

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Dunn 7L-201**

Surface Location: Dunn 5N64W7 Pad Sec.7-T5N-R64W

North American Datum 1983 , US State Plane 1983, Colorado Northern Zone

Ground Elevation: 4625.0

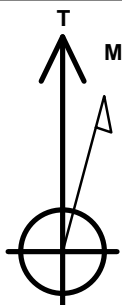
+N/-S +E/-W Northing Easting Latitude Longitude Slot

0.0 0.0 1392920.91 3251104.62 40.408465 -104.598273

Original Well Elev WELL @ 4638.0ft (Original Well Elev)

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 765'FSL & 981'FWL, Sec.7	1.0	0.0	0.0	Point
BHL 200'FNL & 1194'FWL, Sec.6	6723.0	9519.2	242.2	Point



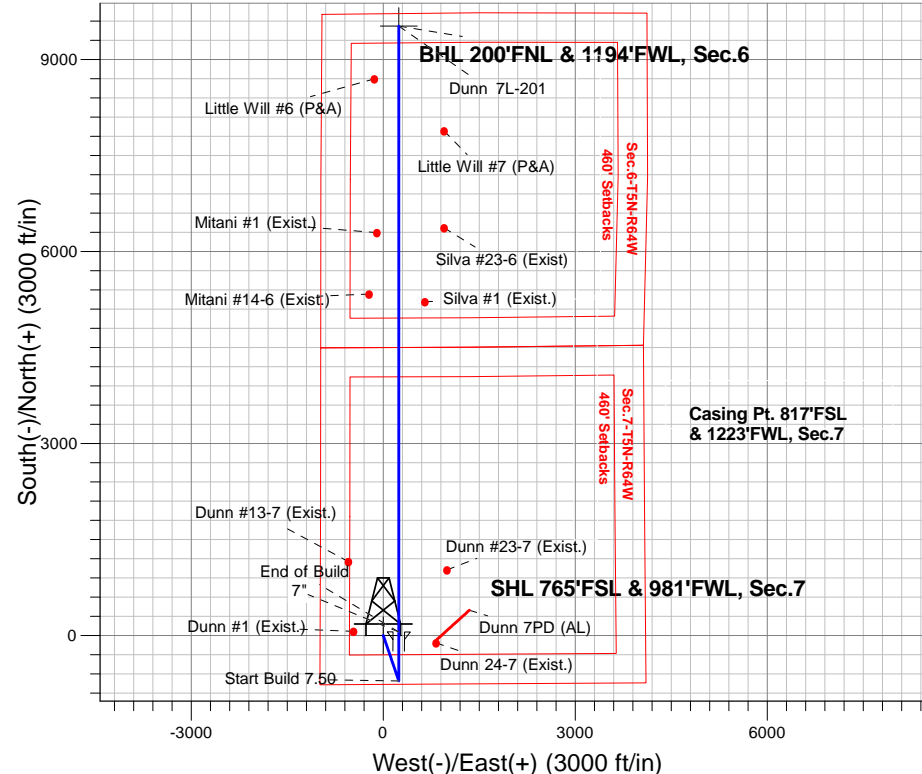
Azimuths to True North  
Magnetic North: 8.20°

Magnetic Field  
Strength: 52703.9snT  
Dip Angle: 66.93°  
Date: 9/24/2015  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
1400.0	1400.0	KOP - Start Build 1.50
5233.1	5300.2	Start Drop -2.00
5800.0	5870.9	Start 173.9 hold at 5870.9 MD
5973.9	6044.8	Start Build 7.50
6737.9	7246.0	End of Build
6723.0	16713.4	TD at 16713.4

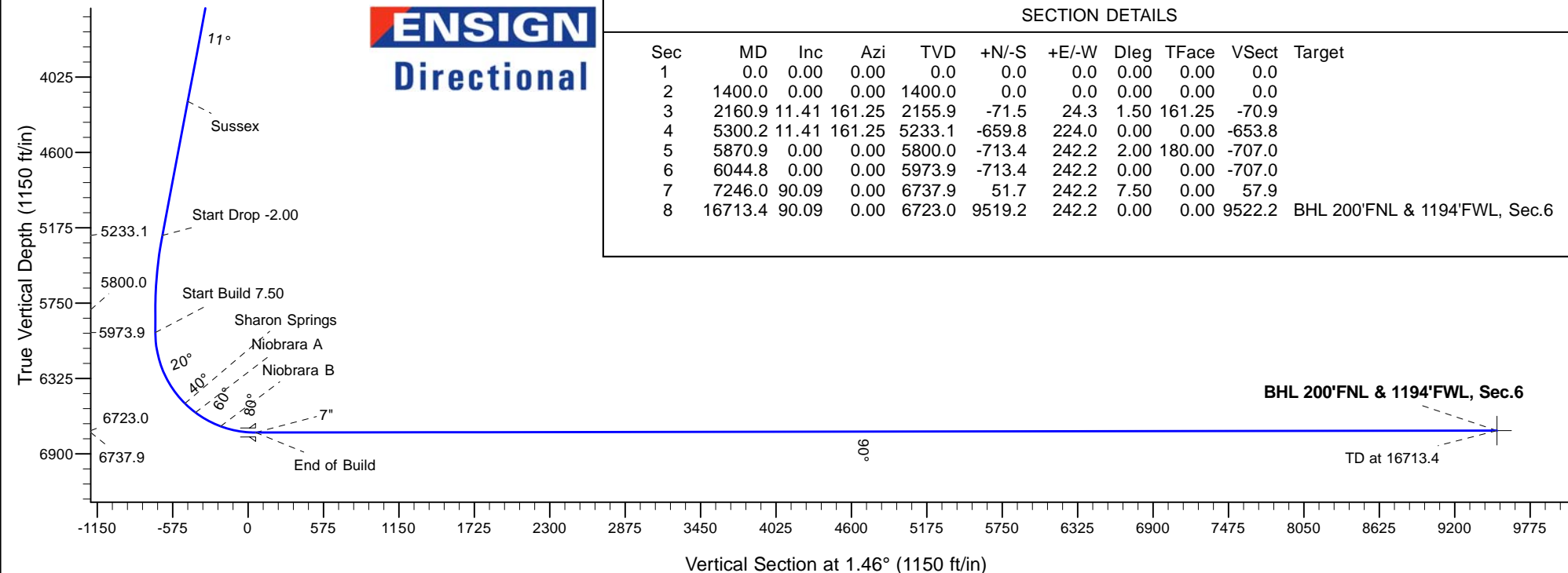
Dunn 5N64W7 Pad Sec.7-T5N-R64W  
Dunn 7L-201  
Plan #1 (9-10-15)  
6:01, September 24 2015



**ENSIGN**  
Directional

## 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	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	2160.9	11.41	161.25	2155.9	-71.5	24.3	1.50	161.25	-70.9	
4	5300.2	11.41	161.25	5233.1	-659.8	224.0	0.00	0.00	-653.8	
5	5870.9	0.00	0.00	5800.0	-713.4	242.2	2.00	180.00	-707.0	
6	6044.8	0.00	0.00	5973.9	-713.4	242.2	0.00	0.00	-707.0	
7	7246.0	90.09	0.00	6737.9	51.7	242.2	7.50	0.00	57.9	
8	16713.4	90.09	0.00	6723.0	9519.2	242.2	0.00	0.00	9522.2	BHL 200'FNL & 1194'FWL, Sec.6





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.7-T5N-R64W**

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

**Dunn 7L-201**

**Wellbore #1**

**Plan: Plan #1 (9-10-15)**

## **Standard Planning Report**

**24 September, 2015**

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

<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 7L-201		
<b>Well Position</b>	<b>+N/-S</b>	-60.1 ft	<b>Northing:</b>
	<b>+E/-W</b>	-0.6 ft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	0.0 ft
		<b>Latitude:</b>	40.408465
		<b>Longitude:</b>	-104.598273
		<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 (9-10-15)		
<b>Audit Notes:</b>			
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>
			0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>
	(ft)	(ft)	(ft)
	0.0	0.0	0.0
			<b>Direction (°)</b>
			1.46

<b>Plan Sections</b>										
<b>Measured Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical Depth</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg Rate</b>	<b>Build Rate</b>	<b>Turn Rate</b>	<b>TFO</b>	<b>Target</b>
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,160.9	11.41	161.25	2,155.9	-71.5	24.3	1.50	1.50	0.00	161.25	
5,300.2	11.41	161.25	5,233.1	-659.8	224.0	0.00	0.00	0.00	0.00	
5,870.9	0.00	0.00	5,800.0	-713.4	242.2	2.00	-2.00	0.00	180.00	
6,044.8	0.00	0.00	5,973.9	-713.4	242.2	0.00	0.00	0.00	0.00	
7,246.0	90.09	0.00	6,737.9	51.7	242.2	7.50	7.50	0.00	0.00	
16,713.4	90.09	0.00	6,723.0	9,519.2	242.2	0.00	0.00	0.00	0.00	BHL 200'FNL & 1194'I

Database:	US_EDM	Local Co-ordinate Reference:	Well Dunn 7L-201
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Project:	SEC.7-T5N-R64W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site:	Dunn 5N64W7 Pad Sec.7-T5N-R64W	North Reference:	True
Well:	Dunn 7L-201	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-10-15)		

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
SHL 765'FSL & 981'FWL, Sec.7									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.50									
1,500.0	1.50	161.25	1,500.0	-1.2	0.4	-1.2	1.50	1.50	0.00
1,600.0	3.00	161.25	1,599.9	-5.0	1.7	-4.9	1.50	1.50	0.00
1,700.0	4.50	161.25	1,699.7	-11.1	3.8	-11.0	1.50	1.50	0.00
1,800.0	6.00	161.25	1,799.3	-19.8	6.7	-19.6	1.50	1.50	0.00
1,900.0	7.50	161.25	1,898.6	-30.9	10.5	-30.7	1.50	1.50	0.00
2,000.0	9.00	161.25	1,997.5	-44.5	15.1	-44.1	1.50	1.50	0.00
2,100.0	10.50	161.25	2,096.1	-60.6	20.6	-60.0	1.50	1.50	0.00
2,160.9	11.41	161.25	2,155.9	-71.5	24.3	-70.9	1.50	1.50	0.00
2,200.0	11.41	161.25	2,194.2	-78.9	26.8	-78.1	0.00	0.00	0.00
2,300.0	11.41	161.25	2,292.2	-97.6	33.1	-96.7	0.00	0.00	0.00
2,400.0	11.41	161.25	2,390.2	-116.3	39.5	-115.3	0.00	0.00	0.00
2,500.0	11.41	161.25	2,488.3	-135.1	45.9	-133.9	0.00	0.00	0.00
2,600.0	11.41	161.25	2,586.3	-153.8	52.2	-152.4	0.00	0.00	0.00
2,700.0	11.41	161.25	2,684.3	-172.5	58.6	-171.0	0.00	0.00	0.00
2,800.0	11.41	161.25	2,782.3	-191.3	64.9	-189.6	0.00	0.00	0.00
2,900.0	11.41	161.25	2,880.4	-210.0	71.3	-208.1	0.00	0.00	0.00
3,000.0	11.41	161.25	2,978.4	-228.8	77.7	-226.7	0.00	0.00	0.00
3,100.0	11.41	161.25	3,076.4	-247.5	84.0	-245.3	0.00	0.00	0.00
3,200.0	11.41	161.25	3,174.4	-266.2	90.4	-263.8	0.00	0.00	0.00
3,300.0	11.41	161.25	3,272.5	-285.0	96.7	-282.4	0.00	0.00	0.00
3,400.0	11.41	161.25	3,370.5	-303.7	103.1	-301.0	0.00	0.00	0.00
3,500.0	11.41	161.25	3,468.5	-322.4	109.5	-319.6	0.00	0.00	0.00
3,521.9	11.41	161.25	3,490.0	-326.6	110.9	-323.6	0.00	0.00	0.00
Parkman									
3,600.0	11.41	161.25	3,566.5	-341.2	115.8	-338.1	0.00	0.00	0.00
3,700.0	11.41	161.25	3,664.5	-359.9	122.2	-356.7	0.00	0.00	0.00
3,800.0	11.41	161.25	3,762.6	-378.7	128.5	-375.3	0.00	0.00	0.00
3,900.0	11.41	161.25	3,860.6	-397.4	134.9	-393.8	0.00	0.00	0.00
4,000.0	11.41	161.25	3,958.6	-416.1	141.3	-412.4	0.00	0.00	0.00
4,100.0	11.41	161.25	4,056.6	-434.9	147.6	-431.0	0.00	0.00	0.00
4,200.0	11.41	161.25	4,154.7	-453.6	154.0	-449.5	0.00	0.00	0.00
4,256.5	11.41	161.25	4,210.0	-464.2	157.6	-460.0	0.00	0.00	0.00
Sussex									
4,300.0	11.41	161.25	4,252.7	-472.3	160.4	-468.1	0.00	0.00	0.00
4,400.0	11.41	161.25	4,350.7	-491.1	166.7	-486.7	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Dunn 7L-201
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Project:	SEC.7-T5N-R64W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site:	Dunn 5N64W7 Pad Sec.7-T5N-R64W	North Reference:	True
Well:	Dunn 7L-201	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (9-10-15)		

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)
4,500.0	11.41	161.25	4,448.7	-509.8	173.1	-505.3	0.00	0.00	0.00
4,600.0	11.41	161.25	4,546.7	-528.6	179.4	-523.8	0.00	0.00	0.00
4,700.0	11.41	161.25	4,644.8	-547.3	185.8	-542.4	0.00	0.00	0.00
4,800.0	11.41	161.25	4,742.8	-566.0	192.2	-561.0	0.00	0.00	0.00
4,900.0	11.41	161.25	4,840.8	-584.8	198.5	-579.5	0.00	0.00	0.00
5,000.0	11.41	161.25	4,938.8	-603.5	204.9	-598.1	0.00	0.00	0.00
5,100.0	11.41	161.25	5,036.9	-622.2	211.2	-616.7	0.00	0.00	0.00
5,200.0	11.41	161.25	5,134.9	-641.0	217.6	-635.2	0.00	0.00	0.00
5,300.0	11.41	161.25	5,232.9	-659.7	224.0	-653.8	0.00	0.00	0.00
5,300.2	11.41	161.25	5,233.1	-659.8	224.0	-653.8	0.00	0.00	0.00
Start Drop -2.00									
5,400.0	9.42	161.25	5,331.3	-676.8	229.8	-670.8	2.00	-2.00	0.00
5,500.0	7.42	161.25	5,430.2	-690.7	234.5	-684.5	2.00	-2.00	0.00
5,600.0	5.42	161.25	5,529.5	-701.3	238.1	-695.0	2.00	-2.00	0.00
5,700.0	3.42	161.25	5,629.2	-708.6	240.6	-702.2	2.00	-2.00	0.00
5,800.0	1.42	161.25	5,729.1	-712.6	241.9	-706.2	2.00	-2.00	0.00
5,870.9	0.00	0.00	5,800.0	-713.4	242.2	-707.0	2.00	-2.00	0.00
Start 173.9 hold at 5870.9 MD									
5,900.0	0.00	0.00	5,829.1	-713.4	242.2	-707.0	0.00	0.00	0.00
6,000.0	0.00	0.00	5,929.1	-713.4	242.2	-707.0	0.00	0.00	0.00
6,044.8	0.00	0.00	5,973.9	-713.4	242.2	-707.0	0.00	0.00	0.00
Start Build 7.50									
6,100.0	4.14	0.00	6,029.1	-711.4	242.2	-705.0	7.50	7.50	0.00
6,200.0	11.64	0.00	6,128.1	-697.7	242.2	-691.3	7.50	7.50	0.00
6,300.0	19.14	0.00	6,224.4	-671.2	242.2	-664.8	7.50	7.50	0.00
6,400.0	26.64	0.00	6,316.5	-632.3	242.2	-625.9	7.50	7.50	0.00
6,500.0	34.14	0.00	6,402.7	-581.7	242.2	-575.4	7.50	7.50	0.00
6,600.0	41.64	0.00	6,481.5	-520.4	242.2	-514.0	7.50	7.50	0.00
6,647.5	45.20	0.00	6,516.0	-487.8	242.2	-481.4	7.50	7.50	0.00
Sharon Springs									
6,700.0	49.14	0.00	6,551.7	-449.2	242.2	-442.9	7.50	7.50	0.00
6,753.1	53.12	0.00	6,585.0	-407.9	242.2	-401.6	7.50	7.50	0.00
Niobrara A									
6,800.0	56.64	0.00	6,612.0	-369.5	242.2	-363.3	7.50	7.50	0.00
6,900.0	64.14	0.00	6,661.4	-282.7	242.2	-276.4	7.50	7.50	0.00
6,972.9	69.61	0.00	6,690.0	-215.6	242.2	-209.4	7.50	7.50	0.00
Niobrara B									
7,000.0	71.64	0.00	6,699.0	-190.1	242.2	-183.9	7.50	7.50	0.00
7,100.0	79.14	0.00	6,724.2	-93.4	242.2	-87.2	7.50	7.50	0.00
7,200.0	86.64	0.00	6,736.6	5.8	242.2	11.9	7.50	7.50	0.00
7,246.0	90.09	0.00	6,737.9	51.8	242.2	57.9	7.50	7.50	0.00
End of Build - 7"									
7,300.0	90.09	0.00	6,737.8	105.8	242.2	111.9	0.00	0.00	0.00
7,400.0	90.09	0.00	6,737.6	205.8	242.2	211.8	0.00	0.00	0.00
7,500.0	90.09	0.00	6,737.5	305.8	242.2	311.8	0.00	0.00	0.00
7,600.0	90.09	0.00	6,737.3	405.8	242.2	411.8	0.00	0.00	0.00
7,700.0	90.09	0.00	6,737.2	505.8	242.2	511.7	0.00	0.00	0.00
7,800.0	90.09	0.00	6,737.0	605.8	242.2	611.7	0.00	0.00	0.00
7,900.0	90.09	0.00	6,736.8	705.8	242.2	711.7	0.00	0.00	0.00
8,000.0	90.09	0.00	6,736.7	805.8	242.2	811.6	0.00	0.00	0.00
8,100.0	90.09	0.00	6,736.5	905.8	242.2	911.6	0.00	0.00	0.00
8,200.0	90.09	0.00	6,736.4	1,005.8	242.2	1,011.6	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

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	90.09	0.00	6,736.2	1,105.8	242.2	1,111.6	0.00	0.00	0.00
8,400.0	90.09	0.00	6,736.1	1,205.7	242.2	1,211.5	0.00	0.00	0.00
8,500.0	90.09	0.00	6,735.9	1,305.7	242.2	1,311.5	0.00	0.00	0.00
8,600.0	90.09	0.00	6,735.7	1,405.7	242.2	1,411.5	0.00	0.00	0.00
8,700.0	90.09	0.00	6,735.6	1,505.7	242.2	1,511.4	0.00	0.00	0.00
8,800.0	90.09	0.00	6,735.4	1,605.7	242.2	1,611.4	0.00	0.00	0.00
8,900.0	90.09	0.00	6,735.3	1,705.7	242.2	1,711.4	0.00	0.00	0.00
9,000.0	90.09	0.00	6,735.1	1,805.7	242.2	1,811.3	0.00	0.00	0.00
9,100.0	90.09	0.00	6,735.0	1,905.7	242.2	1,911.3	0.00	0.00	0.00
9,200.0	90.09	0.00	6,734.8	2,005.7	242.2	2,011.3	0.00	0.00	0.00
9,300.0	90.09	0.00	6,734.6	2,105.7	242.2	2,111.2	0.00	0.00	0.00
9,400.0	90.09	0.00	6,734.5	2,205.7	242.2	2,211.2	0.00	0.00	0.00
9,500.0	90.09	0.00	6,734.3	2,305.7	242.2	2,311.2	0.00	0.00	0.00
9,600.0	90.09	0.00	6,734.2	2,405.7	242.2	2,411.1	0.00	0.00	0.00
9,700.0	90.09	0.00	6,734.0	2,505.7	242.2	2,511.1	0.00	0.00	0.00
9,800.0	90.09	0.00	6,733.9	2,605.7	242.2	2,611.1	0.00	0.00	0.00
9,900.0	90.09	0.00	6,733.7	2,705.7	242.2	2,711.0	0.00	0.00	0.00
10,000.0	90.09	0.00	6,733.5	2,805.7	242.2	2,811.0	0.00	0.00	0.00
10,100.0	90.09	0.00	6,733.4	2,905.7	242.2	2,911.0	0.00	0.00	0.00
10,200.0	90.09	0.00	6,733.2	3,005.7	242.2	3,010.9	0.00	0.00	0.00
10,300.0	90.09	0.00	6,733.1	3,105.7	242.2	3,110.9	0.00	0.00	0.00
10,400.0	90.09	0.00	6,732.9	3,205.7	242.2	3,210.9	0.00	0.00	0.00
10,500.0	90.09	0.00	6,732.8	3,305.7	242.2	3,310.8	0.00	0.00	0.00
10,600.0	90.09	0.00	6,732.6	3,405.7	242.2	3,410.8	0.00	0.00	0.00
10,700.0	90.09	0.00	6,732.4	3,505.7	242.2	3,510.8	0.00	0.00	0.00
10,800.0	90.09	0.00	6,732.3	3,605.7	242.2	3,610.7	0.00	0.00	0.00
10,900.0	90.09	0.00	6,732.1	3,705.7	242.2	3,710.7	0.00	0.00	0.00
11,000.0	90.09	0.00	6,732.0	3,805.7	242.2	3,810.7	0.00	0.00	0.00
11,100.0	90.09	0.00	6,731.8	3,905.7	242.2	3,910.6	0.00	0.00	0.00
11,200.0	90.09	0.00	6,731.7	4,005.7	242.2	4,010.6	0.00	0.00	0.00
11,300.0	90.09	0.00	6,731.5	4,105.7	242.2	4,110.6	0.00	0.00	0.00
11,400.0	90.09	0.00	6,731.3	4,205.7	242.2	4,210.5	0.00	0.00	0.00
11,500.0	90.09	0.00	6,731.2	4,305.7	242.2	4,310.5	0.00	0.00	0.00
11,600.0	90.09	0.00	6,731.0	4,405.7	242.2	4,410.5	0.00	0.00	0.00
11,700.0	90.09	0.00	6,730.9	4,505.7	242.2	4,510.4	0.00	0.00	0.00
11,800.0	90.09	0.00	6,730.7	4,605.7	242.2	4,610.4	0.00	0.00	0.00
11,900.0	90.09	0.00	6,730.6	4,705.7	242.2	4,710.4	0.00	0.00	0.00
12,000.0	90.09	0.00	6,730.4	4,805.7	242.2	4,810.4	0.00	0.00	0.00
12,100.0	90.09	0.00	6,730.2	4,905.7	242.2	4,910.3	0.00	0.00	0.00
12,200.0	90.09	0.00	6,730.1	5,005.7	242.2	5,010.3	0.00	0.00	0.00
12,300.0	90.09	0.00	6,729.9	5,105.7	242.2	5,110.3	0.00	0.00	0.00
12,400.0	90.09	0.00	6,729.8	5,205.7	242.2	5,210.2	0.00	0.00	0.00
12,500.0	90.09	0.00	6,729.6	5,305.7	242.2	5,310.2	0.00	0.00	0.00
12,600.0	90.09	0.00	6,729.5	5,405.7	242.2	5,410.2	0.00	0.00	0.00
12,700.0	90.09	0.00	6,729.3	5,505.7	242.2	5,510.1	0.00	0.00	0.00
12,800.0	90.09	0.00	6,729.1	5,605.7	242.2	5,610.1	0.00	0.00	0.00
12,900.0	90.09	0.00	6,729.0	5,705.7	242.2	5,710.1	0.00	0.00	0.00
13,000.0	90.09	0.00	6,728.8	5,805.7	242.2	5,810.0	0.00	0.00	0.00
13,100.0	90.09	0.00	6,728.7	5,905.7	242.2	5,910.0	0.00	0.00	0.00
13,200.0	90.09	0.00	6,728.5	6,005.7	242.2	6,010.0	0.00	0.00	0.00
13,300.0	90.09	0.00	6,728.4	6,105.7	242.2	6,109.9	0.00	0.00	0.00
13,400.0	90.09	0.00	6,728.2	6,205.7	242.2	6,209.9	0.00	0.00	0.00
13,500.0	90.09	0.00	6,728.0	6,305.7	242.2	6,309.9	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

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	90.09	0.00	6,727.9	6,405.7	242.2	6,409.8	0.00	0.00	0.00
13,700.0	90.09	0.00	6,727.7	6,505.7	242.2	6,509.8	0.00	0.00	0.00
13,800.0	90.09	0.00	6,727.6	6,605.7	242.2	6,609.8	0.00	0.00	0.00
13,900.0	90.09	0.00	6,727.4	6,705.7	242.2	6,709.7	0.00	0.00	0.00
14,000.0	90.09	0.00	6,727.3	6,805.7	242.2	6,809.7	0.00	0.00	0.00
14,100.0	90.09	0.00	6,727.1	6,905.7	242.2	6,909.7	0.00	0.00	0.00
14,200.0	90.09	0.00	6,726.9	7,005.7	242.2	7,009.6	0.00	0.00	0.00
14,300.0	90.09	0.00	6,726.8	7,105.7	242.2	7,109.6	0.00	0.00	0.00
14,400.0	90.09	0.00	6,726.6	7,205.7	242.2	7,209.6	0.00	0.00	0.00
14,500.0	90.09	0.00	6,726.5	7,305.7	242.2	7,309.5	0.00	0.00	0.00
14,600.0	90.09	0.00	6,726.3	7,405.7	242.2	7,409.5	0.00	0.00	0.00
14,700.0	90.09	0.00	6,726.2	7,505.7	242.2	7,509.5	0.00	0.00	0.00
14,800.0	90.09	0.00	6,726.0	7,605.7	242.2	7,609.4	0.00	0.00	0.00
14,900.0	90.09	0.00	6,725.8	7,705.7	242.2	7,709.4	0.00	0.00	0.00
15,000.0	90.09	0.00	6,725.7	7,805.7	242.2	7,809.4	0.00	0.00	0.00
15,100.0	90.09	0.00	6,725.5	7,905.7	242.2	7,909.3	0.00	0.00	0.00
15,200.0	90.09	0.00	6,725.4	8,005.7	242.2	8,009.3	0.00	0.00	0.00
15,300.0	90.09	0.00	6,725.2	8,105.7	242.2	8,109.3	0.00	0.00	0.00
15,400.0	90.09	0.00	6,725.1	8,205.7	242.2	8,209.2	0.00	0.00	0.00
15,500.0	90.09	0.00	6,724.9	8,305.7	242.2	8,309.2	0.00	0.00	0.00
15,600.0	90.09	0.00	6,724.7	8,405.7	242.2	8,409.2	0.00	0.00	0.00
15,700.0	90.09	0.00	6,724.6	8,505.7	242.2	8,509.1	0.00	0.00	0.00
15,800.0	90.09	0.00	6,724.4	8,605.7	242.2	8,609.1	0.00	0.00	0.00
15,900.0	90.09	0.00	6,724.3	8,705.7	242.2	8,709.1	0.00	0.00	0.00
16,000.0	90.09	0.00	6,724.1	8,805.7	242.2	8,809.1	0.00	0.00	0.00
16,100.0	90.09	0.00	6,724.0	8,905.7	242.2	8,909.0	0.00	0.00	0.00
16,200.0	90.09	0.00	6,723.8	9,005.7	242.2	9,009.0	0.00	0.00	0.00
16,300.0	90.09	0.00	6,723.6	9,105.7	242.2	9,109.0	0.00	0.00	0.00
16,400.0	90.09	0.00	6,723.5	9,205.7	242.2	9,208.9	0.00	0.00	0.00
16,500.0	90.09	0.00	6,723.3	9,305.7	242.2	9,308.9	0.00	0.00	0.00
16,600.0	90.09	0.00	6,723.2	9,405.7	242.2	9,408.9	0.00	0.00	0.00
16,700.0	90.09	0.00	6,723.0	9,505.7	242.2	9,508.8	0.00	0.00	0.00
16,713.4	90.09	0.00	6,723.0	9,519.1	242.2	9,522.2	0.00	0.00	0.00
TD at 16713.4 - BHL 200'FNL & 1194'FWL, Sec.6									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 765'FSL & 981'FWL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,392,920.91	3,251,104.62	40.408465	-104.598273
BHL 200'FNL & 1194'FWL - plan hits target center - Point	0.00	0.00	6,723.0	9,519.2	242.2	1,402,441.64	3,251,250.00	40.434594	-104.597403

