

# PETROLEUM DEVELOPMENT CORP Weld County CO

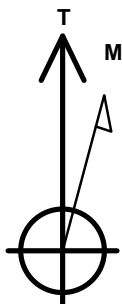
Well Name: **Becker Ranch 5M-423**

Surface Location: Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4782.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1339344.32	3258959.79	40.261180	-104.572080	
RKB - 12.5' WELL @ 4794.5ft (RKB - 12.5')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 211'FNL, 1875'FEL	1.0	0.0	0.0	Point
BHL 500'FSL, 2297'FEL	6991.0	-4597.5	-443.8	Point



Azimuths to True North  
Magnetic North: 8.35°

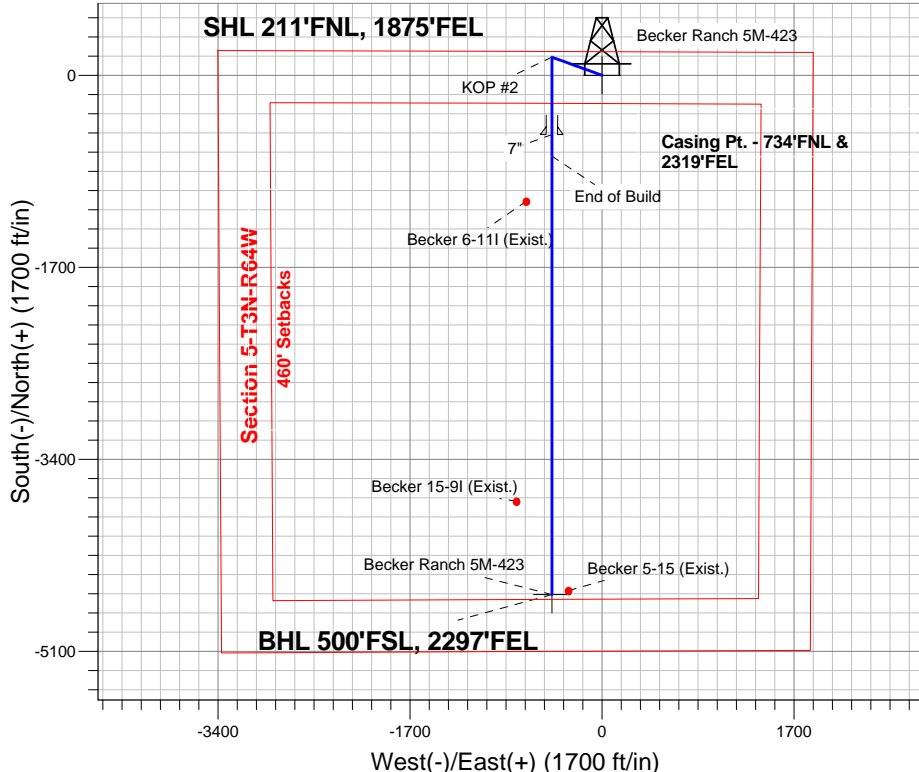
Magnetic Field  
Strength: 52766.2snT  
Dip Angle: 66.87°  
Date: 6/4/2014  
Model: IGRF2010

## ANNOTATIONS

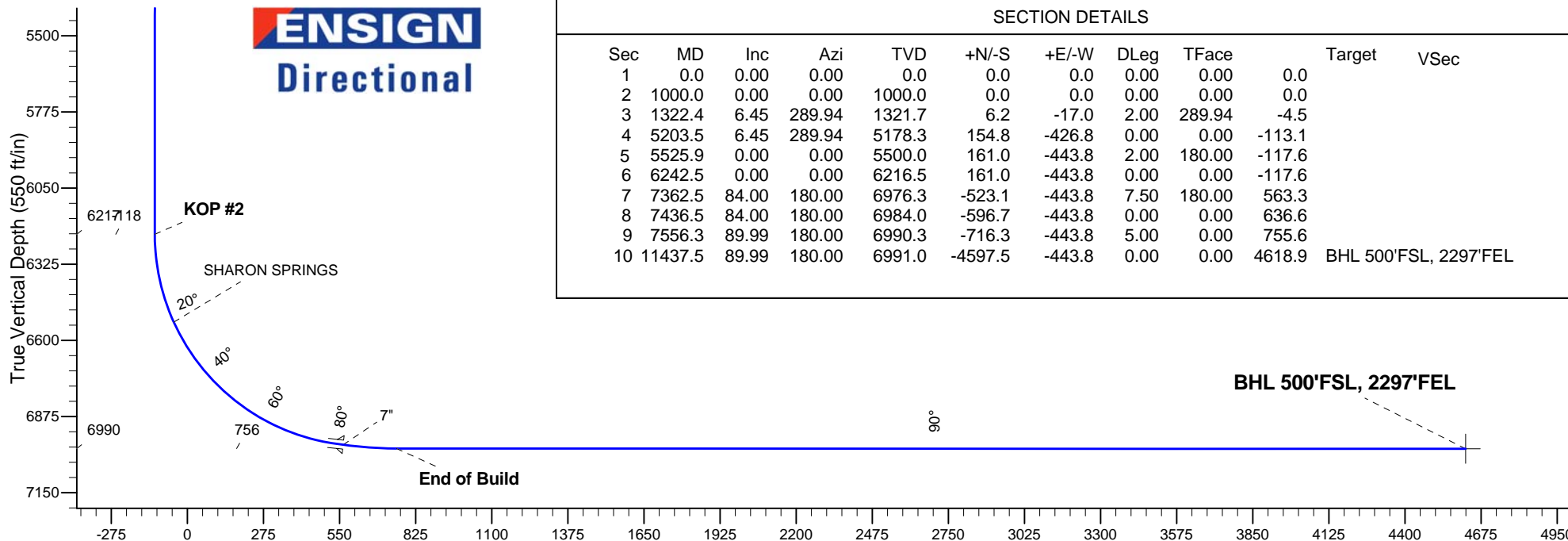
TVD	MD	Annotation
1000.0	1000.0	KOP #1
6216.6	6242.5	KOP #2
6990.3	7556.3	End of Build

Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W  
Becker Ranch 5M-423  
Plan #2 (5-30-14)  
14:01, June 04 2014

South(-)/North(+) (1700 ft/in)



**ENSIGN**  
Directional



## 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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1322.4	6.45	289.94	1321.7	6.2	-17.0	2.00	289.94	-4.5	
4	5203.5	6.45	289.94	5178.3	154.8	-426.8	0.00	0.00	-113.1	
5	5525.9	0.00	0.00	5500.0	161.0	-443.8	2.00	180.00	-117.6	
6	6242.5	0.00	0.00	6216.5	161.0	-443.8	0.00	0.00	-117.6	
7	7362.5	84.00	180.00	6976.3	-523.1	-443.8	7.50	180.00	563.3	
8	7436.5	84.00	180.00	6984.0	-596.7	-443.8	0.00	0.00	636.6	
9	7556.3	89.99	180.00	6990.3	-716.3	-443.8	5.00	0.00	755.6	
10	11437.5	89.99	180.00	6991.0	-4597.5	-443.8	0.00	0.00	4618.9	BHL 500'FSL, 2297'FEL

Vertical Section at 185.51° (550 ft/in)



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.5-T3N-R64W**

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

**Becker Ranch 5M-423**

**Wellbore #1**

**Plan: Plan #2 (5-30-14)**

## **Standard Planning Report**

**04 June, 2014**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5M-423	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-30-14)		

<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 5MR-HZ Pad Sec.5-T3N-R64W											
<b>Site Position:</b>						<b>Northing:</b>			1,339,344.02 ft			<b>Latitude:</b>			40.261180		
<b>From:</b>			Lat/Long			<b>Easting:</b>			3,258,929.10 ft			<b>Longitude:</b>			-104.572190		
<b>Position Uncertainty:</b>			0.0 ft			<b>Slot Radius:</b>			"			<b>Grid Convergence:</b>			0.60 °		

Well	Becker Ranch 5M-423					
Well Position	+N/-S	0.0 ft	Northing:	1,339,344.32 ft	Latitude:	40.261180
	+E/-W	30.7 ft	Easting:	3,258,959.79 ft	Longitude:	-104.572080
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,782.0 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	6/4/2014	8.35	66.87	52,766

<b>Design</b>	Plan #2 (5-30-14)			
<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	185.51

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,322.4	6.45	289.94	1,321.7	6.2	-17.0	2.00	2.00	0.00	289.94	
5,203.5	6.45	289.94	5,178.3	154.8	-426.8	0.00	0.00	0.00	0.00	
5,525.9	0.00	0.00	5,500.0	161.0	-443.8	2.00	-2.00	0.00	180.00	
6,242.5	0.00	0.00	6,216.5	161.0	-443.8	0.00	0.00	0.00	0.00	
7,362.5	84.00	180.00	6,976.3	-523.1	-443.8	7.50	7.50	0.00	180.00	
7,436.5	84.00	180.00	6,984.0	-596.7	-443.8	0.00	0.00	0.00	0.00	
7,556.3	89.99	180.00	6,990.3	-716.3	-443.8	5.00	5.00	0.00	0.00	
11,437.5	89.99	180.00	6,991.0	-4,597.5	-443.8	0.00	0.00	0.00	0.00	BHL 500'FSL, 2297

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5M-423	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-30-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,100.0	2.00	289.94	1,100.0	0.6	-1.6	-0.4	2.00	2.00	0.00
1,200.0	4.00	289.94	1,199.8	2.4	-6.6	-1.7	2.00	2.00	0.00
1,300.0	6.00	289.94	1,299.5	5.4	-14.8	-3.9	2.00	2.00	0.00
1,322.4	6.45	289.94	1,321.7	6.2	-17.0	-4.5	2.00	2.00	0.00
1,400.0	6.45	289.94	1,398.8	9.2	-25.2	-6.7	0.00	0.00	0.00
1,500.0	6.45	289.94	1,498.2	13.0	-35.8	-9.5	0.00	0.00	0.00
1,600.0	6.45	289.94	1,597.6	16.8	-46.3	-12.3	0.00	0.00	0.00
1,700.0	6.45	289.94	1,696.9	20.6	-56.9	-15.1	0.00	0.00	0.00
1,800.0	6.45	289.94	1,796.3	24.5	-67.5	-17.9	0.00	0.00	0.00
1,900.0	6.45	289.94	1,895.7	28.3	-78.0	-20.7	0.00	0.00	0.00
2,000.0	6.45	289.94	1,995.0	32.1	-88.6	-23.5	0.00	0.00	0.00
2,100.0	6.45	289.94	2,094.4	36.0	-99.1	-26.3	0.00	0.00	0.00
2,200.0	6.45	289.94	2,193.8	39.8	-109.7	-29.1	0.00	0.00	0.00
2,300.0	6.45	289.94	2,293.1	43.6	-120.2	-31.9	0.00	0.00	0.00
2,400.0	6.45	289.94	2,392.5	47.5	-130.8	-34.7	0.00	0.00	0.00
2,500.0	6.45	289.94	2,491.9	51.3	-141.4	-37.5	0.00	0.00	0.00
2,600.0	6.45	289.94	2,591.2	55.1	-151.9	-40.3	0.00	0.00	0.00
2,700.0	6.45	289.94	2,690.6	58.9	-162.5	-43.1	0.00	0.00	0.00
2,800.0	6.45	289.94	2,790.0	62.8	-173.0	-45.9	0.00	0.00	0.00
2,900.0	6.45	289.94	2,889.3	66.6	-183.6	-48.7	0.00	0.00	0.00
3,000.0	6.45	289.94	2,988.7	70.4	-194.1	-51.4	0.00	0.00	0.00
3,100.0	6.45	289.94	3,088.1	74.3	-204.7	-54.2	0.00	0.00	0.00
3,200.0	6.45	289.94	3,187.4	78.1	-215.3	-57.0	0.00	0.00	0.00
3,300.0	6.45	289.94	3,286.8	81.9	-225.8	-59.8	0.00	0.00	0.00
3,400.0	6.45	289.94	3,386.2	85.7	-236.4	-62.6	0.00	0.00	0.00
3,500.0	6.45	289.94	3,485.5	89.6	-246.9	-65.4	0.00	0.00	0.00
3,600.0	6.45	289.94	3,584.9	93.4	-257.5	-68.2	0.00	0.00	0.00
3,700.0	6.45	289.94	3,684.3	97.2	-268.0	-71.0	0.00	0.00	0.00
3,715.8	6.45	289.94	3,700.0	97.8	-269.7	-71.5	0.00	0.00	0.00
<b>PARKMAN</b>									
3,800.0	6.45	289.94	3,783.6	101.1	-278.6	-73.8	0.00	0.00	0.00
3,900.0	6.45	289.94	3,883.0	104.9	-289.2	-76.6	0.00	0.00	0.00
4,000.0	6.45	289.94	3,982.4	108.7	-299.7	-79.4	0.00	0.00	0.00
4,100.0	6.45	289.94	4,081.7	112.6	-310.3	-82.2	0.00	0.00	0.00
4,200.0	6.45	289.94	4,181.1	116.4	-320.8	-85.0	0.00	0.00	0.00
4,300.0	6.45	289.94	4,280.5	120.2	-331.4	-87.8	0.00	0.00	0.00
4,400.0	6.45	289.94	4,379.9	124.0	-341.9	-90.6	0.00	0.00	0.00
4,420.3	6.45	289.94	4,400.0	124.8	-344.1	-91.2	0.00	0.00	0.00
<b>SUSSEX</b>									
4,500.0	6.45	289.94	4,479.2	127.9	-352.5	-93.4	0.00	0.00	0.00
4,600.0	6.45	289.94	4,578.6	131.7	-363.1	-96.2	0.00	0.00	0.00

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<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5M-423	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-30-14)		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	6.45	289.94	4,678.0	135.5	-373.6	-99.0	0.00	0.00	0.00
4,800.0	6.45	289.94	4,777.3	139.4	-384.2	-101.8	0.00	0.00	0.00
4,900.0	6.45	289.94	4,876.7	143.2	-394.7	-104.6	0.00	0.00	0.00
5,000.0	6.45	289.94	4,976.1	147.0	-405.3	-107.4	0.00	0.00	0.00
5,100.0	6.45	289.94	5,075.4	150.9	-415.8	-110.2	0.00	0.00	0.00
5,124.7	6.45	289.94	5,100.0	151.8	-418.4	-110.9	0.00	0.00	0.00
<b>SHANNON</b>									
5,200.0	6.45	289.94	5,174.8	154.7	-426.4	-113.0	0.00	0.00	0.00
5,203.5	6.45	289.94	5,178.3	154.8	-426.8	-113.1	0.00	0.00	0.00
5,300.0	4.52	289.94	5,274.3	158.0	-435.4	-115.4	2.00	-2.00	0.00
5,400.0	2.52	289.94	5,374.1	160.1	-441.2	-116.9	2.00	-2.00	0.00
5,500.0	0.52	289.94	5,474.1	161.0	-443.7	-117.6	2.00	-2.00	0.00
5,525.9	0.00	0.00	5,500.0	161.0	-443.8	-117.6	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,574.1	161.0	-443.8	-117.6	0.00	0.00	0.00
5,700.0	0.00	0.00	5,674.1	161.0	-443.8	-117.6	0.00	0.00	0.00
5,800.0	0.00	0.00	5,774.1	161.0	-443.8	-117.6	0.00	0.00	0.00
5,900.0	0.00	0.00	5,874.1	161.0	-443.8	-117.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,974.1	161.0	-443.8	-117.6	0.00	0.00	0.00
6,100.0	0.00	0.00	6,074.1	161.0	-443.8	-117.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,174.1	161.0	-443.8	-117.6	0.00	0.00	0.00
6,242.5	0.00	0.00	6,216.6	161.0	-443.8	-117.6	0.00	0.00	0.00
<b>KOP #2</b>									
6,300.0	4.32	180.00	6,274.0	158.8	-443.8	-115.5	7.51	7.51	0.00
6,400.0	11.82	180.00	6,373.0	144.8	-443.8	-101.5	7.50	7.50	0.00
6,500.0	19.32	180.00	6,469.2	118.0	-443.8	-74.8	7.50	7.50	0.00
6,569.8	24.55	180.00	6,534.0	91.9	-443.8	-48.8	7.50	7.50	0.00
<b>SHARON SPRINGS</b>									
6,600.0	26.82	180.00	6,561.2	78.8	-443.8	-35.8	7.50	7.50	0.00
6,700.0	34.32	180.00	6,647.2	28.0	-443.8	14.7	7.50	7.50	0.00
6,800.0	41.82	180.00	6,725.9	-33.6	-443.8	76.1	7.50	7.50	0.00
6,900.0	49.32	180.00	6,795.9	-104.9	-443.8	147.1	7.50	7.50	0.00
7,000.0	56.82	180.00	6,855.9	-184.8	-443.8	226.6	7.50	7.50	0.00
7,100.0	64.32	180.00	6,905.0	-271.8	-443.8	313.2	7.50	7.50	0.00
7,200.0	71.82	180.00	6,942.3	-364.5	-443.8	405.5	7.50	7.50	0.00
7,300.0	79.32	180.00	6,967.2	-461.3	-443.8	501.8	7.50	7.50	0.00
7,362.5	84.00	180.00	6,976.3	-523.1	-443.8	563.4	7.50	7.50	0.00
<b>7"</b>									
7,400.0	84.00	180.00	6,980.2	-560.4	-443.8	600.5	0.00	0.00	0.00
7,436.5	84.00	180.00	6,984.0	-596.7	-443.8	636.6	0.00	0.00	0.00
7,500.0	87.18	180.00	6,988.9	-660.0	-443.8	699.6	5.00	5.00	0.00
7,556.3	89.99	180.00	6,990.3	-716.3	-443.8	755.6	5.00	5.00	0.00
<b>End of Build</b>									
7,600.0	89.99	180.00	6,990.3	-760.0	-443.8	799.1	0.00	0.00	0.00
7,700.0	89.99	180.00	6,990.3	-860.0	-443.8	898.7	0.00	0.00	0.00
7,800.0	89.99	180.00	6,990.4	-960.0	-443.8	998.2	0.00	0.00	0.00
7,900.0	89.99	180.00	6,990.4	-1,060.0	-443.8	1,097.7	0.00	0.00	0.00
8,000.0	89.99	180.00	6,990.4	-1,160.0	-443.8	1,197.3	0.00	0.00	0.00
8,100.0	89.99	180.00	6,990.4	-1,260.0	-443.8	1,296.8	0.00	0.00	0.00
8,200.0	89.99	180.00	6,990.4	-1,360.0	-443.8	1,396.4	0.00	0.00	0.00
8,300.0	89.99	180.00	6,990.5	-1,460.0	-443.8	1,495.9	0.00	0.00	0.00
8,400.0	89.99	180.00	6,990.5	-1,560.0	-443.8	1,595.4	0.00	0.00	0.00
8,500.0	89.99	180.00	6,990.5	-1,660.0	-443.8	1,695.0	0.00	0.00	0.00
8,600.0	89.99	180.00	6,990.5	-1,760.0	-443.8	1,794.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5M-423	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-30-14)		

