

# PETROLEUM DEVELOPMENT CORP Weld County CO

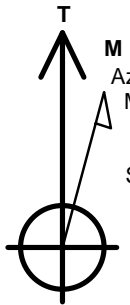
Well Name: **LDS 1V-334**

Surface Location: LDS 5N65W1W Pad Sec.1-T5N-R65W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4613.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1400523.00	3249730.79	40.429370	-104.602930	
RKB -13' WELL @ 4626.0ft (RKB -13')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E/W Hardline (1V-334)	0.0	441.9	-3806.3	Rectangle (Sides: L-6641.3 W100.0)
SHL 2094'FNL & 331'FEL, Sec.1	1.0	0.0	0.0	Point
BHL 1660'FNL & 2144'FEL, Sec.2	6758.0	441.9	-7126.9	Point

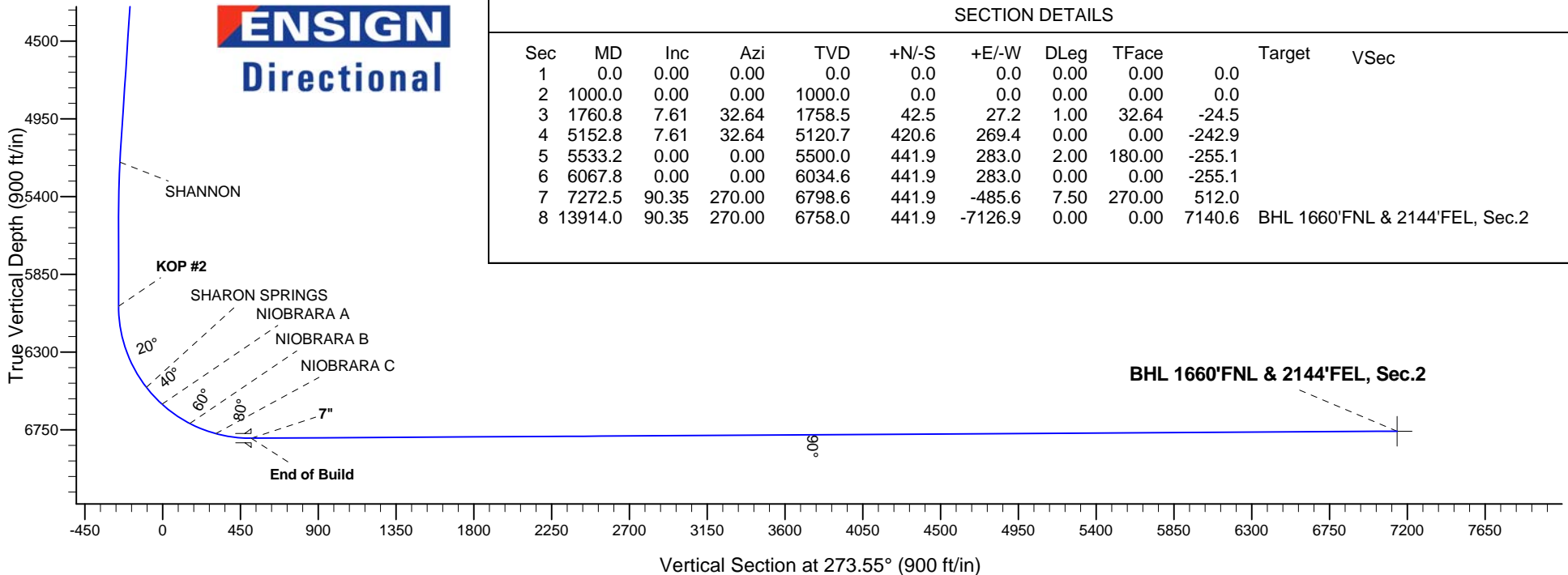
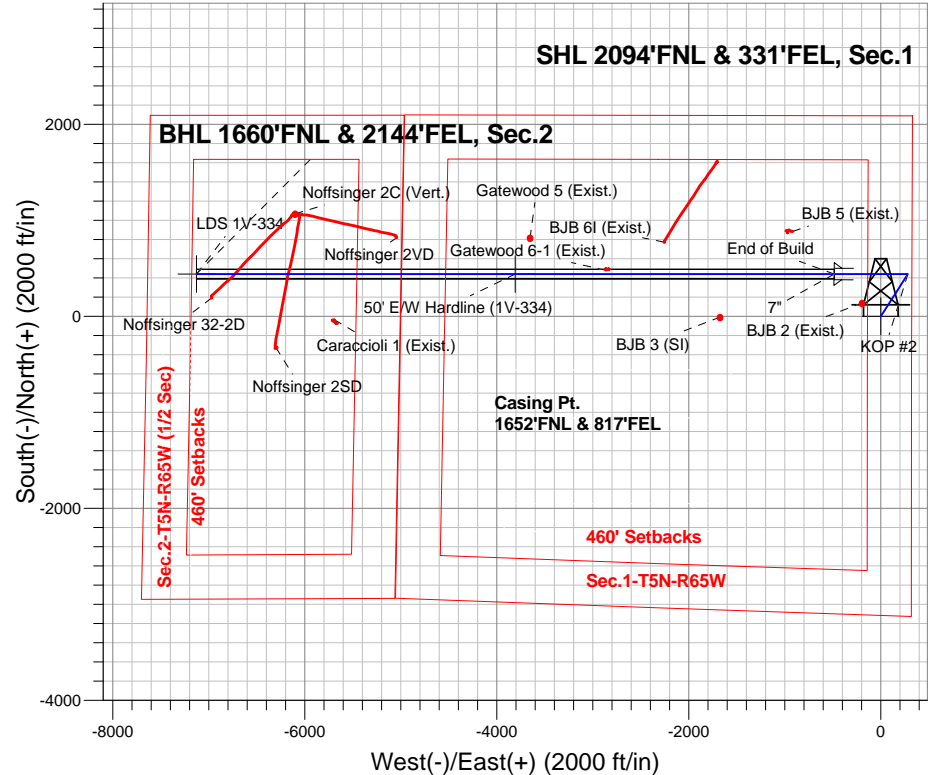


Azimuths to True North  
Magnetic North: 8.26°  
  
Magnetic Field  
Strength: 52756.9snT  
Dip Angle: 66.97°  
Date: 4/30/2015  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6034.6	6067.8	KOP #2
6798.6	7272.5	End of Build

LDS 5N65W1W Pad Sec.1-T5N-R65W  
LDS 1V-334  
Plan #2 (4-30-15)





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.1-T5N-R65W**

**LDS 5N65W1W Pad Sec.1-T5N-R65W**

**LDS 1V-334**

**Wellbore #1**

**Plan: Plan #2 (4-30-15)**

## **Standard Planning Report**

**30 April, 2015**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-15)		

<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 5N65W1W Pad Sec.1-T5N-R65W											
Site Position:						Northing:			1,400,464.71 ft			Latitude:			40.429210		
From:			Lat/Long			Easting:			3,249,728.59ft			Longitude:			-104.602940		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.58 °		

Well	LDS 1V-334					
Well Position	+N-S	58.3 ft	Northing:	1,400,523.00 ft	Latitude:	40.429370
	+E-W	2.8 ft	Easting:	3,249,730.79 ft	Longitude:	-104.602930
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,613.0 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	4/30/2015	8.26	66.97	52,757

<b>Design</b>	Plan #2 (4-30-15)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	273.55

<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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,760.8	7.61	32.64	1,758.5	42.5	27.2	1.00	1.00	0.00	32.64	
5,152.8	7.61	32.64	5,120.7	420.6	269.4	0.00	0.00	0.00	0.00	
5,533.2	0.00	0.00	5,500.0	441.9	283.0	2.00	-2.00	0.00	180.00	
6,067.8	0.00	0.00	6,034.6	441.9	283.0	0.00	0.00	0.00	0.00	
7,272.5	90.35	270.00	6,798.6	441.9	-485.6	7.50	7.50	0.00	270.00	
13,914.0	90.35	270.00	6,758.0	441.9	-7,126.9	0.00	0.00	0.00	0.00	BHL 1660'FNL & 21

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,100.0	1.00	32.64	1,100.0	0.7	0.5	-0.4	1.00	1.00	0.00
1,200.0	2.00	32.64	1,200.0	2.9	1.9	-1.7	1.00	1.00	0.00
1,300.0	3.00	32.64	1,299.9	6.6	4.2	-3.8	1.00	1.00	0.00
1,400.0	4.00	32.64	1,399.7	11.8	7.5	-6.8	1.00	1.00	0.00
1,500.0	5.00	32.64	1,499.4	18.4	11.8	-10.6	1.00	1.00	0.00
1,600.0	6.00	32.64	1,598.9	26.4	16.9	-15.3	1.00	1.00	0.00
1,700.0	7.00	32.64	1,698.3	36.0	23.0	-20.8	1.00	1.00	0.00
1,760.8	7.61	32.64	1,758.5	42.5	27.2	-24.5	1.00	1.00	0.00
1,800.0	7.61	32.64	1,797.4	46.8	30.0	-27.0	0.00	0.00	0.00
1,900.0	7.61	32.64	1,896.5	58.0	37.1	-33.5	0.00	0.00	0.00
2,000.0	7.61	32.64	1,995.7	69.1	44.3	-39.9	0.00	0.00	0.00
2,100.0	7.61	32.64	2,094.8	80.3	51.4	-46.4	0.00	0.00	0.00
2,200.0	7.61	32.64	2,193.9	91.4	58.6	-52.8	0.00	0.00	0.00
2,300.0	7.61	32.64	2,293.0	102.6	65.7	-59.2	0.00	0.00	0.00
2,400.0	7.61	32.64	2,392.1	113.7	72.8	-65.7	0.00	0.00	0.00
2,500.0	7.61	32.64	2,491.3	124.9	80.0	-72.1	0.00	0.00	0.00
2,600.0	7.61	32.64	2,590.4	136.0	87.1	-78.5	0.00	0.00	0.00
2,700.0	7.61	32.64	2,689.5	147.2	94.3	-85.0	0.00	0.00	0.00
2,800.0	7.61	32.64	2,788.6	158.3	101.4	-91.4	0.00	0.00	0.00
2,900.0	7.61	32.64	2,887.7	169.5	108.5	-97.8	0.00	0.00	0.00
3,000.0	7.61	32.64	2,986.9	180.6	115.7	-104.3	0.00	0.00	0.00
3,100.0	7.61	32.64	3,086.0	191.8	122.8	-110.7	0.00	0.00	0.00
3,200.0	7.61	32.64	3,185.1	202.9	130.0	-117.2	0.00	0.00	0.00
3,300.0	7.61	32.64	3,284.2	214.1	137.1	-123.6	0.00	0.00	0.00
3,400.0	7.61	32.64	3,383.3	225.2	144.2	-130.0	0.00	0.00	0.00
3,500.0	7.61	32.64	3,482.5	236.4	151.4	-136.5	0.00	0.00	0.00
3,503.6	7.61	32.64	3,486.0	236.8	151.6	-136.7	0.00	0.00	0.00
<b>PARKMAN</b>									
3,600.0	7.61	32.64	3,581.6	247.5	158.5	-142.9	0.00	0.00	0.00
3,700.0	7.61	32.64	3,680.7	258.7	165.7	-149.3	0.00	0.00	0.00
3,800.0	7.61	32.64	3,779.8	269.8	172.8	-155.8	0.00	0.00	0.00
3,900.0	7.61	32.64	3,878.9	281.0	179.9	-162.2	0.00	0.00	0.00
4,000.0	7.61	32.64	3,978.1	292.1	187.1	-168.7	0.00	0.00	0.00
4,100.0	7.61	32.64	4,077.2	303.3	194.2	-175.1	0.00	0.00	0.00
4,200.0	7.61	32.64	4,176.3	314.4	201.4	-181.5	0.00	0.00	0.00
4,268.3	7.61	32.64	4,244.0	322.0	206.2	-185.9	0.00	0.00	0.00
<b>SUSSEX</b>									
4,300.0	7.61	32.64	4,275.4	325.6	208.5	-188.0	0.00	0.00	0.00
4,400.0	7.61	32.64	4,374.5	336.7	215.6	-194.4	0.00	0.00	0.00
4,500.0	7.61	32.64	4,473.7	347.8	222.8	-200.8	0.00	0.00	0.00
4,600.0	7.61	32.64	4,572.8	359.0	229.9	-207.3	0.00	0.00	0.00

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<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-15)		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	7.61	32.64	4,671.9	370.1	237.1	-213.7	0.00	0.00	0.00
4,800.0	7.61	32.64	4,771.0	381.3	244.2	-220.1	0.00	0.00	0.00
4,900.0	7.61	32.64	4,870.1	392.4	251.3	-226.6	0.00	0.00	0.00
5,000.0	7.61	32.64	4,969.3	403.6	258.5	-233.0	0.00	0.00	0.00
5,100.0	7.61	32.64	5,068.4	414.7	265.6	-239.5	0.00	0.00	0.00
5,152.8	7.61	32.64	5,120.7	420.6	269.4	-242.9	0.00	0.00	0.00
5,200.0	6.66	32.64	5,167.5	425.6	272.6	-245.7	2.00	-2.00	0.00
5,232.7	6.01	32.64	5,200.0	428.6	274.5	-247.5	2.00	-2.00	0.00
<b>SHANNON</b>									
5,300.0	4.66	32.64	5,267.1	433.9	277.9	-250.5	2.00	-2.00	0.00
5,400.0	2.66	32.64	5,366.8	439.3	281.3	-253.6	2.00	-2.00	0.00
5,500.0	0.66	32.64	5,466.8	441.7	282.9	-255.0	2.00	-2.00	0.00
5,533.2	0.00	0.00	5,500.0	441.9	283.0	-255.1	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,566.8	441.9	283.0	-255.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,666.8	441.9	283.0	-255.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,766.8	441.9	283.0	-255.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,866.8	441.9	283.0	-255.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,966.8	441.9	283.0	-255.1	0.00	0.00	0.00
6,067.8	0.00	0.00	6,034.6	441.9	283.0	-255.1	0.00	0.00	0.00
<b>KOP #2</b>									
6,100.0	2.41	270.00	6,066.8	441.9	282.3	-254.4	7.49	7.49	0.00
6,200.0	9.91	270.00	6,166.1	441.9	271.6	-243.7	7.50	7.50	0.00
6,300.0	17.41	270.00	6,263.2	441.9	248.0	-220.2	7.50	7.50	0.00
6,400.0	24.91	270.00	6,356.4	441.9	211.9	-184.2	7.50	7.50	0.00
6,500.0	32.41	270.00	6,444.1	441.9	164.0	-136.3	7.50	7.50	0.00
6,573.3	37.91	270.00	6,504.0	441.9	121.8	-94.2	7.50	7.50	0.00
<b>SHARON SPRINGS</b>									
6,600.0	39.91	270.00	6,524.8	441.9	105.0	-77.5	7.50	7.50	0.00
6,700.0	47.41	270.00	6,597.1	441.9	36.0	-8.6	7.50	7.50	0.00
6,707.3	47.96	270.00	6,602.0	441.9	30.6	-3.2	7.50	7.50	0.00
<b>NIORARA A</b>									
6,800.0	54.91	270.00	6,659.7	441.9	-41.8	69.1	7.50	7.50	0.00
6,900.0	62.41	270.00	6,711.7	441.9	-127.1	154.2	7.50	7.50	0.00
6,902.8	62.62	270.00	6,713.0	441.9	-129.6	156.7	7.50	7.50	0.00
<b>NIORARA B</b>									
7,000.0	69.91	270.00	6,752.1	441.9	-218.6	245.5	7.50	7.50	0.00
7,065.7	74.84	270.00	6,772.0	441.9	-281.2	308.0	7.50	7.50	0.00
<b>NIORARA C</b>									
7,100.0	77.41	270.00	6,780.2	441.9	-314.4	341.2	7.50	7.50	0.00
7,200.0	84.91	270.00	6,795.6	441.9	-413.2	439.7	7.50	7.50	0.00
7,272.5	90.35	270.00	6,798.6	441.9	-485.6	512.0	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,300.0	90.35	270.00	6,798.4	441.9	-513.1	539.5	0.00	0.00	0.00
7,400.0	90.35	270.00	6,797.8	441.9	-613.1	639.3	0.00	0.00	0.00
7,500.0	90.35	270.00	6,797.2	441.9	-713.1	739.1	0.00	0.00	0.00
7,600.0	90.35	270.00	6,796.6	441.9	-813.1	838.9	0.00	0.00	0.00
7,700.0	90.35	270.00	6,796.0	441.9	-913.1	938.7	0.00	0.00	0.00
7,800.0	90.35	270.00	6,795.3	441.9	-1,013.1	1,038.5	0.00	0.00	0.00
7,900.0	90.35	270.00	6,794.7	441.9	-1,113.1	1,138.3	0.00	0.00	0.00
8,000.0	90.35	270.00	6,794.1	441.9	-1,213.1	1,238.1	0.00	0.00	0.00
8,100.0	90.35	270.00	6,793.5	441.9	-1,313.1	1,337.9	0.00	0.00	0.00
8,200.0	90.35	270.00	6,792.9	441.9	-1,413.1	1,437.7	0.00	0.00	0.00

