

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **LDS 1U-304**

Surface Location: LDS 5N65W1U Pad Sec.1-T5N-R65W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

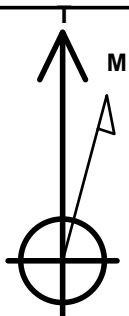
Ground Elevation: 4640.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1402168.58	3249616.70	40.433890	-104.603280	

Original Well Elev WELL @ 4655.0ft (Original Well Elev)

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 446'FNL & 432'FEL, Sec.1	1.0	0.0	0.0	Point
BHL 106'FNL & 1141'FEL, Sec.2	6763.0	350.5	-5999.1	Point



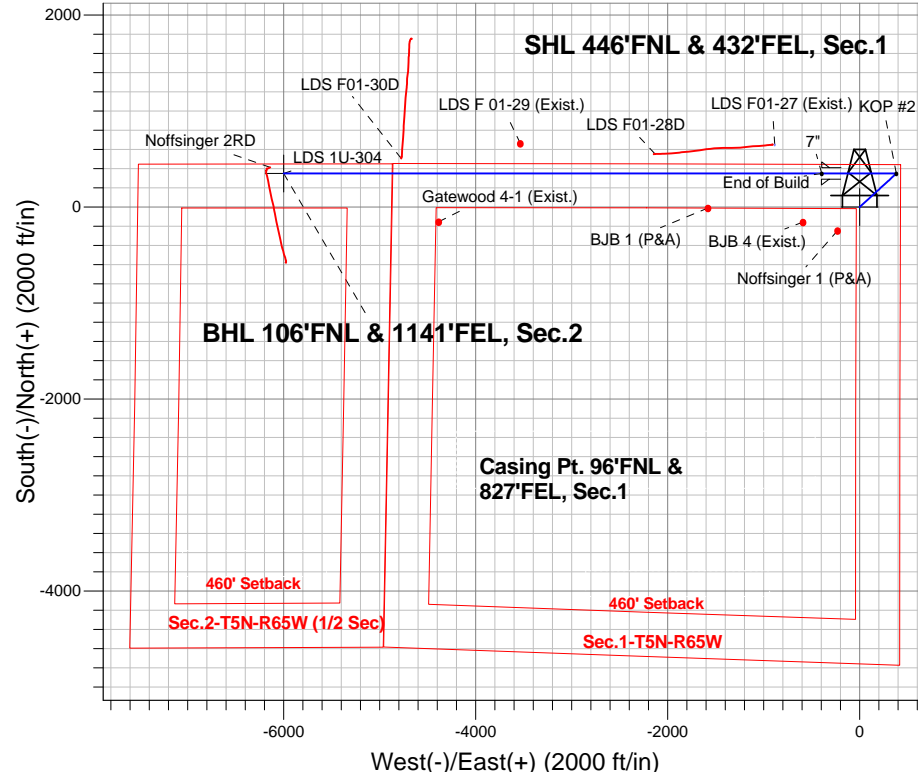
Azimuths to True North  
Magnetic North: 8.35°

Magnetic Field  
Strength: 52827.8srT  
Dip Angle: 66.99°  
Date: 9/4/2014  
Model: IGRF2010

LDS 5N65W1U Pad Sec.1-T5N-R65W  
LDS 1U-304  
Plan #1 (9-4-14)

## ANNOTATIONS

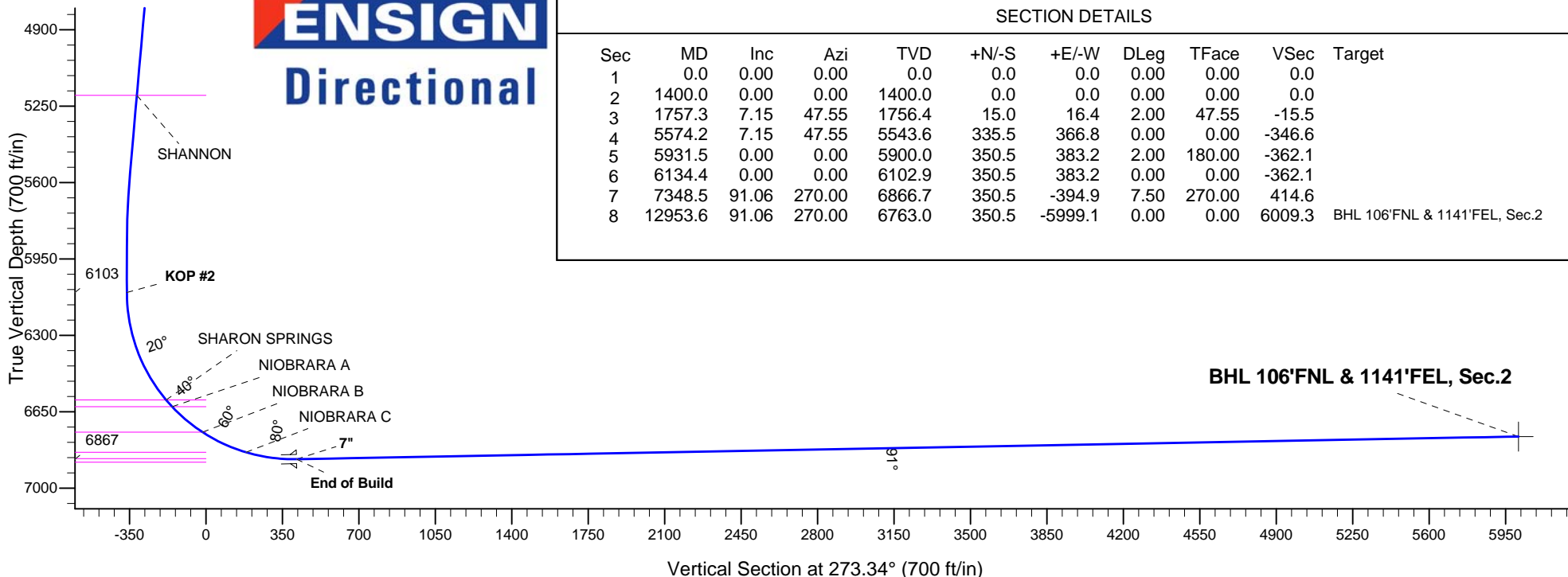
TVD	MD	Annotation
1400.0	1400.0	KOP #1
6102.9	6134.4	KOP #2
6866.7	7348.5	End of Build



**ENSIGN**  
Directional

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	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	1757.3	7.15	47.55	1756.4	15.0	16.4	2.00	47.55	-15.5	
4	5574.2	7.15	47.55	5543.6	335.5	366.8	0.00	0.00	-346.6	
5	5931.5	0.00	0.00	5900.0	350.5	383.2	2.00	180.00	-362.1	
6	6134.4	0.00	0.00	6102.9	350.5	383.2	0.00	0.00	-362.1	
7	7348.5	91.06	270.00	6866.7	350.5	-394.9	7.50	270.00	414.6	
8	12953.6	91.06	270.00	6763.0	350.5	-5999.1	0.00	0.00	6009.3	BHL 106'FNL & 1141'FEL, Sec.2





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.1-T5N-R65W**

**LDS 5N65W1U Pad Sec.1-T5N-R65W**

**LDS 1U-304**

**Wellbore #1**

**Plan: Plan #1 (9-4-14)**

## **Standard Planning Report**

**18 September, 2014**

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

<b>Project</b>	SEC.1-T5N-R65W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						LDS 5N65W1U Pad Sec.1-T5N-R65W											
Site Position:						Northing:			1,402,064.02 ft			Latitude:			40.433600		
From:			Lat/Long			Easting:			3,249,723.55 ft			Longitude:			-104.602900		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.58 °		

Well	LDS 1U-304					
Well Position	+N/-S	105.6 ft	Northing:	1,402,168.58 ft	Latitude:	40.433890
	+E/-W	-105.8 ft	Easting:	3,249,616.70 ft	Longitude:	-104.603280
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,640.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	9/4/2014	8.35	66.99	52,828

<b>Design</b>	Plan #1 (9-4-14)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	273.34

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,757.3	7.15	47.55	1,756.4	15.0	16.4	2.00	2.00	0.00	47.55	
5,574.2	7.15	47.55	5,543.6	335.5	366.8	0.00	0.00	0.00	0.00	
5,931.5	0.00	0.00	5,900.0	350.5	383.2	2.00	-2.00	0.00	180.00	
6,134.4	0.00	0.00	6,102.9	350.5	383.2	0.00	0.00	0.00	0.00	
7,348.5	91.06	270.00	6,866.7	350.5	-394.9	7.50	7.50	0.00	270.00	
12,953.6	91.06	270.00	6,763.0	350.5	-5,999.1	0.00	0.00	0.00	0.00	BHL 106°FNL & 114

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,500.0	2.00	47.55	1,500.0	1.2	1.3	-1.2	2.00	2.00	0.00
1,600.0	4.00	47.55	1,599.8	4.7	5.1	-4.9	2.00	2.00	0.00
1,700.0	6.00	47.55	1,699.5	10.6	11.6	-10.9	2.00	2.00	0.00
1,757.3	7.15	47.55	1,756.4	15.0	16.4	-15.5	2.00	2.00	0.00
1,800.0	7.15	47.55	1,798.7	18.6	20.3	-19.2	0.00	0.00	0.00
1,900.0	7.15	47.55	1,898.0	27.0	29.5	-27.9	0.00	0.00	0.00
2,000.0	7.15	47.55	1,997.2	35.4	38.7	-36.6	0.00	0.00	0.00
2,100.0	7.15	47.55	2,096.4	43.8	47.9	-45.2	0.00	0.00	0.00
2,200.0	7.15	47.55	2,195.6	52.2	57.1	-53.9	0.00	0.00	0.00
2,300.0	7.15	47.55	2,294.9	60.6	66.2	-62.6	0.00	0.00	0.00
2,400.0	7.15	47.55	2,394.1	69.0	75.4	-71.3	0.00	0.00	0.00
2,500.0	7.15	47.55	2,493.3	77.4	84.6	-79.9	0.00	0.00	0.00
2,600.0	7.15	47.55	2,592.5	85.8	93.8	-88.6	0.00	0.00	0.00
2,700.0	7.15	47.55	2,691.8	94.2	103.0	-97.3	0.00	0.00	0.00
2,800.0	7.15	47.55	2,791.0	102.6	112.1	-106.0	0.00	0.00	0.00
2,900.0	7.15	47.55	2,890.2	111.0	121.3	-114.6	0.00	0.00	0.00
3,000.0	7.15	47.55	2,989.4	119.3	130.5	-123.3	0.00	0.00	0.00
3,100.0	7.15	47.55	3,088.6	127.7	139.7	-132.0	0.00	0.00	0.00
3,200.0	7.15	47.55	3,187.9	136.1	148.8	-140.7	0.00	0.00	0.00
3,300.0	7.15	47.55	3,287.1	144.5	158.0	-149.3	0.00	0.00	0.00
3,400.0	7.15	47.55	3,386.3	152.9	167.2	-158.0	0.00	0.00	0.00
3,500.0	7.15	47.55	3,485.5	161.3	176.4	-166.7	0.00	0.00	0.00
3,500.5	7.15	47.55	3,486.0	161.4	176.4	-166.7	0.00	0.00	0.00
<b>PARKMAN</b>									
3,600.0	7.15	47.55	3,584.8	169.7	185.6	-175.4	0.00	0.00	0.00
3,700.0	7.15	47.55	3,684.0	178.1	194.7	-184.0	0.00	0.00	0.00
3,800.0	7.15	47.55	3,783.2	186.5	203.9	-192.7	0.00	0.00	0.00
3,900.0	7.15	47.55	3,882.4	194.9	213.1	-201.4	0.00	0.00	0.00
4,000.0	7.15	47.55	3,981.7	203.3	222.3	-210.0	0.00	0.00	0.00
4,100.0	7.15	47.55	4,080.9	211.7	231.5	-218.7	0.00	0.00	0.00
4,200.0	7.15	47.55	4,180.1	220.1	240.6	-227.4	0.00	0.00	0.00
4,264.4	7.15	47.55	4,244.0	225.5	246.6	-233.0	0.00	0.00	0.00
<b>SUSSEX</b>									
4,300.0	7.15	47.55	4,279.3	228.5	249.8	-236.1	0.00	0.00	0.00
4,400.0	7.15	47.55	4,378.5	236.9	259.0	-244.7	0.00	0.00	0.00
4,500.0	7.15	47.55	4,477.8	245.3	268.2	-253.4	0.00	0.00	0.00
4,600.0	7.15	47.55	4,577.0	253.7	277.4	-262.1	0.00	0.00	0.00

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<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	7.15	47.55	4,676.2	262.1	286.5	-270.8	0.00	0.00	0.00
4,800.0	7.15	47.55	4,775.4	270.5	295.7	-279.4	0.00	0.00	0.00
4,900.0	7.15	47.55	4,874.7	278.9	304.9	-288.1	0.00	0.00	0.00
5,000.0	7.15	47.55	4,973.9	287.3	314.1	-296.8	0.00	0.00	0.00
5,100.0	7.15	47.55	5,073.1	295.6	323.3	-305.5	0.00	0.00	0.00
5,200.0	7.15	47.55	5,172.3	304.0	332.4	-314.1	0.00	0.00	0.00
5,227.9	7.15	47.55	5,200.0	306.4	335.0	-316.6	0.00	0.00	0.00
<b>SHANNON</b>									
5,300.0	7.15	47.55	5,271.6	312.4	341.6	-322.8	0.00	0.00	0.00
5,400.0	7.15	47.55	5,370.8	320.8	350.8	-331.5	0.00	0.00	0.00
5,500.0	7.15	47.55	5,470.0	329.2	360.0	-340.2	0.00	0.00	0.00
5,574.2	7.15	47.55	5,543.6	335.5	366.8	-346.6	0.00	0.00	0.00
5,600.0	6.63	47.55	5,569.2	337.5	369.1	-348.7	2.00	-2.00	0.00
5,700.0	4.63	47.55	5,668.8	344.2	376.3	-355.6	2.00	-2.00	0.00
5,800.0	2.63	47.55	5,768.5	348.4	381.0	-360.0	2.00	-2.00	0.00
5,900.0	0.63	47.55	5,868.5	350.4	383.1	-362.0	2.00	-2.00	0.00
5,931.5	0.00	0.00	5,900.0	350.5	383.2	-362.1	2.00	-2.00	0.00
6,000.0	0.00	0.00	5,968.5	350.5	383.2	-362.1	0.00	0.00	0.00
6,100.0	0.00	0.00	6,068.5	350.5	383.2	-362.1	0.00	0.00	0.00
6,134.4	0.00	0.00	6,102.9	350.5	383.2	-362.1	0.00	0.00	0.00
<b>KOP #2</b>									
6,200.0	4.92	270.00	6,168.4	350.5	380.4	-359.3	7.50	7.50	0.00
6,300.0	12.42	270.00	6,267.2	350.5	365.3	-344.3	7.50	7.50	0.00
6,400.0	19.92	270.00	6,363.2	350.5	337.5	-316.5	7.50	7.50	0.00
6,500.0	27.42	270.00	6,454.7	350.5	297.4	-276.4	7.50	7.50	0.00
6,600.0	34.92	270.00	6,540.2	350.5	245.6	-224.8	7.50	7.50	0.00
6,669.1	40.10	270.00	6,595.0	350.5	203.6	-182.8	7.50	7.50	0.00
<b>SHARON SPRINGS</b>									
6,700.0	42.42	270.00	6,618.2	350.5	183.2	-162.4	7.50	7.50	0.00
6,710.6	43.22	270.00	6,626.0	350.5	176.0	-155.3	7.50	7.50	0.00
<b>NIOBRARA A</b>									
6,800.0	49.92	270.00	6,687.4	350.5	111.1	-90.5	7.50	7.50	0.00
6,893.3	56.92	270.00	6,743.0	350.5	36.2	-15.7	7.50	7.50	0.00
<b>NIOBRARA B</b>									
6,900.0	57.42	270.00	6,746.6	350.5	30.6	-10.1	7.50	7.50	0.00
7,000.0	64.92	270.00	6,794.8	350.5	-56.9	77.3	7.50	7.50	0.00
7,100.0	72.42	270.00	6,831.2	350.5	-150.0	170.2	7.50	7.50	0.00
7,113.1	73.40	270.00	6,835.0	350.5	-162.6	182.7	7.50	7.50	0.00
<b>NIOBRARA C</b>									
7,200.0	79.92	270.00	6,855.0	350.5	-247.1	267.1	7.50	7.50	0.00
7,268.7	85.07	270.00	6,864.0	350.5	-315.1	335.0	7.50	7.50	0.00
<b>FT HAYS</b>									
7,300.0	87.42	270.00	6,866.0	350.5	-346.4	366.2	7.50	7.50	0.00
7,348.5	91.06	270.00	6,866.7	350.5	-394.9	414.6	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,400.0	91.06	270.00	6,865.7	350.5	-446.4	466.0	0.00	0.00	0.00
7,500.0	91.06	270.00	6,863.9	350.5	-546.3	565.9	0.00	0.00	0.00
7,600.0	91.06	270.00	6,862.0	350.5	-646.3	665.7	0.00	0.00	0.00
7,700.0	91.06	270.00	6,860.2	350.5	-746.3	765.5	0.00	0.00	0.00
7,800.0	91.06	270.00	6,858.3	350.5	-846.3	865.3	0.00	0.00	0.00
7,900.0	91.06	270.00	6,856.5	350.5	-946.3	965.1	0.00	0.00	0.00
8,000.0	91.06	270.00	6,854.6	350.5	-1,046.3	1,064.9	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,100.0	91.06	270.00	6,852.8	350.5	-1,146.2	1,164.7	0.00	0.00	0.00
8,200.0	91.06	270.00	6,850.9	350.5	-1,246.2	1,264.5	0.00	0.00	0.00
8,300.0	91.06	270.00	6,849.1	350.5	-1,346.2	1,364.4	0.00	0.00	0.00
8,400.0	91.06	270.00	6,847.2	350.5	-1,446.2	1,464.2	0.00	0.00	0.00
8,500.0	91.06	270.00	6,845.4	350.5	-1,546.2	1,564.0	0.00	0.00	0.00
8,600.0	91.06	270.00	6,843.5	350.5	-1,646.2	1,663.8	0.00	0.00	0.00
8,700.0	91.06	270.00	6,841.7	350.5	-1,746.1	1,763.6	0.00	0.00	0.00
8,800.0	91.06	270.00	6,839.8	350.5	-1,846.1	1,863.4	0.00	0.00	0.00
8,900.0	91.06	270.00	6,838.0	350.5	-1,946.1	1,963.2	0.00	0.00	0.00
9,000.0	91.06	270.00	6,836.1	350.5	-2,046.1	2,063.0	0.00	0.00	0.00
9,100.0	91.06	270.00	6,834.3	350.5	-2,146.1	2,162.9	0.00	0.00	0.00
9,200.0	91.06	270.00	6,832.4	350.5	-2,246.1	2,262.7	0.00	0.00	0.00
9,300.0	91.06	270.00	6,830.6	350.5	-2,346.0	2,362.5	0.00	0.00	0.00
9,400.0	91.06	270.00	6,828.7	350.5	-2,446.0	2,462.3	0.00	0.00	0.00
9,500.0	91.06	270.00	6,826.9	350.5	-2,546.0	2,562.1	0.00	0.00	0.00
9,600.0	91.06	270.00	6,825.0	350.5	-2,646.0	2,661.9	0.00	0.00	0.00
9,700.0	91.06	270.00	6,823.2	350.5	-2,746.0	2,761.7	0.00	0.00	0.00
9,800.0	91.06	270.00	6,821.3	350.5	-2,845.9	2,861.5	0.00	0.00	0.00
9,900.0	91.06	270.00	6,819.5	350.5	-2,945.9	2,961.4	0.00	0.00	0.00
10,000.0	91.06	270.00	6,817.6	350.5	-3,045.9	3,061.2	0.00	0.00	0.00
10,100.0	91.06	270.00	6,815.8	350.5	-3,145.9	3,161.0	0.00	0.00	0.00
10,200.0	91.06	270.00	6,813.9	350.5	-3,245.9	3,260.8	0.00	0.00	0.00
10,300.0	91.06	270.00	6,812.1	350.5	-3,345.9	3,360.6	0.00	0.00	0.00
10,400.0	91.06	270.00	6,810.2	350.5	-3,445.8	3,460.4	0.00	0.00	0.00
10,500.0	91.06	270.00	6,808.4	350.5	-3,545.8	3,560.2	0.00	0.00	0.00
10,600.0	91.06	270.00	6,806.5	350.5	-3,645.8	3,660.0	0.00	0.00	0.00
10,700.0	91.06	270.00	6,804.7	350.5	-3,745.8	3,759.9	0.00	0.00	0.00
10,800.0	91.06	270.00	6,802.8	350.5	-3,845.8	3,859.7	0.00	0.00	0.00
10,900.0	91.06	270.00	6,801.0	350.5	-3,945.8	3,959.5	0.00	0.00	0.00
11,000.0	91.06	270.00	6,799.1	350.5	-4,045.7	4,059.3	0.00	0.00	0.00
11,100.0	91.06	270.00	6,797.3	350.5	-4,145.7	4,159.1	0.00	0.00	0.00
11,200.0	91.06	270.00	6,795.4	350.5	-4,245.7	4,258.9	0.00	0.00	0.00
11,300.0	91.06	270.00	6,793.6	350.5	-4,345.7	4,358.7	0.00	0.00	0.00
11,400.0	91.06	270.00	6,791.7	350.5	-4,445.7	4,458.5	0.00	0.00	0.00
11,500.0	91.06	270.00	6,789.9	350.5	-4,545.7	4,558.4	0.00	0.00	0.00
11,600.0	91.06	270.00	6,788.0	350.5	-4,645.6	4,658.2	0.00	0.00	0.00
11,700.0	91.06	270.00	6,786.2	350.5	-4,745.6	4,758.0	0.00	0.00	0.00
11,800.0	91.06	270.00	6,784.3	350.5	-4,845.6	4,857.8	0.00	0.00	0.00
11,900.0	91.06	270.00	6,782.5	350.5	-4,945.6	4,957.6	0.00	0.00	0.00
12,000.0	91.06	270.00	6,780.6	350.5	-5,045.6	5,057.4	0.00	0.00	0.00
12,100.0	91.06	270.00	6,778.8	350.5	-5,145.6	5,157.2	0.00	0.00	0.00
12,200.0	91.06	270.00	6,776.9	350.5	-5,245.5	5,257.0	0.00	0.00	0.00
12,300.0	91.06	270.00	6,775.1	350.5	-5,345.5	5,356.9	0.00	0.00	0.00
12,400.0	91.06	270.00	6,773.2	350.5	-5,445.5	5,456.7	0.00	0.00	0.00
12,500.0	91.06	270.00	6,771.4	350.5	-5,545.5	5,556.5	0.00	0.00	0.00
12,600.0	91.06	270.00	6,769.5	350.5	-5,645.5	5,656.3	0.00	0.00	0.00
12,700.0	91.06	270.00	6,767.7	350.5	-5,745.5	5,756.1	0.00	0.00	0.00
12,800.0	91.06	270.00	6,765.8	350.5	-5,845.4	5,855.9	0.00	0.00	0.00
12,900.0	91.06	270.00	6,764.0	350.5	-5,945.4	5,955.7	0.00	0.00	0.00
12,953.6	91.06	270.00	6,763.0	350.5	-5,999.1	6,009.3	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (9-4-14)		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
SHL 446'FNL & 432'F	0.00	0.00	1.0	0.0	0.0	1,402,168.59	3,249,616.70	40.433890	-104.603280
- plan hits target									
- Point									
BHL 106'FNL & 1141'	0.00	0.00	6,763.0	350.5	-5,999.1	1,402,458.37	3,243,614.65	40.434850	-104.624830
- plan hits target									
- Point									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(")	(")
7,348.5	6,866.7	7"		7	7-1/2

