

# PETROLEUM DEVELOPMENT CORP Weld County CO

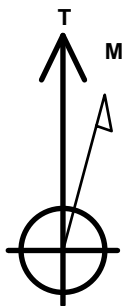
Well Name: **Becker Ranch 5R-323**

Surface Location: Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4783.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1339355.70	3260045.36	40.261180	-104.568190	
RKB - 12.5' WELL @ 4795.5ft (RKB - 12.5')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 206'FNL & 790'FEL	1.0	0.0	0.0	Point
BHL 500'FSL, 950'FEL	6846.0	-4593.8	-181.4	Point



Azimuths to True North  
Magnetic North: 8.35°

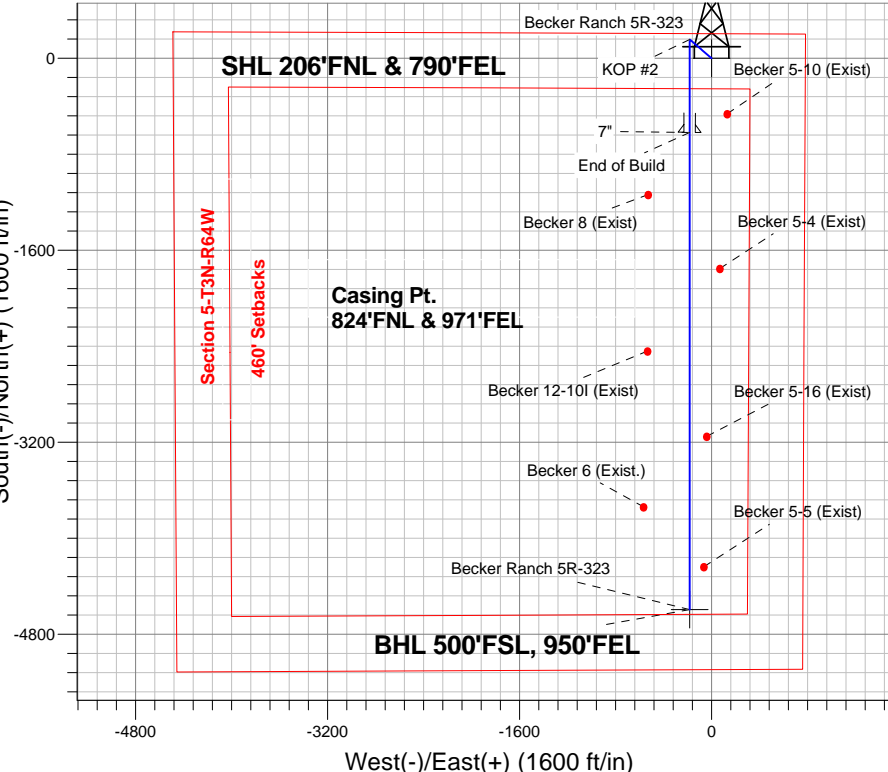
Magnetic Field  
Strength: 52768.6snT  
Dip Angle: 66.87°  
Date: 5/28/2014  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
3000.0	3000.0	KOP #1
6134.2	6146.6	KOP #2
6898.0	7356.6	End of Build

Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W  
Becker Ranch 5R-323  
Plan #2 (5-28-14)  
11:09, May 30 2014

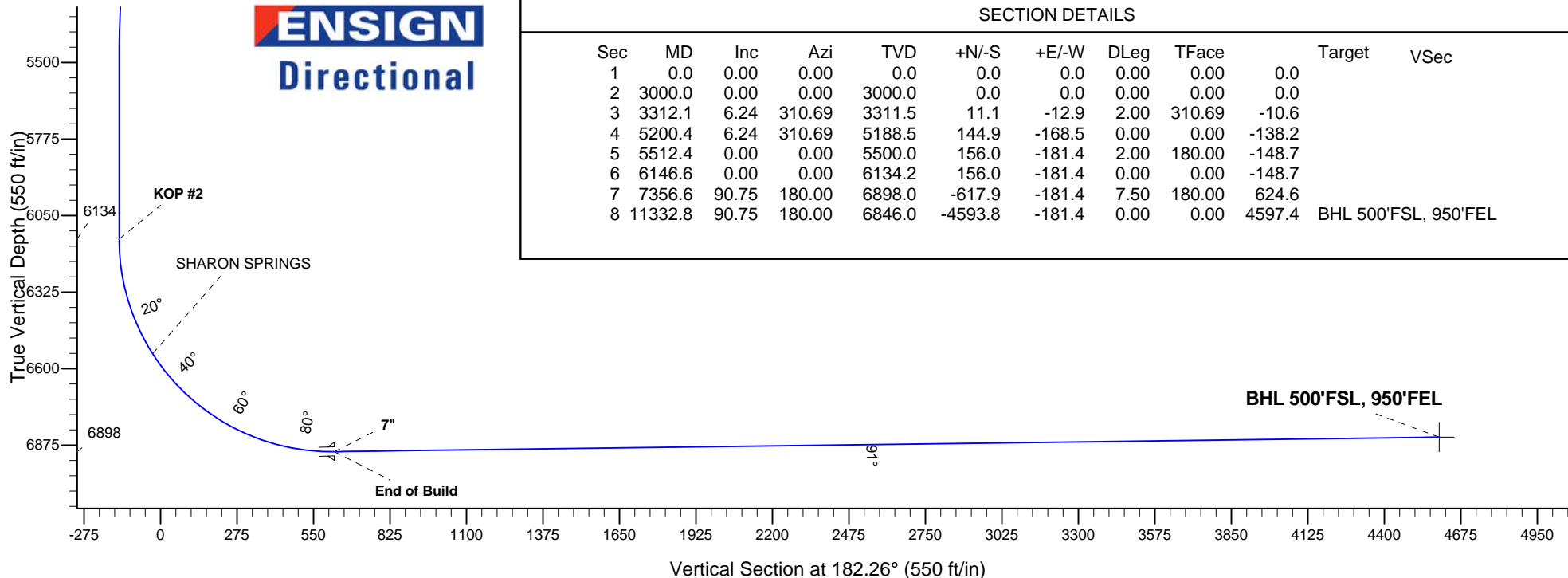
South(-)/North(+) (1600 ft/in)



## 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	3000.0	0.00	0.00	3000.0	0.0	0.0	0.00	0.00	0.0	
3	3312.1	6.24	310.69	3311.5	11.1	-12.9	2.00	310.69	-10.6	
4	5200.4	6.24	310.69	5188.5	144.9	-168.5	0.00	0.00	-138.2	
5	5512.4	0.00	0.00	5500.0	156.0	-181.4	2.00	180.00	-148.7	
6	6146.6	0.00	0.00	6134.2	156.0	-181.4	0.00	0.00	-148.7	
7	7356.6	90.75	180.00	6898.0	-617.9	-181.4	7.50	180.00	624.6	
8	11332.8	90.75	180.00	6846.0	-4593.8	-181.4	0.00	0.00	4597.4	BHL 500'FSL, 950'FEL

**ENSIGN**  
Directional





# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.5-T3N-R64W**

**Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W**

**Becker Ranch 5R-323**

**Wellbore #1**

**Plan: Plan #2 (5-28-14)**

## **Standard Planning Report**

**30 May, 2014**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5R-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-28-14)		

<b>Project</b>	SEC.5-T3N-R64W, 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						Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W											
Site Position:			Northing:			1,339,355.73ft			Latitude:			40.261180					
From:			Lat/Long			Easting:			3,260,045.36ft			Longitude:			-104.568190		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.60 °		

Well	Becker Ranch 5R-323					
Well Position	+N/-S	0.0 ft	Northing:	1,339,355.70 ft	Latitude:	40.261180
	+E/-W	0.0 ft	Easting:	3,260,045.36 ft	Longitude:	-104.568190
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,783.0 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	5/28/2014	8.35	66.87	52,769

<b>Design</b>	Plan #2 (5-28-14)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	182.26

<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	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
3,312.1	6.24	310.69	3,311.5	11.1	-12.9	2.00	2.00	0.00	310.69	
5,200.4	6.24	310.69	5,188.5	144.9	-168.5	0.00	0.00	0.00	0.00	
5,512.4	0.00	0.00	5,500.0	156.0	-181.4	2.00	-2.00	0.00	180.00	
6,146.6	0.00	0.00	6,134.2	156.0	-181.4	0.00	0.00	0.00	0.00	
7,356.6	90.75	180.00	6,898.0	-617.9	-181.4	7.50	7.50	0.00	180.00	
11,332.8	90.75	180.00	6,846.0	-4,593.8	-181.4	0.00	0.00	0.00	0.00	BHL 500'FSL, 950'F

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5R-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-28-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 206'FNL &amp; 790'FEL</b>									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
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
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
3,100.0	2.00	310.69	3,100.0	1.1	-1.3	-1.1	2.00	2.00	0.00
3,200.0	4.00	310.69	3,199.8	4.6	-5.3	-4.3	2.00	2.00	0.00
3,300.0	6.00	310.69	3,299.5	10.2	-11.9	-9.8	2.00	2.00	0.00
3,312.1	6.24	310.69	3,311.5	11.1	-12.9	-10.6	2.00	2.00	0.00
3,400.0	6.24	310.69	3,398.9	17.3	-20.1	-16.5	0.00	0.00	0.00
3,500.0	6.24	310.69	3,498.3	24.4	-28.4	-23.3	0.00	0.00	0.00
3,600.0	6.24	310.69	3,597.7	31.5	-36.6	-30.0	0.00	0.00	0.00
3,700.0	6.24	310.69	3,697.1	38.6	-44.9	-36.8	0.00	0.00	0.00
3,702.9	6.24	310.69	3,700.0	38.8	-45.1	-37.0	0.00	0.00	0.00
<b>PARKMAN</b>									
3,800.0	6.24	310.69	3,796.5	45.7	-53.1	-43.5	0.00	0.00	0.00
3,900.0	6.24	310.69	3,895.9	52.7	-61.3	-50.3	0.00	0.00	0.00
4,000.0	6.24	310.69	3,995.3	59.8	-69.6	-57.0	0.00	0.00	0.00
4,100.0	6.24	310.69	4,094.7	66.9	-77.8	-63.8	0.00	0.00	0.00
4,200.0	6.24	310.69	4,194.1	74.0	-86.1	-70.6	0.00	0.00	0.00
4,300.0	6.24	310.69	4,293.5	81.1	-94.3	-77.3	0.00	0.00	0.00
4,400.0	6.24	310.69	4,392.9	88.2	-102.6	-84.1	0.00	0.00	0.00
4,407.1	6.24	310.69	4,400.0	88.7	-103.1	-84.6	0.00	0.00	0.00
<b>SUSSEX</b>									

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<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5R-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-28-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	6.24	310.69	4,492.3	95.3	-110.8	-90.8	0.00	0.00	0.00
4,600.0	6.24	310.69	4,591.7	102.4	-119.0	-97.6	0.00	0.00	0.00
4,700.0	6.24	310.69	4,691.2	109.5	-127.3	-104.4	0.00	0.00	0.00
4,800.0	6.24	310.69	4,790.6	116.5	-135.5	-111.1	0.00	0.00	0.00
4,900.0	6.24	310.69	4,890.0	123.6	-143.8	-117.9	0.00	0.00	0.00
5,000.0	6.24	310.69	4,989.4	130.7	-152.0	-124.6	0.00	0.00	0.00
5,100.0	6.24	310.69	5,088.8	137.8	-160.3	-131.4	0.00	0.00	0.00
5,111.3	6.24	310.69	5,100.0	138.6	-161.2	-132.1	0.00	0.00	0.00
SHANNON									
5,200.0	6.24	310.69	5,188.2	144.9	-168.5	-138.1	0.00	0.00	0.00
5,200.4	6.24	310.69	5,188.5	144.9	-168.5	-138.2	0.00	0.00	0.00
5,300.0	4.25	310.69	5,287.8	150.9	-175.4	-143.8	2.00	-2.00	0.00
5,400.0	2.25	310.69	5,387.6	154.6	-179.7	-147.3	2.00	-2.00	0.00
5,500.0	0.25	310.69	5,487.6	156.0	-181.4	-148.7	2.00	-2.00	0.00
5,512.4	0.00	0.00	5,500.0	156.0	-181.4	-148.7	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,587.6	156.0	-181.4	-148.7	0.00	0.00	0.00
5,700.0	0.00	0.00	5,687.6	156.0	-181.4	-148.7	0.00	0.00	0.00
5,800.0	0.00	0.00	5,787.6	156.0	-181.4	-148.7	0.00	0.00	0.00
5,900.0	0.00	0.00	5,887.6	156.0	-181.4	-148.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,987.6	156.0	-181.4	-148.7	0.00	0.00	0.00
6,100.0	0.00	0.00	6,087.6	156.0	-181.4	-148.7	0.00	0.00	0.00
6,146.6	0.00	0.00	6,134.2	156.0	-181.4	-148.7	0.00	0.00	0.00
KOP #2									
6,200.0	4.01	180.00	6,187.5	154.1	-181.4	-146.9	7.50	7.50	0.00
6,300.0	11.51	180.00	6,286.5	140.6	-181.4	-133.4	7.50	7.50	0.00
6,400.0	19.01	180.00	6,383.0	114.4	-181.4	-107.1	7.50	7.50	0.00
6,500.0	26.51	180.00	6,475.1	75.7	-181.4	-68.5	7.50	7.50	0.00
6,581.5	32.62	180.00	6,546.0	35.5	-181.4	-28.3	7.50	7.50	0.00
SHARON SPRINGS									
6,600.0	34.01	180.00	6,561.4	25.4	-181.4	-18.2	7.50	7.50	0.00
6,700.0	41.51	180.00	6,640.4	-35.8	-181.4	43.0	7.50	7.50	0.00
6,800.0	49.01	180.00	6,710.8	-106.8	-181.4	113.9	7.50	7.50	0.00
6,900.0	56.51	180.00	6,771.2	-186.4	-181.4	193.4	7.50	7.50	0.00
7,000.0	64.01	180.00	6,820.8	-273.1	-181.4	280.1	7.50	7.50	0.00
7,100.0	71.51	180.00	6,858.7	-365.6	-181.4	372.5	7.50	7.50	0.00
7,200.0	79.01	180.00	6,884.1	-462.2	-181.4	469.0	7.50	7.50	0.00
7,300.0	86.51	180.00	6,896.7	-561.4	-181.4	568.1	7.50	7.50	0.00
7,356.6	90.75	180.00	6,898.0	-617.9	-181.4	624.6	7.50	7.50	0.00
End of Build - 7"									
7,400.0	90.75	180.00	6,897.5	-661.3	-181.4	668.0	0.00	0.00	0.00
7,500.0	90.75	180.00	6,896.2	-761.3	-181.4	767.9	0.00	0.00	0.00
7,600.0	90.75	180.00	6,894.9	-861.3	-181.4	867.8	0.00	0.00	0.00
7,700.0	90.75	180.00	6,893.6	-961.3	-181.4	967.7	0.00	0.00	0.00
7,800.0	90.75	180.00	6,892.2	-1,061.3	-181.4	1,067.6	0.00	0.00	0.00
7,900.0	90.75	180.00	6,890.9	-1,161.3	-181.4	1,167.6	0.00	0.00	0.00
8,000.0	90.75	180.00	6,889.6	-1,261.3	-181.4	1,267.5	0.00	0.00	0.00
8,100.0	90.75	180.00	6,888.3	-1,361.3	-181.4	1,367.4	0.00	0.00	0.00
8,200.0	90.75	180.00	6,887.0	-1,461.3	-181.4	1,467.3	0.00	0.00	0.00
8,300.0	90.75	180.00	6,885.7	-1,561.3	-181.4	1,567.2	0.00	0.00	0.00
8,400.0	90.75	180.00	6,884.4	-1,661.3	-181.4	1,667.1	0.00	0.00	0.00
8,500.0	90.75	180.00	6,883.1	-1,761.3	-181.4	1,767.0	0.00	0.00	0.00
8,600.0	90.75	180.00	6,881.8	-1,861.2	-181.4	1,867.0	0.00	0.00	0.00

