

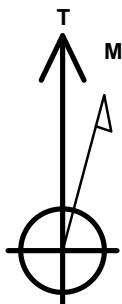
# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Dunn 7Q-221**

Surface Location: Dunn 5N64W7 Pad Sec.7-T5N-R64W  
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
 Ground Elevation: 4625.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1392830.92 3251104.70 40.408218 -104.598276  
 Original Well Elev WELL @ 4638.0ft (Original Well Elev)

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 675'FSL & 980'FWL, Sec.7	1.0	0.0	0.0	Point
BHL 200'FNL & 2326'FEL, Sec.6	6723.0	9620.9	1801.7	Point



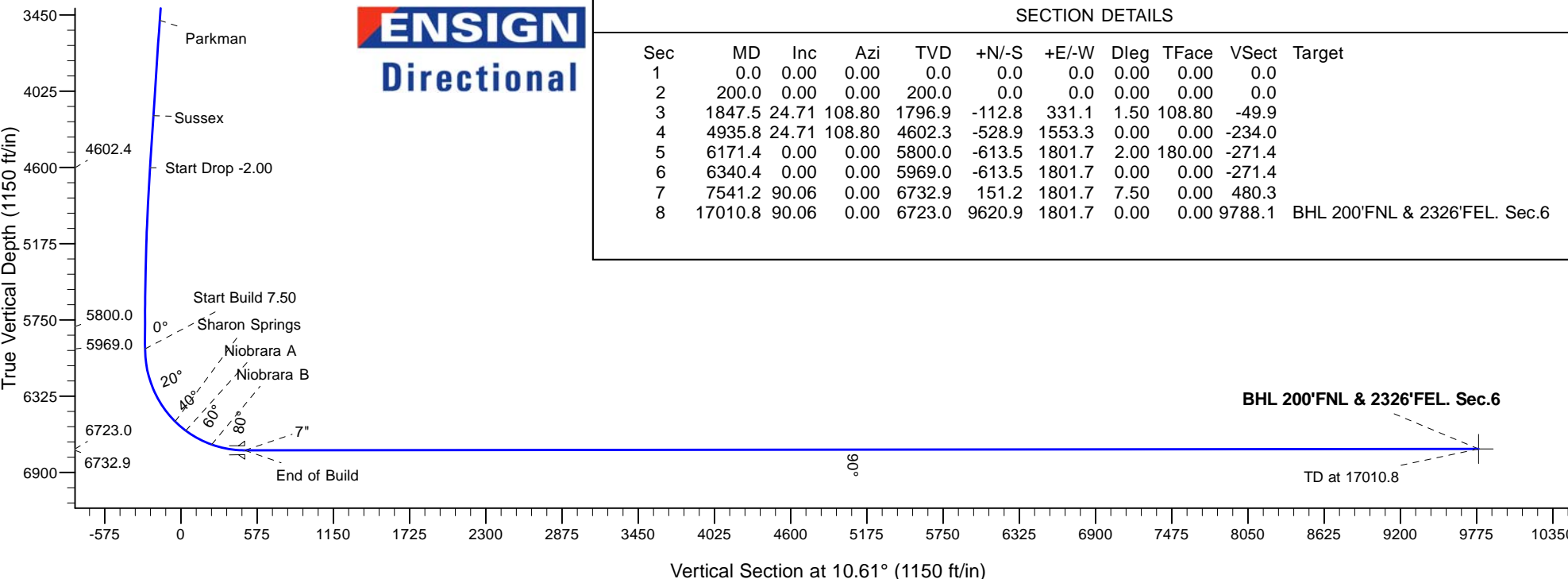
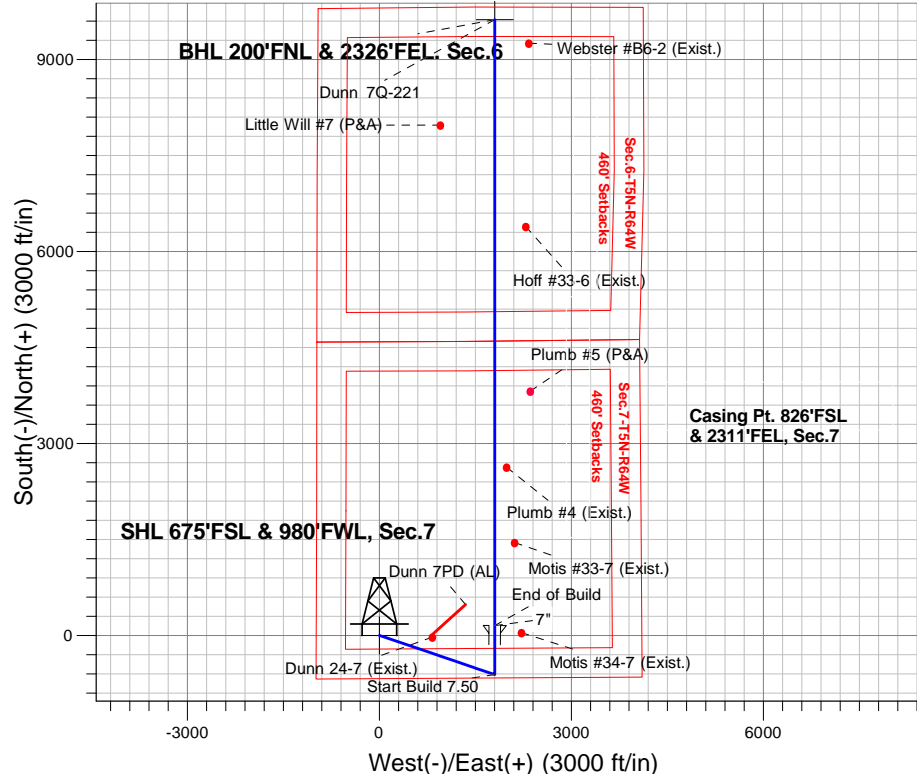
Azimuths to True North  
 Magnetic North: 8.20°

Magnetic Field  
 Strength: 52703.8snT  
 Dip Angle: 66.93°  
 Date: 9/24/2015  
 Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.50
4602.4	4935.8	Start Drop -2.00
5800.0	6171.4	Start 169.0 hold at 6171.4 MD
5969.0	6340.4	Start Build 7.50
6732.9	7541.2	End of Build
6723.0	17010.8	TD at 17010.8

Dunn 5N64W7 Pad Sec.7-T5N-R64W  
 Dunn 7Q-221  
 Plan #1 (9-11-15)  
 9:56, September 24 2015



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1847.5	24.71	108.80	1796.9	-112.8	331.1	1.50	108.80	-49.9	
4	4935.8	24.71	108.80	4602.3	-528.9	1553.3	0.00	0.00	-234.0	
5	6171.4	0.00	0.00	5800.0	-613.5	1801.7	2.00	180.00	-271.4	
6	6340.4	0.00	0.00	5969.0	-613.5	1801.7	0.00	0.00	-271.4	
7	7541.2	90.06	0.00	6732.9	151.2	1801.7	7.50	0.00	480.3	
8	17010.8	90.06	0.00	6723.0	9620.9	1801.7	0.00	0.00	9788.1	BHL 200'FNL & 2326'FEL, Sec.6



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.7-T5N-R64W**

**Dunn 5N64W7 Pad Sec.7-T5N-R64W**

**Dunn 7Q-221**

**Wellbore #1**

**Plan: Plan #1 (9-11-15)**

## **Standard Planning Report**

**24 September, 2015**

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-11-15)		

<b>Project</b>	SEC.7-T5N-R64W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,392,981.02 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,251,104.57 usft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40.408630
		<b>Longitude:</b>	-104.598271
		<b>Grid Convergence:</b>	0.58 °

<b>Well</b>	Dunn 7Q-221		
<b>Well Position</b>	<b>+N/-S</b>	-150.1 ft	<b>Northing:</b>
	<b>+E/-W</b>	-1.4 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	0.0 ft
		<b>Latitude:</b>	40.408218
		<b>Longitude:</b>	-104.598276
		<b>Ground Level:</b>	4,625.0 ft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010	9/24/2015	8.20
			<b>Dip Angle (°)</b>
			66.93
			<b>Field Strength (nT)</b>
			52,704

<b>Design</b>	Plan #1 (9-11-15)		
<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)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			<b>Direction (°)</b>
			10.61

<b>Plan Sections</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,847.5	24.71	108.80	1,796.9	-112.8	331.1	1.50	1.50	0.00	108.80	
4,935.8	24.71	108.80	4,602.3	-528.9	1,553.3	0.00	0.00	0.00	0.00	
6,171.4	0.00	0.00	5,800.0	-613.5	1,801.7	2.00	-2.00	0.00	180.00	
6,340.4	0.00	0.00	5,969.0	-613.5	1,801.7	0.00	0.00	0.00	0.00	
7,541.2	90.06	0.00	6,732.9	151.2	1,801.7	7.50	7.50	0.00	0.00	
17,010.8	90.06	0.00	6,723.0	9,620.9	1,801.7	0.00	0.00	0.00	0.00	BHL 200'FNL & 2326'

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-11-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 675'FSL &amp; 980'FWL, Sec.7</b>									
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
<b>KOP - Start Build 1.50</b>									
300.0	1.50	108.80	300.0	-0.4	1.2	-0.2	1.50	1.50	0.00
400.0	3.00	108.80	399.9	-1.7	5.0	-0.7	1.50	1.50	0.00
500.0	4.50	108.80	499.7	-3.8	11.1	-1.7	1.50	1.50	0.00
600.0	6.00	108.80	599.3	-6.7	19.8	-3.0	1.50	1.50	0.00
700.0	7.50	108.80	698.6	-10.5	30.9	-4.7	1.50	1.50	0.00
800.0	9.00	108.80	797.5	-15.2	44.5	-6.7	1.50	1.50	0.00
900.0	10.50	108.80	896.1	-20.6	60.5	-9.1	1.50	1.50	0.00
1,000.0	12.00	108.80	994.2	-26.9	79.0	-11.9	1.50	1.50	0.00
1,100.0	13.50	108.80	1,091.7	-34.0	99.9	-15.0	1.50	1.50	0.00
1,200.0	15.00	108.80	1,188.6	-42.0	123.2	-18.6	1.50	1.50	0.00
1,300.0	16.50	108.80	1,284.9	-50.7	148.9	-22.4	1.50	1.50	0.00
1,400.0	18.00	108.80	1,380.4	-60.3	177.0	-26.7	1.50	1.50	0.00
1,500.0	19.50	108.80	1,475.0	-70.6	207.4	-31.2	1.50	1.50	0.00
1,600.0	21.00	108.80	1,568.9	-81.8	240.2	-36.2	1.50	1.50	0.00
1,700.0	22.50	108.80	1,661.7	-93.7	275.2	-41.5	1.50	1.50	0.00
1,800.0	24.00	108.80	1,753.6	-106.4	312.6	-47.1	1.50	1.50	0.00
1,847.5	24.71	108.80	1,796.9	-112.8	331.1	-49.9	1.50	1.50	0.00
1,900.0	24.71	108.80	1,844.6	-119.8	351.9	-53.0	0.00	0.00	0.00
2,000.0	24.71	108.80	1,935.4	-133.3	391.5	-59.0	0.00	0.00	0.00
2,100.0	24.71	108.80	2,026.3	-146.8	431.1	-64.9	0.00	0.00	0.00
2,200.0	24.71	108.80	2,117.1	-160.3	470.6	-70.9	0.00	0.00	0.00
2,300.0	24.71	108.80	2,208.0	-173.7	510.2	-76.9	0.00	0.00	0.00
2,400.0	24.71	108.80	2,298.8	-187.2	549.8	-82.8	0.00	0.00	0.00
2,500.0	24.71	108.80	2,389.6	-200.7	589.4	-88.8	0.00	0.00	0.00
2,600.0	24.71	108.80	2,480.5	-214.2	628.9	-94.7	0.00	0.00	0.00
2,700.0	24.71	108.80	2,571.3	-227.6	668.5	-100.7	0.00	0.00	0.00
2,800.0	24.71	108.80	2,662.2	-241.1	708.1	-106.7	0.00	0.00	0.00
2,900.0	24.71	108.80	2,753.0	-254.6	747.7	-112.6	0.00	0.00	0.00
3,000.0	24.71	108.80	2,843.8	-268.1	787.2	-118.6	0.00	0.00	0.00
3,100.0	24.71	108.80	2,934.7	-281.5	826.8	-124.5	0.00	0.00	0.00
3,200.0	24.71	108.80	3,025.5	-295.0	866.4	-130.5	0.00	0.00	0.00
3,300.0	24.71	108.80	3,116.4	-308.5	906.0	-136.5	0.00	0.00	0.00
3,400.0	24.71	108.80	3,207.2	-322.0	945.5	-142.4	0.00	0.00	0.00
3,500.0	24.71	108.80	3,298.1	-335.4	985.1	-148.4	0.00	0.00	0.00
3,600.0	24.71	108.80	3,388.9	-348.9	1,024.7	-154.4	0.00	0.00	0.00
3,700.0	24.71	108.80	3,479.7	-362.4	1,064.3	-160.3	0.00	0.00	0.00
3,711.3	24.71	108.80	3,490.0	-363.9	1,068.7	-161.0	0.00	0.00	0.00
<b>Parkman</b>									
3,800.0	24.71	108.80	3,570.6	-375.9	1,103.8	-166.3	0.00	0.00	0.00
3,900.0	24.71	108.80	3,661.4	-389.4	1,143.4	-172.2	0.00	0.00	0.00
4,000.0	24.71	108.80	3,752.3	-402.8	1,183.0	-178.2	0.00	0.00	0.00
4,100.0	24.71	108.80	3,843.1	-416.3	1,222.6	-184.2	0.00	0.00	0.00
4,200.0	24.71	108.80	3,933.9	-429.8	1,262.1	-190.1	0.00	0.00	0.00
4,300.0	24.71	108.80	4,024.8	-443.3	1,301.7	-196.1	0.00	0.00	0.00
4,400.0	24.71	108.80	4,115.6	-456.7	1,341.3	-202.0	0.00	0.00	0.00
4,500.0	24.71	108.80	4,206.5	-470.2	1,380.9	-208.0	0.00	0.00	0.00
4,503.9	24.71	108.80	4,210.0	-470.7	1,382.4	-208.2	0.00	0.00	0.00

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Site:	Dunn 5N64W7 Pad Sec.7-T5N-R64W	North Reference:	True
Well:	Dunn 7Q-221	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-11-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>Sussex</b>									
4,600.0	24.71	108.80	4,297.3	-483.7	1,420.4	-214.0	0.00	0.00	0.00
4,700.0	24.71	108.80	4,388.2	-497.2	1,460.0	-219.9	0.00	0.00	0.00
4,800.0	24.71	108.80	4,479.0	-510.6	1,499.6	-225.9	0.00	0.00	0.00
4,900.0	24.71	108.80	4,569.8	-524.1	1,539.2	-231.8	0.00	0.00	0.00
4,935.8	24.71	108.80	4,602.4	-528.9	1,553.3	-234.0	0.00	0.00	0.00
<b>Start Drop -2.00</b>									
5,000.0	23.43	108.80	4,661.0	-537.4	1,578.1	-237.7	2.00	-2.00	0.00
5,100.0	21.43	108.80	4,753.4	-549.7	1,614.2	-243.2	2.00	-2.00	0.00
5,200.0	19.43	108.80	4,847.1	-560.9	1,647.3	-248.1	2.00	-2.00	0.00
5,300.0	17.43	108.80	4,942.0	-571.1	1,677.2	-252.6	2.00	-2.00	0.00
5,400.0	15.43	108.80	5,037.9	-580.2	1,704.0	-256.7	2.00	-2.00	0.00
5,500.0	13.43	108.80	5,134.7	-588.3	1,727.5	-260.2	2.00	-2.00	0.00
5,600.0	11.43	108.80	5,232.4	-595.2	1,747.9	-263.3	2.00	-2.00	0.00
5,700.0	9.43	108.80	5,330.7	-601.0	1,765.0	-265.9	2.00	-2.00	0.00
5,800.0	7.43	108.80	5,429.7	-605.8	1,778.9	-268.0	2.00	-2.00	0.00
5,900.0	5.43	108.80	5,529.0	-609.4	1,789.5	-269.6	2.00	-2.00	0.00
6,000.0	3.43	108.80	5,628.7	-611.8	1,796.8	-270.7	2.00	-2.00	0.00
6,100.0	1.43	108.80	5,728.6	-613.2	1,800.8	-271.3	2.00	-2.00	0.00
6,171.4	0.00	0.00	5,800.0	-613.5	1,801.7	-271.4	2.00	-2.00	0.00
<b>Start 169.0 hold at 6171.4 MD</b>									
6,200.0	0.00	0.00	5,828.6	-613.5	1,801.7	-271.4	0.00	0.00	0.00
6,300.0	0.00	0.00	5,928.6	-613.5	1,801.7	-271.4	0.00	0.00	0.00
6,340.4	0.00	0.00	5,969.0	-613.5	1,801.7	-271.4	0.00	0.00	0.00
<b>Start Build 7.50</b>									
6,400.0	4.47	0.00	6,028.6	-611.2	1,801.7	-269.1	7.50	7.50	0.00
6,500.0	11.97	0.00	6,127.5	-596.9	1,801.7	-255.1	7.50	7.50	0.00
6,600.0	19.47	0.00	6,223.6	-569.8	1,801.7	-228.4	7.50	7.50	0.00
6,700.0	26.97	0.00	6,315.5	-530.4	1,801.7	-189.7	7.50	7.50	0.00
6,800.0	34.47	0.00	6,401.4	-479.3	1,801.7	-139.5	7.50	7.50	0.00
6,900.0	41.97	0.00	6,479.9	-417.5	1,801.7	-78.8	7.50	7.50	0.00
6,950.1	45.72	0.00	6,516.0	-382.8	1,801.7	-44.7	7.49	7.49	0.00
<b>Sharon Springs</b>									
7,000.0	49.47	0.00	6,549.6	-346.0	1,801.7	-8.4	7.51	7.51	0.00
7,056.9	53.74	0.00	6,585.0	-301.4	1,801.7	35.4	7.50	7.50	0.00
<b>Niobrara A</b>									
7,100.0	56.97	0.00	6,609.5	-265.9	1,801.7	70.2	7.50	7.50	0.00
7,200.0	64.47	0.00	6,658.3	-178.8	1,801.7	155.9	7.50	7.50	0.00
7,283.1	70.70	0.00	6,690.0	-102.0	1,801.7	231.4	7.50	7.50	0.00
<b>Niobrara B</b>									
7,300.0	71.97	0.00	6,695.4	-86.0	1,801.7	247.1	7.50	7.50	0.00
7,400.0	79.47	0.00	6,720.1	10.9	1,801.7	342.3	7.50	7.50	0.00
7,500.0	86.97	0.00	6,731.9	110.1	1,801.7	439.8	7.50	7.50	0.00
7,541.2	90.06	0.00	6,732.9	151.3	1,801.7	480.3	7.49	7.49	0.00
<b>End of Build - 7"</b>									
7,600.0	90.06	0.00	6,732.9	210.1	1,801.7	538.1	0.00	0.00	0.00
7,700.0	90.06	0.00	6,732.8	310.1	1,801.7	636.4	0.00	0.00	0.00
7,800.0	90.06	0.00	6,732.6	410.1	1,801.7	734.7	0.00	0.00	0.00
7,900.0	90.06	0.00	6,732.5	510.1	1,801.7	833.0	0.00	0.00	0.00
8,000.0	90.06	0.00	6,732.4	610.1	1,801.7	931.3	0.00	0.00	0.00
8,100.0	90.06	0.00	6,732.3	710.1	1,801.7	1,029.6	0.00	0.00	0.00
8,200.0	90.06	0.00	6,732.2	810.1	1,801.7	1,127.9	0.00	0.00	0.00