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-10-15)		

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,246.0	6,737.9	7"	7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,521.9	3,490.0	Parkman		0.00	
4,256.5	4,210.0	Sussex		0.00	
6,647.5	6,516.0	Sharon Springs		0.00	
6,753.1	6,585.0	Niobrara A		0.00	
6,972.9	6,690.0	Niobrara B		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,400.0	1,400.0	0.0	0.0	KOP - Start Build 1.50
5,300.2	5,233.1	-71.5	24.3	Start Drop -2.00
5,870.9	5,800.0	-659.8	224.0	Start 173.9 hold at 5870.9 MD
6,044.8	5,973.9	-713.4	242.2	Start Build 7.50
7,246.0	6,737.9	-713.4	242.2	End of Build
16,713.4	6,723.0	51.7	242.2	TD at 16713.4





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.7-T5N-R64W**

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

**Dunn 7L-201**

**Wellbore #1**

**Plan #1 (9-10-15)**

## **Anticollision Report**

**24 September, 2015**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (9-10-15)		
<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	16,713.4	Plan #1 (9-10-15) (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 7L-201 - Wellbore #1 - Plan #1 (9-8-15)	1,400.0	1,400.0	45.2	39.1	7.444	CC, ES
Dunn 7L-201 - Wellbore #1 - Plan #1 (9-8-15)	1,500.0	1,500.0	46.4	39.9	7.152	SF
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	1,400.0	1,400.0	14.9	8.9	2.461	CC, ES
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	16,713.4	16,733.4	598.3	224.2	1.599	SF
Dunn 7L-321 - Wellbore #1 - Plan #1 (9-10-15)	1,400.0	1,400.0	30.2	24.2	4.982	CC, ES
Dunn 7L-321 - Wellbore #1 - Plan #1 (9-10-15)	1,500.0	1,500.0	31.5	25.0	4.850	SF
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	500.0	500.0	29.9	27.9	14.769	CC, ES
Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)	16,713.4	16,741.4	486.1	111.0	1.296	Level 3, SF
Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)	1,200.0	1,200.0	14.9	9.8	2.891	CC
Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)	16,713.4	16,804.2	244.1	-116.9	0.676	Level 1, ES, SF
Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)	1,400.0	1,400.0	60.1	54.0	9.905	CC
Dunn 7L-341 - Wellbore #1 - Plan #1 (9-10-15)	16,713.4	16,834.0	273.3	-89.8	0.753	Level 1, ES, SF
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	200.0	200.0	90.0	89.3	133.466	CC
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	300.0	299.2	90.4	89.3	81.629	ES
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	1,000.0	983.0	139.7	135.1	30.592	SF
Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)	600.0	600.0	59.8	57.3	24.168	CC, ES
Dunn 7Q-241 - Wellbore #1 - Plan #1 (9-11-15)	1,000.0	995.8	71.4	67.2	16.973	SF
Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)	400.0	400.0	75.1	73.5	47.706	CC, ES
Dunn 7Q-301 - Wellbore #1 - Plan #1 (9-11-15)	1,000.0	990.9	101.9	97.6	23.643	SF
Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)	800.0	800.0	44.8	41.4	13.293	CC, ES
Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)	1,100.0	1,097.6	51.9	47.3	11.188	SF
Dunn Pad Sec.7-T5N-R64W						
Dunn 24-7 (Exist.) - Wellbore #1 - Wellbore #1	7,073.7	6,705.8	583.8	432.7	3.863	CC, ES
Dunn 24-7 (Exist.) - Wellbore #1 - Wellbore #1	7,100.0	6,711.2	584.4	433.1	3.863	SF
Dunn 7PD (AL) - Wellbore #1 - Design #1						Out of range

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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						
Existing Wells - Sec.7-T5N-R64W						
Dunn #1 (Exist.) - Wellbore #1 - Wellbore #1	1,400.0	1,387.0	468.7	437.9	15.231	CC
Dunn #1 (Exist.) - Wellbore #1 - Wellbore #1	1,600.0	1,586.9	471.1	435.9	13.409	ES
Dunn #1 (Exist.) - Wellbore #1 - Wellbore #1	7,256.9	6,724.8	706.7	554.5	4.643	SF
Dunn #13-7 (Exist.) - Wellbore #1 - Wellbore #1	8,348.0	6,721.1	789.7	624.2	4.773	CC, ES
Dunn #13-7 (Exist.) - Wellbore #1 - Wellbore #1	8,400.0	6,721.0	791.4	625.1	4.759	SF
Dunn #23-7 (Exist.) - Wellbore #1 - Wellbore #1	8,214.7	6,721.3	752.8	589.5	4.609	CC, ES
Dunn #23-7 (Exist.) - Wellbore #1 - Wellbore #1	8,300.0	6,721.2	757.6	592.9	4.600	SF
Little Will #6 (P&A) - Wellbore #1 - Wellbore #1	15,890.4	6,713.3	382.2	76.3	1.249	Level 2, CC
Little Will #6 (P&A) - Wellbore #1 - Wellbore #1	15,900.0	6,713.3	382.3	76.2	1.249	Level 2, ES, SF
Little Will #7 (P&A) - Wellbore #1 - Wellbore #1	15,078.0	6,710.6	709.1	418.7	2.442	CC
Little Will #7 (P&A) - Wellbore #1 - Wellbore #1	15,100.0	6,710.5	709.4	418.7	2.440	ES, SF
Mitani #1 (Exist.) - Wellbore #1 - Wellbore #1	13,488.1	6,700.1	342.7	82.9	1.319	Level 3, CC
Mitani #1 (Exist.) - Wellbore #1 - Wellbore #1	13,500.0	6,700.0	342.9	82.8	1.319	Level 3, ES, SF
Mitani #14-6 (Exist.) - Wellbore #1 - Wellbore #1	12,527.8	6,691.6	463.5	222.1	1.920	CC, ES, SF
Silva #1 (Exist.) - Wellbore #1 - Wellbore #1	12,407.2	6,690.8	407.7	168.5	1.705	CC, ES, SF
Silva #23-6 (Exist.) - Wellbore #1 - Wellbore #1	13,562.8	6,697.9	708.0	446.8	2.710	CC, ES
Silva #23-6 (Exist.) - Wellbore #1 - Wellbore #1	13,600.0	6,697.9	709.0	447.1	2.707	SF

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	0.71	45.2	0.6	45.2					
100.0	100.0	100.0	100.0	0.1	0.1	0.71	45.2	0.6	45.2	45.0	0.22	201.020		
200.0	200.0	200.0	200.0	0.3	0.3	0.71	45.2	0.6	45.2	44.5	0.67	67.002		
300.0	300.0	300.0	300.0	0.6	0.6	0.71	45.2	0.6	45.2	44.1	1.12	40.201		
400.0	400.0	400.0	400.0	0.8	0.8	0.71	45.2	0.6	45.2	43.6	1.57	28.715		
500.0	500.0	500.0	500.0	1.0	1.0	0.71	45.2	0.6	45.2	43.2	2.02	22.334		
600.0	600.0	600.0	600.0	1.2	1.2	0.71	45.2	0.6	45.2	42.7	2.47	18.273		
700.0	700.0	700.0	700.0	1.5	1.5	0.71	45.2	0.6	45.2	42.3	2.92	15.462		
800.0	800.0	800.0	800.0	1.7	1.7	0.71	45.2	0.6	45.2	41.8	3.37	13.400		
900.0	900.0	900.0	900.0	1.9	1.9	0.71	45.2	0.6	45.2	41.4	3.82	11.824		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.71	45.2	0.6	45.2	40.9	4.27	10.579		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.71	45.2	0.6	45.2	40.5	4.72	9.572		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.71	45.2	0.6	45.2	40.0	5.17	8.739		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.71	45.2	0.6	45.2	39.6	5.62	8.040		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.71	45.2	0.6	45.2	39.1	6.07	7.444	CC, ES	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.3	-161.07	45.2	0.6	46.4	39.9	6.49	7.152	SF	
1,600.0	1,599.9	1,599.9	1,599.9	3.4	3.5	-162.51	45.2	0.6	50.1	43.3	6.89	7.283		
1,700.0	1,699.7	1,699.7	1,699.7	3.6	3.7	-164.48	45.2	0.6	56.4	49.1	7.28	7.746		
1,800.0	1,799.3	1,799.3	1,799.3	3.8	3.9	-166.60	45.2	0.6	65.3	57.6	7.68	8.498		
1,900.0	1,898.6	1,898.6	1,898.6	4.0	4.1	-169.41	44.3	-0.4	76.0	67.9	8.06	9.432		
2,000.0	1,997.5	2,000.1	2,000.0	4.2	4.3	-173.21	41.5	-3.2	88.0	79.6	8.41	10.463		
2,100.0	2,096.1	2,100.2	2,099.9	4.5	4.5	-177.48	36.9	-7.9	101.6	92.9	8.77	11.590		
2,160.9	2,155.9	2,160.9	2,160.4	4.7	4.6	179.84	33.3	-11.6	110.9	101.9	8.99	12.328		
2,200.0	2,194.2	2,199.9	2,199.1	4.8	4.7	178.11	30.6	-14.4	117.0	107.9	9.15	12.786		
2,300.0	2,292.2	2,299.4	2,298.0	5.1	4.9	173.71	22.4	-22.8	132.5	122.9	9.58	13.835		
2,400.0	2,390.2	2,398.7	2,396.3	5.5	5.1	169.28	12.4	-32.9	147.9	137.8	10.03	14.735		

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 7L-201
<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 7L-201	<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 (9-10-15)	<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		
2,500.0	2,488.3	2,497.7	2,493.8	5.8	5.4	164.82	0.8	-44.9	163.4	152.9	10.54	15.512		
2,600.0	2,586.3	2,596.2	2,590.4	6.2	5.7	160.36	-12.6	-58.6	179.5	168.4	11.09	16.188		
2,700.0	2,684.3	2,694.0	2,685.9	6.5	6.0	155.93	-27.6	-73.9	196.4	184.7	11.70	16.783		
2,800.0	2,782.3	2,791.1	2,780.1	6.9	6.3	151.56	-44.2	-90.9	214.3	201.9	12.37	17.319		
2,900.0	2,880.4	2,887.4	2,872.8	7.3	6.7	147.30	-62.3	-109.4	233.5	220.4	13.10	17.820		
3,000.0	2,978.4	2,982.7	2,963.9	7.7	7.2	143.19	-81.8	-129.3	254.3	240.4	13.89	18.307		
3,100.0	3,076.4	3,076.9	3,053.3	8.1	7.6	139.25	-102.6	-150.7	276.8	262.0	14.72	18.800		
3,200.0	3,174.4	3,170.0	3,140.8	8.5	8.1	135.50	-124.7	-173.3	301.1	285.5	15.59	19.314		
3,300.0	3,272.5	3,262.0	3,226.5	8.9	8.7	131.97	-148.0	-197.1	327.4	310.9	16.48	19.865		
3,400.0	3,370.5	3,356.1	3,313.9	9.3	9.3	128.71	-172.5	-222.2	355.3	337.9	17.40	20.412		
3,500.0	3,468.5	3,450.3	3,401.3	9.8	9.9	125.92	-197.0	-247.2	384.0	365.7	18.32	20.962		
3,600.0	3,566.5	3,544.4	3,488.7	10.2	10.5	123.51	-221.6	-272.3	413.6	394.3	19.23	21.503		
3,700.0	3,664.5	3,638.6	3,576.0	10.6	11.1	121.42	-246.1	-297.4	443.7	423.5	20.14	22.029		
3,800.0	3,762.6	3,732.7	3,663.4	11.0	11.8	119.59	-270.6	-322.5	474.3	453.2	21.05	22.537		
3,900.0	3,860.6	3,826.9	3,750.8	11.4	12.4	117.98	-295.1	-347.6	505.3	483.3	21.95	23.024		
4,000.0	3,958.6	3,921.0	3,838.1	11.9	13.1	116.55	-319.6	-372.7	536.6	513.8	22.84	23.490		
4,100.0	4,056.6	4,015.2	3,925.5	12.3	13.8	115.28	-344.2	-397.7	568.2	544.5	23.74	23.935		
4,200.0	4,154.7	4,109.3	4,012.9	12.7	14.5	114.14	-368.7	-422.8	600.0	575.4	24.63	24.358		
4,300.0	4,252.7	4,203.5	4,100.3	13.2	15.1	113.11	-393.2	-447.9	632.0	606.5	25.53	24.761		
4,400.0	4,350.7	4,297.6	4,187.6	13.6	15.8	112.19	-417.7	-473.0	664.2	637.8	26.42	25.143		
4,500.0	4,448.7	4,391.8	4,275.0	14.0	16.5	111.34	-442.2	-498.1	696.6	669.3	27.31	25.507		
4,600.0	4,546.7	4,485.9	4,362.4	14.4	17.2	110.58	-466.7	-523.2	729.0	700.8	28.20	25.853		
4,700.0	4,644.8	4,580.1	4,449.8	14.9	17.9	109.87	-491.3	-548.2	761.6	732.5	29.09	26.181		
4,800.0	4,742.8	4,674.2	4,537.1	15.3	18.6	109.23	-515.8	-573.3	794.2	764.2	29.98	26.494		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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	66.443		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	14.9	0.0	14.9	14.3	0.67	22.146		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	14.9	0.0	14.9	13.8	1.12	13.288		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	14.9	0.0	14.9	13.4	1.57	9.491		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	14.9	0.0	14.9	12.9	2.02	7.382		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	14.9	0.0	14.9	12.5	2.47	6.040		
700.0	700.0	700.0	700.0	1.5	1.5	0.00	14.9	0.0	14.9	12.0	2.92	5.111		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	14.9	0.0	14.9	11.6	3.37	4.429		
900.0	900.0	900.0	900.0	1.9	1.9	0.00	14.9	0.0	14.9	11.1	3.82	3.908		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	14.9	0.0	14.9	10.7	4.27	3.497		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	14.9	0.0	14.9	10.2	4.72	3.164		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	14.9	0.0	14.9	9.8	5.17	2.889		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.00	14.9	0.0	14.9	9.3	5.62	2.657		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.00	14.9	0.0	14.9	8.9	6.07	2.461 CC, ES		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.3	-162.73	14.9	0.0	16.2	9.7	6.49	2.493		
1,600.0	1,599.9	1,600.3	1,600.3	3.4	3.5	-168.14	13.7	-0.6	18.8	12.0	6.86	2.748		
1,700.0	1,699.7	1,700.7	1,700.6	3.6	3.6	-177.18	10.2	-2.3	22.2	15.0	7.21	3.083		
1,800.0	1,799.3	1,800.9	1,800.6	3.8	3.8	172.44	4.3	-5.2	26.9	19.4	7.56	3.560		
1,900.0	1,898.6	1,901.0	1,900.2	4.0	4.0	162.56	-4.0	-9.2	33.5	25.5	7.93	4.218		
2,000.0	1,997.5	2,000.8	1,999.4	4.2	4.2	154.14	-14.5	-14.4	42.1	33.8	8.34	5.051		
2,100.0	2,096.1	2,100.4	2,098.0	4.5	4.5	147.35	-27.4	-20.6	52.9	44.1	8.78	6.028		
2,160.9	2,155.9	2,160.9	2,157.6	4.7	4.6	143.94	-36.3	-25.0	60.6	51.5	9.08	6.672		
2,200.0	2,194.2	2,199.7	2,195.8	4.8	4.7	141.93	-42.5	-28.0	65.8	56.5	9.29	7.080		
2,300.0	2,292.2	2,298.8	2,292.9	5.1	5.0	136.71	-59.9	-36.5	79.2	69.3	9.87	8.021		
2,400.0	2,390.2	2,397.5	2,389.3	5.5	5.3	131.56	-79.2	-45.9	93.1	82.6	10.52	8.855		
2,500.0	2,488.3	2,496.2	2,485.5	5.8	5.7	127.50	-99.1	-55.6	107.7	96.5	11.20	9.614		
2,600.0	2,586.3	2,594.9	2,581.7	6.2	6.0	124.42	-118.9	-65.3	122.6	110.7	11.91	10.297		
2,700.0	2,684.3	2,693.6	2,677.9	6.5	6.4	122.01	-138.7	-74.9	137.9	125.2	12.64	10.908		
2,800.0	2,782.2	2,792.2	2,774.1	6.9	6.8	120.08	-158.5	-84.6	153.3	139.9	13.39	11.451		
2,900.0	2,880.4	2,890.9	2,870.3	7.3	7.2	118.50	-178.3	-94.2	168.9	154.7	14.15	11.936		
3,000.0	2,978.4	2,989.6	2,966.5	7.7	7.6	117.19	-198.1	-103.9	184.5	169.6	14.92	12.367		
3,100.0	3,076.4	3,088.3	3,062.6	8.1	8.1	116.09	-217.9	-113.6	200.3	184.6	15.70	12.754		
3,200.0	3,174.4	3,187.0	3,158.8	8.5	8.5	115.14	-237.8	-123.2	216.1	199.6	16.49	13.100		
3,300.0	3,272.5	3,285.7	3,255.0	8.9	8.9	114.33	-257.6	-132.9	231.9	214.6	17.29	13.412		
3,400.0	3,370.5	3,384.4	3,351.2	9.3	9.3	113.62	-277.4	-142.6	247.8	229.7	18.10	13.694		
3,500.0	3,468.5	3,483.0	3,447.4	9.8	9.8	112.99	-297.2	-152.2	263.7	244.8	18.91	13.949		
3,600.0	3,566.5	3,581.7	3,543.6	10.2	10.2	112.44	-317.0	-161.9	279.7	260.0	19.72	14.181		
3,700.0	3,664.5	3,680.4	3,639.8	10.6	10.7	111.95	-336.8	-171.5	295.7	275.1	20.54	14.392		
3,800.0	3,762.6	3,779.1	3,736.0	11.0	11.1	111.50	-356.7	-181.2	311.7	290.3	21.37	14.586		
3,900.0	3,860.6	3,877.8	3,832.2	11.4	11.6	111.10	-376.5	-190.9	327.7	305.5	22.20	14.763		
4,000.0	3,958.6	3,976.5	3,928.4	11.9	12.0	110.74	-396.3	-200.5	343.7	320.7	23.03	14.927		
4,100.0	4,056.6	4,075.1	4,024.6	12.3	12.5	110.41	-416.1	-210.2	359.8	335.9	23.86	15.078		
4,200.0	4,154.7	4,173.8	4,120.7	12.7	13.0	110.11	-435.9	-219.9	375.8	351.1	24.70	15.217		
4,300.0	4,252.7	4,272.5	4,216.9	13.2	13.4	109.83	-455.7	-229.5	391.9	366.3	25.53	15.346		
4,400.0	4,350.7	4,371.2	4,313.1	13.6	13.9	109.57	-475.5	-239.2	407.9	381.6	26.38	15.467		
4,500.0	4,448.7	4,469.9	4,409.3	14.0	14.3	109.34	-495.4	-248.9	424.0	396.8	27.22	15.579		
4,600.0	4,546.7	4,568.6	4,505.5	14.4	14.8	109.12	-515.2	-258.5	440.1	412.0	28.06	15.683		
4,700.0	4,644.8	4,667.3	4,601.7	14.9	15.3	108.92	-535.0	-268.2	456.2	427.3	28.91	15.781		
4,800.0	4,742.8	4,765.9	4,697.9	15.3	15.7	108.73	-554.8	-277.8	472.3	442.5	29.75	15.873		
4,900.0	4,840.8	4,864.6	4,794.1	15.8	16.2	108.55	-574.6	-287.5	488.4	457.8	30.60	15.959		

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 7L-201
<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 7L-201	<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 (9-10-15)	<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							
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
5,000.0	4,938.8	4,963.3	4,890.3	16.2	16.7	108.38	-594.4	-297.2	504.5	473.0	31.45	16.040	
5,100.0	5,036.9	5,062.0	4,986.5	16.6	17.1	108.23	-614.2	-306.8	520.6	488.3	32.30	16.117	
5,200.0	5,134.9	5,160.7	5,082.7	17.1	17.6	108.08	-634.1	-316.5	536.7	503.5	33.15	16.189	
5,300.2	5,233.1	5,261.4	5,180.8	17.5	18.1	107.95	-654.2	-326.3	552.8	518.8	34.00	16.259	
5,400.0	5,331.3	5,369.4	5,286.7	17.9	18.4	108.16	-673.4	-335.7	567.2	532.5	34.73	16.333	
5,500.0	5,430.2	5,478.2	5,394.1	18.1	18.7	108.33	-689.1	-343.3	578.9	543.6	35.32	16.393	
5,600.0	5,529.5	5,587.6	5,502.7	18.4	19.0	108.45	-701.2	-349.2	587.9	552.1	35.83	16.407	
5,700.0	5,629.2	5,697.4	5,612.1	18.6	19.2	108.54	-709.5	-353.3	594.1	557.8	36.27	16.379	
5,800.0	5,729.1	5,807.4	5,722.0	18.7	19.4	108.58	-714.1	-355.5	597.5	560.9	36.63	16.310	
5,870.9	5,800.0	5,885.5	5,800.0	18.8	19.5	-90.16	-715.1	-356.0	598.2	561.3	36.86	16.229	
5,900.0	5,829.1	5,914.6	5,829.1	18.9	19.6	-90.16	-715.1	-356.0	598.2	561.3	36.94	16.195	
6,000.0	5,929.1	6,014.6	5,929.1	19.0	19.7	-90.16	-715.1	-356.0	598.2	561.0	37.19	16.084	
6,044.8	5,973.9	6,059.4	5,973.9	19.1	19.8	-90.16	-715.1	-356.0	598.2	560.9	37.31	16.034	
6,050.0	5,979.1	6,064.6	5,979.1	19.1	19.8	-90.16	-715.1	-356.0	598.2	560.9	37.32	16.029	
6,100.0	6,029.1	6,114.7	6,029.2	19.1	19.8	-90.22	-713.7	-356.0	598.2	560.8	37.41	15.990	
6,150.0	6,078.8	6,164.9	6,079.2	19.1	19.8	-90.28	-709.1	-356.0	598.2	560.8	37.44	15.978	
6,200.0	6,128.1	6,215.1	6,128.7	19.1	19.8	-90.34	-701.2	-356.0	598.2	560.8	37.40	15.994	
6,250.0	6,176.7	6,265.4	6,177.7	19.1	19.8	-90.40	-690.0	-356.0	598.2	560.9	37.30	16.036	
6,300.0	6,224.4	6,315.6	6,225.9	19.0	19.7	-90.46	-675.7	-356.0	598.2	561.1	37.15	16.103	
6,350.0	6,271.1	6,366.0	6,273.1	18.9	19.6	-90.51	-658.2	-356.0	598.2	561.3	36.94	16.193	
6,400.0	6,316.5	6,416.3	6,319.1	18.8	19.5	-90.56	-637.6	-356.0	598.2	561.5	36.69	16.306	
6,450.0	6,360.4	6,466.7	6,363.6	18.6	19.3	-90.61	-614.0	-356.0	598.2	561.8	36.40	16.437	
6,500.0	6,402.7	6,517.2	6,406.5	18.5	19.2	-90.66	-587.5	-356.0	598.2	562.2	36.07	16.584	
6,550.0	6,443.1	6,567.7	6,447.6	18.3	19.0	-90.71	-558.2	-356.0	598.2	562.5	35.73	16.743	
6,600.0	6,481.5	6,618.2	6,486.7	18.1	18.8	-90.75	-526.2	-356.0	598.2	562.9	35.38	16.910	
6,650.0	6,517.8	6,668.7	6,523.6	18.0	18.6	-90.79	-491.8	-356.0	598.2	563.2	35.03	17.080	
6,700.0	6,551.7	6,719.2	6,558.1	17.8	18.4	-90.82	-454.9	-356.0	598.3	563.6	34.69	17.247	
6,750.0	6,583.2	6,769.8	6,590.2	17.6	18.2	-90.85	-415.8	-356.0	598.3	563.9	34.37	17.405	
6,800.0	6,612.0	6,820.4	6,619.6	17.5	18.0	-90.88	-374.6	-356.0	598.3	564.2	34.10	17.545	
6,850.0	6,638.1	6,871.0	6,646.3	17.4	17.8	-90.90	-331.6	-356.0	598.3	564.4	33.87	17.662	
6,900.0	6,661.4	6,921.7	6,670.0	17.3	17.7	-90.92	-286.9	-356.0	598.3	564.6	33.71	17.747	
6,950.0	6,681.7	6,972.3	6,690.8	17.2	17.5	-90.94	-240.7	-356.0	598.3	564.7	33.62	17.794	
7,000.0	6,699.0	7,023.0	6,708.4	17.2	17.4	-90.95	-193.2	-356.0	598.3	564.7	33.61	17.798	
7,050.0	6,713.2	7,073.6	6,722.8	17.2	17.3	-90.96	-144.7	-356.0	598.3	564.6	33.69	17.756	
7,100.0	6,724.2	7,124.3	6,734.0	17.2	17.2	-90.96	-95.3	-356.0	598.3	564.4	33.87	17.664	
7,150.0	6,732.0	7,174.9	6,742.0	17.3	17.2	-90.96	-45.2	-356.0	598.3	564.1	34.14	17.524	
7,200.0	6,736.6	7,225.6	6,746.5	17.5	17.3	-90.96	5.2	-356.0	598.3	563.8	34.51	17.337	
7,246.0	6,737.9	7,272.2	6,747.8	17.7	17.4	-90.95	51.8	-356.0	598.3	563.4	34.92	17.131	
7,300.0	6,737.8	7,326.2	6,747.6	18.0	17.6	-90.94	105.8	-356.0	598.3	562.7	35.53	16.837	
7,400.0	6,737.6	7,426.2	6,747.4	18.7	18.3	-90.93	205.8	-356.0	598.3	561.4	36.91	16.208	
7,500.0	6,737.5	7,526.2	6,747.1	19.5	19.1	-90.92	305.8	-356.0	598.3	559.6	38.63	15.489	
7,600.0	6,737.3	7,626.2	6,746.8	20.6	20.1	-90.91	405.8	-356.0	598.3	557.6	40.63	14.725	
7,700.0	6,737.2	7,726.2	6,746.6	21.7	21.3	-90.90	505.8	-356.0	598.3	555.4	42.89	13.950	
7,800.0	6,737.0	7,826.2	6,746.3	23.0	22.5	-90.89	605.8	-356.0	598.3	552.9	45.36	13.191	
7,900.0	6,736.8	7,926.2	6,746.1	24.3	23.9	-90.88	705.8	-356.0	598.3	550.3	48.01	12.462	
8,000.0	6,736.7	8,026.2	6,745.8	25.8	25.3	-90.87	805.8	-356.0	598.3	547.5	50.81	11.775	
8,100.0	6,736.5	8,126.2	6,745.5	27.2	26.8	-90.86	905.8	-356.0	598.3	544.5	53.74	11.132	
8,200.0	6,736.4	8,226.2	6,745.3	28.8	28.3	-90.85	1,005.8	-356.0	598.3	541.5	56.78	10.536	
8,300.0	6,736.2	8,326.2	6,745.0	30.3	29.9	-90.84	1,105.8	-356.0	598.3	538.3	59.91	9.985	
8,400.0	6,736.1	8,426.2	6,744.7	31.9	31.5	-90.83	1,205.8	-356.0	598.3	535.1	63.12	9.477	
8,500.0	6,735.9	8,526.2	6,744.5	33.6	33.1	-90.82	1,305.8	-356.0	598.3	531.9	66.40	9.010	

