

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Harvesters Resources 15U-443**

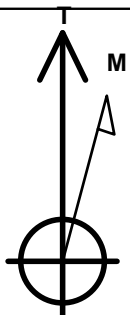
Surface Location: Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4815.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1423919.97	3206864.26	40.494680	-104.756200	

RKB - 15' WELL @ 4830.0ft (RKB - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 500'FSL, 630'FEL	7270.0	-4459.2	-50.1	Point



Azimuths to True North  
Magnetic North: 8.60°

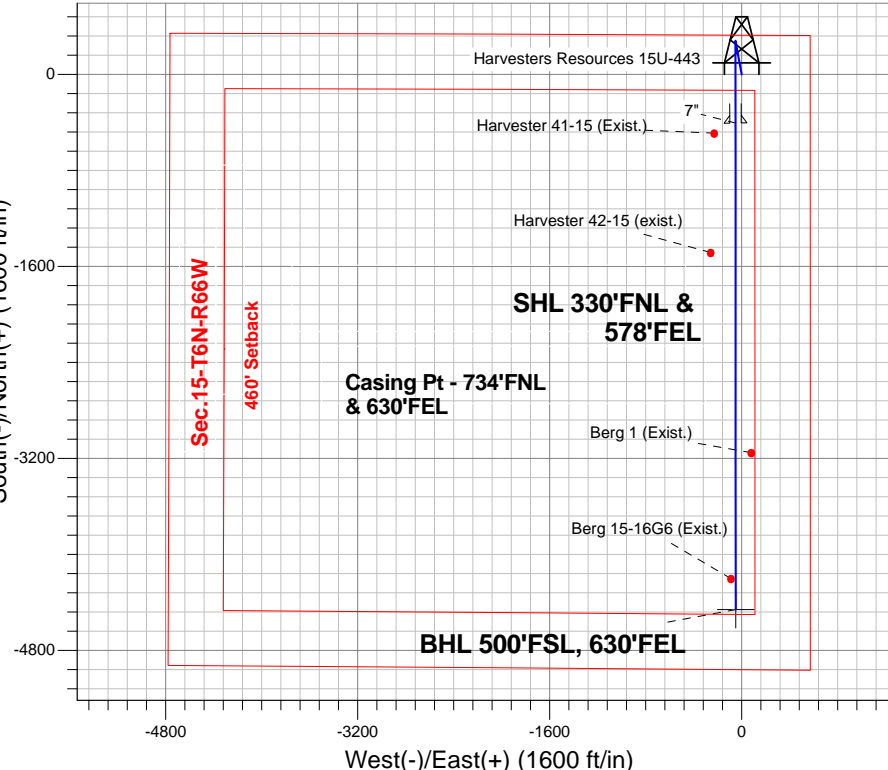
Magnetic Field  
Strength: 52972.5nT  
Dip Angle: 67.06°  
Date: 6/10/2013  
Model: IGRF2010

Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W  
Harvesters Resources 15U-443  
Plan #1 (6-10-13)  
16:36, June 10 2013

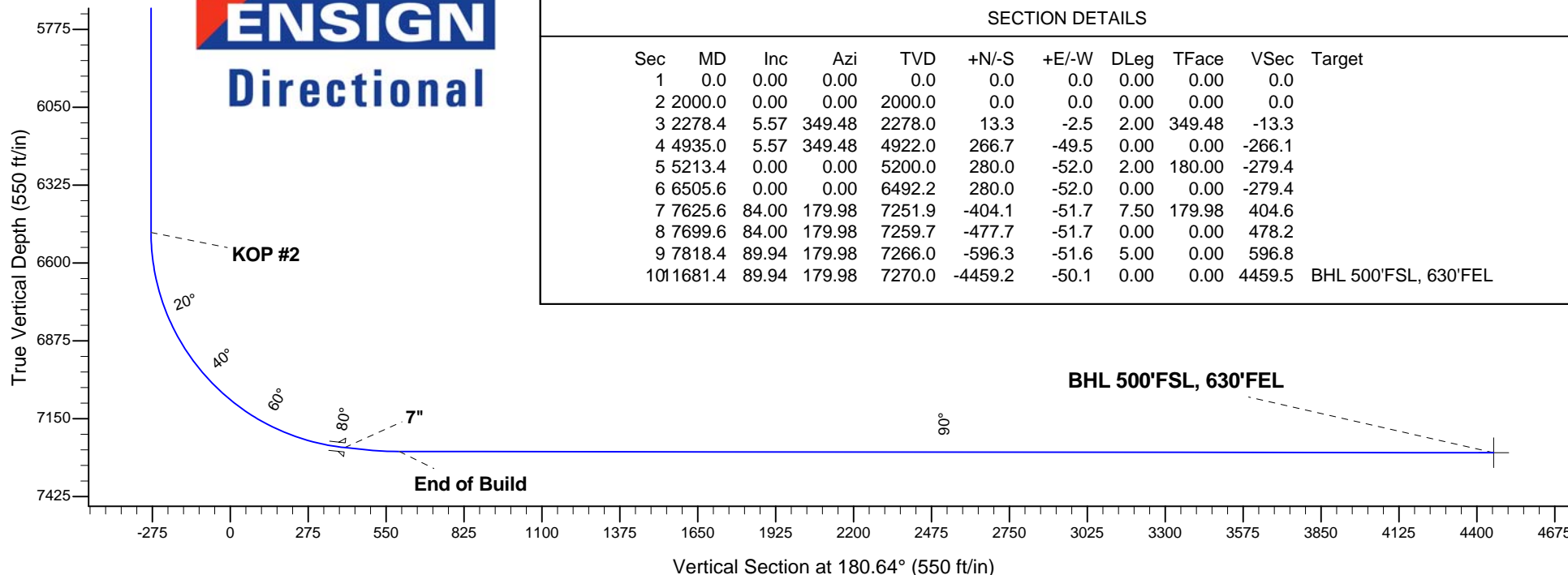
## ANNOTATIONS

TVD	MD	Annotation
2000.0	2000.0	KOP #1
6492.2	6505.6	KOP #2
7266.0	7818.4	End of Build

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



**ENSIGN**  
Directional



## 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	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	2278.4	5.57	349.48	2278.0	13.3	-2.5	2.00	349.48	-13.3	
4	4935.0	5.57	349.48	4922.0	266.7	-49.5	0.00	0.00	-266.1	
5	5213.4	0.00	0.00	5200.0	280.0	-52.0	2.00	180.00	-279.4	
6	6505.6	0.00	0.00	6492.2	280.0	-52.0	0.00	0.00	-279.4	
7	7625.6	84.00	179.98	7251.9	-404.1	-51.7	7.50	179.98	404.6	
8	7699.6	84.00	179.98	7259.7	-477.7	-51.7	0.00	0.00	478.2	
9	7818.4	89.94	179.98	7266.0	-596.3	-51.6	5.00	0.00	596.8	
10	1681.4	89.94	179.98	7270.0	-4459.2	-50.1	0.00	0.00	4459.5	BHL 500'FSL, 630'FEL



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.15-T6N-R66W**

**Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W**

**Harvesters Resources 15U-443**

**Wellbore #1**

**Plan: Plan #1 (6-10-13)**

## **Standard Planning Report**

**10 June, 2013**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Project:</b>	SEC.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Harvesters Resources 15U-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-10-13)		

<b>Project</b>	SEC.15-T6N-R66W, Weld County, CO		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W					
Site Position:		Northing:		1,423,919.73ft	
From:	Lat/Long	Easting:		3,206,833.67ft	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
0.0 ft		"		40.494680 -104.756310 0.48 °	

Well	Harvesters Resources 15U-443					
Well Position	+N-S	0.0 ft	Northing:	1,423,919.97 ft	Latitude:	40.494680
	+E-W	30.6 ft	Easting:	3,206,864.26 ft	Longitude:	-104.756200
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,815.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/10/2013	8.60	67.06	52,972

<b>Design</b>	Plan #1 (6-10-13)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	180.64

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,278.4	5.57	349.48	2,278.0	13.3	-2.5	2.00	2.00	0.00	349.48	
4,935.0	5.57	349.48	4,922.0	266.7	-49.5	0.00	0.00	0.00	0.00	
5,213.4	0.00	0.00	5,200.0	280.0	-52.0	2.00	-2.00	0.00	180.00	
6,505.6	0.00	0.00	6,492.2	280.0	-52.0	0.00	0.00	0.00	0.00	
7,625.6	84.00	179.98	7,251.9	-404.1	-51.7	7.50	7.50	0.00	179.98	
7,699.6	84.00	179.98	7,259.7	-477.7	-51.7	0.00	0.00	0.00	0.00	
7,818.4	89.94	179.98	7,266.0	-596.3	-51.6	5.00	5.00	0.00	0.00	
11,681.4	89.94	179.98	7,270.0	-4,459.2	-50.1	0.00	0.00	0.00	0.00	BHL 500'FSL, 630'F

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Project:</b>	SEC.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Harvesters Resources 15U-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-10-13)		

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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	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
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.00	0.00	960.0	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
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.00	0.00	1,160.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,240.0	0.00	0.00	1,240.0	0.0	0.0	0.0	0.00	0.00	0.00
1,280.0	0.00	0.00	1,280.0	0.0	0.0	0.0	0.00	0.00	0.00
1,320.0	0.00	0.00	1,320.0	0.0	0.0	0.0	0.00	0.00	0.00
1,360.0	0.00	0.00	1,360.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,440.0	0.00	0.00	1,440.0	0.0	0.0	0.0	0.00	0.00	0.00
1,480.0	0.00	0.00	1,480.0	0.0	0.0	0.0	0.00	0.00	0.00
1,520.0	0.00	0.00	1,520.0	0.0	0.0	0.0	0.00	0.00	0.00
1,560.0	0.00	0.00	1,560.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,640.0	0.00	0.00	1,640.0	0.0	0.0	0.0	0.00	0.00	0.00
1,680.0	0.00	0.00	1,680.0	0.0	0.0	0.0	0.00	0.00	0.00
1,720.0	0.00	0.00	1,720.0	0.0	0.0	0.0	0.00	0.00	0.00
1,760.0	0.00	0.00	1,760.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,840.0	0.00	0.00	1,840.0	0.0	0.0	0.0	0.00	0.00	0.00
1,880.0	0.00	0.00	1,880.0	0.0	0.0	0.0	0.00	0.00	0.00
1,920.0	0.00	0.00	1,920.0	0.0	0.0	0.0	0.00	0.00	0.00
1,960.0	0.00	0.00	1,960.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Project:</b>	SEC.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Harvesters Resources 15U-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-10-13)		

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)
2,040.0	0.80	349.48	2,040.0	0.3	-0.1	-0.3	2.00	2.00	0.00
2,080.0	1.60	349.48	2,080.0	1.1	-0.2	-1.1	2.00	2.00	0.00
2,120.0	2.40	349.48	2,120.0	2.5	-0.5	-2.5	2.00	2.00	0.00
2,160.0	3.20	349.48	2,159.9	4.4	-0.8	-4.4	2.00	2.00	0.00
2,200.0	4.00	349.48	2,199.8	6.9	-1.3	-6.8	2.00	2.00	0.00
2,240.0	4.80	349.48	2,239.7	9.9	-1.8	-9.9	2.00	2.00	0.00
2,278.4	5.57	349.48	2,278.0	13.3	-2.5	-13.3	2.00	2.00	0.00
2,280.0	5.57	349.48	2,279.6	13.4	-2.5	-13.4	0.00	0.00	0.00
2,320.0	5.57	349.48	2,319.4	17.3	-3.2	-17.2	0.00	0.00	0.00
2,360.0	5.57	349.48	2,359.2	21.1	-3.9	-21.0	0.00	0.00	0.00
2,400.0	5.57	349.48	2,399.0	24.9	-4.6	-24.8	0.00	0.00	0.00
2,440.0	5.57	349.48	2,438.8	28.7	-5.3	-28.6	0.00	0.00	0.00
2,480.0	5.57	349.48	2,478.6	32.5	-6.0	-32.5	0.00	0.00	0.00
2,520.0	5.57	349.48	2,518.4	36.3	-6.7	-36.3	0.00	0.00	0.00
2,560.0	5.57	349.48	2,558.2	40.2	-7.5	-40.1	0.00	0.00	0.00
2,600.0	5.57	349.48	2,598.0	44.0	-8.2	-43.9	0.00	0.00	0.00
2,640.0	5.57	349.48	2,637.9	47.8	-8.9	-47.7	0.00	0.00	0.00
2,680.0	5.57	349.48	2,677.7	51.6	-9.6	-51.5	0.00	0.00	0.00
2,720.0	5.57	349.48	2,717.5	55.4	-10.3	-55.3	0.00	0.00	0.00
2,760.0	5.57	349.48	2,757.3	59.2	-11.0	-59.1	0.00	0.00	0.00
2,800.0	5.57	349.48	2,797.1	63.0	-11.7	-62.9	0.00	0.00	0.00
2,840.0	5.57	349.48	2,836.9	66.9	-12.4	-66.7	0.00	0.00	0.00
2,880.0	5.57	349.48	2,876.7	70.7	-13.1	-70.5	0.00	0.00	0.00
2,920.0	5.57	349.48	2,916.5	74.5	-13.8	-74.3	0.00	0.00	0.00
2,960.0	5.57	349.48	2,956.3	78.3	-14.5	-78.1	0.00	0.00	0.00
3,000.0	5.57	349.48	2,996.2	82.1	-15.3	-81.9	0.00	0.00	0.00
3,040.0	5.57	349.48	3,036.0	85.9	-16.0	-85.8	0.00	0.00	0.00
3,080.0	5.57	349.48	3,075.8	89.8	-16.7	-89.6	0.00	0.00	0.00
3,120.0	5.57	349.48	3,115.6	93.6	-17.4	-93.4	0.00	0.00	0.00
3,160.0	5.57	349.48	3,155.4	97.4	-18.1	-97.2	0.00	0.00	0.00
3,200.0	5.57	349.48	3,195.2	101.2	-18.8	-101.0	0.00	0.00	0.00
3,240.0	5.57	349.48	3,235.0	105.0	-19.5	-104.8	0.00	0.00	0.00
3,280.0	5.57	349.48	3,274.8	108.8	-20.2	-108.6	0.00	0.00	0.00
3,320.0	5.57	349.48	3,314.6	112.7	-20.9	-112.4	0.00	0.00	0.00
3,360.0	5.57	349.48	3,354.5	116.5	-21.6	-116.2	0.00	0.00	0.00
3,400.0	5.57	349.48	3,394.3	120.3	-22.3	-120.0	0.00	0.00	0.00
3,440.0	5.57	349.48	3,434.1	124.1	-23.0	-123.8	0.00	0.00	0.00
3,480.0	5.57	349.48	3,473.9	127.9	-23.8	-127.6	0.00	0.00	0.00
3,520.0	5.57	349.48	3,513.7	131.7	-24.5	-131.4	0.00	0.00	0.00
3,560.0	5.57	349.48	3,553.5	135.5	-25.2	-135.3	0.00	0.00	0.00
3,600.0	5.57	349.48	3,593.3	139.4	-25.9	-139.1	0.00	0.00	0.00
3,640.0	5.57	349.48	3,633.1	143.2	-26.6	-142.9	0.00	0.00	0.00
3,680.0	5.57	349.48	3,672.9	147.0	-27.3	-146.7	0.00	0.00	0.00
3,720.0	5.57	349.48	3,712.8	150.8	-28.0	-150.5	0.00	0.00	0.00
3,760.0	5.57	349.48	3,752.6	154.6	-28.7	-154.3	0.00	0.00	0.00
3,800.0	5.57	349.48	3,792.4	158.4	-29.4	-158.1	0.00	0.00	0.00
3,840.0	5.57	349.48	3,832.2	162.3	-30.1	-161.9	0.00	0.00	0.00
3,880.0	5.57	349.48	3,872.0	166.1	-30.8	-165.7	0.00	0.00	0.00
3,920.0	5.57	349.48	3,911.8	169.9	-31.6	-169.5	0.00	0.00	0.00
3,960.0	5.57	349.48	3,951.6	173.7	-32.3	-173.3	0.00	0.00	0.00
4,000.0	5.57	349.48	3,991.4	177.5	-33.0	-177.1	0.00	0.00	0.00
4,040.0	5.57	349.48	4,031.3	181.3	-33.7	-180.9	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Project:</b>	SEC.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Harvesters Resources 15U-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-10-13)		