## 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	89.99	180.00	6,990.5	-1,860.0	-443.8	1,894.0	0.00	0.00	0.00
8,800.0	89.99	180.00	6,990.5	-1,960.0	-443.8	1,993.6	0.00	0.00	0.00
8,900.0	89.99	180.00	6,990.6	-2,060.0	-443.8	2,093.1	0.00	0.00	0.00
9,000.0	89.99	180.00	6,990.6	-2,160.0	-443.8	2,192.7	0.00	0.00	0.00
9,100.0	89.99	180.00	6,990.6	-2,260.0	-443.8	2,292.2	0.00	0.00	0.00
9,200.0	89.99	180.00	6,990.6	-2,360.0	-443.8	2,391.7	0.00	0.00	0.00
9,300.0	89.99	180.00	6,990.6	-2,460.0	-443.8	2,491.3	0.00	0.00	0.00
9,400.0	89.99	180.00	6,990.6	-2,560.0	-443.8	2,590.8	0.00	0.00	0.00
9,500.0	89.99	180.00	6,990.7	-2,660.0	-443.8	2,690.3	0.00	0.00	0.00
9,600.0	89.99	180.00	6,990.7	-2,760.0	-443.8	2,789.9	0.00	0.00	0.00
9,700.0	89.99	180.00	6,990.7	-2,860.0	-443.8	2,889.4	0.00	0.00	0.00
9,800.0	89.99	180.00	6,990.7	-2,960.0	-443.8	2,989.0	0.00	0.00	0.00
9,900.0	89.99	180.00	6,990.7	-3,060.0	-443.8	3,088.5	0.00	0.00	0.00
10,000.0	89.99	180.00	6,990.7	-3,160.0	-443.8	3,188.0	0.00	0.00	0.00
10,100.0	89.99	180.00	6,990.8	-3,260.0	-443.8	3,287.6	0.00	0.00	0.00
10,200.0	89.99	180.00	6,990.8	-3,360.0	-443.8	3,387.1	0.00	0.00	0.00
10,300.0	89.99	180.00	6,990.8	-3,460.0	-443.8	3,486.6	0.00	0.00	0.00
10,400.0	89.99	180.00	6,990.8	-3,560.0	-443.8	3,586.2	0.00	0.00	0.00
10,500.0	89.99	180.00	6,990.8	-3,660.0	-443.8	3,685.7	0.00	0.00	0.00
10,600.0	89.99	180.00	6,990.9	-3,760.0	-443.8	3,785.3	0.00	0.00	0.00
10,700.0	89.99	180.00	6,990.9	-3,860.0	-443.8	3,884.8	0.00	0.00	0.00
10,800.0	89.99	180.00	6,990.9	-3,960.0	-443.8	3,984.3	0.00	0.00	0.00
10,900.0	89.99	180.00	6,990.9	-4,060.0	-443.8	4,083.9	0.00	0.00	0.00
11,000.0	89.99	180.00	6,990.9	-4,160.0	-443.8	4,183.4	0.00	0.00	0.00
11,100.0	89.99	180.00	6,990.9	-4,260.0	-443.8	4,282.9	0.00	0.00	0.00
11,200.0	89.99	180.00	6,991.0	-4,360.0	-443.8	4,382.5	0.00	0.00	0.00
11,300.0	89.99	180.00	6,991.0	-4,460.0	-443.8	4,482.0	0.00	0.00	0.00
11,400.0	89.99	180.00	6,991.0	-4,560.0	-443.8	4,581.6	0.00	0.00	0.00
11,437.5	89.99	180.00	6,991.0	-4,597.5	-443.8	4,618.9	0.00	0.00	0.00

## Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL 500'FSL, 2297'FI	0.00	0.00	6,991.0	-4,597.5	-443.8	1,334,742.66	3,258,564.10	40.248560	-104.573670
- plan hits target center									
- Point									
SHL 211'FNL, 1875'FI	0.00	0.00	1.0	0.0	0.0	1,339,344.34	3,258,959.79	40.261180	-104.572080
- plan hits target center									
- Point									

## Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,362.5	6,976.3	7"	7	7-1/2

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Project:</b>	SEC.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Becker Ranch 5M-423	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (5-30-14)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,715.8	3,700.0	PARKMAN				
4,420.3	4,400.0	SUSSEX				
5,124.7	5,100.0	SHANNON				
6,569.8	6,534.0	SHARON SPRINGS				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.0	1,000.0	0.0	0.0	KOP #1	
6,242.5	6,216.6	161.0	-443.8	KOP #2	
7,556.3	6,990.3	-716.3	-443.8	End of Build	



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.5-T3N-R64W**

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

**Becker Ranch 5M-423**

**Wellbore #1**

**Plan #2 (5-30-14)**

## **Anticollision Report**

**04 June, 2014**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (5-30-14)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 6/4/2014			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,437.5	Plan #2 (5-30-14) (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 5MR-HZ Pad Sec.5-T3N-R64W						
Becker Ranch 5M-203 - Wellbore #1 - Plan #1 (5-30-14)	500.0	500.0	30.7	28.7	15.176	CC, ES
Becker Ranch 5M-203 - Wellbore #1 - Plan #1 (5-30-14)	11,437.5	11,266.4	304.7	170.3	2.267	SF
Becker Ranch 5M-323 - Wellbore #1 - Plan #2 (5-30-14)	1,000.0	1,000.0	30.7	26.4	7.189	CC, ES
Becker Ranch 5M-323 - Wellbore #1 - Plan #2 (5-30-14)	11,437.5	11,314.9	250.1	97.8	1.642	SF
Becker Ranch 5R-243 - Wellbore #1 - Plan #1 (5-30-14)	1,000.0	999.0	58.6	54.3	13.731	CC, ES
Becker Ranch 5R-243 - Wellbore #1 - Plan #1 (5-30-14)	11,437.5	11,230.1	497.1	334.4	3.054	SF
Becker Ranch 5R-303 - Wellbore #1 - Plan #2 (5-30-14)	1,000.0	998.0	120.0	115.7	28.131	CC, ES
Becker Ranch 5R-303 - Wellbore #1 - Plan #2 (5-30-14)	11,437.5	11,308.9	869.0	691.5	4.896	SF
Becker Ranch 5R-443 - Wellbore #1 - Plan #2 (5-30-14)	1,000.0	998.0	89.3	85.0	20.935	CC, ES
Becker Ranch 5R-443 - Wellbore #1 - Plan #2 (5-30-14)	11,437.5	11,412.7	650.4	470.8	3.621	SF
<b>Existing Wells Sec.5-T3N-R64W</b>						
Becker 15-9I (Exist.) - Wellbore #1 - Wellbore #1	10,610.5	6,948.4	312.6	99.4	1.466	Level 3, CC, ES, SF
Becker 5-15 (Exist.) - Wellbore #1 - Wellbore #1	11,401.1	6,930.5	147.9	-79.9	0.649	Level 1, CC, ES, SF
Becker 6-11I (Exist.) - Wellbore #1 - Wellbore #1	7,954.7	6,983.9	226.0	59.8	1.360	Level 3, CC, ES, SF

<b>Offset Design</b> Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-203 - Wellbore #1 - Plan #1 (5-30-14)											
Survey Program: 0-MWD											
Reference		Offset		Semi Major Axis		Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)
0.0	0.0	0.0	0.0	0.0	0.0	-90.01	0.0	-30.7	30.7		
100.0	100.0	100.0	100.0	0.1	0.1	-90.01	0.0	-30.7	30.7	30.5	0.22
200.0	200.0	200.0	200.0	0.3	0.3	-90.01	0.0	-30.7	30.7	30.0	0.67
300.0	300.0	300.0	300.0	0.6	0.6	-90.01	0.0	-30.7	30.7	29.6	1.12
400.0	400.0	400.0	400.0	0.8	0.8	-90.01	0.0	-30.7	30.7	29.1	1.57
500.0	500.0	500.0	500.0	1.0	1.0	-90.01	0.0	-30.7	30.7	28.7	2.02
											15.176 CC, ES
600.0	600.0	598.9	598.9	1.2	1.2	-89.25	0.4	-32.4	32.4	29.9	2.46
700.0	700.0	697.6	697.5	1.5	1.4	-87.38	1.7	-37.3	37.4	34.5	2.90
800.0	800.0	795.9	795.3	1.7	1.7	-85.18	3.8	-45.5	45.9	42.5	3.36
900.0	900.0	893.9	892.6	1.9	1.9	-83.20	6.8	-56.8	57.6	53.8	3.83
1,000.0	1,000.0	993.0	991.0	2.1	2.2	-81.78	10.0	-69.1	70.4	66.1	4.33
											16.260
1,100.0	1,100.0	1,092.4	1,089.5	2.4	2.5	-10.93	13.2	-81.5	81.5	76.9	4.67
											17.454

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 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-203 - Wellbore #1 - Plan #1 (5-30-14)											Offset Site Error:		0.0 ft
Survey Program:		0-MWD											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance								Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
1,200.0	1,199.8	1,192.1	1,188.4	2.6	2.8	-10.74	16.4	-93.9	89.2	84.1	5.10	17.494			
1,300.0	1,299.5	1,292.0	1,287.5	2.8	3.1	-10.98	19.7	-106.4	93.5	88.0	5.54	16.896			
1,322.4	1,321.7	1,314.4	1,309.7	2.8	3.2	-11.08	20.4	-109.2	94.0	88.4	5.63	16.690			
1,400.0	1,398.8	1,392.0	1,386.6	3.0	3.4	-11.49	22.9	-118.9	95.4	89.4	5.98	15.947			
1,500.0	1,498.2	1,492.0	1,485.8	3.3	3.7	-12.00	26.1	-131.3	97.2	90.8	6.44	15.101			
1,600.0	1,597.6	1,591.9	1,584.9	3.6	4.1	-12.49	29.4	-143.8	99.1	92.2	6.90	14.357			
1,700.0	1,696.9	1,691.9	1,684.0	3.8	4.4	-12.96	32.6	-156.3	100.9	93.5	7.36	13.701			
1,800.0	1,796.3	1,791.9	1,783.2	4.1	4.7	-13.42	35.9	-168.7	102.7	94.9	7.83	13.119			
1,900.0	1,895.7	1,891.9	1,882.3	4.4	5.0	-13.85	39.1	-181.2	104.6	96.3	8.30	12.598			
2,000.0	1,995.0	1,991.9	1,981.5	4.7	5.4	-14.28	42.3	-193.7	106.4	97.7	8.77	12.131			
2,100.0	2,094.4	2,091.8	2,080.6	4.9	5.7	-14.69	45.6	-206.1	108.3	99.0	9.25	11.709			
2,200.0	2,193.8	2,191.8	2,179.8	5.2	6.0	-15.08	48.8	-218.6	110.2	100.4	9.73	11.326			
2,300.0	2,293.1	2,291.8	2,278.9	5.5	6.3	-15.46	52.0	-231.0	112.0	101.8	10.21	10.977			
2,400.0	2,392.5	2,391.8	2,378.1	5.8	6.7	-15.83	55.3	-243.5	113.9	103.2	10.69	10.659			
2,500.0	2,491.9	2,491.8	2,477.2	6.1	7.0	-16.19	58.5	-256.0	115.8	104.6	11.17	10.367			
2,600.0	2,591.2	2,591.7	2,576.4	6.4	7.3	-16.54	61.8	-268.4	117.7	106.0	11.65	10.098			
2,700.0	2,690.6	2,691.7	2,675.5	6.7	7.6	-16.87	65.0	-280.9	119.5	107.4	12.14	9.850			
2,800.0	2,790.0	2,791.7	2,774.7	7.0	8.0	-17.20	68.2	-293.4	121.4	108.8	12.62	9.620			
2,900.0	2,889.3	2,891.7	2,873.8	7.3	8.3	-17.51	71.5	-305.8	123.3	110.2	13.11	9.406			
3,000.0	2,988.7	2,991.7	2,973.0	7.6	8.6	-17.82	74.7	-318.3	125.2	111.6	13.60	9.207			
3,100.0	3,088.1	3,091.6	3,072.1	7.9	9.0	-18.12	78.0	-330.8	127.1	113.0	14.09	9.022			
3,200.0	3,187.4	3,191.6	3,171.3	8.2	9.3	-18.40	81.2	-343.2	129.0	114.4	14.58	8.849			
3,300.0	3,286.8	3,291.6	3,270.4	8.5	9.6	-18.68	84.4	-355.7	130.9	115.9	15.07	8.686			
3,400.0	3,386.2	3,391.6	3,369.5	8.8	10.0	-18.95	87.7	-368.2	132.8	117.3	15.57	8.533			
3,500.0	3,485.5	3,491.6	3,468.7	9.1	10.3	-19.22	90.9	-380.6	134.8	118.7	16.06	8.390			
3,600.0	3,584.9	3,591.5	3,567.8	9.4	10.6	-19.47	94.1	-393.1	136.7	120.1	16.56	8.255			
3,700.0	3,684.3	3,691.5	3,667.0	9.7	10.9	-19.72	97.4	-405.5	138.6	121.5	17.05	8.127			
3,800.0	3,783.6	3,791.5	3,766.1	10.0	11.3	-19.96	100.6	-418.0	140.5	123.0	17.55	8.006			
3,900.0	3,883.0	3,891.5	3,865.3	10.3	11.6	-20.20	103.9	-430.5	142.4	124.4	18.05	7.892			
4,000.0	3,982.4	3,991.5	3,964.4	10.6	11.9	-20.43	107.1	-442.9	144.4	125.8	18.55	7.784			
4,100.0	4,081.7	4,091.4	4,063.6	10.9	12.3	-20.65	110.3	-455.4	146.3	127.2	19.05	7.681			
4,200.0	4,181.1	4,191.4	4,162.7	11.2	12.6	-20.87	113.6	-467.9	148.2	128.7	19.55	7.583			
4,300.0	4,280.5	4,291.4	4,261.9	11.5	12.9	-21.08	116.8	-480.3	150.1	130.1	20.05	7.490			
4,400.0	4,379.9	4,391.4	4,361.0	11.8	13.3	-21.29	120.0	-492.8	152.1	131.5	20.55	7.401			
4,500.0	4,479.2	4,491.4	4,460.2	12.2	13.6	-21.49	123.3	-505.3	154.0	133.0	21.05	7.317			
4,600.0	4,578.6	4,591.3	4,559.3	12.5	13.9	-21.69	126.5	-517.7	156.0	134.4	21.55	7.236			
4,700.0	4,678.0	4,691.3	4,658.5	12.8	14.3	-21.88	129.8	-530.2	157.9	135.8	22.06	7.159			
4,800.0	4,777.3	4,791.3	4,757.6	13.1	14.6	-22.06	133.0	-542.6	159.8	137.3	22.56	7.085			
4,900.0	4,876.7	4,891.3	4,856.8	13.4	14.9	-22.25	136.2	-555.1	161.8	138.7	23.06	7.014			
5,000.0	4,976.1	4,991.3	4,955.9	13.7	15.2	-22.43	139.5	-567.6	163.7	140.2	23.57	6.946			
5,100.0	5,075.4	5,091.2	5,055.0	14.0	15.6	-22.60	142.7	-580.0	165.7	141.6	24.08	6.881			
5,203.5	5,178.3	5,194.7	5,157.7	14.3	15.9	-22.77	146.1	-592.9	167.7	143.1	24.60	6.817			
5,300.0	5,274.3	5,291.2	5,253.3	14.6	16.2	-22.75	149.2	-605.0	171.1	146.0	25.04	6.831			
5,400.0	5,374.1	5,390.9	5,352.2	14.7	16.6	-22.32	152.4	-617.4	177.7	152.3	25.42	6.991			
5,500.0	5,474.1	5,491.7	5,452.2	14.9	16.9	-21.55	155.7	-629.9	187.6	161.8	25.74	7.286			
5,525.9	5,500.0	5,519.2	5,479.5	14.9	17.0	-91.37	156.5	-633.0	190.4	164.5	25.81	7.375			
5,600.0	5,574.1	5,598.1	5,558.0	15.1	17.1	-90.75	158.4	-640.5	197.4	171.3	26.06	7.574			
5,700.0	5,674.1	5,705.1	5,664.8	15.2	17.3	-90.23	160.2	-647.3	203.7	177.3	26.42	7.711			
5,800.0	5,774.1	5,812.5	5,772.1	15.4	17.5	-90.01	161.0	-650.3	206.5	179.7	26.79	7.706			
5,900.0	5,874.1	5,914.5	5,874.1	15.6	17.6	-90.00	161.0	-650.4	206.6	179.4	27.18	7.601			
6,000.0	5,974.1	6,014.5	5,974.1	15.8	17.8	-90.00	161.0	-650.4	206.6	179.0	27.58	7.492			