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 7L-201
<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 7L-201	<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 (9-10-15)	<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	
8,600.0	6,735.7	8,626.2	6,744.2	35.3	34.8	-90.81	1,405.8	-356.0	598.3	528.5	69.74	8.579	
8,700.0	6,735.6	8,726.2	6,744.0	36.9	36.5	-90.80	1,505.8	-356.0	598.3	525.1	73.12	8.182	
8,800.0	6,735.4	8,826.2	6,743.7	38.7	38.2	-90.79	1,605.8	-356.0	598.3	521.7	76.55	7.815	
8,900.0	6,735.3	8,926.2	6,743.4	40.4	39.9	-90.78	1,705.8	-356.0	598.3	518.2	80.02	7.477	
9,000.0	6,735.1	9,026.2	6,743.2	42.1	41.6	-90.77	1,805.8	-356.0	598.3	514.7	83.52	7.163	
9,100.0	6,735.0	9,126.2	6,742.9	43.9	43.4	-90.76	1,905.8	-356.0	598.3	511.2	87.04	6.873	
9,200.0	6,734.8	9,226.2	6,742.7	45.7	45.2	-90.75	2,005.8	-356.0	598.3	507.7	90.60	6.604	
9,300.0	6,734.6	9,326.2	6,742.4	47.5	47.0	-90.74	2,105.8	-356.0	598.3	504.1	94.17	6.353	
9,400.0	6,734.5	9,426.2	6,742.1	49.3	48.8	-90.73	2,205.8	-356.0	598.3	500.5	97.77	6.119	
9,500.0	6,734.3	9,526.2	6,741.9	51.1	50.6	-90.72	2,305.8	-356.0	598.3	496.9	101.38	5.901	
9,600.0	6,734.2	9,626.2	6,741.6	52.9	52.4	-90.71	2,405.8	-356.0	598.3	493.2	105.01	5.697	
9,700.0	6,734.0	9,726.2	6,741.3	54.7	54.2	-90.70	2,505.8	-356.0	598.3	489.6	108.66	5.506	
9,800.0	6,733.9	9,826.2	6,741.1	56.5	56.0	-90.69	2,605.8	-356.0	598.2	485.9	112.31	5.327	
9,900.0	6,733.7	9,926.2	6,740.8	58.4	57.8	-90.68	2,705.8	-356.0	598.2	482.3	115.98	5.158	
10,000.0	6,733.5	10,026.2	6,740.6	60.2	59.7	-90.67	2,805.8	-356.0	598.2	478.6	119.66	4.999	
10,100.0	6,733.4	10,126.2	6,740.3	62.1	61.5	-90.66	2,905.8	-356.0	598.2	474.9	123.35	4.850	
10,200.0	6,733.2	10,226.2	6,740.0	63.9	63.4	-90.65	3,005.8	-356.0	598.2	471.2	127.05	4.709	
10,300.0	6,733.1	10,326.2	6,739.8	65.8	65.2	-90.64	3,105.8	-356.0	598.2	467.5	130.76	4.575	
10,400.0	6,732.9	10,426.2	6,739.5	67.6	67.1	-90.63	3,205.8	-356.0	598.2	463.8	134.48	4.449	
10,500.0	6,732.8	10,526.2	6,739.3	69.5	68.9	-90.62	3,305.8	-356.0	598.2	460.0	138.20	4.329	
10,600.0	6,732.6	10,626.2	6,739.0	71.3	70.8	-90.61	3,405.8	-356.0	598.2	456.3	141.93	4.215	
10,700.0	6,732.4	10,726.2	6,738.7	73.2	72.7	-90.60	3,505.8	-356.0	598.2	452.6	145.66	4.107	
10,800.0	6,732.3	10,826.2	6,738.5	75.1	74.5	-90.59	3,605.8	-356.0	598.2	448.8	149.40	4.004	
10,900.0	6,732.1	10,926.2	6,738.2	76.9	76.4	-90.58	3,705.8	-356.0	598.2	445.1	153.14	3.906	
11,000.0	6,732.0	11,026.2	6,737.9	78.8	78.3	-90.57	3,805.8	-356.0	598.2	441.3	156.89	3.813	
11,100.0	6,731.8	11,126.2	6,737.7	80.7	80.1	-90.56	3,905.8	-356.0	598.2	437.6	160.65	3.724	
11,200.0	6,731.7	11,226.2	6,737.4	82.6	82.0	-90.55	4,005.8	-356.0	598.2	433.8	164.40	3.639	
11,300.0	6,731.5	11,326.2	6,737.2	84.4	83.9	-90.54	4,105.8	-356.0	598.2	430.1	168.17	3.557	
11,400.0	6,731.3	11,426.2	6,736.9	86.3	85.8	-90.53	4,205.8	-356.0	598.2	426.3	171.93	3.480	
11,500.0	6,731.2	11,526.2	6,736.6	88.2	87.7	-90.52	4,305.8	-356.0	598.2	422.5	175.70	3.405	
11,600.0	6,731.0	11,626.2	6,736.4	90.1	89.6	-90.51	4,405.8	-356.0	598.2	418.8	179.47	3.333	
11,700.0	6,730.9	11,726.2	6,736.1	92.0	91.4	-90.50	4,505.8	-356.0	598.2	415.0	183.25	3.265	
11,800.0	6,730.7	11,826.2	6,735.8	93.9	93.3	-90.49	4,605.8	-356.0	598.2	411.2	187.02	3.199	
11,900.0	6,730.6	11,926.2	6,735.6	95.8	95.2	-90.48	4,705.8	-356.0	598.2	407.4	190.80	3.135	
12,000.0	6,730.4	12,026.2	6,735.3	97.6	97.1	-90.47	4,805.8	-356.0	598.2	403.7	194.58	3.074	
12,100.0	6,730.2	12,126.2	6,735.1	99.5	99.0	-90.46	4,905.8	-356.0	598.2	399.9	198.37	3.016	
12,200.0	6,730.1	12,226.2	6,734.8	101.4	100.9	-90.45	5,005.8	-356.0	598.2	396.1	202.15	2.959	
12,300.0	6,729.9	12,326.2	6,734.5	103.3	102.8	-90.44	5,105.8	-356.0	598.2	392.3	205.94	2.905	
12,400.0	6,729.8	12,426.2	6,734.3	105.2	104.7	-90.43	5,205.8	-356.0	598.2	388.5	209.73	2.852	
12,500.0	6,729.6	12,526.2	6,734.0	107.1	106.6	-90.42	5,305.8	-356.0	598.2	384.7	213.53	2.802	
12,600.0	6,729.5	12,626.2	6,733.8	109.0	108.5	-90.41	5,405.8	-356.0	598.2	380.9	217.32	2.753	
12,700.0	6,729.3	12,726.2	6,733.5	110.9	110.4	-90.40	5,505.8	-356.0	598.2	377.1	221.12	2.706	
12,800.0	6,729.1	12,826.2	6,733.2	112.8	112.3	-90.39	5,605.8	-356.0	598.2	373.3	224.91	2.660	
12,900.0	6,729.0	12,926.2	6,733.0	114.7	114.2	-90.38	5,705.8	-356.0	598.2	369.5	228.71	2.616	
13,000.0	6,728.8	13,026.2	6,732.7	116.6	116.0	-90.37	5,805.8	-356.0	598.2	365.7	232.51	2.573	
13,100.0	6,728.7	13,126.2	6,732.4	118.5	117.9	-90.36	5,905.8	-356.0	598.2	361.9	236.31	2.532	
13,200.0	6,728.5	13,226.2	6,732.2	120.4	119.8	-90.35	6,005.8	-356.0	598.2	358.1	240.12	2.491	
13,300.0	6,728.4	13,326.2	6,731.9	122.3	121.7	-90.34	6,105.8	-356.0	598.2	354.3	243.92	2.453	
13,400.0	6,728.2	13,426.2	6,731.7	124.2	123.7	-90.33	6,205.7	-356.0	598.2	350.5	247.72	2.415	
13,500.0	6,728.0	13,526.2	6,731.4	126.1	125.6	-90.32	6,305.7	-356.0	598.2	346.7	251.53	2.378	
13,600.0	6,727.9	13,626.2	6,731.1	128.0	127.5	-90.31	6,405.7	-356.0	598.2	342.9	255.34	2.343	

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 7L-201
<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 7L-201	<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 (9-10-15)	<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	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)				
13,700.0	6,727.7	13,726.2	6,730.9	129.9	129.4	-90.30	6,505.7	-356.0	598.2	339.1	259.15	2.308			
13,800.0	6,727.6	13,826.2	6,730.6	131.8	131.3	-90.29	6,605.7	-356.0	598.2	335.3	262.96	2.275			
13,900.0	6,727.4	13,926.2	6,730.3	133.7	133.2	-90.28	6,705.7	-356.0	598.2	331.5	266.77	2.243			
14,000.0	6,727.3	14,026.2	6,730.1	135.6	135.1	-90.27	6,805.7	-356.0	598.2	327.7	270.58	2.211			
14,100.0	6,727.1	14,126.2	6,729.8	137.5	137.0	-90.26	6,905.7	-356.0	598.2	323.8	274.39	2.180			
14,148.8	6,727.0	14,175.0	6,729.7	138.5	137.9	-90.26	6,954.6	-356.0	598.2	322.0	276.25	2.166			
14,200.0	6,726.9	14,226.2	6,729.6	139.4	138.9	-90.25	7,005.7	-356.0	598.2	320.0	278.20	2.150			
14,300.0	6,726.8	14,326.2	6,729.3	141.3	140.8	-90.24	7,105.7	-356.0	598.2	316.2	282.01	2.121			
14,400.0	6,726.6	14,426.2	6,729.0	143.3	142.7	-90.23	7,205.7	-356.0	598.2	312.4	285.83	2.093			
14,500.0	6,726.5	14,526.2	6,728.8	145.2	144.6	-90.22	7,305.7	-356.0	598.2	308.6	289.64	2.065			
14,600.0	6,726.3	14,626.2	6,728.5	147.1	146.5	-90.21	7,405.7	-356.0	598.2	304.8	293.46	2.039			
14,700.0	6,726.2	14,726.2	6,728.3	149.0	148.4	-90.20	7,505.7	-356.0	598.2	301.0	297.28	2.012			
14,800.0	6,726.0	14,826.2	6,728.0	150.9	150.3	-90.19	7,605.7	-356.0	598.2	297.1	301.09	1.987			
14,900.0	6,725.8	14,926.2	6,727.7	152.8	152.2	-90.18	7,705.7	-356.0	598.2	293.3	304.91	1.962			
15,000.0	6,725.7	15,026.2	6,727.5	154.7	154.1	-90.17	7,805.7	-356.0	598.2	289.5	308.73	1.938			
15,100.0	6,725.5	15,126.2	6,727.2	156.6	156.0	-90.16	7,905.7	-356.0	598.2	285.7	312.55	1.914			
15,200.0	6,725.4	15,226.2	6,726.9	158.5	158.0	-90.15	8,005.7	-356.0	598.2	281.9	316.37	1.891			
15,300.0	6,725.2	15,326.2	6,726.7	160.4	159.9	-90.14	8,105.7	-356.0	598.2	278.0	320.19	1.868			
15,400.0	6,725.1	15,426.2	6,726.4	162.3	161.8	-90.13	8,205.7	-356.0	598.2	274.2	324.01	1.846			
15,500.0	6,724.9	15,526.2	6,726.2	164.2	163.7	-90.12	8,305.7	-356.0	598.2	270.4	327.83	1.825			
15,600.0	6,724.7	15,626.2	6,725.9	166.2	165.6	-90.11	8,405.7	-356.0	598.2	266.6	331.65	1.804			
15,700.0	6,724.6	15,726.2	6,725.6	168.1	167.5	-90.10	8,505.7	-356.0	598.2	262.8	335.47	1.783			
15,800.0	6,724.4	15,826.2	6,725.4	170.0	169.4	-90.09	8,605.7	-356.0	598.2	258.9	339.29	1.763			
15,900.0	6,724.3	15,926.2	6,725.1	171.9	171.3	-90.08	8,705.7	-356.0	598.2	255.1	343.11	1.744			
16,000.0	6,724.1	16,026.2	6,724.9	173.8	173.2	-90.07	8,805.7	-356.0	598.2	251.3	346.94	1.724			
16,100.0	6,724.0	16,126.2	6,724.6	175.7	175.1	-90.06	8,905.7	-356.0	598.2	247.5	350.76	1.706			
16,200.0	6,723.8	16,226.2	6,724.3	177.6	177.1	-90.05	9,005.7	-356.0	598.2	243.7	354.58	1.687			
16,300.0	6,723.6	16,326.2	6,724.1	179.5	179.0	-90.04	9,105.7	-356.0	598.2	239.8	358.41	1.669			
16,400.0	6,723.5	16,426.2	6,723.8	181.4	180.9	-90.03	9,205.7	-356.0	598.2	236.0	362.23	1.652			
16,500.0	6,723.3	16,526.2	6,723.5	183.4	182.8	-90.02	9,305.7	-356.0	598.2	232.2	366.06	1.634			
16,600.0	6,723.2	16,626.2	6,723.3	185.3	184.7	-90.01	9,405.7	-356.0	598.2	228.4	369.88	1.617			
16,700.0	6,723.0	16,726.2	6,723.0	187.2	186.6	-90.00	9,505.7	-356.0	598.2	224.5	373.71	1.601			
16,700.0	6,723.0	16,726.2	6,723.0	187.2	186.6	-90.00	9,505.7	-356.0	598.2	224.5	373.71	1.601			
16,713.4	6,723.0	16,733.4	6,723.0	187.4	186.8	-90.00	9,513.0	-356.0	598.3	224.2	374.10	1.599 SF			



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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	134.531		
200.0	200.0	200.0	200.0	0.3	0.3	0.53	30.2	0.3	30.2	29.6	0.67	44.841		
300.0	300.0	300.0	300.0	0.6	0.6	0.53	30.2	0.3	30.2	29.1	1.12	26.904		
400.0	400.0	400.0	400.0	0.8	0.8	0.53	30.2	0.3	30.2	28.7	1.57	19.217		
500.0	500.0	500.0	500.0	1.0	1.0	0.53	30.2	0.3	30.2	28.2	2.02	14.947		
600.0	600.0	600.0	600.0	1.2	1.2	0.53	30.2	0.3	30.2	27.8	2.47	12.229		
700.0	700.0	700.0	700.0	1.5	1.5	0.53	30.2	0.3	30.2	27.3	2.92	10.348		
800.0	800.0	800.0	800.0	1.7	1.7	0.53	30.2	0.3	30.2	26.9	3.37	8.968		
900.0	900.0	900.0	900.0	1.9	1.9	0.53	30.2	0.3	30.2	26.4	3.82	7.913		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.53	30.2	0.3	30.2	26.0	4.27	7.080		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.53	30.2	0.3	30.2	25.5	4.72	6.406		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.53	30.2	0.3	30.2	25.1	5.17	5.849		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.53	30.2	0.3	30.2	24.6	5.62	5.381		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.53	30.2	0.3	30.2	24.2	6.07	4.982 CC, ES		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.3	-161.50	30.2	0.3	31.5	25.0	6.49	4.850 SF		
1,600.0	1,599.9	1,599.9	1,599.9	3.4	3.5	-163.51	30.2	0.3	35.2	28.3	6.89	5.115		
1,700.0	1,699.7	1,700.5	1,700.5	3.6	3.7	-167.34	29.2	-0.5	40.6	33.3	7.26	5.591		
1,800.0	1,799.3	1,800.9	1,800.9	3.8	3.9	-173.18	26.1	-3.0	46.9	39.3	7.61	6.167		
1,900.0	1,898.6	1,901.3	1,900.9	4.0	4.1	-179.96	20.9	-7.0	54.8	46.8	7.97	6.874		
2,000.0	1,997.5	2,001.3	2,000.6	4.2	4.2	173.16	13.7	-12.7	64.6	56.2	8.34	7.743		
2,100.0	2,096.1	2,101.0	2,099.5	4.5	4.5	166.70	4.4	-20.0	76.7	67.9	8.73	8.778		
2,160.9	2,155.9	2,161.4	2,159.4	4.7	4.6	163.10	-2.2	-25.1	85.2	76.2	8.99	9.478		
2,200.0	2,194.2	2,200.2	2,197.8	4.8	4.7	160.92	-6.8	-28.8	91.0	81.9	9.18	9.922		
2,300.0	2,292.2	2,299.2	2,295.3	5.1	5.0	155.52	-20.0	-39.1	106.1	96.4	9.68	10.953		
2,400.0	2,390.2	2,397.8	2,392.0	5.5	5.2	150.28	-35.1	-50.9	121.6	111.3	10.25	11.861		
2,500.0	2,488.3	2,495.8	2,487.6	5.8	5.6	145.20	-52.0	-64.3	137.9	127.0	10.88	12.674		
2,600.0	2,586.3	2,593.3	2,582.1	6.2	5.9	140.31	-70.8	-79.0	155.3	143.7	11.57	13.421		
2,700.0	2,684.3	2,690.4	2,675.7	6.5	6.3	135.71	-91.2	-94.9	174.0	161.6	12.31	14.127		
2,800.0	2,782.3	2,787.7	2,769.4	6.9	6.7	131.90	-111.8	-111.1	193.6	180.5	13.08	14.796		
2,900.0	2,880.4	2,885.0	2,863.1	7.3	7.2	128.80	-132.5	-127.3	213.9	200.0	13.87	15.422		
3,000.0	2,978.4	2,982.3	2,956.8	7.7	7.6	126.24	-153.1	-143.5	234.7	220.1	14.67	16.003		
3,100.0	3,076.4	3,079.6	3,050.5	8.1	8.1	124.09	-173.7	-159.7	255.9	240.5	15.47	16.539		
3,200.0	3,174.4	3,176.9	3,144.3	8.5	8.6	122.27	-194.4	-175.9	277.4	261.1	16.29	17.032		
3,300.0	3,272.5	3,274.2	3,238.0	8.9	9.1	120.71	-215.0	-192.1	299.2	282.1	17.11	17.486		
3,400.0	3,370.5	3,371.6	3,331.7	9.3	9.6	119.36	-235.7	-208.3	321.1	303.1	17.93	17.903		
3,500.0	3,468.5	3,468.9	3,425.4	9.8	10.1	118.19	-256.3	-224.5	343.1	324.4	18.76	18.286		
3,600.0	3,566.5	3,566.2	3,519.1	10.2	10.6	117.16	-277.0	-240.6	365.3	345.7	19.60	18.640		
3,700.0	3,664.5	3,663.5	3,612.8	10.6	11.1	116.24	-297.6	-256.8	387.6	367.1	20.43	18.967		
3,800.0	3,762.6	3,760.8	3,706.5	11.0	11.6	115.42	-318.2	-273.0	409.9	388.7	21.28	19.269		
3,900.0	3,860.6	3,858.1	3,800.2	11.4	12.1	114.69	-338.9	-289.2	432.4	410.3	22.12	19.549		
4,000.0	3,958.6	3,955.4	3,893.9	11.9	12.6	114.03	-359.5	-305.4	454.9	431.9	22.96	19.809		
4,100.0	4,056.6	4,052.7	3,987.6	12.3	13.2	113.44	-380.2	-321.6	477.4	453.6	23.81	20.050		
4,200.0	4,154.7	4,150.0	4,081.3	12.7	13.7	112.89	-400.8	-337.8	500.0	475.4	24.66	20.276		
4,300.0	4,252.7	4,247.3	4,175.0	13.2	14.2	112.39	-421.4	-354.0	522.6	497.1	25.51	20.486		
4,400.0	4,350.7	4,344.7	4,268.7	13.6	14.8	111.94	-442.1	-370.2	545.3	518.9	26.36	20.683		
4,500.0	4,448.7	4,442.0	4,362.4	14.0	15.3	111.52	-462.7	-386.4	568.0	540.8	27.22	20.867		
4,600.0	4,546.7	4,539.3	4,456.2	14.4	15.8	111.13	-483.4	-402.5	590.7	562.6	28.08	21.040		
4,700.0	4,644.8	4,636.6	4,549.9	14.9	16.4	110.77	-504.0	-418.7	613.5	584.5	28.93	21.203		
4,800.0	4,742.8	4,733.9	4,643.6	15.3	16.9	110.44	-524.7	-434.9	636.2	606.4	29.79	21.356		
4,900.0	4,840.8	4,831.2	4,737.3	15.8	17.4	110.13	-545.3	-451.1	659.0	628.4	30.65	21.501		

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 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b>												<b>Offset Site Error:</b>	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-321 - Wellbore #1 - Plan #1 (9-10-15)												<b>Offset Well Error:</b>	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
5,000.0	4,938.8	4,928.5	4,831.0	16.2	18.0	109.84	-565.9	-467.3	681.8	650.3	31.51	21.638	
5,100.0	5,036.9	5,025.8	4,924.7	16.6	18.5	109.57	-586.6	-483.5	704.6	672.3	32.37	21.767	
5,200.0	5,134.9	5,123.1	5,018.4	17.1	19.1	109.32	-607.2	-499.7	727.5	694.2	33.23	21.889	
5,300.2	5,233.1	5,220.6	5,112.3	17.5	19.6	109.08	-627.9	-515.9	750.4	716.3	34.10	22.005	
5,400.0	5,331.3	5,333.5	5,221.4	17.9	20.1	109.19	-650.6	-533.7	771.8	736.9	34.93	22.095	
5,500.0	5,430.2	5,451.1	5,336.2	18.1	20.5	109.22	-670.7	-549.4	789.8	754.2	35.60	22.188	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-221 - 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 (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	-179.47	-29.9	-0.3	29.9	29.9	0.00	N/A			
100.0	100.0	100.0	100.0	0.1	0.1	-179.47	-29.9	-0.3	29.9	29.7	0.22	132.928			
200.0	200.0	200.0	200.0	0.3	0.3	-179.47	-29.9	-0.3	29.9	29.2	0.67	44.307			
300.0	300.0	300.0	300.0	0.6	0.6	-179.47	-29.9	-0.3	29.9	28.8	1.12	26.584			
400.0	400.0	400.0	400.0	0.8	0.8	-179.47	-29.9	-0.3	29.9	28.3	1.57	18.988			
500.0	500.0	500.0	500.0	1.0	1.0	-179.47	-29.9	-0.3	29.9	27.9	2.02	14.769 CC, ES			
600.0	600.0	599.5	599.4	1.2	1.2	178.76	-30.8	0.7	30.8	28.3	2.45	12.563			
700.0	700.0	698.8	698.7	1.5	1.4	174.02	-33.4	3.5	33.6	30.7	2.87	11.726			
800.0	800.0	797.8	797.5	1.7	1.6	167.76	-37.8	8.2	38.8	35.5	3.30	11.749			
900.0	900.0	896.5	895.8	1.9	1.8	161.44	-43.9	14.7	46.5	42.8	3.74	12.423			
1,000.0	1,000.0	994.6	993.2	2.1	2.1	155.94	-51.7	23.1	57.0	52.8	4.20	13.579			
1,100.0	1,100.0	1,092.1	1,089.7	2.4	2.4	151.51	-61.1	33.2	70.3	65.7	4.66	15.079			
1,200.0	1,200.0	1,188.8	1,185.0	2.6	2.7	148.06	-72.1	45.0	86.3	81.2	5.13	16.812			
1,300.0	1,300.0	1,284.6	1,279.1	2.8	3.1	145.41	-84.7	58.4	105.0	99.4	5.61	18.701			
1,400.0	1,400.0	1,381.4	1,373.7	3.0	3.5	143.37	-98.6	73.3	125.7	119.6	6.10	20.604			
1,500.0	1,500.0	1,479.3	1,469.4	3.2	3.9	-19.44	-112.9	88.5	145.5	139.0	6.42	22.653			
1,600.0	1,599.9	1,577.7	1,565.5	3.4	4.3	-20.94	-127.1	103.8	162.9	156.1	6.83	23.854			
1,700.0	1,699.7	1,676.4	1,662.0	3.6	4.7	-22.46	-141.5	119.2	178.1	170.9	7.25	24.567			
1,800.0	1,799.3	1,775.4	1,758.7	3.8	5.2	-24.05	-155.8	134.6	191.0	183.3	7.68	24.880			
1,900.0	1,898.6	1,874.7	1,855.7	4.0	5.6	-25.77	-170.3	150.0	201.7	193.6	8.12	24.856			
2,000.0	1,997.5	1,974.1	1,952.8	4.2	6.1	-27.63	-184.7	165.4	210.3	201.7	8.57	24.544			
2,100.0	2,096.1	2,073.5	2,050.0	4.5	6.5	-29.70	-199.1	180.9	216.8	207.8	9.04	23.981			
2,160.9	2,155.9	2,134.1	2,109.2	4.7	6.8	-31.07	-207.9	190.3	219.9	210.5	9.34	23.528			
2,200.0	2,194.2	2,173.0	2,147.2	4.8	7.0	-31.99	-213.6	196.3	221.6	212.1	9.55	23.204			
2,300.0	2,292.2	2,272.5	2,244.4	5.1	7.4	-34.26	-228.0	211.8	226.3	216.2	10.10	22.412			
2,400.0	2,390.2	2,372.0	2,341.7	5.5	7.9	-36.45	-242.4	227.3	231.4	220.7	10.67	21.673			
2,500.0	2,488.3	2,471.5	2,438.9	5.8	8.4	-38.53	-256.9	242.7	236.7	225.4	11.28	20.982			
2,600.0	2,586.3	2,571.0	2,536.1	6.2	8.8	-40.53	-271.3	258.2	242.4	230.5	11.92	20.337			
2,700.0	2,684.3	2,670.5	2,633.3	6.5	9.3	-42.43	-285.8	273.6	248.3	235.8	12.58	19.736			
2,800.0	2,782.3	2,770.0	2,730.5	6.9	9.8	-44.24	-300.2	289.1	254.6	241.3	13.27	19.178			
2,900.0	2,880.4	2,869.4	2,827.7	7.3	10.2	-45.96	-314.7	304.6	261.0	247.0	13.99	18.659			
3,000.0	2,978.4	2,968.9	2,924.9	7.7	10.7	-47.60	-329.1	320.0	267.7	253.0	14.73	18.179			
3,100.0	3,076.4	3,068.4	3,022.1	8.1	11.2	-49.16	-343.5	335.5	274.6	259.1	15.48	17.736			
3,200.0	3,174.4	3,167.9	3,119.4	8.5	11.6	-50.64	-358.0	350.9	281.7	265.4	16.26	17.326			
3,300.0	3,272.5	3,267.4	3,216.6	8.9	12.1	-52.05	-372.4	366.4	288.9	271.9	17.05	16.948			
3,400.0	3,370.5	3,366.9	3,313.8	9.3	12.6	-53.39	-386.9	381.9	296.4	278.5	17.85	16.599			
3,500.0	3,468.5	3,466.4	3,411.0	9.8	13.0	-54.66	-401.3	397.3	303.9	285.3	18.67	16.278			
3,600.0	3,566.5	3,565.9	3,508.2	10.2	13.5	-55.87	-415.8	412.8	311.7	292.2	19.50	15.981			
3,700.0	3,664.5	3,665.4	3,605.4	10.6	14.0	-57.02	-430.2	428.2	319.5	299.2	20.34	15.708			
3,800.0	3,762.6	3,764.8	3,702.6	11.0	14.4	-58.12	-444.6	443.7	327.5	306.3	21.19	15.455			
3,900.0	3,860.6	3,864.3	3,799.9	11.4	14.9	-59.16	-459.1	459.1	335.6	313.6	22.05	15.222			
4,000.0	3,958.6	3,963.8	3,897.1	11.9	15.4	-60.16	-473.5	474.6	343.8	320.9	22.91	15.007			
4,100.0	4,056.6	4,063.3	3,994.3	12.3	15.9	-61.11	-488.0	490.1	352.1	328.3	23.78	14.807			
4,200.0	4,154.7	4,162.8	4,091.5	12.7	16.3	-62.01	-502.4	505.5	360.5	335.8	24.65	14.623			
4,300.0	4,252.7	4,262.3	4,188.7	13.2	16.8	-62.87	-516.9	521.0	369.0	343.4	25.53	14.451			
4,400.0	4,350.7	4,361.8	4,285.9	13.6	17.3	-63.70	-531.3	536.4	377.5	351.1	26.41	14.292			
4,500.0	4,448.7	4,461.3	4,383.1	14.0	17.7	-64.49	-545.8	551.9	386.1	358.8	27.30	14.144			
4,600.0	4,546.7	4,560.8	4,480.4	14.4	18.2	-65.24	-560.2	567.4	394.8	366.6	28.19	14.007			
4,700.0	4,644.8	4,660.3	4,577.6	14.9	18.7	-65.96	-574.6	582.8	403.6	374.5	29.08	13.879			
4,800.0	4,742.8	4,759.7	4,674.8	15.3	19.2	-66.65	-589.1	598.3	412.4	382.4	29.97	13.759			
4,900.0	4,840.8	4,859.2	4,772.0	15.8	19.6	-67.31	-603.5	613.7	421.3	390.4	30.87	13.648			