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)
4,080.0	5.57	349.48	4,071.1	185.1	-34.4	-184.8	0.00	0.00	0.00
4,120.0	5.57	349.48	4,110.9	189.0	-35.1	-188.6	0.00	0.00	0.00
4,160.0	5.57	349.48	4,150.7	192.8	-35.8	-192.4	0.00	0.00	0.00
4,200.0	5.57	349.48	4,190.5	196.6	-36.5	-196.2	0.00	0.00	0.00
4,240.0	5.57	349.48	4,230.3	200.4	-37.2	-200.0	0.00	0.00	0.00
4,280.0	5.57	349.48	4,270.1	204.2	-37.9	-203.8	0.00	0.00	0.00
4,320.0	5.57	349.48	4,309.9	208.0	-38.6	-207.6	0.00	0.00	0.00
4,360.0	5.57	349.48	4,349.7	211.9	-39.3	-211.4	0.00	0.00	0.00
4,400.0	5.57	349.48	4,389.6	215.7	-40.1	-215.2	0.00	0.00	0.00
4,440.0	5.57	349.48	4,429.4	219.5	-40.8	-219.0	0.00	0.00	0.00
4,480.0	5.57	349.48	4,469.2	223.3	-41.5	-222.8	0.00	0.00	0.00
4,520.0	5.57	349.48	4,509.0	227.1	-42.2	-226.6	0.00	0.00	0.00
4,560.0	5.57	349.48	4,548.8	230.9	-42.9	-230.4	0.00	0.00	0.00
4,600.0	5.57	349.48	4,588.6	234.8	-43.6	-234.2	0.00	0.00	0.00
4,640.0	5.57	349.48	4,628.4	238.6	-44.3	-238.1	0.00	0.00	0.00
4,680.0	5.57	349.48	4,668.2	242.4	-45.0	-241.9	0.00	0.00	0.00
4,720.0	5.57	349.48	4,708.0	246.2	-45.7	-245.7	0.00	0.00	0.00
4,760.0	5.57	349.48	4,747.9	250.0	-46.4	-249.5	0.00	0.00	0.00
4,800.0	5.57	349.48	4,787.7	253.8	-47.1	-253.3	0.00	0.00	0.00
4,840.0	5.57	349.48	4,827.5	257.6	-47.8	-257.1	0.00	0.00	0.00
4,880.0	5.57	349.48	4,867.3	261.5	-48.6	-260.9	0.00	0.00	0.00
4,920.0	5.57	349.48	4,907.1	265.3	-49.3	-264.7	0.00	0.00	0.00
4,935.0	5.57	349.48	4,922.0	266.7	-49.5	-266.1	0.00	0.00	0.00
4,960.0	5.07	349.48	4,946.9	269.0	-50.0	-268.4	2.00	-2.00	0.00
5,000.0	4.27	349.48	4,986.8	272.2	-50.5	-271.6	2.00	-2.00	0.00
5,040.0	3.47	349.48	5,026.7	274.8	-51.0	-274.3	2.00	-2.00	0.00
5,080.0	2.67	349.48	5,066.6	276.9	-51.4	-276.4	2.00	-2.00	0.00
5,120.0	1.87	349.48	5,106.6	278.5	-51.7	-277.9	2.00	-2.00	0.00
5,160.0	1.07	349.48	5,146.6	279.5	-51.9	-278.9	2.00	-2.00	0.00
5,200.0	0.27	349.48	5,186.6	280.0	-52.0	-279.4	2.00	-2.00	0.00
5,213.4	0.00	0.00	5,200.0	280.0	-52.0	-279.4	2.00	-2.00	0.00
5,240.0	0.00	0.00	5,226.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,280.0	0.00	0.00	5,266.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,320.0	0.00	0.00	5,306.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,360.0	0.00	0.00	5,346.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,386.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,440.0	0.00	0.00	5,426.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,480.0	0.00	0.00	5,466.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,520.0	0.00	0.00	5,506.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,560.0	0.00	0.00	5,546.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,586.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,640.0	0.00	0.00	5,626.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,680.0	0.00	0.00	5,666.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,720.0	0.00	0.00	5,706.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,760.0	0.00	0.00	5,746.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,786.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,840.0	0.00	0.00	5,826.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,880.0	0.00	0.00	5,866.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,920.0	0.00	0.00	5,906.6	280.0	-52.0	-279.4	0.00	0.00	0.00
5,960.0	0.00	0.00	5,946.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,986.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,040.0	0.00	0.00	6,026.6	280.0	-52.0	-279.4	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Project:</b>	SEC.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Harvesters Resources 15U-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-10-13)		

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)
6,080.0	0.00	0.00	6,066.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,120.0	0.00	0.00	6,106.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,160.0	0.00	0.00	6,146.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,186.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,240.0	0.00	0.00	6,226.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,280.0	0.00	0.00	6,266.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,320.0	0.00	0.00	6,306.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,360.0	0.00	0.00	6,346.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,386.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,440.0	0.00	0.00	6,426.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,480.0	0.00	0.00	6,466.6	280.0	-52.0	-279.4	0.00	0.00	0.00
6,505.6	0.00	0.00	6,492.2	280.0	-52.0	-279.4	0.00	0.00	0.00
<b>KOP #2</b>									
6,520.0	1.08	179.98	6,506.6	279.9	-52.0	-279.3	7.50	7.50	0.00
6,560.0	4.08	179.98	6,546.5	278.1	-52.0	-277.5	7.50	7.50	0.00
6,600.0	7.08	179.98	6,586.4	274.2	-52.0	-273.6	7.50	7.50	0.00
6,640.0	10.08	179.98	6,625.9	268.2	-52.0	-267.6	7.50	7.50	0.00
6,680.0	13.08	179.98	6,665.1	260.2	-52.0	-259.6	7.50	7.50	0.00
6,720.0	16.08	179.98	6,703.8	250.1	-52.0	-249.5	7.50	7.50	0.00
6,760.0	19.08	179.98	6,741.9	238.0	-52.0	-237.4	7.50	7.50	0.00
6,800.0	22.08	179.98	6,779.4	224.0	-52.0	-223.4	7.50	7.50	0.00
6,840.0	25.08	179.98	6,816.0	208.0	-52.0	-207.4	7.50	7.50	0.00
6,880.0	28.08	179.98	6,851.8	190.1	-52.0	-189.5	7.50	7.50	0.00
6,920.0	31.08	179.98	6,886.6	170.3	-52.0	-169.7	7.50	7.50	0.00
6,960.0	34.08	179.98	6,920.3	148.8	-51.9	-148.2	7.50	7.50	0.00
7,000.0	37.08	179.98	6,952.8	125.5	-51.9	-124.9	7.50	7.50	0.00
7,040.0	40.08	179.98	6,984.1	100.6	-51.9	-100.0	7.50	7.50	0.00
7,080.0	43.08	179.98	7,014.0	74.0	-51.9	-73.4	7.50	7.50	0.00
7,120.0	46.08	179.98	7,042.5	46.0	-51.9	-45.4	7.50	7.50	0.00
7,160.0	49.08	179.98	7,069.4	16.4	-51.9	-15.9	7.50	7.50	0.00
7,200.0	52.08	179.98	7,094.8	-14.5	-51.9	15.0	7.50	7.50	0.00
7,240.0	55.08	179.98	7,118.6	-46.6	-51.9	47.2	7.50	7.50	0.00
7,280.0	58.08	179.98	7,140.6	-80.0	-51.9	80.6	7.50	7.50	0.00
7,320.0	61.08	179.98	7,160.9	-114.5	-51.8	115.1	7.50	7.50	0.00
7,360.0	64.08	179.98	7,179.3	-150.0	-51.8	150.6	7.50	7.50	0.00
7,400.0	67.08	179.98	7,195.8	-186.4	-51.8	187.0	7.50	7.50	0.00
7,440.0	70.08	179.98	7,210.4	-223.7	-51.8	224.2	7.50	7.50	0.00
7,480.0	73.08	179.98	7,223.1	-261.6	-51.8	262.2	7.50	7.50	0.00
7,520.0	76.08	179.98	7,233.7	-300.2	-51.8	300.7	7.50	7.50	0.00
7,560.0	79.08	179.98	7,242.3	-339.2	-51.7	339.8	7.50	7.50	0.00
7,600.0	82.08	179.98	7,248.8	-378.7	-51.7	379.2	7.50	7.50	0.00
7,625.6	84.00	179.98	7,251.9	-404.1	-51.7	404.7	7.50	7.50	0.00
<b>7"</b>									
7,640.0	84.00	179.98	7,253.4	-418.4	-51.7	419.0	0.00	0.00	0.00
7,680.0	84.00	179.98	7,257.6	-458.2	-51.7	458.8	0.00	0.00	0.00
7,699.6	84.00	179.98	7,259.7	-477.7	-51.7	478.2	0.00	0.00	0.00
7,720.0	85.02	179.98	7,261.6	-498.0	-51.7	498.5	5.00	5.00	0.00
7,760.0	87.02	179.98	7,264.4	-537.9	-51.7	538.4	5.00	5.00	0.00
7,800.0	89.02	179.98	7,265.8	-577.9	-51.7	578.4	5.00	5.00	0.00
7,818.4	89.94	179.98	7,266.0	-596.3	-51.6	596.8	5.00	5.00	0.00
<b>End of Build</b>									
7,840.0	89.94	179.98	7,266.0	-617.9	-51.6	618.4	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Project:</b>	SEC.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Harvesters Resources 15U-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-10-13)		

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)
7,880.0	89.94	179.98	7,266.0	-657.9	-51.6	658.4	0.00	0.00	0.00
7,920.0	89.94	179.98	7,266.1	-697.9	-51.6	698.4	0.00	0.00	0.00
7,960.0	89.94	179.98	7,266.1	-737.9	-51.6	738.4	0.00	0.00	0.00
8,000.0	89.94	179.98	7,266.1	-777.9	-51.6	778.4	0.00	0.00	0.00
8,040.0	89.94	179.98	7,266.2	-817.9	-51.6	818.4	0.00	0.00	0.00
8,080.0	89.94	179.98	7,266.2	-857.9	-51.5	858.4	0.00	0.00	0.00
8,120.0	89.94	179.98	7,266.3	-897.9	-51.5	898.4	0.00	0.00	0.00
8,160.0	89.94	179.98	7,266.3	-937.9	-51.5	938.4	0.00	0.00	0.00
8,200.0	89.94	179.98	7,266.4	-977.9	-51.5	978.4	0.00	0.00	0.00
8,240.0	89.94	179.98	7,266.4	-1,017.9	-51.5	1,018.4	0.00	0.00	0.00
8,280.0	89.94	179.98	7,266.4	-1,057.9	-51.5	1,058.4	0.00	0.00	0.00
8,320.0	89.94	179.98	7,266.5	-1,097.9	-51.4	1,098.4	0.00	0.00	0.00
8,360.0	89.94	179.98	7,266.5	-1,137.9	-51.4	1,138.4	0.00	0.00	0.00
8,400.0	89.94	179.98	7,266.6	-1,177.9	-51.4	1,178.4	0.00	0.00	0.00
8,440.0	89.94	179.98	7,266.6	-1,217.9	-51.4	1,218.4	0.00	0.00	0.00
8,480.0	89.94	179.98	7,266.6	-1,257.9	-51.4	1,258.4	0.00	0.00	0.00
8,520.0	89.94	179.98	7,266.7	-1,297.9	-51.4	1,298.4	0.00	0.00	0.00
8,560.0	89.94	179.98	7,266.7	-1,337.9	-51.3	1,338.4	0.00	0.00	0.00
8,600.0	89.94	179.98	7,266.8	-1,377.9	-51.3	1,378.4	0.00	0.00	0.00
8,640.0	89.94	179.98	7,266.8	-1,417.9	-51.3	1,418.4	0.00	0.00	0.00
8,680.0	89.94	179.98	7,266.9	-1,457.9	-51.3	1,458.4	0.00	0.00	0.00
8,720.0	89.94	179.98	7,266.9	-1,497.9	-51.3	1,498.4	0.00	0.00	0.00
8,760.0	89.94	179.98	7,266.9	-1,537.9	-51.3	1,538.4	0.00	0.00	0.00
8,800.0	89.94	179.98	7,267.0	-1,577.9	-51.2	1,578.3	0.00	0.00	0.00
8,840.0	89.94	179.98	7,267.0	-1,617.9	-51.2	1,618.3	0.00	0.00	0.00
8,880.0	89.94	179.98	7,267.1	-1,657.9	-51.2	1,658.3	0.00	0.00	0.00
8,920.0	89.94	179.98	7,267.1	-1,697.9	-51.2	1,698.3	0.00	0.00	0.00
8,960.0	89.94	179.98	7,267.2	-1,737.9	-51.2	1,738.3	0.00	0.00	0.00
9,000.0	89.94	179.98	7,267.2	-1,777.9	-51.2	1,778.3	0.00	0.00	0.00
9,040.0	89.94	179.98	7,267.2	-1,817.9	-51.1	1,818.3	0.00	0.00	0.00
9,080.0	89.94	179.98	7,267.3	-1,857.9	-51.1	1,858.3	0.00	0.00	0.00
9,120.0	89.94	179.98	7,267.3	-1,897.9	-51.1	1,898.3	0.00	0.00	0.00
9,160.0	89.94	179.98	7,267.4	-1,937.9	-51.1	1,938.3	0.00	0.00	0.00
9,200.0	89.94	179.98	7,267.4	-1,977.9	-51.1	1,978.3	0.00	0.00	0.00
9,240.0	89.94	179.98	7,267.4	-2,017.9	-51.1	2,018.3	0.00	0.00	0.00
9,280.0	89.94	179.98	7,267.5	-2,057.9	-51.0	2,058.3	0.00	0.00	0.00
9,320.0	89.94	179.98	7,267.5	-2,097.9	-51.0	2,098.3	0.00	0.00	0.00
9,360.0	89.94	179.98	7,267.6	-2,137.9	-51.0	2,138.3	0.00	0.00	0.00
9,400.0	89.94	179.98	7,267.6	-2,177.9	-51.0	2,178.3	0.00	0.00	0.00
9,440.0	89.94	179.98	7,267.7	-2,217.9	-51.0	2,218.3	0.00	0.00	0.00
9,480.0	89.94	179.98	7,267.7	-2,257.9	-51.0	2,258.3	0.00	0.00	0.00
9,520.0	89.94	179.98	7,267.7	-2,297.9	-51.0	2,298.3	0.00	0.00	0.00
9,560.0	89.94	179.98	7,267.8	-2,337.9	-50.9	2,338.3	0.00	0.00	0.00
9,600.0	89.94	179.98	7,267.8	-2,377.9	-50.9	2,378.3	0.00	0.00	0.00
9,640.0	89.94	179.98	7,267.9	-2,417.9	-50.9	2,418.3	0.00	0.00	0.00
9,680.0	89.94	179.98	7,267.9	-2,457.9	-50.9	2,458.3	0.00	0.00	0.00
9,720.0	89.94	179.98	7,267.9	-2,497.9	-50.9	2,498.3	0.00	0.00	0.00
9,760.0	89.94	179.98	7,268.0	-2,537.9	-50.9	2,538.3	0.00	0.00	0.00
9,800.0	89.94	179.98	7,268.0	-2,577.9	-50.8	2,578.3	0.00	0.00	0.00
9,840.0	89.94	179.98	7,268.1	-2,617.9	-50.8	2,618.3	0.00	0.00	0.00
9,880.0	89.94	179.98	7,268.1	-2,657.9	-50.8	2,658.3	0.00	0.00	0.00
9,920.0	89.94	179.98	7,268.2	-2,697.9	-50.8	2,698.3	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Project:</b>	SEC.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Harvesters Resources 15U-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-10-13)		

