

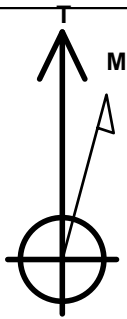
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Bernhardt Farms 13W-343**

Surface Location: Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4737.0  
+N/-S      +E/-W      Northing      Easting      Latitude      Longitude      Slot  
0.0      0.0      1357094.84      3186274.32      40.311700      -104.832040  
RKB - 15'      WELL @ 4752.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2634'FSL, 650'FEL	1.0	0.0	0.0	Point
BHL 500'FSL,405'FEL	7114.0	-7399.0	228.8	Point

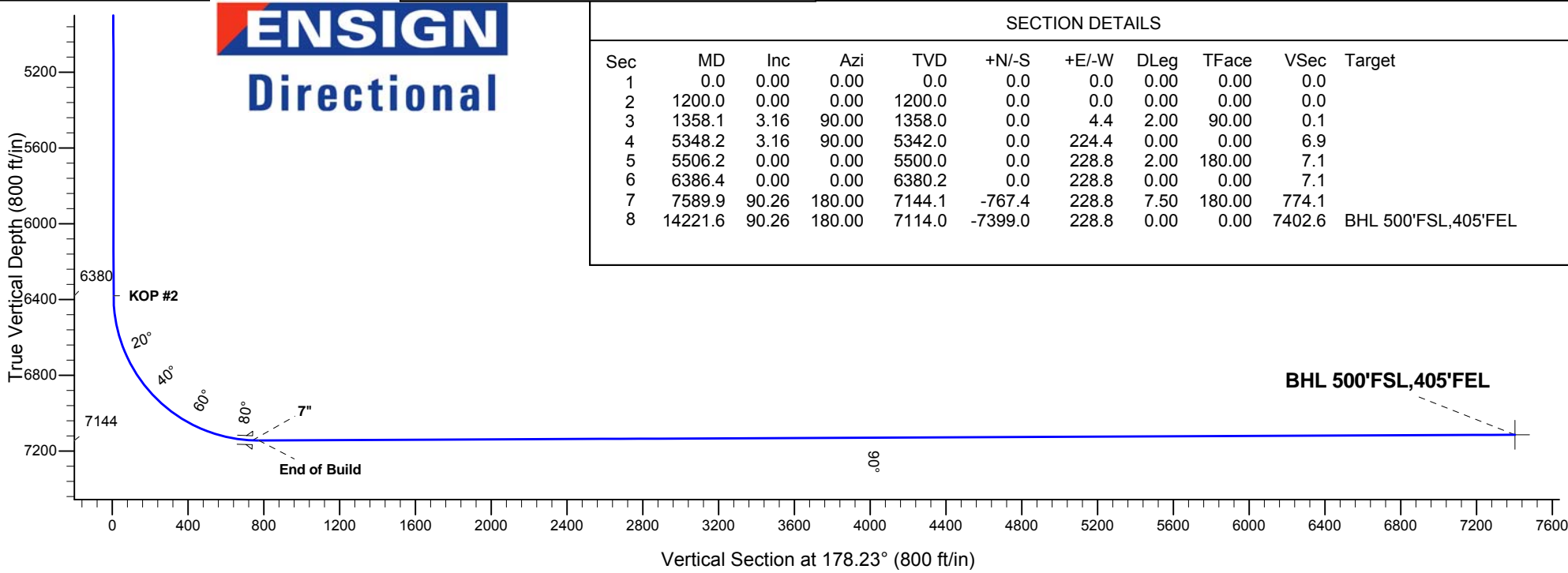
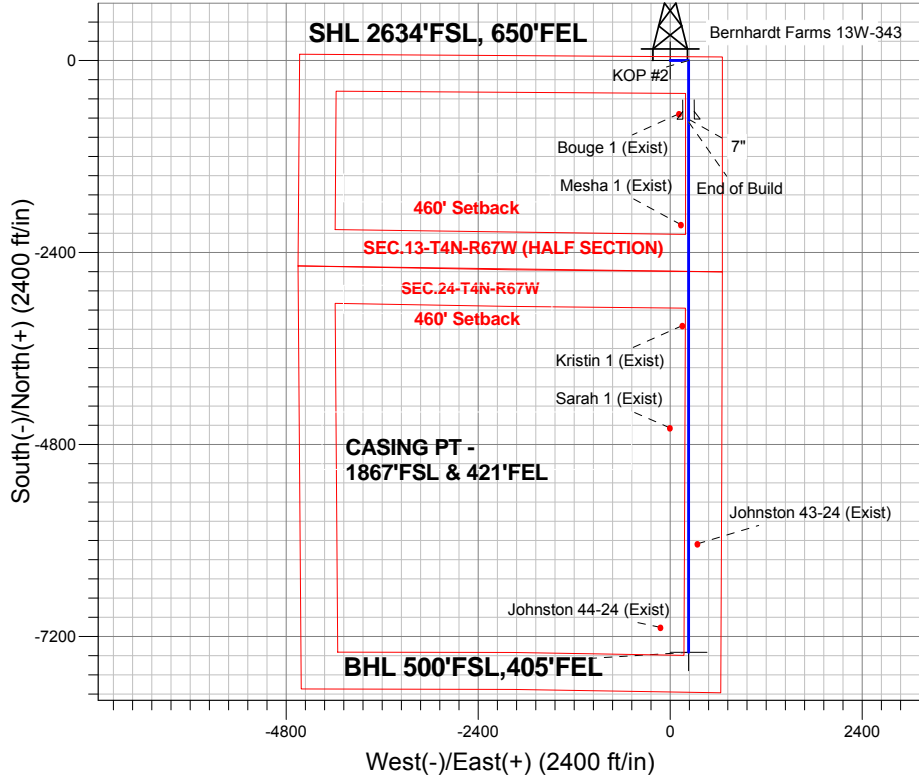


Azimuths to True North  
Magnetic North: 8.57°  
  
Magnetic Field  
Strength: 52824.3nT  
Dip Angle: 68.89°  
Date: 11/13/2013  
Model: IGRF2010

**Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W**  
Bernhardt Farms 13W-343  
Plan #1 (11-13-13)  
11:38, November 20 2013

ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	KOP #1
6380.2	6386.4	KOP #2
7144.1	7589.9	End of Build



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1358.1	3.16	90.00	1358.0	0.0	4.4	2.00	90.00	0.1	
4	5348.2	3.16	90.00	5342.0	0.0	224.4	0.00	0.00	6.9	
5	5506.2	0.00	0.00	5500.0	0.0	228.8	2.00	180.00	7.1	
6	6386.4	0.00	0.00	6380.2	0.0	228.8	0.00	0.00	7.1	
7	7589.9	90.26	180.00	7144.1	-767.4	228.8	7.50	180.00	774.1	
8	14221.6	90.26	180.00	7114.0	-7399.0	228.8	0.00	0.00	7402.6	BHL 500'FSL,405'FEL



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.13-T4N-R67W**

**Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W**

**Bernhardt Farms 13W-343**

**Wellbore #1**

**Plan: Plan #1 (11-13-13)**

## **Standard Planning Report**

**20 November, 2013**

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,358.1	3.16	90.00	1,358.0	0.0	4.4	2.00	2.00	0.00	90.00	
5,348.2	3.16	90.00	5,342.0	0.0	224.4	0.00	0.00	0.00	0.00	
5,506.2	0.00	0.00	5,500.0	0.0	228.8	2.00	-2.00	0.00	180.00	
6,386.4	0.00	0.00	6,380.2	0.0	228.8	0.00	0.00	0.00	0.00	
7,589.9	90.26	180.00	7,144.1	-767.4	228.8	7.50	7.50	0.00	180.00	
14,221.6	90.26	180.00	7,114.0	-7,399.0	228.8	0.00	0.00	0.00	0.00	BHL 500°FSL,405°F

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Project:</b>	SEC.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-13-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 2634'FSL, 650'FEL</b>									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP #1</b>									
1,300.0	2.00	90.00	1,300.0	0.0	1.7	0.1	2.00	2.00	0.00
1,358.1	3.16	90.00	1,358.0	0.0	4.4	0.1	2.00	2.00	0.00
1,400.0	3.16	90.00	1,399.9	0.0	6.7	0.2	0.00	0.00	0.00
1,500.0	3.16	90.00	1,499.7	0.0	12.2	0.4	0.00	0.00	0.00
1,600.0	3.16	90.00	1,599.6	0.0	17.7	0.5	0.00	0.00	0.00
1,700.0	3.16	90.00	1,699.4	0.0	23.2	0.7	0.00	0.00	0.00
1,800.0	3.16	90.00	1,799.2	0.0	28.7	0.9	0.00	0.00	0.00
1,900.0	3.16	90.00	1,899.1	0.0	34.2	1.1	0.00	0.00	0.00
2,000.0	3.16	90.00	1,998.9	0.0	39.8	1.2	0.00	0.00	0.00
2,100.0	3.16	90.00	2,098.8	0.0	45.3	1.4	0.00	0.00	0.00
2,200.0	3.16	90.00	2,198.6	0.0	50.8	1.6	0.00	0.00	0.00
2,300.0	3.16	90.00	2,298.5	0.0	56.3	1.7	0.00	0.00	0.00
2,400.0	3.16	90.00	2,398.3	0.0	61.8	1.9	0.00	0.00	0.00
2,500.0	3.16	90.00	2,498.2	0.0	67.3	2.1	0.00	0.00	0.00
2,600.0	3.16	90.00	2,598.0	0.0	72.8	2.3	0.00	0.00	0.00
2,700.0	3.16	90.00	2,697.9	0.0	78.4	2.4	0.00	0.00	0.00
2,800.0	3.16	90.00	2,797.7	0.0	83.9	2.6	0.00	0.00	0.00
2,900.0	3.16	90.00	2,897.6	0.0	89.4	2.8	0.00	0.00	0.00
3,000.0	3.16	90.00	2,997.4	0.0	94.9	2.9	0.00	0.00	0.00
3,100.0	3.16	90.00	3,097.3	0.0	100.4	3.1	0.00	0.00	0.00
3,200.0	3.16	90.00	3,197.1	0.0	105.9	3.3	0.00	0.00	0.00
3,300.0	3.16	90.00	3,297.0	0.0	111.4	3.4	0.00	0.00	0.00
3,400.0	3.16	90.00	3,396.8	0.0	117.0	3.6	0.00	0.00	0.00
3,500.0	3.16	90.00	3,496.7	0.0	122.5	3.8	0.00	0.00	0.00
3,583.5	3.16	90.00	3,580.0	0.0	127.1	3.9	0.00	0.00	0.00
<b>PARKMAN</b>									
3,600.0	3.16	90.00	3,596.5	0.0	128.0	4.0	0.00	0.00	0.00
3,700.0	3.16	90.00	3,696.4	0.0	133.5	4.1	0.00	0.00	0.00
3,800.0	3.16	90.00	3,796.2	0.0	139.0	4.3	0.00	0.00	0.00
3,900.0	3.16	90.00	3,896.1	0.0	144.5	4.5	0.00	0.00	0.00
4,000.0	3.16	90.00	3,995.9	0.0	150.0	4.6	0.00	0.00	0.00
4,100.0	3.16	90.00	4,095.7	0.0	155.6	4.8	0.00	0.00	0.00
4,104.3	3.16	90.00	4,100.0	0.0	155.8	4.8	0.00	0.00	0.00
<b>SUSSEX</b>									
4,200.0	3.16	90.00	4,195.6	0.0	161.1	5.0	0.00	0.00	0.00
4,300.0	3.16	90.00	4,295.4	0.0	166.6	5.1	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Project:</b>	SEC.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-13-13)		

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)
4,400.0	3.16	90.00	4,395.3	0.0	172.1	5.3	0.00	0.00	0.00
4,500.0	3.16	90.00	4,495.1	0.0	177.6	5.5	0.00	0.00	0.00
4,600.0	3.16	90.00	4,595.0	0.0	183.1	5.7	0.00	0.00	0.00
4,675.1	3.16	90.00	4,670.0	0.0	187.3	5.8	0.00	0.00	0.00
<b>SHANNON</b>									
4,700.0	3.16	90.00	4,694.8	0.0	188.7	5.8	0.00	0.00	0.00
4,800.0	3.16	90.00	4,794.7	0.0	194.2	6.0	0.00	0.00	0.00
4,900.0	3.16	90.00	4,894.5	0.0	199.7	6.2	0.00	0.00	0.00
5,000.0	3.16	90.00	4,994.4	0.0	205.2	6.3	0.00	0.00	0.00
5,100.0	3.16	90.00	5,094.2	0.0	210.7	6.5	0.00	0.00	0.00
5,200.0	3.16	90.00	5,194.1	0.0	216.2	6.7	0.00	0.00	0.00
5,300.0	3.16	90.00	5,293.9	0.0	221.7	6.9	0.00	0.00	0.00
5,348.2	3.16	90.00	5,342.0	0.0	224.4	6.9	0.00	0.00	0.00
5,400.0	2.12	90.00	5,393.8	0.0	226.8	7.0	2.00	-2.00	0.00
5,500.0	0.12	90.00	5,493.8	0.0	228.7	7.1	2.00	-2.00	0.00
5,506.2	0.00	0.00	5,500.0	0.0	228.8	7.1	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,593.8	0.0	228.8	7.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,693.8	0.0	228.8	7.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,793.8	0.0	228.8	7.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,893.8	0.0	228.8	7.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,993.8	0.0	228.8	7.1	0.00	0.00	0.00
6,100.0	0.00	0.00	6,093.8	0.0	228.8	7.1	0.00	0.00	0.00
6,200.0	0.00	0.00	6,193.8	0.0	228.8	7.1	0.00	0.00	0.00
6,300.0	0.00	0.00	6,293.8	0.0	228.8	7.1	0.00	0.00	0.00
6,386.4	0.00	0.00	6,380.2	0.0	228.8	7.1	0.00	0.00	0.00
<b>KOP #2</b>									
6,400.0	1.02	180.00	6,393.8	-0.1	228.8	7.2	7.51	7.51	0.00
6,500.0	8.52	180.00	6,493.3	-8.4	228.8	15.5	7.50	7.50	0.00
6,600.0	16.02	180.00	6,591.0	-29.7	228.8	36.7	7.50	7.50	0.00
6,700.0	23.52	180.00	6,685.0	-63.5	228.8	70.5	7.50	7.50	0.00
6,800.0	31.02	180.00	6,773.9	-109.3	228.8	116.3	7.50	7.50	0.00
6,868.6	36.17	180.00	6,831.0	-147.2	228.8	154.2	7.50	7.50	0.00
<b>SHARON SPRINGS</b>									
6,900.0	38.52	180.00	6,855.9	-166.2	228.8	173.2	7.50	7.50	0.00
7,000.0	46.02	180.00	6,929.9	-233.5	228.8	240.4	7.50	7.50	0.00
7,100.0	53.52	180.00	6,994.4	-309.8	228.8	316.7	7.50	7.50	0.00
7,200.0	61.02	180.00	7,048.5	-393.8	228.8	400.7	7.50	7.50	0.00
7,300.0	68.52	180.00	7,091.0	-484.2	228.8	491.1	7.50	7.50	0.00
7,400.0	76.02	180.00	7,121.5	-579.4	228.8	586.2	7.50	7.50	0.00
7,500.0	83.52	180.00	7,139.2	-677.7	228.8	684.5	7.50	7.50	0.00
7,556.3	87.74	180.00	7,143.5	-733.9	228.8	740.6	7.50	7.50	0.00
<b>7"</b>									
7,589.9	90.26	180.00	7,144.1	-767.5	228.8	774.2	7.49	7.49	0.00
<b>End of Build</b>									
7,600.0	90.26	180.00	7,144.0	-777.6	228.8	784.3	0.00	0.00	0.00
7,700.0	90.26	180.00	7,143.6	-877.6	228.8	884.2	0.00	0.00	0.00
7,800.0	90.26	180.00	7,143.1	-977.6	228.8	984.2	0.00	0.00	0.00
7,900.0	90.26	180.00	7,142.7	-1,077.6	228.8	1,084.1	0.00	0.00	0.00
8,000.0	90.26	180.00	7,142.2	-1,177.6	228.8	1,184.1	0.00	0.00	0.00
8,100.0	90.26	180.00	7,141.8	-1,277.5	228.8	1,284.0	0.00	0.00	0.00
8,200.0	90.26	180.00	7,141.3	-1,377.5	228.8	1,384.0	0.00	0.00	0.00
8,300.0	90.26	180.00	7,140.9	-1,477.5	228.8	1,483.9	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Project:</b>	SEC.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-13-13)		