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<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,300.0	90.35	270.00	6,792.3	441.9	-1,513.1	1,537.5	0.00	0.00	0.00
8,400.0	90.35	270.00	6,791.7	441.9	-1,613.1	1,637.3	0.00	0.00	0.00
8,500.0	90.35	270.00	6,791.1	441.9	-1,713.1	1,737.1	0.00	0.00	0.00
8,600.0	90.35	270.00	6,790.5	441.9	-1,813.1	1,836.9	0.00	0.00	0.00
8,700.0	90.35	270.00	6,789.9	441.9	-1,913.1	1,936.7	0.00	0.00	0.00
8,800.0	90.35	270.00	6,789.2	441.9	-2,013.1	2,036.6	0.00	0.00	0.00
8,900.0	90.35	270.00	6,788.6	441.9	-2,113.1	2,136.4	0.00	0.00	0.00
9,000.0	90.35	270.00	6,788.0	441.9	-2,213.1	2,236.2	0.00	0.00	0.00
9,100.0	90.35	270.00	6,787.4	441.9	-2,313.1	2,336.0	0.00	0.00	0.00
9,200.0	90.35	270.00	6,786.8	441.9	-2,413.1	2,435.8	0.00	0.00	0.00
9,300.0	90.35	270.00	6,786.2	441.9	-2,513.1	2,535.6	0.00	0.00	0.00
9,400.0	90.35	270.00	6,785.6	441.9	-2,613.1	2,635.4	0.00	0.00	0.00
9,500.0	90.35	270.00	6,785.0	441.9	-2,713.1	2,735.2	0.00	0.00	0.00
9,600.0	90.35	270.00	6,784.4	441.9	-2,813.1	2,835.0	0.00	0.00	0.00
9,700.0	90.35	270.00	6,783.7	441.9	-2,913.1	2,934.8	0.00	0.00	0.00
9,800.0	90.35	270.00	6,783.1	441.9	-3,013.0	3,034.6	0.00	0.00	0.00
9,900.0	90.35	270.00	6,782.5	441.9	-3,113.0	3,134.4	0.00	0.00	0.00
10,000.0	90.35	270.00	6,781.9	441.9	-3,213.0	3,234.2	0.00	0.00	0.00
10,100.0	90.35	270.00	6,781.3	441.9	-3,313.0	3,334.0	0.00	0.00	0.00
10,200.0	90.35	270.00	6,780.7	441.9	-3,413.0	3,433.8	0.00	0.00	0.00
10,300.0	90.35	270.00	6,780.1	441.9	-3,513.0	3,533.7	0.00	0.00	0.00
10,400.0	90.35	270.00	6,779.5	441.9	-3,613.0	3,633.5	0.00	0.00	0.00
10,500.0	90.35	270.00	6,778.9	441.9	-3,713.0	3,733.3	0.00	0.00	0.00
10,600.0	90.35	270.00	6,778.2	441.9	-3,813.0	3,833.1	0.00	0.00	0.00
10,700.0	90.35	270.00	6,777.6	441.9	-3,913.0	3,932.9	0.00	0.00	0.00
10,800.0	90.35	270.00	6,777.0	441.9	-4,013.0	4,032.7	0.00	0.00	0.00
10,900.0	90.35	270.00	6,776.4	441.9	-4,113.0	4,132.5	0.00	0.00	0.00
11,000.0	90.35	270.00	6,775.8	441.9	-4,213.0	4,232.3	0.00	0.00	0.00
11,100.0	90.35	270.00	6,775.2	441.9	-4,313.0	4,332.1	0.00	0.00	0.00
11,200.0	90.35	270.00	6,774.6	441.9	-4,413.0	4,431.9	0.00	0.00	0.00
11,300.0	90.35	270.00	6,774.0	441.9	-4,513.0	4,531.7	0.00	0.00	0.00
11,400.0	90.35	270.00	6,773.4	441.9	-4,613.0	4,631.5	0.00	0.00	0.00
11,500.0	90.35	270.00	6,772.7	441.9	-4,713.0	4,731.3	0.00	0.00	0.00
11,600.0	90.35	270.00	6,772.1	441.9	-4,813.0	4,831.1	0.00	0.00	0.00
11,700.0	90.35	270.00	6,771.5	441.9	-4,913.0	4,930.9	0.00	0.00	0.00
11,800.0	90.35	270.00	6,770.9	441.9	-5,013.0	5,030.7	0.00	0.00	0.00
11,900.0	90.35	270.00	6,770.3	441.9	-5,113.0	5,130.6	0.00	0.00	0.00
12,000.0	90.35	270.00	6,769.7	441.9	-5,213.0	5,230.4	0.00	0.00	0.00
12,100.0	90.35	270.00	6,769.1	441.9	-5,313.0	5,330.2	0.00	0.00	0.00
12,200.0	90.35	270.00	6,768.5	441.9	-5,413.0	5,430.0	0.00	0.00	0.00
12,300.0	90.35	270.00	6,767.9	441.9	-5,513.0	5,529.8	0.00	0.00	0.00
12,400.0	90.35	270.00	6,767.2	441.9	-5,613.0	5,629.6	0.00	0.00	0.00
12,500.0	90.35	270.00	6,766.6	441.9	-5,713.0	5,729.4	0.00	0.00	0.00
12,600.0	90.35	270.00	6,766.0	441.9	-5,813.0	5,829.2	0.00	0.00	0.00
12,700.0	90.35	270.00	6,765.4	441.9	-5,913.0	5,929.0	0.00	0.00	0.00
12,800.0	90.35	270.00	6,764.8	441.9	-6,013.0	6,028.8	0.00	0.00	0.00
12,900.0	90.35	270.00	6,764.2	441.9	-6,113.0	6,128.6	0.00	0.00	0.00
13,000.0	90.35	270.00	6,763.6	441.9	-6,213.0	6,228.4	0.00	0.00	0.00
13,100.0	90.35	270.00	6,763.0	441.9	-6,313.0	6,328.2	0.00	0.00	0.00
13,200.0	90.35	270.00	6,762.4	441.9	-6,413.0	6,428.0	0.00	0.00	0.00
13,300.0	90.35	270.00	6,761.8	441.9	-6,513.0	6,527.8	0.00	0.00	0.00
13,400.0	90.35	270.00	6,761.1	441.9	-6,613.0	6,627.7	0.00	0.00	0.00
13,500.0	90.35	270.00	6,760.5	441.9	-6,713.0	6,727.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,600.0	90.35	270.00	6,759.9	441.9	-6,813.0	6,827.3	0.00	0.00	0.00
13,700.0	90.35	270.00	6,759.3	441.9	-6,913.0	6,927.1	0.00	0.00	0.00
13,800.0	90.35	270.00	6,758.7	441.9	-7,013.0	7,026.9	0.00	0.00	0.00
13,900.0	90.35	270.00	6,758.1	441.9	-7,113.0	7,126.7	0.00	0.00	0.00
13,914.0	90.35	270.00	6,758.0	441.9	-7,126.9	7,140.6	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL 1660'FNL & 214'	0.00	0.00	6,758.0	441.9	-7,126.9	1,400,892.74	3,242,600.03	40.430580	-104.628530
- plan hits target center									
- Point									
50' E/W Hardline (1V-	0.00	0.00	0.0	441.9	-3,806.3	1,400,926.36	3,245,920.41	40.430582	-104.616602
- plan misses target center by 3831.8ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W-6,641.3 H100.0 D0.0)									
SHL 2094'FNL & 331'	0.00	0.00	1.0	0.0	0.0	1,400,523.02	3,249,730.79	40.429370	-104.602930
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
7,272.5	6,798.6	7"		7	7-1/2

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,503.6	3,486.0	PARKMAN		0.00		
4,268.3	4,244.0	SUSSEX		0.00		
5,232.7	5,200.0	SHANNON		0.00		
6,573.3	6,504.0	SHARON SPRINGS		0.00		
6,707.3	6,602.0	NIOBRARA A		0.00		
6,902.8	6,713.0	NIOBRARA B		0.00		
7,065.7	6,772.0	NIOBRARA C		0.00		
	6,865.0	FT HAYS		0.00		
	6,887.0	CODELL		0.00		

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Project:</b>	SEC.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	LDS 1V-334	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (4-30-15)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,067.8	6,034.6	441.9	283.0	KOP #2
7,272.5	6,798.6	441.9	-485.6	End of Build





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.1-T5N-R65W**

**LDS 5N65W1W Pad Sec.1-T5N-R65W**

**LDS 1V-334**

**Wellbore #1**

**Plan #2 (4-30-15)**

## **Anticollision Report**

**30 April, 2015**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (4-30-15)
<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	4/30/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	13,914.0	Plan #2 (4-30-15) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Sec.1-T5N-R65W						
BJB 2 (Exist.) - Wellbore #1 - Wellbore #1	1,362.8	1,350.6	238.8	208.8	7.972	CC
BJB 2 (Exist.) - Wellbore #1 - Wellbore #1	6,974.6	6,731.0	303.4	151.1	1.992	ES, SF
BJB 3 (SI) - Wellbore #1 - Wellbore #1	8,462.9	6,797.3	449.1	261.2	2.390	CC, ES
BJB 3 (SI) - Wellbore #1 - Wellbore #1	8,500.0	6,797.1	450.6	261.7	2.385	SF
BJB 5 (Exist.) - Wellbore #1 - Wellbore #1	7,705.8	6,811.3	444.4	399.3	9.869	CC, ES
BJB 5 (Exist.) - Wellbore #1 - Wellbore #1	7,800.0	6,809.3	454.2	406.9	9.593	SF
BJB 6I (Exist.) - Wellbore #1 - Wellbore #1	9,039.2	6,956.9	332.3	247.1	3.899	CC, ES
BJB 6I (Exist.) - Wellbore #1 - Wellbore #1	9,100.0	6,957.4	337.8	250.9	3.888	SF
Gatewood 5 (Exist.) - Wellbore #1 - Wellbore #1	10,439.5	6,792.2	378.1	136.1	1.562	CC, ES, SF
Gatewood 6-1 (Exist.) - Wellbore #1 - Wellbore #1	9,652.1	6,794.8	41.1	-151.3	0.214	Level 1, CC, ES, SF
Existing Wells Sec.2-T5N-R65W						
Caraccioli 1 (Exist.) - Wellbore #1 - Wellbore #1	12,480.4	6,784.0	476.6	299.6	2.694	CC
Caraccioli 1 (Exist.) - Wellbore #1 - Wellbore #1	12,500.0	6,783.5	477.0	299.5	2.688	ES, SF
LDS 5N65W1U Pad Sec.1-T5N-R65W						
LDS 1V-304 - Wellbore #1 - Plan #2 (4-13-15)	13,905.5	13,942.2	513.7	107.9	1.266	Level 3, CC
LDS 1V-304 - Wellbore #1 - Plan #2 (4-13-15)	13,914.0	13,942.2	513.7	107.7	1.265	Level 3, ES, SF
LDS 5N65W1W Pad Sec.1-T5N-R65W						
LDS 1V-234 - Wellbore #1 - Plan #2 (4-29-15)	1,000.0	1,000.0	29.3	25.0	6.855	CC
LDS 1V-234 - Wellbore #1 - Plan #2 (4-29-15)	13,914.0	13,843.5	199.9	-185.9	0.518	Level 1, ES, SF
LDS 1W-314 - Wellbore #1 - Plan #2 (4-15-15)	1,000.0	1,000.0	58.4	54.1	13.664	CC
LDS 1W-314 - Wellbore #1 - Plan #2 (4-15-15)	13,914.0	13,898.8	397.8	-8.2	0.980	Level 1, ES, SF
LDS 1W-414 - Wellbore #1 - Plan #2 (4-30-15)	1,000.0	1,000.0	91.1	86.8	21.335	CC, ES
LDS 1W-414 - Wellbore #1 - Plan #2 (4-30-15)	13,914.0	13,971.7	714.0	311.0	1.772	SF
Noffsinger Pad Sec.2-T5N-R65W						
Noffsinger 2C (Vert.) - Wellbore #1 - Design #1	12,885.4	6,798.3	626.3	436.7	3.304	CC
Noffsinger 2C (Vert.) - Wellbore #1 - Design #1	12,900.0	6,798.2	626.5	436.5	3.297	ES, SF
Noffsinger 2SD - Wellbore #1 - Wellbore #1	13,075.9	7,039.4	762.1	565.6	3.877	CC
Noffsinger 2SD - Wellbore #1 - Wellbore #1	13,100.0	7,039.9	762.5	565.3	3.866	ES
Noffsinger 2SD - Wellbore #1 - Wellbore #1	13,200.0	7,041.9	772.2	572.1	3.860	SF
Noffsinger 2VD - Wellbore #1 - Wellbore #1	11,835.4	6,939.8	376.8	208.8	2.243	CC, ES, SF
Noffsinger 32-2D - Wellbore #1 - Wellbore #1	13,754.2	6,949.6	243.8	24.0	1.109	Level 2, CC, ES, SF

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0ft
Survey Program: 7050-UNKNOWN													Offset Well Error:	0.0ft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-54.61	138.5	-194.9	239.4					
100.0	100.0	88.0	88.0	0.1	1.8	-54.61	138.5	-194.9	239.1	237.2	1.87	127.660		
200.0	200.0	188.0	188.0	0.3	3.8	-54.61	138.5	-194.9	239.1	235.0	4.10	58.344		
300.0	300.0	288.0	288.0	0.6	5.8	-54.61	138.5	-194.9	239.1	232.7	6.32	37.812		
400.0	400.0	388.0	388.0	0.8	7.8	-54.61	138.5	-194.9	239.1	230.5	8.55	27.970		
500.0	500.0	488.0	488.0	1.0	9.8	-54.61	138.5	-194.9	239.1	228.3	10.77	22.193		
600.0	600.0	588.0	588.0	1.2	11.8	-54.61	138.5	-194.9	239.1	226.1	13.00	18.394		
700.0	700.0	688.0	688.0	1.5	13.8	-54.61	138.5	-194.9	239.1	223.8	15.22	15.705		
800.0	800.0	788.0	788.0	1.7	15.8	-54.61	138.5	-194.9	239.1	221.6	17.45	13.703		
900.0	900.0	888.0	888.0	1.9	17.8	-54.61	138.5	-194.9	239.1	219.4	19.67	12.153		
1,000.0	1,000.0	988.0	988.0	2.1	19.8	-54.61	138.5	-194.9	239.1	217.2	21.90	10.918		
1,100.0	1,100.0	1,088.0	1,088.0	2.4	21.8	-87.46	138.5	-194.9	239.0	214.9	24.12	9.910		
1,200.0	1,200.0	1,188.0	1,188.0	2.6	23.8	-88.08	138.5	-194.9	238.9	212.6	26.34	9.071		
1,300.0	1,299.9	1,287.9	1,287.9	2.8	25.8	-89.13	138.5	-194.9	238.8	210.2	28.56	8.362		
1,362.8	1,362.6	1,350.6	1,350.6	2.9	27.0	-90.00	138.5	-194.9	238.8	208.8	29.95	7.972 CC		
1,400.0	1,399.7	1,387.7	1,387.7	3.0	27.8	-90.59	138.5	-194.9	238.8	208.0	30.78	7.758		
1,500.0	1,499.4	1,487.4	1,487.4	3.3	29.7	-92.47	138.5	-194.9	239.0	206.0	33.01	7.241		
1,600.0	1,598.9	1,586.9	1,586.9	3.5	31.7	-94.74	138.5	-194.9	239.6	204.4	35.24	6.800		
1,700.0	1,698.3	1,686.3	1,686.3	3.8	33.7	-97.40	138.5	-194.9	240.8	203.3	37.47	6.426		
1,800.0	1,797.4	1,785.4	1,785.4	4.0	35.7	-100.38	138.5	-194.9	242.8	203.1	39.71	6.115		
1,900.0	1,896.5	1,884.5	1,884.5	4.3	37.7	-103.40	138.5	-194.9	245.6	203.6	41.96	5.853		
2,000.0	1,995.7	1,983.7	1,983.7	4.6	39.7	-106.34	138.5	-194.9	249.0	204.8	44.20	5.633		
2,100.0	2,094.8	2,082.8	2,082.8	4.9	41.7	-109.19	138.5	-194.9	253.1	206.6	46.45	5.448		
2,200.0	2,193.9	2,181.9	2,181.9	5.2	43.6	-111.95	138.5	-194.9	257.8	209.1	48.69	5.294		
2,300.0	2,293.0	2,281.0	2,281.0	5.5	45.6	-114.61	138.5	-194.9	263.0	212.1	50.93	5.164		
2,400.0	2,392.1	2,380.1	2,380.1	5.8	47.6	-117.16	138.5	-194.9	268.9	215.7	53.17	5.056		
2,500.0	2,491.3	2,479.3	2,479.3	6.1	49.6	-119.59	138.5	-194.9	275.2	219.8	55.41	4.967		
2,600.0	2,590.4	2,578.4	2,578.4	6.4	51.6	-121.92	138.5	-194.9	282.0	224.4	57.64	4.893		
2,700.0	2,689.5	2,677.5	2,677.5	6.7	53.6	-124.13	138.5	-194.9	289.3	229.4	59.86	4.832		
2,800.0	2,788.6	2,776.6	2,776.6	7.0	55.5	-126.23	138.5	-194.9	296.9	234.9	62.09	4.783		
2,900.0	2,887.7	2,875.7	2,875.7	7.3	57.5	-128.23	138.5	-194.9	305.0	240.7	64.30	4.743		
3,000.0	2,986.9	2,974.9	2,974.9	7.6	59.5	-130.12	138.5	-194.9	313.4	246.9	66.52	4.712		
3,100.0	3,086.0	3,074.0	3,074.0	8.0	61.5	-131.91	138.5	-194.9	322.1	253.4	68.73	4.687		
3,200.0	3,185.1	3,173.1	3,173.1	8.3	63.5	-133.61	138.5	-194.9	331.2	260.2	70.94	4.668		
3,300.0	3,284.2	3,272.2	3,272.2	8.6	65.4	-135.22	138.5	-194.9	340.5	267.3	73.15	4.655		
3,400.0	3,383.3	3,371.3	3,371.3	8.9	67.4	-136.74	138.5	-194.9	350.0	274.7	75.36	4.645		
3,500.0	3,482.5	3,470.5	3,470.5	9.2	69.4	-138.18	138.5	-194.9	359.8	282.3	77.56	4.640		
3,600.0	3,581.6	3,569.6	3,569.6	9.6	71.4	-139.54	138.5	-194.9	369.8	290.1	79.76	4.637		
3,700.0	3,680.7	3,668.7	3,668.7	9.9	73.4	-140.83	138.5	-194.9	380.1	298.1	81.96	4.637		
3,800.0	3,779.8	3,767.8	3,767.8	10.2	75.4	-142.05	138.5	-194.9	390.4	306.3	84.16	4.639		
3,900.0	3,878.9	3,866.9	3,866.9	10.5	77.3	-143.21	138.5	-194.9	401.0	314.6	86.36	4.643		
4,000.0	3,978.1	3,966.1	3,966.1	10.8	79.3	-144.31	138.5	-194.9	411.7	323.2	88.56	4.649		
4,100.0	4,077.2	4,065.2	4,065.2	11.2	81.3	-145.36	138.5	-194.9	422.6	331.8	90.76	4.656		
4,200.0	4,176.3	4,164.3	4,164.3	11.5	83.3	-146.35	138.5	-194.9	433.6	340.6	92.96	4.664		
4,300.0	4,275.4	4,263.4	4,263.4	11.8	85.3	-147.29	138.5	-194.9	444.7	349.5	95.15	4.673		
4,400.0	4,374.5	4,362.5	4,362.5	12.1	87.3	-148.19	138.5	-194.9	455.9	358.5	97.35	4.683		
4,500.0	4,473.7	4,461.7	4,461.7	12.5	89.2	-149.04	138.5	-194.9	467.2	367.7	99.55	4.693		
4,600.0	4,572.8	4,560.8	4,560.8	12.8	91.2	-149.86	138.5	-194.9	478.6	376.9	101.74	4.704		
4,700.0	4,671.9	4,659.9	4,659.9	13.1	93.2	-150.63	138.5	-194.9	490.2	386.2	103.94	4.716		
4,800.0	4,771.0	4,759.0	4,759.0	13.4	95.2	-151.37	138.5	-194.9	501.8	395.6	106.14	4.728		
4,900.0	4,870.1	4,858.1	4,858.1	13.8	97.2	-152.08	138.5	-194.9	513.4	405.1	108.33	4.740		