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
3,500.5	3,486.0	PARKMAN		0.00	
4,264.4	4,244.0	SUSSEX		0.00	
5,227.9	5,200.0	SHANNON		0.00	
6,669.1	6,595.0	SHARON SPRINGS		0.00	
6,710.6	6,626.0	NIOBRARA A		0.00	
6,893.3	6,743.0	NIOBRARA B		0.00	
7,113.1	6,835.0	NIOBRARA C		0.00	
7,268.7	6,864.0	FT HAYS		0.00	
	6,881.0	CODELL		0.00	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
(ft)	(ft)	(ft)	(ft)		
1,400.0	1,400.0	0.0	0.0	KOP #1	
6,134.4	6,102.9	15.0	16.4	KOP #2	
7,348.5	6,866.7	335.5	366.8	End of Build	



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.1-T5N-R65W**

**LDS 5N65W1U Pad Sec.1-T5N-R65W**

**LDS 1U-304**

**Wellbore #1**

**Plan #1 (9-4-14)**

## **Anticollision Report**

**18 September, 2014**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (9-4-14)
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	9/18/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	12,953.6	Plan #1 (9-4-14) (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
Existing Wells Sec.1-T5N-R65W						
BJB 1 (P&A) - Wellbore #1 - Wellbore #1	8,532.3	6,828.8	361.4	173.4	1.923	CC, ES, SF
BJB 4 (Exist.) - Wellbore #1 - Wellbore #1	7,543.8	6,845.1	507.1	343.6	3.101	CC, ES
BJB 4 (Exist.) - Wellbore #1 - Wellbore #1	7,600.0	6,844.0	510.2	345.5	3.097	SF
Gateway 4-1 (Exist.) - Wellbore #1 - Wellbore #1	11,338.9	6,778.9	503.1	239.0	1.905	CC, ES, SF
Noffsinger 1 (P&A) - Wellbore #1 - Wellbore #1	1,400.0	1,429.0	334.2	302.6	10.571	CC
Noffsinger 1 (P&A) - Wellbore #1 - Wellbore #1	1,500.0	1,529.0	335.9	302.1	9.935	ES
Noffsinger 1 (P&A) - Wellbore #1 - Wellbore #1	7,200.0	6,884.0	594.9	437.3	3.774	SF
Existing Wells Sec.36-T6N-R36W						
LDS F 01-29 (Exist.) - Wellbore #1 - Wellbore #1	10,489.5	6,798.6	312.8	72.0	1.299	Level 3, CC
LDS F 01-29 (Exist.) - Wellbore #1 - Wellbore #1	10,500.0	6,798.4	313.0	71.8	1.298	Level 3, ES, SF
LDS 5N65W1U Pad Sec.1-T5N-R65W						
LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)	1,498.2	1,497.1	31.2	24.7	4.792	CC
LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)	12,953.6	12,860.0	202.3	-141.8	0.588	Level 1, ES, SF
LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)	400.0	398.0	120.3	118.7	76.670	CC, ES
LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)	5,800.0	5,808.5	999.5	970.6	34.584	SF
LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)	200.0	197.0	149.5	148.8	223.960	CC, ES
LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)	1,400.0	1,355.0	309.6	302.5	43.848	SF
LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)	1,582.7	1,580.5	59.6	52.8	8.674	CC
LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)	1,600.0	1,597.8	59.6	52.7	8.580	ES
LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)	12,953.6	12,949.8	758.7	411.7	2.186	SF
LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)	1,000.0	998.0	89.1	84.8	20.881	CC, ES
LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)	12,900.0	12,834.6	897.2	557.6	2.642	SF
LDS F01-28D Sec.36-T6N-R65W						
LDS F01-27 (Exist.) - Wellbore #1 - Wellbore #1	7,838.9	6,857.6	301.7	131.0	1.768	CC, ES, SF
LDS F01-28D - LDS F01-28D - LDS F01-28D	9,090.6	7,010.5	202.2	109.0	2.169	CC
LDS F01-28D - LDS F01-28D - LDS F01-28D	9,100.0	7,010.1	202.5	109.0	2.165	ES, SF
LDS F01-30D Sec.36-T6N-R65W						
LDS F01-30D - LDS F01-30D - LDS F01-30D	11,729.4	6,977.0	160.1	4.6	1.030	Level 2, CC, ES, SF
Noffsinger Pad Sec.2-T5N-R65W						
Noffsinger 2RD - Wellbore #1 - Wellbore #1	12,953.6	6,911.7	166.1	-19.0	0.897	Level 1, CC, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 1 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 7040-UNKNOWN													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	
7,600.0	6,862.0	6,846.0	6,846.0	27.9	136.9	-92.73	-10.9	-1,578.4	999.7	835.1	164.64	6.072		
7,700.0	6,860.2	6,844.2	6,844.2	30.3	136.9	-92.44	-10.9	-1,578.4	907.2	740.3	166.94	5.434		
7,800.0	6,858.3	6,842.3	6,842.3	32.6	136.8	-92.15	-10.9	-1,578.4	816.5	647.1	169.32	4.822		
7,900.0	6,856.5	6,840.5	6,840.5	35.1	136.8	-91.85	-10.9	-1,578.4	728.1	556.4	171.75	4.240		
8,000.0	6,854.6	6,838.6	6,838.6	37.6	136.8	-91.56	-10.9	-1,578.4	643.3	469.0	174.23	3.692		
8,100.0	6,852.8	6,836.8	6,836.8	40.1	136.7	-91.27	-10.9	-1,578.4	563.4	386.6	176.75	3.187		
8,200.0	6,850.9	6,834.9	6,834.9	42.7	136.7	-90.97	-10.9	-1,578.4	490.9	311.6	179.30	2.738		
8,300.0	6,849.1	6,833.1	6,833.1	45.3	136.7	-90.68	-10.9	-1,578.4	429.5	247.7	181.87	2.362		
8,400.0	6,847.2	6,831.2	6,831.2	47.9	136.6	-90.39	-10.9	-1,578.4	384.8	200.3	184.46	2.086		
8,500.0	6,845.4	6,829.4	6,829.4	50.6	136.6	-90.09	-10.9	-1,578.4	362.8	175.7	187.07	1.939		
8,532.3	6,844.8	6,828.8	6,828.8	51.4	136.6	-90.00	-10.9	-1,578.4	361.4	173.4	187.92	1.923 CC, ES, SF		
8,600.0	6,843.5	6,827.5	6,827.5	53.2	136.6	-89.80	-10.9	-1,578.4	367.6	178.0	189.69	1.938		
8,700.0	6,841.7	6,825.7	6,825.7	55.9	136.5	-89.51	-10.9	-1,578.4	398.4	206.1	192.32	2.071		
8,800.0	6,839.8	6,823.8	6,823.8	58.6	136.5	-89.21	-10.9	-1,578.4	449.7	254.8	194.95	2.307		
8,900.0	6,838.0	6,822.0	6,822.0	61.3	136.4	-88.92	-10.9	-1,578.4	515.5	317.9	197.59	2.609		
9,000.0	6,836.1	6,820.1	6,820.1	64.0	136.4	-88.63	-10.9	-1,578.4	591.0	390.8	200.24	2.951		
9,100.0	6,834.3	6,818.3	6,818.3	66.7	136.4	-88.34	-10.9	-1,578.4	672.9	470.0	202.89	3.317		
9,200.0	6,832.4	6,816.4	6,816.4	69.4	136.3	-88.04	-10.9	-1,578.4	759.1	553.6	205.54	3.693		
9,300.0	6,830.6	6,814.6	6,814.6	72.2	136.3	-87.75	-10.9	-1,578.4	848.4	640.2	208.19	4.075		
9,400.0	6,828.7	6,812.7	6,812.7	74.9	136.3	-87.46	-10.9	-1,578.4	939.8	729.0	210.83	4.458		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells Sec.1-T5N-R65W - BJB 4 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program: 7064-UNKNOWN													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-104.87	-156.6	-590.2	610.9						
100.0	100.0	82.0	82.0	0.1	1.6	-104.87	-156.6	-590.2	610.6	608.9	1.75	348.406			
200.0	200.0	182.0	182.0	0.3	3.6	-104.87	-156.6	-590.2	610.6	606.6	3.98	153.522			
300.0	300.0	282.0	282.0	0.6	5.6	-104.87	-156.6	-590.2	610.6	604.4	6.20	98.452			
400.0	400.0	382.0	382.0	0.8	7.6	-104.87	-156.6	-590.2	610.6	602.2	8.43	72.460			
500.0	500.0	482.0	482.0	1.0	9.6	-104.87	-156.6	-590.2	610.6	600.0	10.65	57.325			
600.0	600.0	582.0	582.0	1.2	11.6	-104.87	-156.6	-590.2	610.6	597.7	12.88	47.421			
700.0	700.0	682.0	682.0	1.5	13.6	-104.87	-156.6	-590.2	610.6	595.5	15.10	40.435			
800.0	800.0	782.0	782.0	1.7	15.6	-104.87	-156.6	-590.2	610.6	593.3	17.33	35.243			
900.0	900.0	882.0	882.0	1.9	17.6	-104.87	-156.6	-590.2	610.6	591.1	19.55	31.232			
1,000.0	1,000.0	982.0	982.0	2.1	19.6	-104.87	-156.6	-590.2	610.6	588.8	21.78	28.041			
1,100.0	1,100.0	1,082.0	1,082.0	2.4	21.6	-104.87	-156.6	-590.2	610.6	586.6	24.00	25.442			
1,200.0	1,200.0	1,182.0	1,182.0	2.6	23.6	-104.87	-156.6	-590.2	610.6	584.4	26.22	23.284			
1,300.0	1,300.0	1,282.0	1,282.0	2.8	25.6	-104.87	-156.6	-590.2	610.6	582.2	28.45	21.463			
1,400.0	1,400.0	1,382.0	1,382.0	3.0	27.6	-104.87	-156.6	-590.2	610.6	579.9	30.67	19.906			
1,500.0	1,500.0	1,482.0	1,482.0	3.3	29.6	-152.48	-156.6	-590.2	612.2	579.3	32.88	18.619			
1,600.0	1,599.8	1,581.8	1,581.8	3.5	31.6	-152.66	-156.6	-590.2	616.8	581.8	35.04	17.603			
1,700.0	1,699.5	1,681.5	1,681.5	3.7	33.6	-152.96	-156.6	-590.2	624.6	587.4	37.16	16.808			
1,800.0	1,798.7	1,780.7	1,780.7	3.9	35.6	-153.39	-156.6	-590.2	635.2	595.9	39.28	16.169			
1,900.0	1,898.0	1,880.0	1,880.0	4.2	37.6	-153.88	-156.6	-590.2	646.3	604.9	41.48	15.582			
2,000.0	1,997.2	1,979.2	1,979.2	4.4	39.6	-154.36	-156.6	-590.2	657.5	613.9	43.68	15.055			
2,100.0	2,096.4	2,078.4	2,078.4	4.7	41.6	-154.82	-156.6	-590.2	668.8	622.9	45.88	14.578			
2,200.0	2,195.6	2,177.6	2,177.6	5.0	43.6	-155.27	-156.6	-590.2	680.1	632.0	48.08	14.145			
2,300.0	2,294.9	2,276.9	2,276.9	5.3	45.5	-155.70	-156.6	-590.2	691.4	641.1	50.28	13.751			
2,400.0	2,394.1	2,376.1	2,376.1	5.5	47.5	-156.11	-156.6	-590.2	702.8	650.3	52.49	13.390			
2,500.0	2,493.3	2,475.3	2,475.3	5.8	49.5	-156.52	-156.6	-590.2	714.2	659.5	54.69	13.058			
2,600.0	2,592.5	2,574.5	2,574.5	6.1	51.5	-156.91	-156.6	-590.2	725.6	668.7	56.90	12.753			
2,700.0	2,691.8	2,673.8	2,673.8	6.4	53.5	-157.29	-156.6	-590.2	737.1	678.0	59.11	12.470			
2,800.0	2,791.0	2,773.0	2,773.0	6.7	55.5	-157.65	-156.6	-590.2	748.6	687.3	61.32	12.209			
2,900.0	2,890.2	2,872.2	2,872.2	7.0	57.4	-158.01	-156.6	-590.2	760.1	696.6	63.53	11.966			
3,000.0	2,889.4	2,971.4	2,971.4	7.3	59.4	-158.36	-156.6	-590.2	771.7	706.0	65.74	11.740			
3,100.0	3,088.6	3,070.6	3,070.6	7.6	61.4	-158.69	-156.6	-590.2	783.3	715.3	67.94	11.528			
3,200.0	3,187.9	3,169.9	3,169.9	7.9	63.4	-159.02	-156.6	-590.2	794.9	724.8	70.15	11.331			
3,300.0	3,287.1	3,269.1	3,269.1	8.2	65.4	-159.33	-156.6	-590.2	806.5	734.2	72.36	11.146			
3,400.0	3,386.3	3,368.3	3,368.3	8.5	67.4	-159.64	-156.6	-590.2	818.2	743.6	74.57	10.972			
3,500.0	3,485.5	3,467.5	3,467.5	8.8	69.4	-159.94	-156.6	-590.2	829.9	753.1	76.78	10.808			
3,600.0	3,584.8	3,566.8	3,566.8	9.1	71.3	-160.23	-156.6	-590.2	841.6	762.6	78.99	10.654			
3,700.0	3,684.0	3,666.0	3,666.0	9.5	73.3	-160.51	-156.6	-590.2	853.3	772.1	81.20	10.508			
3,800.0	3,783.2	3,765.2	3,765.2	9.8	75.3	-160.79	-156.6	-590.2	865.1	781.7	83.41	10.371			
3,900.0	3,882.4	3,864.4	3,864.4	10.1	77.3	-161.05	-156.6	-590.2	876.8	791.2	85.62	10.241			
4,000.0	3,981.7	3,963.7	3,963.7	10.4	79.3	-161.31	-156.6	-590.2	888.6	800.8	87.83	10.117			
4,100.0	4,080.9	4,062.9	4,062.9	10.7	81.3	-161.57	-156.6	-590.2	900.4	810.4	90.04	10.000			
4,200.0	4,180.1	4,162.1	4,162.1	11.0	83.2	-161.81	-156.6	-590.2	912.2	820.0	92.25	9.888			
4,300.0	4,279.3	4,261.3	4,261.3	11.3	85.2	-162.05	-156.6	-590.2	924.1	829.6	94.46	9.782			
4,400.0	4,378.5	4,360.5	4,360.5	11.6	87.2	-162.29	-156.6	-590.2	935.9	839.3	96.67	9.681			
4,500.0	4,477.8	4,459.8	4,459.8	12.0	89.2	-162.52	-156.6	-590.2	947.8	848.9	98.88	9.585			
4,600.0	4,577.0	4,559.0	4,559.0	12.3	91.2	-162.74	-156.6	-590.2	959.7	858.6	101.09	9.493			
4,700.0	4,676.2	4,658.2	4,658.2	12.6	93.2	-162.96	-156.6	-590.2	971.6	868.3	103.30	9.405			
4,800.0	4,775.4	4,757.4	4,757.4	12.9	95.1	-163.17	-156.6	-590.2	983.5	878.0	105.51	9.321			
4,900.0	4,874.7	4,856.7	4,856.7	13.2	97.1	-163.38	-156.6	-590.2	995.4	887.7	107.72	9.240			
6,600.0	6,540.2	6,522.2	6,522.2	16.4	130.4	-36.50	-156.6	-590.2	977.6	849.0	128.67	7.598			