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)
9,960.0	89.94	179.98	7,268.2	-2,737.9	-50.8	2,738.3	0.00	0.00	0.00
10,000.0	89.94	179.98	7,268.2	-2,777.9	-50.8	2,778.3	0.00	0.00	0.00
10,040.0	89.94	179.98	7,268.3	-2,817.9	-50.7	2,818.3	0.00	0.00	0.00
10,080.0	89.94	179.98	7,268.3	-2,857.9	-50.7	2,858.3	0.00	0.00	0.00
10,120.0	89.94	179.98	7,268.4	-2,897.9	-50.7	2,898.3	0.00	0.00	0.00
10,160.0	89.94	179.98	7,268.4	-2,937.9	-50.7	2,938.3	0.00	0.00	0.00
10,200.0	89.94	179.98	7,268.4	-2,977.9	-50.7	2,978.3	0.00	0.00	0.00
10,240.0	89.94	179.98	7,268.5	-3,017.9	-50.7	3,018.2	0.00	0.00	0.00
10,280.0	89.94	179.98	7,268.5	-3,057.9	-50.6	3,058.2	0.00	0.00	0.00
10,320.0	89.94	179.98	7,268.6	-3,097.9	-50.6	3,098.2	0.00	0.00	0.00
10,360.0	89.94	179.98	7,268.6	-3,137.9	-50.6	3,138.2	0.00	0.00	0.00
10,400.0	89.94	179.98	7,268.7	-3,177.9	-50.6	3,178.2	0.00	0.00	0.00
10,440.0	89.94	179.98	7,268.7	-3,217.9	-50.6	3,218.2	0.00	0.00	0.00
10,480.0	89.94	179.98	7,268.7	-3,257.9	-50.6	3,258.2	0.00	0.00	0.00
10,520.0	89.94	179.98	7,268.8	-3,297.9	-50.5	3,298.2	0.00	0.00	0.00
10,560.0	89.94	179.98	7,268.8	-3,337.9	-50.5	3,338.2	0.00	0.00	0.00
10,600.0	89.94	179.98	7,268.9	-3,377.9	-50.5	3,378.2	0.00	0.00	0.00
10,640.0	89.94	179.98	7,268.9	-3,417.9	-50.5	3,418.2	0.00	0.00	0.00
10,680.0	89.94	179.98	7,269.0	-3,457.9	-50.5	3,458.2	0.00	0.00	0.00
10,720.0	89.94	179.98	7,269.0	-3,497.9	-50.5	3,498.2	0.00	0.00	0.00
10,760.0	89.94	179.98	7,269.0	-3,537.9	-50.4	3,538.2	0.00	0.00	0.00
10,800.0	89.94	179.98	7,269.1	-3,577.9	-50.4	3,578.2	0.00	0.00	0.00
10,840.0	89.94	179.98	7,269.1	-3,617.9	-50.4	3,618.2	0.00	0.00	0.00
10,880.0	89.94	179.98	7,269.2	-3,657.9	-50.4	3,658.2	0.00	0.00	0.00
10,920.0	89.94	179.98	7,269.2	-3,697.9	-50.4	3,698.2	0.00	0.00	0.00
10,960.0	89.94	179.98	7,269.2	-3,737.9	-50.4	3,738.2	0.00	0.00	0.00
11,000.0	89.94	179.98	7,269.3	-3,777.9	-50.3	3,778.2	0.00	0.00	0.00
11,040.0	89.94	179.98	7,269.3	-3,817.9	-50.3	3,818.2	0.00	0.00	0.00
11,080.0	89.94	179.98	7,269.4	-3,857.9	-50.3	3,858.2	0.00	0.00	0.00
11,120.0	89.94	179.98	7,269.4	-3,897.9	-50.3	3,898.2	0.00	0.00	0.00
11,160.0	89.94	179.98	7,269.5	-3,937.9	-50.3	3,938.2	0.00	0.00	0.00
11,200.0	89.94	179.98	7,269.5	-3,977.9	-50.3	3,978.2	0.00	0.00	0.00
11,240.0	89.94	179.98	7,269.5	-4,017.9	-50.3	4,018.2	0.00	0.00	0.00
11,280.0	89.94	179.98	7,269.6	-4,057.9	-50.2	4,058.2	0.00	0.00	0.00
11,320.0	89.94	179.98	7,269.6	-4,097.9	-50.2	4,098.2	0.00	0.00	0.00
11,360.0	89.94	179.98	7,269.7	-4,137.9	-50.2	4,138.2	0.00	0.00	0.00
11,400.0	89.94	179.98	7,269.7	-4,177.9	-50.2	4,178.2	0.00	0.00	0.00
11,440.0	89.94	179.98	7,269.7	-4,217.9	-50.2	4,218.2	0.00	0.00	0.00
11,480.0	89.94	179.98	7,269.8	-4,257.9	-50.2	4,258.2	0.00	0.00	0.00
11,520.0	89.94	179.98	7,269.8	-4,297.9	-50.1	4,298.2	0.00	0.00	0.00
11,560.0	89.94	179.98	7,269.9	-4,337.9	-50.1	4,338.2	0.00	0.00	0.00
11,600.0	89.94	179.98	7,269.9	-4,377.9	-50.1	4,378.2	0.00	0.00	0.00
11,640.0	89.94	179.98	7,270.0	-4,417.9	-50.1	4,418.2	0.00	0.00	0.00
11,680.0	89.94	179.98	7,270.0	-4,457.9	-50.1	4,458.2	0.00	0.00	0.00
11,681.4	89.94	179.98	7,270.0	-4,459.2	-50.1	4,459.5	0.00	0.00	0.00
BHL 500'FSL, 630'FEL									

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Project:</b>	SEC.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Harvesters Resources 15U-443	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (6-10-13)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
BHL 500'FSL, 630'FE - plan hits target center - Point	0.00	0.00	7,270.0	-4,459.2	-50.1	1,419,460.63	3,206,851.59	40.482440	-104.756380

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,625.6	7,251.9	7"	7	7-1/2	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.0	2,000.0	0.0	0.0	KOP #1
6,505.6	6,492.2	280.0	-52.0	KOP #2
7,818.4	7,266.0	-596.3	-51.6	End of Build



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.15-T6N-R66W**

**Harvesters Resources 15UR-HZ Pad**

**Sec.15-T6N-R66W**

**Harvesters Resources 15U-443**

**Wellbore #1**

**Plan #1 (6-10-13)**

## **Anticollision Report**

**10 June, 2013**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (6-10-13)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 6/10/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,681.4	Plan #1 (6-10-13) (Wellbore #1)	MWD	MWD - Standard

<b>Summary</b>						
<b>Site Name</b>	<b>Reference Measured Depth (ft)</b>	<b>Offset Measured Depth (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
<b>Offset Well - Wellbore - Design</b>						
<b>Existing Wells</b>						
Berg 1 (Exist.) - Wellbore #1 - Wellbore #1	10,373.5	7,215.6	131.3	-76.7	0.631	Level 1, CC, ES, SF
Berg 15-16G6 (Exist.) - Wellbore #1 - Wellbore #1	11,422.7	7,216.7	38.8	-188.8	0.171	Level 1, CC, ES, SF
Harvester 41-15 (Exist.) - Wellbore #1 - Wellbore #1	7,710.1	7,240.7	179.2	15.4	1.094	Level 2, CC, ES, SF
Harvester 42-15 (exist.) - Wellbore #1 - Wellbore #1	8,704.8	7,226.9	207.4	29.4	1.165	Level 2, CC, ES, SF
<b>Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W</b>						
Harvesters Resources 15R-323 - Wellbore #1 - Plan #1 (	1,200.0	1,200.0	30.6	25.5	5.957	CC, ES
Harvesters Resources 15R-323 - Wellbore #1 - Plan #1 (	11,681.4	11,623.5	427.3	255.2	2.483	SF
Harvesters Resources 15R-403 - Wellbore #1 - Plan #1 (	800.0	800.0	61.2	57.9	18.332	CC, ES
Harvesters Resources 15R-403 - Wellbore #1 - Plan #1 (	11,681.4	11,719.8	745.6	569.3	4.229	SF
Harvesters Resources 15U-203 - Wellbore #1 - Plan #1 (	1,500.0	1,500.0	30.6	24.1	4.718	CC, ES
Harvesters Resources 15U-203 - Wellbore #1 - Plan #1 (	11,681.4	11,538.4	492.3	325.6	2.954	SF

<b>Offset Design</b>											
Existing Wells - Berg 1 (Exist.) - Wellbore #1 - Wellbore #1											
Survey Program: 7300-UNKNOWN											
Reference											
Offset											
Semi Major Axis											
<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Reference (ft)</b>	<b>Offset (ft)</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>Offset Wellbore Centre +E/-W (ft)</b>	<b>Distance Between Centres (ft)</b>	<b>Distance Between Ellipses (ft)</b>	<b>Minimum Separation (ft)</b>
											<b>Separation Factor</b>
											<b>Warning</b>
0.0	0.0	0.0	0.0	0.0	0.0	178.53	-3,151.3	80.7	3,152.8		
100.0	100.0	47.0	47.0	0.1	0.9	178.53	-3,151.3	80.7	3,152.4	3,151.3	1.04
200.0	200.0	147.0	147.0	0.3	2.9	178.53	-3,151.3	80.7	3,152.4	3,149.1	3.26
300.0	300.0	247.0	247.0	0.5	4.9	178.53	-3,151.3	80.7	3,152.4	3,146.9	5.49
400.0	400.0	347.0	347.0	0.8	6.9	178.53	-3,151.3	80.7	3,152.4	3,144.7	7.71
500.0	500.0	447.0	447.0	1.0	8.9	178.53	-3,151.3	80.7	3,152.4	3,142.4	9.93
600.0	600.0	547.0	547.0	1.2	10.9	178.53	-3,151.3	80.7	3,152.4	3,140.2	12.16
700.0	700.0	647.0	647.0	1.4	12.9	178.53	-3,151.3	80.7	3,152.4	3,138.0	14.38
800.0	800.0	747.0	747.0	1.7	14.9	178.53	-3,151.3	80.7	3,152.4	3,135.8	16.61
900.0	900.0	847.0	847.0	1.9	16.9	178.53	-3,151.3	80.7	3,152.4	3,133.5	18.83
1,000.0	1,000.0	947.0	947.0	2.1	18.9	178.53	-3,151.3	80.7	3,152.4	3,131.3	21.06
1,100.0	1,100.0	1,047.0	1,047.0	2.3	20.9	178.53	-3,151.3	80.7	3,152.4	3,129.1	23.28
1,200.0	1,200.0	1,147.0	1,147.0	2.6	22.9	178.53	-3,151.3	80.7	3,152.4	3,126.9	25.51
1,300.0	1,300.0	1,247.0	1,247.0	2.8	24.9	178.53	-3,151.3	80.7	3,152.4	3,124.6	27.73

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells - Berg 1 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error: 0.0 ft	
Survey Program: 7300-UNKNOWN													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
1,400.0	1,400.0	1,347.0	1,347.0	3.0	26.9	178.53	-3,151.3	80.7	3,152.4	3,122.4	29.96	105.228		
1,500.0	1,500.0	1,447.0	1,447.0	3.2	28.9	178.53	-3,151.3	80.7	3,152.4	3,120.2	32.18	97.954		
1,600.0	1,600.0	1,547.0	1,547.0	3.5	30.9	178.53	-3,151.3	80.7	3,152.4	3,118.0	34.41	91.620		
1,700.0	1,700.0	1,647.0	1,647.0	3.7	32.9	178.53	-3,151.3	80.7	3,152.4	3,115.7	36.63	86.056		
1,800.0	1,800.0	1,747.0	1,747.0	3.9	34.9	178.53	-3,151.3	80.7	3,152.4	3,113.5	38.86	81.128		
1,900.0	1,900.0	1,847.0	1,847.0	4.1	36.9	178.53	-3,151.3	80.7	3,152.4	3,111.3	41.08	76.735		
2,000.0	2,000.0	1,947.0	1,947.0	4.4	38.9	178.53	-3,151.3	80.7	3,152.4	3,109.1	43.31	72.793		
2,100.0	2,100.0	2,047.0	2,047.0	4.6	40.9	-170.95	-3,151.3	80.7	3,154.1	3,108.6	45.50	69.315		
2,200.0	2,199.8	2,146.8	2,146.8	4.8	42.9	-170.94	-3,151.3	80.7	3,159.3	3,111.6	47.64	66.314		
2,278.4	2,278.0	2,225.0	2,225.0	5.0	44.5	-170.94	-3,151.3	80.7	3,165.7	3,116.5	49.27	64.256		
2,300.0	2,299.5	2,246.5	2,246.5	5.0	44.9	-170.95	-3,151.3	80.7	3,167.8	3,118.1	49.74	63.682		
2,400.0	2,399.0	2,346.0	2,346.0	5.3	46.9	-170.98	-3,151.3	80.7	3,177.4	3,125.4	51.95	61.160		
2,500.0	2,498.5	2,445.5	2,445.5	5.5	48.9	-171.00	-3,151.3	80.7	3,187.0	3,132.8	54.16	58.844		
2,600.0	2,598.0	2,545.0	2,545.0	5.7	50.9	-171.03	-3,151.3	80.7	3,196.6	3,140.2	56.37	56.708		
2,700.0	2,697.6	2,644.6	2,644.6	6.0	52.9	-171.06	-3,151.3	80.7	3,206.1	3,147.6	58.58	54.732		
2,800.0	2,797.1	2,744.1	2,744.1	6.2	54.9	-171.08	-3,151.3	80.7	3,215.7	3,154.9	60.79	52.900		
2,900.0	2,896.6	2,843.6	2,843.6	6.5	56.9	-171.11	-3,151.3	80.7	3,225.3	3,162.3	63.00	51.196		
3,000.0	2,996.2	2,943.2	2,943.2	6.7	58.9	-171.14	-3,151.3	80.7	3,234.9	3,169.7	65.21	49.607		
3,100.0	3,095.7	3,042.7	3,042.7	7.0	60.9	-171.16	-3,151.3	80.7	3,244.5	3,177.1	67.42	48.121		
3,200.0	3,195.2	3,142.2	3,142.2	7.3	62.8	-171.19	-3,151.3	80.7	3,254.1	3,184.4	69.64	46.730		
3,300.0	3,294.7	3,241.7	3,241.7	7.5	64.8	-171.22	-3,151.3	80.7	3,263.7	3,191.8	71.85	45.425		
3,400.0	3,394.3	3,341.3	3,341.3	7.8	66.8	-171.24	-3,151.3	80.7	3,273.3	3,199.2	74.06	44.197		
3,500.0	3,493.8	3,440.8	3,440.8	8.0	68.8	-171.27	-3,151.3	80.7	3,282.8	3,206.6	76.27	43.040		
3,600.0	3,593.3	3,540.3	3,540.3	8.3	70.8	-171.29	-3,151.3	80.7	3,292.4	3,213.9	78.49	41.949		
3,700.0	3,692.9	3,639.9	3,639.9	8.6	72.8	-171.32	-3,151.3	80.7	3,302.0	3,221.3	80.70	40.917		
3,800.0	3,792.4	3,739.4	3,739.4	8.8	74.8	-171.34	-3,151.3	80.7	3,311.6	3,228.7	82.91	39.940		
3,900.0	3,891.9	3,838.9	3,838.9	9.1	76.8	-171.37	-3,151.3	80.7	3,321.2	3,236.1	85.13	39.014		
4,000.0	3,991.4	3,938.4	3,938.4	9.4	78.8	-171.39	-3,151.3	80.7	3,330.8	3,243.5	87.34	38.135		
4,100.0	4,091.0	4,038.0	4,038.0	9.6	80.8	-171.42	-3,151.3	80.7	3,340.4	3,250.8	89.56	37.299		
4,200.0	4,190.5	4,137.5	4,137.5	9.9	82.8	-171.44	-3,151.3	80.7	3,350.0	3,258.2	91.77	36.503		
4,300.0	4,290.0	4,237.0	4,237.0	10.2	84.7	-171.47	-3,151.3	80.7	3,359.6	3,265.6	93.99	35.745		
4,400.0	4,389.6	4,336.6	4,336.6	10.5	86.7	-171.49	-3,151.3	80.7	3,369.2	3,273.0	96.20	35.022		
4,500.0	4,489.1	4,436.1	4,436.1	10.7	88.7	-171.52	-3,151.3	80.7	3,378.8	3,280.4	98.42	34.331		
4,600.0	4,588.6	4,535.6	4,535.6	11.0	90.7	-171.54	-3,151.3	80.7	3,388.4	3,287.7	100.63	33.671		
4,700.0	4,688.1	4,635.1	4,635.1	11.3	92.7	-171.57	-3,151.3	80.7	3,398.0	3,295.1	102.85	33.039		
4,800.0	4,787.7	4,734.7	4,734.7	11.6	94.7	-171.59	-3,151.3	80.7	3,407.6	3,302.5	105.06	32.434		
4,900.0	4,887.2	4,834.2	4,834.2	11.8	96.7	-171.61	-3,151.3	80.7	3,417.2	3,309.9	107.28	31.853		
4,935.0	4,922.0	4,869.0	4,869.0	11.9	97.4	-171.62	-3,151.3	80.7	3,420.5	3,312.5	108.05	31.656		
5,000.0	4,986.8	4,933.8	4,933.8	12.1	98.7	-171.65	-3,151.3	80.7	3,426.1	3,316.4	109.67	31.240		
5,100.0	5,086.6	5,033.6	5,033.6	12.3	100.7	-171.68	-3,151.3	80.7	3,431.7	3,319.7	112.03	30.632		
5,200.0	5,186.6	5,133.6	5,133.6	12.5	102.7	-171.69	-3,151.3	80.7	3,433.9	3,319.6	114.26	30.052		
5,213.4	5,200.0	5,147.0	5,147.0	12.5	102.9	177.79	-3,151.3	80.7	3,433.9	3,319.4	114.55	29.976		
5,300.0	5,286.6	5,233.6	5,233.6	12.6	104.7	177.79	-3,151.3	80.7	3,433.9	3,317.5	116.45	29.487		
5,400.0	5,386.6	5,333.6	5,333.6	12.8	106.7	177.79	-3,151.3	80.7	3,433.9	3,315.2	118.67	28.936		
5,500.0	5,486.6	5,433.6	5,433.6	13.0	108.7	177.79	-3,151.3	80.7	3,433.9	3,313.0	120.89	28.404		
5,600.0	5,586.6	5,533.6	5,533.6	13.2	110.7	177.79	-3,151.3	80.7	3,433.9	3,310.8	123.11	27.892		
5,700.0	5,686.6	5,633.6	5,633.6	13.4	112.7	177.79	-3,151.3	80.7	3,433.9	3,308.6	125.34	27.398		
5,800.0	5,786.6	5,733.6	5,733.6	13.7	114.7	177.79	-3,151.3	80.7	3,433.9	3,306.4	127.56	26.921		
5,900.0	5,886.6	5,833.6	5,833.6	13.9	116.7	177.79	-3,151.3	80.7	3,433.9	3,304.1	129.78	26.460		
6,000.0	5,986.6	5,933.6	5,933.6	14.1	118.7	177.79	-3,151.3	80.7	3,433.9	3,301.9	132.00	26.015		
6,100.0	6,086.6	6,033.6	6,033.6	14.3	120.7	177.79	-3,151.3	80.7	3,433.9	3,299.7	134.22	25.584		