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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7050-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
5,000.0	4,969.3	4,957.3	4,957.3	14.1	99.1	-152.75		138.5	-194.9	525.2	414.7	110.53	4.752	
5,100.0	5,068.4	5,056.4	5,056.4	14.4	101.1	-153.40		138.5	-194.9	537.0	424.3	112.73	4.764	
5,200.0	5,167.5	5,155.5	5,155.5	14.7	103.1	-154.04		138.5	-194.9	548.6	433.5	115.08	4.767	
5,300.0	5,267.1	5,255.1	5,255.1	15.0	105.1	-154.57		138.5	-194.9	557.5	439.9	117.53	4.743	
5,400.0	5,366.8	5,354.8	5,354.8	15.2	107.1	-154.89		138.5	-194.9	563.3	443.4	119.87	4.699	
5,500.0	5,466.8	5,454.8	5,454.8	15.3	109.1	-155.04		138.5	-194.9	565.9	443.8	122.11	4.634	
5,600.0	5,566.8	5,554.8	5,554.8	15.5	111.1	-122.41		138.5	-194.9	566.1	439.9	126.16	4.487	
5,700.0	5,666.8	5,654.8	5,654.8	15.6	113.1	-122.41		138.5	-194.9	566.1	437.7	128.34	4.411	
5,800.0	5,766.8	5,754.8	5,754.8	15.8	115.1	-122.41		138.5	-194.9	566.1	435.5	130.52	4.337	
5,900.0	5,866.8	5,854.8	5,854.8	16.0	117.1	-122.41		138.5	-194.9	566.1	433.4	132.70	4.266	
6,000.0	5,966.8	5,954.8	5,954.8	16.2	119.1	-122.41		138.5	-194.9	566.1	431.2	134.88	4.197	
6,100.0	6,066.8	6,054.8	6,054.8	16.3	121.1	-32.47		138.5	-194.9	565.5	430.3	135.17	4.184	
6,200.0	6,166.1	6,154.1	6,154.1	16.5	123.1	-33.44		138.5	-194.9	556.5	420.6	135.89	4.095	
6,300.0	6,263.2	6,251.2	6,251.2	16.5	125.0	-35.68		138.5	-194.9	536.8	401.7	135.14	3.973	
6,400.0	6,356.4	6,344.4	6,344.4	16.5	126.9	-39.43		138.5	-194.9	507.5	373.9	133.56	3.800	
6,500.0	6,444.1	6,432.1	6,432.1	16.5	128.6	-45.04		138.5	-194.9	469.9	337.5	132.44	3.548	
6,600.0	6,524.8	6,512.8	6,512.8	16.5	130.3	-52.83		138.5	-194.9	426.6	293.0	133.58	3.194	
6,700.0	6,597.1	6,585.1	6,585.1	16.4	131.7	-62.75		138.5	-194.9	381.3	243.1	138.17	2.760	
6,800.0	6,659.7	6,647.7	6,647.7	16.4	133.0	-73.83		138.5	-194.9	339.8	195.1	144.77	2.347	
6,900.0	6,711.7	6,699.7	6,699.7	16.9	134.0	-84.10		138.5	-194.9	310.9	160.8	150.09	2.071	
6,974.6	6,743.0	6,731.0	6,731.0	17.8	134.6	-90.00		138.5	-194.9	303.4	151.1	152.31	1.992 ES, SF	
7,000.0	6,752.1	6,740.1	6,740.1	18.1	134.8	-91.53		138.5	-194.9	304.3	151.6	152.77	1.992	
7,100.0	6,780.2	6,768.2	6,768.2	19.7	135.4	-94.91		138.5	-194.9	326.1	171.7	154.41	2.112	
7,200.0	6,795.6	6,783.6	6,783.6	21.5	135.7	-93.65		138.5	-194.9	373.8	217.1	156.69	2.385	
7,300.0	6,798.4	6,786.4	6,786.4	23.4	135.7	-89.63		138.5	-194.9	439.7	280.8	158.92	2.767	
7,400.0	6,797.8	6,785.8	6,785.8	25.5	135.7	-89.52		138.5	-194.9	516.7	355.7	161.01	3.209	
7,500.0	6,797.2	6,785.2	6,785.2	27.8	135.7	-89.40		138.5	-194.9	600.5	437.3	163.22	3.679	
7,600.0	6,796.6	6,784.6	6,784.6	30.1	135.7	-89.29		138.5	-194.9	688.7	523.1	165.53	4.160	
7,700.0	6,796.0	6,784.0	6,784.0	32.5	135.7	-89.17		138.5	-194.9	779.7	611.8	167.91	4.643	
7,800.0	6,795.3	6,783.3	6,783.3	34.9	135.7	-89.06		138.5	-194.9	872.7	702.3	170.35	5.123	
7,900.0	6,794.7	6,782.7	6,782.7	37.4	135.7	-88.94		138.5	-194.9	967.0	794.2	172.85	5.595	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 3 (SI) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7027-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,600.0	6,796.6	6,802.6	6,802.6	30.1	136.1	-90.67	-7.2	-1,676.0	972.7	806.8	165.92	5.863		
7,700.0	6,796.0	6,802.0	6,802.0	32.5	136.0	-90.59	-7.2	-1,676.0	885.2	716.9	168.31	5.260		
7,800.0	6,795.3	6,801.3	6,801.3	34.9	136.0	-90.52	-7.2	-1,676.0	800.7	629.9	170.76	4.689		
7,900.0	6,794.7	6,800.7	6,800.7	37.4	136.0	-90.44	-7.2	-1,676.0	720.1	546.8	173.26	4.156		
8,000.0	6,794.1	6,800.1	6,800.1	40.0	136.0	-90.36	-7.2	-1,676.0	644.9	469.1	175.81	3.668		
8,100.0	6,793.5	6,799.5	6,799.5	42.6	136.0	-90.28	-7.2	-1,676.0	577.4	399.0	178.38	3.237		
8,200.0	6,792.9	6,798.9	6,798.9	45.2	136.0	-90.20	-7.2	-1,676.0	520.4	339.4	180.98	2.875		
8,300.0	6,792.3	6,798.3	6,798.3	47.8	136.0	-90.13	-7.2	-1,676.0	477.7	294.1	183.60	2.602		
8,400.0	6,791.7	6,797.7	6,797.7	50.4	136.0	-90.05	-7.2	-1,676.0	453.5	267.2	186.24	2.435		
8,462.9	6,791.3	6,797.3	6,797.3	52.1	135.9	-90.00	-7.2	-1,676.0	449.1	261.2	187.91	2.390 CC, ES		
8,500.0	6,791.1	6,797.1	6,797.1	53.1	135.9	-89.97	-7.2	-1,676.0	450.6	261.7	188.90	2.385 SF		
8,600.0	6,790.5	6,796.5	6,796.5	55.8	135.9	-89.89	-7.2	-1,676.0	469.5	278.0	191.57	2.451		
8,700.0	6,789.9	6,795.9	6,795.9	58.5	135.9	-89.82	-7.2	-1,676.0	507.8	313.6	194.25	2.614		
8,800.0	6,789.2	6,795.2	6,795.2	61.2	135.9	-89.74	-7.2	-1,676.0	561.5	364.6	196.94	2.851		
8,900.0	6,788.6	6,794.6	6,794.6	63.9	135.9	-89.66	-7.2	-1,676.0	626.7	427.0	199.64	3.139		
9,000.0	6,788.0	6,794.0	6,794.0	66.6	135.9	-89.58	-7.2	-1,676.0	700.1	497.8	202.35	3.460		
9,100.0	6,787.4	6,793.4	6,793.4	69.3	135.9	-89.50	-7.2	-1,676.0	779.5	574.4	205.06	3.801		
9,200.0	6,786.8	6,792.8	6,792.8	72.1	135.9	-89.43	-7.2	-1,676.0	863.1	655.3	207.78	4.154		
9,300.0	6,786.2	6,792.2	6,792.2	74.8	135.8	-89.35	-7.2	-1,676.0	949.9	739.4	210.50	4.513		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 5 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 100-NS-GYRO-MS												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 (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
6,800.0	6,659.7	6,688.3	6,686.7	16.4	12.3	41.93	886.2	-920.7	984.9	961.0	23.95	41.124	
6,900.0	6,711.7	6,739.0	6,737.4	16.9	12.4	51.23	886.2	-920.0	908.9	883.4	25.51	35.631	
7,000.0	6,752.1	6,778.0	6,776.4	18.1	12.5	62.53	886.2	-919.4	829.9	801.6	28.29	29.335	
7,100.0	6,780.2	6,804.7	6,803.1	19.7	12.6	74.51	886.2	-919.0	750.3	719.0	31.39	23.907	
7,200.0	6,795.6	6,818.5	6,816.9	21.5	12.6	85.17	886.2	-918.8	673.2	639.3	33.89	19.864	
7,300.0	6,798.4	6,819.9	6,818.3	23.4	12.6	91.08	886.2	-918.8	601.7	565.9	35.81	16.801	
7,400.0	6,797.8	6,817.8	6,816.2	25.5	12.6	90.80	886.2	-918.8	539.4	501.5	37.92	14.225	
7,500.0	6,797.2	6,815.6	6,814.0	27.8	12.6	90.53	886.2	-918.8	489.7	449.5	40.15	12.196	
7,600.0	6,796.6	6,813.5	6,811.9	30.1	12.6	90.26	886.2	-918.9	456.8	414.3	42.48	10.753	
7,700.0	6,796.0	6,811.4	6,809.8	32.5	12.6	89.99	886.2	-918.9	444.4	399.5	44.88	9.901	
7,705.8	6,795.9	6,811.3	6,809.7	32.6	12.6	89.97	886.2	-918.9	444.4	399.3	45.03	9.869 CC, ES	
7,800.0	6,795.3	6,809.3	6,807.7	34.9	12.6	89.72	886.2	-918.9	454.2	406.9	47.35	9.593 SF	
7,900.0	6,794.7	6,807.2	6,805.6	37.4	12.6	89.44	886.2	-918.9	484.9	435.1	49.86	9.725	
8,000.0	6,794.1	6,805.1	6,803.5	40.0	12.6	89.17	886.2	-919.0	532.9	480.5	52.41	10.167	
8,100.0	6,793.5	6,803.0	6,801.4	42.6	12.6	88.90	886.2	-919.0	594.0	539.0	55.00	10.800	
8,200.0	6,792.9	6,800.9	6,799.3	45.2	12.6	88.63	886.2	-919.0	664.5	606.9	57.60	11.536	
8,300.0	6,792.3	6,798.8	6,797.2	47.8	12.6	88.36	886.2	-919.1	741.9	681.6	60.23	12.317	
8,400.0	6,791.7	6,796.7	6,795.1	50.4	12.6	88.09	886.2	-919.1	824.1	761.2	62.88	13.106	
8,500.0	6,791.1	6,794.6	6,793.0	53.1	12.6	87.81	886.2	-919.1	909.9	844.4	65.54	13.884	
8,600.0	6,790.5	6,792.5	6,790.9	55.8	12.6	87.54	886.2	-919.2	998.4	930.1	68.21	14.637	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - BJB 6I (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 552-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface ('')	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
8,100.0	6,793.5	6,949.1	6,794.9	42.6	22.5	88.63	774.2	-2,252.2	996.2	936.2	60.03	16.595		
8,200.0	6,792.9	6,949.9	6,795.6	45.2	22.5	88.77	774.2	-2,252.2	902.6	839.9	62.65	14.407		
8,300.0	6,792.3	6,950.7	6,796.4	47.8	22.5	88.90	774.2	-2,252.2	810.5	745.2	65.29	12.413		
8,400.0	6,791.7	6,951.5	6,797.2	50.4	22.5	89.04	774.2	-2,252.2	720.4	652.5	67.95	10.602		
8,500.0	6,791.1	6,952.3	6,798.0	53.1	22.5	89.17	774.2	-2,252.2	633.4	562.8	70.62	8.968		
8,600.0	6,790.5	6,953.1	6,798.8	55.8	22.5	89.31	774.2	-2,252.2	550.8	477.5	73.31	7.513		
8,700.0	6,789.9	6,953.9	6,799.6	58.5	22.5	89.46	774.2	-2,252.2	474.9	398.9	76.01	6.247		
8,800.0	6,789.2	6,954.8	6,800.5	61.2	22.5	89.60	774.2	-2,252.3	409.5	330.7	78.72	5.201		
8,900.0	6,788.6	6,955.6	6,801.4	63.9	22.5	89.75	774.2	-2,252.3	360.3	278.9	81.44	4.424		
9,000.0	6,788.0	6,956.5	6,802.2	66.6	22.5	89.91	774.2	-2,252.3	334.6	250.5	84.17	3.976		
9,039.2	6,787.8	6,956.9	6,802.6	67.7	22.5	89.97	774.2	-2,252.3	332.3	247.1	85.24	3.899 CC, ES		
9,100.0	6,787.4	6,957.4	6,803.1	69.3	22.5	90.06	774.2	-2,252.3	337.8	250.9	86.90	3.888 SF		
9,200.0	6,786.8	6,958.3	6,804.0	72.1	22.5	90.22	774.2	-2,252.3	369.2	279.5	89.64	4.118		
9,300.0	6,786.2	6,959.3	6,805.0	74.8	22.5	90.38	774.2	-2,252.3	422.4	330.0	92.38	4.573		
9,400.0	6,785.6	6,960.2	6,805.9	77.5	22.5	90.54	774.2	-2,252.3	490.5	395.4	95.13	5.156		
9,500.0	6,785.0	6,961.2	6,806.9	80.3	22.5	90.71	774.2	-2,252.4	568.1	470.2	97.88	5.804		
9,600.0	6,784.4	6,962.0	6,807.7	83.0	22.5	90.85	774.2	-2,252.4	651.8	551.2	100.63	6.477		
9,700.0	6,783.7	6,963.1	6,808.8	85.8	22.5	91.04	774.2	-2,252.4	739.6	636.2	103.39	7.154		
9,800.0	6,783.1	6,964.1	6,809.8	88.6	22.5	91.20	774.2	-2,252.4	830.2	724.0	106.15	7.821		
9,900.0	6,782.5	6,965.0	6,810.7	91.3	22.5	91.36	774.2	-2,252.4	922.7	813.8	108.91	8.472		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells Sec.1-T5N-R65W - Gatewood 5 (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7123-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,600.0	6,784.4	6,797.4	6,797.4	83.0	135.9	90.78	820.0	-3,652.5	920.7	701.8	218.85	4.207	
9,700.0	6,783.7	6,796.7	6,796.7	85.8	135.9	90.68	820.0	-3,652.5	830.5	608.9	221.60	3.748	
9,800.0	6,783.1	6,796.1	6,796.1	88.6	135.9	90.59	820.0	-3,652.5	742.9	518.5	224.36	3.311	
9,900.0	6,782.5	6,795.5	6,795.5	91.3	135.9	90.50	820.0	-3,652.5	658.8	431.7	227.12	2.901	
10,000.0	6,781.9	6,794.9	6,794.9	94.1	135.9	90.41	820.0	-3,652.5	579.7	349.9	229.88	2.522	
10,100.0	6,781.3	6,794.3	6,794.3	96.9	135.9	90.31	820.0	-3,652.5	508.1	275.5	232.64	2.184	
10,200.0	6,780.7	6,793.7	6,793.7	99.6	135.9	90.22	820.0	-3,652.5	447.6	212.2	235.40	1.901	
10,300.0	6,780.1	6,793.1	6,793.1	102.4	135.9	90.13	820.0	-3,652.5	403.0	164.9	238.17	1.692	
10,400.0	6,779.5	6,792.5	6,792.5	105.2	135.8	90.04	820.0	-3,652.5	380.2	139.2	240.93	1.578	
10,439.5	6,779.2	6,792.2	6,792.2	106.3	135.8	90.00	820.0	-3,652.5	378.1	136.1	242.02	1.562 CC, ES, SF	
10,500.0	6,778.9	6,791.9	6,791.9	107.9	135.8	89.94	820.0	-3,652.5	382.9	139.2	243.70	1.571	
10,600.0	6,778.2	6,791.2	6,791.2	110.7	135.8	89.85	820.0	-3,652.5	410.8	164.3	246.47	1.667	
10,700.0	6,777.6	6,790.6	6,790.6	113.5	135.8	89.76	820.0	-3,652.5	459.2	210.0	249.24	1.842	
10,800.0	6,777.0	6,790.0	6,790.0	116.3	135.8	89.67	820.0	-3,652.5	522.5	270.4	252.01	2.073	
10,900.0	6,776.4	6,789.4	6,789.4	119.1	135.8	89.57	820.0	-3,652.5	595.9	341.1	254.78	2.339	
11,000.0	6,775.8	6,788.8	6,788.8	121.8	135.8	89.48	820.0	-3,652.5	676.1	418.6	257.55	2.625	
11,100.0	6,775.2	6,788.2	6,788.2	124.6	135.8	89.39	820.0	-3,652.5	761.1	500.8	260.32	2.924	
11,200.0	6,774.6	6,787.6	6,787.6	127.4	135.8	89.30	820.0	-3,652.5	849.3	586.2	263.09	3.228	
11,300.0	6,774.0	6,787.0	6,787.0	130.2	135.7	89.20	820.0	-3,652.5	939.9	674.1	265.87	3.535	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.1-T5N-R65W - Gatewood 6-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,700.0	6,789.9	6,799.5	6,799.0	58.5	108.1	96.95	482.9	-2,865.2	953.0	787.8	165.16	5.770		
8,800.0	6,789.2	6,799.0	6,798.5	61.2	108.1	96.28	482.9	-2,865.2	853.1	685.0	168.07	5.076		
8,900.0	6,788.6	6,798.5	6,798.1	63.9	108.0	95.60	482.9	-2,865.2	753.2	582.2	170.97	4.406		
9,000.0	6,788.0	6,798.0	6,797.6	66.6	108.0	94.92	482.9	-2,865.2	653.4	479.5	173.86	3.758		
9,100.0	6,787.4	6,797.5	6,797.1	69.3	108.0	94.24	482.9	-2,865.2	553.6	376.9	176.74	3.132		
9,200.0	6,786.8	6,797.0	6,796.6	72.1	108.0	93.56	482.9	-2,865.2	454.0	274.3	179.61	2.527		
9,300.0	6,786.2	6,796.5	6,796.1	74.8	108.0	92.88	482.9	-2,865.2	354.5	172.0	182.46	1.943		
9,400.0	6,785.6	6,796.0	6,795.6	77.5	108.0	92.20	483.0	-2,865.2	255.4	70.1	185.30	1.378 Level 3		
9,500.0	6,785.0	6,795.6	6,795.1	80.3	108.0	91.52	483.0	-2,865.2	157.6	-30.6	188.11	0.838 Level 1		
9,600.0	6,784.4	6,795.1	6,794.6	83.0	108.0	90.84	483.0	-2,865.2	66.4	-124.6	190.91	0.348 Level 1		
9,652.1	6,784.0	6,794.8	6,794.4	84.5	108.0	90.49	483.0	-2,865.2	41.1	-151.3	192.36	0.214 Level 1, CC, ES, SF		
9,700.0	6,783.7	6,794.6	6,794.1	85.8	108.0	90.16	483.0	-2,865.2	63.1	-130.6	193.69	0.326 Level 1		
9,800.0	6,783.1	6,794.1	6,793.7	88.6	108.0	89.48	483.0	-2,865.2	153.5	-42.9	196.44	0.781 Level 1		
9,900.0	6,782.5	6,793.6	6,793.2	91.3	108.0	88.80	483.0	-2,865.2	251.3	52.1	199.17	1.262 Level 3		
10,000.0	6,781.9	6,793.1	6,792.7	94.1	108.0	88.11	483.0	-2,865.2	350.3	148.4	201.87	1.735		
10,100.0	6,781.3	6,792.6	6,792.2	96.9	108.0	87.43	483.0	-2,865.2	449.8	245.2	204.55	2.199		
10,200.0	6,780.7	6,792.1	6,791.7	99.6	108.0	86.76	483.0	-2,865.1	549.4	342.2	207.20	2.652		
10,300.0	6,780.1	6,791.6	6,791.2	102.4	108.0	86.08	483.0	-2,865.1	649.2	439.4	209.81	3.094		
10,400.0	6,779.5	6,791.2	6,790.7	105.2	107.9	85.40	483.0	-2,865.1	749.0	536.6	212.40	3.526		
10,500.0	6,778.9	6,790.7	6,790.2	107.9	107.9	84.72	483.0	-2,865.1	848.9	633.9	214.96	3.949		
10,600.0	6,778.2	6,790.2	6,789.7	110.7	107.9	84.05	483.0	-2,865.1	948.8	731.3	217.49	4.362		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells Sec.2-T5N-R65W - Caraccioli 1 (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 100-NS-GYRO-MS												<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
11,700.0	6,771.5	6,800.5	6,799.7	141.4	13.8	-91.80	-34.8	-5,693.1	914.3	759.2	155.10	5.895	
11,800.0	6,770.9	6,800.0	6,799.2	144.2	13.8	-91.74	-34.8	-5,693.1	830.6	672.7	157.89	5.260	
11,900.0	6,770.3	6,796.2	6,795.4	146.9	13.8	-91.28	-34.7	-5,693.2	750.9	590.2	160.70	4.673	
12,000.0	6,769.7	6,794.1	6,793.3	149.7	13.8	-91.03	-34.7	-5,693.2	676.6	513.1	163.50	4.138	
12,100.0	6,769.1	6,791.9	6,791.2	152.5	13.8	-90.77	-34.7	-5,693.3	609.7	443.4	166.29	3.666	
12,200.0	6,768.5	6,789.8	6,789.1	155.3	13.8	-90.52	-34.7	-5,693.3	552.9	383.8	169.09	3.270	
12,300.0	6,767.9	6,787.7	6,787.0	158.1	13.8	-90.27	-34.7	-5,693.3	509.5	337.7	171.88	2.965	
12,400.0	6,767.2	6,785.6	6,784.9	160.9	13.8	-90.02	-34.7	-5,693.4	483.3	308.6	174.67	2.767	
12,480.4	6,766.8	6,784.0	6,783.2	163.2	13.8	-89.81	-34.7	-5,693.4	476.6	299.6	176.91	2.694 CC	
12,500.0	6,766.6	6,783.5	6,782.8	163.7	13.8	-89.76	-34.7	-5,693.4	477.0	299.5	177.46	2.688 ES, SF	
12,600.0	6,766.0	6,781.4	6,780.7	166.5	13.8	-89.51	-34.7	-5,693.4	491.3	311.1	180.24	2.726	
12,700.0	6,765.4	6,779.4	6,778.6	169.3	13.8	-89.26	-34.7	-5,693.5	524.7	341.7	183.02	2.867	
12,800.0	6,764.8	6,777.3	6,776.5	172.1	13.8	-89.01	-34.7	-5,693.5	573.8	388.0	185.80	3.088	
12,900.0	6,764.2	6,775.2	6,774.4	174.9	13.8	-88.76	-34.7	-5,693.5	634.9	446.3	188.57	3.367	
13,000.0	6,763.6	6,773.1	6,772.4	177.7	13.8	-88.51	-34.7	-5,693.6	705.0	513.6	191.34	3.684	
13,100.0	6,763.0	6,771.0	6,770.3	180.5	13.8	-88.26	-34.7	-5,693.6	781.6	587.4	194.11	4.026	
13,200.0	6,762.4	6,769.0	6,768.2	183.3	13.8	-88.01	-34.7	-5,693.6	862.9	666.1	196.87	4.383	
13,300.0	6,761.8	6,766.9	6,766.1	186.1	13.8	-87.76	-34.7	-5,693.7	947.9	748.3	199.63	4.748	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-304 - Wellbore #1 - Plan #2 (4-13-15)													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
3,400.0	3,383.3	3,558.7	3,533.1	8.9	10.7	-32.69		1,217.1	156.2	999.8	983.2	16.61	60.186	
3,500.0	3,482.5	3,655.9	3,629.4	9.2	11.1	-32.75		1,204.9	162.1	976.2	959.1	17.13	56.992	
3,600.0	3,581.6	3,753.1	3,725.6	9.6	11.4	-32.81		1,192.7	168.0	952.7	935.1	17.65	53.984	
3,700.0	3,680.7	3,850.3	3,821.9	9.9	11.8	-32.88		1,180.5	173.9	929.2	911.0	18.17	51.146	
3,800.0	3,779.8	3,947.5	3,918.1	10.2	12.1	-32.95		1,168.4	179.8	905.7	887.0	18.69	48.466	
3,900.0	3,878.9	4,044.7	4,014.4	10.5	12.4	-33.02		1,156.2	185.7	882.2	863.0	19.21	45.929	
4,000.0	3,978.1	4,141.9	4,110.6	10.8	12.8	-33.09		1,144.0	191.6	858.7	838.9	19.73	43.526	
4,100.0	4,077.2	4,239.0	4,206.8	11.2	13.1	-33.17		1,131.8	197.5	835.2	814.9	20.25	41.246	
4,200.0	4,176.3	4,336.2	4,303.1	11.5	13.5	-33.26		1,119.6	203.4	811.6	790.9	20.77	39.079	
4,300.0	4,275.4	4,433.4	4,399.3	11.8	13.8	-33.34		1,107.5	209.3	788.1	766.8	21.29	37.018	
4,400.0	4,374.5	4,530.6	4,495.6	12.1	14.2	-33.44		1,095.3	215.1	764.6	742.8	21.81	35.056	
4,500.0	4,473.7	4,627.8	4,591.8	12.5	14.5	-33.54		1,083.1	221.0	741.1	718.8	22.33	33.185	
4,600.0	4,572.8	4,725.0	4,688.1	12.8	14.8	-33.65		1,070.9	226.9	717.6	694.8	22.86	31.399	
4,700.0	4,671.9	4,822.2	4,784.3	13.1	15.2	-33.76		1,058.7	232.8	694.1	670.7	23.38	29.693	
4,800.0	4,771.0	4,919.4	4,880.6	13.4	15.5	-33.88		1,046.6	238.7	670.6	646.7	23.90	28.061	
4,900.0	4,870.1	5,016.6	4,976.8	13.8	15.9	-34.01		1,034.4	244.6	647.1	622.7	24.42	26.499	
5,000.0	4,969.3	5,113.8	5,073.0	14.1	16.2	-34.16		1,022.2	250.5	623.6	598.7	24.94	25.002	
5,100.0	5,068.4	5,210.9	5,169.3	14.4	16.6	-34.31		1,010.0	256.4	600.2	574.7	25.47	23.567	
5,200.0	5,167.5	5,308.2	5,265.6	14.7	16.9	-34.32		997.8	262.3	577.0	551.0	26.01	22.184	
5,300.0	5,267.1	5,406.0	5,362.5	15.0	17.2	-34.06		985.6	268.2	556.2	529.7	26.53	20.969	
5,400.0	5,366.8	5,495.7	5,451.4	15.2	17.5	-33.67		974.7	273.5	538.8	511.8	26.98	19.972	
5,500.0	5,466.8	5,580.6	5,535.8	15.3	17.7	-33.27		966.5	277.4	526.7	499.4	27.35	19.261	
5,600.0	5,566.8	5,666.2	5,621.1	15.5	17.9	-0.30		960.6	280.3	519.6	487.8	31.79	16.342	
5,700.0	5,666.8	5,752.1	5,706.9	15.6	18.0	-0.10		956.9	282.1	515.3	483.2	32.11	16.048	
5,800.0	5,766.8	5,838.2	5,792.9	15.8	18.1	-0.03		955.6	282.8	513.7	481.3	32.42	15.846	
5,836.3	5,803.1	5,873.4	5,828.1	15.9	18.2	-0.03		955.5	282.8	513.7	481.1	32.54	15.789	
5,900.0	5,866.8	5,937.0	5,891.8	16.0	18.3	-0.03		955.5	282.8	513.7	480.9	32.74	15.691	
6,000.0	5,966.8	6,037.0	5,991.8	16.2	18.4	-0.03		955.5	282.8	513.7	480.6	33.05	15.543	
6,100.0	6,066.8	6,137.0	6,091.8	16.3	18.5	89.97		955.5	282.1	513.7	484.2	29.47	17.434	
6,200.0	6,166.1	6,237.0	6,191.1	16.5	18.6	89.97		955.5	271.4	513.7	484.0	29.69	17.302	
6,300.0	6,263.2	6,337.0	6,288.2	16.5	18.6	89.97		955.5	247.8	513.7	483.9	29.80	17.237	
6,400.0	6,356.4	6,436.9	6,381.3	16.5	18.6	89.97		955.5	211.7	513.7	483.8	29.85	17.207	
6,500.0	6,444.1	6,536.9	6,469.0	16.5	18.6	89.97		955.5	163.8	513.7	483.7	29.94	17.158	
6,600.0	6,524.8	6,636.9	6,549.7	16.5	18.6	89.98		955.5	104.9	513.7	483.5	30.19	17.017	
6,700.0	6,597.1	6,736.9	6,621.9	16.4	18.6	89.98		955.5	35.9	513.7	482.9	30.76	16.700	
6,800.0	6,659.7	6,836.8	6,684.6	16.4	18.5	89.98		955.5	-41.9	513.7	481.9	31.82	16.143	
6,900.0	6,711.7	6,936.8	6,736.6	16.9	18.5	89.98		955.5	-127.2	513.7	480.2	33.50	15.335	
7,000.0	6,752.1	7,036.8	6,777.0	18.1	18.7	89.99		955.5	-218.6	513.7	477.8	35.84	14.331	
7,100.0	6,780.2	7,136.8	6,805.1	19.7	19.8	89.99		955.5	-314.5	513.7	474.9	38.82	13.231	
7,200.0	6,795.6	7,236.8	6,820.5	21.5	21.5	89.99		955.5	-413.2	513.7	471.3	42.33	12.134	
7,300.0	6,798.4	7,336.8	6,823.4	23.4	23.4	89.99		955.5	-513.1	513.7	467.4	46.23	11.111	
7,400.0	6,797.8	7,436.8	6,822.7	25.5	25.5	89.99		955.5	-613.1	513.7	463.2	50.43	10.185	
7,500.0	6,797.2	7,536.8	6,822.1	27.8	27.7	89.99		955.5	-713.1	513.7	458.8	54.89	9.359	
7,600.0	6,796.6	7,636.8	6,821.5	30.1	30.0	89.99		955.5	-813.1	513.7	454.1	59.54	8.628	
7,700.0	6,796.0	7,736.8	6,820.9	32.5	32.4	89.99		955.5	-913.1	513.7	449.3	64.34	7.984	
7,800.0	6,795.3	7,836.8	6,820.3	34.9	34.9	89.99		955.5	-1,013.1	513.7	444.4	69.27	7.415	
7,900.0	6,794.7	7,936.8	6,819.7	37.4	37.4	89.99		955.5	-1,113.1	513.7	439.4	74.30	6.914	
8,000.0	6,794.1	8,036.8	6,819.1	40.0	39.9	89.99		955.5	-1,213.1	513.7	434.3	79.41	6.469	
8,100.0	6,793.5	8,136.8	6,818.5	42.6	42.5	89.99		955.5	-1,313.1	513.7	429.1	84.58	6.074	
8,200.0	6,792.9	8,236.8	6,817.9	45.2	45.1	89.99		955.5	-1,413.1	513.7	423.9	89.80	5.720	
8,300.0	6,792.3	8,336.8	6,817.2	47.8	47.7	89.99		955.5	-1,513.1	513.7	418.6	95.07	5.403	