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-11-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,300.0	90.06	0.00	6,732.1	910.1	1,801.7	1,226.2	0.00	0.00	0.00
8,400.0	90.06	0.00	6,732.0	1,010.1	1,801.7	1,324.5	0.00	0.00	0.00
8,500.0	90.06	0.00	6,731.9	1,110.1	1,801.7	1,422.7	0.00	0.00	0.00
8,600.0	90.06	0.00	6,731.8	1,210.1	1,801.7	1,521.0	0.00	0.00	0.00
8,700.0	90.06	0.00	6,731.7	1,310.1	1,801.7	1,619.3	0.00	0.00	0.00
8,800.0	90.06	0.00	6,731.6	1,410.1	1,801.7	1,717.6	0.00	0.00	0.00
8,900.0	90.06	0.00	6,731.5	1,510.1	1,801.7	1,815.9	0.00	0.00	0.00
9,000.0	90.06	0.00	6,731.4	1,610.1	1,801.7	1,914.2	0.00	0.00	0.00
9,100.0	90.06	0.00	6,731.3	1,710.1	1,801.7	2,012.5	0.00	0.00	0.00
9,200.0	90.06	0.00	6,731.2	1,810.1	1,801.7	2,110.8	0.00	0.00	0.00
9,300.0	90.06	0.00	6,731.1	1,910.1	1,801.7	2,209.1	0.00	0.00	0.00
9,400.0	90.06	0.00	6,731.0	2,010.1	1,801.7	2,307.4	0.00	0.00	0.00
9,500.0	90.06	0.00	6,730.9	2,110.1	1,801.7	2,405.7	0.00	0.00	0.00
9,600.0	90.06	0.00	6,730.8	2,210.1	1,801.7	2,503.9	0.00	0.00	0.00
9,700.0	90.06	0.00	6,730.7	2,310.1	1,801.7	2,602.2	0.00	0.00	0.00
9,800.0	90.06	0.00	6,730.6	2,410.1	1,801.7	2,700.5	0.00	0.00	0.00
9,900.0	90.06	0.00	6,730.4	2,510.1	1,801.7	2,798.8	0.00	0.00	0.00
10,000.0	90.06	0.00	6,730.3	2,610.1	1,801.7	2,897.1	0.00	0.00	0.00
10,100.0	90.06	0.00	6,730.2	2,710.1	1,801.7	2,995.4	0.00	0.00	0.00
10,200.0	90.06	0.00	6,730.1	2,810.1	1,801.7	3,093.7	0.00	0.00	0.00
10,300.0	90.06	0.00	6,730.0	2,910.1	1,801.7	3,192.0	0.00	0.00	0.00
10,400.0	90.06	0.00	6,729.9	3,010.1	1,801.7	3,290.3	0.00	0.00	0.00
10,500.0	90.06	0.00	6,729.8	3,110.1	1,801.7	3,388.6	0.00	0.00	0.00
10,600.0	90.06	0.00	6,729.7	3,210.1	1,801.7	3,486.9	0.00	0.00	0.00
10,700.0	90.06	0.00	6,729.6	3,310.1	1,801.7	3,585.2	0.00	0.00	0.00
10,800.0	90.06	0.00	6,729.5	3,410.1	1,801.7	3,683.4	0.00	0.00	0.00
10,900.0	90.06	0.00	6,729.4	3,510.1	1,801.7	3,781.7	0.00	0.00	0.00
11,000.0	90.06	0.00	6,729.3	3,610.1	1,801.7	3,880.0	0.00	0.00	0.00
11,100.0	90.06	0.00	6,729.2	3,710.1	1,801.7	3,978.3	0.00	0.00	0.00
11,200.0	90.06	0.00	6,729.1	3,810.1	1,801.7	4,076.6	0.00	0.00	0.00
11,300.0	90.06	0.00	6,729.0	3,910.1	1,801.7	4,174.9	0.00	0.00	0.00
11,400.0	90.06	0.00	6,728.9	4,010.1	1,801.7	4,273.2	0.00	0.00	0.00
11,500.0	90.06	0.00	6,728.8	4,110.1	1,801.7	4,371.5	0.00	0.00	0.00
11,600.0	90.06	0.00	6,728.7	4,210.1	1,801.7	4,469.8	0.00	0.00	0.00
11,700.0	90.06	0.00	6,728.6	4,310.1	1,801.7	4,568.1	0.00	0.00	0.00
11,800.0	90.06	0.00	6,728.5	4,410.1	1,801.7	4,666.4	0.00	0.00	0.00
11,900.0	90.06	0.00	6,728.4	4,510.1	1,801.7	4,764.6	0.00	0.00	0.00
12,000.0	90.06	0.00	6,728.2	4,610.1	1,801.7	4,862.9	0.00	0.00	0.00
12,100.0	90.06	0.00	6,728.1	4,710.1	1,801.7	4,961.2	0.00	0.00	0.00
12,200.0	90.06	0.00	6,728.0	4,810.1	1,801.7	5,059.5	0.00	0.00	0.00
12,300.0	90.06	0.00	6,727.9	4,910.1	1,801.7	5,157.8	0.00	0.00	0.00
12,400.0	90.06	0.00	6,727.8	5,010.1	1,801.7	5,256.1	0.00	0.00	0.00
12,500.0	90.06	0.00	6,727.7	5,110.1	1,801.7	5,354.4	0.00	0.00	0.00
12,600.0	90.06	0.00	6,727.6	5,210.1	1,801.7	5,452.7	0.00	0.00	0.00
12,700.0	90.06	0.00	6,727.5	5,310.1	1,801.7	5,551.0	0.00	0.00	0.00
12,800.0	90.06	0.00	6,727.4	5,410.1	1,801.7	5,649.3	0.00	0.00	0.00
12,900.0	90.06	0.00	6,727.3	5,510.1	1,801.7	5,747.6	0.00	0.00	0.00
13,000.0	90.06	0.00	6,727.2	5,610.1	1,801.7	5,845.9	0.00	0.00	0.00
13,100.0	90.06	0.00	6,727.1	5,710.1	1,801.7	5,944.1	0.00	0.00	0.00
13,200.0	90.06	0.00	6,727.0	5,810.1	1,801.7	6,042.4	0.00	0.00	0.00
13,300.0	90.06	0.00	6,726.9	5,910.1	1,801.7	6,140.7	0.00	0.00	0.00
13,400.0	90.06	0.00	6,726.8	6,010.1	1,801.7	6,239.0	0.00	0.00	0.00
13,500.0	90.06	0.00	6,726.7	6,110.1	1,801.7	6,337.3	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-11-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,600.0	90.06	0.00	6,726.6	6,210.1	1,801.7	6,435.6	0.00	0.00	0.00	
13,700.0	90.06	0.00	6,726.5	6,310.1	1,801.7	6,533.9	0.00	0.00	0.00	
13,800.0	90.06	0.00	6,726.4	6,410.1	1,801.7	6,632.2	0.00	0.00	0.00	
13,900.0	90.06	0.00	6,726.3	6,510.1	1,801.7	6,730.5	0.00	0.00	0.00	
14,000.0	90.06	0.00	6,726.2	6,610.1	1,801.7	6,828.8	0.00	0.00	0.00	
14,100.0	90.06	0.00	6,726.0	6,710.1	1,801.7	6,927.1	0.00	0.00	0.00	
14,200.0	90.06	0.00	6,725.9	6,810.1	1,801.7	7,025.3	0.00	0.00	0.00	
14,300.0	90.06	0.00	6,725.8	6,910.1	1,801.7	7,123.6	0.00	0.00	0.00	
14,400.0	90.06	0.00	6,725.7	7,010.1	1,801.7	7,221.9	0.00	0.00	0.00	
14,500.0	90.06	0.00	6,725.6	7,110.1	1,801.7	7,320.2	0.00	0.00	0.00	
14,600.0	90.06	0.00	6,725.5	7,210.1	1,801.7	7,418.5	0.00	0.00	0.00	
14,700.0	90.06	0.00	6,725.4	7,310.1	1,801.7	7,516.8	0.00	0.00	0.00	
14,800.0	90.06	0.00	6,725.3	7,410.1	1,801.7	7,615.1	0.00	0.00	0.00	
14,900.0	90.06	0.00	6,725.2	7,510.1	1,801.7	7,713.4	0.00	0.00	0.00	
15,000.0	90.06	0.00	6,725.1	7,610.1	1,801.7	7,811.7	0.00	0.00	0.00	
15,100.0	90.06	0.00	6,725.0	7,710.1	1,801.7	7,910.0	0.00	0.00	0.00	
15,200.0	90.06	0.00	6,724.9	7,810.1	1,801.7	8,008.3	0.00	0.00	0.00	
15,300.0	90.06	0.00	6,724.8	7,910.1	1,801.7	8,106.6	0.00	0.00	0.00	
15,400.0	90.06	0.00	6,724.7	8,010.1	1,801.7	8,204.8	0.00	0.00	0.00	
15,500.0	90.06	0.00	6,724.6	8,110.1	1,801.7	8,303.1	0.00	0.00	0.00	
15,600.0	90.06	0.00	6,724.5	8,210.1	1,801.7	8,401.4	0.00	0.00	0.00	
15,700.0	90.06	0.00	6,724.4	8,310.1	1,801.7	8,499.7	0.00	0.00	0.00	
15,800.0	90.06	0.00	6,724.3	8,410.1	1,801.7	8,598.0	0.00	0.00	0.00	
15,900.0	90.06	0.00	6,724.2	8,510.1	1,801.7	8,696.3	0.00	0.00	0.00	
16,000.0	90.06	0.00	6,724.1	8,610.1	1,801.7	8,794.6	0.00	0.00	0.00	
16,100.0	90.06	0.00	6,724.0	8,710.1	1,801.7	8,892.9	0.00	0.00	0.00	
16,200.0	90.06	0.00	6,723.8	8,810.1	1,801.7	8,991.2	0.00	0.00	0.00	
16,300.0	90.06	0.00	6,723.7	8,910.1	1,801.7	9,089.5	0.00	0.00	0.00	
16,400.0	90.06	0.00	6,723.6	9,010.1	1,801.7	9,187.8	0.00	0.00	0.00	
16,500.0	90.06	0.00	6,723.5	9,110.1	1,801.7	9,286.0	0.00	0.00	0.00	
16,600.0	90.06	0.00	6,723.4	9,210.1	1,801.7	9,384.3	0.00	0.00	0.00	
16,700.0	90.06	0.00	6,723.3	9,310.1	1,801.7	9,482.6	0.00	0.00	0.00	
16,800.0	90.06	0.00	6,723.2	9,410.1	1,801.7	9,580.9	0.00	0.00	0.00	
16,900.0	90.06	0.00	6,723.1	9,510.1	1,801.7	9,679.2	0.00	0.00	0.00	
17,000.0	90.06	0.00	6,723.0	9,610.1	1,801.7	9,777.5	0.00	0.00	0.00	
17,010.8	90.06	0.00	6,723.0	9,620.9	1,801.7	9,788.1	0.00	0.00	0.00	
TD at 17010.8 - BHL 200°FNL & 2326°FEL. Sec.6										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL 675'FSL & 980'FWL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,392,830.93	3,251,104.70	40.408218	-104.598276	
BHL 200°FNL & 2326°FEL - plan hits target center - Point	0.00	0.00	6,723.0	9,620.9	1,801.7	1,402,469.21	3,252,808.38	40.434626	-104.591804	

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-11-15)		

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,541.2	6,732.9	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,711.3	3,490.0	Parkman		0.00	
4,503.9	4,210.0	Sussex		0.00	
6,950.1	6,516.0	Sharon Springs		0.00	
7,056.9	6,585.0	Niobrara A		0.00	
7,283.1	6,690.0	Niobrara B		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP - Start Build 1.50
4,935.8	4,602.4	-528.9	1,553.3	Start Drop -2.00
6,171.4	5,800.0	-613.5	1,801.7	Start 169.0 hold at 6171.4 MD
6,340.4	5,969.0	-613.5	1,801.7	Start Build 7.50
7,541.2	6,732.9	151.3	1,801.7	End of Build
17,010.8	6,723.0	9,620.9	1,801.7	TD at 17010.8





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.7-T5N-R64W**

**Dunn 5N64W7 Pad Sec.7-T5N-R64W**

**Dunn 7Q-221**

**Wellbore #1**

**Plan #1 (9-11-15)**

## **Anticollision Report**

**24 September, 2015**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (9-11-15)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<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 800.0 ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	9/24/2015		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	17,010.8	Plan #1 (9-11-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Dunn 5N64W7 Pad Sec.7-T5N-R64W						
Dunn 7I-201 - Wellbore #1 - Plan #1 (9-8-15)	200.0	200.0	135.2	134.5	200.456	CC
Dunn 7I-201 - Wellbore #1 - Plan #1 (9-8-15)	300.0	300.0	135.6	134.5	122.141	ES
Dunn 7I-201 - Wellbore #1 - Plan #1 (9-8-15)	1,200.0	1,188.6	215.0	209.4	38.418	SF
Dunn 7I-221 - Wellbore #1 - Plan #1 (9-10-15)	200.0	200.0	104.9	104.3	155.602	CC
Dunn 7I-221 - Wellbore #1 - Plan #1 (9-10-15)	300.0	300.0	105.3	104.2	94.896	ES
Dunn 7I-221 - Wellbore #1 - Plan #1 (9-10-15)	1,000.0	994.2	153.3	148.8	33.980	SF
Dunn 7I-321 - Wellbore #1 - Plan #1 (9-10-15)	200.0	200.0	120.2	119.6	178.296	CC
Dunn 7I-321 - Wellbore #1 - Plan #1 (9-10-15)	300.0	300.0	120.6	119.5	108.680	ES
Dunn 7I-321 - Wellbore #1 - Plan #1 (9-10-15)	1,100.0	1,091.7	183.2	178.1	36.286	SF
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)	200.0	200.0	90.0	89.3	133.458	CC
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)	300.0	300.0	90.4	89.3	81.444	ES
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-10-15)	1,000.0	994.2	140.6	136.1	31.331	SF
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	200.0	200.0	60.1	59.4	89.154	CC
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	300.0	300.0	60.5	59.4	54.534	ES
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	800.0	797.5	87.2	83.7	25.182	SF
Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)	200.0	200.0	75.1	74.4	111.298	CC
Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)	300.0	300.0	75.5	74.4	67.986	ES
Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)	900.0	896.1	112.9	108.9	28.450	SF
Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)	200.0	200.0	150.1	149.4	222.600	CC
Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)	300.0	300.0	150.5	149.4	135.593	ES
Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)	1,200.0	1,188.6	227.4	221.8	40.416	SF
Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)	200.0	200.0	30.2	29.6	44.844	CC
Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)	300.0	300.0	30.7	29.6	27.628	ES
Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)	17,010.8	16,871.9	517.5	140.6	1.373	Level 3, SF
Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)	200.0	200.0	14.9	14.3	22.151	CC
Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)	17,010.8	17,001.2	287.3	-83.1	0.776	Level 1, ES, SF
Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)	200.0	200.0	45.2	44.5	66.994	CC
Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)	300.0	300.0	45.6	44.5	41.080	ES
Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)	17,010.8	16,888.0	761.8	385.7	2.025	SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Dunn Pad Sec.7-T5N-R64W						
Dunn 24-7 (Exist.) - Wellbore #1 - Wellbore #1	2,905.4	2,744.9	238.9	166.5	3.300	CC, ES
Dunn 24-7 (Exist.) - Wellbore #1 - Wellbore #1	3,000.0	2,830.8	242.2	167.5	3.243	SF
Dunn 7PD (AL) - Wellbore #1 - Design #1	2,561.1	2,379.7	384.3	365.9	20.922	CC
Dunn 7PD (AL) - Wellbore #1 - Design #1	2,600.0	2,415.9	384.6	365.6	20.297	ES
Dunn 7PD (AL) - Wellbore #1 - Design #1	7,900.0	6,803.0	458.2	416.9	11.092	SF
Existing Wells - Sec.7-T5N-R64W						
Hoff #33-6 (Exist.) - Wellbore #1 - Wellbore #1	13,777.2	6,687.4	484.4	223.4	1.856	CC, ES
Hoff #33-6 (Exist.) - Wellbore #1 - Wellbore #1	13,800.0	6,687.4	484.9	223.5	1.855	SF
Little Will #7 (P&A) - Wellbore #1 - Wellbore #1						Out of range
Motis #33-7 (Exist.) - Wellbore #1 - Wellbore #1	8,841.1	6,714.5	309.7	138.4	1.808	CC, ES, SF
Motis #34-7 (Exist.) - Wellbore #1 - Wellbore #1	7,431.9	6,710.2	417.9	262.8	2.695	CC, ES, SF
Plumb #4 (Exist.) - Wellbore #1 - Wellbore #1	10,017.0	6,691.3	183.5	-7.5	0.961	Level 1, CC, ES, SF
Plumb #5 (P&A) - Wellbore #1 - Wellbore #1	11,205.1	6,686.1	555.6	343.0	2.614	CC, ES, SF
Webster #B6-2 (Exist.) - Wellbore #1 - Wellbore #1	16,644.3	6,702.4	532.9	217.0	1.687	CC, ES, SF

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Between Centres (ft)	Between Ellipses (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	0.59	135.2	1.4	135.2					
100.0	100.0	100.0	100.0	0.1	0.1	0.59	135.2	1.4	135.2	134.9	0.22	601.442		
200.0	200.0	200.0	200.0	0.3	0.3	0.59	135.2	1.4	135.2	134.5	0.67	200.456	CC	
300.0	300.0	300.0	300.0	0.5	0.6	-108.73	135.2	1.4	135.6	134.5	1.11	122.141	ES	
400.0	399.9	399.9	399.9	0.8	0.8	-110.27	135.2	1.4	136.9	135.3	1.55	88.357		
500.0	499.7	499.7	499.7	1.0	1.0	-112.76	135.2	1.4	139.3	137.3	2.01	69.371		
600.0	599.3	599.3	599.3	1.3	1.2	-116.07	135.2	1.4	143.1	140.6	2.49	57.562		
700.0	698.6	698.6	698.6	1.5	1.5	-120.05	135.2	1.4	148.7	145.7	2.98	49.840		
800.0	797.5	797.5	797.5	1.9	1.7	-124.48	135.2	1.4	156.4	152.9	3.50	44.739		
900.0	896.1	896.1	896.1	2.2	1.9	-129.12	135.2	1.4	166.6	162.6	4.02	41.461		
1,000.0	994.2	994.2	994.2	2.6	2.1	-133.76	135.2	1.4	179.7	175.2	4.55	39.520		
1,100.0	1,091.7	1,091.7	1,091.7	3.1	2.3	-138.22	135.2	1.4	195.8	190.7	5.07	38.586		
1,200.0	1,188.6	1,188.6	1,188.6	3.6	2.6	-142.37	135.2	1.4	215.0	209.4	5.60	38.418	SF	
1,300.0	1,284.9	1,284.9	1,284.9	4.1	2.8	-146.13	135.2	1.4	237.3	231.2	6.11	38.837		
1,400.0	1,380.4	1,380.4	1,380.4	4.7	3.0	-149.50	135.2	1.4	262.7	256.1	6.62	39.704		
1,500.0	1,475.0	1,475.0	1,475.0	5.4	3.2	-152.47	135.2	1.4	291.2	284.1	7.12	40.915		
1,600.0	1,568.9	1,568.9	1,568.9	6.1	3.4	-155.07	135.2	1.4	322.6	315.0	7.61	42.387		
1,700.0	1,661.7	1,661.7	1,661.7	6.8	3.6	-157.35	135.2	1.4	356.9	348.8	8.10	44.059		
1,800.0	1,753.6	1,753.6	1,753.6	7.6	3.8	-159.33	135.2	1.4	394.0	385.4	8.59	45.884		
1,847.5	1,796.9	1,796.9	1,796.9	8.0	3.9	-160.18	135.2	1.4	412.6	403.7	8.82	46.794		
1,900.0	1,844.6	1,843.8	1,843.8	8.5	4.0	-161.17	135.0	1.2	433.5	424.4	9.07	47.796		
2,000.0	1,935.4	1,932.2	1,932.2	9.4	4.2	-163.01	133.6	-0.2	474.0	464.5	9.54	49.707		
2,100.0	2,026.3	2,019.7	2,019.6	10.3	4.4	-164.80	130.7	-3.1	515.4	505.4	9.98	51.627		
2,200.0	2,117.1	2,106.1	2,105.8	11.2	4.5	-166.53	126.6	-7.4	557.6	547.2	10.42	53.491		
2,300.0	2,208.0	2,191.4	2,190.7	12.1	4.7	-168.20	121.2	-12.9	600.8	589.9	10.87	55.289		
2,400.0	2,298.8	2,275.5	2,274.2	13.0	4.9	-169.81	114.5	-19.7	645.0	633.7	11.31	57.008		
2,500.0	2,389.6	2,358.3	2,356.3	13.9	5.0	-171.37	106.7	-27.7	690.2	678.5	11.77	58.638		