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Berg 1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 7300-UNKNOWN													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
6,200.0	6,186.6	6,133.6	6,133.6	14.5	122.7	177.79	-3,151.3	80.7	3,433.9	3,297.5	136.44	25.168		
6,300.0	6,286.6	6,233.6	6,233.6	14.7	124.7	177.79	-3,151.3	80.7	3,433.9	3,295.2	138.66	24.764		
6,400.0	6,386.6	6,333.6	6,333.6	14.9	126.7	177.79	-3,151.3	80.7	3,433.9	3,293.0	140.89	24.374		
6,505.6	6,492.2	6,439.2	6,439.2	15.1	128.8	177.79	-3,151.3	80.7	3,433.9	3,290.7	143.23	23.975		
6,550.0	6,536.6	6,483.6	6,483.6	15.2	129.7	-2.20	-3,151.3	80.7	3,432.6	3,288.7	143.94	23.848		
6,600.0	6,586.4	6,533.4	6,533.4	15.3	130.7	-2.21	-3,151.3	80.7	3,428.1	3,284.0	144.13	23.784		
6,650.0	6,635.7	6,582.7	6,582.7	15.3	131.7	-2.24	-3,151.3	80.7	3,420.3	3,276.6	143.70	23.802		
6,700.0	6,684.5	6,631.5	6,631.5	15.3	132.6	-2.28	-3,151.3	80.7	3,409.3	3,266.7	142.63	23.903		
6,750.0	6,732.4	6,679.4	6,679.4	15.3	133.6	-2.33	-3,151.3	80.7	3,395.2	3,254.3	140.91	24.094		
6,800.0	6,779.4	6,726.4	6,726.4	15.3	134.5	-2.40	-3,151.3	80.7	3,377.9	3,239.4	138.55	24.381		
6,850.0	6,825.0	6,772.0	6,772.0	15.4	135.4	-2.49	-3,151.3	80.7	3,357.6	3,222.1	135.54	24.772		
6,900.0	6,869.3	6,816.3	6,816.3	15.4	136.3	-2.59	-3,151.3	80.7	3,334.4	3,202.5	131.90	25.280		
6,950.0	6,911.9	6,858.9	6,858.9	15.4	137.2	-2.72	-3,151.3	80.7	3,308.3	3,180.7	127.64	25.920		
7,000.0	6,952.8	6,899.8	6,899.8	15.4	138.0	-2.87	-3,151.3	80.7	3,279.6	3,156.8	122.77	26.714		
7,050.0	6,991.7	6,938.7	6,938.7	15.4	138.8	-3.06	-3,151.3	80.7	3,248.1	3,130.8	117.31	27.688		
7,100.0	7,028.4	6,975.4	6,975.4	15.4	139.5	-3.28	-3,151.3	80.7	3,214.3	3,103.0	111.31	28.876		
7,150.0	7,062.8	7,009.8	7,009.8	15.5	140.2	-3.56	-3,151.3	80.7	3,178.1	3,073.3	104.80	30.325		
7,200.0	7,094.8	7,041.8	7,041.8	15.6	140.8	-3.90	-3,151.3	80.7	3,139.7	3,041.9	97.82	32.095		
7,250.0	7,124.3	7,071.3	7,071.3	15.7	141.4	-4.32	-3,151.3	80.7	3,099.3	3,008.9	90.45	34.265		
7,300.0	7,151.0	7,098.0	7,098.0	15.9	142.0	-4.85	-3,151.3	80.7	3,057.1	2,974.3	82.77	36.935		
7,350.0	7,174.9	7,121.9	7,121.9	16.1	142.4	-5.55	-3,151.3	80.7	3,013.2	2,938.3	74.91	40.224		
7,400.0	7,195.8	7,142.8	7,142.8	16.4	142.9	-6.49	-3,151.3	80.7	2,967.9	2,900.8	67.10	44.228		
7,450.0	7,213.8	7,160.8	7,160.8	16.7	143.2	-7.80	-3,151.3	80.7	2,921.3	2,861.5	59.80	48.847		
7,500.0	7,228.6	7,175.6	7,175.6	17.0	143.5	-9.76	-3,151.3	80.7	2,873.6	2,819.5	54.04	53.174		
7,550.0	7,240.3	7,187.3	7,187.3	17.4	143.7	-12.95	-3,151.3	80.7	2,825.0	2,772.7	52.32	53.997		
7,600.0	7,248.8	7,195.8	7,195.8	17.9	143.9	-18.96	-3,151.3	80.7	2,775.8	2,715.3	60.47	45.901		
7,625.6	7,251.9	7,198.9	7,198.9	18.1	144.0	-24.57	-3,151.3	80.7	2,750.4	2,678.1	72.32	38.029		
7,699.6	7,259.7	7,206.7	7,206.7	18.8	144.1	-25.16	-3,151.3	80.7	2,676.9	2,602.8	74.18	36.088		
7,800.0	7,265.8	7,212.8	7,212.8	19.9	144.3	-71.47	-3,151.3	80.7	2,576.9	2,421.0	155.87	16.532		
7,818.4	7,266.0	7,213.0	7,213.0	20.2	144.3	-88.83	-3,151.3	80.7	2,558.5	2,394.1	164.38	15.564		
7,900.0	7,266.0	7,213.0	7,213.0	21.2	144.3	-88.87	-3,151.3	80.7	2,477.0	2,311.6	165.39	14.976		
8,000.0	7,266.1	7,213.1	7,213.1	22.5	144.3	-88.92	-3,151.3	80.7	2,377.2	2,210.4	166.72	14.258		
8,100.0	7,266.2	7,213.2	7,213.2	23.9	144.3	-88.96	-3,151.3	80.7	2,277.3	2,109.2	168.13	13.545		
8,200.0	7,266.4	7,213.4	7,213.4	25.4	144.3	-89.01	-3,151.3	80.7	2,177.5	2,007.9	169.60	12.839		
8,300.0	7,266.5	7,213.5	7,213.5	26.9	144.3	-89.05	-3,151.3	80.7	2,077.7	1,906.5	171.14	12.140		
8,400.0	7,266.6	7,213.6	7,213.6	28.5	144.3	-89.10	-3,151.3	80.7	1,977.9	1,805.2	172.72	11.451		
8,500.0	7,266.7	7,213.7	7,213.7	30.1	144.3	-89.14	-3,151.3	80.7	1,878.1	1,703.8	174.34	10.773		
8,600.0	7,266.8	7,213.8	7,213.8	31.7	144.3	-89.19	-3,151.3	80.7	1,778.4	1,602.4	176.00	10.105		
8,700.0	7,266.9	7,213.9	7,213.9	33.4	144.3	-89.24	-3,151.3	80.7	1,678.7	1,501.0	177.68	9.448		
8,800.0	7,267.0	7,214.0	7,214.0	35.1	144.3	-89.28	-3,151.3	80.7	1,579.0	1,399.6	179.39	8.802		
8,900.0	7,267.1	7,214.1	7,214.1	36.9	144.3	-89.33	-3,151.3	80.7	1,479.4	1,298.2	181.12	8.168		
9,000.0	7,267.2	7,214.2	7,214.2	38.6	144.3	-89.37	-3,151.3	80.7	1,379.8	1,196.9	182.87	7.545		
9,100.0	7,267.3	7,214.3	7,214.3	40.4	144.3	-89.42	-3,151.3	80.7	1,280.3	1,095.6	184.63	6.934		
9,200.0	7,267.4	7,214.4	7,214.4	42.1	144.3	-89.46	-3,151.3	80.7	1,180.8	994.4	186.41	6.335		
9,300.0	7,267.5	7,214.5	7,214.5	43.9	144.3	-89.51	-3,151.3	80.7	1,081.5	893.3	188.21	5.747		
9,400.0	7,267.6	7,214.6	7,214.6	45.7	144.3	-89.56	-3,151.3	80.7	982.3	792.3	190.01	5.170		
9,500.0	7,267.7	7,214.7	7,214.7	47.5	144.3	-89.60	-3,151.3	80.7	883.3	691.5	191.82	4.605		
9,600.0	7,267.8	7,214.8	7,214.8	49.4	144.3	-89.65	-3,151.3	80.7	784.6	590.9	193.64	4.052		
9,700.0	7,267.9	7,214.9	7,214.9	51.2	144.3	-89.69	-3,151.3	80.7	686.2	490.7	195.47	3.511		
9,800.0	7,268.0	7,215.0	7,215.0	53.0	144.3	-89.74	-3,151.3	80.7	588.4	391.1	197.30	2.982		