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)
8,400.0	90.26	180.00	7,140.4	-1,577.5	228.8	1,583.9	0.00	0.00	0.00
8,500.0	90.26	180.00	7,140.0	-1,677.5	228.8	1,683.8	0.00	0.00	0.00
8,600.0	90.26	180.00	7,139.5	-1,777.5	228.8	1,783.8	0.00	0.00	0.00
8,700.0	90.26	180.00	7,139.1	-1,877.5	228.8	1,883.7	0.00	0.00	0.00
8,800.0	90.26	180.00	7,138.6	-1,977.5	228.8	1,983.7	0.00	0.00	0.00
8,900.0	90.26	180.00	7,138.1	-2,077.5	228.8	2,083.6	0.00	0.00	0.00
9,000.0	90.26	180.00	7,137.7	-2,177.5	228.8	2,183.6	0.00	0.00	0.00
9,100.0	90.26	180.00	7,137.2	-2,277.5	228.8	2,283.5	0.00	0.00	0.00
9,200.0	90.26	180.00	7,136.8	-2,377.5	228.8	2,383.5	0.00	0.00	0.00
9,300.0	90.26	180.00	7,136.3	-2,477.5	228.8	2,483.4	0.00	0.00	0.00
9,400.0	90.26	180.00	7,135.9	-2,577.5	228.8	2,583.4	0.00	0.00	0.00
9,500.0	90.26	180.00	7,135.4	-2,677.5	228.8	2,683.3	0.00	0.00	0.00
9,600.0	90.26	180.00	7,135.0	-2,777.5	228.8	2,783.3	0.00	0.00	0.00
9,700.0	90.26	180.00	7,134.5	-2,877.5	228.8	2,883.2	0.00	0.00	0.00
9,800.0	90.26	180.00	7,134.1	-2,977.5	228.8	2,983.2	0.00	0.00	0.00
9,900.0	90.26	180.00	7,133.6	-3,077.5	228.8	3,083.1	0.00	0.00	0.00
10,000.0	90.26	180.00	7,133.2	-3,177.5	228.8	3,183.1	0.00	0.00	0.00
10,100.0	90.26	180.00	7,132.7	-3,277.5	228.8	3,283.0	0.00	0.00	0.00
10,200.0	90.26	180.00	7,132.2	-3,377.5	228.8	3,383.0	0.00	0.00	0.00
10,300.0	90.26	180.00	7,131.8	-3,477.5	228.8	3,482.9	0.00	0.00	0.00
10,400.0	90.26	180.00	7,131.3	-3,577.5	228.8	3,582.9	0.00	0.00	0.00
10,500.0	90.26	180.00	7,130.9	-3,677.5	228.8	3,682.8	0.00	0.00	0.00
10,600.0	90.26	180.00	7,130.4	-3,777.5	228.8	3,782.8	0.00	0.00	0.00
10,700.0	90.26	180.00	7,130.0	-3,877.5	228.8	3,882.7	0.00	0.00	0.00
10,800.0	90.26	180.00	7,129.5	-3,977.5	228.8	3,982.7	0.00	0.00	0.00
10,900.0	90.26	180.00	7,129.1	-4,077.5	228.8	4,082.6	0.00	0.00	0.00
11,000.0	90.26	180.00	7,128.6	-4,177.5	228.8	4,182.6	0.00	0.00	0.00
11,100.0	90.26	180.00	7,128.2	-4,277.5	228.8	4,282.5	0.00	0.00	0.00
11,200.0	90.26	180.00	7,127.7	-4,377.5	228.8	4,382.5	0.00	0.00	0.00
11,300.0	90.26	180.00	7,127.3	-4,477.5	228.8	4,482.4	0.00	0.00	0.00
11,400.0	90.26	180.00	7,126.8	-4,577.5	228.8	4,582.4	0.00	0.00	0.00
11,500.0	90.26	180.00	7,126.3	-4,677.5	228.8	4,682.3	0.00	0.00	0.00
11,600.0	90.26	180.00	7,125.9	-4,777.5	228.8	4,782.3	0.00	0.00	0.00
11,700.0	90.26	180.00	7,125.4	-4,877.5	228.8	4,882.3	0.00	0.00	0.00
11,800.0	90.26	180.00	7,125.0	-4,977.5	228.8	4,982.2	0.00	0.00	0.00
11,900.0	90.26	180.00	7,124.5	-5,077.5	228.8	5,082.2	0.00	0.00	0.00
12,000.0	90.26	180.00	7,124.1	-5,177.5	228.8	5,182.1	0.00	0.00	0.00
12,100.0	90.26	180.00	7,123.6	-5,277.5	228.8	5,282.1	0.00	0.00	0.00
12,200.0	90.26	180.00	7,123.2	-5,377.5	228.8	5,382.0	0.00	0.00	0.00
12,300.0	90.26	180.00	7,122.7	-5,477.5	228.8	5,482.0	0.00	0.00	0.00
12,400.0	90.26	180.00	7,122.3	-5,577.5	228.8	5,581.9	0.00	0.00	0.00
12,500.0	90.26	180.00	7,121.8	-5,677.5	228.8	5,681.9	0.00	0.00	0.00
12,600.0	90.26	180.00	7,121.4	-5,777.5	228.8	5,781.8	0.00	0.00	0.00
12,700.0	90.26	180.00	7,120.9	-5,877.5	228.8	5,881.8	0.00	0.00	0.00
12,800.0	90.26	180.00	7,120.5	-5,977.5	228.8	5,981.7	0.00	0.00	0.00
12,900.0	90.26	180.00	7,120.0	-6,077.5	228.8	6,081.7	0.00	0.00	0.00
13,000.0	90.26	180.00	7,119.5	-6,177.5	228.8	6,181.6	0.00	0.00	0.00
13,100.0	90.26	180.00	7,119.1	-6,277.5	228.8	6,281.6	0.00	0.00	0.00
13,200.0	90.26	180.00	7,118.6	-6,377.5	228.8	6,381.5	0.00	0.00	0.00
13,300.0	90.26	180.00	7,118.2	-6,477.5	228.8	6,481.5	0.00	0.00	0.00
13,400.0	90.26	180.00	7,117.7	-6,577.5	228.8	6,581.4	0.00	0.00	0.00
13,500.0	90.26	180.00	7,117.3	-6,677.5	228.8	6,681.4	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Project:</b>	SEC.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (11-13-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,600.0	90.26	180.00	7,116.8	-6,777.5	228.8	6,781.3	0.00	0.00	0.00
13,700.0	90.26	180.00	7,116.4	-6,877.5	228.8	6,881.3	0.00	0.00	0.00
13,800.0	90.26	180.00	7,115.9	-6,977.5	228.8	6,981.2	0.00	0.00	0.00
13,900.0	90.26	180.00	7,115.5	-7,077.5	228.8	7,081.2	0.00	0.00	0.00
14,000.0	90.26	180.00	7,115.0	-7,177.5	228.8	7,181.1	0.00	0.00	0.00
14,100.0	90.26	180.00	7,114.6	-7,277.5	228.8	7,281.1	0.00	0.00	0.00
14,200.0	90.26	180.00	7,114.1	-7,377.5	228.8	7,381.0	0.00	0.00	0.00
14,221.6	90.26	180.00	7,114.0	-7,399.0	228.8	7,402.6	0.00	0.00	0.00
BHL 500'FSL,405'FEL									

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									
SHL 2634'FSL, 650'FI	0.00	0.00	1.0	0.0	0.0	1,357,094.85	3,186,274.32	40.311700	-104.832040
- plan hits target center									
- Point									
BHL 500'FSL,405'FEL	0.00	0.00	7,114.0	-7,399.0	228.8	1,349,698.06	3,186,558.79	40.291390	-104.831220
- plan hits target center									
- Point									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,556.3	7,143.5	7"	7	7-1/2

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,200.0	1,200.0	0.0	0.0	KOP #1
6,386.4	6,380.2	0.0	228.8	KOP #2
7,589.9	7,144.1	-767.5	228.8	End of Build



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.13-T4N-R67W**

**Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W**

**Bernhardt Farms 13W-343**

**Wellbore #1**

**Plan #1 (11-13-13)**

## **Anticollision Report**

**20 November, 2013**







<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13S-203 - Wellbore #1 - Plan #1										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
800.0	800.0	800.0	800.0	1.7	1.7	-161.48	-58.3	-19.5	61.5	58.1	3.37	18.232	
900.0	900.0	900.0	900.0	1.9	1.9	-161.48	-58.3	-19.5	61.5	57.6	3.82	16.087	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-161.48	-58.3	-19.5	61.5	57.2	4.27	14.393	CC
1,100.0	1,100.0	1,099.8	1,099.8	2.4	2.3	-160.69	-58.2	-20.4	61.7	56.9	4.71	13.098	ES
1,200.0	1,200.0	1,199.5	1,199.4	2.6	2.6	-158.36	-57.9	-23.0	62.3	57.2	5.14	12.131	
1,300.0	1,300.0	1,298.9	1,298.8	2.8	2.8	116.76	-57.4	-27.3	64.3	58.8	5.56	11.578	
1,358.1	1,358.0	1,356.4	1,356.2	2.9	2.9	121.34	-57.1	-30.5	66.9	61.1	5.80	11.538	
1,400.0	1,399.9	1,397.9	1,397.5	3.0	3.0	124.99	-56.8	-33.2	69.4	63.5	5.97	11.622	
1,500.0	1,499.7	1,496.3	1,495.7	3.2	3.2	133.33	-55.9	-40.9	77.2	70.8	6.40	12.065	
1,600.0	1,599.6	1,594.2	1,593.2	3.4	3.4	140.83	-54.9	-50.1	87.5	80.7	6.83	12.817	
1,700.0	1,699.4	1,691.6	1,690.0	3.6	3.7	147.27	-53.7	-61.0	100.3	93.0	7.26	13.822	
1,800.0	1,799.2	1,789.6	1,787.1	3.9	4.0	152.62	-52.3	-73.1	115.2	107.5	7.69	14.981	
1,900.0	1,899.1	1,887.9	1,884.7	4.1	4.2	156.77	-51.0	-85.5	130.9	122.8	8.12	16.122	
2,000.0	1,998.9	1,986.3	1,982.3	4.3	4.5	160.03	-49.6	-97.8	147.2	138.6	8.55	17.207	
2,100.0	2,098.8	2,084.6	2,079.8	4.6	4.8	162.63	-48.2	-110.1	163.8	154.8	8.99	18.224	
2,200.0	2,198.6	2,183.0	2,177.4	4.8	5.1	164.75	-46.8	-122.5	180.7	171.3	9.43	19.173	
2,300.0	2,298.5	2,281.3	2,275.0	5.0	5.4	166.51	-45.5	-134.8	197.8	188.0	9.87	20.054	
2,400.0	2,398.3	2,379.7	2,372.5	5.3	5.7	167.98	-44.1	-147.1	215.1	204.8	10.31	20.871	
2,500.0	2,498.2	2,478.1	2,470.1	5.5	6.0	169.24	-42.7	-159.5	232.5	221.7	10.75	21.630	
2,600.0	2,598.0	2,576.4	2,567.7	5.7	6.3	170.32	-41.4	-171.8	250.0	238.8	11.19	22.333	
2,700.0	2,697.9	2,674.8	2,665.3	6.0	6.6	171.26	-40.0	-184.1	267.5	255.9	11.64	22.987	
2,800.0	2,797.7	2,773.1	2,762.8	6.2	6.9	172.09	-38.6	-196.5	285.1	273.0	12.08	23.595	
2,900.0	2,897.6	2,871.5	2,860.4	6.4	7.2	172.82	-37.3	-208.8	302.8	290.3	12.53	24.162	
3,000.0	2,997.4	2,969.9	2,958.0	6.7	7.5	173.47	-35.9	-221.1	320.5	307.5	12.98	24.692	
3,100.0	3,097.3	3,068.2	3,055.6	6.9	7.8	174.05	-34.5	-233.5	338.2	324.8	13.43	25.186	
3,200.0	3,197.1	3,166.6	3,153.1	7.2	8.1	174.57	-33.1	-245.8	356.0	342.1	13.88	25.650	
3,300.0	3,297.0	3,264.9	3,250.7	7.4	8.4	175.04	-31.8	-258.1	373.8	359.5	14.33	26.084	
3,400.0	3,396.8	3,363.3	3,348.3	7.6	8.7	175.47	-30.4	-270.5	391.6	376.9	14.78	26.493	
3,500.0	3,496.7	3,461.7	3,445.8	7.9	9.1	175.87	-29.0	-282.8	409.5	394.2	15.24	26.877	
3,600.0	3,596.5	3,560.0	3,543.4	8.1	9.4	176.23	-27.7	-295.1	427.3	411.6	15.69	27.239	
3,700.0	3,696.4	3,658.4	3,641.0	8.4	9.7	176.56	-26.3	-307.5	445.2	429.1	16.14	27.581	
3,800.0	3,796.2	3,756.7	3,738.6	8.6	10.0	176.86	-24.9	-319.8	463.1	446.5	16.60	27.904	
3,900.0	3,896.1	3,855.1	3,836.1	8.9	10.3	177.15	-23.6	-332.1	481.0	463.9	17.05	28.210	
4,000.0	3,995.9	3,953.4	3,933.7	9.1	10.6	177.41	-22.2	-344.5	498.9	481.4	17.51	28.500	
4,100.0	4,095.7	4,051.8	4,031.3	9.3	11.0	177.65	-20.8	-356.8	516.8	498.9	17.96	28.775	
4,200.0	4,195.6	4,150.2	4,128.9	9.6	11.3	177.88	-19.4	-369.1	534.7	516.3	18.42	29.036	
4,300.0	4,295.4	4,248.5	4,226.4	9.8	11.6	178.10	-18.1	-381.5	552.7	533.8	18.87	29.284	
4,400.0	4,395.3	4,346.9	4,324.0	10.1	11.9	178.29	-16.7	-393.8	570.6	551.3	19.33	29.521	
4,500.0	4,495.1	4,445.2	4,421.6	10.3	12.2	178.48	-15.3	-406.1	588.6	568.8	19.79	29.746	
4,600.0	4,595.0	4,543.6	4,519.1	10.6	12.5	178.66	-14.0	-418.4	606.5	586.3	20.24	29.961	
4,700.0	4,694.8	4,642.0	4,616.7	10.8	12.9	178.83	-12.6	-430.8	624.5	603.8	20.70	30.167	
4,800.0	4,794.7	4,740.3	4,714.3	11.1	13.2	178.98	-11.2	-443.1	642.4	621.3	21.16	30.363	
4,900.0	4,894.5	4,843.2	4,816.4	11.3	13.5	179.14	-9.8	-455.9	660.3	638.7	21.62	30.544	
5,000.0	4,994.4	4,954.8	4,927.2	11.5	13.8	179.28	-8.5	-468.0	676.6	654.6	22.07	30.662	
5,100.0	5,094.2	5,067.0	5,039.0	11.8	14.0	179.39	-7.3	-478.1	691.1	668.6	22.50	30.708	
5,200.0	5,194.1	5,179.8	5,151.6	12.0	14.2	179.47	-6.5	-486.0	703.6	680.6	22.94	30.670	
5,300.0	5,293.9	5,293.2	5,264.8	12.3	14.5	179.53	-5.8	-491.8	714.1	690.7	23.37	30.552	
5,348.2	5,342.0	5,348.0	5,319.5	12.4	14.6	179.55	-5.6	-493.7	718.5	694.9	23.58	30.468	
5,400.0	5,393.8	5,407.0	5,378.6	12.5	14.7	179.57	-5.4	-495.3	722.2	698.4	23.82	30.322	
5,506.2	5,500.0	5,528.5	5,500.0	12.7	14.8	-90.42	-5.3	-496.6	725.3	701.1	24.27	29.889	
5,600.0	5,593.8	5,622.2	5,593.8	12.9	15.0	-90.42	-5.3	-496.6	725.3	700.7	24.64	29.440	