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7I-201 - Wellbore #1 - Plan #1 (9-8-15)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	
2,600.0	2,480.5	2,439.8	2,436.8	14.8	5.2	-172.88	97.8	-36.8	736.5	724.3	12.24	60.171	
2,700.0	2,571.3	2,520.0	2,515.8	15.7	5.5	-174.32	87.9	-47.0	784.0	771.2	12.73	61.603	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7I-221 - Wellbore #1 - Plan #1 (9-10-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	0.46	104.9	0.8	104.9					
100.0	100.0	100.0	100.0	0.1	0.1	0.46	104.9	0.8	104.9	104.7	0.22	466.864		
200.0	200.0	200.0	200.0	0.3	0.3	0.46	104.9	0.8	104.9	104.3	0.67	155.602 CC		
300.0	300.0	300.0	300.0	0.5	0.6	-109.02	104.9	0.8	105.3	104.2	1.11	94.896 ES		
400.0	399.9	399.9	399.9	0.8	0.8	-110.99	104.9	0.8	106.7	105.1	1.55	68.853		
500.0	499.7	499.7	499.7	1.0	1.0	-114.16	104.9	0.8	109.2	107.2	2.01	54.377		
600.0	599.3	599.3	599.3	1.3	1.2	-118.32	104.9	0.8	113.3	110.8	2.49	45.568		
700.0	698.6	698.6	698.6	1.5	1.5	-123.19	104.9	0.8	119.3	116.3	2.98	40.041		
800.0	797.5	797.5	797.5	1.9	1.7	-128.45	104.9	0.8	127.8	124.3	3.49	36.652		
900.0	896.1	896.1	896.1	2.2	1.9	-133.76	104.9	0.8	139.0	135.0	4.00	34.767		
1,000.0	994.2	994.2	994.2	2.6	2.1	-138.85	104.9	0.8	153.3	148.8	4.51	33.980 SF		
1,100.0	1,091.7	1,091.7	1,091.7	3.1	2.3	-143.53	104.9	0.8	170.6	165.6	5.02	34.007		
1,200.0	1,188.6	1,188.6	1,188.6	3.6	2.6	-147.71	104.9	0.8	191.2	185.7	5.52	34.641		
1,300.0	1,284.9	1,284.9	1,284.9	4.1	2.8	-151.38	104.9	0.8	214.8	208.8	6.01	35.725		
1,400.0	1,380.4	1,380.4	1,380.4	4.7	3.0	-154.54	104.9	0.8	241.5	235.0	6.50	37.143		
1,500.0	1,475.0	1,475.0	1,475.0	5.4	3.2	-157.26	104.9	0.8	271.1	264.1	6.99	38.808		
1,600.0	1,568.9	1,570.0	1,570.0	6.1	3.4	-159.75	104.3	0.6	303.4	296.0	7.45	40.752		
1,700.0	1,661.7	1,664.1	1,664.1	6.8	3.6	-162.26	101.8	-0.7	338.2	330.3	7.87	42.971		
1,800.0	1,753.6	1,756.8	1,756.6	7.6	3.7	-164.76	97.2	-2.9	375.5	367.3	8.28	45.359		
1,847.5	1,796.9	1,800.3	1,800.0	8.0	3.8	-165.92	94.3	-4.3	394.3	385.8	8.47	46.538		
1,900.0	1,844.6	1,848.0	1,847.5	8.5	3.9	-167.25	90.7	-6.1	415.3	406.6	8.70	47.727		
2,000.0	1,935.4	1,938.4	1,937.5	9.4	4.1	-169.67	82.3	-10.2	455.9	446.8	9.15	49.836		
2,100.0	2,026.3	2,028.1	2,026.4	10.3	4.3	-171.94	72.2	-15.1	497.0	487.4	9.61	51.719		
2,200.0	2,117.1	2,117.0	2,114.3	11.2	4.5	-174.10	60.2	-21.0	538.8	528.7	10.10	53.365		
2,300.0	2,208.0	2,204.9	2,200.9	12.1	4.7	-176.15	46.6	-27.6	581.3	570.6	10.61	54.769		
2,400.0	2,298.8	2,291.9	2,286.2	13.0	5.0	-178.12	31.4	-35.0	624.5	613.3	11.17	55.916		
2,500.0	2,389.6	2,378.2	2,370.4	13.9	5.3	179.99	14.6	-43.2	668.5	656.7	11.77	56.816		
2,600.0	2,480.5	2,465.5	2,455.6	14.8	5.6	178.25	-2.9	-51.8	713.2	700.8	12.41	57.483		
2,700.0	2,571.3	2,552.9	2,540.8	15.7	5.9	176.71	-20.5	-60.3	758.3	745.2	13.08	57.979		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7I-321 - Wellbore #1 - Plan #1 (9-10-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	0.53	120.2	1.1	120.2					
100.0	100.0	100.0	100.0	0.1	0.1	0.53	120.2	1.1	120.2	120.0	0.22	534.954		
200.0	200.0	200.0	200.0	0.3	0.3	0.53	120.2	1.1	120.2	119.6	0.67	178.296 CC		
300.0	300.0	300.0	300.0	0.5	0.6	-108.86	120.2	1.1	120.6	119.5	1.11	108.680 ES		
400.0	399.9	399.9	399.9	0.8	0.8	-110.58	120.2	1.1	122.0	120.4	1.55	78.720		
500.0	499.7	499.7	499.7	1.0	1.0	-113.36	120.2	1.1	124.4	122.4	2.01	61.959		
600.0	599.3	599.3	599.3	1.3	1.2	-117.05	120.2	1.1	128.3	125.9	2.49	51.627		
700.0	698.6	698.6	698.6	1.5	1.5	-121.43	120.2	1.1	134.1	131.1	2.98	44.982		
800.0	797.5	797.5	797.5	1.9	1.7	-126.24	120.2	1.1	142.2	138.7	3.49	40.719		
900.0	896.1	896.1	896.1	2.2	1.9	-131.20	120.2	1.1	152.9	148.9	4.01	38.123		
1,000.0	994.2	994.2	994.2	2.6	2.1	-136.07	120.2	1.1	166.5	161.9	4.53	36.747		
1,100.0	1,091.7	1,091.7	1,091.7	3.1	2.3	-140.66	120.2	1.1	183.2	178.1	5.05	36.286 SF		
1,200.0	1,188.6	1,188.6	1,188.6	3.6	2.6	-144.85	120.2	1.1	203.0	197.4	5.56	36.515		
1,300.0	1,284.9	1,284.9	1,284.9	4.1	2.8	-148.59	120.2	1.1	226.0	219.9	6.06	37.265		
1,400.0	1,380.4	1,380.4	1,380.4	4.7	3.0	-151.88	120.2	1.1	252.0	245.4	6.56	38.409		
1,500.0	1,475.0	1,475.0	1,475.0	5.4	3.2	-154.75	120.2	1.1	281.0	274.0	7.05	39.849		
1,600.0	1,568.9	1,568.9	1,568.9	6.1	3.4	-157.23	120.2	1.1	313.0	305.4	7.54	41.513		
1,700.0	1,661.7	1,661.7	1,661.7	6.8	3.6	-159.47	119.8	0.8	347.7	339.7	8.00	43.441		
1,800.0	1,753.6	1,753.0	1,752.9	7.6	3.8	-161.72	117.8	-0.8	385.4	376.9	8.44	45.676		
1,847.5	1,796.9	1,795.7	1,795.6	8.0	3.9	-162.77	116.3	-2.0	404.3	395.6	8.63	46.826		
1,900.0	1,844.6	1,842.5	1,842.3	8.5	3.9	-164.02	114.2	-3.6	425.7	416.8	8.86	48.022		
2,000.0	1,935.4	1,931.0	1,930.6	9.4	4.1	-166.28	108.9	-7.7	467.0	457.7	9.30	50.211		
2,100.0	2,026.3	2,018.5	2,017.7	10.3	4.3	-168.41	102.2	-13.0	509.2	499.5	9.74	52.269		
2,200.0	2,117.1	2,105.0	2,103.5	11.2	4.5	-170.42	94.0	-19.5	552.3	542.1	10.19	54.186		
2,300.0	2,208.0	2,190.3	2,188.0	12.1	4.7	-172.34	84.4	-27.0	596.3	585.7	10.66	55.941		
2,400.0	2,298.8	2,274.4	2,270.9	13.0	4.9	-174.16	73.5	-35.5	641.4	630.2	11.15	57.525		
2,500.0	2,389.6	2,357.3	2,352.4	13.9	5.1	-175.90	61.3	-45.1	687.4	675.8	11.66	58.938		
2,600.0	2,480.5	2,439.0	2,432.2	14.8	5.4	-177.55	48.0	-55.5	734.5	722.3	12.21	60.154		
2,700.0	2,571.3	2,519.2	2,510.4	15.7	5.6	-179.14	33.6	-66.8	782.7	770.0	12.78	61.241		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		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)					
0.0	0.0	0.0	0.0	0.0	0.0	0.53	90.0	0.8	90.0				
100.0	100.0	100.0	100.0	0.1	0.1	0.53	90.0	0.8	90.0	89.8	0.22	400.423	
200.0	200.0	200.0	200.0	0.3	0.3	0.53	90.0	0.8	90.0	89.3	0.67	133.458 CC	
300.0	300.0	300.0	300.0	0.5	0.6	-109.05	90.0	0.8	90.4	89.3	1.11	81.444 ES	
400.0	399.9	399.9	399.9	0.8	0.8	-111.35	90.0	0.8	91.8	90.2	1.55	59.221	
500.0	499.7	499.7	499.7	1.0	1.0	-115.01	90.0	0.8	94.3	92.3	2.01	46.976	
600.0	599.3	599.3	599.3	1.3	1.2	-119.76	90.0	0.8	98.6	96.1	2.49	39.662	
700.0	698.6	698.6	698.6	1.5	1.5	-125.24	90.0	0.8	104.9	102.0	2.98	35.238	
800.0	797.5	797.5	797.5	1.9	1.7	-131.01	90.0	0.8	113.9	110.4	3.48	32.718	
900.0	896.1	896.1	896.1	2.2	1.9	-136.68	90.0	0.8	125.7	121.7	3.99	31.538	
1,000.0	994.2	994.2	994.2	2.6	2.1	-141.97	90.0	0.8	140.6	136.1	4.49	31.331 SF	
1,100.0	1,091.7	1,091.7	1,091.7	3.1	2.3	-146.69	90.0	0.8	158.7	153.7	4.99	31.835	
1,200.0	1,188.6	1,188.6	1,188.6	3.6	2.6	-150.81	90.0	0.8	180.0	174.5	5.48	32.858	
1,300.0	1,284.9	1,284.9	1,284.9	4.1	2.8	-154.34	90.0	0.8	204.2	198.3	5.96	34.258	
1,400.0	1,380.4	1,380.4	1,380.4	4.7	3.0	-157.33	90.0	0.8	231.5	225.1	6.44	35.932	
1,500.0	1,475.0	1,479.6	1,479.6	5.4	3.2	-160.09	89.2	1.1	261.0	254.1	6.90	37.819	
1,600.0	1,568.9	1,580.0	1,580.0	6.1	3.4	-162.77	86.0	2.2	291.4	284.0	7.33	39.774	
1,700.0	1,661.7	1,680.5	1,680.3	6.8	3.6	-165.36	80.2	4.1	322.6	314.9	7.74	41.669	
1,800.0	1,753.6	1,781.0	1,780.4	7.6	3.7	-167.88	72.0	6.9	355.0	346.8	8.16	43.481	
1,847.5	1,796.9	1,828.7	1,827.8	8.0	3.8	-169.04	67.2	8.6	370.7	362.3	8.37	44.309	
1,900.0	1,844.6	1,881.5	1,880.2	8.5	4.0	-170.36	61.3	10.6	388.1	379.5	8.61	45.065	
2,000.0	1,935.4	1,982.7	1,980.4	9.4	4.2	-172.75	48.0	15.1	420.2	411.1	9.10	46.186	
2,100.0	2,026.3	2,084.5	2,080.9	10.3	4.5	-175.07	32.1	20.5	451.2	441.5	9.62	46.905	
2,200.0	2,117.1	2,184.7	2,179.2	11.2	4.7	-177.28	14.0	26.6	481.0	470.8	10.18	47.266	
2,300.0	2,208.0	2,278.8	2,271.5	12.1	5.0	-179.17	-3.6	32.6	511.0	500.2	10.77	47.445	
2,400.0	2,298.8	2,372.9	2,363.7	13.0	5.4	179.15	-21.3	38.6	541.4	530.0	11.40	47.493	
2,500.0	2,389.6	2,467.0	2,455.9	13.9	5.7	177.64	-38.9	44.6	572.2	560.1	12.06	47.442	
2,600.0	2,480.5	2,561.1	2,548.1	14.8	6.0	176.28	-56.5	50.6	603.3	590.5	12.75	47.316	
2,700.0	2,571.3	2,655.2	2,640.4	15.7	6.4	175.05	-74.2	56.6	634.7	621.2	13.47	47.134	
2,800.0	2,662.2	2,749.3	2,732.6	16.6	6.7	173.94	-91.8	62.5	666.3	652.1	14.20	46.913	
2,900.0	2,753.0	2,843.3	2,824.8	17.5	7.1	172.93	-109.4	68.5	698.2	683.2	14.96	46.665	
3,000.0	2,843.8	2,937.4	2,917.1	18.4	7.5	172.00	-127.0	74.5	730.2	714.5	15.74	46.401	
3,100.0	2,934.7	3,031.5	3,009.3	19.3	7.8	171.15	-144.7	80.5	762.4	745.9	16.53	46.129	
3,200.0	3,025.5	3,125.6	3,101.5	20.2	8.2	170.37	-162.3	86.5	794.8	777.4	17.33	45.853	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												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	0.53	60.1	0.6	60.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.53	60.1	0.6	60.1	59.9	0.22	267.495	
200.0	200.0	200.0	200.0	0.3	0.3	0.53	60.1	0.6	60.1	59.4	0.67	89.154 CC	
300.0	300.0	300.0	300.0	0.5	0.6	-109.44	60.1	0.6	60.5	59.4	1.11	54.534 ES	
400.0	399.9	399.9	399.9	0.8	0.8	-112.85	60.1	0.6	62.0	60.4	1.55	39.976	
500.0	499.7	499.7	499.7	1.0	1.0	-118.14	60.1	0.6	64.8	62.8	2.01	32.245	
600.0	599.3	599.3	599.3	1.3	1.2	-124.72	60.1	0.6	69.6	67.1	2.48	28.003	
700.0	698.6	698.6	698.6	1.5	1.5	-131.83	60.1	0.6	76.9	73.9	2.97	25.882	
800.0	797.5	797.5	797.5	1.9	1.7	-138.74	60.1	0.6	87.2	83.7	3.46	25.182 SF	
900.0	896.1	896.1	896.1	2.2	1.9	-144.97	60.1	0.6	100.6	96.6	3.95	25.466	
1,000.0	994.2	994.2	994.2	2.6	2.1	-150.30	60.1	0.6	117.2	112.7	4.43	26.431	
1,100.0	1,091.7	1,095.1	1,095.1	3.1	2.3	-154.87	59.3	1.4	135.7	130.8	4.89	27.747	
1,200.0	1,188.6	1,196.7	1,196.6	3.6	2.5	-158.76	56.7	4.3	154.7	149.4	5.32	29.057	
1,300.0	1,284.9	1,298.7	1,298.4	4.1	2.7	-162.16	52.1	9.1	174.1	168.3	5.76	30.215	
1,400.0	1,380.4	1,401.1	1,400.4	4.7	2.9	-165.22	45.8	15.9	193.8	187.6	6.21	31.238	
1,500.0	1,475.0	1,504.0	1,502.5	5.4	3.2	-168.03	37.4	24.8	213.9	207.3	6.66	32.140	
1,600.0	1,568.9	1,607.3	1,604.7	6.1	3.5	-170.64	27.2	35.8	234.4	227.3	7.12	32.926	
1,700.0	1,661.7	1,711.0	1,706.9	6.8	3.8	-173.10	15.1	48.8	255.3	247.7	7.60	33.592	
1,800.0	1,753.6	1,815.1	1,808.9	7.6	4.1	-175.43	1.0	63.9	276.5	268.4	8.10	34.127	
1,847.5	1,796.9	1,864.6	1,857.3	8.0	4.3	-176.50	-6.4	71.8	286.8	278.4	8.35	34.327	
1,900.0	1,844.6	1,919.6	1,910.7	8.5	4.5	-177.67	-15.1	81.1	297.9	289.2	8.66	34.399	
2,000.0	1,935.4	2,018.4	2,006.6	9.4	4.9	-179.63	-31.5	98.6	318.2	308.9	9.26	34.344	
2,100.0	2,026.3	2,115.8	2,101.0	10.3	5.4	-178.66	-47.6	115.9	338.8	328.8	9.91	34.199	
2,200.0	2,117.1	2,213.1	2,195.5	11.2	5.8	-177.15	-63.8	133.2	359.6	349.0	10.58	34.001	
2,300.0	2,208.0	2,310.5	2,289.9	12.1	6.3	-175.81	-80.0	150.5	380.6	369.4	11.27	33.762	
2,400.0	2,298.8	2,407.9	2,384.4	13.0	6.7	-174.60	-96.2	167.8	401.9	389.9	12.00	33.495	
2,500.0	2,389.6	2,505.3	2,478.9	13.9	7.2	-173.52	-112.3	185.2	423.3	410.5	12.74	33.212	
2,600.0	2,480.5	2,602.7	2,573.3	14.8	7.7	-172.54	-128.5	202.5	444.8	431.3	13.51	32.920	
2,700.0	2,571.3	2,700.1	2,667.8	15.7	8.2	-171.65	-144.7	219.8	466.4	452.1	14.30	32.627	
2,800.0	2,662.2	2,797.5	2,762.2	16.6	8.6	-170.84	-160.9	237.1	488.2	473.1	15.10	32.337	
2,900.0	2,753.0	2,894.9	2,856.7	17.5	9.1	-170.10	-177.0	254.4	510.0	494.1	15.91	32.054	
3,000.0	2,843.8	2,992.2	2,951.2	18.4	9.6	-169.42	-193.2	271.7	531.9	515.1	16.74	31.779	
3,100.0	2,934.7	3,089.6	3,045.6	19.3	10.1	-168.79	-209.4	289.0	553.8	536.2	17.57	31.514	
3,200.0	3,025.5	3,187.0	3,140.1	20.2	10.6	-168.21	-225.6	306.4	575.8	557.4	18.42	31.260	
3,300.0	3,116.4	3,284.4	3,234.5	21.1	11.1	-167.67	-241.7	323.7	597.9	578.6	19.28	31.017	
3,400.0	3,207.2	3,381.8	3,329.0	22.0	11.6	-167.17	-257.9	341.0	620.0	599.9	20.14	30.786	
3,500.0	3,298.1	3,479.2	3,423.5	22.9	12.1	-166.71	-274.1	358.3	642.2	621.2	21.01	30.565	
3,600.0	3,388.9	3,576.6	3,517.9	23.8	12.6	-166.27	-290.3	375.6	664.4	642.5	21.89	30.355	
3,700.0	3,479.7	3,673.9	3,612.4	24.7	13.1	-165.87	-306.5	392.9	686.6	663.8	22.77	30.156	
3,800.0	3,570.6	3,771.3	3,706.8	25.6	13.6	-165.49	-322.6	410.2	708.9	685.2	23.66	29.966	
3,900.0	3,661.4	3,868.7	3,801.3	26.6	14.2	-165.13	-338.8	427.6	731.1	706.6	24.55	29.785	
4,000.0	3,752.3	3,966.1	3,895.8	27.5	14.7	-164.79	-355.0	444.9	753.5	728.0	25.44	29.614	
4,100.0	3,843.1	4,063.5	3,990.2	28.4	15.2	-164.48	-371.2	462.2	775.8	749.5	26.34	29.451	
4,200.0	3,933.9	4,160.9	4,084.7	29.3	15.7	-164.18	-387.3	479.5	798.2	770.9	27.25	29.295	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)		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					
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
0.0	0.0	0.0	0.0	0.0	0.0	0.43	75.0	0.6	75.1								
100.0	100.0	100.0	100.0	0.1	0.1	0.43	75.0	0.6	75.1	74.8	0.22	333.936					
200.0	200.0	200.0	200.0	0.3	0.3	0.43	75.0	0.6	75.1	74.4	0.67	111.298	CC				
300.0	300.0	300.0	300.0	0.5	0.6	-109.32	75.0	0.6	75.5	74.4	1.11	67.986	ES				
400.0	399.9	399.9	399.9	0.8	0.8	-112.06	75.0	0.6	76.9	75.3	1.55	49.596					
500.0	499.7	499.7	499.7	1.0	1.0	-116.38	75.0	0.6	79.6	77.5	2.01	39.603					
600.0	599.3	599.3	599.3	1.3	1.2	-121.91	75.0	0.6	84.0	81.5	2.49	33.813					
700.0	698.6	698.6	698.6	1.5	1.5	-128.11	75.0	0.6	90.8	87.8	2.97	30.526					
800.0	797.5	797.5	797.5	1.9	1.7	-134.43	75.0	0.6	100.3	96.9	3.47	28.903					
900.0	896.1	896.1	896.1	2.2	1.9	-140.42	75.0	0.6	112.9	108.9	3.97	28.450	SF				
1,000.0	994.2	994.2	994.2	2.6	2.1	-145.80	75.0	0.6	128.6	124.2	4.46	28.831					
1,100.0	1,091.7	1,091.7	1,091.7	3.1	2.3	-150.45	75.0	0.6	147.5	142.6	4.95	29.808					
1,200.0	1,188.6	1,188.6	1,188.6	3.6	2.6	-154.39	75.0	0.6	169.5	164.1	5.43	31.208					
1,300.0	1,284.9	1,289.2	1,289.2	4.1	2.8	-157.91	74.2	1.1	193.5	187.6	5.89	32.859					
1,400.0	1,380.4	1,390.8	1,390.7	4.7	2.9	-161.12	71.1	3.2	218.1	211.7	6.32	34.519					
1,500.0	1,475.0	1,492.7	1,492.4	5.4	3.1	-164.08	65.8	6.9	243.1	236.4	6.74	36.049					
1,600.0	1,568.9	1,594.9	1,594.2	6.1	3.3	-166.86	58.2	12.1	268.8	261.6	7.18	37.453					
1,700.0	1,661.7	1,697.5	1,696.1	6.8	3.6	-169.50	48.3	18.8	295.2	287.5	7.62	38.739					
1,800.0	1,753.6	1,800.3	1,797.8	7.6	3.8	-172.02	36.2	27.1	322.2	314.1	8.07	39.900					
1,847.5	1,796.9	1,849.2	1,846.1	8.0	4.0	-173.19	29.6	31.6	335.3	327.0	8.30	40.389					
1,900.0	1,844.6	1,903.4	1,899.5	8.5	4.1	-174.46	21.7	37.0	349.6	341.0	8.58	40.770					
2,000.0	1,935.4	2,006.3	2,000.4	9.4	4.4	-176.78	5.1	48.4	375.6	366.5	9.13	41.144					
2,100.0	2,026.3	2,102.1	2,094.1	10.3	4.8	-178.74	-11.3	59.5	401.3	391.5	9.71	41.312					
2,200.0	2,117.1	2,197.9	2,187.8	11.2	5.1	179.54	-27.6	70.7	427.3	416.9	10.33	41.363					
2,300.0	2,208.0	2,293.7	2,281.5	12.1	5.5	178.01	-43.9	81.8	453.6	442.7	10.98	41.323					
2,400.0	2,298.8	2,389.5	2,375.3	13.0	5.9	176.65	-60.2	93.0	480.2	468.6	11.65	41.214					
2,500.0	2,389.6	2,485.3	2,469.0	13.9	6.2	175.43	-76.5	104.1	507.1	494.7	12.35	41.053					
2,600.0	2,480.5	2,581.1	2,562.7	14.8	6.6	174.34	-92.9	115.3	534.1	521.1	13.07	40.857					
2,700.0	2,571.3	2,676.9	2,656.4	15.7	7.0	173.34	-109.2	126.5	561.3	547.5	13.81	40.636					
2,800.0	2,662.2	2,772.6	2,750.2	16.6	7.4	172.44	-125.5	137.6	588.7	574.1	14.57	40.400					
2,900.0	2,753.0	2,868.4	2,843.9	17.5	7.8	171.62	-141.8	148.8	616.2	600.8	15.34	40.156					
3,000.0	2,843.8	2,964.2	2,937.6	18.4	8.2	170.87	-158.1	159.9	643.8	627.6	16.13	39.909					
3,100.0	2,934.7	3,060.0	3,031.4	19.3	8.7	170.18	-174.5	171.1	671.4	654.5	16.93	39.663					
3,200.0	3,025.5	3,155.8	3,125.1	20.2	9.1	169.55	-190.8	182.2	699.2	681.5	17.74	39.421					
3,300.0	3,116.4	3,251.6	3,218.8	21.1	9.5	168.96	-207.1	193.4	727.0	708.5	18.55	39.184					
3,400.0	3,207.2	3,347.4	3,312.5	22.0	9.9	168.41	-223.4	204.5	754.9	735.5	19.38	38.955					
3,500.0	3,298.1	3,443.2	3,406.3	22.9	10.3	167.91	-239.8	215.7	782.9	762.7	20.21	38.733					

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
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	0.53	150.1	1.4	150.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.53	150.1	1.4	150.1	149.9	0.22	667.882		
200.0	200.0	200.0	200.0	0.3	0.3	0.53	150.1	1.4	150.1	149.4	0.67	222.600 CC		
300.0	300.0	300.0	300.0	0.5	0.6	-108.74	150.1	1.4	150.5	149.4	1.11	135.593 ES		
400.0	399.9	399.9	399.9	0.8	0.8	-110.12	150.1	1.4	151.8	150.3	1.55	97.994		
500.0	499.7	499.7	499.7	1.0	1.0	-112.37	150.1	1.4	154.2	152.2	2.01	76.793		
600.0	599.3	599.3	599.3	1.3	1.2	-115.38	150.1	1.4	157.9	155.4	2.49	63.520		
700.0	698.6	698.6	698.6	1.5	1.5	-119.02	150.1	1.4	163.3	160.3	2.98	54.738		
800.0	797.5	797.5	797.5	1.9	1.7	-123.10	150.1	1.4	170.8	167.3	3.50	48.815		
900.0	896.1	896.1	896.1	2.2	1.9	-127.45	150.1	1.4	180.7	176.6	4.03	44.873		
1,000.0	994.2	994.2	994.2	2.6	2.1	-131.85	150.1	1.4	193.3	188.7	4.56	42.378		
1,100.0	1,091.7	1,091.7	1,091.7	3.1	2.3	-136.15	150.1	1.4	208.8	203.7	5.10	40.978		
1,200.0	1,188.6	1,188.6	1,188.6	3.6	2.6	-140.22	150.1	1.4	227.4	221.8	5.63	40.416 SF		
1,300.0	1,284.9	1,284.9	1,284.9	4.1	2.8	-143.97	150.1	1.4	249.2	243.0	6.15	40.501		
1,400.0	1,380.4	1,380.4	1,380.4	4.7	3.0	-147.36	150.1	1.4	274.0	267.3	6.67	41.087		
1,500.0	1,475.0	1,475.0	1,475.0	5.4	3.2	-150.40	150.1	1.4	301.9	294.7	7.18	42.061		
1,600.0	1,568.9	1,568.9	1,568.9	6.1	3.4	-153.09	150.1	1.4	332.8	325.1	7.68	43.333		
1,700.0	1,661.7	1,661.7	1,661.7	6.8	3.6	-155.45	150.1	1.4	366.7	358.5	8.18	44.837		
1,800.0	1,753.6	1,753.6	1,753.6	7.6	3.8	-157.53	150.1	1.4	403.3	394.6	8.67	46.519		
1,847.5	1,796.9	1,796.9	1,796.9	8.0	3.9	-158.43	150.1	1.4	421.7	412.8	8.90	47.369		
1,900.0	1,844.6	1,844.6	1,844.6	8.5	4.0	-159.46	150.1	1.4	442.4	433.2	9.17	48.249		
2,000.0	1,935.4	1,935.4	1,935.4	9.4	4.2	-161.19	150.1	1.4	482.2	472.5	9.68	49.822		
2,100.0	2,026.3	2,026.3	2,026.3	10.3	4.4	-162.66	150.1	1.4	522.3	512.1	10.19	51.263		
2,200.0	2,117.1	2,117.1	2,117.1	11.2	4.6	-163.92	150.1	1.4	562.6	551.9	10.70	52.582		
2,300.0	2,208.0	2,208.0	2,208.0	12.1	4.9	-165.01	150.1	1.4	603.1	591.9	11.21	53.789		
2,400.0	2,298.8	2,298.8	2,298.8	13.0	5.1	-165.97	150.1	1.4	643.8	632.1	11.73	54.892		
2,500.0	2,389.6	2,389.6	2,389.6	13.9	5.3	-166.81	150.1	1.4	684.7	672.4	12.25	55.903		
2,600.0	2,480.5	2,480.5	2,480.5	14.8	5.5	-167.56	150.1	1.4	725.6	712.8	12.77	56.830		
2,700.0	2,571.3	2,571.3	2,571.3	15.7	5.7	-168.34	149.3	1.4	766.3	753.0	13.27	57.726		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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	0.53	30.2	0.3	30.2	30.2	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	0.53	30.2	0.3	30.2	30.0	0.22	134.549		
200.0	200.0	200.0	200.0	0.3	0.3	0.53	30.2	0.3	30.2	29.6	0.67	44.844 CC		
300.0	300.0	300.0	300.0	0.5	0.6	-110.59	30.2	0.3	30.7	29.6	1.11	27.628 ES		
400.0	399.9	399.9	399.9	0.8	0.8	-117.11	30.2	0.3	32.3	30.7	1.55	20.804		
500.0	499.7	499.7	499.7	1.0	1.0	-126.43	30.2	0.3	35.7	33.7	2.01	17.766		
600.0	599.3	599.3	599.3	1.3	1.2	-136.48	30.2	0.3	41.8	39.3	2.48	16.843		
700.0	698.6	699.7	699.7	1.5	1.4	-144.95	29.7	1.4	49.9	46.9	2.94	16.967		
800.0	797.5	800.5	800.4	1.9	1.6	-151.30	27.9	5.0	58.5	55.1	3.38	17.309		
900.0	896.1	901.5	901.2	2.2	1.9	-156.27	24.9	10.9	67.5	63.7	3.83	17.632		
1,000.0	994.2	1,002.8	1,002.1	2.6	2.1	-160.30	20.7	19.2	76.8	72.5	4.29	17.915		
1,100.0	1,091.7	1,104.4	1,102.9	3.1	2.4	-163.69	15.3	30.0	86.3	81.5	4.75	18.154		
1,200.0	1,188.6	1,206.2	1,203.7	3.6	2.7	-166.62	8.6	43.1	95.9	90.7	5.23	18.348		
1,300.0	1,284.9	1,308.4	1,304.3	4.1	3.0	-169.22	0.8	58.8	105.6	99.9	5.71	18.497		
1,400.0	1,380.4	1,410.7	1,404.7	4.7	3.4	-171.55	-8.3	76.8	115.4	109.2	6.20	18.602		
1,500.0	1,475.0	1,513.4	1,504.7	5.4	3.8	-173.69	-18.7	97.3	125.3	118.6	6.71	18.659		
1,600.0	1,568.9	1,616.3	1,604.4	6.1	4.3	-175.68	-30.3	120.3	135.2	128.0	7.24	18.670		
1,700.0	1,661.7	1,719.5	1,703.5	6.8	4.8	-177.54	-43.1	145.7	145.2	137.4	7.79	18.635		
1,800.0	1,753.6	1,822.9	1,802.1	7.6	5.4	-179.30	-57.1	173.6	155.3	146.9	8.37	18.542		
1,847.5	1,796.9	1,872.1	1,848.8	8.0	5.7	-179.89	-64.2	187.7	160.1	151.4	8.66	18.478		
1,900.0	1,844.6	1,925.7	1,899.2	8.5	6.1	-179.04	-72.2	203.6	165.1	156.1	9.01	18.324		
2,000.0	1,935.4	2,025.1	1,993.0	9.4	6.7	-177.57	-87.2	233.3	174.5	164.8	9.69	18.012		
2,100.0	2,026.3	2,124.6	2,086.7	10.3	7.4	-176.26	-102.2	263.0	184.0	173.6	10.40	17.701		
2,200.0	2,117.1	2,224.0	2,180.4	11.2	8.0	-175.07	-117.2	292.8	193.7	182.5	11.13	17.397		
2,300.0	2,208.0	2,323.5	2,274.1	12.1	8.7	-174.00	-132.2	322.5	203.3	191.5	11.89	17.101		
2,400.0	2,298.8	2,423.0	2,367.9	13.0	9.4	-173.02	-147.1	352.2	213.1	200.4	12.67	16.817		
2,500.0	2,389.6	2,522.4	2,461.6	13.9	10.1	-172.13	-162.1	381.9	222.9	209.4	13.47	16.545		
2,600.0	2,480.5	2,621.9	2,555.3	14.8	10.8	-171.32	-177.1	411.7	232.8	218.5	14.29	16.287		
2,700.0	2,571.3	2,721.4	2,649.0	15.7	11.5	-170.57	-192.1	441.4	242.7	227.5	15.13	16.042		
2,800.0	2,662.2	2,820.8	2,742.8	16.6	12.2	-169.88	-207.1	471.1	252.6	236.6	15.98	15.810		
2,900.0	2,753.0	2,920.3	2,836.5	17.5	12.9	-169.24	-222.1	500.8	262.6	245.7	16.84	15.592		
3,000.0	2,843.8	3,019.7	2,930.2	18.4	13.6	-168.65	-237.0	530.6	272.6	254.9	17.72	15.386		
3,100.0	2,934.7	3,119.2	3,023.9	19.3	14.3	-168.10	-252.0	560.3	282.6	264.0	18.60	15.193		
3,200.0	3,025.5	3,218.7	3,117.7	20.2	15.0	-167.59	-267.0	590.0	292.7	273.2	19.50	15.011		
3,300.0	3,116.4	3,318.1	3,211.4	21.1	15.7	-167.12	-282.0	619.7	302.7	282.3	20.40	14.839		
3,400.0	3,207.2	3,417.6	3,305.1	22.0	16.4	-166.67	-297.0	649.5	312.8	291.5	21.31	14.678		
3,500.0	3,298.1	3,517.0	3,398.8	22.9	17.1	-166.25	-311.9	679.2	323.0	300.7	22.23	14.526		
3,600.0	3,388.9	3,616.5	3,492.6	23.8	17.8	-165.86	-326.9	708.9	333.1	309.9	23.16	14.382		
3,700.0	3,479.7	3,716.0	3,586.3	24.7	18.5	-165.49	-341.9	738.6	343.2	319.1	24.09	14.247		
3,800.0	3,570.6	3,815.4	3,680.0	25.6	19.3	-165.14	-356.9	768.4	353.4	328.4	25.03	14.119		
3,900.0	3,661.4	3,914.9	3,773.7	26.6	20.0	-164.81	-371.9	798.1	363.5	337.6	25.97	13.999		
4,000.0	3,752.3	4,014.3	3,867.5	27.5	20.7	-164.50	-386.9	827.8	373.7	346.8	26.92	13.885		
4,100.0	3,843.1	4,113.8	3,961.2	28.4	21.4	-164.20	-401.8	857.5	383.9	356.1	27.87	13.777		
4,200.0	3,933.9	4,213.3	4,054.9	29.3	22.1	-163.92	-416.8	887.3	394.1	365.3	28.82	13.674		
4,300.0	4,024.8	4,312.7	4,148.6	30.2	22.8	-163.66	-431.8	917.0	404.3	374.5	29.78	13.577		
4,400.0	4,115.6	4,412.2	4,242.4	31.1	23.5	-163.41	-446.8	946.7	414.5	383.8	30.74	13.485		
4,500.0	4,206.5	4,511.6	4,336.1	32.0	24.2	-163.17	-461.8	976.4	424.8	393.1	31.71	13.397		
4,600.0	4,297.3	4,611.1	4,429.8	32.9	24.9	-162.94	-476.7	1,006.2	435.0	402.3	32.67	13.314		
4,700.0	4,388.2	4,710.6	4,523.5	33.9	25.7	-162.72	-491.7	1,035.9	445.2	411.6	33.64	13.234		
4,800.0	4,479.0	4,810.0	4,617.3	34.8	26.4	-162.51	-506.7	1,065.6	455.5	420.9	34.62	13.158		
4,900.0	4,569.8	4,909.5	4,711.0	35.7	27.1	-162.31	-521.7	1,095.3	465.7	430.1	35.59	13.086		

