

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **LDS 1W-314**

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	1400464.70	3249728.59	40.429210	-104.602940	
RKB - 13' WELL @ 4626.0ft (RKB - 13')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E/W Hardline (1W-314)	1.0	103.1	-3807.9	Rectangle (Sides: L-6649.4 W100.0)
SHL 2154'FNL & 333'FEL, Sec. 1	1.0	0.0	0.0	Point
BHL 2055'FNL & 2144'FEL, Sec. 2	6782.0	103.1	-7132.6	Point



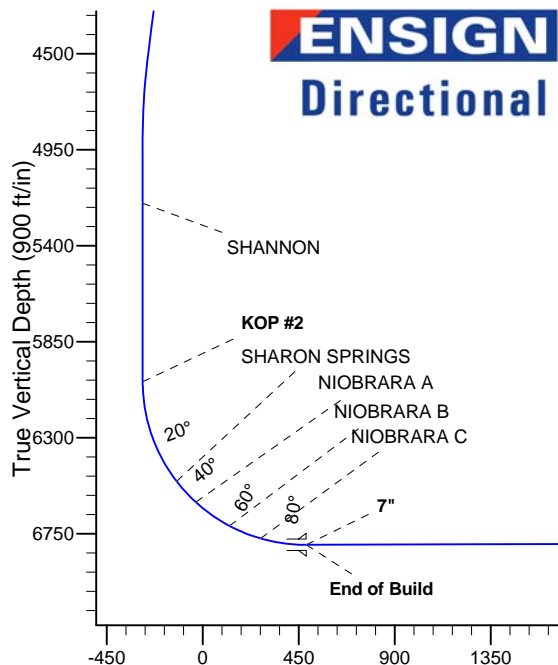
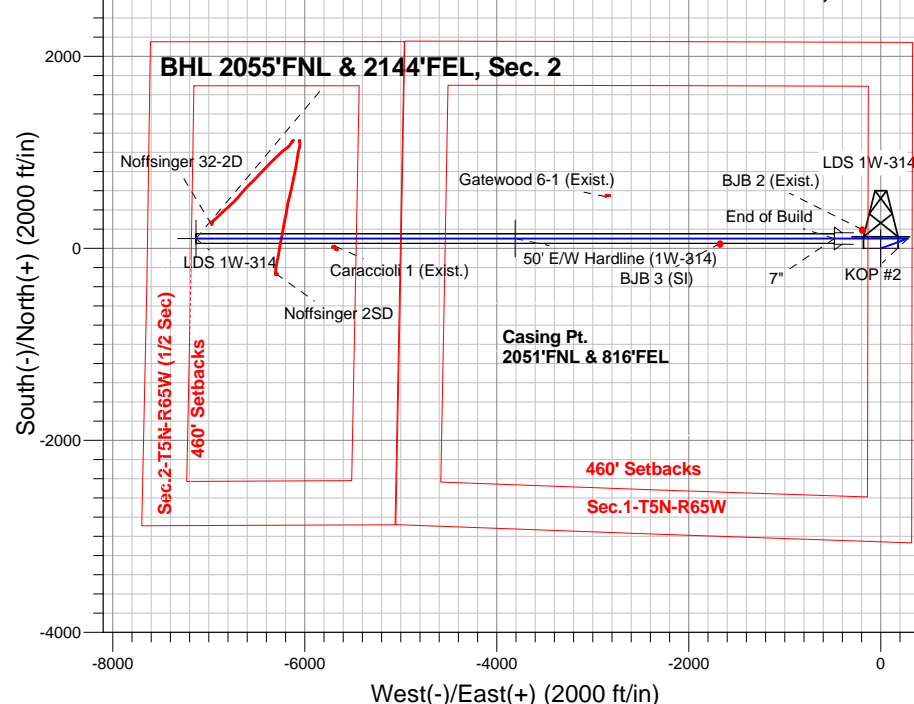
Azimuths to True North  
Magnetic North: 8.26°  
  
Magnetic Field  
Strength: 52756.9snT  
Dip Angle: 66.97°  
Date: 4/30/2015  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
2000.0	2000.0	KOP #1
6037.8	6055.5	KOP #2
6801.7	7257.8	End of Build

LDS 5N65W1W Pad Sec.1-T5N-R65W  
LDS 1W-314  
Plan #2 (4-30-15)

SHL 2154'FNL & 333'FEL, Sec. 1



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	2729.7	7.30	69.99	2727.8	15.9	43.6	1.00	69.99	-43.4	
4	4552.9	7.30	69.99	4536.1	95.1	261.2	0.00	0.00	-259.8	
5	4917.7	0.00	0.00	4900.0	103.1	283.0	2.00	180.00	-281.5	
6	6055.5	0.00	0.00	6037.8	103.1	283.0	0.00	0.00	-281.5	
7	7257.8	90.17	270.00	6801.7	103.1	-483.2	7.50	270.00	484.7	
8	13907.2	90.17	270.00	6782.0	103.1	-7132.6	0.00	0.00	7133.4	BHL 2055'FNL & 2144'FEL, Sec. 2

BHL 2055'FNL & 2144'FEL, Sec. 2

Vertical Section at 270.83° (900 ft/in)



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.1-T5N-R65W**

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

**LDS 1W-314**

**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 1W-314
<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 1W-314	<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 1W-314					
Well Position	+N/-S	0.0 ft	Northing:	1,400,464.70 ft	Latitude:	40.429210
	+E/-W	0.0 ft	Easting:	3,249,728.59 ft	Longitude:	-104.602940
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	270.83

<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	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,729.7	7.30	69.99	2,727.8	15.9	43.6	1.00	1.00	0.00	69.99	
4,552.9	7.30	69.99	4,536.1	95.1	261.2	0.00	0.00	0.00	0.00	
4,917.7	0.00	0.00	4,900.0	103.1	283.0	2.00	-2.00	0.00	180.00	
6,055.5	0.00	0.00	6,037.8	103.1	283.0	0.00	0.00	0.00	0.00	
7,257.8	90.17	270.00	6,801.7	103.1	-483.2	7.50	7.50	0.00	270.00	
13,907.2	90.17	270.00	6,782.0	103.1	-7,132.6	0.00	0.00	0.00	0.00	BHL 2055'FNL & 21

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
2,100.0	1.00	69.99	2,100.0	0.3	0.8	-0.8	1.00	1.00	0.00
2,200.0	2.00	69.99	2,200.0	1.2	3.3	-3.3	1.00	1.00	0.00
2,300.0	3.00	69.99	2,299.9	2.7	7.4	-7.3	1.00	1.00	0.00
2,400.0	4.00	69.99	2,399.7	4.8	13.1	-13.0	1.00	1.00	0.00
2,500.0	5.00	69.99	2,499.4	7.5	20.5	-20.4	1.00	1.00	0.00
2,600.0	6.00	69.99	2,598.9	10.7	29.5	-29.3	1.00	1.00	0.00
2,700.0	7.00	69.99	2,698.3	14.6	40.1	-39.9	1.00	1.00	0.00
2,729.7	7.30	69.99	2,727.8	15.9	43.6	-43.4	1.00	1.00	0.00
2,800.0	7.30	69.99	2,797.5	18.9	52.0	-51.7	0.00	0.00	0.00
2,900.0	7.30	69.99	2,896.6	23.3	63.9	-63.6	0.00	0.00	0.00
3,000.0	7.30	69.99	2,995.8	27.6	75.9	-75.5	0.00	0.00	0.00
3,100.0	7.30	69.99	3,095.0	32.0	87.8	-87.3	0.00	0.00	0.00
3,200.0	7.30	69.99	3,194.2	36.3	99.7	-99.2	0.00	0.00	0.00
3,300.0	7.30	69.99	3,293.4	40.7	111.7	-111.1	0.00	0.00	0.00
3,400.0	7.30	69.99	3,392.6	45.0	123.6	-122.9	0.00	0.00	0.00
3,494.2	7.30	69.99	3,486.0	49.1	134.8	-134.1	0.00	0.00	0.00
<b>PARKMAN</b>									
3,500.0	7.30	69.99	3,491.8	49.4	135.5	-134.8	0.00	0.00	0.00
3,600.0	7.30	69.99	3,591.0	53.7	147.5	-146.7	0.00	0.00	0.00
3,700.0	7.30	69.99	3,690.2	58.0	159.4	-158.6	0.00	0.00	0.00
3,800.0	7.30	69.99	3,789.4	62.4	171.3	-170.4	0.00	0.00	0.00
3,900.0	7.30	69.99	3,888.6	66.7	183.3	-182.3	0.00	0.00	0.00
4,000.0	7.30	69.99	3,987.7	71.1	195.2	-194.2	0.00	0.00	0.00
4,100.0	7.30	69.99	4,086.9	75.4	207.1	-206.0	0.00	0.00	0.00
4,200.0	7.30	69.99	4,186.1	79.8	219.1	-217.9	0.00	0.00	0.00
4,258.4	7.30	69.99	4,244.0	82.3	226.0	-224.8	0.00	0.00	0.00
<b>SUSSEX</b>									
4,300.0	7.30	69.99	4,285.3	84.1	231.0	-229.8	0.00	0.00	0.00
4,400.0	7.30	69.99	4,384.5	88.5	243.0	-241.6	0.00	0.00	0.00
4,500.0	7.30	69.99	4,483.7	92.8	254.9	-253.5	0.00	0.00	0.00
4,552.9	7.30	69.99	4,536.1	95.1	261.2	-259.8	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 1W-314	<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)
4,600.0	6.35	69.99	4,582.9	97.0	266.5	-265.0	2.00	-2.00	0.00
4,700.0	4.35	69.99	4,682.5	100.2	275.2	-273.8	2.00	-2.00	0.00
4,800.0	2.35	69.99	4,782.3	102.2	280.7	-279.2	2.00	-2.00	0.00
4,900.0	0.35	69.99	4,882.3	103.0	282.9	-281.4	2.00	-2.00	0.00
4,917.7	0.00	0.00	4,900.0	103.1	283.0	-281.5	2.00	-2.00	0.00
5,000.0	0.00	0.00	4,982.3	103.1	283.0	-281.5	0.00	0.00	0.00
5,100.0	0.00	0.00	5,082.3	103.1	283.0	-281.5	0.00	0.00	0.00
5,200.0	0.00	0.00	5,182.3	103.1	283.0	-281.5	0.00	0.00	0.00
5,217.7	0.00	0.00	5,200.0	103.1	283.0	-281.5	0.00	0.00	0.00
SHANNON									
5,300.0	0.00	0.00	5,282.3	103.1	283.0	-281.5	0.00	0.00	0.00
5,400.0	0.00	0.00	5,382.3	103.1	283.0	-281.5	0.00	0.00	0.00
5,500.0	0.00	0.00	5,482.3	103.1	283.0	-281.5	0.00	0.00	0.00
5,600.0	0.00	0.00	5,582.3	103.1	283.0	-281.5	0.00	0.00	0.00
5,700.0	0.00	0.00	5,682.3	103.1	283.0	-281.5	0.00	0.00	0.00
5,800.0	0.00	0.00	5,782.3	103.1	283.0	-281.5	0.00	0.00	0.00
5,900.0	0.00	0.00	5,882.3	103.1	283.0	-281.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,982.3	103.1	283.0	-281.5	0.00	0.00	0.00
6,055.5	0.00	0.00	6,037.8	103.1	283.0	-281.5	0.00	0.00	0.00
KOP #2									
6,100.0	3.34	270.00	6,082.3	103.1	281.7	-280.2	7.50	7.50	0.00
6,200.0	10.84	270.00	6,181.4	103.1	269.4	-267.9	7.50	7.50	0.00
6,300.0	18.34	270.00	6,278.1	103.1	244.2	-242.7	7.50	7.50	0.00
6,400.0	25.84	270.00	6,370.7	103.1	206.6	-205.1	7.50	7.50	0.00
6,500.0	33.34	270.00	6,457.6	103.1	157.3	-155.8	7.50	7.50	0.00
6,557.0	37.61	270.00	6,504.0	103.1	124.2	-122.7	7.50	7.50	0.00
SHARON SPRINGS									
6,600.0	40.84	270.00	6,537.3	103.1	97.0	-95.5	7.50	7.50	0.00
6,690.3	47.61	270.00	6,602.0	103.1	34.1	-32.6	7.50	7.50	0.00
NIOBRARA A									
6,700.0	48.34	270.00	6,608.5	103.1	26.9	-25.4	7.50	7.50	0.00
6,800.0	55.84	270.00	6,669.9	103.1	-51.9	53.4	7.50	7.50	0.00
6,883.6	62.11	270.00	6,713.0	103.1	-123.6	125.1	7.50	7.50	0.00
NIOBRARA B									
6,900.0	63.34	270.00	6,720.5	103.1	-138.1	139.6	7.50	7.50	0.00
7,000.0	70.84	270.00	6,759.4	103.1	-230.2	231.6	7.50	7.50	0.00
7,041.7	73.96	270.00	6,772.0	103.1	-269.9	271.4	7.50	7.50	0.00
NIOBRARA C									
7,100.0	78.34	270.00	6,786.0	103.1	-326.5	328.0	7.50	7.50	0.00
7,200.0	85.84	270.00	6,799.7	103.1	-425.5	426.9	7.50	7.50	0.00
7,257.8	90.17	270.00	6,801.7	103.1	-483.2	484.7	7.50	7.50	0.00
End of Build - 7"									
7,300.0	90.17	270.00	6,801.6	103.1	-525.4	526.9	0.00	0.00	0.00
7,400.0	90.17	270.00	6,801.3	103.1	-625.4	626.9	0.00	0.00	0.00
7,500.0	90.17	270.00	6,801.0	103.1	-725.4	726.8	0.00	0.00	0.00
7,600.0	90.17	270.00	6,800.7	103.1	-825.4	826.8	0.00	0.00	0.00
7,700.0	90.17	270.00	6,800.4	103.1	-925.4	926.8	0.00	0.00	0.00
7,800.0	90.17	270.00	6,800.1	103.1	-1,025.4	1,026.8	0.00	0.00	0.00
7,900.0	90.17	270.00	6,799.8	103.1	-1,125.4	1,126.8	0.00	0.00	0.00
8,000.0	90.17	270.00	6,799.5	103.1	-1,225.4	1,226.8	0.00	0.00	0.00
8,100.0	90.17	270.00	6,799.2	103.1	-1,325.4	1,326.8	0.00	0.00	0.00
8,200.0	90.17	270.00	6,798.9	103.1	-1,425.4	1,426.8	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 1W-314	<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	90.17	270.00	6,798.6	103.1	-1,525.4	1,526.8	0.00	0.00	0.00
8,400.0	90.17	270.00	6,798.3	103.1	-1,625.4	1,626.7	0.00	0.00	0.00
8,500.0	90.17	270.00	6,798.0	103.1	-1,725.4	1,726.7	0.00	0.00	0.00
8,600.0	90.17	270.00	6,797.7	103.1	-1,825.4	1,826.7	0.00	0.00	0.00
8,700.0	90.17	270.00	6,797.5	103.1	-1,925.4	1,926.7	0.00	0.00	0.00
8,800.0	90.17	270.00	6,797.2	103.1	-2,025.4	2,026.7	0.00	0.00	0.00
8,900.0	90.17	270.00	6,796.9	103.1	-2,125.4	2,126.7	0.00	0.00	0.00
9,000.0	90.17	270.00	6,796.6	103.1	-2,225.4	2,226.7	0.00	0.00	0.00
9,100.0	90.17	270.00	6,796.3	103.1	-2,325.4	2,326.7	0.00	0.00	0.00
9,200.0	90.17	270.00	6,796.0	103.1	-2,425.4	2,426.7	0.00	0.00	0.00
9,300.0	90.17	270.00	6,795.7	103.1	-2,525.4	2,526.6	0.00	0.00	0.00
9,400.0	90.17	270.00	6,795.4	103.1	-2,625.4	2,626.6	0.00	0.00	0.00
9,500.0	90.17	270.00	6,795.1	103.1	-2,725.4	2,726.6	0.00	0.00	0.00
9,600.0	90.17	270.00	6,794.8	103.1	-2,825.4	2,826.6	0.00	0.00	0.00
9,700.0	90.17	270.00	6,794.5	103.1	-2,925.4	2,926.6	0.00	0.00	0.00
9,800.0	90.17	270.00	6,794.2	103.1	-3,025.4	3,026.6	0.00	0.00	0.00
9,900.0	90.17	270.00	6,793.9	103.1	-3,125.4	3,126.6	0.00	0.00	0.00
10,000.0	90.17	270.00	6,793.6	103.1	-3,225.4	3,226.6	0.00	0.00	0.00
10,100.0	90.17	270.00	6,793.3	103.1	-3,325.4	3,326.6	0.00	0.00	0.00
10,200.0	90.17	270.00	6,793.0	103.1	-3,425.4	3,426.6	0.00	0.00	0.00
10,300.0	90.17	270.00	6,792.7	103.1	-3,525.4	3,526.5	0.00	0.00	0.00
10,400.0	90.17	270.00	6,792.4	103.1	-3,625.4	3,626.5	0.00	0.00	0.00
10,500.0	90.17	270.00	6,792.1	103.1	-3,725.4	3,726.5	0.00	0.00	0.00
10,600.0	90.17	270.00	6,791.8	103.1	-3,825.4	3,826.5	0.00	0.00	0.00
10,700.0	90.17	270.00	6,791.5	103.1	-3,925.4	3,926.5	0.00	0.00	0.00
10,800.0	90.17	270.00	6,791.2	103.1	-4,025.4	4,026.5	0.00	0.00	0.00
10,900.0	90.17	270.00	6,790.9	103.1	-4,125.4	4,126.5	0.00	0.00	0.00
11,000.0	90.17	270.00	6,790.6	103.1	-4,225.4	4,226.5	0.00	0.00	0.00
11,100.0	90.17	270.00	6,790.3	103.1	-4,325.4	4,326.5	0.00	0.00	0.00
11,200.0	90.17	270.00	6,790.0	103.1	-4,425.4	4,426.4	0.00	0.00	0.00
11,300.0	90.17	270.00	6,789.7	103.1	-4,525.4	4,526.4	0.00	0.00	0.00
11,400.0	90.17	270.00	6,789.4	103.1	-4,625.4	4,626.4	0.00	0.00	0.00
11,500.0	90.17	270.00	6,789.1	103.1	-4,725.4	4,726.4	0.00	0.00	0.00
11,600.0	90.17	270.00	6,788.8	103.1	-4,825.4	4,826.4	0.00	0.00	0.00
11,700.0	90.17	270.00	6,788.5	103.1	-4,925.4	4,926.4	0.00	0.00	0.00
11,800.0	90.17	270.00	6,788.3	103.1	-5,025.4	5,026.4	0.00	0.00	0.00
11,900.0	90.17	270.00	6,788.0	103.1	-5,125.4	5,126.4	0.00	0.00	0.00
12,000.0	90.17	270.00	6,787.7	103.1	-5,225.4	5,226.4	0.00	0.00	0.00
12,100.0	90.17	270.00	6,787.4	103.1	-5,325.4	5,326.3	0.00	0.00	0.00
12,200.0	90.17	270.00	6,787.1	103.1	-5,425.4	5,426.3	0.00	0.00	0.00
12,300.0	90.17	270.00	6,786.8	103.1	-5,525.4	5,526.3	0.00	0.00	0.00
12,400.0	90.17	270.00	6,786.5	103.1	-5,625.4	5,626.3	0.00	0.00	0.00
12,500.0	90.17	270.00	6,786.2	103.1	-5,725.4	5,726.3	0.00	0.00	0.00
12,600.0	90.17	270.00	6,785.9	103.1	-5,825.4	5,826.3	0.00	0.00	0.00
12,700.0	90.17	270.00	6,785.6	103.1	-5,925.4	5,926.3	0.00	0.00	0.00
12,800.0	90.17	270.00	6,785.3	103.1	-6,025.4	6,026.3	0.00	0.00	0.00
12,900.0	90.17	270.00	6,785.0	103.1	-6,125.4	6,126.3	0.00	0.00	0.00
13,000.0	90.17	270.00	6,784.7	103.1	-6,225.4	6,226.2	0.00	0.00	0.00
13,100.0	90.17	270.00	6,784.4	103.1	-6,325.4	6,326.2	0.00	0.00	0.00
13,200.0	90.17	270.00	6,784.1	103.1	-6,425.4	6,426.2	0.00	0.00	0.00
13,300.0	90.17	270.00	6,783.8	103.1	-6,525.4	6,526.2	0.00	0.00	0.00
13,400.0	90.17	270.00	6,783.5	103.1	-6,625.4	6,626.2	0.00	0.00	0.00
13,500.0	90.17	270.00	6,783.2	103.1	-6,725.4	6,726.2	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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	90.17	270.00	6,782.9	103.1	-6,825.4	6,826.2	0.00	0.00	0.00
13,700.0	90.17	270.00	6,782.6	103.1	-6,925.4	6,926.2	0.00	0.00	0.00
13,800.0	90.17	270.00	6,782.3	103.1	-7,025.4	7,026.2	0.00	0.00	0.00
13,900.0	90.17	270.00	6,782.0	103.1	-7,125.4	7,126.1	0.00	0.00	0.00
13,907.2	90.17	270.00	6,782.0	103.1	-7,132.6	7,133.4	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 2055'FNL & 214'	0.00	0.00	6,782.0	103.1	-7,132.6	1,400,495.59	3,242,595.58	40.429490	-104.628560
- plan hits target center									
- Point									
50' E/W Hardline (1W)	0.00	0.00	1.0	103.1	-3,807.9	1,400,529.27	3,245,920.00	40.429492	-104.616618
- plan misses target center by 3809.3ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W-6,649.4 H100.0 D0.0)									
SHL 2154'FNL & 333'	0.00	0.00	1.0	0.0	0.0	1,400,464.71	3,249,728.59	40.429210	-104.602940
- plan hits target center									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (")	Hole Diameter (")
7,257.8	6,801.7	7"		7	7-1/2

