	2.409	
10,300.0	7,000.5	10,425.1	7,090.1	66.7	67.7	-107.34	3,326.7	-437.7	300.8	172.3	128.50	2.341	
10,400.0	6,999.7	10,525.1	7,089.3	68.6	69.6	-107.33	3,426.7	-437.7	300.8	168.7	132.10	2.277	
10,500.0	6,999.0	10,625.1	7,088.5	70.5	71.5	-107.32	3,526.7	-437.7	300.8	165.1	135.71	2.216	
10,600.0	6,998.2	10,725.1	7,087.7	72.3	73.3	-107.31	3,626.7	-437.7	300.8	161.5	139.32	2.159	
10,700.0	6,997.5	10,825.1	7,086.9	74.2	75.2	-107.30	3,726.7	-437.7	300.8	157.8	142.94	2.104	
10,800.0	6,996.7	10,925.1	7,086.1	76.1	77.1	-107.29	3,826.7	-437.7	300.8	154.2	146.56	2.052	
10,900.0	6,996.0	11,025.1	7,085.3	78.0	79.0	-107.28	3,926.7	-437.7	300.7	150.5	150.19	2.002	
11,000.0	6,995.2	11,125.1	7,084.5	79.9	80.8	-107.27	4,026.7	-437.7	300.7	146.9	153.82	1.955	
11,100.0	6,994.5	11,225.1	7,083.7	81.7	82.7	-107.26	4,126.7	-437.7	300.7	143.3	157.45	1.910	
11,200.0	6,993.7	11,325.1	7,082.9	83.6	84.6	-107.25	4,226.7	-437.7	300.7	139.6	161.09	1.867	
11,300.0	6,993.0	11,425.1	7,082.1	85.5	86.5	-107.24	4,326.7	-437.7	300.7	135.9	164.73	1.825	
11,400.0	6,992.2	11,525.1	7,081.3	87.4	88.3	-107.23	4,426.7	-437.7	300.7	132.4	168.29	1.787	
11,429.5	6,992.0	11,554.7	7,081.1	88.0	88.7	-107.23	4,456.2	-437.7	300.7	131.4	169.26	1.776 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	1.0	1.0	0.0	0.0	-180.00	-14.6	0.0	14.6					
100.0	100.0	101.0	101.0	0.1	0.1	-180.00	-14.6	0.0	14.6	14.4	0.20	73.674		
200.0	200.0	201.0	201.0	0.3	0.3	-180.00	-14.6	0.0	14.6	13.9	0.65	22.511		
300.0	300.0	301.0	301.0	0.5	0.5	-180.00	-14.6	0.0	14.6	13.5	1.10	13.285		
400.0	400.0	401.0	401.0	0.8	0.8	-180.00	-14.6	0.0	14.6	13.0	1.55	9.423		
500.0	500.0	501.0	501.0	1.0	1.0	-180.00	-14.6	0.0	14.6	12.6	2.00	7.301		
600.0	600.0	601.0	601.0	1.2	1.2	-180.00	-14.6	0.0	14.6	12.1	2.45	5.959		
700.0	700.0	701.0	701.0	1.4	1.4	-180.00	-14.6	0.0	14.6	11.7	2.89	5.034		
800.0	800.0	801.0	801.0	1.7	1.7	-180.00	-14.6	0.0	14.6	11.2	3.34	4.357		
900.0	900.0	901.0	901.0	1.9	1.9	-180.00	-14.6	0.0	14.6	10.8	3.79	3.841		
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-180.00	-14.6	0.0	14.6	10.3	4.24	3.434		
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	-180.00	-14.6	0.0	14.6	9.9	4.69	3.105		
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	-180.00	-14.6	0.0	14.6	9.4	5.14	2.834		
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	-180.00	-14.6	0.0	14.6	9.0	5.59	2.606		
1,366.3	1,366.3	1,367.3	1,367.3	2.9	2.9	-180.00	-14.6	0.0	14.6	8.7	5.89	2.474 CC		
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	180.00	-14.6	0.0	14.6	8.5	6.04	2.412 ES		
1,500.0	1,500.0	1,500.8	1,500.8	3.2	3.2	177.41	-15.1	0.7	15.2	8.7	6.47	2.343 SF		
1,600.0	1,600.0	1,600.6	1,600.6	3.5	3.4	170.82	-16.8	2.7	17.0	10.1	6.87	2.476		
1,700.0	1,700.0	1,700.2	1,700.1	3.7	3.6	162.74	-19.6	6.1	20.5	13.2	7.29	2.814		
1,800.0	1,800.0	1,799.7	1,799.4	3.9	3.8	155.30	-23.4	10.8	25.8	18.1	7.70	3.353		
1,900.0	1,900.0	1,898.9	1,898.3	4.1	4.0	-61.57	-28.3	16.8	32.6	24.5	8.10	4.029		
2,000.0	2,000.0	1,997.9	1,996.8	4.3	4.2	-69.00	-34.3	24.1	40.8	32.3	8.47	4.816		
2,100.0	2,099.9	2,096.4	2,094.7	4.5	4.4	-75.94	-41.4	32.7	50.7	41.8	8.85	5.728		
2,200.0	2,199.7	2,195.4	2,192.9	4.7	4.7	-82.13	-49.3	42.2	62.1	52.8	9.24	6.719		
2,300.0	2,299.4	2,294.4	2,291.2	4.9	5.0	-87.68	-57.2	51.9	74.0	64.3	9.64	7.670		
2,400.0	2,398.9	2,393.4	2,389.3	5.1	5.2	-92.79	-65.1	61.5	86.4	76.4	10.06	8.589		
2,500.0	2,498.3	2,492.2	2,487.4	5.3	5.5	-97.44	-72.9	71.1	99.6	89.1	10.50	9.485		
2,600.0	2,597.7	2,591.1	2,585.4	5.5	5.8	-101.09	-80.8	80.7	113.3	102.4	10.96	10.342		
2,700.0	2,697.1	2,689.9	2,683.5	5.7	6.0	-103.95	-88.7	90.3	127.4	116.0	11.42	11.151		
2,800.0	2,796.4	2,788.7	2,781.5	6.0	6.3	-106.24	-96.6	99.9	141.7	129.8	11.90	11.905		
2,900.0	2,895.8	2,887.5	2,879.5	6.2	6.6	-108.10	-104.5	109.5	156.2	143.8	12.39	12.606		
3,000.0	2,995.2	2,986.4	2,977.6	6.5	6.9	-109.65	-112.4	119.1	170.8	157.9	12.88	13.257		
3,100.0	3,094.6	3,085.2	3,075.6	6.7	7.2	-110.95	-120.2	128.7	185.5	172.2	13.39	13.859		
3,200.0	3,194.0	3,184.0	3,173.7	7.0	7.5	-112.06	-128.1	138.3	200.3	186.5	13.90	14.417		
3,300.0	3,293.4	3,282.8	3,271.7	7.3	7.8	-113.02	-136.0	147.9	215.2	200.8	14.41	14.935		
3,400.0	3,392.7	3,381.7	3,369.8	7.5	8.1	-113.86	-143.9	157.5	230.1	215.2	14.93	15.415		