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 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-203 - Wellbore #1 - Plan #1 (5-30-14)													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
6,053.0	6,027.1	6,067.5	6,027.1	15.9	17.9	-90.00		161.0	-650.4	206.6	178.8	27.79	7.436	
6,100.0	6,074.1	6,114.4	6,074.0	16.0	18.0	-90.31		159.9	-650.4	206.6	178.6	27.98	7.384	
6,200.0	6,174.1	6,212.9	6,171.7	16.1	18.1	-93.52		148.3	-650.4	207.0	178.5	28.52	7.259	
6,242.5	6,216.5	6,253.5	6,211.5	16.2	18.1	-95.84		139.9	-650.4	207.7	178.9	28.80	7.212	
6,250.0	6,224.1	6,260.6	6,218.4	16.2	18.1	83.69		138.2	-650.4	207.9	179.1	28.86	7.205	
6,300.0	6,274.0	6,307.5	6,263.5	16.3	18.1	80.62		125.4	-650.4	209.6	180.3	29.22	7.172	
6,350.0	6,323.7	6,353.7	6,307.1	16.4	18.2	77.66		110.1	-650.4	211.7	182.2	29.55	7.166	
6,400.0	6,373.0	6,400.0	6,349.8	16.4	18.2	74.78		92.2	-650.4	214.4	184.6	29.84	7.186	
6,450.0	6,421.5	6,444.5	6,389.7	16.5	18.2	72.11		72.6	-650.4	217.6	187.5	30.07	7.237	
6,500.0	6,469.2	6,489.1	6,428.5	16.5	18.3	69.55		50.7	-650.4	221.1	190.9	30.22	7.316	
6,550.0	6,515.8	6,533.2	6,465.6	16.6	18.3	67.15		26.7	-650.4	224.9	194.6	30.30	7.422	
6,600.0	6,561.2	6,576.9	6,500.9	16.6	18.4	64.92		1.0	-650.4	228.9	198.6	30.27	7.561	
6,650.0	6,605.0	6,620.2	6,534.3	16.6	18.4	62.84		-26.5	-650.4	233.0	202.8	30.24	7.705	
6,700.0	6,647.2	6,663.1	6,565.9	16.7	18.5	60.92		-55.5	-650.4	237.2	207.1	30.09	7.883	
6,750.0	6,687.6	6,705.7	6,595.5	16.7	18.5	59.17		-86.1	-650.4	241.5	211.6	29.90	8.076	
6,800.0	6,725.9	6,750.0	6,624.6	16.8	18.6	57.50		-119.6	-650.4	245.6	216.0	29.67	8.279	
6,850.0	6,762.0	6,789.9	6,649.0	16.9	18.7	56.10		-151.1	-650.4	249.7	220.3	29.43	8.484	
6,900.0	6,795.9	6,831.5	6,672.7	16.9	18.8	54.79		-185.3	-650.4	253.6	224.4	29.20	8.684	
6,950.0	6,827.2	6,873.0	6,694.4	17.1	18.9	53.61		-220.6	-650.4	257.3	228.3	29.00	8.871	
7,000.0	6,855.9	6,914.2	6,714.1	17.2	19.1	52.57		-256.9	-650.4	260.8	231.9	28.86	9.034	
7,050.0	6,881.9	6,955.3	6,731.7	17.4	19.3	51.65		-293.9	-650.4	263.9	235.1	28.80	9.164	
7,100.0	6,905.0	7,000.0	6,748.6	17.6	19.5	50.80		-335.4	-650.4	266.8	238.0	28.86	9.246	
7,150.0	6,925.2	7,036.9	6,760.6	17.9	19.7	50.17		-370.2	-650.4	269.3	240.3	29.04	9.275	
7,200.0	6,942.3	7,077.5	6,772.0	18.2	20.0	49.61		-409.2	-650.4	271.5	242.1	29.37	9.244	
7,250.0	6,956.4	7,118.0	6,781.2	18.6	20.3	49.15		-448.6	-650.4	273.3	243.4	29.86	9.153	
7,300.0	6,967.2	7,158.4	6,788.3	19.0	20.6	48.80		-488.4	-650.4	274.6	244.1	30.51	9.003	
7,350.0	6,974.9	7,200.0	6,793.4	19.5	20.9	48.55		-529.7	-650.4	275.6	244.3	31.33	8.796	
7,362.5	6,976.3	7,208.9	6,794.2	19.6	21.0	48.51		-538.5	-650.4	275.8	244.3	31.56	8.740	
7,400.0	6,980.2	7,239.1	6,796.2	20.0	21.3	48.33		-568.7	-650.4	276.8	244.7	32.09	8.625	
7,436.5	6,984.0	7,268.4	6,796.9	20.4	21.6	47.97		-597.9	-650.4	278.7	246.2	32.57	8.557	
7,500.0	6,988.9	7,329.0	6,796.6	21.1	22.3	47.09		-658.6	-650.4	282.3	248.6	33.70	8.376	
7,556.3	6,990.3	7,385.3	6,796.1	21.8	22.9	46.77		-714.8	-650.4	283.5	248.6	34.97	8.107	
7,600.0	6,990.3	7,429.0	6,795.8	22.4	23.4	46.72		-758.5	-650.4	283.8	247.9	35.86	7.914	
7,700.0	6,990.3	7,529.0	6,795.1	23.7	24.7	46.61		-858.5	-650.4	284.3	246.3	37.96	7.490	
7,800.0	6,990.4	7,629.0	6,794.3	25.1	26.0	46.50		-958.5	-650.4	284.8	244.7	40.15	7.093	
7,900.0	6,990.4	7,729.0	6,793.6	26.6	27.5	46.39		-1,058.5	-650.4	285.3	242.9	42.43	6.724	
8,000.0	6,990.4	7,829.0	6,792.8	28.1	28.9	46.28		-1,158.5	-650.4	285.9	241.1	44.78	6.384	
8,100.0	6,990.4	7,929.0	6,792.1	29.7	30.5	46.16		-1,258.5	-650.4	286.4	239.2	47.18	6.070	
8,200.0	6,990.4	8,029.0	6,791.3	31.3	32.0	46.05		-1,358.5	-650.4	286.9	237.3	49.63	5.781	
8,300.0	6,990.5	8,129.0	6,790.6	32.9	33.6	45.94		-1,458.5	-650.4	287.5	235.3	52.12	5.515	
8,400.0	6,990.5	8,229.0	6,789.8	34.6	35.3	45.83		-1,558.5	-650.4	288.0	233.4	54.64	5.271	
8,500.0	6,990.5	8,329.0	6,789.1	36.3	36.9	45.72		-1,658.5	-650.4	288.5	231.3	57.19	5.045	
8,600.0	6,990.5	8,429.0	6,788.3	38.0	38.6	45.62		-1,758.5	-650.4	289.1	229.3	59.76	4.837	
8,700.0	6,990.5	8,529.0	6,787.6	39.7	40.3	45.51		-1,858.5	-650.4	289.6	227.3	62.35	4.645	
8,800.0	6,990.5	8,629.0	6,786.8	41.5	42.1	45.40		-1,958.5	-650.4	290.1	225.2	64.95	4.467	
8,900.0	6,990.6	8,729.0	6,786.1	43.2	43.8	45.29		-2,058.5	-650.4	290.7	223.1	67.56	4.302	
9,000.0	6,990.6	8,828.9	6,785.3	45.0	45.6	45.18		-2,158.5	-650.4	291.2	221.0	70.19	4.149	
9,100.0	6,990.6	8,928.9	6,784.6	46.8	47.3	45.08		-2,258.5	-650.4	291.8	219.0	72.82	4.007	
9,200.0	6,990.6	9,028.9	6,783.8	48.6	49.1	44.97		-2,358.5	-650.4	292.3	216.9	75.46	3.874	
9,300.0	6,990.6	9,128.9	6,783.1	50.4	50.9	44.86		-2,458.4	-650.4	292.9	214.8	78.10	3.750	
9,400.0	6,990.6	9,228.9	6,782.3	52.2	52.7	44.76		-2,558.4	-650.4	293.4	212.7	80.75	3.633	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-203 - Wellbore #1 - Plan #1 (5-30-14)										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)							
9,500.0	6,990.7	9,328.9	6,781.6	54.1	54.5	44.65	-2,658.4	-650.4	293.9	210.5	83.40	3.525			
9,600.0	6,990.7	9,428.9	6,780.8	55.9	56.3	44.55	-2,758.4	-650.4	294.5	208.4	86.05	3.422			
9,700.0	6,990.7	9,528.9	6,780.1	57.7	58.2	44.44	-2,858.4	-650.4	295.0	206.3	88.70	3.326			
9,800.0	6,990.7	9,628.9	6,779.3	59.6	60.0	44.34	-2,958.4	-650.4	295.6	204.2	91.35	3.236			
9,900.0	6,990.7	9,728.9	6,778.6	61.4	61.8	44.23	-3,058.4	-650.4	296.1	202.1	94.00	3.150			
10,000.0	6,990.7	9,828.9	6,777.8	63.2	63.7	44.13	-3,158.4	-650.4	296.7	200.0	96.65	3.070			
10,100.0	6,990.8	9,928.9	6,777.0	65.1	65.5	44.03	-3,258.4	-650.4	297.2	197.9	99.30	2.993			
10,200.0	6,990.8	10,028.9	6,776.3	67.0	67.3	43.92	-3,358.4	-650.4	297.8	195.8	101.95	2.921			
10,300.0	6,990.8	10,128.9	6,775.5	68.8	69.2	43.82	-3,458.4	-650.4	298.3	193.8	104.59	2.852			
10,400.0	6,990.8	10,228.9	6,774.8	70.7	71.0	43.72	-3,558.4	-650.4	298.9	191.7	107.23	2.787			
10,500.0	6,990.8	10,328.9	6,774.0	72.5	72.9	43.62	-3,658.4	-650.4	299.5	189.6	109.87	2.726			
10,600.0	6,990.9	10,428.9	6,773.3	74.4	74.8	43.52	-3,758.4	-650.4	300.0	187.5	112.50	2.667			
10,700.0	6,990.9	10,528.9	6,772.5	76.3	76.6	43.42	-3,858.4	-650.4	300.6	185.4	115.13	2.611			
10,800.0	6,990.9	10,628.9	6,771.8	78.2	78.5	43.31	-3,958.4	-650.4	301.1	183.4	117.76	2.557			
10,900.0	6,990.9	10,728.9	6,771.0	80.0	80.4	43.21	-4,058.4	-650.4	301.7	181.3	120.38	2.506			
11,000.0	6,990.9	10,828.9	6,770.3	81.9	82.2	43.11	-4,158.3	-650.4	302.2	179.2	122.99	2.457			
11,100.0	6,990.9	10,928.9	6,769.5	83.8	84.1	43.02	-4,258.3	-650.4	302.8	177.2	125.61	2.411			
11,200.0	6,991.0	11,028.9	6,768.8	85.7	86.0	42.92	-4,358.3	-650.4	303.4	175.1	128.21	2.366			
11,300.0	6,991.0	11,128.9	6,768.0	87.6	87.9	42.82	-4,458.3	-650.4	303.9	173.1	130.82	2.323			
11,400.0	6,991.0	11,228.9	6,767.3	89.4	89.7	42.72	-4,558.3	-650.4	304.5	171.1	133.41	2.282			
11,437.5	6,991.0	11,266.4	6,767.0	90.1	90.4	42.68	-4,595.8	-650.4	304.7	170.3	134.39	2.267 SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-323 - Wellbore #1 - Plan #2 (5-30-14)													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 (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.99	89.99	0.0	30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	89.99	89.99	0.0	30.7	30.7	30.5	0.22	136.588	
200.0	200.0	200.0	200.0	0.3	0.3	89.99	89.99	0.0	30.7	30.7	30.0	0.67	45.529	
300.0	300.0	300.0	300.0	0.6	0.6	89.99	89.99	0.0	30.7	30.7	29.6	1.12	27.318	
400.0	400.0	400.0	400.0	0.8	0.8	89.99	89.99	0.0	30.7	30.7	29.1	1.57	19.513	
500.0	500.0	500.0	500.0	1.0	1.0	89.99	89.99	0.0	30.7	30.7	28.7	2.02	15.176	
600.0	600.0	600.0	600.0	1.2	1.2	89.99	89.99	0.0	30.7	30.7	28.2	2.47	12.417	
700.0	700.0	700.0	700.0	1.5	1.5	89.99	89.99	0.0	30.7	30.7	27.8	2.92	10.507	
800.0	800.0	800.0	800.0	1.7	1.7	89.99	89.99	0.0	30.7	30.7	27.3	3.37	9.106	
900.0	900.0	900.0	900.0	1.9	1.9	89.99	89.99	0.0	30.7	30.7	26.9	3.82	8.035	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.99	89.99	0.0	30.7	30.7	26.4	4.27	7.189 CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	161.10	161.10	0.0	30.7	32.3	27.6	4.71	6.867	
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	163.67	163.67	0.0	30.7	37.3	32.2	5.14	7.265	
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	166.70	166.70	0.0	30.7	45.8	40.2	5.57	8.222	
1,322.4	1,321.7	1,321.7	1,321.7	2.8	2.9	167.35	167.35	0.0	30.7	48.1	42.5	5.66	8.502	
1,400.0	1,398.8	1,398.8	1,398.8	3.0	3.0	169.28	169.28	0.0	30.7	56.7	50.7	6.00	9.444	
1,500.0	1,498.2	1,498.2	1,498.2	3.3	3.3	171.05	171.05	0.0	30.7	67.7	61.3	6.44	10.518	
1,600.0	1,597.6	1,600.1	1,600.1	3.6	3.5	171.93	171.93	0.9	29.2	77.2	70.4	6.88	11.227	
1,700.0	1,696.9	1,702.7	1,702.5	3.8	3.7	171.82	171.82	3.7	24.6	83.4	76.1	7.32	11.396	
1,800.0	1,796.3	1,803.6	1,803.1	4.1	3.9	171.12	171.12	7.9	17.6	86.9	79.1	7.76	11.203	
1,900.0	1,895.7	1,903.5	1,902.7	4.4	4.2	170.43	170.43	12.2	10.5	90.2	82.0	8.20	11.002	
2,000.0	1,995.0	2,003.4	2,002.3	4.7	4.4	169.79	169.79	16.4	3.4	93.6	84.9	8.65	10.819	
2,100.0	2,094.4	2,103.4	2,101.9	4.9	4.6	169.19	169.19	20.7	-3.7	96.9	87.8	9.10	10.652	
2,200.0	2,193.8	2,203.3	2,201.4	5.2	4.9	168.63	168.63	24.9	-10.8	100.3	90.7	9.55	10.497	
2,300.0	2,293.1	2,303.3	2,301.0	5.5	5.1	168.11	168.11	29.2	-17.9	103.7	93.6	10.01	10.355	
2,400.0	2,392.5	2,403.2	2,400.6	5.8	5.4	167.62	167.62	33.5	-25.0	107.0	96.6	10.47	10.223	
2,500.0	2,491.9	2,503.1	2,500.2	6.1	5.6	167.16	167.16	37.7	-32.1	110.4	99.5	10.93	10.101	
2,600.0	2,591.2	2,603.1	2,599.8	6.4	5.9	166.73	166.73	42.0	-39.2	113.8	102.4	11.40	9.988	
2,700.0	2,690.6	2,703.0	2,699.4	6.7	6.1	166.33	166.33	46.2	-46.3	117.2	105.4	11.86	9.883	
2,800.0	2,790.0	2,803.0	2,799.0	7.0	6.4	165.94	165.94	50.5	-53.4	120.6	108.3	12.33	9.784	
2,900.0	2,889.3	2,902.9	2,898.6	7.3	6.6	165.58	165.58	54.8	-60.5	124.0	111.2	12.80	9.692	
3,000.0	2,988.7	3,002.8	2,998.2	7.6	6.9	165.24	165.24	59.0	-67.6	127.5	114.2	13.27	9.606	
3,100.0	3,088.1	3,102.8	3,097.8	7.9	7.1	164.91	164.91	63.3	-74.7	130.9	117.1	13.74	9.525	
3,200.0	3,187.4	3,202.7	3,197.4	8.2	7.4	164.61	164.61	67.6	-81.7	134.3	120.1	14.21	9.448	
3,300.0	3,286.8	3,302.6	3,297.0	8.5	7.7	164.31	164.31	71.8	-88.8	137.7	123.0	14.69	9.376	
3,400.0	3,386.2	3,402.6	3,396.6	8.8	7.9	164.03	164.03	76.1	-95.9	141.2	126.0	15.16	9.309	
3,500.0	3,485.5	3,502.5	3,496.2	9.1	8.2	163.77	163.77	80.3	-103.0	144.6	128.9	15.64	9.245	
3,600.0	3,584.9	3,602.5	3,595.8	9.4	8.5	163.52	163.52	84.6	-110.1	148.0	131.9	16.12	9.184	
3,700.0	3,684.3	3,702.4	3,695.4	9.7	8.7	163.27	163.27	88.9	-117.2	151.5	134.9	16.60	9.126	
3,800.0	3,783.6	3,802.3	3,795.0	10.0	9.0	163.04	163.04	93.1	-124.3	154.9	137.8	17.08	9.072	
3,900.0	3,883.0	3,902.3	3,894.6	10.3	9.2	162.82	162.82	97.4	-131.4	158.3	140.8	17.56	9.020	
4,000.0	3,982.4	4,002.2	3,994.2	10.6	9.5	162.61	162.61	101.7	-138.5	161.8	143.8	18.04	8.971	
4,100.0	4,081.7	4,102.2	4,093.8	10.9	9.8	162.41	162.41	105.9	-145.6	165.2	146.7	18.52	8.924	
4,200.0	4,181.1	4,202.1	4,193.4	11.2	10.0	162.21	162.21	110.2	-152.7	168.7	149.7	19.00	8.879	
4,300.0	4,280.5	4,302.0	4,293.0	11.5	10.3	162.03	162.03	114.4	-159.8	172.1	152.7	19.48	8.836	
4,400.0	4,379.9	4,402.0	4,392.6	11.8	10.6	161.85	161.85	118.7	-166.9	175.6	155.6	19.96	8.795	
4,500.0	4,479.2	4,501.9	4,492.1	12.2	10.8	161.68	161.68	123.0	-174.0	179.1	158.6	20.45	8.756	
4,600.0	4,578.6	4,601.9	4,591.7	12.5	11.1	161.51	161.51	127.2	-181.1	182.5	161.6	20.93	8.719	
4,700.0	4,678.0	4,701.8	4,691.3	12.8	11.4	161.35	161.35	131.5	-188.2	186.0	164.6	21.42	8.683	
4,800.0	4,777.3	4,801.7	4,790.9	13.1	11.6	161.20	161.20	135.7	-195.3	189.4	167.5	21.90	8.649	
4,900.0	4,876.7	4,901.7	4,890.5	13.4	11.9	161.05	161.05	140.0	-202.3	192.9	170.5	22.39	8.616	