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Berg 1 (Exist.) - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0 ft
Survey Program: 7300-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		
9,900.0	7,268.1	7,215.1	7,215.1	54.8	144.3	-89.78	-3,151.3	80.7	491.4	292.2	199.15	2.467		
10,000.0	7,268.2	7,215.2	7,215.2	56.7	144.3	-89.83	-3,151.3	80.7	395.9	194.9	200.99	1.970		
10,100.0	7,268.3	7,215.3	7,215.3	58.5	144.3	-89.87	-3,151.3	80.7	303.4	100.6	202.84	1.496 Level 3		
10,200.0	7,268.4	7,215.4	7,215.4	60.4	144.3	-89.92	-3,151.3	80.7	217.6	12.9	204.70	1.063 Level 2		
10,300.0	7,268.6	7,215.6	7,215.6	62.3	144.3	-89.97	-3,151.3	80.7	150.5	-56.1	206.56	0.728 Level 1		
10,373.5	7,268.6	7,215.6	7,215.6	63.6	144.3	-90.00	-3,151.3	80.7	131.3	-76.7	207.93	0.631 Level 1, CC, ES, SF		
10,400.0	7,268.7	7,215.7	7,215.7	64.1	144.3	-90.01	-3,151.3	80.7	133.9	-74.5	208.43	0.643 Level 1		
10,500.0	7,268.8	7,215.8	7,215.8	66.0	144.3	-90.06	-3,151.3	80.7	182.3	-28.0	210.29	0.867 Level 1		
10,600.0	7,268.9	7,215.9	7,215.9	67.9	144.3	-90.10	-3,151.3	80.7	261.8	49.6	212.16	1.234 Level 2		
10,700.0	7,269.0	7,216.0	7,216.0	69.7	144.3	-90.15	-3,151.3	80.7	351.9	137.8	214.04	1.644		
10,800.0	7,269.1	7,216.1	7,216.1	71.6	144.3	-90.19	-3,151.3	80.7	446.2	230.3	215.91	2.067		
10,900.0	7,269.2	7,216.2	7,216.2	73.5	144.3	-90.24	-3,151.3	80.7	542.6	324.8	217.79	2.491		
11,000.0	7,269.3	7,216.3	7,216.3	75.4	144.3	-90.29	-3,151.3	80.7	640.1	420.4	219.67	2.914		
11,100.0	7,269.4	7,216.4	7,216.4	77.2	144.3	-90.33	-3,151.3	80.7	738.2	516.7	221.56	3.332		
11,200.0	7,269.5	7,216.5	7,216.5	79.1	144.3	-90.38	-3,151.3	80.7	836.8	613.4	223.44	3.745		
11,300.0	7,269.6	7,216.6	7,216.6	81.0	144.3	-90.42	-3,151.3	80.7	935.7	710.4	225.33	4.153		
11,400.0	7,269.7	7,216.7	7,216.7	82.9	144.3	-90.47	-3,151.3	80.7	1,034.8	807.6	227.21	4.554		
11,500.0	7,269.8	7,216.8	7,216.8	84.8	144.3	-90.51	-3,151.3	80.7	1,134.1	905.0	229.10	4.950		
11,600.0	7,269.9	7,216.9	7,216.9	86.7	144.3	-90.56	-3,151.3	80.7	1,233.5	1,002.5	230.99	5.340		
11,681.4	7,270.0	7,217.0	7,217.0	88.2	144.3	-90.60	-3,151.3	80.7	1,314.4	1,081.9	232.53	5.653		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Berg 15-16G6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7300-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	-178.79	-4,200.6	-89.0	4,201.9					
100.0	100.0	47.0	47.0	0.1	0.9	-178.79	-4,200.6	-89.0	4,201.5	4,200.5	1.04	4,056.605		
200.0	200.0	147.0	147.0	0.3	2.9	-178.79	-4,200.6	-89.0	4,201.5	4,198.3	3.26	1,288.618		
300.0	300.0	247.0	247.0	0.5	4.9	-178.79	-4,200.6	-89.0	4,201.5	4,196.0	5.49	765.968		
400.0	400.0	347.0	347.0	0.8	6.9	-178.79	-4,200.6	-89.0	4,201.5	4,193.8	7.71	544.944		
500.0	500.0	447.0	447.0	1.0	8.9	-178.79	-4,200.6	-89.0	4,201.5	4,191.6	9.93	422.911		
600.0	600.0	547.0	547.0	1.2	10.9	-178.79	-4,200.6	-89.0	4,201.5	4,189.4	12.16	345.533		
700.0	700.0	647.0	647.0	1.4	12.9	-178.79	-4,200.6	-89.0	4,201.5	4,187.1	14.38	292.091		
800.0	800.0	747.0	747.0	1.7	14.9	-178.79	-4,200.6	-89.0	4,201.5	4,184.9	16.61	252.966		
900.0	900.0	847.0	847.0	1.9	16.9	-178.79	-4,200.6	-89.0	4,201.5	4,182.7	18.83	223.084		
1,000.0	1,000.0	947.0	947.0	2.1	18.9	-178.79	-4,200.6	-89.0	4,201.5	4,180.5	21.06	199.516		
1,100.0	1,100.0	1,047.0	1,047.0	2.3	20.9	-178.79	-4,200.6	-89.0	4,201.5	4,178.2	23.28	180.452		
1,200.0	1,200.0	1,147.0	1,147.0	2.6	22.9	-178.79	-4,200.6	-89.0	4,201.5	4,176.0	25.51	164.713		
1,300.0	1,300.0	1,247.0	1,247.0	2.8	24.9	-178.79	-4,200.6	-89.0	4,201.5	4,173.8	27.73	151.500		
1,400.0	1,400.0	1,347.0	1,347.0	3.0	26.9	-178.79	-4,200.6	-89.0	4,201.5	4,171.6	29.96	140.249		
1,500.0	1,500.0	1,447.0	1,447.0	3.2	28.9	-178.79	-4,200.6	-89.0	4,201.5	4,169.3	32.18	130.553		
1,600.0	1,600.0	1,547.0	1,547.0	3.5	30.9	-178.79	-4,200.6	-89.0	4,201.5	4,167.1	34.41	122.112		
1,700.0	1,700.0	1,647.0	1,647.0	3.7	32.9	-178.79	-4,200.6	-89.0	4,201.5	4,164.9	36.63	114.696		
1,800.0	1,800.0	1,747.0	1,747.0	3.9	34.9	-178.79	-4,200.6	-89.0	4,201.5	4,162.7	38.86	108.129		
1,900.0	1,900.0	1,847.0	1,847.0	4.1	36.9	-178.79	-4,200.6	-89.0	4,201.5	4,160.4	41.08	102.273		
2,000.0	2,000.0	1,947.0	1,947.0	4.4	38.9	-178.79	-4,200.6	-89.0	4,201.5	4,158.2	43.31	97.019		
2,100.0	2,100.0	2,047.0	2,047.0	4.6	40.9	-168.26	-4,200.6	-89.0	4,203.2	4,157.7	45.50	92.370		
2,200.0	2,199.8	2,146.8	2,146.8	4.8	42.9	-168.26	-4,200.6	-89.0	4,208.4	4,160.7	47.64	88.331		
2,278.4	2,278.0	2,225.0	2,225.0	5.0	44.5	-168.25	-4,200.6	-89.0	4,214.8	4,165.5	49.27	85.542		
2,300.0	2,299.5	2,246.5	2,246.5	5.0	44.9	-168.25	-4,200.6	-89.0	4,216.8	4,167.1	49.75	84.763		
2,400.0	2,399.0	2,346.0	2,346.0	5.3	46.9	-168.28	-4,200.6	-89.0	4,226.3	4,174.4	51.96	81.344		
2,500.0	2,498.5	2,445.5	2,445.5	5.5	48.9	-168.31	-4,200.6	-89.0	4,235.8	4,181.7	54.16	78.203		
2,600.0	2,598.0	2,545.0	2,545.0	5.7	50.9	-168.33	-4,200.6	-89.0	4,245.3	4,188.9	56.37	75.306		
2,700.0	2,697.6	2,644.6	2,644.6	6.0	52.9	-168.36	-4,200.6	-89.0	4,254.8	4,196.2	58.58	72.627		
2,800.0	2,797.1	2,744.1	2,744.1	6.2	54.9	-168.39	-4,200.6	-89.0	4,264.3	4,203.5	60.80	70.142		
2,900.0	2,896.6	2,843.6	2,843.6	6.5	56.9	-168.41	-4,200.6	-89.0	4,273.8	4,210.8	63.01	67.831		
3,000.0	2,996.2	2,943.2	2,943.2	6.7	58.9	-168.44	-4,200.6	-89.0	4,283.3	4,218.1	65.22	65.677		
3,100.0	3,095.7	3,042.7	3,042.7	7.0	60.9	-168.47	-4,200.6	-89.0	4,292.8	4,225.4	67.43	63.663		
3,200.0	3,195.2	3,142.2	3,142.2	7.3	62.8	-168.49	-4,200.6	-89.0	4,302.4	4,232.7	69.64	61.776		
3,300.0	3,294.7	3,241.7	3,241.7	7.5	64.8	-168.52	-4,200.6	-89.0	4,311.9	4,240.0	71.86	60.006		
3,400.0	3,394.3	3,341.3	3,341.3	7.8	66.8	-168.54	-4,200.6	-89.0	4,321.4	4,247.3	74.07	58.341		
3,500.0	3,493.8	3,440.8	3,440.8	8.0	68.8	-168.57	-4,200.6	-89.0	4,330.9	4,254.6	76.29	56.772		
3,600.0	3,593.3	3,540.3	3,540.3	8.3	70.8	-168.59	-4,200.6	-89.0	4,340.4	4,261.9	78.50	55.292		
3,700.0	3,692.9	3,639.9	3,639.9	8.6	72.8	-168.62	-4,200.6	-89.0	4,349.9	4,269.2	80.71	53.893		
3,800.0	3,792.4	3,739.4	3,739.4	8.8	74.8	-168.64	-4,200.6	-89.0	4,359.4	4,276.5	82.93	52.568		
3,900.0	3,891.9	3,838.9	3,838.9	9.1	76.8	-168.67	-4,200.6	-89.0	4,368.9	4,283.8	85.14	51.312		
4,000.0	3,991.4	3,938.4	3,938.4	9.4	78.8	-168.69	-4,200.6	-89.0	4,378.5	4,291.1	87.36	50.120		
4,100.0	4,091.0	4,038.0	4,038.0	9.6	80.8	-168.72	-4,200.6	-89.0	4,388.0	4,298.4	89.57	48.987		
4,200.0	4,190.5	4,137.5	4,137.5	9.9	82.8	-168.74	-4,200.6	-89.0	4,397.5	4,305.7	91.79	47.908		
4,300.0	4,290.0	4,237.0	4,237.0	10.2	84.7	-168.77	-4,200.6	-89.0	4,407.0	4,313.0	94.01	46.880		
4,400.0	4,389.6	4,336.6	4,336.6	10.5	86.7	-168.79	-4,200.6	-89.0	4,416.5	4,320.3	96.22	45.900		
4,500.0	4,489.1	4,436.1	4,436.1	10.7	88.7	-168.82	-4,200.6	-89.0	4,426.0	4,327.6	98.44	44.963		
4,600.0	4,588.6	4,535.6	4,535.6	11.0	90.7	-168.84	-4,200.6	-89.0	4,435.6	4,334.9	100.65	44.068		
4,700.0	4,688.1	4,635.1	4,635.1	11.3	92.7	-168.87	-4,200.6	-89.0	4,445.1	4,342.2	102.87	43.211		
4,800.0	4,787.7	4,734.7	4,734.7	11.6	94.7	-168.89	-4,200.6	-89.0	4,454.6	4,349.5	105.09	42.390		
4,900.0	4,887.2	4,834.2	4,834.2	11.8	96.7	-168.91	-4,200.6	-89.0	4,464.1	4,356.8	107.30	41.603		

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells - Berg 15-16G6 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program: 7300-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				
4,935.0	4,922.0	4,869.0	4,869.0	11.9	97.4	-168.92	-4,200.6	-89.0	4,467.5	4,359.4	108.08	41.335				
5,000.0	4,986.8	4,933.8	4,933.8	12.1	98.7	-168.96	-4,200.6	-89.0	4,472.9	4,363.2	109.69	40.777				
5,100.0	5,086.6	5,033.6	5,033.6	12.3	100.7	-168.99	-4,200.6	-89.0	4,478.5	4,366.5	112.05	39.970				
5,200.0	5,186.6	5,133.6	5,133.6	12.5	102.7	-169.01	-4,200.6	-89.0	4,480.7	4,366.4	114.28	39.208				
5,213.4	5,200.0	5,147.0	5,147.0	12.5	102.9	-179.53	-4,200.6	-89.0	4,480.7	4,366.2	114.57	39.109				
5,300.0	5,286.6	5,233.6	5,233.6	12.6	104.7	-179.53	-4,200.6	-89.0	4,480.7	4,364.3	116.47	38.471				
5,400.0	5,386.6	5,333.6	5,333.6	12.8	106.7	-179.53	-4,200.6	-89.0	4,480.7	4,362.0	118.69	37.751				
5,500.0	5,486.6	5,433.6	5,433.6	13.0	108.7	-179.53	-4,200.6	-89.0	4,480.7	4,359.8	120.91	37.058				
5,600.0	5,586.6	5,533.6	5,533.6	13.2	110.7	-179.53	-4,200.6	-89.0	4,480.7	4,357.6	123.13	36.390				
5,700.0	5,686.6	5,633.6	5,633.6	13.4	112.7	-179.53	-4,200.6	-89.0	4,480.7	4,355.4	125.35	35.745				
5,800.0	5,786.6	5,733.6	5,733.6	13.7	114.7	-179.53	-4,200.6	-89.0	4,480.7	4,353.2	127.57	35.123				
5,900.0	5,886.6	5,833.6	5,833.6	13.9	116.7	-179.53	-4,200.6	-89.0	4,480.7	4,350.9	129.79	34.522				
6,000.0	5,986.6	5,933.6	5,933.6	14.1	118.7	-179.53	-4,200.6	-89.0	4,480.7	4,348.7	132.01	33.941				
6,100.0	6,086.6	6,033.6	6,033.6	14.3	120.7	-179.53	-4,200.6	-89.0	4,480.7	4,346.5	134.24	33.380				
6,200.0	6,186.6	6,133.6	6,133.6	14.5	122.7	-179.53	-4,200.6	-89.0	4,480.7	4,344.3	136.46	32.836				
6,300.0	6,286.6	6,233.6	6,233.6	14.7	124.7	-179.53	-4,200.6	-89.0	4,480.7	4,342.1	138.68	32.310				
6,400.0	6,386.6	6,333.6	6,333.6	14.9	126.7	-179.53	-4,200.6	-89.0	4,480.7	4,339.8	140.90	31.801				
6,505.6	6,492.2	6,439.2	6,439.2	15.1	128.8	-179.53	-4,200.6	-89.0	4,480.7	4,337.5	143.25	31.280				
6,550.0	6,536.6	6,483.6	6,483.6	15.2	129.7	0.50	-4,200.6	-89.0	4,479.4	4,335.5	143.95	31.118				
6,600.0	6,586.4	6,533.4	6,533.4	15.3	130.7	0.50	-4,200.6	-89.0	4,474.9	4,330.8	144.15	31.044				
6,650.0	6,635.7	6,582.7	6,582.7	15.3	131.7	0.51	-4,200.6	-89.0	4,467.1	4,323.4	143.71	31.084				
6,700.0	6,684.5	6,631.5	6,631.5	15.3	132.6	0.52	-4,200.6	-89.0	4,456.1	4,313.5	142.64	31.241				
6,750.0	6,732.4	6,679.4	6,679.4	15.3	133.6	0.53	-4,200.6	-89.0	4,442.0	4,301.1	140.92	31.522				
6,800.0	6,779.4	6,726.4	6,726.4	15.3	134.5	0.54	-4,200.6	-89.0	4,424.7	4,286.2	138.55	31.937				
6,850.0	6,825.0	6,772.0	6,772.0	15.4	135.4	0.56	-4,200.6	-89.0	4,404.4	4,268.9	135.53	32.498				
6,900.0	6,869.3	6,816.3	6,816.3	15.4	136.3	0.58	-4,200.6	-89.0	4,381.2	4,249.3	131.88	33.222				
6,950.0	6,911.9	6,858.9	6,858.9	15.4	137.2	0.61	-4,200.6	-89.0	4,355.1	4,227.5	127.59	34.133				
7,000.0	6,952.8	6,899.8	6,899.8	15.4	138.0	0.64	-4,200.6	-89.0	4,326.3	4,203.6	122.70	35.259				
7,050.0	6,991.7	6,938.7	6,938.7	15.4	138.8	0.68	-4,200.6	-89.0	4,294.8	4,177.6	117.21	36.641				
7,100.0	7,028.4	6,975.4	6,975.4	15.4	139.5	0.73	-4,200.6	-89.0	4,260.9	4,149.8	111.17	38.330				
7,150.0	7,062.8	7,009.8	7,009.8	15.5	140.2	0.79	-4,200.6	-89.0	4,224.7	4,120.1	104.58	40.396				
7,200.0	7,094.8	7,041.8	7,041.8	15.6	140.8	0.86	-4,200.6	-89.0	4,186.3	4,088.8	97.50	42.934				
7,250.0	7,124.3	7,071.3	7,071.3	15.7	141.4	0.96	-4,200.6	-89.0	4,145.9	4,055.9	89.97	46.080				
7,300.0	7,151.0	7,098.0	7,098.0	15.9	142.0	1.07	-4,200.6	-89.0	4,103.6	4,021.6	82.03	50.025				
7,350.0	7,174.9	7,121.9	7,121.9	16.1	142.4	1.22	-4,200.6	-89.0	4,059.7	3,986.0	73.74	55.054				
7,400.0	7,195.8	7,142.8	7,142.8	16.4	142.9	1.42	-4,200.6	-89.0	4,014.3	3,949.2	65.16	61.609				
7,450.0	7,213.8	7,160.8	7,160.8	16.7	143.2	1.71	-4,200.6	-89.0	3,967.7	3,911.3	56.37	70.392				
7,500.0	7,228.6	7,175.6	7,175.6	17.0	143.5	2.13	-4,200.6	-89.0	3,919.9	3,872.5	47.48	82.556				
7,550.0	7,240.3	7,187.3	7,187.3	17.4	143.7	2.84	-4,200.6	-89.0	3,871.3	3,832.6	38.78	99.829				
7,600.0	7,248.8	7,195.8	7,195.8	17.9	143.9	4.22	-4,200.6	-89.0	3,822.1	3,790.7	31.33	121.994				
7,625.6	7,251.9	7,198.9	7,198.9	18.1	144.0	5.59	-4,200.6	-89.0	3,796.7	3,767.2	29.50	128.681				
7,699.6	7,259.7	7,206.7	7,206.7	18.8	144.1	5.70	-4,200.6	-89.0	3,723.1	3,693.1	29.99	124.136				
7,800.0	7,265.8	7,212.8	7,212.8	19.9	144.3	32.09	-4,200.6	-89.0	3,622.9	3,532.9	90.02	40.244				
7,818.4	7,266.0	7,213.0	7,213.0	20.2	144.3	84.45	-4,200.6	-89.0	3,604.5	3,440.8	163.68	22.021				
7,900.0	7,266.0	7,213.0	7,213.0	21.2	144.3	84.57	-4,200.6	-89.0	3,522.9	3,358.2	164.72	21.387				
8,000.0	7,266.1	7,213.1	7,213.1	22.5	144.3	84.73	-4,200.6	-89.0	3,422.9	3,256.8	166.08	20.610				
8,100.0	7,266.2	7,213.2	7,213.2	23.9	144.3	84.88	-4,200.6	-89.0	3,322.9	3,155.4	167.52	19.836				
8,200.0	7,266.4	7,213.4	7,213.4	25.4	144.3	85.03	-4,200.6	-89.0	3,222.9	3,053.9	169.03	19.067				
8,300.0	7,266.5	7,213.5	7,213.5	26.9	144.3	85.19	-4,200.6	-89.0	3,122.9	2,952.3	170.59	18.307				
8,400.0	7,266.6	7,213.6	7,213.6	28.5	144.3	85.34	-4,200.6	-89.0	3,022.9	2,850.7	172.20	17.555				