3,500.0	3,492.1	3,480.5	3,467.8	7.8	8.4	-114.59	-151.8	167.1	245.1	229.7	15.45	15.861		
3,600.0	3,591.5	3,579.3	3,565.9	8.1	8.7	-115.24	-159.7	176.7	260.1	244.1	15.98	16.276		
3,700.0	3,690.9	3,678.2	3,663.9	8.4	9.0	-115.82	-167.6	186.3	275.1	258.6	16.51	16.662		
3,800.0	3,790.3	3,777.0	3,761.9	8.6	9.4	-116.33	-175.4	196.0	290.2	273.1	17.05	17.023		
3,900.0	3,889.6	3,875.8	3,860.0	8.9	9.7	-116.80	-183.3	205.6	305.3	287.7	17.58	17.360		
4,000.0	3,989.0	3,974.6	3,958.0	9.2	10.0	-117.22	-191.2	215.2	320.4	302.2	18.12	17.676		
4,100.0	4,088.4	4,073.5	4,056.1	9.5	10.3	-117.61	-199.1	224.8	335.5	316.8	18.67	17.971		
4,200.0	4,187.8	4,172.3	4,154.1	9.8	10.6	-117.96	-207.0	234.4	350.6	331.4	19.21	18.249		
4,300.0	4,287.2	4,271.1	4,252.2	10.1	10.9	-118.28	-214.9	244.0	365.7	346.0	19.76	18.510		
4,400.0	4,386.5	4,370.0	4,350.2	10.4	11.2	-118.58	-222.7	253.6	380.9	360.6	20.31	18.756		
4,500.0	4,485.9	4,468.8	4,448.3	10.7	11.6	-118.85	-230.6	263.2	396.0	375.2	20.86	18.988		
4,600.0	4,585.3	4,567.6	4,546.3	11.0	11.9	-119.11	-238.5	272.8	411.2	389.8	21.41	19.207		
4,700.0	4,684.7	4,666.4	4,644.3	11.3	12.2	-119.35	-246.4	282.4	426.3	404.4	21.96	19.413		
4,800.0	4,784.3	4,765.4	4,742.5	11.5	12.5	-119.61	-254.3	292.0	440.6	418.1	22.48	19.599		
4,900.0	4,884.1	4,864.6	4,840.9	11.7	12.8	-119.45	-262.2	301.6	453.2	430.2	22.97	19.726		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,000.0	4,984.1	4,963.8	4,939.3	11.9	13.1	-118.91	-270.1	311.3	464.1	440.7	23.44	19.804	
5,100.0	5,084.1	5,063.0	5,037.8	12.1	13.5	91.68	-278.0	320.9	474.1	450.2	23.87	19.856	
5,200.0	5,184.1	5,162.2	5,136.2	12.2	13.8	92.59	-286.0	330.6	484.1	459.8	24.31	19.916	
5,300.0	5,284.1	5,276.9	5,250.2	12.4	14.1	93.45	-293.7	340.1	492.7	468.0	24.72	19.935	
5,400.0	5,384.1	5,393.0	5,366.1	12.6	14.3	93.97	-298.7	346.1	498.2	473.1	25.11	19.838	
5,500.0	5,484.1	5,509.6	5,482.6	12.8	14.5	94.18	-300.6	348.5	500.3	474.8	25.50	19.620	
5,600.0	5,584.1	5,612.1	5,585.1	13.0	14.7	94.18	-300.7	348.5	500.4	474.5	25.88	19.338	
5,700.0	5,684.1	5,712.1	5,685.1	13.2	14.8	94.18	-300.7	348.5	500.4	474.1	26.24	19.067	
5,800.0	5,784.1	5,812.1	5,785.1	13.3	15.0	94.18	-300.7	348.5	500.4	473.8	26.61	18.801	
5,900.0	5,884.1	5,912.1	5,885.1	13.5	15.2	94.18	-300.7	348.5	500.4	473.4	26.99	18.542	
6,000.0	5,984.1	6,012.1	5,985.1	13.7	15.3	94.18	-300.7	348.5	500.4	473.0	27.36	18.287	
6,100.0	6,084.1	6,112.1	6,085.1	13.9	15.5	94.18	-300.7	348.5	500.4	472.6	27.74	18.039	
6,200.0	6,184.1	6,212.1	6,185.1	14.1	15.7	94.18	-300.7	348.5	500.4	472.3	28.12	17.795	
6,249.3	6,233.3	6,261.4	6,234.3	14.2	15.8	94.23	-300.7	348.5	500.4	472.1	28.30	17.680	
6,300.0	6,284.0	6,312.1	6,285.0	14.3	15.9	94.23	-300.7	348.5	500.4	471.9	28.50	17.561	
6,400.0	6,383.5	6,414.1	6,387.1	14.4	16.0	95.21	-299.5	348.5	501.1	472.3	28.79	17.405	
6,500.0	6,480.8	6,520.7	6,492.7	14.5	16.2	96.39	-286.0	348.5	502.2	473.2	28.97	17.334	
6,600.0	6,574.2	6,628.9	6,597.0	14.6	16.2	97.47	-257.5	348.5	503.4	474.3	29.05	17.326	
6,700.0	6,662.3	6,738.6	6,697.5	14.6	16.2	98.41	-213.9	348.5	504.5	475.4	29.09	17.342	
6,800.0	6,743.4	6,849.6	6,791.9	14.7	16.2	99.20	-155.5	348.5	505.6	476.4	29.17	17.334	
6,900.0	6,816.2	6,961.8	6,877.6	14.7	16.2	99.82	-83.4	348.5	506.5	477.1	29.38	17.237	
7,000.0	6,879.5	7,074.8	6,952.3	14.9	16.2	100.24	1.3	348.5	507.1	477.3	29.84	16.995	
7,100.0	6,932.1	7,188.4	7,014.0	15.3	16.1	100.48	96.5	348.5	507.5	476.9	30.63	16.568	
7,200.0	6,973.2	7,302.1	7,061.1	15.9	16.5	100.51	200.0	348.5	507.6	475.7	31.81	15.954	
7,300.0	7,002.0	7,415.8	7,092.2	16.7	17.4	100.33	309.2	348.5	507.3	473.9	33.42	15.180	
7,400.0	7,018.1	7,529.0	7,106.7	17.7	18.5	99.96	421.4	348.5	506.7	471.3	35.40	14.314	
7,500.0	7,021.5	7,634.4	7,107.4	18.8	19.7	99.66	526.7	348.5	506.2	468.6	37.61	13.459	
7,600.0	7,020.7	7,734.4	7,106.7	20.0	20.9	99.66	626.7	348.5	506.2	466.2	39.99	12.659	
7,700.0	7,020.0	7,834.4	7,105.9	21.3	22.2	99.66	726.7	348.5	506.2	463.6	42.57	11.891	
7,800.0	7,019.2	7,934.4	7,105.2	22.7	23.6	99.66	826.7	348.5	506.2	460.9	45.33	11.168	
7,900.0	7,018.5	8,034.4	7,104.4	24.2	25.1	99.66	926.7	348.5	506.2	458.0	48.22	10.498	
8,000.0	7,017.7	8,134.4	7,103.7	25.7	26.6	99.66	1,026.7	348.5	506.2	455.0	51.23	9.880	