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 7L-201
<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 7L-201	<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 (9-10-15)	<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														
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	
5,000.0	4,938.8	4,958.7	4,869.2	16.2	20.1	-67.94	-618.0	629.2	430.2	398.5	31.77	13.543		
5,100.0	5,036.9	5,058.2	4,966.4	16.6	20.6	-68.55	-632.4	644.7	439.2	406.6	32.67	13.445		
5,200.0	5,134.9	5,157.7	5,063.6	17.1	21.0	-69.14	-646.9	660.1	448.3	414.7	33.57	13.354		
5,300.2	5,233.1	5,257.4	5,161.1	17.5	21.5	-69.70	-661.3	675.6	457.3	422.9	34.47	13.268		
5,400.0	5,331.3	5,366.1	5,267.4	17.9	21.9	-70.32	-676.4	691.7	466.3	431.1	35.25	13.230		
5,500.0	5,430.2	5,479.4	5,379.2	18.1	22.2	-70.81	-689.3	705.5	473.8	437.9	35.86	13.211		
5,600.0	5,529.5	5,593.0	5,491.9	18.4	22.5	-71.18	-699.1	716.1	479.5	443.1	36.39	13.176		
5,700.0	5,629.2	5,706.9	5,605.3	18.6	22.7	-71.43	-706.0	723.4	483.4	446.6	36.83	13.127		
5,800.0	5,729.1	5,820.9	5,719.2	18.7	22.9	-71.57	-707.7	727.4	485.6	448.4	37.17	13.063		
5,870.9	5,800.0	5,901.7	5,800.0	18.8	23.0	89.66	-710.5	728.2	486.0	448.7	37.38	13.002		
5,900.0	5,829.1	5,930.9	5,829.1	18.9	23.1	89.66	-710.5	728.2	486.0	448.6	37.46	12.974		
6,000.0	5,929.1	6,030.9	5,929.1	19.0	23.2	89.66	-710.5	728.2	486.0	448.3	37.72	12.886		
6,044.8	5,973.9	6,075.6	5,973.9	19.1	23.2	89.66	-710.5	728.2	486.0	448.2	37.83	12.848		
6,050.0	5,979.1	6,080.8	5,979.1	19.1	23.2	89.66	-710.5	728.2	486.0	448.2	37.84	12.844		
6,100.0	6,029.1	6,130.6	6,028.9	19.1	23.2	89.66	-708.5	728.2	486.0	448.1	37.93	12.815		
6,150.0	6,078.8	6,180.5	6,078.4	19.1	23.3	89.66	-703.3	728.2	486.0	448.1	37.95	12.807		
6,200.0	6,128.1	6,230.3	6,127.5	19.1	23.2	89.66	-694.9	728.2	486.0	448.1	37.91	12.820		
6,250.0	6,176.7	6,280.1	6,175.9	19.1	23.2	89.67	-683.3	728.2	486.0	448.2	37.82	12.852		
6,300.0	6,224.4	6,329.9	6,223.5	19.0	23.2	89.67	-668.6	728.2	486.0	448.4	37.67	12.903		
6,350.0	6,271.1	6,379.7	6,270.0	18.9	23.1	89.68	-650.8	728.2	486.0	448.6	37.47	12.971		
6,400.0	6,316.5	6,429.5	6,315.3	18.8	23.0	89.69	-630.0	728.2	486.0	448.8	37.23	13.055		
6,450.0	6,360.4	6,479.4	6,359.1	18.6	22.9	89.70	-606.3	728.2	486.0	449.1	36.96	13.151		
6,500.0	6,402.7	6,529.2	6,401.3	18.5	22.7	89.71	-579.7	728.2	486.0	449.4	36.66	13.258		
6,550.0	6,443.1	6,579.1	6,441.7	18.3	22.6	89.73	-550.5	728.2	486.0	449.7	36.35	13.373		
6,600.0	6,481.5	6,628.9	6,480.1	18.1	22.4	89.74	-518.7	728.2	486.0	450.0	36.03	13.491		
6,650.0	6,517.8	6,678.8	6,516.3	18.0	22.3	89.76	-484.5	728.2	486.0	450.3	35.71	13.610		
6,700.0	6,551.7	6,728.6	6,550.3	17.8	22.1	89.77	-448.0	728.2	486.0	450.6	35.42	13.724		
6,750.0	6,583.2	6,778.5	6,581.8	17.6	21.9	89.79	-409.3	728.2	486.0	450.9	35.15	13.829		
6,800.0	6,612.0	6,828.4	6,610.7	17.5	21.8	89.81	-368.7	728.2	486.0	451.1	34.92	13.919		
6,850.0	6,638.1	6,878.3	6,636.9	17.4	21.6	89.83	-326.2	728.2	486.0	451.3	34.74	13.989		
6,900.0	6,661.4	6,928.2	6,660.2	17.3	21.4	89.85	-282.1	728.2	486.0	451.4	34.63	14.034		
6,950.0	6,681.7	6,978.2	6,680.7	17.2	21.2	89.87	-236.6	728.2	486.0	451.4	34.59	14.051		
7,000.0	6,699.0	7,028.1	6,698.1	17.2	21.1	89.89	-189.8	728.2	486.0	451.4	34.63	14.035		
7,050.0	6,713.2	7,078.0	6,712.5	17.2	20.9	89.91	-142.0	728.2	486.0	451.3	34.75	13.985		
7,100.0	6,724.2	7,128.0	6,723.6	17.2	20.7	89.93	-93.3	728.2	486.0	451.1	34.97	13.899		
7,150.0	6,732.0	7,178.0	6,731.6	17.3	20.6	89.96	-44.0	728.2	486.0	450.8	35.27	13.779		
7,181.4	6,735.2	7,209.3	6,735.0	17.4	20.5	89.97	-12.8	728.2	486.0	450.5	35.51	13.685		
7,200.0	6,736.6	7,227.9	6,736.4	17.5	20.4	89.98	5.8	728.2	486.0	450.4	35.67	13.626		
7,246.0	6,737.9	7,273.9	6,737.9	17.7	20.3	90.00	51.7	728.2	486.0	449.9	36.11	13.461		
7,300.0	6,737.8	7,327.9	6,737.8	18.0	20.2	90.00	105.8	728.2	486.0	449.3	36.74	13.229		
7,400.0	6,737.6	7,427.9	6,737.6	18.7	20.0	90.00	205.8	728.2	486.0	447.9	38.15	12.740		
7,500.0	6,737.5	7,527.9	6,737.5	19.5	20.6	90.00	305.8	728.2	486.0	446.1	39.88	12.186		
7,600.0	6,737.3	7,627.9	6,737.3	20.6	21.8	90.00	405.7	728.2	486.0	444.1	41.90	11.600		
7,700.0	6,737.2	7,727.9	6,737.2	21.7	23.0	90.00	505.7	728.2	486.0	441.9	44.16	11.007		
7,800.0	6,737.0	7,827.9	6,737.0	23.0	24.3	90.00	605.7	728.2	486.0	439.4	46.62	10.425		
7,900.0	6,736.8	7,927.9	6,736.9	24.3	25.7	90.00	705.7	728.2	486.0	436.8	49.27	9.866		
8,000.0	6,736.7	8,027.9	6,736.7	25.8	27.1	90.00	805.7	728.2	486.0	434.0	52.06	9.337		
8,100.0	6,736.5	8,127.9	6,736.5	27.2	28.6	90.00	905.7	728.2	486.0	431.1	54.98	8.841		
8,200.0	6,736.4	8,227.9	6,736.4	28.8	30.1	90.00	1,005.7	728.2	486.0	428.0	58.00	8.380		
8,300.0	6,736.2	8,327.9	6,736.2	30.3	31.7	90.00	1,105.7	728.2	486.0	424.9	61.12	7.952		
8,400.0	6,736.1	8,427.9	6,736.1	31.9	33.3	90.00	1,205.7	728.2	486.0	421.7	64.32	7.557		

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 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-221 - Wellbore #1 - Plan #1 (9-10-15)												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
8,500.0	6,735.9	8,527.9	6,735.9	33.6	34.9	90.00	1,305.7	728.2	486.0	418.5	67.58	7.192	
8,600.0	6,735.7	8,627.9	6,735.8	35.3	36.5	90.00	1,405.7	728.2	486.0	415.1	70.90	6.855	
8,700.0	6,735.6	8,727.9	6,735.6	36.9	38.2	90.00	1,505.7	728.2	486.0	411.8	74.27	6.544	
8,800.0	6,735.4	8,827.9	6,735.4	38.7	39.9	90.00	1,605.7	728.2	486.0	408.3	77.69	6.256	
8,900.0	6,735.3	8,927.9	6,735.3	40.4	41.6	90.00	1,705.7	728.2	486.0	404.9	81.14	5.990	
9,000.0	6,735.1	9,027.9	6,735.1	42.1	43.3	90.00	1,805.7	728.2	486.0	401.4	84.63	5.743	
9,100.0	6,735.0	9,127.9	6,735.0	43.9	45.1	90.00	1,905.7	728.2	486.0	397.9	88.14	5.514	
9,200.0	6,734.8	9,227.9	6,734.8	45.7	46.8	90.00	2,005.7	728.2	486.0	394.4	91.69	5.301	
9,300.0	6,734.6	9,327.9	6,734.7	47.5	48.6	90.00	2,105.7	728.2	486.0	390.8	95.25	5.103	
9,400.0	6,734.5	9,427.9	6,734.5	49.3	50.3	90.00	2,205.7	728.2	486.0	387.2	98.84	4.918	
9,500.0	6,734.3	9,527.9	6,734.3	51.1	52.1	90.00	2,305.7	728.2	486.0	383.6	102.44	4.745	
9,600.0	6,734.2	9,627.9	6,734.2	52.9	53.9	90.00	2,405.7	728.2	486.0	380.0	106.06	4.583	
9,700.0	6,734.0	9,727.9	6,734.0	54.7	55.7	90.00	2,505.7	728.2	486.0	376.3	109.70	4.431	
9,800.0	6,733.9	9,827.9	6,733.9	56.5	57.5	90.00	2,605.7	728.2	486.0	372.7	113.35	4.288	
9,900.0	6,733.7	9,927.9	6,733.7	58.4	59.3	90.00	2,705.7	728.2	486.0	369.0	117.01	4.154	
10,000.0	6,733.5	10,027.9	6,733.6	60.2	61.2	90.00	2,805.7	728.2	486.0	365.4	120.68	4.027	
10,100.0	6,733.4	10,127.9	6,733.4	62.1	63.0	90.00	2,905.7	728.2	486.0	361.7	124.37	3.908	
10,200.0	6,733.2	10,227.9	6,733.2	63.9	64.8	90.00	3,005.7	728.2	486.0	358.0	128.06	3.795	
10,300.0	6,733.1	10,327.9	6,733.1	65.8	66.7	90.00	3,105.7	728.2	486.0	354.3	131.76	3.689	
10,400.0	6,732.9	10,427.9	6,732.9	67.6	68.5	90.00	3,205.7	728.2	486.0	350.6	135.47	3.588	
10,500.0	6,732.8	10,527.9	6,732.8	69.5	70.3	90.00	3,305.7	728.2	486.0	346.9	139.19	3.492	
10,600.0	6,732.6	10,627.9	6,732.6	71.3	72.2	90.00	3,405.7	728.2	486.0	343.1	142.91	3.401	
10,700.0	6,732.4	10,727.9	6,732.5	73.2	74.0	90.00	3,505.7	728.2	486.0	339.4	146.64	3.315	
10,800.0	6,732.3	10,827.9	6,732.3	75.1	75.9	90.00	3,605.7	728.2	486.0	335.7	150.37	3.232	
10,900.0	6,732.1	10,927.9	6,732.1	76.9	77.8	90.00	3,705.7	728.2	486.0	331.9	154.11	3.154	
11,000.0	6,732.0	11,027.9	6,732.0	78.8	79.6	90.00	3,805.7	728.2	486.0	328.2	157.86	3.079	
11,100.0	6,731.8	11,127.9	6,731.8	80.7	81.5	90.00	3,905.7	728.2	486.0	324.4	161.61	3.008	
11,200.0	6,731.7	11,227.9	6,731.7	82.6	83.3	90.00	4,005.7	728.2	486.0	320.7	165.36	2.939	
11,300.0	6,731.5	11,327.9	6,731.5	84.4	85.2	90.00	4,105.7	728.2	486.0	316.9	169.12	2.874	
11,400.0	6,731.3	11,427.9	6,731.4	86.3	87.1	90.00	4,205.7	728.2	486.0	313.2	172.88	2.811	
11,500.0	6,731.2	11,527.9	6,731.2	88.2	89.0	90.00	4,305.7	728.2	486.0	309.4	176.64	2.752	
11,600.0	6,731.0	11,627.9	6,731.0	90.1	90.8	90.00	4,405.7	728.2	486.0	305.6	180.41	2.694	
11,700.0	6,730.9	11,727.9	6,730.9	92.0	92.7	90.00	4,505.7	728.2	486.0	301.9	184.18	2.639	
11,800.0	6,730.7	11,827.9	6,730.7	93.9	94.6	90.00	4,605.7	728.2	486.0	298.1	187.95	2.586	
11,900.0	6,730.6	11,927.9	6,730.6	95.8	96.5	90.00	4,705.7	728.2	486.0	294.3	191.73	2.535	
12,000.0	6,730.4	12,027.9	6,730.4	97.6	98.3	90.00	4,805.7	728.2	486.0	290.5	195.51	2.486	
12,100.0	6,730.2	12,127.9	6,730.3	99.5	100.2	90.00	4,905.7	728.2	486.0	286.8	199.29	2.439	
12,200.0	6,730.1	12,227.9	6,730.1	101.4	102.1	90.00	5,005.7	728.2	486.0	283.0	203.07	2.393	
12,300.0	6,729.9	12,327.9	6,729.9	103.3	104.0	90.00	5,105.7	728.2	486.0	279.2	206.86	2.350	
12,400.0	6,729.8	12,427.9	6,729.8	105.2	105.9	90.00	5,205.7	728.2	486.0	275.4	210.65	2.307	
12,500.0	6,729.6	12,527.9	6,729.6	107.1	107.8	90.00	5,305.7	728.2	486.0	271.6	214.44	2.267	
12,600.0	6,729.5	12,627.9	6,729.5	109.0	109.7	90.00	5,405.7	728.2	486.0	267.8	218.23	2.227	
12,700.0	6,729.3	12,727.9	6,729.3	110.9	111.6	90.00	5,505.7	728.2	486.0	264.0	222.02	2.189	
12,800.0	6,729.1	12,827.9	6,729.2	112.8	113.4	90.00	5,605.7	728.2	486.0	260.2	225.81	2.152	
12,900.0	6,729.0	12,927.9	6,729.0	114.7	115.3	90.00	5,705.7	728.2	486.0	256.4	229.61	2.117	
13,000.0	6,728.8	13,027.9	6,728.8	116.6	117.2	90.00	5,805.7	728.2	486.0	252.6	233.41	2.082	
13,100.0	6,728.7	13,127.9	6,728.7	118.5	119.1	90.00	5,905.7	728.2	486.0	248.8	237.21	2.049	
13,200.0	6,728.5	13,227.9	6,728.5	120.4	121.0	90.00	6,005.7	728.2	486.0	245.0	241.01	2.017	
13,300.0	6,728.4	13,327.9	6,728.4	122.3	122.9	90.00	6,105.7	728.2	486.0	241.2	244.81	1.985	
13,400.0	6,728.2	13,427.9	6,728.2	124.2	124.8	90.00	6,205.7	728.2	486.0	237.4	248.61	1.955	
13,500.0	6,728.0	13,527.9	6,728.1	126.1	126.7	90.00	6,305.7	728.2	486.0	233.6	252.42	1.926	

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 7L-201
<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 7L-201	<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 (9-10-15)	<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	6,727.9	13,627.9	6,727.9	128.0	128.6	90.00	6,405.7	728.2	486.0	229.8	256.22	1.897		
13,700.0	6,727.7	13,727.9	6,727.7	129.9	130.5	90.00	6,505.7	728.2	486.0	226.0	260.03	1.869		
13,800.0	6,727.6	13,827.9	6,727.6	131.8	132.4	90.00	6,605.7	728.2	486.0	222.2	263.84	1.842		
13,900.0	6,727.4	13,927.9	6,727.4	133.7	134.3	90.00	6,705.7	728.2	486.0	218.4	267.64	1.816		
14,000.0	6,727.3	14,027.9	6,727.3	135.6	136.2	90.00	6,805.7	728.2	486.0	214.6	271.45	1.791		
14,100.0	6,727.1	14,127.9	6,727.1	137.5	138.1	90.00	6,905.7	728.2	486.0	210.8	275.26	1.766		
14,200.0	6,726.9	14,227.9	6,727.0	139.4	140.0	90.00	7,005.7	728.2	486.0	207.0	279.07	1.742		
14,300.0	6,726.8	14,327.9	6,726.8	141.3	141.9	90.00	7,105.7	728.2	486.0	203.2	282.89	1.718		
14,400.0	6,726.6	14,427.9	6,726.6	143.3	143.8	90.00	7,205.7	728.2	486.0	199.3	286.70	1.695		
14,500.0	6,726.5	14,527.9	6,726.5	145.2	145.7	90.00	7,305.7	728.2	486.0	195.5	290.51	1.673		
14,600.0	6,726.3	14,627.9	6,726.3	147.1	147.6	90.00	7,405.7	728.2	486.0	191.7	294.32	1.651		
14,700.0	6,726.2	14,727.9	6,726.2	149.0	149.5	90.00	7,505.7	728.2	486.0	187.9	298.14	1.630		
14,800.0	6,726.0	14,827.9	6,726.0	150.9	151.4	90.00	7,605.7	728.2	486.0	184.1	301.95	1.610		
14,900.0	6,725.8	14,927.9	6,725.9	152.8	153.3	90.00	7,705.7	728.2	486.0	180.3	305.77	1.590		
15,000.0	6,725.7	15,027.9	6,725.7	154.7	155.2	90.00	7,805.7	728.2	486.0	176.5	309.59	1.570		
15,100.0	6,725.5	15,127.9	6,725.5	156.6	157.1	90.00	7,905.7	728.2	486.0	172.6	313.40	1.551		
15,200.0	6,725.4	15,227.9	6,725.4	158.5	159.0	90.00	8,005.7	728.2	486.0	168.8	317.22	1.532		
15,300.0	6,725.2	15,327.9	6,725.2	160.4	160.9	90.00	8,105.7	728.2	486.0	165.0	321.04	1.514		
15,400.0	6,725.1	15,427.9	6,725.1	162.3	162.8	90.00	8,205.7	728.2	486.0	161.2	324.86	1.496 Level 3		
15,500.0	6,724.9	15,527.9	6,724.9	164.2	164.7	90.00	8,305.7	728.2	486.0	157.4	328.68	1.479 Level 3		
15,600.0	6,724.7	15,627.9	6,724.8	166.2	166.7	90.00	8,405.7	728.2	486.0	153.5	332.50	1.462 Level 3		
15,700.0	6,724.6	15,727.9	6,724.6	168.1	168.6	90.00	8,505.7	728.2	486.0	149.7	336.32	1.445 Level 3		
15,800.0	6,724.4	15,827.9	6,724.4	170.0	170.5	90.00	8,605.7	728.2	486.0	145.9	340.14	1.429 Level 3		
15,900.0	6,724.3	15,927.9	6,724.3	171.9	172.4	90.00	8,705.7	728.2	486.0	142.1	343.96	1.413 Level 3		
16,000.0	6,724.1	16,027.9	6,724.1	173.8	174.3	90.00	8,805.7	728.2	486.0	138.3	347.78	1.398 Level 3		
16,100.0	6,724.0	16,127.9	6,724.0	175.7	176.2	90.00	8,905.7	728.2	486.0	134.4	351.61	1.382 Level 3		
16,200.0	6,723.8	16,227.9	6,723.8	177.6	178.1	90.00	9,005.7	728.2	486.0	130.6	355.43	1.368 Level 3		
16,300.0	6,723.6	16,327.9	6,723.7	179.5	180.0	90.00	9,105.7	728.2	486.1	126.8	359.25	1.353 Level 3		
16,400.0	6,723.5	16,427.9	6,723.5	181.4	181.9	90.00	9,205.7	728.2	486.1	123.0	363.07	1.339 Level 3		
16,500.0	6,723.3	16,527.9	6,723.3	183.4	183.8	90.00	9,305.7	728.2	486.1	119.2	366.90	1.325 Level 3		
16,600.0	6,723.2	16,627.9	6,723.2	185.3	185.7	90.00	9,405.7	728.2	486.1	115.3	370.72	1.311 Level 3		
16,700.0	6,723.0	16,727.9	6,723.0	187.2	187.6	90.00	9,505.7	728.2	486.1	111.5	374.55	1.298 Level 3		
16,713.4	6,723.0	16,741.4	6,723.0	187.4	187.9	90.00	9,519.2	728.2	486.1	111.0	375.06	1.296 Level 3, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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														
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	
0.0	0.0	0.0	0.0	0.0	0.0	-178.93	-14.9	-0.3	14.9	14.9	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	-178.93	-14.9	-0.3	14.9	14.7	0.22	66.491		
200.0	200.0	200.0	200.0	0.3	0.3	-178.93	-14.9	-0.3	14.9	14.3	0.67	22.162		
300.0	300.0	300.0	300.0	0.6	0.6	-178.93	-14.9	-0.3	14.9	13.8	1.12	13.297		
400.0	400.0	400.0	400.0	0.8	0.8	-178.93	-14.9	-0.3	14.9	13.4	1.57	9.498		
500.0	500.0	500.0	500.0	1.0	1.0	-178.93	-14.9	-0.3	14.9	12.9	2.02	7.387		
600.0	600.0	600.0	600.0	1.2	1.2	-178.93	-14.9	-0.3	14.9	12.5	2.47	6.044		
700.0	700.0	700.0	700.0	1.5	1.5	-178.93	-14.9	-0.3	14.9	12.0	2.92	5.114		
800.0	800.0	800.0	800.0	1.7	1.7	-178.93	-14.9	-0.3	14.9	11.6	3.37	4.432		
900.0	900.0	900.0	900.0	1.9	1.9	-178.93	-14.9	-0.3	14.9	11.1	3.82	3.911		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-178.93	-14.9	-0.3	14.9	10.7	4.27	3.499		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-178.93	-14.9	-0.3	14.9	10.2	4.72	3.166		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-178.93	-14.9	-0.3	14.9	9.8	5.17	2.891 CC		
1,300.0	1,300.0	1,299.7	1,299.6	2.8	2.8	178.37	-16.0	0.5	16.0	10.4	5.59	2.865		
1,400.0	1,400.0	1,399.2	1,399.1	3.0	3.0	172.15	-19.2	2.7	19.4	13.4	6.00	3.240		
1,500.0	1,500.0	1,498.5	1,498.2	3.2	3.2	4.60	-24.6	6.3	24.1	17.7	6.38	3.782		
1,600.0	1,599.9	1,597.7	1,597.0	3.4	3.4	-0.98	-32.0	11.4	28.9	22.2	6.74	4.289		
1,700.0	1,699.7	1,696.8	1,695.4	3.6	3.6	-6.13	-41.6	17.9	33.8	26.7	7.10	4.761		
1,800.0	1,799.3	1,795.6	1,793.2	3.8	3.8	-10.95	-53.2	25.9	39.0	31.5	7.48	5.210		
1,900.0	1,898.6	1,894.4	1,890.6	4.0	4.1	-15.52	-66.9	35.2	44.4	36.5	7.86	5.644		
2,000.0	1,997.5	1,992.9	1,987.2	4.2	4.4	-19.84	-82.6	46.0	50.1	41.9	8.26	6.067		
2,100.0	2,096.1	2,092.7	2,084.9	4.5	4.7	-24.18	-99.6	57.6	55.0	46.3	8.69	6.331		
2,160.9	2,155.9	2,153.5	2,144.3	4.7	5.0	-27.04	-110.0	64.7	57.0	48.0	8.97	6.354		
2,200.0	2,194.2	2,192.5	2,182.6	4.8	5.1	-28.92	-116.7	69.2	58.0	48.9	9.16	6.333		
2,300.0	2,292.2	2,292.4	2,280.3	5.1	5.5	-33.43	-133.7	80.9	61.0	51.3	9.70	6.288		
2,400.0	2,390.2	2,392.2	2,378.0	5.5	5.9	-37.49	-150.7	92.5	64.3	54.0	10.29	6.253		
2,500.0	2,488.3	2,492.1	2,475.7	5.8	6.3	-41.14	-167.7	104.1	68.0	57.0	10.92	6.223		
2,600.0	2,586.3	2,591.9	2,573.4	6.2	6.7	-44.41	-184.7	115.7	71.8	60.2	11.59	6.196		
2,700.0	2,684.3	2,691.8	2,671.1	6.5	7.1	-47.34	-201.7	127.4	75.9	63.6	12.30	6.172		
2,800.0	2,782.3	2,791.6	2,768.7	6.9	7.5	-49.96	-218.7	139.0	80.1	67.1	13.03	6.149		
2,900.0	2,880.4	2,891.5	2,866.4	7.3	7.9	-52.32	-235.7	150.6	84.5	70.7	13.80	6.128		
3,000.0	2,978.4	2,991.3	2,964.1	7.7	8.4	-54.44	-252.8	162.2	89.1	74.5	14.58	6.109		
3,100.0	3,076.4	3,091.2	3,061.8	8.1	8.8	-56.35	-269.8	173.9	93.7	78.3	15.38	6.092		
3,200.0	3,174.4	3,191.0	3,159.5	8.5	9.2	-58.08	-286.8	185.5	98.4	82.2	16.20	6.078		
3,300.0	3,272.5	3,290.9	3,257.2	8.9	9.7	-59.65	-303.8	197.1	103.2	86.2	17.02	6.065		
3,400.0	3,370.5	3,390.7	3,354.9	9.3	10.1	-61.08	-320.8	208.7	108.1	90.3	17.86	6.054		
3,500.0	3,468.5	3,490.5	3,452.6	9.8	10.6	-62.38	-337.8	220.4	113.1	94.4	18.71	6.044		
3,600.0	3,566.5	3,590.4	3,550.3	10.2	11.0	-63.58	-354.8	232.0	118.1	98.5	19.56	6.036		
3,700.0	3,664.5	3,690.2	3,648.0	10.6	11.4	-64.68	-371.8	243.6	123.1	102.7	20.42	6.030		
3,800.0	3,762.6	3,790.1	3,745.7	11.0	11.9	-65.69	-388.8	255.2	128.2	106.9	21.28	6.024		
3,900.0	3,860.6	3,889.9	3,843.4	11.4	12.3	-66.62	-405.9	266.9	133.3	111.2	22.15	6.020		
4,000.0	3,958.6	3,989.8	3,941.1	11.9	12.8	-67.49	-422.9	278.5	138.5	115.5	23.02	6.016		
4,100.0	4,056.6	4,089.6	4,038.8	12.3	13.2	-68.29	-439.9	290.1	143.7	119.8	23.89	6.013		
4,200.0	4,154.7	4,189.5	4,136.5	12.7	13.7	-69.03	-456.9	301.7	148.9	124.1	24.77	6.011		
4,300.0	4,252.7	4,289.3	4,234.2	13.2	14.1	-69.73	-473.9	313.4	154.1	128.5	25.65	6.009		
4,400.0	4,350.7	4,389.2	4,331.9	13.6	14.6	-70.38	-490.9	325.0	159.4	132.9	26.53	6.008		
4,500.0	4,448.7	4,489.0	4,429.6	14.0	15.0	-70.99	-507.9	336.6	164.7	137.3	27.41	6.007		
4,600.0	4,546.7	4,588.8	4,527.3	14.4	15.5	-71.56	-524.9	348.2	170.0	141.7	28.29	6.007		
4,700.0	4,644.8	4,688.7	4,625.0	14.9	15.9	-72.09	-542.0	359.9	175.3	146.1	29.18	6.007		
4,800.0	4,742.8	4,788.5	4,722.7	15.3	16.4	-72.60	-559.0	371.5	180.6	150.5	30.06	6.007		
4,900.0	4,840.8	4,888.4	4,820.4	15.8	16.8	-73.07	-576.0	383.1	185.9	155.0	30.95	6.007		