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Berg 15-16G6 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 7300-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
8,500.0	7,266.7	7,213.7	7,213.7	30.1	144.3	85.49	-4,200.6	-89.0	2,923.0	2,749.1	173.85	16.813	
8,600.0	7,266.8	7,213.8	7,213.8	31.7	144.3	85.65	-4,200.6	-89.0	2,823.0	2,647.4	175.54	16.082	
8,700.0	7,266.9	7,213.9	7,213.9	33.4	144.3	85.80	-4,200.6	-89.0	2,723.0	2,545.7	177.25	15.362	
8,800.0	7,267.0	7,214.0	7,214.0	35.1	144.3	85.96	-4,200.6	-89.0	2,623.0	2,444.0	178.98	14.655	
8,900.0	7,267.1	7,214.1	7,214.1	36.9	144.3	86.11	-4,200.6	-89.0	2,523.0	2,342.3	180.74	13.959	
9,000.0	7,267.2	7,214.2	7,214.2	38.6	144.3	86.26	-4,200.6	-89.0	2,423.0	2,240.5	182.52	13.276	
9,100.0	7,267.3	7,214.3	7,214.3	40.4	144.3	86.42	-4,200.6	-89.0	2,323.0	2,138.7	184.31	12.604	
9,200.0	7,267.4	7,214.4	7,214.4	42.1	144.3	86.57	-4,200.6	-89.0	2,223.0	2,036.9	186.11	11.945	
9,300.0	7,267.5	7,214.5	7,214.5	43.9	144.3	86.72	-4,200.6	-89.0	2,123.0	1,935.1	187.93	11.297	
9,400.0	7,267.6	7,214.6	7,214.6	45.7	144.3	86.88	-4,200.6	-89.0	2,023.1	1,833.3	189.75	10.662	
9,500.0	7,267.7	7,214.7	7,214.7	47.5	144.3	87.03	-4,200.6	-89.0	1,923.1	1,731.5	191.59	10.038	
9,600.0	7,267.8	7,214.8	7,214.8	49.4	144.3	87.19	-4,200.6	-89.0	1,823.1	1,629.7	193.43	9.425	
9,700.0	7,267.9	7,214.9	7,214.9	51.2	144.3	87.34	-4,200.6	-89.0	1,723.1	1,527.9	195.28	8.824	
9,800.0	7,268.0	7,215.0	7,215.0	53.0	144.3	87.49	-4,200.6	-89.0	1,623.2	1,426.0	197.13	8.234	
9,900.0	7,268.1	7,215.1	7,215.1	54.8	144.3	87.65	-4,200.6	-89.0	1,523.2	1,324.2	198.99	7.654	
10,000.0	7,268.2	7,215.2	7,215.2	56.7	144.3	87.80	-4,200.6	-89.0	1,423.2	1,222.4	200.86	7.086	
10,100.0	7,268.3	7,215.3	7,215.3	58.5	144.3	87.96	-4,200.6	-89.0	1,323.3	1,120.5	202.73	6.527	
10,200.0	7,268.4	7,215.4	7,215.4	60.4	144.3	88.11	-4,200.6	-89.0	1,223.3	1,018.7	204.60	5.979	
10,300.0	7,268.6	7,215.6	7,215.6	62.3	144.3	88.27	-4,200.6	-89.0	1,123.4	916.9	206.48	5.441	
10,400.0	7,268.7	7,215.7	7,215.7	64.1	144.3	88.42	-4,200.6	-89.0	1,023.4	815.1	208.35	4.912	
10,500.0	7,268.8	7,215.8	7,215.8	66.0	144.3	88.57	-4,200.6	-89.0	923.5	713.3	210.23	4.393	
10,600.0	7,268.9	7,215.9	7,215.9	67.9	144.3	88.73	-4,200.6	-89.0	823.6	611.5	212.12	3.883	
10,700.0	7,269.0	7,216.0	7,216.0	69.7	144.3	88.88	-4,200.6	-89.0	723.7	509.7	214.00	3.382	
10,800.0	7,269.1	7,216.1	7,216.1	71.6	144.3	89.04	-4,200.6	-89.0	623.9	408.0	215.89	2.890	
10,900.0	7,269.2	7,216.2	7,216.2	73.5	144.3	89.19	-4,200.6	-89.0	524.1	306.4	217.77	2.407	
11,000.0	7,269.3	7,216.3	7,216.3	75.4	144.3	89.35	-4,200.6	-89.0	424.5	204.8	219.66	1.932	
11,100.0	7,269.4	7,216.4	7,216.4	77.2	144.3	89.50	-4,200.6	-89.0	325.0	103.5	221.55	1.467	Level 3
11,200.0	7,269.5	7,216.5	7,216.5	79.1	144.3	89.66	-4,200.6	-89.0	226.1	2.6	223.44	1.012	Level 2
11,300.0	7,269.6	7,216.6	7,216.6	81.0	144.3	89.81	-4,200.6	-89.0	128.7	-96.6	225.33	0.571	Level 1
11,400.0	7,269.7	7,216.7	7,216.7	82.9	144.3	89.96	-4,200.6	-89.0	45.0	-182.2	227.22	0.198	Level 1
11,422.7	7,269.7	7,216.7	7,216.7	83.3	144.3	90.00	-4,200.6	-89.0	38.8	-188.8	227.65	0.171	Level 1, CC, ES, SF
11,500.0	7,269.8	7,216.8	7,216.8	84.8	144.3	90.12	-4,200.6	-89.0	86.5	-142.6	229.11	0.378	Level 1
11,600.0	7,269.9	7,216.9	7,216.9	86.7	144.3	90.27	-4,200.6	-89.0	181.5	-49.5	231.00	0.786	Level 1
11,681.4	7,270.0	7,217.0	7,217.0	88.2	144.3	90.40	-4,200.6	-89.0	261.6	29.0	232.54	1.125	Level 2

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Harvester 41-15 (Exist.) - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0ft
Survey Program: 7300-UNKNOWN														Offset Well Error: 0.0ft
Reference	Offset	Semi Major Axis			Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-154.69	-488.2	-230.9	540.4					
100.0	100.0	80.0	80.0	0.1	1.6	-154.69	-488.2	-230.9	540.0	538.3	1.70	318.456		
200.0	200.0	180.0	180.0	0.3	3.6	-154.69	-488.2	-230.9	540.0	536.1	3.92	137.741		
300.0	300.0	280.0	280.0	0.5	5.6	-154.69	-488.2	-230.9	540.0	533.9	6.15	87.875		
400.0	400.0	380.0	380.0	0.8	7.6	-154.69	-488.2	-230.9	540.0	531.6	8.37	64.518		
500.0	500.0	480.0	480.0	1.0	9.6	-154.69	-488.2	-230.9	540.0	529.4	10.59	50.970		
600.0	600.0	580.0	580.0	1.2	11.6	-154.69	-488.2	-230.9	540.0	527.2	12.82	42.124		
700.0	700.0	680.0	680.0	1.4	13.6	-154.69	-488.2	-230.9	540.0	525.0	15.04	35.895		
800.0	800.0	780.0	780.0	1.7	15.6	-154.69	-488.2	-230.9	540.0	522.7	17.27	31.271		
900.0	900.0	880.0	880.0	1.9	17.6	-154.69	-488.2	-230.9	540.0	520.5	19.49	27.702		
1,000.0	1,000.0	980.0	980.0	2.1	19.6	-154.69	-488.2	-230.9	540.0	518.3	21.72	24.864		
1,100.0	1,100.0	1,080.0	1,080.0	2.3	21.6	-154.69	-488.2	-230.9	540.0	516.1	23.94	22.554		
1,200.0	1,200.0	1,180.0	1,180.0	2.6	23.6	-154.69	-488.2	-230.9	540.0	513.8	26.17	20.636		
1,300.0	1,300.0	1,280.0	1,280.0	2.8	25.6	-154.69	-488.2	-230.9	540.0	511.6	28.39	19.019		
1,400.0	1,400.0	1,380.0	1,380.0	3.0	27.6	-154.69	-488.2	-230.9	540.0	509.4	30.62	17.637		
1,500.0	1,500.0	1,480.0	1,480.0	3.2	29.6	-154.69	-488.2	-230.9	540.0	507.2	32.84	16.443		
1,600.0	1,600.0	1,580.0	1,580.0	3.5	31.6	-154.69	-488.2	-230.9	540.0	504.9	35.07	15.399		
1,700.0	1,700.0	1,680.0	1,680.0	3.7	33.6	-154.69	-488.2	-230.9	540.0	502.7	37.29	14.481		
1,800.0	1,800.0	1,780.0	1,780.0	3.9	35.6	-154.69	-488.2	-230.9	540.0	500.5	39.52	13.665		
1,900.0	1,900.0	1,880.0	1,880.0	4.1	37.6	-154.69	-488.2	-230.9	540.0	498.3	41.74	12.937		
2,000.0	2,000.0	1,980.0	1,980.0	4.4	39.6	-154.69	-488.2	-230.9	540.0	496.0	43.97	12.282		
2,100.0	2,100.0	2,080.0	2,080.0	4.6	41.6	-144.26	-488.2	-230.9	541.4	495.3	46.17	11.726		
2,200.0	2,199.8	2,179.8	2,179.8	4.8	43.6	-144.53	-488.2	-230.9	545.7	497.4	48.34	11.290		
2,278.4	2,278.0	2,258.0	2,258.0	5.0	45.2	-144.87	-488.2	-230.9	551.0	501.0	50.00	11.021		
2,300.0	2,299.5	2,279.5	2,279.5	5.0	45.6	-144.99	-488.2	-230.9	552.7	502.3	50.47	10.951		
2,400.0	2,399.0	2,379.0	2,379.0	5.3	47.6	-145.56	-488.2	-230.9	560.7	508.0	52.68	10.643		
2,500.0	2,498.5	2,478.5	2,478.5	5.5	49.6	-146.11	-488.2	-230.9	568.8	513.9	54.90	10.361		
2,600.0	2,598.0	2,578.0	2,578.0	5.7	51.6	-146.65	-488.2	-230.9	576.9	519.8	57.11	10.101		
2,700.0	2,697.6	2,677.6	2,677.6	6.0	53.6	-147.17	-488.2	-230.9	585.0	525.7	59.33	9.861		
2,800.0	2,797.1	2,777.1	2,777.1	6.2	55.5	-147.68	-488.2	-230.9	593.2	531.6	61.54	9.639		
2,900.0	2,896.6	2,876.6	2,876.6	6.5	57.5	-148.17	-488.2	-230.9	601.4	537.7	63.76	9.433		
3,000.0	2,996.2	2,976.2	2,976.2	6.7	59.5	-148.65	-488.2	-230.9	609.7	543.7	65.98	9.241		
3,100.0	3,095.7	3,075.7	3,075.7	7.0	61.5	-149.12	-488.2	-230.9	618.0	549.8	68.19	9.063		
3,200.0	3,195.2	3,175.2	3,175.2	7.3	63.5	-149.57	-488.2	-230.9	626.4	556.0	70.41	8.896		
3,300.0	3,294.7	3,274.7	3,274.7	7.5	65.5	-150.02	-488.2	-230.9	634.8	562.1	72.63	8.739		
3,400.0	3,394.3	3,374.3	3,374.3	7.8	67.5	-150.45	-488.2	-230.9	643.2	568.3	74.85	8.593		
3,500.0	3,493.8	3,473.8	3,473.8	8.0	69.5	-150.87	-488.2	-230.9	651.7	574.6	77.07	8.455		
3,600.0	3,593.3	3,573.3	3,573.3	8.3	71.5	-151.28	-488.2	-230.9	660.2	580.9	79.29	8.326		
3,700.0	3,692.9	3,672.9	3,672.9	8.6	73.5	-151.68	-488.2	-230.9	668.7	587.2	81.51	8.204		
3,800.0	3,792.4	3,772.4	3,772.4	8.8	75.4	-152.06	-488.2	-230.9	677.3	593.5	83.73	8.089		
3,900.0	3,891.9	3,871.9	3,871.9	9.1	77.4	-152.44	-488.2	-230.9	685.9	599.9	85.95	7.980		
4,000.0	3,991.4	3,971.4	3,971.4	9.4	79.4	-152.81	-488.2	-230.9	694.5	606.3	88.17	7.877		
4,100.0	4,091.0	4,071.0	4,071.0	9.6	81.4	-153.17	-488.2	-230.9	703.1	612.8	90.39	7.779		
4,200.0	4,190.5	4,170.5	4,170.5	9.9	83.4	-153.53	-488.2	-230.9	711.8	619.2	92.61	7.686		
4,300.0	4,290.0	4,270.0	4,270.0	10.2	85.4	-153.87	-488.2	-230.9	720.5	625.7	94.83	7.598		
4,400.0	4,389.6	4,369.6	4,369.6	10.5	87.4	-154.21	-488.2	-230.9	729.3	632.2	97.05	7.514		
4,500.0	4,489.1	4,469.1	4,469.1	10.7	89.4	-154.53	-488.2	-230.9	738.0	638.7	99.27	7.435		
4,600.0	4,588.6	4,568.6	4,568.6	11.0	91.4	-154.85	-488.2	-230.9	746.8	645.3	101.49	7.359		
4,700.0	4,688.1	4,668.1	4,668.1	11.3	93.4	-155.17	-488.2	-230.9	755.6	651.9	103.71	7.286		
4,800.0	4,787.7	4,767.7	4,767.7	11.6	95.4	-155.47	-488.2	-230.9	764.4	658.5	105.93	7.217		
4,900.0	4,887.2	4,867.2	4,867.2	11.8	97.3	-155.77	-488.2	-230.9	773.3	665.1	108.14	7.150		