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<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5R-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-28-14)		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,700.0	90.75	180.00	6,880.5	-1,961.2	-181.4	1,966.9	0.00	0.00	0.00
8,800.0	90.75	180.00	6,879.2	-2,061.2	-181.4	2,066.8	0.00	0.00	0.00
8,900.0	90.75	180.00	6,877.8	-2,161.2	-181.4	2,166.7	0.00	0.00	0.00
9,000.0	90.75	180.00	6,876.5	-2,261.2	-181.4	2,266.6	0.00	0.00	0.00
9,100.0	90.75	180.00	6,875.2	-2,361.2	-181.4	2,366.5	0.00	0.00	0.00
9,200.0	90.75	180.00	6,873.9	-2,461.2	-181.4	2,466.4	0.00	0.00	0.00
9,300.0	90.75	180.00	6,872.6	-2,561.2	-181.4	2,566.3	0.00	0.00	0.00
9,400.0	90.75	180.00	6,871.3	-2,661.2	-181.4	2,666.3	0.00	0.00	0.00
9,500.0	90.75	180.00	6,870.0	-2,761.2	-181.4	2,766.2	0.00	0.00	0.00
9,600.0	90.75	180.00	6,868.7	-2,861.2	-181.4	2,866.1	0.00	0.00	0.00
9,700.0	90.75	180.00	6,867.4	-2,961.1	-181.4	2,966.0	0.00	0.00	0.00
9,800.0	90.75	180.00	6,866.1	-3,061.1	-181.4	3,065.9	0.00	0.00	0.00
9,900.0	90.75	180.00	6,864.8	-3,161.1	-181.4	3,165.8	0.00	0.00	0.00
10,000.0	90.75	180.00	6,863.4	-3,261.1	-181.4	3,265.7	0.00	0.00	0.00
10,100.0	90.75	180.00	6,862.1	-3,361.1	-181.4	3,365.7	0.00	0.00	0.00
10,200.0	90.75	180.00	6,860.8	-3,461.1	-181.4	3,465.6	0.00	0.00	0.00
10,300.0	90.75	180.00	6,859.5	-3,561.1	-181.4	3,565.5	0.00	0.00	0.00
10,400.0	90.75	180.00	6,858.2	-3,661.1	-181.4	3,665.4	0.00	0.00	0.00
10,500.0	90.75	180.00	6,856.9	-3,761.1	-181.4	3,765.3	0.00	0.00	0.00
10,600.0	90.75	180.00	6,855.6	-3,861.1	-181.4	3,865.2	0.00	0.00	0.00
10,700.0	90.75	180.00	6,854.3	-3,961.1	-181.4	3,965.1	0.00	0.00	0.00
10,800.0	90.75	180.00	6,853.0	-4,061.1	-181.4	4,065.1	0.00	0.00	0.00
10,900.0	90.75	180.00	6,851.7	-4,161.0	-181.4	4,165.0	0.00	0.00	0.00
11,000.0	90.75	180.00	6,850.4	-4,261.0	-181.4	4,264.9	0.00	0.00	0.00
11,100.0	90.75	180.00	6,849.0	-4,361.0	-181.4	4,364.8	0.00	0.00	0.00
11,200.0	90.75	180.00	6,847.7	-4,461.0	-181.4	4,464.7	0.00	0.00	0.00
11,300.0	90.75	180.00	6,846.4	-4,561.0	-181.4	4,564.6	0.00	0.00	0.00
11,332.8	90.75	180.00	6,846.0	-4,593.8	-181.4	4,597.4	0.00	0.00	0.00
BHL 500'FSL, 950'FEL									

## Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,356.6	6,898.0	7"	7	7-1/2

## Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,702.9	3,700.0	PARKMAN			
4,407.1	4,400.0	SUSSEX			
5,111.3	5,100.0	SHANNON			
6,581.5	6,546.0	SHARON SPRINGS			

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5R-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-28-14)		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
3,000.0	3,000.0	0.0	0.0	KOP #1
6,146.6	6,134.2	156.0	-181.4	KOP #2
7,356.6	6,898.0	-617.9	-181.4	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.5-T3N-R64W**

**Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W**

**Becker Ranch 5R-323**

**Wellbore #1**

**Plan #2 (5-28-14)**

## **Anticollision Report**

**30 May, 2014**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (5-28-14)
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	5/30/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,332.8	Plan #2 (5-28-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W						
Becker Ranch 5R-203 - Wellbore #1 - Plan #2 (5-28-14)	1,000.0	999.0	30.7	26.4	7.193	CC, ES
Becker Ranch 5R-203 - Wellbore #1 - Plan #2 (5-28-14)	11,332.8	11,256.3	226.7	58.3	1.346	Level 3, SF
Becker Ranch 5U-243 - Wellbore #1 - Plan #1 (5-28-14)	1,966.3	1,967.3	27.9	19.3	3.239	CC
Becker Ranch 5U-243 - Wellbore #1 - Plan #1 (5-28-14)	2,000.0	2,001.0	27.9	19.1	3.183	ES
Becker Ranch 5U-243 - Wellbore #1 - Plan #1 (5-28-14)	11,332.8	11,243.6	375.9	200.7	2.145	SF
Becker Ranch 5U-303 - Wellbore #1 - Plan #2 (5-28-14)	1,000.0	1,000.0	89.3	85.0	20.913	CC, ES
Becker Ranch 5U-303 - Wellbore #1 - Plan #2 (5-28-14)	11,332.8	11,351.2	778.8	599.5	4.343	SF
Becker Ranch 5U-443 - Wellbore #1 - Plan #2 (5-28-14)	1,466.3	1,467.3	58.6	52.2	9.202	CC
Becker Ranch 5U-443 - Wellbore #1 - Plan #2 (5-28-14)	1,500.0	1,501.0	58.6	52.1	8.989	ES
Becker Ranch 5U-443 - Wellbore #1 - Plan #2 (5-28-14)	11,332.8	11,391.7	588.6	413.4	3.359	SF
<b>Existing Wells Sec.5-T3N-R64W</b>						
Becker 12-10I (Exist) - Wellbore #1 - Wellbore #1	9,179.6	6,829.7	351.7	165.7	1.891	CC, ES
Becker 12-10I (Exist) - Wellbore #1 - Wellbore #1	9,200.0	6,829.4	352.3	165.9	1.890	SF
Becker 5-10 (Exist) - Wellbore #1 - Wellbore #1	7,200.4	6,865.7	312.6	157.9	2.020	CC, ES, SF
Becker 5-16 (Exist) - Wellbore #1 - Wellbore #1	9,890.1	6,810.4	142.4	-56.4	0.716	Level 1, CC, ES, SF
Becker 5-4 (Exist) - Wellbore #1 - Wellbore #1	8,491.0	6,859.7	251.2	77.0	1.442	Level 3, CC, ES
Becker 5-4 (Exist) - Wellbore #1 - Wellbore #1	8,500.0	6,859.6	251.4	77.0	1.441	Level 3, SF
Becker 5-5 (Exist) - Wellbore #1 - Wellbore #1	10,975.8	6,781.2	117.2	-101.3	0.536	Level 1, CC, ES, SF
Becker 6 (Exist.) - Wellbore #1 - Wellbore #1	10,476.7	6,805.7	385.2	175.6	1.837	CC, ES
Becker 6 (Exist.) - Wellbore #1 - Wellbore #1	10,500.0	6,805.4	385.9	175.8	1.837	SF
Becker 8 (Exist) - Wellbore #1 - Wellbore #1	7,875.3	6,876.8	346.1	181.9	2.108	CC, ES, SF

Offset Design		Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-203 - Wellbore #1 - Plan #2 (5-28-14)										Offset Site Error:		0.0 ft	
Survey Program:		0-MWVD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-30.7	30.7						
100.0	100.0	99.0	99.0	0.1	0.1	-89.98	0.0	-30.7	30.7	30.5	0.22	137.273			
200.0	200.0	199.0	199.0	0.3	0.3	-89.98	0.0	-30.7	30.7	30.0	0.67	45.681			
300.0	300.0	299.0	299.0	0.6	0.6	-89.98	0.0	-30.7	30.7	29.6	1.12	27.372			
400.0	400.0	399.0	399.0	0.8	0.8	-89.98	0.0	-30.7	30.7	29.1	1.57	19.540			
500.0	500.0	499.0	499.0	1.0	1.0	-89.98	0.0	-30.7	30.7	28.7	2.02	15.193			

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-203 - Wellbore #1 - Plan #2 (5-28-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
600.0	600.0	599.0	599.0	1.2	1.2	-89.98	-89.98	0.0	-30.7	30.7	28.2	2.47	12.428	
700.0	700.0	699.0	699.0	1.5	1.5	-89.98	-89.98	0.0	-30.7	30.7	27.8	2.92	10.515	
800.0	800.0	799.0	799.0	1.7	1.7	-89.98	-89.98	0.0	-30.7	30.7	27.3	3.37	9.112	
900.0	900.0	899.0	899.0	1.9	1.9	-89.98	-89.98	0.0	-30.7	30.7	26.9	3.82	8.039	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	-89.98	-89.98	0.0	-30.7	30.7	26.4	4.27	7.193 CC, ES	
1,100.0	1,100.0	1,098.0	1,098.0	2.4	2.3	-88.82	-88.82	0.7	-32.2	32.3	27.6	4.71	6.853	
1,200.0	1,200.0	1,196.7	1,196.6	2.6	2.6	-85.91	-85.91	2.6	-36.9	37.1	31.9	5.15	7.209	
1,300.0	1,300.0	1,295.4	1,294.9	2.8	2.8	-82.47	-82.47	5.9	-44.6	45.2	39.6	5.59	8.084	
1,400.0	1,400.0	1,395.0	1,394.0	3.0	3.0	-79.83	-79.83	9.6	-53.2	54.3	48.3	6.04	8.995	
1,500.0	1,500.0	1,494.5	1,493.1	3.3	3.3	-77.95	-77.95	13.2	-61.9	63.5	57.1	6.49	9.785	
1,600.0	1,600.0	1,594.1	1,592.2	3.5	3.5	-76.55	-76.55	16.9	-70.5	72.8	65.9	6.95	10.471	
1,700.0	1,700.0	1,693.6	1,691.3	3.7	3.8	-75.47	-75.47	20.5	-79.1	82.1	74.7	7.42	11.070	
1,800.0	1,800.0	1,793.2	1,790.5	3.9	4.0	-74.60	-74.60	24.2	-87.8	91.5	83.6	7.89	11.596	
1,900.0	1,900.0	1,892.7	1,889.6	4.2	4.3	-73.90	-73.90	27.8	-96.4	100.8	92.4	8.36	12.062	
2,000.0	2,000.0	1,992.3	1,988.7	4.4	4.6	-73.32	-73.32	31.5	-105.1	110.2	101.3	8.83	12.475	
2,100.0	2,100.0	2,091.9	2,087.8	4.6	4.8	-72.82	-72.82	35.1	-113.7	119.5	110.2	9.30	12.846	
2,200.0	2,200.0	2,191.4	2,186.9	4.8	5.1	-72.40	-72.40	38.8	-122.3	128.9	119.1	9.78	13.178	
2,300.0	2,300.0	2,291.0	2,286.0	5.1	5.4	-72.04	-72.04	42.5	-131.0	138.3	128.0	10.26	13.479	
2,400.0	2,400.0	2,390.5	2,385.1	5.3	5.6	-71.72	-71.72	46.1	-139.6	147.7	136.9	10.74	13.751	
2,500.0	2,500.0	2,490.1	2,484.3	5.5	5.9	-71.44	-71.44	49.8	-148.2	157.1	145.8	11.22	14.000	
2,600.0	2,600.0	2,589.6	2,583.4	5.7	6.2	-71.19	-71.19	53.4	-156.9	166.4	154.7	11.70	14.227	
2,700.0	2,700.0	2,689.2	2,682.5	6.0	6.5	-70.97	-70.97	57.1	-165.5	175.8	163.7	12.18	14.435	
2,800.0	2,800.0	2,788.7	2,781.6	6.2	6.7	-70.77	-70.77	60.7	-174.1	185.2	172.6	12.66	14.627	
2,900.0	2,900.0	2,888.3	2,880.7	6.4	7.0	-70.59	-70.59	64.4	-182.8	194.6	181.5	13.15	14.804	
3,000.0	3,000.0	2,987.9	2,979.8	6.6	7.3	-70.43	-70.43	68.0	-191.4	204.0	190.4	13.63	14.968	
3,100.0	3,100.0	3,087.5	3,079.1	6.9	7.6	-21.09	-21.09	71.7	-200.0	211.8	198.2	13.66	15.504	
3,200.0	3,199.8	3,187.4	3,178.5	7.1	7.8	-21.41	-21.41	75.4	-208.7	216.3	202.3	14.10	15.345	
3,300.0	3,299.5	3,287.4	3,278.0	7.3	8.1	-22.08	-22.08	79.0	-217.4	217.7	203.1	14.52	14.985	
3,400.0	3,398.9	3,387.3	3,377.5	7.5	8.4	-22.97	-22.97	82.7	-226.0	217.0	202.0	14.97	14.497	
3,500.0	3,498.3	3,487.3	3,477.0	7.8	8.7	-23.86	-23.86	86.4	-234.7	216.4	201.0	15.42	14.034	
3,600.0	3,597.7	3,587.2	3,576.5	8.0	9.0	-24.76	-24.76	90.1	-243.4	215.9	200.0	15.87	13.598	
3,700.0	3,697.1	3,687.1	3,676.0	8.2	9.2	-25.67	-25.67	93.7	-252.0	215.3	199.0	16.33	13.187	
3,800.0	3,796.5	3,787.1	3,775.5	8.5	9.5	-26.58	-26.58	97.4	-260.7	214.9	198.1	16.79	12.799	
3,900.0	3,895.9	3,887.0	3,875.0	8.7	9.8	-27.49	-27.49	101.1	-269.4	214.5	197.3	17.25	12.433	
4,000.0	3,995.3	3,987.0	3,974.5	9.0	10.1	-28.41	-28.41	104.7	-278.1	214.2	196.5	17.72	12.087	
4,100.0	4,094.7	4,086.9	4,074.0	9.2	10.4	-29.33	-29.33	108.4	-286.7	213.9	195.7	18.19	11.760	
4,200.0	4,194.1	4,186.8	4,173.5	9.5	10.7	-30.25	-30.25	112.1	-295.4	213.7	195.0	18.66	11.450	
4,300.0	4,293.5	4,286.8	4,273.0	9.8	10.9	-31.17	-31.17	115.7	-304.1	213.5	194.3	19.14	11.156	
4,400.0	4,392.9	4,386.7	4,372.5	10.0	11.2	-32.10	-32.10	119.4	-312.7	213.4	193.7	19.62	10.877	
4,500.0	4,492.3	4,486.7	4,472.0	10.3	11.5	-33.02	-33.02	123.1	-321.4	213.3	193.2	20.10	10.612	
4,561.3	4,553.3	4,547.9	4,532.9	10.4	11.7	-33.59	-33.59	125.3	-326.7	213.3	192.9	20.40	10.457	
4,600.0	4,591.7	4,586.6	4,571.5	10.5	11.8	-33.95	-33.95	126.7	-330.1	213.3	192.7	20.59	10.361	
4,700.0	4,691.2	4,686.5	4,671.0	10.8	12.1	-34.87	-34.87	130.4	-338.7	213.3	192.3	21.08	10.122	
4,800.0	4,790.6	4,786.5	4,770.5	11.1	12.3	-35.80	-35.80	134.1	-347.4	213.5	191.9	21.57	9.895	
4,900.0	4,890.0	4,886.4	4,870.0	11.4	12.6	-36.72	-36.72	137.8	-356.1	213.6	191.5	22.07	9.678	
5,000.0	4,989.4	4,986.4	4,969.5	11.6	12.9	-37.64	-37.64	141.4	-364.7	213.8	191.3	22.57	9.472	
5,100.0	5,088.8	5,086.3	5,068.9	11.9	13.2	-38.56	-38.56	145.1	-373.4	214.1	191.0	23.08	9.276	
5,200.0	5,188.2	5,186.3	5,168.4	12.2	13.5	-39.48	-39.48	148.8	-382.1	214.4	190.8	23.59	9.089	
5,300.0	5,287.8	5,289.0	5,270.8	12.4	13.8	-40.41	-40.41	152.4	-390.7	215.9	191.8	24.08	8.966	
5,400.0	5,387.6	5,396.5	5,378.1	12.6	14.0	-40.54	-40.54	155.0	-396.8	217.2	192.7	24.48	8.875	
5,500.0	5,487.6	5,504.0	5,485.6	12.8	14.1	-40.69	-40.69	156.0	-399.1	217.8	192.9	24.83	8.769	