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 7L-201
<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 7L-201	<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 (9-10-15)	<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							
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
5,000.0	4,938.8	4,988.2	4,918.1	16.2	17.3	-73.52	-593.0	394.7	191.3	159.4	31.84	6.008	
5,100.0	5,036.9	5,088.1	5,015.8	16.6	17.8	-73.95	-610.0	406.4	196.6	163.9	32.73	6.009	
5,200.0	5,134.9	5,187.9	5,113.5	17.1	18.2	-74.35	-627.0	418.0	202.0	168.4	33.61	6.010	
5,300.2	5,233.1	5,288.0	5,211.4	17.5	18.7	-74.73	-644.1	429.6	207.4	172.9	34.51	6.011	
5,400.0	5,331.3	5,387.6	5,308.8	17.9	19.1	-74.75	-661.0	441.2	213.2	178.0	35.27	6.046	
5,500.0	5,430.2	5,491.4	5,410.8	18.1	19.5	-74.28	-677.2	452.3	219.1	183.3	35.78	6.124	
5,600.0	5,529.5	5,595.5	5,513.6	18.4	19.7	-73.76	-690.3	461.3	224.0	187.8	36.20	6.188	
5,700.0	5,629.2	5,699.7	5,617.2	18.6	20.0	-73.16	-700.4	468.1	228.0	191.5	36.54	6.240	
5,800.0	5,729.1	5,804.2	5,721.3	18.7	20.2	-72.51	-707.3	472.9	231.2	194.4	36.81	6.281	
5,870.9	5,800.0	5,878.3	5,795.3	18.8	20.3	89.25	-710.4	474.9	232.8	195.9	36.95	6.302	
5,900.0	5,829.1	5,908.8	5,825.8	18.9	20.4	89.45	-711.1	475.5	233.3	196.3	37.01	6.305	
6,000.0	5,929.1	6,012.2	5,929.1	19.0	20.5	89.64	-711.9	476.0	233.8	196.6	37.25	6.277	
6,044.8	5,973.9	6,057.0	5,973.9	19.1	20.6	89.64	-711.9	476.0	233.8	196.5	37.37	6.258	
6,050.0	5,979.1	6,062.2	5,979.1	19.1	20.6	89.65	-711.9	476.0	233.8	196.5	37.38	6.256	
6,092.0	6,021.1	6,104.2	6,021.1	19.1	20.6	90.00	-711.9	476.0	233.8	196.4	37.42	6.249	
6,100.0	6,029.1	6,112.1	6,029.1	19.1	20.6	90.13	-711.9	476.0	233.8	196.4	37.42	6.250	
6,150.0	6,078.8	6,162.0	6,079.0	19.1	20.7	91.31	-711.5	476.0	233.9	196.6	37.30	6.270	
6,200.0	6,128.1	6,212.3	6,129.1	19.1	20.7	92.58	-708.2	476.0	234.1	197.0	37.12	6.307	
6,250.0	6,176.7	6,262.9	6,179.3	19.1	20.7	93.84	-701.6	476.0	234.4	197.5	36.86	6.358	
6,300.0	6,224.4	6,313.8	6,229.2	19.0	20.7	95.09	-691.5	476.0	234.8	198.2	36.55	6.423	
6,350.0	6,271.1	6,365.1	6,278.7	18.9	20.6	96.31	-678.1	476.0	235.3	199.1	36.19	6.501	
6,400.0	6,316.5	6,416.8	6,327.6	18.8	20.6	97.51	-661.2	476.0	235.9	200.1	35.79	6.591	
6,450.0	6,360.4	6,468.9	6,375.5	18.6	20.5	98.67	-640.9	476.0	236.6	201.2	35.35	6.692	
6,500.0	6,402.7	6,521.3	6,422.2	18.5	20.3	99.79	-617.3	476.0	237.3	202.4	34.89	6.803	
6,550.0	6,443.1	6,574.0	6,467.5	18.3	20.2	100.87	-590.2	476.0	238.1	203.7	34.41	6.922	
6,600.0	6,481.5	6,627.1	6,511.1	18.1	20.0	101.89	-560.0	476.0	239.0	205.1	33.92	7.045	
6,650.0	6,517.8	6,680.5	6,552.8	18.0	19.9	102.86	-526.5	476.0	239.9	206.4	33.45	7.172	
6,700.0	6,551.7	6,734.3	6,592.2	17.8	19.7	103.77	-490.0	476.0	240.8	207.8	33.00	7.297	
6,750.0	6,583.2	6,788.4	6,629.2	17.6	19.5	104.61	-450.6	476.0	241.7	209.1	32.58	7.418	
6,800.0	6,612.0	6,842.7	6,663.5	17.5	19.3	105.39	-408.4	476.0	242.6	210.4	32.22	7.529	
6,850.0	6,638.1	6,897.3	6,694.8	17.4	19.1	106.09	-363.7	476.0	243.4	211.5	31.92	7.626	
6,900.0	6,661.4	6,952.2	6,723.0	17.3	18.9	106.72	-316.6	476.0	244.2	212.5	31.69	7.705	
6,950.0	6,681.7	7,007.3	6,747.8	17.2	18.8	107.27	-267.4	476.0	244.9	213.3	31.56	7.759	
7,000.0	6,699.0	7,062.6	6,769.1	17.2	18.6	107.74	-216.4	476.0	245.5	214.0	31.53	7.787	
7,050.0	6,713.2	7,118.1	6,786.7	17.2	18.5	108.13	-163.8	476.0	246.1	214.5	31.61	7.785	
7,100.0	6,724.2	7,173.7	6,800.4	17.2	18.3	108.44	-109.9	476.0	246.5	214.7	31.80	7.751	
7,150.0	6,732.0	7,229.4	6,810.2	17.3	18.3	108.67	-55.1	476.0	246.8	214.7	32.11	7.688	
7,200.0	6,736.6	7,285.2	6,816.0	17.5	18.2	108.81	0.4	476.0	247.0	214.5	32.53	7.595	
7,246.0	6,737.9	7,336.6	6,817.8	17.7	18.3	108.87	51.7	476.0	247.1	214.1	33.01	7.487	
7,300.0	6,737.8	7,390.8	6,817.6	18.0	18.4	108.86	106.0	476.0	247.1	213.5	33.60	7.354	
7,400.0	6,737.6	7,490.8	6,817.4	18.7	19.0	108.83	206.0	476.0	247.1	212.1	34.97	7.065	
7,500.0	6,737.5	7,590.8	6,817.1	19.5	19.9	108.81	306.0	476.0	247.0	210.4	36.65	6.741	
7,600.0	6,737.3	7,690.8	6,816.9	20.6	21.0	108.79	406.0	476.0	247.0	208.4	38.61	6.398	
7,700.0	6,737.2	7,790.8	6,816.6	21.7	22.2	108.76	506.0	476.0	247.0	206.2	40.80	6.053	
7,800.0	6,737.0	7,890.8	6,816.3	23.0	23.5	108.74	606.0	476.0	246.9	203.7	43.20	5.717	
7,900.0	6,736.8	7,990.8	6,816.1	24.3	24.8	108.72	706.0	476.0	246.9	201.1	45.76	5.395	
8,000.0	6,736.7	8,090.8	6,815.8	25.8	26.2	108.70	806.0	476.0	246.9	198.4	48.47	5.093	
8,100.0	6,736.5	8,190.8	6,815.6	27.2	27.7	108.67	906.0	476.0	246.8	195.5	51.30	4.812	
8,200.0	6,736.4	8,290.8	6,815.3	28.8	29.3	108.65	1,006.0	476.0	246.8	192.6	54.23	4.551	
8,300.0	6,736.2	8,390.8	6,815.0	30.3	30.8	108.63	1,106.0	476.0	246.8	189.5	57.25	4.310	
8,400.0	6,736.1	8,490.8	6,814.8	31.9	32.4	108.60	1,206.0	476.0	246.7	186.4	60.34	4.089	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-301 - Wellbore #1 - Plan #1 (9-10-15)												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
8,500.0	6,735.9	8,590.8	6,814.5	33.6	34.1	108.58	1,306.0	476.0	246.7	183.2	63.49	3.885	
8,600.0	6,735.7	8,690.8	6,814.2	35.3	35.7	108.56	1,406.0	476.0	246.7	180.0	66.70	3.698	
8,700.0	6,735.6	8,790.8	6,814.0	36.9	37.4	108.53	1,506.0	476.0	246.6	176.7	69.96	3.525	
8,800.0	6,735.4	8,890.8	6,813.7	38.7	39.1	108.51	1,606.0	476.0	246.6	173.3	73.25	3.366	
8,900.0	6,735.3	8,990.8	6,813.5	40.4	40.8	108.49	1,706.0	476.0	246.6	170.0	76.59	3.219	
9,000.0	6,735.1	9,090.8	6,813.2	42.1	42.6	108.47	1,806.0	476.0	246.5	166.6	79.95	3.084	
9,100.0	6,735.0	9,190.8	6,812.9	43.9	44.3	108.44	1,906.0	476.0	246.5	163.2	83.34	2.958	
9,200.0	6,734.8	9,290.8	6,812.7	45.7	46.1	108.42	2,006.0	476.0	246.5	159.7	86.75	2.841	
9,300.0	6,734.6	9,390.8	6,812.4	47.5	47.9	108.40	2,106.0	476.0	246.4	156.2	90.19	2.732	
9,400.0	6,734.5	9,490.8	6,812.2	49.3	49.7	108.37	2,206.0	476.0	246.4	152.8	93.65	2.631	
9,500.0	6,734.3	9,590.8	6,811.9	51.1	51.5	108.35	2,306.0	476.0	246.4	149.2	97.12	2.537	
9,600.0	6,734.2	9,690.8	6,811.6	52.9	53.3	108.33	2,406.0	476.0	246.3	145.7	100.61	2.448	
9,700.0	6,734.0	9,790.8	6,811.4	54.7	55.1	108.30	2,506.0	476.0	246.3	142.2	104.11	2.366	
9,800.0	6,733.9	9,890.8	6,811.1	56.5	56.9	108.28	2,606.0	476.0	246.3	138.6	107.63	2.288	
9,900.0	6,733.7	9,990.8	6,810.8	58.4	58.7	108.26	2,705.9	476.0	246.2	135.1	111.16	2.215	
10,000.0	6,733.5	10,090.8	6,810.6	60.2	60.6	108.23	2,805.9	476.0	246.2	131.5	114.70	2.147	
10,100.0	6,733.4	10,190.8	6,810.3	62.1	62.4	108.21	2,905.9	476.0	246.2	127.9	118.25	2.082	
10,200.0	6,733.2	10,290.8	6,810.1	63.9	64.2	108.19	3,005.9	476.0	246.1	124.3	121.81	2.021	
10,300.0	6,733.1	10,390.8	6,809.8	65.8	66.1	108.16	3,105.9	476.0	246.1	120.7	125.37	1.963	
10,400.0	6,732.9	10,490.8	6,809.5	67.6	67.9	108.14	3,205.9	476.0	246.1	117.1	128.95	1.908	
10,500.0	6,732.8	10,590.8	6,809.3	69.5	69.8	108.12	3,305.9	476.0	246.0	113.5	132.53	1.857	
10,600.0	6,732.6	10,690.8	6,809.0	71.3	71.7	108.09	3,405.9	476.0	246.0	109.9	136.12	1.807	
10,700.0	6,732.4	10,790.8	6,808.7	73.2	73.5	108.07	3,505.9	476.0	246.0	106.3	139.71	1.761	
10,800.0	6,732.3	10,890.8	6,808.5	75.1	75.4	108.05	3,605.9	476.0	245.9	102.6	143.31	1.716	
10,900.0	6,732.1	10,990.8	6,808.2	76.9	77.2	108.03	3,705.9	476.0	245.9	99.0	146.92	1.674	
11,000.0	6,732.0	11,090.8	6,808.0	78.8	79.1	108.00	3,805.9	476.0	245.9	95.3	150.53	1.633	
11,100.0	6,731.8	11,190.8	6,807.7	80.7	81.0	107.98	3,905.9	476.0	245.8	91.7	154.14	1.595	
11,200.0	6,731.7	11,290.8	6,807.4	82.6	82.9	107.96	4,005.9	476.0	245.8	88.0	157.76	1.558	
11,300.0	6,731.5	11,390.8	6,807.2	84.4	84.7	107.93	4,105.9	476.0	245.8	84.4	161.39	1.523	
11,400.0	6,731.3	11,490.8	6,806.9	86.3	86.6	107.91	4,205.9	476.0	245.7	80.7	165.02	1.489 Level 3	
11,500.0	6,731.2	11,590.8	6,806.7	88.2	88.5	107.89	4,305.9	476.0	245.7	77.1	168.65	1.457 Level 3	
11,600.0	6,731.0	11,690.8	6,806.4	90.1	90.4	107.86	4,405.9	476.0	245.7	73.4	172.29	1.426 Level 3	
11,700.0	6,730.9	11,790.8	6,806.1	92.0	92.2	107.84	4,505.9	476.0	245.7	69.7	175.93	1.396 Level 3	
11,800.0	6,730.7	11,890.8	6,805.9	93.9	94.1	107.82	4,605.9	476.0	245.6	66.0	179.57	1.368 Level 3	
11,900.0	6,730.6	11,990.8	6,805.6	95.8	96.0	107.79	4,705.9	476.0	245.6	62.4	183.22	1.340 Level 3	
12,000.0	6,730.4	12,090.8	6,805.3	97.6	97.9	107.77	4,805.9	476.0	245.6	58.7	186.87	1.314 Level 3	
12,100.0	6,730.2	12,190.8	6,805.1	99.5	99.8	107.75	4,905.9	476.0	245.5	55.0	190.52	1.289 Level 3	
12,200.0	6,730.1	12,290.8	6,804.8	101.4	101.7	107.72	5,005.9	476.0	245.5	51.3	194.17	1.264 Level 3	
12,300.0	6,729.9	12,390.8	6,804.6	103.3	103.6	107.70	5,105.9	476.0	245.5	47.6	197.83	1.241 Level 2	
12,400.0	6,729.8	12,490.8	6,804.3	105.2	105.5	107.68	5,205.9	476.0	245.4	43.9	201.49	1.218 Level 2	
12,500.0	6,729.6	12,590.8	6,804.0	107.1	107.4	107.65	5,305.9	476.0	245.4	40.2	205.15	1.196 Level 2	
12,600.0	6,729.5	12,690.8	6,803.8	109.0	109.2	107.63	5,405.9	476.0	245.4	36.5	208.82	1.175 Level 2	
12,700.0	6,729.3	12,790.8	6,803.5	110.9	111.1	107.61	5,505.9	476.0	245.3	32.8	212.49	1.155 Level 2	
12,800.0	6,729.1	12,890.8	6,803.3	112.8	113.0	107.58	5,605.9	476.0	245.3	29.1	216.16	1.135 Level 2	
12,900.0	6,729.0	12,990.8	6,803.0	114.7	114.9	107.56	5,705.9	476.0	245.3	25.4	219.83	1.116 Level 2	
13,000.0	6,728.8	13,090.8	6,802.7	116.6	116.8	107.54	5,805.9	476.0	245.2	21.7	223.50	1.097 Level 2	
13,100.0	6,728.7	13,190.8	6,802.5	118.5	118.7	107.51	5,905.9	476.0	245.2	18.0	227.18	1.079 Level 2	
13,200.0	6,728.5	13,290.8	6,802.2	120.4	120.6	107.49	6,005.9	476.0	245.2	14.3	230.86	1.062 Level 2	
13,300.0	6,728.4	13,390.8	6,801.9	122.3	122.5	107.47	6,105.9	476.0	245.1	10.6	234.54	1.045 Level 2	
13,400.0	6,728.2	13,490.8	6,801.7	124.2	124.4	107.44	6,205.9	476.0	245.1	6.9	238.22	1.029 Level 2	
13,500.0	6,728.0	13,590.8	6,801.4	126.1	126.3	107.42	6,305.9	476.0	245.1	3.2	241.90	1.013 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 7L-201
<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 7L-201	<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 (9-10-15)	<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							
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
13,600.0	6,727.9	13,690.8	6,801.2	128.0	128.2	107.40	6,405.9	476.0	245.0	-0.5	245.59	0.998	Level 1
13,700.0	6,727.7	13,790.8	6,800.9	129.9	130.1	107.37	6,505.9	476.0	245.0	-4.3	249.27	0.983	Level 1
13,800.0	6,727.6	13,890.8	6,800.6	131.8	132.0	107.35	6,605.9	476.0	245.0	-8.0	252.96	0.968	Level 1
13,900.0	6,727.4	13,990.8	6,800.4	133.7	133.9	107.33	6,705.9	476.0	245.0	-11.7	256.65	0.954	Level 1
14,000.0	6,727.3	14,090.8	6,800.1	135.6	135.8	107.30	6,805.9	476.0	244.9	-15.4	260.34	0.941	Level 1
14,100.0	6,727.1	14,190.8	6,799.8	137.5	137.7	107.28	6,905.9	476.0	244.9	-19.1	264.04	0.927	Level 1
14,200.0	6,726.9	14,290.8	6,799.6	139.4	139.6	107.26	7,005.9	476.0	244.9	-22.9	267.73	0.915	Level 1
14,300.0	6,726.8	14,390.8	6,799.3	141.3	141.5	107.23	7,105.9	476.0	244.8	-26.6	271.43	0.902	Level 1
14,400.0	6,726.6	14,490.8	6,799.1	143.3	143.5	107.21	7,205.9	476.0	244.8	-30.3	275.13	0.890	Level 1
14,500.0	6,726.5	14,590.8	6,798.8	145.2	145.4	107.19	7,305.9	476.0	244.8	-34.1	278.83	0.878	Level 1
14,600.0	6,726.3	14,690.8	6,798.5	147.1	147.3	107.16	7,405.9	476.0	244.7	-37.8	282.53	0.866	Level 1
14,700.0	6,726.2	14,790.8	6,798.3	149.0	149.2	107.14	7,505.9	476.0	244.7	-41.5	286.23	0.855	Level 1
14,800.0	6,726.0	14,890.8	6,798.0	150.9	151.1	107.12	7,605.9	476.0	244.7	-45.3	289.93	0.844	Level 1
14,900.0	6,725.8	14,990.8	6,797.8	152.8	153.0	107.09	7,705.9	476.0	244.6	-49.0	293.64	0.833	Level 1
15,000.0	6,725.7	15,090.8	6,797.5	154.7	154.9	107.07	7,805.9	476.0	244.6	-52.7	297.34	0.823	Level 1
15,100.0	6,725.5	15,190.8	6,797.2	156.6	156.8	107.05	7,905.9	476.0	244.6	-56.5	301.05	0.812	Level 1
15,200.0	6,725.4	15,290.8	6,797.0	158.5	158.7	107.02	8,005.9	476.0	244.6	-60.2	304.76	0.802	Level 1
15,300.0	6,725.2	15,390.8	6,796.7	160.4	160.6	107.00	8,105.9	476.0	244.5	-63.9	308.47	0.793	Level 1
15,400.0	6,725.1	15,490.8	6,796.4	162.3	162.5	106.98	8,205.9	476.0	244.5	-67.7	312.18	0.783	Level 1
15,500.0	6,724.9	15,590.8	6,796.2	164.2	164.4	106.95	8,305.9	476.0	244.5	-71.4	315.89	0.774	Level 1
15,600.0	6,724.7	15,690.8	6,795.9	166.2	166.3	106.93	8,405.9	476.0	244.4	-75.2	319.60	0.765	Level 1
15,700.0	6,724.6	15,790.8	6,795.7	168.1	168.2	106.90	8,505.9	476.0	244.4	-78.9	323.32	0.756	Level 1
15,800.0	6,724.4	15,890.8	6,795.4	170.0	170.2	106.88	8,605.9	476.0	244.4	-82.7	327.03	0.747	Level 1
15,900.0	6,724.3	15,990.8	6,795.1	171.9	172.1	106.86	8,705.9	476.0	244.3	-86.4	330.75	0.739	Level 1
16,000.0	6,724.1	16,090.8	6,794.9	173.8	174.0	106.83	8,805.9	476.0	244.3	-90.2	334.47	0.730	Level 1
16,100.0	6,724.0	16,190.8	6,794.6	175.7	175.9	106.81	8,905.9	476.0	244.3	-93.9	338.19	0.722	Level 1
16,200.0	6,723.8	16,290.8	6,794.3	177.6	177.8	106.79	9,005.9	476.0	244.2	-97.7	341.91	0.714	Level 1
16,300.0	6,723.6	16,390.8	6,794.1	179.5	179.7	106.76	9,105.9	476.0	244.2	-101.4	345.63	0.707	Level 1
16,400.0	6,723.5	16,490.8	6,793.8	181.4	181.6	106.74	9,205.9	476.0	244.2	-105.2	349.35	0.699	Level 1
16,500.0	6,723.3	16,590.8	6,793.6	183.4	183.5	106.72	9,305.9	476.0	244.2	-108.9	353.08	0.692	Level 1
16,600.0	6,723.2	16,690.8	6,793.3	185.3	185.4	106.69	9,405.9	476.0	244.1	-112.7	356.80	0.684	Level 1
16,700.0	6,723.0	16,790.8	6,793.0	187.2	187.3	106.67	9,505.9	476.0	244.1	-116.4	360.53	0.677	Level 1
16,713.4	6,723.0	16,804.2	6,793.0	187.4	187.6	106.67	9,519.3	476.0	244.1	-116.9	361.03	0.676	Level 1, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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						
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
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	267.459	
200.0	200.0	200.0	200.0	0.3	0.3	0.53	60.1	0.6	60.1	59.4	0.67	89.147	
300.0	300.0	300.0	300.0	0.6	0.6	0.53	60.1	0.6	60.1	59.0	1.12	53.488	
400.0	400.0	400.0	400.0	0.8	0.8	0.53	60.1	0.6	60.1	58.5	1.57	38.205	
500.0	500.0	500.0	500.0	1.0	1.0	0.53	60.1	0.6	60.1	58.1	2.02	29.715	
600.0	600.0	600.0	600.0	1.2	1.2	0.53	60.1	0.6	60.1	57.6	2.47	24.312	
700.0	700.0	700.0	700.0	1.5	1.5	0.53	60.1	0.6	60.1	57.2	2.92	20.572	
800.0	800.0	800.0	800.0	1.7	1.7	0.53	60.1	0.6	60.1	56.7	3.37	17.829	
900.0	900.0	900.0	900.0	1.9	1.9	0.53	60.1	0.6	60.1	56.3	3.82	15.731	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.53	60.1	0.6	60.1	55.8	4.27	14.076	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.53	60.1	0.6	60.1	55.4	4.72	12.735	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.53	60.1	0.6	60.1	54.9	5.17	11.628	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.53	60.1	0.6	60.1	54.5	5.62	10.697	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.53	60.1	0.6	60.1	54.0	6.07	9.905 CC	
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.3	-161.12	60.1	0.6	61.3	54.9	6.49	9.453	
1,600.0	1,599.9	1,599.9	1,599.9	3.4	3.5	-162.22	60.1	0.6	65.1	58.2	6.89	9.451	
1,700.0	1,699.7	1,699.7	1,699.7	3.6	3.7	-163.79	60.1	0.6	71.3	64.0	7.28	9.793	
1,800.0	1,799.3	1,799.3	1,799.3	3.8	3.9	-165.59	60.1	0.6	80.2	72.5	7.68	10.434	
1,900.0	1,898.6	1,898.6	1,898.6	4.0	4.2	-167.38	60.1	0.6	91.6	83.5	8.08	11.334	
2,000.0	1,997.5	1,997.5	1,997.5	4.2	4.4	-169.04	60.1	0.6	105.6	97.2	8.48	12.460	
2,100.0	2,096.1	2,096.1	2,096.1	4.5	4.6	-170.50	60.1	0.6	122.3	113.4	8.87	13.783	
2,160.9	2,155.9	2,155.9	2,155.9	4.7	4.7	-171.30	60.1	0.6	133.7	124.6	9.11	14.674	
2,200.0	2,194.2	2,194.2	2,194.2	4.8	4.8	-171.77	60.1	0.6	141.4	132.1	9.28	15.236	
2,300.0	2,292.2	2,292.2	2,292.2	5.1	5.0	-172.78	60.1	0.6	161.0	151.3	9.71	16.581	
2,400.0	2,390.2	2,390.2	2,390.2	5.5	5.3	-173.57	60.1	0.6	180.7	170.5	10.15	17.807	
2,500.0	2,488.3	2,488.3	2,488.3	5.8	5.5	-174.20	60.1	0.6	200.4	189.8	10.59	18.927	
2,600.0	2,586.3	2,591.4	2,591.3	6.2	5.7	-174.82	59.0	0.5	219.1	208.1	11.01	19.893	
2,700.0	2,684.3	2,696.0	2,695.9	6.5	5.9	-175.54	55.1	0.4	235.2	223.8	11.41	20.607	
2,800.0	2,782.3	2,801.4	2,801.1	6.9	6.0	-176.35	48.2	0.2	248.8	237.0	11.82	21.042	
2,900.0	2,880.4	2,907.5	2,906.7	7.3	6.2	-177.28	38.4	-0.1	259.8	247.6	12.24	21.220	
3,000.0	2,978.4	3,014.1	3,012.5	7.7	6.4	-178.32	25.6	-0.4	268.2	255.6	12.67	21.167	
3,100.0	3,076.4	3,120.9	3,118.2	8.1	6.7	-179.52	9.8	-0.9	274.1	261.0	13.11	20.906	
3,200.0	3,174.4	3,227.9	3,223.5	8.5	6.9	179.13	-9.0	-1.4	277.5	263.9	13.56	20.458	
3,300.0	3,272.5	3,334.9	3,328.3	8.9	7.2	177.57	-30.7	-2.0	278.4	264.4	14.03	19.839	
3,400.0	3,370.5	3,441.7	3,432.2	9.3	7.5	175.78	-55.3	-2.7	276.9	262.4	14.52	19.067	
3,500.0	3,468.5	3,548.2	3,535.0	9.8	7.8	173.71	-82.7	-3.5	273.2	258.2	15.05	18.158	
3,600.0	3,566.5	3,654.1	3,636.6	10.2	8.2	171.29	-112.8	-4.4	267.4	251.8	15.61	17.128	
3,700.0	3,664.5	3,758.1	3,735.5	10.6	8.7	168.49	-145.1	-5.3	259.7	243.4	16.23	15.999	
3,800.0	3,762.6	3,856.9	3,829.2	11.0	9.1	165.57	-176.6	-6.2	251.8	234.9	16.90	14.903	
3,900.0	3,860.6	3,955.8	3,922.9	11.4	9.6	162.47	-208.0	-7.1	244.7	227.1	17.64	13.875	
4,000.0	3,958.6	4,054.6	4,016.5	11.9	10.1	159.19	-239.5	-7.9	238.4	219.9	18.45	12.916	
4,100.0	4,056.6	4,153.4	4,110.2	12.3	10.6	155.76	-271.0	-8.8	232.8	213.5	19.36	12.028	
4,200.0	4,154.7	4,252.2	4,203.9	12.7	11.1	152.17	-302.5	-9.7	228.2	207.9	20.35	11.215	
4,300.0	4,252.7	4,351.1	4,297.6	13.2	11.6	148.45	-333.9	-10.6	224.5	203.1	21.42	10.480	
4,400.0	4,350.7	4,449.9	4,391.2	13.6	12.1	144.63	-365.4	-11.5	221.8	199.2	22.58	9.823	
4,500.0	4,448.7	4,548.7	4,484.9	14.0	12.7	140.73	-396.9	-12.4	220.2	196.4	23.81	9.248	
4,600.0	4,546.7	4,647.5	4,578.6	14.4	13.2	136.80	-428.3	-13.3	219.6	194.5	25.09	8.751	
4,607.0	4,553.6	4,654.5	4,585.2	14.5	13.3	136.52	-430.6	-13.4	219.6	194.4	25.18	8.719	
4,700.0	4,644.8	4,746.4	4,672.3	14.9	13.8	132.86	-459.8	-14.2	220.0	193.6	26.41	8.331	
4,800.0	4,742.8	4,845.2	4,765.9	15.3	14.4	128.96	-491.3	-15.1	221.5	193.8	27.75	7.984	