8,100.0	7,017.0	8,234.4	7,102.9	27.3	28.2	99.66	1,126.7	348.5	506.2	451.9	54.34	9.315	
8,200.0	7,016.2	8,334.4	7,102.2	28.9	29.8	99.66	1,226.7	348.5	506.2	448.7	57.54	8.798	
8,300.0	7,015.5	8,434.4	7,101.4	30.6	31.4	99.66	1,326.7	348.5	506.2	445.4	60.80	8.326	
8,400.0	7,014.7	8,534.4	7,100.6	32.2	33.1	99.66	1,426.7	348.5	506.2	442.1	64.12	7.895	
8,500.0	7,014.0	8,634.4	7,099.9	34.0	34.8	99.66	1,526.7	348.5	506.2	438.7	67.49	7.501	
8,600.0	7,013.2	8,734.4	7,099.1	35.7	36.5	99.66	1,626.7	348.5	506.2	435.3	70.90	7.140	
8,700.0	7,012.5	8,834.4	7,098.4	37.4	38.2	99.66	1,726.7	348.5	506.2	431.9	74.35	6.809	
8,800.0	7,011.7	8,934.4	7,097.6	39.2	40.0	99.66	1,826.7	348.5	506.2	428.4	77.83	6.504	
8,900.0	7,011.0	9,034.4	7,096.9	41.0	41.7	99.66	1,926.7	348.5	506.2	424.9	81.34	6.224	
9,000.0	7,010.2	9,134.4	7,096.1	42.8	43.5	99.66	2,026.7	348.5	506.2	421.4	84.87	5.964	
9,100.0	7,009.5	9,234.4	7,095.4	44.6	45.3	99.66	2,126.7	348.5	506.2	417.8	88.43	5.725	
9,200.0	7,008.7	9,334.4	7,094.6	46.4	47.1	99.66	2,226.7	348.5	506.2	414.2	92.00	5.502	
9,300.0	7,008.0	9,434.4	7,093.9	48.2	48.9	99.66	2,326.7	348.5	506.2	410.6	95.59	5.296	
9,400.0	7,007.2	9,534.4	7,093.1	50.0	50.7	99.66	2,426.7	348.5	506.2	407.0	99.20	5.103	
9,500.0	7,006.5	9,634.4	7,092.4	51.9	52.5	99.66	2,526.7	348.5	506.2	403.4	102.82	4.924	
9,600.0	7,005.7	9,734.4	7,091.6	53.7	54.4	99.66	2,626.7	348.5	506.2	399.8	106.45	4.756	
9,700.0	7,005.0	9,834.4	7,090.9	55.5	56.2	99.66	2,726.6	348.5	506.2	396.1	110.09	4.598	
9,800.0	7,004.2	9,934.4	7,090.1	57.4	58.0	99.66	2,826.6	348.5	506.2	392.5	113.74	4.451	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,900.0	7,003.5	10,034.4	7,089.4	59.3	59.9	99.66	2,926.6	348.5	506.2	388.8	117.40	4.312	
10,000.0	7,002.7	10,134.4	7,088.6	61.1	61.7	99.66	3,026.6	348.5	506.2	385.2	121.07	4.181	
10,100.0	7,002.0	10,234.4	7,087.9	63.0	63.6	99.66	3,126.6	348.5	506.2	381.5	124.75	4.058	
10,200.0	7,001.2	10,334.4	7,087.1	64.8	65.5	99.66	3,226.6	348.5	506.2	377.8	128.43	3.942	
10,300.0	7,000.5	10,434.4	7,086.4	66.7	67.3	99.66	3,326.6	348.5	506.2	374.1	132.12	3.832	
10,400.0	6,999.7	10,534.4	7,085.6	68.6	69.2	99.66	3,426.6	348.5	506.2	370.4	135.81	3.727	
10,500.0	6,999.0	10,634.4	7,084.9	70.5	71.0	99.66	3,526.6	348.5	506.2	366.7	139.51	3.628	
10,600.0	6,998.2	10,734.4	7,084.1	72.3	72.9	99.66	3,626.6	348.5	506.2	363.0	143.22	3.535	
10,700.0	6,997.5	10,834.4	7,083.4	74.2	74.8	99.66	3,726.6	348.5	506.2	359.3	146.93	3.445	
10,800.0	6,996.7	10,934.4	7,082.6	76.1	76.7	99.66	3,826.6	348.5	506.2	355.6	150.64	3.360	
10,900.0	6,996.0	11,034.4	7,081.9	78.0	78.5	99.66	3,926.6	348.5	506.2	351.9	154.36	3.280	
11,000.0	6,995.2	11,134.4	7,081.1	79.9	80.4	99.66	4,026.6	348.5	506.2	348.1	158.08	3.202	
11,100.0	6,994.5	11,234.4	7,080.4	81.7	82.3	99.66	4,126.6	348.5	506.2	344.4	161.80	3.129	
11,200.0	6,993.7	11,334.4	7,079.6	83.6	84.2	99.66	4,226.6	348.5	506.2	340.7	165.53	3.058	
11,300.0	6,993.0	11,434.4	7,078.9	85.5	86.1	99.66	4,326.6	348.5	506.2	337.0	169.26	2.991	
11,400.0	6,992.2	11,534.4	7,078.1	87.4	88.0	99.66	4,426.6	348.5	506.2	333.2	172.99	2.926	
11,407.8	6,992.2	11,542.2	7,078.1	87.6	88.1	99.66	4,434.4	348.5	506.2	332.9	173.28	2.921	
11,429.5	6,992.0	11,552.3	7,078.0	88.0	88.3	99.66	4,444.6	348.5	506.4	332.5	173.88	2.912	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	1.0	1.0	0.0	0.0	0.00	14.6	0.0	14.6					
100.0	100.0	101.0	101.0	0.1	0.1	0.00	14.6	0.0	14.6	14.4	0.20	73.674		
200.0	200.0	201.0	201.0	0.3	0.3	0.00	14.6	0.0	14.6	13.9	0.65	22.511		
300.0	300.0	301.0	301.0	0.5	0.5	0.00	14.6	0.0	14.6	13.5	1.10	13.285		
400.0	400.0	401.0	401.0	0.8	0.8	0.00	14.6	0.0	14.6	13.0	1.55	9.423		
500.0	500.0	501.0	501.0	1.0	1.0	0.00	14.6	0.0	14.6	12.6	2.00	7.301		
600.0	600.0	601.0	601.0	1.2	1.2	0.00	14.6	0.0	14.6	12.1	2.45	5.959		
700.0	700.0	701.0	701.0	1.4	1.4	0.00	14.6	0.0	14.6	11.7	2.89	5.034		
800.0	800.0	801.0	801.0	1.7	1.7	0.00	14.6	0.0	14.6	11.2	3.34	4.357		
900.0	900.0	901.0	901.0	1.9	1.9	0.00	14.6	0.0	14.6	10.8	3.79	3.841		
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	0.00	14.6	0.0	14.6	10.3	4.24	3.434		
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.3	0.00	14.6	0.0	14.6	9.9	4.69	3.105		
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	0.00	14.6	0.0	14.6	9.4	5.14	2.834		