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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-304 - Wellbore #1 - Plan #2 (4-13-15)													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
8,400.0	6,791.7	8,436.8	6,816.6	50.4	50.4	89.99	89.99	955.5	-1,613.1	513.7	413.3	100.38	5.117	
8,500.0	6,791.1	8,536.8	6,816.0	53.1	53.0	89.99	89.99	955.5	-1,713.1	513.7	408.0	105.72	4.859	
8,600.0	6,790.5	8,636.8	6,815.4	55.8	55.7	89.99	89.99	955.5	-1,813.1	513.7	402.6	111.09	4.624	
8,700.0	6,789.9	8,736.8	6,814.8	58.5	58.4	89.99	89.99	955.5	-1,913.1	513.7	397.2	116.48	4.410	
8,800.0	6,789.2	8,836.8	6,814.2	61.2	61.1	89.99	89.99	955.5	-2,013.1	513.7	391.8	121.90	4.214	
8,900.0	6,788.6	8,936.8	6,813.6	63.9	63.8	89.99	89.99	955.5	-2,113.1	513.7	386.4	127.33	4.034	
9,000.0	6,788.0	9,036.8	6,813.0	66.6	66.5	89.99	89.99	955.5	-2,213.1	513.7	380.9	132.78	3.869	
9,100.0	6,787.4	9,136.8	6,812.4	69.3	69.2	89.99	89.99	955.5	-2,313.1	513.7	375.4	138.24	3.716	
9,200.0	6,786.8	9,236.8	6,811.7	72.1	72.0	89.99	89.99	955.5	-2,413.1	513.7	370.0	143.71	3.574	
9,300.0	6,786.2	9,336.8	6,811.1	74.8	74.7	89.99	89.99	955.5	-2,513.1	513.7	364.5	149.19	3.443	
9,400.0	6,785.6	9,436.8	6,810.5	77.5	77.5	89.99	89.99	955.5	-2,613.1	513.7	359.0	154.69	3.321	
9,500.0	6,785.0	9,536.8	6,809.9	80.3	80.2	89.99	89.99	955.5	-2,713.1	513.7	353.5	160.19	3.207	
9,600.0	6,784.4	9,636.8	6,809.3	83.0	82.9	89.99	89.99	955.5	-2,813.1	513.7	348.0	165.70	3.100	
9,700.0	6,783.7	9,736.8	6,808.7	85.8	85.7	89.99	89.99	955.5	-2,913.1	513.7	342.5	171.22	3.000	
9,800.0	6,783.1	9,836.8	6,808.1	88.6	88.5	89.99	89.99	955.5	-3,013.0	513.7	336.9	176.74	2.906	
9,900.0	6,782.5	9,936.8	6,807.5	91.3	91.2	89.99	89.99	955.5	-3,113.0	513.7	331.4	182.27	2.818	
10,000.0	6,781.9	10,036.8	6,806.9	94.1	94.0	89.99	89.99	955.5	-3,213.0	513.7	325.9	187.80	2.735	
10,100.0	6,781.3	10,136.8	6,806.2	96.9	96.7	89.99	89.99	955.5	-3,313.0	513.7	320.3	193.34	2.657	
10,200.0	6,780.7	10,236.8	6,805.6	99.6	99.5	89.99	89.99	955.5	-3,413.0	513.7	314.8	198.89	2.583	
10,300.0	6,780.1	10,336.8	6,805.0	102.4	102.3	89.99	89.99	955.5	-3,513.0	513.7	309.2	204.44	2.513	
10,400.0	6,779.5	10,436.8	6,804.4	105.2	105.1	89.99	89.99	955.5	-3,613.0	513.7	303.7	209.99	2.446	
10,500.0	6,778.9	10,536.8	6,803.8	107.9	107.8	89.99	89.99	955.5	-3,713.0	513.7	298.1	215.55	2.383	
10,600.0	6,778.2	10,636.8	6,803.2	110.7	110.6	89.99	89.99	955.5	-3,813.0	513.7	292.6	221.11	2.323	
10,700.0	6,777.6	10,736.8	6,802.6	113.5	113.4	89.99	89.99	955.5	-3,913.0	513.7	287.0	226.67	2.266	
10,800.0	6,777.0	10,836.8	6,802.0	116.3	116.2	89.99	89.99	955.5	-4,013.0	513.7	281.4	232.23	2.212	
10,900.0	6,776.4	10,936.8	6,801.4	119.1	118.9	89.99	89.99	955.5	-4,113.0	513.7	275.9	237.80	2.160	
11,000.0	6,775.8	11,036.8	6,800.7	121.8	121.7	89.99	89.99	955.5	-4,213.0	513.7	270.3	243.37	2.111	
11,100.0	6,775.2	11,136.8	6,800.1	124.6	124.5	89.99	89.99	955.5	-4,313.0	513.7	264.7	248.94	2.063	
11,200.0	6,774.6	11,236.8	6,799.5	127.4	127.3	89.99	89.99	955.5	-4,413.0	513.7	259.2	254.52	2.018	
11,300.0	6,774.0	11,336.8	6,798.9	130.2	130.1	89.99	89.99	955.5	-4,513.0	513.7	253.6	260.09	1.975	
11,400.0	6,773.4	11,436.8	6,798.3	133.0	132.9	89.99	89.99	955.5	-4,613.0	513.7	248.0	265.67	1.934	
11,500.0	6,772.7	11,536.8	6,797.7	135.8	135.7	89.99	89.99	955.5	-4,713.0	513.7	242.4	271.25	1.894	
11,600.0	6,772.1	11,636.8	6,797.1	138.6	138.4	89.99	89.99	955.5	-4,813.0	513.7	236.8	276.83	1.856	
11,700.0	6,771.5	11,736.8	6,796.5	141.4	141.2	89.99	89.99	955.5	-4,913.0	513.7	231.3	282.42	1.819	
11,800.0	6,770.9	11,836.8	6,795.9	144.2	144.0	89.99	89.99	955.5	-5,013.0	513.7	225.7	288.00	1.784	
11,900.0	6,770.3	11,936.8	6,795.3	146.9	146.8	89.99	89.99	955.5	-5,113.0	513.7	220.1	293.59	1.750	
12,000.0	6,769.7	12,036.8	6,794.6	149.7	149.6	89.99	89.99	955.5	-5,213.0	513.7	214.5	299.17	1.717	
12,100.0	6,769.1	12,136.8	6,794.0	152.5	152.4	89.99	89.99	955.5	-5,313.0	513.7	208.9	304.76	1.686	
12,200.0	6,768.5	12,236.8	6,793.4	155.3	155.2	89.99	89.99	955.5	-5,413.0	513.7	203.3	310.35	1.655	
12,300.0	6,767.9	12,336.8	6,792.8	158.1	158.0	89.99	89.99	955.5	-5,513.0	513.7	197.7	315.94	1.626	
12,400.0	6,767.2	12,436.8	6,792.2	160.9	160.8	89.99	89.99	955.5	-5,613.0	513.7	192.1	321.53	1.598	
12,500.0	6,766.6	12,536.8	6,791.6	163.7	163.6	89.99	89.99	955.5	-5,713.0	513.7	186.6	327.13	1.570	
12,600.0	6,766.0	12,636.8	6,791.0	166.5	166.4	89.99	89.99	955.5	-5,813.0	513.7	181.0	332.72	1.544	
12,700.0	6,765.4	12,736.8	6,790.4	169.3	169.2	89.99	89.99	955.5	-5,913.0	513.7	175.4	338.31	1.518	
12,800.0	6,764.8	12,836.8	6,789.8	172.1	172.0	89.99	89.99	955.5	-6,013.0	513.7	169.8	343.91	1.494 Level 3	
12,900.0	6,764.2	12,936.8	6,789.1	174.9	174.8	89.99	89.99	955.5	-6,113.0	513.7	164.2	349.50	1.470 Level 3	
13,000.0	6,763.6	13,036.8	6,788.5	177.7	177.6	89.99	89.99	955.5	-6,213.0	513.7	158.6	355.10	1.447 Level 3	
13,100.0	6,763.0	13,136.8	6,787.9	180.5	180.4	89.99	89.99	955.5	-6,313.0	513.7	153.0	360.70	1.424 Level 3	
13,200.0	6,762.4	13,236.8	6,787.3	183.3	183.2	89.99	89.99	955.5	-6,413.0	513.7	147.4	366.30	1.402 Level 3	
13,300.0	6,761.8	13,336.8	6,786.7	186.1	186.0	89.99	89.99	955.5	-6,513.0	513.7	141.8	371.90	1.381 Level 3	
13,400.0	6,761.1	13,436.8	6,786.1	188.9	188.8	89.99	89.99	955.5	-6,613.0	513.7	136.2	377.50	1.361 Level 3	