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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells Sec.1-T5N-R65W - BJB 4 (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7064-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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,700.0	6,618.2	6,600.2	6,600.2	16.4	132.0	-41.61	-156.6	-590.2	924.8	798.1	126.76	7.296	
6,800.0	6,687.4	6,669.4	6,669.4	16.4	133.4	-48.32	-156.6	-590.2	865.4	737.4	127.99	6.762	
6,900.0	6,746.6	6,728.6	6,728.6	16.6	134.6	-56.61	-156.6	-590.2	801.6	668.2	133.41	6.008	
7,000.0	6,794.8	6,776.8	6,776.8	17.3	135.5	-65.98	-156.6	-590.2	735.9	594.1	141.79	5.190	
7,100.0	6,831.2	6,813.2	6,813.2	18.4	136.3	-75.31	-156.6	-590.2	671.5	521.5	149.95	4.478	
7,200.0	6,855.0	6,837.0	6,837.0	20.0	136.7	-83.25	-156.6	-590.2	612.3	456.8	155.51	3.937	
7,300.0	6,866.0	6,848.0	6,848.0	21.7	137.0	-88.76	-156.6	-590.2	562.7	404.1	158.56	3.549	
7,400.0	6,865.7	6,847.7	6,847.7	23.6	137.0	-90.30	-156.6	-590.2	527.1	366.6	160.53	3.284	
7,500.0	6,863.9	6,845.9	6,845.9	25.7	136.9	-90.09	-156.6	-590.2	509.0	346.4	162.57	3.131	
7,543.8	6,863.1	6,845.1	6,845.1	26.7	136.9	-90.00	-156.6	-590.2	507.1	343.6	163.52	3.101 CC, ES	
7,600.0	6,862.0	6,844.0	6,844.0	27.9	136.9	-89.88	-156.6	-590.2	510.2	345.5	164.73	3.097 SF	
7,700.0	6,860.2	6,842.2	6,842.2	30.3	136.8	-89.67	-156.6	-590.2	530.6	363.6	167.00	3.177	
7,800.0	6,858.3	6,840.3	6,840.3	32.6	136.8	-89.46	-156.6	-590.2	568.1	398.8	169.34	3.355	
7,900.0	6,856.5	6,838.5	6,838.5	35.1	136.8	-89.26	-156.6	-590.2	619.7	447.9	171.74	3.608	
8,000.0	6,854.6	6,836.6	6,836.6	37.6	136.7	-89.05	-156.6	-590.2	682.0	507.9	174.18	3.916	
8,100.0	6,852.8	6,834.8	6,834.8	40.1	136.7	-88.84	-156.6	-590.2	752.6	575.9	176.67	4.260	
8,200.0	6,850.9	6,832.9	6,832.9	42.7	136.7	-88.63	-156.6	-590.2	829.2	650.0	179.19	4.627	
8,300.0	6,849.1	6,831.1	6,831.1	45.3	136.6	-88.42	-156.6	-590.2	910.4	728.6	181.73	5.009	
8,400.0	6,847.2	6,829.2	6,829.2	47.9	136.6	-88.21	-156.6	-590.2	995.0	810.7	184.30	5.399	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Gatewood 4-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7045-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,500.0	6,808.4	6,794.4	6,794.4	105.2	135.9	-91.77	-152.6	-4,384.5	978.0	737.0	241.00	4.058		
10,600.0	6,806.5	6,792.5	6,792.5	108.0	135.9	-91.56	-152.6	-4,384.5	893.8	650.0	243.75	3.667		
10,700.0	6,804.7	6,790.7	6,790.7	110.8	135.8	-91.35	-152.6	-4,384.5	813.1	566.6	246.51	3.298		
10,800.0	6,802.8	6,788.8	6,788.8	113.6	135.8	-91.13	-152.6	-4,384.5	737.1	487.9	249.27	2.957		
10,900.0	6,801.0	6,787.0	6,787.0	116.3	135.7	-90.92	-152.6	-4,384.5	667.6	415.5	252.02	2.649		
11,000.0	6,799.1	6,785.1	6,785.1	119.1	135.7	-90.71	-152.6	-4,384.5	606.5	351.8	254.77	2.381		
11,100.0	6,797.3	6,783.3	6,783.3	121.9	135.7	-90.50	-152.6	-4,384.5	556.9	299.4	257.53	2.163		
11,200.0	6,795.4	6,781.4	6,781.4	124.7	135.6	-90.29	-152.6	-4,384.5	521.9	261.6	260.27	2.005		
11,300.0	6,793.6	6,779.6	6,779.6	127.5	135.6	-90.08	-152.6	-4,384.5	504.6	241.6	263.02	1.918		
11,338.9	6,792.9	6,778.9	6,778.9	128.6	135.6	-90.00	-152.6	-4,384.5	503.1	239.0	264.09	1.905 CC, ES, SF		
11,400.0	6,791.7	6,777.7	6,777.7	130.3	135.6	-89.87	-152.6	-4,384.5	506.8	241.0	265.77	1.907		
11,500.0	6,789.9	6,775.9	6,775.9	133.0	135.5	-89.66	-152.6	-4,384.5	528.3	259.8	268.51	1.967		
11,600.0	6,788.0	6,774.0	6,774.0	135.8	135.5	-89.45	-152.6	-4,384.5	566.8	295.6	271.25	2.090		
11,700.0	6,786.2	6,772.2	6,772.2	138.6	135.4	-89.24	-152.6	-4,384.5	619.3	345.3	273.98	2.260		
11,800.0	6,784.3	6,770.3	6,770.3	141.4	135.4	-89.03	-152.6	-4,384.5	682.4	405.7	276.72	2.466		
11,900.0	6,782.5	6,768.5	6,768.5	144.2	135.4	-88.82	-152.6	-4,384.5	753.6	474.1	279.45	2.697		
12,000.0	6,780.6	6,766.6	6,766.6	147.0	135.3	-88.61	-152.6	-4,384.5	830.7	548.5	282.17	2.944		
12,100.0	6,778.8	6,764.8	6,764.8	149.8	135.3	-88.40	-152.6	-4,384.5	912.3	627.4	284.90	3.202		
12,200.0	6,776.9	6,762.9	6,762.9	152.6	135.3	-88.19	-152.6	-4,384.5	997.2	709.6	287.62	3.467		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Noffsinger 1 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7140-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	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
0.0	0.0	29.0	29.0	0.0	0.6	-136.92		-244.1	-228.3	334.2	333.6	0.58	576.014	
100.0	100.0	129.0	129.0	0.1	2.6	-136.92		-244.1	-228.3	334.2	331.5	2.69	124.120	
200.0	200.0	229.0	229.0	0.3	4.6	-136.92		-244.1	-228.3	334.2	329.3	4.92	67.964	
300.0	300.0	329.0	329.0	0.6	6.6	-136.92		-244.1	-228.3	334.2	327.1	7.14	46.793	
400.0	400.0	429.0	429.0	0.8	8.6	-136.92		-244.1	-228.3	334.2	324.8	9.37	35.679	
500.0	500.0	529.0	529.0	1.0	10.6	-136.92		-244.1	-228.3	334.2	322.6	11.59	28.831	
600.0	600.0	629.0	629.0	1.2	12.6	-136.92		-244.1	-228.3	334.2	320.4	13.82	24.189	
700.0	700.0	729.0	729.0	1.5	14.6	-136.92		-244.1	-228.3	334.2	318.2	16.04	20.834	
800.0	800.0	829.0	829.0	1.7	16.6	-136.92		-244.1	-228.3	334.2	315.9	18.27	18.297	
900.0	900.0	929.0	929.0	1.9	18.6	-136.92		-244.1	-228.3	334.2	313.7	20.49	16.310	
1,000.0	1,000.0	1,029.0	1,029.0	2.1	20.6	-136.92		-244.1	-228.3	334.2	311.5	22.72	14.713	
1,100.0	1,100.0	1,129.0	1,129.0	2.4	22.6	-136.92		-244.1	-228.3	334.2	309.3	24.94	13.400	
1,200.0	1,200.0	1,229.0	1,229.0	2.6	24.6	-136.92		-244.1	-228.3	334.2	307.0	27.16	12.303	
1,300.0	1,300.0	1,329.0	1,329.0	2.8	26.6	-136.92		-244.1	-228.3	334.2	304.8	29.39	11.371	
1,400.0	1,400.0	1,429.0	1,429.0	3.0	28.6	-136.92		-244.1	-228.3	334.2	302.6	31.61	10.571 CC	
1,500.0	1,500.0	1,529.0	1,529.0	3.3	30.6	175.55		-244.1	-228.3	335.9	302.1	33.81	9.935 ES	
1,600.0	1,599.8	1,628.8	1,628.8	3.5	32.6	175.61		-244.1	-228.3	341.2	305.2	35.96	9.486	
1,700.0	1,699.5	1,728.5	1,728.5	3.7	34.6	175.71		-244.1	-228.3	349.9	311.8	38.06	9.193	
1,800.0	1,798.7	1,827.7	1,827.7	3.9	36.6	175.84		-244.1	-228.3	361.7	321.5	40.16	9.006	
1,900.0	1,898.0	1,927.0	1,927.0	4.2	38.5	175.97		-244.1	-228.3	374.1	331.7	42.35	8.833	
2,000.0	1,997.2	2,026.2	2,026.2	4.4	40.5	176.10		-244.1	-228.3	386.5	342.0	44.55	8.676	
2,100.0	2,096.4	2,125.4	2,125.4	4.7	42.5	176.23		-244.1	-228.3	398.9	352.2	46.74	8.534	
2,200.0	2,195.6	2,224.6	2,224.6	5.0	44.5	176.34		-244.1	-228.3	411.3	362.4	48.94	8.405	
2,300.0	2,294.9	2,323.9	2,323.9	5.3	46.5	176.45		-244.1	-228.3	423.7	372.6	51.14	8.286	
2,400.0	2,394.1	2,423.1	2,423.1	5.5	48.5	176.55		-244.1	-228.3	436.2	382.8	53.34	8.177	
2,500.0	2,493.3	2,522.3	2,522.3	5.8	50.4	176.64		-244.1	-228.3	448.6	393.0	55.54	8.077	
2,600.0	2,592.5	2,621.5	2,621.5	6.1	52.4	176.73		-244.1	-228.3	461.0	403.3	57.74	7.984	
2,700.0	2,691.8	2,720.8	2,720.8	6.4	54.4	176.82		-244.1	-228.3	473.4	413.5	59.94	7.898	
2,800.0	2,791.0	2,820.0	2,820.0	6.7	56.4	176.90		-244.1	-228.3	485.8	423.7	62.15	7.818	
2,900.0	2,890.2	2,919.2	2,919.2	7.0	58.4	176.98		-244.1	-228.3	498.3	433.9	64.35	7.743	
3,000.0	2,989.4	3,018.4	3,018.4	7.3	60.4	177.05		-244.1	-228.3	510.7	444.1	66.55	7.673	
3,100.0	3,088.6	3,117.6	3,117.6	7.6	62.4	177.12		-244.1	-228.3	523.1	454.4	68.76	7.608	
3,200.0	3,187.9	3,216.9	3,216.9	7.9	64.3	177.19		-244.1	-228.3	535.5	464.6	70.96	7.547	
3,300.0	3,287.1	3,316.1	3,316.1	8.2	66.3	177.25		-244.1	-228.3	548.0	474.8	73.17	7.489	
3,400.0	3,386.3	3,415.3	3,415.3	8.5	68.3	177.31		-244.1	-228.3	560.4	485.0	75.37	7.435	
3,500.0	3,485.5	3,514.5	3,514.5	8.8	70.3	177.37		-244.1	-228.3	572.8	495.2	77.58	7.384	
3,600.0	3,584.8	3,613.8	3,613.8	9.1	72.3	177.43		-244.1	-228.3	585.2	505.5	79.78	7.335	
3,700.0	3,684.0	3,713.0	3,713.0	9.5	74.3	177.48		-244.1	-228.3	597.7	515.7	81.99	7.289	
3,800.0	3,783.2	3,812.2	3,812.2	9.8	76.2	177.53		-244.1	-228.3	610.1	525.9	84.20	7.246	
3,900.0	3,882.4	3,911.4	3,911.4	10.1	78.2	177.58		-244.1	-228.3	622.5	536.1	86.40	7.205	
4,000.0	3,981.7	4,010.7	4,010.7	10.4	80.2	177.63		-244.1	-228.3	635.0	546.3	88.61	7.166	
4,100.0	4,080.9	4,109.9	4,109.9	10.7	82.2	177.68		-244.1	-228.3	647.4	556.6	90.82	7.128	
4,200.0	4,180.1	4,209.1	4,209.1	11.0	84.2	177.72		-244.1	-228.3	659.8	566.8	93.03	7.093	
4,300.0	4,279.3	4,308.3	4,308.3	11.3	86.2	177.76		-244.1	-228.3	672.2	577.0	95.23	7.059	
4,400.0	4,378.5	4,407.5	4,407.5	11.6	88.2	177.80		-244.1	-228.3	684.7	587.2	97.44	7.026	
4,500.0	4,477.8	4,506.8	4,506.8	12.0	90.1	177.84		-244.1	-228.3	697.1	597.5	99.65	6.996	
4,600.0	4,577.0	4,606.0	4,606.0	12.3	92.1	177.88		-244.1	-228.3	709.5	607.7	101.86	6.966	
4,700.0	4,676.2	4,705.2	4,705.2	12.6	94.1	177.92		-244.1	-228.3	722.0	617.9	104.07	6.938	
4,800.0	4,775.4	4,804.4	4,804.4	12.9	96.1	177.95		-244.1	-228.3	734.4	628.1	106.27	6.910	
4,900.0	4,874.7	4,903.7	4,903.7	13.2	98.1	177.98		-244.1	-228.3	746.8	638.3	108.48	6.884	
5,000.0	4,973.9	5,002.9	5,002.9	13.5	100.1	178.02		-244.1	-228.3	759.3	648.6	110.69	6.859	