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	0.00	14.6	0.0	14.6	9.0	5.59	2.606		
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	0.00	14.6	0.0	14.6	8.5	6.04	2.412		
1,500.0	1,500.0	1,501.0	1,501.0	3.2	3.2	0.00	14.6	0.0	14.6	8.1	6.49	2.245		
1,600.0	1,600.0	1,601.0	1,601.0	3.5	3.5	0.00	14.6	0.0	14.6	7.6	6.94	2.100		
1,700.0	1,700.0	1,701.0	1,701.0	3.7	3.7	0.00	14.6	0.0	14.6	7.2	7.39	1.972		
1,800.0	1,800.0	1,801.0	1,801.0	3.9	3.9	0.00	14.6	0.0	14.6	6.7	7.84	1.859 CC, ES		
1,900.0	1,900.0	1,901.0	1,901.0	4.1	4.1	151.93	14.6	0.0	15.3	7.1	8.26	1.856 SF		
2,000.0	2,000.0	2,001.0	2,001.0	4.3	4.4	155.92	14.6	0.0	17.7	9.0	8.66	2.043		
2,100.0	2,099.9	2,100.9	2,100.9	4.5	4.6	160.60	14.6	0.0	21.7	12.7	9.06	2.401		
2,200.0	2,199.7	2,200.7	2,200.7	4.7	4.8	164.80	14.6	0.0	27.6	18.1	9.46	2.916		
2,300.0	2,299.4	2,300.8	2,300.8	4.9	5.0	169.08	13.7	0.3	34.5	24.7	9.83	3.512		
2,400.0	2,398.9	2,401.0	2,400.9	5.1	5.2	173.89	11.3	1.3	42.1	31.9	10.18	4.135		
2,500.0	2,498.3	2,501.1	2,501.0	5.3	5.4	178.79	7.2	2.9	50.1	39.6	10.54	4.753		
2,600.0	2,597.7	2,601.3	2,601.0	5.5	5.5	-176.27	1.5	5.1	57.5	46.6	10.92	5.264		
2,700.0	2,697.1	2,701.5	2,700.9	5.7	5.7	-171.15	-5.8	8.0	64.3	53.0	11.31	5.684		
2,800.0	2,796.4	2,801.7	2,800.5	6.0	5.9	-165.77	-14.8	11.6	70.8	59.1	11.72	6.039		
2,900.0	2,895.8	2,901.4	2,899.7	6.2	6.1	-160.42	-24.9	15.6	77.3	65.2	12.15	6.366		
3,000.0	2,995.2	3,000.9	2,998.6	6.5	6.4	-155.90	-35.1	19.6	84.4	71.8	12.59	6.704		
3,100.0	3,094.6	3,100.4	3,097.5	6.7	6.6	-152.09	-45.3	23.6	92.0	78.9	13.05	7.046		
3,200.0	3,194.0	3,200.0	3,196.5	7.0	6.8	-148.87	-55.5	27.6	99.8	86.3	13.52	7.382		
3,300.0	3,293.4	3,299.5	3,295.4	7.3	7.1	-146.13	-65.7	31.6	108.0	94.0	14.01	7.709		
3,400.0	3,392.7	3,399.1	3,394.4	7.5	7.3	-143.78	-75.9	35.6	116.3	101.8	14.50	8.022		
3,500.0	3,492.1	3,498.6	3,493.3	7.8	7.5	-141.74	-86.1	39.6	124.9	109.9	15.00	8.322		
3,600.0	3,591.5	3,598.2	3,592.2	8.1	7.8	-139.97	-96.2	43.6	133.5	118.0	15.51	8.607		
3,700.0	3,690.9	3,697.7	3,691.2	8.4	8.0	-138.41	-106.4	47.6	142.3	126.3	16.03	8.877		
3,800.0	3,790.3	3,797.3	3,790.1	8.6	8.3	-137.03	-116.6	51.7	151.2	134.6	16.55	9.132		
3,900.0	3,889.6	3,896.8	3,889.1	8.9	8.6	-135.81	-126.8	55.7	160.1	143.0	17.08	9.373		
4,000.0	3,989.0	3,996.3	3,988.0	9.2	8.8	-134.72	-137.0	59.7	169.1	151.5	17.61	9.600		
4,100.0	4,088.4	4,095.9	4,086.9	9.5	9.1	-133.73	-147.2	63.7	178.2	160.0	18.15	9.815		
4,200.0	4,187.8	4,195.4	4,185.9	9.8	9.4	-132.85	-157.4	67.7	187.3	168.6	18.69	10.018		
4,300.0	4,287.2	4,295.0	4,284.8	10.1	9.6	-132.04	-167.6	71.7	196.4	177.2	19.24	10.210		
4,400.0	4,386.5	4,394.5	4,383.8	10.4	9.9	-131.31	-177.8	75.7	205.6	185.8	19.79	10.391		
4,500.0	4,485.9	4,494.1	4,482.7	10.7	10.2	-130.64	-187.9	79.7	214.8	194.5	20.34	10.563		
4,600.0	4,585.3	4,593.6	4,581.6	11.0	10.5	-130.02	-198.1	83.7	224.1	203.2	20.89	10.725		
4,700.0	4,684.7	4,693.2	4,680.6	11.3	10.8	-129.46	-208.3	87.8	233.3	211.9	21.45	10.879		
4,800.0	4,784.3	4,792.8	4,779.6	11.5	11.0	-128.72	-218.5	91.8	241.5	219.5	21.98	10.986		
4,900.0	4,884.1	4,892.4	4,878.6	11.7	11.3	-127.37	-228.7	95.8	247.5	225.0	22.49	11.004		
5,000.0	4,984.1	4,991.9	4,977.5	11.9	11.6	-125.43	-238.9	99.8	251.7	228.7	22.99	10.947		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,100.0	5,084.1	5,091.3	5,076.3	12.1	11.9	86.60	-249.1	103.8	254.9	231.5	23.48	10.856			
5,200.0	5,184.1	5,190.7	5,175.1	12.2	12.2	88.90	-259.2	107.8	258.6	234.6	23.97	10.790			
5,300.0	5,284.1	5,290.1	5,273.9	12.4	12.5	91.14	-269.4	111.8	262.6	238.2	24.44	10.747			
5,400.0	5,384.1	5,389.5	5,372.7	12.6	12.8	93.31	-279.6	115.8	267.1	242.2	24.91	10.724			
5,500.0	5,484.1	5,492.8	5,475.5	12.8	13.0	95.21	-288.8	119.4	271.3	245.9	25.35	10.702			
5,600.0	5,584.1	5,597.1	5,579.7	13.0	13.3	96.39	-294.7	121.7	274.0	248.3	25.75	10.642			
5,700.0	5,684.1	5,701.9	5,684.3	13.2	13.5	96.84	-297.0	122.7	275.2	249.0	26.14	10.527			
5,800.0	5,784.1	5,802.6	5,785.1	13.3	13.6	96.85	-297.0	122.7	275.2	248.7	26.52	10.378			
5,900.0	5,884.1	5,902.6	5,885.1	13.5	13.8	96.85	-297.0	122.7	275.2	248.3	26.89	10.234			
6,000.0	5,984.1	6,002.6	5,985.1	13.7	14.0	96.85	-297.0	122.7	275.2	247.9	27.27	10.093			