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-203 - Wellbore #1 - Plan #2 (5-28-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,600.0	5,587.6	5,605.1	5,586.6	13.0	14.3	-90.00	-90.00	156.0	-399.2	217.8	192.6	25.21	8.638	
5,700.0	5,687.6	5,705.1	5,686.6	13.2	14.5	-90.00	-90.00	156.0	-399.2	217.8	192.1	25.63	8.496	
5,800.0	5,787.6	5,805.1	5,786.6	13.4	14.7	-90.00	-90.00	156.0	-399.2	217.8	191.7	26.05	8.359	
5,900.0	5,887.6	5,905.1	5,886.6	13.6	14.9	-90.00	-90.00	156.0	-399.2	217.8	191.3	26.47	8.226	
6,000.0	5,987.6	6,005.1	5,986.6	13.8	15.1	-90.00	-90.00	156.0	-399.2	217.8	190.9	26.90	8.097	
6,072.0	6,059.6	6,077.0	6,058.6	14.0	15.2	-90.00	-90.00	156.0	-399.2	217.8	190.6	27.20	8.006	
6,100.0	6,087.6	6,105.1	6,086.6	14.0	15.2	-90.20	-90.20	155.2	-399.2	217.8	190.5	27.32	7.972	
6,200.0	6,187.5	6,204.0	6,184.9	14.2	15.4	87.43	87.43	144.4	-399.2	218.0	190.3	27.72	7.864	
6,300.0	6,286.5	6,301.7	6,279.7	14.3	15.5	84.75	84.75	121.4	-399.1	218.6	190.6	28.02	7.802	
6,400.0	6,383.0	6,398.0	6,369.7	14.5	15.6	82.19	82.19	87.0	-399.1	219.7	191.5	28.24	7.780	
6,500.0	6,475.1	6,493.3	6,453.6	14.5	15.6	79.80	79.80	42.2	-399.0	221.1	192.7	28.40	7.785	
6,600.0	6,561.4	6,587.6	6,530.6	14.6	15.7	77.61	77.61	-12.2	-398.9	222.7	194.1	28.55	7.799	
6,700.0	6,640.4	6,681.0	6,599.7	14.7	15.9	75.65	75.65	-74.9	-398.8	224.4	195.6	28.77	7.799	
6,800.0	6,710.8	6,773.6	6,660.1	14.9	16.1	73.94	73.94	-145.0	-398.6	226.1	197.0	29.14	7.760	
6,900.0	6,771.2	6,865.5	6,711.3	15.3	16.4	72.50	72.50	-221.3	-398.5	227.7	197.9	29.74	7.655	
7,000.0	6,820.8	6,956.9	6,752.7	15.8	16.9	71.34	71.34	-302.7	-398.4	229.0	198.4	30.66	7.468	
7,100.0	6,858.7	7,050.0	6,784.6	16.6	17.6	70.44	70.44	-390.1	-398.2	230.1	198.1	31.98	7.194	
7,100.4	6,858.8	7,050.0	6,784.6	16.6	17.6	70.44	70.44	-390.1	-398.2	230.1	198.1	31.98	7.194	
7,200.0	6,884.1	7,138.6	6,804.9	17.6	18.4	69.87	69.87	-476.3	-398.1	230.7	197.1	33.66	6.854	
7,300.0	6,896.7	7,229.1	6,815.2	18.6	19.4	69.58	69.58	-566.2	-397.9	231.0	195.3	35.73	6.466	
7,400.0	6,897.5	7,323.5	6,815.7	19.9	20.5	69.52	69.52	-660.5	-397.7	230.9	192.9	38.07	6.066	
7,500.0	6,896.2	7,423.5	6,814.2	21.2	21.7	69.46	69.46	-760.5	-397.6	230.8	190.3	40.55	5.692	
7,600.0	6,894.9	7,523.5	6,812.7	22.6	23.1	69.41	69.41	-860.5	-397.4	230.7	187.5	43.20	5.341	
7,700.0	6,893.6	7,623.5	6,811.3	24.0	24.6	69.36	69.36	-960.5	-397.2	230.6	184.6	45.97	5.016	
7,800.0	6,892.2	7,723.5	6,809.8	25.6	26.1	69.31	69.31	-1,060.5	-397.0	230.5	181.6	48.86	4.717	
7,900.0	6,890.9	7,823.5	6,808.3	27.1	27.6	69.26	69.26	-1,160.5	-396.9	230.4	178.5	51.84	4.444	
8,000.0	6,889.6	7,923.5	6,806.9	28.8	29.2	69.20	69.20	-1,260.5	-396.7	230.3	175.4	54.89	4.195	
8,100.0	6,888.3	8,023.5	6,805.4	30.4	30.8	69.15	69.15	-1,360.5	-396.5	230.2	172.2	58.00	3.968	
8,200.0	6,887.0	8,123.5	6,803.9	32.1	32.5	69.10	69.10	-1,460.5	-396.3	230.0	168.9	61.17	3.761	
8,300.0	6,885.7	8,223.5	6,802.5	33.8	34.2	69.05	69.05	-1,560.4	-396.1	229.9	165.6	64.38	3.572	
8,400.0	6,884.4	8,323.5	6,801.0	35.5	35.9	68.99	68.99	-1,660.4	-396.0	229.8	162.2	67.63	3.398	
8,500.0	6,883.1	8,423.5	6,799.5	37.3	37.6	68.94	68.94	-1,760.4	-395.8	229.7	158.8	70.91	3.240	
8,600.0	6,881.8	8,523.5	6,798.1	39.0	39.4	68.89	68.89	-1,860.4	-395.6	229.6	155.4	74.22	3.094	
8,700.0	6,880.5	8,623.5	6,796.6	40.8	41.2	68.84	68.84	-1,960.4	-395.4	229.5	151.9	77.55	2.959	
8,800.0	6,879.2	8,723.5	6,795.1	42.6	42.9	68.78	68.78	-2,060.4	-395.3	229.4	148.5	80.91	2.835	
8,900.0	6,877.8	8,823.5	6,793.7	44.4	44.7	68.73	68.73	-2,160.4	-395.1	229.3	145.0	84.28	2.721	
9,000.0	6,876.5	8,923.5	6,792.2	46.2	46.5	68.68	68.68	-2,260.4	-394.9	229.2	141.5	87.67	2.614	
9,100.0	6,875.2	9,023.5	6,790.7	48.0	48.3	68.63	68.63	-2,360.4	-394.7	229.1	138.0	91.07	2.515	
9,200.0	6,873.9	9,123.5	6,789.3	49.9	50.2	68.57	68.57	-2,460.3	-394.6	229.0	134.5	94.48	2.423	
9,300.0	6,872.6	9,223.5	6,787.8	51.7	52.0	68.52	68.52	-2,560.3	-394.4	228.9	130.9	97.90	2.338	
9,400.0	6,871.3	9,323.5	6,786.3	53.5	53.8	68.47	68.47	-2,660.3	-394.2	228.7	127.4	101.33	2.257	
9,500.0	6,870.0	9,423.5	6,784.9	55.4	55.6	68.41	68.41	-2,760.3	-394.0	228.6	123.9	104.77	2.182	
9,600.0	6,868.7	9,523.5	6,783.4	57.2	57.5	68.36	68.36	-2,860.3	-393.9	228.5	120.3	108.22	2.112	
9,700.0	6,867.4	9,623.5	6,782.0	59.1	59.3	68.31	68.31	-2,960.3	-393.7	228.4	116.7	111.67	2.045	
9,800.0	6,866.1	9,723.5	6,780.5	60.9	61.2	68.26	68.26	-3,060.3	-393.5	228.3	113.2	115.13	1.983	
9,900.0	6,864.8	9,823.5	6,779.0	62.8	63.0	68.20	68.20	-3,160.3	-393.3	228.2	109.6	118.59	1.924	
10,000.0	6,863.4	9,923.5	6,777.6	64.7	64.9	68.15	68.15	-3,260.3	-393.1	228.1	106.0	122.06	1.869	
10,100.0	6,862.1	10,023.5	6,776.1	66.5	66.8	68.10	68.10	-3,360.2	-393.0	228.0	102.5	125.53	1.816	
10,200.0	6,860.8	10,123.5	6,774.6	68.4	68.6	68.04	68.04	-3,460.2	-392.8	227.9	98.9	129.00	1.767	
10,300.0	6,859.5	10,223.5	6,773.2	70.3	70.5	67.99	67.99	-3,560.2	-392.6	227.8	95.3	132.48	1.719	
10,400.0	6,858.2	10,323.5	6,771.7	72.1	72.4	67.94	67.94	-3,660.2	-392.4	227.7	91.7	135.96	1.675	

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-203 - Wellbore #1 - Plan #2 (5-28-14)													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Reference	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,500.0	6,856.9	10,423.5	6,770.2	74.0	74.2	67.88	67.88	-3,760.2	-392.3	227.6	88.1	139.44	1.632	
10,600.0	6,855.6	10,523.5	6,768.8	75.9	76.1	67.83	67.83	-3,860.2	-392.1	227.5	84.6	142.92	1.592	
10,700.0	6,854.3	10,623.5	6,767.3	77.8	78.0	67.78	67.78	-3,960.2	-391.9	227.4	81.0	146.40	1.553	
10,800.0	6,853.0	10,723.5	6,765.8	79.7	79.9	67.72	67.72	-4,060.2	-391.7	227.3	77.4	149.88	1.516	
10,900.0	6,851.7	10,823.5	6,764.4	81.6	81.8	67.67	67.67	-4,160.2	-391.6	227.2	73.8	153.37	1.481 Level 3	
11,000.0	6,850.4	10,923.5	6,762.9	83.4	83.6	67.62	67.62	-4,260.1	-391.4	227.1	70.2	156.85	1.448 Level 3	
11,100.0	6,849.0	11,023.5	6,761.4	85.3	85.5	67.56	67.56	-4,360.1	-391.2	227.0	66.6	160.34	1.415 Level 3	
11,200.0	6,847.7	11,123.5	6,760.0	87.2	87.4	67.51	67.51	-4,460.1	-391.0	226.8	63.0	163.82	1.385 Level 3	
11,300.0	6,846.4	11,223.5	6,758.5	89.1	89.3	67.45	67.45	-4,560.1	-390.9	226.7	59.4	167.30	1.355 Level 3	
11,332.8	6,846.0	11,256.3	6,758.0	89.7	89.9	67.44	67.44	-4,592.9	-390.8	226.7	58.3	168.45	1.346 Level 3, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-243 - Wellbore #1 - Plan #1 (5-28-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	90.02	90.02	0.0	27.9	27.9	27.9	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	90.02	90.02	0.0	27.9	27.9	27.7	0.23	122.941	
200.0	200.0	201.0	201.0	0.3	0.3	90.02	90.02	0.0	27.9	27.9	27.2	0.68	41.253	
300.0	300.0	301.0	301.0	0.6	0.6	90.02	90.02	0.0	27.9	27.9	26.8	1.13	24.785	
400.0	400.0	401.0	401.0	0.8	0.8	90.02	90.02	0.0	27.9	27.9	26.3	1.58	17.713	
500.0	500.0	501.0	501.0	1.0	1.0	90.02	90.02	0.0	27.9	27.9	25.9	2.03	13.781	
600.0	600.0	601.0	601.0	1.2	1.2	90.02	90.02	0.0	27.9	27.9	25.4	2.47	11.278	
700.0	700.0	701.0	701.0	1.5	1.5	90.02	90.02	0.0	27.9	27.9	25.0	2.92	9.544	
800.0	800.0	801.0	801.0	1.7	1.7	90.02	90.02	0.0	27.9	27.9	24.5	3.37	8.273	
900.0	900.0	901.0	901.0	1.9	1.9	90.02	90.02	0.0	27.9	27.9	24.1	3.82	7.300	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	90.02	90.02	0.0	27.9	27.9	23.6	4.27	6.532	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	90.02	90.02	0.0	27.9	27.9	23.2	4.72	5.910	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	90.02	90.02	0.0	27.9	27.9	22.7	5.17	5.396	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	90.02	90.02	0.0	27.9	27.9	22.3	5.62	4.965	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	90.02	90.02	0.0	27.9	27.9	21.8	6.07	4.597	
1,500.0	1,500.0	1,501.0	1,501.0	3.3	3.3	90.02	90.02	0.0	27.9	27.9	21.4	6.52	4.280	
1,600.0	1,600.0	1,601.0	1,601.0	3.5	3.5	90.02	90.02	0.0	27.9	27.9	20.9	6.97	4.004	
1,700.0	1,700.0	1,701.0	1,701.0	3.7	3.7	90.02	90.02	0.0	27.9	27.9	20.5	7.42	3.762	
1,800.0	1,800.0	1,801.0	1,801.0	3.9	3.9	90.02	90.02	0.0	27.9	27.9	20.0	7.87	3.547	
1,900.0	1,900.0	1,901.0	1,901.0	4.2	4.2	90.02	90.02	0.0	27.9	27.9	19.6	8.32	3.355	
1,966.3	1,966.3	1,967.3	1,967.3	4.3	4.3	90.02	90.02	0.0	27.9	27.9	19.3	8.62	3.239 CC	
2,000.0	2,000.0	2,001.0	2,001.0	4.4	4.4	90.02	90.02	0.0	27.9	27.9	19.1	8.77	3.183 ES	
2,100.0	2,100.0	2,100.0	2,100.0	4.6	4.6	87.59	87.59	1.2	29.1	29.2	20.0	9.21	3.169	
2,200.0	2,200.0	2,199.5	2,199.4	4.8	4.8	81.63	81.63	4.8	32.7	33.1	23.5	9.65	3.433	
2,300.0	2,300.0	2,299.3	2,299.0	5.1	5.0	76.19	76.19	9.1	37.0	38.2	28.1	10.10	3.784	
2,400.0	2,400.0	2,399.2	2,398.6	5.3	5.3	72.05	72.05	13.4	41.3	43.5	33.0	10.54	4.128	
2,500.0	2,500.0	2,499.0	2,498.3	5.5	5.5	68.82	68.82	17.7	45.6	49.0	38.0	10.99	4.461	
2,600.0	2,600.0	2,598.8	2,597.9	5.7	5.7	66.25	66.25	22.0	49.9	54.6	43.2	11.44	4.777	
2,700.0	2,700.0	2,698.6	2,697.5	6.0	5.9	64.17	64.17	26.3	54.2	60.3	48.5	11.89	5.077	
2,800.0	2,800.0	2,798.4	2,797.2	6.2	6.2	62.44	62.44	30.5	58.5	66.1	53.8	12.34	5.359	
2,900.0	2,900.0	2,898.2	2,896.8	6.4	6.4	60.99	60.99	34.8	62.8	71.9	59.2	12.79	5.625	
3,000.0	3,000.0	2,998.1	2,996.4	6.6	6.6	59.77	59.77	39.1	67.1	77.8	64.6	13.24	5.876	
3,100.0	3,100.0	3,097.8	3,096.0	6.9	6.9	109.02	109.02	43.4	71.4	84.3	70.6	13.64	6.176	
3,200.0	3,199.8	3,197.5	3,195.5	7.1	7.1	111.00	111.00	47.7	75.7	91.9	77.8	14.08	6.529	
3,300.0	3,299.5	3,296.9	3,294.7	7.3	7.3	114.45	114.45	51.9	80.0	101.1	86.6	14.51	6.965	
3,400.0	3,398.9	3,396.1	3,393.7	7.5	7.6	118.41	118.41	56.2	84.2	111.5	96.6	14.95	7.462	
3,500.0	3,498.3	3,495.2	3,492.7	7.8	7.8	121.71	121.71	60.5	88.5	122.5	107.1	15.40	7.956	
3,600.0	3,597.7	3,594.4	3,591.7	8.0	8.1	124.47	124.47	64.7	92.8	133.8	117.9	15.84	8.442	
3,700.0	3,697.1	3,693.6	3,690.7	8.2	8.3	126.79	126.79	69.0	97.0	145.3	129.0	16.30	8.916	
3,800.0	3,796.5	3,792.7	3,789.6	8.5	8.5	128.77	128.77	73.2	101.3	157.0	140.3	16.75	9.374	
3,900.0	3,895.9	3,891.9	3,888.6	8.7	8.8	130.47	130.47	77.5	105.6	168.9	151.7	17.21	9.815	
4,000.0	3,995.3	3,991.1	3,987.6	9.0	9.0	131.95	131.95	81.8	109.8	181.0	163.3	17.67	10.240	
4,100.0	4,094.7	4,090.3	4,086.6	9.2	9.2	133.24	133.24	86.0	114.1	193.1	175.0	18.14	10.647	
4,200.0	4,194.1	4,189.4	4,185.6	9.5	9.5	134.38	134.38	90.3	118.4	205.3	186.7	18.60	11.038	
4,300.0	4,293.5	4,288.6	4,284.6	9.8	9.7	135.39	135.39	94.5	122.7	217.6	198.5	19.07	11.413	
4,400.0	4,392.9	4,387.8	4,383.6	10.0	10.0	136.29	136.29	98.8	126.9	230.0	210.4	19.53	11.772	
4,500.0	4,492.3	4,487.0	4,482.6	10.3	10.2	137.11	137.11	103.1	131.2	242.3	222.3	20.00	12.116	
4,600.0	4,591.7	4,586.1	4,581.6	10.5	10.4	137.84	137.84	107.3	135.5	254.8	234.3	20.47	12.446	
4,700.0	4,691.2	4,685.3	4,680.6	10.8	10.7	138.50	138.50	111.6	139.7	267.3	246.3	20.94	12.762	
4,800.0	4,790.6	4,784.5	4,779.5	11.1	10.9	139.11	139.11	115.8	144.0	279.8	258.4	21.41	13.065	
4,900.0	4,890.0	4,883.7	4,878.5	11.4	11.2	139.66	139.66	120.1	148.3	292.3	270.4	21.89	13.356	