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,494.2	3,486.0	PARKMAN		0.00	
4,258.4	4,244.0	SUSSEX		0.00	
5,217.7	5,200.0	SHANNON		0.00	
6,557.0	6,504.0	SHARON SPRINGS		0.00	
6,690.3	6,602.0	NIOBRARA A		0.00	
6,883.6	6,713.0	NIOBRARA B		0.00	
7,041.7	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 1W-314
<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 1W-314	<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)	
2,000.0	2,000.0	0.0	0.0	KOP #1
6,055.5	6,037.8	103.1	283.0	KOP #2
7,257.8	6,801.7	103.1	-483.2	End of Build





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.1-T5N-R65W**

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

**LDS 1W-314**

**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 1W-314
<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 1W-314	<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	13,907.2	Plan #2 (4-30-15) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.1-T5N-R65W						
BJB 2 (Exist.) - Wellbore #1 - Wellbore #1	6,959.3	6,733.0	93.7	-58.5	0.616	Level 1, CC, ES, SF
BJB 3 (SI) - Wellbore #1 - Wellbore #1	8,447.8	6,804.2	52.0	-136.1	0.276	Level 1, CC, ES, SF
Gatewood 6-1 (Exist.) - Wellbore #1 - Wellbore #1	9,637.0	6,808.8	438.1	245.5	2.274	CC, ES, SF
Existing Wells Sec.2-T5N-R65W						
Caraccioli 1 (Exist.) - Wellbore #1 - Wellbore #1	12,464.9	6,804.7	79.6	-97.5	0.449	Level 1, CC, ES, SF
LDS 5N65W1W Pad Sec.1-T5N-R65W						
LDS 1V-234 - Wellbore #1 - Plan #2 (4-29-15)	1,400.0	1,400.0	29.1	23.1	4.803	CC
LDS 1V-234 - Wellbore #1 - Plan #2 (4-29-15)	13,907.2	13,850.3	225.5	-152.1	0.597	Level 1, ES, SF
LDS 1V-334 - Wellbore #1 - Plan #2 (4-30-15)	1,000.0	1,000.0	58.4	54.1	13.664	CC
LDS 1V-334 - Wellbore #1 - Plan #2 (4-30-15)	13,907.2	13,914.0	397.9	-8.3	0.980	Level 1, ES, SF
LDS 1W-414 - Wellbore #1 - Plan #2 (4-30-15)	1,600.0	1,600.0	32.8	25.8	4.705	CC
LDS 1W-414 - Wellbore #1 - Plan #2 (4-30-15)	13,907.2	13,980.1	319.1	-77.0	0.806	Level 1, ES, SF
Noffsinger Pad Sec.2-T5N-R65W						
Noffsinger 2SD - Wellbore #1 - Wellbore #1	13,061.3	7,057.4	365.0	168.3	1.855	CC, ES, SF
Noffsinger 32-2D - Wellbore #1 - Wellbore #1	13,739.5	6,987.1	152.2	-67.9	0.692	Level 1, CC, ES, SF

<b>Offset Design</b>													
Existing Wells Sec.1-T5N-R65W - BJB 2 (Exist.) - Wellbore #1 - Wellbore #1													
Survey Program: 7050-UNKNOWN													
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning		Offset Site 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)	Separation Factor	Offset Well Error: 0.0 ft	
0.0	0.0	0.0	0.0	0.0	0.0	-44.32	196.7	-192.1	275.2				
100.0	100.0	88.0	88.0	0.1	1.8	-44.32	196.7	-192.1	275.0	273.1	1.87	146.838	
200.0	200.0	188.0	188.0	0.3	3.8	-44.32	196.7	-192.1	275.0	270.9	4.10	67.109	
300.0	300.0	288.0	288.0	0.6	5.8	-44.32	196.7	-192.1	275.0	268.6	6.32	43.493	
400.0	400.0	388.0	388.0	0.8	7.8	-44.32	196.7	-192.1	275.0	266.4	8.55	32.172	
500.0	500.0	488.0	488.0	1.0	9.8	-44.32	196.7	-192.1	275.0	264.2	10.77	25.527	
600.0	600.0	588.0	588.0	1.2	11.8	-44.32	196.7	-192.1	275.0	262.0	13.00	21.157	
700.0	700.0	688.0	688.0	1.5	13.8	-44.32	196.7	-192.1	275.0	259.7	15.22	18.065	
800.0	800.0	788.0	788.0	1.7	15.8	-44.32	196.7	-192.1	275.0	257.5	17.45	15.761	
900.0	900.0	888.0	888.0	1.9	17.8	-44.32	196.7	-192.1	275.0	255.3	19.67	13.979	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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
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		
1,000.0	1,000.0	988.0	988.0	2.1	19.8	-44.32	196.7	-192.1	275.0	253.1	21.90	12.558		
1,100.0	1,100.0	1,088.0	1,088.0	2.4	21.8	-44.32	196.7	-192.1	275.0	250.8	24.12	11.400		
1,200.0	1,200.0	1,188.0	1,188.0	2.6	23.8	-44.32	196.7	-192.1	275.0	248.6	26.34	10.437		
1,300.0	1,300.0	1,288.0	1,288.0	2.8	25.8	-44.32	196.7	-192.1	275.0	246.4	28.57	9.624		
1,400.0	1,400.0	1,388.0	1,388.0	3.0	27.8	-44.32	196.7	-192.1	275.0	244.2	30.79	8.929		
1,500.0	1,500.0	1,488.0	1,488.0	3.3	29.8	-44.32	196.7	-192.1	275.0	241.9	33.02	8.327		
1,600.0	1,600.0	1,588.0	1,588.0	3.5	31.8	-44.32	196.7	-192.1	275.0	239.7	35.24	7.802		
1,700.0	1,700.0	1,688.0	1,688.0	3.7	33.8	-44.32	196.7	-192.1	275.0	237.5	37.47	7.339		
1,800.0	1,800.0	1,788.0	1,788.0	3.9	35.8	-44.32	196.7	-192.1	275.0	235.3	39.69	6.927		
1,900.0	1,900.0	1,888.0	1,888.0	4.2	37.8	-44.32	196.7	-192.1	275.0	233.0	41.92	6.560		
2,000.0	2,000.0	1,988.0	1,988.0	4.4	39.8	-44.32	196.7	-192.1	275.0	230.8	44.14	6.229		
2,100.0	2,100.0	2,088.0	2,088.0	4.6	41.8	-114.47	196.7	-192.1	275.3	229.0	46.36	5.939		
2,200.0	2,200.0	2,188.0	2,188.0	4.8	43.8	-114.95	196.7	-192.1	276.4	227.9	48.56	5.692		
2,300.0	2,299.9	2,287.9	2,287.9	5.0	45.8	-115.75	196.7	-192.1	278.3	227.5	50.76	5.482		
2,400.0	2,399.7	2,387.7	2,387.7	5.2	47.8	-116.85	196.7	-192.1	281.0	228.0	52.96	5.306		
2,500.0	2,499.4	2,487.4	2,487.4	5.5	49.7	-118.22	196.7	-192.1	284.6	229.5	55.15	5.161		
2,600.0	2,598.9	2,586.9	2,586.9	5.7	51.7	-119.85	196.7	-192.1	289.3	232.0	57.33	5.046		
2,700.0	2,698.3	2,686.3	2,686.3	5.9	53.7	-121.69	196.7	-192.1	295.1	235.6	59.50	4.960		
2,800.0	2,797.5	2,785.5	2,785.5	6.2	55.7	-123.70	196.7	-192.1	302.0	240.3	61.69	4.895		
2,900.0	2,896.6	2,884.6	2,884.6	6.4	57.7	-125.65	196.7	-192.1	309.3	245.4	63.89	4.840		
3,000.0	2,995.8	2,983.8	2,983.8	6.7	59.7	-127.51	196.7	-192.1	316.9	250.8	66.09	4.794		
3,100.0	3,095.0	3,083.0	3,083.0	7.0	61.7	-129.28	196.7	-192.1	324.8	256.5	68.30	4.756		
3,200.0	3,194.2	3,182.2	3,182.2	7.2	63.6	-130.96	196.7	-192.1	333.0	262.5	70.50	4.724		
3,300.0	3,293.4	3,281.4	3,281.4	7.5	65.6	-132.56	196.7	-192.1	341.5	268.8	72.70	4.697		
3,400.0	3,392.6	3,380.6	3,380.6	7.8	67.6	-134.09	196.7	-192.1	350.3	275.4	74.91	4.676		
3,500.0	3,491.8	3,479.8	3,479.8	8.1	69.6	-135.54	196.7	-192.1	359.3	282.1	77.11	4.659		
3,600.0	3,591.0	3,579.0	3,579.0	8.4	71.6	-136.92	196.7	-192.1	368.5	289.2	79.31	4.646		
3,700.0	3,690.2	3,678.2	3,678.2	8.7	73.6	-138.23	196.7	-192.1	377.9	296.4	81.52	4.635		
3,800.0	3,789.4	3,777.4	3,777.4	9.0	75.5	-139.47	196.7	-192.1	387.5	303.8	83.72	4.628		
3,900.0	3,888.6	3,876.6	3,876.6	9.2	77.5	-140.66	196.7	-192.1	397.2	311.3	85.92	4.623		
4,000.0	3,987.7	3,975.7	3,975.7	9.5	79.5	-141.79	196.7	-192.1	407.2	319.1	88.13	4.620		
4,100.0	4,086.9	4,074.9	4,074.9	9.8	81.5	-142.87	196.7	-192.1	417.3	326.9	90.33	4.619		
4,200.0	4,186.1	4,174.1	4,174.1	10.1	83.5	-143.89	196.7	-192.1	427.5	335.0	92.53	4.620		
4,300.0	4,285.3	4,273.3	4,273.3	10.4	85.5	-144.87	196.7	-192.1	437.8	343.1	94.73	4.622		
4,400.0	4,384.5	4,372.5	4,372.5	10.8	87.5	-145.80	196.7	-192.1	448.3	351.4	96.93	4.625		
4,500.0	4,483.7	4,471.7	4,471.7	11.1	89.4	-146.69	196.7	-192.1	458.9	359.8	99.13	4.629		
4,600.0	4,582.9	4,570.9	4,570.9	11.3	91.4	-147.56	196.7	-192.1	469.3	367.8	101.46	4.625		
4,700.0	4,682.5	4,670.5	4,670.5	11.6	93.4	-148.25	196.7	-192.1	477.2	373.3	103.85	4.595		
4,800.0	4,782.3	4,770.3	4,770.3	11.8	95.4	-148.67	196.7	-192.1	482.2	376.0	106.17	4.542		
4,900.0	4,882.3	4,870.3	4,870.3	11.9	97.4	-148.83	196.7	-192.1	484.2	375.8	108.40	4.467		
5,000.0	4,982.3	4,970.3	4,970.3	12.1	99.4	-78.84	196.7	-192.1	484.2	373.0	111.26	4.352		
5,100.0	5,082.3	5,070.3	5,070.3	12.3	101.4	-78.84	196.7	-192.1	484.2	370.8	113.46	4.268		
5,200.0	5,182.3	5,170.3	5,170.3	12.5	103.4	-78.84	196.7	-192.1	484.2	368.6	115.67	4.187		
5,300.0	5,282.3	5,270.3	5,270.3	12.7	105.4	-78.84	196.7	-192.1	484.2	366.4	117.87	4.108		
5,400.0	5,382.3	5,370.3	5,370.3	12.9	107.4	-78.84	196.7	-192.1	484.2	364.2	120.07	4.033		
5,500.0	5,482.3	5,470.3	5,470.3	13.1	109.4	-78.84	196.7	-192.1	484.2	362.0	122.28	3.960		
5,600.0	5,582.3	5,570.3	5,570.3	13.3	111.4	-78.84	196.7	-192.1	484.2	359.8	124.48	3.890		
5,700.0	5,682.3	5,670.3	5,670.3	13.5	113.4	-78.84	196.7	-192.1	484.2	357.6	126.69	3.822		
5,800.0	5,782.3	5,770.3	5,770.3	13.7	115.4	-78.84	196.7	-192.1	484.2	355.4	128.89	3.757		
5,900.0	5,882.3	5,870.3	5,870.3	13.9	117.4	-78.84	196.7	-192.1	484.2	353.1	131.10	3.694		
6,000.0	5,982.3	5,970.3	5,970.3	14.1	119.4	-78.84	196.7	-192.1	484.2	350.9	133.30	3.633		