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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Noffsinger 1 (P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7140-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	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
5,100.0	5,073.1	5,102.1	5,102.1	13.8	102.0	178.05		-244.1	-228.3	771.7	658.8	112.90	6.835	
5,200.0	5,172.3	5,201.3	5,201.3	14.2	104.0	178.08		-244.1	-228.3	784.1	669.0	115.11	6.812	
5,300.0	5,271.6	5,300.6	5,300.6	14.5	106.0	178.11		-244.1	-228.3	796.6	679.2	117.32	6.790	
5,400.0	5,370.8	5,399.8	5,399.8	14.8	108.0	178.14		-244.1	-228.3	809.0	689.5	119.52	6.768	
5,500.0	5,470.0	5,499.0	5,499.0	15.1	110.0	178.17		-244.1	-228.3	821.4	699.7	121.73	6.748	
5,600.0	5,569.2	5,598.2	5,598.2	15.4	112.0	178.20		-244.1	-228.3	833.7	709.7	124.06	6.720	
5,700.0	5,668.8	5,697.8	5,697.8	15.6	114.0	178.22		-244.1	-228.3	843.5	716.9	126.61	6.662	
5,800.0	5,768.5	5,797.5	5,797.5	15.8	116.0	178.24		-244.1	-228.3	849.9	720.8	129.02	6.587	
5,900.0	5,868.5	5,897.5	5,897.5	16.0	118.0	178.25		-244.1	-228.3	852.7	721.4	131.29	6.495	
6,000.0	5,968.5	5,997.5	5,997.5	16.2	120.0	-134.20		-244.1	-228.3	852.9	716.8	136.11	6.266	
6,100.0	6,068.5	6,097.5	6,097.5	16.3	122.0	-134.20		-244.1	-228.3	852.9	714.6	138.28	6.168	
6,200.0	6,168.4	6,197.4	6,197.4	16.5	123.9	-44.44		-244.1	-228.3	850.9	713.3	137.55	6.186	
6,300.0	6,267.2	6,296.2	6,296.2	16.6	125.9	-45.73		-244.1	-228.3	840.2	701.8	138.31	6.074	
6,400.0	6,363.2	6,392.2	6,392.2	16.6	127.8	-48.18		-244.1	-228.3	820.7	682.5	138.25	5.937	
6,500.0	6,454.7	6,483.7	6,483.7	16.5	129.7	-51.88		-244.1	-228.3	793.6	655.6	138.05	5.749	
6,600.0	6,540.2	6,569.2	6,569.2	16.4	131.4	-56.83		-244.1	-228.3	760.3	621.7	138.63	5.485	
6,700.0	6,618.2	6,647.2	6,647.2	16.4	132.9	-62.94		-244.1	-228.3	723.1	582.3	140.76	5.137	
6,800.0	6,687.4	6,716.4	6,716.4	16.4	134.3	-69.82		-244.1	-228.3	684.6	540.1	144.49	4.738	
6,900.0	6,746.6	6,775.6	6,775.6	16.6	135.5	-76.81		-244.1	-228.3	648.5	499.6	148.87	4.356	
7,000.0	6,794.8	6,823.8	6,823.8	17.3	136.5	-83.04		-244.1	-228.3	618.8	466.1	152.70	4.052	
7,100.0	6,831.2	6,860.2	6,860.2	18.4	137.2	-87.72		-244.1	-228.3	599.7	444.2	155.49	3.857	
7,180.8	6,851.4	6,880.4	6,880.4	19.7	137.6	-90.00		-244.1	-228.3	594.6	437.3	157.24	3.781	
7,200.0	6,855.0	6,884.0	6,884.0	20.0	137.7	-90.32		-244.1	-228.3	594.9	437.3	157.60	3.774 SF	
7,300.0	6,866.0	6,895.0	6,895.0	21.7	137.9	-90.51		-244.1	-228.3	606.2	446.6	159.56	3.799	
7,400.0	6,865.7	6,894.7	6,894.7	23.6	137.9	-89.61		-244.1	-228.3	633.3	471.9	161.45	3.923	
7,500.0	6,863.9	6,892.9	6,892.9	25.7	137.9	-89.43		-244.1	-228.3	674.3	510.8	163.49	4.124	
7,600.0	6,862.0	6,891.0	6,891.0	27.9	137.8	-89.25		-244.1	-228.3	726.8	561.2	165.65	4.388	
7,700.0	6,860.2	6,889.2	6,889.2	30.3	137.8	-89.08		-244.1	-228.3	788.6	620.7	167.91	4.697	
7,800.0	6,858.3	6,887.3	6,887.3	32.6	137.7	-88.90		-244.1	-228.3	857.6	687.3	170.24	5.037	
7,900.0	6,856.5	6,885.5	6,885.5	35.1	137.7	-88.72		-244.1	-228.3	932.2	759.6	172.64	5.400	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.36-T6N-R36W - LDS F 01-29 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7076-Reference													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,600.0	6,825.0	6,815.0	6,815.0	80.4	136.3	93.01	663.3	-3,535.4	942.8	726.5	216.27	4.359		
9,700.0	6,823.2	6,813.2	6,813.2	83.1	136.3	92.67	663.3	-3,535.4	849.1	630.1	219.05	3.876		
9,800.0	6,821.3	6,811.3	6,811.3	85.9	136.2	92.33	663.3	-3,535.4	757.1	535.2	221.83	3.413		
9,900.0	6,819.5	6,809.5	6,809.5	88.6	136.2	92.00	663.3	-3,535.4	667.3	442.7	224.60	2.971		
10,000.0	6,817.6	6,807.6	6,807.6	91.4	136.2	91.66	663.3	-3,535.4	580.9	353.5	227.37	2.555		
10,100.0	6,815.8	6,805.8	6,805.8	94.2	136.1	91.32	663.3	-3,535.4	499.5	269.4	230.14	2.171		
10,200.0	6,813.9	6,803.9	6,803.9	96.9	136.1	90.98	663.3	-3,535.4	426.2	193.3	232.90	1.830		
10,300.0	6,812.1	6,802.1	6,802.1	99.7	136.0	90.64	663.3	-3,535.4	365.7	130.1	235.66	1.552		
10,400.0	6,810.2	6,800.2	6,800.2	102.5	136.0	90.30	663.3	-3,535.4	325.4	87.0	238.41	1.365 Level 3		
10,489.5	6,808.6	6,798.6	6,798.6	104.9	136.0	90.00	663.3	-3,535.4	312.8	72.0	240.87	1.299 Level 3, CC		
10,500.0	6,808.4	6,798.4	6,798.4	105.2	136.0	89.96	663.3	-3,535.4	313.0	71.8	241.15	1.298 Level 3, ES, SF		
10,600.0	6,806.5	6,796.5	6,796.5	108.0	135.9	89.63	663.3	-3,535.4	331.8	87.9	243.89	1.360 Level 3		
10,700.0	6,804.7	6,794.7	6,794.7	110.8	135.9	89.29	663.3	-3,535.4	377.0	130.4	246.63	1.529		
10,800.0	6,802.8	6,792.8	6,792.8	113.6	135.9	88.95	663.3	-3,535.4	440.7	191.4	249.35	1.767		
10,900.0	6,801.0	6,791.0	6,791.0	116.3	135.8	88.61	663.3	-3,535.4	516.0	264.0	252.07	2.047		
11,000.0	6,799.1	6,789.1	6,789.1	119.1	135.8	88.27	663.3	-3,535.4	598.6	343.8	254.78	2.350		
11,100.0	6,797.3	6,787.3	6,787.3	121.9	135.7	87.93	663.3	-3,535.4	685.9	428.4	257.48	2.664		
11,200.0	6,795.4	6,785.4	6,785.4	124.7	135.7	87.59	663.3	-3,535.4	776.2	516.0	260.18	2.983		
11,300.0	6,793.6	6,783.6	6,783.6	127.5	135.7	87.26	663.3	-3,535.4	868.6	605.8	262.86	3.304		
11,400.0	6,791.7	6,781.7	6,781.7	130.3	135.6	86.92	663.3	-3,535.4	962.6	697.0	265.54	3.625		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis (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
0.0	0.0	0.0	0.0	0.0	0.0	134.47		-21.9	22.3	31.2				
100.0	100.0	99.0	99.0	0.1	0.1	134.47		-21.9	22.3	31.2	31.0	0.22	139.532	
200.0	200.0	199.0	199.0	0.3	0.3	134.47		-21.9	22.3	31.2	30.5	0.67	46.433	
300.0	300.0	299.0	299.0	0.6	0.6	134.47		-21.9	22.3	31.2	30.1	1.12	27.823	
400.0	400.0	399.0	399.0	0.8	0.8	134.47		-21.9	22.3	31.2	29.6	1.57	19.862	
500.0	500.0	499.0	499.0	1.0	1.0	134.47		-21.9	22.3	31.2	29.2	2.02	15.443	
600.0	600.0	599.0	599.0	1.2	1.2	134.47		-21.9	22.3	31.2	28.7	2.47	12.633	
700.0	700.0	699.0	699.0	1.5	1.5	134.47		-21.9	22.3	31.2	28.3	2.92	10.688	
800.0	800.0	799.0	799.0	1.7	1.7	134.47		-21.9	22.3	31.2	27.8	3.37	9.262	
900.0	900.0	899.0	899.0	1.9	1.9	134.47		-21.9	22.3	31.2	27.4	3.82	8.172	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	134.47		-21.9	22.3	31.2	26.9	4.27	7.311	
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	134.47		-21.9	22.3	31.2	26.5	4.72	6.614	
1,200.0	1,200.0	1,199.0	1,199.0	2.6	2.6	134.47		-21.9	22.3	31.2	26.0	5.17	6.039	
1,300.0	1,300.0	1,299.0	1,299.0	2.8	2.8	134.47		-21.9	22.3	31.2	25.6	5.62	5.556	
1,400.0	1,400.0	1,399.0	1,399.0	3.0	3.0	134.47		-21.9	22.3	31.2	25.1	6.07	5.144	
1,498.2	1,498.1	1,497.1	1,497.1	3.3	3.3	90.00		-21.9	22.3	31.2	24.7	6.50	4.792 CC	
1,500.0	1,500.0	1,499.0	1,499.0	3.3	3.3	90.12		-21.9	22.3	31.2	24.6	6.51	4.786	
1,600.0	1,599.8	1,598.8	1,598.8	3.5	3.5	99.63		-21.9	22.3	31.6	24.7	6.95	4.545	
1,700.0	1,699.5	1,698.5	1,698.5	3.7	3.7	114.10		-21.9	22.3	34.2	26.8	7.40	4.617	
1,800.0	1,798.7	1,797.7	1,797.7	3.9	3.9	129.49		-21.9	22.3	40.5	32.7	7.85	5.163	
1,900.0	1,898.0	1,897.0	1,897.0	4.2	4.2	140.67		-21.9	22.3	49.4	41.1	8.29	5.957	
2,000.0	1,997.2	1,996.2	1,996.2	4.4	4.4	148.26		-21.9	22.3	59.6	50.8	8.74	6.817	
2,100.0	2,096.4	2,095.4	2,095.4	4.7	4.6	153.58		-21.9	22.3	70.5	61.3	9.18	7.672	
2,200.0	2,195.6	2,194.6	2,194.6	5.0	4.8	157.45		-21.9	22.3	81.8	72.2	9.63	8.493	
2,300.0	2,294.9	2,293.9	2,293.9	5.3	5.0	160.38		-21.9	22.3	93.4	83.3	10.08	9.268	
2,400.0	2,394.1	2,393.1	2,393.1	5.5	5.3	162.65		-21.9	22.3	105.2	94.7	10.53	9.993	
2,500.0	2,493.3	2,492.3	2,492.3	5.8	5.5	164.46		-21.9	22.3	117.2	106.2	10.98	10.670	
2,600.0	2,592.5	2,591.5	2,591.5	6.1	5.7	165.62		-21.2	23.7	127.9	116.5	11.44	11.186	
2,700.0	2,691.8	2,690.8	2,690.8	6.4	5.9	165.81		-18.9	28.5	135.6	123.7	11.89	11.406	
2,800.0	2,791.0	2,803.1	2,802.6	6.7	6.2	165.17		-15.0	36.7	140.2	127.9	12.35	11.349	
2,900.0	2,890.2	2,906.1	2,904.8	7.0	6.4	163.82		-9.6	48.1	141.9	129.1	12.83	11.060	
3,000.0	2,989.4	3,006.0	3,003.8	7.3	6.6	162.33		-4.0	59.9	142.9	129.6	13.31	10.738	
3,100.0	3,088.6	3,106.0	3,102.9	7.6	6.9	160.86		1.6	71.7	144.1	130.3	13.80	10.439	
3,200.0	3,187.9	3,205.9	3,202.0	7.9	7.1	159.42		7.2	83.6	145.3	131.0	14.30	10.160	
3,300.0	3,287.1	3,305.8	3,301.0	8.2	7.4	158.00		12.8	95.4	146.6	131.8	14.81	9.901	
3,400.0	3,386.3	3,405.7	3,400.1	8.5	7.7	156.61		18.5	107.2	148.0	132.7	15.32	9.659	
3,500.0	3,485.5	3,505.7	3,499.2	8.8	7.9	155.24		24.1	119.1	149.5	133.6	15.85	9.433	
3,600.0	3,584.8	3,605.6	3,598.2	9.1	8.2	153.90		29.7	130.9	151.0	134.7	16.38	9.222	
3,700.0	3,684.0	3,705.5	3,697.3	9.5	8.5	152.59		35.3	142.7	152.7	135.8	16.92	9.025	
3,800.0	3,783.2	3,805.4	3,796.4	9.8	8.8	151.31		40.9	154.5	154.4	136.9	17.47	8.840	
3,900.0	3,882.4	3,905.4	3,895.4	10.1	9.0	150.06		46.5	166.4	156.2	138.2	18.02	8.667	
4,000.0	3,981.7	4,005.3	3,994.5	10.4	9.3	148.83		52.1	178.2	158.1	139.5	18.59	8.505	
4,100.0	4,080.9	4,105.2	4,093.5	10.7	9.6	147.64		57.7	190.0	160.0	140.9	19.16	8.353	
4,200.0	4,180.1	4,205.1	4,192.6	11.0	9.9	146.47		63.3	201.8	162.0	142.3	19.74	8.210	
4,300.0	4,279.3	4,305.1	4,291.7	11.3	10.2	145.34		69.0	213.7	164.1	143.8	20.32	8.076	
4,400.0	4,378.5	4,405.0	4,390.7	11.6	10.5	144.23		74.6	225.5	166.3	145.4	20.91	7.951	
4,500.0	4,477.8	4,504.9	4,489.8	12.0	10.8	143.15		80.2	237.3	168.5	147.0	21.51	7.833	
4,600.0	4,577.0	4,604.8	4,588.9	12.3	11.1	142.10		85.8	249.1	170.7	148.6	22.11	7.722	
4,700.0	4,676.2	4,704.8	4,687.9	12.6	11.4	141.08		91.4	261.0	173.0	150.3	22.72	7.618	
4,800.0	4,775.4	4,804.7	4,787.0	12.9	11.7	140.08		97.0	272.8	175.4	152.1	23.33	7.519	
4,900.0	4,874.7	4,904.6	4,886.1	13.2	12.0	139.11		102.6	284.6	177.8	153.9	23.94	7.427	