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13S-203 - Wellbore #1 - Plan #1										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
5,700.0	5,693.8	5,722.2	5,693.8	13.1	15.2	-90.42	-5.3	-496.6	725.3	700.3	25.05	28.961	
5,800.0	5,793.8	5,822.2	5,793.8	13.3	15.3	-90.42	-5.3	-496.6	725.3	699.9	25.45	28.495	
5,900.0	5,893.8	5,922.2	5,893.8	13.5	15.5	-90.42	-5.3	-496.6	725.3	699.5	25.87	28.043	
6,000.0	5,993.8	6,022.2	5,993.8	13.7	15.7	-90.42	-5.3	-496.6	725.3	699.1	26.28	27.603	
6,100.0	6,093.8	6,122.2	6,093.8	13.9	15.9	-90.42	-5.3	-496.6	725.3	698.6	26.69	27.176	
6,200.0	6,193.8	6,222.2	6,193.8	14.1	16.1	-90.42	-5.3	-496.6	725.3	698.2	27.10	26.761	
6,260.7	6,254.5	6,283.0	6,254.5	14.2	16.2	-90.42	-5.3	-496.6	725.3	698.0	27.36	26.514	
6,300.0	6,293.8	6,322.1	6,293.7	14.3	16.2	-90.43	-5.4	-496.6	725.3	697.8	27.52	26.359	
6,386.4	6,380.2	6,407.3	6,378.6	14.5	16.4	-90.94	-11.9	-496.6	725.4	697.6	27.86	26.041	
6,400.0	6,393.8	6,420.6	6,391.7	14.5	16.4	88.92	-13.7	-496.6	725.4	697.5	27.91	25.995	
6,450.0	6,443.7	6,469.1	6,439.4	14.6	16.5	88.41	-22.4	-496.6	725.6	697.5	28.09	25.834	
6,500.0	6,493.3	6,517.2	6,486.1	14.7	16.5	87.91	-34.1	-496.6	725.8	697.5	28.27	25.678	
6,550.0	6,542.5	6,565.0	6,531.6	14.8	16.6	87.43	-48.5	-496.6	726.1	697.6	28.44	25.527	
6,600.0	6,591.0	6,612.4	6,575.8	14.9	16.7	86.95	-65.5	-496.6	726.4	697.7	28.63	25.373	
6,650.0	6,638.6	6,659.4	6,618.6	15.0	16.8	86.49	-85.2	-496.6	726.7	697.9	28.82	25.216	
6,700.0	6,685.0	6,706.2	6,659.8	15.1	16.8	86.04	-107.3	-496.6	727.1	698.0	29.03	25.048	
6,750.0	6,730.2	6,752.6	6,699.3	15.2	16.9	85.61	-131.7	-496.6	727.5	698.2	29.26	24.866	
6,800.0	6,773.9	6,800.0	6,738.0	15.3	17.0	85.19	-159.0	-496.6	727.9	698.4	29.52	24.660	
6,850.0	6,815.8	6,844.7	6,772.9	15.5	17.1	84.80	-186.9	-496.6	728.3	698.5	29.81	24.432	
6,900.0	6,855.9	6,890.4	6,806.9	15.7	17.2	84.43	-217.5	-496.6	728.8	698.6	30.15	24.171	
6,950.0	6,894.0	6,935.9	6,838.7	15.8	17.4	84.09	-249.9	-496.6	729.2	698.7	30.54	23.877	
7,000.0	6,929.9	6,981.1	6,868.5	16.1	17.5	83.76	-284.0	-496.6	729.7	698.7	30.99	23.547	
7,050.0	6,963.4	7,026.2	6,896.1	16.3	17.7	83.47	-319.6	-496.6	730.1	698.6	31.50	23.180	
7,100.0	6,994.4	7,071.0	6,921.4	16.6	17.9	83.19	-356.6	-496.6	730.5	698.4	32.07	22.777	
7,150.0	7,022.8	7,115.8	6,944.4	17.0	18.2	82.95	-395.0	-496.6	730.9	698.1	32.72	22.339	
7,200.0	7,048.5	7,160.4	6,965.1	17.3	18.5	82.73	-434.4	-496.6	731.2	697.8	33.43	21.870	
7,250.0	7,071.2	7,204.8	6,983.4	17.7	18.8	82.54	-475.0	-496.6	731.5	697.3	34.22	21.374	
7,300.0	7,091.0	7,250.0	6,999.6	18.2	19.1	82.37	-517.1	-496.6	731.8	696.7	35.10	20.852	
7,350.0	7,107.8	7,293.5	7,012.8	18.7	19.5	82.24	-558.6	-496.6	732.0	696.0	36.03	20.319	
7,400.0	7,121.5	7,337.7	7,023.7	19.2	19.9	82.14	-601.4	-496.6	732.2	695.2	37.03	19.773	
7,450.0	7,132.0	7,381.9	7,032.2	19.8	20.4	82.06	-644.8	-496.6	732.3	694.2	38.10	19.223	
7,500.0	7,139.2	7,426.0	7,038.1	20.4	20.8	82.02	-688.5	-496.6	732.4	693.2	39.22	18.674	
7,550.0	7,143.2	7,470.1	7,041.5	21.0	21.3	82.01	-732.5	-496.6	732.4	692.0	40.40	18.132	
7,589.9	7,144.1	7,505.3	7,042.4	21.5	21.8	82.02	-767.6	-496.6	732.4	691.0	41.36	17.708	
7,600.0	7,144.0	7,515.1	7,042.4	21.6	21.9	82.02	-777.4	-496.6	732.4	690.8	41.62	17.597	
7,700.0	7,143.6	7,615.1	7,042.2	23.0	23.1	82.04	-877.4	-496.6	732.4	688.1	44.31	16.529	
7,800.0	7,143.1	7,715.1	7,042.1	24.4	24.5	82.07	-977.4	-496.6	732.3	685.2	47.15	15.533	
7,900.0	7,142.7	7,815.1	7,041.9	25.9	25.9	82.09	-1,077.4	-496.6	732.3	682.2	50.12	14.612	
8,000.0	7,142.2	7,915.1	7,041.8	27.5	27.4	82.11	-1,177.4	-496.6	732.2	679.0	53.19	13.766	
8,100.0	7,141.8	8,015.1	7,041.6	29.1	28.9	82.14	-1,277.4	-496.6	732.2	675.8	56.36	12.992	
8,200.0	7,141.3	8,115.1	7,041.4	30.7	30.5	82.16	-1,377.4	-496.6	732.2	672.6	59.60	12.285	
8,300.0	7,140.9	8,215.1	7,041.3	32.3	32.1	82.18	-1,477.4	-496.6	732.1	669.2	62.91	11.638	
8,400.0	7,140.4	8,315.1	7,041.1	34.0	33.7	82.21	-1,577.4	-496.6	732.1	665.8	66.27	11.047	
8,500.0	7,140.0	8,415.1	7,041.0	35.7	35.4	82.23	-1,677.4	-496.6	732.0	662.4	69.68	10.506	
8,600.0	7,139.5	8,515.1	7,040.8	37.5	37.1	82.25	-1,777.4	-496.6	732.0	658.9	73.12	10.010	
8,700.0	7,139.1	8,615.1	7,040.7	39.2	38.8	82.27	-1,877.4	-496.6	732.0	655.4	76.61	9.555	
8,800.0	7,138.6	8,715.1	7,040.5	41.0	40.6	82.30	-1,977.4	-496.6	731.9	651.8	80.12	9.135	
8,900.0	7,138.1	8,815.1	7,040.3	42.8	42.3	82.32	-2,077.4	-496.6	731.9	648.2	83.66	8.748	
9,000.0	7,137.7	8,915.1	7,040.2	44.5	44.1	82.34	-2,177.4	-496.6	731.8	644.6	87.22	8.390	
9,100.0	7,137.2	9,015.1	7,040.0	46.3	45.9	82.37	-2,277.4	-496.6	731.8	641.0	90.81	8.059	

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13S-203 - Wellbore #1 - Plan #1										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
9,200.0	7,136.8	9,115.1	7,039.9	48.1	47.6	82.39	-2,377.4	-496.6	731.8	637.3	94.41	7.751	
9,300.0	7,136.3	9,215.1	7,039.7	50.0	49.4	82.41	-2,477.4	-496.6	731.7	633.7	98.03	7.464	
9,400.0	7,135.9	9,315.1	7,039.6	51.8	51.3	82.44	-2,577.4	-496.6	731.7	630.0	101.66	7.197	
9,500.0	7,135.4	9,415.1	7,039.4	53.6	53.1	82.46	-2,677.4	-496.6	731.6	626.3	105.31	6.948	
9,600.0	7,135.0	9,515.1	7,039.2	55.5	54.9	82.48	-2,777.4	-496.6	731.6	622.6	108.97	6.714	
9,700.0	7,134.5	9,615.1	7,039.1	57.3	56.7	82.50	-2,877.4	-496.6	731.6	618.9	112.64	6.495	
9,800.0	7,134.1	9,715.1	7,038.9	59.1	58.6	82.53	-2,977.4	-496.6	731.5	615.2	116.32	6.289	
9,900.0	7,133.6	9,815.1	7,038.8	61.0	60.4	82.55	-3,077.4	-496.6	731.5	611.5	120.00	6.095	
10,000.0	7,133.2	9,915.1	7,038.6	62.9	62.2	82.57	-3,177.4	-496.6	731.4	607.7	123.70	5.913	
10,100.0	7,132.7	10,015.1	7,038.5	64.7	64.1	82.60	-3,277.4	-496.6	731.4	604.0	127.40	5.741	
10,200.0	7,132.2	10,115.1	7,038.3	66.6	65.9	82.62	-3,377.4	-496.6	731.4	600.3	131.12	5.578	
10,300.0	7,131.8	10,215.1	7,038.1	68.4	67.8	82.64	-3,477.4	-496.6	731.3	596.5	134.83	5.424	
10,400.0	7,131.3	10,315.1	7,038.0	70.3	69.7	82.67	-3,577.4	-496.6	731.3	592.7	138.55	5.278	
10,500.0	7,130.9	10,415.1	7,037.8	72.2	71.5	82.69	-3,677.4	-496.6	731.3	589.0	142.28	5.139	
10,600.0	7,130.4	10,515.1	7,037.7	74.1	73.4	82.71	-3,777.4	-496.6	731.2	585.2	146.02	5.008	
10,700.0	7,130.0	10,615.1	7,037.5	75.9	75.3	82.73	-3,877.4	-496.6	731.2	581.4	149.75	4.883	
10,800.0	7,129.5	10,715.1	7,037.4	77.8	77.1	82.76	-3,977.4	-496.6	731.1	577.7	153.50	4.763	
10,900.0	7,129.1	10,815.1	7,037.2	79.7	79.0	82.78	-4,077.4	-496.6	731.1	573.9	157.24	4.650	
11,000.0	7,128.6	10,915.1	7,037.0	81.6	80.9	82.80	-4,177.4	-496.6	731.1	570.1	160.99	4.541	
11,100.0	7,128.2	11,015.1	7,036.9	83.5	82.8	82.83	-4,277.4	-496.6	731.0	566.3	164.75	4.437	
11,200.0	7,127.7	11,115.1	7,036.7	85.4	84.6	82.85	-4,377.4	-496.6	731.0	562.5	168.50	4.338	
11,300.0	7,127.3	11,215.1	7,036.6	87.2	86.5	82.87	-4,477.4	-496.6	731.0	558.7	172.26	4.243	
11,400.0	7,126.8	11,315.1	7,036.4	89.1	88.4	82.90	-4,577.4	-496.6	730.9	554.9	176.03	4.152	
11,500.0	7,126.3	11,415.1	7,036.3	91.0	90.3	82.92	-4,677.4	-496.6	730.9	551.1	179.79	4.065	
11,600.0	7,125.9	11,515.1	7,036.1	92.9	92.2	82.94	-4,777.4	-496.6	730.9	547.3	183.56	3.982	
11,700.0	7,125.4	11,615.1	7,035.9	94.8	94.1	82.97	-4,877.4	-496.6	730.8	543.5	187.33	3.901	
11,800.0	7,125.0	11,715.1	7,035.8	96.7	96.0	82.99	-4,977.4	-496.6	730.8	539.7	191.10	3.824	
11,900.0	7,124.5	11,815.1	7,035.6	98.6	97.8	83.01	-5,077.4	-496.6	730.7	535.9	194.88	3.750	
12,000.0	7,124.1	11,915.1	7,035.5	100.5	99.7	83.03	-5,177.4	-496.6	730.7	532.0	198.66	3.678	
12,100.0	7,123.6	12,015.1	7,035.3	102.4	101.6	83.06	-5,277.4	-496.6	730.7	528.2	202.44	3.609	
12,200.0	7,123.2	12,115.1	7,035.2	104.3	103.5	83.08	-5,377.4	-496.6	730.6	524.4	206.22	3.543	
12,300.0	7,122.7	12,215.1	7,035.0	106.2	105.4	83.10	-5,477.4	-496.6	730.6	520.6	210.00	3.479	
12,400.0	7,122.3	12,315.1	7,034.8	108.1	107.3	83.13	-5,577.4	-496.6	730.6	516.8	213.79	3.417	
12,500.0	7,121.8	12,415.1	7,034.7	110.0	109.2	83.15	-5,677.4	-496.6	730.5	513.0	217.57	3.358	
12,600.0	7,121.4	12,515.1	7,034.5	111.9	111.1	83.17	-5,777.4	-496.6	730.5	509.1	221.36	3.300	
12,700.0	7,120.9	12,615.1	7,034.4	113.8	113.0	83.20	-5,877.4	-496.6	730.5	505.3	225.15	3.244	
12,800.0	7,120.5	12,715.1	7,034.2	115.7	114.9	83.22	-5,977.4	-496.6	730.4	501.5	228.94	3.190	
12,900.0	7,120.0	12,815.1	7,034.1	117.6	116.8	83.24	-6,077.4	-496.6	730.4	497.7	232.74	3.138	
13,000.0	7,119.5	12,915.1	7,033.9	119.5	118.7	83.27	-6,177.4	-496.6	730.4	493.8	236.53	3.088	
13,100.0	7,119.1	13,015.1	7,033.7	121.4	120.6	83.29	-6,277.4	-496.6	730.3	490.0	240.33	3.039	
13,200.0	7,118.6	13,115.1	7,033.6	123.3	122.5	83.31	-6,377.4	-496.6	730.3	486.2	244.12	2.991	
13,300.0	7,118.2	13,215.1	7,033.4	125.2	124.4	83.34	-6,477.4	-496.6	730.2	482.3	247.92	2.945	
13,400.0	7,117.7	13,315.1	7,033.3	127.1	126.3	83.36	-6,577.4	-496.6	730.2	478.5	251.72	2.901	
13,500.0	7,117.3	13,415.1	7,033.1	129.0	128.2	83.38	-6,677.4	-496.6	730.2	474.7	255.52	2.858	
13,600.0	7,116.8	13,515.1	7,033.0	130.9	130.1	83.40	-6,777.4	-496.6	730.1	470.8	259.32	2.816	
13,700.0	7,116.4	13,615.1	7,032.8	132.8	132.0	83.43	-6,877.4	-496.6	730.1	467.0	263.12	2.775	
13,800.0	7,115.9	13,715.1	7,032.6	134.7	133.9	83.45	-6,977.4	-496.6	730.1	463.2	266.93	2.735	
13,900.0	7,115.5	13,815.1	7,032.5	136.6	135.8	83.47	-7,077.4	-496.6	730.0	459.3	270.73	2.697	
14,000.0	7,115.0	13,915.1	7,032.3	138.5	137.7	83.50	-7,177.4	-496.6	730.0	455.5	274.54	2.659	
14,100.0	7,114.6	14,015.0	7,032.2	140.4	139.6	83.52	-7,277.4	-496.6	730.0	451.6	278.34	2.623	
14,200.0	7,114.1	14,115.0	7,032.0	142.4	141.5	83.54	-7,377.4	-496.6	729.9	447.8	282.15	2.587	

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13S-203 - Wellbore #1 - Plan #1		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					
14,211.0	7,114.0	14,125.8	7,032.0	142.6	141.7	83.55	-7,388.1	-496.6	729.9	447.4	282.56	2.583					
14,221.6	7,114.0	14,125.8	7,032.0	142.8	141.7	83.55	-7,388.1	-496.6	730.0	447.3	282.76	2.582 SF					