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-243 - Wellbore #1 - Plan #1 (5-28-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,989.4	4,982.8	4,977.5	11.6	11.4	140.17	124.4	152.5	304.9	282.5	22.36	13.635		
5,100.0	5,088.8	5,082.0	5,076.5	11.9	11.7	140.63	128.6	156.8	317.5	294.6	22.83	13.903		
5,200.0	5,188.2	5,181.2	5,175.5	12.2	11.9	141.07	132.9	161.1	330.1	306.8	23.31	14.160		
5,300.0	5,287.8	5,280.5	5,274.7	12.4	12.1	141.43	137.1	165.3	341.3	317.5	23.80	14.345		
5,400.0	5,387.6	5,380.1	5,374.1	12.6	12.4	141.38	141.4	169.6	349.9	325.7	24.24	14.435		
5,500.0	5,487.6	5,479.9	5,473.7	12.8	12.6	140.96	145.7	173.9	355.8	331.1	24.66	14.425		
5,600.0	5,587.6	5,579.7	5,573.3	13.0	12.9	90.96	150.0	178.2	360.0	334.9	25.09	14.347		
5,700.0	5,687.6	5,684.2	5,677.6	13.2	13.1	90.29	154.1	182.4	363.9	338.4	25.54	14.250		
5,800.0	5,787.6	5,794.1	5,787.4	13.4	13.3	90.00	156.0	184.2	365.6	339.7	25.96	14.086		
5,900.0	5,887.6	5,895.2	5,888.6	13.6	13.5	90.00	156.0	184.2	365.6	339.3	26.37	13.867		
6,000.0	5,987.6	5,995.2	5,988.6	13.8	13.7	90.00	156.0	184.2	365.6	338.8	26.80	13.645		
6,059.7	6,047.3	6,054.9	6,048.3	13.9	13.8	90.00	156.0	184.2	365.6	338.6	27.05	13.515		
6,100.0	6,087.6	6,095.2	6,088.5	14.0	13.9	90.12	155.2	184.2	365.6	338.4	27.22	13.433		
6,200.0	6,187.5	6,194.1	6,186.8	14.2	14.1	-88.46	144.4	184.2	365.6	338.2	27.54	13.283		
6,300.0	6,286.5	6,291.7	6,281.6	14.3	14.2	-86.86	121.4	184.2	366.2	338.4	27.75	13.194		
6,400.0	6,383.0	6,388.0	6,371.5	14.5	14.3	-85.33	87.1	184.2	366.9	338.9	27.92	13.139		
6,500.0	6,475.1	6,483.2	6,455.5	14.5	14.4	-83.89	42.2	184.2	367.7	339.7	28.09	13.092		
6,600.0	6,561.4	6,577.5	6,532.4	14.6	14.5	-82.55	-12.1	184.2	368.8	340.4	28.32	13.023		
6,700.0	6,640.4	6,670.8	6,601.5	14.7	14.6	-81.35	-74.8	184.2	369.9	341.2	28.67	12.900		
6,800.0	6,710.8	6,763.4	6,661.9	14.9	14.9	-80.29	-144.8	184.2	371.0	341.7	29.22	12.695		
6,900.0	6,771.2	6,855.3	6,713.1	15.3	15.4	-79.39	-221.1	184.2	372.0	342.0	30.03	12.389		
7,000.0	6,820.8	6,946.7	6,754.6	15.8	16.0	-78.66	-302.5	184.2	372.9	341.8	31.13	11.978		
7,100.0	6,858.7	7,037.7	6,785.9	16.6	16.7	-78.11	-387.8	184.2	373.7	341.1	32.56	11.475		
7,200.0	6,884.1	7,128.3	6,806.8	17.6	17.6	-77.74	-476.0	184.2	374.2	339.9	34.30	10.909		
7,300.0	6,896.7	7,218.8	6,817.1	18.6	18.6	-77.56	-565.8	184.2	374.4	338.1	36.32	10.310		
7,400.0	6,897.5	7,313.2	6,817.6	19.9	19.8	-77.53	-660.2	184.2	374.5	335.9	38.62	9.696		
7,500.0	6,896.2	7,413.2	6,816.2	21.2	21.1	-77.51	-760.1	184.2	374.5	333.3	41.20	9.090		
7,600.0	6,894.9	7,513.2	6,814.7	22.6	22.5	-77.48	-860.1	184.2	374.5	330.6	43.95	8.522		
7,700.0	6,893.6	7,613.2	6,813.2	24.0	24.0	-77.46	-960.1	184.2	374.6	327.7	46.84	7.998		
7,800.0	6,892.2	7,713.2	6,811.8	25.6	25.5	-77.44	-1,060.1	184.2	374.6	324.8	49.84	7.517		
7,900.0	6,890.9	7,813.2	6,810.3	27.1	27.1	-77.41	-1,160.1	184.2	374.6	321.7	52.94	7.077		
8,000.0	6,889.6	7,913.2	6,808.8	28.8	28.7	-77.39	-1,260.1	184.2	374.7	318.6	56.12	6.677		
8,100.0	6,888.3	8,013.2	6,807.4	30.4	30.4	-77.36	-1,360.1	184.2	374.7	315.4	59.36	6.312		
8,200.0	6,887.0	8,113.2	6,805.9	32.1	32.1	-77.34	-1,460.1	184.2	374.8	312.1	62.67	5.980		
8,300.0	6,885.7	8,213.2	6,804.4	33.8	33.8	-77.32	-1,560.1	184.2	374.8	308.8	66.02	5.677		
8,400.0	6,884.4	8,313.2	6,803.0	35.5	35.5	-77.29	-1,660.1	184.2	374.8	305.4	69.41	5.400		
8,500.0	6,883.1	8,413.2	6,801.5	37.3	37.3	-77.27	-1,760.0	184.2	374.9	302.0	72.83	5.147		
8,600.0	6,881.8	8,513.2	6,800.0	39.0	39.0	-77.25	-1,860.0	184.2	374.9	298.6	76.29	4.914		
8,700.0	6,880.5	8,613.2	6,798.6	40.8	40.8	-77.22	-1,960.0	184.2	374.9	295.2	79.77	4.700		
8,800.0	6,879.2	8,713.2	6,797.1	42.6	42.6	-77.20	-2,060.0	184.2	375.0	291.7	83.28	4.503		
8,900.0	6,877.8	8,813.2	6,795.6	44.4	44.4	-77.18	-2,160.0	184.2	375.0	288.2	86.80	4.320		
9,000.0	6,876.5	8,913.2	6,794.2	46.2	46.2	-77.15	-2,260.0	184.2	375.0	284.7	90.35	4.151		
9,100.0	6,875.2	9,013.2	6,792.7	48.0	48.0	-77.13	-2,360.0	184.2	375.1	281.2	93.90	3.994		
9,200.0	6,873.9	9,113.2	6,791.2	49.9	49.9	-77.11	-2,460.0	184.2	375.1	277.6	97.48	3.848		
9,300.0	6,872.6	9,213.2	6,789.8	51.7	51.7	-77.08	-2,560.0	184.2	375.1	274.1	101.06	3.712		
9,400.0	6,871.3	9,313.2	6,788.3	53.5	53.5	-77.06	-2,659.9	184.2	375.2	270.5	104.65	3.585		
9,500.0	6,870.0	9,413.2	6,786.8	55.4	55.4	-77.04	-2,759.9	184.2	375.2	267.0	108.26	3.466		
9,600.0	6,868.7	9,513.2	6,785.4	57.2	57.2	-77.01	-2,859.9	184.2	375.3	263.4	111.87	3.354		
9,700.0	6,867.4	9,613.2	6,783.9	59.1	59.1	-76.99	-2,959.9	184.2	375.3	259.8	115.49	3.249		
9,800.0	6,866.1	9,713.2	6,782.4	60.9	61.0	-76.97	-3,059.9	184.2	375.3	256.2	119.12	3.151		
9,900.0	6,864.8	9,813.2	6,781.0	62.8	62.8	-76.94	-3,159.9	184.2	375.4	252.6	122.76	3.058		

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-243 - Wellbore #1 - Plan #1 (5-28-14)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,000.0	6,863.4	9,913.2	6,779.5	64.7	64.7	-76.92	-3,259.9	184.2	375.4	249.0	126.40	2.970	
10,100.0	6,862.1	10,013.2	6,778.0	66.5	66.5	-76.90	-3,359.9	184.2	375.4	245.4	130.05	2.887	
10,200.0	6,860.8	10,113.2	6,776.6	68.4	68.4	-76.87	-3,459.9	184.2	375.5	241.8	133.70	2.808	
10,300.0	6,859.5	10,213.2	6,775.1	70.3	70.3	-76.85	-3,559.8	184.2	375.5	238.2	137.35	2.734	
10,400.0	6,858.2	10,313.2	6,773.6	72.1	72.2	-76.83	-3,659.8	184.2	375.5	234.5	141.01	2.663	
10,500.0	6,856.9	10,413.2	6,772.2	74.0	74.0	-76.80	-3,759.8	184.2	375.6	230.9	144.67	2.596	
10,600.0	6,855.6	10,513.2	6,770.7	75.9	75.9	-76.78	-3,859.8	184.2	375.6	227.3	148.34	2.532	
10,700.0	6,854.3	10,613.2	6,769.2	77.8	77.8	-76.76	-3,959.8	184.2	375.7	223.6	152.01	2.471	
10,800.0	6,853.0	10,713.2	6,767.8	79.7	79.7	-76.73	-4,059.8	184.2	375.7	220.0	155.68	2.413	
10,900.0	6,851.7	10,813.2	6,766.3	81.6	81.6	-76.71	-4,159.8	184.2	375.7	216.4	159.35	2.358	
11,000.0	6,850.4	10,913.2	6,764.8	83.4	83.5	-76.69	-4,259.8	184.2	375.8	212.7	163.03	2.305	
11,100.0	6,849.0	11,013.2	6,763.4	85.3	85.4	-76.66	-4,359.8	184.2	375.8	209.1	166.71	2.254	
11,200.0	6,847.7	11,113.2	6,761.9	87.2	87.2	-76.64	-4,459.7	184.2	375.8	205.5	170.39	2.206	
11,300.0	6,846.4	11,213.2	6,760.4	89.1	89.1	-76.62	-4,559.7	184.2	375.9	201.8	174.07	2.159	
11,314.3	6,846.2	11,227.5	6,760.2	89.4	89.4	-76.61	-4,574.1	184.2	375.9	201.3	174.60	2.153	
11,332.8	6,846.0	11,243.6	6,760.0	89.7	89.7	-76.61	-4,590.2	184.2	375.9	200.7	175.24	2.145 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	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
0.0	0.0	0.0	0.0	0.0	0.0	90.00	90.00	0.0	89.3	89.3				
100.0	100.0	100.0	100.0	0.1	0.1	90.00	90.00	0.0	89.3	89.3	89.1	0.22	397.346	
200.0	200.0	200.0	200.0	0.3	0.3	90.00	90.00	0.0	89.3	89.3	88.6	0.67	132.449	
300.0	300.0	300.0	300.0	0.6	0.6	90.00	90.00	0.0	89.3	89.3	88.2	1.12	79.469	
400.0	400.0	400.0	400.0	0.8	0.8	90.00	90.00	0.0	89.3	89.3	87.7	1.57	56.764	
500.0	500.0	500.0	500.0	1.0	1.0	90.00	90.00	0.0	89.3	89.3	87.3	2.02	44.150	
600.0	600.0	600.0	600.0	1.2	1.2	90.00	90.00	0.0	89.3	89.3	86.8	2.47	36.122	
700.0	700.0	700.0	700.0	1.5	1.5	90.00	90.00	0.0	89.3	89.3	86.4	2.92	30.565	
800.0	800.0	800.0	800.0	1.7	1.7	90.00	90.00	0.0	89.3	89.3	85.9	3.37	26.490	
900.0	900.0	900.0	900.0	1.9	1.9	90.00	90.00	0.0	89.3	89.3	85.5	3.82	23.373	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	90.00	0.0	89.3	89.3	85.0	4.27	20.913 CC, ES	
1,100.0	1,100.0	1,097.1	1,097.0	2.4	2.3	89.71	89.71	0.5	90.9	90.9	86.2	4.70	19.331	
1,200.0	1,200.0	1,193.9	1,193.7	2.6	2.6	88.91	88.91	1.8	95.6	95.8	90.7	5.13	18.669	
1,300.0	1,300.0	1,290.3	1,289.8	2.8	2.8	87.73	87.73	4.1	103.4	104.0	98.4	5.57	18.672	
1,400.0	1,400.0	1,386.1	1,384.9	3.0	3.0	86.37	86.37	7.2	114.3	115.5	109.5	6.02	19.186	
1,500.0	1,500.0	1,485.2	1,483.1	3.3	3.3	85.07	85.07	10.9	127.0	128.6	122.1	6.49	19.814	
1,600.0	1,600.0	1,584.3	1,581.3	3.5	3.5	84.02	84.02	14.6	139.7	141.7	134.7	6.97	20.340	
1,700.0	1,700.0	1,683.4	1,679.6	3.7	3.8	83.14	83.14	18.3	152.4	154.9	147.4	7.45	20.786	
1,800.0	1,800.0	1,782.5	1,777.8	3.9	4.1	82.40	82.40	22.0	165.2	168.1	160.2	7.94	21.166	
1,900.0	1,900.0	1,881.6	1,876.0	4.2	4.4	81.76	81.76	25.7	177.9	181.3	172.9	8.44	21.494	
2,000.0	2,000.0	1,980.7	1,974.2	4.4	4.7	81.22	81.22	29.4	190.6	194.6	185.6	8.93	21.779	
2,100.0	2,100.0	2,079.8	2,072.4	4.6	5.0	80.74	80.74	33.1	203.3	207.8	198.4	9.43	22.030	
2,200.0	2,200.0	2,178.9	2,170.6	4.8	5.3	80.32	80.32	36.8	216.0	221.1	211.2	9.94	22.251	
2,300.0	2,300.0	2,278.0	2,268.8	5.1	5.6	79.95	79.95	40.5	228.8	234.4	224.0	10.44	22.448	
2,400.0	2,400.0	2,377.1	2,367.0	5.3	5.9	79.62	79.62	44.2	241.5	247.7	236.8	10.95	22.625	
2,500.0	2,500.0	2,476.2	2,465.3	5.5	6.2	79.32	79.32	47.9	254.2	261.0	249.6	11.46	22.783	
2,600.0	2,600.0	2,575.3	2,563.5	5.7	6.6	79.05	79.05	51.6	266.9	274.3	262.4	11.97	22.927	
2,700.0	2,700.0	2,674.4	2,661.7	6.0	6.9	78.81	78.81	55.3	279.7	287.7	275.2	12.48	23.057	
2,800.0	2,800.0	2,773.5	2,759.9	6.2	7.2	78.59	78.59	59.0	292.4	301.0	288.0	12.99	23.176	
2,900.0	2,900.0	2,872.6	2,858.1	6.4	7.5	78.38	78.38	62.7	305.1	314.3	300.8	13.50	23.286	
3,000.0	3,000.0	2,971.7	2,956.3	6.6	7.9	78.19	78.19	66.4	317.8	327.6	313.6	14.01	23.386	
3,100.0	3,100.0	3,070.7	3,054.4	6.9	8.2	127.33	127.33	70.1	330.5	342.0	328.3	13.68	25.006	
3,200.0	3,199.8	3,169.3	3,152.1	7.1	8.5	127.57	127.57	73.8	343.2	358.5	344.4	14.11	25.413	
3,300.0	3,299.5	3,267.3	3,249.3	7.3	8.8	128.16	128.16	77.5	355.8	377.1	362.6	14.53	25.956	
3,400.0	3,398.9	3,365.1	3,346.1	7.5	9.1	129.16	129.16	81.1	368.3	397.2	382.2	14.98	26.520	
3,500.0	3,498.3	3,462.8	3,443.0	7.8	9.5	130.11	130.11	84.8	380.9	417.4	401.9	15.43	27.046	
3,600.0	3,597.7	3,560.5	3,539.8	8.0	9.8	130.97	130.97	88.4	393.4	437.6	421.8	15.89	27.541	
3,700.0	3,697.1	3,658.2	3,636.7	8.2	10.1	131.75	131.75	92.1	406.0	458.0	441.7	16.35	28.006	
3,800.0	3,796.5	3,756.0	3,733.5	8.5	10.4	132.47	132.47	95.7	418.5	478.4	461.6	16.82	28.445	
3,900.0	3,895.9	3,853.7	3,830.3	8.7	10.8	133.12	133.12	99.4	431.1	498.9	481.7	17.29	28.860	
4,000.0	3,995.3	3,951.4	3,927.2	9.0	11.1	133.73	133.73	103.0	443.6	519.5	501.7	17.76	29.251	
4,100.0	4,094.7	4,049.1	4,024.0	9.2	11.4	134.29	134.29	106.7	456.2	540.1	521.9	18.23	29.621	
4,200.0	4,194.1	4,146.8	4,120.9	9.5	11.7	134.81	134.81	110.3	468.7	560.8	542.1	18.71	29.972	
4,300.0	4,293.5	4,244.6	4,217.7	9.8	12.1	135.29	135.29	113.9	481.3	581.5	562.3	19.19	30.304	
4,400.0	4,392.9	4,342.3	4,314.6	10.0	12.4	135.74	135.74	117.6	493.8	602.2	582.5	19.67	30.620	
4,500.0	4,492.3	4,440.0	4,411.4	10.3	12.7	136.16	136.16	121.2	506.4	623.0	602.8	20.15	30.920	
4,600.0	4,591.7	4,537.7	4,508.2	10.5	13.0	136.55	136.55	124.9	518.9	643.8	623.2	20.63	31.204	
4,700.0	4,691.2	4,635.4	4,605.1	10.8	13.4	136.92	136.92	128.5	531.5	664.6	643.5	21.12	31.476	
4,800.0	4,790.6	4,733.2	4,701.9	11.1	13.7	137.26	137.26	132.2	544.0	685.5	663.9	21.60	31.734	
4,900.0	4,890.0	4,830.9	4,798.8	11.4	14.0	137.59	137.59	135.8	556.6	706.3	684.3	22.09	31.981	
5,000.0	4,989.4	4,928.6	4,895.6	11.6	14.3	137.90	137.90	139.5	569.1	727.2	704.7	22.57	32.216	