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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design    LDS 5N65W1U Pad Sec.1-T5N-R65W - LDS 1V-304 - Wellbore #1 - Plan #2 (4-13-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
13,500.0	6,760.5	13,536.8	6,785.5	191.7	191.6	89.99	955.5	-6,713.0	513.7	130.6	383.10	1.341 Level 3	
13,600.0	6,759.9	13,636.8	6,784.9	194.5	194.4	89.99	955.5	-6,813.0	513.7	125.0	388.70	1.322 Level 3	
13,700.0	6,759.3	13,736.8	6,784.3	197.3	197.2	89.99	955.5	-6,913.0	513.7	119.4	394.30	1.303 Level 3	
13,800.0	6,758.7	13,836.8	6,783.6	200.1	200.0	89.99	955.5	-7,013.0	513.7	113.8	399.90	1.285 Level 3	
13,900.0	6,758.1	13,936.8	6,783.0	202.9	202.8	89.99	955.5	-7,113.0	513.7	108.2	405.50	1.267 Level 3	
13,905.5	6,758.1	13,942.2	6,783.0	203.0	202.9	89.99	955.5	-7,118.4	513.7	107.9	405.81	1.266 Level 3, CC	
13,914.0	6,758.0	13,942.2	6,783.0	203.3	202.9	89.99	955.5	-7,118.4	513.7	107.7	406.05	1.265 Level 3, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1V-234 - Wellbore #1 - Plan #2 (4-29-15)													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	-174.54	-174.54	-29.1	-2.8	29.3				
100.0	100.0	100.0	100.0	0.1	0.1	-174.54	-174.54	-29.1	-2.8	29.3	29.0	0.22	130.241	
200.0	200.0	200.0	200.0	0.3	0.3	-174.54	-174.54	-29.1	-2.8	29.3	28.6	0.67	43.414	
300.0	300.0	300.0	300.0	0.6	0.6	-174.54	-174.54	-29.1	-2.8	29.3	28.1	1.12	26.048	
400.0	400.0	400.0	400.0	0.8	0.8	-174.54	-174.54	-29.1	-2.8	29.3	27.7	1.57	18.606	
500.0	500.0	500.0	500.0	1.0	1.0	-174.54	-174.54	-29.1	-2.8	29.3	27.3	2.02	14.471	
600.0	600.0	600.0	600.0	1.2	1.2	-174.54	-174.54	-29.1	-2.8	29.3	26.8	2.47	11.840	
700.0	700.0	700.0	700.0	1.5	1.5	-174.54	-174.54	-29.1	-2.8	29.3	26.4	2.92	10.019	
800.0	800.0	800.0	800.0	1.7	1.7	-174.54	-174.54	-29.1	-2.8	29.3	25.9	3.37	8.683	
900.0	900.0	900.0	900.0	1.9	1.9	-174.54	-174.54	-29.1	-2.8	29.3	25.5	3.82	7.661	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-174.54	-174.54	-29.1	-2.8	29.3	25.0	4.27	6.855 CC	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	153.58	153.58	-29.1	-2.8	30.1	25.3	4.72	6.370	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	155.62	155.62	-29.1	-2.8	32.4	27.3	5.16	6.279	
1,300.0	1,299.9	1,299.9	1,299.9	2.8	2.8	158.44	158.44	-29.1	-2.8	36.4	30.8	5.61	6.497	
1,400.0	1,399.7	1,399.7	1,399.7	3.0	3.0	161.47	161.47	-29.1	-2.8	42.2	36.1	6.05	6.968	
1,500.0	1,499.4	1,500.1	1,500.1	3.3	3.3	163.86	163.86	-28.5	-2.2	48.9	42.4	6.49	7.533	
1,600.0	1,598.9	1,600.7	1,600.6	3.5	3.5	165.30	165.30	-26.7	-0.3	55.8	48.9	6.93	8.058	
1,700.0	1,698.3	1,701.4	1,701.2	3.8	3.7	166.09	166.09	-23.6	2.8	62.9	55.6	7.37	8.538	
1,800.0	1,797.4	1,802.2	1,801.8	4.0	3.9	166.40	166.40	-19.2	7.2	70.0	62.2	7.82	8.955	
1,900.0	1,896.5	1,903.1	1,902.5	4.3	4.2	166.13	166.13	-13.6	12.9	75.8	67.5	8.28	9.159	
2,000.0	1,995.7	2,004.3	2,003.2	4.6	4.4	165.32	165.32	-6.7	19.8	80.0	71.3	8.74	9.153	
2,100.0	2,094.8	2,105.4	2,103.6	4.9	4.6	164.03	164.03	1.4	27.9	82.7	73.5	9.22	8.972	
2,200.0	2,193.9	2,205.3	2,202.8	5.2	4.9	162.60	162.60	10.0	36.5	84.9	75.2	9.71	8.744	
2,300.0	2,293.0	2,305.3	2,302.0	5.5	5.2	161.24	161.24	18.5	45.1	87.1	76.9	10.20	8.537	
2,400.0	2,392.1	2,405.2	2,401.2	5.8	5.4	159.95	159.95	27.0	53.6	89.3	78.6	10.70	8.348	
2,500.0	2,491.3	2,505.2	2,500.5	6.1	5.7	158.72	158.72	35.5	62.2	91.6	80.4	11.20	8.174	
2,600.0	2,590.4	2,605.1	2,599.7	6.4	6.0	157.55	157.55	44.0	70.8	93.9	82.2	11.72	8.015	
2,700.0	2,689.5	2,705.1	2,698.9	6.7	6.3	156.44	156.44	52.6	79.3	96.2	84.0	12.23	7.867	
2,800.0	2,788.6	2,805.0	2,798.1	7.0	6.6	155.38	155.38	61.1	87.9	98.6	85.9	12.76	7.731	
2,900.0	2,887.7	2,905.0	2,897.4	7.3	6.8	154.38	154.38	69.6	96.5	101.1	87.8	13.29	7.605	
3,000.0	2,986.9	3,005.0	2,996.6	7.6	7.1	153.42	153.42	78.1	105.0	103.5	89.7	13.82	7.487	
3,100.0	3,086.0	3,104.9	3,095.8	8.0	7.4	152.50	152.50	86.6	113.6	106.0	91.6	14.37	7.378	
3,200.0	3,185.1	3,204.9	3,195.0	8.3	7.7	151.63	151.63	95.2	122.2	108.5	93.6	14.91	7.276	
3,300.0	3,284.2	3,304.8	3,294.2	8.6	8.0	150.79	150.79	103.7	130.7	111.0	95.6	15.46	7.180	
3,400.0	3,383.3	3,404.8	3,393.5	8.9	8.3	150.00	150.00	112.2	139.3	113.6	97.6	16.02	7.091	
3,500.0	3,482.5	3,504.7	3,492.7	9.2	8.6	149.23	149.23	120.7	147.8	116.1	99.6	16.57	7.007	
3,600.0	3,581.6	3,604.7	3,591.9	9.6	8.9	148.51	148.51	129.3	156.4	118.7	101.6	17.14	6.929	
3,700.0	3,680.7	3,704.6	3,691.1	9.9	9.2	147.81	147.81	137.8	165.0	121.3	103.6	17.70	6.855	
3,800.0	3,779.8	3,804.6	3,790.4	10.2	9.5	147.14	147.14	146.3	173.5	124.0	105.7	18.27	6.785	
3,900.0	3,878.9	3,904.6	3,889.6	10.5	9.8	146.50	146.50	154.8	182.1	126.6	107.8	18.84	6.719	
4,000.0	3,978.1	4,004.5	3,988.8	10.8	10.1	145.89	145.89	163.3	190.7	129.3	109.9	19.42	6.657	
4,100.0	4,077.2	4,104.5	4,088.0	11.2	10.4	145.30	145.30	171.9	199.2	131.9	111.9	19.99	6.599	
4,200.0	4,176.3	4,204.4	4,187.3	11.5	10.7	144.73	144.73	180.4	207.8	134.6	114.1	20.57	6.543	
4,300.0	4,275.4	4,304.4	4,286.5	11.8	11.0	144.19	144.19	188.9	216.4	137.3	116.2	21.16	6.491	
4,400.0	4,374.5	4,404.3	4,385.7	12.1	11.3	143.67	143.67	197.4	224.9	140.0	118.3	21.74	6.441	
4,500.0	4,473.7	4,504.3	4,484.9	12.5	11.6	143.17	143.17	205.9	233.5	142.8	120.4	22.33	6.394	
4,600.0	4,572.8	4,604.2	4,584.1	12.8	12.0	142.68	142.68	214.5	242.1	145.5	122.6	22.92	6.349	
4,700.0	4,671.9	4,704.2	4,683.4	13.1	12.3	142.22	142.22	223.0	250.6	148.2	124.7	23.51	6.306	
4,800.0	4,771.0	4,804.2	4,782.6	13.4	12.6	141.77	141.77	231.5	259.2	151.0	126.9	24.10	6.265	
4,900.0	4,870.1	4,903.2	4,880.9	13.8	12.9	141.38	141.38	239.9	267.6	153.8	129.1	24.68	6.234	
5,000.0	4,969.3	5,000.0	4,977.3	14.1	13.1	141.70	141.70	246.3	274.1	158.3	133.1	25.13	6.297	

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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1V-234 - Wellbore #1 - Plan #2 (4-29-15)		Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft			
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
5,100.0	5,068.4	5,096.0	5,073.1	14.4	13.3	142.87	250.4	278.2	164.8	139.3	25.50	6.464			
5,200.0	5,167.5	5,191.8	5,168.8	14.7	13.4	144.72	252.3	280.1	173.4	147.6	25.79	6.725			
5,300.0	5,267.1	5,290.0	5,267.1	15.0	13.6	146.54	252.4	280.2	181.5	155.4	26.02	6.974			
5,400.0	5,366.8	5,389.8	5,366.8	15.2	13.8	147.68	252.4	280.2	186.8	160.5	26.30	7.103			
5,500.0	5,466.8	5,489.7	5,466.8	15.3	14.0	148.17	252.4	280.2	189.3	162.7	26.60	7.115			
5,600.0	5,566.8	5,589.7	5,566.8	15.5	14.2	-179.16	252.4	280.2	189.5	161.5	27.96	6.775			
5,700.0	5,666.8	5,689.7	5,666.8	15.6	14.3	-179.16	252.4	280.2	189.5	161.1	28.34	6.685			
5,800.0	5,766.8	5,789.7	5,766.8	15.8	14.5	-179.16	252.4	280.2	189.5	160.7	28.72	6.596			
5,900.0	5,866.8	5,889.7	5,866.8	16.0	14.7	-179.16	252.4	280.2	189.5	160.3	29.11	6.509			
6,000.0	5,966.8	5,989.7	5,966.8	16.2	14.9	-179.16	252.4	280.2	189.5	160.0	29.49	6.424			
6,100.0	6,066.8	6,089.1	6,065.9	16.3	15.1	-87.81	252.4	275.1	189.6	160.7	28.83	6.576			
6,200.0	6,166.1	6,187.4	6,162.6	16.5	15.1	-85.62	252.4	257.5	190.0	161.1	28.89	6.577			
6,300.0	6,263.2	6,284.9	6,255.4	16.5	15.2	-83.53	252.4	227.9	190.7	161.8	28.88	6.601			
6,400.0	6,356.4	6,381.5	6,343.0	16.5	15.2	-81.56	252.4	187.2	191.5	162.6	28.88	6.632			
6,500.0	6,444.1	6,477.4	6,424.1	16.5	15.2	-79.76	252.4	136.2	192.5	163.6	28.96	6.648			
6,600.0	6,524.8	6,572.6	6,497.7	16.5	15.2	-78.15	252.4	75.9	193.6	164.3	29.23	6.621			
6,700.0	6,597.1	6,667.2	6,562.8	16.4	15.3	-76.74	252.4	7.3	194.6	164.8	29.83	6.526			
6,800.0	6,659.7	6,761.4	6,618.8	16.4	15.9	-75.55	252.4	-68.3	195.6	164.8	30.85	6.341			
6,900.0	6,711.7	6,855.1	6,664.8	16.9	16.8	-74.61	252.4	-149.9	196.5	164.1	32.40	6.065			
7,000.0	6,752.1	6,950.0	6,700.8	18.1	18.0	-73.89	252.4	-237.6	197.2	162.6	34.53	5.710			
7,000.8	6,752.4	6,950.0	6,700.8	18.2	18.0	-73.89	252.4	-237.6	197.2	162.6	34.54	5.709			
7,100.0	6,780.2	7,041.8	6,725.1	19.7	19.5	-73.44	252.4	-326.1	197.6	160.5	37.17	5.316			
7,200.0	6,795.6	7,134.8	6,738.7	21.5	21.2	-73.24	252.4	-418.1	197.8	157.5	40.31	4.908			
7,288.9	6,799.7	7,218.4	6,741.5	23.2	22.8	-72.90	252.4	-501.5	198.2	154.8	43.38	4.569			
7,300.0	6,798.4	7,229.5	6,741.4	23.4	23.1	-73.24	252.4	-512.7	197.8	154.0	43.87	4.509			
7,400.0	6,797.8	7,329.5	6,740.7	25.5	25.2	-73.22	252.4	-612.7	197.9	150.0	47.91	4.130			
7,500.0	6,797.2	7,429.5	6,739.9	27.8	27.4	-73.19	252.4	-712.7	197.9	145.7	52.19	3.792			
7,600.0	6,796.6	7,529.5	6,739.2	30.1	29.8	-73.16	252.4	-812.7	197.9	141.3	56.66	3.493			
7,700.0	6,796.0	7,629.5	6,738.5	32.5	32.2	-73.13	252.4	-912.7	198.0	136.7	61.27	3.231			
7,800.0	6,795.3	7,729.5	6,737.8	34.9	34.7	-73.10	252.4	-1,012.7	198.0	132.0	66.01	3.000			
7,900.0	6,794.7	7,829.5	6,737.1	37.4	37.2	-73.07	252.4	-1,112.7	198.0	127.2	70.83	2.796			
8,000.0	6,794.1	7,929.5	6,736.4	40.0	39.7	-73.04	252.4	-1,212.7	198.0	122.3	75.72	2.615			
8,100.0	6,793.5	8,029.5	6,735.6	42.6	42.3	-73.01	252.4	-1,312.7	198.1	117.4	80.68	2.455			
8,200.0	6,792.9	8,129.5	6,734.9	45.2	44.9	-72.98	252.4	-1,412.7	198.1	112.4	85.69	2.312			
8,300.0	6,792.3	8,229.5	6,734.2	47.8	47.6	-72.96	252.4	-1,512.7	198.1	107.4	90.73	2.184			
8,400.0	6,791.7	8,329.5	6,733.5	50.4	50.2	-72.93	252.4	-1,612.7	198.2	102.4	95.81	2.068			
8,500.0	6,791.1	8,429.5	6,732.8	53.1	52.9	-72.90	252.4	-1,712.7	198.2	97.3	100.92	1.964			
8,600.0	6,790.5	8,529.5	6,732.1	55.8	55.6	-72.87	252.4	-1,812.7	198.2	92.2	106.06	1.869			
8,700.0	6,789.9	8,629.5	6,731.4	58.5	58.3	-72.84	252.4	-1,912.7	198.3	87.1	111.21	1.783			
8,800.0	6,789.2	8,729.5	6,730.6	61.2	61.0	-72.81	252.4	-2,012.6	198.3	81.9	116.38	1.704			
8,900.0	6,788.6	8,829.5	6,729.9	63.9	63.7	-72.78	252.4	-2,112.6	198.3	76.8	121.57	1.631			
9,000.0	6,788.0	8,929.5	6,729.2	66.6	66.4	-72.75	252.4	-2,212.6	198.4	71.6	126.77	1.565			
9,100.0	6,787.4	9,029.5	6,728.5	69.3	69.2	-72.72	252.4	-2,312.6	198.4	66.4	131.99	1.503			
9,200.0	6,786.8	9,129.5	6,727.8	72.1	71.9	-72.69	252.4	-2,412.6	198.4	61.2	137.21	1.446 Level 3			
9,300.0	6,786.2	9,229.5	6,727.1	74.8	74.6	-72.67	252.4	-2,512.6	198.5	56.0	142.44	1.393 Level 3			
9,400.0	6,785.6	9,329.5	6,726.3	77.5	77.4	-72.64	252.4	-2,612.6	198.5	50.8	147.68	1.344 Level 3			
9,500.0	6,785.0	9,429.5	6,725.6	80.3	80.1	-72.61	252.4	-2,712.6	198.5	45.6	152.93	1.298 Level 3			
9,600.0	6,784.4	9,529.5	6,724.9	83.0	82.9	-72.58	252.4	-2,812.6	198.5	40.4	158.18	1.255 Level 3			
9,700.0	6,783.7	9,629.5	6,724.2	85.8	85.7	-72.55	252.4	-2,912.6	198.6	35.1	163.43	1.215 Level 2			
9,800.0	6,783.1	9,729.5	6,723.5	88.6	88.4	-72.52	252.4	-3,012.6	198.6	29.9	168.69	1.177 Level 2			
9,900.0	6,782.5	9,829.5	6,722.8	91.3	91.2	-72.49	252.4	-3,112.6	198.6	24.7	173.96	1.142 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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1V-234 - Wellbore #1 - Plan #2 (4-29-15)													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.0	6,781.9	9,929.5	6,722.1	94.1	93.9	-72.46	252.4	-3,212.6	198.7	19.4	179.23	1.108	Level 2	
10,100.0	6,781.3	10,029.5	6,721.3	96.9	96.7	-72.44	252.4	-3,312.6	198.7	14.2	184.50	1.077	Level 2	
10,200.0	6,780.7	10,129.5	6,720.6	99.6	99.5	-72.41	252.4	-3,412.6	198.7	9.0	189.77	1.047	Level 2	
10,300.0	6,780.1	10,229.5	6,719.9	102.4	102.3	-72.38	252.4	-3,512.6	198.8	3.7	195.05	1.019	Level 2	
10,400.0	6,779.5	10,329.5	6,719.2	105.2	105.0	-72.35	252.4	-3,612.6	198.8	-1.5	200.33	0.992	Level 1	
10,500.0	6,778.9	10,429.5	6,718.5	107.9	107.8	-72.32	252.4	-3,712.6	198.8	-6.8	205.61	0.967	Level 1	
10,600.0	6,778.2	10,529.5	6,717.8	110.7	110.6	-72.29	252.4	-3,812.6	198.9	-12.0	210.89	0.943	Level 1	
10,700.0	6,777.6	10,629.5	6,717.0	113.5	113.4	-72.26	252.4	-3,912.6	198.9	-17.3	216.17	0.920	Level 1	
10,800.0	6,777.0	10,729.5	6,716.3	116.3	116.2	-72.23	252.4	-4,012.6	198.9	-22.5	221.45	0.898	Level 1	
10,900.0	6,776.4	10,829.5	6,715.6	119.1	118.9	-72.21	252.4	-4,112.6	199.0	-27.8	226.74	0.877	Level 1	
11,000.0	6,775.8	10,929.5	6,714.9	121.8	121.7	-72.18	252.4	-4,212.6	199.0	-33.0	232.02	0.858	Level 1	
11,100.0	6,775.2	11,029.5	6,714.2	124.6	124.5	-72.15	252.4	-4,312.6	199.0	-38.3	237.31	0.839	Level 1	
11,200.0	6,774.6	11,129.5	6,713.5	127.4	127.3	-72.12	252.4	-4,412.6	199.1	-43.5	242.59	0.821	Level 1	
11,300.0	6,774.0	11,229.5	6,712.7	130.2	130.1	-72.09	252.4	-4,512.6	199.1	-48.8	247.88	0.803	Level 1	
11,400.0	6,773.4	11,329.5	6,712.0	133.0	132.9	-72.06	252.4	-4,612.6	199.1	-54.0	253.16	0.787	Level 1	
11,500.0	6,772.7	11,429.5	6,711.3	135.8	135.7	-72.03	252.4	-4,712.6	199.2	-59.3	258.45	0.771	Level 1	
11,600.0	6,772.1	11,529.5	6,710.6	138.6	138.5	-72.00	252.4	-4,812.6	199.2	-64.6	263.74	0.755	Level 1	
11,700.0	6,771.5	11,629.5	6,709.9	141.4	141.3	-71.98	252.4	-4,912.6	199.2	-69.8	269.02	0.741	Level 1	
11,800.0	6,770.9	11,729.5	6,709.2	144.2	144.0	-71.95	252.4	-5,012.6	199.2	-75.1	274.31	0.726	Level 1	
11,900.0	6,770.3	11,829.5	6,708.5	146.9	146.8	-71.92	252.4	-5,112.6	199.3	-80.3	279.59	0.713	Level 1	
12,000.0	6,769.7	11,929.5	6,707.7	149.7	149.6	-71.89	252.4	-5,212.6	199.3	-85.6	284.87	0.700	Level 1	
12,100.0	6,769.1	12,029.5	6,707.0	152.5	152.4	-71.86	252.4	-5,312.6	199.3	-90.8	290.16	0.687	Level 1	
12,200.0	6,768.5	12,129.5	6,706.3	155.3	155.2	-71.83	252.4	-5,412.6	199.4	-96.1	295.44	0.675	Level 1	
12,300.0	6,767.9	12,229.5	6,705.6	158.1	158.0	-71.80	252.4	-5,512.6	199.4	-101.3	300.72	0.663	Level 1	
12,400.0	6,767.2	12,329.5	6,704.9	160.9	160.8	-71.78	252.4	-5,612.6	199.4	-106.6	306.00	0.652	Level 1	
12,500.0	6,766.6	12,429.5	6,704.2	163.7	163.6	-71.75	252.4	-5,712.6	199.5	-111.8	311.28	0.641	Level 1	
12,600.0	6,766.0	12,529.5	6,703.4	166.5	166.4	-71.72	252.4	-5,812.5	199.5	-117.1	316.56	0.630	Level 1	
12,700.0	6,765.4	12,629.5	6,702.7	169.3	169.2	-71.69	252.4	-5,912.5	199.5	-122.3	321.84	0.620	Level 1	
12,800.0	6,764.8	12,729.5	6,702.0	172.1	172.0	-71.66	252.4	-6,012.5	199.6	-127.5	327.12	0.610	Level 1	
12,900.0	6,764.2	12,829.5	6,701.3	174.9	174.8	-71.63	252.4	-6,112.5	199.6	-132.8	332.40	0.601	Level 1	
13,000.0	6,763.6	12,929.5	6,700.6	177.7	177.6	-71.60	252.4	-6,212.5	199.6	-138.0	337.67	0.591	Level 1	
13,100.0	6,763.0	13,029.5	6,699.9	180.5	180.4	-71.58	252.4	-6,312.5	199.7	-143.3	342.95	0.582	Level 1	
13,200.0	6,762.4	13,129.5	6,699.2	183.3	183.2	-71.55	252.4	-6,412.5	199.7	-148.5	348.22	0.574	Level 1	
13,300.0	6,761.8	13,229.5	6,698.4	186.1	186.0	-71.52	252.4	-6,512.5	199.7	-153.8	353.50	0.565	Level 1	
13,400.0	6,761.1	13,329.5	6,697.7	188.9	188.8	-71.49	252.4	-6,612.5	199.8	-159.0	358.77	0.557	Level 1	
13,500.0	6,760.5	13,429.5	6,697.0	191.7	191.6	-71.46	252.4	-6,712.5	199.8	-164.2	364.04	0.549	Level 1	
13,600.0	6,759.9	13,529.5	6,696.3	194.5	194.4	-71.43	252.4	-6,812.5	199.8	-169.5	369.31	0.541	Level 1	
13,700.0	6,759.3	13,629.5	6,695.6	197.3	197.2	-71.41	252.4	-6,912.5	199.9	-174.7	374.58	0.534	Level 1	
13,800.0	6,758.7	13,729.5	6,694.9	200.1	200.0	-71.38	252.4	-7,012.5	199.9	-179.9	379.84	0.526	Level 1	
13,900.0	6,758.1	13,829.5	6,694.1	202.9	202.8	-71.35	252.4	-7,112.5	199.9	-185.2	385.11	0.519	Level 1	
13,914.0	6,758.0	13,843.5	6,694.0	203.3	203.2	-71.34	252.4	-7,126.5	199.9	-185.9	385.84	0.518 Level 1, ES, SF		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-314 - Wellbore #1 - Plan #2 (4-15-15)													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	-177.27	-177.27	-58.3	-2.8	58.4				
100.0	100.0	100.0	100.0	0.1	0.1	-177.27	-177.27	-58.3	-2.8	58.4	58.1	0.22	259.615	
200.0	200.0	200.0	200.0	0.3	0.3	-177.27	-177.27	-58.3	-2.8	58.4	57.7	0.67	86.538	
300.0	300.0	300.0	300.0	0.6	0.6	-177.27	-177.27	-58.3	-2.8	58.4	57.2	1.12	51.923	
400.0	400.0	400.0	400.0	0.8	0.8	-177.27	-177.27	-58.3	-2.8	58.4	56.8	1.57	37.088	
500.0	500.0	500.0	500.0	1.0	1.0	-177.27	-177.27	-58.3	-2.8	58.4	56.3	2.02	28.846	
600.0	600.0	600.0	600.0	1.2	1.2	-177.27	-177.27	-58.3	-2.8	58.4	55.9	2.47	23.601	
700.0	700.0	700.0	700.0	1.5	1.5	-177.27	-177.27	-58.3	-2.8	58.4	55.4	2.92	19.970	
800.0	800.0	800.0	800.0	1.7	1.7	-177.27	-177.27	-58.3	-2.8	58.4	55.0	3.37	17.308	
900.0	900.0	900.0	900.0	1.9	1.9	-177.27	-177.27	-58.3	-2.8	58.4	54.5	3.82	15.271	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-177.27	-177.27	-58.3	-2.8	58.4	54.1	4.27	13.664 CC	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	150.51	150.51	-58.3	-2.8	59.1	54.4	4.72	12.529	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	151.71	151.71	-58.3	-2.8	61.4	56.2	5.16	11.892	
1,300.0	1,299.9	1,299.9	1,299.9	2.8	2.8	153.50	153.50	-58.3	-2.8	65.3	59.7	5.61	11.639	
1,400.0	1,399.7	1,399.7	1,399.7	3.0	3.0	155.68	155.68	-58.3	-2.8	70.8	64.7	6.05	11.694	
1,500.0	1,499.4	1,499.4	1,499.4	3.3	3.3	158.03	158.03	-58.3	-2.8	78.0	71.5	6.50	12.004	
1,600.0	1,598.9	1,598.9	1,598.9	3.5	3.5	160.36	160.36	-58.3	-2.8	87.0	80.0	6.94	12.528	
1,700.0	1,698.3	1,698.3	1,698.3	3.8	3.7	162.56	162.56	-58.3	-2.8	97.7	90.3	7.39	13.231	
1,800.0	1,797.4	1,797.4	1,797.4	4.0	3.9	164.55	164.55	-58.3	-2.8	110.1	102.3	7.83	14.061	
1,900.0	1,896.5	1,896.5	1,896.5	4.3	4.2	166.20	166.20	-58.3	-2.8	122.9	114.7	8.28	14.839	
2,000.0	1,995.7	1,995.7	1,995.7	4.6	4.4	167.53	167.53	-58.3	-2.8	135.8	127.1	8.74	15.544	
2,100.0	2,094.8	2,096.4	2,096.4	4.9	4.6	168.41	168.41	-58.0	-2.0	148.3	139.1	9.19	16.136	
2,200.0	2,193.9	2,197.6	2,197.5	5.2	4.8	168.67	168.67	-57.1	0.4	159.6	149.9	9.63	16.563	
2,300.0	2,293.0	2,299.0	2,298.8	5.5	5.0	168.45	168.45	-55.6	4.5	169.7	159.6	10.09	16.826	
2,400.0	2,392.1	2,400.6	2,400.3	5.8	5.2	167.82	167.82	-53.5	10.4	178.7	168.2	10.55	16.945	
2,500.0	2,491.3	2,502.3	2,501.7	6.1	5.5	166.82	166.82	-50.8	17.9	186.6	175.6	11.01	16.939	
2,600.0	2,590.4	2,604.1	2,603.0	6.4	5.7	165.48	165.48	-47.4	27.1	193.4	181.9	11.50	16.825	
2,700.0	2,689.5	2,705.9	2,704.1	6.7	5.9	163.82	163.82	-43.4	38.0	199.3	187.3	11.99	16.620	
2,800.0	2,788.6	2,806.1	2,803.5	7.0	6.2	162.00	162.00	-39.1	49.9	204.6	192.1	12.50	16.369	
2,900.0	2,887.7	2,905.7	2,902.3	7.3	6.4	160.26	160.26	-34.8	61.8	210.0	197.0	13.01	16.139	
3,000.0	2,986.9	3,005.4	3,001.2	7.6	6.7	158.62	158.62	-30.4	73.7	215.7	202.1	13.54	15.928	
3,100.0	3,086.0	3,105.0	3,100.0	8.0	7.0	157.06	157.06	-26.1	85.6	221.5	207.4	14.08	15.734	
3,200.0	3,185.1	3,204.7	3,198.8	8.3	7.2	155.58	155.58	-21.8	97.5	227.4	212.8	14.62	15.555	
3,300.0	3,284.2	3,304.3	3,297.7	8.6	7.5	154.18	154.18	-17.4	109.4	233.5	218.4	15.17	15.391	
3,400.0	3,383.3	3,404.0	3,396.5	8.9	7.8	152.85	152.85	-13.1	121.3	239.8	224.1	15.74	15.239	
3,500.0	3,482.5	3,503.6	3,495.4	9.2	8.1	151.59	151.59	-8.8	133.2	246.2	229.8	16.30	15.098	
3,600.0	3,581.6	3,603.3	3,594.2	9.6	8.4	150.39	150.39	-4.4	145.1	252.6	235.8	16.88	14.968	
3,700.0	3,680.7	3,702.9	3,693.1	9.9	8.7	149.25	149.25	-0.1	157.0	259.2	241.8	17.46	14.848	
3,800.0	3,779.8	3,802.6	3,791.9	10.2	9.0	148.17	148.17	4.2	168.9	265.9	247.9	18.04	14.736	
3,900.0	3,878.9	3,902.2	3,890.8	10.5	9.3	147.14	147.14	8.5	180.8	272.7	254.0	18.63	14.633	
4,000.0	3,978.1	4,001.9	3,989.6	10.8	9.6	146.16	146.16	12.9	192.7	279.5	260.3	19.23	14.536	
4,100.0	4,077.2	4,101.5	4,088.5	11.2	9.9	145.23	145.23	17.2	204.5	286.5	266.6	19.83	14.447	
4,200.0	4,176.3	4,201.2	4,187.3	11.5	10.2	144.34	144.34	21.5	216.4	293.5	273.0	20.43	14.364	
4,300.0	4,275.4	4,300.9	4,286.2	11.8	10.5	143.50	143.50	25.9	228.3	300.5	279.5	21.04	14.286	
4,400.0	4,374.5	4,400.5	4,385.0	12.1	10.8	142.69	142.69	30.2	240.2	307.7	286.0	21.64	14.214	
4,500.0	4,473.7	4,500.2	4,483.9	12.5	11.1	141.92	141.92	34.5	252.1	314.8	292.6	22.26	14.147	
4,600.0	4,572.8	4,598.6	4,581.5	12.8	11.3	141.26	141.26	38.7	263.5	322.2	299.3	22.85	14.103	
4,700.0	4,671.9	4,695.6	4,678.1	13.1	11.6	141.11	141.11	41.8	272.1	330.2	306.9	23.34	14.148	
4,800.0	4,771.0	4,792.4	4,774.7	13.4	11.8	141.51	141.51	43.8	277.6	339.1	315.3	23.79	14.253	
4,900.0	4,870.1	4,888.8	4,871.1	13.8	11.9	142.41	142.41	44.7	280.1	348.9	324.7	24.20	14.418	
5,000.0	4,969.3	4,987.0	4,969.3	14.1	12.1	143.65	143.65	44.8	280.2	359.5	334.9	24.58	14.623	