6,100.0	6,084.1	6,102.6	6,085.1	13.9	14.2	96.85	-297.0	122.7	275.2	247.5	27.64	9.955			
6,200.0	6,184.1	6,202.6	6,185.1	14.1	14.4	96.85	-297.0	122.7	275.2	247.2	28.02	9.820			
6,249.3	6,233.4	6,251.9	6,234.4	14.2	14.5	96.94	-297.0	122.7	275.2	247.0	28.21	9.757			
6,300.0	6,284.0	6,302.6	6,285.0	14.3	14.6	96.94	-297.0	122.7	275.2	246.8	28.40	9.691			
6,400.0	6,383.5	6,402.0	6,384.5	14.4	14.7	98.87	-297.0	122.7	276.6	247.9	28.71	9.634			
6,500.0	6,480.8	6,502.4	6,484.9	14.5	14.9	103.04	-296.1	122.7	280.9	252.0	28.90	9.721			
6,600.0	6,574.2	6,610.4	6,592.0	14.6	15.1	107.64	-283.4	122.7	287.5	258.6	28.90	9.948			
6,700.0	6,662.3	6,722.6	6,700.3	14.6	15.1	111.84	-254.3	122.7	295.4	266.7	28.71	10.290			
6,800.0	6,743.4	6,839.1	6,806.9	14.7	15.1	115.54	-207.6	122.7	304.0	275.6	28.37	10.715			
6,900.0	6,816.2	6,960.0	6,908.7	14.7	15.2	118.70	-142.7	122.7	312.6	284.6	27.99	11.167			
7,000.0	6,879.5	7,084.9	7,001.8	14.9	15.2	121.26	-59.6	122.7	320.5	292.8	27.72	11.563			
7,100.0	6,932.1	7,213.4	7,082.1	15.3	15.5	123.19	40.5	122.7	327.0	299.3	27.72	11.798			
7,200.0	6,973.2	7,344.7	7,145.7	15.9	16.0	124.47	155.2	122.7	331.6	303.4	28.17	11.773			
7,300.0	7,002.0	7,477.8	7,189.2	16.7	16.9	125.09	280.8	122.7	333.9	304.7	29.21	11.432			
7,400.0	7,018.1	7,611.4	7,210.3	17.7	18.1	125.04	412.5	122.7	333.7	302.8	30.89	10.804			
7,488.2	7,022.6	7,712.2	7,212.4	18.6	19.1	124.65	513.4	122.7	332.1	299.5	32.67	10.165			
7,500.0	7,021.5	7,724.0	7,212.5	18.8	19.3	124.81	525.2	122.7	332.8	299.9	32.86	10.129			
7,600.0	7,020.7	7,824.0	7,213.0	20.0	20.5	124.99	625.2	122.7	333.5	298.7	34.82	9.576			
7,700.0	7,020.0	7,924.0	7,213.4	21.3	21.7	125.16	725.2	122.7	334.2	297.2	36.96	9.042			
7,800.0	7,019.2	8,024.0	7,213.9	22.7	23.1	125.33	825.2	122.7	334.9	295.7	39.24	8.535			
7,900.0	7,018.5	8,124.0	7,214.4	24.2	24.6	125.50	925.1	122.7	335.6	294.0	41.63	8.062			
8,000.0	7,017.7	8,224.0	7,214.9	25.7	26.1	125.67	1,025.1	122.7	336.3	292.2	44.11	7.624			
8,100.0	7,017.0	8,324.0	7,215.3	27.3	27.6	125.84	1,125.1	122.7	337.0	290.4	46.67	7.221			
8,200.0	7,016.2	8,424.0	7,215.8	28.9	29.3	126.01	1,225.1	122.7	337.8	288.5	49.29	6.852			
8,300.0	7,015.5	8,524.0	7,216.3	30.6	30.9	126.17	1,325.1	122.7	338.5	286.5	51.96	6.514			
8,400.0	7,014.7	8,624.0	7,216.7	32.2	32.6	126.34	1,425.1	122.7	339.2	284.5	54.68	6.204			
8,500.0	7,014.0	8,724.0	7,217.2	34.0	34.3	126.50	1,525.1	122.7	339.9	282.5	57.42	5.919			
8,600.0	7,013.2	8,824.0	7,217.7	35.7	36.0	126.67	1,625.1	122.7	340.6	280.4	60.20	5.659			
8,700.0	7,012.5	8,924.0	7,218.2	37.4	37.7	126.83	1,725.1	122.7	341.4	278.4	63.00	5.419			
8,800.0	7,011.7	9,023.9	7,218.6	39.2	39.5	127.00	1,825.1	122.7	342.1	276.3	65.81	5.199			
8,900.0	7,011.0	9,123.9	7,219.1	41.0	41.2	127.16	1,925.1	122.7	342.8	274.2	68.64	4.995			
9,000.0	7,010.2	9,223.9	7,219.6	42.8	43.0	127.32	2,025.0	122.7	343.6	272.1	71.48	4.807			
9,100.0	7,009.5	9,323.9	7,220.0	44.6	44.8	127.49	2,125.0	122.7	344.3	270.0	74.33	4.633			
9,200.0	7,008.7	9,423.9	7,220.5	46.4	46.6	127.65	2,225.0	122.7	345.1	267.9	77.18	4.471			
9,300.0	7,008.0	9,523.9	7,221.0	48.2	48.4	127.81	2,325.0	122.7	345.8	265.8	80.04	4.321			
9,400.0	7,007.2	9,623.9	7,221.4	50.0	50.3	127.97	2,425.0	122.7	346.6	263.7	82.90	4.180			
9,500.0	7,006.5	9,723.9	7,221.9	51.9	52.1	128.12	2,525.0	122.7	347.3	261.6	85.77	4.050			
9,600.0	7,005.7	9,823.9	7,222.4	53.7	53.9	128.28	2,625.0	122.7	348.1	259.5	88.63	3.927			
9,700.0	7,005.0	9,923.9	7,222.9	55.5	55.8	128.44	2,725.0	122.7	348.8	257.3	91.49	3.813			
9,800.0	7,004.2	10,023.9	7,223.3	57.4	57.6	128.60	2,825.0	122.7	349.6	255.2	94.36	3.705			

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
9,900.0	7,003.5	10,123.9	7,223.8	59.3	59.5	128.75	2,925.0	122.7	350.4	253.2	97.21	3.604	
10,000.0	7,002.7	10,223.9	7,224.3	61.1	61.3	128.91	3,025.0	122.7	351.1	251.1	100.07	3.509	
10,100.0	7,002.0	10,323.9	7,224.7	63.0	63.2	129.06	3,125.0	122.7	351.9	249.0	102.92	3.419	
10,200.0	7,001.2	10,423.8	7,225.2	64.8	65.0	129.22	3,224.9	122.7	352.7	246.9	105.77	3.334	
10,300.0	7,000.5	10,523.8	7,225.7	66.7	66.9	129.37	3,324.9	122.7	353.4	244.8	108.61	3.254	
10,400.0	6,999.7	10,623.8	7,226.2	68.6	68.8	129.52	3,424.9	122.7	354.2	242.8	111.45	3.178	