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 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5M-323 - Wellbore #1 - Plan #2 (5-30-14)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,976.1	5,001.6	4,990.1	13.7	12.2	160.91	144.3	-209.4	196.4	173.5	22.87	8.584		
5,100.0	5,075.4	5,101.5	5,089.7	14.0	12.4	160.77	148.5	-216.5	199.8	176.5	23.36	8.554		
5,203.5	5,178.3	5,205.0	5,192.8	14.3	12.7	160.63	152.9	-223.9	203.4	179.5	23.86	8.523		
5,300.0	5,274.3	5,300.0	5,287.5	14.6	13.0	160.39	156.9	-230.5	205.3	181.0	24.32	8.443		
5,400.0	5,374.1	5,394.1	5,381.4	14.7	13.1	160.16	159.7	-235.2	206.1	181.5	24.68	8.351		
5,500.0	5,474.1	5,488.3	5,475.6	14.9	13.3	160.06	161.0	-237.2	206.5	181.5	25.00	8.258		
5,525.9	5,500.0	5,512.7	5,500.0	14.9	13.3	90.00	161.0	-237.3	206.5	181.4	25.08	8.233		
5,550.6	5,524.7	5,537.4	5,524.7	15.0	13.4	90.00	161.0	-237.3	206.5	181.3	25.17	8.203		
5,600.0	5,574.1	5,586.8	5,574.1	15.1	13.5	90.00	161.0	-237.3	206.5	181.1	25.36	8.142		
5,700.0	5,674.1	5,686.8	5,674.1	15.2	13.7	90.00	161.0	-237.3	206.5	180.7	25.77	8.013		
5,800.0	5,774.1	5,786.8	5,774.1	15.4	13.9	90.00	161.0	-237.3	206.5	180.3	26.18	7.887		
5,900.0	5,874.1	5,886.8	5,874.1	15.6	14.1	90.00	161.0	-237.3	206.5	179.9	26.59	7.765		
6,000.0	5,974.1	5,986.8	5,974.1	15.8	14.3	90.00	161.0	-237.3	206.5	179.5	27.01	7.646		
6,100.0	6,074.1	6,086.8	6,074.1	16.0	14.5	90.00	161.0	-237.3	206.5	179.1	27.42	7.530		
6,144.8	6,118.9	6,131.6	6,118.9	16.0	14.6	90.02	160.9	-237.3	206.5	178.9	27.61	7.480		
6,200.0	6,174.1	6,186.6	6,173.8	16.1	14.7	90.78	158.2	-237.3	206.5	178.7	27.78	7.435		
6,242.5	6,216.5	6,228.5	6,215.5	16.2	14.7	92.09	153.5	-237.3	206.6	178.8	27.87	7.413		
6,250.0	6,224.1	6,235.9	6,222.8	16.2	14.7	-87.62	152.4	-237.3	206.7	178.8	27.89	7.412		
6,300.0	6,274.0	6,284.7	6,270.7	16.3	14.8	-85.71	143.6	-237.3	207.1	179.1	27.96	7.407		
6,350.0	6,323.7	6,333.0	6,317.6	16.4	14.8	-83.84	131.8	-237.3	207.7	179.7	28.02	7.414		
6,400.0	6,373.0	6,380.9	6,363.2	16.4	14.9	-82.01	117.2	-237.3	208.6	180.5	28.07	7.429		
6,450.0	6,421.5	6,428.4	6,407.5	16.5	14.9	-80.23	100.0	-237.3	209.6	181.5	28.13	7.451		
6,500.0	6,469.2	6,475.6	6,450.3	16.5	15.0	-78.52	80.2	-237.3	210.8	182.6	28.19	7.478		
6,550.0	6,515.8	6,522.4	6,491.5	16.6	15.0	-76.88	58.0	-237.3	212.1	183.9	28.25	7.509		
6,600.0	6,561.2	6,568.9	6,531.0	16.6	15.0	-75.31	33.4	-237.3	213.6	185.3	28.32	7.542		
6,650.0	6,605.0	6,615.1	6,568.7	16.6	15.1	-73.82	6.7	-237.3	215.1	186.7	28.40	7.575		
6,700.0	6,647.2	6,661.0	6,604.5	16.7	15.1	-72.42	-22.0	-237.3	216.7	188.3	28.48	7.610		
6,750.0	6,687.6	6,706.7	6,638.3	16.7	15.2	-71.10	-52.7	-237.3	218.4	189.8	28.58	7.640		
6,800.0	6,725.9	6,750.0	6,668.6	16.8	15.3	-69.92	-83.6	-237.3	220.1	191.4	28.70	7.668		
6,850.0	6,762.0	6,797.2	6,699.6	16.9	15.4	-68.74	-119.2	-237.3	221.7	192.9	28.84	7.686		
6,900.0	6,795.9	6,842.1	6,727.0	16.9	15.5	-67.70	-154.8	-237.3	223.3	194.3	29.01	7.697		
6,950.0	6,827.2	6,886.9	6,752.2	17.1	15.7	-66.75	-191.8	-237.3	224.9	195.6	29.21	7.698		
7,000.0	6,855.9	6,931.4	6,775.1	17.2	15.9	-65.90	-230.0	-237.3	226.3	196.9	29.44	7.687		
7,050.0	6,881.9	6,975.9	6,795.6	17.4	16.2	-65.14	-269.4	-237.3	227.7	198.0	29.72	7.661		
7,100.0	6,905.0	7,020.1	6,813.8	17.6	16.5	-64.47	-309.7	-237.3	228.9	198.9	30.04	7.621		
7,150.0	6,925.2	7,064.3	6,829.6	17.9	16.8	-63.89	-351.0	-237.3	230.0	199.6	30.41	7.563		
7,200.0	6,942.3	7,108.3	6,842.9	18.2	17.2	-63.41	-393.0	-237.3	231.0	200.1	30.85	7.487		
7,250.0	6,956.4	7,150.0	6,853.2	18.6	17.5	-63.03	-433.3	-237.3	231.8	200.4	31.33	7.399		
7,300.0	6,967.2	7,196.2	6,862.1	19.0	18.0	-62.71	-478.6	-237.3	232.4	200.5	31.91	7.283		
7,350.0	6,974.9	7,240.0	6,868.0	19.5	18.5	-62.50	-522.1	-237.3	232.8	200.3	32.54	7.155		
7,362.5	6,976.3	7,250.0	6,869.0	19.6	18.6	-62.47	-532.0	-237.3	232.9	200.2	32.70	7.123		
7,400.0	6,980.2	7,283.8	6,871.4	20.0	19.0	-62.22	-565.7	-237.3	233.5	200.1	33.36	6.999		
7,436.5	6,984.0	7,315.6	6,872.3	20.4	19.3	-61.69	-597.5	-237.3	234.8	200.9	33.94	6.919		
7,500.0	6,988.9	7,377.5	6,872.0	21.1	20.1	-60.52	-659.4	-237.3	237.3	202.5	34.78	6.823		
7,556.3	6,990.3	7,433.7	6,871.7	21.8	20.8	-60.12	-715.6	-237.3	238.2	202.4	35.76	6.661		
7,600.0	6,990.3	7,477.4	6,871.4	22.4	21.4	-60.07	-759.3	-237.3	238.3	201.5	36.76	6.483		
7,700.0	6,990.3	7,577.4	6,870.9	23.7	22.8	-59.95	-859.3	-237.3	238.6	199.4	39.16	6.092		
7,800.0	6,990.4	7,677.4	6,870.3	25.1	24.2	-59.83	-959.3	-237.3	238.9	197.2	41.69	5.729		
7,900.0	6,990.4	7,777.4	6,869.8	26.6	25.8	-59.71	-1,059.3	-237.3	239.2	194.8	44.33	5.395		
8,000.0	6,990.4	7,877.4	6,869.2	28.1	27.3	-59.59	-1,159.3	-237.3	239.5	192.4	47.06	5.089		
8,100.0	6,990.4	7,977.4	6,868.6	29.7	28.9	-59.47	-1,259.3	-237.3	239.7	189.9	49.85	4.809		