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 1W-314
<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 1W-314	<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 - BJB 2 (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7050-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,100.0	6,082.3	6,070.3	6,070.3	14.3	121.4	11.20	196.7	-192.1	483.0	348.3	134.67	3.586	
6,200.0	6,181.4	6,169.4	6,169.4	14.4	123.4	11.68	196.7	-192.1	470.9	336.2	134.69	3.496	
6,300.0	6,278.1	6,266.1	6,266.1	14.5	125.3	12.75	196.7	-192.1	446.3	313.8	132.47	3.369	
6,400.0	6,370.7	6,358.7	6,358.7	14.6	127.2	14.63	196.7	-192.1	409.6	281.5	128.14	3.196	
6,500.0	6,457.6	6,445.6	6,445.6	14.6	128.9	17.79	196.7	-192.1	361.7	239.5	122.24	2.959	
6,600.0	6,537.3	6,525.3	6,525.3	14.8	130.5	23.18	196.7	-192.1	303.9	187.6	116.34	2.613	
6,700.0	6,608.5	6,596.5	6,596.5	15.2	131.9	32.76	196.7	-192.1	238.2	123.3	114.87	2.074	
6,800.0	6,669.9	6,657.9	6,657.9	15.8	133.2	49.97	196.7	-192.1	168.6	42.1	126.50	1.333	Level 3
6,900.0	6,720.5	6,708.5	6,708.5	16.7	134.2	75.51	196.7	-192.1	108.1	-39.1	147.20	0.735	Level 1
6,959.3	6,745.0	6,733.0	6,733.0	17.5	134.7	90.00	196.7	-192.1	93.7	-58.5	152.15	0.616	Level 1, CC, ES, SF
7,000.0	6,759.4	6,747.4	6,747.4	18.0	134.9	97.60	196.7	-192.1	101.1	-50.6	151.74	0.666	Level 1
7,100.0	6,786.0	6,774.0	6,774.0	19.6	135.5	106.17	196.7	-192.1	163.8	14.6	149.21	1.098	Level 2
7,200.0	6,799.7	6,787.7	6,787.7	21.4	135.8	100.25	196.7	-192.1	251.5	96.8	154.66	1.626	
7,300.0	6,801.6	6,789.6	6,789.6	23.4	135.8	89.40	196.7	-192.1	346.3	187.0	159.21	2.175	
7,400.0	6,801.3	6,789.3	6,789.3	25.6	135.8	89.21	196.7	-192.1	443.3	282.0	161.34	2.748	
7,500.0	6,801.0	6,789.0	6,789.0	27.8	135.8	89.03	196.7	-192.1	541.5	377.9	163.59	3.310	
7,600.0	6,800.7	6,788.7	6,788.7	30.2	135.8	88.85	196.7	-192.1	640.2	474.3	165.93	3.858	
7,700.0	6,800.4	6,788.4	6,788.4	32.6	135.8	88.67	196.7	-192.1	739.3	571.0	168.34	4.392	
7,800.0	6,800.1	6,788.1	6,788.1	35.1	135.8	88.49	196.7	-192.1	838.6	667.8	170.81	4.910	
7,900.0	6,799.8	6,787.8	6,787.8	37.6	135.8	88.31	196.7	-192.1	938.0	764.7	173.32	5.412	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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	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)					
7,500.0	6,801.0	6,807.0	6,807.0	27.8	136.1	-93.10	51.1	-1,673.2	949.2	785.4	163.75	5.796				
7,600.0	6,800.7	6,806.7	6,806.7	30.2	136.1	-92.77	51.1	-1,673.2	849.4	683.2	166.14	5.112				
7,700.0	6,800.4	6,806.4	6,806.4	32.6	136.1	-92.44	51.1	-1,673.2	749.6	581.0	168.60	4.446				
7,800.0	6,800.1	6,806.1	6,806.1	35.1	136.1	-92.12	51.1	-1,673.2	649.8	478.7	171.12	3.798				
7,900.0	6,799.8	6,805.8	6,805.8	37.6	136.1	-91.79	51.1	-1,673.2	550.2	376.6	173.67	3.168				
8,000.0	6,799.5	6,805.5	6,805.5	40.2	136.1	-91.46	51.1	-1,673.2	450.8	274.5	176.26	2.557				
8,100.0	6,799.2	6,805.2	6,805.2	42.8	136.1	-91.14	51.1	-1,673.2	351.6	172.8	178.87	1.966				
8,200.0	6,798.9	6,804.9	6,804.9	45.4	136.1	-90.81	51.1	-1,673.2	253.2	71.7	181.50	1.395 Level 3				
8,300.0	6,798.6	6,804.6	6,804.6	48.1	136.1	-90.48	51.1	-1,673.2	156.6	-27.5	184.15	0.851 Level 1				
8,400.0	6,798.3	6,804.3	6,804.3	50.7	136.1	-90.16	51.1	-1,673.2	70.6	-116.2	186.81	0.378 Level 1				
8,447.8	6,798.2	6,804.2	6,804.2	52.0	136.1	-90.00	51.1	-1,673.2	52.0	-136.1	188.08	0.276 Level 1, CC, ES, SF				
8,500.0	6,798.0	6,804.0	6,804.0	53.4	136.1	-89.83	51.1	-1,673.2	73.7	-115.8	189.48	0.389 Level 1				
8,600.0	6,797.7	6,803.7	6,803.7	56.1	136.1	-89.50	51.1	-1,673.2	160.9	-31.3	192.15	0.837 Level 1				
8,700.0	6,797.5	6,803.5	6,803.5	58.8	136.1	-89.18	51.1	-1,673.2	257.5	62.7	194.83	1.322 Level 3				
8,800.0	6,797.2	6,803.2	6,803.2	61.5	136.1	-88.85	51.1	-1,673.2	356.1	158.5	197.52	1.803				
8,900.0	6,796.9	6,802.9	6,802.9	64.2	136.1	-88.52	51.1	-1,673.2	455.2	255.0	200.20	2.274				
9,000.0	6,796.6	6,802.6	6,802.6	67.0	136.1	-88.19	51.1	-1,673.2	554.7	351.8	202.89	2.734				
9,100.0	6,796.3	6,802.3	6,802.3	69.7	136.0	-87.87	51.1	-1,673.2	654.3	448.7	205.57	3.183				
9,200.0	6,796.0	6,802.0	6,802.0	72.4	136.0	-87.54	51.1	-1,673.2	754.0	545.8	208.26	3.621				
9,300.0	6,795.7	6,801.7	6,801.7	75.2	136.0	-87.22	51.1	-1,673.2	853.8	642.9	210.94	4.048				
9,400.0	6,795.4	6,801.4	6,801.4	77.9	136.0	-86.89	51.1	-1,673.2	953.7	740.0	213.61	4.464				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,800.0	6,797.2	6,810.3	6,809.8	61.5	108.2	90.68	90.68	541.1	-2,862.4	944.7	775.0	169.70	5.567	
8,900.0	6,796.9	6,810.1	6,809.7	64.2	108.2	90.65	90.65	541.1	-2,862.4	857.3	684.9	172.42	4.972	
9,000.0	6,796.6	6,809.9	6,809.5	67.0	108.2	90.63	90.63	541.1	-2,862.4	773.1	597.9	175.14	4.414	
9,100.0	6,796.3	6,809.7	6,809.3	69.7	108.2	90.61	90.61	541.1	-2,862.4	693.0	515.1	177.88	3.896	
9,200.0	6,796.0	6,809.6	6,809.1	72.4	108.2	90.59	90.59	541.1	-2,862.4	618.8	438.1	180.61	3.426	
9,300.0	6,795.7	6,809.4	6,809.0	75.2	108.2	90.56	90.56	541.1	-2,862.4	552.7	369.3	183.36	3.014	
9,400.0	6,795.4	6,809.2	6,808.8	77.9	108.2	90.54	90.54	541.1	-2,862.4	498.1	312.0	186.10	2.676	
9,500.0	6,795.1	6,809.0	6,808.6	80.7	108.2	90.52	90.52	541.1	-2,862.4	459.0	270.1	188.86	2.430	
9,600.0	6,794.8	6,808.9	6,808.4	83.4	108.2	90.49	90.49	541.1	-2,862.4	439.6	248.0	191.61	2.294	
9,637.0	6,794.7	6,808.8	6,808.4	84.5	108.2	90.49	90.49	541.1	-2,862.4	438.1	245.5	192.63	2.274	CC, ES, SF
9,700.0	6,794.5	6,808.7	6,808.3	86.2	108.2	90.47	90.47	541.1	-2,862.4	442.6	248.2	194.37	2.277	
9,800.0	6,794.2	6,808.5	6,808.1	89.0	108.2	90.45	90.45	541.1	-2,862.4	467.4	270.3	197.13	2.371	
9,900.0	6,793.9	6,808.3	6,807.9	91.7	108.2	90.43	90.43	541.1	-2,862.4	511.0	311.1	199.90	2.556	
10,000.0	6,793.6	6,808.2	6,807.7	94.5	108.2	90.40	90.40	541.1	-2,862.4	569.0	366.3	202.66	2.807	
10,100.0	6,793.3	6,808.0	6,807.6	97.3	108.2	90.38	90.38	541.1	-2,862.4	637.4	432.0	205.43	3.103	
10,200.0	6,793.0	6,807.8	6,807.4	100.0	108.2	90.36	90.36	541.1	-2,862.4	713.4	505.2	208.20	3.426	
10,300.0	6,792.7	6,807.6	6,807.2	102.8	108.2	90.33	90.33	541.1	-2,862.4	794.7	583.7	210.98	3.767	
10,400.0	6,792.4	6,807.5	6,807.0	105.6	108.2	90.31	90.31	541.1	-2,862.4	879.9	666.1	213.75	4.116	
10,500.0	6,792.1	6,807.3	6,806.9	108.4	108.2	90.29	90.29	541.1	-2,862.4	967.9	751.3	216.53	4.470	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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
<b>Survey Program:</b> 100-NS-GYRO-MS													<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
11,500.0	6,789.1	6,824.6	6,823.9	136.2	13.9	-103.82		23.4	-5,689.9	967.9	821.8	146.20	6.621	
11,600.0	6,788.8	6,822.5	6,821.7	139.0	13.9	-102.35		23.4	-5,690.0	868.3	718.6	149.72	5.800	
11,700.0	6,788.5	6,820.3	6,819.6	141.8	13.8	-100.88		23.5	-5,690.0	768.8	615.7	153.18	5.019	
11,800.0	6,788.3	6,818.2	6,817.5	144.6	13.8	-99.40		23.5	-5,690.0	669.5	512.9	156.58	4.276	
11,900.0	6,788.0	6,816.1	6,815.4	147.4	13.8	-97.93		23.5	-5,690.1	570.3	410.4	159.90	3.567	
12,000.0	6,787.7	6,814.1	6,813.3	150.2	13.8	-96.46		23.5	-5,690.1	471.5	308.4	163.14	2.890	
12,100.0	6,787.4	6,812.0	6,811.2	153.0	13.8	-95.00		23.5	-5,690.2	373.4	207.1	166.29	2.245	
12,200.0	6,787.1	6,810.0	6,809.2	155.8	13.8	-93.54		23.5	-5,690.2	276.5	107.1	169.36	1.633	
12,300.0	6,786.8	6,807.9	6,807.2	158.6	13.8	-92.09		23.5	-5,690.2	183.0	10.7	172.33	1.062 Level 2	
12,400.0	6,786.5	6,806.0	6,805.2	161.4	13.8	-90.66		23.5	-5,690.3	102.6	-72.6	175.20	0.586 Level 1	
12,464.9	6,786.3	6,804.7	6,803.9	163.2	13.8	-89.73		23.5	-5,690.3	79.6	-97.5	177.02	0.449 Level 1, CC, ES, SF	
12,500.0	6,786.2	6,804.0	6,803.2	164.2	13.8	-89.24		23.5	-5,690.3	87.0	-91.0	177.98	0.489 Level 1	
12,600.0	6,785.9	6,802.0	6,801.3	167.0	13.8	-87.83		23.5	-5,690.3	156.8	-23.9	180.65	0.868 Level 1	
12,700.0	6,785.6	6,800.1	6,799.3	169.8	13.8	-86.43		23.5	-5,690.4	248.2	65.0	183.22	1.355 Level 3	
12,800.0	6,785.3	6,798.2	6,797.4	172.6	13.8	-85.07		23.5	-5,690.4	344.4	158.7	185.69	1.855	
12,900.0	6,785.0	6,796.3	6,795.5	175.4	13.8	-83.71		23.5	-5,690.4	442.3	254.2	188.05	2.352	
13,000.0	6,784.7	6,794.4	6,793.6	178.2	13.8	-82.37		23.6	-5,690.4	540.9	350.6	190.31	2.842	
13,100.0	6,784.4	6,792.5	6,791.7	181.0	13.8	-81.03		23.6	-5,690.5	640.0	447.5	192.46	3.325	
13,200.0	6,784.1	6,790.6	6,789.8	183.8	13.8	-79.71		23.6	-5,690.5	739.3	544.8	194.50	3.801	
13,300.0	6,783.8	6,788.7	6,788.0	186.6	13.8	-78.40		23.6	-5,690.5	838.8	642.3	196.43	4.270	
13,400.0	6,783.5	6,786.8	6,786.1	189.4	13.8	-77.10		23.6	-5,690.6	938.3	740.1	198.25	4.733	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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-MWDD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1						
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.669			
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.223			
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.934			
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.524			
500.0	500.0	500.0	500.0	1.0	1.0	0.00	29.1	0.0	29.1	27.1	2.02	14.408			
600.0	600.0	600.0	600.0	1.2	1.2	0.00	29.1	0.0	29.1	26.7	2.47	11.788			
700.0	700.0	700.0	700.0	1.5	1.5	0.00	29.1	0.0	29.1	26.2	2.92	9.975			
800.0	800.0	800.0	800.0	1.7	1.7	0.00	29.1	0.0	29.1	25.8	3.37	8.645			
900.0	900.0	900.0	900.0	1.9	1.9	0.00	29.1	0.0	29.1	25.3	3.82	7.628			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	29.1	0.0	29.1	24.9	4.27	6.825			
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	29.1	0.0	29.1	24.4	4.72	6.175			
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	29.1	0.0	29.1	24.0	5.17	5.638			
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	0.00	29.1	0.0	29.1	23.5	5.62	5.187			
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	0.00	29.1	0.0	29.1	23.1	6.07	4.803 CC			
1,500.0	1,500.0	1,499.6	1,499.6	3.3	3.3	1.18	29.8	0.6	29.8	23.3	6.51	4.570			
1,600.0	1,600.0	1,599.2	1,599.2	3.5	3.5	4.44	31.6	2.5	31.7	24.7	6.95	4.558			
1,700.0	1,700.0	1,698.7	1,698.5	3.7	3.7	9.05	34.6	5.5	35.1	27.7	7.40	4.746			
1,800.0	1,800.0	1,797.9	1,797.6	3.9	3.9	14.13	38.9	9.8	40.2	32.3	7.84	5.123			
1,900.0	1,900.0	1,897.0	1,896.3	4.2	4.1	19.00	44.3	15.3	47.0	38.7	8.29	5.672			
2,000.0	2,000.0	1,995.7	1,994.6	4.4	4.4	23.28	51.0	21.9	55.7	47.0	8.75	6.369			
2,100.0	2,100.0	2,094.2	2,092.5	4.6	4.6	-43.57	58.8	29.8	65.7	56.5	9.18	7.156			
2,200.0	2,200.0	2,193.7	2,191.3	4.8	4.9	-41.92	67.3	38.3	75.3	65.7	9.61	7.832			
2,300.0	2,299.9	2,293.3	2,290.2	5.0	5.1	-41.43	75.7	46.8	83.6	73.6	10.05	8.320			
2,400.0	2,399.7	2,393.1	2,389.2	5.2	5.4	-41.74	84.3	55.4	90.6	80.1	10.49	8.639			
2,500.0	2,499.4	2,492.9	2,488.3	5.5	5.7	-42.71	92.8	63.9	96.4	85.4	10.94	8.808			
2,600.0	2,598.9	2,592.8	2,587.4	5.7	6.0	-44.26	101.3	72.5	100.9	89.5	11.40	8.848			
2,700.0	2,698.3	2,692.6	2,686.6	5.9	6.2	-46.37	109.8	81.1	104.3	92.4	11.88	8.779			
2,800.0	2,797.5	2,792.5	2,785.7	6.2	6.5	-48.88	118.3	89.6	106.9	94.5	12.37	8.641			
2,900.0	2,896.6	2,892.4	2,884.8	6.4	6.8	-51.30	126.8	98.2	109.7	96.8	12.88	8.515			
3,000.0	2,995.8	2,992.2	2,983.9	6.7	7.1	-53.60	135.3	106.7	112.7	99.3	13.41	8.405			
3,100.0	3,095.0	3,092.1	3,083.1	7.0	7.4	-55.78	143.8	115.3	115.8	101.9	13.94	8.309			
3,200.0	3,194.2	3,191.9	3,182.2	7.2	7.7	-57.84	152.3	123.8	119.1	104.6	14.48	8.225			
3,300.0	3,293.4	3,291.8	3,281.3	7.5	8.0	-59.79	160.9	132.4	122.6	107.5	15.04	8.152			
3,400.0	3,392.6	3,391.6	3,380.4	7.8	8.3	-61.62	169.4	140.9	126.2	110.6	15.60	8.088			
3,500.0	3,491.8	3,491.5	3,479.5	8.1	8.6	-63.36	177.9	149.5	129.9	113.7	16.17	8.032			
3,600.0	3,591.0	3,591.3	3,578.7	8.4	8.9	-65.00	186.4	158.1	133.7	116.9	16.75	7.984			
3,700.0	3,690.2	3,691.2	3,677.8	8.7	9.2	-66.54	194.9	166.6	137.6	120.3	17.33	7.941			
3,800.0	3,789.4	3,791.1	3,776.9	9.0	9.5	-68.00	203.4	175.2	141.6	123.7	17.92	7.904			
3,900.0	3,888.6	3,890.9	3,876.0	9.2	9.8	-69.38	211.9	183.7	145.7	127.2	18.51	7.872			
4,000.0	3,987.7	3,990.8	3,975.2	9.5	10.1	-70.68	220.4	192.3	149.9	130.8	19.11	7.845			
4,100.0	4,086.9	4,090.6	4,074.3	9.8	10.4	-71.91	229.0	200.8	154.2	134.5	19.71	7.821			
4,200.0	4,186.1	4,190.5	4,173.4	10.1	10.7	-73.08	237.5	209.4	158.5	138.2	20.32	7.800			
4,300.0	4,285.3	4,290.3	4,272.5	10.4	11.0	-74.18	246.0	217.9	162.9	142.0	20.93	7.783			
4,400.0	4,384.5	4,390.2	4,371.7	10.8	11.3	-75.22	254.5	226.5	167.3	145.8	21.54	7.768			
4,500.0	4,483.7	4,490.0	4,470.8	11.1	11.6	-76.21	263.0	235.1	171.8	149.7	22.16	7.755			
4,600.0	4,582.9	4,589.9	4,569.9	11.3	11.9	-77.07	271.5	243.6	176.5	153.7	22.75	7.756			
4,700.0	4,682.5	4,689.8	4,669.0	11.6	12.2	-77.02	280.0	252.2	181.8	158.5	23.25	7.818			
4,800.0	4,782.3	4,789.5	4,768.0	11.8	12.5	-75.96	288.5	260.7	187.9	164.2	23.70	7.931			
4,900.0	4,882.3	4,889.6	4,867.4	11.9	12.8	-74.00	297.1	269.3	195.1	171.0	24.07	8.103			
5,000.0	4,982.3	4,994.0	4,971.3	12.1	13.1	-1.85	304.3	276.5	201.6	178.6	23.03	8.753			