10,500.0	6,999.0	10,723.8	7,226.6	70.5	70.6	129.68	3,524.9	122.7	355.0	240.7	114.28	3.106	
10,600.0	6,998.2	10,823.8	7,227.1	72.3	72.5	129.83	3,624.9	122.7	355.8	238.7	117.11	3.038	
10,700.0	6,997.5	10,923.8	7,227.6	74.2	74.4	129.98	3,724.9	122.7	356.6	236.6	119.93	2.973	
10,800.0	6,996.7	11,023.8	7,228.0	76.1	76.3	130.13	3,824.9	122.7	357.4	234.6	122.74	2.911	
10,900.0	6,996.0	11,123.8	7,228.5	78.0	78.1	130.28	3,924.9	122.7	358.1	232.6	125.55	2.853	
11,000.0	6,995.2	11,223.8	7,229.0	79.9	80.0	130.43	4,024.9	122.7	358.9	230.6	128.35	2.796	
11,100.0	6,994.5	11,323.8	7,229.5	81.7	81.9	130.57	4,124.9	122.7	359.7	228.6	131.15	2.743	
11,200.0	6,993.7	11,423.8	7,229.9	83.6	83.8	130.72	4,224.9	122.7	360.5	226.6	133.93	2.692	
11,300.0	6,993.0	11,523.8	7,230.4	85.5	85.7	130.87	4,324.9	122.7	361.3	224.6	136.71	2.643	
11,400.0	6,992.2	11,623.8	7,230.9	87.4	87.6	131.02	4,424.8	122.7	362.1	222.6	139.48	2.596	
11,429.5	6,992.0	11,650.8	7,231.0	88.0	88.1	131.05	4,451.8	122.7	362.4	222.1	140.27	2.583	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10Q-241 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	1.0	1.0	0.0	0.0	-180.00	-29.1	0.0	29.1					
100.0	100.0	101.0	101.0	0.1	0.1	-180.00	-29.1	0.0	29.1	28.9	0.20	147.348		
200.0	200.0	201.0	201.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.65	45.023		
300.0	300.0	301.0	301.0	0.5	0.5	-180.00	-29.1	0.0	29.1	28.0	1.10	26.571		
400.0	400.0	401.0	401.0	0.8	0.8	-180.00	-29.1	0.0	29.1	27.6	1.55	18.847		
500.0	500.0	501.0	501.0	1.0	1.0	-180.00	-29.1	0.0	29.1	27.1	2.00	14.602		
600.0	600.0	601.0	601.0	1.2	1.2	-180.00	-29.1	0.0	29.1	26.7	2.45	11.918		
700.0	700.0	701.0	701.0	1.4	1.4	-180.00	-29.1	0.0	29.1	26.2	2.89	10.067		
766.3	766.3	767.3	767.3	1.6	1.6	-180.00	-29.1	0.0	29.1	26.0	3.19	9.127 CC		
800.0	800.0	801.0	801.0	1.7	1.7	180.00	-29.1	0.0	29.1	25.8	3.34	8.715		
900.0	900.0	900.8	900.8	1.9	1.9	178.39	-29.5	0.8	29.5	25.7	3.77	7.807 ES		
1,000.0	1,000.0	1,000.6	1,000.5	2.1	2.1	173.84	-30.4	3.3	30.6	26.4	4.19	7.291		
1,100.0	1,100.0	1,100.2	1,100.0	2.3	2.3	167.04	-31.9	7.3	32.8	28.2	4.62	7.099		
1,200.0	1,200.0	1,199.6	1,199.3	2.6	2.5	159.10	-34.1	13.0	36.5	31.5	5.05	7.238		
1,300.0	1,300.0	1,298.8	1,298.2	2.8	2.7	151.17	-36.9	20.3	42.2	36.7	5.48	7.693		
1,400.0	1,400.0	1,397.7	1,396.7	3.0	3.0	144.09	-40.2	29.1	49.8	43.9	5.92	8.424		
1,500.0	1,500.0	1,496.3	1,494.6	3.2	3.2	138.19	-44.2	39.5	59.6	53.2	6.36	9.376		
1,600.0	1,600.0	1,594.4	1,591.9	3.5	3.5	133.45	-48.7	51.4	71.4	64.6	6.80	10.495		
1,700.0	1,700.0	1,692.1	1,688.5	3.7	3.8	129.70	-53.8	64.8	85.1	77.9	7.25	11.736		
1,800.0	1,800.0	1,789.2	1,784.3	3.9	4.1	126.73	-59.4	79.6	100.7	93.0	7.71	13.062		
1,900.0	1,900.0	1,887.5	1,881.1	4.1	4.4	-85.52	-65.5	95.6	117.5	109.3	8.13	14.445		
2,000.0	2,000.0	1,985.9	1,978.0	4.3	4.8	-88.16	-71.6	111.5	134.4	125.8	8.53	15.751		
2,100.0	2,099.9	2,084.2	2,074.8	4.5	5.1	-90.83	-77.6	127.5	151.5	142.6	8.93	16.959		
2,200.0	2,199.7	2,182.3	2,171.4	4.7	5.5	-93.51	-83.7	143.4	169.0	159.7	9.34	18.090		
2,300.0	2,299.4	2,280.3	2,267.9	4.9	5.8	-96.18	-89.7	159.3	187.1	177.3	9.77	19.158		
2,400.0	2,398.9	2,378.0	2,364.2	5.1	6.2	-98.83	-95.8	175.2	205.8	195.6	10.20	20.173		
2,500.0	2,498.3	2,475.6	2,460.3	5.3	6.6	-101.47	-101.8	191.0	225.2	214.5	10.65	21.137		
2,600.0	2,597.7	2,573.2	2,556.4	5.5	6.9	-103.77	-107.8	206.9	245.0	233.9	11.12	22.032		
2,700.0	2,697.1	2,670.8	2,652.5	5.7	7.3	-105.74	-113.8	222.7	265.1	253.5	11.60	22.859		
2,800.0	2,796.4	2,768.3	2,748.5	6.0	7.7	-107.43	-119.9	238.6	285.5	273.4	12.09	23.621		
2,900.0	2,895.8	2,865.9	2,844.6	6.2	8.1	-108.89	-125.9	254.4	306.1	293.5	12.59	24.323		
3,000.0	2,995.2	2,963.5	2,940.7	6.5	8.4	-110.16	-131.9	270.2	326.9	313.8	13.09	24.969		
3,100.0	3,094.6	3,061.1	3,036.8	6.7	8.8	-111.29	-137.9	286.1	347.8	334.2	13.60	25.564		
3,200.0	3,194.0	3,158.6	3,132.9	7.0	9.2	-112.29	-143.9	301.9	368.8	354.7	14.12	26.114		
3,300.0	3,293.4	3,256.2	3,229.0	7.3	9.6	-113.18	-150.0	317.8	389.9	375.3	14.65	26.622		
3,400.0	3,392.7	3,353.8	3,325.1	7.5	10.0	-113.98	-156.0	333.6	411.1	396.0	15.18	27.091		
3,500.0	3,492.1	3,451.4	3,421.2	7.8	10.4	-114.70	-162.0	349.4	432.4	416.7	15.71	27.527		
3,600.0	3,591.5	3,548.9	3,517.3	8.1	10.7	-115.35	-168.0	365.3	453.7	437.5	16.24	27.932		