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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)													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	Offset	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
5,000.0	4,973.9	5,004.6	4,985.1	13.5	12.3	138.17		108.2	296.5	180.3	155.7	24.56	7.340	
5,100.0	5,073.1	5,104.5	5,084.2	13.8	12.7	137.25		113.8	308.3	182.8	157.6	25.19	7.259	
5,200.0	5,172.3	5,204.4	5,183.3	14.2	13.0	136.36		119.5	320.1	185.4	159.6	25.81	7.182	
5,300.0	5,271.6	5,304.3	5,282.3	14.5	13.3	135.50		125.1	331.9	188.0	161.6	26.44	7.109	
5,400.0	5,370.8	5,404.3	5,381.4	14.8	13.6	134.65		130.7	343.8	190.6	163.6	27.08	7.041	
5,500.0	5,470.0	5,504.2	5,480.5	15.1	13.9	133.83		136.3	355.6	193.3	165.6	27.71	6.976	
5,600.0	5,569.2	5,602.5	5,578.0	15.4	14.2	133.17		141.6	366.8	196.2	167.9	28.31	6.931	
5,700.0	5,668.8	5,700.0	5,675.0	15.6	14.4	132.80		145.6	375.2	198.7	170.0	28.76	6.911	
5,800.0	5,768.5	5,796.6	5,771.4	15.8	14.6	132.57		148.1	380.6	200.3	171.2	29.14	6.875	
5,900.0	5,868.5	5,893.6	5,868.5	16.0	14.8	132.46		149.3	383.0	201.1	171.6	29.47	6.822	
6,000.0	5,968.5	5,992.7	5,967.5	16.2	14.9	-179.99		149.4	383.2	201.1	173.0	28.13	7.148	
6,049.7	6,018.2	6,042.4	6,017.2	16.3	15.0	-179.99		149.4	383.2	201.1	172.8	28.33	7.099	
6,100.0	6,068.5	6,092.6	6,067.4	16.3	15.1	-179.51		149.4	381.5	201.1	172.6	28.55	7.044	
6,200.0	6,168.4	6,191.2	6,165.1	16.5	15.2	-86.60		149.4	368.6	201.5	171.3	30.19	6.674	
6,300.0	6,267.2	6,288.4	6,259.0	16.6	15.2	-83.56		149.4	343.7	202.4	172.3	30.08	6.727	
6,400.0	6,363.2	6,384.4	6,347.8	16.6	15.2	-80.68		149.4	307.6	203.8	173.9	29.91	6.815	
6,500.0	6,454.7	6,479.2	6,430.5	16.5	15.2	-78.01		149.4	261.3	205.6	175.9	29.73	6.916	
6,600.0	6,540.2	6,573.0	6,506.0	16.4	15.3	-75.58		149.4	205.8	207.7	178.0	29.64	7.007	
6,700.0	6,618.2	6,665.8	6,573.5	16.4	15.4	-73.43		149.4	142.1	209.8	180.1	29.74	7.055	
6,800.0	6,687.4	6,757.9	6,632.3	16.4	15.8	-71.57		149.4	71.4	212.0	181.8	30.16	7.027	
6,900.0	6,746.6	6,850.0	6,682.2	16.6	16.4	-70.02		149.4	-6.0	214.0	182.9	31.03	6.896	
7,000.0	6,794.8	6,940.2	6,721.7	17.3	17.4	-68.79		149.4	-87.0	215.7	183.3	32.41	6.654	
7,100.0	6,831.2	7,030.6	6,751.5	18.4	18.6	-67.88		149.5	-172.4	217.0	182.7	34.36	6.316	
7,200.0	6,855.0	7,120.8	6,770.9	20.0	20.0	-67.29		149.5	-260.4	217.9	181.1	36.84	5.916	
7,300.0	6,866.0	7,210.8	6,779.9	21.7	21.7	-67.01		149.5	-349.9	218.3	178.6	39.78	5.489	
7,400.0	6,865.7	7,306.6	6,780.0	23.6	23.6	-67.13		149.5	-445.7	218.1	174.9	43.28	5.040	
7,500.0	6,863.9	7,406.6	6,779.1	25.7	25.7	-67.38		149.5	-545.7	217.7	170.5	47.24	4.609	
7,600.0	6,862.0	7,506.6	6,778.3	27.9	27.9	-67.62		149.5	-645.7	217.3	165.9	51.44	4.225	
7,700.0	6,860.2	7,606.6	6,777.5	30.3	30.3	-67.87		149.5	-745.6	216.9	161.1	55.85	3.885	
7,800.0	6,858.3	7,706.6	6,776.6	32.6	32.7	-68.11		149.5	-845.6	216.5	156.1	60.41	3.585	
7,900.0	6,856.5	7,806.6	6,775.8	35.1	35.1	-68.36		149.6	-945.6	216.2	151.1	65.10	3.321	
8,000.0	6,854.6	7,906.6	6,774.9	37.6	37.7	-68.61		149.6	-1,045.6	215.8	145.9	69.89	3.087	
8,100.0	6,852.8	8,006.6	6,774.1	40.1	40.2	-68.86		149.6	-1,145.6	215.4	140.6	74.78	2.880	
8,200.0	6,850.9	8,106.6	6,773.3	42.7	42.8	-69.11		149.6	-1,245.6	215.0	135.3	79.74	2.696	
8,300.0	6,849.1	8,206.6	6,772.4	45.3	45.4	-69.36		149.6	-1,345.6	214.6	129.9	84.77	2.532	
8,400.0	6,847.2	8,306.6	6,771.6	47.9	48.1	-69.61		149.6	-1,445.6	214.3	124.4	89.86	2.385	
8,500.0	6,845.4	8,406.6	6,770.8	50.6	50.7	-69.87		149.6	-1,545.6	213.9	118.9	94.99	2.252	
8,600.0	6,843.5	8,506.6	6,769.9	53.2	53.4	-70.12		149.7	-1,645.6	213.6	113.4	100.17	2.132	
8,700.0	6,841.7	8,606.6	6,769.1	55.9	56.1	-70.37		149.7	-1,745.6	213.2	107.8	105.39	2.023	
8,800.0	6,839.8	8,706.6	6,768.2	58.6	58.8	-70.63		149.7	-1,845.6	212.9	102.2	110.65	1.924	
8,900.0	6,838.0	8,806.6	6,767.4	61.3	61.5	-70.89		149.7	-1,945.5	212.5	96.6	115.94	1.833	
9,000.0	6,836.1	8,906.6	6,766.6	64.0	64.2	-71.14		149.7	-2,045.5	212.2	90.9	121.26	1.750	
9,100.0	6,834.3	9,006.6	6,765.7	66.7	66.9	-71.40		149.7	-2,145.5	211.8	85.2	126.61	1.673	
9,200.0	6,832.4	9,106.5	6,764.9	69.4	69.6	-71.66		149.7	-2,245.5	211.5	79.5	131.99	1.602	
9,300.0	6,830.6	9,206.5	6,764.1	72.2	72.4	-71.92		149.7	-2,345.5	211.2	73.8	137.39	1.537	
9,400.0	6,828.7	9,306.5	6,763.2	74.9	75.1	-72.18		149.8	-2,445.5	210.8	68.0	142.81	1.476 Level 3	
9,500.0	6,826.9	9,406.5	6,762.4	77.6	77.9	-72.44		149.8	-2,545.5	210.5	62.3	148.26	1.420 Level 3	
9,600.0	6,825.0	9,506.5	6,761.5	80.4	80.6	-72.70		149.8	-2,645.5	210.2	56.5	153.72	1.367 Level 3	
9,700.0	6,823.2	9,606.5	6,760.7	83.1	83.4	-72.96		149.8	-2,745.5	209.9	50.7	159.21	1.318 Level 3	
9,800.0	6,821.3	9,706.5	6,759.9	85.9	86.1	-73.23		149.8	-2,845.5	209.6	44.9	164.71	1.272 Level 3	
9,900.0	6,819.5	9,806.5	6,759.0	88.6	88.9	-73.49		149.8	-2,945.5	209.3	39.0	170.23	1.229 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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1U-234 - Wellbore #1 - Plan #1 (9-4-14)													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,000.0	6,817.6	9,906.5	6,758.2	91.4	91.6	-73.76	149.8	-3,045.5	209.0	33.2	175.77	1.189	Level 2	
10,100.0	6,815.8	10,006.5	6,757.3	94.2	94.4	-74.02	149.9	-3,145.4	208.7	27.4	181.33	1.151	Level 2	
10,200.0	6,813.9	10,106.5	6,756.5	96.9	97.2	-74.29	149.9	-3,245.4	208.4	21.5	186.90	1.115	Level 2	
10,300.0	6,812.1	10,206.5	6,755.7	99.7	99.9	-74.56	149.9	-3,345.4	208.1	15.6	192.48	1.081	Level 2	
10,400.0	6,810.2	10,306.5	6,754.8	102.5	102.7	-74.83	149.9	-3,445.4	207.8	9.8	198.08	1.049	Level 2	
10,500.0	6,808.4	10,406.5	6,754.0	105.2	105.5	-75.09	149.9	-3,545.4	207.6	3.9	203.69	1.019	Level 2	
10,600.0	6,806.5	10,506.5	6,753.2	108.0	108.3	-75.36	149.9	-3,645.4	207.3	-2.0	209.31	0.990	Level 1	
10,700.0	6,804.7	10,606.5	6,752.3	110.8	111.0	-75.63	149.9	-3,745.4	207.0	-7.9	214.94	0.963	Level 1	
10,800.0	6,802.8	10,706.5	6,751.5	113.6	113.8	-75.90	149.9	-3,845.4	206.8	-13.8	220.59	0.937	Level 1	
10,900.0	6,801.0	10,806.5	6,750.6	116.3	116.6	-76.18	150.0	-3,945.4	206.5	-19.7	226.25	0.913	Level 1	
11,000.0	6,799.1	10,906.5	6,749.8	119.1	119.4	-76.45	150.0	-4,045.4	206.2	-25.7	231.92	0.889	Level 1	
11,100.0	6,797.3	11,006.4	6,749.0	121.9	122.2	-76.72	150.0	-4,145.4	206.0	-31.6	237.59	0.867	Level 1	
11,200.0	6,795.4	11,106.4	6,748.1	124.7	125.0	-76.99	150.0	-4,245.3	205.8	-37.5	243.28	0.846	Level 1	
11,300.0	6,793.6	11,206.4	6,747.3	127.5	127.7	-77.27	150.0	-4,345.3	205.5	-43.5	248.98	0.825	Level 1	
11,400.0	6,791.7	11,306.4	6,746.5	130.3	130.5	-77.54	150.0	-4,445.3	205.3	-49.4	254.68	0.806	Level 1	
11,500.0	6,789.9	11,406.4	6,745.6	133.0	133.3	-77.82	150.0	-4,545.3	205.1	-55.3	260.39	0.787	Level 1	
11,600.0	6,788.0	11,506.4	6,744.8	135.8	136.1	-78.09	150.1	-4,645.3	204.8	-61.3	266.11	0.770	Level 1	
11,700.0	6,786.2	11,606.4	6,743.9	138.6	138.9	-78.37	150.1	-4,745.3	204.6	-67.2	271.84	0.753	Level 1	
11,800.0	6,784.3	11,706.4	6,743.1	141.4	141.7	-78.65	150.1	-4,845.3	204.4	-73.2	277.57	0.736	Level 1	
11,900.0	6,782.5	11,806.4	6,742.3	144.2	144.5	-78.93	150.1	-4,945.3	204.2	-79.1	283.31	0.721	Level 1	
12,000.0	6,780.6	11,906.4	6,741.4	147.0	147.3	-79.20	150.1	-5,045.3	204.0	-85.1	289.05	0.706	Level 1	
12,100.0	6,778.8	12,006.4	6,740.6	149.8	150.1	-79.48	150.1	-5,145.3	203.8	-91.0	294.80	0.691	Level 1	
12,200.0	6,776.9	12,106.4	6,739.8	152.6	152.9	-79.76	150.1	-5,245.3	203.6	-97.0	300.56	0.677	Level 1	
12,300.0	6,775.1	12,206.4	6,738.9	155.4	155.7	-80.04	150.1	-5,345.3	203.4	-102.9	306.31	0.664	Level 1	
12,400.0	6,773.2	12,306.4	6,738.1	158.2	158.5	-80.32	150.2	-5,445.2	203.2	-108.9	312.08	0.651	Level 1	
12,500.0	6,771.4	12,406.4	6,737.2	160.9	161.2	-80.60	150.2	-5,545.2	203.0	-114.8	317.84	0.639	Level 1	
12,600.0	6,769.5	12,506.4	6,736.4	163.7	164.0	-80.89	150.2	-5,645.2	202.9	-120.8	323.61	0.627	Level 1	
12,700.0	6,767.7	12,606.4	6,735.6	166.5	166.8	-81.17	150.2	-5,745.2	202.7	-126.7	329.38	0.615	Level 1	
12,800.0	6,765.8	12,706.4	6,734.7	169.3	169.6	-81.45	150.2	-5,845.2	202.5	-132.6	335.15	0.604	Level 1	
12,900.0	6,764.0	12,806.4	6,733.9	172.1	172.4	-81.73	150.2	-5,945.2	202.4	-138.6	340.92	0.594	Level 1	
12,953.6	6,763.0	12,860.0	6,733.4	173.6	173.9	-81.88	150.2	-5,998.8	202.3	-141.8	344.02	0.588 Level 1, ES, SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)													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	Offset	Semi Major Axis	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
0.0	0.0	0.0	0.0	0.0	0.0	134.16		-83.8	86.3	120.3				
100.0	100.0	98.0	98.0	0.1	0.1	134.16		-83.8	86.3	120.3	120.1	0.22	540.555	
200.0	200.0	198.0	198.0	0.3	0.3	134.16		-83.8	86.3	120.3	119.6	0.67	179.583	
300.0	300.0	298.0	298.0	0.6	0.6	134.16		-83.8	86.3	120.3	119.2	1.12	107.462	
400.0	400.0	398.0	398.0	0.8	0.8	134.16		-83.8	86.3	120.3	118.7	1.57	76.670 CC, ES	
500.0	500.0	494.2	494.2	1.0	1.0	134.39		-85.2	87.0	121.8	119.8	1.99	61.330	
600.0	600.0	590.1	590.0	1.2	1.2	135.06		-89.4	89.2	126.5	124.1	2.40	52.789	
700.0	700.0	685.6	685.2	1.5	1.4	136.08		-96.4	92.8	134.5	131.6	2.83	47.517	
800.0	800.0	780.5	779.4	1.7	1.6	137.32		-106.2	97.9	145.6	142.3	3.29	44.286	
900.0	900.0	879.3	877.3	1.9	1.9	138.60		-118.0	104.0	158.6	154.9	3.78	41.934	
1,000.0	1,000.0	978.4	975.5	2.1	2.2	139.68		-129.8	110.1	171.7	167.4	4.29	40.040	
1,100.0	1,100.0	1,077.5	1,073.7	2.4	2.5	140.61		-141.6	116.3	184.8	180.0	4.80	38.492	
1,200.0	1,200.0	1,176.6	1,171.9	2.6	2.8	141.42		-153.4	122.4	198.0	192.7	5.32	37.217	
1,300.0	1,300.0	1,275.7	1,270.1	2.8	3.2	142.12		-165.2	128.5	211.2	205.4	5.84	36.154	
1,400.0	1,400.0	1,374.8	1,368.3	3.0	3.5	142.75		-177.1	134.7	224.4	218.1	6.37	35.258	
1,500.0	1,500.0	1,473.8	1,466.4	3.3	3.8	95.90		-188.9	140.8	237.9	231.4	6.42	37.034	
1,600.0	1,599.8	1,572.6	1,564.3	3.5	4.1	97.28		-200.7	146.9	251.8	244.9	6.87	36.652	
1,700.0	1,699.5	1,671.0	1,661.8	3.7	4.5	99.22		-212.4	153.0	266.4	259.1	7.32	36.399	
1,800.0	1,798.7	1,769.0	1,758.9	3.9	4.8	101.66		-224.1	159.0	282.1	274.3	7.78	36.254	
1,900.0	1,898.0	1,866.8	1,855.9	4.2	5.1	104.11		-235.8	165.1	298.4	290.1	8.25	36.144	
2,000.0	1,997.2	1,964.7	1,952.9	4.4	5.5	106.30		-247.4	171.1	315.1	306.4	8.74	36.053	
2,100.0	2,096.4	2,062.6	2,049.9	4.7	5.8	108.27		-259.1	177.2	332.3	323.1	9.24	35.979	
2,200.0	2,195.6	2,160.5	2,146.9	5.0	6.1	110.05		-270.8	183.2	349.9	340.1	9.74	35.919	
2,300.0	2,294.9	2,258.4	2,243.9	5.3	6.5	111.66		-282.5	189.3	367.7	357.5	10.25	35.870	
2,400.0	2,394.1	2,356.3	2,340.9	5.5	6.8	113.12		-294.1	195.3	385.8	375.0	10.77	35.833	
2,500.0	2,493.3	2,454.2	2,437.9	5.8	7.1	114.45		-305.8	201.4	404.1	392.8	11.29	35.803	
2,600.0	2,592.5	2,552.1	2,534.9	6.1	7.5	115.67		-317.5	207.4	422.6	410.8	11.81	35.782	
2,700.0	2,691.8	2,650.0	2,631.9	6.4	7.8	116.78		-329.2	213.5	441.3	429.0	12.34	35.766	
2,800.0	2,791.0	2,747.9	2,728.9	6.7	8.1	117.81		-340.8	219.6	460.2	447.3	12.87	35.756	
2,900.0	2,890.2	2,845.7	2,825.9	7.0	8.5	118.75		-352.5	225.6	479.1	465.7	13.40	35.751	
3,000.0	2,989.4	2,943.6	2,922.9	7.3	8.8	119.62		-364.2	231.7	498.2	484.3	13.94	35.749	
3,100.0	3,088.6	3,041.5	3,019.9	7.6	9.2	120.43		-375.9	237.7	517.4	502.9	14.47	35.750	
3,200.0	3,187.9	3,139.4	3,116.9	7.9	9.5	121.18		-387.5	243.8	536.7	521.6	15.01	35.754	
3,300.0	3,287.1	3,237.3	3,213.9	8.2	9.8	121.88		-399.2	249.8	556.0	540.5	15.55	35.760	
3,400.0	3,386.3	3,335.2	3,310.9	8.5	10.2	122.53		-410.9	255.9	575.4	559.4	16.09	35.768	
3,500.0	3,485.5	3,433.1	3,407.9	8.8	10.5	123.14		-422.6	261.9	594.9	578.3	16.63	35.777	
3,600.0	3,584.8	3,531.0	3,504.9	9.1	10.8	123.71		-434.2	268.0	614.5	597.3	17.17	35.788	
3,700.0	3,684.0	3,628.9	3,601.9	9.5	11.2	124.24		-445.9	274.0	634.1	616.4	17.71	35.799	
3,800.0	3,783.2	3,726.8	3,698.9	9.8	11.5	124.75		-457.6	280.1	653.8	635.5	18.26	35.812	
3,900.0	3,882.4	3,824.6	3,795.9	10.1	11.9	125.22		-469.3	286.1	673.5	654.7	18.80	35.825	
4,000.0	3,981.7	3,922.5	3,892.9	10.4	12.2	125.67		-480.9	292.2	693.2	673.9	19.34	35.838	
4,100.0	4,080.9	4,020.4	3,989.9	10.7	12.5	126.09		-492.6	298.2	713.0	693.1	19.89	35.852	
4,200.0	4,180.1	4,118.3	4,086.9	11.0	12.9	126.49		-504.3	304.3	732.9	712.4	20.43	35.866	
4,300.0	4,279.3	4,216.2	4,183.9	11.3	13.2	126.87		-516.0	310.3	752.7	731.7	20.98	35.880	
4,400.0	4,378.5	4,314.1	4,281.0	11.6	13.5	127.23		-527.6	316.4	772.6	751.1	21.52	35.894	
4,500.0	4,477.8	4,412.0	4,378.0	12.0	13.9	127.57		-539.3	322.4	792.5	770.5	22.07	35.908	
4,600.0	4,577.0	4,509.9	4,475.0	12.3	14.2	127.89		-551.0	328.5	812.5	789.8	22.62	35.923	
4,700.0	4,676.2	4,607.8	4,572.0	12.6	14.6	128.20		-562.7	334.6	832.4	809.3	23.16	35.937	
4,800.0	4,775.4	4,705.7	4,669.0	12.9	14.9	128.49		-574.3	340.6	852.4	828.7	23.71	35.951	
4,900.0	4,874.7	4,803.6	4,766.0	13.2	15.2	128.78		-586.0	346.7	872.4	848.2	24.26	35.965	
5,000.0	4,973.9	4,901.4	4,863.0	13.5	15.6	129.04		-597.7	352.7	892.5	867.6	24.80	35.979	