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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		
4,935.8	4,602.3	4,945.1	4,744.5	36.0	27.3	162.24	-527.0	1,106.0	469.4	433.5	35.94	13.061		
5,000.0	4,661.0	5,009.0	4,804.8	36.5	27.8	162.13	-536.7	1,125.1	475.3	438.7	36.60	12.988		
5,100.0	4,753.4	5,100.0	4,890.7	37.2	28.4	161.90	-550.2	1,151.9	482.3	444.8	37.52	12.856		
5,200.0	4,847.1	5,187.3	4,973.8	37.8	28.8	161.69	-562.1	1,175.5	488.5	450.2	38.29	12.759		
5,300.0	4,942.0	5,273.8	5,057.0	38.3	29.2	161.51	-572.7	1,196.6	494.1	455.2	38.98	12.678		
5,400.0	5,037.9	5,360.2	5,140.8	38.8	29.6	161.36	-582.3	1,215.5	499.2	459.6	39.58	12.610		
5,500.0	5,134.7	5,446.5	5,225.1	39.3	29.9	161.23	-590.6	1,232.1	503.6	463.5	40.11	12.556		
5,600.0	5,232.4	5,532.8	5,309.9	39.6	30.2	161.11	-597.9	1,246.5	507.4	466.9	40.55	12.514		
5,700.0	5,330.7	5,619.1	5,395.1	39.9	30.4	161.02	-603.9	1,258.5	510.6	469.7	40.91	12.483		
5,800.0	5,429.7	5,700.0	5,475.4	40.2	30.6	160.95	-608.6	1,267.7	513.3	472.1	41.17	12.468		
5,900.0	5,529.0	5,791.5	5,566.4	40.4	30.8	160.89	-612.6	1,275.6	515.2	473.9	41.37	12.455		
6,000.0	5,628.7	5,877.7	5,652.4	40.6	30.9	160.85	-615.1	1,280.8	516.6	475.1	41.47	12.457		
6,100.0	5,728.6	5,963.8	5,738.5	40.7	31.0	160.83	-616.6	1,283.6	517.4	475.9	41.50	12.468		
6,171.4	5,800.0	6,025.3	5,800.0	40.7	31.1	-90.37	-616.9	1,284.2	517.5	476.0	41.47	12.478		
6,200.0	5,828.6	6,053.9	5,828.6	40.8	31.1	-90.37	-616.9	1,284.2	517.5	476.0	41.54	12.458		
6,300.0	5,928.6	6,153.9	5,928.6	40.8	31.2	-90.37	-616.9	1,284.2	517.5	475.7	41.77	12.390		
6,340.4	5,969.0	6,194.3	5,969.0	40.9	31.2	-90.37	-616.9	1,284.2	517.5	475.7	41.86	12.362		
6,350.0	5,978.6	6,204.0	5,978.6	40.9	31.3	-90.38	-616.8	1,284.2	517.5	475.6	41.89	12.355		
6,400.0	6,028.6	6,254.2	6,028.8	40.9	31.3	-90.41	-614.9	1,284.2	517.5	475.5	41.99	12.324		
6,450.0	6,078.2	6,304.5	6,078.8	40.9	31.3	-90.45	-609.6	1,284.2	517.5	475.5	42.04	12.311		
6,500.0	6,127.5	6,354.7	6,128.3	40.9	31.3	-90.48	-601.1	1,284.2	517.5	475.5	42.02	12.315		
6,550.0	6,176.0	6,405.0	6,177.2	40.9	31.3	-90.51	-589.3	1,284.2	517.5	475.6	41.96	12.334		
6,600.0	6,223.6	6,455.3	6,225.2	40.8	31.2	-90.53	-574.3	1,284.2	517.5	475.7	41.85	12.368		
6,650.0	6,270.2	6,505.6	6,272.2	40.8	31.2	-90.56	-556.2	1,284.2	517.5	475.8	41.69	12.415		
6,700.0	6,315.5	6,556.0	6,317.8	40.8	31.1	-90.58	-535.1	1,284.2	517.5	476.0	41.49	12.473		
6,750.0	6,359.3	6,606.3	6,362.0	40.7	31.0	-90.60	-510.9	1,284.2	517.5	476.3	41.27	12.541		
6,800.0	6,401.4	6,656.7	6,404.5	40.6	30.9	-90.62	-484.0	1,284.2	517.5	476.5	41.02	12.616		
6,850.0	6,441.6	6,707.1	6,445.2	40.5	30.8	-90.63	-454.2	1,284.2	517.5	476.8	40.76	12.696		
6,900.0	6,479.9	6,757.5	6,483.8	40.5	30.7	-90.64	-421.9	1,284.2	517.5	477.0	40.50	12.778		
6,950.0	6,515.9	6,807.8	6,520.2	40.4	30.6	-90.65	-387.0	1,284.2	517.5	477.3	40.25	12.858		
7,000.0	6,549.6	6,858.2	6,554.2	40.3	30.4	-90.66	-349.8	1,284.2	517.5	477.5	40.02	12.933		
7,050.0	6,580.9	6,908.6	6,585.7	40.2	30.3	-90.66	-310.5	1,284.2	517.5	477.7	39.81	12.999		
7,100.0	6,609.5	6,959.0	6,614.5	40.1	30.2	-90.66	-269.2	1,284.2	517.5	477.9	39.65	13.052		
7,150.0	6,635.3	7,009.4	6,640.5	40.0	30.1	-90.66	-226.1	1,284.2	517.5	478.0	39.54	13.090		
7,200.0	6,658.3	7,059.8	6,663.7	39.9	29.9	-90.66	-181.3	1,284.2	517.5	478.1	39.49	13.107		
7,250.0	6,678.4	7,110.2	6,683.8	39.8	29.8	-90.65	-135.1	1,284.2	517.5	478.0	39.50	13.102		
7,300.0	6,695.4	7,160.6	6,700.9	39.7	29.7	-90.64	-87.7	1,284.2	517.5	478.0	39.59	13.073		
7,350.0	6,709.3	7,211.0	6,714.8	39.6	29.6	-90.62	-39.3	1,284.2	517.5	477.8	39.76	13.018		
7,400.0	6,720.1	7,261.3	6,725.5	39.6	29.4	-90.61	9.9	1,284.2	517.5	477.5	40.01	12.937		
7,450.0	6,727.6	7,311.7	6,732.9	39.5	29.3	-90.59	59.7	1,284.2	517.5	477.2	40.34	12.830		
7,500.0	6,731.9	7,362.0	6,737.0	39.4	29.3	-90.57	109.9	1,284.2	517.5	476.8	40.75	12.700		
7,541.2	6,732.9	7,403.4	6,737.9	39.4	29.2	-90.55	151.3	1,284.2	517.5	476.4	41.15	12.578		
7,600.0	6,732.9	7,462.3	6,737.8	39.4	29.1	-90.55	210.1	1,284.2	517.5	475.7	41.84	12.371		
7,700.0	6,732.8	7,562.3	6,737.6	39.3	29.1	-90.54	310.1	1,284.2	517.5	474.3	43.22	11.973		
7,800.0	6,732.6	7,662.3	6,737.5	39.4	29.2	-90.53	410.1	1,284.2	517.5	472.6	44.90	11.527		
7,900.0	6,732.5	7,762.3	6,737.3	39.5	29.4	-90.53	510.1	1,284.2	517.5	470.7	46.83	11.052		
8,000.0	6,732.4	7,862.3	6,737.2	39.6	29.7	-90.52	610.1	1,284.2	517.5	468.5	48.98	10.565		
8,100.0	6,732.3	7,962.3	6,737.0	39.9	30.3	-90.52	710.1	1,284.2	517.5	466.2	51.34	10.081		
8,200.0	6,732.2	8,062.3	6,736.8	40.2	31.0	-90.51	810.1	1,284.2	517.5	463.7	53.86	9.608		
8,300.0	6,732.1	8,162.3	6,736.7	40.7	32.0	-90.50	910.1	1,284.2	517.5	461.0	56.54	9.154		
8,400.0	6,732.0	8,262.3	6,736.5	41.2	33.0	-90.50	1,010.1	1,284.2	517.5	458.2	59.34	8.722		

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												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	
8,500.0	6,731.9	8,362.3	6,736.4	41.9	34.3	-90.49	1,110.1	1,284.2	517.5	455.3	62.25	8.314	
8,600.0	6,731.8	8,462.3	6,736.2	42.7	35.6	-90.49	1,210.1	1,284.2	517.5	452.3	65.26	7.930	
8,700.0	6,731.7	8,562.3	6,736.1	43.6	36.9	-90.48	1,310.1	1,284.2	517.5	449.2	68.35	7.572	
8,800.0	6,731.6	8,662.3	6,735.9	44.6	38.4	-90.48	1,410.1	1,284.2	517.5	446.0	71.51	7.237	
8,900.0	6,731.5	8,762.3	6,735.7	45.7	39.9	-90.47	1,510.1	1,284.2	517.5	442.8	74.74	6.924	
9,000.0	6,731.4	8,862.3	6,735.6	46.9	41.4	-90.46	1,610.1	1,284.2	517.5	439.5	78.03	6.633	
9,100.0	6,731.3	8,962.3	6,735.4	48.2	43.0	-90.46	1,710.1	1,284.2	517.5	436.2	81.36	6.361	
9,200.0	6,731.2	9,062.3	6,735.3	49.5	44.6	-90.45	1,810.1	1,284.2	517.5	432.8	84.73	6.108	
9,300.0	6,731.1	9,162.3	6,735.1	50.9	46.2	-90.45	1,910.1	1,284.2	517.5	429.4	88.15	5.871	
9,400.0	6,731.0	9,262.3	6,735.0	52.3	47.9	-90.44	2,010.1	1,284.2	517.5	425.9	91.59	5.650	
9,500.0	6,730.9	9,362.3	6,734.8	53.8	49.6	-90.44	2,110.1	1,284.2	517.5	422.5	95.07	5.444	
9,600.0	6,730.8	9,462.3	6,734.6	55.3	51.3	-90.43	2,210.1	1,284.2	517.5	418.9	98.57	5.250	
9,700.0	6,730.7	9,562.3	6,734.5	56.9	53.0	-90.42	2,310.1	1,284.2	517.5	415.4	102.10	5.069	
9,800.0	6,730.6	9,662.3	6,734.3	58.4	54.7	-90.42	2,410.1	1,284.2	517.5	411.9	105.65	4.898	
9,900.0	6,730.4	9,762.3	6,734.2	60.0	56.4	-90.41	2,510.1	1,284.2	517.5	408.3	109.22	4.738	
10,000.0	6,730.3	9,862.3	6,734.0	61.7	58.2	-90.41	2,610.1	1,284.2	517.5	404.7	112.81	4.588	
10,100.0	6,730.2	9,962.3	6,733.9	63.3	59.9	-90.40	2,710.1	1,284.2	517.5	401.1	116.41	4.446	
10,200.0	6,730.1	10,062.3	6,733.7	65.0	61.7	-90.39	2,810.1	1,284.2	517.5	397.5	120.03	4.312	
10,300.0	6,730.0	10,162.3	6,733.5	66.7	63.5	-90.39	2,910.1	1,284.2	517.5	393.9	123.66	4.185	
10,400.0	6,729.9	10,262.3	6,733.4	68.4	65.2	-90.38	3,010.1	1,284.2	517.5	390.2	127.31	4.065	
10,500.0	6,729.8	10,362.3	6,733.2	70.1	67.0	-90.38	3,110.1	1,284.2	517.5	386.6	130.96	3.952	
10,600.0	6,729.7	10,462.3	6,733.1	71.8	68.8	-90.37	3,210.1	1,284.2	517.5	382.9	134.63	3.844	
10,700.0	6,729.6	10,562.3	6,732.9	73.5	70.6	-90.37	3,310.1	1,284.2	517.5	379.2	138.30	3.742	
10,800.0	6,729.5	10,662.3	6,732.8	75.3	72.4	-90.36	3,410.1	1,284.2	517.5	375.5	141.99	3.645	
10,900.0	6,729.4	10,762.3	6,732.6	77.0	74.2	-90.35	3,510.1	1,284.2	517.5	371.8	145.68	3.552	
11,000.0	6,729.3	10,862.3	6,732.4	78.8	76.1	-90.35	3,610.1	1,284.2	517.5	368.1	149.38	3.464	
11,100.0	6,729.2	10,962.3	6,732.3	80.6	77.9	-90.34	3,710.1	1,284.2	517.5	364.4	153.08	3.381	
11,200.0	6,729.1	11,062.3	6,732.1	82.3	79.7	-90.34	3,810.1	1,284.2	517.5	360.7	156.80	3.301	
11,300.0	6,729.0	11,162.3	6,732.0	84.1	81.5	-90.33	3,910.1	1,284.2	517.5	357.0	160.52	3.224	
11,400.0	6,728.9	11,262.3	6,731.8	85.9	83.4	-90.33	4,010.1	1,284.2	517.5	353.3	164.24	3.151	
11,500.0	6,728.8	11,362.3	6,731.7	87.7	85.2	-90.32	4,110.1	1,284.2	517.5	349.5	167.97	3.081	
11,600.0	6,728.7	11,462.3	6,731.5	89.5	87.1	-90.31	4,210.1	1,284.2	517.5	345.8	171.70	3.014	
11,700.0	6,728.6	11,562.3	6,731.3	91.3	88.9	-90.31	4,310.1	1,284.2	517.5	342.1	175.44	2.950	
11,800.0	6,728.5	11,662.3	6,731.2	93.1	90.7	-90.30	4,410.1	1,284.2	517.5	338.3	179.19	2.888	
11,900.0	6,728.4	11,762.3	6,731.0	94.9	92.6	-90.30	4,510.1	1,284.2	517.5	334.6	182.93	2.829	
12,000.0	6,728.2	11,862.3	6,730.9	96.7	94.4	-90.29	4,610.1	1,284.2	517.5	330.8	186.68	2.772	
12,100.0	6,728.1	11,962.3	6,730.7	98.6	96.3	-90.28	4,710.1	1,284.2	517.5	327.1	190.44	2.717	
12,200.0	6,728.0	12,062.3	6,730.6	100.4	98.2	-90.28	4,810.1	1,284.2	517.5	323.3	194.20	2.665	
12,300.0	6,727.9	12,162.3	6,730.4	102.2	100.0	-90.27	4,910.1	1,284.2	517.5	319.6	197.96	2.614	
12,400.0	6,727.8	12,262.3	6,730.2	104.0	101.9	-90.27	5,010.1	1,284.2	517.5	315.8	201.72	2.565	
12,500.0	6,727.7	12,362.3	6,730.1	105.9	103.8	-90.26	5,110.1	1,284.2	517.5	312.0	205.49	2.518	
12,600.0	6,727.6	12,462.3	6,729.9	107.7	105.6	-90.26	5,210.1	1,284.2	517.5	308.3	209.26	2.473	
12,700.0	6,727.5	12,562.3	6,729.8	109.6	107.5	-90.25	5,310.1	1,284.2	517.5	304.5	213.03	2.429	
12,800.0	6,727.4	12,662.3	6,729.6	111.4	109.4	-90.24	5,410.1	1,284.2	517.5	300.7	216.81	2.387	
12,900.0	6,727.3	12,762.3	6,729.5	113.2	111.2	-90.24	5,510.1	1,284.2	517.5	296.9	220.58	2.346	
13,000.0	6,727.2	12,862.3	6,729.3	115.1	113.1	-90.23	5,610.1	1,284.2	517.5	293.1	224.36	2.307	
13,100.0	6,727.1	12,962.3	6,729.1	116.9	115.0	-90.23	5,710.1	1,284.2	517.5	289.4	228.14	2.268	
13,200.0	6,727.0	13,062.3	6,729.0	118.8	116.9	-90.22	5,810.1	1,284.2	517.5	285.6	231.93	2.231	
13,300.0	6,726.9	13,162.3	6,728.8	120.6	118.7	-90.21	5,910.1	1,284.2	517.5	281.8	235.71	2.196	
13,400.0	6,726.8	13,262.3	6,728.7	122.5	120.6	-90.21	6,010.1	1,284.2	517.5	278.0	239.50	2.161	
13,500.0	6,726.7	13,362.3	6,728.5	124.4	122.5	-90.20	6,110.1	1,284.2	517.5	274.2	243.29	2.127	