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 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<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
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
8,200.0	6,990.4	8,077.4	6,868.1	31.3	30.6	-59.36	-1,359.3	-237.3	240.0	187.3	52.71	4.554	
8,300.0	6,990.5	8,177.4	6,867.5	32.9	32.2	-59.24	-1,459.3	-237.3	240.3	184.7	55.61	4.322	
8,400.0	6,990.5	8,277.4	6,867.0	34.6	33.9	-59.12	-1,559.3	-237.3	240.6	182.1	58.55	4.110	
8,500.0	6,990.5	8,377.4	6,866.4	36.3	35.7	-59.00	-1,659.3	-237.3	240.9	179.4	61.53	3.916	
8,600.0	6,990.5	8,477.4	6,865.9	38.0	37.4	-58.89	-1,759.3	-237.3	241.2	176.7	64.53	3.738	
8,700.0	6,990.5	8,577.4	6,865.3	39.7	39.2	-58.77	-1,859.3	-237.3	241.5	174.0	67.56	3.575	
8,800.0	6,990.5	8,677.4	6,864.7	41.5	40.9	-58.65	-1,959.3	-237.3	241.8	171.2	70.61	3.425	
8,900.0	6,990.6	8,777.4	6,864.2	43.2	42.7	-58.54	-2,059.3	-237.3	242.1	168.5	73.67	3.287	
9,000.0	6,990.6	8,877.4	6,863.6	45.0	44.5	-58.42	-2,159.3	-237.3	242.4	165.7	76.74	3.159	
9,100.0	6,990.6	8,977.4	6,863.1	46.8	46.3	-58.30	-2,259.3	-237.3	242.7	162.9	79.82	3.041	
9,200.0	6,990.6	9,077.4	6,862.5	48.6	48.1	-58.19	-2,359.3	-237.3	243.0	160.1	82.92	2.931	
9,300.0	6,990.6	9,177.4	6,861.9	50.4	50.0	-58.07	-2,459.3	-237.3	243.3	157.3	86.02	2.829	
9,400.0	6,990.6	9,277.4	6,861.4	52.2	51.8	-57.96	-2,559.3	-237.3	243.7	154.5	89.12	2.734	
9,500.0	6,990.7	9,377.4	6,860.8	54.1	53.6	-57.85	-2,659.3	-237.3	244.0	151.7	92.23	2.645	
9,600.0	6,990.7	9,477.4	6,860.3	55.9	55.5	-57.73	-2,759.3	-237.3	244.3	148.9	95.35	2.562	
9,700.0	6,990.7	9,577.4	6,859.7	57.7	57.3	-57.62	-2,859.3	-237.3	244.6	146.1	98.46	2.484	
9,800.0	6,990.7	9,677.4	6,859.1	59.6	59.2	-57.50	-2,959.3	-237.3	244.9	143.3	101.58	2.411	
9,900.0	6,990.7	9,777.4	6,858.6	61.4	61.0	-57.39	-3,059.3	-237.3	245.2	140.5	104.69	2.342	
10,000.0	6,990.7	9,877.4	6,858.0	63.2	62.9	-57.28	-3,159.3	-237.3	245.5	137.7	107.81	2.277	
10,100.0	6,990.8	9,977.4	6,857.5	65.1	64.7	-57.16	-3,259.3	-237.3	245.8	134.9	110.92	2.216	
10,200.0	6,990.8	10,077.4	6,856.9	67.0	66.6	-57.05	-3,359.3	-237.3	246.1	132.1	114.04	2.158	
10,300.0	6,990.8	10,177.4	6,856.4	68.8	68.5	-56.94	-3,459.3	-237.3	246.4	129.3	117.15	2.104	
10,400.0	6,990.8	10,277.4	6,855.8	70.7	70.3	-56.83	-3,559.2	-237.3	246.8	126.5	120.26	2.052	
10,500.0	6,990.8	10,377.4	6,855.2	72.5	72.2	-56.72	-3,659.2	-237.3	247.1	123.7	123.37	2.003	
10,600.0	6,990.9	10,477.4	6,854.7	74.4	74.1	-56.60	-3,759.2	-237.3	247.4	120.9	126.48	1.956	
10,700.0	6,990.9	10,577.4	6,854.1	76.3	76.0	-56.49	-3,859.2	-237.3	247.7	118.1	129.58	1.912	
10,800.0	6,990.9	10,677.4	6,853.6	78.2	77.9	-56.38	-3,959.2	-237.3	248.0	115.4	132.68	1.869	
10,900.0	6,990.9	10,777.4	6,853.0	80.0	79.7	-56.27	-4,059.2	-237.3	248.4	112.6	135.77	1.829	
11,000.0	6,990.9	10,877.4	6,852.4	81.9	81.6	-56.16	-4,159.2	-237.3	248.7	109.8	138.86	1.791	
11,100.0	6,990.9	10,977.4	6,851.9	83.8	83.5	-56.05	-4,259.2	-237.3	249.0	107.1	141.95	1.754	
11,200.0	6,991.0	11,077.4	6,851.3	85.7	85.4	-55.94	-4,359.2	-237.3	249.3	104.3	145.03	1.719	
11,300.0	6,991.0	11,177.4	6,850.8	87.6	87.3	-55.83	-4,459.2	-237.3	249.6	101.5	148.11	1.686	
11,400.0	6,991.0	11,277.4	6,850.2	89.4	89.2	-55.72	-4,559.2	-237.3	250.0	98.8	151.19	1.653	
11,437.5	6,991.0	11,314.9	6,850.0	90.1	89.9	-55.68	-4,596.7	-237.3	250.1	97.8	152.34	1.642 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-243 - Wellbore #1 - Plan #1 (5-30-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00	90.00	0.0	58.6	58.6				
100.0	100.0	99.0	99.0	0.1	0.1	90.00	90.00	0.0	58.6	58.6	58.4	0.22	262.066	
200.0	200.0	199.0	199.0	0.3	0.3	90.00	90.00	0.0	58.6	58.6	57.9	0.67	87.210	
300.0	300.0	299.0	299.0	0.6	0.6	90.00	90.00	0.0	58.6	58.6	57.5	1.12	52.256	
400.0	400.0	399.0	399.0	0.8	0.8	90.00	90.00	0.0	58.6	58.6	57.0	1.57	37.304	
500.0	500.0	499.0	499.0	1.0	1.0	90.00	90.00	0.0	58.6	58.6	56.6	2.02	29.005	
600.0	600.0	599.0	599.0	1.2	1.2	90.00	90.00	0.0	58.6	58.6	56.1	2.47	23.727	
700.0	700.0	699.0	699.0	1.5	1.5	90.00	90.00	0.0	58.6	58.6	55.7	2.92	20.074	
800.0	800.0	799.0	799.0	1.7	1.7	90.00	90.00	0.0	58.6	58.6	55.2	3.37	17.395	
900.0	900.0	899.0	899.0	1.9	1.9	90.00	90.00	0.0	58.6	58.6	54.8	3.82	15.348	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	90.00	90.00	0.0	58.6	58.6	54.3	4.27	13.731 CC, ES	
1,100.0	1,100.0	1,099.0	1,099.0	2.4	2.4	160.62	160.62	0.0	58.6	60.3	55.5	4.71	12.798	
1,200.0	1,199.8	1,198.8	1,198.8	2.6	2.6	162.11	162.11	0.0	58.6	65.2	60.1	5.14	12.694	
1,300.0	1,299.5	1,298.5	1,298.5	2.8	2.8	164.15	164.15	0.0	58.6	73.6	68.0	5.56	13.218	
1,322.4	1,321.7	1,320.7	1,320.7	2.8	2.9	164.64	164.64	0.0	58.6	75.9	70.2	5.66	13.409	
1,400.0	1,398.8	1,397.8	1,397.8	3.0	3.0	166.21	166.21	0.0	58.6	84.3	78.3	6.00	14.057	
1,500.0	1,498.2	1,497.2	1,497.2	3.3	3.3	167.82	167.82	0.0	58.6	95.3	88.8	6.44	14.796	
1,600.0	1,597.6	1,596.6	1,596.6	3.6	3.5	169.10	169.10	0.0	58.6	106.3	99.4	6.88	15.444	
1,700.0	1,696.9	1,695.9	1,695.9	3.8	3.7	170.13	170.13	0.0	58.6	117.3	110.0	7.33	16.013	
1,800.0	1,796.3	1,795.3	1,795.3	4.1	3.9	170.99	170.99	0.0	58.6	128.4	120.6	7.77	16.518	
1,900.0	1,895.7	1,894.7	1,894.7	4.4	4.1	171.71	171.71	0.0	58.6	139.5	131.3	8.22	16.968	
2,000.0	1,995.0	1,994.0	1,994.0	4.7	4.4	172.33	172.33	0.0	58.6	150.6	142.0	8.67	17.371	
2,100.0	2,094.4	2,093.4	2,093.4	4.9	4.6	172.86	172.86	0.0	58.6	161.8	152.7	9.12	17.734	
2,200.0	2,193.8	2,192.8	2,192.8	5.2	4.8	173.32	173.32	0.0	58.6	172.9	163.4	9.57	18.062	
2,300.0	2,293.1	2,292.1	2,292.1	5.5	5.0	173.73	173.73	0.0	58.6	184.1	174.1	10.03	18.360	
2,400.0	2,392.5	2,391.5	2,391.5	5.8	5.3	174.09	174.09	0.0	58.6	195.3	184.8	10.48	18.631	
2,500.0	2,491.9	2,490.9	2,490.9	6.1	5.5	174.41	174.41	0.0	58.6	206.4	195.5	10.93	18.880	
2,600.0	2,591.2	2,590.2	2,590.2	6.4	5.7	174.70	174.70	0.0	58.6	217.6	206.2	11.39	19.109	
2,700.0	2,690.6	2,689.6	2,689.6	6.7	5.9	174.96	174.96	0.0	58.6	228.8	217.0	11.84	19.319	
2,800.0	2,790.0	2,789.0	2,789.0	7.0	6.2	175.19	175.19	0.0	58.6	240.0	227.7	12.30	19.514	
2,900.0	2,889.3	2,888.3	2,888.3	7.3	6.4	175.41	175.41	0.0	58.6	251.2	238.4	12.75	19.694	
3,000.0	2,988.7	2,987.7	2,987.7	7.6	6.6	175.60	175.60	0.0	58.6	262.4	249.2	13.21	19.862	
3,100.0	3,088.1	3,092.2	3,092.2	7.9	6.8	175.54	175.54	1.4	58.1	272.8	259.1	13.68	19.944	
3,200.0	3,187.4	3,197.7	3,197.6	8.2	7.1	174.84	174.84	6.4	56.3	281.0	266.9	14.14	19.872	
3,300.0	3,286.8	3,298.2	3,297.8	8.5	7.3	173.83	173.83	13.4	53.7	288.1	273.4	14.60	19.729	
3,400.0	3,386.2	3,397.8	3,397.1	8.8	7.5	172.87	172.87	20.3	51.2	295.1	280.1	15.06	19.596	
3,500.0	3,485.5	3,497.5	3,496.5	9.1	7.8	171.95	171.95	27.3	48.6	302.3	286.7	15.52	19.472	
3,600.0	3,584.9	3,597.1	3,595.8	9.4	8.0	171.08	171.08	34.2	46.1	309.5	293.5	15.99	19.356	
3,700.0	3,684.3	3,696.7	3,695.2	9.7	8.2	170.24	170.24	41.2	43.5	316.8	300.3	16.46	19.248	
3,800.0	3,783.6	3,796.4	3,794.5	10.0	8.4	169.44	169.44	48.1	41.0	324.1	307.2	16.93	19.147	
3,900.0	3,883.0	3,896.0	3,893.9	10.3	8.7	168.68	168.68	55.1	38.4	331.6	314.2	17.40	19.052	
4,000.0	3,982.4	3,995.6	3,993.3	10.6	8.9	167.95	167.95	62.0	35.9	339.0	321.2	17.88	18.962	
4,100.0	4,081.7	4,095.2	4,092.6	10.9	9.1	167.26	167.26	69.0	33.3	346.6	328.2	18.36	18.878	
4,200.0	4,181.1	4,194.9	4,192.0	11.2	9.4	166.59	166.59	75.9	30.8	354.1	335.3	18.84	18.798	
4,300.0	4,280.5	4,294.5	4,291.3	11.5	9.6	165.95	165.95	82.9	28.2	361.7	342.4	19.32	18.722	
4,400.0	4,379.9	4,394.1	4,390.7	11.8	9.9	165.34	165.34	89.8	25.7	369.4	349.6	19.81	18.651	
4,500.0	4,479.2	4,493.8	4,490.0	12.2	10.1	164.75	164.75	96.8	23.1	377.1	356.8	20.29	18.583	
4,600.0	4,578.6	4,593.4	4,589.4	12.5	10.3	164.19	164.19	103.7	20.6	384.8	364.1	20.78	18.519	
4,700.0	4,678.0	4,693.0	4,688.7	12.8	10.6	163.65	163.65	110.7	18.1	392.6	371.4	21.27	18.457	
4,800.0	4,777.3	4,792.6	4,788.1	13.1	10.8	163.13	163.13	117.6	15.5	400.4	378.7	21.76	18.399	
4,900.0	4,876.7	4,892.3	4,887.4	13.4	11.1	162.62	162.62	124.6	13.0	408.3	386.0	22.26	18.343	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-243 - Wellbore #1 - Plan #1 (5-30-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,976.1	4,991.9	4,986.8	13.7	11.3	162.14		131.5	10.4	416.1	393.4	22.75	18.290	
5,100.0	5,075.4	5,091.5	5,086.1	14.0	11.6	161.68		138.5	7.9	424.0	400.8	23.25	18.240	
5,203.5	5,178.3	5,194.7	5,189.0	14.3	11.8	161.22		145.7	5.2	432.2	408.5	23.76	18.190	
5,300.0	5,274.3	5,290.9	5,284.9	14.6	12.1	160.77		152.4	2.8	438.4	414.1	24.25	18.080	
5,400.0	5,374.1	5,385.7	5,379.6	14.7	12.2	160.37		157.6	0.9	442.1	417.5	24.63	17.949	
5,500.0	5,474.1	5,480.6	5,474.5	14.9	12.4	160.20		159.9	0.0	443.7	418.8	24.96	17.774	
5,525.9	5,500.0	5,506.1	5,500.0	14.9	12.5	90.13		160.0	0.0	443.8	418.7	25.05	17.718	
5,550.9	5,525.0	5,530.2	5,524.0	15.0	12.5	90.13		160.0	0.0	443.8	418.6	25.14	17.652	
5,600.0	5,574.1	5,579.2	5,573.1	15.1	12.6	90.13		160.0	0.0	443.8	418.5	25.33	17.522	
5,700.0	5,674.1	5,679.2	5,673.1	15.2	12.8	90.13		160.0	0.0	443.8	418.0	25.74	17.240	
5,800.0	5,774.1	5,779.2	5,773.1	15.4	13.0	90.13		160.0	0.0	443.8	417.6	26.16	16.964	
5,900.0	5,874.1	5,879.2	5,873.1	15.6	13.2	90.13		160.0	0.0	443.8	417.2	26.58	16.695	
6,000.0	5,974.1	5,979.2	5,973.1	15.8	13.5	90.13		160.0	0.0	443.8	416.8	27.00	16.435	
6,052.1	6,026.2	6,031.4	6,025.2	15.9	13.6	90.13		160.0	0.0	443.8	416.6	27.22	16.302	
6,100.0	6,074.1	6,079.1	6,073.0	16.0	13.7	90.27		158.9	0.0	443.8	416.4	27.40	16.198	
6,200.0	6,174.1	6,177.5	6,170.6	16.1	13.8	91.76		147.3	0.0	444.0	416.3	27.69	16.036	
6,242.5	6,216.5	6,218.1	6,210.2	16.2	13.8	92.85		138.9	0.0	444.4	416.6	27.79	15.991	
6,250.0	6,224.1	6,225.2	6,217.2	16.2	13.8	-86.93		137.2	0.0	444.5	416.7	27.80	15.985	
6,300.0	6,274.0	6,272.0	6,262.2	16.3	13.9	-85.48		124.5	0.0	445.2	417.4	27.89	15.964	
6,350.0	6,323.7	6,318.1	6,305.8	16.4	13.9	-84.07		109.3	0.0	446.3	418.3	27.97	15.959	
6,400.0	6,373.0	6,363.7	6,347.8	16.4	14.0	-82.68		91.7	0.0	447.6	419.6	28.03	15.966	
6,450.0	6,421.5	6,408.8	6,388.3	16.5	14.0	-81.34		71.8	0.0	449.1	421.0	28.10	15.983	
6,500.0	6,469.2	6,453.4	6,427.1	16.5	14.1	-80.05		49.9	0.0	450.9	422.7	28.17	16.006	
6,550.0	6,515.8	6,500.0	6,466.2	16.6	14.1	-78.74		24.6	0.0	452.8	424.5	28.25	16.029	
6,600.0	6,561.2	6,541.1	6,499.4	16.6	14.2	-77.61		0.3	0.0	454.8	426.4	28.33	16.053	
6,650.0	6,605.0	6,584.4	6,532.9	16.6	14.2	-76.47		-27.1	0.0	456.9	428.4	28.43	16.070	
6,700.0	6,647.2	6,627.3	6,564.4	16.7	14.3	-75.40		-56.1	0.0	459.0	430.5	28.55	16.079	
6,750.0	6,687.6	6,669.8	6,594.1	16.7	14.4	-74.39		-86.6	0.0	461.2	432.6	28.69	16.077	
6,800.0	6,725.9	6,712.0	6,621.8	16.8	14.6	-73.44		-118.4	0.0	463.4	434.6	28.86	16.059	
6,850.0	6,762.0	6,753.9	6,647.6	16.9	14.7	-72.56		-151.5	0.0	465.6	436.5	29.06	16.023	
6,900.0	6,795.9	6,795.6	6,671.3	16.9	14.9	-71.75		-185.7	0.0	467.7	438.4	29.30	15.965	
6,950.0	6,827.2	6,837.0	6,693.0	17.1	15.2	-71.00		-221.0	0.0	469.7	440.1	29.58	15.880	
7,000.0	6,855.9	6,878.3	6,712.7	17.2	15.4	-70.33		-257.2	0.0	471.6	441.7	29.91	15.768	
7,050.0	6,881.9	6,919.3	6,730.4	17.4	15.7	-69.73		-294.3	0.0	473.4	443.1	30.29	15.630	
7,100.0	6,905.0	6,960.2	6,745.9	17.6	16.1	-69.20		-332.0	0.0	474.9	444.2	30.72	15.461	
7,150.0	6,925.2	7,000.0	6,759.1	17.9	16.4	-68.75		-369.6	0.0	476.3	445.1	31.20	15.267	
7,200.0	6,942.3	7,041.5	6,770.8	18.2	16.8	-68.36		-409.4	0.0	477.6	445.8	31.76	15.034	
7,250.0	6,956.4	7,082.0	6,780.0	18.6	17.2	-68.05		-448.9	0.0	478.6	446.2	32.38	14.778	
7,300.0	6,967.2	7,122.4	6,787.2	19.0	17.6	-67.81		-488.6	0.0	479.3	446.3	33.06	14.497	
7,350.0	6,974.9	7,162.8	6,792.2	19.5	18.0	-67.64		-528.7	0.0	479.9	446.1	33.81	14.195	
7,362.5	6,976.3	7,172.8	6,793.2	19.6	18.2	-67.61		-538.7	0.0	480.0	446.0	34.00	14.116	
7,400.0	6,980.2	7,200.0	6,795.0	20.0	18.5	-67.50		-565.8	0.0	480.5	445.9	34.66	13.864	
7,436.5	6,984.0	7,232.3	6,795.9	20.4	18.8	-67.23		-598.1	0.0	481.6	446.3	35.36	13.621	
7,500.0	6,988.9	7,292.8	6,795.6	21.1	19.6	-66.60		-658.6	0.0	483.7	447.2	36.51	13.247	
7,556.3	6,990.3	7,349.0	6,795.1	21.8	20.3	-66.37		-714.8	0.0	484.4	446.7	37.70	12.848	
7,600.0	6,990.3	7,392.7	6,794.8	22.4	20.9	-66.33		-758.5	0.0	484.6	445.8	38.76	12.500	
7,700.0	6,990.3	7,492.7	6,794.1	23.7	22.3	-66.25		-858.5	0.0	484.9	443.5	41.32	11.735	
7,800.0	6,990.4	7,592.7	6,793.3	25.1	23.8	-66.17		-958.5	0.0	485.2	441.2	44.01	11.024	
7,900.0	6,990.4	7,692.7	6,792.6	26.6	25.4	-66.08		-1,058.5	0.0	485.5	438.7	46.81	10.371	
8,000.0	6,990.4	7,792.7	6,791.8	28.1	26.9	-66.00		-1,158.5	0.0	485.8	436.1	49.70	9.774	
8,100.0	6,990.4	7,892.7	6,791.1	29.7	28.6	-65.92		-1,258.5	0.0	486.1	433.4	52.67	9.230	

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 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<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
Reference														
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)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,200.0	6,990.4	7,992.7	6,790.3	31.3	30.2	-65.84	-1,358.5	0.0	486.4	430.7	55.70	8.733		
8,300.0	6,990.5	8,092.7	6,789.6	32.9	31.9	-65.75	-1,458.5	0.0	486.7	428.0	58.78	8.281		
8,400.0	6,990.5	8,192.7	6,788.8	34.6	33.6	-65.67	-1,558.5	0.0	487.1	425.2	61.91	7.868		
8,500.0	6,990.5	8,292.7	6,788.1	36.3	35.4	-65.59	-1,658.5	0.0	487.4	422.3	65.07	7.490		
8,600.0	6,990.5	8,392.7	6,787.3	38.0	37.1	-65.51	-1,758.5	0.0	487.7	419.4	68.26	7.145		
8,700.0	6,990.5	8,492.7	6,786.6	39.7	38.9	-65.42	-1,858.5	0.0	488.0	416.5	71.48	6.827		
8,800.0	6,990.5	8,592.7	6,785.8	41.5	40.7	-65.34	-1,958.5	0.0	488.3	413.6	74.72	6.535		
8,900.0	6,990.6	8,692.7	6,785.1	43.2	42.5	-65.26	-2,058.5	0.0	488.7	410.7	77.99	6.266		
9,000.0	6,990.6	8,792.7	6,784.3	45.0	44.3	-65.18	-2,158.5	0.0	489.0	407.7	81.26	6.017		
9,100.0	6,990.6	8,892.7	6,783.6	46.8	46.1	-65.10	-2,258.5	0.0	489.3	404.8	84.55	5.787		
9,200.0	6,990.6	8,992.7	6,782.8	48.6	47.9	-65.02	-2,358.5	0.0	489.6	401.8	87.86	5.573		
9,300.0	6,990.6	9,092.7	6,782.1	50.4	49.8	-64.93	-2,458.4	0.0	490.0	398.8	91.17	5.374		
9,400.0	6,990.6	9,192.7	6,781.3	52.2	51.6	-64.85	-2,558.4	0.0	490.3	395.8	94.49	5.189		
9,500.0	6,990.7	9,292.7	6,780.6	54.1	53.4	-64.77	-2,658.4	0.0	490.6	392.8	97.82	5.015		
9,600.0	6,990.7	9,392.7	6,779.8	55.9	55.3	-64.69	-2,758.4	0.0	490.9	389.8	101.16	4.853		
9,700.0	6,990.7	9,492.7	6,779.1	57.7	57.1	-64.61	-2,858.4	0.0	491.3	386.8	104.50	4.701		
9,800.0	6,990.7	9,592.7	6,778.3	59.6	59.0	-64.53	-2,958.4	0.0	491.6	383.8	107.84	4.559		
9,900.0	6,990.7	9,692.7	6,777.6	61.4	60.9	-64.45	-3,058.4	0.0	491.9	380.7	111.19	4.424		
10,000.0	6,990.7	9,792.7	6,776.8	63.2	62.7	-64.37	-3,158.4	0.0	492.3	377.7	114.54	4.298		
10,100.0	6,990.8	9,892.7	6,776.0	65.1	64.6	-64.29	-3,258.4	0.0	492.6	374.7	117.89	4.178		
10,200.0	6,990.8	9,992.7	6,775.3	67.0	66.5	-64.21	-3,358.4	0.0	492.9	371.7	121.25	4.065		
10,300.0	6,990.8	10,092.7	6,774.5	68.8	68.3	-64.13	-3,458.4	0.0	493.3	368.7	124.60	3.959		
10,400.0	6,990.8	10,192.7	6,773.8	70.7	70.2	-64.05	-3,558.4	0.0	493.6	365.6	127.96	3.857		
10,500.0	6,990.8	10,292.7	6,773.0	72.5	72.1	-63.97	-3,658.4	0.0	493.9	362.6	131.32	3.761		
10,600.0	6,990.9	10,392.7	6,772.3	74.4	74.0	-63.89	-3,758.4	0.0	494.3	359.6	134.68	3.670		
10,700.0	6,990.9	10,492.7	6,771.5	76.3	75.8	-63.81	-3,858.4	0.0	494.6	356.6	138.03	3.583		
10,800.0	6,990.9	10,592.7	6,770.8	78.2	77.7	-63.73	-3,958.4	0.0	495.0	353.6	141.39	3.501		
10,900.0	6,990.9	10,692.7	6,770.0	80.0	79.6	-63.65	-4,058.4	0.0	495.3	350.6	144.75	3.422		
11,000.0	6,990.9	10,792.6	6,769.3	81.9	81.5	-63.57	-4,158.3	0.0	495.6	347.5	148.10	3.347		
11,100.0	6,990.9	10,892.6	6,768.5	83.8	83.4	-63.49	-4,258.3	0.0	496.0	344.5	151.45	3.275		
11,200.0	6,991.0	10,992.6	6,767.8	85.7	85.3	-63.41	-4,358.3	0.0	496.3	341.5	154.81	3.206		
11,300.0	6,991.0	11,092.6	6,767.0	87.6	87.2	-63.33	-4,458.3	0.0	496.7	338.5	158.16	3.140		
11,400.0	6,991.0	11,192.6	6,766.3	89.4	89.1	-63.25	-4,558.3	0.0	497.0	335.5	161.51	3.077		
11,437.5	6,991.0	11,230.1	6,766.0	90.1	89.8	-63.22	-4,595.8	0.0	497.1	334.4	162.76	3.054 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-303 - Wellbore #1 - Plan #2 (5-30-14)													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)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	120.0	120.0					
100.0	100.0	98.0	98.0	0.1	0.1	90.00	0.0	120.0	120.0	119.8	0.22	539.317		
200.0	200.0	198.0	198.0	0.3	0.3	90.00	0.0	120.0	120.0	119.3	0.67	179.172		
300.0	300.0	298.0	298.0	0.6	0.6	90.00	0.0	120.0	120.0	118.9	1.12	107.216		
400.0	400.0	398.0	398.0	0.8	0.8	90.00	0.0	120.0	120.0	118.4	1.57	76.495		
500.0	500.0	498.0	498.0	1.0	1.0	90.00	0.0	120.0	120.0	118.0	2.02	59.458		
600.0	600.0	598.0	598.0	1.2	1.2	90.00	0.0	120.0	120.0	117.5	2.47	48.628		
700.0	700.0	698.0	698.0	1.5	1.5	90.00	0.0	120.0	120.0	117.1	2.92	41.135		
800.0	800.0	798.0	798.0	1.7	1.7	90.00	0.0	120.0	120.0	116.6	3.37	35.643		
900.0	900.0	898.0	898.0	1.9	1.9	90.00	0.0	120.0	120.0	116.2	3.82	31.445		
1,000.0	1,000.0	998.0	998.0	2.1	2.1	90.00	0.0	120.0	120.0	115.7	4.27	28.131 CC, ES		
1,100.0	1,100.0	1,094.4	1,094.4	2.4	2.3	159.96	0.7	121.4	123.1	118.4	4.69	26.231		
1,200.0	1,199.8	1,190.2	1,190.1	2.6	2.5	159.66	3.0	125.6	132.3	127.2	5.11	25.915		
1,300.0	1,299.5	1,287.8	1,287.3	2.8	2.8	159.34	6.6	132.0	147.2	141.6	5.53	26.617		
1,322.4	1,321.7	1,309.8	1,309.4	2.8	2.8	159.32	7.4	133.6	151.0	145.3	5.62	26.849		
1,400.0	1,398.8	1,386.3	1,385.5	3.0	3.0	159.41	10.2	138.8	164.4	158.4	5.95	27.610		
1,500.0	1,498.2	1,484.8	1,483.7	3.3	3.2	159.49	13.9	145.5	181.7	175.3	6.39	28.446		
1,600.0	1,597.6	1,583.2	1,581.9	3.6	3.5	159.56	17.6	152.2	199.0	192.2	6.83	29.151		
1,700.0	1,696.9	1,681.7	1,680.1	3.8	3.7	159.62	21.3	159.0	216.4	209.1	7.27	29.752		
1,800.0	1,796.3	1,780.2	1,778.3	4.1	3.9	159.68	24.9	165.7	233.7	226.0	7.72	30.269		
1,900.0	1,895.7	1,878.7	1,876.5	4.4	4.2	159.72	28.6	172.4	251.0	242.9	8.17	30.715		
2,000.0	1,995.0	1,977.2	1,974.7	4.7	4.4	159.76	32.3	179.2	268.4	259.7	8.63	31.107		
2,100.0	2,094.4	2,075.7	2,072.9	4.9	4.7	159.79	36.0	185.9	285.7	276.6	9.08	31.450		
2,200.0	2,193.8	2,174.2	2,171.1	5.2	4.9	159.82	39.6	192.6	303.0	293.5	9.54	31.755		
2,300.0	2,293.1	2,272.7	2,269.2	5.5	5.2	159.85	43.3	199.3	320.3	310.3	10.00	32.026		
2,400.0	2,392.5	2,371.1	2,367.4	5.8	5.4	159.87	47.0	206.1	337.7	327.2	10.46	32.268		
2,500.0	2,491.9	2,469.6	2,465.6	6.1	5.7	159.89	50.6	212.8	355.0	344.1	10.93	32.486		
2,600.0	2,591.2	2,568.1	2,563.8	6.4	6.0	159.91	54.3	219.5	372.3	360.9	11.39	32.683		
2,700.0	2,690.6	2,666.6	2,662.0	6.7	6.2	159.93	58.0	226.3	389.6	377.8	11.86	32.862		
2,800.0	2,790.0	2,765.1	2,760.2	7.0	6.5	159.95	61.7	233.0	407.0	394.6	12.32	33.025		
2,900.0	2,889.3	2,863.6	2,858.4	7.3	6.7	159.96	65.3	239.7	424.3	411.5	12.79	33.174		
3,000.0	2,988.7	2,962.1	2,956.6	7.6	7.0	159.98	69.0	246.4	441.6	428.4	13.26	33.310		
3,100.0	3,088.1	3,060.6	3,054.8	7.9	7.2	159.99	72.7	253.2	458.9	445.2	13.73	33.436		
3,200.0	3,187.4	3,159.0	3,152.9	8.2	7.5	160.00	76.4	259.9	476.3	462.1	14.20	33.552		
3,300.0	3,286.8	3,257.5	3,251.1	8.5	7.7	160.01	80.0	266.6	493.6	478.9	14.66	33.659		
3,400.0	3,386.2	3,356.0	3,349.3	8.8	8.0	160.02	83.7	273.4	510.9	495.8	15.13	33.759		
3,500.0	3,485.5	3,454.5	3,447.5	9.1	8.3	160.03	87.4	280.1	528.3	512.7	15.61	33.852		
3,600.0	3,584.9	3,553.0	3,545.7	9.4	8.5	160.04	91.1	286.8	545.6	529.5	16.08	33.938		
3,700.0	3,684.3	3,651.5	3,643.9	9.7	8.8	160.05	94.7	293.6	562.9	546.4	16.55	34.019		
3,800.0	3,783.6	3,750.0	3,742.1	10.0	9.0	160.06	98.4	300.3	580.2	563.2	17.02	34.094		
3,900.0	3,883.0	3,848.5	3,840.3	10.3	9.3	160.07	102.1	307.0	597.6	580.1	17.49	34.165		
4,000.0	3,982.4	3,946.9	3,938.5	10.6	9.6	160.07	105.7	313.7	614.9	596.9	17.96	34.232		
4,100.0	4,081.7	4,045.4	4,036.6	10.9	9.8	160.08	109.4	320.5	632.2	613.8	18.44	34.294		
4,200.0	4,181.1	4,143.9	4,134.8	11.2	10.1	160.09	113.1	327.2	649.5	630.6	18.91	34.353		
4,300.0	4,280.5	4,242.4	4,233.0	11.5	10.3	160.09	116.8	333.9	666.9	647.5	19.38	34.409		
4,400.0	4,379.9	4,340.9	4,331.2	11.8	10.6	160.10	120.4	340.7	684.2	664.3	19.85	34.461		
4,500.0	4,479.2	4,439.4	4,429.4	12.2	10.9	160.10	124.1	347.4	701.5	681.2	20.33	34.511		
4,600.0	4,578.6	4,537.9	4,527.6	12.5	11.1	160.11	127.8	354.1	718.9	698.1	20.80	34.558		
4,700.0	4,678.0	4,636.4	4,625.8	12.8	11.4	160.11	131.5	360.8	736.2	714.9	21.27	34.603		
4,800.0	4,777.3	4,734.8	4,724.0	13.1	11.6	160.12	135.1	367.6	753.5	731.8	21.75	34.646		
4,900.0	4,876.7	4,833.3	4,822.1	13.4	11.9	160.12	138.8	374.3	770.8	748.6	22.22	34.686		