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-303 - Wellbore #1 - Plan #2 (5-28-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,088.8	5,026.3	4,992.5	11.9	14.7	138.19		143.1	581.6	748.1	725.1	23.06	32.441	
5,200.0	5,188.2	5,124.0	5,089.3	12.2	15.0	138.46		146.8	594.2	769.1	745.5	23.55	32.656	
5,300.0	5,287.6	5,247.2	5,211.6	12.4	15.3	138.95		150.9	608.5	787.6	763.5	24.10	32.683	
5,400.0	5,387.6	5,382.5	5,346.5	12.6	15.6	139.26		153.8	618.5	799.3	774.7	24.59	32.506	
5,500.0	5,487.6	5,519.1	5,483.0	12.8	15.8	139.38		155.0	622.4	803.8	778.8	25.04	32.100	
5,600.0	5,587.6	5,623.7	5,587.6	13.0	16.0	90.07		155.0	622.5	803.9	778.4	25.43	31.611	
5,700.0	5,687.6	5,723.7	5,687.6	13.2	16.2	90.07		155.0	622.5	803.9	778.0	25.84	31.106	
5,800.0	5,787.6	5,823.7	5,787.6	13.4	16.3	90.07		155.0	622.5	803.9	777.6	26.26	30.615	
5,900.0	5,887.6	5,923.7	5,887.6	13.6	16.5	90.07		155.0	622.5	803.9	777.2	26.67	30.139	
6,000.0	5,987.6	6,023.7	5,987.6	13.8	16.7	90.07		155.0	622.5	803.9	776.8	27.09	29.676	
6,100.0	6,087.6	6,123.7	6,087.6	14.0	16.8	90.07		155.0	622.5	803.9	776.4	27.51	29.225	
6,200.0	6,187.5	6,223.9	6,187.8	14.2	17.0	-89.93		153.1	622.5	803.9	776.0	27.88	28.836	
6,300.0	6,286.5	6,324.3	6,287.2	14.3	17.1	-89.92		139.4	622.4	803.8	775.7	28.14	28.567	
6,400.0	6,383.0	6,424.7	6,383.9	14.5	17.2	-89.92		112.8	622.3	803.7	775.3	28.33	28.363	
6,500.0	6,475.1	6,525.1	6,476.3	14.5	17.3	-89.91		73.7	622.0	803.5	774.9	28.52	28.174	
6,600.0	6,561.4	6,625.4	6,562.7	14.6	17.4	-89.91		23.0	621.8	803.2	774.4	28.75	27.933	
6,700.0	6,640.4	6,725.7	6,641.7	14.7	17.5	-89.91		-38.6	621.5	802.9	773.7	29.12	27.568	
6,800.0	6,710.8	6,825.9	6,712.0	14.9	17.6	-89.91		-110.0	621.1	802.5	772.8	29.70	27.015	
6,900.0	6,771.2	6,926.1	6,772.2	15.3	17.9	-89.92		-190.0	620.7	802.1	771.5	30.57	26.237	
7,000.0	6,820.8	7,026.2	6,821.5	15.8	18.3	-89.92		-277.0	620.2	801.6	769.8	31.77	25.233	
7,100.0	6,858.7	7,126.3	6,858.9	16.6	18.9	-89.93		-369.8	619.7	801.1	767.8	33.31	24.047	
7,200.0	6,884.1	7,226.3	6,884.0	17.6	19.6	-89.93		-466.5	619.2	800.6	765.4	35.19	22.748	
7,300.0	6,896.7	7,326.2	6,896.1	18.6	20.6	-89.94		-565.6	618.7	800.1	762.7	37.36	21.413	
7,400.0	6,897.5	7,426.2	6,896.7	19.9	21.7	-89.95		-665.6	618.1	799.6	759.8	39.78	20.100	
7,500.0	6,896.2	7,526.2	6,895.4	21.2	22.9	-89.95		-765.6	617.6	799.0	756.6	42.39	18.848	
7,600.0	6,894.9	7,626.2	6,894.1	22.6	24.2	-89.95		-865.5	617.1	798.5	753.3	45.18	17.673	
7,700.0	6,893.6	7,726.2	6,892.8	24.0	25.5	-89.95		-965.5	616.5	798.0	749.8	48.12	16.584	
7,800.0	6,892.2	7,826.2	6,891.5	25.6	27.0	-89.95		-1,065.5	616.0	797.4	746.3	51.17	15.584	
7,900.0	6,890.9	7,926.2	6,890.2	27.1	28.5	-89.95		-1,165.5	615.5	796.9	742.6	54.32	14.670	
8,000.0	6,889.6	8,026.2	6,888.9	28.8	30.0	-89.95		-1,265.5	615.0	796.4	738.8	57.56	13.836	
8,100.0	6,888.3	8,126.2	6,887.7	30.4	31.6	-89.96		-1,365.5	614.4	795.9	735.0	60.86	13.076	
8,200.0	6,887.0	8,226.2	6,886.4	32.1	33.3	-89.96		-1,465.5	613.9	795.3	731.1	64.23	12.383	
8,300.0	6,885.7	8,326.2	6,885.1	33.8	34.9	-89.96		-1,565.5	613.4	794.8	727.2	67.64	11.750	
8,400.0	6,884.4	8,426.2	6,883.8	35.5	36.6	-89.96		-1,665.5	612.8	794.3	723.2	71.10	11.171	
8,500.0	6,883.1	8,526.2	6,882.5	37.3	38.3	-89.96		-1,765.4	612.3	793.7	719.1	74.60	10.640	
8,600.0	6,881.8	8,626.2	6,881.2	39.0	40.0	-89.96		-1,865.4	611.8	793.2	715.1	78.12	10.153	
8,700.0	6,880.5	8,726.2	6,879.9	40.8	41.7	-89.96		-1,965.4	611.3	792.7	711.0	81.68	9.705	
8,800.0	6,879.2	8,826.2	6,878.6	42.6	43.5	-89.96		-2,065.4	610.7	792.2	706.9	85.26	9.291	
8,900.0	6,877.8	8,926.2	6,877.3	44.4	45.3	-89.97		-2,165.4	610.2	791.6	702.8	88.86	8.909	
9,000.0	6,876.5	9,026.2	6,876.0	46.2	47.0	-89.97		-2,265.4	609.7	791.1	698.6	92.48	8.554	
9,100.0	6,875.2	9,126.2	6,874.7	48.0	48.8	-89.97		-2,365.4	609.1	790.6	694.5	96.11	8.225	
9,200.0	6,873.9	9,226.2	6,873.4	49.9	50.6	-89.97		-2,465.4	608.6	790.0	690.3	99.76	7.919	
9,300.0	6,872.6	9,326.2	6,872.2	51.7	52.4	-89.97		-2,565.4	608.1	789.5	686.1	103.43	7.633	
9,400.0	6,871.3	9,426.2	6,870.9	53.5	54.2	-89.97		-2,665.3	607.5	789.0	681.9	107.11	7.366	
9,500.0	6,870.0	9,526.2	6,869.6	55.4	56.1	-89.97		-2,765.3	607.0	788.5	677.7	110.79	7.116	
9,600.0	6,868.7	9,626.2	6,868.3	57.2	57.9	-89.97		-2,865.3	606.5	787.9	673.4	114.49	6.882	
9,700.0	6,867.4	9,726.2	6,867.0	59.1	59.7	-89.98		-2,965.3	606.0	787.4	669.2	118.20	6.662	
9,800.0	6,866.1	9,826.2	6,865.7	60.9	61.6	-89.98		-3,065.3	605.4	786.9	665.0	121.91	6.455	
9,900.0	6,864.8	9,926.2	6,864.4	62.8	63.4	-89.98		-3,165.3	604.9	786.3	660.7	125.63	6.259	
10,000.0	6,863.4	10,026.1	6,863.1	64.7	65.3	-89.98		-3,265.3	604.4	785.8	656.5	129.36	6.075	
10,100.0	6,862.1	10,126.1	6,861.8	66.5	67.1	-89.98		-3,365.3	603.8	785.3	652.2	133.09	5.900	