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 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7L-341 - 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 (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					
4,900.0	4,840.8	4,944.0	4,859.6	15.8	15.0	125.12	-522.8	-16.0	224.1	195.0	29.09	7.704					
5,000.0	4,938.8	5,042.8	4,953.3	16.2	15.5	121.39	-554.2	-16.9	227.6	197.2	30.41	7.485					
5,100.0	5,036.9	5,141.0	5,046.5	16.6	16.0	117.97	-584.9	-17.7	232.2	200.6	31.61	7.346					
5,200.0	5,134.9	5,239.3	5,140.9	17.1	16.5	115.44	-612.5	-18.5	237.9	205.3	32.64	7.289					
5,300.2	5,233.1	5,338.4	5,236.9	17.5	16.9	113.81	-637.1	-19.2	244.3	210.7	33.57	7.277					
5,400.0	5,331.3	5,437.4	5,333.6	17.9	17.2	112.79	-658.4	-19.8	250.3	215.9	34.36	7.284					
5,500.0	5,430.2	5,536.9	5,431.4	18.1	17.6	111.85	-676.3	-20.3	255.2	220.2	35.03	7.286					
5,600.0	5,529.5	5,636.5	5,529.9	18.4	17.9	110.97	-690.9	-20.8	259.0	223.4	35.62	7.272					
5,700.0	5,629.2	5,736.4	5,629.2	18.6	18.1	110.14	-702.1	-21.1	261.7	225.6	36.13	7.243					
5,800.0	5,729.1	5,836.4	5,728.9	18.7	18.4	109.35	-709.8	-21.3	263.2	226.7	36.56	7.199					
5,870.9	5,800.0	5,907.3	5,799.7	18.8	18.5	-89.94	-713.1	-21.4	263.6	226.7	36.83	7.157					
5,900.0	5,829.1	5,936.5	5,828.9	18.9	18.5	-90.13	-714.0	-21.4	263.6	226.7	36.92	7.139					
6,000.0	5,929.1	6,036.8	5,929.1	19.0	18.7	-90.32	-714.9	-21.4	263.6	226.4	37.21	7.085					
6,044.8	5,973.9	6,081.5	5,973.9	19.1	18.8	-90.32	-714.9	-21.4	263.6	226.3	37.33	7.062					
6,050.0	5,979.1	6,086.8	5,979.1	19.1	18.8	-90.33	-714.9	-21.4	263.6	226.3	37.35	7.059					
6,100.0	6,029.1	6,136.7	6,029.1	19.1	18.8	-90.76	-714.9	-21.4	263.6	226.2	37.48	7.035					
6,150.0	6,078.8	6,186.6	6,079.0	19.1	18.9	-91.83	-714.6	-21.4	263.8	226.2	37.60	7.016					
6,200.0	6,128.1	6,237.1	6,129.4	19.1	18.9	-93.02	-711.6	-21.4	264.0	226.3	37.65	7.012					
6,250.0	6,176.7	6,287.9	6,179.8	19.1	18.9	-94.20	-705.3	-21.4	264.3	226.7	37.63	7.026					
6,300.0	6,224.4	6,339.1	6,230.0	19.0	18.9	-95.37	-695.5	-21.4	264.8	227.3	37.52	7.057					
6,350.0	6,271.1	6,390.7	6,279.8	18.9	18.8	-96.51	-682.2	-21.4	265.4	228.0	37.35	7.105					
6,400.0	6,316.5	6,442.6	6,329.0	18.8	18.7	-97.63	-665.5	-21.4	266.0	228.9	37.10	7.170					
6,450.0	6,360.4	6,495.0	6,377.3	18.6	18.6	-98.71	-645.3	-21.4	266.7	230.0	36.78	7.252					
6,500.0	6,402.7	6,547.7	6,424.4	18.5	18.4	-99.75	-621.7	-21.4	267.5	231.1	36.41	7.348					
6,550.0	6,443.1	6,600.8	6,470.2	18.3	18.2	-100.74	-594.7	-21.4	268.4	232.4	35.99	7.457					
6,600.0	6,481.5	6,654.3	6,514.2	18.1	18.0	-101.69	-564.3	-21.4	269.3	233.7	35.53	7.579					
6,650.0	6,517.8	6,708.1	6,556.2	18.0	17.8	-102.58	-530.8	-21.4	270.2	235.1	35.04	7.710					
6,700.0	6,551.7	6,762.3	6,596.0	17.8	17.5	-103.41	-494.1	-21.4	271.1	236.5	34.55	7.846					
6,750.0	6,583.2	6,816.8	6,633.4	17.6	17.3	-104.18	-454.4	-21.4	272.0	237.9	34.06	7.985					
6,800.0	6,612.0	6,871.6	6,668.0	17.5	17.1	-104.88	-411.9	-21.5	272.8	239.2	33.60	8.120					
6,850.0	6,638.1	6,926.6	6,699.6	17.4	16.9	-105.52	-366.8	-21.5	273.7	240.5	33.18	8.248					
6,900.0	6,661.4	6,982.0	6,728.0	17.3	16.7	-106.08	-319.4	-21.5	274.4	241.6	32.82	8.360					
6,950.0	6,681.7	7,037.5	6,753.0	17.2	16.5	-106.57	-269.8	-21.5	275.1	242.5	32.55	8.453					
7,000.0	6,699.0	7,093.3	6,774.4	17.2	16.4	-106.98	-218.3	-21.5	275.7	243.3	32.36	8.518					
7,050.0	6,713.2	7,149.2	6,792.1	17.2	16.4	-107.31	-165.2	-21.5	276.2	243.9	32.29	8.552					
7,100.0	6,724.2	7,205.3	6,805.8	17.2	16.4	-107.56	-110.9	-21.5	276.6	244.2	32.35	8.550					
7,150.0	6,732.0	7,261.5	6,815.5	17.3	16.4	-107.74	-55.6	-21.5	276.8	244.3	32.53	8.510					
7,200.0	6,736.6	7,317.7	6,821.2	17.5	16.6	-107.83	0.4	-21.5	277.0	244.1	32.84	8.433					
7,246.0	6,737.9	7,369.4	6,822.7	17.7	16.7	-107.84	52.0	-21.5	277.0	243.8	33.24	8.334					
7,300.0	6,737.8	7,423.4	6,822.6	18.0	17.0	-107.82	106.0	-21.5	277.0	243.2	33.80	8.193					
7,400.0	6,737.6	7,523.4	6,822.3	18.7	17.6	-107.79	206.0	-21.5	276.9	241.8	35.10	7.889					
7,500.0	6,737.5	7,623.4	6,821.9	19.5	18.4	-107.76	306.0	-21.5	276.9	240.2	36.72	7.539					
7,600.0	6,737.3	7,723.4	6,821.6	20.6	19.3	-107.73	406.0	-21.5	276.8	238.2	38.63	7.166					
7,700.0	6,737.2	7,823.4	6,821.3	21.7	20.4	-107.70	506.0	-21.5	276.8	236.0	40.79	6.786					
7,800.0	6,737.0	7,923.4	6,821.0	23.0	21.5	-107.67	606.0	-21.5	276.8	233.6	43.15	6.413					
7,900.0	6,736.8	8,023.4	6,820.7	24.3	22.8	-107.64	706.0	-21.5	276.7	231.0	45.69	6.056					
8,000.0	6,736.7	8,123.4	6,820.4	25.8	24.2	-107.61	806.0	-21.5	276.7	228.3	48.38	5.718					
8,100.0	6,736.5	8,223.4	6,820.1	27.2	25.7	-107.57	906.0	-21.5	276.6	225.4	51.20	5.403					
8,200.0	6,736.4	8,323.4	6,819.7	28.8	27.2	-107.54	1,006.0	-21.5	276.6	222.5	54.13	5.110					
8,300.0	6,736.2	8,423.4	6,819.4	30.3	28.7	-107.51	1,106.0	-21.5	276.5	219.4	57.14	4.840					
8,400.0	6,736.1	8,523.4	6,819.1	31.9	30.3	-107.48	1,206.0	-21.5	276.5	216.3	60.23	4.591					

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 7L-201
<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 7L-201	<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 (9-10-15)	<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						
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	6,735.9	8,623.4	6,818.8	33.6	31.9	-107.45	1,306.0	-21.5	276.5	213.1	63.39	4.361	
8,600.0	6,735.7	8,723.4	6,818.5	35.3	33.6	-107.42	1,406.0	-21.6	276.4	209.8	66.60	4.150	
8,700.0	6,735.6	8,823.4	6,818.2	36.9	35.3	-107.39	1,506.0	-21.6	276.4	206.5	69.86	3.956	
8,800.0	6,735.4	8,923.4	6,817.9	38.7	37.0	-107.35	1,606.0	-21.6	276.3	203.2	73.17	3.777	
8,900.0	6,735.3	9,023.4	6,817.5	40.4	38.7	-107.32	1,706.0	-21.6	276.3	199.8	76.51	3.611	
9,000.0	6,735.1	9,123.4	6,817.2	42.1	40.5	-107.29	1,806.0	-21.6	276.2	196.4	79.89	3.458	
9,100.0	6,735.0	9,223.4	6,816.9	43.9	42.2	-107.26	1,906.0	-21.6	276.2	192.9	83.29	3.316	
9,200.0	6,734.8	9,323.4	6,816.6	45.7	44.0	-107.23	2,006.0	-21.6	276.2	189.4	86.72	3.185	
9,300.0	6,734.6	9,423.4	6,816.3	47.5	45.8	-107.20	2,106.0	-21.6	276.1	186.0	90.17	3.062	
9,400.0	6,734.5	9,523.4	6,816.0	49.3	47.6	-107.17	2,206.0	-21.6	276.1	182.4	93.64	2.948	
9,500.0	6,734.3	9,623.4	6,815.7	51.1	49.4	-107.13	2,306.0	-21.6	276.0	178.9	97.13	2.842	
9,600.0	6,734.2	9,723.4	6,815.3	52.9	51.2	-107.10	2,406.0	-21.6	276.0	175.4	100.64	2.742	
9,700.0	6,734.0	9,823.4	6,815.0	54.7	53.1	-107.07	2,506.0	-21.6	276.0	171.8	104.16	2.649	
9,800.0	6,733.9	9,923.4	6,814.7	56.5	54.9	-107.04	2,606.0	-21.6	275.9	168.2	107.70	2.562	
9,900.0	6,733.7	10,023.4	6,814.4	58.4	56.7	-107.01	2,706.0	-21.6	275.9	164.6	111.25	2.480	
10,000.0	6,733.5	10,123.4	6,814.1	60.2	58.6	-106.98	2,806.0	-21.6	275.8	161.0	114.81	2.403	
10,100.0	6,733.4	10,223.4	6,813.8	62.1	60.4	-106.94	2,906.0	-21.6	275.8	157.4	118.38	2.330	
10,200.0	6,733.2	10,323.4	6,813.5	63.9	62.3	-106.91	3,006.0	-21.6	275.8	153.8	121.96	2.261	
10,300.0	6,733.1	10,423.4	6,813.1	65.8	64.1	-106.88	3,106.0	-21.6	275.7	150.2	125.55	2.196	
10,400.0	6,732.9	10,523.4	6,812.8	67.6	66.0	-106.85	3,206.0	-21.6	275.7	146.5	129.14	2.135	
10,500.0	6,732.8	10,623.4	6,812.5	69.5	67.8	-106.82	3,306.0	-21.7	275.6	142.9	132.75	2.076	
10,600.0	6,732.6	10,723.4	6,812.2	71.3	69.7	-106.79	3,406.0	-21.7	275.6	139.2	136.36	2.021	
10,700.0	6,732.4	10,823.4	6,811.9	73.2	71.6	-106.76	3,506.0	-21.7	275.6	135.6	139.98	1.969	
10,800.0	6,732.3	10,923.4	6,811.6	75.1	73.4	-106.72	3,606.0	-21.7	275.5	131.9	143.60	1.919	
10,900.0	6,732.1	11,023.4	6,811.3	76.9	75.3	-106.69	3,706.0	-21.7	275.5	128.2	147.23	1.871	
11,000.0	6,732.0	11,123.4	6,810.9	78.8	77.2	-106.66	3,806.0	-21.7	275.4	124.6	150.87	1.826	
11,100.0	6,731.8	11,223.4	6,810.6	80.7	79.1	-106.63	3,906.0	-21.7	275.4	120.9	154.51	1.782	
11,200.0	6,731.7	11,323.4	6,810.3	82.6	80.9	-106.60	4,006.0	-21.7	275.4	117.2	158.15	1.741	
11,300.0	6,731.5	11,423.4	6,810.0	84.4	82.8	-106.57	4,106.0	-21.7	275.3	113.5	161.80	1.702	
11,400.0	6,731.3	11,523.4	6,809.7	86.3	84.7	-106.53	4,206.0	-21.7	275.3	109.8	165.46	1.664	
11,500.0	6,731.2	11,623.4	6,809.4	88.2	86.6	-106.50	4,306.0	-21.7	275.2	106.1	169.12	1.627	
11,600.0	6,731.0	11,723.4	6,809.1	90.1	88.5	-106.47	4,406.0	-21.7	275.2	102.4	172.78	1.593	
11,700.0	6,730.9	11,823.4	6,808.7	92.0	90.4	-106.44	4,506.0	-21.7	275.2	98.7	176.44	1.559	
11,800.0	6,730.7	11,923.4	6,808.4	93.9	92.3	-106.41	4,606.0	-21.7	275.1	95.0	180.11	1.527	
11,900.0	6,730.6	12,023.4	6,808.1	95.8	94.1	-106.38	4,706.0	-21.7	275.1	91.3	183.79	1.497 Level 3	
12,000.0	6,730.4	12,123.4	6,807.8	97.6	96.0	-106.34	4,806.0	-21.7	275.0	87.6	187.46	1.467 Level 3	
12,100.0	6,730.2	12,223.4	6,807.5	99.5	97.9	-106.31	4,906.0	-21.7	275.0	83.9	191.14	1.439 Level 3	
12,200.0	6,730.1	12,323.4	6,807.2	101.4	99.8	-106.28	5,006.0	-21.7	275.0	80.1	194.83	1.411 Level 3	
12,300.0	6,729.9	12,423.4	6,806.9	103.3	101.7	-106.25	5,106.0	-21.8	274.9	76.4	198.51	1.385 Level 3	
12,400.0	6,729.8	12,523.4	6,806.5	105.2	103.6	-106.22	5,206.0	-21.8	274.9	72.7	202.20	1.359 Level 3	
12,500.0	6,729.6	12,623.4	6,806.2	107.1	105.5	-106.18	5,306.0	-21.8	274.8	69.0	205.89	1.335 Level 3	
12,600.0	6,729.5	12,723.4	6,805.9	109.0	107.4	-106.15	5,406.0	-21.8	274.8	65.2	209.59	1.311 Level 3	
12,700.0	6,729.3	12,823.4	6,805.6	110.9	109.3	-106.12	5,506.0	-21.8	274.8	61.5	213.28	1.288 Level 3	
12,800.0	6,729.1	12,923.4	6,805.3	112.8	111.2	-106.09	5,606.0	-21.8	274.7	57.7	216.98	1.266 Level 3	
12,900.0	6,729.0	13,023.4	6,805.0	114.7	113.1	-106.06	5,706.0	-21.8	274.7	54.0	220.68	1.245 Level 2	
13,000.0	6,728.8	13,123.4	6,804.7	116.6	115.0	-106.03	5,806.0	-21.8	274.7	50.3	224.39	1.224 Level 2	
13,100.0	6,728.7	13,223.4	6,804.3	118.5	116.9	-105.99	5,906.0	-21.8	274.6	46.5	228.09	1.204 Level 2	
13,200.0	6,728.5	13,323.4	6,804.0	120.4	118.8	-105.96	6,006.0	-21.8	274.6	42.8	231.80	1.185 Level 2	
13,300.0	6,728.4	13,423.4	6,803.7	122.3	120.7	-105.93	6,106.0	-21.8	274.5	39.0	235.51	1.166 Level 2	
13,400.0	6,728.2	13,523.4	6,803.4	124.2	122.6	-105.90	6,206.0	-21.8	274.5	35.3	239.22	1.147 Level 2	
13,500.0	6,728.0	13,623.4	6,803.1	126.1	124.5	-105.87	6,306.0	-21.8	274.5	31.5	242.93	1.130 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 7L-201
<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 7L-201	<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 (9-10-15)	<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						
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
13,600.0	6,727.9	13,723.4	6,802.8	128.0	126.4	-105.83	6,406.0	-21.8	274.4	27.8	246.65	1.113	Level 2
13,700.0	6,727.7	13,823.4	6,802.5	129.9	128.3	-105.80	6,506.0	-21.8	274.4	24.0	250.37	1.096	Level 2
13,800.0	6,727.6	13,923.4	6,802.1	131.8	130.2	-105.77	6,606.0	-21.8	274.4	20.3	254.09	1.080	Level 2
13,900.0	6,727.4	14,023.4	6,801.8	133.7	132.1	-105.74	6,706.0	-21.8	274.3	16.5	257.81	1.064	Level 2
14,000.0	6,727.3	14,123.4	6,801.5	135.6	134.0	-105.71	6,806.0	-21.8	274.3	12.7	261.53	1.049	Level 2
14,100.0	6,727.1	14,223.4	6,801.2	137.5	136.0	-105.68	6,906.0	-21.8	274.2	9.0	265.26	1.034	Level 2
14,200.0	6,726.9	14,323.4	6,800.9	139.4	137.9	-105.64	7,006.0	-21.9	274.2	5.2	268.98	1.019	Level 2
14,300.0	6,726.8	14,423.4	6,800.6	141.3	139.8	-105.61	7,106.0	-21.9	274.2	1.5	272.71	1.005	Level 2
14,400.0	6,726.6	14,523.4	6,800.3	143.3	141.7	-105.58	7,206.0	-21.9	274.1	-2.3	276.44	0.992	Level 1
14,500.0	6,726.5	14,623.4	6,799.9	145.2	143.6	-105.55	7,306.0	-21.9	274.1	-6.1	280.17	0.978	Level 1
14,600.0	6,726.3	14,723.4	6,799.6	147.1	145.5	-105.52	7,406.0	-21.9	274.1	-9.9	283.91	0.965	Level 1
14,700.0	6,726.2	14,823.4	6,799.3	149.0	147.4	-105.48	7,506.0	-21.9	274.0	-13.6	287.64	0.953	Level 1
14,800.0	6,726.0	14,923.4	6,799.0	150.9	149.3	-105.45	7,606.0	-21.9	274.0	-17.4	291.38	0.940	Level 1
14,900.0	6,725.8	15,023.4	6,798.7	152.8	151.2	-105.42	7,706.0	-21.9	273.9	-21.2	295.11	0.928	Level 1
15,000.0	6,725.7	15,123.4	6,798.4	154.7	153.1	-105.39	7,806.0	-21.9	273.9	-24.9	298.85	0.917	Level 1
15,100.0	6,725.5	15,223.4	6,798.1	156.6	155.0	-105.36	7,906.0	-21.9	273.9	-28.7	302.59	0.905	Level 1
15,200.0	6,725.4	15,323.4	6,797.7	158.5	156.9	-105.32	8,006.0	-21.9	273.8	-32.5	306.34	0.894	Level 1
15,300.0	6,725.2	15,423.4	6,797.4	160.4	158.9	-105.29	8,106.0	-21.9	273.8	-36.3	310.08	0.883	Level 1
15,400.0	6,725.1	15,523.4	6,797.1	162.3	160.8	-105.26	8,206.0	-21.9	273.8	-40.1	313.82	0.872	Level 1
15,500.0	6,724.9	15,623.4	6,796.8	164.2	162.7	-105.23	8,306.0	-21.9	273.7	-43.8	317.57	0.862	Level 1
15,600.0	6,724.7	15,723.4	6,796.5	166.2	164.6	-105.20	8,406.0	-21.9	273.7	-47.6	321.32	0.852	Level 1
15,700.0	6,724.6	15,823.4	6,796.2	168.1	166.5	-105.16	8,506.0	-21.9	273.7	-51.4	325.07	0.842	Level 1
15,800.0	6,724.4	15,923.4	6,795.9	170.0	168.4	-105.13	8,606.0	-21.9	273.6	-55.2	328.82	0.832	Level 1
15,900.0	6,724.3	16,023.4	6,795.5	171.9	170.3	-105.10	8,706.0	-21.9	273.6	-59.0	332.57	0.823	Level 1
16,000.0	6,724.1	16,123.4	6,795.2	173.8	172.2	-105.07	8,805.9	-22.0	273.5	-62.8	336.32	0.813	Level 1
16,100.0	6,724.0	16,223.4	6,794.9	175.7	174.1	-105.04	8,905.9	-22.0	273.5	-66.6	340.07	0.804	Level 1
16,200.0	6,723.8	16,323.4	6,794.6	177.6	176.1	-105.00	9,005.9	-22.0	273.5	-70.4	343.83	0.795	Level 1
16,300.0	6,723.6	16,423.4	6,794.3	179.5	178.0	-104.97	9,105.9	-22.0	273.4	-74.1	347.59	0.787	Level 1
16,400.0	6,723.5	16,523.4	6,794.0	181.4	179.9	-104.94	9,205.9	-22.0	273.4	-77.9	351.34	0.778	Level 1
16,500.0	6,723.3	16,623.4	6,793.7	183.4	181.8	-104.91	9,305.9	-22.0	273.4	-81.7	355.10	0.770	Level 1
16,600.0	6,723.2	16,723.4	6,793.3	185.3	183.7	-104.88	9,405.9	-22.0	273.3	-85.5	358.86	0.762	Level 1
16,700.0	6,723.0	16,823.4	6,793.0	187.2	185.6	-104.84	9,505.9	-22.0	273.3	-89.3	362.62	0.754	Level 1
16,710.6	6,723.0	16,834.0	6,793.0	187.4	185.8	-104.84	9,516.6	-22.0	273.3	-89.7	363.02	0.753	Level 1
16,713.4	6,723.0	16,834.0	6,793.0	187.4	185.8	-104.84	9,516.6	-22.0	273.3	-89.8	363.07	0.753	Level 1, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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													Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-179.47	-90.0	-0.8	90.0					
100.0	100.0	100.0	100.0	0.1	0.1	-179.47	-90.0	-0.8	90.0	89.8	0.22	400.423		
200.0	200.0	200.0	200.0	0.3	0.3	-179.47	-90.0	-0.8	90.0	89.3	0.67	133.466 CC		
300.0	300.0	299.2	299.2	0.6	0.5	179.76	-90.4	0.4	90.4	89.3	1.11	81.629 ES		
400.0	400.0	398.4	398.3	0.8	0.8	177.48	-91.6	4.0	91.8	90.2	1.54	59.426		
500.0	500.0	497.2	496.9	1.0	1.0	173.85	-93.7	10.1	94.3	92.3	2.00	47.145		
600.0	600.0	595.6	594.9	1.2	1.2	169.13	-96.6	18.5	98.5	96.0	2.48	39.748		
700.0	700.0	693.6	692.2	1.5	1.5	163.70	-100.3	29.3	104.7	101.8	2.98	35.193		
800.0	800.0	790.8	788.5	1.7	1.8	157.98	-104.7	42.3	113.5	110.0	3.49	32.491		
900.0	900.0	887.4	883.6	1.9	2.2	152.36	-109.9	57.5	125.1	121.1	4.03	31.080		
1,000.0	1,000.0	983.0	977.5	2.1	2.6	147.11	-115.8	74.9	139.7	135.1	4.57	30.592 SF		
1,100.0	1,100.0	1,077.6	1,069.9	2.4	3.0	142.41	-122.3	94.2	157.3	152.2	5.11	30.769		
1,200.0	1,200.0	1,171.2	1,160.8	2.6	3.4	138.31	-129.6	115.4	177.9	172.2	5.66	31.420		
1,300.0	1,300.0	1,263.6	1,249.9	2.8	3.9	134.79	-137.4	138.4	201.4	195.2	6.21	32.406		
1,400.0	1,400.0	1,354.7	1,337.2	3.0	4.4	131.79	-145.8	163.1	227.6	220.9	6.77	33.627		
1,500.0	1,500.0	1,444.7	1,422.8	3.2	5.0	-31.92	-154.8	189.4	255.5	248.6	6.83	37.411		
1,600.0	1,599.9	1,533.8	1,506.9	3.4	5.6	-34.24	-164.3	217.4	283.8	276.6	7.26	39.116		
1,700.0	1,699.7	1,621.9	1,589.3	3.6	6.2	-36.45	-174.3	246.8	312.8	305.2	7.69	40.693		
1,800.0	1,799.3	1,709.1	1,670.1	3.8	6.9	-38.54	-184.8	277.7	342.5	334.4	8.13	42.158		
1,900.0	1,898.6	1,795.2	1,749.2	4.0	7.6	-40.52	-195.8	309.9	373.0	364.4	8.57	43.509		
2,000.0	1,997.5	1,883.7	1,829.8	4.2	8.4	-42.49	-207.6	344.6	404.1	395.1	9.05	44.669		
2,100.0	2,096.1	1,977.6	1,915.0	4.5	9.2	-44.50	-220.3	381.8	434.5	424.9	9.55	45.475		
2,160.9	2,155.9	2,034.8	1,967.0	4.7	9.7	-45.68	-228.0	404.4	452.4	442.5	9.88	45.797		
2,200.0	2,194.2	2,071.6	2,000.5	4.8	10.0	-46.55	-232.9	419.0	463.8	453.7	10.09	45.955		
2,300.0	2,292.2	2,165.7	2,085.9	5.1	10.9	-48.57	-245.6	456.2	493.4	482.8	10.67	46.264		
2,400.0	2,390.2	2,259.8	2,171.4	5.5	11.7	-50.38	-258.3	493.5	523.6	512.3	11.27	46.450		
2,500.0	2,488.3	2,353.9	2,256.9	5.8	12.5	-51.99	-271.0	530.7	554.2	542.3	11.91	46.532		
2,600.0	2,586.3	2,448.0	2,342.4	6.2	13.4	-53.43	-283.7	567.9	585.1	572.5	12.57	46.529		
2,700.0	2,684.3	2,542.0	2,427.8	6.5	14.2	-54.73	-296.3	605.2	616.3	603.1	13.27	46.460		
2,800.0	2,782.3	2,636.1	2,513.3	6.9	15.1	-55.91	-309.0	642.4	647.9	633.9	13.98	46.340		
2,900.0	2,880.4	2,730.2	2,598.8	7.3	15.9	-56.98	-321.7	679.6	679.6	664.9	14.72	46.183		
3,000.0	2,978.4	2,824.3	2,684.2	7.7	16.8	-57.95	-334.4	716.9	711.5	696.1	15.47	46.000		
3,100.0	3,076.4	2,918.4	2,769.7	8.1	17.6	-58.84	-347.1	754.1	743.6	727.4	16.24	45.800		
3,200.0	3,174.4	3,012.5	2,855.2	8.5	18.5	-59.66	-359.7	791.3	775.9	758.9	17.02	45.588		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-179.47	-59.8	-0.6	59.8				
100.0	100.0	100.0	100.0	0.1	0.1	-179.47	-59.8	-0.6	59.8	59.5	0.22	265.874	
200.0	200.0	200.0	200.0	0.3	0.3	-179.47	-59.8	-0.6	59.8	59.1	0.67	88.619	
300.0	300.0	300.0	300.0	0.6	0.6	-179.47	-59.8	-0.6	59.8	58.6	1.12	53.171	
400.0	400.0	400.0	400.0	0.8	0.8	-179.47	-59.8	-0.6	59.8	58.2	1.57	37.979	
500.0	500.0	500.0	500.0	1.0	1.0	-179.47	-59.8	-0.6	59.8	57.7	2.02	29.539	
600.0	600.0	600.0	600.0	1.2	1.2	-179.47	-59.8	-0.6	59.8	57.3	2.47	24.168	CC, ES
700.0	700.0	699.3	699.3	1.5	1.4	179.43	-60.3	0.6	60.3	57.4	2.90	20.797	
800.0	800.0	798.4	798.4	1.7	1.6	176.27	-62.1	4.0	62.2	58.9	3.32	18.734	
900.0	900.0	897.3	897.0	1.9	1.8	171.45	-65.0	9.8	65.8	62.0	3.76	17.507	
1,000.0	1,000.0	995.8	995.1	2.1	2.1	165.58	-69.0	17.7	71.4	67.2	4.21	16.973	SF
1,100.0	1,100.0	1,093.8	1,092.4	2.4	2.3	159.36	-74.1	27.9	79.5	74.9	4.67	17.029	
1,200.0	1,200.0	1,191.1	1,188.8	2.6	2.6	153.40	-80.3	40.2	90.5	85.4	5.15	17.578	
1,300.0	1,300.0	1,287.7	1,284.0	2.8	2.9	148.06	-87.5	54.6	104.4	98.8	5.64	18.523	
1,400.0	1,400.0	1,383.3	1,377.9	3.0	3.3	143.48	-95.8	70.9	121.2	115.1	6.13	19.773	
1,500.0	1,500.0	1,478.2	1,470.5	3.2	3.6	-21.69	-105.0	89.2	139.7	133.2	6.46	21.634	
1,600.0	1,599.9	1,572.4	1,562.0	3.4	4.1	-25.30	-115.2	109.4	158.7	151.8	6.86	23.127	
1,700.0	1,699.7	1,666.0	1,652.2	3.6	4.5	-28.68	-126.3	131.4	178.3	171.0	7.27	24.524	
1,800.0	1,799.3	1,758.8	1,741.1	3.8	5.0	-31.84	-138.3	155.2	198.6	191.0	7.69	25.840	
1,900.0	1,898.6	1,850.8	1,828.6	4.0	5.6	-34.82	-151.1	180.7	219.8	211.7	8.12	27.078	
2,000.0	1,997.5	1,944.5	1,917.0	4.2	6.2	-37.69	-165.1	208.4	241.6	233.0	8.57	28.196	
2,100.0	2,096.1	2,041.4	2,008.3	4.5	6.8	-40.52	-179.7	237.3	262.5	253.4	9.06	28.981	
2,160.9	2,155.9	2,100.5	2,064.0	4.7	7.2	-42.19	-188.6	255.0	274.5	265.2	9.37	29.298	
2,200.0	2,194.2	2,138.5	2,099.8	4.8	7.5	-43.31	-194.3	266.4	282.2	272.6	9.59	29.438	
2,300.0	2,292.2	2,235.6	2,191.3	5.1	8.1	-45.90	-208.9	295.4	302.3	292.1	10.16	29.740	
2,400.0	2,390.2	2,332.7	2,282.8	5.5	8.8	-48.18	-223.5	324.4	322.8	312.0	10.78	29.955	
2,500.0	2,488.3	2,429.8	2,374.3	5.8	9.5	-50.18	-238.2	353.4	343.8	332.4	11.42	30.096	
2,600.0	2,586.3	2,526.8	2,465.7	6.2	10.1	-51.96	-252.8	382.4	365.2	353.1	12.10	30.175	
2,700.0	2,684.3	2,623.9	2,557.2	6.5	10.8	-53.54	-267.4	411.4	386.9	374.1	12.81	30.206	
2,800.0	2,782.3	2,721.0	2,648.7	6.9	11.5	-54.95	-282.0	440.5	408.8	395.2	13.54	30.199	
2,900.0	2,880.4	2,818.1	2,740.2	7.3	12.2	-56.22	-296.7	469.5	430.9	416.6	14.29	30.164	
3,000.0	2,978.4	2,915.2	2,831.7	7.7	12.9	-57.36	-311.3	498.5	453.2	438.2	15.05	30.110	
3,100.0	3,076.4	3,012.3	2,923.2	8.1	13.5	-58.40	-325.9	527.5	475.7	459.9	15.84	30.041	
3,200.0	3,174.4	3,109.4	3,014.7	8.5	14.2	-59.34	-340.5	556.5	498.3	481.7	16.63	29.962	
3,300.0	3,272.5	3,206.5	3,106.2	8.9	14.9	-60.21	-355.2	585.5	521.1	503.6	17.44	29.877	
3,400.0	3,370.5	3,303.6	3,197.7	9.3	15.6	-61.00	-369.8	614.6	543.9	525.6	18.26	29.789	
3,500.0	3,468.5	3,400.7	3,289.2	9.8	16.3	-61.73	-384.4	643.6	566.8	547.7	19.08	29.699	
3,600.0	3,566.5	3,497.8	3,380.7	10.2	17.0	-62.40	-399.0	672.6	589.8	569.9	19.92	29.609	
3,700.0	3,664.5	3,594.9	3,472.2	10.6	17.7	-63.02	-413.7	701.6	612.9	592.1	20.76	29.520	
3,800.0	3,762.6	3,692.0	3,563.7	11.0	18.4	-63.60	-428.3	730.6	636.0	614.4	21.61	29.432	
3,900.0	3,860.6	3,789.1	3,655.2	11.4	19.1	-64.13	-442.9	759.7	659.2	636.8	22.46	29.346	
4,000.0	3,958.6	3,886.2	3,746.7	11.9	19.8	-64.63	-457.5	788.7	682.5	659.1	23.32	29.263	
4,100.0	4,056.6	3,983.2	3,838.2	12.3	20.4	-65.10	-472.2	817.7	705.8	681.6	24.18	29.183	
4,200.0	4,154.7	4,080.3	3,929.7	12.7	21.1	-65.53	-486.8	846.7	729.1	704.0	25.05	29.105	
4,300.0	4,252.7	4,177.4	4,021.2	13.2	21.8	-65.94	-501.4	875.7	752.5	726.5	25.92	29.030	
4,400.0	4,350.7	4,274.5	4,112.6	13.6	22.5	-66.33	-516.0	904.7	775.9	749.1	26.79	28.958	
4,500.0	4,448.7	4,371.6	4,204.1	14.0	23.2	-66.69	-530.7	933.8	799.3	771.6	27.67	28.888	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-179.36	-75.1	-0.8	75.1					
100.0	100.0	100.0	100.0	0.1	0.1	-179.36	-75.1	-0.8	75.1	74.8	0.22	333.965		
200.0	200.0	200.0	200.0	0.3	0.3	-179.36	-75.1	-0.8	75.1	74.4	0.67	111.315		
300.0	300.0	300.0	300.0	0.6	0.6	-179.36	-75.1	-0.8	75.1	73.9	1.12	66.788		
400.0	400.0	400.0	400.0	0.8	0.8	-179.36	-75.1	-0.8	75.1	73.5	1.57	47.706 CC, ES		
500.0	500.0	499.3	499.2	1.0	1.0	179.73	-75.5	0.4	75.6	73.5	2.00	37.701		
600.0	600.0	598.4	598.3	1.2	1.2	177.08	-77.0	3.9	77.1	74.7	2.43	31.744		
700.0	700.0	697.2	696.9	1.5	1.4	172.94	-79.5	9.8	80.1	77.3	2.87	27.892		
800.0	800.0	795.7	795.0	1.7	1.7	167.69	-82.9	18.1	85.0	81.6	3.34	25.481		
900.0	900.0	893.6	892.2	1.9	1.9	161.85	-87.2	28.6	92.1	88.3	3.82	24.146		
1,000.0	1,000.0	990.9	988.5	2.1	2.2	155.93	-92.5	41.3	101.9	97.6	4.31	23.643 SF		
1,100.0	1,100.0	1,087.4	1,083.7	2.4	2.5	150.34	-98.6	56.2	114.7	109.9	4.82	23.789		
1,200.0	1,200.0	1,183.0	1,177.6	2.6	2.9	145.33	-105.6	73.1	130.4	125.1	5.34	24.431		
1,300.0	1,300.0	1,277.7	1,270.0	2.8	3.3	140.98	-113.4	91.9	149.1	143.2	5.86	25.440		
1,400.0	1,400.0	1,371.3	1,360.8	3.0	3.7	137.29	-122.0	112.7	170.6	164.2	6.39	26.716		
1,500.0	1,500.0	1,463.9	1,450.2	3.2	4.2	-27.08	-131.3	135.2	193.8	187.2	6.61	29.330		
1,600.0	1,599.9	1,555.7	1,538.1	3.4	4.7	-29.99	-141.4	159.5	217.6	210.5	7.02	30.970		
1,700.0	1,699.7	1,646.6	1,624.6	3.6	5.3	-32.72	-152.2	185.5	241.9	234.5	7.45	32.491		
1,800.0	1,799.3	1,736.7	1,709.6	3.8	5.9	-35.30	-163.6	213.1	267.0	259.1	7.87	33.912		
1,900.0	1,898.6	1,826.9	1,793.9	4.0	6.5	-37.76	-175.8	242.5	292.9	284.6	8.32	35.216		
2,000.0	1,997.5	1,922.5	1,883.1	4.2	7.2	-40.24	-189.0	274.5	318.2	309.4	8.78	36.221		
2,100.0	2,096.1	2,018.5	1,972.5	4.5	7.9	-42.61	-202.3	306.6	342.3	333.0	9.28	36.882		
2,160.9	2,155.9	2,076.9	2,027.1	4.7	8.3	-44.03	-210.4	326.1	356.3	346.7	9.60	37.121		
2,200.0	2,194.2	2,114.5	2,062.1	4.8	8.6	-45.01	-215.6	338.7	365.3	355.5	9.81	37.220		
2,300.0	2,292.2	2,210.6	2,151.7	5.1	9.4	-47.31	-228.9	370.8	388.6	378.2	10.39	37.404		
2,400.0	2,390.2	2,306.7	2,241.3	5.5	10.1	-49.35	-242.1	402.9	412.4	401.4	11.00	37.497		
2,500.0	2,488.3	2,402.9	2,330.9	5.8	10.8	-51.17	-255.4	435.0	436.7	425.1	11.64	37.513		
2,600.0	2,586.3	2,499.0	2,420.5	6.2	11.5	-52.80	-268.7	467.1	461.4	449.1	12.31	37.467		
2,700.0	2,684.3	2,595.1	2,510.1	6.5	12.3	-54.26	-282.0	499.3	486.4	473.3	13.01	37.375		
2,800.0	2,782.3	2,691.2	2,599.7	6.9	13.0	-55.59	-295.3	531.4	511.6	497.9	13.74	37.248		
2,900.0	2,880.4	2,787.3	2,689.3	7.3	13.8	-56.79	-308.6	563.5	537.1	522.6	14.48	37.097		
3,000.0	2,978.4	2,883.4	2,778.9	7.7	14.5	-57.88	-321.9	595.6	562.8	547.6	15.24	36.929		
3,100.0	3,076.4	2,979.5	2,868.5	8.1	15.2	-58.87	-335.2	627.7	588.7	572.7	16.02	36.752		
3,200.0	3,174.4	3,075.6	2,958.1	8.5	16.0	-59.79	-348.5	659.8	614.7	597.9	16.81	36.570		
3,300.0	3,272.5	3,171.7	3,047.7	8.9	16.7	-60.63	-361.8	692.0	640.9	623.3	17.61	36.387		
3,400.0	3,370.5	3,267.8	3,137.3	9.3	17.5	-61.40	-375.1	724.1	667.1	648.7	18.43	36.205		
3,500.0	3,468.5	3,363.9	3,226.9	9.8	18.2	-62.12	-388.4	756.2	693.5	674.3	19.25	36.026		
3,600.0	3,566.5	3,460.0	3,316.5	10.2	19.0	-62.78	-401.6	788.3	720.0	699.9	20.08	35.852		
3,700.0	3,664.5	3,556.1	3,406.1	10.6	19.7	-63.40	-414.9	820.4	746.6	725.7	20.92	35.683		
3,800.0	3,762.6	3,652.2	3,495.7	11.0	20.4	-63.98	-428.2	852.6	773.2	751.4	21.77	35.519		
3,900.0	3,860.6	3,748.3	3,585.3	11.4	21.2	-64.51	-441.5	884.7	799.9	777.3	22.62	35.362		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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
0.0	0.0	0.0	0.0	0.0	0.0	-179.29	-44.8	-0.6	44.8				
100.0	100.0	100.0	100.0	0.1	0.1	-179.29	-44.8	-0.6	44.8	44.6	0.22	199.417	
200.0	200.0	200.0	200.0	0.3	0.3	-179.29	-44.8	-0.6	44.8	44.1	0.67	66.468	
300.0	300.0	300.0	300.0	0.6	0.6	-179.29	-44.8	-0.6	44.8	43.7	1.12	39.880	
400.0	400.0	400.0	400.0	0.8	0.8	-179.29	-44.8	-0.6	44.8	43.2	1.57	28.486	
500.0	500.0	500.0	500.0	1.0	1.0	-179.29	-44.8	-0.6	44.8	42.8	2.02	22.156	
600.0	600.0	600.0	600.0	1.2	1.2	-179.29	-44.8	-0.6	44.8	42.3	2.47	18.127	
700.0	700.0	700.0	700.0	1.5	1.5	-179.29	-44.8	-0.6	44.8	41.9	2.92	15.338	
800.0	800.0	800.0	800.0	1.7	1.7	-179.29	-44.8	-0.6	44.8	41.4	3.37	13.293 CC, ES	
900.0	900.0	899.4	899.4	1.9	1.9	179.33	-45.5	0.5	45.5	41.7	3.80	11.981	
1,000.0	1,000.0	998.6	998.5	2.1	2.1	175.44	-47.6	3.8	47.8	43.5	4.21	11.333	
1,100.0	1,100.0	1,097.6	1,097.3	2.4	2.3	169.76	-51.0	9.2	51.9	47.3	4.64	11.188 SF	
1,200.0	1,200.0	1,196.1	1,195.4	2.6	2.5	163.29	-55.8	16.8	58.5	53.4	5.08	11.506	
1,300.0	1,300.0	1,294.2	1,292.8	2.8	2.7	156.94	-61.9	26.4	67.7	62.2	5.53	12.238	
1,400.0	1,400.0	1,391.6	1,389.2	3.0	3.0	151.27	-69.4	38.0	79.8	73.8	5.99	13.316	
1,500.0	1,500.0	1,488.3	1,484.6	3.2	3.3	-14.89	-78.0	51.6	93.6	87.2	6.37	14.679	
1,600.0	1,599.9	1,584.6	1,579.1	3.4	3.6	-19.37	-87.9	67.2	107.7	101.0	6.77	15.926	
1,700.0	1,699.7	1,680.4	1,672.6	3.6	4.0	-23.53	-99.0	84.7	122.5	115.3	7.16	17.101	
1,800.0	1,799.3	1,775.6	1,765.0	3.8	4.4	-27.41	-111.3	104.0	137.9	130.3	7.57	18.222	
1,900.0	1,898.6	1,870.2	1,856.3	4.0	4.9	-31.05	-124.8	125.1	154.0	146.1	7.98	19.299	
2,000.0	1,997.5	1,966.5	1,948.5	4.2	5.4	-34.55	-139.5	148.3	170.7	162.3	8.42	20.268	
2,100.0	2,096.1	2,064.7	2,042.6	4.5	5.9	-37.94	-154.6	172.1	186.2	177.3	8.90	20.928	
2,160.9	2,155.9	2,124.5	2,099.9	4.7	6.2	-39.97	-163.9	186.6	194.9	185.7	9.21	21.176	
2,200.0	2,194.2	2,163.0	2,136.7	4.8	6.5	-41.28	-169.8	195.9	200.5	191.0	9.42	21.282	
2,300.0	2,292.2	2,261.3	2,230.9	5.1	7.0	-44.34	-185.0	219.7	215.0	205.0	9.99	21.514	
2,400.0	2,390.2	2,359.6	2,325.1	5.5	7.6	-47.01	-200.2	243.6	230.1	219.5	10.61	21.690	
2,500.0	2,488.3	2,457.9	2,419.2	5.8	8.1	-49.35	-215.3	267.4	245.6	234.3	11.26	21.816	
2,600.0	2,586.3	2,556.2	2,513.4	6.2	8.7	-51.42	-230.5	291.3	261.4	249.5	11.94	21.899	
2,700.0	2,684.3	2,654.6	2,607.6	6.5	9.3	-53.24	-245.7	315.1	277.6	264.9	12.65	21.947	
2,800.0	2,782.3	2,752.9	2,701.8	6.9	9.9	-54.87	-260.8	339.0	294.0	280.6	13.38	21.969	
2,900.0	2,880.4	2,851.2	2,795.9	7.3	10.5	-56.32	-276.0	362.8	310.6	296.5	14.14	21.971	
3,000.0	2,978.4	2,949.5	2,890.1	7.7	11.1	-57.62	-291.2	386.7	327.4	312.5	14.91	21.958	
3,100.0	3,076.4	3,047.8	2,984.3	8.1	11.7	-58.80	-306.4	410.5	344.3	328.6	15.70	21.934	
3,200.0	3,174.4	3,146.2	3,078.4	8.5	12.3	-59.87	-321.5	434.3	361.4	344.9	16.50	21.903	
3,300.0	3,272.5	3,244.5	3,172.6	8.9	12.8	-60.84	-336.7	458.2	378.5	361.2	17.31	21.867	
3,400.0	3,370.5	3,342.8	3,266.8	9.3	13.4	-61.73	-351.9	482.0	395.8	377.7	18.13	21.827	
3,500.0	3,468.5	3,441.1	3,360.9	9.8	14.0	-62.54	-367.0	505.9	413.2	394.2	18.96	21.786	
3,600.0	3,566.5	3,539.4	3,455.1	10.2	14.6	-63.29	-382.2	529.7	430.6	410.8	19.80	21.744	
3,700.0	3,664.5	3,637.8	3,549.3	10.6	15.2	-63.98	-397.4	553.6	448.1	427.4	20.65	21.701	
3,800.0	3,762.6	3,736.1	3,643.5	11.0	15.8	-64.62	-412.5	577.4	465.6	444.1	21.50	21.659	
3,900.0	3,860.6	3,834.4	3,737.6	11.4	16.4	-65.21	-427.7	601.2	483.2	460.9	22.35	21.618	
4,000.0	3,958.6	3,932.7	3,831.8	11.9	17.0	-65.76	-442.9	625.1	500.9	477.7	23.21	21.577	
4,100.0	4,056.6	4,031.0	3,926.0	12.3	17.6	-66.27	-458.1	648.9	518.6	494.5	24.08	21.538	
4,200.0	4,154.7	4,129.4	4,020.1	12.7	18.2	-66.75	-473.2	672.8	536.3	511.4	24.94	21.500	
4,300.0	4,252.7	4,227.7	4,114.3	13.2	18.8	-67.20	-488.4	696.6	554.1	528.2	25.81	21.463	
4,400.0	4,350.7	4,326.0	4,208.5	13.6	19.4	-67.62	-503.6	720.5	571.9	545.2	26.69	21.428	
4,500.0	4,448.7	4,424.3	4,302.7	14.0	20.1	-68.02	-518.7	744.3	589.7	562.1	27.56	21.394	
4,600.0	4,546.7	4,522.6	4,396.8	14.4	20.7	-68.39	-533.9	768.2	607.5	579.1	28.44	21.361	
4,700.0	4,644.8	4,621.0	4,491.0	14.9	21.3	-68.74	-549.1	792.0	625.4	596.1	29.32	21.329	
4,800.0	4,742.8	4,719.3	4,585.2	15.3	21.9	-69.07	-564.3	815.8	643.3	613.1	30.20	21.299	
4,900.0	4,840.8	4,817.6	4,679.3	15.8	22.5	-69.39	-579.4	839.7	661.2	630.1	31.09	21.270	