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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-314 - Wellbore #1 - Plan #2 (4-15-15)													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
5,100.0	5,068.4	5,086.1	5,068.4	14.4	12.3	144.87		44.8	280.2	370.3	345.3	24.99	14.819	
5,200.0	5,167.5	5,185.3	5,167.5	14.7	12.5	146.03		44.8	280.2	380.9	355.5	25.39	15.002	
5,300.0	5,267.1	5,284.8	5,267.1	15.0	12.7	146.93		44.8	280.2	389.1	363.4	25.75	15.112	
5,400.0	5,366.8	5,384.6	5,366.8	15.2	12.9	147.50		44.8	280.2	394.5	368.4	26.10	15.116	
5,500.0	5,466.8	5,484.5	5,466.8	15.3	13.1	147.75		44.8	280.2	396.9	370.5	26.43	15.016	
5,600.0	5,566.8	5,584.5	5,566.8	15.5	13.3	-179.60		44.8	280.2	397.1	370.2	26.94	14.740	
5,700.0	5,666.8	5,684.5	5,666.8	15.6	13.5	-179.60		44.8	280.2	397.1	369.8	27.33	14.527	
5,800.0	5,766.8	5,784.5	5,766.8	15.8	13.7	-179.60		44.8	280.2	397.1	369.4	27.73	14.320	
5,900.0	5,866.8	5,884.5	5,866.8	16.0	13.9	-179.60		44.8	280.2	397.1	369.0	28.13	14.118	
6,000.0	5,966.8	5,984.5	5,966.8	16.2	14.1	-179.60		44.8	280.2	397.1	368.6	28.53	13.920	
6,100.0	6,066.8	6,084.4	6,066.7	16.3	14.3	-89.62		44.8	279.7	397.1	368.3	28.80	13.786	
6,200.0	6,166.1	6,184.1	6,165.8	16.5	14.4	-89.68		44.8	269.4	397.1	368.0	29.06	13.665	
6,300.0	6,263.2	6,283.8	6,262.7	16.5	14.5	-89.75		44.8	246.3	397.1	367.9	29.21	13.593	
6,400.0	6,356.4	6,383.6	6,355.9	16.5	14.5	-89.83		44.8	210.8	397.1	367.8	29.32	13.542	
6,500.0	6,444.1	6,483.5	6,443.8	16.5	14.6	-89.90		44.8	163.4	397.1	367.6	29.48	13.471	
6,600.0	6,524.8	6,583.5	6,524.7	16.5	14.8	-89.98		44.8	104.9	397.1	367.3	29.81	13.322	
6,613.6	6,535.1	6,597.1	6,535.1	16.5	14.8	-89.99		44.8	96.2	397.1	367.2	29.88	13.289	
6,700.0	6,597.1	6,683.5	6,597.4	16.4	15.1	-90.06		44.8	36.3	397.1	366.6	30.47	13.034	
6,800.0	6,659.7	6,783.6	6,660.5	16.4	15.7	-90.14		44.8	-41.2	397.1	365.5	31.61	12.561	
6,900.0	6,711.7	6,883.7	6,713.0	16.9	16.6	-90.22		44.8	-126.4	397.1	363.7	33.37	11.898	
7,000.0	6,752.1	6,984.0	6,754.0	18.1	17.8	-90.29		44.8	-217.9	397.1	361.3	35.79	11.094	
7,100.0	6,780.2	7,084.2	6,782.6	19.7	19.3	-90.35		44.8	-313.9	397.1	358.3	38.84	10.224	
7,200.0	6,795.6	7,184.6	6,798.4	21.5	21.1	-90.42		44.8	-412.9	397.1	354.7	42.40	9.365	
7,300.0	6,798.4	7,284.9	6,801.6	23.4	23.1	-90.47		44.8	-513.1	397.1	350.8	46.33	8.571	
7,400.0	6,797.8	7,384.9	6,801.4	25.5	25.2	-90.51		44.8	-613.1	397.1	346.6	50.56	7.854	
7,500.0	6,797.2	7,484.9	6,801.1	27.8	27.5	-90.56		44.8	-713.1	397.1	342.1	55.04	7.216	
7,600.0	6,796.6	7,584.9	6,800.8	30.1	29.8	-90.60		44.8	-813.1	397.1	337.4	59.70	6.651	
7,700.0	6,796.0	7,684.9	6,800.5	32.5	32.3	-90.65		44.8	-913.1	397.1	332.6	64.52	6.155	
7,800.0	6,795.3	7,784.9	6,800.2	34.9	34.7	-90.70		44.8	-1,013.1	397.1	327.7	69.46	5.717	
7,900.0	6,794.7	7,884.9	6,799.9	37.4	37.3	-90.74		44.8	-1,113.1	397.1	322.6	74.50	5.330	
8,000.0	6,794.1	7,984.9	6,799.6	40.0	39.8	-90.79		44.8	-1,213.1	397.1	317.5	79.62	4.988	
8,100.0	6,793.5	8,084.9	6,799.3	42.6	42.4	-90.83		44.8	-1,313.1	397.1	312.3	84.80	4.683	
8,200.0	6,792.9	8,184.9	6,799.0	45.2	45.0	-90.88		44.8	-1,413.1	397.1	307.1	90.03	4.411	
8,300.0	6,792.3	8,284.9	6,798.7	47.8	47.7	-90.92		44.8	-1,513.1	397.1	301.8	95.30	4.167	
8,400.0	6,791.7	8,384.9	6,798.4	50.4	50.3	-90.97		44.8	-1,613.1	397.2	296.5	100.62	3.947	
8,500.0	6,791.1	8,484.9	6,798.1	53.1	53.0	-91.01		44.8	-1,713.1	397.2	291.2	105.96	3.748	
8,600.0	6,790.5	8,584.9	6,797.8	55.8	55.7	-91.06		44.8	-1,813.1	397.2	285.8	111.33	3.567	
8,700.0	6,789.9	8,684.9	6,797.5	58.5	58.4	-91.10		44.8	-1,913.1	397.2	280.4	116.73	3.403	
8,800.0	6,789.2	8,784.9	6,797.2	61.2	61.1	-91.15		44.8	-2,013.1	397.2	275.0	122.14	3.252	
8,900.0	6,788.6	8,884.9	6,796.9	63.9	63.8	-91.19		44.8	-2,113.1	397.2	269.6	127.57	3.113	
9,000.0	6,788.0	8,984.9	6,796.6	66.6	66.5	-91.24		44.8	-2,213.1	397.2	264.2	133.02	2.986	
9,100.0	6,787.4	9,084.9	6,796.3	69.3	69.3	-91.28		44.8	-2,313.1	397.2	258.7	138.48	2.868	
9,200.0	6,786.8	9,184.9	6,796.0	72.1	72.0	-91.33		44.8	-2,413.1	397.2	253.3	143.95	2.759	
9,300.0	6,786.2	9,284.9	6,795.7	74.8	74.8	-91.37		44.8	-2,513.1	397.2	247.8	149.44	2.658	
9,400.0	6,785.6	9,384.9	6,795.4	77.5	77.5	-91.42		44.8	-2,613.1	397.2	242.3	154.93	2.564	
9,500.0	6,785.0	9,484.9	6,795.1	80.3	80.3	-91.47		44.8	-2,713.1	397.2	236.8	160.43	2.476	
9,600.0	6,784.4	9,584.9	6,794.8	83.0	83.0	-91.51		44.8	-2,813.1	397.2	231.3	165.94	2.394	
9,700.0	6,783.7	9,684.9	6,794.5	85.8	85.8	-91.56		44.8	-2,913.1	397.2	225.8	171.45	2.317	
9,800.0	6,783.1	9,784.9	6,794.2	88.6	88.5	-91.60		44.8	-3,013.1	397.3	220.3	176.97	2.245	
9,900.0	6,782.5	9,884.9	6,793.9	91.3	91.3	-91.65		44.8	-3,113.1	397.3	214.8	182.50	2.177	
10,000.0	6,781.9	9,984.9	6,793.6	94.1	94.1	-91.69		44.8	-3,213.1	397.3	209.2	188.03	2.113	