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 1W-314
<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 1W-314	<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	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,082.3	5,098.9	5,076.1	12.3	13.3	-0.53	308.8	281.1	205.9	182.4	23.51	8.759	
5,200.0	5,182.3	5,204.3	5,181.3	12.5	13.5	-0.01	310.7	283.0	207.6	183.7	23.92	8.678	
5,300.0	5,282.3	5,305.2	5,282.3	12.7	13.6	0.00	310.7	283.0	207.7	183.3	24.32	8.540	
5,400.0	5,382.3	5,405.2	5,382.3	12.9	13.8	0.00	310.7	283.0	207.7	182.9	24.73	8.398	
5,500.0	5,482.3	5,505.2	5,482.3	13.1	14.0	0.00	310.7	283.0	207.7	182.5	25.14	8.260	
5,600.0	5,582.3	5,605.2	5,582.3	13.3	14.2	0.00	310.7	283.0	207.7	182.1	25.55	8.126	
5,700.0	5,682.3	5,705.2	5,682.3	13.5	14.4	0.00	310.7	283.0	207.7	181.7	25.97	7.997	
5,800.0	5,782.3	5,805.2	5,782.3	13.7	14.6	0.00	310.7	283.0	207.7	181.3	26.38	7.871	
5,900.0	5,882.3	5,905.2	5,882.3	13.9	14.8	0.00	310.7	283.0	207.7	180.9	26.80	7.748	
5,965.9	5,948.1	5,971.1	5,948.1	14.1	14.9	0.00	310.7	283.0	207.7	180.6	27.08	7.669	
6,000.0	5,982.3	6,005.2	5,982.3	14.1	14.9	0.00	310.7	283.0	207.7	180.4	27.22	7.630	
6,100.0	6,082.3	6,104.7	6,081.5	14.3	15.1	88.39	310.7	275.9	207.7	179.1	28.67	7.245	
6,200.0	6,181.4	6,203.2	6,177.9	14.4	15.2	86.27	310.7	256.3	208.1	179.2	28.95	7.189	
6,300.0	6,278.1	6,300.7	6,270.1	14.5	15.2	84.24	310.7	224.8	208.7	179.6	29.12	7.168	
6,400.0	6,370.7	6,397.3	6,356.8	14.6	15.2	82.32	310.7	182.3	209.6	180.3	29.24	7.167	
6,500.0	6,457.6	6,493.2	6,436.8	14.6	15.2	80.54	310.7	129.6	210.5	181.1	29.40	7.162	
6,600.0	6,537.3	6,588.3	6,509.1	14.8	15.2	78.95	310.7	67.8	211.6	181.9	29.72	7.120	
6,700.0	6,608.5	6,682.8	6,572.7	15.2	15.4	77.54	310.7	-1.9	212.7	182.3	30.36	7.005	
6,800.0	6,669.9	6,776.7	6,627.0	15.8	16.0	76.35	310.7	-78.5	213.7	182.2	31.48	6.789	
6,900.0	6,720.5	6,870.3	6,671.3	16.7	17.0	75.37	310.7	-160.8	214.6	181.5	33.15	6.473	
7,000.0	6,759.4	6,963.4	6,705.1	18.0	18.3	74.64	310.7	-247.6	215.4	179.9	35.45	6.075	
7,100.0	6,786.0	7,056.3	6,728.0	19.6	19.8	74.14	310.7	-337.6	215.9	177.6	38.33	5.632	
7,200.0	6,799.7	7,150.0	6,739.9	21.4	21.5	73.88	310.7	-430.4	216.2	174.4	41.72	5.181	
7,218.4	6,800.9	7,166.2	6,740.8	21.8	21.8	73.83	310.7	-446.6	216.2	173.8	42.38	5.102	
7,300.0	6,801.6	7,244.6	6,741.3	23.4	23.4	73.80	310.7	-525.0	216.3	170.8	45.49	4.754	
7,400.0	6,801.3	7,344.6	6,740.5	25.6	25.5	73.69	310.7	-625.0	216.4	166.8	49.58	4.364	
7,500.0	6,801.0	7,444.6	6,739.8	27.8	27.8	73.58	310.7	-725.0	216.5	162.6	53.89	4.017	
7,600.0	6,800.7	7,544.6	6,739.1	30.2	30.1	73.48	310.7	-825.0	216.6	158.2	58.38	3.710	
7,700.0	6,800.4	7,644.6	6,738.4	32.6	32.6	73.37	310.7	-925.0	216.7	153.7	63.01	3.440	
7,800.0	6,800.1	7,744.6	6,737.7	35.1	35.0	73.27	310.7	-1,025.0	216.8	149.1	67.74	3.201	
7,900.0	6,799.8	7,844.6	6,737.0	37.6	37.6	73.16	310.7	-1,125.0	217.0	144.4	72.56	2.990	
8,000.0	6,799.5	7,944.6	6,736.3	40.2	40.1	73.05	310.7	-1,225.0	217.1	139.6	77.44	2.803	
8,100.0	6,799.2	8,044.6	6,735.5	42.8	42.7	72.95	310.7	-1,325.0	217.2	134.8	82.38	2.637	
8,200.0	6,798.9	8,144.6	6,734.8	45.4	45.3	72.84	310.7	-1,425.0	217.3	130.0	87.37	2.488	
8,300.0	6,798.6	8,244.6	6,734.1	48.1	48.0	72.74	310.7	-1,525.0	217.5	125.1	92.39	2.354	
8,400.0	6,798.3	8,344.6	6,733.4	50.7	50.6	72.63	310.7	-1,625.0	217.6	120.1	97.43	2.233	
8,500.0	6,798.0	8,444.6	6,732.7	53.4	53.3	72.53	310.7	-1,725.0	217.7	115.2	102.51	2.124	
8,600.0	6,797.7	8,544.6	6,732.0	56.1	56.0	72.42	310.7	-1,825.0	217.8	110.2	107.60	2.024	
8,700.0	6,797.5	8,644.6	6,731.2	58.8	58.7	72.32	310.7	-1,925.0	218.0	105.3	112.71	1.934	
8,800.0	6,797.2	8,744.6	6,730.5	61.5	61.4	72.21	310.7	-2,024.9	218.1	100.3	117.83	1.851	
8,900.0	6,796.9	8,844.6	6,729.8	64.2	64.1	72.11	310.7	-2,124.9	218.2	95.3	122.96	1.775	
9,000.0	6,796.6	8,944.6	6,729.1	67.0	66.8	72.00	310.7	-2,224.9	218.3	90.2	128.10	1.704	
9,100.0	6,796.3	9,044.6	6,728.4	69.7	69.6	71.90	310.7	-2,324.9	218.5	85.2	133.25	1.640	
9,200.0	6,796.0	9,144.6	6,727.7	72.4	72.3	71.79	310.7	-2,424.9	218.6	80.2	138.40	1.579	
9,300.0	6,795.7	9,244.6	6,727.0	75.2	75.1	71.69	310.7	-2,524.9	218.7	75.2	143.56	1.524	
9,400.0	6,795.4	9,344.6	6,726.2	77.9	77.8	71.59	310.7	-2,624.9	218.9	70.1	148.72	1.472 Level 3	
9,500.0	6,795.1	9,444.6	6,725.5	80.7	80.6	71.48	310.7	-2,724.9	219.0	65.1	153.88	1.423 Level 3	
9,600.0	6,794.8	9,544.6	6,724.8	83.4	83.3	71.38	310.7	-2,824.9	219.1	60.1	159.04	1.378 Level 3	
9,700.0	6,794.5	9,644.6	6,724.1	86.2	86.1	71.27	310.7	-2,924.9	219.3	55.1	164.21	1.335 Level 3	
9,800.0	6,794.2	9,744.6	6,723.4	89.0	88.8	71.17	310.7	-3,024.9	219.4	50.0	169.37	1.295 Level 3	
9,900.0	6,793.9	9,844.6	6,722.7	91.7	91.6	71.07	310.7	-3,124.9	219.5	45.0	174.53	1.258 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 1W-314
<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 1W-314	<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		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)			
10,000.0	6,793.6	9,944.6	6,721.9	94.5	94.4	70.96	310.7	-3,224.9	219.7	40.0	179.69	1.222	Level 2
10,100.0	6,793.3	10,044.6	6,721.2	97.3	97.1	70.86	310.7	-3,324.9	219.8	35.0	184.85	1.189	Level 2
10,200.0	6,793.0	10,144.6	6,720.5	100.0	99.9	70.76	310.7	-3,424.9	219.9	29.9	190.01	1.158	Level 2
10,300.0	6,792.7	10,244.6	6,719.8	102.8	102.7	70.65	310.7	-3,524.9	220.1	24.9	195.16	1.128	Level 2
10,400.0	6,792.4	10,344.6	6,719.1	105.6	105.5	70.55	310.7	-3,624.9	220.2	19.9	200.31	1.099	Level 2
10,500.0	6,792.1	10,444.6	6,718.4	108.4	108.2	70.45	310.7	-3,724.9	220.4	14.9	205.46	1.073	Level 2
10,600.0	6,791.8	10,544.6	6,717.6	111.1	111.0	70.35	310.7	-3,824.9	220.5	9.9	210.61	1.047	Level 2
10,700.0	6,791.5	10,644.6	6,716.9	113.9	113.8	70.24	310.7	-3,924.9	220.6	4.9	215.75	1.023	Level 2
10,800.0	6,791.2	10,744.6	6,716.2	116.7	116.6	70.14	310.7	-4,024.9	220.8	-0.1	220.88	1.000	Level 1
10,900.0	6,790.9	10,844.6	6,715.5	119.5	119.4	70.04	310.7	-4,124.9	220.9	-5.1	226.01	0.978	Level 1
11,000.0	6,790.6	10,944.6	6,714.8	122.3	122.2	69.94	310.7	-4,224.9	221.1	-10.1	231.14	0.956	Level 1
11,100.0	6,790.3	11,044.6	6,714.1	125.1	124.9	69.84	310.7	-4,324.9	221.2	-15.0	236.26	0.936	Level 1
11,200.0	6,790.0	11,144.6	6,713.4	127.9	127.7	69.73	310.7	-4,424.9	221.4	-20.0	241.38	0.917	Level 1
11,300.0	6,789.7	11,244.6	6,712.6	130.6	130.5	69.63	310.7	-4,524.9	221.5	-25.0	246.50	0.899	Level 1
11,400.0	6,789.4	11,344.6	6,711.9	133.4	133.3	69.53	310.7	-4,624.9	221.7	-29.9	251.60	0.881	Level 1
11,500.0	6,789.1	11,444.6	6,711.2	136.2	136.1	69.43	310.7	-4,724.9	221.8	-34.9	256.71	0.864	Level 1
11,600.0	6,788.8	11,544.6	6,710.5	139.0	138.9	69.33	310.7	-4,824.9	221.9	-39.9	261.80	0.848	Level 1
11,700.0	6,788.5	11,644.6	6,709.8	141.8	141.7	69.23	310.7	-4,924.8	222.1	-44.8	266.89	0.832	Level 1
11,800.0	6,788.3	11,744.6	6,709.1	144.6	144.5	69.13	310.7	-5,024.8	222.2	-49.7	271.98	0.817	Level 1
11,900.0	6,788.0	11,844.6	6,708.3	147.4	147.3	69.02	310.7	-5,124.8	222.4	-54.7	277.06	0.803	Level 1
12,000.0	6,787.7	11,944.6	6,707.6	150.2	150.1	68.92	310.7	-5,224.8	222.5	-59.6	282.13	0.789	Level 1
12,100.0	6,787.4	12,044.6	6,706.9	153.0	152.9	68.82	310.7	-5,324.8	222.7	-64.5	287.20	0.775	Level 1
12,200.0	6,787.1	12,144.6	6,706.2	155.8	155.6	68.72	310.7	-5,424.8	222.8	-69.4	292.26	0.762	Level 1
12,300.0	6,786.8	12,244.6	6,705.5	158.6	158.4	68.62	310.7	-5,524.8	223.0	-74.3	297.32	0.750	Level 1
12,400.0	6,786.5	12,344.6	6,704.8	161.4	161.2	68.52	310.7	-5,624.8	223.2	-79.2	302.37	0.738	Level 1
12,500.0	6,786.2	12,444.6	6,704.1	164.2	164.0	68.42	310.7	-5,724.8	223.3	-84.1	307.41	0.726	Level 1
12,600.0	6,785.9	12,544.6	6,703.3	167.0	166.8	68.32	310.7	-5,824.8	223.5	-89.0	312.45	0.715	Level 1
12,700.0	6,785.6	12,644.6	6,702.6	169.8	169.6	68.22	310.7	-5,924.8	223.6	-93.9	317.48	0.704	Level 1
12,800.0	6,785.3	12,744.6	6,701.9	172.6	172.4	68.12	310.7	-6,024.8	223.8	-98.7	322.51	0.694	Level 1
12,900.0	6,785.0	12,844.6	6,701.2	175.4	175.2	68.02	310.7	-6,124.8	223.9	-103.6	327.52	0.684	Level 1
13,000.0	6,784.7	12,944.6	6,700.5	178.2	178.0	67.92	310.7	-6,224.8	224.1	-108.4	332.54	0.674	Level 1
13,100.0	6,784.4	13,044.6	6,699.8	181.0	180.8	67.83	310.7	-6,324.8	224.2	-113.3	337.54	0.664	Level 1
13,200.0	6,784.1	13,144.6	6,699.0	183.8	183.6	67.73	310.7	-6,424.8	224.4	-118.1	342.54	0.655	Level 1
13,300.0	6,783.8	13,244.6	6,698.3	186.6	186.4	67.63	310.7	-6,524.8	224.6	-123.0	347.53	0.646	Level 1
13,400.0	6,783.5	13,344.6	6,697.6	189.4	189.2	67.53	310.7	-6,624.8	224.7	-127.8	352.51	0.637	Level 1
13,500.0	6,783.2	13,444.6	6,696.9	192.2	192.0	67.43	310.7	-6,724.8	224.9	-132.6	357.49	0.629	Level 1
13,600.0	6,782.9	13,544.6	6,696.2	195.0	194.8	67.33	310.7	-6,824.8	225.0	-137.4	362.46	0.621	Level 1
13,700.0	6,782.6	13,644.6	6,695.5	197.8	197.6	67.23	310.7	-6,924.8	225.2	-142.2	367.42	0.613	Level 1
13,800.0	6,782.3	13,744.6	6,694.8	200.6	200.4	67.14	310.7	-7,024.8	225.4	-147.0	372.38	0.605	Level 1
13,900.0	6,782.0	13,844.6	6,694.0	203.4	203.2	67.04	310.7	-7,124.8	225.5	-151.8	377.33	0.598	Level 1
13,907.2	6,782.0	13,850.3	6,694.0	203.6	203.4	67.03	310.7	-7,130.5	225.5	-152.1	377.65	0.597	Level 1, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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-334 - 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						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)					
0.0	0.0	0.0	0.0	0.0	0.0	2.73	58.3	2.8	58.4							
100.0	100.0	100.0	100.0	0.1	0.1	2.73	58.3	2.8	58.4	58.1	0.22	259.615				
200.0	200.0	200.0	200.0	0.3	0.3	2.73	58.3	2.8	58.4	57.7	0.67	86.538				
300.0	300.0	300.0	300.0	0.6	0.6	2.73	58.3	2.8	58.4	57.2	1.12	51.923				
400.0	400.0	400.0	400.0	0.8	0.8	2.73	58.3	2.8	58.4	56.8	1.57	37.088				
500.0	500.0	500.0	500.0	1.0	1.0	2.73	58.3	2.8	58.4	56.3	2.02	28.846				
600.0	600.0	600.0	600.0	1.2	1.2	2.73	58.3	2.8	58.4	55.9	2.47	23.601				
700.0	700.0	700.0	700.0	1.5	1.5	2.73	58.3	2.8	58.4	55.4	2.92	19.970				
800.0	800.0	800.0	800.0	1.7	1.7	2.73	58.3	2.8	58.4	55.0	3.37	17.308				
900.0	900.0	900.0	900.0	1.9	1.9	2.73	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	2.73	58.3	2.8	58.4	54.1	4.27	13.664 CC				
1,100.0	1,100.0	1,099.1	1,099.1	2.4	2.4	3.15	59.0	3.2	59.1	54.4	4.72	12.534				
1,200.0	1,200.0	1,198.2	1,198.1	2.6	2.6	4.33	61.2	4.6	61.4	56.2	5.16	11.898				
1,300.0	1,300.0	1,297.1	1,297.0	2.8	2.8	6.11	64.8	6.9	65.2	59.6	5.60	11.638				
1,400.0	1,400.0	1,395.9	1,395.6	3.0	3.0	8.28	69.8	10.2	70.7	64.6	6.05	11.679				
1,500.0	1,500.0	1,494.4	1,493.8	3.3	3.2	10.61	76.2	14.3	77.8	71.3	6.51	11.961				
1,600.0	1,600.0	1,592.6	1,591.6	3.5	3.5	12.93	84.1	19.3	86.7	79.7	6.97	12.439				
1,700.0	1,700.0	1,690.5	1,688.8	3.7	3.7	15.12	93.3	25.2	97.3	89.8	7.44	13.074				
1,800.0	1,800.0	1,788.5	1,786.0	3.9	4.0	17.11	103.8	32.0	109.6	101.6	7.93	13.822				
1,900.0	1,900.0	1,887.6	1,884.3	4.2	4.3	18.77	114.9	39.0	122.4	113.9	8.42	14.525				
2,000.0	2,000.0	1,986.7	1,982.5	4.4	4.5	20.11	125.9	46.1	135.3	126.3	8.93	15.147				
2,100.0	2,100.0	2,085.9	2,080.8	4.6	4.8	-48.93	137.0	53.2	147.6	138.4	9.21	16.030				
2,200.0	2,200.0	2,185.3	2,179.3	4.8	5.1	-48.60	148.1	60.3	158.9	149.3	9.65	16.464				
2,300.0	2,299.9	2,284.8	2,277.9	5.0	5.4	-48.75	159.2	67.4	169.0	158.9	10.10	16.737				
2,400.0	2,399.7	2,384.4	2,376.6	5.2	5.7	-49.31	170.3	74.5	178.0	167.5	10.55	16.870				
2,500.0	2,499.4	2,484.0	2,475.4	5.5	6.0	-50.23	181.4	81.6	185.9	174.9	11.01	16.880				
2,600.0	2,598.9	2,583.7	2,574.2	5.7	6.3	-51.48	192.5	88.7	192.8	181.3	11.48	16.784				
2,700.0	2,698.3	2,683.3	2,673.0	5.9	6.6	-53.05	203.6	95.9	198.7	186.7	11.97	16.597				
2,800.0	2,797.5	2,783.0	2,771.8	6.2	7.0	-54.86	214.7	103.0	203.9	191.5	12.47	16.352				
2,900.0	2,896.6	2,882.7	2,870.5	6.4	7.3	-56.60	225.8	110.1	209.4	196.4	12.99	16.121				
3,000.0	2,995.8	2,982.3	2,969.3	6.7	7.6	-58.25	236.9	117.2	215.0	201.5	13.51	15.911				
3,100.0	3,095.0	3,082.0	3,068.1	7.0	7.9	-59.82	248.0	124.3	220.8	206.7	14.05	15.717				
3,200.0	3,194.2	3,181.6	3,166.9	7.2	8.2	-61.31	259.2	131.4	226.7	212.1	14.59	15.539				
3,300.0	3,293.4	3,281.3	3,265.6	7.5	8.5	-62.72	270.3	138.6	232.8	217.7	15.14	15.375				
3,400.0	3,392.6	3,380.9	3,364.4	7.8	8.8	-64.06	281.4	145.7	239.1	223.4	15.70	15.224				
3,500.0	3,491.8	3,480.6	3,463.2	8.1	9.2	-65.33	292.5	152.8	245.4	229.1	16.27	15.084				
3,600.0	3,591.0	3,580.2	3,562.0	8.4	9.5	-66.54	303.6	159.9	251.9	235.0	16.84	14.954				
3,700.0	3,690.2	3,679.9	3,660.8	8.7	9.8	-67.68	314.7	167.0	258.4	241.0	17.42	14.835				
3,800.0	3,789.4	3,779.5	3,759.5	9.0	10.1	-68.77	325.8	174.1	265.1	247.1	18.01	14.724				
3,900.0	3,888.6	3,879.2	3,858.3	9.2	10.5	-69.80	336.9	181.2	271.9	253.3	18.60	14.621				
4,000.0	3,987.7	3,978.8	3,957.1	9.5	10.8	-70.79	348.0	188.4	278.7	259.5	19.19	14.525				
4,100.0	4,086.9	4,078.5	4,055.9	9.8	11.1	-71.73	359.1	195.5	285.6	265.9	19.79	14.436				
4,200.0	4,186.1	4,178.1	4,154.6	10.1	11.4	-72.62	370.3	202.6	292.6	272.3	20.39	14.353				
4,300.0	4,285.3	4,277.8	4,253.4	10.4	11.7	-73.47	381.4	209.7	299.7	278.7	20.99	14.276				
4,400.0	4,384.5	4,377.5	4,352.2	10.8	12.1	-74.28	392.5	216.8	306.8	285.2	21.60	14.204				
4,500.0	4,483.7	4,477.1	4,451.0	11.1	12.4	-75.05	403.6	223.9	314.0	291.8	22.21	14.137				
4,600.0	4,582.9	4,576.8	4,549.7	11.3	12.7	-75.79	414.7	231.1	321.3	298.5	22.80	14.092				
4,700.0	4,682.5	4,676.4	4,648.5	11.6	13.0	-76.09	425.8	238.2	329.4	306.1	23.31	14.134				
4,800.0	4,782.3	4,776.0	4,747.2	11.8	13.4	-75.81	436.9	245.3	338.4	314.6	23.76	14.239				
4,900.0	4,882.3	4,875.3	4,845.7	11.9	13.7	-75.02	448.0	252.4	348.2	324.1	24.17	14.407				
5,000.0	4,982.3	4,974.5	4,943.9	12.1	14.0	-3.79	459.0	259.4	358.8	334.7	24.07	14.909				