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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		
13,600.0	6,726.6	13,462.3	6,728.4	126.2	124.4	-90.20	6,210.1	1,284.2	517.5	270.4	247.08	2.095		
13,700.0	6,726.5	13,562.3	6,728.2	128.1	126.3	-90.19	6,310.1	1,284.2	517.5	266.6	250.87	2.063		
13,800.0	6,726.4	13,662.3	6,728.0	130.0	128.1	-90.19	6,410.1	1,284.2	517.5	262.8	254.66	2.032		
13,900.0	6,726.3	13,762.3	6,727.9	131.8	130.0	-90.18	6,510.1	1,284.2	517.5	259.1	258.45	2.002		
14,000.0	6,726.2	13,862.3	6,727.7	133.7	131.9	-90.17	6,610.1	1,284.2	517.5	255.3	262.25	1.973		
14,100.0	6,726.0	13,962.3	6,727.6	135.6	133.8	-90.17	6,710.1	1,284.2	517.5	251.5	266.05	1.945		
14,200.0	6,725.9	14,062.3	6,727.4	137.4	135.7	-90.16	6,810.1	1,284.2	517.5	247.7	269.85	1.918		
14,300.0	6,725.8	14,162.3	6,727.3	139.3	137.6	-90.16	6,910.1	1,284.2	517.5	243.9	273.64	1.891		
14,400.0	6,725.7	14,262.3	6,727.1	141.2	139.5	-90.15	7,010.1	1,284.2	517.5	240.1	277.45	1.865		
14,500.0	6,725.6	14,362.3	6,726.9	143.0	141.3	-90.15	7,110.1	1,284.2	517.5	236.3	281.25	1.840		
14,600.0	6,725.5	14,462.3	6,726.8	144.9	143.2	-90.14	7,210.1	1,284.2	517.5	232.5	285.05	1.816		
14,700.0	6,725.4	14,562.3	6,726.6	146.8	145.1	-90.13	7,310.1	1,284.2	517.5	228.7	288.85	1.792		
14,800.0	6,725.3	14,662.3	6,726.5	148.7	147.0	-90.13	7,410.1	1,284.2	517.5	224.9	292.66	1.768		
14,900.0	6,725.2	14,762.3	6,726.3	150.5	148.9	-90.12	7,510.1	1,284.2	517.5	221.0	296.46	1.746		
15,000.0	6,725.1	14,862.3	6,726.2	152.4	150.8	-90.12	7,610.1	1,284.2	517.5	217.2	300.27	1.723		
15,100.0	6,725.0	14,962.3	6,726.0	154.3	152.7	-90.11	7,710.1	1,284.2	517.5	213.4	304.08	1.702		
15,200.0	6,724.9	15,062.3	6,725.8	156.2	154.6	-90.10	7,810.1	1,284.2	517.5	209.6	307.89	1.681		
15,300.0	6,724.8	15,162.3	6,725.7	158.1	156.5	-90.10	7,910.1	1,284.2	517.5	205.8	311.69	1.660		
15,400.0	6,724.7	15,262.3	6,725.5	160.0	158.4	-90.09	8,010.1	1,284.2	517.5	202.0	315.50	1.640		
15,500.0	6,724.6	15,362.3	6,725.4	161.8	160.3	-90.09	8,110.1	1,284.2	517.5	198.2	319.31	1.621		
15,600.0	6,724.5	15,462.3	6,725.2	163.7	162.2	-90.08	8,210.1	1,284.2	517.5	194.4	323.13	1.602		
15,700.0	6,724.4	15,562.3	6,725.1	165.6	164.1	-90.08	8,310.1	1,284.2	517.5	190.6	326.94	1.583		
15,800.0	6,724.3	15,662.3	6,724.9	167.5	166.0	-90.07	8,410.1	1,284.2	517.5	186.8	330.75	1.565		
15,900.0	6,724.2	15,762.3	6,724.7	169.4	167.9	-90.06	8,510.1	1,284.2	517.5	182.9	334.56	1.547		
16,000.0	6,724.1	15,862.3	6,724.6	171.3	169.8	-90.06	8,610.1	1,284.2	517.5	179.1	338.38	1.529		
16,100.0	6,724.0	15,962.3	6,724.4	173.2	171.7	-90.05	8,710.1	1,284.2	517.5	175.3	342.19	1.512		
16,200.0	6,723.8	16,062.3	6,724.3	175.0	173.6	-90.05	8,810.1	1,284.2	517.5	171.5	346.01	1.496 Level 3		
16,300.0	6,723.7	16,162.3	6,724.1	176.9	175.5	-90.04	8,910.1	1,284.2	517.5	167.7	349.82	1.479 Level 3		
16,400.0	6,723.6	16,262.3	6,724.0	178.8	177.4	-90.04	9,010.1	1,284.2	517.5	163.9	353.64	1.463 Level 3		
16,500.0	6,723.5	16,362.3	6,723.8	180.7	179.3	-90.03	9,110.1	1,284.2	517.5	160.1	357.45	1.448 Level 3		
16,600.0	6,723.4	16,462.3	6,723.6	182.6	181.2	-90.02	9,210.1	1,284.2	517.5	156.2	361.27	1.432 Level 3		
16,700.0	6,723.3	16,562.3	6,723.5	184.5	183.1	-90.02	9,310.1	1,284.2	517.5	152.4	365.09	1.417 Level 3		
16,800.0	6,723.2	16,662.3	6,723.3	186.4	185.0	-90.01	9,410.1	1,284.2	517.5	148.6	368.91	1.403 Level 3		
16,900.0	6,723.1	16,762.3	6,723.2	188.3	186.9	-90.01	9,510.1	1,284.2	517.5	144.8	372.72	1.388 Level 3		
16,986.1	6,723.0	16,848.4	6,723.0	189.9	188.5	-90.00	9,596.2	1,284.2	517.5	141.5	376.01	1.376 Level 3		
17,000.0	6,723.0	16,862.3	6,723.0	190.2	188.8	-90.00	9,610.1	1,284.2	517.5	141.0	376.54	1.374 Level 3		
17,001.2	6,723.0	16,863.5	6,723.0	190.2	188.8	-90.00	9,611.3	1,284.2	517.5	140.9	376.59	1.374 Level 3		
17,010.8	6,723.0	16,871.9	6,723.0	190.4	189.0	-90.00	9,619.7	1,284.2	517.5	140.6	376.93	1.373 Level 3, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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	0.00	14.9	0.0	14.9	14.9	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	0.00	14.9	0.0	14.9	14.7	0.22	66.461		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	14.9	0.0	14.9	14.3	0.67	22.151 CC		
300.0	300.0	300.0	300.0	0.5	0.6	-113.41	14.9	0.0	15.4	14.3	1.11	13.874		
400.0	399.9	399.9	399.9	0.8	0.8	-125.36	14.9	0.0	17.3	15.8	1.55	11.168		
500.0	499.7	500.1	500.1	1.0	1.0	-137.36	14.4	1.2	20.8	18.8	1.99	10.409		
600.0	599.3	600.5	600.4	1.3	1.2	-146.04	12.9	4.9	24.7	22.3	2.43	10.158		
700.0	698.6	701.0	700.7	1.5	1.4	-152.51	10.4	11.0	29.0	26.1	2.89	10.052		
800.0	797.5	801.6	800.9	1.9	1.7	-157.54	6.9	19.5	33.5	30.2	3.35	10.007		
900.0	896.1	902.4	900.9	2.2	1.9	-161.60	2.3	30.5	38.1	34.3	3.82	9.987		
1,000.0	994.2	1,003.3	1,000.8	2.6	2.3	-164.98	-3.2	43.9	42.8	38.5	4.29	9.975		
1,100.0	1,091.7	1,104.3	1,100.3	3.1	2.6	-167.88	-9.8	59.8	47.6	42.8	4.78	9.961		
1,200.0	1,188.6	1,205.5	1,199.5	3.6	3.0	-170.42	-17.4	78.2	52.4	47.1	5.27	9.940		
1,300.0	1,284.9	1,306.8	1,298.3	4.1	3.4	-172.70	-26.0	99.0	57.3	51.5	5.78	9.908		
1,400.0	1,380.4	1,408.2	1,396.6	4.7	3.9	-174.77	-35.7	122.2	62.2	55.9	6.30	9.860		
1,500.0	1,475.0	1,509.8	1,494.3	5.4	4.5	-176.69	-46.3	147.9	67.1	60.2	6.84	9.802		
1,600.0	1,568.9	1,611.5	1,591.3	6.1	5.1	-178.47	-57.9	176.0	72.0	64.6	7.41	9.722		
1,700.0	1,661.7	1,713.4	1,687.6	6.8	5.7	-179.85	-70.6	206.6	76.9	68.9	8.00	9.622		
1,800.0	1,753.6	1,815.3	1,783.1	7.6	6.4	-178.26	-84.2	239.5	81.9	73.3	8.62	9.502		
1,847.5	1,796.9	1,862.7	1,827.3	8.0	6.8	-177.57	-90.7	255.4	84.6	75.7	8.92	9.478		
1,900.0	1,844.6	1,915.1	1,876.2	8.5	7.1	-176.86	-98.0	272.9	87.9	78.6	9.29	9.461		
2,000.0	1,935.4	2,014.9	1,969.2	9.4	7.9	-175.66	-111.8	306.2	94.2	84.2	10.00	9.419		
2,100.0	2,026.3	2,114.6	2,062.2	10.3	8.6	-174.61	-125.6	339.6	100.6	89.8	10.74	9.366		
2,200.0	2,117.1	2,214.4	2,155.2	11.2	9.4	-173.68	-139.4	372.9	107.0	95.5	11.49	9.307		
2,300.0	2,208.0	2,314.2	2,248.3	12.1	10.1	-172.86	-153.2	406.2	113.4	101.1	12.27	9.244		
2,400.0	2,298.8	2,414.0	2,341.3	13.0	10.9	-172.13	-167.0	439.6	119.8	106.8	13.06	9.179		
2,500.0	2,389.6	2,513.8	2,434.3	13.9	11.7	-171.47	-180.8	472.9	126.3	112.4	13.86	9.114		
2,600.0	2,480.5	2,613.6	2,527.4	14.8	12.4	-170.88	-194.6	506.3	132.8	118.1	14.67	9.050		
2,700.0	2,571.3	2,713.3	2,620.4	15.7	13.2	-170.34	-208.4	539.6	139.2	123.8	15.49	8.988		
2,800.0	2,662.2	2,813.1	2,713.4	16.6	14.0	-169.85	-222.2	573.0	145.7	129.4	16.33	8.928		
2,900.0	2,753.0	2,912.9	2,806.4	17.5	14.7	-169.40	-236.0	606.3	152.2	135.1	17.17	8.869		
3,000.0	2,843.8	3,012.7	2,899.5	18.4	15.5	-168.99	-249.8	639.7	158.8	140.8	18.01	8.814		
3,100.0	2,934.7	3,112.5	2,992.5	19.3	16.3	-168.61	-263.6	673.0	165.3	146.4	18.87	8.760		
3,200.0	3,025.5	3,212.2	3,085.5	20.2	17.0	-168.26	-277.4	706.4	171.8	152.1	19.73	8.710		
3,300.0	3,116.4	3,312.0	3,178.5	21.1	17.8	-167.93	-291.2	739.7	178.3	157.8	20.59	8.661		
3,400.0	3,207.2	3,411.8	3,271.6	22.0	18.6	-167.63	-305.0	773.0	184.9	163.4	21.46	8.615		
3,500.0	3,298.1	3,511.6	3,364.6	22.9	19.4	-167.35	-318.8	806.4	191.4	169.1	22.33	8.571		
3,600.0	3,388.9	3,611.4	3,457.6	23.8	20.1	-167.08	-332.6	839.7	198.0	174.8	23.21	8.529		
3,700.0	3,479.7	3,711.1	3,550.6	24.7	20.9	-166.84	-346.4	873.1	204.5	180.4	24.09	8.490		
3,800.0	3,570.6	3,810.9	3,643.7	25.6	21.7	-166.61	-360.2	906.4	211.1	186.1	24.98	8.452		
3,900.0	3,661.4	3,910.7	3,736.7	26.6	22.4	-166.39	-374.0	939.8	217.6	191.8	25.86	8.416		
4,000.0	3,752.3	4,010.5	3,829.7	27.5	23.2	-166.19	-387.8	973.1	224.2	197.5	26.75	8.381		
4,100.0	3,843.1	4,110.3	3,922.7	28.4	24.0	-165.99	-401.6	1,006.5	230.8	203.1	27.64	8.348		
4,200.0	3,933.9	4,210.1	4,015.8	29.3	24.8	-165.81	-415.4	1,039.8	237.3	208.8	28.54	8.317		
4,300.0	4,024.8	4,309.8	4,108.8	30.2	25.5	-165.64	-429.2	1,073.2	243.9	214.5	29.43	8.287		
4,400.0	4,115.6	4,409.6	4,201.8	31.1	26.3	-165.48	-443.0	1,106.5	250.5	220.2	30.33	8.259		
4,500.0	4,206.5	4,509.4	4,294.9	32.0	27.1	-165.32	-456.8	1,139.9	257.1	225.8	31.23	8.232		
4,600.0	4,297.3	4,609.2	4,387.9	32.9	27.9	-165.18	-470.6	1,173.2	263.6	231.5	32.13	8.206		
4,700.0	4,388.2	4,709.0	4,480.9	33.9	28.7	-165.04	-484.4	1,206.5	270.2	237.2	33.03	8.181		
4,800.0	4,479.0	4,808.7	4,573.9	34.8	29.4	-164.90	-498.2	1,239.9	276.8	242.8	33.93	8.157		
4,900.0	4,569.8	4,908.5	4,667.0	35.7	30.2	-164.78	-512.0	1,273.2	283.4	248.5	34.84	8.134		

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)											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			
4,935.8	4,602.3	4,944.2	4,700.2	36.0	30.5	164.73	-516.9	1,285.2	285.7	250.6	35.16	8.126			
5,000.0	4,661.0	5,008.3	4,760.0	36.5	31.0	164.64	-525.8	1,306.6	289.3	253.5	35.78	8.085			
5,100.0	4,753.4	5,108.3	4,853.2	37.2	31.8	164.33	-539.6	1,340.0	292.0	255.2	36.75	7.946			
5,200.0	4,847.1	5,200.0	4,939.1	37.8	32.4	163.94	-551.9	1,369.7	292.6	254.9	37.65	7.772			
5,300.0	4,942.0	5,291.7	5,026.0	38.3	32.9	163.57	-563.1	1,396.8	292.8	254.4	38.43	7.618			
5,400.0	5,037.9	5,382.9	5,113.3	38.8	33.3	163.21	-573.2	1,421.2	292.7	253.5	39.15	7.476			
5,500.0	5,134.7	5,474.2	5,201.4	39.3	33.7	162.88	-582.3	1,443.1	292.2	252.4	39.78	7.345			
5,600.0	5,232.4	5,565.5	5,290.3	39.6	34.1	162.55	-590.3	1,462.4	291.4	251.1	40.34	7.223			
5,700.0	5,330.7	5,656.8	5,379.8	39.9	34.4	162.24	-597.2	1,479.0	290.2	249.4	40.82	7.109			
5,800.0	5,429.7	5,748.2	5,469.9	40.2	34.7	161.94	-602.9	1,493.0	288.7	247.5	41.23	7.003			
5,900.0	5,529.0	5,839.6	5,560.5	40.4	34.9	161.65	-607.6	1,504.4	286.9	245.3	41.56	6.903			
6,000.0	5,628.7	5,931.1	5,651.6	40.6	35.1	161.38	-611.2	1,513.0	284.7	242.9	41.81	6.810			
6,100.0	5,728.6	6,022.7	5,742.9	40.7	35.2	161.11	-613.7	1,519.0	282.2	240.2	41.98	6.721			
6,171.4	5,800.0	6,088.2	5,808.3	40.7	35.3	-90.27	-614.8	1,521.7	280.1	238.1	42.07	6.659			
6,200.0	5,828.6	6,114.4	5,834.5	40.8	35.3	-90.32	-615.1	1,522.3	279.4	237.2	42.17	6.626			
6,300.0	5,928.6	6,208.5	5,928.6	40.8	35.4	-90.38	-615.4	1,523.0	278.7	236.2	42.43	6.567			
6,340.4	5,969.0	6,248.9	5,969.0	40.9	35.4	-90.38	-615.4	1,523.0	278.7	236.1	42.52	6.553			
6,350.0	5,978.6	6,258.5	5,978.6	40.9	35.4	-90.40	-615.4	1,523.0	278.7	236.1	42.55	6.549			
6,400.0	6,028.6	6,308.4	6,028.6	40.9	35.5	-90.86	-615.4	1,523.0	278.7	235.7	42.95	6.488			
6,450.0	6,078.2	6,358.5	6,078.6	40.9	35.5	-91.87	-614.8	1,523.0	278.8	235.1	43.69	6.381			
6,500.0	6,127.5	6,409.0	6,129.0	40.9	35.5	-92.93	-611.2	1,523.0	279.0	234.6	44.42	6.281			
6,550.0	6,176.0	6,459.9	6,179.3	40.9	35.5	-93.99	-604.1	1,523.0	279.3	234.3	45.08	6.197			
6,600.0	6,223.6	6,511.1	6,229.5	40.8	35.5	-95.02	-593.7	1,523.0	279.7	234.1	45.65	6.129			
6,650.0	6,270.2	6,562.7	6,279.1	40.8	35.5	-96.04	-579.8	1,523.0	280.2	234.1	46.11	6.077			
6,700.0	6,315.5	6,614.6	6,328.1	40.8	35.5	-97.03	-562.5	1,523.0	280.8	234.3	46.46	6.043			
6,750.0	6,359.3	6,666.9	6,376.1	40.7	35.4	-97.98	-541.8	1,523.0	281.4	234.7	46.70	6.026			
6,800.0	6,401.4	6,719.6	6,422.8	40.6	35.3	-98.91	-517.6	1,523.0	282.1	235.3	46.81	6.026			
6,850.0	6,441.6	6,772.6	6,468.1	40.5	35.2	-99.79	-490.1	1,523.0	282.8	236.0	46.80	6.042			
6,900.0	6,479.9	6,825.9	6,511.7	40.5	35.2	-100.63	-459.3	1,523.0	283.6	236.9	46.68	6.074			
6,950.0	6,515.9	6,879.6	6,553.2	40.4	35.1	-101.41	-425.3	1,523.0	284.3	237.9	46.46	6.120			
7,000.0	6,549.6	6,933.5	6,592.4	40.3	34.9	-102.15	-388.2	1,523.0	285.1	238.9	46.15	6.177			
7,050.0	6,580.9	6,987.8	6,629.2	40.2	34.8	-102.83	-348.3	1,523.0	285.8	240.0	45.77	6.244			
7,100.0	6,609.5	7,042.4	6,663.1	40.1	34.7	-103.45	-305.6	1,523.0	286.5	241.2	45.36	6.317			
7,150.0	6,635.3	7,097.2	6,694.1	40.0	34.6	-104.01	-260.4	1,523.0	287.2	242.3	44.93	6.392			
7,200.0	6,658.3	7,152.2	6,721.9	39.9	34.5	-104.50	-212.9	1,523.0	287.8	243.3	44.53	6.464			
7,250.0	6,678.4	7,207.5	6,746.3	39.8	34.3	-104.93	-163.3	1,523.0	288.4	244.2	44.17	6.529			
7,300.0	6,695.4	7,262.9	6,767.0	39.7	34.2	-105.28	-112.0	1,523.0	288.9	245.0	43.90	6.580			
7,350.0	6,709.3	7,318.5	6,784.1	39.6	34.1	-105.57	-59.1	1,523.0	289.3	245.5	43.74	6.614			
7,400.0	6,720.1	7,374.2	6,797.2	39.6	34.0	-105.79	-5.0	1,523.0	289.6	245.9	43.71	6.625			
7,450.0	6,727.6	7,430.0	6,806.5	39.5	33.9	-105.93	50.0	1,523.0	289.8	246.0	43.84	6.611			
7,500.0	6,731.9	7,485.8	6,811.6	39.4	33.8	-106.00	105.6	1,523.0	289.9	245.8	44.12	6.570			
7,541.2	6,732.9	7,531.6	6,812.8	39.4	33.8	-106.00	151.4	1,523.0	289.9	245.4	44.48	6.518			
7,600.0	6,732.9	7,590.5	6,812.7	39.4	33.7	-105.99	210.2	1,523.0	289.9	244.7	45.21	6.412			
7,700.0	6,732.8	7,690.5	6,812.5	39.3	33.7	-105.97	310.2	1,523.0	289.8	243.2	46.65	6.213			
7,800.0	6,732.6	7,790.5	6,812.3	39.4	33.8	-105.95	410.2	1,523.0	289.8	241.5	48.33	5.996			
7,900.0	6,732.5	7,890.5	6,812.1	39.5	33.9	-105.93	510.2	1,523.0	289.8	239.6	50.23	5.769			
8,000.0	6,732.4	7,990.5	6,811.9	39.6	34.1	-105.91	610.2	1,523.0	289.8	237.4	52.33	5.537			
8,100.0	6,732.3	8,090.5	6,811.7	39.9	34.5	-105.89	710.2	1,523.0	289.7	235.1	54.60	5.306			
8,200.0	6,732.2	8,190.5	6,811.5	40.2	35.0	-105.87	810.2	1,523.0	289.7	232.7	57.03	5.080			
8,300.0	6,732.1	8,290.5	6,811.2	40.7	35.7	-105.85	910.2	1,523.0	289.7	230.1	59.58	4.862			
8,400.0	6,732.0	8,390.5	6,811.0	41.2	36.5	-105.83	1,010.2	1,523.0	289.6	227.4	62.26	4.652			

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)													
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
8,500.0	6,731.9	8,490.5	6,810.8	41.9	37.4	-105.81	1,110.2	1,523.0	289.6	224.6	65.03	4.453	
8,600.0	6,731.8	8,590.5	6,810.6	42.7	38.5	-105.79	1,210.2	1,523.0	289.6	221.7	67.90	4.265	
8,700.0	6,731.7	8,690.5	6,810.4	43.6	39.7	-105.77	1,310.2	1,523.0	289.6	218.7	70.85	4.087	
8,800.0	6,731.6	8,790.5	6,810.2	44.6	40.9	-105.75	1,410.2	1,523.0	289.5	215.7	73.87	3.920	
8,900.0	6,731.5	8,890.5	6,810.0	45.7	42.3	-105.73	1,510.2	1,523.0	289.5	212.6	76.95	3.762	
9,000.0	6,731.4	8,990.5	6,809.8	46.9	43.7	-105.71	1,610.2	1,523.0	289.5	209.4	80.08	3.615	
9,100.0	6,731.3	9,090.5	6,809.6	48.2	45.1	-105.69	1,710.2	1,523.0	289.4	206.2	83.26	3.476	
9,200.0	6,731.2	9,190.5	6,809.4	49.5	46.7	-105.67	1,810.2	1,523.0	289.4	202.9	86.49	3.346	
9,300.0	6,731.1	9,290.5	6,809.2	50.9	48.2	-105.65	1,910.2	1,523.0	289.4	199.6	89.76	3.224	
9,400.0	6,731.0	9,390.5	6,808.9	52.3	49.8	-105.63	2,010.2	1,523.0	289.4	196.3	93.06	3.110	
9,500.0	6,730.9	9,490.5	6,808.7	53.8	51.4	-105.61	2,110.2	1,523.0	289.3	192.9	96.39	3.002	
9,600.0	6,730.8	9,590.5	6,808.5	55.3	53.0	-105.59	2,210.2	1,523.0	289.3	189.6	99.75	2.900	
9,700.0	6,730.7	9,690.5	6,808.3	56.9	54.6	-105.57	2,310.2	1,523.0	289.3	186.1	103.13	2.805	
9,800.0	6,730.6	9,790.5	6,808.1	58.4	56.3	-105.55	2,410.2	1,523.0	289.2	182.7	106.54	2.715	
9,900.0	6,730.4	9,890.5	6,807.9	60.0	58.0	-105.53	2,510.2	1,523.0	289.2	179.2	109.97	2.630	
10,000.0	6,730.3	9,990.5	6,807.7	61.7	59.7	-105.51	2,610.2	1,523.0	289.2	175.8	113.42	2.550	
10,100.0	6,730.2	10,090.5	6,807.5	63.3	61.4	-105.49	2,710.2	1,523.0	289.2	172.3	116.89	2.474	
10,200.0	6,730.1	10,190.5	6,807.3	65.0	63.1	-105.47	2,810.2	1,523.0	289.1	168.8	120.37	2.402	
10,300.0	6,730.0	10,290.5	6,807.1	66.7	64.9	-105.45	2,910.2	1,523.0	289.1	165.2	123.87	2.334	
10,400.0	6,729.9	10,390.5	6,806.8	68.4	66.6	-105.43	3,010.2	1,523.0	289.1	161.7	127.38	2.269	
10,500.0	6,729.8	10,490.5	6,806.6	70.1	68.4	-105.41	3,110.2	1,523.0	289.1	158.1	130.90	2.208	
10,600.0	6,729.7	10,590.5	6,806.4	71.8	70.1	-105.39	3,210.2	1,523.0	289.0	154.6	134.44	2.150	
10,700.0	6,729.6	10,690.5	6,806.2	73.5	71.9	-105.37	3,310.2	1,523.0	289.0	151.0	137.99	2.094	
10,800.0	6,729.5	10,790.5	6,806.0	75.3	73.7	-105.35	3,410.2	1,523.0	289.0	147.4	141.54	2.042	
10,900.0	6,729.4	10,890.5	6,805.8	77.0	75.5	-105.33	3,510.2	1,523.0	288.9	143.8	145.11	1.991	
11,000.0	6,729.3	10,990.5	6,805.6	78.8	77.3	-105.31	3,610.2	1,523.0	288.9	140.2	148.68	1.943	
11,100.0	6,729.2	11,090.5	6,805.4	80.6	79.1	-105.29	3,710.2	1,523.0	288.9	136.6	152.27	1.897	
11,200.0	6,729.1	11,190.5	6,805.2	82.3	80.9	-105.27	3,810.2	1,523.0	288.9	133.0	155.86	1.853	
11,300.0	6,729.0	11,290.5	6,805.0	84.1	82.7	-105.25	3,910.2	1,523.0	288.8	129.4	159.45	1.811	
11,400.0	6,728.9	11,390.5	6,804.8	85.9	84.5	-105.23	4,010.2	1,523.0	288.8	125.7	163.06	1.771	
11,500.0	6,728.8	11,490.5	6,804.5	87.7	86.3	-105.21	4,110.2	1,523.0	288.8	122.1	166.67	1.733	
11,600.0	6,728.7	11,590.5	6,804.3	89.5	88.1	-105.19	4,210.2	1,523.0	288.7	118.5	170.29	1.696	
11,700.0	6,728.6	11,690.5	6,804.1	91.3	90.0	-105.17	4,310.2	1,523.0	288.7	114.8	173.91	1.660	
11,800.0	6,728.5	11,790.5	6,803.9	93.1	91.8	-105.15	4,410.2	1,523.0	288.7	111.2	177.54	1.626	
11,900.0	6,728.4	11,890.5	6,803.7	94.9	93.6	-105.13	4,510.2	1,523.0	288.7	107.5	181.17	1.593	
12,000.0	6,728.2	11,990.5	6,803.5	96.7	95.5	-105.11	4,610.2	1,523.0	288.6	103.8	184.80	1.562	
12,100.0	6,728.1	12,090.5	6,803.3	98.6	97.3	-105.09	4,710.2	1,523.0	288.6	100.2	188.45	1.532	
12,200.0	6,728.0	12,190.5	6,803.1	100.4	99.2	-105.07	4,810.2	1,523.0	288.6	96.5	192.09	1.502	
12,300.0	6,727.9	12,290.5	6,802.9	102.2	101.0	-105.05	4,910.2	1,523.0	288.6	92.8	195.74	1.474 Level 3	
12,400.0	6,727.8	12,390.5	6,802.7	104.0	102.9	-105.03	5,010.2	1,523.0	288.5	89.1	199.40	1.447 Level 3	
12,500.0	6,727.7	12,490.5	6,802.4	105.9	104.7	-105.01	5,110.2	1,523.0	288.5	85.4	203.06	1.421 Level 3	
12,600.0	6,727.6	12,590.5	6,802.2	107.7	106.6	-104.99	5,210.2	1,523.0	288.5	81.8	206.72	1.396 Level 3	
12,700.0	6,727.5	12,690.5	6,802.0	109.6	108.4	-104.97	5,310.2	1,523.0	288.4	78.1	210.38	1.371 Level 3	
12,800.0	6,727.4	12,790.5	6,801.8	111.4	110.3	-104.95	5,410.2	1,523.0	288.4	74.4	214.05	1.347 Level 3	
12,900.0	6,727.3	12,890.5	6,801.6	113.2	112.1	-104.93	5,510.2	1,523.0	288.4	70.7	217.72	1.325 Level 3	
13,000.0	6,727.2	12,990.5	6,801.4	115.1	114.0	-104.91	5,610.2	1,523.0	288.4	67.0	221.39	1.303 Level 3	
13,100.0	6,727.1	13,090.5	6,801.2	116.9	115.9	-104.89	5,710.2	1,523.0	288.3	63.3	225.07	1.281 Level 3	
13,200.0	6,727.0	13,190.5	6,801.0	118.8	117.7	-104.87	5,810.2	1,523.0	288.3	59.6	228.75	1.260 Level 3	
13,300.0	6,726.9	13,290.5	6,800.8	120.6	119.6	-104.85	5,910.2	1,523.0	288.3	55.9	232.43	1.240 Level 2	
13,400.0	6,726.8	13,390.5	6,800.6	122.5	121.5	-104.83	6,010.2	1,523.0	288.3	52.1	236.12	1.221 Level 2	
13,500.0	6,726.7	13,490.5	6,800.4	124.4	123.3	-104.81	6,110.2	1,523.0	288.2	48.4	239.81	1.202 Level 2	