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 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-303 - Wellbore #1 - Plan #2 (5-30-14)													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	4,976.1	4,931.8	4,920.3	13.7	12.2	160.13	160.13	142.5	381.0	788.2	765.5	22.70	34.725	
5,100.0	5,075.4	5,030.3	5,018.5	14.0	12.4	160.13	160.13	146.2	387.8	805.5	782.3	23.17	34.761	
5,203.5	5,178.3	5,132.2	5,120.2	14.3	12.7	160.13	160.13	150.0	394.7	823.4	799.8	23.66	34.797	
5,300.0	5,274.3	5,227.5	5,215.1	14.6	12.9	160.20	160.20	153.5	401.2	838.6	814.5	24.14	34.739	
5,400.0	5,374.1	5,339.8	5,327.1	14.7	13.2	160.17	160.17	157.5	408.5	850.9	826.3	24.59	34.598	
5,500.0	5,474.1	5,475.0	5,462.2	14.9	13.4	160.13	160.13	159.9	412.9	856.6	831.6	25.02	34.243	
5,525.9	5,500.0	5,510.1	5,497.3	14.9	13.5	90.07	90.07	160.0	413.1	856.9	831.8	25.12	34.112	
5,600.0	5,574.1	5,584.9	5,572.1	15.1	13.6	90.07	90.07	160.0	413.1	856.9	831.5	25.40	33.732	
5,700.0	5,674.1	5,684.9	5,672.1	15.2	13.8	90.07	90.07	160.0	413.1	856.9	831.1	25.81	33.203	
5,800.0	5,774.1	5,784.9	5,772.1	15.4	14.0	90.07	90.07	160.0	413.1	856.9	830.7	26.22	32.686	
5,900.0	5,874.1	5,884.9	5,872.1	15.6	14.2	90.07	90.07	160.0	413.1	856.9	830.3	26.63	32.183	
6,000.0	5,974.1	5,984.9	5,972.1	15.8	14.4	90.07	90.07	160.0	413.1	856.9	829.9	27.04	31.694	
6,100.0	6,074.1	6,084.9	6,072.1	16.0	14.6	90.07	90.07	160.0	413.1	856.9	829.5	27.45	31.218	
6,137.3	6,111.4	6,122.1	6,109.4	16.0	14.7	90.07	90.07	160.0	413.1	856.9	829.3	27.60	31.044	
6,200.0	6,174.1	6,184.6	6,171.8	16.1	14.8	90.26	90.26	157.2	413.1	856.9	829.1	27.83	30.787	
6,242.5	6,216.5	6,226.5	6,213.3	16.2	14.8	90.57	90.57	152.4	413.1	857.0	829.0	27.98	30.633	
6,250.0	6,224.1	6,233.9	6,220.6	16.2	14.8	-89.36	-89.36	151.4	413.1	857.0	829.0	28.00	30.608	
6,300.0	6,274.0	6,282.5	6,268.5	16.3	14.9	-88.90	-88.90	142.5	413.1	857.1	828.9	28.13	30.466	
6,350.0	6,323.7	6,330.8	6,315.3	16.4	15.0	-88.44	-88.44	130.8	413.1	857.2	829.0	28.25	30.347	
6,400.0	6,373.0	6,378.6	6,360.9	16.4	15.0	-87.99	-87.99	116.3	413.1	857.4	829.1	28.35	30.248	
6,450.0	6,421.5	6,426.1	6,405.1	16.5	15.0	-87.56	-87.56	99.0	413.1	857.7	829.3	28.44	30.161	
6,500.0	6,469.2	6,473.2	6,447.9	16.5	15.1	-87.13	-87.13	79.3	413.1	858.0	829.5	28.52	30.079	
6,550.0	6,515.8	6,520.0	6,489.0	16.6	15.1	-86.72	-86.72	57.1	413.1	858.3	829.7	28.61	29.997	
6,600.0	6,561.2	6,566.4	6,528.5	16.6	15.2	-86.32	-86.32	32.6	413.1	858.7	830.0	28.72	29.904	
6,650.0	6,605.0	6,612.6	6,566.1	16.6	15.2	-85.94	-85.94	5.9	413.1	859.1	830.3	28.83	29.795	
6,700.0	6,647.2	6,658.4	6,601.9	16.7	15.3	-85.57	-85.57	-22.7	413.1	859.5	830.5	28.98	29.656	
6,750.0	6,687.6	6,704.0	6,635.7	16.7	15.4	-85.22	-85.22	-53.3	413.1	859.9	830.8	29.16	29.486	
6,800.0	6,725.9	6,750.0	6,667.8	16.8	15.4	-84.89	-84.89	-86.2	413.1	860.4	831.0	29.39	29.272	
6,850.0	6,762.0	6,794.5	6,697.0	16.9	15.6	-84.59	-84.59	-119.8	413.1	860.8	831.1	29.67	29.012	
6,900.0	6,795.9	6,839.4	6,724.4	16.9	15.7	-84.30	-84.30	-155.3	413.1	861.2	831.2	30.01	28.698	
6,950.0	6,827.2	6,884.1	6,749.6	17.1	15.9	-84.04	-84.04	-192.2	413.1	861.6	831.2	30.41	28.331	
7,000.0	6,855.9	6,928.6	6,772.5	17.2	16.1	-83.80	-83.80	-230.4	413.1	862.0	831.1	30.88	27.911	
7,050.0	6,881.9	6,973.0	6,793.1	17.4	16.4	-83.58	-83.58	-269.7	413.1	862.3	830.9	31.43	27.439	
7,100.0	6,905.0	7,017.2	6,811.3	17.6	16.7	-83.39	-83.39	-310.1	413.1	862.7	830.6	32.05	26.919	
7,150.0	6,925.2	7,061.4	6,827.1	17.9	17.0	-83.23	-83.23	-351.3	413.1	862.9	830.2	32.74	26.358	
7,200.0	6,942.3	7,105.4	6,840.4	18.2	17.4	-83.09	-83.09	-393.2	413.1	863.2	829.7	33.51	25.762	
7,250.0	6,956.4	7,150.0	6,851.5	18.6	17.8	-82.97	-82.97	-436.4	413.1	863.4	829.1	34.35	25.135	
7,300.0	6,967.2	7,193.2	6,859.7	19.0	18.2	-82.89	-82.89	-478.8	413.1	863.6	828.3	35.26	24.494	
7,350.0	6,974.9	7,237.0	6,865.7	19.5	18.7	-82.83	-82.83	-522.2	413.1	863.7	827.4	36.23	23.840	
7,362.5	6,976.3	7,250.0	6,866.9	19.6	18.8	-82.81	-82.81	-535.1	413.1	863.7	827.2	36.50	23.663	
7,363.2	6,976.4	7,250.0	6,866.9	19.6	18.8	-82.81	-82.81	-535.1	413.1	863.7	827.2	36.51	23.658	
7,400.0	6,980.2	7,280.8	6,869.1	20.0	19.2	-82.74	-82.74	-565.9	413.1	863.9	826.6	37.26	23.182	
7,436.5	6,984.0	7,312.6	6,870.0	20.4	19.5	-82.59	-82.59	-597.6	413.1	864.2	826.2	38.04	22.717	
7,500.0	6,988.9	7,374.2	6,869.7	21.1	20.3	-82.22	-82.22	-659.3	413.1	864.9	825.4	39.53	21.880	
7,556.3	6,990.3	7,430.5	6,869.4	21.8	21.0	-82.10	-82.10	-715.5	413.1	865.1	824.2	40.94	21.130	
7,600.0	6,990.3	7,474.2	6,869.1	22.4	21.6	-82.08	-82.08	-759.3	413.1	865.2	823.1	42.09	20.554	
7,700.0	6,990.3	7,574.2	6,868.5	23.7	22.9	-82.04	-82.04	-859.2	413.1	865.3	820.4	44.85	19.294	
7,800.0	6,990.4	7,674.2	6,867.8	25.1	24.4	-81.99	-81.99	-959.2	413.1	865.4	817.6	47.74	18.125	
7,900.0	6,990.4	7,774.2	6,867.2	26.6	25.9	-81.95	-81.95	-1,059.2	413.1	865.4	814.7	50.76	17.050	
8,000.0	6,990.4	7,874.2	6,866.6	28.1	27.5	-81.91	-81.91	-1,159.2	413.1	865.5	811.7	53.88	16.065	
8,100.0	6,990.4	7,974.2	6,866.0	29.7	29.1	-81.87	-81.87	-1,259.2	413.1	865.6	808.6	57.07	15.167	