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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-204 - Wellbore #1 - Plan #1 (9-4-14)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.0	5,073.1	4,999.3	4,960.0	13.8	15.9	129.30	-609.4	358.8	912.5	887.1	25.35	35.993	
5,200.0	5,172.3	5,097.2	5,057.0	14.2	16.2	129.55	-621.0	364.8	932.6	906.7	25.90	36.006	
5,300.0	5,271.6	5,211.9	5,170.7	14.5	16.6	129.83	-634.2	371.7	952.3	925.8	26.47	35.975	
5,400.0	5,370.8	5,353.2	5,311.3	14.8	16.9	130.32	-645.6	377.5	968.5	941.4	27.04	35.820	
5,500.0	5,470.0	5,495.8	5,453.8	15.1	17.1	130.96	-650.8	380.2	980.3	952.7	27.58	35.538	
5,600.0	5,569.2	5,609.2	5,567.2	15.4	17.3	131.60	-651.1	380.4	988.7	960.6	28.09	35.201	
5,700.0	5,668.8	5,708.7	5,666.8	15.6	17.4	132.12	-651.1	380.4	995.3	966.8	28.51	34.907	
5,800.0	5,768.5	5,808.5	5,766.5	15.8	17.5	132.45	-651.1	380.4	999.5	970.6	28.90	34.584 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-304 - Wellbore #1 - Plan #1 (9-4-14)													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	Offset	Semi Major Axis	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
0.0	0.0	0.0	0.0	0.0	0.0	134.96		-105.6	105.8	149.5				
100.0	100.0	97.0	97.0	0.1	0.1	134.96		-105.6	105.8	149.5	149.3	0.22	675.271	
200.0	200.0	197.0	197.0	0.3	0.3	134.96		-105.6	105.8	149.5	148.8	0.67	223.960 CC, ES	
300.0	300.0	292.7	292.7	0.6	0.5	135.23		-107.1	106.2	150.9	149.8	1.09	138.952	
400.0	400.0	388.1	387.9	0.8	0.7	136.04		-111.6	107.6	155.2	153.7	1.51	102.895	
500.0	500.0	483.0	482.6	1.0	0.9	137.31		-119.0	109.8	162.6	160.6	1.96	82.924	
600.0	600.0	577.4	576.3	1.2	1.2	138.89		-129.4	112.9	173.0	170.6	2.45	70.743	
700.0	700.0	670.9	668.8	1.5	1.5	140.66		-142.6	116.9	186.6	183.6	2.97	62.921	
800.0	800.0	765.4	761.8	1.7	1.9	142.51		-158.7	121.7	203.1	199.6	3.52	57.704	
900.0	900.0	863.7	858.4	1.9	2.3	144.21		-176.2	127.0	220.6	216.5	4.11	53.713	
1,000.0	1,000.0	962.0	954.9	2.1	2.6	145.66		-193.6	132.2	238.2	233.5	4.70	50.717	
1,100.0	1,100.0	1,060.2	1,051.5	2.4	3.0	146.92		-211.0	137.5	255.9	250.6	5.29	48.397	
1,200.0	1,200.0	1,158.5	1,148.1	2.6	3.5	148.01		-228.4	142.7	273.7	267.8	5.88	46.559	
1,300.0	1,300.0	1,256.8	1,244.7	2.8	3.9	148.96		-245.8	147.9	291.6	285.2	6.47	45.072	
1,400.0	1,400.0	1,355.0	1,341.2	3.0	4.3	149.81		-263.2	153.2	309.6	302.5	7.06	43.848 SF	
1,500.0	1,500.0	1,453.2	1,437.6	3.3	4.7	102.94		-280.6	158.4	328.0	321.4	6.65	49.351	
1,600.0	1,599.8	1,550.9	1,533.7	3.5	5.1	104.06		-297.9	163.6	347.4	340.3	7.10	48.903	
1,700.0	1,699.5	1,648.1	1,629.2	3.7	5.5	105.53		-315.2	168.8	367.9	360.3	7.56	48.671	
1,800.0	1,798.7	1,744.7	1,724.1	3.9	5.9	107.40		-332.3	173.9	389.7	381.6	8.02	48.602	
1,900.0	1,898.0	1,841.2	1,819.0	4.2	6.3	109.37		-349.4	179.1	412.1	403.6	8.49	48.553	
2,000.0	1,997.2	1,937.7	1,913.8	4.4	6.7	111.13		-366.5	184.2	434.9	425.9	8.97	48.495	
2,100.0	2,096.4	2,034.2	2,008.7	4.7	7.1	112.73		-383.6	189.3	458.1	448.6	9.46	48.432	
2,200.0	2,195.6	2,130.7	2,103.5	5.0	7.5	114.17		-400.7	194.5	481.6	471.6	9.96	48.367	
2,300.0	2,294.9	2,227.2	2,198.4	5.3	7.9	115.47		-417.8	199.6	505.3	494.9	10.46	48.302	
2,400.0	2,394.1	2,323.8	2,293.2	5.5	8.3	116.66		-434.9	204.8	529.3	518.4	10.97	48.239	
2,500.0	2,493.3	2,420.3	2,388.1	5.8	8.7	117.75		-452.0	209.9	553.5	542.0	11.49	48.177	
2,600.0	2,592.5	2,516.8	2,482.9	6.1	9.2	118.75		-469.1	215.1	577.9	565.9	12.01	48.118	
2,700.0	2,691.8	2,613.3	2,577.7	6.4	9.6	119.66		-486.2	220.2	602.4	589.9	12.53	48.062	
2,800.0	2,791.0	2,709.8	2,672.6	6.7	10.0	120.51		-503.3	225.3	627.1	614.0	13.06	48.009	
2,900.0	2,890.2	2,806.3	2,767.4	7.0	10.4	121.29		-520.4	230.5	651.8	638.2	13.59	47.960	
3,000.0	2,989.4	2,902.8	2,862.3	7.3	10.8	122.02		-537.5	235.6	676.7	662.6	14.12	47.913	
3,100.0	3,088.6	2,999.3	2,957.1	7.6	11.2	122.69		-554.6	240.8	701.7	687.0	14.66	47.869	
3,200.0	3,187.9	3,095.8	3,052.0	7.9	11.6	123.32		-571.7	245.9	726.7	711.5	15.19	47.828	
3,300.0	3,287.1	3,192.4	3,146.8	8.2	12.0	123.91		-588.8	251.0	751.9	736.1	15.73	47.790	
3,400.0	3,386.3	3,288.9	3,241.7	8.5	12.4	124.45		-605.9	256.2	777.1	760.8	16.27	47.754	
3,500.0	3,485.5	3,385.4	3,336.5	8.8	12.8	124.97		-623.0	261.3	802.3	785.5	16.81	47.721	
3,600.0	3,584.8	3,481.9	3,431.3	9.1	13.2	125.45		-640.1	266.5	827.7	810.3	17.36	47.689	
3,700.0	3,684.0	3,578.4	3,526.2	9.5	13.6	125.91		-657.2	271.6	853.0	835.1	17.90	47.660	
3,800.0	3,783.2	3,674.9	3,621.0	9.8	14.1	126.33		-674.3	276.8	878.5	860.0	18.44	47.632	
3,900.0	3,882.4	3,771.4	3,715.9	10.1	14.5	126.74		-691.4	281.9	903.9	884.9	18.99	47.606	
4,000.0	3,981.7	3,867.9	3,810.7	10.4	14.9	127.12		-708.5	287.0	929.4	909.9	19.53	47.582	
4,100.0	4,080.9	3,964.4	3,905.6	10.7	15.3	127.48		-725.6	292.2	955.0	934.9	20.08	47.559	
4,200.0	4,180.1	4,060.9	4,000.4	11.0	15.7	127.82		-742.7	297.3	980.6	959.9	20.63	47.538	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)													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	Offset	Semi Major Axis	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
0.0	0.0	0.0	0.0	0.0	0.0	131.98		-40.1	44.5	59.9				
100.0	100.0	98.0	98.0	0.1	0.1	131.98		-40.1	44.5	59.9	59.7	0.22	269.257	
200.0	200.0	198.0	198.0	0.3	0.3	131.98		-40.1	44.5	59.9	59.2	0.67	89.453	
300.0	300.0	298.0	298.0	0.6	0.6	131.98		-40.1	44.5	59.9	58.8	1.12	53.528	
400.0	400.0	398.0	398.0	0.8	0.8	131.98		-40.1	44.5	59.9	58.3	1.57	38.190	
500.0	500.0	498.0	498.0	1.0	1.0	131.98		-40.1	44.5	59.9	57.9	2.02	29.685	
600.0	600.0	598.0	598.0	1.2	1.2	131.98		-40.1	44.5	59.9	57.4	2.47	24.278	
700.0	700.0	698.0	698.0	1.5	1.5	131.98		-40.1	44.5	59.9	57.0	2.92	20.537	
800.0	800.0	798.0	798.0	1.7	1.7	131.98		-40.1	44.5	59.9	56.5	3.37	17.795	
900.0	900.0	898.0	898.0	1.9	1.9	131.98		-40.1	44.5	59.9	56.1	3.82	15.699	
1,000.0	1,000.0	998.0	998.0	2.1	2.1	131.98		-40.1	44.5	59.9	55.6	4.27	14.045	
1,100.0	1,100.0	1,098.0	1,098.0	2.4	2.4	131.98		-40.1	44.5	59.9	55.2	4.72	12.706	
1,200.0	1,200.0	1,198.0	1,198.0	2.6	2.6	131.98		-40.1	44.5	59.9	54.8	5.17	11.600	
1,300.0	1,300.0	1,298.0	1,298.0	2.8	2.8	131.98		-40.1	44.5	59.9	54.3	5.61	10.671	
1,400.0	1,400.0	1,398.0	1,398.0	3.0	3.0	131.98		-40.1	44.5	59.9	53.9	6.06	9.880	
1,500.0	1,500.0	1,498.0	1,498.0	3.3	3.3	86.09		-40.1	44.5	59.8	53.3	6.51	9.183	
1,582.7	1,582.5	1,580.5	1,580.5	3.4	3.4	90.00		-40.1	44.5	59.6	52.8	6.87	8.674 CC	
1,600.0	1,599.8	1,597.8	1,597.8	3.5	3.5	91.11		-40.1	44.5	59.6	52.7	6.95	8.580 ES	
1,700.0	1,699.5	1,695.4	1,695.4	3.7	3.7	98.92		-41.2	45.6	62.0	54.7	7.37	8.415	
1,800.0	1,798.7	1,792.4	1,792.3	3.9	3.9	107.64		-44.8	48.9	69.7	61.9	7.79	8.951	
1,900.0	1,898.0	1,888.9	1,888.5	4.2	4.0	113.96		-50.8	54.4	82.0	73.8	8.22	9.982	
2,000.0	1,997.2	1,985.6	1,984.4	4.4	4.2	117.73		-59.1	62.0	97.9	89.2	8.66	11.305	
2,100.0	2,096.4	2,084.0	2,082.1	4.7	4.5	120.27		-68.2	70.3	114.9	105.8	9.11	12.602	
2,200.0	2,195.6	2,182.4	2,179.7	5.0	4.7	122.15		-77.3	78.6	132.0	122.4	9.58	13.779	
2,300.0	2,294.9	2,280.9	2,277.4	5.3	4.9	123.60		-86.4	86.9	149.2	139.2	10.05	14.843	
2,400.0	2,394.1	2,379.3	2,375.1	5.5	5.2	124.75		-95.5	95.3	166.5	156.0	10.54	15.804	
2,500.0	2,493.3	2,477.8	2,472.7	5.8	5.4	125.68		-104.6	103.6	183.9	172.9	11.03	16.674	
2,600.0	2,592.5	2,576.2	2,570.4	6.1	5.7	126.46		-113.7	111.9	201.3	189.8	11.53	17.464	
2,700.0	2,691.8	2,674.6	2,668.1	6.4	6.0	127.10		-122.8	120.2	218.7	206.7	12.03	18.181	
2,800.0	2,791.0	2,773.1	2,765.7	6.7	6.3	127.66		-131.9	128.6	236.1	223.6	12.54	18.834	
2,900.0	2,890.2	2,871.5	2,863.4	7.0	6.5	128.13		-141.0	136.9	253.6	240.6	13.05	19.431	
3,000.0	2,989.4	2,970.0	2,961.1	7.3	6.8	128.55		-150.1	145.2	271.1	257.5	13.57	19.977	
3,100.0	3,088.6	3,068.4	3,058.7	7.6	7.1	128.92		-159.2	153.6	288.6	274.5	14.09	20.479	
3,200.0	3,187.9	3,166.9	3,156.4	7.9	7.4	129.24		-168.3	161.9	306.1	291.5	14.62	20.940	
3,300.0	3,287.1	3,265.3	3,254.1	8.2	7.7	129.53		-177.4	170.2	323.6	308.5	15.15	21.366	
3,400.0	3,386.3	3,363.7	3,351.7	8.5	8.0	129.79		-186.5	178.5	341.1	325.5	15.68	21.760	
3,500.0	3,485.5	3,462.2	3,449.4	8.8	8.3	130.02		-195.5	186.9	358.7	342.4	16.21	22.125	
3,600.0	3,584.8	3,560.6	3,547.1	9.1	8.6	130.23		-204.6	195.2	376.2	359.4	16.75	22.464	
3,700.0	3,684.0	3,659.1	3,644.7	9.5	8.9	130.43		-213.7	203.5	393.7	376.4	17.28	22.780	
3,800.0	3,783.2	3,757.5	3,742.4	9.8	9.2	130.60		-222.8	211.8	411.3	393.4	17.82	23.074	
3,900.0	3,882.4	3,856.0	3,840.1	10.1	9.5	130.76		-231.9	220.2	428.8	410.4	18.36	23.349	
4,000.0	3,981.7	3,954.4	3,937.7	10.4	9.8	130.91		-241.0	228.5	446.3	427.4	18.91	23.607	
4,100.0	4,080.9	4,052.8	4,035.4	10.7	10.1	131.05		-250.1	236.8	463.9	444.4	19.45	23.849	
4,200.0	4,180.1	4,151.3	4,133.1	11.0	10.5	131.18		-259.2	245.2	481.4	461.4	20.00	24.076	
4,300.0	4,279.3	4,249.7	4,230.7	11.3	10.8	131.30		-268.3	253.5	499.0	478.5	20.54	24.289	
4,400.0	4,378.5	4,348.2	4,328.4	11.6	11.1	131.41		-277.4	261.8	516.6	495.5	21.09	24.491	
4,500.0	4,477.8	4,446.6	4,426.1	12.0	11.4	131.51		-286.5	270.1	534.1	512.5	21.64	24.681	
4,600.0	4,577.0	4,545.1	4,523.7	12.3	11.7	131.61		-295.6	278.5	551.7	529.5	22.19	24.861	
4,700.0	4,676.2	4,643.5	4,621.4	12.6	12.0	131.70		-304.7	286.8	569.2	546.5	22.74	25.031	
4,800.0	4,775.4	4,741.9	4,719.1	12.9	12.3	131.79		-313.8	295.1	586.8	563.5	23.29	25.192	
4,900.0	4,874.7	4,840.4	4,816.7	13.2	12.7	131.87		-322.9	303.4	604.4	580.5	23.84	25.345	

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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis					Distance						
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
5,000.0	4,973.9	4,938.8	4,914.4	13.5	13.0	131.94	-332.0	311.8	621.9	597.5	24.40	25.491			
5,100.0	5,073.1	5,037.3	5,012.1	13.8	13.3	132.02	-341.1	320.1	639.5	614.5	24.95	25.629			
5,200.0	5,172.3	5,135.7	5,109.7	14.2	13.6	132.08	-350.2	328.4	657.0	631.5	25.51	25.761			
5,300.0	5,271.6	5,234.1	5,207.4	14.5	13.9	132.15	-359.3	336.8	674.6	648.6	26.06	25.886			
5,400.0	5,370.8	5,332.6	5,305.1	14.8	14.2	132.21	-368.4	345.1	692.2	665.6	26.62	26.006			
5,500.0	5,470.0	5,431.0	5,402.7	15.1	14.6	132.27	-377.5	353.4	709.7	682.6	27.17	26.120			
5,600.0	5,569.2	5,529.5	5,500.4	15.4	14.9	132.38	-386.6	361.7	727.2	699.5	27.73	26.225			
5,700.0	5,668.8	5,641.8	5,611.9	15.6	15.2	132.54	-396.3	370.6	742.5	714.3	28.25	26.287			
5,800.0	5,768.5	5,764.9	5,734.6	15.8	15.5	132.62	-403.5	377.2	752.6	723.9	28.71	26.214			
5,900.0	5,868.5	5,888.8	5,858.4	16.0	15.7	132.65	-406.8	380.2	757.2	728.1	29.12	26.004			
6,000.0	5,968.5	5,996.8	5,966.5	16.2	15.9	-179.79	-407.0	380.4	757.5	728.1	29.36	25.801			
6,100.0	6,068.5	6,096.8	6,066.5	16.3	16.0	-179.79	-407.0	380.4	757.5	727.8	29.72	25.487			
6,200.0	6,168.4	6,196.6	6,166.2	16.5	16.2	-89.81	-407.0	377.8	757.5	727.3	30.16	25.115			
6,300.0	6,267.2	6,296.3	6,264.7	16.6	16.2	-89.83	-407.0	363.1	757.5	727.2	30.31	24.989			
6,400.0	6,363.2	6,396.0	6,360.6	16.6	16.3	-89.86	-407.0	335.7	757.5	727.1	30.35	24.963			
6,500.0	6,454.7	6,495.8	6,452.0	16.5	16.2	-89.89	-407.0	296.1	757.5	727.2	30.33	24.979			
6,600.0	6,540.2	6,595.7	6,537.6	16.4	16.2	-89.92	-407.0	244.8	757.5	727.1	30.36	24.953			
6,700.0	6,618.2	6,695.6	6,615.9	16.4	16.2	-89.96	-407.0	182.8	757.5	726.9	30.58	24.768			
6,800.0	6,687.4	6,795.5	6,685.4	16.4	16.2	-89.99	-407.0	111.0	757.5	726.3	31.17	24.300			
6,820.0	6,700.1	6,815.5	6,698.1	16.4	16.2	-90.00	-407.0	95.7	757.5	726.1	31.38	24.142			
6,900.0	6,746.6	6,895.5	6,744.9	16.6	16.3	-90.03	-407.0	30.8	757.5	725.2	32.29	23.461			
7,000.0	6,794.8	6,995.6	6,793.6	17.3	16.8	-90.06	-407.0	-56.6	757.5	723.5	34.04	22.251			
7,100.0	6,831.2	7,095.7	6,830.4	18.4	18.0	-90.10	-407.0	-149.6	757.5	721.0	36.47	20.770			
7,200.0	6,855.0	7,195.9	6,854.7	20.0	19.6	-90.13	-407.0	-246.8	757.5	718.0	39.52	19.168			
7,300.0	6,866.0	7,296.2	6,866.1	21.7	21.4	-90.16	-407.0	-346.3	757.5	714.4	43.06	17.591			
7,400.0	6,865.7	7,396.3	6,866.4	23.6	23.4	-90.20	-407.0	-446.4	757.5	710.5	46.96	16.130			
7,500.0	6,863.9	7,496.3	6,865.3	25.7	25.6	-90.26	-407.0	-546.4	757.5	706.3	51.17	14.803			
7,600.0	6,862.0	7,596.3	6,864.1	27.9	27.9	-90.31	-407.0	-646.4	757.5	701.9	55.63	13.617			
7,700.0	6,860.2	7,696.3	6,863.0	30.3	30.2	-90.37	-407.0	-746.4	757.5	697.2	60.28	12.566			
7,800.0	6,858.3	7,796.3	6,861.9	32.6	32.6	-90.42	-407.0	-846.4	757.5	692.4	65.09	11.639			
7,900.0	6,856.5	7,896.3	6,860.8	35.1	35.1	-90.48	-407.0	-946.3	757.5	687.5	70.01	10.820			
8,000.0	6,854.6	7,996.3	6,859.7	37.6	37.6	-90.53	-407.0	-1,046.3	757.5	682.5	75.04	10.096			
8,100.0	6,852.8	8,096.3	6,858.6	40.1	40.2	-90.59	-407.0	-1,146.3	757.5	677.4	80.14	9.453			
8,200.0	6,850.9	8,196.3	6,857.4	42.7	42.8	-90.64	-407.0	-1,246.3	757.5	672.2	85.30	8.880			
8,300.0	6,849.1	8,296.3	6,856.3	45.3	45.4	-90.70	-407.0	-1,346.3	757.5	667.0	90.53	8.368			
8,400.0	6,847.2	8,396.3	6,855.2	47.9	48.0	-90.75	-407.0	-1,446.3	757.6	661.8	95.79	7.909			
8,500.0	6,845.4	8,496.3	6,854.1	50.6	50.7	-90.81	-407.0	-1,546.3	757.6	656.5	101.09	7.494			
8,600.0	6,843.5	8,596.3	6,853.0	53.2	53.4	-90.86	-407.0	-1,646.3	757.6	651.2	106.43	7.118			
8,700.0	6,841.7	8,696.3	6,851.9	55.9	56.1	-90.92	-407.0	-1,746.3	757.6	645.8	111.79	6.777			
8,800.0	6,839.8	8,796.3	6,850.7	58.6	58.8	-90.98	-407.0	-1,846.3	757.6	640.4	117.18	6.465			
8,900.0	6,838.0	8,896.3	6,849.6	61.3	61.5	-91.03	-407.0	-1,946.3	757.6	635.0	122.58	6.180			
9,000.0	6,836.1	8,996.3	6,848.5	64.0	64.2	-91.09	-407.0	-2,046.2	757.6	629.6	128.01	5.919			
9,100.0	6,834.3	9,096.3	6,847.4	66.7	66.9	-91.14	-407.0	-2,146.2	757.6	624.2	133.45	5.677			
9,200.0	6,832.4	9,196.3	6,846.3	69.4	69.6	-91.20	-407.0	-2,246.2	757.7	618.8	138.90	5.455			
9,300.0	6,830.6	9,296.3	6,845.2	72.2	72.4	-91.25	-407.0	-2,346.2	757.7	613.3	144.37	5.248			
9,400.0	6,828.7	9,396.3	6,844.0	74.9	75.1	-91.31	-407.0	-2,446.2	757.7	607.8	149.84	5.057			
9,500.0	6,826.9	9,496.3	6,842.9	77.6	77.9	-91.36	-407.0	-2,546.2	757.7	602.4	155.33	4.878			
9,600.0	6,825.0	9,596.3	6,841.8	80.4	80.6	-91.42	-407.0	-2,646.2	757.7	596.9	160.82	4.712			
9,700.0	6,823.2	9,696.3	6,840.7	83.1	83.4	-91.47	-407.0	-2,746.2	757.7	591.4	166.33	4.556			
9,800.0	6,821.3	9,796.2	6,839.6	85.9	86.1	-91.53	-407.0	-2,846.2	757.8	585.9	171.84	4.410			
9,900.0	6,819.5	9,896.2	6,838.5	88.6	88.9	-91.59	-407.0	-2,946.2	757.8	580.4	177.35	4.273			