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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		
13,600.0	6,726.6	13,590.5	6,800.1	126.2	125.2	-104.79	6,210.2	1,523.0	288.2	44.7	243.50	1.184	Level 2	
13,700.0	6,726.5	13,690.5	6,799.9	128.1	127.1	-104.77	6,310.2	1,523.0	288.2	41.0	247.19	1.166	Level 2	
13,800.0	6,726.4	13,790.5	6,799.7	130.0	129.0	-104.75	6,410.2	1,523.0	288.2	37.3	250.88	1.149	Level 2	
13,900.0	6,726.3	13,890.5	6,799.5	131.8	130.8	-104.73	6,510.2	1,523.0	288.1	33.5	254.58	1.132	Level 2	
14,000.0	6,726.2	13,990.5	6,799.3	133.7	132.7	-104.71	6,610.2	1,523.0	288.1	29.8	258.28	1.115	Level 2	
14,100.0	6,726.0	14,090.5	6,799.1	135.6	134.6	-104.69	6,710.2	1,523.0	288.1	26.1	261.98	1.100	Level 2	
14,200.0	6,725.9	14,190.5	6,798.9	137.4	136.5	-104.67	6,810.2	1,523.0	288.0	22.4	265.68	1.084	Level 2	
14,300.0	6,725.8	14,290.5	6,798.7	139.3	138.3	-104.65	6,910.2	1,523.0	288.0	18.6	269.39	1.069	Level 2	
14,400.0	6,725.7	14,390.5	6,798.5	141.2	140.2	-104.63	7,010.2	1,523.0	288.0	14.9	273.09	1.055	Level 2	
14,500.0	6,725.6	14,490.5	6,798.3	143.0	142.1	-104.61	7,110.2	1,523.0	288.0	11.2	276.80	1.040	Level 2	
14,600.0	6,725.5	14,590.5	6,798.1	144.9	144.0	-104.59	7,210.2	1,523.0	287.9	7.4	280.51	1.026	Level 2	
14,700.0	6,725.4	14,690.5	6,797.8	146.8	145.9	-104.57	7,310.2	1,523.0	287.9	3.7	284.22	1.013	Level 2	
14,800.0	6,725.3	14,790.5	6,797.6	148.7	147.8	-104.55	7,410.2	1,523.0	287.9	0.0	287.93	1.000	Level 1	
14,900.0	6,725.2	14,890.5	6,797.4	150.5	149.7	-104.53	7,510.2	1,523.0	287.9	-3.8	291.65	0.987	Level 1	
15,000.0	6,725.1	14,990.5	6,797.2	152.4	151.5	-104.51	7,610.2	1,523.0	287.8	-7.5	295.37	0.975	Level 1	
15,100.0	6,725.0	15,090.5	6,797.0	154.3	153.4	-104.49	7,710.2	1,523.0	287.8	-11.3	299.08	0.962	Level 1	
15,200.0	6,724.9	15,190.5	6,796.8	156.2	155.3	-104.47	7,810.2	1,523.0	287.8	-15.0	302.80	0.950	Level 1	
15,300.0	6,724.8	15,290.5	6,796.6	158.1	157.2	-104.45	7,910.2	1,523.0	287.8	-18.8	306.52	0.939	Level 1	
15,400.0	6,724.7	15,390.5	6,796.4	160.0	159.1	-104.43	8,010.2	1,523.0	287.7	-22.5	310.25	0.927	Level 1	
15,500.0	6,724.6	15,490.5	6,796.2	161.8	161.0	-104.41	8,110.2	1,523.0	287.7	-26.3	313.97	0.916	Level 1	
15,600.0	6,724.5	15,590.5	6,796.0	163.7	162.9	-104.39	8,210.2	1,523.0	287.7	-30.0	317.69	0.906	Level 1	
15,700.0	6,724.4	15,690.5	6,795.7	165.6	164.8	-104.37	8,310.2	1,523.0	287.7	-33.8	321.42	0.895	Level 1	
15,800.0	6,724.3	15,790.5	6,795.5	167.5	166.7	-104.35	8,410.2	1,523.0	287.6	-37.5	325.15	0.885	Level 1	
15,900.0	6,724.2	15,890.5	6,795.3	169.4	168.6	-104.33	8,510.2	1,523.0	287.6	-41.3	328.88	0.874	Level 1	
16,000.0	6,724.1	15,990.5	6,795.1	171.3	170.5	-104.31	8,610.2	1,523.0	287.6	-45.0	332.61	0.865	Level 1	
16,100.0	6,724.0	16,090.5	6,794.9	173.2	172.3	-104.29	8,710.2	1,523.0	287.5	-48.8	336.34	0.855	Level 1	
16,200.0	6,723.8	16,190.5	6,794.7	175.0	174.2	-104.27	8,810.2	1,523.0	287.5	-52.5	340.07	0.845	Level 1	
16,300.0	6,723.7	16,290.5	6,794.5	176.9	176.1	-104.25	8,910.2	1,523.0	287.5	-56.3	343.80	0.836	Level 1	
16,400.0	6,723.6	16,390.5	6,794.3	178.8	178.0	-104.23	9,010.2	1,523.0	287.5	-60.1	347.54	0.827	Level 1	
16,500.0	6,723.5	16,490.5	6,794.1	180.7	179.9	-104.20	9,110.2	1,523.0	287.4	-63.8	351.27	0.818	Level 1	
16,600.0	6,723.4	16,590.5	6,793.9	182.6	181.8	-104.18	9,210.2	1,523.0	287.4	-67.6	355.01	0.810	Level 1	
16,700.0	6,723.3	16,690.5	6,793.7	184.5	183.7	-104.16	9,310.2	1,523.0	287.4	-71.4	358.75	0.801	Level 1	
16,800.0	6,723.2	16,790.5	6,793.4	186.4	185.6	-104.14	9,410.2	1,523.0	287.4	-75.1	362.49	0.793	Level 1	
16,900.0	6,723.1	16,890.5	6,793.2	188.3	187.5	-104.12	9,510.2	1,523.0	287.3	-78.9	366.23	0.785	Level 1	
17,000.0	6,723.0	16,990.5	6,793.0	190.2	189.4	-104.10	9,610.2	1,523.0	287.3	-82.7	369.97	0.777	Level 1	
17,010.8	6,723.0	17,001.2	6,793.0	190.4	189.6	-104.10	9,621.0	1,523.0	287.3	-83.1	370.37	0.776	Level 1, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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	0.35	45.2	0.3	45.2					
100.0	100.0	100.0	100.0	0.1	0.1	0.35	45.2	0.3	45.2	45.0	0.22	201.008		
200.0	200.0	200.0	200.0	0.3	0.3	0.35	45.2	0.3	45.2	44.5	0.67	66.994 CC		
300.0	300.0	300.0	300.0	0.5	0.6	-110.00	45.2	0.3	45.6	44.5	1.11	41.080 ES		
400.0	399.9	399.9	399.9	0.8	0.8	-114.47	45.2	0.3	47.1	45.5	1.55	30.378		
500.0	499.7	499.7	499.7	1.0	1.0	-121.24	45.2	0.3	50.2	48.2	2.01	24.960		
600.0	599.3	599.3	599.3	1.3	1.2	-129.26	45.2	0.3	55.5	53.0	2.48	22.332		
700.0	698.6	698.6	698.6	1.5	1.5	-137.38	45.2	0.3	63.6	60.6	2.97	21.440		
800.0	797.5	797.5	797.5	1.9	1.7	-144.72	45.2	0.3	74.8	71.4	3.45	21.699		
900.0	896.1	898.3	898.3	2.2	1.9	-150.80	44.5	1.3	88.0	84.1	3.91	22.532		
1,000.0	994.2	999.5	999.4	2.6	2.1	-155.60	42.4	4.7	101.8	97.4	4.35	23.415		
1,100.0	1,091.7	1,101.1	1,100.8	3.1	2.3	-159.55	38.8	10.3	115.8	111.0	4.79	24.175		
1,200.0	1,188.6	1,203.1	1,202.3	3.6	2.5	-162.92	33.8	18.2	130.2	124.9	5.24	24.824		
1,300.0	1,284.9	1,305.4	1,304.0	4.1	2.8	-165.86	27.3	28.5	144.7	139.0	5.70	25.374		
1,400.0	1,380.4	1,408.2	1,405.6	4.7	3.1	-168.50	19.2	41.0	159.5	153.3	6.17	25.835		
1,500.0	1,475.0	1,511.3	1,507.2	5.4	3.4	-170.91	9.7	56.0	174.4	167.7	6.65	26.210		
1,600.0	1,568.9	1,614.9	1,608.7	6.1	3.7	-173.13	-1.3	73.3	189.5	182.3	7.15	26.499		
1,700.0	1,661.7	1,718.8	1,710.0	6.8	4.2	-175.21	-13.9	93.1	204.7	197.0	7.67	26.692		
1,800.0	1,753.6	1,823.1	1,810.9	7.6	4.6	-177.18	-27.9	115.2	220.0	211.8	8.21	26.817		
1,847.5	1,796.9	1,872.7	1,858.7	8.0	4.9	-178.09	-35.2	126.5	227.4	218.9	8.47	26.839		
1,900.0	1,844.6	1,927.0	1,910.7	8.5	5.2	-179.05	-43.4	139.5	235.2	226.4	8.80	26.741		
2,000.0	1,935.4	2,025.6	2,005.2	9.4	5.7	179.35	-58.6	163.4	249.9	240.5	9.43	26.491		
2,100.0	2,026.3	2,124.3	2,099.7	10.3	6.2	177.92	-73.9	187.4	264.8	254.7	10.10	26.217		
2,200.0	2,117.1	2,223.0	2,194.2	11.2	6.8	176.64	-89.1	211.3	279.8	269.0	10.79	25.928		
2,300.0	2,208.0	2,321.7	2,288.8	12.1	7.4	175.49	-104.3	235.2	294.9	283.4	11.51	25.631		
2,400.0	2,298.8	2,420.4	2,383.3	13.0	7.9	174.45	-119.5	259.2	310.1	297.9	12.24	25.332		
2,500.0	2,389.6	2,519.1	2,477.8	13.9	8.5	173.51	-134.8	283.1	325.5	312.5	13.00	25.036		
2,600.0	2,480.5	2,617.7	2,572.3	14.8	9.1	172.66	-150.0	307.0	340.9	327.1	13.77	24.746		
2,700.0	2,571.3	2,716.4	2,666.8	15.7	9.7	171.88	-165.2	331.0	356.3	341.8	14.56	24.465		
2,800.0	2,662.2	2,815.1	2,761.4	16.6	10.3	171.16	-180.5	354.9	371.8	356.5	15.37	24.194		
2,900.0	2,753.0	2,913.8	2,855.9	17.5	10.9	170.51	-195.7	378.8	387.4	371.2	16.19	23.935		
3,000.0	2,843.8	3,012.5	2,950.4	18.4	11.4	169.90	-210.9	402.8	403.0	386.0	17.02	23.687		
3,100.0	2,934.7	3,111.2	3,044.9	19.3	12.0	169.34	-226.1	426.7	418.7	400.9	17.85	23.451		
3,200.0	3,025.5	3,209.9	3,139.4	20.2	12.6	168.81	-241.4	450.6	434.4	415.7	18.70	23.227		
3,300.0	3,116.4	3,308.5	3,234.0	21.1	13.2	168.33	-256.6	474.6	450.2	430.6	19.56	23.014		
3,400.0	3,207.2	3,407.2	3,328.5	22.0	13.8	167.88	-271.8	498.5	465.9	445.5	20.42	22.812		
3,500.0	3,298.1	3,505.9	3,423.0	22.9	14.4	167.45	-287.0	522.4	481.7	460.4	21.29	22.621		
3,600.0	3,388.9	3,604.6	3,517.5	23.8	15.0	167.06	-302.3	546.4	497.5	475.4	22.17	22.440		
3,700.0	3,479.7	3,703.3	3,612.0	24.7	15.6	166.69	-317.5	570.3	513.4	490.3	23.05	22.268		
3,800.0	3,570.6	3,802.0	3,706.6	25.6	16.2	166.34	-332.7	594.2	529.2	505.3	23.94	22.105		
3,900.0	3,661.4	3,900.6	3,801.1	26.6	16.8	166.01	-348.0	618.1	545.1	520.3	24.83	21.950		
4,000.0	3,752.3	3,999.3	3,895.6	27.5	17.4	165.70	-363.2	642.1	561.0	535.3	25.73	21.803		
4,100.0	3,843.1	4,098.0	3,990.1	28.4	18.1	165.40	-378.4	666.0	576.9	550.3	26.63	21.663		
4,200.0	3,933.9	4,196.7	4,084.6	29.3	18.7	165.13	-393.6	689.9	592.8	565.3	27.53	21.531		
4,300.0	4,024.8	4,295.4	4,179.2	30.2	19.3	164.86	-408.9	713.9	608.7	580.3	28.44	21.404		
4,400.0	4,115.6	4,394.1	4,273.7	31.1	19.9	164.61	-424.1	737.8	624.7	595.3	29.35	21.284		
4,500.0	4,206.5	4,492.8	4,368.2	32.0	20.5	164.38	-439.3	761.7	640.6	610.4	30.26	21.170		
4,600.0	4,297.3	4,591.4	4,462.7	32.9	21.1	164.15	-454.5	785.7	656.6	625.4	31.18	21.060		
4,700.0	4,388.2	4,690.1	4,557.3	33.9	21.7	163.94	-469.8	809.6	672.6	640.5	32.09	20.956		
4,800.0	4,479.0	4,788.8	4,651.8	34.8	22.3	163.73	-485.0	833.5	688.6	655.6	33.01	20.857		
4,900.0	4,569.8	4,887.5	4,746.3	35.7	22.9	163.53	-500.2	857.5	704.6	670.6	33.94	20.762		

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)												Offset Well Error:	0.0 ft
Survey Program: 0-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
4,935.8	4,602.3	4,922.8	4,780.1	36.0	23.1	163.47	-505.7	866.0	710.3	676.0	34.27	20.729	
5,000.0	4,661.0	4,986.3	4,840.9	36.5	23.5	163.39	-515.5	881.4	719.9	685.0	34.89	20.630	
5,100.0	4,753.4	5,085.5	4,935.9	37.2	24.1	163.19	-530.8	905.5	732.1	696.3	35.84	20.428	
5,200.0	4,847.1	5,185.0	5,031.2	37.8	24.7	162.90	-546.1	929.6	741.0	704.3	36.78	20.145	
5,300.0	4,942.0	5,275.1	5,117.6	38.3	25.2	162.58	-559.9	951.2	747.0	709.4	37.64	19.845	
5,400.0	5,037.9	5,356.5	5,196.3	38.8	25.6	162.30	-571.2	969.0	751.9	713.5	38.34	19.612	
5,500.0	5,134.7	5,438.0	5,275.5	39.3	25.9	162.05	-581.3	985.0	755.8	716.9	38.94	19.409	
5,600.0	5,232.4	5,519.5	5,355.3	39.6	26.2	161.82	-590.3	999.0	758.9	719.5	39.47	19.228	
5,700.0	5,330.7	5,600.0	5,434.5	39.9	26.5	161.61	-597.9	1,011.0	761.2	721.3	39.92	19.070	
5,800.0	5,429.7	5,682.5	5,516.2	40.2	26.7	161.42	-604.5	1,021.3	762.5	722.3	40.28	18.930	
5,900.0	5,529.0	5,764.1	5,597.2	40.4	26.9	161.25	-609.7	1,029.5	763.0	722.4	40.57	18.808	
6,000.0	5,628.7	5,845.8	5,678.4	40.6	27.0	161.10	-613.7	1,035.8	762.6	721.8	40.77	18.704	
6,100.0	5,728.6	5,927.4	5,759.9	40.7	27.2	160.96	-616.5	1,040.2	761.3	720.4	40.90	18.614	
6,171.4	5,800.0	5,985.8	5,818.2	40.7	27.2	-90.32	-617.7	1,042.1	759.8	718.9	40.95	18.556	
6,200.0	5,828.6	6,009.2	5,841.6	40.8	27.3	-90.34	-618.0	1,042.6	759.2	718.2	41.02	18.507	
6,300.0	5,928.6	6,096.2	5,928.6	40.8	27.4	-90.36	-618.3	1,043.1	758.6	717.3	41.26	18.386	
6,340.4	5,969.0	6,136.5	5,969.0	40.9	27.4	-90.36	-618.3	1,043.1	758.6	717.2	41.35	18.344	
6,350.0	5,978.6	6,146.2	5,978.6	40.9	27.4	-90.37	-618.3	1,043.1	758.6	717.2	41.38	18.332	
6,400.0	6,028.6	6,196.1	6,028.6	40.9	27.5	-90.54	-618.3	1,043.1	758.6	717.0	41.58	18.246	
6,450.0	6,078.2	6,246.3	6,078.7	40.9	27.5	-90.91	-617.7	1,043.1	758.7	716.8	41.86	18.126	
6,500.0	6,127.5	6,297.0	6,129.3	40.9	27.5	-91.30	-614.1	1,043.1	758.8	716.7	42.09	18.027	
6,550.0	6,176.0	6,348.0	6,179.8	40.9	27.5	-91.69	-607.0	1,043.1	758.9	716.7	42.26	17.957	
6,600.0	6,223.6	6,399.5	6,230.2	40.8	27.5	-92.06	-596.5	1,043.1	759.1	716.7	42.37	17.915	
6,650.0	6,270.2	6,451.2	6,280.0	40.8	27.5	-92.44	-582.5	1,043.1	759.3	716.9	42.41	17.901	
6,700.0	6,315.5	6,503.4	6,329.1	40.8	27.4	-92.80	-565.1	1,043.1	759.5	717.1	42.39	17.915	
6,750.0	6,359.3	6,555.9	6,377.3	40.7	27.3	-93.15	-544.1	1,043.1	759.7	717.4	42.31	17.955	
6,800.0	6,401.4	6,608.7	6,424.2	40.6	27.2	-93.49	-519.8	1,043.1	760.0	717.8	42.18	18.019	
6,850.0	6,441.6	6,661.9	6,469.6	40.5	27.1	-93.81	-492.1	1,043.1	760.3	718.3	41.99	18.104	
6,900.0	6,479.9	6,715.5	6,513.2	40.5	27.0	-94.12	-461.0	1,043.1	760.6	718.8	41.77	18.206	
6,950.0	6,515.9	6,769.3	6,554.8	40.4	26.8	-94.41	-426.8	1,043.1	760.8	719.3	41.53	18.322	
7,000.0	6,549.6	6,823.5	6,594.0	40.3	26.7	-94.68	-389.6	1,043.1	761.1	719.9	41.27	18.444	
7,050.0	6,580.9	6,877.9	6,630.8	40.2	26.5	-94.93	-349.4	1,043.1	761.4	720.4	41.01	18.568	
7,100.0	6,609.5	6,932.6	6,664.7	40.1	26.4	-95.15	-306.5	1,043.1	761.7	720.9	40.76	18.685	
7,150.0	6,635.3	6,987.6	6,695.6	40.0	26.2	-95.35	-261.0	1,043.1	761.9	721.4	40.55	18.789	
7,200.0	6,658.3	7,042.8	6,723.3	39.9	26.0	-95.53	-213.3	1,043.1	762.1	721.8	40.39	18.870	
7,250.0	6,678.4	7,098.1	6,747.5	39.8	25.9	-95.68	-163.5	1,043.1	762.3	722.0	40.29	18.920	
7,300.0	6,695.4	7,153.7	6,768.1	39.7	25.7	-95.81	-112.0	1,043.1	762.5	722.2	40.28	18.932	
7,350.0	6,709.3	7,209.3	6,784.9	39.6	25.6	-95.90	-59.0	1,043.1	762.6	722.3	40.35	18.898	
7,400.0	6,720.1	7,265.1	6,797.9	39.6	25.4	-95.97	-4.8	1,043.1	762.7	722.2	40.53	18.818	
7,450.0	6,727.6	7,320.9	6,806.9	39.5	25.3	-96.01	50.3	1,043.1	762.8	722.0	40.82	18.688	
7,500.0	6,731.9	7,376.7	6,811.8	39.4	25.1	-96.02	105.9	1,043.1	762.8	721.6	41.21	18.512	
7,541.2	6,732.9	7,422.2	6,812.8	39.4	25.1	-96.01	151.4	1,043.1	762.8	721.2	41.60	18.335	
7,600.0	6,732.9	7,481.1	6,812.7	39.4	25.0	-96.01	210.2	1,043.1	762.8	720.5	42.30	18.032	
7,700.0	6,732.8	7,581.1	6,812.5	39.3	24.9	-96.00	310.2	1,043.1	762.8	719.0	43.72	17.448	
7,800.0	6,732.6	7,681.1	6,812.3	39.4	25.0	-95.99	410.2	1,043.1	762.8	717.3	45.41	16.797	
7,900.0	6,732.5	7,781.1	6,812.1	39.5	25.4	-95.99	510.2	1,043.1	762.7	715.4	47.35	16.107	
8,000.0	6,732.4	7,881.1	6,811.9	39.6	26.0	-95.98	610.2	1,043.1	762.7	713.2	49.52	15.404	
8,100.0	6,732.3	7,981.1	6,811.7	39.9	26.9	-95.97	710.2	1,043.1	762.7	710.8	51.87	14.704	
8,200.0	6,732.2	8,081.1	6,811.4	40.2	28.0	-95.96	810.2	1,043.1	762.7	708.3	54.39	14.022	
8,300.0	6,732.1	8,181.1	6,811.2	40.7	29.3	-95.95	910.2	1,043.1	762.7	705.6	57.06	13.367	
8,400.0	6,732.0	8,281.1	6,811.0	41.2	30.6	-95.95	1,010.2	1,043.1	762.7	702.8	59.85	12.743	