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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-314 - Wellbore #1 - Plan #2 (4-15-15)													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
10,100.0	6,781.3	10,084.9	6,793.3	96.9	96.8	-91.74		44.8	-3,313.1	397.3	203.7	193.57	2.052	
10,200.0	6,780.7	10,184.9	6,793.0	99.6	99.6	-91.78		44.8	-3,413.1	397.3	198.2	199.11	1.995	
10,300.0	6,780.1	10,284.9	6,792.7	102.4	102.4	-91.83		44.8	-3,513.1	397.3	192.7	204.65	1.941	
10,400.0	6,779.5	10,384.9	6,792.5	105.2	105.2	-91.87		44.8	-3,613.1	397.3	187.1	210.20	1.890	
10,500.0	6,778.9	10,484.9	6,792.2	107.9	107.9	-91.92		44.8	-3,713.1	397.3	181.6	215.75	1.842	
10,600.0	6,778.2	10,584.9	6,791.9	110.7	110.7	-91.96		44.8	-3,813.1	397.3	176.0	221.30	1.795	
10,700.0	6,777.6	10,684.9	6,791.6	113.5	113.5	-92.01		44.8	-3,913.1	397.3	170.5	226.86	1.752	
10,800.0	6,777.0	10,784.9	6,791.3	116.3	116.3	-92.05		44.8	-4,013.1	397.4	164.9	232.42	1.710	
10,900.0	6,776.4	10,884.9	6,791.0	119.1	119.1	-92.10		44.8	-4,113.1	397.4	159.4	237.98	1.670	
11,000.0	6,775.8	10,984.9	6,790.7	121.8	121.9	-92.14		44.8	-4,213.1	397.4	153.8	243.54	1.632	
11,100.0	6,775.2	11,084.9	6,790.4	124.6	124.6	-92.19		44.8	-4,313.1	397.4	148.3	249.10	1.595	
11,200.0	6,774.6	11,184.9	6,790.1	127.4	127.4	-92.24		44.8	-4,413.1	397.4	142.7	254.67	1.560	
11,300.0	6,774.0	11,284.9	6,789.8	130.2	130.2	-92.28		44.8	-4,513.1	397.4	137.2	260.23	1.527	
11,400.0	6,773.4	11,384.9	6,789.5	133.0	133.0	-92.33		44.8	-4,613.1	397.4	131.6	265.80	1.495 Level 3	
11,500.0	6,772.7	11,484.9	6,789.2	135.8	135.8	-92.37		44.8	-4,713.1	397.4	126.1	271.37	1.465 Level 3	
11,600.0	6,772.1	11,584.9	6,788.9	138.6	138.6	-92.42		44.8	-4,813.1	397.5	120.5	276.94	1.435 Level 3	
11,700.0	6,771.5	11,684.9	6,788.6	141.4	141.4	-92.46		44.8	-4,913.1	397.5	115.0	282.51	1.407 Level 3	
11,800.0	6,770.9	11,784.9	6,788.3	144.2	144.2	-92.51		44.8	-5,013.1	397.5	109.4	288.09	1.380 Level 3	
11,900.0	6,770.3	11,884.9	6,788.0	146.9	147.0	-92.55		44.8	-5,113.1	397.5	103.8	293.66	1.354 Level 3	
12,000.0	6,769.7	11,984.9	6,787.7	149.7	149.8	-92.60		44.8	-5,213.1	397.5	98.3	299.24	1.328 Level 3	
12,100.0	6,769.1	12,084.9	6,787.4	152.5	152.6	-92.64		44.8	-5,313.1	397.5	92.7	304.81	1.304 Level 3	
12,200.0	6,768.5	12,184.9	6,787.1	155.3	155.4	-92.69		44.8	-5,413.1	397.5	87.2	310.39	1.281 Level 3	
12,300.0	6,767.9	12,284.9	6,786.8	158.1	158.2	-92.73		44.8	-5,513.1	397.6	81.6	315.96	1.258 Level 3	
12,400.0	6,767.2	12,384.9	6,786.5	160.9	161.0	-92.78		44.8	-5,613.1	397.6	76.0	321.54	1.236 Level 2	
12,500.0	6,766.6	12,484.9	6,786.2	163.7	163.7	-92.82		44.8	-5,713.1	397.6	70.5	327.12	1.215 Level 2	
12,600.0	6,766.0	12,584.9	6,785.9	166.5	166.5	-92.87		44.8	-5,813.1	397.6	64.9	332.69	1.195 Level 2	
12,700.0	6,765.4	12,684.9	6,785.6	169.3	169.3	-92.91		44.8	-5,913.1	397.6	59.3	338.27	1.175 Level 2	
12,800.0	6,764.8	12,784.9	6,785.3	172.1	172.1	-92.96		44.8	-6,013.1	397.6	53.8	343.85	1.156 Level 2	
12,900.0	6,764.2	12,884.9	6,785.0	174.9	174.9	-93.00		44.8	-6,113.1	397.7	48.2	349.43	1.138 Level 2	
13,000.0	6,763.6	12,984.9	6,784.7	177.7	177.7	-93.05		44.8	-6,213.1	397.7	42.7	355.00	1.120 Level 2	
13,100.0	6,763.0	13,084.9	6,784.4	180.5	180.5	-93.09		44.8	-6,313.1	397.7	37.1	360.58	1.103 Level 2	
13,200.0	6,762.4	13,184.9	6,784.1	183.3	183.3	-93.14		44.8	-6,413.1	397.7	31.5	366.16	1.086 Level 2	
13,300.0	6,761.8	13,284.9	6,783.8	186.1	186.1	-93.18		44.8	-6,513.0	397.7	26.0	371.74	1.070 Level 2	
13,400.0	6,761.1	13,384.9	6,783.5	188.9	188.9	-93.23		44.8	-6,613.0	397.7	20.4	377.32	1.054 Level 2	
13,500.0	6,760.5	13,484.9	6,783.3	191.7	191.7	-93.28		44.8	-6,713.0	397.8	14.9	382.89	1.039 Level 2	
13,600.0	6,759.9	13,584.9	6,783.0	194.5	194.5	-93.32		44.8	-6,813.0	397.8	9.3	388.47	1.024 Level 2	
13,700.0	6,759.3	13,684.9	6,782.7	197.3	197.3	-93.37		44.8	-6,913.0	397.8	3.7	394.05	1.009 Level 2	
13,800.0	6,758.7	13,784.9	6,782.4	200.1	200.1	-93.41		44.8	-7,013.0	397.8	-1.8	399.63	0.995 Level 1	
13,900.0	6,758.1	13,884.9	6,782.1	202.9	202.9	-93.46		44.8	-7,113.0	397.8	-7.4	405.21	0.982 Level 1	
13,914.0	6,758.0	13,898.8	6,782.0	203.3	203.3	-93.46		44.8	-7,127.0	397.8	-8.2	405.98	0.980 Level 1, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-414 - Wellbore #1 - Plan #2 (4-30-15)													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	-178.25	-178.25	-91.1	-2.8	91.1				
100.0	100.0	100.0	100.0	0.1	0.1	-178.25	-178.25	-91.1	-2.8	91.1	90.9	0.22	405.368	
200.0	200.0	200.0	200.0	0.3	0.3	-178.25	-178.25	-91.1	-2.8	91.1	90.4	0.67	135.123	
300.0	300.0	300.0	300.0	0.6	0.6	-178.25	-178.25	-91.1	-2.8	91.1	90.0	1.12	81.074	
400.0	400.0	400.0	400.0	0.8	0.8	-178.25	-178.25	-91.1	-2.8	91.1	89.5	1.57	57.910	
500.0	500.0	500.0	500.0	1.0	1.0	-178.25	-178.25	-91.1	-2.8	91.1	89.1	2.02	45.041	
600.0	600.0	600.0	600.0	1.2	1.2	-178.25	-178.25	-91.1	-2.8	91.1	88.6	2.47	36.852	
700.0	700.0	700.0	700.0	1.5	1.5	-178.25	-178.25	-91.1	-2.8	91.1	88.2	2.92	31.182	
800.0	800.0	800.0	800.0	1.7	1.7	-178.25	-178.25	-91.1	-2.8	91.1	87.7	3.37	27.025	
900.0	900.0	900.0	900.0	1.9	1.9	-178.25	-178.25	-91.1	-2.8	91.1	87.3	3.82	23.845	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-178.25	-178.25	-91.1	-2.8	91.1	86.8	4.27	21.335 CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	149.39	149.39	-91.1	-2.8	91.9	87.1	4.72	19.471	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	150.19	150.19	-91.1	-2.8	94.1	89.0	5.16	18.230	
1,300.0	1,299.9	1,299.9	1,299.9	2.8	2.8	151.44	151.44	-91.1	-2.8	97.9	92.3	5.61	17.461	
1,400.0	1,399.7	1,399.7	1,399.7	3.0	3.0	153.03	153.03	-91.1	-2.8	103.3	97.3	6.05	17.068	
1,500.0	1,499.4	1,499.4	1,499.4	3.3	3.3	154.85	154.85	-91.1	-2.8	110.4	103.9	6.50	16.983	
1,600.0	1,598.9	1,598.9	1,598.9	3.5	3.5	156.77	156.77	-91.1	-2.8	119.1	112.2	6.95	17.154	
1,700.0	1,698.3	1,697.5	1,697.5	3.8	3.7	158.34	158.34	-91.5	-2.1	129.9	122.6	7.37	17.631	
1,800.0	1,797.4	1,795.8	1,795.8	4.0	3.9	159.26	159.26	-92.8	0.1	142.8	135.1	7.78	18.359	
1,900.0	1,896.5	1,894.0	1,893.9	4.3	4.1	159.50	159.50	-95.0	3.6	156.7	148.4	8.21	19.089	
2,000.0	1,995.7	1,992.0	1,991.7	4.6	4.2	159.16	159.16	-98.1	8.6	171.0	162.4	8.64	19.790	
2,100.0	2,094.8	2,089.9	2,089.3	4.9	4.5	158.39	158.39	-102.0	15.0	186.0	176.9	9.09	20.463	
2,200.0	2,193.9	2,187.4	2,186.4	5.2	4.7	157.28	157.28	-106.8	22.8	201.6	192.0	9.55	21.111	
2,300.0	2,293.0	2,284.6	2,283.0	5.5	4.9	155.93	155.93	-112.5	32.0	217.9	207.9	10.02	21.739	
2,400.0	2,392.1	2,382.6	2,380.2	5.8	5.1	154.48	154.48	-118.8	42.3	234.8	224.3	10.51	22.336	
2,500.0	2,491.3	2,481.0	2,477.9	6.1	5.4	153.21	153.21	-125.1	52.7	251.9	240.8	11.01	22.873	
2,600.0	2,590.4	2,579.4	2,575.5	6.4	5.6	152.10	152.10	-131.5	63.0	269.0	257.5	11.52	23.357	
2,700.0	2,689.5	2,677.8	2,673.1	6.7	5.9	151.13	151.13	-137.9	73.4	286.3	274.2	12.03	23.796	
2,800.0	2,788.6	2,776.2	2,770.8	7.0	6.2	150.26	150.26	-144.2	83.7	303.6	291.0	12.55	24.193	
2,900.0	2,887.7	2,874.6	2,868.4	7.3	6.4	149.49	149.49	-150.6	94.1	321.0	307.9	13.07	24.555	
3,000.0	2,986.9	2,972.9	2,966.0	7.6	6.7	148.80	148.80	-156.9	104.5	338.4	324.8	13.60	24.885	
3,100.0	3,086.0	3,071.3	3,063.7	8.0	7.0	148.17	148.17	-163.3	114.8	355.9	341.7	14.13	25.187	
3,200.0	3,185.1	3,169.7	3,161.3	8.3	7.3	147.61	147.61	-169.7	125.2	373.4	358.7	14.66	25.464	
3,300.0	3,284.2	3,268.1	3,259.0	8.6	7.6	147.09	147.09	-176.0	135.5	390.9	375.7	15.20	25.718	
3,400.0	3,383.3	3,366.5	3,356.6	8.9	7.9	146.62	146.62	-182.4	145.9	408.5	392.8	15.74	25.953	
3,500.0	3,482.5	3,464.9	3,454.2	9.2	8.2	146.19	146.19	-188.8	156.3	426.1	409.8	16.28	26.170	
3,600.0	3,581.6	3,563.3	3,551.9	9.6	8.5	145.79	145.79	-195.1	166.6	443.7	426.9	16.83	26.371	
3,700.0	3,680.7	3,661.7	3,649.5	9.9	8.8	145.42	145.42	-201.5	177.0	461.3	444.0	17.37	26.558	
3,800.0	3,779.8	3,760.1	3,747.1	10.2	9.1	145.08	145.08	-207.9	187.3	479.0	461.1	17.92	26.732	
3,900.0	3,878.9	3,858.5	3,844.8	10.5	9.4	144.77	144.77	-214.2	197.7	496.7	478.2	18.47	26.894	
4,000.0	3,978.1	3,956.9	3,942.4	10.8	9.7	144.47	144.47	-220.6	208.1	514.4	495.3	19.02	27.046	
4,100.0	4,077.2	4,055.2	4,040.0	11.2	10.0	144.20	144.20	-226.9	218.4	532.1	512.5	19.57	27.188	
4,200.0	4,176.3	4,153.6	4,137.7	11.5	10.3	143.94	143.94	-233.3	228.8	549.8	529.6	20.12	27.321	
4,300.0	4,275.4	4,252.0	4,235.3	11.8	10.6	143.70	143.70	-239.7	239.2	567.5	546.8	20.68	27.446	
4,400.0	4,374.5	4,350.4	4,333.0	12.1	10.9	143.47	143.47	-246.0	249.5	585.2	564.0	21.23	27.564	
4,500.0	4,473.7	4,448.8	4,430.6	12.5	11.2	143.26	143.26	-252.4	259.9	602.9	581.2	21.79	27.675	
4,600.0	4,572.8	4,559.1	4,540.2	12.8	11.5	143.15	143.15	-258.7	270.2	619.9	597.6	22.33	27.764	
4,700.0	4,671.9	4,672.3	4,653.1	13.1	11.7	143.38	143.38	-262.9	277.0	634.6	611.8	22.84	27.790	
4,800.0	4,771.0	4,786.0	4,766.7	13.4	11.9	143.92	143.92	-264.8	280.1	647.1	623.8	23.32	27.752	
4,900.0	4,870.1	4,889.4	4,870.1	13.8	12.1	144.61	144.61	-264.9	280.2	658.0	634.2	23.77	27.685	
5,000.0	4,969.3	4,988.5	4,969.3	14.1	12.3	145.26	145.26	-264.9	280.2	668.8	644.6	24.21	27.622	

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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-414 - Wellbore #1 - Plan #2 (4-30-15)		Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis				Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	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)					
5,100.0	5,068.4	5,087.6	5,068.4	14.4	12.5	145.90	-264.9	280.2	679.8	655.1	24.66	27.566				
5,200.0	5,167.5	5,186.8	5,167.5	14.7	12.6	146.55	-264.9	280.2	690.5	665.4	25.11	27.497				
5,300.0	5,267.1	5,286.3	5,267.1	15.0	12.8	147.08	-264.9	280.2	698.8	673.3	25.52	27.384				
5,400.0	5,366.8	5,386.1	5,366.8	15.2	13.0	147.42	-264.9	280.2	704.2	678.3	25.90	27.190				
5,500.0	5,466.8	5,486.0	5,466.8	15.3	13.2	147.58	-264.9	280.2	706.6	680.4	26.25	26.918				
5,600.0	5,566.8	5,586.0	5,566.8	15.5	13.4	-179.77	-264.9	280.2	706.8	679.7	27.02	26.156				
5,700.0	5,666.8	5,686.0	5,666.8	15.6	13.6	-179.77	-264.9	280.2	706.8	679.4	27.40	25.792				
5,800.0	5,766.8	5,786.0	5,766.8	15.8	13.8	-179.77	-264.9	280.2	706.8	679.0	27.78	25.437				
5,900.0	5,866.8	5,886.0	5,866.8	16.0	13.9	-179.77	-264.9	280.2	706.8	678.6	28.17	25.090				
6,000.0	5,966.8	5,986.0	5,966.8	16.2	14.1	-179.77	-264.9	280.2	706.8	678.2	28.56	24.751				
6,100.0	6,066.8	6,086.0	6,066.8	16.3	14.3	-89.83	-264.9	280.2	706.8	678.2	28.58	24.726				
6,130.7	6,097.4	6,116.7	6,097.4	16.4	14.4	-89.98	-264.9	280.2	706.8	678.1	28.69	24.638				
6,200.0	6,166.1	6,185.9	6,166.6	16.5	14.5	-90.52	-264.9	278.0	706.8	677.9	28.90	24.459				
6,300.0	6,263.2	6,286.9	6,266.6	16.5	14.6	-91.30	-264.9	263.8	706.9	677.9	29.09	24.299				
6,400.0	6,356.4	6,389.3	6,365.0	16.5	14.7	-92.07	-264.9	236.0	707.2	678.0	29.22	24.208				
6,500.0	6,444.1	6,493.0	6,460.0	16.5	14.7	-92.80	-264.9	194.8	707.6	678.3	29.34	24.118				
6,600.0	6,524.8	6,598.0	6,549.7	16.5	14.8	-93.48	-264.9	140.3	708.1	678.5	29.59	23.930				
6,700.0	6,597.1	6,704.2	6,631.9	16.4	14.9	-94.11	-264.9	73.2	708.6	678.5	30.13	23.515				
6,800.0	6,659.7	6,811.6	6,704.8	16.4	15.3	-94.67	-264.9	-5.6	709.1	678.0	31.16	22.756				
6,900.0	6,711.7	6,920.1	6,766.5	16.9	16.1	-95.14	-264.9	-94.7	709.6	676.8	32.83	21.614				
7,000.0	6,752.1	7,029.5	6,815.3	18.1	17.3	-95.52	-264.9	-192.5	710.1	674.8	35.23	20.156				
7,100.0	6,780.2	7,139.5	6,849.7	19.7	18.9	-95.79	-264.9	-296.9	710.4	672.1	38.33	18.534				
7,200.0	6,795.6	7,250.0	6,868.9	21.5	20.9	-95.96	-264.9	-405.6	710.6	668.6	42.03	16.907				
7,300.0	6,798.4	7,357.8	6,872.9	23.4	23.0	-96.02	-264.9	-513.3	710.7	664.6	46.10	15.416				
7,400.0	6,797.8	7,457.8	6,872.7	25.5	25.2	-96.05	-264.9	-613.3	710.7	660.4	50.31	14.126				
7,500.0	6,797.2	7,557.8	6,872.5	27.8	27.4	-96.08	-264.9	-713.3	710.8	656.0	54.76	12.980				
7,600.0	6,796.6	7,657.8	6,872.3	30.1	29.8	-96.11	-264.9	-813.2	710.8	651.4	59.40	11.966				
7,700.0	6,796.0	7,757.8	6,872.0	32.5	32.2	-96.14	-264.9	-913.2	710.8	646.7	64.19	11.073				
7,800.0	6,795.3	7,857.8	6,871.8	34.9	34.7	-96.18	-264.9	-1,013.2	710.9	641.8	69.11	10.287				
7,900.0	6,794.7	7,957.8	6,871.6	37.4	37.2	-96.21	-264.9	-1,113.2	710.9	636.8	74.11	9.592				
8,000.0	6,794.1	8,057.8	6,871.4	40.0	39.7	-96.24	-264.9	-1,213.2	711.0	631.8	79.20	8.977				
8,100.0	6,793.5	8,157.8	6,871.2	42.6	42.3	-96.27	-264.9	-1,313.2	711.0	626.7	84.35	8.430				
8,200.0	6,792.9	8,257.8	6,871.0	45.2	45.0	-96.31	-264.9	-1,413.2	711.1	621.5	89.55	7.941				
8,300.0	6,792.3	8,357.8	6,870.8	47.8	47.6	-96.34	-264.9	-1,513.2	711.1	616.3	94.79	7.502				
8,400.0	6,791.7	8,457.7	6,870.6	50.4	50.3	-96.37	-264.9	-1,613.2	711.2	611.1	100.07	7.107				
8,500.0	6,791.1	8,557.7	6,870.4	53.1	52.9	-96.40	-264.9	-1,713.2	711.2	605.8	105.38	6.749				
8,600.0	6,790.5	8,657.7	6,870.2	55.8	55.6	-96.43	-264.9	-1,813.2	711.2	600.5	110.71	6.424				
8,700.0	6,789.9	8,757.7	6,869.9	58.5	58.3	-96.47	-264.9	-1,913.2	711.3	595.2	116.07	6.128				
8,800.0	6,789.2	8,857.7	6,869.7	61.2	61.0	-96.50	-264.9	-2,013.2	711.3	589.9	121.45	5.857				
8,900.0	6,788.6	8,957.7	6,869.5	63.9	63.8	-96.53	-264.9	-2,113.2	711.4	584.5	126.85	5.608				
9,000.0	6,788.0	9,057.7	6,869.3	66.6	66.5	-96.56	-264.9	-2,213.2	711.4	579.2	132.26	5.379				
9,100.0	6,787.4	9,157.7	6,869.1	69.3	69.2	-96.59	-264.9	-2,313.2	711.5	573.8	137.68	5.168				
9,200.0	6,786.8	9,257.7	6,868.9	72.1	72.0	-96.63	-264.9	-2,413.2	711.5	568.4	143.12	4.972				
9,300.0	6,786.2	9,357.7	6,868.7	74.8	74.7	-96.66	-264.9	-2,513.2	711.6	563.0	148.56	4.790				
9,400.0	6,785.6	9,457.7	6,868.5	77.5	77.4	-96.69	-264.9	-2,613.2	711.6	557.6	154.01	4.620				
9,500.0	6,785.0	9,557.7	6,868.3	80.3	80.2	-96.72	-264.9	-2,713.2	711.7	552.2	159.47	4.463				
9,600.0	6,784.4	9,657.7	6,868.1	83.0	83.0	-96.75	-264.9	-2,813.2	711.7	546.8	164.94	4.315				
9,700.0	6,783.7	9,757.7	6,867.9	85.8	85.7	-96.79	-264.9	-2,913.2	711.8	541.3	170.42	4.177				
9,800.0	6,783.1	9,857.7	6,867.6	88.6	88.5	-96.82	-264.9	-3,013.2	711.8	535.9	175.90	4.047				
9,900.0	6,782.5	9,957.7	6,867.4	91.3	91.3	-96.85	-264.9	-3,113.2	711.8	530.5	181.38	3.925				
10,000.0	6,781.9	10,057.7	6,867.2	94.1	94.0	-96.88	-264.9	-3,213.2	711.9	525.0	186.87	3.810				