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells - Harvester 41-15 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program: 7300-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				
4,935.0	4,922.0	4,902.0	4,902.0	11.9	98.0	-155.87	-488.2	-230.9	776.4	667.4	108.92	7.128				
5,000.0	4,986.8	4,966.8	4,966.8	12.1	99.3	-156.08	-488.2	-230.9	781.5	670.9	110.51	7.071				
5,100.0	5,086.6	5,066.6	5,066.6	12.3	101.3	-156.29	-488.2	-230.9	786.7	673.8	112.84	6.971				
5,200.0	5,186.6	5,166.6	5,166.6	12.5	103.3	-156.37	-488.2	-230.9	788.7	673.6	115.07	6.854				
5,213.4	5,200.0	5,180.0	5,180.0	12.5	103.6	-166.89	-488.2	-230.9	788.7	673.4	115.36	6.837				
5,300.0	5,286.6	5,266.6	5,266.6	12.6	105.3	-166.89	-488.2	-230.9	788.7	671.5	117.25	6.727				
5,400.0	5,386.6	5,366.6	5,366.6	12.8	107.3	-166.89	-488.2	-230.9	788.7	669.3	119.47	6.602				
5,500.0	5,486.6	5,466.6	5,466.6	13.0	109.3	-166.89	-488.2	-230.9	788.7	667.0	121.69	6.481				
5,600.0	5,586.6	5,566.6	5,566.6	13.2	111.3	-166.89	-488.2	-230.9	788.7	664.8	123.91	6.365				
5,700.0	5,686.6	5,666.6	5,666.6	13.4	113.3	-166.89	-488.2	-230.9	788.7	662.6	126.13	6.253				
5,800.0	5,786.6	5,766.6	5,766.6	13.7	115.3	-166.89	-488.2	-230.9	788.7	660.4	128.35	6.145				
5,900.0	5,886.6	5,866.6	5,866.6	13.9	117.3	-166.89	-488.2	-230.9	788.7	658.2	130.56	6.041				
6,000.0	5,986.6	5,966.6	5,966.6	14.1	119.3	-166.89	-488.2	-230.9	788.7	655.9	132.78	5.940				
6,100.0	6,086.6	6,066.6	6,066.6	14.3	121.3	-166.89	-488.2	-230.9	788.7	653.7	135.00	5.842				
6,200.0	6,186.6	6,166.6	6,166.6	14.5	123.3	-166.89	-488.2	-230.9	788.7	651.5	137.22	5.748				
6,300.0	6,286.6	6,266.6	6,266.6	14.7	125.3	-166.89	-488.2	-230.9	788.7	649.3	139.44	5.656				
6,400.0	6,386.6	6,366.6	6,366.6	14.9	127.3	-166.89	-488.2	-230.9	788.7	647.1	141.66	5.568				
6,505.6	6,492.2	6,472.2	6,472.2	15.1	129.4	-166.89	-488.2	-230.9	788.7	644.7	144.01	5.477				
6,550.0	6,536.6	6,516.6	6,516.6	15.2	130.3	13.17	-488.2	-230.9	787.5	642.7	144.72	5.441				
6,600.0	6,586.4	6,566.4	6,566.4	15.3	131.3	13.32	-488.2	-230.9	783.1	638.1	144.97	5.402				
6,650.0	6,635.7	6,615.7	6,615.7	15.3	132.3	13.59	-488.2	-230.9	775.5	630.9	144.61	5.363				
6,700.0	6,684.5	6,664.5	6,664.5	15.3	133.3	13.98	-488.2	-230.9	764.8	621.1	143.66	5.323				
6,750.0	6,732.4	6,712.4	6,712.4	15.3	134.2	14.51	-488.2	-230.9	751.0	608.9	142.13	5.284				
6,800.0	6,779.4	6,759.4	6,759.4	15.3	135.2	15.19	-488.2	-230.9	734.3	594.2	140.04	5.243				
6,850.0	6,825.0	6,805.0	6,805.0	15.4	136.1	16.05	-488.2	-230.9	714.6	577.2	137.43	5.200				
6,900.0	6,869.3	6,849.3	6,849.3	15.4	137.0	17.13	-488.2	-230.9	692.1	557.8	134.36	5.151				
6,950.0	6,911.9	6,891.9	6,891.9	15.4	137.8	18.46	-488.2	-230.9	667.0	536.0	130.94	5.094				
7,000.0	6,952.8	6,932.8	6,932.8	15.4	138.7	20.10	-488.2	-230.9	639.3	511.9	127.32	5.021				
7,050.0	6,991.7	6,971.7	6,971.7	15.4	139.4	22.13	-488.2	-230.9	609.1	485.4	123.73	4.923				
7,100.0	7,028.4	7,008.4	7,008.4	15.4	140.2	24.64	-488.2	-230.9	576.8	456.3	120.51	4.787				
7,150.0	7,062.8	7,042.8	7,042.8	15.5	140.9	27.76	-488.2	-230.9	542.5	424.4	118.14	4.592				
7,200.0	7,094.8	7,074.8	7,074.8	15.6	141.5	31.61	-488.2	-230.9	506.4	389.1	117.27	4.318				
7,250.0	7,124.3	7,104.3	7,104.3	15.7	142.1	36.37	-488.2	-230.9	468.8	350.2	118.62	3.952				
7,300.0	7,151.0	7,131.0	7,131.0	15.9	142.6	42.15	-488.2	-230.9	430.1	307.3	122.76	3.503				
7,350.0	7,174.9	7,154.9	7,154.9	16.1	143.1	49.00	-488.2	-230.9	390.6	260.9	129.71	3.011				
7,400.0	7,195.8	7,175.8	7,175.8	16.4	143.5	56.75	-488.2	-230.9	350.9	212.3	138.54	2.533				
7,450.0	7,213.8	7,193.8	7,193.8	16.7	143.9	64.95	-488.2	-230.9	311.7	164.2	147.50	2.113				
7,500.0	7,228.6	7,208.6	7,208.6	17.0	144.2	72.90	-488.2	-230.9	274.0	119.2	154.77	1.770				
7,550.0	7,240.3	7,220.3	7,220.3	17.4	144.4	79.84	-488.2	-230.9	239.3	79.9	159.47	1.501				
7,600.0	7,248.8	7,228.8	7,228.8	17.9	144.6	85.19	-488.2	-230.9	209.9	48.0	161.89	1.297 Level 3				
7,625.6	7,251.9	7,231.9	7,231.9	18.1	144.6	87.19	-488.2	-230.9	197.9	35.3	162.54	1.217 Level 2				
7,699.6	7,259.7	7,239.7	7,239.7	18.8	144.8	89.65	-488.2	-230.9	179.5	15.9	163.62	1.097 Level 2				
7,710.1	7,260.7	7,240.7	7,240.7	18.9	144.8	90.00	-488.2	-230.9	179.2	15.4	163.76	1.094 Level 2, CC, ES, SF				
7,800.0	7,265.8	7,245.8	7,245.8	19.9	144.9	90.49	-488.2	-230.9	200.4	35.5	164.85	1.216 Level 2				
7,818.4	7,266.0	7,246.0	7,246.0	20.2	144.9	90.04	-488.2	-230.9	209.3	44.2	165.08	1.268 Level 3				
7,900.0	7,266.0	7,246.0	7,246.0	21.2	144.9	90.06	-488.2	-230.9	261.0	94.9	166.09	1.571				
8,000.0	7,266.1	7,246.1	7,246.1	22.5	144.9	90.10	-488.2	-230.9	340.7	173.3	167.41	2.035				
8,100.0	7,266.2	7,246.2	7,246.2	23.9	144.9	90.13	-488.2	-230.9	429.0	260.2	168.82	2.541				
8,200.0	7,266.4	7,246.4	7,246.4	25.4	144.9	90.16	-488.2	-230.9	521.5	351.2	170.29	3.062				
8,300.0	7,266.5	7,246.5	7,246.5	26.9	144.9	90.20	-488.2	-230.9	616.4	444.6	171.82	3.587				

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Harvester 41-15 (Exist.) - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0 ft
Survey Program: 7300-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		
8,400.0	7,266.6	7,246.6	7,246.6	28.5	144.9	90.23	-488.2	-230.9	712.7	539.3	173.40	4.110		
8,500.0	7,266.7	7,246.7	7,246.7	30.1	144.9	90.26	-488.2	-230.9	809.8	634.8	175.02	4.627		
8,600.0	7,266.8	7,246.8	7,246.8	31.7	144.9	90.30	-488.2	-230.9	907.6	731.0	176.67	5.137		
8,700.0	7,266.9	7,246.9	7,246.9	33.4	144.9	90.33	-488.2	-230.9	1,005.8	827.5	178.35	5.640		
8,800.0	7,267.0	7,247.0	7,247.0	35.1	144.9	90.36	-488.2	-230.9	1,104.4	924.3	180.06	6.133		
8,900.0	7,267.1	7,247.1	7,247.1	36.9	144.9	90.40	-488.2	-230.9	1,203.2	1,021.4	181.79	6.619		
9,000.0	7,267.2	7,247.2	7,247.2	38.6	144.9	90.43	-488.2	-230.9	1,302.1	1,118.6	183.54	7.095		
9,100.0	7,267.3	7,247.3	7,247.3	40.4	144.9	90.47	-488.2	-230.9	1,401.3	1,216.0	185.30	7.562		
9,200.0	7,267.4	7,247.4	7,247.4	42.1	144.9	90.50	-488.2	-230.9	1,500.5	1,313.4	187.08	8.021		
9,300.0	7,267.5	7,247.5	7,247.5	43.9	145.0	90.53	-488.2	-230.9	1,599.8	1,411.0	188.86	8.471		
9,400.0	7,267.6	7,247.6	7,247.6	45.7	145.0	90.57	-488.2	-230.9	1,699.2	1,508.6	190.66	8.912		
9,500.0	7,267.7	7,247.7	7,247.7	47.5	145.0	90.60	-488.2	-230.9	1,798.7	1,606.2	192.47	9.345		
9,600.0	7,267.8	7,247.8	7,247.8	49.4	145.0	90.63	-488.2	-230.9	1,898.2	1,703.9	194.29	9.770		
9,700.0	7,267.9	7,247.9	7,247.9	51.2	145.0	90.67	-488.2	-230.9	1,997.8	1,801.7	196.12	10.187		
9,800.0	7,268.0	7,248.0	7,248.0	53.0	145.0	90.70	-488.2	-230.9	2,097.4	1,899.5	197.95	10.596		
9,900.0	7,268.1	7,248.1	7,248.1	54.8	145.0	90.73	-488.2	-230.9	2,197.1	1,997.3	199.79	10.997		
10,000.0	7,268.2	7,248.2	7,248.2	56.7	145.0	90.77	-488.2	-230.9	2,296.8	2,095.1	201.64	11.391		
10,100.0	7,268.3	7,248.3	7,248.3	58.5	145.0	90.80	-488.2	-230.9	2,396.5	2,193.0	203.48	11.777		
10,200.0	7,268.4	7,248.4	7,248.4	60.4	145.0	90.83	-488.2	-230.9	2,496.2	2,290.9	205.34	12.156		
10,300.0	7,268.6	7,248.6	7,248.6	62.3	145.0	90.87	-488.2	-230.9	2,596.0	2,388.8	207.20	12.529		
10,400.0	7,268.7	7,248.7	7,248.7	64.1	145.0	90.90	-488.2	-230.9	2,695.7	2,486.7	209.06	12.895		
10,500.0	7,268.8	7,248.8	7,248.8	66.0	145.0	90.93	-488.2	-230.9	2,795.5	2,584.6	210.92	13.254		
10,600.0	7,268.9	7,248.9	7,248.9	67.9	145.0	90.97	-488.2	-230.9	2,895.3	2,682.5	212.79	13.606		
10,700.0	7,269.0	7,249.0	7,249.0	69.7	145.0	91.00	-488.2	-230.9	2,995.1	2,780.5	214.66	13.953		
10,800.0	7,269.1	7,249.1	7,249.1	71.6	145.0	91.03	-488.2	-230.9	3,095.0	2,878.4	216.54	14.293		
10,900.0	7,269.2	7,249.2	7,249.2	73.5	145.0	91.07	-488.2	-230.9	3,194.8	2,976.4	218.42	14.627		
11,000.0	7,269.3	7,249.3	7,249.3	75.4	145.0	91.10	-488.2	-230.9	3,294.6	3,074.3	220.29	14.956		
11,100.0	7,269.4	7,249.4	7,249.4	77.2	145.0	91.14	-488.2	-230.9	3,394.5	3,172.3	222.17	15.278		
11,200.0	7,269.5	7,249.5	7,249.5	79.1	145.0	91.17	-488.2	-230.9	3,494.4	3,270.3	224.06	15.596		
11,300.0	7,269.6	7,249.6	7,249.6	81.0	145.0	91.20	-488.2	-230.9	3,594.2	3,368.3	225.94	15.908		
11,400.0	7,269.7	7,249.7	7,249.7	82.9	145.0	91.24	-488.2	-230.9	3,694.1	3,466.3	227.83	16.214		
11,500.0	7,269.8	7,249.8	7,249.8	84.8	145.0	91.27	-488.2	-230.9	3,794.0	3,564.3	229.72	16.516		
11,600.0	7,269.9	7,249.9	7,249.9	86.7	145.0	91.30	-488.2	-230.9	3,893.9	3,662.3	231.60	16.813		
11,681.4	7,270.0	7,250.0	7,250.0	88.2	145.0	91.33	-488.2	-230.9	3,975.2	3,742.0	233.14	17.050		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells - Harvester 42-15 (exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 7300-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			
0.0	0.0	0.0	0.0	0.0	0.0	-170.10	-1,482.8	-258.7	1,505.7						
100.0	100.0	60.0	60.0	0.1	1.2	-170.10	-1,482.8	-258.7	1,505.2	1,503.9	1.30	1,161.642			
200.0	200.0	160.0	160.0	0.3	3.2	-170.10	-1,482.8	-258.7	1,505.2	1,501.6	3.52	427.545			
300.0	300.0	260.0	260.0	0.5	5.2	-170.10	-1,482.8	-258.7	1,505.2	1,499.4	5.75	261.985			
400.0	400.0	360.0	360.0	0.8	7.2	-170.10	-1,482.8	-258.7	1,505.2	1,497.2	7.97	188.854			
500.0	500.0	460.0	460.0	1.0	9.2	-170.10	-1,482.8	-258.7	1,505.2	1,495.0	10.19	147.641			
600.0	600.0	560.0	560.0	1.2	11.2	-170.10	-1,482.8	-258.7	1,505.2	1,492.7	12.42	121.193			
700.0	700.0	660.0	660.0	1.4	13.2	-170.10	-1,482.8	-258.7	1,505.2	1,490.5	14.64	102.782			
800.0	800.0	760.0	760.0	1.7	15.2	-170.10	-1,482.8	-258.7	1,505.2	1,488.3	16.87	89.226			
900.0	900.0	860.0	860.0	1.9	17.2	-170.10	-1,482.8	-258.7	1,505.2	1,486.1	19.09	78.830			
1,000.0	1,000.0	960.0	960.0	2.1	19.2	-170.10	-1,482.8	-258.7	1,505.2	1,483.8	21.32	70.603			
1,100.0	1,100.0	1,060.0	1,060.0	2.3	21.2	-170.10	-1,482.8	-258.7	1,505.2	1,481.6	23.54	63.932			
1,200.0	1,200.0	1,160.0	1,160.0	2.6	23.2	-170.10	-1,482.8	-258.7	1,505.2	1,479.4	25.77	58.412			
1,300.0	1,300.0	1,260.0	1,260.0	2.8	25.2	-170.10	-1,482.8	-258.7	1,505.2	1,477.2	27.99	53.770			
1,400.0	1,400.0	1,360.0	1,360.0	3.0	27.2	-170.10	-1,482.8	-258.7	1,505.2	1,474.9	30.22	49.811			
1,500.0	1,500.0	1,460.0	1,460.0	3.2	29.2	-170.10	-1,482.8	-258.7	1,505.2	1,472.7	32.44	46.395			
1,600.0	1,600.0	1,560.0	1,560.0	3.5	31.2	-170.10	-1,482.8	-258.7	1,505.2	1,470.5	34.67	43.418			
1,700.0	1,700.0	1,660.0	1,660.0	3.7	33.2	-170.10	-1,482.8	-258.7	1,505.2	1,468.3	36.89	40.799			
1,800.0	1,800.0	1,760.0	1,760.0	3.9	35.2	-170.10	-1,482.8	-258.7	1,505.2	1,466.1	39.12	38.479			
1,900.0	1,900.0	1,860.0	1,860.0	4.1	37.2	-170.10	-1,482.8	-258.7	1,505.2	1,463.8	41.34	36.408			
2,000.0	2,000.0	1,960.0	1,960.0	4.4	39.2	-170.10	-1,482.8	-258.7	1,505.2	1,461.6	43.57	34.549			
2,100.0	2,100.0	2,060.0	2,060.0	4.6	41.2	-159.59	-1,482.8	-258.7	1,506.8	1,461.0	45.77	32.924			
2,200.0	2,199.8	2,159.8	2,159.8	4.8	43.2	-159.63	-1,482.8	-258.7	1,511.7	1,463.8	47.91	31.552			
2,278.4	2,278.0	2,238.0	2,238.0	5.0	44.8	-159.67	-1,482.8	-258.7	1,517.8	1,468.3	49.55	30.633			
2,300.0	2,299.5	2,259.5	2,259.5	5.0	45.2	-159.70	-1,482.8	-258.7	1,519.8	1,469.8	50.03	30.380			
2,400.0	2,399.0	2,359.0	2,359.0	5.3	47.2	-159.83	-1,482.8	-258.7	1,528.9	1,476.7	52.23	29.270			
2,500.0	2,498.5	2,458.5	2,458.5	5.5	49.2	-159.95	-1,482.8	-258.7	1,538.0	1,483.6	54.45	28.249			
2,600.0	2,598.0	2,558.0	2,558.0	5.7	51.2	-160.07	-1,482.8	-258.7	1,547.2	1,490.5	56.66	27.308			
2,700.0	2,697.6	2,657.6	2,657.6	6.0	53.2	-160.20	-1,482.8	-258.7	1,556.3	1,497.4	58.87	26.437			
2,800.0	2,797.1	2,757.1	2,757.1	6.2	55.1	-160.32	-1,482.8	-258.7	1,565.4	1,504.3	61.08	25.628			
2,900.0	2,896.6	2,856.6	2,856.6	6.5	57.1	-160.44	-1,482.8	-258.7	1,574.6	1,511.3	63.30	24.877			
3,000.0	2,996.2	2,956.2	2,956.2	6.7	59.1	-160.55	-1,482.8	-258.7	1,583.7	1,518.2	65.51	24.175			
3,100.0	3,095.7	3,055.7	3,055.7	7.0	61.1	-160.67	-1,482.8	-258.7	1,592.9	1,525.1	67.72	23.520			
3,200.0	3,195.2	3,155.2	3,155.2	7.3	63.1	-160.78	-1,482.8	-258.7	1,602.0	1,532.1	69.94	22.906			
3,300.0	3,294.7	3,254.7	3,254.7	7.5	65.1	-160.90	-1,482.8	-258.7	1,611.2	1,539.1	72.16	22.330			
3,400.0	3,394.3	3,354.3	3,354.3	7.8	67.1	-161.01	-1,482.8	-258.7	1,620.4	1,546.0	74.37	21.788			
3,500.0	3,493.8	3,453.8	3,453.8	8.0	69.1	-161.12	-1,482.8	-258.7	1,629.6	1,553.0	76.59	21.277			
3,600.0	3,593.3	3,553.3	3,553.3	8.3	71.1	-161.23	-1,482.8	-258.7	1,638.8	1,559.9	78.80	20.795			
3,700.0	3,692.9	3,652.9	3,652.9	8.6	73.1	-161.34	-1,482.8	-258.7	1,647.9	1,566.9	81.02	20.340			
3,800.0	3,792.4	3,752.4	3,752.4	8.8	75.0	-161.45	-1,482.8	-258.7	1,657.1	1,573.9	83.24	19.908			
3,900.0	3,891.9	3,851.9	3,851.9	9.1	77.0	-161.55	-1,482.8	-258.7	1,666.4	1,580.9	85.46	19.499			
4,000.0	3,991.4	3,951.4	3,951.4	9.4	79.0	-161.66	-1,482.8	-258.7	1,675.6	1,587.9	87.67	19.111			
4,100.0	4,091.0	4,051.0	4,051.0	9.6	81.0	-161.76	-1,482.8	-258.7	1,684.8	1,594.9	89.89	18.742			
4,200.0	4,190.5	4,150.5	4,150.5	9.9	83.0	-161.86	-1,482.8	-258.7	1,694.0	1,601.9	92.11	18.391			
4,300.0	4,290.0	4,250.0	4,250.0	10.2	85.0	-161.96	-1,482.8	-258.7	1,703.2	1,608.9	94.33	18.056			
4,400.0	4,389.6	4,349.6	4,349.6	10.5	87.0	-162.07	-1,482.8	-258.7	1,712.5	1,615.9	96.55	17.737			
4,500.0	4,489.1	4,449.1	4,449.1	10.7	89.0	-162.16	-1,482.8	-258.7	1,721.7	1,622.9	98.76	17.432			
4,600.0	4,588.6	4,548.6	4,548.6	11.0	91.0	-162.26	-1,482.8	-258.7	1,730.9	1,630.0	100.98	17.141			
4,700.0	4,688.1	4,648.1	4,648.1	11.3	93.0	-162.36	-1,482.8	-258.7	1,740.2	1,637.0	103.20	16.862			
4,800.0	4,787.7	4,747.7	4,747.7	11.6	95.0	-162.46	-1,482.8	-258.7	1,749.4	1,644.0	105.42	16.595			
4,900.0	4,887.2	4,847.2	4,847.2	11.8	96.9	-162.55	-1,482.8	-258.7	1,758.7	1,651.1	107.64	16.339			