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13S-423 - Wellbore #1 - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-163.98	-29.1	-8.4	30.3				
100.0	100.0	100.0	100.0	0.1	0.1	-163.98	-29.1	-8.4	30.3	30.1	0.22	134.903	
200.0	200.0	200.0	200.0	0.3	0.3	-163.98	-29.1	-8.4	30.3	29.6	0.67	44.968	
300.0	300.0	300.0	300.0	0.6	0.6	-163.98	-29.1	-8.4	30.3	29.2	1.12	26.981	
400.0	400.0	400.0	400.0	0.8	0.8	-163.98	-29.1	-8.4	30.3	28.7	1.57	19.272	
500.0	500.0	500.0	500.0	1.0	1.0	-163.98	-29.1	-8.4	30.3	28.3	2.02	14.989	
600.0	600.0	600.0	600.0	1.2	1.2	-163.98	-29.1	-8.4	30.3	27.8	2.47	12.264	
700.0	700.0	700.0	700.0	1.5	1.5	-163.98	-29.1	-8.4	30.3	27.4	2.92	10.377	
800.0	800.0	800.0	800.0	1.7	1.7	-163.98	-29.1	-8.4	30.3	27.0	3.37	8.994	
900.0	900.0	900.0	900.0	1.9	1.9	-163.98	-29.1	-8.4	30.3	26.5	3.82	7.935	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-163.98	-29.1	-8.4	30.3	26.1	4.27	7.100	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-163.98	-29.1	-8.4	30.3	25.6	4.72	6.424	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-163.98	-29.1	-8.4	30.3	25.2	5.17	5.865 CC, ES	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	109.12	-29.1	-8.4	30.8	25.2	5.61	5.503	
1,358.1	1,358.0	1,358.0	1,358.0	2.9	2.9	113.56	-29.1	-8.4	31.8	25.9	5.85	5.433	
1,400.0	1,399.9	1,399.9	1,399.9	3.0	3.0	117.26	-29.1	-8.4	32.8	26.8	6.03	5.436	
1,500.0	1,499.7	1,499.7	1,499.7	3.2	3.3	125.15	-29.1	-8.4	35.7	29.2	6.47	5.516	
1,600.0	1,599.6	1,599.6	1,599.6	3.4	3.5	131.77	-29.1	-8.4	39.1	32.2	6.90	5.667	
1,700.0	1,699.4	1,699.4	1,699.4	3.6	3.7	137.26	-29.1	-8.4	43.0	35.6	7.34	5.858	
1,800.0	1,799.2	1,799.2	1,799.2	3.9	3.9	141.80	-29.1	-8.4	47.2	39.4	7.77	6.069	
1,900.0	1,899.1	1,899.1	1,899.1	4.1	4.2	145.59	-29.1	-8.4	51.6	43.4	8.21	6.286	
2,000.0	1,998.9	1,998.9	1,998.9	4.3	4.4	148.76	-29.1	-8.4	56.3	47.6	8.65	6.502	
2,100.0	2,098.8	2,097.1	2,097.1	4.6	4.6	152.35	-28.9	-10.0	62.4	53.3	9.08	6.870	
2,200.0	2,198.6	2,195.4	2,195.2	4.8	4.8	156.76	-28.0	-14.7	71.4	61.9	9.49	7.515	
2,300.0	2,298.5	2,294.8	2,294.5	5.0	5.0	160.48	-27.0	-20.3	81.3	71.4	9.91	8.206	
2,400.0	2,398.3	2,394.1	2,393.7	5.3	5.2	163.38	-26.1	-25.9	91.6	81.3	10.33	8.863	
2,500.0	2,498.2	2,493.5	2,492.9	5.5	5.4	165.69	-25.1	-31.4	102.0	91.3	10.76	9.485	
2,600.0	2,598.0	2,592.9	2,592.1	5.7	5.7	167.57	-24.1	-37.0	112.6	101.4	11.18	10.068	
2,700.0	2,697.9	2,692.3	2,691.3	6.0	5.9	169.12	-23.1	-42.5	123.3	111.7	11.61	10.616	
2,800.0	2,797.7	2,791.7	2,790.5	6.2	6.1	170.43	-22.1	-48.1	134.0	122.0	12.04	11.129	
2,900.0	2,897.6	2,891.0	2,889.8	6.4	6.3	171.55	-21.2	-53.7	144.8	132.4	12.47	11.610	
3,000.0	2,997.4	2,990.4	2,989.0	6.7	6.5	172.50	-20.2	-59.2	155.7	142.8	12.91	12.061	
3,100.0	3,097.3	3,089.8	3,088.2	6.9	6.8	173.34	-19.2	-64.8	166.6	153.2	13.34	12.485	
3,200.0	3,197.1	3,189.2	3,187.4	7.2	7.0	174.07	-18.2	-70.3	177.5	163.7	13.78	12.882	
3,300.0	3,297.0	3,288.5	3,286.6	7.4	7.2	174.72	-17.3	-75.9	188.4	174.2	14.21	13.256	
3,400.0	3,396.8	3,387.9	3,385.9	7.6	7.5	175.29	-16.3	-81.5	199.4	184.7	14.65	13.608	
3,500.0	3,496.7	3,487.3	3,485.1	7.9	7.7	175.81	-15.3	-87.0	210.4	195.3	15.09	13.940	
3,600.0	3,596.5	3,586.7	3,584.3	8.1	7.9	176.27	-14.3	-92.6	221.4	205.9	15.53	14.254	
3,700.0	3,696.4	3,686.1	3,683.5	8.4	8.2	176.69	-13.3	-98.2	232.4	216.4	15.97	14.550	
3,800.0	3,796.2	3,785.4	3,782.7	8.6	8.4	177.07	-12.4	-103.7	243.4	227.0	16.41	14.830	
3,900.0	3,896.1	3,884.8	3,881.9	8.9	8.6	177.42	-11.4	-109.3	254.5	237.6	16.86	15.096	
4,000.0	3,995.9	3,984.2	3,981.2	9.1	8.9	177.74	-10.4	-114.8	265.5	248.2	17.30	15.348	
4,100.0	4,095.7	4,083.6	4,080.4	9.3	9.1	178.04	-9.4	-120.4	276.5	258.8	17.74	15.587	
4,200.0	4,195.6	4,182.9	4,179.6	9.6	9.3	178.31	-8.4	-126.0	287.6	269.4	18.19	15.815	
4,300.0	4,295.4	4,282.3	4,278.8	9.8	9.6	178.56	-7.5	-131.5	298.7	280.0	18.63	16.032	
4,400.0	4,395.3	4,381.7	4,378.0	10.1	9.8	178.79	-6.5	-137.1	309.7	290.7	19.07	16.238	
4,500.0	4,495.1	4,481.1	4,477.2	10.3	10.1	179.01	-5.5	-142.6	320.8	301.3	19.52	16.435	
4,600.0	4,595.0	4,580.5	4,576.5	10.6	10.3	179.21	-4.5	-148.2	331.9	311.9	19.96	16.623	
4,700.0	4,694.8	4,679.8	4,675.7	10.8	10.5	179.40	-3.5	-153.8	343.0	322.5	20.41	16.803	
4,800.0	4,794.7	4,779.2	4,774.9	11.1	10.8	179.58	-2.6	-159.3	354.0	333.2	20.86	16.975	
4,900.0	4,894.5	4,883.9	4,879.4	11.3	11.0	179.75	-1.6	-164.9	364.9	343.6	21.31	17.124	

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13S-423 - Wellbore #1 - Plan #1										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		
5,000.0	4,994.4	4,998.1	4,993.6	11.5	11.2	179.82	-1.1	-167.4	372.6	350.8	21.74	17.133		
5,100.0	5,094.2	5,098.7	5,094.2	11.8	11.4	179.83	-1.1	-167.4	378.1	355.9	22.17	17.053		
5,200.0	5,194.1	5,198.6	5,194.1	12.0	11.6	179.83	-1.1	-167.4	383.6	361.0	22.61	16.964		
5,300.0	5,293.9	5,298.4	5,293.9	12.3	11.8	179.83	-1.1	-167.4	389.1	366.1	23.05	16.878		
5,348.2	5,342.0	5,346.5	5,342.0	12.4	11.9	179.83	-1.1	-167.4	391.8	368.5	23.27	16.838		
5,400.0	5,393.8	5,398.3	5,393.8	12.5	12.1	179.83	-1.1	-167.4	394.2	370.7	23.50	16.775		
5,506.2	5,500.0	5,504.5	5,500.0	12.7	12.3	-90.17	-1.1	-167.4	396.1	372.2	23.93	16.552		
5,600.0	5,593.8	5,598.3	5,593.8	12.9	12.5	-90.17	-1.1	-167.4	396.1	371.8	24.32	16.287		
5,700.0	5,693.8	5,698.3	5,693.8	13.1	12.7	-90.17	-1.1	-167.4	396.1	371.4	24.74	16.009		
5,800.0	5,793.8	5,798.3	5,793.8	13.3	12.9	-90.17	-1.1	-167.4	396.1	371.0	25.17	15.740		
5,900.0	5,893.8	5,898.3	5,893.8	13.5	13.1	-90.17	-1.1	-167.4	396.1	370.5	25.59	15.479		
6,000.0	5,993.8	5,998.3	5,993.8	13.7	13.3	-90.17	-1.1	-167.4	396.1	370.1	26.02	15.226		
6,100.0	6,093.8	6,098.3	6,093.8	13.9	13.5	-90.17	-1.1	-167.4	396.1	369.7	26.44	14.981		
6,200.0	6,193.8	6,198.3	6,193.8	14.1	13.8	-90.17	-1.1	-167.4	396.1	369.3	26.87	14.743		
6,300.0	6,293.8	6,298.3	6,293.8	14.3	14.0	-90.17	-1.1	-167.4	396.1	368.8	27.30	14.512		
6,386.4	6,380.2	6,384.7	6,380.2	14.5	14.2	-90.17	-1.1	-167.4	396.1	368.5	27.67	14.318		
6,400.0	6,393.8	6,398.3	6,393.8	14.5	14.2	89.85	-1.1	-167.4	396.1	368.4	27.72	14.289		
6,428.1	6,421.9	6,426.4	6,421.9	14.5	14.3	90.00	-1.1	-167.4	396.1	368.3	27.84	14.230		
6,450.0	6,443.7	6,448.2	6,443.7	14.6	14.3	90.22	-1.1	-167.4	396.1	368.2	27.93	14.185		
6,500.0	6,493.3	6,497.9	6,493.4	14.7	14.4	91.04	-1.2	-167.4	396.2	368.1	28.13	14.086		
6,550.0	6,542.5	6,548.1	6,543.6	14.8	14.5	92.04	-3.3	-167.4	396.4	368.1	28.31	14.002		
6,600.0	6,591.0	6,598.8	6,594.0	14.9	14.6	93.03	-8.7	-167.4	396.7	368.2	28.49	13.923		
6,650.0	6,638.6	6,650.0	6,644.4	15.0	14.7	94.01	-17.6	-167.4	397.1	368.4	28.67	13.849		
6,700.0	6,685.0	6,701.7	6,694.5	15.1	14.8	94.98	-30.0	-167.4	397.6	368.8	28.86	13.777		
6,750.0	6,730.2	6,753.8	6,744.2	15.2	14.9	95.93	-45.9	-167.4	398.3	369.2	29.06	13.705		
6,800.0	6,773.9	6,806.5	6,793.1	15.3	15.0	96.85	-65.3	-167.4	399.0	369.7	29.28	13.629		
6,850.0	6,815.8	6,859.6	6,841.0	15.5	15.1	97.74	-88.3	-167.4	399.8	370.3	29.52	13.545		
6,900.0	6,855.9	6,913.3	6,887.6	15.7	15.2	98.61	-114.9	-167.4	400.7	370.9	29.79	13.450		
6,950.0	6,894.0	6,967.4	6,932.7	15.8	15.3	99.43	-144.9	-167.4	401.6	371.5	30.10	13.341		
7,000.0	6,929.9	7,022.1	6,975.8	16.1	15.5	100.21	-178.3	-167.4	402.6	372.1	30.47	13.212		
7,050.0	6,963.4	7,077.2	7,016.9	16.3	15.7	100.95	-215.1	-167.4	403.5	372.6	30.90	13.061		
7,100.0	6,994.4	7,132.7	7,055.4	16.6	15.9	101.63	-255.1	-167.4	404.5	373.1	31.39	12.886		
7,150.0	7,022.8	7,188.7	7,091.2	17.0	16.2	102.26	-298.1	-167.4	405.4	373.5	31.96	12.685		
7,200.0	7,048.5	7,245.0	7,124.0	17.3	16.5	102.84	-343.9	-167.4	406.3	373.7	32.62	12.457		
7,250.0	7,071.2	7,301.8	7,153.5	17.7	16.9	103.35	-392.3	-167.4	407.2	373.8	33.37	12.202		
7,300.0	7,091.0	7,358.8	7,179.4	18.2	17.4	103.80	-443.1	-167.4	407.9	373.7	34.21	11.923		
7,350.0	7,107.8	7,416.2	7,201.6	18.7	17.9	104.18	-496.0	-167.4	408.6	373.5	35.15	11.624		
7,400.0	7,121.5	7,473.8	7,219.9	19.2	18.4	104.50	-550.6	-167.4	409.2	373.0	36.19	11.308		
7,450.0	7,132.0	7,531.5	7,234.0	19.8	19.0	104.74	-606.6	-167.4	409.6	372.3	37.31	10.980		
7,500.0	7,139.2	7,589.5	7,243.8	20.4	19.7	104.92	-663.7	-167.4	409.9	371.4	38.51	10.645		
7,550.0	7,143.2	7,642.5	7,249.7	21.0	20.3	105.10	-716.4	-167.4	410.3	370.6	39.73	10.329		
7,589.9	7,144.1	7,682.2	7,253.8	21.5	20.8	105.48	-755.9	-167.4	411.2	370.5	40.66	10.114		
7,600.0	7,144.0	7,693.0	7,254.9	21.6	21.0	105.63	-766.7	-167.4	411.5	370.6	40.90	10.062		
7,700.0	7,143.6	7,804.0	7,260.4	23.0	22.4	106.43	-877.4	-167.4	413.0	369.5	43.52	9.491		
7,800.0	7,143.1	7,904.1	7,260.4	24.4	23.9	106.48	-977.6	-167.4	413.1	366.8	46.27	8.929		
7,900.0	7,142.7	8,004.1	7,260.3	25.9	25.3	106.54	-1,077.6	-167.4	413.2	364.1	49.14	8.409		
8,000.0	7,142.2	8,104.1	7,260.3	27.5	26.9	106.59	-1,177.6	-167.4	413.3	361.2	52.11	7.932		
8,100.0	7,141.8	8,204.1	7,260.2	29.1	28.4	106.64	-1,277.6	-167.4	413.4	358.3	55.17	7.494		
8,200.0	7,141.3	8,304.1	7,260.1	30.7	30.1	106.70	-1,377.6	-167.4	413.6	355.3	58.30	7.093		
8,300.0	7,140.9	8,404.1	7,260.1	32.3	31.7	106.75	-1,477.6	-167.4	413.7	352.2	61.50	6.727		

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13S-423 - Wellbore #1 - Plan #1										Offset Site Error:		0.0 ft	
Survey Program: 0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	7,140.4	8,504.1	7,260.0	34.0	33.4	106.80	-1,577.6	-167.4	413.8	349.1	64.74	6.392	
8,500.0	7,140.0	8,604.1	7,260.0	35.7	35.1	106.86	-1,677.6	-167.4	413.9	345.9	68.03	6.084	
8,600.0	7,139.5	8,704.1	7,259.9	37.5	36.8	106.91	-1,777.6	-167.4	414.0	342.7	71.35	5.802	
8,700.0	7,139.1	8,804.1	7,259.9	39.2	38.6	106.96	-1,877.6	-167.4	414.1	339.4	74.71	5.543	
8,800.0	7,138.6	8,904.1	7,259.8	41.0	40.3	107.02	-1,977.6	-167.4	414.3	336.2	78.10	5.305	
8,900.0	7,138.1	9,004.1	7,259.8	42.8	42.1	107.07	-2,077.6	-167.4	414.4	332.9	81.50	5.084	
9,000.0	7,137.7	9,104.1	7,259.7	44.5	43.9	107.12	-2,177.6	-167.4	414.5	329.6	84.93	4.880	
9,100.0	7,137.2	9,204.1	7,259.7	46.3	45.7	107.18	-2,277.6	-167.4	414.6	326.2	88.38	4.691	
9,200.0	7,136.8	9,304.1	7,259.6	48.1	47.5	107.23	-2,377.6	-167.4	414.7	322.9	91.85	4.516	
9,300.0	7,136.3	9,404.1	7,259.6	50.0	49.3	107.28	-2,477.6	-167.4	414.9	319.5	95.32	4.352	
9,400.0	7,135.9	9,504.1	7,259.5	51.8	51.2	107.33	-2,577.6	-167.4	415.0	316.2	98.81	4.200	
9,500.0	7,135.4	9,604.1	7,259.5	53.6	53.0	107.39	-2,677.6	-167.4	415.1	312.8	102.32	4.057	
9,600.0	7,135.0	9,704.1	7,259.4	55.5	54.8	107.44	-2,777.6	-167.4	415.2	309.4	105.83	3.924	
9,700.0	7,134.5	9,804.1	7,259.4	57.3	56.7	107.49	-2,877.6	-167.4	415.3	306.0	109.35	3.798	
9,800.0	7,134.1	9,904.1	7,259.3	59.1	58.5	107.55	-2,977.6	-167.4	415.5	302.6	112.87	3.681	
9,900.0	7,133.6	10,004.1	7,259.3	61.0	60.4	107.60	-3,077.6	-167.4	415.6	299.2	116.41	3.570	
10,000.0	7,133.2	10,104.1	7,259.2	62.9	62.2	107.65	-3,177.6	-167.4	415.7	295.8	119.95	3.466	
10,100.0	7,132.7	10,204.1	7,259.2	64.7	64.1	107.70	-3,277.6	-167.4	415.8	292.3	123.49	3.367	
10,200.0	7,132.2	10,304.1	7,259.1	66.6	65.9	107.76	-3,377.6	-167.4	415.9	288.9	127.04	3.274	
10,300.0	7,131.8	10,404.1	7,259.0	68.4	67.8	107.81	-3,477.6	-167.4	416.1	285.5	130.59	3.186	
10,400.0	7,131.3	10,504.1	7,259.0	70.3	69.7	107.86	-3,577.6	-167.4	416.2	282.0	134.15	3.102	
10,500.0	7,130.9	10,604.1	7,258.9	72.2	71.5	107.91	-3,677.6	-167.4	416.3	278.6	137.71	3.023	
10,600.0	7,130.4	10,704.1	7,258.9	74.1	73.4	107.97	-3,777.6	-167.4	416.4	275.2	141.27	2.948	
10,700.0	7,130.0	10,804.1	7,258.8	75.9	75.3	108.02	-3,877.6	-167.4	416.6	271.7	144.83	2.876	
10,800.0	7,129.5	10,904.1	7,258.8	77.8	77.2	108.07	-3,977.6	-167.4	416.7	268.3	148.40	2.808	
10,900.0	7,129.1	11,004.1	7,258.7	79.7	79.1	108.12	-4,077.6	-167.4	416.8	264.8	151.97	2.743	
11,000.0	7,128.6	11,104.1	7,258.7	81.6	80.9	108.18	-4,177.6	-167.4	416.9	261.4	155.54	2.681	
11,100.0	7,128.2	11,204.1	7,258.6	83.5	82.8	108.23	-4,277.6	-167.4	417.1	257.9	159.11	2.621	
11,200.0	7,127.7	11,304.1	7,258.6	85.4	84.7	108.28	-4,377.6	-167.4	417.2	254.5	162.68	2.564	
11,300.0	7,127.3	11,404.1	7,258.5	87.2	86.6	108.33	-4,477.6	-167.4	417.3	251.1	166.26	2.510	
11,400.0	7,126.8	11,504.1	7,258.5	89.1	88.5	108.39	-4,577.6	-167.4	417.4	247.6	169.83	2.458	
11,500.0	7,126.3	11,604.1	7,258.4	91.0	90.4	108.44	-4,677.6	-167.4	417.6	244.2	173.41	2.408	
11,600.0	7,125.9	11,704.1	7,258.4	92.9	92.3	108.49	-4,777.6	-167.4	417.7	240.7	176.98	2.360	
11,700.0	7,125.4	11,804.1	7,258.3	94.8	94.2	108.54	-4,877.6	-167.4	417.8	237.3	180.55	2.314	
11,800.0	7,125.0	11,904.1	7,258.3	96.7	96.1	108.60	-4,977.6	-167.4	417.9	233.8	184.13	2.270	
11,900.0	7,124.5	12,004.1	7,258.2	98.6	97.9	108.65	-5,077.6	-167.4	418.1	230.4	187.70	2.227	
12,000.0	7,124.1	12,104.1	7,258.2	100.5	99.8	108.70	-5,177.6	-167.4	418.2	226.9	191.28	2.186	
12,100.0	7,123.6	12,204.1	7,258.1	102.4	101.7	108.75	-5,277.6	-167.4	418.3	223.5	194.85	2.147	
12,200.0	7,123.2	12,304.1	7,258.1	104.3	103.6	108.80	-5,377.6	-167.4	418.5	220.0	198.43	2.109	
12,300.0	7,122.7	12,404.1	7,258.0	106.2	105.5	108.86	-5,477.6	-167.4	418.6	216.6	202.00	2.072	
12,400.0	7,122.3	12,504.1	7,257.9	108.1	107.4	108.91	-5,577.6	-167.4	418.7	213.1	205.57	2.037	
12,500.0	7,121.8	12,604.1	7,257.9	110.0	109.3	108.96	-5,677.6	-167.4	418.9	209.7	209.15	2.003	
12,600.0	7,121.4	12,704.1	7,257.8	111.9	111.2	109.01	-5,777.6	-167.4	419.0	206.3	212.72	1.970	
12,700.0	7,120.9	12,804.1	7,257.8	113.8	113.1	109.06	-5,877.6	-167.4	419.1	202.8	216.29	1.938	
12,800.0	7,120.5	12,904.1	7,257.7	115.7	115.0	109.11	-5,977.6	-167.4	419.2	199.4	219.86	1.907	
12,900.0	7,120.0	13,004.1	7,257.7	117.6	116.9	109.17	-6,077.6	-167.4	419.4	195.9	223.43	1.877	
13,000.0	7,119.5	13,104.1	7,257.6	119.5	118.8	109.22	-6,177.6	-167.4	419.5	192.5	227.00	1.848	
13,100.0	7,119.1	13,204.1	7,257.6	121.4	120.7	109.27	-6,277.6	-167.4	419.6	189.1	230.56	1.820	
13,200.0	7,118.6	13,304.1	7,257.5	123.3	122.7	109.32	-6,377.6	-167.4	419.8	185.6	234.13	1.793	
13,300.0	7,118.2	13,404.1	7,257.5	125.2	124.6	109.37	-6,477.6	-167.4	419.9	182.2	237.70	1.767	
13,400.0	7,117.7	13,504.1	7,257.4	127.1	126.5	109.43	-6,577.6	-167.4	420.0	178.8	241.26	1.741	