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 1W-314
<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 1W-314	<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-334 - 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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,082.3	5,073.6	5,042.2	12.3	14.3	-2.57		470.1	266.5	369.6	344.9	24.64	15.000	
5,200.0	5,182.3	5,175.2	5,142.9	12.5	14.7	-1.40		481.3	273.7	380.4	355.2	25.21	15.090	
5,300.0	5,282.3	5,287.2	5,254.3	12.7	14.9	-0.43		491.3	280.1	389.2	363.5	25.74	15.124	
5,400.0	5,382.3	5,399.9	5,366.8	12.9	15.2	0.16		497.5	284.1	394.8	368.6	26.20	15.066	
5,500.0	5,482.3	5,513.1	5,479.9	13.1	15.3	0.40		500.1	285.7	397.1	370.4	26.62	14.916	
5,600.0	5,582.3	5,615.5	5,582.3	13.3	15.5	0.40		500.1	285.8	397.1	370.1	27.00	14.707	
5,700.0	5,682.3	5,715.5	5,682.3	13.5	15.7	0.40		500.1	285.8	397.1	369.7	27.40	14.495	
5,800.0	5,782.3	5,815.5	5,782.3	13.7	15.8	0.40		500.1	285.8	397.1	369.3	27.79	14.288	
5,900.0	5,882.3	5,915.5	5,882.3	13.9	16.0	0.40		500.1	285.8	397.1	368.9	28.19	14.087	
6,000.0	5,982.3	6,015.5	5,982.3	14.1	16.2	0.40		500.1	285.8	397.1	368.5	28.59	13.890	
6,100.0	6,082.3	6,115.7	6,082.4	14.3	16.4	90.37		500.1	284.3	397.1	368.3	28.85	13.763	
6,200.0	6,181.4	6,216.0	6,181.8	14.4	16.5	90.31		500.1	271.5	397.1	368.0	29.09	13.651	
6,300.0	6,278.1	6,316.2	6,278.6	14.5	16.5	90.24		500.1	245.8	397.1	367.9	29.23	13.584	
6,400.0	6,370.7	6,416.4	6,371.2	14.6	16.5	90.16		500.1	207.6	397.1	367.8	29.34	13.533	
6,500.0	6,457.6	6,516.5	6,457.9	14.6	16.5	90.08		500.1	157.8	397.1	367.6	29.52	13.453	
6,600.0	6,537.3	6,616.5	6,537.4	14.8	16.5	90.01		500.1	97.1	397.1	367.2	29.89	13.286	
6,601.8	6,538.7	6,618.3	6,538.7	14.8	16.5	90.00		500.1	95.9	397.1	367.2	29.90	13.281	
6,700.0	6,608.5	6,716.5	6,608.1	15.2	16.4	89.93		500.1	26.6	397.1	366.5	30.62	12.970	
6,800.0	6,669.9	6,816.4	6,669.0	15.8	16.4	89.85		500.1	-52.5	397.1	365.2	31.86	12.465	
6,900.0	6,720.5	6,916.2	6,719.1	16.7	17.1	89.77		500.1	-138.8	397.1	363.4	33.72	11.776	
7,000.0	6,759.4	7,016.0	6,757.4	18.0	18.4	89.70		500.1	-230.8	397.1	360.9	36.24	10.957	
7,100.0	6,786.0	7,115.7	6,783.5	19.6	20.0	89.64		500.1	-327.0	397.1	357.7	39.37	10.087	
7,200.0	6,799.7	7,215.3	6,796.8	21.4	21.8	89.58		500.1	-425.7	397.1	354.1	42.98	9.238	
7,300.0	6,801.6	7,315.1	6,798.3	23.4	23.7	89.52		500.1	-525.4	397.1	350.2	46.96	8.457	
7,400.0	6,801.3	7,415.1	6,797.7	25.6	25.9	89.48		500.1	-625.4	397.1	345.9	51.22	7.753	
7,500.0	6,801.0	7,515.1	6,797.1	27.8	28.1	89.43		500.1	-725.4	397.1	341.4	55.73	7.126	
7,600.0	6,800.7	7,615.1	6,796.5	30.2	30.4	89.39		500.1	-825.4	397.1	336.7	60.42	6.572	
7,700.0	6,800.4	7,715.1	6,795.9	32.6	32.8	89.34		500.1	-925.4	397.1	331.9	65.26	6.085	
7,800.0	6,800.1	7,815.1	6,795.3	35.1	35.3	89.30		500.1	-1,025.4	397.1	326.9	70.22	5.655	
7,900.0	6,799.8	7,915.1	6,794.6	37.6	37.8	89.25		500.1	-1,125.4	397.1	321.9	75.27	5.276	
8,000.0	6,799.5	8,015.1	6,794.0	40.2	40.4	89.21		500.1	-1,225.4	397.1	316.7	80.40	4.940	
8,100.0	6,799.2	8,115.1	6,793.4	42.8	43.0	89.16		500.1	-1,325.4	397.1	311.6	85.58	4.640	
8,200.0	6,798.9	8,215.1	6,792.8	45.4	45.6	89.12		500.1	-1,425.4	397.1	306.3	90.82	4.373	
8,300.0	6,798.6	8,315.1	6,792.2	48.1	48.2	89.07		500.1	-1,525.4	397.1	301.0	96.10	4.132	
8,400.0	6,798.3	8,415.1	6,791.6	50.7	50.8	89.03		500.1	-1,625.4	397.2	295.7	101.42	3.916	
8,500.0	6,798.0	8,515.1	6,791.0	53.4	53.5	88.98		500.1	-1,725.4	397.2	290.4	106.77	3.720	
8,600.0	6,797.7	8,615.1	6,790.4	56.1	56.2	88.94		500.1	-1,825.4	397.2	285.0	112.15	3.542	
8,700.0	6,797.5	8,715.1	6,789.8	58.8	58.9	88.89		500.1	-1,925.4	397.2	279.6	117.54	3.379	
8,800.0	6,797.2	8,815.1	6,789.1	61.5	61.6	88.84		500.1	-2,025.4	397.2	274.2	122.96	3.230	
8,900.0	6,796.9	8,915.1	6,788.5	64.2	64.3	88.80		500.1	-2,125.4	397.2	268.8	128.40	3.093	
9,000.0	6,796.6	9,015.1	6,787.9	67.0	67.0	88.75		500.1	-2,225.4	397.2	263.3	133.84	2.968	
9,100.0	6,796.3	9,115.1	6,787.3	69.7	69.7	88.71		500.1	-2,325.4	397.2	257.9	139.31	2.851	
9,200.0	6,796.0	9,215.1	6,786.7	72.4	72.5	88.66		500.2	-2,425.4	397.2	252.4	144.78	2.743	
9,300.0	6,795.7	9,315.1	6,786.1	75.2	75.2	88.62		500.2	-2,525.4	397.2	246.9	150.27	2.643	
9,400.0	6,795.4	9,415.1	6,785.5	77.9	78.0	88.57		500.2	-2,625.4	397.2	241.5	155.76	2.550	
9,500.0	6,795.1	9,515.1	6,784.9	80.7	80.7	88.53		500.2	-2,725.4	397.2	236.0	161.26	2.463	
9,600.0	6,794.8	9,615.1	6,784.3	83.4	83.5	88.48		500.2	-2,825.4	397.2	230.5	166.77	2.382	
9,700.0	6,794.5	9,715.1	6,783.6	86.2	86.2	88.44		500.2	-2,925.4	397.2	225.0	172.29	2.306	
9,800.0	6,794.2	9,815.1	6,783.0	89.0	89.0	88.39		500.2	-3,025.4	397.3	219.4	177.81	2.234	
9,900.0	6,793.9	9,915.1	6,782.4	91.7	91.7	88.35		500.2	-3,125.4	397.3	213.9	183.34	2.167	
10,000.0	6,793.6	10,015.1	6,781.8	94.5	94.5	88.30		500.2	-3,225.3	397.3	208.4	188.87	2.103	