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 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b>												<b>Offset Site Error:</b>	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-341 - Wellbore #1 - Plan #1 (9-11-15)												<b>Offset Well Error:</b>	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	
5,000.0	4,938.8	4,915.9	4,773.5	16.2	23.1	-69.68	-594.6	863.5	679.1	647.2	31.97	21.242	
5,100.0	5,036.9	5,014.2	4,867.7	16.6	23.7	-69.96	-609.8	887.4	697.1	664.2	32.86	21.216	
5,200.0	5,134.9	5,112.6	4,961.9	17.1	24.3	-70.23	-624.9	911.2	715.0	681.3	33.74	21.190	
5,300.2	5,233.1	5,211.1	5,056.2	17.5	24.9	-70.49	-640.1	935.1	733.1	698.4	34.64	21.165	
5,400.0	5,331.3	5,330.7	5,171.3	17.9	25.5	-71.02	-657.7	962.8	750.5	715.0	35.50	21.137	
5,500.0	5,430.2	5,457.8	5,294.8	18.1	26.0	-71.42	-673.6	987.7	765.5	729.3	36.19	21.149	
5,600.0	5,529.5	5,585.9	5,420.6	18.4	26.4	-71.69	-686.6	1,008.2	777.9	741.1	36.78	21.148	
5,700.0	5,629.2	5,714.9	5,548.3	18.6	26.8	-71.81	-696.7	1,024.0	787.7	750.4	37.27	21.136	
5,800.0	5,729.1	5,844.7	5,677.4	18.7	27.0	-71.81	-703.7	1,034.9	794.8	757.1	37.64	21.116	
5,870.9	5,800.0	5,937.0	5,769.5	18.8	27.2	89.52	-706.7	1,039.7	798.2	760.3	37.85	21.089	
5,900.0	5,829.1	5,975.0	5,807.5	18.9	27.2	89.58	-707.5	1,041.0	799.1	761.2	37.93	21.071	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<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
Dunn Pad Sec.7-T5N-R64W - Dunn 24-7 (Exist.) - Wellbore #1 - Wellbore #1													
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
2,300.0	2,292.2	2,279.2	2,279.2	5.1	45.6	-70.06	-119.1	826.0	793.2	742.6	50.55	15.691	
2,400.0	2,390.2	2,377.2	2,377.2	5.5	47.5	-71.39	-119.1	826.0	786.5	733.7	52.85	14.882	
2,500.0	2,488.3	2,475.3	2,475.3	5.8	49.5	-72.75	-119.1	826.0	780.3	725.1	55.17	14.144	
2,600.0	2,586.3	2,573.3	2,573.3	6.2	51.5	-74.12	-119.1	826.0	774.6	717.1	57.50	13.470	
2,700.0	2,684.3	2,671.3	2,671.3	6.5	53.4	-75.51	-119.1	826.0	769.3	709.4	59.85	12.853	
2,800.0	2,782.3	2,769.3	2,769.3	6.9	55.4	-76.92	-119.1	826.0	764.5	702.3	62.21	12.289	
2,900.0	2,880.4	2,867.4	2,867.4	7.3	57.3	-78.34	-119.1	826.0	760.2	695.6	64.57	11.772	
3,000.0	2,978.4	2,965.4	2,965.4	7.7	59.3	-79.78	-119.1	826.0	756.3	689.4	66.95	11.298	
3,100.0	3,076.4	3,063.4	3,063.4	8.1	61.3	-81.24	-119.1	826.0	753.0	683.7	69.32	10.862	
3,200.0	3,174.4	3,161.4	3,161.4	8.5	63.2	-82.70	-119.1	826.0	750.2	678.5	71.71	10.462	
3,300.0	3,272.5	3,259.4	3,259.4	8.9	65.2	-84.18	-119.1	826.0	747.9	673.8	74.09	10.094	
3,400.0	3,370.5	3,357.5	3,357.5	9.3	67.1	-85.66	-119.1	826.0	746.1	669.6	76.48	9.756	
3,500.0	3,468.5	3,455.5	3,455.5	9.8	69.1	-87.15	-119.1	826.0	744.8	666.0	78.86	9.445	
3,600.0	3,566.5	3,553.5	3,553.5	10.2	71.1	-88.64	-119.1	826.0	744.1	662.8	81.25	9.158	
3,691.1	3,655.8	3,642.8	3,642.8	10.6	72.9	-90.00	-119.1	826.0	743.9	660.4	83.42	8.917	
3,700.0	3,664.5	3,651.5	3,651.5	10.6	73.0	-90.13	-119.1	826.0	743.9	660.2	83.63	8.895	
3,800.0	3,762.6	3,749.6	3,749.6	11.0	75.0	-91.63	-119.1	826.0	744.2	658.2	86.01	8.652	
3,900.0	3,860.6	3,847.6	3,847.6	11.4	77.0	-93.12	-119.1	826.0	745.0	656.6	88.38	8.429	
4,000.0	3,958.6	3,945.6	3,945.6	11.9	78.9	-94.60	-119.1	826.0	746.4	655.6	90.75	8.224	
4,100.0	4,056.6	4,043.6	4,043.6	12.3	80.9	-96.09	-119.1	826.0	748.2	655.1	93.12	8.035	
4,200.0	4,154.7	4,141.6	4,141.6	12.7	82.8	-97.56	-119.1	826.0	750.6	655.2	95.48	7.862	
4,300.0	4,252.7	4,239.7	4,239.7	13.2	84.8	-99.02	-119.1	826.0	753.6	655.7	97.83	7.703	
4,400.0	4,350.7	4,337.7	4,337.7	13.6	86.8	-100.47	-119.1	826.0	757.0	656.8	100.17	7.557	
4,500.0	4,448.7	4,435.7	4,435.7	14.0	88.7	-101.91	-119.1	826.0	760.9	658.4	102.51	7.423	
4,600.0	4,546.7	4,533.7	4,533.7	14.4	90.7	-103.33	-119.1	826.0	765.3	660.5	104.83	7.300	
4,700.0	4,644.8	4,631.8	4,631.8	14.9	92.6	-104.74	-119.1	826.0	770.2	663.0	107.15	7.188	
4,800.0	4,742.8	4,729.8	4,729.8	15.3	94.6	-106.13	-119.1	826.0	775.5	666.1	109.46	7.085	
4,900.0	4,840.8	4,827.8	4,827.8	15.8	96.6	-107.50	-119.1	826.0	781.4	669.6	111.76	6.991	
5,000.0	4,938.8	4,925.8	4,925.8	16.2	98.5	-108.84	-119.1	826.0	787.7	673.6	114.05	6.906	
5,100.0	5,036.9	5,023.9	5,023.9	16.6	100.5	-110.17	-119.1	826.0	794.4	678.1	116.33	6.828	
6,350.0	6,271.1	6,258.1	6,258.1	18.9	125.2	-49.87	-119.1	826.0	791.3	652.3	138.94	5.695	
6,400.0	6,316.5	6,303.5	6,303.5	18.8	126.1	-51.84	-119.1	826.0	777.3	638.5	138.81	5.600	
6,450.0	6,360.4	6,347.4	6,347.4	18.6	126.9	-54.13	-119.1	826.0	761.7	622.9	138.82	5.487	
6,500.0	6,402.7	6,389.7	6,389.7	18.5	127.8	-56.74	-119.1	826.0	744.9	605.8	139.07	5.356	
6,550.0	6,443.1	6,430.1	6,430.1	18.3	128.6	-59.65	-119.1	826.0	727.0	587.3	139.65	5.206	
6,600.0	6,481.5	6,468.5	6,468.5	18.1	129.4	-62.81	-119.1	826.0	708.4	567.8	140.59	5.039	
6,650.0	6,517.8	6,504.8	6,504.8	18.0	130.1	-66.19	-119.1	826.0	689.5	547.6	141.87	4.860	
6,700.0	6,551.7	6,538.7	6,538.7	17.8	130.8	-69.70	-119.1	826.0	670.7	527.3	143.40	4.677	
6,750.0	6,583.2	6,570.2	6,570.2	17.6	131.4	-73.25	-119.1	826.0	652.4	507.4	145.04	4.498	
6,800.0	6,612.0	6,599.0	6,599.0	17.5	132.0	-76.73	-119.1	826.0	635.2	488.6	146.63	4.332	
6,850.0	6,638.1	6,625.1	6,625.1	17.4	132.5	-80.03	-119.1	826.0	619.7	471.6	148.03	4.186	
6,900.0	6,661.4	6,648.4	6,648.4	17.3	133.0	-83.03	-119.1	826.0	606.3	457.1	149.16	4.065	
6,950.0	6,681.7	6,668.7	6,668.7	17.2	133.4	-85.65	-119.1	826.0	595.6	445.6	150.00	3.971	
7,000.0	6,699.0	6,686.0	6,686.0	17.2	133.7	-87.81	-119.1	826.0	588.1	437.5	150.57	3.906	
7,050.0	6,713.2	6,700.2	6,700.2	17.2	134.0	-89.43	-119.1	826.0	584.3	433.3	150.97	3.870	
7,073.7	6,718.8	6,705.8	6,705.8	17.2	134.1	-90.00	-119.1	826.0	583.8	432.7	151.13	3.863 CC, ES	
7,100.0	6,724.2	6,711.2	6,711.2	17.2	134.2	-90.48	-119.1	826.0	584.4	433.1	151.28	3.863 SF	
7,150.0	6,732.0	6,719.0	6,719.0	17.3	134.4	-90.91	-119.1	826.0	588.6	437.1	151.57	3.884	
7,200.0	6,736.6	6,723.6	6,723.6	17.5	134.5	-90.72	-119.1	826.0	597.0	445.2	151.87	3.931	
7,246.0	6,737.9	6,724.9	6,724.9	17.7	134.5	-89.97	-119.1	826.0	608.3	456.2	152.14	3.998	
7,300.0	6,737.8	6,724.8	6,724.8	18.0	134.5	-89.97	-119.1	826.0	625.6	473.2	152.45	4.104	