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-303 - Wellbore #1 - Plan #2 (5-28-14)		Offset Site Error:		0.0 ft	
Survey Program: 0-MWD												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis		Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
10,200.0	6,860.8	10,226.1	6,860.5	68.4	69.0	-89.98	-3,465.3	603.3	784.8	647.9	136.83	5.735			
10,300.0	6,859.5	10,326.1	6,859.2	70.3	70.8	-89.98	-3,565.2	602.8	784.2	643.6	140.58	5.579			
10,400.0	6,858.2	10,426.1	6,857.9	72.1	72.7	-89.98	-3,665.2	602.3	783.7	639.4	144.33	5.430			
10,500.0	6,856.9	10,526.1	6,856.7	74.0	74.5	-89.99	-3,765.2	601.7	783.2	635.1	148.08	5.289			
10,600.0	6,855.6	10,626.1	6,855.4	75.9	76.4	-89.99	-3,865.2	601.2	782.6	630.8	151.84	5.154			
10,700.0	6,854.3	10,726.1	6,854.1	77.8	78.3	-89.99	-3,965.2	600.7	782.1	626.5	155.60	5.026			
10,800.0	6,853.0	10,826.1	6,852.8	79.7	80.1	-89.99	-4,065.2	600.1	781.6	622.2	159.37	4.904			
10,900.0	6,851.7	10,926.1	6,851.5	81.6	82.0	-89.99	-4,165.2	599.6	781.1	617.9	163.14	4.788			
11,000.0	6,850.4	11,026.1	6,850.2	83.4	83.9	-89.99	-4,265.2	599.1	780.5	613.6	166.91	4.676			
11,100.0	6,849.0	11,126.1	6,848.9	85.3	85.8	-89.99	-4,365.2	598.5	780.0	609.3	170.68	4.570			
11,200.0	6,847.7	11,226.1	6,847.6	87.2	87.6	-89.99	-4,465.1	598.0	779.5	605.0	174.46	4.468			
11,300.0	6,846.4	11,326.1	6,846.3	89.1	89.5	-90.00	-4,565.1	597.5	778.9	600.7	178.24	4.370			
11,329.2	6,846.0	11,351.2	6,846.0	89.7	90.0	-90.00	-4,590.2	597.4	778.8	599.5	179.26	4.344			
11,332.8	6,846.0	11,351.2	6,846.0	89.7	90.0	-90.00	-4,590.2	597.4	778.8	599.5	179.33	4.343 SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-443 - Wellbore #1 - Plan #2 (5-28-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	90.00	90.00	0.0	58.6	58.6	58.6	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	90.00	90.00	0.0	58.6	58.6	58.4	0.23	258.176	
200.0	200.0	201.0	201.0	0.3	0.3	90.00	90.00	0.0	58.6	58.6	57.9	0.68	86.631	
300.0	300.0	301.0	301.0	0.6	0.6	90.00	90.00	0.0	58.6	58.6	57.5	1.13	52.048	
400.0	400.0	401.0	401.0	0.8	0.8	90.00	90.00	0.0	58.6	58.6	57.0	1.58	37.198	
500.0	500.0	501.0	501.0	1.0	1.0	90.00	90.00	0.0	58.6	58.6	56.6	2.03	28.941	
600.0	600.0	601.0	601.0	1.2	1.2	90.00	90.00	0.0	58.6	58.6	56.1	2.47	23.684	
700.0	700.0	701.0	701.0	1.5	1.5	90.00	90.00	0.0	58.6	58.6	55.7	2.92	20.043	
800.0	800.0	801.0	801.0	1.7	1.7	90.00	90.00	0.0	58.6	58.6	55.2	3.37	17.372	
900.0	900.0	901.0	901.0	1.9	1.9	90.00	90.00	0.0	58.6	58.6	54.8	3.82	15.330	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	90.00	90.00	0.0	58.6	58.6	54.3	4.27	13.717	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	90.00	90.00	0.0	58.6	58.6	53.9	4.72	12.411	
1,200.0	1,200.0	1,201.0	1,201.0	2.6	2.6	90.00	90.00	0.0	58.6	58.6	53.4	5.17	11.332	
1,300.0	1,300.0	1,301.0	1,301.0	2.8	2.8	90.00	90.00	0.0	58.6	58.6	53.0	5.62	10.426	
1,400.0	1,400.0	1,401.0	1,401.0	3.0	3.0	90.00	90.00	0.0	58.6	58.6	52.5	6.07	9.654	
1,466.3	1,466.3	1,467.3	1,467.3	3.2	3.2	90.00	90.00	0.0	58.6	58.6	52.2	6.37	9.202 CC	
1,500.0	1,500.0	1,501.0	1,501.0	3.3	3.3	90.00	90.00	0.0	58.6	58.6	52.1	6.52	8.989 ES	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	89.08	89.08	1.0	60.1	60.1	53.1	6.96	8.630	
1,700.0	1,700.0	1,697.3	1,697.2	3.7	3.7	86.65	86.65	3.8	64.3	64.5	57.1	7.40	8.720	
1,800.0	1,800.0	1,796.0	1,795.5	3.9	3.9	83.38	83.38	8.2	71.0	71.7	63.8	7.84	9.145	
1,900.0	1,900.0	1,895.6	1,894.7	4.2	4.1	80.56	80.56	13.0	78.1	79.5	71.2	8.29	9.588	
2,000.0	2,000.0	1,995.2	1,994.0	4.4	4.4	78.24	78.24	17.8	85.3	87.4	78.7	8.74	10.000	
2,100.0	2,100.0	2,094.9	2,093.3	4.6	4.6	76.31	76.31	22.5	92.5	95.5	86.3	9.20	10.380	
2,200.0	2,200.0	2,194.5	2,192.5	4.8	4.8	74.69	74.69	27.3	99.6	103.6	94.0	9.66	10.730	
2,300.0	2,300.0	2,294.1	2,291.8	5.1	5.1	73.30	73.30	32.0	106.8	111.9	101.7	10.12	11.053	
2,400.0	2,400.0	2,393.7	2,391.0	5.3	5.3	72.10	72.10	36.8	113.9	120.1	109.6	10.58	11.351	
2,500.0	2,500.0	2,493.4	2,490.3	5.5	5.6	71.06	71.06	41.6	121.1	128.5	117.4	11.05	11.627	
2,600.0	2,600.0	2,593.0	2,589.5	5.7	5.8	70.14	70.14	46.3	128.2	136.8	125.3	11.52	11.882	
2,700.0	2,700.0	2,692.6	2,688.8	6.0	6.1	69.33	69.33	51.1	135.4	145.2	133.2	11.98	12.119	
2,800.0	2,800.0	2,792.2	2,788.0	6.2	6.4	68.61	68.61	55.8	142.5	153.6	141.2	12.45	12.339	
2,900.0	2,900.0	2,891.9	2,887.3	6.4	6.6	67.96	67.96	60.6	149.7	162.1	149.2	12.92	12.543	
3,000.0	3,000.0	2,991.5	2,986.6	6.6	6.9	67.38	67.38	65.4	156.9	170.5	157.2	13.39	12.734	
3,100.0	3,100.0	3,091.1	3,085.8	6.9	7.1	116.49	116.49	70.1	164.0	179.8	166.2	13.63	13.196	
3,200.0	3,199.8	3,190.4	3,184.7	7.1	7.4	117.22	117.22	74.9	171.1	190.6	176.6	14.06	13.558	
3,300.0	3,299.5	3,289.5	3,283.4	7.3	7.6	118.69	118.69	79.6	178.3	203.1	188.6	14.49	14.019	
3,400.0	3,398.9	3,388.3	3,381.8	7.5	7.9	120.64	120.64	84.3	185.4	216.9	201.9	14.94	14.521	
3,500.0	3,498.3	3,487.0	3,480.2	7.8	8.2	122.40	122.40	89.0	192.5	230.9	215.5	15.39	15.004	
3,600.0	3,597.7	3,585.8	3,578.7	8.0	8.4	123.95	123.95	93.8	199.5	245.0	229.2	15.84	15.466	
3,700.0	3,697.1	3,684.6	3,677.1	8.2	8.7	125.33	125.33	98.5	206.6	259.4	243.1	16.30	15.909	
3,800.0	3,796.5	3,783.4	3,775.5	8.5	9.0	126.57	126.57	103.2	213.7	273.9	257.1	16.77	16.332	
3,900.0	3,895.9	3,882.2	3,873.9	8.7	9.2	127.68	127.68	107.9	220.8	288.4	271.2	17.23	16.736	
4,000.0	3,995.3	3,981.0	3,972.3	9.0	9.5	128.69	128.69	112.6	227.9	303.1	285.4	17.70	17.122	
4,100.0	4,094.7	4,079.7	4,070.7	9.2	9.7	129.60	129.60	117.4	235.0	317.9	299.7	18.17	17.490	
4,200.0	4,194.1	4,178.5	4,169.2	9.5	10.0	130.43	130.43	122.1	242.1	332.7	314.1	18.65	17.842	
4,300.0	4,293.5	4,277.3	4,267.6	9.8	10.3	131.19	131.19	126.8	249.2	347.6	328.5	19.12	18.178	
4,400.0	4,392.9	4,376.1	4,366.0	10.0	10.5	131.89	131.89	131.5	256.3	362.5	342.9	19.60	18.499	
4,500.0	4,492.3	4,474.9	4,464.4	10.3	10.8	132.53	132.53	136.2	263.4	377.5	357.5	20.08	18.805	
4,600.0	4,491.7	4,473.7	4,462.8	10.5	11.1	133.13	133.13	141.0	270.5	392.6	372.0	20.56	19.099	
4,700.0	4,491.2	4,472.4	4,461.2	10.8	11.3	133.68	133.68	145.7	277.6	407.7	386.6	21.04	19.379	
4,800.0	4,490.6	4,472.2	4,460.7	11.1	11.6	134.19	134.19	150.5	284.8	422.8	401.3	21.52	19.647	
4,900.0	4,490.0	4,486.2	4,474.3	11.4	11.8	134.91	134.91	154.5	290.8	436.0	414.0	21.98	19.831	

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-443 - Wellbore #1 - Plan #2 (5-28-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,989.4	5,000.7	4,988.9	11.6	12.0	135.87		156.0	293.1	445.8	423.4	22.44	19.868	
5,100.0	5,088.8	5,101.6	5,089.8	11.9	12.2	136.84		156.0	293.1	453.7	430.8	22.88	19.830	
5,200.0	5,188.2	5,201.1	5,189.2	12.2	12.4	137.76		156.0	293.1	461.7	438.4	23.34	19.783	
5,300.0	5,287.8	5,300.6	5,288.8	12.4	12.6	138.60		156.0	293.1	468.6	444.7	23.81	19.679	
5,400.0	5,387.6	5,400.5	5,388.6	12.6	12.8	139.11		156.0	293.1	472.8	448.6	24.24	19.508	
5,500.0	5,487.6	5,500.4	5,488.6	12.8	13.0	139.30		156.0	293.1	474.5	449.8	24.64	19.255	
5,600.0	5,587.6	5,600.4	5,588.6	13.0	13.2	90.00		156.0	293.1	474.5	449.4	25.04	18.946	
5,700.0	5,687.6	5,700.4	5,688.6	13.2	13.4	90.00		156.0	293.1	474.5	449.0	25.47	18.628	
5,800.0	5,787.6	5,800.4	5,788.6	13.4	13.6	90.00		156.0	293.1	474.5	448.6	25.90	18.320	
5,900.0	5,887.6	5,900.4	5,888.6	13.6	13.8	90.00		156.0	293.1	474.5	448.2	26.33	18.021	
6,000.0	5,987.6	6,000.4	5,988.6	13.8	14.0	90.00		156.0	293.1	474.5	447.7	26.76	17.732	
6,100.0	6,087.6	6,100.4	6,088.6	14.0	14.2	90.00		156.0	293.1	474.5	447.3	27.19	17.451	
6,148.9	6,136.5	6,149.4	6,137.5	14.1	14.3	-90.10		156.0	293.1	474.5	447.1	27.39	17.326	
6,200.0	6,187.5	6,200.4	6,188.5	14.2	14.5	-90.23		156.0	293.1	474.5	446.9	27.59	17.198	
6,300.0	6,286.5	6,299.7	6,287.7	14.3	14.6	-91.28		151.5	293.2	474.7	446.8	27.88	17.024	
6,400.0	6,383.0	6,400.0	6,386.4	14.5	14.7	-92.34		134.0	293.5	475.4	447.3	28.09	16.921	
6,500.0	6,475.1	6,501.6	6,483.1	14.5	14.9	-93.36		103.4	294.2	476.4	448.2	28.27	16.855	
6,600.0	6,561.4	6,604.3	6,576.0	14.6	15.0	-94.32		59.6	295.1	477.9	449.4	28.47	16.789	
6,700.0	6,640.4	6,708.4	6,663.2	14.7	15.1	-95.20		3.0	296.2	479.7	450.9	28.77	16.674	
6,800.0	6,710.8	6,813.6	6,742.7	14.9	15.2	-95.99		-65.8	297.7	481.8	452.5	29.26	16.465	
6,900.0	6,771.2	6,919.9	6,812.7	15.3	15.5	-96.67		-145.7	299.3	484.1	454.1	30.03	16.120	
7,000.0	6,820.8	7,027.3	6,871.5	15.8	16.0	-97.22		-235.4	301.1	486.6	455.4	31.14	15.624	
7,100.0	6,858.7	7,135.6	6,917.4	16.6	16.7	-97.64		-333.4	303.2	489.1	456.4	32.63	14.988	
7,200.0	6,884.1	7,244.6	6,949.2	17.6	17.7	-97.91		-437.6	305.3	491.5	457.0	34.50	14.249	
7,300.0	6,896.7	7,352.6	6,965.9	18.6	18.8	-98.05		-544.1	307.5	494.0	457.3	36.69	13.464	
7,400.0	6,897.5	7,455.1	6,975.8	19.9	20.1	-98.92		-646.2	309.6	497.3	458.3	39.02	12.744	
7,500.0	6,896.2	7,560.1	6,978.3	21.2	21.4	-99.33		-751.0	311.8	499.9	458.3	41.63	12.009	
7,600.0	6,894.9	7,660.1	6,978.5	22.6	22.8	-99.45		-851.0	313.8	502.2	457.8	44.38	11.316	
7,700.0	6,893.6	7,760.0	6,978.6	24.0	24.3	-99.58		-950.9	315.9	504.5	457.2	47.26	10.673	
7,800.0	6,892.2	7,860.0	6,978.8	25.6	25.8	-99.71		-1,050.9	317.9	506.7	456.5	50.27	10.081	
7,900.0	6,890.9	7,960.0	6,979.0	27.1	27.3	-99.83		-1,150.8	320.0	509.0	455.6	53.37	9.537	
8,000.0	6,889.6	8,059.9	6,979.2	28.8	29.0	-99.96		-1,250.8	322.0	511.3	454.7	56.55	9.041	
8,100.0	6,888.3	8,159.9	6,979.3	30.4	30.6	-100.08		-1,350.7	324.1	513.6	453.8	59.80	8.588	
8,200.0	6,887.0	8,259.9	6,979.5	32.1	32.3	-100.20		-1,450.7	326.2	515.9	452.8	63.11	8.174	
8,300.0	6,885.7	8,359.8	6,979.7	33.8	34.0	-100.33		-1,550.6	328.2	518.2	451.7	66.46	7.796	
8,400.0	6,884.4	8,459.8	6,979.9	35.5	35.7	-100.45		-1,650.6	330.3	520.5	450.6	69.86	7.450	
8,500.0	6,883.1	8,559.8	6,980.0	37.3	37.5	-100.56		-1,750.5	332.3	522.8	449.5	73.29	7.133	
8,600.0	6,881.8	8,659.8	6,980.2	39.0	39.2	-100.68		-1,850.5	334.4	525.0	448.3	76.75	6.841	
8,700.0	6,880.5	8,759.7	6,980.4	40.8	41.0	-100.80		-1,950.4	336.5	527.3	447.1	80.23	6.573	
8,800.0	6,879.2	8,859.7	6,980.6	42.6	42.8	-100.91		-2,050.3	338.5	529.6	445.9	83.73	6.325	
8,900.0	6,877.8	8,959.7	6,980.7	44.4	44.6	-101.03		-2,150.3	340.6	532.0	444.7	87.26	6.096	
9,000.0	6,876.5	9,059.6	6,980.9	46.2	46.4	-101.14		-2,250.2	342.6	534.3	443.5	90.80	5.884	
9,100.0	6,875.2	9,159.6	6,981.1	48.0	48.2	-101.26		-2,350.2	344.7	536.6	442.2	94.35	5.687	
9,200.0	6,873.9	9,259.6	6,981.3	49.9	50.0	-101.37		-2,450.1	346.7	538.9	441.0	97.92	5.503	
9,300.0	6,872.6	9,359.5	6,981.4	51.7	51.9	-101.48		-2,550.1	348.8	541.2	439.7	101.50	5.332	
9,400.0	6,871.3	9,459.5	6,981.6	53.5	53.7	-101.59		-2,650.0	350.9	543.5	438.4	105.08	5.172	
9,500.0	6,870.0	9,559.5	6,981.8	55.4	55.6	-101.70		-2,750.0	352.9	545.8	437.1	108.68	5.022	
9,600.0	6,868.7	9,659.4	6,982.0	57.2	57.4	-101.81		-2,849.9	355.0	548.1	435.9	112.28	4.882	
9,700.0	6,867.4	9,759.4	6,982.1	59.1	59.3	-101.91		-2,949.9	357.0	550.5	434.6	115.89	4.750	
9,800.0	6,866.1	9,859.4	6,982.3	60.9	61.1	-102.02		-3,049.8	359.1	552.8	433.3	119.50	4.626	
9,900.0	6,864.8	9,959.3	6,982.5	62.8	63.0	-102.13		-3,149.8	361.1	555.1	432.0	123.12	4.509	