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13S-423 - Wellbore #1 - Plan #1		Offset Site Error:		0.0 ft	
Survey Program: 0-MWD														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
13,500.0	7,117.3	13,604.1	7,257.4	129.0	128.4	109.48	-6,677.6	-167.4	420.2	175.4	244.82	1.716					
13,600.0	7,116.8	13,704.1	7,257.3	130.9	130.3	109.53	-6,777.6	-167.4	420.3	171.9	248.38	1.692					
13,700.0	7,116.4	13,804.1	7,257.3	132.8	132.2	109.58	-6,877.6	-167.4	420.4	168.5	251.94	1.669					
13,800.0	7,115.9	13,904.1	7,257.2	134.7	134.1	109.63	-6,977.6	-167.4	420.6	165.1	255.50	1.646					
13,900.0	7,115.5	14,004.1	7,257.2	136.6	136.0	109.68	-7,077.6	-167.4	420.7	161.7	259.06	1.624					
14,000.0	7,115.0	14,104.1	7,257.1	138.5	137.9	109.73	-7,177.6	-167.4	420.9	158.2	262.62	1.603					
14,100.0	7,114.6	14,204.1	7,257.1	140.4	139.8	109.79	-7,277.6	-167.4	421.0	154.8	266.17	1.582					
14,200.0	7,114.1	14,304.1	7,257.0	142.4	141.7	109.84	-7,377.6	-167.4	421.1	151.4	269.72	1.561					
14,202.9	7,114.1	14,307.0	7,257.0	142.4	141.8	109.84	-7,380.5	-167.4	421.1	151.3	269.83	1.561					
14,221.6	7,114.0	14,318.3	7,257.0	142.8	142.0	109.84	-7,391.8	-167.4	421.2	150.9	270.36	1.558 SF					

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13S-443 - Wellbore #1 - Plan #1											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	
0.0	0.0	0.0	0.0	0.0	0.0	-160.67	-87.4	-30.7	92.7				
100.0	100.0	100.0	100.0	0.1	0.1	-160.67	-87.4	-30.7	92.7	92.4	0.22	412.248	
200.0	200.0	200.0	200.0	0.3	0.3	-160.67	-87.4	-30.7	92.7	92.0	0.67	137.416	CC, ES
300.0	300.0	299.2	299.1	0.6	0.6	-159.64	-87.3	-32.4	93.1	92.0	1.11	83.583	
400.0	400.0	398.1	397.9	0.8	0.8	-156.65	-86.9	-37.5	94.6	93.1	1.56	60.605	
500.0	500.0	496.5	496.0	1.0	1.0	-151.92	-86.2	-46.0	97.7	95.7	2.02	48.365	
600.0	600.0	594.3	593.0	1.2	1.3	-145.90	-85.2	-57.7	103.1	100.6	2.50	41.304	
700.0	700.0	691.1	688.7	1.5	1.6	-139.17	-83.9	-72.5	111.5	108.5	3.00	37.150	
800.0	800.0	787.5	783.4	1.7	2.0	-132.32	-82.4	-90.5	123.5	120.0	3.55	34.772	
900.0	900.0	884.7	878.6	1.9	2.4	-126.23	-80.8	-110.2	138.3	134.2	4.15	33.321	
1,000.0	1,000.0	982.6	974.4	2.1	2.8	-121.30	-79.1	-130.1	154.4	149.6	4.78	32.309	
1,100.0	1,100.0	1,080.5	1,070.3	2.4	3.2	-117.30	-77.4	-150.0	171.4	165.9	5.42	31.589	
1,200.0	1,200.0	1,178.4	1,166.1	2.6	3.7	-114.04	-75.7	-169.8	189.0	182.9	6.08	31.073	SF
1,300.0	1,300.0	1,275.9	1,261.6	2.8	4.1	158.69	-74.1	-189.6	208.8	202.8	5.96	35.034	
1,358.1	1,358.0	1,332.2	1,316.7	2.9	4.4	160.17	-73.1	-201.0	221.9	215.7	6.21	35.747	
1,400.0	1,399.9	1,372.7	1,356.4	3.0	4.5	161.24	-72.4	-209.3	231.9	225.5	6.39	36.298	
1,500.0	1,499.7	1,469.4	1,451.0	3.2	5.0	163.44	-70.8	-228.9	255.9	249.1	6.82	37.515	
1,600.0	1,599.6	1,566.0	1,545.6	3.4	5.4	165.26	-69.1	-248.5	280.3	273.0	7.26	38.604	
1,700.0	1,699.4	1,662.6	1,640.2	3.6	5.8	166.79	-67.5	-268.1	304.8	297.1	7.70	39.577	
1,800.0	1,799.2	1,759.3	1,734.8	3.9	6.3	168.10	-65.8	-287.7	329.6	321.4	8.15	40.448	
1,900.0	1,899.1	1,855.9	1,829.4	4.1	6.7	169.22	-64.2	-307.3	354.5	345.9	8.60	41.230	
2,000.0	1,998.9	1,952.5	1,924.0	4.3	7.2	170.20	-62.6	-326.9	379.5	370.4	9.05	41.934	
2,100.0	2,098.8	2,049.2	2,018.6	4.6	7.6	171.05	-60.9	-346.5	404.5	395.0	9.50	42.570	
2,200.0	2,198.6	2,145.8	2,113.2	4.8	8.0	171.81	-59.3	-366.2	429.7	419.7	9.96	43.145	
2,300.0	2,298.5	2,242.5	2,207.9	5.0	8.5	172.48	-57.6	-385.8	454.9	444.5	10.42	43.669	
2,400.0	2,398.3	2,339.1	2,302.5	5.3	8.9	173.08	-56.0	-405.4	480.2	469.3	10.88	44.146	
2,500.0	2,498.2	2,435.7	2,397.1	5.5	9.3	173.62	-54.3	-425.0	505.5	494.2	11.34	44.582	
2,600.0	2,598.0	2,532.4	2,491.7	5.7	9.8	174.11	-52.7	-444.6	530.9	519.1	11.80	44.983	
2,700.0	2,697.9	2,629.0	2,586.3	6.0	10.2	174.56	-51.0	-464.2	556.3	544.0	12.27	45.352	
2,800.0	2,797.7	2,725.6	2,680.9	6.2	10.7	174.96	-49.4	-483.8	581.7	569.0	12.73	45.692	
2,900.0	2,897.6	2,822.3	2,775.5	6.4	11.1	175.34	-47.7	-503.4	607.1	593.9	13.20	46.007	
3,000.0	2,997.4	2,918.9	2,870.1	6.7	11.5	175.68	-46.1	-523.0	632.6	618.9	13.66	46.299	
3,100.0	3,097.3	3,015.5	2,964.7	6.9	12.0	176.00	-44.4	-542.7	658.1	644.0	14.13	46.570	
3,200.0	3,197.1	3,112.2	3,059.4	7.2	12.4	176.29	-42.8	-562.3	683.6	669.0	14.60	46.823	
3,300.0	3,297.0	3,208.8	3,154.0	7.4	12.9	176.56	-41.1	-581.9	709.1	694.0	15.07	47.059	
3,400.0	3,396.8	3,305.5	3,248.6	7.6	13.3	176.81	-39.5	-601.5	734.6	719.1	15.54	47.280	
3,500.0	3,496.7	3,402.1	3,343.2	7.9	13.7	177.05	-37.8	-621.1	760.2	744.2	16.01	47.487	
3,600.0	3,596.5	3,498.7	3,437.8	8.1	14.2	177.27	-36.2	-640.7	785.8	769.3	16.48	47.681	
3,700.0	3,696.4	3,595.4	3,532.4	8.4	14.6	177.48	-34.6	-660.3	811.3	794.4	16.95	47.864	
3,800.0	3,796.2	3,692.0	3,627.0	8.6	15.0	177.67	-32.9	-679.9	836.9	819.5	17.42	48.036	
3,900.0	3,896.1	3,788.6	3,721.6	8.9	15.5	177.85	-31.3	-699.5	862.5	844.6	17.89	48.198	
4,000.0	3,995.9	3,885.3	3,816.2	9.1	15.9	178.02	-29.6	-719.2	888.1	869.7	18.37	48.352	
4,100.0	4,095.7	3,981.9	3,910.9	9.3	16.4	178.19	-28.0	-738.8	913.7	894.8	18.84	48.497	
4,200.0	4,195.6	4,078.5	4,005.5	9.6	16.8	178.34	-26.3	-758.4	939.3	920.0	19.31	48.635	
4,300.0	4,295.4	4,175.2	4,100.1	9.8	17.2	178.48	-24.7	-778.0	964.9	945.1	19.79	48.765	
4,400.0	4,395.3	4,271.8	4,194.7	10.1	17.7	178.62	-23.0	-797.6	990.5	970.3	20.26	48.889	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13W-403 - Wellbore #1 - Plan #											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	
0.0	0.0	0.0	0.0	0.0	0.0	23.63	25.5	11.2	27.8				
100.0	100.0	100.0	100.0	0.1	0.1	23.63	25.5	11.2	27.8	27.6	0.22	123.822	
200.0	200.0	200.0	200.0	0.3	0.3	23.63	25.5	11.2	27.8	27.2	0.67	41.274	
300.0	300.0	300.0	300.0	0.6	0.6	23.63	25.5	11.2	27.8	26.7	1.12	24.764	
400.0	400.0	400.0	400.0	0.8	0.8	23.63	25.5	11.2	27.8	26.3	1.57	17.689	
500.0	500.0	500.0	500.0	1.0	1.0	23.63	25.5	11.2	27.8	25.8	2.02	13.758	
600.0	600.0	600.0	600.0	1.2	1.2	23.63	25.5	11.2	27.8	25.4	2.47	11.257	
700.0	700.0	700.0	700.0	1.5	1.5	23.63	25.5	11.2	27.8	24.9	2.92	9.525	
800.0	800.0	800.0	800.0	1.7	1.7	23.63	25.5	11.2	27.8	24.5	3.37	8.255	
900.0	900.0	900.0	900.0	1.9	1.9	23.63	25.5	11.2	27.8	24.0	3.82	7.284	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	23.63	25.5	11.2	27.8	23.6	4.27	6.517 CC	
1,100.0	1,100.0	1,099.8	1,099.8	2.4	2.3	27.14	25.0	12.8	28.1	23.4	4.70	5.980 ES	
1,200.0	1,200.0	1,199.4	1,199.3	2.6	2.5	37.07	23.6	17.8	29.6	24.5	5.12	5.774	
1,300.0	1,300.0	1,298.7	1,298.1	2.8	2.8	-41.01	21.2	26.1	32.4	26.8	5.54	5.842	
1,358.1	1,358.0	1,356.2	1,355.3	2.9	2.9	-34.61	19.4	32.4	34.2	28.5	5.78	5.924	
1,400.0	1,399.9	1,397.8	1,396.6	3.0	3.0	-30.03	18.0	37.6	35.9	30.0	5.96	6.031	
1,500.0	1,499.7	1,497.5	1,495.4	3.2	3.2	-20.59	14.4	50.2	40.9	34.5	6.38	6.413	
1,600.0	1,599.6	1,597.2	1,594.2	3.4	3.5	-13.34	10.8	62.9	46.8	40.0	6.80	6.873	
1,700.0	1,699.4	1,696.9	1,693.0	3.6	3.8	-7.77	7.2	75.5	53.2	45.9	7.23	7.356	
1,800.0	1,799.2	1,796.5	1,791.8	3.9	4.1	-3.43	3.6	88.1	60.0	52.3	7.66	7.835	
1,900.0	1,899.1	1,896.2	1,890.6	4.1	4.4	0.02	0.0	100.8	67.1	59.0	8.09	8.293	
2,000.0	1,998.9	1,995.9	1,989.4	4.3	4.7	2.80	-3.6	113.4	74.3	65.8	8.52	8.724	
2,100.0	2,098.8	2,095.6	2,088.2	4.6	5.0	5.08	-7.2	126.0	81.8	72.8	8.96	9.126	
2,200.0	2,198.6	2,195.2	2,187.0	4.8	5.3	6.97	-10.8	138.7	89.3	79.9	9.40	9.499	
2,300.0	2,298.5	2,294.9	2,285.8	5.0	5.6	8.57	-14.4	151.3	96.9	87.1	9.85	9.843	
2,400.0	2,398.3	2,394.6	2,384.6	5.3	5.9	9.94	-18.0	163.9	104.6	94.3	10.29	10.162	
2,500.0	2,498.2	2,494.3	2,483.4	5.5	6.2	11.12	-21.6	176.6	112.3	101.6	10.74	10.457	
2,600.0	2,598.0	2,593.9	2,582.2	5.7	6.6	12.15	-25.2	189.2	120.1	108.9	11.19	10.729	
2,700.0	2,697.9	2,693.6	2,681.0	6.0	6.9	13.05	-28.8	201.8	127.9	116.2	11.64	10.982	
2,800.0	2,797.7	2,793.3	2,779.9	6.2	7.2	13.85	-32.4	214.5	135.7	123.6	12.10	11.217	
2,900.0	2,897.6	2,893.0	2,878.7	6.4	7.5	14.56	-36.0	227.1	143.6	131.0	12.56	11.435	
3,000.0	2,997.4	2,992.6	2,977.5	6.7	7.9	15.20	-39.6	239.7	151.4	138.4	13.01	11.638	
3,100.0	3,097.3	3,092.3	3,076.3	6.9	8.2	15.77	-43.2	252.3	159.3	145.9	13.47	11.828	
3,200.0	3,197.1	3,192.0	3,175.1	7.2	8.5	16.29	-46.8	265.0	167.2	153.3	13.93	12.005	
3,300.0	3,297.0	3,291.7	3,273.9	7.4	8.8	16.77	-50.4	277.6	175.2	160.8	14.39	12.171	
3,400.0	3,396.8	3,391.3	3,372.7	7.6	9.2	17.20	-54.0	290.2	183.1	168.2	14.85	12.326	
3,500.0	3,496.7	3,491.0	3,471.5	7.9	9.5	17.60	-57.6	302.9	191.0	175.7	15.32	12.472	
3,600.0	3,596.5	3,590.7	3,570.3	8.1	9.8	17.96	-61.2	315.5	199.0	183.2	15.78	12.610	
3,700.0	3,696.4	3,690.4	3,669.1	8.4	10.2	18.30	-64.8	328.1	206.9	190.7	16.24	12.739	
3,800.0	3,796.2	3,790.1	3,767.9	8.6	10.5	18.61	-68.4	340.8	214.9	198.2	16.71	12.862	
3,900.0	3,896.1	3,889.7	3,866.7	8.9	10.8	18.90	-72.0	353.4	222.8	205.7	17.17	12.977	
4,000.0	3,995.9	3,989.4	3,965.5	9.1	11.1	19.17	-75.5	366.0	230.8	213.2	17.64	13.087	
4,100.0	4,095.7	4,089.1	4,064.3	9.3	11.5	19.42	-79.1	378.7	238.8	220.7	18.10	13.190	
4,200.0	4,195.6	4,188.8	4,163.2	9.6	11.8	19.66	-82.7	391.3	246.8	228.2	18.57	13.289	
4,300.0	4,295.4	4,288.4	4,262.0	9.8	12.1	19.88	-86.3	403.9	254.8	235.7	19.04	13.382	
4,400.0	4,395.3	4,388.1	4,360.8	10.1	12.5	20.08	-89.9	416.6	262.7	243.2	19.50	13.471	
4,500.0	4,495.1	4,487.8	4,459.6	10.3	12.8	20.28	-93.5	429.2	270.7	250.8	19.97	13.555	
4,600.0	4,595.0	4,587.5	4,558.4	10.6	13.1	20.46	-97.1	441.8	278.7	258.3	20.44	13.636	
4,700.0	4,694.8	4,687.1	4,657.2	10.8	13.5	20.64	-100.7	454.4	286.7	265.8	20.91	13.713	
4,800.0	4,794.7	4,786.8	4,756.0	11.1	13.8	20.80	-104.3	467.1	294.7	273.3	21.38	13.786	
4,900.0	4,894.5	4,886.5	4,854.8	11.3	14.1	20.96	-107.9	479.7	302.7	280.9	21.85	13.857	