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 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Dunn Pad Sec.7-T5N-R64W - Dunn 24-7 (Exist.) - Wellbore #1 - Wellbore #1													<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b> 7062-UNKNOWN													<b>Offset Well Error:</b>	0.0 ft
<b>Reference</b>		<b>Offset</b>		<b>Semi Major Axis</b>		<b>Distance</b>							<b>Warning</b>	
<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Reference (ft)</b>	<b>Offset (ft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Between Centres (ft)</b>	<b>Between Ellipses (ft)</b>	<b>Minimum Separation (ft)</b>	<b>Separation Factor</b>		
7,400.0	6,737.6	6,724.6	6,724.6	18.7	134.5	89.95	-119.1	826.0	668.1	515.0	153.16	4.362		
7,500.0	6,737.5	6,724.5	6,724.5	19.5	134.5	89.93	-119.1	826.0	722.0	568.0	154.03	4.688		
7,600.0	6,737.3	6,724.3	6,724.3	20.6	134.5	89.92	-119.1	826.0	785.1	630.0	155.05	5.063		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.7-T5N-R64W - Dunn #1 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6990-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	
0.0	0.0	0.0	0.0	0.0	0.0	-82.32	62.7	-464.5	468.9				
100.0	100.0	87.0	87.0	0.1	1.7	-82.32	62.7	-464.5	468.7	466.9	1.85	253.037	
200.0	200.0	187.0	187.0	0.3	3.7	-82.32	62.7	-464.5	468.7	464.6	4.08	114.963	
300.0	300.0	287.0	287.0	0.6	5.7	-82.32	62.7	-464.5	468.7	462.4	6.30	74.378	
400.0	400.0	387.0	387.0	0.8	7.7	-82.32	62.7	-464.5	468.7	460.2	8.53	54.971	
500.0	500.0	487.0	487.0	1.0	9.7	-82.32	62.7	-464.5	468.7	458.0	10.75	43.596	
600.0	600.0	587.0	587.0	1.2	11.7	-82.32	62.7	-464.5	468.7	455.7	12.98	36.122	
700.0	700.0	687.0	687.0	1.5	13.7	-82.32	62.7	-464.5	468.7	453.5	15.20	30.835	
800.0	800.0	787.0	787.0	1.7	15.7	-82.32	62.7	-464.5	468.7	451.3	17.43	26.898	
900.0	900.0	887.0	887.0	1.9	17.7	-82.32	62.7	-464.5	468.7	449.1	19.65	23.853	
1,000.0	1,000.0	987.0	987.0	2.1	19.7	-82.32	62.7	-464.5	468.7	446.8	21.88	21.427	
1,100.0	1,100.0	1,087.0	1,087.0	2.4	21.7	-82.32	62.7	-464.5	468.7	444.6	24.10	19.449	
1,200.0	1,200.0	1,187.0	1,187.0	2.6	23.7	-82.32	62.7	-464.5	468.7	442.4	26.32	17.805	
1,300.0	1,300.0	1,287.0	1,287.0	2.8	25.7	-82.32	62.7	-464.5	468.7	440.2	28.55	16.418	
1,400.0	1,400.0	1,387.0	1,387.0	3.0	27.7	-82.32	62.7	-464.5	468.7	437.9	30.77	15.231 CC	
1,500.0	1,500.0	1,487.0	1,487.0	3.2	29.7	116.57	62.7	-464.5	469.3	436.3	32.97	14.235	
1,600.0	1,599.9	1,586.9	1,586.9	3.4	31.7	116.97	62.7	-464.5	471.1	435.9	35.13	13.409 ES	
1,700.0	1,699.7	1,686.7	1,686.7	3.6	33.7	117.63	62.7	-464.5	474.1	436.8	37.29	12.712	
1,800.0	1,799.3	1,786.3	1,786.3	3.8	35.7	118.55	62.7	-464.5	478.4	438.9	39.45	12.125	
1,900.0	1,898.6	1,885.6	1,885.6	4.0	37.7	119.69	62.7	-464.5	484.2	442.5	41.61	11.635	
2,000.0	1,997.5	1,984.5	1,984.5	4.2	39.7	121.03	62.7	-464.5	491.5	447.7	43.76	11.231	
2,100.0	2,096.1	2,083.1	2,083.1	4.5	41.7	122.56	62.7	-464.5	500.5	454.6	45.90	10.904	
2,160.9	2,155.9	2,142.8	2,142.8	4.7	42.9	123.57	62.7	-464.5	506.9	459.7	47.19	10.740	
2,200.0	2,194.2	2,181.2	2,181.2	4.8	43.6	124.29	62.7	-464.5	511.3	463.2	48.05	10.640	
2,300.0	2,292.2	2,279.2	2,279.2	5.1	45.6	126.05	62.7	-464.5	522.8	472.6	50.25	10.404	
2,400.0	2,390.2	2,377.2	2,377.2	5.5	47.5	127.75	62.7	-464.5	534.8	482.4	52.46	10.196	
2,500.0	2,488.3	2,475.3	2,475.3	5.8	49.5	129.37	62.7	-464.5	547.3	492.7	54.67	10.012	
2,600.0	2,586.3	2,573.3	2,573.3	6.2	51.5	130.91	62.7	-464.5	560.2	503.4	56.88	9.850	
2,700.0	2,684.3	2,671.3	2,671.3	6.5	53.4	132.39	62.7	-464.5	573.5	514.4	59.09	9.706	
2,800.0	2,782.3	2,769.3	2,769.3	6.9	55.4	133.80	62.7	-464.5	587.2	525.9	61.30	9.579	
2,900.0	2,880.4	2,867.4	2,867.4	7.3	57.3	135.15	62.7	-464.5	601.2	537.7	63.51	9.466	
3,000.0	2,978.4	2,965.4	2,965.4	7.7	59.3	136.44	62.7	-464.5	615.5	549.8	65.72	9.366	
3,100.0	3,076.4	3,063.4	3,063.4	8.1	61.3	137.67	62.7	-464.5	630.1	562.2	67.93	9.277	
3,200.0	3,174.4	3,161.4	3,161.4	8.5	63.2	138.84	62.7	-464.5	645.0	574.9	70.13	9.197	
3,300.0	3,272.5	3,259.4	3,259.4	8.9	65.2	139.96	62.7	-464.5	660.2	587.9	72.33	9.127	
3,400.0	3,370.5	3,357.5	3,357.5	9.3	67.1	141.03	62.7	-464.5	675.6	601.0	74.53	9.064	
3,500.0	3,468.5	3,455.5	3,455.5	9.8	69.1	142.06	62.7	-464.5	691.2	614.5	76.73	9.008	
3,600.0	3,566.5	3,553.5	3,553.5	10.2	71.1	143.04	62.7	-464.5	707.0	628.1	78.93	8.958	
3,700.0	3,664.5	3,651.5	3,651.5	10.6	73.0	143.97	62.7	-464.5	723.0	641.9	81.12	8.913	
3,800.0	3,762.6	3,749.6	3,749.6	11.0	75.0	144.87	62.7	-464.5	739.2	655.9	83.31	8.873	
3,900.0	3,860.6	3,847.6	3,847.6	11.4	77.0	145.73	62.7	-464.5	755.6	670.1	85.50	8.837	
4,000.0	3,958.6	3,945.6	3,945.6	11.9	78.9	146.55	62.7	-464.5	772.1	684.5	87.69	8.805	
4,100.0	4,056.6	4,043.6	4,043.6	12.3	80.9	147.34	62.7	-464.5	788.8	699.0	89.88	8.777	
6,900.0	6,661.4	6,648.4	6,648.4	17.3	133.0	-77.97	62.7	-464.5	786.6	639.7	146.88	5.355	
6,950.0	6,681.7	6,668.7	6,668.7	17.2	133.4	-80.93	62.7	-464.5	767.6	619.2	148.42	5.172	
7,000.0	6,699.0	6,686.0	6,686.0	17.2	133.7	-83.57	62.7	-464.5	750.5	600.9	149.62	5.016	
7,050.0	6,713.2	6,700.2	6,700.2	17.2	134.0	-85.82	62.7	-464.5	735.8	585.3	150.50	4.889	
7,100.0	6,724.2	6,711.2	6,711.2	17.2	134.2	-87.62	62.7	-464.5	723.7	572.6	151.12	4.789	
7,150.0	6,732.0	6,719.0	6,719.0	17.3	134.4	-88.93	62.7	-464.5	714.7	563.2	151.56	4.716	
7,200.0	6,736.6	6,723.6	6,723.6	17.5	134.5	-89.73	62.7	-464.5	709.0	557.1	151.88	4.668	
7,246.0	6,737.9	6,724.9	6,724.9	17.7	134.5	-90.00	62.7	-464.5	706.8	554.7	152.14	4.646	

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 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells - Sec.7-T5N-R64W - Dunn #1 (Exist.) - Wellbore #1 - Wellbore #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 6990-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		
7,256.9	6,737.9	6,724.8	6,724.8	17.7	134.5	-90.00	62.7	-464.5	706.7	554.5	152.20	4.643 SF		
7,300.0	6,737.8	6,724.8	6,724.8	18.0	134.5	-89.99	62.7	-464.5	708.0	555.6	152.45	4.644		
7,400.0	6,737.6	6,724.6	6,724.6	18.7	134.5	-89.98	62.7	-464.5	721.0	567.9	153.16	4.708		
7,500.0	6,737.5	6,724.5	6,724.5	19.5	134.5	-89.97	62.7	-464.5	747.3	593.3	154.03	4.852		
7,600.0	6,737.3	6,724.3	6,724.3	20.6	134.5	-89.96	62.7	-464.5	785.6	630.5	155.05	5.067		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells - Sec.7-T5N-R64W - Dunn #13-7 (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 71125-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,300.0	6,736.2	6,721.2	6,721.2	30.3	134.4	-90.01	1,153.8	-547.5	791.1	626.4	164.68	4.804	
8,348.0	6,736.1	6,721.1	6,721.1	31.1	134.4	-90.00	1,153.8	-547.5	789.7	624.2	165.46	4.773 CC, ES	
8,400.0	6,736.1	6,721.0	6,721.0	31.9	134.4	-89.99	1,153.8	-547.5	791.4	625.1	166.29	4.759 SF	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells - Sec.7-T5N-R64W - Dunn #23-7 (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7275-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	
8,000.0	6,736.7	6,721.7	6,721.7	25.8	134.4	90.03	1,020.5	995.0	782.8	622.7	160.13	4.889	
8,100.0	6,736.5	6,721.5	6,721.5	27.2	134.4	90.01	1,020.5	995.0	761.5	599.9	161.60	4.712	
8,200.0	6,736.4	6,721.4	6,721.4	28.8	134.4	90.00	1,020.5	995.0	752.9	589.8	163.12	4.616	
8,214.7	6,736.3	6,721.3	6,721.3	29.0	134.4	90.00	1,020.5	995.0	752.8	589.5	163.35	4.609	CC, ES
8,300.0	6,736.2	6,721.2	6,721.2	30.3	134.4	89.99	1,020.5	995.0	757.6	592.9	164.68	4.600	SF
8,400.0	6,736.1	6,721.0	6,721.0	31.9	134.4	89.98	1,020.5	995.0	775.3	609.0	166.29	4.662	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.7-T5N-R64W - Little Will #6 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 6998-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		
15,200.0	6,725.4	6,714.4	6,714.4	158.5	134.3	-90.16	8,696.2	-140.0	789.2	496.4	292.77	2.695		
15,300.0	6,725.2	6,714.2	6,714.2	160.4	134.3	-90.14	8,696.2	-140.0	703.3	408.7	294.68	2.387		
15,400.0	6,725.1	6,714.1	6,714.1	162.3	134.3	-90.12	8,696.2	-140.0	621.8	325.2	296.59	2.096		
15,500.0	6,724.9	6,713.9	6,713.9	164.2	134.3	-90.09	8,696.2	-140.0	546.4	247.9	298.49	1.830		
15,600.0	6,724.7	6,713.7	6,713.7	166.2	134.3	-90.07	8,696.2	-140.0	480.0	179.6	300.40	1.598		
15,700.0	6,724.6	6,713.6	6,713.6	168.1	134.3	-90.04	8,696.2	-140.0	427.0	124.7	302.31	1.413	Level 3	
15,800.0	6,724.4	6,713.4	6,713.4	170.0	134.3	-90.02	8,696.2	-140.0	392.8	88.6	304.21	1.291	Level 3	
15,890.4	6,724.3	6,713.3	6,713.3	171.7	134.3	-90.00	8,696.2	-140.0	382.2	76.3	305.94	1.249	Level 2, CC	
15,900.0	6,724.3	6,713.3	6,713.3	171.9	134.3	-90.00	8,696.2	-140.0	382.3	76.2	306.12	1.249	Level 2, ES, SF	
16,000.0	6,724.1	6,713.1	6,713.1	173.8	134.3	-89.97	8,696.2	-140.0	397.6	89.6	308.03	1.291	Level 3	
16,100.0	6,724.0	6,713.0	6,713.0	175.7	134.3	-89.95	8,696.2	-140.0	435.9	126.0	309.94	1.406	Level 3	
16,200.0	6,723.8	6,712.8	6,712.8	177.6	134.3	-89.93	8,696.2	-140.0	491.9	180.0	311.85	1.577		
16,300.0	6,723.6	6,712.6	6,712.6	179.5	134.3	-89.90	8,696.2	-140.0	560.2	246.5	313.75	1.786		
16,400.0	6,723.5	6,712.5	6,712.5	181.4	134.2	-89.88	8,696.2	-140.0	637.0	321.3	315.66	2.018		
16,500.0	6,723.3	6,712.3	6,712.3	183.4	134.2	-89.86	8,696.2	-140.0	719.5	401.9	317.57	2.266		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells - Sec.7-T5N-R64W - Little Will #7 (P&A) - Wellbore #1 - Wellbore #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7000-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		
14,800.0	6,726.0	6,711.0	6,711.0	150.9	134.2	90.04	7,883.8	951.3	761.7	476.6	285.07	2.672		
14,900.0	6,725.8	6,710.8	6,710.8	152.8	134.2	90.02	7,883.8	951.3	731.1	444.1	286.97	2.548		
15,000.0	6,725.7	6,710.7	6,710.7	154.7	134.2	90.01	7,883.8	951.3	713.4	424.5	288.88	2.469		
15,078.0	6,725.6	6,710.6	6,710.6	156.2	134.2	90.00	7,883.8	951.3	709.1	418.7	290.37	2.442 CC		
15,100.0	6,725.5	6,710.5	6,710.5	156.6	134.2	90.00	7,883.8	951.3	709.4	418.7	290.79	2.440 ES, SF		
15,200.0	6,725.4	6,710.4	6,710.4	158.5	134.2	89.98	7,883.8	951.3	719.5	426.8	292.69	2.458		
15,300.0	6,725.2	6,710.2	6,710.2	160.4	134.2	89.97	7,883.8	951.3	743.0	448.4	294.60	2.522		
15,400.0	6,725.1	6,710.1	6,710.1	162.3	134.2	89.96	7,883.8	951.3	778.8	482.3	296.51	2.627		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.7-T5N-R64W - Mitani #1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7000-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		
12,800.0	6,729.1	6,701.1	6,701.1	112.8	134.0	-90.18	6,293.9	-100.5	768.7	522.0	246.79	3.115		
12,900.0	6,729.0	6,701.0	6,701.0	114.7	134.0	-90.15	6,293.9	-100.5	680.7	432.0	248.68	2.737		
13,000.0	6,728.8	6,700.8	6,700.8	116.6	134.0	-90.13	6,293.9	-100.5	596.4	345.8	250.58	2.380		
13,100.0	6,728.7	6,700.7	6,700.7	118.5	134.0	-90.10	6,293.9	-100.5	517.8	265.3	252.48	2.051		
13,200.0	6,728.5	6,700.5	6,700.5	120.4	134.0	-90.08	6,293.9	-100.5	447.7	193.4	254.37	1.760		
13,300.0	6,728.4	6,700.4	6,700.4	122.3	134.0	-90.05	6,293.9	-100.5	390.9	134.7	256.27	1.525		
13,400.0	6,728.2	6,700.2	6,700.2	124.2	134.0	-90.02	6,293.9	-100.5	353.8	95.7	258.17	1.371	Level 3	
13,488.1	6,728.1	6,700.1	6,700.1	125.9	134.0	-90.00	6,293.9	-100.5	342.7	82.9	259.85	1.319	Level 3, CC	
13,500.0	6,728.0	6,700.0	6,700.0	126.1	134.0	-90.00	6,293.9	-100.5	342.9	82.8	260.07	1.319	Level 3, ES, SF	
13,600.0	6,727.9	6,699.9	6,699.9	128.0	134.0	-89.97	6,293.9	-100.5	360.5	98.5	261.97	1.376	Level 3	
13,700.0	6,727.7	6,699.7	6,699.7	129.9	134.0	-89.94	6,293.9	-100.5	402.9	139.0	263.87	1.527		
13,800.0	6,727.6	6,699.6	6,699.6	131.8	134.0	-89.92	6,293.9	-100.5	463.4	197.6	265.77	1.743		
13,900.0	6,727.4	6,699.4	6,699.4	133.7	134.0	-89.89	6,293.9	-100.5	535.8	268.1	267.67	2.002		
14,000.0	6,727.3	6,699.3	6,699.3	135.6	134.0	-89.87	6,293.9	-100.5	616.0	346.4	269.57	2.285		
14,100.0	6,727.1	6,699.1	6,699.1	137.5	134.0	-89.84	6,293.9	-100.5	701.3	429.8	271.48	2.583		
14,200.0	6,726.9	6,698.9	6,698.9	139.4	134.0	-89.81	6,293.9	-100.5	790.1	516.7	273.38	2.890		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.7-T5N-R64W - Mitani #14-6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7032-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		
11,900.0	6,730.6	6,692.6	6,692.6	95.8	133.9	-90.12	5,333.5	-221.3	780.4	550.8	229.56	3.399		
12,000.0	6,730.4	6,692.4	6,692.4	97.6	133.8	-90.10	5,333.5	-221.3	702.4	471.0	231.45	3.035		
12,100.0	6,730.2	6,692.2	6,692.2	99.5	133.8	-90.08	5,333.5	-221.3	630.8	397.4	233.34	2.703		
12,200.0	6,730.1	6,692.1	6,692.1	101.4	133.8	-90.06	5,333.5	-221.3	567.7	332.5	235.23	2.414		
12,300.0	6,729.9	6,691.9	6,691.9	103.3	133.8	-90.04	5,333.5	-221.3	516.5	279.4	237.12	2.178		
12,400.0	6,729.8	6,691.8	6,691.8	105.2	133.8	-90.02	5,333.5	-221.3	480.8	241.8	239.01	2.012		
12,500.0	6,729.6	6,691.6	6,691.6	107.1	133.8	-90.01	5,333.5	-221.3	464.4	223.5	240.90	1.928		
12,527.8	6,729.6	6,691.6	6,691.6	107.6	133.8	-90.00	5,333.5	-221.3	463.5	222.1	241.43	1.920 CC, ES, SF		
12,600.0	6,729.5	6,691.5	6,691.5	109.0	133.8	-89.99	5,333.5	-221.3	469.1	226.3	242.80	1.932		
12,700.0	6,729.3	6,691.3	6,691.3	110.9	133.8	-89.97	5,333.5	-221.3	494.5	249.8	244.69	2.021		
12,800.0	6,729.1	6,691.1	6,691.1	112.8	133.8	-89.95	5,333.5	-221.3	537.6	291.0	246.58	2.180		
12,900.0	6,729.0	6,691.0	6,691.0	114.7	133.8	-89.93	5,333.5	-221.3	594.5	346.0	248.48	2.392		
13,000.0	6,728.8	6,690.8	6,690.8	116.6	133.8	-89.91	5,333.5	-221.3	661.7	411.3	250.38	2.643		
13,100.0	6,728.7	6,690.7	6,690.7	118.5	133.8	-89.89	5,333.5	-221.3	736.4	484.1	252.27	2.919		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.7-T5N-R64W - Silva #1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 6976-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		
11,800.0	6,730.7	6,691.7	6,691.7	93.9	133.8	90.13	5,213.0	649.9	731.4	503.7	227.65	3.213		
11,900.0	6,730.6	6,691.6	6,691.6	95.8	133.8	90.11	5,213.0	649.9	650.7	421.2	229.54	2.835		
12,000.0	6,730.4	6,691.4	6,691.4	97.6	133.8	90.09	5,213.0	649.9	576.2	344.8	231.43	2.490		
12,100.0	6,730.2	6,691.2	6,691.2	99.5	133.8	90.07	5,213.0	649.9	510.5	277.1	233.32	2.188		
12,200.0	6,730.1	6,691.1	6,691.1	101.4	133.8	90.05	5,213.0	649.9	457.3	222.1	235.21	1.944		
12,300.0	6,729.9	6,690.9	6,690.9	103.3	133.8	90.02	5,213.0	649.9	421.5	184.4	237.10	1.778		
12,400.0	6,729.8	6,690.8	6,690.8	105.2	133.8	90.00	5,213.0	649.9	407.7	168.7	238.99	1.706		
12,407.2	6,729.8	6,690.8	6,690.8	105.4	133.8	90.00	5,213.0	649.9	407.7	168.5	239.13	1.705 CC, ES, SF		
12,500.0	6,729.6	6,690.6	6,690.6	107.1	133.8	89.98	5,213.0	649.9	418.1	177.2	240.88	1.736		
12,600.0	6,729.5	6,690.5	6,690.5	109.0	133.8	89.96	5,213.0	649.9	451.0	208.2	242.78	1.857		
12,700.0	6,729.3	6,690.3	6,690.3	110.9	133.8	89.94	5,213.0	649.9	501.9	257.2	244.67	2.051		
12,800.0	6,729.1	6,690.1	6,690.1	112.8	133.8	89.91	5,213.0	649.9	566.1	319.5	246.57	2.296		
12,900.0	6,729.0	6,690.0	6,690.0	114.7	133.8	89.89	5,213.0	649.9	639.6	391.1	248.46	2.574		
13,000.0	6,728.8	6,689.8	6,689.8	116.6	133.8	89.87	5,213.0	649.9	719.4	469.1	250.36	2.874		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells - Sec.7-T5N-R64W - Silva #23-6 (Exist) - Wellbore #1 - Wellbore #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7100-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		
13,200.0	6,728.5	6,698.5	6,698.5	120.4	134.0	90.05	6,368.6	950.2	795.6	541.3	254.33	3.128		
13,300.0	6,728.4	6,698.4	6,698.4	122.3	134.0	90.03	6,368.6	950.2	755.3	499.0	256.23	2.948		
13,400.0	6,728.2	6,698.2	6,698.2	124.2	134.0	90.02	6,368.6	950.2	726.5	468.4	258.13	2.815		
13,500.0	6,728.0	6,698.0	6,698.0	126.1	134.0	90.01	6,368.6	950.2	710.8	450.8	260.03	2.734		
13,562.8	6,727.9	6,697.9	6,697.9	127.3	134.0	90.00	6,368.6	950.2	708.0	446.8	261.22	2.710 CC, ES		
13,600.0	6,727.9	6,697.9	6,697.9	128.0	134.0	90.00	6,368.6	950.2	709.0	447.1	261.93	2.707 SF		
13,700.0	6,727.7	6,697.7	6,697.7	129.9	134.0	89.98	6,368.6	950.2	721.2	457.4	263.83	2.734		
13,800.0	6,727.6	6,697.6	6,697.6	131.8	134.0	89.97	6,368.6	950.2	746.7	481.0	265.73	2.810		
13,900.0	6,727.4	6,697.4	6,697.4	133.7	133.9	89.96	6,368.6	950.2	784.2	516.6	267.64	2.930		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Dunn 7L-201
<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 7L-201	<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 (9-10-15)	<b>Offset TVD Reference:</b>	Offset Datum

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

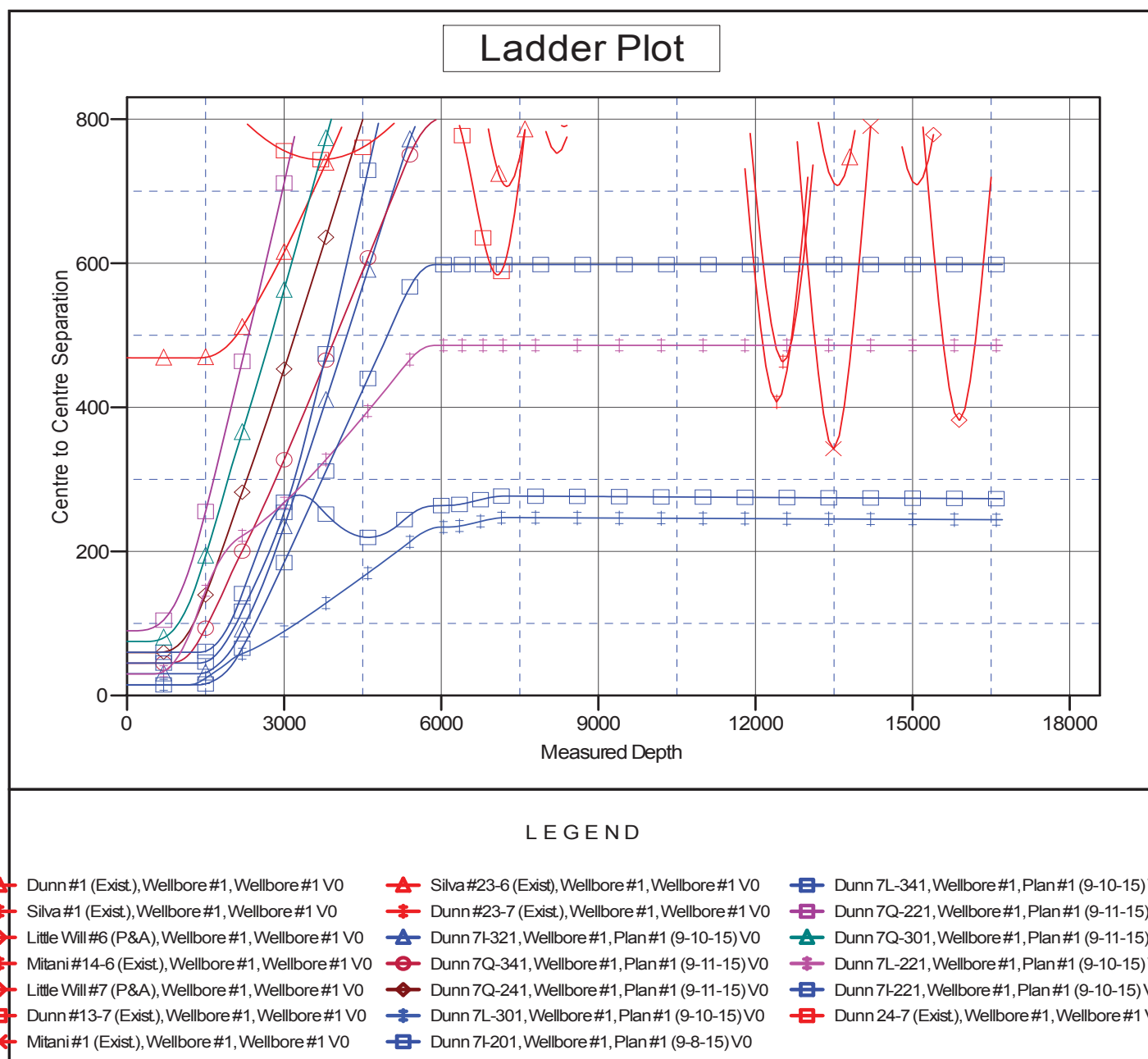
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Dunn 7L-201

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 7L-201
<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 7L-201	<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 (9-10-15)	<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 7L-201

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.58°