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 1W-314
<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 1W-314	<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-334 - 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	6,793.3	10,115.1	6,781.2	97.3	97.3	88.26	500.2	-3,325.3	397.3	202.9	194.40	2.044	
10,200.0	6,793.0	10,215.1	6,780.6	100.0	100.0	88.21	500.2	-3,425.3	397.3	197.3	199.95	1.987	
10,300.0	6,792.7	10,315.1	6,780.0	102.8	102.8	88.17	500.2	-3,525.3	397.3	191.8	205.49	1.933	
10,400.0	6,792.4	10,415.1	6,779.4	105.6	105.6	88.12	500.2	-3,625.3	397.3	186.3	211.04	1.883	
10,500.0	6,792.1	10,515.1	6,778.8	108.4	108.4	88.07	500.2	-3,725.3	397.3	180.7	216.59	1.834	
10,600.0	6,791.8	10,615.1	6,778.2	111.1	111.1	88.03	500.2	-3,825.3	397.3	175.2	222.14	1.789	
10,700.0	6,791.5	10,715.1	6,777.5	113.9	113.9	87.98	500.2	-3,925.3	397.3	169.6	227.70	1.745	
10,800.0	6,791.2	10,815.1	6,776.9	116.7	116.7	87.94	500.2	-4,025.3	397.4	164.1	233.26	1.704	
10,900.0	6,790.9	10,915.1	6,776.3	119.5	119.5	87.89	500.2	-4,125.3	397.4	158.6	238.82	1.664	
11,000.0	6,790.6	11,015.1	6,775.7	122.3	122.3	87.85	500.2	-4,225.3	397.4	153.0	244.38	1.626	
11,100.0	6,790.3	11,115.1	6,775.1	125.1	125.1	87.80	500.2	-4,325.3	397.4	147.4	249.94	1.590	
11,200.0	6,790.0	11,215.1	6,774.5	127.9	127.8	87.76	500.2	-4,425.3	397.4	141.9	255.51	1.555	
11,300.0	6,789.7	11,315.1	6,773.9	130.6	130.6	87.71	500.2	-4,525.3	397.4	136.3	261.08	1.522	
11,400.0	6,789.4	11,415.1	6,773.3	133.4	133.4	87.67	500.2	-4,625.3	397.4	130.8	266.64	1.490	Level 3
11,500.0	6,789.1	11,515.1	6,772.7	136.2	136.2	87.62	500.2	-4,725.3	397.4	125.2	272.21	1.460	Level 3
11,600.0	6,788.8	11,615.1	6,772.0	139.0	139.0	87.58	500.2	-4,825.3	397.5	119.7	277.79	1.431	Level 3
11,700.0	6,788.5	11,715.1	6,771.4	141.8	141.8	87.53	500.2	-4,925.3	397.5	114.1	283.36	1.403	Level 3
11,800.0	6,788.3	11,815.1	6,770.8	144.6	144.6	87.49	500.2	-5,025.3	397.5	108.6	288.93	1.376	Level 3
11,900.0	6,788.0	11,915.1	6,770.2	147.4	147.4	87.44	500.2	-5,125.3	397.5	103.0	294.50	1.350	Level 3
12,000.0	6,787.7	12,015.1	6,769.6	150.2	150.2	87.40	500.2	-5,225.3	397.5	97.4	300.08	1.325	Level 3
12,100.0	6,787.4	12,115.1	6,769.0	153.0	152.9	87.35	500.2	-5,325.3	397.5	91.9	305.65	1.301	Level 3
12,200.0	6,787.1	12,215.1	6,768.4	155.8	155.7	87.31	500.2	-5,425.3	397.5	86.3	311.23	1.277	Level 3
12,300.0	6,786.8	12,315.1	6,767.8	158.6	158.5	87.26	500.2	-5,525.3	397.6	80.7	316.81	1.255	Level 3
12,400.0	6,786.5	12,415.1	6,767.2	161.4	161.3	87.22	500.2	-5,625.3	397.6	75.2	322.38	1.233	Level 2
12,500.0	6,786.2	12,515.1	6,766.5	164.2	164.1	87.17	500.2	-5,725.3	397.6	69.6	327.96	1.212	Level 2
12,600.0	6,785.9	12,615.1	6,765.9	167.0	166.9	87.12	500.2	-5,825.3	397.6	64.1	333.54	1.192	Level 2
12,700.0	6,785.6	12,715.1	6,765.3	169.8	169.7	87.08	500.2	-5,925.3	397.6	58.5	339.11	1.173	Level 2
12,800.0	6,785.3	12,815.1	6,764.7	172.6	172.5	87.03	500.2	-6,025.3	397.6	52.9	344.69	1.154	Level 2
12,900.0	6,785.0	12,915.1	6,764.1	175.4	175.3	86.99	500.2	-6,125.3	397.6	47.4	350.27	1.135	Level 2
13,000.0	6,784.7	13,015.1	6,763.5	178.2	178.1	86.94	500.2	-6,225.3	397.7	41.8	355.85	1.118	Level 2
13,100.0	6,784.4	13,115.1	6,762.9	181.0	180.9	86.90	500.2	-6,325.3	397.7	36.3	361.43	1.100	Level 2
13,200.0	6,784.1	13,215.1	6,762.3	183.8	183.7	86.85	500.2	-6,425.3	397.7	30.7	367.00	1.084	Level 2
13,300.0	6,783.8	13,315.1	6,761.7	186.6	186.5	86.81	500.2	-6,525.3	397.7	25.1	372.58	1.067	Level 2
13,400.0	6,783.5	13,415.1	6,761.0	189.4	189.3	86.76	500.2	-6,625.3	397.7	19.6	378.16	1.052	Level 2
13,500.0	6,783.2	13,515.1	6,760.4	192.2	192.1	86.72	500.2	-6,725.3	397.8	14.0	383.74	1.037	Level 2
13,600.0	6,782.9	13,615.1	6,759.8	195.0	194.9	86.67	500.2	-6,825.3	397.8	8.5	389.32	1.022	Level 2
13,700.0	6,782.6	13,715.1	6,759.2	197.8	197.7	86.63	500.2	-6,925.3	397.8	2.9	394.89	1.007	Level 2
13,800.0	6,782.3	13,815.1	6,758.6	200.6	200.5	86.58	500.2	-7,025.3	397.8	-2.7	400.47	0.993	Level 1
13,857.1	6,782.1	13,872.1	6,758.3	202.2	202.1	86.56	500.2	-7,082.3	397.8	-5.8	403.65	0.986	Level 1
13,900.0	6,782.0	13,914.0	6,758.0	203.4	203.3	86.54	500.2	-7,124.2	397.8	-8.2	406.02	0.980	Level 1
13,907.2	6,782.0	13,914.0	6,758.0	203.6	203.3	86.54	500.2	-7,124.2	397.9	-8.3	406.22	0.980	Level 1, ES, SF