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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-314 - Wellbore #1 - Plan #1 (9-4-14)													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)			
10,000.0	6,817.6	9,996.2	6,837.3	91.4	91.6	-91.64	-407.0	-3,046.2	757.8	574.9	182.87	4.144		
10,100.0	6,815.8	10,096.2	6,836.2	94.2	94.4	-91.70	-407.0	-3,146.1	757.8	569.4	188.40	4.022		
10,200.0	6,813.9	10,196.2	6,835.1	96.9	97.2	-91.75	-407.0	-3,246.1	757.8	563.9	193.93	3.908		
10,300.0	6,812.1	10,296.2	6,834.0	99.7	100.0	-91.81	-407.0	-3,346.1	757.9	558.4	199.46	3.800		
10,400.0	6,810.2	10,396.2	6,832.9	102.5	102.7	-91.86	-407.0	-3,446.1	757.9	552.9	205.00	3.697		
10,500.0	6,808.4	10,496.2	6,831.8	105.2	105.5	-91.92	-407.0	-3,546.1	757.9	547.4	210.54	3.600		
10,600.0	6,806.5	10,596.2	6,830.6	108.0	108.3	-91.97	-407.0	-3,646.1	757.9	541.9	216.09	3.508		
10,700.0	6,804.7	10,696.2	6,829.5	110.8	111.1	-92.03	-407.0	-3,746.1	758.0	536.3	221.63	3.420		
10,800.0	6,802.8	10,796.2	6,828.4	113.6	113.8	-92.08	-407.0	-3,846.1	758.0	530.8	227.18	3.336		
10,900.0	6,801.0	10,896.2	6,827.3	116.3	116.6	-92.14	-407.0	-3,946.1	758.0	525.3	232.74	3.257		
11,000.0	6,799.1	10,996.2	6,826.2	119.1	119.4	-92.19	-407.0	-4,046.1	758.0	519.8	238.29	3.181		
11,100.0	6,797.3	11,096.2	6,825.1	121.9	122.2	-92.25	-407.0	-4,146.1	758.1	514.2	243.85	3.109		
11,200.0	6,795.4	11,196.2	6,823.9	124.7	125.0	-92.31	-407.0	-4,246.0	758.1	508.7	249.40	3.040		
11,300.0	6,793.6	11,296.2	6,822.8	127.5	127.8	-92.36	-407.0	-4,346.0	758.1	503.2	254.96	2.974		
11,400.0	6,791.7	11,396.2	6,821.7	130.3	130.5	-92.42	-407.0	-4,446.0	758.2	497.6	260.52	2.910		
11,500.0	6,789.9	11,496.2	6,820.6	133.0	133.3	-92.47	-407.0	-4,546.0	758.2	492.1	266.09	2.849		
11,600.0	6,788.0	11,596.2	6,819.5	135.8	136.1	-92.53	-407.0	-4,646.0	758.2	486.6	271.65	2.791		
11,700.0	6,786.2	11,696.2	6,818.3	138.6	138.9	-92.58	-407.0	-4,746.0	758.3	481.1	277.21	2.735		
11,800.0	6,784.3	11,796.2	6,817.2	141.4	141.7	-92.64	-407.0	-4,846.0	758.3	475.5	282.78	2.682		
11,900.0	6,782.5	11,896.2	6,816.1	144.2	144.5	-92.69	-407.0	-4,946.0	758.3	470.0	288.34	2.630		
12,000.0	6,780.6	11,996.2	6,815.0	147.0	147.3	-92.75	-407.0	-5,046.0	758.4	464.5	293.91	2.580		
12,100.0	6,778.8	12,096.2	6,813.9	149.8	150.1	-92.80	-407.0	-5,146.0	758.4	458.9	299.48	2.532		
12,200.0	6,776.9	12,196.2	6,812.8	152.6	152.9	-92.86	-407.0	-5,246.0	758.4	453.4	305.04	2.486		
12,300.0	6,775.1	12,296.2	6,811.6	155.4	155.7	-92.91	-407.0	-5,346.0	758.5	447.9	310.61	2.442		
12,400.0	6,773.2	12,396.2	6,810.5	158.2	158.5	-92.97	-407.0	-5,445.9	758.5	442.3	316.18	2.399		
12,500.0	6,771.4	12,496.2	6,809.4	160.9	161.3	-93.02	-407.0	-5,545.9	758.5	436.8	321.75	2.358		
12,600.0	6,769.5	12,596.2	6,808.3	163.7	164.0	-93.08	-407.0	-5,645.9	758.6	431.3	327.32	2.318		
12,700.0	6,767.7	12,696.2	6,807.2	166.5	166.8	-93.14	-407.0	-5,745.9	758.6	425.7	332.89	2.279		
12,800.0	6,765.8	12,796.2	6,806.1	169.3	169.6	-93.19	-407.0	-5,845.9	758.7	420.2	338.46	2.242		
12,900.0	6,764.0	12,896.2	6,804.9	172.1	172.4	-93.25	-407.0	-5,945.9	758.7	414.7	344.03	2.205		
12,953.6	6,763.0	12,949.8	6,804.3	173.6	173.9	-93.28	-407.0	-5,999.5	758.7	411.7	347.01	2.186 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)													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	Offset	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	134.05		-61.9	64.0	89.1				
100.0	100.0	98.0	98.0	0.1	0.1	134.05		-61.9	64.0	89.1	88.9	0.22	400.322	
200.0	200.0	198.0	198.0	0.3	0.3	134.05		-61.9	64.0	89.1	88.4	0.67	132.995	
300.0	300.0	298.0	298.0	0.6	0.6	134.05		-61.9	64.0	89.1	88.0	1.12	79.583	
400.0	400.0	398.0	398.0	0.8	0.8	134.05		-61.9	64.0	89.1	87.5	1.57	56.780	
500.0	500.0	498.0	498.0	1.0	1.0	134.05		-61.9	64.0	89.1	87.1	2.02	44.134	
600.0	600.0	598.0	598.0	1.2	1.2	134.05		-61.9	64.0	89.1	86.6	2.47	36.095	
700.0	700.0	698.0	698.0	1.5	1.5	134.05		-61.9	64.0	89.1	86.2	2.92	30.534	
800.0	800.0	798.0	798.0	1.7	1.7	134.05		-61.9	64.0	89.1	85.7	3.37	26.457	
900.0	900.0	898.0	898.0	1.9	1.9	134.05		-61.9	64.0	89.1	85.3	3.82	23.341	
1,000.0	1,000.0	998.0	998.0	2.1	2.1	134.05		-61.9	64.0	89.1	84.8	4.27	20.881 CC, ES	
1,100.0	1,100.0	1,095.1	1,095.1	2.4	2.3	134.26		-63.2	64.9	90.7	86.0	4.68	19.358	
1,200.0	1,200.0	1,191.9	1,191.7	2.6	2.5	134.86		-67.3	67.6	95.6	90.5	5.08	18.797	
1,300.0	1,300.0	1,288.2	1,287.7	2.8	2.7	135.74		-74.0	72.1	103.8	98.3	5.50	18.885	
1,400.0	1,400.0	1,385.0	1,383.9	3.0	2.9	136.76		-83.3	78.3	115.2	109.3	5.92	19.443	
1,500.0	1,500.0	1,484.2	1,482.3	3.3	3.1	90.67		-93.5	85.2	127.5	121.2	6.33	20.135	
1,600.0	1,599.8	1,583.2	1,580.5	3.5	3.4	93.25		-103.8	92.0	140.0	133.3	6.75	20.742	
1,700.0	1,699.5	1,681.9	1,678.4	3.7	3.7	96.65		-114.0	98.8	153.3	146.1	7.18	21.338	
1,800.0	1,798.7	1,780.2	1,775.9	3.9	3.9	100.62		-124.1	105.6	167.5	159.9	7.63	21.961	
1,900.0	1,898.0	1,878.4	1,873.4	4.2	4.2	104.27		-134.3	112.4	182.7	174.6	8.09	22.578	
2,000.0	1,997.2	1,976.6	1,970.9	4.4	4.5	107.35		-144.4	119.2	198.5	189.9	8.57	23.168	
2,100.0	2,096.4	2,074.8	2,068.3	4.7	4.8	109.98		-154.5	126.0	214.8	205.7	9.05	23.723	
2,200.0	2,195.6	2,173.0	2,165.8	5.0	5.1	112.24		-164.7	132.8	231.4	221.8	9.55	24.240	
2,300.0	2,294.9	2,271.3	2,263.2	5.3	5.4	114.19		-174.8	139.6	248.3	238.3	10.05	24.719	
2,400.0	2,394.1	2,369.5	2,360.7	5.5	5.7	115.90		-185.0	146.4	265.5	255.0	10.55	25.162	
2,500.0	2,493.3	2,467.7	2,458.2	5.8	6.0	117.39		-195.1	153.1	282.9	271.9	11.06	25.571	
2,600.0	2,592.5	2,565.9	2,555.6	6.1	6.3	118.72		-205.3	159.9	300.5	288.9	11.58	25.949	
2,700.0	2,691.8	2,664.1	2,653.1	6.4	6.6	119.89		-215.4	166.7	318.2	306.1	12.10	26.298	
2,800.0	2,791.0	2,762.4	2,750.5	6.7	6.9	120.95		-225.6	173.5	336.0	323.4	12.62	26.621	
2,900.0	2,890.2	2,860.6	2,848.0	7.0	7.2	121.89		-235.7	180.3	353.9	340.8	13.15	26.920	
3,000.0	2,989.4	2,958.8	2,945.5	7.3	7.5	122.75		-245.9	187.1	371.9	358.3	13.68	27.198	
3,100.0	3,088.6	3,057.0	3,042.9	7.6	7.8	123.53		-256.0	193.9	390.0	375.8	14.20	27.456	
3,200.0	3,187.9	3,155.2	3,140.4	7.9	8.2	124.23		-266.1	200.7	408.1	393.4	14.74	27.696	
3,300.0	3,287.1	3,253.5	3,237.8	8.2	8.5	124.88		-276.3	207.5	426.3	411.1	15.27	27.921	
3,400.0	3,386.3	3,351.7	3,335.3	8.5	8.8	125.48		-286.4	214.2	444.6	428.8	15.80	28.130	
3,500.0	3,485.5	3,449.9	3,432.8	8.8	9.1	126.03		-296.6	221.0	462.9	446.5	16.34	28.327	
3,600.0	3,584.8	3,548.1	3,530.2	9.1	9.4	126.53		-306.7	227.8	481.2	464.3	16.88	28.511	
3,700.0	3,684.0	3,646.4	3,627.7	9.5	9.7	127.00		-316.9	234.6	499.6	482.1	17.42	28.684	
3,800.0	3,783.2	3,744.6	3,725.1	9.8	10.1	127.44		-327.0	241.4	517.9	500.0	17.96	28.846	
3,900.0	3,882.4	3,842.8	3,822.6	10.1	10.4	127.84		-337.2	248.2	536.4	517.9	18.50	28.999	
4,000.0	3,981.7	3,941.0	3,920.1	10.4	10.7	128.22		-347.3	255.0	554.8	535.8	19.04	29.144	
4,100.0	4,080.9	4,039.2	4,017.5	10.7	11.0	128.58		-357.5	261.8	573.3	553.7	19.58	29.281	
4,200.0	4,180.1	4,137.5	4,115.0	11.0	11.3	128.91		-367.6	268.5	591.7	571.6	20.12	29.410	
4,300.0	4,279.3	4,235.7	4,212.4	11.3	11.7	129.22		-377.7	275.3	610.2	589.6	20.66	29.532	
4,400.0	4,378.5	4,333.9	4,309.9	11.6	12.0	129.52		-387.9	282.1	628.7	607.5	21.21	29.649	
4,500.0	4,477.8	4,432.1	4,407.4	12.0	12.3	129.80		-398.0	288.9	647.3	625.5	21.75	29.759	
4,600.0	4,577.0	4,530.3	4,504.8	12.3	12.6	130.06		-408.2	295.7	665.8	643.5	22.30	29.864	
4,700.0	4,676.2	4,628.6	4,602.3	12.6	12.9	130.31		-418.3	302.5	684.4	661.5	22.84	29.964	
4,800.0	4,775.4	4,726.8	4,699.7	12.9	13.3	130.54		-428.5	309.3	702.9	679.6	23.39	30.059	
4,900.0	4,874.7	4,825.0	4,797.2	13.2	13.6	130.76		-438.6	316.1	721.5	697.6	23.93	30.150	
5,000.0	4,973.9	4,923.2	4,894.7	13.5	13.9	130.97		-448.8	322.9	740.1	715.6	24.48	30.236	

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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,100.0	5,073.1	5,021.5	4,992.1	13.8	14.2	131.18	-458.9	329.6	758.7	733.7	25.02	30.319		
5,200.0	5,172.3	5,119.7	5,089.6	14.2	14.5	131.37	-469.1	336.4	777.3	751.7	25.57	30.398		
5,300.0	5,271.6	5,217.9	5,187.0	14.5	14.9	131.55	-479.2	343.2	795.9	769.8	26.12	30.474		
5,400.0	5,370.8	5,316.1	5,284.5	14.8	15.2	131.72	-489.3	350.0	814.6	787.9	26.67	30.547		
5,500.0	5,470.0	5,414.3	5,382.0	15.1	15.5	131.89	-499.5	356.8	833.2	806.0	27.21	30.616		
5,600.0	5,569.2	5,512.6	5,479.4	15.4	15.8	132.12	-509.6	363.6	851.7	824.0	27.77	30.676		
5,700.0	5,668.8	5,622.4	5,588.4	15.6	16.2	132.40	-520.7	371.0	868.4	840.1	28.29	30.700		
5,800.0	5,768.5	5,755.4	5,720.9	15.8	16.4	132.55	-530.2	377.3	879.8	851.0	28.77	30.582		
5,900.0	5,868.5	5,889.5	5,855.0	16.0	16.7	132.62	-534.5	380.2	885.0	855.8	29.19	30.313		
6,000.0	5,968.5	6,001.1	5,966.5	16.2	16.8	-179.82	-534.8	380.4	885.3	854.7	30.56	28.968		
6,100.0	6,068.5	6,101.1	6,066.5	16.3	17.0	-179.82	-534.8	380.4	885.3	854.4	30.90	28.647		
6,200.0	6,168.4	6,200.9	6,166.2	16.5	17.1	-89.83	-534.8	377.8	885.3	855.1	30.23	29.284		
6,300.0	6,267.2	6,300.5	6,264.7	16.6	17.2	-89.86	-534.8	363.1	885.3	854.9	30.38	29.138		
6,400.0	6,363.2	6,400.3	6,360.6	16.6	17.2	-89.88	-534.8	335.7	885.3	854.9	30.42	29.106		
6,500.0	6,454.7	6,500.1	6,452.0	16.5	17.2	-89.91	-534.8	296.1	885.3	854.9	30.40	29.125		
6,600.0	6,540.2	6,599.9	6,537.6	16.4	17.2	-89.94	-534.8	244.8	885.3	854.9	30.43	29.096		
6,700.0	6,618.2	6,699.8	6,615.9	16.4	17.1	-89.96	-534.8	182.8	885.3	854.6	30.65	28.883		
6,800.0	6,687.4	6,799.7	6,685.4	16.4	17.1	-89.99	-534.8	111.1	885.3	854.1	31.24	28.340		
6,818.7	6,699.3	6,818.5	6,697.3	16.4	17.1	-90.00	-534.8	96.6	885.3	853.9	31.43	28.165		
6,900.0	6,746.6	6,899.8	6,744.9	16.6	17.0	-90.02	-534.8	30.8	885.3	852.9	32.35	27.365		
7,000.0	6,794.8	6,999.8	6,793.6	17.3	17.0	-90.05	-534.8	-56.6	885.3	851.2	34.11	25.958		
7,100.0	6,831.2	7,100.0	6,830.4	18.4	18.1	-90.08	-534.8	-149.6	885.3	848.8	36.53	24.232		
7,200.0	6,855.0	7,200.2	6,854.7	20.0	19.8	-90.11	-534.8	-246.8	885.3	845.7	39.59	22.364		
7,300.0	6,866.0	7,300.4	6,866.1	21.7	21.6	-90.14	-534.8	-346.3	885.3	842.2	43.13	20.524		
7,400.0	6,865.7	7,400.5	6,867.3	23.6	23.6	-90.23	-534.8	-446.3	885.3	838.3	47.04	18.820		
7,500.0	6,863.9	7,500.5	6,867.8	25.7	25.8	-90.38	-534.8	-546.3	885.3	834.1	51.25	17.273		
7,600.0	6,862.0	7,600.5	6,868.3	27.9	28.0	-90.53	-534.8	-646.3	885.3	829.6	55.72	15.890		
7,700.0	6,860.2	7,700.4	6,868.7	30.3	30.4	-90.68	-534.8	-746.3	885.4	825.0	60.37	14.665		
7,800.0	6,858.3	7,800.4	6,869.2	32.6	32.8	-90.83	-534.8	-846.2	885.4	820.2	65.18	13.584		
7,900.0	6,856.5	7,900.4	6,869.6	35.1	35.3	-90.98	-534.8	-946.2	885.4	815.3	70.10	12.630		
8,000.0	6,854.6	8,000.3	6,870.1	37.6	37.8	-91.13	-534.8	-1,046.2	885.5	810.3	75.13	11.786		
8,100.0	6,852.8	8,100.3	6,870.5	40.1	40.4	-91.28	-534.8	-1,146.1	885.5	805.3	80.23	11.038		
8,200.0	6,850.9	8,200.3	6,871.0	42.7	43.0	-91.43	-534.8	-1,246.1	885.6	800.2	85.39	10.371		
8,300.0	6,849.1	8,300.3	6,871.4	45.3	45.6	-91.57	-534.8	-1,346.1	885.6	795.0	90.60	9.775		
8,400.0	6,847.2	8,400.2	6,871.9	47.9	48.2	-91.72	-534.8	-1,446.1	885.7	789.8	95.86	9.239		
8,500.0	6,845.4	8,500.2	6,872.3	50.6	50.9	-91.87	-534.8	-1,546.0	885.8	784.6	101.16	8.756		
8,600.0	6,843.5	8,600.2	6,872.8	53.2	53.5	-92.02	-534.8	-1,646.0	885.8	779.4	106.48	8.319		
8,700.0	6,841.7	8,700.2	6,873.2	55.9	56.2	-92.17	-534.8	-1,746.0	885.9	774.1	111.84	7.922		
8,800.0	6,839.8	8,800.1	6,873.7	58.6	58.9	-92.32	-534.8	-1,846.0	886.0	768.8	117.21	7.559		
8,900.0	6,838.0	8,900.1	6,874.1	61.3	61.6	-92.47	-534.8	-1,945.9	886.1	763.5	122.60	7.228		
9,000.0	6,836.1	9,000.1	6,874.6	64.0	64.3	-92.62	-534.8	-2,045.9	886.2	758.2	128.01	6.923		
9,100.0	6,834.3	9,100.1	6,875.1	66.7	67.1	-92.76	-534.8	-2,145.9	886.3	752.9	133.43	6.642		
9,200.0	6,832.4	9,200.0	6,875.5	69.4	69.8	-92.91	-534.8	-2,245.8	886.4	747.6	138.87	6.383		
9,300.0	6,830.6	9,300.0	6,876.0	72.2	72.5	-93.06	-534.8	-2,345.8	886.6	742.2	144.31	6.143		
9,400.0	6,828.7	9,400.0	6,876.4	74.9	75.3	-93.21	-534.8	-2,445.8	886.7	736.9	149.77	5.920		
9,500.0	6,826.9	9,499.9	6,876.9	77.6	78.0	-93.36	-534.8	-2,545.8	886.8	731.6	155.23	5.713		
9,600.0	6,825.0	9,599.9	6,877.3	80.4	80.8	-93.51	-534.8	-2,645.7	887.0	726.3	160.70	5.519		
9,700.0	6,823.2	9,699.9	6,877.8	83.1	83.5	-93.66	-534.8	-2,745.7	887.1	720.9	166.17	5.339		
9,800.0	6,821.3	9,799.9	6,878.2	85.9	86.3	-93.80	-534.8	-2,845.7	887.3	715.6	171.65	5.169		
9,900.0	6,819.5	9,899.8	6,878.7	88.6	89.0	-93.95	-534.8	-2,945.7	887.4	710.3	177.13	5.010		
10,000.0	6,817.6	9,999.8	6,879.1	91.4	91.8	-94.10	-534.8	-3,045.6	887.6	705.0	182.61	4.860		