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
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	
8,500.0	6,731.9	8,381.1	6,810.8	41.9	32.1	-95.94	1,110.2	1,043.1	762.7	699.9	62.75	12.154	
8,600.0	6,731.8	8,481.1	6,810.6	42.7	33.5	-95.93	1,210.2	1,043.1	762.7	696.9	65.75	11.600	
8,700.0	6,731.7	8,581.1	6,810.4	43.6	35.1	-95.92	1,310.2	1,043.1	762.7	693.8	68.83	11.081	
8,800.0	6,731.6	8,681.1	6,810.2	44.6	36.6	-95.91	1,410.2	1,043.1	762.6	690.7	71.98	10.596	
8,900.0	6,731.5	8,781.1	6,810.0	45.7	38.2	-95.91	1,510.2	1,043.1	762.6	687.4	75.19	10.143	
9,000.0	6,731.4	8,881.1	6,809.8	46.9	39.8	-95.90	1,610.2	1,043.1	762.6	684.2	78.45	9.721	
9,100.0	6,731.3	8,981.1	6,809.6	48.2	41.5	-95.89	1,710.2	1,043.1	762.6	680.8	81.77	9.326	
9,200.0	6,731.2	9,081.1	6,809.4	49.5	43.1	-95.88	1,810.2	1,043.1	762.6	677.5	85.13	8.958	
9,300.0	6,731.1	9,181.1	6,809.1	50.9	44.8	-95.88	1,910.2	1,043.1	762.6	674.1	88.52	8.615	
9,400.0	6,731.0	9,281.1	6,808.9	52.3	46.5	-95.87	2,010.2	1,043.1	762.6	670.6	91.95	8.293	
9,500.0	6,730.9	9,381.1	6,808.7	53.8	48.2	-95.86	2,110.2	1,043.1	762.6	667.2	95.41	7.992	
9,600.0	6,730.8	9,481.1	6,808.5	55.3	50.0	-95.85	2,210.2	1,043.1	762.6	663.7	98.90	7.711	
9,700.0	6,730.7	9,581.1	6,808.3	56.9	51.7	-95.84	2,310.2	1,043.1	762.5	660.1	102.41	7.446	
9,800.0	6,730.6	9,681.1	6,808.1	58.4	53.5	-95.84	2,410.2	1,043.1	762.5	656.6	105.94	7.198	
9,900.0	6,730.4	9,781.1	6,807.9	60.0	55.2	-95.83	2,510.2	1,043.1	762.5	653.0	109.49	6.964	
10,000.0	6,730.3	9,881.1	6,807.7	61.7	57.0	-95.82	2,610.2	1,043.1	762.5	649.5	113.06	6.744	
10,100.0	6,730.2	9,981.1	6,807.5	63.3	58.8	-95.81	2,710.2	1,043.1	762.5	645.9	116.65	6.537	
10,200.0	6,730.1	10,081.1	6,807.3	65.0	60.6	-95.81	2,810.2	1,043.1	762.5	642.2	120.25	6.341	
10,300.0	6,730.0	10,181.1	6,807.0	66.7	62.4	-95.80	2,910.2	1,043.1	762.5	638.6	123.86	6.156	
10,400.0	6,729.9	10,281.1	6,806.8	68.4	64.2	-95.79	3,010.2	1,043.1	762.5	635.0	127.49	5.981	
10,500.0	6,729.8	10,381.1	6,806.6	70.1	66.0	-95.78	3,110.2	1,043.1	762.5	631.3	131.13	5.815	
10,600.0	6,729.7	10,481.1	6,806.4	71.8	67.8	-95.77	3,210.2	1,043.1	762.5	627.7	134.77	5.657	
10,700.0	6,729.6	10,581.1	6,806.2	73.5	69.6	-95.77	3,310.2	1,043.1	762.4	624.0	138.43	5.508	
10,800.0	6,729.5	10,681.1	6,806.0	75.3	71.5	-95.76	3,410.2	1,043.1	762.4	620.3	142.10	5.365	
10,900.0	6,729.4	10,781.1	6,805.8	77.0	73.3	-95.75	3,510.2	1,043.1	762.4	616.6	145.77	5.230	
11,000.0	6,729.3	10,881.1	6,805.6	78.8	75.1	-95.74	3,610.2	1,043.1	762.4	613.0	149.46	5.101	
11,100.0	6,729.2	10,981.1	6,805.4	80.6	77.0	-95.73	3,710.2	1,043.1	762.4	609.3	153.15	4.978	
11,200.0	6,729.1	11,081.1	6,805.2	82.3	78.8	-95.73	3,810.2	1,043.1	762.4	605.5	156.84	4.861	
11,300.0	6,729.0	11,181.1	6,805.0	84.1	80.7	-95.72	3,910.2	1,043.1	762.4	601.8	160.55	4.749	
11,400.0	6,728.9	11,281.1	6,804.7	85.9	82.5	-95.71	4,010.2	1,043.1	762.4	598.1	164.25	4.641	
11,500.0	6,728.8	11,381.1	6,804.5	87.7	84.4	-95.70	4,110.2	1,043.1	762.4	594.4	167.97	4.539	
11,600.0	6,728.7	11,481.1	6,804.3	89.5	86.2	-95.70	4,210.2	1,043.1	762.3	590.7	171.69	4.440	
11,700.0	6,728.6	11,581.1	6,804.1	91.3	88.1	-95.69	4,310.2	1,043.1	762.3	586.9	175.41	4.346	
11,800.0	6,728.5	11,681.1	6,803.9	93.1	89.9	-95.68	4,410.2	1,043.1	762.3	583.2	179.14	4.256	
11,900.0	6,728.4	11,781.1	6,803.7	94.9	91.8	-95.67	4,510.2	1,043.1	762.3	579.4	182.87	4.169	
12,000.0	6,728.2	11,881.1	6,803.5	96.7	93.7	-95.66	4,610.2	1,043.1	762.3	575.7	186.60	4.085	
12,100.0	6,728.1	11,981.1	6,803.3	98.6	95.5	-95.66	4,710.2	1,043.1	762.3	572.0	190.34	4.005	
12,200.0	6,728.0	12,081.1	6,803.1	100.4	97.4	-95.65	4,810.2	1,043.1	762.3	568.2	194.09	3.928	
12,300.0	6,727.9	12,181.1	6,802.9	102.2	99.3	-95.64	4,910.2	1,043.1	762.3	564.4	197.83	3.853	
12,400.0	6,727.8	12,281.1	6,802.6	104.0	101.1	-95.63	5,010.2	1,043.1	762.3	560.7	201.58	3.781	
12,500.0	6,727.7	12,381.1	6,802.4	105.9	103.0	-95.63	5,110.2	1,043.1	762.3	556.9	205.33	3.712	
12,600.0	6,727.6	12,481.1	6,802.2	107.7	104.9	-95.62	5,210.2	1,043.1	762.2	553.2	209.09	3.646	
12,700.0	6,727.5	12,581.1	6,802.0	109.6	106.8	-95.61	5,310.2	1,043.1	762.2	549.4	212.85	3.581	
12,800.0	6,727.4	12,681.1	6,801.8	111.4	108.6	-95.60	5,410.2	1,043.1	762.2	545.6	216.61	3.519	
12,900.0	6,727.3	12,781.1	6,801.6	113.2	110.5	-95.59	5,510.2	1,043.1	762.2	541.8	220.37	3.459	
13,000.0	6,727.2	12,881.1	6,801.4	115.1	112.4	-95.59	5,610.2	1,043.1	762.2	538.1	224.13	3.401	
13,100.0	6,727.1	12,981.1	6,801.2	116.9	114.3	-95.58	5,710.2	1,043.1	762.2	534.3	227.90	3.344	
13,200.0	6,727.0	13,081.1	6,801.0	118.8	116.2	-95.57	5,810.2	1,043.1	762.2	530.5	231.67	3.290	
13,300.0	6,726.9	13,181.1	6,800.8	120.6	118.1	-95.56	5,910.2	1,043.1	762.2	526.7	235.44	3.237	
13,400.0	6,726.8	13,281.1	6,800.6	122.5	119.9	-95.55	6,010.2	1,043.1	762.2	522.9	239.21	3.186	
13,500.0	6,726.7	13,381.1	6,800.3	124.4	121.8	-95.55	6,110.2	1,043.1	762.2	519.2	242.99	3.137	