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 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-303 - Wellbore #1 - Plan #2 (5-30-14)													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
8,200.0	6,990.4	8,074.2	6,865.3	31.3	30.7	-81.82	-1,359.2	413.1	865.7	805.4	60.34	14.347		
8,300.0	6,990.5	8,174.2	6,864.7	32.9	32.4	-81.78	-1,459.2	413.1	865.8	802.1	63.67	13.599		
8,400.0	6,990.5	8,274.2	6,864.1	34.6	34.1	-81.74	-1,559.2	413.1	865.9	798.9	67.04	12.916		
8,500.0	6,990.5	8,374.2	6,863.4	36.3	35.8	-81.70	-1,659.2	413.1	866.0	795.5	70.46	12.290		
8,600.0	6,990.5	8,474.2	6,862.8	38.0	37.5	-81.66	-1,759.2	413.1	866.1	792.2	73.92	11.717		
8,700.0	6,990.5	8,574.2	6,862.2	39.7	39.3	-81.61	-1,859.2	413.1	866.2	788.8	77.40	11.191		
8,800.0	6,990.5	8,674.2	6,861.6	41.5	41.1	-81.57	-1,959.2	413.1	866.3	785.4	80.92	10.706		
8,900.0	6,990.6	8,774.2	6,860.9	43.2	42.8	-81.53	-2,059.2	413.1	866.4	781.9	84.45	10.259		
9,000.0	6,990.6	8,874.2	6,860.3	45.0	44.6	-81.49	-2,159.2	413.1	866.5	778.5	88.01	9.845		
9,100.0	6,990.6	8,974.2	6,859.7	46.8	46.4	-81.44	-2,259.2	413.1	866.6	775.0	91.59	9.462		
9,200.0	6,990.6	9,074.2	6,859.0	48.6	48.2	-81.40	-2,359.2	413.1	866.7	771.5	95.18	9.105		
9,300.0	6,990.6	9,174.2	6,858.4	50.4	50.1	-81.36	-2,459.2	413.1	866.8	768.0	98.79	8.774		
9,400.0	6,990.6	9,274.2	6,857.8	52.2	51.9	-81.32	-2,559.2	413.1	866.9	764.5	102.41	8.465		
9,500.0	6,990.7	9,374.2	6,857.2	54.1	53.7	-81.28	-2,659.2	413.1	867.0	760.9	106.04	8.176		
9,600.0	6,990.7	9,474.2	6,856.5	55.9	55.6	-81.23	-2,759.2	413.1	867.1	757.4	109.68	7.905		
9,700.0	6,990.7	9,574.2	6,855.9	57.7	57.4	-81.19	-2,859.2	413.1	867.2	753.8	113.33	7.652		
9,800.0	6,990.7	9,674.2	6,855.3	59.6	59.3	-81.15	-2,959.2	413.1	867.3	750.3	116.99	7.413		
9,900.0	6,990.7	9,774.2	6,854.6	61.4	61.1	-81.11	-3,059.2	413.1	867.4	746.7	120.65	7.189		
10,000.0	6,990.7	9,874.2	6,854.0	63.2	63.0	-81.06	-3,159.2	413.1	867.5	743.1	124.32	6.977		
10,100.0	6,990.8	9,974.2	6,853.4	65.1	64.8	-81.02	-3,259.2	413.1	867.6	739.6	128.00	6.778		
10,200.0	6,990.8	10,074.2	6,852.8	67.0	66.7	-80.98	-3,359.1	413.1	867.7	736.0	131.69	6.589		
10,300.0	6,990.8	10,174.2	6,852.1	68.8	68.6	-80.94	-3,459.1	413.1	867.8	732.4	135.37	6.410		
10,400.0	6,990.8	10,274.1	6,851.5	70.7	70.4	-80.90	-3,559.1	413.1	867.9	728.8	139.07	6.241		
10,500.0	6,990.8	10,374.1	6,850.9	72.5	72.3	-80.85	-3,659.1	413.1	868.0	725.2	142.76	6.080		
10,600.0	6,990.9	10,474.1	6,850.2	74.4	74.2	-80.81	-3,759.1	413.1	868.1	721.6	146.46	5.927		
10,700.0	6,990.9	10,574.1	6,849.6	76.3	76.1	-80.77	-3,859.1	413.1	868.2	718.0	150.17	5.782		
10,800.0	6,990.9	10,674.1	6,849.0	78.2	77.9	-80.73	-3,959.1	413.1	868.3	714.4	153.87	5.643		
10,900.0	6,990.9	10,774.1	6,848.4	80.0	79.8	-80.69	-4,059.1	413.1	868.4	710.8	157.58	5.511		
11,000.0	6,990.9	10,874.1	6,847.7	81.9	81.7	-80.64	-4,159.1	413.1	868.5	707.2	161.29	5.385		
11,100.0	6,990.9	10,974.1	6,847.1	83.8	83.6	-80.60	-4,259.1	413.1	868.6	703.6	165.01	5.264		
11,200.0	6,991.0	11,074.1	6,846.5	85.7	85.5	-80.56	-4,359.1	413.1	868.7	700.0	168.72	5.149		
11,300.0	6,991.0	11,174.1	6,845.8	87.6	87.4	-80.52	-4,459.1	413.1	868.8	696.4	172.44	5.038		
11,400.0	6,991.0	11,274.1	6,845.2	89.4	89.2	-80.48	-4,559.1	413.1	868.9	692.8	176.16	4.933		
11,437.5	6,991.0	11,308.9	6,845.0	90.1	89.9	-80.46	-4,593.8	413.1	869.0	691.5	177.50	4.896 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-443 - Wellbore #1 - Plan #2 (5-30-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.99	89.99	0.0	89.3	89.3				
100.0	100.0	98.0	98.0	0.1	0.1	89.99	89.99	0.0	89.3	89.3	89.1	0.22	401.352	
200.0	200.0	198.0	198.0	0.3	0.3	89.99	89.99	0.0	89.3	89.3	88.6	0.67	133.338	
300.0	300.0	298.0	298.0	0.6	0.6	89.99	89.99	0.0	89.3	89.3	88.2	1.12	79.788	
400.0	400.0	398.0	398.0	0.8	0.8	89.99	89.99	0.0	89.3	89.3	87.7	1.57	56.926	
500.0	500.0	498.0	498.0	1.0	1.0	89.99	89.99	0.0	89.3	89.3	87.3	2.02	44.248	
600.0	600.0	598.0	598.0	1.2	1.2	89.99	89.99	0.0	89.3	89.3	86.8	2.47	36.188	
700.0	700.0	698.0	698.0	1.5	1.5	89.99	89.99	0.0	89.3	89.3	86.4	2.92	30.612	
800.0	800.0	798.0	798.0	1.7	1.7	89.99	89.99	0.0	89.3	89.3	85.9	3.37	26.525	
900.0	900.0	898.0	898.0	1.9	1.9	89.99	89.99	0.0	89.3	89.3	85.5	3.82	23.401	
1,000.0	1,000.0	998.0	998.0	2.1	2.1	89.99	89.99	0.0	89.3	89.3	85.0	4.27	20.935 CC, ES	
1,100.0	1,100.0	1,098.0	1,098.0	2.4	2.4	160.42	160.42	0.0	89.3	91.0	86.2	4.71	19.329	
1,200.0	1,199.8	1,197.8	1,197.8	2.6	2.6	161.44	161.44	0.0	89.3	95.9	90.8	5.14	18.675	
1,300.0	1,299.5	1,297.5	1,297.5	2.8	2.8	162.91	162.91	0.0	89.3	104.2	98.6	5.56	18.731	
1,322.4	1,321.7	1,319.7	1,319.7	2.8	2.9	163.28	163.28	0.0	89.3	106.5	100.9	5.66	18.827	
1,400.0	1,398.8	1,396.8	1,396.8	3.0	3.0	164.53	164.53	0.0	89.3	114.9	108.9	6.00	19.157	
1,500.0	1,498.2	1,496.2	1,496.2	3.3	3.3	165.90	165.90	0.0	89.3	125.8	119.3	6.44	19.534	
1,600.0	1,597.6	1,593.4	1,593.4	3.6	3.5	166.46	166.46	1.2	90.2	137.5	130.6	6.88	19.993	
1,700.0	1,696.9	1,690.5	1,690.4	3.8	3.7	165.86	165.86	5.1	93.0	150.8	143.5	7.31	20.614	
1,800.0	1,796.3	1,789.5	1,789.2	4.1	3.9	165.03	165.03	9.8	96.5	164.7	156.9	7.76	21.223	
1,900.0	1,895.7	1,888.5	1,888.1	4.4	4.1	164.33	164.33	14.6	100.0	178.6	170.4	8.21	21.759	
2,000.0	1,995.0	1,987.6	1,986.9	4.7	4.4	163.73	163.73	19.3	103.4	192.5	183.9	8.66	22.233	
2,100.0	2,094.4	2,086.6	2,085.7	4.9	4.6	163.21	163.21	24.1	106.9	206.5	197.4	9.12	22.654	
2,200.0	2,193.8	2,185.6	2,184.5	5.2	4.8	162.75	162.75	28.8	110.4	220.5	210.9	9.57	23.029	
2,300.0	2,293.1	2,284.6	2,283.4	5.5	5.0	162.35	162.35	33.6	113.9	234.5	224.4	10.03	23.366	
2,400.0	2,392.5	2,383.6	2,382.2	5.8	5.3	162.00	162.00	38.3	117.4	248.5	238.0	10.50	23.669	
2,500.0	2,491.9	2,482.6	2,481.0	6.1	5.5	161.68	161.68	43.1	120.8	262.5	251.5	10.96	23.944	
2,600.0	2,591.2	2,581.6	2,579.9	6.4	5.7	161.40	161.40	47.8	124.3	276.5	265.1	11.43	24.194	
2,700.0	2,690.6	2,680.6	2,678.7	6.7	6.0	161.14	161.14	52.6	127.8	290.5	278.6	11.90	24.422	
2,800.0	2,790.0	2,779.6	2,777.5	7.0	6.2	160.91	160.91	57.3	131.3	304.5	292.2	12.36	24.630	
2,900.0	2,889.3	2,878.6	2,876.4	7.3	6.4	160.69	160.69	62.1	134.8	318.6	305.7	12.83	24.821	
3,000.0	2,988.7	2,977.6	2,975.2	7.6	6.7	160.50	160.50	66.8	138.2	332.6	319.3	13.30	24.998	
3,100.0	3,088.1	3,076.6	3,074.0	7.9	6.9	160.32	160.32	71.6	141.7	346.6	332.9	13.78	25.161	
3,200.0	3,187.4	3,175.6	3,172.8	8.2	7.2	160.15	160.15	76.3	145.2	360.7	346.4	14.25	25.312	
3,300.0	3,286.8	3,274.6	3,271.7	8.5	7.4	160.00	160.00	81.0	148.7	374.7	360.0	14.72	25.452	
3,400.0	3,386.2	3,373.6	3,370.5	8.8	7.6	159.86	159.86	85.8	152.2	388.8	373.6	15.20	25.582	
3,500.0	3,485.5	3,472.6	3,469.3	9.1	7.9	159.73	159.73	90.5	155.6	402.8	387.1	15.67	25.704	
3,600.0	3,584.9	3,571.6	3,568.2	9.4	8.1	159.60	159.60	95.3	159.1	416.9	400.7	16.15	25.817	
3,700.0	3,684.3	3,670.6	3,667.0	9.7	8.4	159.49	159.49	100.0	162.6	430.9	414.3	16.62	25.924	
3,800.0	3,783.6	3,769.6	3,765.8	10.0	8.6	159.38	159.38	104.8	166.1	445.0	427.9	17.10	26.024	
3,900.0	3,883.0	3,868.6	3,864.6	10.3	8.8	159.28	159.28	109.5	169.5	459.0	441.4	17.57	26.118	
4,000.0	3,982.4	3,967.6	3,963.5	10.6	9.1	159.18	159.18	114.3	173.0	473.1	455.0	18.05	26.207	
4,100.0	4,081.7	4,066.6	4,062.3	10.9	9.3	159.09	159.09	119.0	176.5	487.1	468.6	18.53	26.290	
4,200.0	4,181.1	4,165.6	4,161.1	11.2	9.6	159.01	159.01	123.8	180.0	501.2	482.2	19.01	26.369	
4,300.0	4,280.5	4,264.7	4,260.0	11.5	9.8	158.93	158.93	128.5	183.5	515.2	495.8	19.48	26.444	
4,400.0	4,379.9	4,363.7	4,358.8	11.8	10.1	158.85	158.85	133.3	186.9	529.3	509.3	19.96	26.514	
4,500.0	4,479.2	4,462.7	4,457.6	12.2	10.3	158.78	158.78	138.0	190.4	543.4	522.9	20.44	26.581	
4,600.0	4,578.6	4,561.7	4,556.4	12.5	10.5	158.71	158.71	142.8	193.9	557.4	536.5	20.92	26.645	
4,700.0	4,678.0	4,660.7	4,655.3	12.8	10.8	158.65	158.65	147.5	197.4	571.5	550.1	21.40	26.706	
4,800.0	4,777.3	4,759.7	4,754.1	13.1	11.0	158.59	158.59	152.3	200.9	585.5	563.7	21.88	26.763	
4,900.0	4,876.7	4,862.1	4,856.4	13.4	11.3	158.54	158.54	157.1	204.4	599.5	577.2	22.36	26.815	

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 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-443 - Wellbore #1 - Plan #2 (5-30-14)													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	4,976.1	4,976.0	4,970.2	13.7	11.5	158.72		159.9	206.4	611.8	589.0	22.81	26.824	
5,100.0	5,075.4	5,079.2	5,073.4	14.0	11.7	159.10		160.0	206.5	622.4	599.2	23.24	26.783	
5,203.5	5,178.3	5,182.1	5,176.3	14.3	11.9	159.47		160.0	206.5	633.3	609.6	23.70	26.722	
5,300.0	5,274.3	5,278.1	5,272.3	14.6	12.1	159.82		160.0	206.5	641.9	617.8	24.14	26.589	
5,400.0	5,374.1	5,377.9	5,372.1	14.7	12.3	160.05		160.0	206.5	647.7	623.2	24.55	26.379	
5,500.0	5,474.1	5,477.9	5,472.1	14.9	12.5	160.14		160.0	206.5	650.2	625.3	24.94	26.073	
5,525.9	5,500.0	5,503.8	5,498.0	14.9	12.6	90.09		160.0	206.5	650.3	625.3	25.03	25.977	
5,600.0	5,574.1	5,577.9	5,572.1	15.1	12.7	90.09		160.0	206.5	650.3	625.0	25.33	25.671	
5,700.0	5,674.1	5,677.9	5,672.1	15.2	12.9	90.09		160.0	206.5	650.3	624.6	25.75	25.256	
5,800.0	5,774.1	5,777.9	5,772.1	15.4	13.1	90.09		160.0	206.5	650.3	624.1	26.17	24.853	
5,900.0	5,874.1	5,877.9	5,872.1	15.6	13.4	90.09		160.0	206.5	650.3	623.7	26.59	24.462	
6,000.0	5,974.1	5,977.9	5,972.1	15.8	13.6	90.09		160.0	206.5	650.3	623.3	27.00	24.082	
6,100.0	6,074.1	6,077.9	6,072.1	16.0	13.8	90.09		160.0	206.5	650.3	622.9	27.42	23.712	
6,200.0	6,174.1	6,177.9	6,172.1	16.1	14.0	90.09		160.0	206.5	650.3	622.5	27.85	23.354	
6,242.5	6,216.5	6,220.4	6,214.5	16.2	14.1	90.09		160.0	206.5	650.3	622.3	28.03	23.204	
6,250.0	6,224.1	6,227.9	6,222.1	16.2	14.1	-89.91		160.0	206.5	650.3	622.3	28.05	23.180	
6,300.0	6,274.0	6,277.8	6,272.0	16.3	14.2	-89.93		158.0	206.5	650.3	622.1	28.22	23.046	
6,350.0	6,323.7	6,327.8	6,321.6	16.4	14.3	-89.94		152.7	206.5	650.3	622.0	28.35	22.935	
6,368.8	6,342.3	6,346.5	6,340.2	16.4	14.3	-89.94		149.9	206.5	650.3	621.9	28.40	22.898	
6,400.0	6,373.0	6,377.7	6,370.9	16.4	14.3	-89.95		144.3	206.5	650.3	621.8	28.47	22.840	
6,450.0	6,421.5	6,427.7	6,419.4	16.5	14.4	-89.96		132.6	206.5	650.3	621.7	28.57	22.759	
6,500.0	6,469.2	6,477.7	6,467.1	16.5	14.4	-89.98		117.7	206.5	650.3	621.6	28.66	22.687	
6,550.0	6,515.8	6,527.7	6,513.8	16.6	14.5	-89.99		99.8	206.5	650.3	621.6	28.75	22.618	
6,600.0	6,561.2	6,577.7	6,559.2	16.6	14.5	-90.00		78.9	206.5	650.3	621.5	28.84	22.546	
6,650.0	6,605.0	6,627.7	6,603.1	16.6	14.6	-90.01		55.0	206.5	650.3	621.4	28.95	22.465	
6,700.0	6,647.2	6,677.7	6,645.4	16.7	14.6	-90.03		28.3	206.5	650.3	621.2	29.07	22.367	
6,750.0	6,687.6	6,727.7	6,685.8	16.7	14.7	-90.04		-1.1	206.5	650.3	621.1	29.23	22.245	
6,800.0	6,725.9	6,777.7	6,724.3	16.8	14.8	-90.05		-33.1	206.5	650.3	620.9	29.44	22.092	
6,850.0	6,762.0	6,827.8	6,760.6	16.9	14.9	-90.06		-67.6	206.5	650.3	620.6	29.69	21.902	
6,900.0	6,795.9	6,877.8	6,794.5	16.9	15.0	-90.08		-104.4	206.5	650.3	620.3	30.01	21.670	
6,950.0	6,827.2	6,927.9	6,826.0	17.1	15.2	-90.09		-143.3	206.5	650.3	619.9	30.40	21.393	
7,000.0	6,855.9	6,978.0	6,854.8	17.2	15.4	-90.10		-184.2	206.5	650.3	619.5	30.86	21.070	
7,050.0	6,881.9	7,028.0	6,881.0	17.4	15.7	-90.11		-226.9	206.5	650.3	618.9	31.41	20.701	
7,100.0	6,905.0	7,078.1	6,904.2	17.6	16.0	-90.12		-271.2	206.5	650.3	618.3	32.05	20.291	
7,150.0	6,925.2	7,128.2	6,924.6	17.9	16.4	-90.13		-317.0	206.5	650.3	617.5	32.77	19.843	
7,200.0	6,942.3	7,178.3	6,941.8	18.2	16.8	-90.14		-364.0	206.5	650.3	616.7	33.58	19.364	
7,250.0	6,956.4	7,228.4	6,956.0	18.6	17.2	-90.15		-412.1	206.5	650.3	615.8	34.48	18.861	
7,300.0	6,967.2	7,278.5	6,967.0	19.0	17.7	-90.16		-461.0	206.5	650.3	614.9	35.45	18.343	
7,350.0	6,974.9	7,328.7	6,974.8	19.5	18.2	-90.16		-510.5	206.5	650.3	613.8	36.50	17.818	
7,362.5	6,976.3	7,341.2	6,976.2	19.6	18.4	-90.17		-522.9	206.5	650.3	613.6	36.77	17.687	
7,400.0	6,980.2	7,378.7	6,980.1	20.0	18.8	-90.17		-560.2	206.5	650.3	612.7	37.61	17.289	
7,436.5	6,984.0	7,415.2	6,983.9	20.4	19.2	-90.17		-596.5	206.5	650.3	611.9	38.46	16.909	
7,500.0	6,988.9	7,478.8	6,988.9	21.1	20.0	-90.17		-659.9	206.5	650.3	610.3	40.02	16.249	
7,556.3	6,990.3	7,535.2	6,990.3	21.8	20.7	-90.18		-716.3	206.5	650.3	608.9	41.46	15.686	
7,600.0	6,990.3	7,578.9	6,990.3	22.4	21.3	-90.18		-760.0	206.5	650.3	607.7	42.62	15.258	
7,700.0	6,990.3	7,678.9	6,990.3	23.7	22.7	-90.18		-860.0	206.5	650.3	604.9	45.40	14.325	
7,800.0	6,990.4	7,778.9	6,990.4	25.1	24.2	-90.18		-960.0	206.5	650.3	602.0	48.32	13.459	
7,900.0	6,990.4	7,878.9	6,990.4	26.6	25.7	-90.18		-1,060.0	206.5	650.3	599.0	51.36	12.663	
8,000.0	6,990.4	7,978.9	6,990.4	28.1	27.3	-90.18		-1,160.0	206.5	650.3	595.8	54.50	11.933	
8,100.0	6,990.4	8,078.9	6,990.4	29.7	28.9	-90.18		-1,260.0	206.5	650.3	592.6	57.72	11.266	
8,200.0	6,990.4	8,178.9	6,990.4	31.3	30.5	-90.18		-1,360.0	206.5	650.3	589.3	61.02	10.658	