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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design LDS 5N65W1W Pad Sec.1-T5N-R65W - LDS 1W-414 - Wellbore #1 - Plan #2 (4-30-15)													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)				
10,100.0	6,781.3	10,157.7	6,867.0	96.9	96.8	-96.92	-264.9	-3,313.2	711.9	519.6	192.37	3.701		
10,200.0	6,780.7	10,257.7	6,866.8	99.6	99.6	-96.95	-264.9	-3,413.2	712.0	514.1	197.86	3.598		
10,300.0	6,780.1	10,357.7	6,866.6	102.4	102.3	-96.98	-264.9	-3,513.2	712.0	508.7	203.36	3.501		
10,400.0	6,779.5	10,457.7	6,866.4	105.2	105.1	-97.01	-264.9	-3,613.2	712.1	503.2	208.87	3.409		
10,500.0	6,778.9	10,557.7	6,866.2	107.9	107.9	-97.04	-264.9	-3,713.2	712.1	497.8	214.37	3.322		
10,600.0	6,778.2	10,657.7	6,866.0	110.7	110.7	-97.08	-264.9	-3,813.2	712.2	492.3	219.88	3.239		
10,700.0	6,777.6	10,757.7	6,865.8	113.5	113.5	-97.11	-264.9	-3,913.2	712.2	486.8	225.39	3.160		
10,800.0	6,777.0	10,857.7	6,865.6	116.3	116.2	-97.14	-264.9	-4,013.2	712.3	481.4	230.91	3.085		
10,900.0	6,776.4	10,957.7	6,865.3	119.1	119.0	-97.17	-264.9	-4,113.2	712.3	475.9	236.42	3.013		
11,000.0	6,775.8	11,057.7	6,865.1	121.8	121.8	-97.20	-264.9	-4,213.2	712.4	470.5	241.94	2.945		
11,100.0	6,775.2	11,157.7	6,864.9	124.6	124.6	-97.24	-264.9	-4,313.2	712.4	465.0	247.45	2.879		
11,200.0	6,774.6	11,257.7	6,864.7	127.4	127.4	-97.27	-264.9	-4,413.2	712.5	459.5	252.97	2.816		
11,300.0	6,774.0	11,357.7	6,864.5	130.2	130.2	-97.30	-264.9	-4,513.2	712.5	454.0	258.49	2.757		
11,400.0	6,773.4	11,457.7	6,864.3	133.0	133.0	-97.33	-264.9	-4,613.2	712.6	448.6	264.01	2.699		
11,500.0	6,772.7	11,557.7	6,864.1	135.8	135.8	-97.36	-264.9	-4,713.2	712.6	443.1	269.54	2.644		
11,600.0	6,772.1	11,657.7	6,863.9	138.6	138.6	-97.40	-264.9	-4,813.2	712.7	437.6	275.06	2.591		
11,700.0	6,771.5	11,757.7	6,863.7	141.4	141.3	-97.43	-264.9	-4,913.2	712.7	432.2	280.58	2.540		
11,800.0	6,770.9	11,857.7	6,863.5	144.2	144.1	-97.46	-264.9	-5,013.2	712.8	426.7	286.11	2.491		
11,900.0	6,770.3	11,957.7	6,863.2	146.9	146.9	-97.49	-264.9	-5,113.2	712.9	421.2	291.63	2.444		
12,000.0	6,769.7	12,057.7	6,863.0	149.7	149.7	-97.52	-264.9	-5,213.2	712.9	415.7	297.15	2.399		
12,100.0	6,769.1	12,157.7	6,862.8	152.5	152.5	-97.56	-264.9	-5,313.2	713.0	410.3	302.68	2.355		
12,200.0	6,768.5	12,257.7	6,862.6	155.3	155.3	-97.59	-264.9	-5,413.2	713.0	404.8	308.21	2.313		
12,300.0	6,767.9	12,357.7	6,862.4	158.1	158.1	-97.62	-264.9	-5,513.2	713.1	399.3	313.73	2.273		
12,400.0	6,767.2	12,457.7	6,862.2	160.9	160.9	-97.65	-264.9	-5,613.2	713.1	393.9	319.26	2.234		
12,500.0	6,766.6	12,557.7	6,862.0	163.7	163.7	-97.68	-264.9	-5,713.2	713.2	388.4	324.78	2.196		
12,600.0	6,766.0	12,657.7	6,861.8	166.5	166.5	-97.72	-264.9	-5,813.2	713.2	382.9	330.31	2.159		
12,700.0	6,765.4	12,757.7	6,861.6	169.3	169.3	-97.75	-264.9	-5,913.2	713.3	377.4	335.83	2.124		
12,800.0	6,764.8	12,857.7	6,861.4	172.1	172.1	-97.78	-264.9	-6,013.2	713.3	372.0	341.36	2.090		
12,900.0	6,764.2	12,957.7	6,861.2	174.9	174.9	-97.81	-264.9	-6,113.2	713.4	366.5	346.89	2.057		
13,000.0	6,763.6	13,057.7	6,860.9	177.7	177.7	-97.84	-264.9	-6,213.2	713.4	361.0	352.41	2.024		
13,100.0	6,763.0	13,157.7	6,860.7	180.5	180.5	-97.88	-264.9	-6,313.2	713.5	355.6	357.94	1.993		
13,200.0	6,762.4	13,257.7	6,860.5	183.3	183.3	-97.91	-264.9	-6,413.2	713.5	350.1	363.46	1.963		
13,300.0	6,761.8	13,357.7	6,860.3	186.1	186.1	-97.94	-264.9	-6,513.2	713.6	344.6	368.99	1.934		
13,400.0	6,761.1	13,457.7	6,860.1	188.9	188.9	-97.97	-264.9	-6,613.2	713.7	339.1	374.51	1.906		
13,500.0	6,760.5	13,557.7	6,859.9	191.7	191.7	-98.00	-264.9	-6,713.2	713.7	333.7	380.04	1.878		
13,600.0	6,759.9	13,657.7	6,859.7	194.5	194.5	-98.03	-264.9	-6,813.2	713.8	328.2	385.56	1.851		
13,700.0	6,759.3	13,757.7	6,859.5	197.3	197.3	-98.07	-264.9	-6,913.2	713.8	322.7	391.09	1.825		
13,800.0	6,758.7	13,857.7	6,859.3	200.1	200.1	-98.10	-264.9	-7,013.2	713.9	317.3	396.61	1.800		
13,900.0	6,758.1	13,957.7	6,859.1	202.9	202.9	-98.13	-264.9	-7,113.2	713.9	311.8	402.13	1.775		
13,914.0	6,758.0	13,971.7	6,859.0	203.3	203.3	-98.14	-264.9	-7,127.1	714.0	311.0	402.90	1.772 SF		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:		0.0 ft	
Survey Program: 0-MWD												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Offset Wellbore Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)				
12,200.0	6,768.5	6,802.5	6,802.5	155.3	15.2	90.38	1,068.2	-6,098.4	928.5	758.0	170.43	5.448			
12,300.0	6,767.9	6,801.9	6,801.9	158.1	15.2	90.33	1,068.2	-6,098.4	857.3	684.1	173.22	4.949			
12,400.0	6,767.2	6,801.2	6,801.2	160.9	15.2	90.27	1,068.2	-6,098.4	792.4	616.4	176.02	4.502			
12,500.0	6,766.6	6,800.6	6,800.6	163.7	15.2	90.22	1,068.2	-6,098.4	735.4	556.6	178.82	4.113			
12,600.0	6,766.0	6,800.0	6,800.0	166.5	15.2	90.16	1,068.2	-6,098.4	688.3	506.7	181.61	3.790			
12,700.0	6,765.4	6,799.4	6,799.4	169.3	15.2	90.10	1,068.2	-6,098.4	653.2	468.8	184.41	3.542			
12,800.0	6,764.8	6,798.8	6,798.8	172.1	15.2	90.05	1,068.2	-6,098.4	632.1	444.9	187.21	3.377			
12,885.4	6,764.3	6,798.3	6,798.3	174.5	15.2	90.00	1,068.2	-6,098.4	626.3	436.7	189.60	3.304 CC			
12,900.0	6,764.2	6,798.2	6,798.2	174.9	15.2	89.99	1,068.2	-6,098.4	626.5	436.5	190.01	3.297 ES, SF			
13,000.0	6,763.6	6,797.6	6,797.6	177.7	15.2	89.94	1,068.2	-6,098.4	636.7	443.9	192.80	3.303			
13,100.0	6,763.0	6,797.0	6,797.0	180.5	15.2	89.88	1,068.2	-6,098.4	662.1	466.5	195.60	3.385			
13,200.0	6,762.4	6,796.4	6,796.4	183.3	15.2	89.82	1,068.2	-6,098.4	700.9	502.5	198.40	3.533			
13,300.0	6,761.8	6,795.8	6,795.8	186.1	15.2	89.77	1,068.2	-6,098.4	751.1	549.9	201.20	3.733			
13,400.0	6,761.1	6,795.1	6,795.1	188.9	15.2	89.71	1,068.2	-6,098.4	810.6	606.6	204.00	3.974			
13,500.0	6,760.5	6,794.5	6,794.5	191.7	15.2	89.66	1,068.2	-6,098.4	877.5	670.7	206.80	4.243			
13,600.0	6,759.9	6,793.9	6,793.9	194.5	15.2	89.60	1,068.2	-6,098.4	950.2	740.6	209.60	4.534			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Noffsinger Pad Sec.2-T5N-R65W - Noffsinger 2SD - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 761-MWD												<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
12,500.0	6,766.6	7,029.6	6,790.3	163.7	28.2	-89.49	-320.3	-6,288.6	955.2	774.7	180.46	5.293	
12,600.0	6,766.0	7,031.1	6,791.9	166.5	28.2	-89.61	-320.3	-6,288.6	898.4	715.2	183.26	4.903	
12,700.0	6,765.4	7,032.7	6,793.5	169.3	28.2	-89.73	-320.3	-6,288.7	849.7	663.7	186.06	4.567	
12,800.0	6,764.8	7,034.4	6,795.2	172.1	28.2	-89.85	-320.3	-6,288.7	810.5	621.6	188.85	4.292	
12,900.0	6,764.2	7,036.1	6,796.9	174.9	28.2	-89.98	-320.3	-6,288.8	782.1	590.5	191.65	4.081	
13,000.0	6,763.6	7,038.0	6,798.7	177.7	28.2	-90.12	-320.2	-6,288.8	765.9	571.4	194.44	3.939	
13,075.9	6,763.1	7,039.4	6,800.2	179.8	28.2	-90.23	-320.2	-6,288.9	762.1	565.6	196.56	3.877	CC
13,100.0	6,763.0	7,039.9	6,800.7	180.5	28.2	-90.27	-320.2	-6,288.9	762.5	565.3	197.24	3.866	ES
13,200.0	6,762.4	7,041.9	6,802.7	183.3	28.2	-90.42	-320.2	-6,289.0	772.2	572.1	200.03	3.860	SF
13,300.0	6,761.8	7,044.1	6,804.8	186.1	28.2	-90.58	-320.2	-6,289.0	794.4	591.5	202.82	3.917	
13,400.0	6,761.1	7,046.3	6,807.1	188.9	28.2	-90.75	-320.2	-6,289.1	828.1	622.5	205.61	4.028	
13,500.0	6,760.5	7,048.7	6,809.5	191.7	28.2	-90.93	-320.2	-6,289.2	872.1	663.7	208.40	4.185	
13,600.0	6,759.9	7,051.2	6,812.0	194.5	28.2	-91.12	-320.2	-6,289.3	924.9	713.7	211.19	4.379	
13,700.0	6,759.3	7,053.9	6,814.6	197.3	28.2	-91.32	-320.2	-6,289.3	985.0	771.0	213.97	4.603	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:		0.0 ft
Survey Program: 700-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)			
11,000.0	6,775.8	6,961.6	6,827.8	121.8	23.3	93.50	818.6	-5,048.0	916.2	771.8	144.38	6.345	2.243 CC, ES, SF	
11,100.0	6,775.2	6,959.0	6,825.2	124.6	23.3	93.11	818.6	-5,048.0	826.1	678.8	147.22	5.611		
11,200.0	6,774.6	6,956.4	6,822.6	127.4	23.3	92.72	818.6	-5,048.1	738.5	588.5	150.05	4.922		
11,300.0	6,774.0	6,953.8	6,820.0	130.2	23.3	92.33	818.6	-5,048.1	654.5	501.6	152.88	4.281		
11,400.0	6,773.4	6,951.2	6,817.4	133.0	23.3	91.93	818.6	-5,048.2	575.7	420.0	155.71	3.697		
11,500.0	6,772.7	6,948.6	6,814.8	135.8	23.3	91.53	818.6	-5,048.2	504.3	345.8	158.53	3.181		
11,600.0	6,772.1	6,945.9	6,812.1	138.6	23.3	91.13	818.6	-5,048.3	444.2	282.9	161.34	2.753		
11,700.0	6,771.5	6,944.0	6,810.2	141.4	23.3	90.83	818.6	-5,048.3	400.3	236.2	164.15	2.439		
11,800.0	6,770.9	6,940.7	6,806.9	144.2	23.3	90.33	818.6	-5,048.4	378.4	211.5	166.96	2.266		
11,835.4	6,770.7	6,939.8	6,806.0	145.1	23.3	90.19	818.6	-5,048.4	376.8	208.8	167.95			
11,900.0	6,770.3	6,938.2	6,804.3	146.9	23.3	89.94	818.6	-5,048.5	382.2	212.5	169.76	2.252		
12,000.0	6,769.7	6,935.7	6,801.8	149.7	23.3	89.57	818.6	-5,048.5	411.1	238.6	172.55	2.383		
12,100.0	6,769.1	6,933.3	6,799.4	152.5	23.3	89.20	818.6	-5,048.6	460.3	285.0	175.34	2.625		
12,200.0	6,768.5	6,930.9	6,797.1	155.3	23.3	88.84	818.7	-5,048.6	524.2	346.1	178.11	2.943		
12,300.0	6,767.9	6,928.6	6,794.8	158.1	23.3	88.49	818.7	-5,048.6	598.0	417.2	180.89	3.306		
12,400.0	6,767.2	6,926.3	6,792.5	160.9	23.3	88.15	818.7	-5,048.7	678.6	495.0	183.66	3.695		
12,500.0	6,766.6	6,924.1	6,790.3	163.7	23.3	87.81	818.7	-5,048.7	763.8	577.4	186.42	4.097		
12,600.0	6,766.0	6,922.0	6,788.1	166.5	23.3	87.48	818.7	-5,048.8	852.2	663.0	189.17	4.505		
12,700.0	6,765.4	6,919.8	6,786.0	169.3	23.3	87.16	818.7	-5,048.8	942.9	751.0	191.93	4.913		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Noffsinger Pad Sec.2-T5N-R65W - Noffsinger 32-2D - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 668-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	
12,800.0	6,764.8	6,943.8	6,778.6	172.1	25.7	-86.63	198.4	-6,967.1	984.9	791.9	192.97	5.104	
12,900.0	6,764.2	6,944.3	6,779.2	174.9	25.7	-86.76	198.4	-6,967.1	888.3	692.6	195.79	4.537	
13,000.0	6,763.6	6,944.9	6,779.7	177.7	25.8	-86.89	198.4	-6,967.1	792.7	594.1	198.60	3.991	
13,100.0	6,763.0	6,945.5	6,780.3	180.5	25.8	-87.03	198.3	-6,967.1	698.2	496.8	201.42	3.466	
13,200.0	6,762.4	6,946.1	6,780.9	183.3	25.8	-87.17	198.3	-6,967.1	605.5	401.3	204.24	2.965	
13,300.0	6,761.8	6,946.7	6,781.5	186.1	25.8	-87.31	198.3	-6,967.1	515.5	308.5	207.06	2.490	
13,400.0	6,761.1	6,947.3	6,782.1	188.9	25.8	-87.46	198.3	-6,967.1	430.0	220.2	209.88	2.049	
13,500.0	6,760.5	6,947.9	6,782.8	191.7	25.8	-87.61	198.3	-6,967.1	352.3	139.6	212.70	1.656	
13,600.0	6,759.9	6,948.6	6,783.4	194.5	25.8	-87.76	198.2	-6,967.2	288.5	73.0	215.52	1.339	Level 3
13,700.0	6,759.3	6,949.3	6,784.1	197.3	25.8	-87.92	198.2	-6,967.2	249.8	31.4	218.34	1.144	Level 2
13,754.2	6,759.0	6,949.6	6,784.5	198.8	25.8	-88.00	198.2	-6,967.2	243.8	24.0	219.87	1.109	Level 2, CC, ES, SF
13,800.0	6,758.7	6,949.9	6,784.8	200.1	25.8	-88.08	198.2	-6,967.2	248.1	26.9	221.16	1.122	Level 2
13,900.0	6,758.1	6,950.6	6,785.5	202.9	25.8	-88.24	198.2	-6,967.2	284.1	60.1	223.98	1.268	Level 3
13,914.0	6,758.0	6,950.7	6,785.6	203.3	25.8	-88.27	198.2	-6,967.2	291.5	67.1	224.37	1.299	Level 3

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4626.0ft (RKB -13')

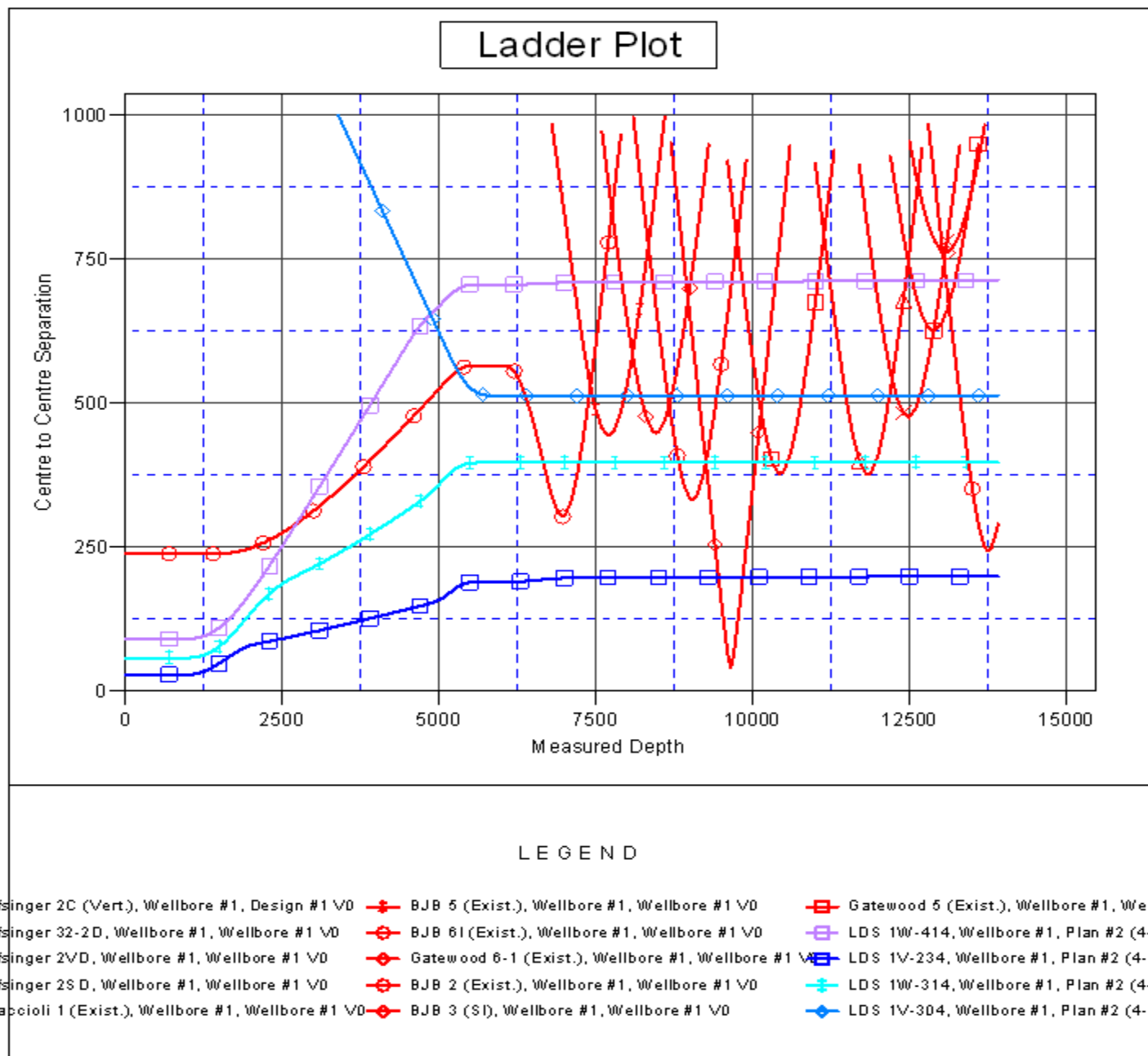
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: LDS 1V-334

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 1V-334
<b>Project:</b>	SEC.1-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Reference Site:</b>	LDS 5N65W1W Pad Sec.1-T5N-R65W	<b>MD Reference:</b>	WELL @ 4626.0ft (RKB -13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	LDS 1V-334	<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 #2 (4-30-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4626.0ft (RKB -13')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: LDS 1V-334

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.58°