3,700.0	3,690.9	3,646.5	3,613.4	8.4	11.1	-115.95	-174.1	381.1	475.1	458.3	16.78	28.308		
3,800.0	3,790.3	3,744.1	3,709.5	8.6	11.5	-116.49	-180.1	397.0	496.5	479.2	17.33	28.660		
3,900.0	3,889.6	3,841.6	3,805.5	8.9	11.9	-116.99	-186.1	412.8	518.0	500.1	17.87	28.987		
4,000.0	3,989.0	3,939.2	3,901.6	9.2	12.3	-117.45	-192.1	428.7	539.5	521.1	18.42	29.294		
4,100.0	4,088.4	4,036.8	3,997.7	9.5	12.7	-117.87	-198.2	444.5	561.0	542.1	18.97	29.581		
4,200.0	4,187.8	4,134.4	4,093.8	9.8	13.1	-118.26	-204.2	460.3	582.6	563.1	19.52	29.851		
4,300.0	4,287.2	4,231.9	4,189.9	10.1	13.5	-118.63	-210.2	476.2	604.2	584.1	20.07	30.104		
4,400.0	4,386.5	4,329.5	4,286.0	10.4	13.8	-118.97	-216.2	492.0	625.8	605.1	20.62	30.343		
4,500.0	4,485.9	4,427.1	4,382.1	10.7	14.2	-119.29	-222.2	507.9	647.4	626.2	21.18	30.568		
4,600.0	4,585.3	4,524.7	4,478.2	11.0	14.6	-119.58	-228.3	523.7	669.0	647.3	21.74	30.780		
4,700.0	4,684.7	4,622.2	4,574.3	11.3	15.0	-119.87	-234.3	539.5	690.7	668.4	22.29	30.980		
4,800.0	4,784.3	4,720.0	4,670.6	11.5	15.4	-120.37	-240.3	555.4	711.4	688.6	22.84	31.145		
4,900.0	4,884.1	4,818.2	4,767.3	11.7	15.8	-120.58	-246.4	571.4	730.5	707.1	23.36	31.271		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10Q-241 - Wellbore #1 - Plan #2 (6-10-15)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,000.0	4,984.1	4,916.6	4,864.1	11.9	16.2	-120.54	-252.5	587.3	747.8	723.9	23.84	31.363	
5,100.0	5,084.1	5,015.1	4,961.1	12.1	16.6	89.57	-258.5	603.3	764.0	739.7	24.29	31.459	
5,200.0	5,184.1	5,113.5	5,058.1	12.2	17.0	90.03	-264.6	619.3	780.2	755.5	24.72	31.565	
5,300.0	5,284.1	5,212.0	5,155.1	12.4	17.4	90.47	-270.7	635.3	796.5	771.4	25.15	31.669	
5,400.0	5,384.1	5,310.5	5,252.1	12.6	17.8	90.90	-276.8	651.3	812.9	787.3	25.59	31.769	
5,500.0	5,484.1	5,409.0	5,349.1	12.8	18.2	91.31	-282.9	667.3	829.3	803.2	26.02	31.868	
5,600.0	5,584.1	5,507.5	5,446.0	13.0	18.6	91.70	-288.9	683.2	845.7	819.2	26.46	31.963	
5,700.0	5,684.1	5,622.4	5,559.3	13.2	19.0	92.13	-295.8	701.4	861.7	834.8	26.91	32.024	
5,800.0	5,784.1	5,761.6	5,697.3	13.3	19.3	92.51	-302.2	718.3	874.1	846.7	27.35	31.955	
5,900.0	5,884.1	5,902.2	5,837.5	13.5	19.6	92.74	-306.3	728.9	881.8	854.0	27.79	31.733	
6,000.0	5,984.1	6,043.7	5,978.8	13.7	19.8	92.83	-307.9	733.2	884.8	856.6	28.21	31.362	
6,100.0	6,084.1	6,149.9	6,085.1	13.9	20.0	92.83	-307.9	733.2	884.9	856.3	28.59	30.950	
6,200.0	6,184.1	6,249.9	6,185.1	14.1	20.1	92.83	-307.9	733.2	884.9	855.9	28.96	30.558	
6,300.0	6,284.0	6,352.1	6,287.3	14.3	20.2	92.80	-306.9	733.2	884.8	855.5	29.32	30.177	
6,400.0	6,383.5	6,457.9	6,392.3	14.4	20.3	92.66	-294.2	733.2	884.8	855.2	29.59	29.897	
6,500.0	6,480.8	6,563.4	6,494.1	14.5	20.4	92.48	-267.2	733.2	884.6	854.9	29.76	29.729	
6,600.0	6,574.2	6,668.4	6,590.8	14.6	20.4	92.25	-226.7	733.2	884.5	854.6	29.85	29.627	
6,700.0	6,662.3	6,772.8	6,680.6	14.6	20.4	91.99	-173.6	733.2	884.3	854.4	29.95	29.526	
6,800.0	6,743.4	6,876.5	6,761.9	14.7	20.3	91.68	-109.2	733.2	884.2	854.0	30.13	29.349	
6,900.0	6,816.2	6,979.5	6,833.2	14.7	20.3	91.35	-34.9	733.2	884.0	853.6	30.47	29.018	
7,000.0	6,879.5	7,081.8	6,893.5	14.9	20.3	91.00	47.6	733.2	883.9	852.9	31.05	28.469	
7,100.0	6,932.1	7,183.3	6,941.9	15.3	20.4	90.63	136.7	733.2	883.8	851.9	31.94	27.674	
7,200.0	6,973.2	7,284.1	6,977.9	15.9	20.5	90.25	230.7	733.2	883.8	850.6	33.17	26.645	
7,266.1	6,993.6	7,350.2	6,994.6	16.4	20.7	90.00	294.7	733.2	883.8	849.6	34.19	25.851	
7,300.0	7,002.0	7,384.0	7,001.0	16.7	20.9	89.87	327.9	733.2	883.8	849.1	34.74	25.438	
7,400.0	7,018.1	7,483.2	7,011.3	17.7	21.4	89.49	426.5	733.2	883.8	847.2	36.63	24.130	
7,500.0	7,021.5	7,582.7	7,011.4	18.8	22.3	89.28	526.0	733.2	883.9	845.1	38.78	22.789	
7,600.0	7,020.7	7,682.7	7,010.6	20.0	23.3	89.28	626.0	733.2	883.9	842.7	41.18	21.465	
7,700.0	7,020.0	7,782.7	7,009.9	21.3	24.4	89.28	726.0	733.2	883.9	840.1	43.77	20.191	
7,800.0	7,019.2	7,882.7	7,009.1	22.7	25.7	89.28	826.0	733.2	883.9	837.3	46.54	18.990	
7,900.0	7,018.5	7,982.7	7,008.4	24.2	27.0	89.28	926.0	733.2	883.9	834.4	49.46	17.872	
8,000.0	7,017.7	8,082.7	7,007.6	25.7	28.4	89.28	1,026.0	733.2	883.9	831.4	52.49	16.839	
8,100.0	7,017.0	8,182.7	7,006.9	27.3	29.9	89.28	1,126.0	733.2	883.9	828.2	55.62	15.891	