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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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		
13,600.0	6,726.6	13,481.1	6,800.1	126.2	123.7	-95.54	6,210.2	1,043.1	762.1	515.4	246.77	3.089		
13,700.0	6,726.5	13,581.1	6,799.9	128.1	125.6	-95.53	6,310.2	1,043.1	762.1	511.6	250.54	3.042		
13,800.0	6,726.4	13,681.1	6,799.7	130.0	127.5	-95.52	6,410.2	1,043.1	762.1	507.8	254.32	2.997		
13,900.0	6,726.3	13,781.1	6,799.5	131.8	129.4	-95.52	6,510.2	1,043.1	762.1	504.0	258.10	2.953		
14,000.0	6,726.2	13,881.1	6,799.3	133.7	131.3	-95.51	6,610.2	1,043.1	762.1	500.2	261.89	2.910		
14,100.0	6,726.0	13,981.1	6,799.1	135.6	133.2	-95.50	6,710.2	1,043.1	762.1	496.4	265.67	2.869		
14,200.0	6,725.9	14,081.1	6,798.9	137.4	135.1	-95.49	6,810.2	1,043.1	762.1	492.6	269.46	2.828		
14,300.0	6,725.8	14,181.1	6,798.7	139.3	137.0	-95.48	6,910.2	1,043.1	762.1	488.8	273.24	2.789		
14,400.0	6,725.7	14,281.1	6,798.5	141.2	138.9	-95.48	7,010.2	1,043.1	762.1	485.0	277.03	2.751		
14,500.0	6,725.6	14,381.1	6,798.3	143.0	140.7	-95.47	7,110.2	1,043.1	762.1	481.2	280.82	2.714		
14,600.0	6,725.5	14,481.1	6,798.0	144.9	142.6	-95.46	7,210.2	1,043.1	762.0	477.4	284.61	2.678		
14,700.0	6,725.4	14,581.1	6,797.8	146.8	144.5	-95.45	7,310.2	1,043.1	762.0	473.6	288.40	2.642		
14,800.0	6,725.3	14,681.1	6,797.6	148.7	146.4	-95.44	7,410.2	1,043.1	762.0	469.8	292.19	2.608		
14,900.0	6,725.2	14,781.1	6,797.4	150.5	148.3	-95.44	7,510.2	1,043.1	762.0	466.0	295.99	2.574		
15,000.0	6,725.1	14,881.1	6,797.2	152.4	150.2	-95.43	7,610.2	1,043.1	762.0	462.2	299.78	2.542		
15,100.0	6,725.0	14,981.1	6,797.0	154.3	152.1	-95.42	7,710.2	1,043.1	762.0	458.4	303.57	2.510		
15,200.0	6,724.9	15,081.1	6,796.8	156.2	154.0	-95.41	7,810.2	1,043.1	762.0	454.6	307.37	2.479		
15,300.0	6,724.8	15,181.1	6,796.6	158.1	155.9	-95.41	7,910.2	1,043.1	762.0	450.8	311.17	2.449		
15,400.0	6,724.7	15,281.1	6,796.4	160.0	157.8	-95.40	8,010.2	1,043.1	762.0	447.0	314.97	2.419		
15,500.0	6,724.6	15,381.1	6,796.2	161.8	159.7	-95.39	8,110.2	1,043.1	762.0	443.2	318.76	2.390		
15,600.0	6,724.5	15,481.1	6,795.9	163.7	161.6	-95.38	8,210.2	1,043.1	761.9	439.4	322.56	2.362		
15,700.0	6,724.4	15,581.1	6,795.7	165.6	163.5	-95.37	8,310.2	1,043.1	761.9	435.6	326.36	2.335		
15,800.0	6,724.3	15,681.1	6,795.5	167.5	165.4	-95.37	8,410.2	1,043.1	761.9	431.8	330.16	2.308		
15,900.0	6,724.2	15,781.1	6,795.3	169.4	167.3	-95.36	8,510.2	1,043.1	761.9	427.9	333.97	2.281		
16,000.0	6,724.1	15,881.1	6,795.1	171.3	169.2	-95.35	8,610.2	1,043.1	761.9	424.1	337.77	2.256		
16,100.0	6,724.0	15,981.1	6,794.9	173.2	171.1	-95.34	8,710.2	1,043.1	761.9	420.3	341.57	2.231		
16,200.0	6,723.8	16,081.1	6,794.7	175.0	173.1	-95.34	8,810.2	1,043.1	761.9	416.5	345.37	2.206		
16,300.0	6,723.7	16,181.1	6,794.5	176.9	175.0	-95.33	8,910.2	1,043.1	761.9	412.7	349.18	2.182		
16,400.0	6,723.6	16,281.1	6,794.3	178.8	176.9	-95.32	9,010.2	1,043.1	761.9	408.9	352.98	2.158		
16,500.0	6,723.5	16,381.1	6,794.1	180.7	178.8	-95.31	9,110.2	1,043.1	761.9	405.1	356.79	2.135		
16,600.0	6,723.4	16,481.1	6,793.9	182.6	180.7	-95.30	9,210.2	1,043.1	761.8	401.2	360.60	2.113		
16,700.0	6,723.3	16,581.1	6,793.6	184.5	182.6	-95.30	9,310.2	1,043.1	761.8	397.4	364.40	2.091		
16,800.0	6,723.2	16,681.1	6,793.4	186.4	184.5	-95.29	9,410.2	1,043.1	761.8	393.6	368.21	2.069		
16,900.0	6,723.1	16,781.1	6,793.2	188.3	186.4	-95.28	9,510.2	1,043.1	761.8	389.8	372.02	2.048		
17,000.0	6,723.0	16,881.1	6,793.0	190.2	188.3	-95.27	9,610.2	1,043.1	761.8	386.0	375.83	2.027		
17,006.9	6,723.0	16,888.0	6,793.0	190.3	188.4	-95.27	9,617.2	1,043.1	761.8	385.7	376.09	2.026		
17,010.8	6,723.0	16,888.0	6,793.0	190.4	188.4	-95.27	9,617.2	1,043.1	761.8	385.7	376.16	2.025 SF		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7062-UNKNOWN													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		
700.0	698.6	685.6	685.6	1.5	13.7	-17.61	-29.1	826.8	796.1	781.1	15.07	52.844		
800.0	797.5	784.5	784.5	1.9	15.7	-17.99	-29.1	826.8	782.4	765.2	17.23	45.423		
900.0	896.1	883.1	883.1	2.2	17.7	-18.46	-29.1	826.8	766.3	747.0	19.37	39.573		
1,000.0	994.2	981.2	981.2	2.6	19.6	-19.02	-29.1	826.8	747.8	726.3	21.48	34.811		
1,100.0	1,091.7	1,078.7	1,078.7	3.1	21.6	-19.69	-29.1	826.8	726.9	703.4	23.58	30.833		
1,200.0	1,188.6	1,175.6	1,175.6	3.6	23.5	-20.49	-29.1	826.8	703.7	678.1	25.65	27.438		
1,300.0	1,284.9	1,271.8	1,271.8	4.1	25.4	-21.43	-29.1	826.8	678.3	650.6	27.70	24.486		
1,400.0	1,380.4	1,367.3	1,367.3	4.7	27.3	-22.55	-29.1	826.8	650.6	620.9	29.74	21.877		
1,500.0	1,475.0	1,462.0	1,462.0	5.4	29.2	-23.86	-29.1	826.8	620.8	589.1	31.77	19.540		
1,600.0	1,568.9	1,555.9	1,555.9	6.1	31.1	-25.43	-29.1	826.8	589.0	555.2	33.81	17.420		
1,700.0	1,661.7	1,648.7	1,648.7	6.8	33.0	-27.29	-29.1	826.8	555.4	519.5	35.88	15.476		
1,800.0	1,753.6	1,740.6	1,740.6	7.6	34.8	-29.52	-29.1	826.8	520.0	482.0	38.02	13.678		
1,847.5	1,796.9	1,783.9	1,783.9	8.0	35.7	-30.74	-29.1	826.8	502.7	463.6	39.06	12.869		
1,900.0	1,844.6	1,831.6	1,831.6	8.5	36.6	-32.04	-29.1	826.8	483.5	443.1	40.39	11.972		
2,000.0	1,935.4	1,922.4	1,922.4	9.4	38.4	-34.80	-29.1	826.8	447.6	404.6	43.00	10.410		
2,100.0	2,026.3	2,013.3	2,013.3	10.3	40.3	-38.00	-29.1	826.8	412.9	367.1	45.76	9.023		
2,200.0	2,117.1	2,104.1	2,104.1	11.2	42.1	-41.73	-29.1	826.8	379.6	330.9	48.68	7.797		
2,300.0	2,208.0	2,194.9	2,194.9	12.1	43.9	-46.10	-29.1	826.8	348.1	296.3	51.80	6.720		
2,400.0	2,298.8	2,285.8	2,285.8	13.0	45.7	-51.22	-29.1	826.8	319.0	263.9	55.11	5.787		
2,500.0	2,389.6	2,376.6	2,376.6	13.9	47.5	-57.20	-29.1	826.8	293.0	234.3	58.62	4.998		
2,600.0	2,480.5	2,467.5	2,467.5	14.8	49.3	-64.11	-29.1	826.8	270.9	208.7	62.25	4.352		
2,700.0	2,571.3	2,558.3	2,558.3	15.7	51.2	-71.92	-29.1	826.8	253.9	188.0	65.87	3.855		
2,800.0	2,662.2	2,649.2	2,649.2	16.6	53.0	-80.49	-29.1	826.8	243.0	173.7	69.28	3.507		
2,900.0	2,753.0	2,740.0	2,740.0	17.5	54.8	-89.51	-29.1	826.8	239.0	166.7	72.27	3.306		
2,905.4	2,757.9	2,744.9	2,744.9	17.5	54.9	-90.00	-29.1	826.8	238.9	166.5	72.42	3.300 CC, ES		
3,000.0	2,843.8	2,830.8	2,830.8	18.4	56.6	-98.55	-29.1	826.8	242.2	167.5	74.69	3.243 SF		
3,100.0	2,934.7	2,921.7	2,921.7	19.3	58.4	-107.19	-29.1	826.8	252.4	175.9	76.53	3.298		
3,200.0	3,025.5	3,012.5	3,012.5	20.2	60.3	-115.09	-29.1	826.8	268.8	190.9	77.91	3.450		
3,300.0	3,116.4	3,103.4	3,103.4	21.1	62.1	-122.09	-29.1	826.8	290.4	211.4	78.99	3.676		
3,400.0	3,207.2	3,194.2	3,194.2	22.0	63.9	-128.17	-29.1	826.8	316.0	236.0	79.96	3.952		
3,500.0	3,298.1	3,285.0	3,285.0	22.9	65.7	-133.38	-29.1	826.8	344.8	263.9	80.91	4.262		
3,600.0	3,388.9	3,375.9	3,375.9	23.8	67.5	-137.83	-29.1	826.8	376.0	294.1	81.91	4.591		
3,700.0	3,479.7	3,466.7	3,466.7	24.7	69.3	-141.63	-29.1	826.8	409.2	326.2	83.00	4.930		
3,800.0	3,570.6	3,557.6	3,557.6	25.6	71.2	-144.88	-29.1	826.8	443.8	359.6	84.19	5.272		
3,900.0	3,661.4	3,648.4	3,648.4	26.6	73.0	-147.68	-29.1	826.8	479.6	394.1	85.47	5.611		
4,000.0	3,752.3	3,739.3	3,739.3	27.5	74.8	-150.11	-29.1	826.8	516.2	429.4	86.84	5.944		
4,100.0	3,843.1	3,830.1	3,830.1	28.4	76.6	-152.22	-29.1	826.8	553.6	465.3	88.29	6.270		
4,200.0	3,933.9	3,920.9	3,920.9	29.3	78.4	-154.08	-29.1	826.8	591.6	501.8	89.81	6.587		
4,300.0	4,024.8	4,011.8	4,011.8	30.2	80.2	-155.72	-29.1	826.8	630.1	538.7	91.39	6.894		
4,400.0	4,115.6	4,102.6	4,102.6	31.1	82.1	-157.17	-29.1	826.8	669.0	575.9	93.02	7.191		
4,500.0	4,206.5	4,193.5	4,193.5	32.0	83.9	-158.47	-29.1	826.8	708.2	613.5	94.70	7.478		
4,600.0	4,297.3	4,284.3	4,284.3	32.9	85.7	-159.63	-29.1	826.8	747.6	651.2	96.41	7.755		
4,700.0	4,388.2	4,375.1	4,375.1	33.9	87.5	-160.68	-29.1	826.8	787.4	689.2	98.16	8.022		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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		
800.0	797.5	803.5	803.5	1.9	1.7	-21.62	20.4	834.6	790.9	787.5	3.43	230.746		
900.0	896.1	902.1	902.1	2.2	1.9	-22.17	20.4	834.6	775.2	771.3	3.91	198.130		
1,000.0	994.2	1,000.2	1,000.2	2.6	2.1	-22.84	20.4	834.6	757.1	752.7	4.41	171.714		
1,100.0	1,091.7	1,097.7	1,097.7	3.1	2.4	-23.63	20.4	834.6	736.7	731.8	4.92	149.723		
1,200.0	1,188.6	1,194.6	1,194.6	3.6	2.6	-24.56	20.4	834.6	714.2	708.7	5.45	131.007		
1,300.0	1,284.9	1,290.8	1,290.8	4.1	2.8	-25.65	20.4	834.6	689.4	683.4	6.01	114.785		
1,400.0	1,380.4	1,386.3	1,386.3	4.7	3.0	-26.94	20.4	834.6	662.6	656.0	6.59	100.516		
1,500.0	1,475.0	1,481.0	1,481.0	5.4	3.2	-28.46	20.4	834.6	633.8	626.6	7.22	87.813		
1,600.0	1,568.9	1,574.9	1,574.9	6.1	3.4	-30.24	20.4	834.6	603.2	595.3	7.89	76.402		
1,700.0	1,661.7	1,667.7	1,667.7	6.8	3.6	-32.35	20.4	834.6	570.9	562.3	8.64	66.087		
1,800.0	1,753.6	1,759.6	1,759.6	7.6	3.8	-34.85	20.4	834.6	537.2	527.8	9.47	56.735		
1,847.5	1,796.9	1,800.0	1,800.0	8.0	3.9	-36.12	20.4	834.6	520.8	510.9	9.89	52.668		
1,900.0	1,844.6	1,843.7	1,843.7	8.5	4.0	-37.44	20.6	834.9	503.0	492.6	10.37	48.489		
2,000.0	1,935.4	1,922.8	1,922.8	9.4	4.2	-40.11	22.2	836.6	471.8	460.5	11.34	41.608		
2,100.0	2,026.3	2,000.0	1,999.8	10.3	4.4	-43.10	25.1	839.8	444.6	432.2	12.38	35.913		
2,200.0	2,117.1	2,083.4	2,082.9	11.2	4.6	-46.72	29.8	845.0	421.8	408.2	13.55	31.131		
2,300.0	2,208.0	2,164.5	2,163.5	12.1	4.7	-50.61	35.9	851.8	404.0	389.2	14.80	27.303		
2,400.0	2,298.8	2,246.1	2,244.3	13.0	4.9	-54.81	43.7	860.3	391.7	375.5	16.12	24.295		
2,500.0	2,389.6	2,328.0	2,325.0	13.9	5.2	-59.21	53.0	870.6	385.3	367.8	17.50	22.014		
2,561.1	2,445.2	2,379.7	2,375.8	14.4	5.3	-62.03	59.6	878.0	384.3	365.9	18.37	20.922 CC		
2,600.0	2,480.5	2,415.9	2,411.3	14.8	5.4	-64.00	64.4	883.2	384.6	365.6	18.95	20.297 ES		
2,700.0	2,571.3	2,509.0	2,502.5	15.7	5.7	-69.05	76.6	896.8	387.7	367.2	20.42	18.985		
2,800.0	2,662.2	2,602.0	2,593.8	16.6	6.0	-73.98	88.9	910.3	394.1	372.3	21.85	18.035		
2,900.0	2,753.0	2,695.1	2,685.0	17.5	6.3	-78.75	101.1	923.9	403.8	380.6	23.24	17.380		
3,000.0	2,843.8	2,788.2	2,776.3	18.4	6.6	-83.28	113.4	937.5	416.5	392.0	24.55	16.965		
3,100.0	2,934.7	2,881.2	2,867.5	19.3	6.9	-87.56	125.7	951.0	432.0	406.2	25.80	16.743		
3,200.0	3,025.5	2,974.3	2,958.8	20.2	7.3	-91.55	137.9	964.6	449.9	422.9	26.98	16.673		
3,300.0	3,116.4	3,067.4	3,050.0	21.1	7.6	-95.25	150.2	978.1	469.9	441.8	28.10	16.723		
3,400.0	3,207.2	3,160.4	3,141.3	22.0	7.9	-98.66	162.4	991.7	491.9	462.7	29.16	16.866		
3,500.0	3,298.1	3,253.5	3,232.5	22.9	8.3	-101.79	174.7	1,005.2	515.5	485.3	30.18	17.080		
3,600.0	3,388.9	3,346.5	3,323.8	23.8	8.6	-104.67	187.0	1,018.8	540.6	509.5	31.16	17.349		
3,700.0	3,479.7	3,439.6	3,415.0	24.7	9.0	-107.30	199.2	1,032.3	567.0	534.8	32.11	17.657		
3,800.0	3,570.6	3,532.7	3,506.3	25.6	9.4	-109.70	211.5	1,045.9	594.4	561.3	33.03	17.994		
3,900.0	3,661.4	3,625.7	3,597.5	26.6	9.7	-111.91	223.7	1,059.4	622.7	588.8	33.93	18.352		
4,000.0	3,752.3	3,718.8	3,688.8	27.5	10.1	-113.93	236.0	1,073.0	651.9	617.1	34.82	18.723		
4,100.0	3,843.1	3,811.9	3,780.0	28.4	10.5	-115.78	248.3	1,086.6	681.8	646.1	35.69	19.102		
4,200.0	3,933.9	3,904.9	3,871.3	29.3	10.8	-117.48	260.5	1,100.1	712.4	675.8	36.56	19.485		
4,300.0	4,024.8	3,998.0	3,962.5	30.2	11.2	-119.05	272.8	1,113.7	743.5	706.0	37.42	19.868		
4,400.0	4,115.6	4,091.0	4,053.8	31.1	11.6	-120.50	285.0	1,127.2	775.0	736.7	38.27	20.249		
7,250.0	6,678.4	6,748.8	6,684.4	39.8	19.3	-63.50	481.5	1,344.4	765.9	734.9	31.00	24.711		
7,300.0	6,695.4	6,765.9	6,701.4	39.7	19.3	-68.99	481.5	1,344.4	728.8	696.2	32.60	22.358		
7,350.0	6,709.3	6,779.8	6,715.3	39.6	19.4	-74.35	481.5	1,344.4	692.0	657.8	34.25	20.206		
7,400.0	6,720.1	6,790.5	6,726.0	39.6	19.4	-79.35	481.5	1,344.4	656.2	620.4	35.74	18.362		
7,450.0	6,727.6	6,798.0	6,733.6	39.5	19.4	-83.80	481.5	1,344.4	621.7	584.7	36.95	16.823		
7,500.0	6,731.9	6,802.3	6,737.8	39.4	19.4	-87.54	481.5	1,344.4	589.1	551.2	37.90	15.541		
7,541.2	6,732.9	6,803.4	6,738.9	39.4	19.4	-90.04	481.5	1,344.4	564.0	525.5	38.52	14.642		
7,600.0	6,732.9	6,803.3	6,738.8	39.4	19.4	-90.04	481.5	1,344.4	531.7	492.9	38.85	13.686		
7,700.0	6,732.8	6,803.2	6,738.7	39.3	19.4	-90.02	481.5	1,344.4	488.3	448.8	39.54	12.351		
7,800.0	6,732.6	6,803.1	6,738.6	39.4	19.4	-90.01	481.5	1,344.4	462.8	422.4	40.36	11.467		
7,871.4	6,732.6	6,803.0	6,738.6	39.4	19.4	-90.00	481.5	1,344.4	457.3	416.2	41.04	11.143		
7,900.0	6,732.5	6,803.0	6,738.5	39.5	19.4	-90.00	481.5	1,344.4	458.2	416.9	41.31	11.092 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 Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Dunn Pad Sec.7-T5N-R64W - Dunn 7PD (AL) - Wellbore #1 - Design #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	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	
8,000.0	6,732.4	6,802.9	6,738.4	39.6	19.4	-89.98	481.5	1,344.4	475.0	432.6	42.37	11.212	
8,100.0	6,732.3	6,802.8	6,738.3	39.9	19.4	-89.97	481.5	1,344.4	511.2	467.7	43.52	11.747	
8,200.0	6,732.2	6,802.7	6,738.2	40.2	19.4	-89.96	481.5	1,344.4	563.1	518.3	44.76	12.580	
8,300.0	6,732.1	6,802.6	6,738.1	40.7	19.4	-89.94	481.5	1,344.4	626.7	580.7	46.08	13.602	
8,400.0	6,732.0	6,802.5	6,738.0	41.2	19.4	-89.93	481.5	1,344.4	698.9	651.5	47.46	14.728	
8,500.0	6,731.9	6,802.4	6,737.9	41.9	19.4	-89.92	481.5	1,344.4	777.3	728.4	48.89	15.898	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.7-T5N-R64W - Hoff #33-6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 7275-UNKNOWN													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)			
13,200.0	6,727.0	6,688.0	6,688.0	118.8	133.8	90.07	6,387.2	2,286.1	753.5	503.5	250.05	3.013		
13,300.0	6,726.9	6,687.9	6,687.9	120.6	133.8	90.06	6,387.2	2,286.1	679.9	428.0	251.94	2.699		
13,400.0	6,726.8	6,687.8	6,687.8	122.5	133.8	90.05	6,387.2	2,286.1	613.9	360.1	253.83	2.419		
13,500.0	6,726.7	6,687.7	6,687.7	124.4	133.8	90.03	6,387.2	2,286.1	558.1	302.4	255.72	2.182		
13,600.0	6,726.6	6,687.6	6,687.6	126.2	133.8	90.02	6,387.2	2,286.1	515.8	258.2	257.61	2.002		
13,700.0	6,726.5	6,687.5	6,687.5	128.1	133.7	90.01	6,387.2	2,286.1	490.5	231.0	259.51	1.890		
13,777.2	6,726.4	6,687.4	6,687.4	129.5	133.7	90.00	6,387.2	2,286.1	484.4	223.4	260.97	1.856 CC, ES		
13,800.0	6,726.4	6,687.4	6,687.4	130.0	133.7	90.00	6,387.2	2,286.1	484.9	223.5	261.40	1.855 SF		
13,900.0	6,726.3	6,687.2	6,687.2	131.8	133.7	89.98	6,387.2	2,286.1	499.7	236.4	263.30	1.898		
14,000.0	6,726.2	6,687.1	6,687.1	133.7	133.7	89.97	6,387.2	2,286.1	533.2	268.0	265.19	2.011		
14,100.0	6,726.0	6,687.0	6,687.0	135.6	133.7	89.96	6,387.2	2,286.1	582.1	315.0	267.09	2.180		
14,200.0	6,725.9	6,686.9	6,686.9	137.4	133.7	89.95	6,387.2	2,286.1	643.0	374.0	268.99	2.390		
14,300.0	6,725.8	6,686.8	6,686.8	139.3	133.7	89.94	6,387.2	2,286.1	712.7	441.9	270.88	2.631		
14,400.0	6,725.7	6,686.7	6,686.7	141.2	133.7	89.92	6,387.2	2,286.1	789.0	516.2	272.78	2.893		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b>												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7121-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Existing Wells - Sec.7-T5N-R64W - Motis #33-7 (Exist.) - Wellbore #1 - Wellbore #1													
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	
8,200.0	6,732.2	6,715.2	6,715.2	40.2	134.3	90.12	1,451.1	2,111.4	712.0	550.1	161.90	4.398	
8,300.0	6,732.1	6,715.1	6,715.1	40.7	134.3	90.10	1,451.1	2,111.4	623.4	460.2	163.22	3.820	
8,400.0	6,732.0	6,715.0	6,715.0	41.2	134.3	90.09	1,451.1	2,111.4	538.9	374.3	164.60	3.274	
8,500.0	6,731.9	6,714.9	6,714.9	41.9	134.3	90.07	1,451.1	2,111.4	460.7	294.7	166.04	2.775	
8,600.0	6,731.8	6,714.8	6,714.8	42.7	134.3	90.05	1,451.1	2,111.4	392.5	224.9	167.53	2.343	
8,700.0	6,731.7	6,714.7	6,714.7	43.6	134.3	90.03	1,451.1	2,111.4	340.3	171.3	169.06	2.013	
8,800.0	6,731.6	6,714.6	6,714.6	44.6	134.3	90.01	1,451.1	2,111.4	312.4	141.8	170.62	1.831	
8,841.1	6,731.6	6,714.5	6,714.5	45.0	134.3	90.00	1,451.1	2,111.4	309.7	138.4	171.28	1.808 CC, ES, SF	
8,900.0	6,731.5	6,714.5	6,714.5	45.7	134.3	89.99	1,451.1	2,111.4	315.3	143.0	172.22	1.831	
9,000.0	6,731.4	6,714.4	6,714.4	46.9	134.3	89.97	1,451.1	2,111.4	348.1	174.3	173.85	2.002	
9,100.0	6,731.3	6,714.3	6,714.3	48.2	134.3	89.95	1,451.1	2,111.4	403.7	228.2	175.51	2.300	
9,200.0	6,731.2	6,714.2	6,714.2	49.5	134.3	89.93	1,451.1	2,111.4	474.1	296.9	177.18	2.676	
9,300.0	6,731.1	6,714.1	6,714.1	50.9	134.3	89.91	1,451.1	2,111.4	553.7	374.8	178.88	3.095	
9,400.0	6,731.0	6,714.0	6,714.0	52.3	134.3	89.89	1,451.1	2,111.4	639.0	458.4	180.59	3.538	
9,500.0	6,730.9	6,713.9	6,713.9	53.8	134.3	89.87	1,451.1	2,111.4	728.1	545.8	182.32	3.994	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.7-T5N-R64W - Motis #34-7 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7128-UNKNOWN													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		
5,500.0	5,134.7	5,119.7	5,119.7	39.3	102.4	-71.33	42.4	2,219.5	799.8	660.0	139.83	5.720		
5,600.0	5,232.4	5,217.4	5,217.4	39.6	104.3	-72.64	42.4	2,219.5	793.0	650.6	142.45	5.567		
5,700.0	5,330.7	5,315.7	5,315.7	39.9	106.3	-73.78	42.4	2,219.5	787.7	642.8	144.96	5.434		
5,800.0	5,429.7	5,414.6	5,414.6	40.2	108.3	-74.72	42.4	2,219.5	783.7	636.3	147.38	5.318		
5,900.0	5,529.0	5,514.0	5,514.0	40.4	110.3	-75.45	42.4	2,219.5	780.8	631.1	149.70	5.216		
6,000.0	5,628.7	5,613.7	5,613.7	40.6	112.3	-75.96	42.4	2,219.5	778.9	627.0	151.93	5.127		
6,100.0	5,728.6	5,713.6	5,713.6	40.7	114.3	-76.24	42.4	2,219.5	777.9	623.8	154.08	5.048		
6,171.4	5,800.0	5,785.0	5,785.0	40.7	115.7	32.50	42.4	2,219.5	777.7	622.1	155.57	4.999		
6,200.0	5,828.6	5,813.6	5,813.6	40.8	116.3	32.50	42.4	2,219.5	777.7	621.5	156.16	4.980		
6,300.0	5,928.6	5,913.6	5,913.6	40.8	118.3	32.50	42.4	2,219.5	777.7	619.4	158.23	4.915		
6,340.4	5,969.0	5,954.0	5,954.0	40.9	119.1	32.50	42.4	2,219.5	777.7	618.6	159.06	4.889		
6,350.0	5,978.6	5,963.6	5,963.6	40.9	119.3	32.51	42.4	2,219.5	777.6	618.4	159.26	4.883		
6,400.0	6,028.6	6,013.5	6,013.5	40.9	120.3	32.67	42.4	2,219.5	775.7	615.8	159.95	4.850		
6,450.0	6,078.2	6,063.2	6,063.2	40.9	121.3	33.09	42.4	2,219.5	771.1	611.0	160.10	4.816		
6,500.0	6,127.5	6,112.4	6,112.4	40.9	122.2	33.75	42.4	2,219.5	763.7	604.0	159.72	4.782		
6,550.0	6,176.0	6,161.0	6,161.0	40.9	123.2	34.69	42.4	2,219.5	753.7	594.9	158.83	4.745		
6,600.0	6,223.6	6,208.6	6,208.6	40.8	124.2	35.91	42.4	2,219.5	741.2	583.7	157.52	4.705		
6,650.0	6,270.2	6,255.2	6,255.2	40.8	125.1	37.44	42.4	2,219.5	726.2	570.4	155.86	4.660		
6,700.0	6,315.5	6,300.5	6,300.5	40.8	126.0	39.30	42.4	2,219.5	709.0	555.0	153.97	4.605		
6,750.0	6,359.3	6,344.3	6,344.3	40.7	126.9	41.54	42.4	2,219.5	689.7	537.6	152.01	4.537		
6,800.0	6,401.4	6,386.4	6,386.4	40.6	127.7	44.17	42.4	2,219.5	668.4	518.3	150.16	4.452		
6,850.0	6,441.6	6,426.6	6,426.6	40.5	128.5	47.23	42.4	2,219.5	645.6	496.9	148.63	4.344		
6,900.0	6,479.9	6,464.9	6,464.9	40.5	129.3	50.71	42.4	2,219.5	621.4	473.8	147.61	4.209		
6,950.0	6,515.9	6,500.9	6,500.9	40.4	130.0	54.61	42.4	2,219.5	596.2	448.9	147.26	4.049		
7,000.0	6,549.6	6,534.6	6,534.6	40.3	130.7	58.87	42.4	2,219.5	570.5	422.8	147.62	3.864		
7,050.0	6,580.9	6,565.9	6,565.9	40.2	131.3	63.41	42.4	2,219.5	544.6	396.0	148.59	3.665		
7,100.0	6,609.5	6,594.5	6,594.5	40.1	131.9	68.09	42.4	2,219.5	519.3	369.3	149.97	3.463		
7,150.0	6,635.3	6,620.3	6,620.3	40.0	132.4	72.74	42.4	2,219.5	495.1	343.6	151.47	3.269		
7,200.0	6,658.3	6,643.3	6,643.3	39.9	132.9	77.15	42.4	2,219.5	472.8	320.0	152.82	3.094		
7,250.0	6,678.4	6,663.4	6,663.4	39.8	133.3	81.15	42.4	2,219.5	453.2	299.3	153.83	2.946		
7,300.0	6,695.4	6,680.4	6,680.4	39.7	133.6	84.57	42.4	2,219.5	437.1	282.7	154.46	2.830		
7,350.0	6,709.3	6,694.3	6,694.3	39.6	133.9	87.29	42.4	2,219.5	425.5	270.7	154.80	2.749		
7,400.0	6,720.1	6,705.0	6,705.0	39.6	134.1	89.21	42.4	2,219.5	419.1	264.1	154.98	2.704		
7,431.9	6,725.2	6,710.2	6,710.2	39.5	134.2	90.00	42.4	2,219.5	417.9	262.8	155.08	2.695 CC, ES, SF		
7,450.0	6,727.6	6,712.6	6,712.6	39.5	134.3	90.29	42.4	2,219.5	418.3	263.1	155.15	2.696		
7,500.0	6,731.9	6,716.8	6,716.8	39.4	134.3	90.49	42.4	2,219.5	423.3	267.9	155.42	2.724		
7,541.2	6,732.9	6,717.9	6,717.9	39.4	134.4	89.98	42.4	2,219.5	431.8	276.1	155.72	2.773		
7,600.0	6,732.9	6,717.8	6,717.8	39.4	134.4	89.98	42.4	2,219.5	450.3	294.2	156.05	2.885		
7,700.0	6,732.8	6,717.7	6,717.7	39.3	134.4	89.96	42.4	2,219.5	496.3	339.5	156.74	3.166		
7,800.0	6,732.6	6,717.6	6,717.6	39.4	134.4	89.95	42.4	2,219.5	556.6	399.1	157.56	3.533		
7,900.0	6,732.5	6,717.5	6,717.5	39.5	134.4	89.93	42.4	2,219.5	627.2	468.7	158.51	3.957		
8,000.0	6,732.4	6,717.4	6,717.4	39.6	134.3	89.92	42.4	2,219.5	704.9	545.4	159.57	4.418		
8,100.0	6,732.3	6,717.3	6,717.3	39.9	134.3	89.90	42.4	2,219.5	787.7	627.0	160.73	4.901		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.7-T5N-R64W - Plumb #4 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 6983-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,300.0	6,731.1	6,692.1	6,692.1	50.9	133.8	90.23	2,627.1	1,985.1	740.1	561.8	178.39	4.149		
9,400.0	6,731.0	6,692.0	6,692.0	52.3	133.8	90.20	2,627.1	1,985.1	643.7	463.6	180.11	3.574		
9,500.0	6,730.9	6,691.9	6,691.9	53.8	133.8	90.17	2,627.1	1,985.1	548.6	366.8	181.84	3.017		
9,600.0	6,730.8	6,691.8	6,691.8	55.3	133.8	90.14	2,627.1	1,985.1	455.6	272.0	183.58	2.482		
9,700.0	6,730.7	6,691.6	6,691.6	56.9	133.8	90.10	2,627.1	1,985.1	366.3	181.0	185.34	1.976		
9,800.0	6,730.6	6,691.5	6,691.5	58.4	133.8	90.07	2,627.1	1,985.1	284.2	97.1	187.11	1.519		
9,900.0	6,730.4	6,691.4	6,691.4	60.0	133.8	90.04	2,627.1	1,985.1	217.6	28.7	188.89	1.152	Level 2	
10,000.0	6,730.3	6,691.3	6,691.3	61.7	133.8	90.01	2,627.1	1,985.1	184.2	-6.4	190.68	0.966	Level 1	
10,017.0	6,730.3	6,691.3	6,691.3	62.0	133.8	90.00	2,627.1	1,985.1	183.5	-7.5	190.98	0.961	Level 1, CC, ES, SF	
10,100.0	6,730.2	6,691.2	6,691.2	63.3	133.8	89.97	2,627.1	1,985.1	201.3	8.9	192.47	1.046	Level 2	
10,200.0	6,730.1	6,691.1	6,691.1	65.0	133.8	89.94	2,627.1	1,985.1	259.1	64.8	194.28	1.334	Level 3	
10,300.0	6,730.0	6,691.0	6,691.0	66.7	133.8	89.91	2,627.1	1,985.1	337.2	141.1	196.09	1.720		
10,400.0	6,729.9	6,690.9	6,690.9	68.4	133.8	89.87	2,627.1	1,985.1	424.6	226.7	197.91	2.146		
10,500.0	6,729.8	6,690.8	6,690.8	70.1	133.8	89.84	2,627.1	1,985.1	516.6	316.9	199.73	2.587		
10,600.0	6,729.7	6,690.7	6,690.7	71.8	133.8	89.81	2,627.1	1,985.1	611.1	409.6	201.56	3.032		
10,700.0	6,729.6	6,690.6	6,690.6	73.5	133.8	89.78	2,627.1	1,985.1	707.2	503.8	203.39	3.477		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells - Sec.7-T5N-R64W - Plumb #5 (P&A) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 6982-UNKNOWN												<b>Offset Well Error:</b>	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	
10,700.0	6,729.6	6,686.6	6,686.6	73.5	133.7	90.05	3,815.2	2,357.3	750.9	547.6	203.28	3.694	
10,800.0	6,729.5	6,686.5	6,686.5	75.3	133.7	90.04	3,815.2	2,357.3	687.6	482.5	205.12	3.352	
10,900.0	6,729.4	6,686.4	6,686.4	77.0	133.7	90.03	3,815.2	2,357.3	633.9	426.9	206.96	3.063	
11,000.0	6,729.3	6,686.3	6,686.3	78.8	133.7	90.02	3,815.2	2,357.3	592.3	383.5	208.80	2.837	
11,100.0	6,729.2	6,686.2	6,686.2	80.6	133.7	90.01	3,815.2	2,357.3	565.5	354.8	210.65	2.685	
11,200.0	6,729.1	6,686.1	6,686.1	82.3	133.7	90.00	3,815.2	2,357.3	555.7	343.2	212.50	2.615	
11,205.1	6,729.1	6,686.1	6,686.1	82.4	133.7	90.00	3,815.2	2,357.3	555.6	343.0	212.60	2.614	CC, ES, SF
11,300.0	6,729.0	6,686.0	6,686.0	84.1	133.7	89.99	3,815.2	2,357.3	563.7	349.3	214.36	2.630	
11,400.0	6,728.9	6,685.9	6,685.9	85.9	133.7	89.98	3,815.2	2,357.3	588.8	372.6	216.22	2.723	
11,500.0	6,728.8	6,685.8	6,685.8	87.7	133.7	89.97	3,815.2	2,357.3	629.0	411.0	218.08	2.885	
11,600.0	6,728.7	6,685.7	6,685.7	89.5	133.7	89.96	3,815.2	2,357.3	681.7	461.7	219.94	3.099	
11,700.0	6,728.6	6,685.6	6,685.6	91.3	133.7	89.95	3,815.2	2,357.3	744.1	522.3	221.80	3.355	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells - Sec.7-T5N-R64W - Webster #B6-2 (Exist.) - Wellbore #1 - Wellbore #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7020-UNKNOWN													<b>Offset Well Error:</b>	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		
16,100.0	6,724.0	6,702.9	6,702.9	173.2	134.1	90.06	9,254.4	2,334.5	761.7	456.3	305.45	2.494		
16,200.0	6,723.8	6,702.8	6,702.8	175.0	134.1	90.05	9,254.4	2,334.5	693.8	386.4	307.36	2.257		
16,300.0	6,723.7	6,702.7	6,702.7	176.9	134.1	90.04	9,254.4	2,334.5	634.4	325.2	309.26	2.051		
16,400.0	6,723.6	6,702.6	6,702.6	178.8	134.1	90.03	9,254.4	2,334.5	586.2	275.0	311.17	1.884		
16,500.0	6,723.5	6,702.5	6,702.5	180.7	134.1	90.02	9,254.4	2,334.5	552.1	239.0	313.08	1.763		
16,600.0	6,723.4	6,702.4	6,702.4	182.6	134.0	90.00	9,254.4	2,334.5	534.7	219.7	314.98	1.698		
16,644.3	6,723.4	6,702.4	6,702.4	183.4	134.0	90.00	9,254.4	2,334.5	532.9	217.0	315.83	1.687 CC, ES, SF		
16,700.0	6,723.3	6,702.3	6,702.3	184.5	134.0	89.99	9,254.4	2,334.5	535.8	218.9	316.89	1.691		
16,800.0	6,723.2	6,702.2	6,702.2	186.4	134.0	89.98	9,254.4	2,334.5	555.1	236.3	318.80	1.741		
16,900.0	6,723.1	6,702.1	6,702.1	188.3	134.0	89.97	9,254.4	2,334.5	591.0	270.3	320.71	1.843		
17,000.0	6,723.0	6,702.0	6,702.0	190.2	134.0	89.96	9,254.4	2,334.5	640.7	318.0	322.61	1.986		
17,010.8	6,723.0	6,702.0	6,702.0	190.4	134.0	89.96	9,254.4	2,334.5	646.7	323.9	322.82	2.003		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)

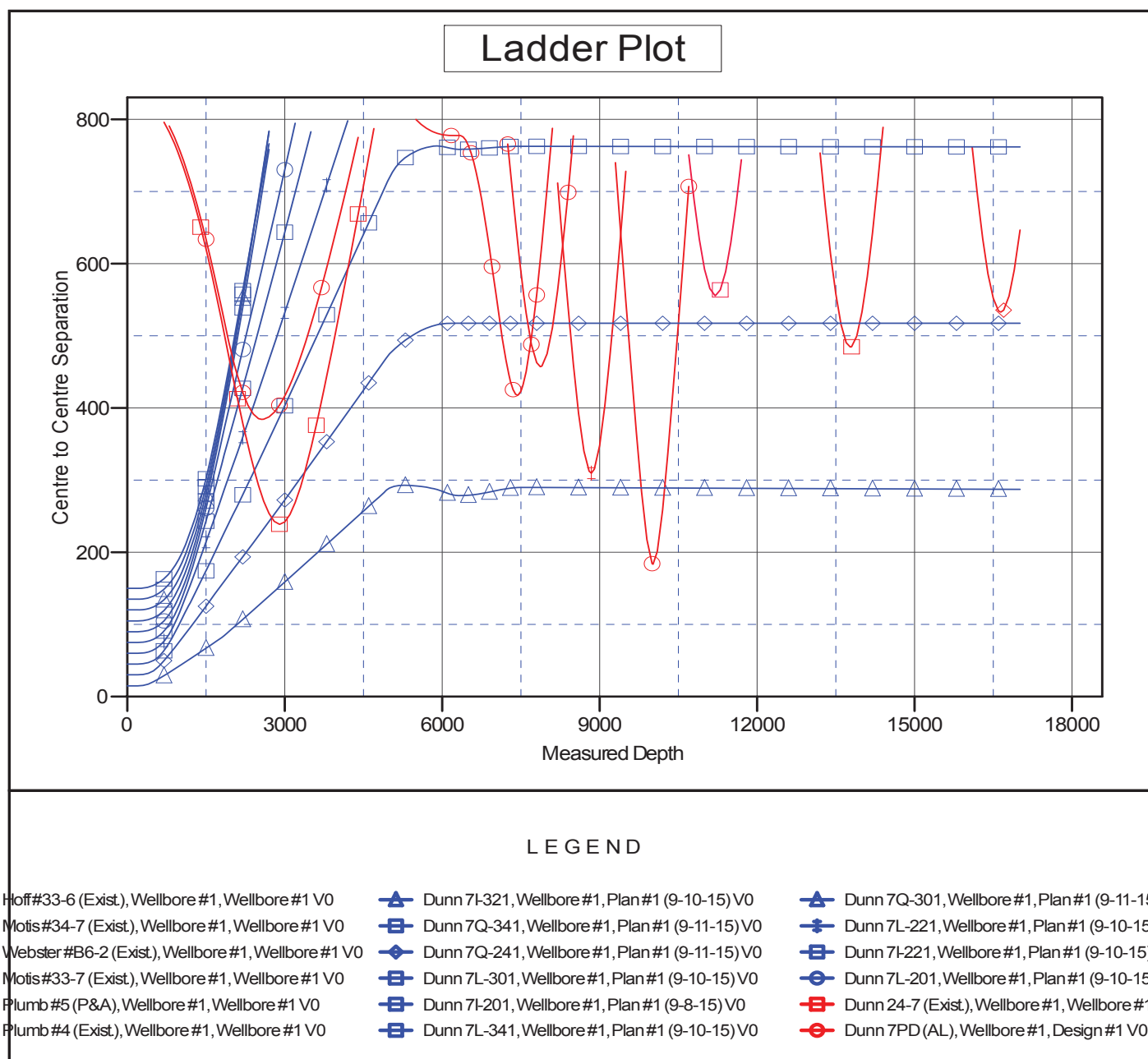
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Dunn 7Q-221

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.58°





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7Q-221
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Reference Site:</b>	Dunn 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4638.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Dunn 7Q-221	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (9-11-15)	<b>Offset TVD Reference:</b>	Offset Datum

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