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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-414 - Wellbore #1 - Plan #1 (9-4-14)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	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
10,100.0	6,815.8	10,099.8	6,879.6	94.2	94.6	-94.25	-534.8	-3,145.6	887.7	699.6	188.10	4.720	
10,200.0	6,813.9	10,199.8	6,880.0	96.9	97.3	-94.40	-534.8	-3,245.6	887.9	694.3	193.59	4.587	
10,300.0	6,812.1	10,299.7	6,880.5	99.7	100.1	-94.55	-534.8	-3,345.5	888.1	689.0	199.08	4.461	
10,400.0	6,810.2	10,399.7	6,881.0	102.5	102.9	-94.69	-534.8	-3,445.5	888.3	683.7	204.57	4.342	
10,500.0	6,808.4	10,499.7	6,881.4	105.2	105.6	-94.84	-534.8	-3,545.5	888.5	678.4	210.06	4.230	
10,600.0	6,806.5	10,599.7	6,881.9	108.0	108.4	-94.99	-534.8	-3,645.5	888.7	673.1	215.55	4.123	
10,700.0	6,804.7	10,699.6	6,882.3	110.8	111.2	-95.14	-534.8	-3,745.4	888.9	667.8	221.04	4.021	
10,800.0	6,802.8	10,799.6	6,882.8	113.6	114.0	-95.29	-534.8	-3,845.4	889.1	662.5	226.53	3.925	
10,900.0	6,801.0	10,899.6	6,883.2	116.3	116.8	-95.43	-534.8	-3,945.4	889.3	657.3	232.02	3.833	
11,000.0	6,799.1	10,999.5	6,883.7	119.1	119.5	-95.58	-534.8	-4,045.3	889.5	652.0	237.51	3.745	
11,100.0	6,797.3	11,099.5	6,884.1	121.9	122.3	-95.73	-534.8	-4,145.3	889.7	646.7	243.00	3.662	
11,200.0	6,795.4	11,199.5	6,884.6	124.7	125.1	-95.88	-534.8	-4,245.3	890.0	641.5	248.48	3.582	
11,300.0	6,793.6	11,299.5	6,885.0	127.5	127.9	-96.02	-534.8	-4,345.3	890.2	636.2	253.97	3.505	
11,400.0	6,791.7	11,399.4	6,885.5	130.3	130.7	-96.17	-534.8	-4,445.2	890.5	631.0	259.45	3.432	
11,500.0	6,789.9	11,499.4	6,885.9	133.0	133.5	-96.32	-534.8	-4,545.2	890.7	625.8	264.92	3.362	
11,600.0	6,788.0	11,599.4	6,886.4	135.8	136.2	-96.47	-534.8	-4,645.2	891.0	620.6	270.40	3.295	
11,700.0	6,786.2	11,699.4	6,886.9	138.6	139.0	-96.61	-534.8	-4,745.2	891.2	615.4	275.87	3.231	
11,800.0	6,784.3	11,799.3	6,887.3	141.4	141.8	-96.76	-534.8	-4,845.1	891.5	610.2	281.34	3.169	
11,900.0	6,782.5	11,899.3	6,887.8	144.2	144.6	-96.91	-534.8	-4,945.1	891.8	605.0	286.81	3.109	
12,000.0	6,780.6	11,999.3	6,888.2	147.0	147.4	-97.05	-534.8	-5,045.1	892.1	599.8	292.27	3.052	
12,100.0	6,778.8	12,099.3	6,888.7	149.8	150.2	-97.20	-534.8	-5,145.0	892.3	594.6	297.73	2.997	
12,200.0	6,776.9	12,199.2	6,889.1	152.6	153.0	-97.35	-534.8	-5,245.0	892.6	589.4	303.18	2.944	
12,300.0	6,775.1	12,299.2	6,889.6	155.4	155.8	-97.49	-534.8	-5,345.0	892.9	584.3	308.63	2.893	
12,400.0	6,773.2	12,399.2	6,890.0	158.2	158.6	-97.64	-534.8	-5,445.0	893.2	579.1	314.08	2.844	
12,500.0	6,771.4	12,499.1	6,890.5	160.9	161.4	-97.79	-534.8	-5,544.9	893.5	574.0	319.52	2.796	
12,600.0	6,769.5	12,599.1	6,890.9	163.7	164.2	-97.93	-534.8	-5,644.9	893.9	568.9	324.96	2.751	
12,700.0	6,767.7	12,699.1	6,891.4	166.5	167.0	-98.08	-534.8	-5,744.9	894.2	563.8	330.40	2.706	
12,800.0	6,765.8	12,799.1	6,891.8	169.3	169.8	-98.22	-534.8	-5,844.9	894.5	558.7	335.82	2.664	
12,900.0	6,764.0	12,834.6	6,892.0	172.1	170.7	-98.28	-534.8	-5,880.4	897.2	557.6	339.53	2.642 SF	
12,953.6	6,763.0	12,834.6	6,892.0	173.6	170.7	-98.28	-534.8	-5,880.4	902.8	561.8	341.02	2.647	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore:</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS F01-28D Sec.36-T6N-R65W - LDS F01-27 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7049-Reference												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis 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
6,900.0	6,746.6	6,746.6	6,746.6	16.6	134.9	31.46	652.1	-885.2	964.2	857.6	106.63	9.043	
7,000.0	6,794.8	6,794.8	6,794.8	17.3	135.9	40.67	652.1	-885.2	881.5	768.9	112.64	7.826	
7,100.0	6,831.2	6,831.2	6,831.2	18.4	136.6	53.64	652.1	-885.2	794.7	665.8	128.93	6.164	
7,200.0	6,855.0	6,855.0	6,855.0	20.0	137.1	69.69	652.1	-885.2	705.9	557.8	148.07	4.767	
7,300.0	6,866.0	6,866.0	6,866.0	21.7	137.3	85.41	652.1	-885.2	617.5	459.0	158.56	3.895	
7,400.0	6,865.7	6,865.7	6,865.7	23.6	137.3	91.54	652.1	-885.2	532.5	371.8	160.80	3.312	
7,500.0	6,863.9	6,863.9	6,863.9	25.7	137.3	91.19	652.1	-885.2	453.7	290.8	162.87	2.786	
7,600.0	6,862.0	6,862.0	6,862.0	27.9	137.2	90.84	652.1	-885.2	384.8	219.7	165.06	2.331	
7,700.0	6,860.2	6,860.2	6,860.2	30.3	137.2	90.49	652.1	-885.2	332.1	164.8	167.35	1.985	
7,800.0	6,858.3	6,858.3	6,858.3	32.6	137.2	90.14	652.1	-885.2	304.2	134.5	169.71	1.792	
7,838.9	6,857.6	6,857.6	6,857.6	33.6	137.2	90.00	652.1	-885.2	301.7	131.0	170.65	1.768	CC, ES, SF
7,900.0	6,856.5	6,856.5	6,856.5	35.1	137.1	89.79	652.1	-885.2	307.8	135.6	172.13	1.788	
8,000.0	6,854.6	6,854.6	6,854.6	37.6	137.1	89.43	652.1	-885.2	341.9	167.4	174.59	1.959	
8,100.0	6,852.8	6,852.8	6,852.8	40.1	137.1	89.08	652.1	-885.2	398.9	221.8	177.08	2.253	
8,200.0	6,850.9	6,850.9	6,850.9	42.7	137.0	88.73	652.1	-885.2	470.4	290.8	179.61	2.619	
8,300.0	6,849.1	6,849.1	6,849.1	45.3	137.0	88.38	652.1	-885.2	550.9	368.8	182.15	3.024	
8,400.0	6,847.2	6,847.2	6,847.2	47.9	136.9	88.03	652.1	-885.2	636.9	452.2	184.71	3.448	
8,500.0	6,845.4	6,845.4	6,845.4	50.6	136.9	87.68	652.1	-885.2	726.5	539.2	187.28	3.879	
8,600.0	6,843.5	6,843.5	6,843.5	53.2	136.9	87.33	652.1	-885.2	818.5	628.7	189.86	4.311	
8,700.0	6,841.7	6,841.7	6,841.7	55.9	136.8	86.98	652.1	-885.2	912.2	719.8	192.45	4.740	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS F01-28D Sec.36-T6N-R65W - LDS F01-28D - LDS F01-28D - LDS F01-28D													Offset Site Error:	0.0 ft
Survey Program: 612-Reference													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis 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	
8,200.0	6,850.9	7,045.9	6,868.9	42.7	26.9	99.64	552.9	-2,135.8	912.5	844.1	68.45	13.331		
8,300.0	6,849.1	7,042.1	6,865.1	45.3	26.9	98.59	552.9	-2,135.9	815.4	744.2	71.23	11.448		
8,400.0	6,847.2	7,038.3	6,861.2	47.9	26.9	97.53	552.9	-2,136.0	719.0	645.0	74.01	9.715		
8,500.0	6,845.4	7,034.4	6,857.3	50.6	26.9	96.45	552.8	-2,136.1	623.8	547.0	76.81	8.121		
8,600.0	6,843.5	7,030.5	6,853.4	53.2	26.9	95.35	552.8	-2,136.2	530.3	450.6	79.62	6.660		
8,700.0	6,841.7	7,026.5	6,849.5	55.9	26.9	94.23	552.8	-2,136.3	439.5	357.1	82.42	5.333		
8,800.0	6,839.8	7,022.5	6,845.4	58.6	26.9	93.10	552.8	-2,136.4	353.8	268.6	85.21	4.152		
8,900.0	6,838.0	7,018.4	6,841.4	61.3	26.9	91.96	552.8	-2,136.5	277.8	189.8	88.00	3.157		
9,000.0	6,836.1	7,014.3	6,837.3	64.0	26.9	90.79	552.7	-2,136.5	221.6	130.8	90.76	2.441		
9,090.6	6,834.5	7,010.5	6,833.5	66.4	26.9	89.73	552.7	-2,136.6	202.2	109.0	93.24	2.169 CC		
9,100.0	6,834.3	7,010.1	6,833.1	66.7	26.9	89.62	552.7	-2,136.6	202.5	109.0	93.50	2.165 ES, SF		
9,200.0	6,832.4	7,005.9	6,828.9	69.4	26.9	88.43	552.7	-2,136.7	229.9	133.7	96.21	2.390		
9,300.0	6,830.6	7,001.7	6,824.7	72.2	26.9	87.23	552.7	-2,136.8	291.0	192.1	98.88	2.943		
9,400.0	6,828.7	6,997.4	6,820.4	74.9	26.9	86.03	552.7	-2,136.9	369.4	267.9	101.52	3.639		
9,500.0	6,826.9	6,993.3	6,816.3	77.6	26.9	84.87	552.6	-2,137.0	456.3	352.2	104.11	4.383		
9,600.0	6,825.0	6,989.3	6,812.3	80.4	26.9	83.74	552.6	-2,137.1	547.7	441.0	106.67	5.134		
9,700.0	6,823.2	6,985.3	6,808.3	83.1	26.9	82.62	552.6	-2,137.2	641.6	532.4	109.19	5.876		
9,800.0	6,821.3	6,981.4	6,804.4	85.9	26.9	81.53	552.6	-2,137.3	737.1	625.4	111.66	6.601		
9,900.0	6,819.5	6,977.5	6,800.5	88.6	26.9	80.46	552.6	-2,137.4	833.6	719.5	114.10	7.306		
10,000.0	6,817.6	6,973.7	6,796.7	91.4	26.9	79.41	552.5	-2,137.5	930.9	814.4	116.49	7.991		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

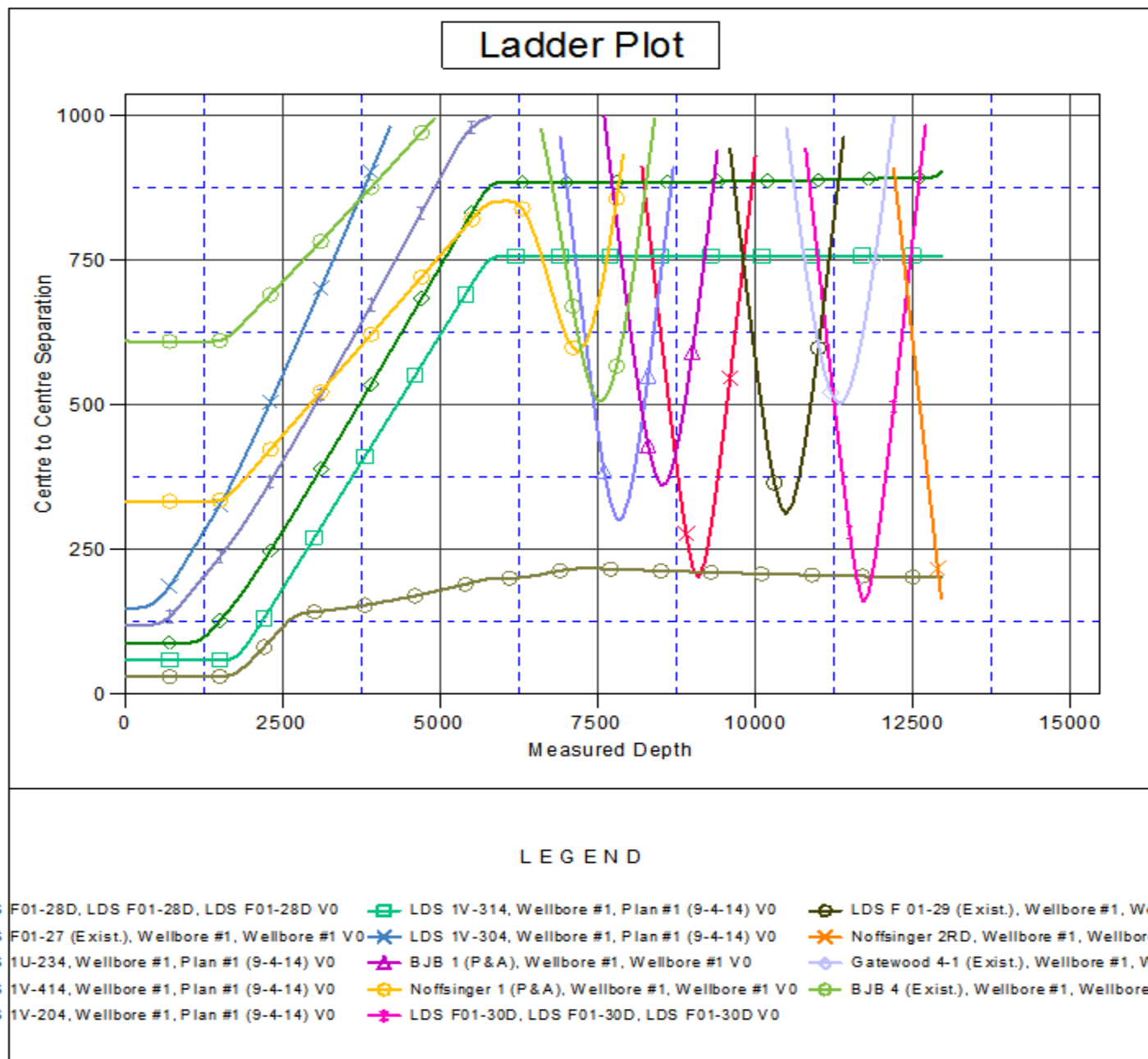
Offset Design LDS F01-30D Sec.36-T6N-R65W - LDS F01-30D - LDS F01-30D - LDS F01-30D													Offset Site Error:	0.0 ft
Survey Program: 611-Reference													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor	
10,800.0	6,802.8	6,991.9	6,813.1	113.6	25.8	96.60	510.2	-4,775.2	943.0	814.0	129.08	7.306		
10,900.0	6,801.0	6,990.1	6,811.4	116.3	25.8	95.98	510.2	-4,775.2	844.7	712.7	131.96	6.401		
11,000.0	6,799.1	6,988.4	6,809.6	119.1	25.8	95.36	510.3	-4,775.2	746.7	611.9	134.84	5.538		
11,100.0	6,797.3	6,986.7	6,808.0	121.9	25.8	94.76	510.3	-4,775.2	649.4	511.7	137.70	4.716		
11,200.0	6,795.4	6,985.1	6,806.3	124.7	25.8	94.18	510.3	-4,775.2	553.1	412.5	140.55	3.935		
11,300.0	6,793.6	6,983.5	6,804.7	127.5	25.8	93.60	510.4	-4,775.2	458.3	314.9	143.40	3.196		
11,400.0	6,791.7	6,981.9	6,803.2	130.3	25.8	93.04	510.4	-4,775.2	366.3	220.0	146.23	2.505		
11,500.0	6,789.9	6,980.4	6,801.6	133.0	25.8	92.50	510.5	-4,775.2	279.8	130.7	149.06	1.877		
11,600.0	6,788.0	6,978.9	6,800.1	135.8	25.8	91.96	510.5	-4,775.2	205.9	54.0	151.87	1.356 Level 3		
11,700.0	6,786.2	6,977.4	6,798.7	138.6	25.8	91.44	510.5	-4,775.1	162.8	8.1	154.68	1.052 Level 2		
11,729.4	6,785.6	6,977.0	6,798.2	139.4	25.8	91.28	510.5	-4,775.1	160.1	4.6	155.50	1.030 Level 2, CC, ES, SF		
11,800.0	6,784.3	6,976.0	6,797.2	141.4	25.8	90.92	510.6	-4,775.1	174.9	17.5	157.47	1.111 Level 2		
11,900.0	6,782.5	6,974.6	6,795.8	144.2	25.8	90.42	510.6	-4,775.1	233.9	73.6	160.26	1.459 Level 3		
12,000.0	6,780.6	6,973.2	6,794.5	147.0	25.8	89.93	510.6	-4,775.1	314.3	151.3	163.04	1.928		
12,100.0	6,778.8	6,971.9	6,793.1	149.8	25.8	89.45	510.6	-4,775.1	403.6	237.8	165.80	2.434		
12,200.0	6,776.9	6,970.6	6,791.8	152.6	25.8	88.98	510.7	-4,775.1	497.0	328.4	168.56	2.948		
12,300.0	6,775.1	6,969.3	6,790.5	155.4	25.8	88.52	510.7	-4,775.1	592.5	421.2	171.31	3.459		
12,400.0	6,773.2	6,968.0	6,789.3	158.2	25.8	88.07	510.7	-4,775.1	689.3	515.3	174.05	3.961		
12,500.0	6,771.4	6,966.8	6,788.0	160.9	25.8	87.63	510.8	-4,775.1	786.9	610.1	176.78	4.452		
12,600.0	6,769.5	6,965.6	6,786.8	163.7	25.8	87.20	510.8	-4,775.1	885.1	705.6	179.50	4.931		
12,700.0	6,767.7	6,964.4	6,785.6	166.5	25.8	86.78	510.8	-4,775.1	983.6	801.4	182.21	5.398		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b>												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 699-MWD												<b>Offset Well Error:</b>	0.0 ft
Noffsinger Pad Sec.2-T5N-R65W - Noffsinger 2RD - 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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,200.0	6,776.9	6,972.6	6,836.7	152.6	22.4	140.97	408.4	-6,151.4	909.4	799.1	110.34	8.242	
12,300.0	6,775.1	6,964.7	6,828.8	155.4	22.4	137.77	408.2	-6,151.9	809.9	691.5	118.48	6.836	
12,400.0	6,773.2	6,956.7	6,820.8	158.2	22.4	134.06	408.0	-6,152.4	710.5	583.0	127.54	5.571	
12,500.0	6,771.4	6,948.7	6,812.8	160.9	22.4	129.78	407.7	-6,152.9	611.2	473.7	137.50	4.445	
12,600.0	6,769.5	6,940.6	6,804.8	163.7	22.4	124.79	407.5	-6,153.4	512.1	363.8	148.28	3.453	
12,700.0	6,767.7	6,932.3	6,796.5	166.5	22.3	118.91	407.2	-6,154.0	413.1	253.4	159.70	2.587	
12,800.0	6,765.8	6,924.1	6,788.3	169.3	22.3	112.30	407.0	-6,154.5	314.6	143.8	170.82	1.842	
12,900.0	6,764.0	6,916.0	6,780.2	172.1	22.3	105.02	406.7	-6,155.0	217.3	36.5	180.73	1.202 Level 2	
12,953.6	6,763.0	6,911.7	6,775.9	173.6	22.3	100.88	406.6	-6,155.2	166.1	-19.0	185.19	0.897 Level 1, CC, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4655.0ft (Original Well Elev) Coordinates are relative to: LDS 1U-304  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °  
 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 LDS 1U-304
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Reference Site:</b>	LDS 5N65W1U Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4655.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1U-304	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (9-4-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4655.0ft (Original Well Elev) Coordinates are relative to: LDS 1U-304  
Offset Depths are relative to Offset Datum  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Central Meridian is -105.500000 °  
Grid Convergence at Surface is: 0.58°