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (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		
5,000.0	4,994.4	4,986.2	4,953.6	11.5	14.5	21.10	-111.5	492.3	310.7	288.4	22.32	13.924		
5,100.0	5,094.2	5,085.8	5,052.4	11.8	14.8	21.24	-115.1	505.0	318.7	295.9	22.79	13.988		
5,200.0	5,194.1	5,189.2	5,154.9	12.0	15.1	21.38	-118.2	517.9	326.6	303.3	23.26	14.042		
5,300.0	5,293.9	5,302.0	5,267.1	12.3	15.4	21.59	-121.9	528.8	331.5	307.8	23.71	13.982		
5,348.2	5,342.0	5,356.4	5,321.4	12.4	15.5	21.71	-123.0	532.6	332.5	308.5	23.92	13.898		
5,400.0	5,393.8	5,415.0	5,379.9	12.5	15.6	21.83	-123.8	535.5	332.9	308.8	24.13	13.799		
5,506.2	5,500.0	5,535.1	5,500.0	12.7	15.8	111.93	-124.5	538.0	333.3	308.8	24.51	13.601		
5,600.0	5,593.8	5,628.9	5,593.8	12.9	15.9	111.93	-124.5	538.0	333.3	308.5	24.87	13.401		
5,700.0	5,693.8	5,728.9	5,693.8	13.1	16.1	111.93	-124.5	538.0	333.3	308.1	25.27	13.191		
5,800.0	5,793.8	5,828.9	5,793.8	13.3	16.3	111.93	-124.5	538.0	333.3	307.7	25.67	12.985		
5,900.0	5,893.8	5,928.9	5,893.8	13.5	16.4	111.93	-124.5	538.0	333.3	307.3	26.07	12.786		
6,000.0	5,993.8	6,028.9	5,993.8	13.7	16.6	111.93	-124.5	538.0	333.3	306.9	26.47	12.592		
6,100.0	6,093.8	6,128.9	6,093.8	13.9	16.7	111.93	-124.5	538.0	333.3	306.4	26.88	12.402		
6,200.0	6,193.8	6,228.9	6,193.8	14.1	16.9	111.93	-124.5	538.0	333.3	306.0	27.28	12.218		
6,300.0	6,293.8	6,328.9	6,293.8	14.3	17.1	111.93	-124.5	538.0	333.3	305.6	27.69	12.039		
6,386.4	6,380.2	6,415.3	6,380.2	14.5	17.2	111.93	-124.5	538.0	333.3	305.3	28.04	11.888		
6,400.0	6,393.8	6,428.9	6,393.8	14.5	17.2	-68.09	-124.5	538.0	333.3	305.2	28.10	11.859		
6,450.0	6,443.7	6,478.8	6,443.7	14.6	17.3	-68.56	-124.5	538.0	332.3	304.0	28.31	11.740		
6,500.0	6,493.3	6,527.1	6,492.0	14.7	17.4	-69.59	-124.6	538.0	330.3	301.8	28.49	11.594		
6,550.0	6,542.5	6,570.2	6,535.1	14.8	17.5	-70.76	-126.3	538.0	327.9	299.2	28.64	11.447		
6,600.0	6,591.0	6,613.6	6,578.3	14.9	17.6	-72.02	-130.4	538.0	325.5	296.7	28.80	11.301		
6,650.0	6,638.6	6,657.4	6,621.5	15.0	17.7	-73.36	-137.1	538.0	323.1	294.1	28.97	11.154		
6,700.0	6,685.0	6,700.0	6,663.2	15.1	17.8	-74.74	-146.0	538.0	320.8	291.7	29.16	11.003		
6,750.0	6,730.2	6,745.9	6,707.4	15.2	17.9	-76.28	-158.1	538.0	318.7	289.3	29.39	10.842		
6,800.0	6,773.9	6,790.8	6,749.9	15.3	18.0	-77.85	-172.6	538.1	316.7	287.0	29.67	10.673		
6,850.0	6,815.8	6,836.2	6,791.9	15.5	18.1	-79.50	-189.7	538.1	314.8	284.8	30.00	10.493		
6,900.0	6,855.9	6,882.0	6,833.3	15.7	18.3	-81.20	-209.4	538.2	313.3	282.8	30.40	10.303		
6,950.0	6,894.0	6,928.3	6,873.8	15.8	18.4	-82.96	-231.9	538.3	311.9	281.1	30.87	10.104		
7,000.0	6,929.9	6,975.1	6,913.3	16.1	18.6	-84.77	-257.0	538.3	310.9	279.5	31.41	9.899		
7,050.0	6,963.4	7,022.5	6,951.6	16.3	18.8	-86.62	-284.9	538.4	310.2	278.2	32.01	9.690		
7,100.0	6,994.4	7,070.6	6,988.6	16.6	19.1	-88.50	-315.5	538.5	309.8	277.2	32.68	9.482		
7,126.2	7,009.6	7,096.0	7,007.4	16.8	19.2	-89.49	-332.7	538.5	309.8	276.7	33.05	9.374		
7,150.0	7,022.8	7,119.2	7,024.0	17.0	19.3	-90.39	-348.9	538.6	309.8	276.4	33.40	9.278		
7,200.0	7,048.5	7,168.5	7,057.7	17.3	19.6	-92.30	-384.9	538.7	310.2	276.0	34.16	9.080		
7,250.0	7,071.2	7,218.5	7,089.4	17.7	20.0	-94.20	-423.5	538.8	310.9	275.9	34.96	8.893		
7,300.0	7,091.0	7,269.3	7,118.9	18.2	20.3	-96.09	-464.8	538.9	312.0	276.2	35.79	8.718		
7,350.0	7,107.8	7,320.8	7,146.0	18.7	20.7	-97.95	-508.6	539.0	313.4	276.8	36.63	8.557		
7,400.0	7,121.5	7,373.1	7,170.4	19.2	21.2	-99.77	-554.8	539.1	315.2	277.7	37.48	8.410		
7,450.0	7,132.0	7,426.1	7,192.0	19.8	21.7	-101.55	-603.3	539.3	317.2	278.9	38.33	8.277		
7,500.0	7,139.2	7,480.0	7,210.3	20.4	22.3	-103.28	-654.0	539.4	319.6	280.4	39.17	8.157		
7,550.0	7,143.2	7,534.8	7,225.2	21.0	22.9	-104.93	-706.6	539.6	322.1	282.1	40.02	8.050		
7,589.9	7,144.1	7,579.0	7,234.5	21.5	23.4	-106.20	-749.9	539.7	324.3	283.6	40.68	7.971		
7,600.0	7,144.0	7,590.4	7,236.5	21.6	23.5	-106.54	-761.1	539.7	324.8	283.9	40.88	7.946		
7,700.0	7,143.6	7,695.7	7,249.0	23.0	24.8	-108.70	-865.6	540.0	328.8	285.8	43.04	7.640		
7,800.0	7,143.1	7,804.3	7,256.7	24.4	26.3	-110.02	-973.9	540.3	331.6	286.1	45.52	7.285		
7,900.0	7,142.7	7,907.1	7,257.0	25.9	27.7	-110.13	-1,076.7	540.6	332.1	283.8	48.35	6.869		
8,000.0	7,142.2	8,007.1	7,257.0	27.5	29.2	-110.19	-1,176.7	540.8	332.5	281.3	51.25	6.488		
8,100.0	7,141.8	8,107.1	7,257.0	29.1	30.7	-110.25	-1,276.7	541.1	332.9	278.7	54.24	6.138		
8,200.0	7,141.3	8,207.1	7,257.0	30.7	32.3	-110.30	-1,376.7	541.4	333.4	276.0	57.31	5.817		
8,300.0	7,140.9	8,307.1	7,257.0	32.3	33.8	-110.36	-1,476.7	541.7	333.8	273.3	60.43	5.523		

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13W-403 - Wellbore #1 - Plan #										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				
8,400.0	7,140.4	8,407.1	7,257.0	34.0	35.5	-110.42	-1,576.7	541.9	334.2	270.6	63.60	5.254				
8,500.0	7,140.0	8,507.1	7,257.0	35.7	37.1	-110.47	-1,676.7	542.2	334.6	267.8	66.82	5.008				
8,600.0	7,139.5	8,607.1	7,257.0	37.5	38.8	-110.53	-1,776.7	542.5	335.0	264.9	70.07	4.781				
8,700.0	7,139.1	8,707.1	7,257.0	39.2	40.5	-110.59	-1,876.7	542.8	335.4	262.1	73.35	4.573				
8,800.0	7,138.6	8,807.1	7,257.0	41.0	42.2	-110.64	-1,976.7	543.0	335.8	259.2	76.67	4.381				
8,900.0	7,138.1	8,907.1	7,257.0	42.8	44.0	-110.70	-2,076.7	543.3	336.3	256.3	80.00	4.203				
9,000.0	7,137.7	9,007.1	7,257.0	44.5	45.7	-110.75	-2,176.7	543.6	336.7	253.3	83.36	4.039				
9,100.0	7,137.2	9,107.1	7,257.0	46.3	47.5	-110.81	-2,276.7	543.9	337.1	250.4	86.73	3.887				
9,200.0	7,136.8	9,207.1	7,257.0	48.1	49.3	-110.86	-2,376.7	544.1	337.5	247.4	90.12	3.745				
9,300.0	7,136.3	9,307.1	7,257.0	50.0	51.1	-110.92	-2,476.7	544.4	337.9	244.4	93.52	3.614				
9,400.0	7,135.9	9,407.1	7,257.0	51.8	52.9	-110.97	-2,576.7	544.7	338.4	241.4	96.93	3.491				
9,500.0	7,135.4	9,507.1	7,257.0	53.6	54.7	-111.03	-2,676.7	545.0	338.8	238.4	100.36	3.376				
9,600.0	7,135.0	9,607.1	7,257.0	55.5	56.5	-111.08	-2,776.7	545.2	339.2	235.4	103.79	3.268				
9,700.0	7,134.5	9,707.1	7,257.0	57.3	58.3	-111.14	-2,876.7	545.5	339.6	232.4	107.23	3.167				
9,800.0	7,134.1	9,807.1	7,257.0	59.1	60.1	-111.19	-2,976.7	545.8	340.0	229.3	110.68	3.072				
9,900.0	7,133.6	9,907.1	7,257.0	61.0	62.0	-111.25	-3,076.7	546.1	340.5	226.3	114.14	2.983				
10,000.0	7,133.2	10,007.1	7,257.0	62.9	63.8	-111.30	-3,176.7	546.3	340.9	223.3	117.60	2.899				
10,100.0	7,132.7	10,107.1	7,257.0	64.7	65.6	-111.36	-3,276.7	546.6	341.3	220.2	121.06	2.819				
10,200.0	7,132.2	10,207.1	7,257.0	66.6	67.5	-111.41	-3,376.7	546.9	341.7	217.2	124.53	2.744				
10,300.0	7,131.8	10,307.1	7,257.0	68.4	69.3	-111.47	-3,476.7	547.2	342.1	214.1	128.01	2.673				
10,400.0	7,131.3	10,407.1	7,257.0	70.3	71.2	-111.52	-3,576.7	547.4	342.6	211.1	131.48	2.605				
10,500.0	7,130.9	10,507.1	7,257.0	72.2	73.0	-111.57	-3,676.6	547.7	343.0	208.0	134.96	2.541				
10,600.0	7,130.4	10,607.1	7,257.0	74.1	74.9	-111.63	-3,776.6	548.0	343.4	205.0	138.44	2.480				
10,700.0	7,130.0	10,707.1	7,257.0	75.9	76.8	-111.68	-3,876.6	548.3	343.8	201.9	141.93	2.423				
10,800.0	7,129.5	10,807.1	7,257.0	77.8	78.6	-111.73	-3,976.6	548.5	344.2	198.8	145.41	2.367				
10,900.0	7,129.1	10,907.1	7,257.0	79.7	80.5	-111.79	-4,076.6	548.8	344.7	195.8	148.90	2.315				
11,000.0	7,128.6	11,007.1	7,257.0	81.6	82.4	-111.84	-4,176.6	549.1	345.1	192.7	152.39	2.265				
11,100.0	7,128.2	11,107.1	7,257.0	83.5	84.2	-111.89	-4,276.6	549.4	345.5	189.6	155.88	2.217				
11,200.0	7,127.7	11,207.1	7,257.0	85.4	86.1	-111.95	-4,376.6	549.6	345.9	186.6	159.37	2.171				
11,300.0	7,127.3	11,307.1	7,257.0	87.2	88.0	-112.00	-4,476.6	549.9	346.4	183.5	162.86	2.127				
11,400.0	7,126.8	11,407.0	7,257.0	89.1	89.9	-112.05	-4,576.6	550.2	346.8	180.4	166.35	2.085				
11,500.0	7,126.3	11,507.0	7,257.0	91.0	91.8	-112.10	-4,676.6	550.5	347.2	177.4	169.84	2.044				
11,600.0	7,125.9	11,607.0	7,257.0	92.9	93.6	-112.15	-4,776.6	550.7	347.6	174.3	173.33	2.006				
11,700.0	7,125.4	11,707.0	7,257.0	94.8	95.5	-112.21	-4,876.6	551.0	348.1	171.2	176.82	1.968				
11,800.0	7,125.0	11,807.0	7,257.0	96.7	97.4	-112.26	-4,976.6	551.3	348.5	168.2	180.31	1.933				
11,900.0	7,124.5	11,907.0	7,257.0	98.6	99.3	-112.31	-5,076.6	551.5	348.9	165.1	183.80	1.898				
12,000.0	7,124.1	12,007.0	7,257.0	100.5	101.2	-112.36	-5,176.6	551.8	349.3	162.1	187.29	1.865				
12,100.0	7,123.6	12,107.0	7,257.0	102.4	103.1	-112.41	-5,276.6	552.1	349.8	159.0	190.78	1.833				
12,200.0	7,123.2	12,207.0	7,257.0	104.3	105.0	-112.47	-5,376.6	552.4	350.2	155.9	194.27	1.803				
12,300.0	7,122.7	12,307.0	7,257.0	106.2	106.9	-112.52	-5,476.6	552.6	350.6	152.9	197.76	1.773				
12,400.0	7,122.3	12,407.0	7,257.0	108.1	108.8	-112.57	-5,576.6	552.9	351.1	149.8	201.25	1.744				
12,500.0	7,121.8	12,507.0	7,257.0	110.0	110.6	-112.62	-5,676.6	553.2	351.5	146.7	204.73	1.717				
12,600.0	7,121.4	12,607.0	7,257.0	111.9	112.5	-112.67	-5,776.6	553.5	351.9	143.7	208.22	1.690				
12,700.0	7,120.9	12,707.0	7,257.0	113.8	114.4	-112.72	-5,876.6	553.7	352.3	140.6	211.71	1.664				
12,800.0	7,120.5	12,807.0	7,257.0	115.7	116.3	-112.77	-5,976.6	554.0	352.8	137.6	215.19	1.639				
12,900.0	7,120.0	12,907.0	7,257.0	117.6	118.2	-112.82	-6,076.6	554.3	353.2	134.5	218.67	1.615				
13,000.0	7,119.5	13,007.0	7,257.0	119.5	120.1	-112.87	-6,176.6	554.6	353.6	131.5	222.15	1.592				
13,100.0	7,119.1	13,107.0	7,257.0	121.4	122.0	-112.92	-6,276.6	554.8	354.1	128.4	225.64	1.569				
13,200.0	7,118.6	13,207.0	7,257.0	123.3	123.9	-112.97	-6,376.6	555.1	354.5	125.4	229.11	1.547				
13,300.0	7,118.2	13,307.0	7,257.0	125.2	125.8	-113.02	-6,476.6	555.4	354.9	122.3	232.59	1.526				
13,400.0	7,117.7	13,407.0	7,257.0	127.1	127.7	-113.07	-6,576.6	555.7	355.3	119.3	236.07	1.505				