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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	-180.00	-180.00	-32.8	0.0	32.8				
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-180.00	-32.8	0.0	32.8	32.6	0.22	145.859	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-180.00	-32.8	0.0	32.8	32.1	0.67	48.620	
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-180.00	-32.8	0.0	32.8	31.7	1.12	29.172	
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-180.00	-32.8	0.0	32.8	31.2	1.57	20.837	
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-180.00	-32.8	0.0	32.8	30.8	2.02	16.207	
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-180.00	-32.8	0.0	32.8	30.3	2.47	13.260	
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-180.00	-32.8	0.0	32.8	29.9	2.92	11.220	
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-180.00	-32.8	0.0	32.8	29.4	3.37	9.724	
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-180.00	-32.8	0.0	32.8	29.0	3.82	8.580	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-180.00	-32.8	0.0	32.8	28.5	4.27	7.677	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-180.00	-180.00	-32.8	0.0	32.8	28.1	4.72	6.946	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-180.00	-180.00	-32.8	0.0	32.8	27.6	5.17	6.342	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-180.00	-180.00	-32.8	0.0	32.8	27.2	5.62	5.834	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-180.00	-180.00	-32.8	0.0	32.8	26.7	6.07	5.402	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-180.00	-180.00	-32.8	0.0	32.8	26.3	6.52	5.030	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-180.00	-180.00	-32.8	0.0	32.8	25.8	6.97	4.705 CC	
1,700.0	1,700.0	1,699.7	1,699.7	3.7	3.7	178.73	-33.2	-33.2	0.7	33.2	25.9	7.39	4.496	
1,800.0	1,800.0	1,799.3	1,799.3	3.9	3.9	175.12	-34.6	-34.6	3.0	34.7	26.9	7.80	4.451	
1,900.0	1,900.0	1,898.8	1,898.7	4.2	4.1	169.79	-36.9	-36.9	6.6	37.5	29.3	8.22	4.561	
2,000.0	2,000.0	1,998.2	1,997.8	4.4	4.3	163.59	-40.0	-40.0	11.8	41.8	33.1	8.63	4.839	
2,100.0	2,100.0	2,097.3	2,096.7	4.6	4.5	88.35	-44.1	-44.1	18.4	47.8	38.8	9.06	5.282	
2,200.0	2,200.0	2,196.2	2,195.2	4.8	4.7	85.10	-49.0	-49.0	26.4	55.5	46.0	9.47	5.860	
2,300.0	2,299.9	2,294.9	2,293.2	5.0	4.9	83.35	-54.8	-54.8	35.9	64.5	54.6	9.89	6.525	
2,400.0	2,399.7	2,394.3	2,391.8	5.2	5.2	82.90	-61.2	-61.2	46.3	74.3	64.0	10.32	7.202	
2,500.0	2,499.4	2,493.8	2,490.6	5.5	5.4	83.72	-67.7	-67.7	56.8	83.9	73.1	10.76	7.798	
2,600.0	2,598.9	2,593.4	2,589.4	5.7	5.7	85.41	-74.1	-74.1	67.3	93.4	82.1	11.22	8.322	
2,700.0	2,698.3	2,692.8	2,688.1	5.9	5.9	87.75	-80.5	-80.5	77.7	102.8	91.1	11.70	8.791	
2,800.0	2,797.5	2,792.2	2,786.7	6.2	6.2	90.42	-87.0	-87.0	88.2	112.4	100.2	12.20	9.220	
2,900.0	2,896.6	2,891.6	2,885.4	6.4	6.5	92.72	-93.4	-93.4	98.7	122.3	109.6	12.71	9.622	
3,000.0	2,995.8	2,991.0	2,984.0	6.7	6.8	94.68	-99.8	-99.8	109.2	132.3	119.0	13.23	9.998	
3,100.0	3,095.0	3,090.4	3,082.6	7.0	7.1	96.36	-106.3	-106.3	119.6	142.4	128.6	13.76	10.347	
3,200.0	3,194.2	3,189.8	3,181.3	7.2	7.3	97.81	-112.7	-112.7	130.1	152.6	138.3	14.30	10.671	
3,300.0	3,293.4	3,289.3	3,279.9	7.5	7.6	99.09	-119.1	-119.1	140.6	162.9	148.1	14.85	10.973	
3,400.0	3,392.6	3,388.7	3,378.6	7.8	7.9	100.21	-125.5	-125.5	151.0	173.3	157.9	15.40	11.252	
3,500.0	3,491.8	3,488.1	3,477.2	8.1	8.2	101.20	-132.0	-132.0	161.5	183.8	167.8	15.96	11.512	
3,600.0	3,591.0	3,587.5	3,575.9	8.4	8.5	102.09	-138.4	-138.4	172.0	194.3	177.7	16.53	11.754	
3,700.0	3,690.2	3,686.9	3,674.5	8.7	8.8	102.89	-144.8	-144.8	182.4	204.8	187.7	17.10	11.979	
3,800.0	3,789.4	3,786.3	3,773.1	9.0	9.1	103.60	-151.3	-151.3	192.9	215.4	197.7	17.67	12.189	
3,900.0	3,888.6	3,885.7	3,871.8	9.2	9.4	104.26	-157.7	-157.7	203.4	226.0	207.7	18.24	12.385	
4,000.0	3,987.7	3,985.1	3,970.4	9.5	9.7	104.85	-164.1	-164.1	213.8	236.6	217.8	18.82	12.568	
4,100.0	4,086.9	4,084.5	4,069.1	9.8	10.0	105.39	-170.6	-170.6	224.3	247.2	227.8	19.41	12.739	
4,200.0	4,186.1	4,183.9	4,167.7	10.1	10.4	105.89	-177.0	-177.0	234.8	257.9	237.9	19.99	12.900	
4,300.0	4,285.3	4,283.3	4,266.4	10.4	10.7	106.34	-183.4	-183.4	245.2	268.6	248.0	20.58	13.051	
4,400.0	4,384.5	4,382.7	4,365.0	10.8	11.0	106.77	-189.8	-189.8	255.7	279.3	258.1	21.17	13.193	
4,500.0	4,483.7	4,483.2	4,464.7	11.1	11.3	107.17	-196.3	-196.3	266.2	290.0	268.2	21.76	13.326	
4,600.0	4,582.9	4,588.7	4,569.7	11.3	11.5	107.98	-201.8	-201.8	275.1	299.2	276.9	22.30	13.418	
4,700.0	4,682.5	4,694.5	4,675.3	11.6	11.8	108.84	-205.2	-205.2	280.7	305.5	282.8	22.75	13.429	
4,800.0	4,782.3	4,800.5	4,781.2	11.8	11.9	109.57	-206.6	-206.6	282.9	308.8	285.7	23.16	13.333	
4,900.0	4,882.3	4,901.5	4,882.3	11.9	12.1	110.00	-206.6	-206.6	283.0	309.6	286.1	23.53	13.160	
5,000.0	4,982.3	5,001.5	4,982.3	12.1	12.3	180.00	-206.6	-206.6	283.0	309.7	287.5	22.21	13.945	

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 1W-314
<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 1W-314	<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)			
5,100.0	5,082.3	5,101.5	5,082.3	12.3	12.5	180.00	-206.6	283.0	309.7	287.1	22.61	13.694	
5,200.0	5,182.3	5,201.5	5,182.3	12.5	12.7	180.00	-206.6	283.0	309.7	286.6	23.02	13.451	
5,300.0	5,282.3	5,301.5	5,282.3	12.7	12.8	180.00	-206.6	283.0	309.7	286.2	23.43	13.216	
5,400.0	5,382.3	5,401.5	5,382.3	12.9	13.0	180.00	-206.6	283.0	309.7	285.8	23.84	12.988	
5,500.0	5,482.3	5,501.5	5,482.3	13.1	13.2	180.00	-206.6	283.0	309.7	285.4	24.26	12.767	
5,600.0	5,582.3	5,601.5	5,582.3	13.3	13.4	180.00	-206.6	283.0	309.7	285.0	24.67	12.553	
5,700.0	5,682.3	5,701.5	5,682.3	13.5	13.6	180.00	-206.6	283.0	309.7	284.6	25.08	12.345	
5,800.0	5,782.3	5,801.5	5,782.3	13.7	13.8	180.00	-206.6	283.0	309.7	284.2	25.50	12.143	
5,900.0	5,882.3	5,901.5	5,882.3	13.9	14.0	180.00	-206.6	283.0	309.7	283.7	25.92	11.948	
6,000.0	5,982.3	6,001.5	5,982.3	14.1	14.2	180.00	-206.6	283.0	309.7	283.3	26.34	11.758	
6,051.6	6,033.8	6,053.1	6,033.8	14.2	14.3	-90.14	-206.6	283.0	309.7	281.6	28.04	11.044	
6,100.0	6,082.3	6,101.5	6,082.3	14.3	14.4	-90.24	-206.6	283.0	309.7	281.4	28.23	10.970	
6,200.0	6,181.4	6,201.7	6,182.4	14.4	14.5	-91.87	-206.6	279.5	309.8	281.3	28.50	10.872	
6,300.0	6,278.1	6,303.3	6,282.5	14.5	14.6	-93.56	-206.6	263.0	310.3	281.6	28.65	10.830	
6,400.0	6,370.7	6,406.1	6,380.8	14.6	14.7	-95.19	-206.6	233.0	310.9	282.2	28.74	10.820	
6,500.0	6,457.6	6,510.2	6,475.2	14.6	14.7	-96.74	-206.6	189.5	311.8	283.0	28.85	10.808	
6,600.0	6,537.3	6,615.5	6,563.9	14.8	14.8	-98.16	-206.6	132.8	312.9	283.7	29.12	10.745	
6,700.0	6,608.5	6,721.9	6,644.7	15.2	15.0	-99.44	-206.6	63.7	313.9	284.2	29.70	10.571	
6,800.0	6,669.9	6,829.4	6,715.8	15.8	15.4	-100.55	-206.6	-16.8	315.0	284.2	30.78	10.235	
6,900.0	6,720.5	6,937.9	6,775.4	16.7	16.3	-101.47	-206.6	-107.4	316.0	283.5	32.50	9.724	
7,000.0	6,759.4	7,047.1	6,821.8	18.0	17.5	-102.18	-206.6	-206.1	316.8	281.9	34.92	9.072	
7,100.0	6,786.0	7,156.9	6,853.8	19.6	19.2	-102.66	-206.6	-311.0	317.4	279.3	38.04	8.344	
7,200.0	6,799.7	7,267.0	6,870.5	21.4	21.2	-102.91	-206.6	-419.8	317.7	276.0	41.72	7.615	
7,300.0	6,801.6	7,372.9	6,872.8	23.4	23.3	-102.96	-206.6	-525.6	317.8	272.0	45.73	6.949	
7,400.0	6,801.3	7,472.9	6,872.6	25.6	25.5	-102.97	-206.6	-625.6	317.8	267.9	49.91	6.367	
7,500.0	6,801.0	7,572.9	6,872.4	27.8	27.8	-102.99	-206.6	-725.6	317.8	263.5	54.32	5.850	
7,600.0	6,800.7	7,672.9	6,872.2	30.2	30.1	-103.00	-206.6	-825.6	317.8	258.9	58.92	5.394	
7,700.0	6,800.4	7,772.9	6,872.0	32.6	32.5	-103.02	-206.6	-925.6	317.8	254.2	63.65	4.993	
7,800.0	6,800.1	7,872.9	6,871.8	35.1	35.0	-103.03	-206.6	-1,025.6	317.9	249.4	68.50	4.640	
7,900.0	6,799.8	7,972.9	6,871.6	37.6	37.6	-103.05	-206.6	-1,125.6	317.9	244.4	73.43	4.329	
8,000.0	6,799.5	8,072.9	6,871.4	40.2	40.1	-103.06	-206.6	-1,225.6	317.9	239.5	78.44	4.053	
8,100.0	6,799.2	8,172.9	6,871.2	42.8	42.7	-103.08	-206.6	-1,325.6	317.9	234.4	83.51	3.807	
8,200.0	6,798.9	8,272.9	6,871.0	45.4	45.4	-103.09	-206.6	-1,425.6	317.9	229.3	88.62	3.587	
8,300.0	6,798.6	8,372.9	6,870.8	48.1	48.0	-103.11	-206.6	-1,525.6	318.0	224.2	93.78	3.390	
8,400.0	6,798.3	8,472.9	6,870.5	50.7	50.7	-103.13	-206.6	-1,625.6	318.0	219.0	98.97	3.213	
8,500.0	6,798.0	8,572.9	6,870.3	53.4	53.3	-103.14	-206.6	-1,725.6	318.0	213.8	104.19	3.052	
8,600.0	6,797.7	8,672.9	6,870.1	56.1	56.0	-103.16	-206.6	-1,825.6	318.0	208.6	109.44	2.906	
8,700.0	6,797.5	8,772.9	6,869.9	58.8	58.7	-103.17	-206.6	-1,925.6	318.0	203.3	114.70	2.773	
8,800.0	6,797.2	8,872.9	6,869.7	61.5	61.4	-103.19	-206.6	-2,025.6	318.1	198.1	119.99	2.651	
8,900.0	6,796.9	8,972.9	6,869.5	64.2	64.2	-103.20	-206.6	-2,125.6	318.1	192.8	125.29	2.539	
9,000.0	6,796.6	9,072.9	6,869.3	67.0	66.9	-103.22	-206.6	-2,225.6	318.1	187.5	130.60	2.436	
9,100.0	6,796.3	9,172.9	6,869.1	69.7	69.6	-103.23	-206.6	-2,325.6	318.1	182.2	135.93	2.340	
9,200.0	6,796.0	9,272.9	6,868.9	72.4	72.4	-103.25	-206.6	-2,425.6	318.1	176.9	141.27	2.252	
9,300.0	6,795.7	9,372.9	6,868.7	75.2	75.1	-103.26	-206.6	-2,525.6	318.2	171.5	146.62	2.170	
9,400.0	6,795.4	9,472.9	6,868.5	77.9	77.9	-103.28	-206.6	-2,625.6	318.2	166.2	151.97	2.094	
9,500.0	6,795.1	9,572.9	6,868.2	80.7	80.6	-103.29	-206.6	-2,725.6	318.2	160.9	157.34	2.022	
9,600.0	6,794.8	9,672.9	6,868.0	83.4	83.4	-103.31	-206.6	-2,825.6	318.2	155.5	162.71	1.956	
9,700.0	6,794.5	9,772.9	6,867.8	86.2	86.1	-103.32	-206.6	-2,925.6	318.2	150.1	168.08	1.893	
9,800.0	6,794.2	9,872.9	6,867.6	89.0	88.9	-103.34	-206.6	-3,025.6	318.3	144.8	173.46	1.835	
9,900.0	6,793.9	9,972.9	6,867.4	91.7	91.7	-103.35	-206.6	-3,125.6	318.3	139.4	178.85	1.780	
10,000.0	6,793.6	10,072.9	6,867.2	94.5	94.4	-103.37	-206.6	-3,225.6	318.3	134.1	184.24	1.728	