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 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W - Becker Ranch 5R-443 - Wellbore #1 - Plan #2 (5-30-14)										Offset Site Error:		0.0 ft	
Survey Program:		0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis		Distance								Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
8,300.0	6,990.5	8,278.9	6,990.5	32.9	32.2	-90.18	-1,460.0	206.5	650.3	586.0	64.38	10.102			
8,400.0	6,990.5	8,378.9	6,990.5	34.6	33.9	-90.18	-1,560.0	206.5	650.3	582.6	67.79	9.594			
8,500.0	6,990.5	8,478.9	6,990.5	36.3	35.6	-90.18	-1,660.0	206.5	650.3	579.1	71.24	9.129			
8,600.0	6,990.5	8,578.9	6,990.5	38.0	37.4	-90.18	-1,760.0	206.5	650.3	575.6	74.73	8.703			
8,700.0	6,990.5	8,678.9	6,990.5	39.7	39.1	-90.18	-1,860.0	206.5	650.3	572.1	78.25	8.311			
8,800.0	6,990.5	8,778.9	6,990.5	41.5	40.9	-90.18	-1,960.0	206.5	650.3	568.6	81.80	7.951			
8,900.0	6,990.6	8,878.9	6,990.6	43.2	42.7	-90.18	-2,060.0	206.5	650.4	565.0	85.37	7.618			
9,000.0	6,990.6	8,978.9	6,990.6	45.0	44.5	-90.18	-2,160.0	206.5	650.4	561.4	88.97	7.310			
9,100.0	6,990.6	9,078.9	6,990.6	46.8	46.3	-90.18	-2,260.0	206.5	650.4	557.8	92.59	7.024			
9,200.0	6,990.6	9,178.9	6,990.6	48.6	48.1	-90.18	-2,360.0	206.5	650.4	554.1	96.22	6.759			
9,300.0	6,990.6	9,278.9	6,990.6	50.4	49.9	-90.18	-2,460.0	206.5	650.4	550.5	99.87	6.512			
9,400.0	6,990.6	9,378.9	6,990.6	52.2	51.8	-90.18	-2,560.0	206.5	650.4	546.8	103.53	6.282			
9,500.0	6,990.7	9,478.9	6,990.7	54.1	53.6	-90.18	-2,660.0	206.5	650.4	543.2	107.21	6.066			
9,600.0	6,990.7	9,578.9	6,990.7	55.9	55.5	-90.18	-2,760.0	206.5	650.4	539.5	110.89	5.865			
9,700.0	6,990.7	9,678.9	6,990.7	57.7	57.3	-90.18	-2,860.0	206.5	650.4	535.8	114.59	5.676			
9,800.0	6,990.7	9,778.9	6,990.7	59.6	59.2	-90.18	-2,960.0	206.5	650.4	532.1	118.29	5.498			
9,900.0	6,990.7	9,878.9	6,990.7	61.4	61.0	-90.18	-3,060.0	206.5	650.4	528.4	122.01	5.331			
10,000.0	6,990.7	9,978.9	6,990.7	63.2	62.9	-90.18	-3,160.0	206.5	650.4	524.6	125.73	5.173			
10,100.0	6,990.8	10,078.9	6,990.8	65.1	64.7	-90.18	-3,260.0	206.5	650.4	520.9	129.46	5.024			
10,200.0	6,990.8	10,178.9	6,990.8	67.0	66.6	-90.18	-3,360.0	206.5	650.4	517.2	133.19	4.883			
10,300.0	6,990.8	10,278.9	6,990.8	68.8	68.5	-90.18	-3,460.0	206.5	650.4	513.4	136.93	4.750			
10,400.0	6,990.8	10,378.9	6,990.8	70.7	70.4	-90.18	-3,560.0	206.5	650.4	509.7	140.67	4.623			
10,500.0	6,990.8	10,478.9	6,990.8	72.5	72.2	-90.18	-3,660.0	206.5	650.4	506.0	144.42	4.503			
10,600.0	6,990.9	10,578.9	6,990.9	74.4	74.1	-90.18	-3,760.0	206.5	650.4	502.2	148.18	4.389			
10,700.0	6,990.9	10,678.9	6,990.9	76.3	76.0	-90.18	-3,860.0	206.5	650.4	498.4	151.94	4.281			
10,800.0	6,990.9	10,778.9	6,990.9	78.2	77.9	-90.18	-3,960.0	206.5	650.4	494.7	155.70	4.177			
10,900.0	6,990.9	10,878.9	6,990.9	80.0	79.7	-90.18	-4,060.0	206.5	650.4	490.9	159.47	4.079			
11,000.0	6,990.9	10,978.9	6,990.9	81.9	81.6	-90.18	-4,160.0	206.5	650.4	487.2	163.23	3.984			
11,100.0	6,990.9	11,078.9	6,990.9	83.8	83.5	-90.18	-4,260.0	206.5	650.4	483.4	167.01	3.894			
11,200.0	6,991.0	11,178.9	6,991.0	85.7	85.4	-90.18	-4,360.0	206.5	650.4	479.6	170.78	3.808			
11,300.0	6,991.0	11,278.9	6,991.0	87.6	87.3	-90.18	-4,460.0	206.5	650.4	475.8	174.56	3.726			
11,400.0	6,991.0	11,378.9	6,991.0	89.4	89.2	-90.18	-4,560.0	206.6	650.4	472.1	178.34	3.647			
11,418.0	6,991.0	11,396.9	6,991.0	89.8	89.5	-90.18	-4,578.0	206.6	650.4	471.4	179.02	3.633			
11,437.5	6,991.0	11,412.7	6,991.0	90.1	89.8	-90.18	-4,593.8	206.6	650.4	470.8	179.64	3.621 SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells Sec.5-T3N-R64W - Becker 15-9I (Exist.) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7210-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,700.0	6,990.7	6,948.2	6,948.2	57.7	139.0	89.97	-3,770.5	-756.5	962.7	766.4	196.27	4.905	
9,800.0	6,990.7	6,948.2	6,948.2	59.6	139.0	89.97	-3,770.5	-756.5	868.7	670.6	198.12	4.385	
9,900.0	6,990.7	6,948.2	6,948.2	61.4	139.0	89.98	-3,770.5	-756.5	776.2	576.3	199.98	3.882	
10,000.0	6,990.7	6,948.2	6,948.2	63.2	139.0	89.98	-3,770.5	-756.5	685.9	484.1	201.84	3.398	
10,100.0	6,990.8	6,948.3	6,948.3	65.1	139.0	89.98	-3,770.5	-756.5	598.6	394.9	203.70	2.939	
10,200.0	6,990.8	6,948.3	6,948.3	67.0	139.0	89.99	-3,770.5	-756.5	516.0	310.4	205.57	2.510	
10,300.0	6,990.8	6,948.3	6,948.3	68.8	139.0	89.99	-3,770.5	-756.5	440.6	233.2	207.44	2.124	
10,400.0	6,990.8	6,948.3	6,948.3	70.7	139.0	89.99	-3,770.5	-756.5	376.9	167.6	209.31	1.801	
10,500.0	6,990.8	6,948.3	6,948.3	72.5	139.0	90.00	-3,770.5	-756.5	331.6	120.4	211.18	1.570	
10,600.0	6,990.9	6,948.4	6,948.4	74.4	139.0	90.00	-3,770.5	-756.5	312.8	99.7	213.06	1.468	Level 3
10,610.5	6,990.9	6,948.4	6,948.4	74.6	139.0	90.00	-3,770.5	-756.5	312.6	99.4	213.26	1.466	Level 3, CC, ES, SF
10,700.0	6,990.9	6,948.4	6,948.4	76.3	139.0	90.00	-3,770.5	-756.5	325.2	110.2	214.94	1.513	
10,800.0	6,990.9	6,948.4	6,948.4	78.2	139.0	90.01	-3,770.5	-756.5	365.6	148.8	216.82	1.686	
10,900.0	6,990.9	6,948.4	6,948.4	80.0	139.0	90.01	-3,770.5	-756.5	426.1	207.4	218.70	1.948	
11,000.0	6,990.9	6,948.4	6,948.4	81.9	139.0	90.01	-3,770.5	-756.5	499.4	278.9	220.59	2.264	
11,100.0	6,990.9	6,948.4	6,948.4	83.8	139.0	90.02	-3,770.5	-756.5	580.8	358.3	222.47	2.611	
11,200.0	6,991.0	6,948.5	6,948.5	85.7	139.0	90.02	-3,770.5	-756.5	667.3	442.9	224.36	2.974	
11,300.0	6,991.0	6,948.5	6,948.5	87.6	139.0	90.02	-3,770.5	-756.5	757.1	530.8	226.25	3.346	
11,400.0	6,991.0	6,948.5	6,948.5	89.4	139.0	90.03	-3,770.5	-756.5	849.1	621.0	228.14	3.722	
11,437.5	6,991.0	6,948.5	6,948.5	90.1	139.0	90.03	-3,770.5	-756.5	884.1	655.2	228.85	3.863	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Existing Wells Sec.5-T3N-R64W - Becker 5-15 (Exist.) - Wellbore #1 - Wellbore #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7085-UNKNOWN													<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,500.0	6,990.8	6,930.3	6,930.3	72.5	138.6	-89.94	-89.94	-4,561.1	-295.9	913.1	702.3	210.82	4.331	
10,600.0	6,990.9	6,930.4	6,930.4	74.4	138.6	-89.95	-89.95	-4,561.1	-295.9	814.6	601.9	212.70	3.830	
10,700.0	6,990.9	6,930.4	6,930.4	76.3	138.6	-89.95	-89.95	-4,561.1	-295.9	716.5	501.9	214.58	3.339	
10,800.0	6,990.9	6,930.4	6,930.4	78.2	138.6	-89.96	-89.96	-4,561.1	-295.9	619.0	402.5	216.46	2.860	
10,900.0	6,990.9	6,930.4	6,930.4	80.0	138.6	-89.97	-89.97	-4,561.1	-295.9	522.4	304.1	218.34	2.393	
11,000.0	6,990.9	6,930.4	6,930.4	81.9	138.6	-89.97	-89.97	-4,561.1	-295.9	427.5	207.2	220.23	1.941	
11,100.0	6,990.9	6,930.4	6,930.4	83.8	138.6	-89.98	-89.98	-4,561.1	-295.9	335.4	113.3	222.11	1.510	
11,200.0	6,991.0	6,930.5	6,930.5	85.7	138.6	-89.99	-89.99	-4,561.1	-295.9	249.6	25.6	224.00	1.114 Level 2	
11,300.0	6,991.0	6,930.5	6,930.5	87.6	138.6	-89.99	-89.99	-4,561.1	-295.9	179.2	-46.7	225.89	0.793 Level 1	
11,400.0	6,991.0	6,930.5	6,930.5	89.4	138.6	-90.00	-90.00	-4,561.1	-295.9	148.0	-79.8	227.78	0.650 Level 1	
11,401.1	6,991.0	6,930.5	6,930.5	89.5	138.6	-90.00	-90.00	-4,561.1	-295.9	147.9	-79.9	227.80	0.649 Level 1, CC, ES, SF	
11,437.5	6,991.0	6,930.5	6,930.5	90.1	138.6	-90.00	-90.00	-4,561.1	-295.9	152.4	-76.1	228.49	0.667 Level 1	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells Sec.5-T3N-R64W - Becker 6-11I (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7200-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,950.0	6,827.2	6,820.7	6,820.7	17.1	136.4	21.18	-1,114.7	-669.9	996.8	893.6	103.26	9.654		
7,000.0	6,855.9	6,849.4	6,849.4	17.2	137.0	23.95	-1,114.7	-669.9	957.0	856.7	100.33	9.539		
7,050.0	6,881.9	6,875.4	6,875.4	17.4	137.5	27.40	-1,114.7	-669.9	915.6	816.3	99.23	9.226		
7,100.0	6,905.0	6,898.5	6,898.5	17.6	138.0	31.75	-1,114.7	-669.9	872.7	771.8	100.88	8.651		
7,150.0	6,925.2	6,918.7	6,918.7	17.9	138.4	37.20	-1,114.7	-669.9	828.6	722.5	106.05	7.813		
7,200.0	6,942.3	6,935.8	6,935.8	18.2	138.7	43.99	-1,114.7	-669.9	783.5	668.5	115.03	6.812		
7,250.0	6,956.4	6,949.9	6,949.9	18.6	139.0	52.25	-1,114.7	-669.9	737.7	610.7	127.01	5.808		
7,300.0	6,967.2	6,960.7	6,960.7	19.0	139.2	61.81	-1,114.7	-669.9	691.4	551.6	139.88	4.943		
7,350.0	6,974.9	6,968.4	6,968.4	19.5	139.4	72.12	-1,114.7	-669.9	644.9	494.3	150.66	4.281		
7,362.5	6,976.3	6,969.8	6,969.8	19.6	139.4	74.70	-1,114.7	-669.9	633.4	480.6	152.72	4.147		
7,400.0	6,980.2	6,973.7	6,973.7	20.0	139.5	75.62	-1,114.7	-669.9	598.6	444.8	153.81	3.892		
7,436.5	6,984.0	6,977.5	6,977.5	20.4	139.6	76.53	-1,114.7	-669.9	565.2	410.4	154.87	3.650		
7,500.0	6,988.9	6,982.4	6,982.4	21.1	139.6	84.34	-1,114.7	-669.9	507.8	348.7	159.08	3.192		
7,556.3	6,990.3	6,983.8	6,983.8	21.8	139.7	89.98	-1,114.7	-669.9	458.1	297.7	160.46	2.855		
7,600.0	6,990.3	6,983.8	6,983.8	22.4	139.7	89.98	-1,114.7	-669.9	420.6	259.6	161.04	2.612		
7,700.0	6,990.3	6,983.8	6,983.8	23.7	139.7	89.99	-1,114.7	-669.9	340.6	178.1	162.42	2.097		
7,800.0	6,990.4	6,983.9	6,983.9	25.1	139.7	89.99	-1,114.7	-669.9	273.9	110.1	163.88	1.672		
7,900.0	6,990.4	6,983.9	6,983.9	26.6	139.7	90.00	-1,114.7	-669.9	232.6	67.2	165.40	1.406	Level 3	
7,954.7	6,990.4	6,983.9	6,983.9	27.4	139.7	90.00	-1,114.7	-669.9	226.0	59.8	166.25	1.360	Level 3, CC, ES, SF	
8,000.0	6,990.4	6,983.9	6,983.9	28.1	139.7	90.00	-1,114.7	-669.9	230.5	63.6	166.96	1.381	Level 3	
8,100.0	6,990.4	6,983.9	6,983.9	29.7	139.7	90.01	-1,114.7	-669.9	268.7	100.1	168.57	1.594		
8,200.0	6,990.4	6,983.9	6,983.9	31.3	139.7	90.01	-1,114.7	-669.9	333.5	163.3	170.22	1.959		
8,300.0	6,990.5	6,984.0	6,984.0	32.9	139.7	90.02	-1,114.7	-669.9	412.7	240.8	171.90	2.401		
8,400.0	6,990.5	6,984.0	6,984.0	34.6	139.7	90.02	-1,114.7	-669.9	499.4	325.8	173.60	2.876		
8,500.0	6,990.5	6,984.0	6,984.0	36.3	139.7	90.02	-1,114.7	-669.9	590.3	414.9	175.32	3.367		
8,600.0	6,990.5	6,984.0	6,984.0	38.0	139.7	90.03	-1,114.7	-669.9	683.7	506.6	177.07	3.861		
8,700.0	6,990.5	6,984.0	6,984.0	39.7	139.7	90.03	-1,114.7	-669.9	778.8	600.0	178.82	4.355		
8,800.0	6,990.5	6,984.0	6,984.0	41.5	139.7	90.04	-1,114.7	-669.9	875.0	694.4	180.60	4.845		
8,900.0	6,990.6	6,984.1	6,984.1	43.2	139.7	90.04	-1,114.7	-669.9	971.9	789.5	182.39	5.329		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4794.5ft (RKB - 12.5')

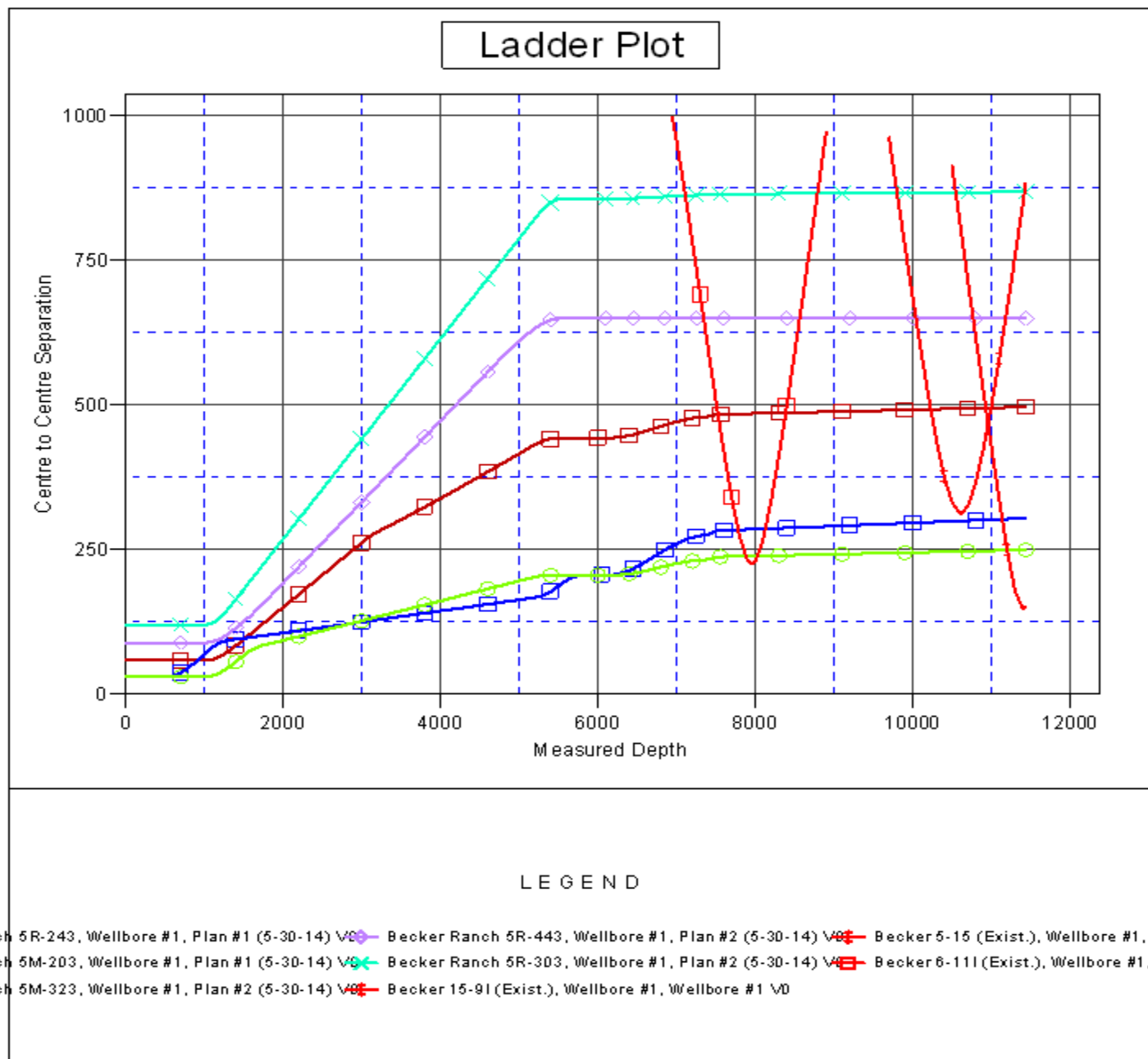
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Becker Ranch 5M-423

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.60°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Becker Ranch 5M-423
<b>Project:</b>	SEC.5-T3N-R64W	<b>TVD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Reference Site:</b>	Becker Ranch 5MR-HZ Pad Sec.5-T3N-R64W	<b>MD Reference:</b>	WELL @ 4794.5ft (RKB - 12.5')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Becker Ranch 5M-423	<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 (5-30-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4794.5ft (RKB - 12.5')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Becker Ranch 5M-423  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.60°