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W - Bernhardt Farms 13W-403 - Wellbore #1 - Plan #													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference	Offset	Semi Major Axis		Distance										
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
13,500.0	7,117.3	13,507.0	7,257.0	129.0	129.6	-113.12	-6,676.6	555.9	355.8	116.2	239.55	1.485	Level 3	
13,600.0	7,116.8	13,607.0	7,257.0	130.9	131.5	-113.17	-6,776.6	556.2	356.2	113.2	243.02	1.466	Level 3	
13,700.0	7,116.4	13,707.0	7,257.0	132.8	133.4	-113.22	-6,876.6	556.5	356.6	110.1	246.49	1.447	Level 3	
13,800.0	7,115.9	13,807.0	7,257.0	134.7	135.3	-113.27	-6,976.6	556.8	357.1	107.1	249.96	1.428	Level 3	
13,900.0	7,115.5	13,907.0	7,257.0	136.6	137.2	-113.32	-7,076.6	557.0	357.5	104.1	253.43	1.411	Level 3	
14,000.0	7,115.0	14,007.0	7,257.0	138.5	139.1	-113.37	-7,176.6	557.3	357.9	101.0	256.90	1.393	Level 3	
14,100.0	7,114.6	14,107.0	7,257.0	140.4	141.0	-113.42	-7,276.6	557.6	358.4	98.0	260.37	1.376	Level 3	
14,200.0	7,114.1	14,207.0	7,257.0	142.4	143.0	-113.47	-7,376.6	557.9	358.8	95.0	263.83	1.360	Level 3	
14,221.6	7,114.0	14,228.6	7,257.0	142.8	143.4	-113.48	-7,398.1	557.9	358.9	94.3	264.58	1.356	Level 3, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Bouge 1 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN													Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	170.73	-666.7	108.8	676.5					
100.0	100.0	63.0	63.0	0.1	1.3	170.73	-666.7	108.8	675.5	674.1	1.37	492.135		
200.0	200.0	163.0	163.0	0.3	3.3	170.73	-666.7	108.8	675.5	671.9	3.60	187.776		
300.0	300.0	263.0	263.0	0.6	5.3	170.73	-666.7	108.8	675.5	669.7	5.82	116.022		
400.0	400.0	363.0	363.0	0.8	7.3	170.73	-666.7	108.8	675.5	667.4	8.05	83.945		
500.0	500.0	463.0	463.0	1.0	9.3	170.73	-666.7	108.8	675.5	665.2	10.27	65.763		
600.0	600.0	563.0	563.0	1.2	11.3	170.73	-666.7	108.8	675.5	663.0	12.50	54.055		
700.0	700.0	663.0	663.0	1.5	13.3	170.73	-666.7	108.8	675.5	660.8	14.72	45.886		
800.0	800.0	763.0	763.0	1.7	15.3	170.73	-666.7	108.8	675.5	658.5	16.95	39.862		
900.0	900.0	863.0	863.0	1.9	17.3	170.73	-666.7	108.8	675.5	656.3	19.17	35.236		
1,000.0	1,000.0	963.0	963.0	2.1	19.3	170.73	-666.7	108.8	675.5	654.1	21.40	31.572		
1,100.0	1,100.0	1,063.0	1,063.0	2.4	21.3	170.73	-666.7	108.8	675.5	651.9	23.62	28.598		
1,200.0	1,200.0	1,163.0	1,163.0	2.6	23.3	170.73	-666.7	108.8	675.5	649.7	25.84	26.136		
1,300.0	1,300.0	1,263.0	1,263.0	2.8	25.3	80.89	-666.7	108.8	675.2	647.2	28.06	24.067		
1,358.1	1,358.0	1,321.0	1,321.0	2.9	26.4	81.11	-666.7	108.8	674.8	645.5	29.33	23.005		
1,400.0	1,399.9	1,362.9	1,362.9	3.0	27.3	81.31	-666.7	108.8	674.5	644.2	30.26	22.291		
1,500.0	1,499.7	1,462.7	1,462.7	3.2	29.3	81.77	-666.7	108.8	673.6	641.2	32.46	20.750		
1,600.0	1,599.6	1,562.6	1,562.6	3.4	31.3	82.23	-666.7	108.8	672.9	638.2	34.68	19.404		
1,700.0	1,699.4	1,662.4	1,662.4	3.6	33.2	82.70	-666.7	108.8	672.1	635.3	36.89	18.219		
1,800.0	1,799.2	1,762.2	1,762.2	3.9	35.2	83.16	-666.7	108.8	671.5	632.4	39.11	17.168		
1,900.0	1,899.1	1,862.1	1,862.1	4.1	37.2	83.63	-666.7	108.8	670.8	629.5	41.34	16.229		
2,000.0	1,998.9	1,961.9	1,961.9	4.3	39.2	84.10	-666.7	108.8	670.2	626.7	43.56	15.387		
2,100.0	2,098.8	2,061.8	2,061.8	4.6	41.2	84.57	-666.7	108.8	669.7	623.9	45.79	14.626		
2,200.0	2,198.6	2,161.6	2,161.6	4.8	43.2	85.04	-666.7	108.8	669.2	621.2	48.02	13.937		
2,300.0	2,298.5	2,261.5	2,261.5	5.0	45.2	85.51	-666.7	108.8	668.7	618.5	50.25	13.309		
2,400.0	2,398.3	2,361.3	2,361.3	5.3	47.2	85.98	-666.7	108.8	668.3	615.9	52.48	12.736		
2,500.0	2,498.2	2,461.2	2,461.2	5.5	49.2	86.45	-666.7	108.8	668.0	613.3	54.71	12.209		
2,600.0	2,598.0	2,561.0	2,561.0	5.7	51.2	86.92	-666.7	108.8	667.6	610.7	56.94	11.725		
2,700.0	2,697.9	2,660.9	2,660.9	6.0	53.2	87.39	-666.7	108.8	667.4	608.2	59.18	11.277		
2,800.0	2,797.7	2,760.7	2,760.7	6.2	55.2	87.86	-666.7	108.8	667.1	605.7	61.41	10.863		
2,900.0	2,897.6	2,860.6	2,860.6	6.4	57.2	88.34	-666.7	108.8	667.0	603.3	63.65	10.479		
3,000.0	2,997.4	2,960.4	2,960.4	6.7	59.2	88.81	-666.7	108.8	666.8	600.9	65.89	10.121		
3,100.0	3,097.3	3,060.3	3,060.3	6.9	61.2	89.28	-666.7	108.8	666.7	598.6	68.12	9.787		
3,200.0	3,197.1	3,160.1	3,160.1	7.2	63.2	89.76	-666.7	108.8	666.7	596.3	70.36	9.475		
3,251.4	3,248.4	3,211.4	3,211.4	7.3	64.2	90.00	-666.7	108.8	666.7	595.2	71.51	9.323		
3,300.0	3,297.0	3,260.0	3,260.0	7.4	65.2	90.23	-666.7	108.8	666.7	594.1	72.60	9.183		
3,400.0	3,396.8	3,359.8	3,359.8	7.6	67.2	90.70	-666.7	108.8	666.7	591.9	74.84	8.909		
3,500.0	3,496.7	3,459.7	3,459.7	7.9	69.2	91.18	-666.7	108.8	666.8	589.7	77.08	8.651		
3,600.0	3,596.5	3,559.5	3,559.5	8.1	71.2	91.65	-666.7	108.8	667.0	587.6	79.32	8.409		
3,700.0	3,696.4	3,659.4	3,659.4	8.4	73.2	92.12	-666.7	108.8	667.1	585.6	81.56	8.180		
3,800.0	3,796.2	3,759.2	3,759.2	8.6	75.2	92.59	-666.7	108.8	667.4	583.6	83.80	7.964		
3,900.0	3,896.1	3,859.1	3,859.1	8.9	77.2	93.07	-666.7	108.8	667.6	581.6	86.04	7.760		
4,000.0	3,995.9	3,958.9	3,958.9	9.1	79.2	93.54	-666.7	108.8	668.0	579.7	88.28	7.567		
4,100.0	4,095.7	4,058.7	4,058.7	9.3	81.2	94.01	-666.7	108.8	668.3	577.8	90.52	7.383		
4,200.0	4,195.6	4,158.6	4,158.6	9.6	83.2	94.48	-666.7	108.8	668.7	576.0	92.76	7.209		
4,300.0	4,295.4	4,258.4	4,258.4	9.8	85.2	94.95	-666.7	108.8	669.2	574.2	95.00	7.044		
4,400.0	4,395.3	4,358.3	4,358.3	10.1	87.2	95.42	-666.7	108.8	669.7	572.4	97.24	6.887		
4,500.0	4,495.1	4,458.1	4,458.1	10.3	89.2	95.89	-666.7	108.8	670.2	570.7	99.48	6.737		
4,600.0	4,595.0	4,558.0	4,558.0	10.6	91.2	96.36	-666.7	108.8	670.8	569.1	101.72	6.595		
4,700.0	4,694.8	4,657.8	4,657.8	10.8	93.2	96.82	-666.7	108.8	671.4	567.5	103.96	6.459		
4,800.0	4,794.7	4,757.7	4,757.7	11.1	95.2	97.29	-666.7	108.8	672.1	565.9	106.20	6.329		

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Bouge 1 (Exist) - Wellbore #1 - Wellbore #1														Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
4,900.0	4,894.5	4,857.5	4,857.5	11.3	97.2	97.75	-666.7	108.8	672.9	564.4	108.44	6.205			
5,000.0	4,994.4	4,957.4	4,957.4	11.5	99.1	98.22	-666.7	108.8	673.6	562.9	110.68	6.086			
5,100.0	5,094.2	5,057.2	5,057.2	11.8	101.1	98.68	-666.7	108.8	674.4	561.5	112.93	5.972			
5,200.0	5,194.1	5,157.1	5,157.1	12.0	103.1	99.14	-666.7	108.8	675.3	560.1	115.17	5.864			
5,300.0	5,293.9	5,256.9	5,256.9	12.3	105.1	99.60	-666.7	108.8	676.2	558.8	117.41	5.759			
5,348.2	5,342.0	5,305.0	5,305.0	12.4	106.1	99.82	-666.7	108.8	676.6	558.1	118.49	5.711			
5,400.0	5,393.8	5,356.8	5,356.8	12.5	107.1	100.03	-666.7	108.8	677.0	557.4	119.63	5.659			
5,506.2	5,500.0	5,463.0	5,463.0	12.7	109.3	-169.80	-666.7	108.8	677.4	555.4	121.95	5.555			
5,600.0	5,593.8	5,556.8	5,556.8	12.9	111.1	-169.80	-666.7	108.8	677.4	553.4	124.00	5.463			
5,700.0	5,693.8	5,656.8	5,656.8	13.1	113.1	-169.80	-666.7	108.8	677.4	551.2	126.20	5.367			
5,800.0	5,793.8	5,756.8	5,756.8	13.3	115.1	-169.80	-666.7	108.8	677.4	549.0	128.40	5.276			
5,900.0	5,893.8	5,856.8	5,856.8	13.5	117.1	-169.80	-666.7	108.8	677.4	546.8	130.60	5.187			
6,000.0	5,993.8	5,956.8	5,956.8	13.7	119.1	-169.80	-666.7	108.8	677.4	544.6	132.80	5.101			
6,100.0	6,093.8	6,056.8	6,056.8	13.9	121.1	-169.80	-666.7	108.8	677.4	542.4	135.00	5.018			
6,200.0	6,193.8	6,156.8	6,156.8	14.1	123.1	-169.80	-666.7	108.8	677.4	540.2	137.20	4.937			
6,300.0	6,293.8	6,256.8	6,256.8	14.3	125.1	-169.80	-666.7	108.8	677.4	538.0	139.41	4.859			
6,386.4	6,380.2	6,343.2	6,343.2	14.5	126.9	-169.80	-666.7	108.8	677.4	536.1	141.31	4.794			
6,400.0	6,393.8	6,356.8	6,356.8	14.5	127.1	10.21	-666.7	108.8	677.3	535.7	141.59	4.783			
6,450.0	6,443.7	6,406.7	6,406.7	14.6	128.1	10.28	-666.7	108.8	674.8	532.6	142.22	4.745			
6,500.0	6,493.3	6,456.3	6,456.3	14.7	129.1	10.44	-666.7	108.8	669.1	526.8	142.27	4.703			
6,550.0	6,542.5	6,505.5	6,505.5	14.8	130.1	10.71	-666.7	108.8	660.2	518.5	141.72	4.659			
6,600.0	6,591.0	6,554.0	6,554.0	14.9	131.1	11.09	-666.7	108.8	648.2	507.6	140.57	4.611			
6,650.0	6,638.6	6,601.6	6,601.6	15.0	132.0	11.59	-666.7	108.8	633.1	494.3	138.84	4.560			
6,700.0	6,685.0	6,648.0	6,648.0	15.1	133.0	12.24	-666.7	108.8	615.0	478.5	136.53	4.505			
6,750.0	6,730.2	6,693.2	6,693.2	15.2	133.9	13.06	-666.7	108.8	594.0	460.3	133.69	4.443			
6,800.0	6,773.9	6,736.9	6,736.9	15.3	134.7	14.10	-666.7	108.8	570.2	439.8	130.38	4.373			
6,850.0	6,815.8	6,778.8	6,778.8	15.5	135.6	15.40	-666.7	108.8	543.7	417.0	126.68	4.292			
6,900.0	6,855.9	6,818.9	6,818.9	15.7	136.4	17.04	-666.7	108.8	514.6	391.9	122.76	4.192			
6,950.0	6,894.0	6,857.0	6,857.0	15.8	137.1	19.11	-666.7	108.8	483.2	364.3	118.85	4.065			
7,000.0	6,929.9	6,892.9	6,892.9	16.1	137.9	21.74	-666.7	108.8	449.5	334.2	115.34	3.897			
7,050.0	6,963.4	6,926.4	6,926.4	16.3	138.5	25.13	-666.7	108.8	413.9	301.1	112.84	3.668			
7,100.0	6,994.4	6,957.4	6,957.4	16.6	139.1	29.49	-666.7	108.8	376.6	264.3	112.22	3.356			
7,150.0	7,022.8	6,985.8	6,985.8	17.0	139.7	35.10	-666.7	108.8	337.8	223.2	114.56	2.949			
7,200.0	7,048.5	7,011.5	7,011.5	17.3	140.2	42.23	-666.7	108.8	298.1	177.3	120.74	2.469			
7,250.0	7,071.2	7,034.2	7,034.2	17.7	140.7	50.95	-666.7	108.8	258.0	127.4	130.59	1.975			
7,300.0	7,091.0	7,054.0	7,054.0	18.2	141.1	60.89	-666.7	108.8	218.4	76.3	142.09	1.537			
7,350.0	7,107.8	7,070.8	7,070.8	18.7	141.4	71.04	-666.7	108.8	180.9	28.9	152.04	1.190 Level 2			
7,400.0	7,121.5	7,084.5	7,084.5	19.2	141.7	80.03	-666.7	108.8	148.4	-9.9	158.27	0.937 Level 1			
7,450.0	7,132.0	7,095.0	7,095.0	19.8	141.9	86.75	-666.7	108.8	126.0	-35.1	161.05	0.782 Level 1			
7,488.9	7,137.9	7,100.9	7,100.9	20.3	142.0	90.00	-666.7	108.8	120.0	-41.9	161.90	0.741 Level 1, CC, ES, SF			
7,500.0	7,139.2	7,102.2	7,102.2	20.4	142.0	90.60	-666.7	108.8	120.5	-41.6	162.05	0.744 Level 1			
7,550.0	7,143.2	7,106.2	7,106.2	21.0	142.1	91.38	-666.7	108.8	134.6	-28.2	162.74	0.827 Level 1			
7,589.9	7,144.1	7,107.1	7,107.1	21.5	142.1	89.78	-666.7	108.8	156.7	-6.6	163.30	0.959 Level 1			
7,600.0	7,144.0	7,107.0	7,107.0	21.6	142.1	89.76	-666.7	108.8	163.4	-0.1	163.43	1.000 Level 1			
7,700.0	7,143.6	7,106.6	7,106.6	23.0	142.1	89.54	-666.7	108.8	242.6	77.8	164.79	1.472 Level 3			
7,800.0	7,143.1	7,106.1	7,106.1	24.4	142.1	89.33	-666.7	108.8	333.2	167.0	166.22	2.005			
7,900.0	7,142.7	7,105.7	7,105.7	25.9	142.1	89.11	-666.7	108.8	428.0	260.3	167.71	2.552			
8,000.0	7,142.2	7,105.2	7,105.2	27.5	142.1	88.89	-666.7	108.8	524.8	355.5	169.24	3.101			
8,100.0	7,141.8	7,104.8	7,104.8	29.1	142.1	88.68	-666.7	108.8	622.5	451.7	170.82	3.644			
8,200.0	7,141.3	7,104.3	7,104.3	30.7	142.1	88.46	-666.7	108.8	720.9	548.5	172.43	4.181			

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 Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Existing Wells - Sec.13-T4N-R67W - Bouge 1 (Exist) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft	
Survey Program: 7600-UNKNOWN														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore +N/-S (ft)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning				
8,300.0	7,140.9	7,103.9	7,103.9	32.3	142.1	88.24	-666.7	108.8	819.7	645.6	174.08	4.709					
8,400.0	7,140.4	7,103.4	7,103.4	34.0	142.1	88.03	-666.7	108.8	918.7	743.0	175.74	5.228					