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 1W-314
<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 1W-314	<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
10,100.0	6,793.3	10,172.9	6,867.0	97.3	97.2	-103.39	-103.39	-206.6	-3,325.6	318.3	128.7	189.64	1.679	
10,200.0	6,793.0	10,272.9	6,866.8	100.0	100.0	-103.40	-103.40	-206.6	-3,425.6	318.3	123.3	195.03	1.632	
10,300.0	6,792.7	10,372.9	6,866.6	102.8	102.8	-103.42	-103.42	-206.6	-3,525.6	318.4	117.9	200.44	1.588	
10,400.0	6,792.4	10,472.9	6,866.4	105.6	105.5	-103.43	-103.43	-206.6	-3,625.6	318.4	112.5	205.84	1.547	
10,500.0	6,792.1	10,572.9	6,866.1	108.4	108.3	-103.45	-103.45	-206.6	-3,725.6	318.4	107.1	211.25	1.507	
10,600.0	6,791.8	10,672.9	6,865.9	111.1	111.1	-103.46	-103.46	-206.6	-3,825.6	318.4	101.8	216.66	1.470	Level 3
10,700.0	6,791.5	10,772.9	6,865.7	113.9	113.9	-103.48	-103.48	-206.6	-3,925.6	318.4	96.4	222.07	1.434	Level 3
10,800.0	6,791.2	10,872.9	6,865.5	116.7	116.7	-103.49	-103.49	-206.6	-4,025.6	318.5	91.0	227.48	1.400	Level 3
10,900.0	6,790.9	10,972.9	6,865.3	119.5	119.5	-103.51	-103.51	-206.6	-4,125.6	318.5	85.6	232.90	1.367	Level 3
11,000.0	6,790.6	11,072.9	6,865.1	122.3	122.2	-103.52	-103.52	-206.6	-4,225.6	318.5	80.2	238.31	1.336	Level 3
11,100.0	6,790.3	11,172.9	6,864.9	125.1	125.0	-103.54	-103.54	-206.6	-4,325.6	318.5	74.8	243.73	1.307	Level 3
11,200.0	6,790.0	11,272.9	6,864.7	127.9	127.8	-103.55	-103.55	-206.6	-4,425.6	318.5	69.4	249.15	1.278	Level 3
11,300.0	6,789.7	11,372.9	6,864.5	130.6	130.6	-103.57	-103.57	-206.6	-4,525.6	318.6	64.0	254.57	1.251	Level 3
11,400.0	6,789.4	11,472.9	6,864.3	133.4	133.4	-103.58	-103.58	-206.6	-4,625.6	318.6	58.6	259.99	1.225	Level 2
11,500.0	6,789.1	11,572.9	6,864.1	136.2	136.2	-103.60	-103.60	-206.6	-4,725.6	318.6	53.2	265.42	1.200	Level 2
11,600.0	6,788.8	11,672.9	6,863.8	139.0	139.0	-103.61	-103.61	-206.6	-4,825.6	318.6	47.8	270.84	1.176	Level 2
11,700.0	6,788.5	11,772.9	6,863.6	141.8	141.8	-103.63	-103.63	-206.6	-4,925.6	318.6	42.4	276.27	1.153	Level 2
11,800.0	6,788.3	11,872.9	6,863.4	144.6	144.6	-103.64	-103.64	-206.6	-5,025.6	318.7	37.0	281.69	1.131	Level 2
11,900.0	6,788.0	11,972.9	6,863.2	147.4	147.4	-103.66	-103.66	-206.6	-5,125.6	318.7	31.6	287.12	1.110	Level 2
12,000.0	6,787.7	12,072.9	6,863.0	150.2	150.1	-103.68	-103.68	-206.6	-5,225.6	318.7	26.2	292.54	1.089	Level 2
12,100.0	6,787.4	12,172.9	6,862.8	153.0	152.9	-103.69	-103.69	-206.6	-5,325.6	318.7	20.8	297.97	1.070	Level 2
12,200.0	6,787.1	12,272.9	6,862.6	155.8	155.7	-103.71	-103.71	-206.6	-5,425.6	318.7	15.3	303.40	1.051	Level 2
12,300.0	6,786.8	12,372.9	6,862.4	158.6	158.5	-103.72	-103.72	-206.6	-5,525.6	318.8	9.9	308.82	1.032	Level 2
12,400.0	6,786.5	12,472.9	6,862.2	161.4	161.3	-103.74	-103.74	-206.6	-5,625.6	318.8	4.5	314.25	1.014	Level 2
12,500.0	6,786.2	12,572.9	6,862.0	164.2	164.1	-103.75	-103.75	-206.6	-5,725.6	318.8	-0.9	319.68	0.997	Level 1
12,600.0	6,785.9	12,672.9	6,861.7	167.0	166.9	-103.77	-103.77	-206.6	-5,825.6	318.8	-6.3	325.11	0.981	Level 1
12,700.0	6,785.6	12,772.9	6,861.5	169.8	169.7	-103.78	-103.78	-206.6	-5,925.6	318.8	-11.7	330.54	0.965	Level 1
12,800.0	6,785.3	12,872.9	6,861.3	172.6	172.5	-103.80	-103.80	-206.6	-6,025.6	318.9	-17.1	335.96	0.949	Level 1
12,900.0	6,785.0	12,972.9	6,861.1	175.4	175.3	-103.81	-103.81	-206.6	-6,125.6	318.9	-22.5	341.39	0.934	Level 1
13,000.0	6,784.7	13,072.9	6,860.9	178.2	178.1	-103.83	-103.83	-206.6	-6,225.6	318.9	-27.9	346.82	0.920	Level 1
13,100.0	6,784.4	13,172.9	6,860.7	181.0	180.9	-103.84	-103.84	-206.6	-6,325.6	318.9	-33.3	352.25	0.905	Level 1
13,200.0	6,784.1	13,272.9	6,860.5	183.8	183.7	-103.86	-103.86	-206.6	-6,425.6	318.9	-38.7	357.68	0.892	Level 1
13,300.0	6,783.8	13,372.9	6,860.3	186.6	186.5	-103.87	-103.87	-206.6	-6,525.6	319.0	-44.1	363.11	0.878	Level 1
13,400.0	6,783.5	13,472.9	6,860.1	189.4	189.3	-103.89	-103.89	-206.6	-6,625.6	319.0	-49.5	368.54	0.866	Level 1
13,500.0	6,783.2	13,572.9	6,859.9	192.2	192.1	-103.90	-103.90	-206.6	-6,725.6	319.0	-55.0	373.96	0.853	Level 1
13,600.0	6,782.9	13,672.9	6,859.7	195.0	194.9	-103.92	-103.92	-206.6	-6,825.6	319.0	-60.4	379.39	0.841	Level 1
13,700.0	6,782.6	13,772.9	6,859.4	197.8	197.7	-103.93	-103.93	-206.6	-6,925.6	319.1	-65.8	384.82	0.829	Level 1
13,800.0	6,782.3	13,872.9	6,859.2	200.6	200.5	-103.95	-103.95	-206.6	-7,025.6	319.1	-71.2	390.25	0.818	Level 1
13,900.0	6,782.0	13,972.9	6,859.0	203.4	203.3	-103.96	-103.96	-206.6	-7,125.6	319.1	-76.6	395.68	0.806	Level 1
13,907.2	6,782.0	13,980.1	6,859.0	203.6	203.5	-103.97	-103.97	-206.6	-7,132.8	319.1	-77.0	396.07	0.806	Level 1, ES, SF



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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
<b>Survey Program:</b> 761-MWD												<b>Offset Well Error:</b>	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)					
12,200.0	6,787.1	7,036.9	6,797.7	155.8	28.2	-86.74	-262.0	-6,286.0	935.1	762.6	172.51	5.421	
12,300.0	6,786.8	7,038.9	6,799.7	158.6	28.2	-87.05	-262.0	-6,286.1	844.0	668.6	175.33	4.814	
12,400.0	6,786.5	7,041.0	6,801.7	161.4	28.2	-87.37	-262.0	-6,286.1	755.1	576.9	178.16	4.238	
12,500.0	6,786.2	7,043.1	6,803.9	164.2	28.2	-87.70	-261.9	-6,286.2	669.3	488.3	180.98	3.698	
12,600.0	6,785.9	7,045.4	6,806.1	167.0	28.2	-88.06	-261.9	-6,286.3	588.1	404.3	183.80	3.200	
12,700.0	6,785.6	7,047.7	6,808.5	169.8	28.2	-88.43	-261.9	-6,286.4	513.4	326.8	186.61	2.751	
12,800.0	6,785.3	7,050.2	6,811.0	172.6	28.2	-88.82	-261.9	-6,286.4	448.8	259.4	189.42	2.369	
12,900.0	6,785.0	7,052.8	6,813.6	175.4	28.2	-89.23	-261.9	-6,286.5	399.0	206.8	192.22	2.076	
13,000.0	6,784.7	7,055.6	6,816.4	178.2	28.2	-89.66	-261.9	-6,286.6	370.1	175.1	195.01	1.898	
13,061.3	6,784.5	7,057.4	6,818.1	179.9	28.2	-89.94	-261.9	-6,286.7	365.0	168.3	196.72	1.855 CC, ES, SF	
13,100.0	6,784.4	7,058.5	6,819.3	181.0	28.2	-90.12	-261.9	-6,286.7	367.0	169.2	197.80	1.856	
13,200.0	6,784.1	7,067.0	6,827.8	183.8	28.2	-91.45	-262.0	-6,287.0	390.5	190.0	200.48	1.948	
13,300.0	6,783.8	7,067.0	6,827.8	186.6	28.2	-91.45	-262.0	-6,287.0	436.1	232.8	203.28	2.145	
13,400.0	6,783.5	7,067.0	6,827.8	189.4	28.2	-91.45	-262.0	-6,287.0	497.8	291.7	206.08	2.416	
13,500.0	6,783.2	7,071.7	6,832.4	192.2	28.2	-92.19	-262.0	-6,287.2	570.5	361.7	208.77	2.733	
13,600.0	6,782.9	7,075.1	6,835.9	195.0	28.2	-92.72	-262.0	-6,287.3	650.5	439.0	211.47	3.076	
13,700.0	6,782.6	7,078.6	6,839.3	197.8	28.3	-93.26	-262.0	-6,287.5	735.3	521.2	214.15	3.434	
13,800.0	6,782.3	7,082.0	6,842.8	200.6	28.3	-93.80	-262.0	-6,287.6	823.6	606.8	216.81	3.799	
13,900.0	6,782.0	7,085.5	6,846.2	203.4	28.3	-94.34	-262.0	-6,287.7	914.3	694.8	219.45	4.166	
13,907.2	6,782.0	7,085.7	6,846.5	203.6	28.3	-94.38	-262.0	-6,287.8	920.9	701.2	219.64	4.193	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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												Noffsinger Pad Sec.2-T5N-R65W - Noffsinger 32-2D - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft	
Survey Program: 668-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)						
12,800.0	6,785.3	6,974.7	6,809.5	172.6	25.8	87.38	255.6	-6,964.7	951.7	758.1	193.60	4.916					
12,900.0	6,785.0	6,975.9	6,810.7	175.4	25.8	87.83	255.6	-6,964.8	853.1	656.7	196.47	4.342					
13,000.0	6,784.7	6,977.1	6,811.9	178.2	25.8	88.29	255.5	-6,964.8	755.0	555.6	199.32	3.788					
13,100.0	6,784.4	6,978.4	6,813.2	181.0	25.8	88.76	255.5	-6,964.8	657.3	455.2	202.17	3.251					
13,200.0	6,784.1	6,979.6	6,814.5	183.8	25.8	89.24	255.4	-6,964.8	560.5	355.5	205.01	2.734					
13,300.0	6,783.8	6,981.0	6,815.8	186.6	25.8	89.74	255.4	-6,964.9	465.1	257.3	207.83	2.238					
13,400.0	6,783.5	6,982.3	6,817.1	189.4	25.8	90.24	255.3	-6,964.9	372.1	161.4	210.64	1.766					
13,500.0	6,783.2	6,983.7	6,818.5	192.2	25.8	90.76	255.3	-6,964.9	283.8	70.3	213.44	1.330	Level 3				
13,600.0	6,782.9	6,985.1	6,819.9	195.0	25.8	91.29	255.2	-6,964.9	206.5	-9.7	216.22	0.955	Level 1				
13,700.0	6,782.6	6,986.6	6,821.4	197.8	25.8	91.84	255.2	-6,964.9	157.2	-61.7	218.98	0.718	Level 1				
13,739.5	6,782.5	6,987.1	6,822.0	198.9	25.8	92.06	255.1	-6,965.0	152.2	-67.9	220.06	0.692	Level 1, CC, ES, SF				
13,800.0	6,782.3	6,988.0	6,822.9	200.6	25.8	92.40	255.1	-6,965.0	163.8	-58.0	221.71	0.739	Level 1				
13,900.0	6,782.0	6,989.6	6,824.4	203.4	25.8	92.98	255.1	-6,965.0	221.1	-3.3	224.43	0.985	Level 1				
13,907.2	6,782.0	6,989.7	6,824.5	203.6	25.8	93.02	255.1	-6,965.0	226.4	1.8	224.62	1.008	Level 2				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well LDS 1W-314
<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 1W-314	<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')

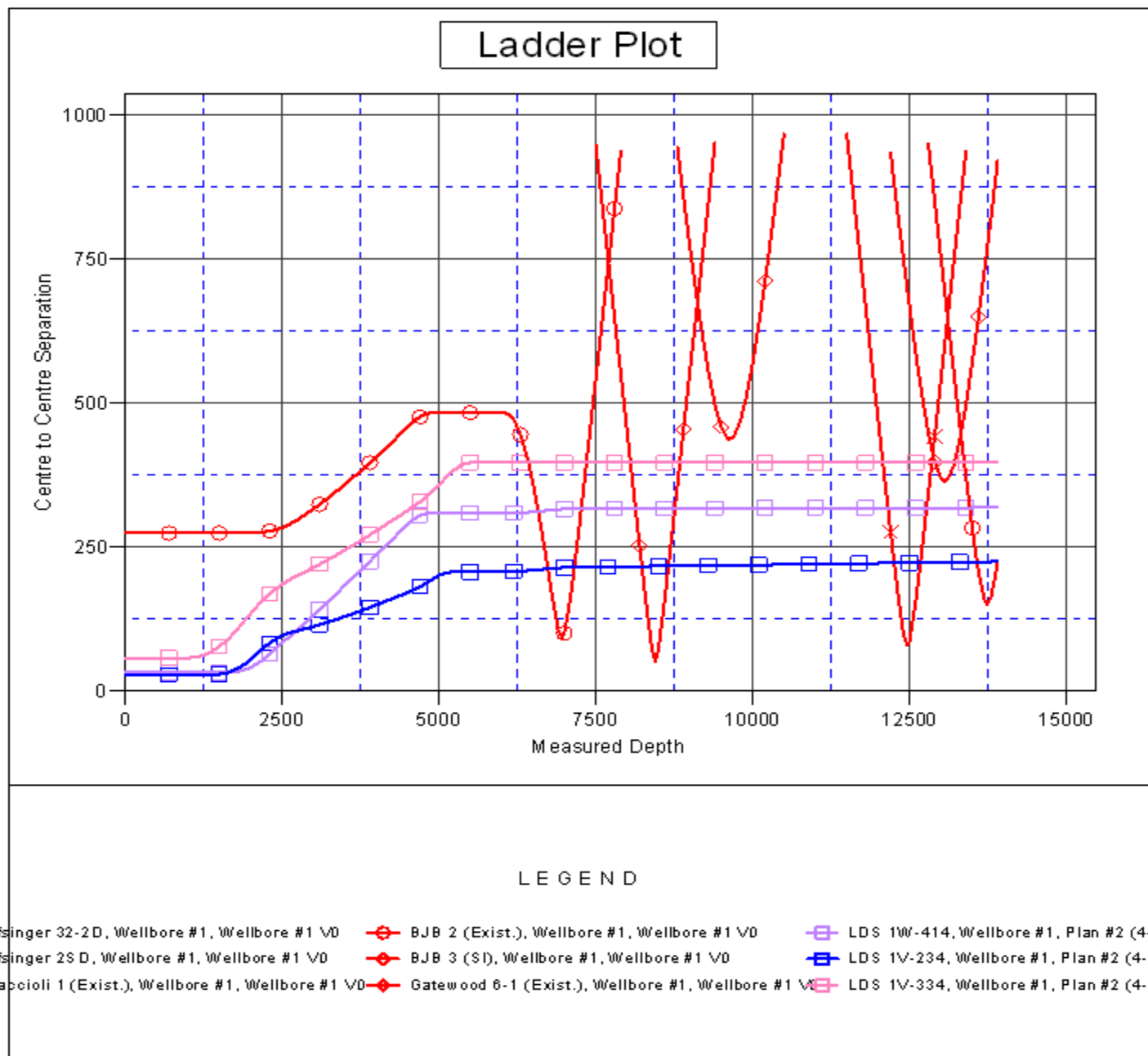
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: LDS 1W-314

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 1W-314
<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 1W-314	<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 1W-314  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.58°