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5U-443 - Wellbore #1 - Plan #2 (5-28-14)				Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)								
10,000.0	6,863.4	10,059.3	6,982.7	64.7	64.9	-102.23	-3,249.7	363.2	557.4	430.7	126.74	4.398				
10,100.0	6,862.1	10,159.3	6,982.8	66.5	66.7	-102.33	-3,349.7	365.3	559.8	429.4	130.37	4.294				
10,200.0	6,860.8	10,259.2	6,983.0	68.4	68.6	-102.44	-3,449.6	367.3	562.1	428.1	134.00	4.195				
10,300.0	6,859.5	10,359.2	6,983.2	70.3	70.5	-102.54	-3,549.5	369.4	564.4	426.8	137.63	4.101				
10,400.0	6,858.2	10,459.2	6,983.4	72.1	72.4	-102.64	-3,649.5	371.4	566.7	425.5	141.26	4.012				
10,500.0	6,856.9	10,559.1	6,983.5	74.0	74.3	-102.74	-3,749.4	373.5	569.1	424.2	144.90	3.927				
10,600.0	6,855.6	10,659.1	6,983.7	75.9	76.1	-102.84	-3,849.4	375.5	571.4	422.9	148.54	3.847				
10,700.0	6,854.3	10,759.1	6,983.9	77.8	78.0	-102.94	-3,949.3	377.6	573.8	421.6	152.17	3.770				
10,800.0	6,853.0	10,859.0	6,984.1	79.7	79.9	-103.04	-4,049.3	379.7	576.1	420.3	155.81	3.697				
10,900.0	6,851.7	10,959.0	6,984.2	81.6	81.8	-103.13	-4,149.2	381.7	578.4	419.0	159.45	3.628				
11,000.0	6,850.4	11,059.0	6,984.4	83.4	83.7	-103.23	-4,249.2	383.8	580.8	417.7	163.10	3.561				
11,100.0	6,849.0	11,158.9	6,984.6	85.3	85.6	-103.33	-4,349.1	385.8	583.1	416.4	166.74	3.497				
11,200.0	6,847.7	11,258.9	6,984.8	87.2	87.5	-103.42	-4,449.1	387.9	585.5	415.1	170.38	3.436				
11,300.0	6,846.4	11,358.9	6,984.9	89.1	89.4	-103.51	-4,549.0	389.9	587.8	413.8	174.02	3.378				
11,332.8	6,846.0	11,391.7	6,985.0	89.7	90.0	-103.55	-4,581.8	390.6	588.6	413.4	175.21	3.359 SF				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 12-10I (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7600-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
8,300.0	6,885.7	6,841.2	6,841.2	33.8	136.8	91.87	91.87	-2,440.8	-533.1	947.3	776.8	170.41	5.559	
8,400.0	6,884.4	6,839.9	6,839.9	35.5	136.8	91.66	91.66	-2,440.8	-533.1	855.2	683.1	172.14	4.968	
8,500.0	6,883.1	6,838.6	6,838.6	37.3	136.8	91.45	91.45	-2,440.8	-533.1	765.2	591.3	173.89	4.400	
8,600.0	6,881.8	6,837.3	6,837.3	39.0	136.7	91.24	91.24	-2,440.8	-533.1	677.9	502.3	175.64	3.860	
8,700.0	6,880.5	6,836.0	6,836.0	40.8	136.7	91.02	91.02	-2,440.8	-533.1	594.7	417.3	177.41	3.352	
8,800.0	6,879.2	6,834.7	6,834.7	42.6	136.7	90.81	90.81	-2,440.8	-533.1	517.5	338.3	179.19	2.888	
8,900.0	6,877.8	6,833.3	6,833.3	44.4	136.7	90.60	90.60	-2,440.8	-533.1	449.3	268.3	180.98	2.483	
9,000.0	6,876.5	6,832.0	6,832.0	46.2	136.6	90.38	90.38	-2,440.8	-533.1	394.9	212.1	182.77	2.161	
9,100.0	6,875.2	6,830.7	6,830.7	48.0	136.6	90.17	90.17	-2,440.8	-533.1	360.6	176.0	184.57	1.954	
9,179.6	6,874.2	6,829.7	6,829.7	49.5	136.6	90.00	90.00	-2,440.8	-533.1	351.7	165.7	186.01	1.891 CC, ES	
9,200.0	6,873.9	6,829.4	6,829.4	49.9	136.6	89.96	89.96	-2,440.8	-533.1	352.3	165.9	186.38	1.890 SF	
9,300.0	6,872.6	6,828.1	6,828.1	51.7	136.6	89.74	89.74	-2,440.8	-533.1	371.7	183.5	188.19	1.975	
9,400.0	6,871.3	6,826.8	6,826.8	53.5	136.5	89.53	89.53	-2,440.8	-533.1	415.0	225.0	190.00	2.184	
9,500.0	6,870.0	6,825.5	6,825.5	55.4	136.5	89.32	89.32	-2,440.8	-533.1	475.7	283.9	191.82	2.480	
9,600.0	6,868.7	6,824.2	6,824.2	57.2	136.5	89.10	89.10	-2,440.8	-533.1	548.1	354.4	193.63	2.830	
9,700.0	6,867.4	6,822.9	6,822.9	59.1	136.5	88.89	88.89	-2,440.8	-533.1	628.0	432.6	195.45	3.213	
9,800.0	6,866.1	6,821.6	6,821.6	60.9	136.4	88.68	88.68	-2,440.8	-533.1	713.1	515.8	197.27	3.615	
9,900.0	6,864.8	6,820.3	6,820.3	62.8	136.4	88.46	88.46	-2,440.8	-533.1	801.6	602.5	199.09	4.026	
10,000.0	6,863.4	6,818.9	6,818.9	64.7	136.4	88.25	88.25	-2,440.8	-533.1	892.5	691.6	200.91	4.442	
10,100.0	6,862.1	6,817.6	6,817.6	66.5	136.4	88.04	88.04	-2,440.8	-533.1	985.2	782.5	202.73	4.860	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 5-10 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 7600-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)		
0.0	0.0	0.0	0.0	0.0	0.0	164.17	-462.6	131.2	481.2				
100.0	100.0	81.5	81.5	0.1	1.6	164.17	-462.6	131.2	480.9	479.1	1.74	275.962	
200.0	200.0	181.5	181.5	0.3	3.6	164.17	-462.6	131.2	480.9	476.9	3.97	121.211	
300.0	300.0	281.5	281.5	0.6	5.6	164.17	-462.6	131.2	480.9	474.7	6.19	77.661	
400.0	400.0	381.5	381.5	0.8	7.6	164.17	-462.6	131.2	480.9	472.5	8.42	57.133	
500.0	500.0	481.5	481.5	1.0	9.6	164.17	-462.6	131.2	480.9	470.2	10.64	45.189	
600.0	600.0	581.5	581.5	1.2	11.6	164.17	-462.6	131.2	480.9	468.0	12.87	37.375	
700.0	700.0	681.5	681.5	1.5	13.6	164.17	-462.6	131.2	480.9	465.8	15.09	31.865	
800.0	800.0	781.5	781.5	1.7	15.6	164.17	-462.6	131.2	480.9	463.6	17.32	27.771	
900.0	900.0	881.5	881.5	1.9	17.6	164.17	-462.6	131.2	480.9	461.3	19.54	24.609	
1,000.0	1,000.0	981.5	981.5	2.1	19.6	164.17	-462.6	131.2	480.9	459.1	21.77	22.094	
1,100.0	1,100.0	1,081.5	1,081.5	2.4	21.6	164.17	-462.6	131.2	480.9	456.9	23.99	20.045	
1,200.0	1,200.0	1,181.5	1,181.5	2.6	23.6	164.17	-462.6	131.2	480.9	454.7	26.21	18.344	
1,300.0	1,300.0	1,281.5	1,281.5	2.8	25.6	164.17	-462.6	131.2	480.9	452.4	28.44	16.909	
1,400.0	1,400.0	1,381.5	1,381.5	3.0	27.6	164.17	-462.6	131.2	480.9	450.2	30.66	15.682	
1,500.0	1,500.0	1,481.5	1,481.5	3.3	29.6	164.17	-462.6	131.2	480.9	448.0	32.89	14.621	
1,600.0	1,600.0	1,581.5	1,581.5	3.5	31.6	164.17	-462.6	131.2	480.9	445.8	35.11	13.695	
1,700.0	1,700.0	1,681.5	1,681.5	3.7	33.6	164.17	-462.6	131.2	480.9	443.5	37.34	12.879	
1,800.0	1,800.0	1,781.5	1,781.5	3.9	35.6	164.17	-462.6	131.2	480.9	441.3	39.56	12.155	
1,900.0	1,900.0	1,881.5	1,881.5	4.2	37.6	164.17	-462.6	131.2	480.9	439.1	41.79	11.508	
2,000.0	2,000.0	1,981.5	1,981.5	4.4	39.6	164.17	-462.6	131.2	480.9	436.9	44.01	10.926	
2,100.0	2,100.0	2,081.5	2,081.5	4.6	41.6	164.17	-462.6	131.2	480.9	434.6	46.24	10.400	
2,200.0	2,200.0	2,181.5	2,181.5	4.8	43.6	164.17	-462.6	131.2	480.9	432.4	48.46	9.923	
2,300.0	2,300.0	2,281.5	2,281.5	5.1	45.6	164.17	-462.6	131.2	480.9	430.2	50.69	9.487	
2,400.0	2,400.0	2,381.5	2,381.5	5.3	47.6	164.17	-462.6	131.2	480.9	428.0	52.91	9.088	
2,500.0	2,500.0	2,481.5	2,481.5	5.5	49.6	164.17	-462.6	131.2	480.9	425.7	55.14	8.722	
2,600.0	2,600.0	2,581.5	2,581.5	5.7	51.6	164.17	-462.6	131.2	480.9	423.5	57.36	8.383	
2,700.0	2,700.0	2,681.5	2,681.5	6.0	53.6	164.17	-462.6	131.2	480.9	421.3	59.59	8.070	
2,800.0	2,800.0	2,781.5	2,781.5	6.2	55.6	164.17	-462.6	131.2	480.9	419.1	61.81	7.780	
2,900.0	2,900.0	2,881.5	2,881.5	6.4	57.6	164.17	-462.6	131.2	480.9	416.8	64.04	7.510	
3,000.0	3,000.0	2,981.5	2,981.5	6.6	59.6	164.17	-462.6	131.2	480.9	414.6	66.26	7.257	
3,100.0	3,100.0	3,081.5	3,081.5	6.9	61.6	-146.62	-462.6	131.2	482.3	413.9	68.45	7.046	
3,200.0	3,199.8	3,181.3	3,181.3	7.1	63.6	-146.91	-462.6	131.2	486.7	416.1	70.58	6.896	
3,300.0	3,299.5	3,281.0	3,281.0	7.3	65.6	-147.39	-462.6	131.2	494.1	421.4	72.63	6.802	
3,400.0	3,398.9	3,380.4	3,380.4	7.5	67.6	-148.04	-462.6	131.2	503.2	428.4	74.80	6.727	
3,500.0	3,498.3	3,479.8	3,479.8	7.8	69.6	-148.68	-462.6	131.2	512.5	435.5	77.00	6.656	
3,600.0	3,597.7	3,579.2	3,579.2	8.0	71.6	-149.30	-462.6	131.2	521.8	442.6	79.20	6.588	
3,700.0	3,697.1	3,678.6	3,678.6	8.2	73.6	-149.90	-462.6	131.2	531.2	449.8	81.41	6.526	
3,800.0	3,796.5	3,778.0	3,778.0	8.5	75.6	-150.48	-462.6	131.2	540.7	457.1	83.61	6.467	
3,900.0	3,895.9	3,877.4	3,877.4	8.7	77.5	-151.03	-462.6	131.2	550.2	464.4	85.82	6.411	
4,000.0	3,995.3	3,976.8	3,976.8	9.0	79.5	-151.57	-462.6	131.2	559.7	471.7	88.02	6.359	
4,100.0	4,094.7	4,076.2	4,076.2	9.2	81.5	-152.09	-462.6	131.2	569.3	479.1	90.23	6.310	
4,200.0	4,194.1	4,175.6	4,175.6	9.5	83.5	-152.59	-462.6	131.2	579.0	486.5	92.44	6.263	
4,300.0	4,293.5	4,275.0	4,275.0	9.8	85.5	-153.08	-462.6	131.2	588.7	494.0	94.65	6.219	
4,400.0	4,392.9	4,374.4	4,374.4	10.0	87.5	-153.55	-462.6	131.2	598.4	501.5	96.86	6.178	
4,500.0	4,492.3	4,473.8	4,473.8	10.3	89.5	-154.01	-462.6	131.2	608.1	509.1	99.06	6.139	
4,600.0	4,591.7	4,573.2	4,573.2	10.5	91.5	-154.45	-462.6	131.2	617.9	516.7	101.27	6.102	
4,700.0	4,691.2	4,672.7	4,672.7	10.8	93.5	-154.88	-462.6	131.2	627.8	524.3	103.48	6.066	
4,800.0	4,790.6	4,772.1	4,772.1	11.1	95.4	-155.29	-462.6	131.2	637.6	532.0	105.69	6.033	
4,900.0	4,890.0	4,871.5	4,871.5	11.4	97.4	-155.69	-462.6	131.2	647.6	539.6	107.90	6.001	
5,000.0	4,989.4	4,970.9	4,970.9	11.6	99.4	-156.08	-462.6	131.2	657.5	547.4	110.11	5.971	