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Johnston 43-24 (Exist) - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0 ft
Survey Program: 7600-UNKNOWN														Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (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		
11,900.0	7,124.5	7,095.5	7,095.5	98.6	141.9	-92.25	-6,043.8	340.3	972.7	732.5	240.22	4.049		
12,000.0	7,124.1	7,095.1	7,095.1	100.5	141.9	-92.02	-6,043.8	340.3	873.5	631.3	242.14	3.607		
12,100.0	7,123.6	7,094.6	7,094.6	102.4	141.9	-91.79	-6,043.8	340.3	774.4	530.3	244.06	3.173		
12,200.0	7,123.2	7,094.2	7,094.2	104.3	141.9	-91.55	-6,043.8	340.3	675.6	429.6	245.98	2.747		
12,300.0	7,122.7	7,093.7	7,093.7	106.2	141.9	-91.32	-6,043.8	340.3	577.2	329.3	247.90	2.328		
12,400.0	7,122.3	7,093.3	7,093.3	108.1	141.9	-91.09	-6,043.8	340.3	479.5	229.7	249.81	1.919		
12,500.0	7,121.8	7,092.8	7,092.8	110.0	141.9	-90.85	-6,043.8	340.3	382.9	131.2	251.72	1.521		
12,600.0	7,121.4	7,092.4	7,092.4	111.9	141.8	-90.62	-6,043.8	340.3	288.8	35.1	253.63	1.138 Level 2		
12,700.0	7,120.9	7,091.9	7,091.9	113.8	141.8	-90.39	-6,043.8	340.3	200.3	-55.3	255.54	0.784 Level 1		
12,800.0	7,120.5	7,091.5	7,091.5	115.7	141.8	-90.15	-6,043.8	340.3	129.8	-127.6	257.44	0.504 Level 1		
12,866.3	7,120.1	7,091.1	7,091.1	116.9	141.8	-90.00	-6,043.8	340.3	111.6	-147.1	258.70	0.431 Level 1, CC, ES, SF		
12,900.0	7,120.0	7,091.0	7,091.0	117.6	141.8	-89.92	-6,043.8	340.3	116.5	-142.8	259.33	0.449 Level 1		
13,000.0	7,119.5	7,090.5	7,090.5	119.5	141.8	-89.69	-6,043.8	340.3	174.1	-87.1	261.23	0.667 Level 1		
13,100.0	7,119.1	7,090.1	7,090.1	121.4	141.8	-89.46	-6,043.8	340.3	258.9	-4.2	263.12	0.984 Level 1		
13,200.0	7,118.6	7,089.6	7,089.6	123.3	141.8	-89.22	-6,043.8	340.3	351.8	86.8	265.01	1.328 Level 3		
13,300.0	7,118.2	7,089.2	7,089.2	125.2	141.8	-88.99	-6,043.8	340.3	447.8	180.9	266.89	1.678		
13,400.0	7,117.7	7,088.7	7,088.7	127.1	141.8	-88.76	-6,043.8	340.3	545.2	276.4	268.77	2.028		
13,500.0	7,117.3	7,088.3	7,088.3	129.0	141.8	-88.52	-6,043.8	340.3	643.4	372.8	270.65	2.377		
13,600.0	7,116.8	7,087.8	7,087.8	130.9	141.8	-88.29	-6,043.8	340.3	742.1	469.6	272.52	2.723		
13,700.0	7,116.4	7,087.4	7,087.4	132.8	141.7	-88.06	-6,043.8	340.3	841.1	566.7	274.38	3.065		
13,800.0	7,115.9	7,086.9	7,086.9	134.7	141.7	-87.83	-6,043.8	340.3	940.3	664.1	276.25	3.404		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Johnston 44-24 (Exist) - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0 ft
Survey Program: 7600-UNKNOWN														Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (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		
13,000.0	7,119.5	7,091.5	7,091.5	119.5	141.8	90.67	-7,085.7	-122.7	973.9	712.7	261.24	3.728		
13,100.0	7,119.1	7,091.1	7,091.1	121.4	141.8	90.60	-7,085.7	-122.7	881.4	618.2	263.14	3.349		
13,200.0	7,118.6	7,090.6	7,090.6	123.3	141.8	90.52	-7,085.7	-122.7	790.7	525.6	265.04	2.983		
13,300.0	7,118.2	7,090.2	7,090.2	125.2	141.8	90.45	-7,085.7	-122.7	702.5	435.6	266.93	2.632		
13,400.0	7,117.7	7,089.7	7,089.7	127.1	141.8	90.38	-7,085.7	-122.7	618.0	349.1	268.83	2.299		
13,500.0	7,117.3	7,089.3	7,089.3	129.0	141.8	90.30	-7,085.7	-122.7	538.7	268.0	270.73	1.990		
13,600.0	7,116.8	7,088.8	7,088.8	130.9	141.8	90.23	-7,085.7	-122.7	467.5	194.9	272.63	1.715		
13,700.0	7,116.4	7,088.4	7,088.4	132.8	141.8	90.15	-7,085.7	-122.7	408.6	134.0	274.53	1.488 Level 3		
13,800.0	7,115.9	7,087.9	7,087.9	134.7	141.8	90.08	-7,085.7	-122.7	367.8	91.4	276.42	1.331 Level 3		
13,900.0	7,115.5	7,087.5	7,087.5	136.6	141.7	90.01	-7,085.7	-122.7	351.6	73.3	278.32	1.263 Level 3		
13,908.3	7,115.4	7,087.4	7,087.4	136.8	141.7	90.00	-7,085.7	-122.7	351.5	73.0	278.48	1.262 Level 3, CC, ES, SF		
14,000.0	7,115.0	7,087.0	7,087.0	138.5	141.7	89.93	-7,085.7	-122.7	363.3	83.1	280.22	1.296 Level 3		
14,100.0	7,114.6	7,086.6	7,086.6	140.4	141.7	89.86	-7,085.7	-122.7	400.4	118.3	282.12	1.419 Level 3		
14,200.0	7,114.1	7,086.1	7,086.1	142.4	141.7	89.78	-7,085.7	-122.7	456.8	172.8	284.02	1.608		
14,221.6	7,114.0	7,086.0	7,086.0	142.8	141.7	89.77	-7,085.7	-122.7	470.9	186.4	284.42	1.655		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Kristin 1 (Exist) - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0 ft
Survey Program: 7600-UNKNOWN														Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning								
Measured Depth (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		
9,200.0	7,136.8	7,103.8	7,103.8	48.1	142.1	93.12	-3,315.2	150.6	940.9	751.1	189.84	4.956		
9,300.0	7,136.3	7,103.3	7,103.3	50.0	142.1	92.79	-3,315.2	150.6	841.3	649.6	191.70	4.389		
9,400.0	7,135.9	7,102.9	7,102.9	51.8	142.1	92.45	-3,315.2	150.6	741.8	548.2	193.56	3.832		
9,500.0	7,135.4	7,102.4	7,102.4	53.6	142.0	92.12	-3,315.2	150.6	642.4	447.0	195.43	3.287		
9,600.0	7,135.0	7,102.0	7,102.0	55.5	142.0	91.79	-3,315.2	150.6	543.3	346.0	197.29	2.754		
9,700.0	7,134.5	7,101.5	7,101.5	57.3	142.0	91.46	-3,315.2	150.6	444.6	245.4	199.15	2.232		
9,800.0	7,134.1	7,101.1	7,101.1	59.1	142.0	91.12	-3,315.2	150.6	346.6	145.6	201.02	1.724		
9,900.0	7,133.6	7,100.6	7,100.6	61.0	142.0	90.79	-3,315.2	150.6	250.2	47.3	202.88	1.233 Level 2		
10,000.0	7,133.2	7,100.2	7,100.2	62.9	142.0	90.46	-3,315.2	150.6	158.3	-46.5	204.74	0.773 Level 1		
10,100.0	7,132.7	7,099.7	7,099.7	64.7	142.0	90.13	-3,315.2	150.6	86.7	-119.9	206.59	0.420 Level 1		
10,137.7	7,132.5	7,099.5	7,099.5	65.4	142.0	90.00	-3,315.2	150.6	78.1	-129.2	207.29	0.377 Level 1, CC, ES, SF		
10,200.0	7,132.2	7,099.2	7,099.2	66.6	142.0	89.79	-3,315.2	150.6	100.0	-108.5	208.44	0.480 Level 1		
10,300.0	7,131.8	7,098.8	7,098.8	68.4	142.0	89.46	-3,315.2	150.6	180.2	-30.1	210.29	0.857 Level 1		
10,400.0	7,131.3	7,098.3	7,098.3	70.3	142.0	89.13	-3,315.2	150.6	273.7	61.6	212.14	1.290 Level 3		
10,500.0	7,130.9	7,097.9	7,097.9	72.2	142.0	88.79	-3,315.2	150.6	370.7	156.7	213.98	1.732		
10,600.0	7,130.4	7,097.4	7,097.4	74.1	141.9	88.46	-3,315.2	150.6	468.9	253.1	215.81	2.173		
10,700.0	7,130.0	7,097.0	7,097.0	75.9	141.9	88.13	-3,315.2	150.6	567.7	350.1	217.64	2.609		
10,800.0	7,129.5	7,096.5	7,096.5	77.8	141.9	87.80	-3,315.2	150.6	666.9	447.5	219.46	3.039		
10,900.0	7,129.1	7,096.1	7,096.1	79.7	141.9	87.46	-3,315.2	150.6	766.3	545.0	221.28	3.463		
11,000.0	7,128.6	7,095.6	7,095.6	81.6	141.9	87.13	-3,315.2	150.6	865.9	642.8	223.09	3.881		
11,100.0	7,128.2	7,095.2	7,095.2	83.5	141.9	86.80	-3,315.2	150.6	965.5	740.6	224.90	4.293		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells - Sec.13-T4N-R67W - Mesha 1 (Exist) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft			
Survey Program: 7600-UNKNOWN														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor					
7,900.0	7,142.7	7,107.7	7,107.7	25.9	142.2	92.67	-2,051.0	133.9	978.1	810.5	167.64	5.835					
8,000.0	7,142.2	7,107.2	7,107.2	27.5	142.1	92.39	-2,051.0	133.9	878.6	709.4	169.22	5.192					
8,100.0	7,141.8	7,106.8	7,106.8	29.1	142.1	92.12	-2,051.0	133.9	779.3	608.5	170.84	4.562					
8,200.0	7,141.3	7,106.3	7,106.3	30.7	142.1	91.84	-2,051.0	133.9	680.1	507.7	172.49	3.943					
8,300.0	7,140.9	7,105.9	7,105.9	32.3	142.1	91.57	-2,051.0	133.9	581.3	407.1	174.18	3.337					
8,400.0	7,140.4	7,105.4	7,105.4	34.0	142.1	91.30	-2,051.0	133.9	482.9	307.0	175.88	2.746					
8,500.0	7,140.0	7,105.0	7,105.0	35.7	142.1	91.02	-2,051.0	133.9	385.4	207.8	177.60	2.170					
8,600.0	7,139.5	7,104.5	7,104.5	37.5	142.1	90.75	-2,051.0	133.9	289.5	110.1	179.34	1.614					
8,700.0	7,139.1	7,104.1	7,104.1	39.2	142.1	90.48	-2,051.0	133.9	197.7	16.7	181.10	1.092 Level 2					
8,800.0	7,138.6	7,103.6	7,103.6	41.0	142.1	90.20	-2,051.0	133.9	120.0	-62.8	182.86	0.656 Level 1					
8,873.5	7,138.3	7,103.3	7,103.3	42.3	142.1	90.00	-2,051.0	133.9	94.9	-89.3	184.17	0.515 Level 1, CC, ES, SF					
8,900.0	7,138.1	7,103.1	7,103.1	42.8	142.1	89.93	-2,051.0	133.9	98.5	-86.1	184.63	0.534 Level 1					
9,000.0	7,137.7	7,102.7	7,102.7	44.5	142.1	89.65	-2,051.0	133.9	158.1	-28.3	186.41	0.848 Level 1					
9,100.0	7,137.2	7,102.2	7,102.2	46.3	142.0	89.38	-2,051.0	133.9	245.6	57.4	188.20	1.305 Level 3					
9,200.0	7,136.8	7,101.8	7,101.8	48.1	142.0	89.11	-2,051.0	133.9	340.0	150.0	189.99	1.790					
9,300.0	7,136.3	7,101.3	7,101.3	50.0	142.0	88.83	-2,051.0	133.9	436.9	245.1	191.78	2.278					
9,400.0	7,135.9	7,100.9	7,100.9	51.8	142.0	88.56	-2,051.0	133.9	535.0	341.4	193.58	2.764					
9,500.0	7,135.4	7,100.4	7,100.4	53.6	142.0	88.28	-2,051.0	133.9	633.6	438.3	195.38	3.243					
9,600.0	7,135.0	7,100.0	7,100.0	55.5	142.0	88.01	-2,051.0	133.9	732.7	535.5	197.18	3.716					
9,700.0	7,134.5	7,099.5	7,099.5	57.3	142.0	87.74	-2,051.0	133.9	831.9	632.9	198.98	4.181					
9,800.0	7,134.1	7,099.1	7,099.1	59.1	142.0	87.46	-2,051.0	133.9	931.3	730.6	200.78	4.639					

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Sarah 1 (Exist) - Wellbore #1 - Wellbore #1														Offset Site Error:	0.0 ft
Survey Program: 7600-UNKNOWN														Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance		Warning									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
10,500.0	7,130.9	7,099.9	7,099.9	72.2	142.0	91.02	-4,593.9	-5.6	945.9	731.8	214.06	4.419			
10,600.0	7,130.4	7,099.4	7,099.4	74.1	142.0	90.91	-4,593.9	-5.6	849.3	633.4	215.93	3.933			
10,700.0	7,130.0	7,099.0	7,099.0	75.9	142.0	90.79	-4,593.9	-5.6	753.7	535.9	217.81	3.461			
10,800.0	7,129.5	7,098.5	7,098.5	77.8	142.0	90.68	-4,593.9	-5.6	659.4	439.7	219.68	3.002			
10,900.0	7,129.1	7,098.1	7,098.1	79.7	142.0	90.57	-4,593.9	-5.6	567.1	345.5	221.56	2.559			
11,000.0	7,128.6	7,097.6	7,097.6	81.6	142.0	90.46	-4,593.9	-5.6	477.8	254.4	223.44	2.138			
11,100.0	7,128.2	7,097.2	7,097.2	83.5	141.9	90.35	-4,593.9	-5.6	393.7	168.4	225.32	1.747			
11,200.0	7,127.7	7,096.7	7,096.7	85.4	141.9	90.24	-4,593.9	-5.6	319.0	91.8	227.20	1.404 Level 3			
11,300.0	7,127.3	7,096.3	7,096.3	87.2	141.9	90.13	-4,593.9	-5.6	261.6	32.6	229.08	1.142 Level 2			
11,400.0	7,126.8	7,095.8	7,095.8	89.1	141.9	90.02	-4,593.9	-5.6	234.9	3.9	230.96	1.017 Level 2			
11,416.4	7,126.7	7,095.7	7,095.7	89.4	141.9	90.00	-4,593.9	-5.6	234.3	3.1	231.26	1.013 Level 2, CC, ES, SF			
11,500.0	7,126.3	7,095.3	7,095.3	91.0	141.9	89.91	-4,593.9	-5.6	248.8	16.0	232.84	1.069 Level 2			
11,600.0	7,125.9	7,094.9	7,094.9	92.9	141.9	89.80	-4,593.9	-5.6	297.7	63.0	234.72	1.268 Level 3			
11,700.0	7,125.4	7,094.4	7,094.4	94.8	141.9	89.69	-4,593.9	-5.6	367.9	131.3	236.60	1.555			
11,800.0	7,125.0	7,094.0	7,094.0	96.7	141.9	89.57	-4,593.9	-5.6	449.5	211.0	238.48	1.885			
11,900.0	7,124.5	7,093.5	7,093.5	98.6	141.9	89.46	-4,593.9	-5.6	537.4	297.0	240.36	2.236			
12,000.0	7,124.1	7,093.1	7,093.1	100.5	141.9	89.35	-4,593.9	-5.6	628.9	386.7	242.25	2.596			
12,100.0	7,123.6	7,092.6	7,092.6	102.4	141.9	89.24	-4,593.9	-5.6	722.7	478.5	244.13	2.960			
12,200.0	7,123.2	7,092.2	7,092.2	104.3	141.8	89.13	-4,593.9	-5.6	817.9	571.9	246.01	3.325			
12,300.0	7,122.7	7,091.7	7,091.7	106.2	141.8	89.02	-4,593.9	-5.6	914.2	666.3	247.89	3.688			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4752.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Bernhardt Farms 13W-343

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.43°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Bernhardt Farms 13W-343
<b>Project:</b>	SEC.13-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Reference Site:</b>	Bernhardt Farms 13SW-HZ Pad Sec.13-T4N-R67W	<b>MD Reference:</b>	WELL @ 4752.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Bernhardt Farms 13W-343	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (11-13-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4752.0ft (RKB - 15')  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: Bernhardt Farms 13W-343  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.43°