8,200.0	7,016.2	8,282.7	7,006.1	28.9	31.4	89.28	1,226.0	733.2	883.9	825.0	58.84	15.023	
8,300.0	7,015.5	8,382.7	7,005.4	30.6	33.0	89.28	1,326.0	733.2	883.9	821.7	62.12	14.228	
8,400.0	7,014.7	8,482.7	7,004.6	32.2	34.6	89.28	1,426.0	733.2	883.9	818.4	65.47	13.501	
8,500.0	7,014.0	8,582.7	7,003.8	34.0	36.3	89.28	1,526.0	733.2	883.9	815.0	68.87	12.835	
8,600.0	7,013.2	8,682.7	7,003.1	35.7	37.9	89.28	1,626.0	733.2	883.9	811.6	72.31	12.224	
8,700.0	7,012.5	8,782.7	7,002.3	37.4	39.6	89.28	1,726.0	733.2	883.9	808.1	75.79	11.662	
8,800.0	7,011.7	8,882.7	7,001.6	39.2	41.3	89.28	1,826.0	733.2	883.9	804.6	79.30	11.146	
8,900.0	7,011.0	8,982.7	7,000.8	41.0	43.0	89.28	1,925.9	733.2	883.9	801.0	82.84	10.669	
9,000.0	7,010.2	9,082.7	7,000.1	42.8	44.8	89.28	2,025.9	733.2	883.9	797.5	86.41	10.229	
9,100.0	7,009.5	9,182.7	6,999.3	44.6	46.5	89.28	2,125.9	733.2	883.9	793.9	90.00	9.821	
9,200.0	7,008.7	9,282.7	6,998.6	46.4	48.3	89.28	2,225.9	733.2	883.9	790.3	93.61	9.442	
9,300.0	7,008.0	9,382.7	6,997.8	48.2	50.0	89.28	2,325.9	733.2	883.9	786.6	97.24	9.090	
9,400.0	7,007.2	9,482.7	6,997.1	50.0	51.8	89.28	2,425.9	733.2	883.9	783.0	100.88	8.762	
9,500.0	7,006.5	9,582.7	6,996.3	51.9	53.6	89.28	2,525.9	733.2	883.9	779.3	104.54	8.455	
9,600.0	7,005.7	9,682.7	6,995.6	53.7	55.4	89.28	2,625.9	733.2	883.9	775.7	108.21	8.168	
9,700.0	7,005.0	9,782.7	6,994.8	55.5	57.2	89.28	2,725.9	733.2	883.9	772.0	111.89	7.900	
9,800.0	7,004.2	9,882.7	6,994.1	57.4	59.1	89.28	2,825.9	733.2	883.9	768.3	115.58	7.647	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10Q-241 - Wellbore #1 - Plan #2 (6-10-15)										Offset Site Error:		0.0 ft	
Survey Program: 0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
9,900.0	7,003.5	9,982.7	6,993.3	59.3	60.9	89.28	2,925.9	733.2	883.9	764.6	119.28	7.410	
10,000.0	7,002.7	10,082.7	6,992.6	61.1	62.7	89.28	3,025.9	733.2	883.9	760.9	122.99	7.187	
10,100.0	7,002.0	10,182.7	6,991.8	63.0	64.5	89.28	3,125.9	733.2	883.9	757.2	126.70	6.976	
10,200.0	7,001.2	10,282.7	6,991.1	64.8	66.4	89.28	3,225.9	733.2	883.9	753.4	130.43	6.777	
10,300.0	7,000.5	10,382.7	6,990.3	66.7	68.2	89.28	3,325.9	733.2	883.9	749.7	134.16	6.588	
10,400.0	6,999.7	10,482.7	6,989.6	68.6	70.1	89.28	3,425.9	733.2	883.9	746.0	137.89	6.410	
10,500.0	6,999.0	10,582.7	6,988.8	70.5	71.9	89.28	3,525.9	733.2	883.9	742.2	141.63	6.240	
10,600.0	6,998.2	10,682.7	6,988.1	72.3	73.8	89.28	3,625.9	733.2	883.9	738.5	145.38	6.080	
10,700.0	6,997.5	10,782.7	6,987.3	74.2	75.6	89.28	3,725.9	733.2	883.9	734.7	149.13	5.927	
10,800.0	6,996.7	10,882.7	6,986.6	76.1	77.5	89.28	3,825.9	733.2	883.9	731.0	152.89	5.781	
10,900.0	6,996.0	10,982.7	6,985.8	78.0	79.3	89.28	3,925.9	733.2	883.9	727.2	156.65	5.642	
11,000.0	6,995.2	11,082.7	6,985.1	79.9	81.2	89.28	4,025.9	733.2	883.9	723.5	160.41	5.510	
11,100.0	6,994.5	11,182.7	6,984.3	81.7	83.1	89.28	4,125.9	733.2	883.9	719.7	164.18	5.384	
11,200.0	6,993.7	11,282.7	6,983.6	83.6	84.9	89.28	4,225.9	733.2	883.9	715.9	167.95	5.263	
11,300.0	6,993.0	11,382.7	6,982.8	85.5	86.8	89.28	4,325.9	733.2	883.9	712.1	171.72	5.147	
11,400.0	6,992.2	11,482.7	6,982.1	87.4	88.7	89.28	4,425.9	733.2	883.9	708.4	175.50	5.036	
11,400.0	6,992.2	11,482.7	6,982.1	87.4	88.7	89.28	4,425.9	733.2	883.9	708.4	175.50	5.036	
11,429.5	6,992.0	11,494.1	6,982.0	88.0	88.9	89.28	4,437.3	733.2	884.0	707.8	176.27	5.015 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Reference Site:</b>	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	<b>MD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4853.0ft (RKB - 13')

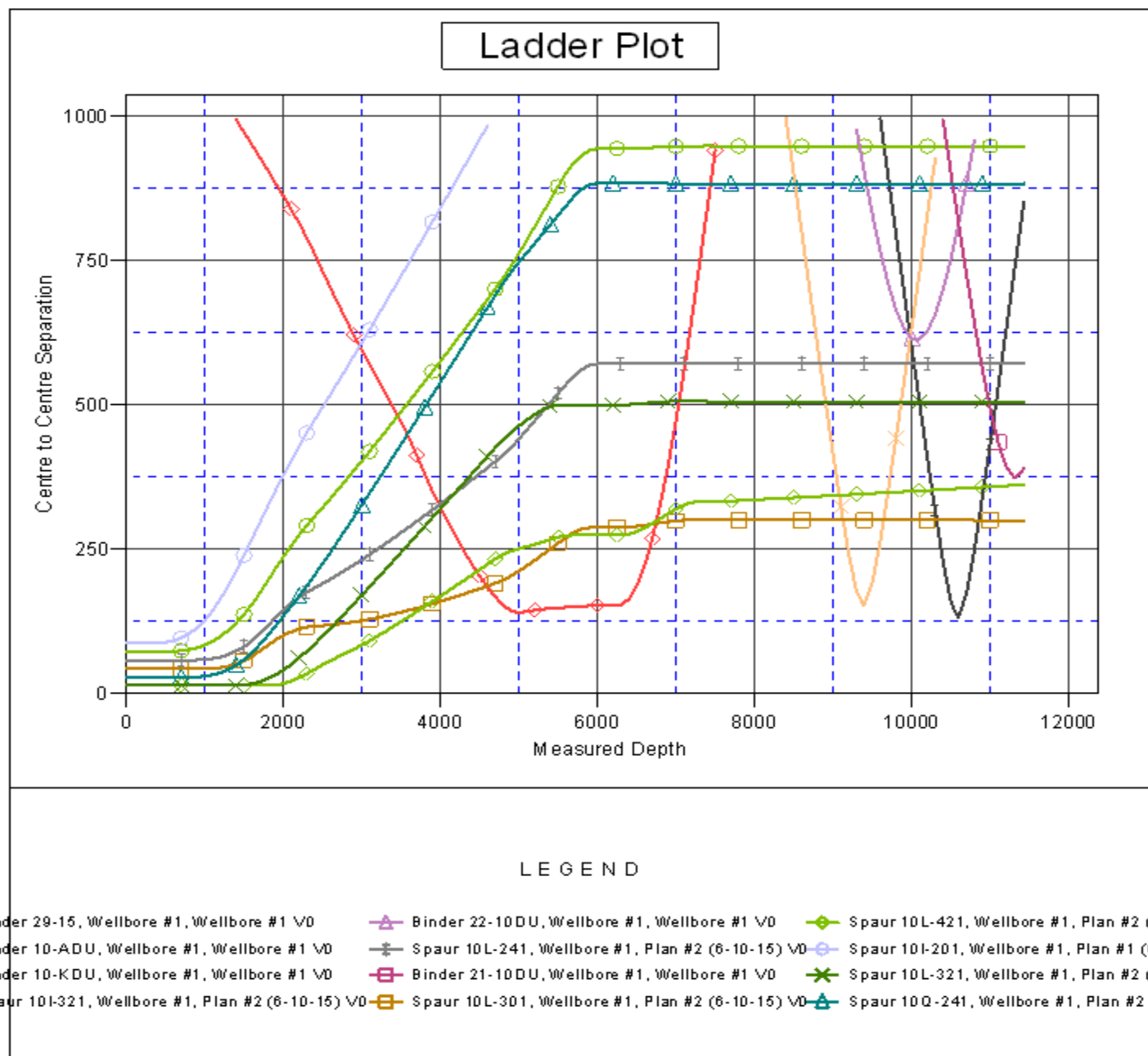
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Spaur 10L-201

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.40°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Spaur 10L-201
<b>Project:</b>	SEC.10-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4853.0ft (RKB - 13')
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<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Spaur 10L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (6-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4853.0ft (RKB - 13')  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: Spaur 10L-201  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.40°