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 Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells Sec.5-T3N-R64W - Becker 5-10 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program: 7600-UNKNOWN														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth Depth (ft)	Vertical Depth (ft)	Measured Depth Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
5,100.0	5,088.8	5,070.3	5,070.3	11.9	101.4	-156.46	-462.6	131.2	667.4	555.1	112.33	5.942				
5,200.0	5,188.2	5,169.7	5,169.7	12.2	103.4	-156.83	-462.6	131.2	677.4	562.9	114.54	5.915				
5,300.0	5,287.8	5,269.3	5,269.3	12.4	105.4	-157.19	-462.6	131.2	685.9	568.8	117.02	5.861				
5,400.0	5,387.6	5,369.1	5,369.1	12.6	107.4	-157.41	-462.6	131.2	691.1	571.7	119.37	5.789				
5,500.0	5,487.6	5,469.1	5,469.1	12.8	109.4	-157.50	-462.6	131.2	693.1	571.5	121.61	5.699				
5,600.0	5,587.6	5,569.1	5,569.1	13.0	111.4	153.19	-462.6	131.2	693.1	569.3	123.80	5.599				
5,700.0	5,687.6	5,669.1	5,669.1	13.2	113.4	153.19	-462.6	131.2	693.1	567.1	126.02	5.500				
5,800.0	5,787.6	5,769.1	5,769.1	13.4	115.4	153.19	-462.6	131.2	693.1	564.9	128.24	5.405				
5,900.0	5,887.6	5,869.1	5,869.1	13.6	117.4	153.19	-462.6	131.2	693.1	562.7	130.46	5.313				
6,000.0	5,987.6	5,969.1	5,969.1	13.8	119.4	153.19	-462.6	131.2	693.1	560.5	132.68	5.224				
6,100.0	6,087.6	6,069.1	6,069.1	14.0	121.4	153.19	-462.6	131.2	693.1	558.2	134.90	5.138				
6,200.0	6,187.5	6,169.0	6,169.0	14.2	123.4	-26.93	-462.6	131.2	691.5	554.7	136.81	5.054				
6,300.0	6,286.5	6,268.0	6,268.0	14.3	125.4	-27.87	-462.6	131.2	679.5	542.4	137.02	4.959				
6,400.0	6,383.0	6,364.5	6,364.5	14.5	127.3	-29.81	-462.6	131.2	656.2	520.7	135.56	4.841				
6,500.0	6,475.1	6,456.6	6,456.6	14.5	129.1	-32.98	-462.6	131.2	622.5	489.6	132.95	4.682				
6,600.0	6,561.4	6,542.9	6,542.9	14.6	130.9	-37.69	-462.6	131.2	579.5	449.2	130.34	4.446				
6,700.0	6,640.4	6,621.9	6,621.9	14.7	132.4	-44.36	-462.6	131.2	529.0	399.4	129.61	4.082				
6,800.0	6,710.8	6,692.3	6,692.3	14.9	133.8	-53.25	-462.6	131.2	473.6	340.8	132.80	3.567				
6,900.0	6,771.2	6,752.7	6,752.7	15.3	135.1	-64.00	-462.6	131.2	417.2	277.3	139.94	2.981				
7,000.0	6,820.8	6,802.3	6,802.3	15.8	136.0	-75.12	-462.6	131.2	365.6	217.9	147.70	2.475				
7,100.0	6,858.7	6,840.2	6,840.2	16.6	136.8	-84.38	-462.6	131.2	327.3	174.7	152.60	2.145				
7,200.0	6,884.1	6,865.6	6,865.6	17.6	137.3	-89.99	-462.6	131.2	312.6	157.9	154.72	2.020				
7,200.4	6,884.2	6,865.7	6,865.7	17.6	137.3	-90.00	-462.6	131.2	312.6	157.9	154.73	2.020 CC, ES, SF				
7,300.0	6,896.7	6,878.2	6,878.2	18.6	137.6	-91.10	-462.6	131.2	327.8	171.8	156.04	2.101				
7,400.0	6,897.5	6,879.0	6,879.0	19.9	137.6	-89.52	-462.6	131.2	370.4	213.1	157.28	2.355				
7,500.0	6,896.2	6,877.7	6,877.7	21.2	137.6	-89.28	-462.6	131.2	432.3	273.8	158.56	2.727				
7,600.0	6,894.9	6,876.4	6,876.4	22.6	137.5	-89.04	-462.6	131.2	506.6	346.7	159.92	3.168				
7,700.0	6,893.6	6,875.1	6,875.1	24.0	137.5	-88.80	-462.6	131.2	588.5	427.2	161.35	3.648				
7,800.0	6,892.2	6,873.7	6,873.7	25.6	137.5	-88.56	-462.6	131.2	675.4	512.5	162.84	4.147				
7,900.0	6,890.9	6,872.4	6,872.4	27.1	137.4	-88.32	-462.6	131.2	765.4	601.0	164.38	4.656				
8,000.0	6,889.6	6,871.1	6,871.1	28.8	137.4	-88.08	-462.6	131.2	857.6	691.7	165.95	5.168				
8,100.0	6,888.3	6,869.8	6,869.8	30.4	137.4	-87.84	-462.6	131.2	951.5	783.9	167.56	5.678				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 5-16 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,000.0	6,876.5	6,822.0	6,822.0	46.2	136.4	-94.68	-3,151.2	-39.1	901.3	719.3	182.04	4.951		
9,100.0	6,875.2	6,820.7	6,820.7	48.0	136.4	-94.15	-3,151.2	-39.1	802.7	618.8	183.95	4.364		
9,200.0	6,873.9	6,819.4	6,819.4	49.9	136.4	-93.63	-3,151.2	-39.1	704.5	518.7	185.86	3.791		
9,300.0	6,872.6	6,818.1	6,818.1	51.7	136.4	-93.11	-3,151.2	-39.1	607.0	419.2	187.75	3.233		
9,400.0	6,871.3	6,816.8	6,816.8	53.5	136.3	-92.58	-3,151.2	-39.1	510.3	320.6	189.64	2.691		
9,500.0	6,870.0	6,815.5	6,815.5	55.4	136.3	-92.05	-3,151.2	-39.1	415.2	223.7	191.53	2.168		
9,600.0	6,868.7	6,814.2	6,814.2	57.2	136.3	-91.53	-3,151.2	-39.1	323.1	129.7	193.40	1.671		
9,700.0	6,867.4	6,812.9	6,812.9	59.1	136.3	-91.00	-3,151.2	-39.1	237.5	42.2	195.26	1.216 Level 2		
9,800.0	6,866.1	6,811.6	6,811.6	60.9	136.2	-90.47	-3,151.2	-39.1	168.5	-28.7	197.11	0.855 Level 1		
9,890.1	6,864.9	6,810.4	6,810.4	62.6	136.2	-90.00	-3,151.2	-39.1	142.4	-56.4	198.76	0.716 Level 1, CC, ES, SF		
9,900.0	6,864.8	6,810.3	6,810.3	62.8	136.2	-89.95	-3,151.2	-39.1	142.7	-56.2	198.95	0.717 Level 1		
10,000.0	6,863.4	6,808.9	6,808.9	64.7	136.2	-89.42	-3,151.2	-39.1	179.9	-20.9	200.77	0.896 Level 1		
10,100.0	6,862.1	6,807.6	6,807.6	66.5	136.2	-88.89	-3,151.2	-39.1	253.6	51.0	202.58	1.252 Level 3		
10,200.0	6,860.8	6,806.3	6,806.3	68.4	136.1	-88.37	-3,151.2	-39.1	341.0	136.7	204.38	1.669		
10,300.0	6,859.5	6,805.0	6,805.0	70.3	136.1	-87.84	-3,151.2	-39.1	433.9	227.7	206.16	2.105		
10,400.0	6,858.2	6,803.7	6,803.7	72.1	136.1	-87.32	-3,151.2	-39.1	529.4	321.5	207.93	2.546		
10,500.0	6,856.9	6,802.4	6,802.4	74.0	136.0	-86.79	-3,151.2	-39.1	626.3	416.6	209.68	2.987		
10,600.0	6,855.6	6,801.1	6,801.1	75.9	136.0	-86.27	-3,151.2	-39.1	724.0	512.6	211.42	3.424		
10,700.0	6,854.3	6,799.8	6,799.8	77.8	136.0	-85.74	-3,151.2	-39.1	822.3	609.1	213.14	3.858		
10,800.0	6,853.0	6,798.5	6,798.5	79.7	136.0	-85.22	-3,151.2	-39.1	920.9	706.1	214.84	4.286		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 5-4 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program: 7600-UNKNOWN											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
7,600.0	6,894.9	6,871.4	6,871.4	22.6	137.4	-92.66	-1,752.3	69.8	925.7	766.0	159.71	5.796	
7,700.0	6,893.6	6,870.1	6,870.1	24.0	137.4	-92.36	-1,752.3	69.8	829.9	668.7	161.19	5.148	
7,800.0	6,892.2	6,868.7	6,868.7	25.6	137.4	-92.06	-1,752.3	69.8	735.2	572.5	162.73	4.518	
7,900.0	6,890.9	6,867.4	6,867.4	27.1	137.3	-91.76	-1,752.3	69.8	642.1	477.8	164.31	3.908	
8,000.0	6,889.6	6,866.1	6,866.1	28.8	137.3	-91.47	-1,752.3	69.8	551.5	385.6	165.93	3.324	
8,100.0	6,888.3	6,864.8	6,864.8	30.4	137.3	-91.17	-1,752.3	69.8	464.7	297.2	167.57	2.773	
8,200.0	6,887.0	6,863.5	6,863.5	32.1	137.3	-90.87	-1,752.3	69.8	384.4	215.2	169.25	2.271	
8,300.0	6,885.7	6,862.2	6,862.2	33.8	137.2	-90.57	-1,752.3	69.8	315.6	144.6	170.94	1.846	
8,400.0	6,884.4	6,860.9	6,860.9	35.5	137.2	-90.27	-1,752.3	69.8	267.2	94.5	172.65	1.548	
8,491.0	6,883.2	6,859.7	6,859.7	37.1	137.2	-90.00	-1,752.3	69.8	251.2	77.0	174.22	1.442 Level 3, CC, ES	
8,500.0	6,883.1	6,859.6	6,859.6	37.3	137.2	-89.97	-1,752.3	69.8	251.4	77.0	174.37	1.441 Level 3, SF	
8,600.0	6,881.8	6,858.3	6,858.3	39.0	137.2	-89.67	-1,752.3	69.8	273.8	97.7	176.11	1.555	
8,700.0	6,880.5	6,857.0	6,857.0	40.8	137.1	-89.38	-1,752.3	69.8	326.7	148.9	177.85	1.837	
8,800.0	6,879.2	6,855.7	6,855.7	42.6	137.1	-89.08	-1,752.3	69.8	398.2	218.6	179.61	2.217	
8,900.0	6,877.8	6,854.3	6,854.3	44.4	137.1	-88.78	-1,752.3	69.8	479.9	298.6	181.36	2.646	
9,000.0	6,876.5	6,853.0	6,853.0	46.2	137.1	-88.48	-1,752.3	69.8	567.5	384.4	183.12	3.099	
9,100.0	6,875.2	6,851.7	6,851.7	48.0	137.0	-88.18	-1,752.3	69.8	658.7	473.8	184.89	3.563	
9,200.0	6,873.9	6,850.4	6,850.4	49.9	137.0	-87.88	-1,752.3	69.8	752.1	565.4	186.66	4.029	
9,300.0	6,872.6	6,849.1	6,849.1	51.7	137.0	-87.59	-1,752.3	69.8	847.0	658.6	188.42	4.495	
9,400.0	6,871.3	6,847.8	6,847.8	53.5	137.0	-87.29	-1,752.3	69.8	943.0	752.8	190.19	4.958	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells Sec.5-T3N-R64W - Becker 5-5 (Exist) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft		
Survey Program: 7600-UNKNOWN														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)						
10,000.0	6,863.4	6,793.9	6,793.9	64.7	135.9	-96.22	-4,236.8	-64.2	982.7	783.3	199.42	4.928				
10,100.0	6,862.1	6,792.6	6,792.6	66.5	135.9	-95.58	-4,236.8	-64.2	883.5	682.1	201.47	4.385				
10,200.0	6,860.8	6,791.3	6,791.3	68.4	135.8	-94.95	-4,236.8	-64.2	784.5	581.0	203.50	3.855				
10,300.0	6,859.5	6,790.0	6,790.0	70.3	135.8	-94.31	-4,236.8	-64.2	685.8	480.3	205.51	3.337				
10,400.0	6,858.2	6,788.7	6,788.7	72.1	135.8	-93.68	-4,236.8	-64.2	587.6	380.1	207.50	2.832				
10,500.0	6,856.9	6,787.4	6,787.4	74.0	135.7	-93.04	-4,236.8	-64.2	490.0	280.5	209.48	2.339				
10,600.0	6,855.6	6,786.1	6,786.1	75.9	135.7	-92.40	-4,236.8	-64.2	393.6	182.2	211.43	1.862				
10,700.0	6,854.3	6,784.8	6,784.8	77.8	135.7	-91.76	-4,236.8	-64.2	299.7	86.3	213.36	1.404	Level 3			
10,800.0	6,853.0	6,783.5	6,783.5	79.7	135.7	-91.12	-4,236.8	-64.2	211.3	-4.0	215.27	0.981	Level 1			
10,900.0	6,851.7	6,782.2	6,782.2	81.6	135.6	-90.48	-4,236.8	-64.2	139.6	-77.6	217.15	0.643	Level 1			
10,975.8	6,850.7	6,781.2	6,781.2	83.0	135.6	-90.00	-4,236.8	-64.2	117.2	-101.3	218.57	0.536	Level 1, CC, ES, SF			
11,000.0	6,850.4	6,780.9	6,780.9	83.4	135.6	-89.85	-4,236.8	-64.2	119.7	-99.3	219.01	0.547	Level 1			
11,100.0	6,849.0	6,779.5	6,779.5	85.3	135.6	-89.21	-4,236.8	-64.2	170.8	-50.1	220.85	0.773	Level 1			
11,200.0	6,847.7	6,778.2	6,778.2	87.2	135.6	-88.57	-4,236.8	-64.2	253.0	30.3	222.66	1.136	Level 2			
11,300.0	6,846.4	6,776.9	6,776.9	89.1	135.5	-87.93	-4,236.8	-64.2	344.7	120.3	224.45	1.536				
11,332.8	6,846.0	6,776.5	6,776.5	89.7	135.5	-87.72	-4,236.8	-64.2	375.8	150.7	225.03	1.670				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7167-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,600.0	6,868.7	6,817.2	6,817.2	57.2	136.3	91.71	-3,737.7	-566.6	957.5	764.1	193.41	4.951		
9,700.0	6,867.4	6,815.9	6,815.9	59.1	136.3	91.51	-3,737.7	-566.6	866.9	671.6	195.26	4.440		
9,800.0	6,866.1	6,814.6	6,814.6	60.9	136.3	91.32	-3,737.7	-566.6	778.6	581.5	197.11	3.950		
9,900.0	6,864.8	6,813.3	6,813.3	62.8	136.3	91.12	-3,737.7	-566.6	693.4	494.5	198.96	3.485		
10,000.0	6,863.4	6,811.9	6,811.9	64.7	136.2	90.93	-3,737.7	-566.6	612.8	412.0	200.81	3.052		
10,100.0	6,862.1	6,810.6	6,810.6	66.5	136.2	90.73	-3,737.7	-566.6	538.7	336.1	202.67	2.658		
10,200.0	6,860.8	6,809.3	6,809.3	68.4	136.2	90.54	-3,737.7	-566.6	474.2	269.7	204.52	2.319		
10,300.0	6,859.5	6,808.0	6,808.0	70.3	136.2	90.34	-3,737.7	-566.6	423.8	217.4	206.38	2.053		
10,400.0	6,858.2	6,806.7	6,806.7	72.1	136.1	90.15	-3,737.7	-566.6	392.8	184.5	208.23	1.886		
10,476.7	6,857.2	6,805.7	6,805.7	73.6	136.1	90.00	-3,737.7	-566.6	385.2	175.6	209.65	1.837 CC, ES		
10,500.0	6,856.9	6,805.4	6,805.4	74.0	136.1	89.95	-3,737.7	-566.6	385.9	175.8	210.09	1.837 SF		
10,600.0	6,855.6	6,804.1	6,804.1	75.9	136.1	89.76	-3,737.7	-566.6	404.5	192.5	211.94	1.908		
10,700.0	6,854.3	6,802.8	6,802.8	77.8	136.1	89.57	-3,737.7	-566.6	445.3	231.5	213.80	2.083		
10,800.0	6,853.0	6,801.5	6,801.5	79.7	136.0	89.37	-3,737.7	-566.6	502.9	287.3	215.65	2.332		
10,900.0	6,851.7	6,800.2	6,800.2	81.6	136.0	89.18	-3,737.7	-566.6	572.3	354.8	217.50	2.631		
11,000.0	6,850.4	6,798.9	6,798.9	83.4	136.0	88.98	-3,737.7	-566.6	649.8	430.4	219.35	2.962		
11,100.0	6,849.0	6,797.5	6,797.5	85.3	136.0	88.79	-3,737.7	-566.6	732.7	511.5	221.20	3.312		
11,200.0	6,847.7	6,796.2	6,796.2	87.2	135.9	88.59	-3,737.7	-566.6	819.5	596.4	223.05	3.674		
11,300.0	6,846.4	6,794.9	6,794.9	89.1	135.9	88.40	-3,737.7	-566.6	908.9	684.0	224.90	4.042		
11,332.8	6,846.0	6,794.5	6,794.5	89.7	135.9	88.33	-3,737.7	-566.6	938.8	713.3	225.51	4.163		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5R-323
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5RU-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4795.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5R-323	<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 (5-28-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 8 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
7,000.0	6,820.8	6,806.3	6,806.3	15.8	136.1	42.44	-1,136.6	-527.5	930.3	815.7	114.59	8.118		
7,100.0	6,858.7	6,844.2	6,844.2	16.6	136.9	54.75	-1,136.6	-527.5	845.1	716.1	129.02	6.550		
7,200.0	6,884.1	6,869.6	6,869.6	17.6	137.4	69.61	-1,136.6	-527.5	758.0	612.2	145.78	5.199		
7,300.0	6,896.7	6,882.2	6,882.2	18.6	137.6	84.22	-1,136.6	-527.5	671.3	515.9	155.41	4.320		
7,400.0	6,897.5	6,883.0	6,883.0	19.9	137.7	91.03	-1,136.6	-527.5	587.9	430.6	157.33	3.737		
7,500.0	6,896.2	6,881.7	6,881.7	21.2	137.6	90.81	-1,136.6	-527.5	510.5	351.9	158.63	3.218		
7,600.0	6,894.9	6,880.4	6,880.4	22.6	137.6	90.60	-1,136.6	-527.5	442.2	282.2	160.02	2.764		
7,700.0	6,893.6	6,879.1	6,879.1	24.0	137.6	90.38	-1,136.6	-527.5	388.0	226.5	161.47	2.403		
7,800.0	6,892.2	6,877.7	6,877.7	25.6	137.6	90.16	-1,136.6	-527.5	354.2	191.2	162.99	2.173		
7,875.3	6,891.3	6,876.8	6,876.8	26.7	137.5	90.00	-1,136.6	-527.5	346.1	181.9	164.16	2.108 CC, ES, SF		
7,900.0	6,890.9	6,876.4	6,876.4	27.1	137.5	89.95	-1,136.6	-527.5	347.0	182.4	164.55	2.109		
8,000.0	6,889.6	6,875.1	6,875.1	28.8	137.5	89.73	-1,136.6	-527.5	367.9	201.7	166.14	2.214		
8,100.0	6,888.3	6,873.8	6,873.8	30.4	137.5	89.51	-1,136.6	-527.5	412.6	244.9	167.77	2.459		
8,200.0	6,887.0	6,872.5	6,872.5	32.1	137.5	89.30	-1,136.6	-527.5	474.5	305.1	169.43	2.801		
8,300.0	6,885.7	6,871.2	6,871.2	33.8	137.4	89.08	-1,136.6	-527.5	547.8	376.7	171.11	3.202		
8,400.0	6,884.4	6,869.9	6,869.9	35.5	137.4	88.86	-1,136.6	-527.5	628.5	455.7	172.81	3.637		
8,500.0	6,883.1	6,868.6	6,868.6	37.3	137.4	88.65	-1,136.6	-527.5	714.1	539.6	174.52	4.092		
8,600.0	6,881.8	6,867.3	6,867.3	39.0	137.3	88.43	-1,136.6	-527.5	803.0	626.8	176.25	4.556		
8,700.0	6,880.5	6,866.0	6,866.0	40.8	137.3	88.21	-1,136.6	-527.5	894.3	716.3	177.99	5.025		
8,800.0	6,879.2	6,864.7	6,864.7	42.6	137.3	88.00	-1,136.6	-527.5	987.3	807.5	179.73	5.493		

Reference Depths are relative to WELL @ 4795.5ft (RKB - 12.5')	Coordinates are relative to: Becker Ranch 5R-323
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.60°



Coordinates are relative to: Becker Ranch 5R-323  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.60°