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Existing Wells - Harvester 42-15 (exist.) - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0 ft	
Survey Program: 7300-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			
4,935.0	4,922.0	4,882.0	4,882.0	11.9	97.6	-162.58	-1,482.8	-258.7	1,761.9	1,653.5	108.41	16.252			
5,000.0	4,986.8	4,946.8	4,946.8	12.1	98.9	-162.67	-1,482.8	-258.7	1,767.3	1,657.2	110.02	16.063			
5,100.0	5,086.6	5,046.6	5,046.6	12.3	100.9	-162.76	-1,482.8	-258.7	1,772.7	1,660.3	112.37	15.776			
5,200.0	5,186.6	5,146.6	5,146.6	12.5	102.9	-162.79	-1,482.8	-258.7	1,774.8	1,660.2	114.59	15.488			
5,213.4	5,200.0	5,160.0	5,160.0	12.5	103.2	-173.31	-1,482.8	-258.7	1,774.8	1,660.0	114.88	15.449			
5,300.0	5,286.6	5,246.6	5,246.6	12.6	104.9	-173.31	-1,482.8	-258.7	1,774.8	1,658.1	116.78	15.198			
5,400.0	5,386.6	5,346.6	5,346.6	12.8	106.9	-173.31	-1,482.8	-258.7	1,774.8	1,655.8	119.00	14.914			
5,500.0	5,486.6	5,446.6	5,446.6	13.0	108.9	-173.31	-1,482.8	-258.7	1,774.8	1,653.6	121.22	14.641			
5,600.0	5,586.6	5,546.6	5,546.6	13.2	110.9	-173.31	-1,482.8	-258.7	1,774.8	1,651.4	123.44	14.378			
5,700.0	5,686.6	5,646.6	5,646.6	13.4	112.9	-173.31	-1,482.8	-258.7	1,774.8	1,649.2	125.66	14.124			
5,800.0	5,786.6	5,746.6	5,746.6	13.7	114.9	-173.31	-1,482.8	-258.7	1,774.8	1,647.0	127.88	13.879			
5,900.0	5,886.6	5,846.6	5,846.6	13.9	116.9	-173.31	-1,482.8	-258.7	1,774.8	1,644.7	130.10	13.642			
6,000.0	5,986.6	5,946.6	5,946.6	14.1	118.9	-173.31	-1,482.8	-258.7	1,774.8	1,642.5	132.32	13.413			
6,100.0	6,086.6	6,046.6	6,046.6	14.3	120.9	-173.31	-1,482.8	-258.7	1,774.8	1,640.3	134.54	13.192			
6,200.0	6,186.6	6,146.6	6,146.6	14.5	122.9	-173.31	-1,482.8	-258.7	1,774.8	1,638.1	136.76	12.978			
6,300.0	6,286.6	6,246.6	6,246.6	14.7	124.9	-173.31	-1,482.8	-258.7	1,774.8	1,635.9	138.98	12.770			
6,400.0	6,386.6	6,346.6	6,346.6	14.9	126.9	-173.31	-1,482.8	-258.7	1,774.8	1,633.6	141.20	12.569			
6,505.6	6,492.2	6,452.2	6,452.2	15.1	129.0	-173.31	-1,482.8	-258.7	1,774.8	1,631.3	143.55	12.364			
6,550.0	6,536.6	6,496.6	6,496.6	15.2	129.9	6.73	-1,482.8	-258.7	1,773.6	1,629.3	144.26	12.294			
6,600.0	6,586.4	6,546.4	6,546.4	15.3	130.9	6.78	-1,482.8	-258.7	1,769.1	1,624.6	144.46	12.246			
6,650.0	6,635.7	6,595.7	6,595.7	15.3	131.9	6.88	-1,482.8	-258.7	1,761.3	1,617.3	144.05	12.227			
6,700.0	6,684.5	6,644.5	6,644.5	15.3	132.9	7.03	-1,482.8	-258.7	1,750.4	1,607.4	143.01	12.240			
6,750.0	6,732.4	6,692.4	6,692.4	15.3	133.8	7.22	-1,482.8	-258.7	1,736.4	1,595.0	141.33	12.286			
6,800.0	6,779.4	6,739.4	6,739.4	15.3	134.8	7.47	-1,482.8	-258.7	1,719.2	1,580.2	139.02	12.367			
6,850.0	6,825.0	6,785.0	6,785.0	15.4	135.7	7.78	-1,482.8	-258.7	1,699.1	1,563.0	136.09	12.484			
6,900.0	6,869.3	6,829.3	6,829.3	15.4	136.6	8.16	-1,482.8	-258.7	1,676.0	1,543.4	132.56	12.643			
6,950.0	6,911.9	6,871.9	6,871.9	15.4	137.4	8.62	-1,482.8	-258.7	1,650.1	1,521.7	128.46	12.846			
7,000.0	6,952.8	6,912.8	6,912.8	15.4	138.3	9.18	-1,482.8	-258.7	1,621.5	1,497.7	123.82	13.096			
7,050.0	6,991.7	6,951.7	6,951.7	15.4	139.0	9.86	-1,482.8	-258.7	1,590.4	1,471.7	118.69	13.399			
7,100.0	7,028.4	6,988.4	6,988.4	15.4	139.8	10.69	-1,482.8	-258.7	1,556.8	1,443.6	113.17	13.756			
7,150.0	7,062.8	7,022.8	7,022.8	15.5	140.5	11.70	-1,482.8	-258.7	1,520.8	1,413.5	107.37	14.164			
7,200.0	7,094.8	7,054.8	7,054.8	15.6	141.1	12.94	-1,482.8	-258.7	1,482.8	1,381.3	101.48	14.612			
7,250.0	7,124.3	7,084.3	7,084.3	15.7	141.7	14.50	-1,482.8	-258.7	1,442.8	1,347.0	95.77	15.065			
7,300.0	7,151.0	7,111.0	7,111.0	15.9	142.2	16.47	-1,482.8	-258.7	1,401.0	1,310.3	90.70	15.446			
7,350.0	7,174.9	7,134.9	7,134.9	16.1	142.7	19.00	-1,482.8	-258.7	1,357.6	1,270.6	86.98	15.608			
7,400.0	7,195.8	7,155.8	7,155.8	16.4	143.1	22.33	-1,482.8	-258.7	1,312.7	1,227.0	85.70	15.319			
7,450.0	7,213.8	7,173.8	7,173.8	16.7	143.5	26.81	-1,482.8	-258.7	1,266.7	1,178.3	88.34	14.338			
7,500.0	7,228.6	7,188.6	7,188.6	17.0	143.8	32.98	-1,482.8	-258.7	1,219.6	1,123.0	96.58	12.628			
7,550.0	7,240.3	7,200.3	7,200.3	17.4	144.0	41.64	-1,482.8	-258.7	1,171.8	1,060.2	111.52	10.507			
7,600.0	7,248.8	7,208.8	7,208.8	17.9	144.2	53.74	-1,482.8	-258.7	1,123.3	991.1	132.22	8.496			
7,625.6	7,251.9	7,211.9	7,211.9	18.1	144.2	61.47	-1,482.8	-258.7	1,098.4	954.9	143.42	7.658			
7,699.6	7,259.7	7,219.7	7,219.7	18.8	144.4	63.14	-1,482.8	-258.7	1,026.2	879.8	146.33	7.013			
7,800.0	7,265.8	7,225.8	7,225.8	19.9	144.5	85.73	-1,482.8	-258.7	928.3	764.3	164.03	5.659			
7,818.4	7,266.0	7,226.0	7,226.0	20.2	144.5	89.74	-1,482.8	-258.7	910.4	745.7	164.68	5.528			
7,900.0	7,266.0	7,226.0	7,226.0	21.2	144.5	89.77	-1,482.8	-258.7	831.1	665.4	165.69	5.016			
8,000.0	7,266.1	7,226.1	7,226.1	22.5	144.5	89.80	-1,482.8	-258.7	734.7	567.7	167.01	4.399			
8,100.0	7,266.2	7,226.2	7,226.2	23.9	144.5	89.83	-1,482.8	-258.7	639.4	471.0	168.42	3.796			
8,200.0	7,266.4	7,226.4	7,226.4	25.4	144.5	89.85	-1,482.8	-258.7	545.8	375.9	169.89	3.212			
8,300.0	7,266.5	7,226.5	7,226.5	26.9	144.5	89.88	-1,482.8	-258.7	454.9	283.4	171.42	2.653			
8,400.0	7,266.6	7,226.6	7,226.6	28.5	144.5	89.91	-1,482.8	-258.7	368.7	195.7	173.00	2.131			

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Existing Wells - Harvester 42-15 (exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program: 7300-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				
8,500.0	7,266.7	7,226.7	7,226.7	30.1	144.5	89.94	-1,482.8	-258.7	291.5	116.9	174.62	1.669	Level 3 Level 2 Level 2, CC, ES, SF Level 3			
8,600.0	7,266.8	7,226.8	7,226.8	31.7	144.5	89.97	-1,482.8	-258.7	232.4	56.1	176.28	1.318				
8,700.0	7,266.9	7,226.9	7,226.9	33.4	144.5	90.00	-1,482.8	-258.7	207.5	29.5	177.96	1.166				
8,704.8	7,266.9	7,226.9	7,226.9	33.5	144.5	90.00	-1,482.8	-258.7	207.4	29.4	178.04	1.165				
8,800.0	7,267.0	7,227.0	7,227.0	35.1	144.5	90.03	-1,482.8	-258.7	228.2	48.5	179.67	1.270				
8,900.0	7,267.1	7,227.1	7,227.1	36.9	144.5	90.06	-1,482.8	-258.7	284.8	103.4	181.39	1.570				
9,000.0	7,267.2	7,227.2	7,227.2	38.6	144.5	90.09	-1,482.8	-258.7	360.8	177.6	183.14	1.970				
9,100.0	7,267.3	7,227.3	7,227.3	40.4	144.5	90.11	-1,482.8	-258.7	446.3	261.4	184.90	2.414				
9,200.0	7,267.4	7,227.4	7,227.4	42.1	144.5	90.14	-1,482.8	-258.7	536.9	350.2	186.68	2.876				
9,300.0	7,267.5	7,227.5	7,227.5	43.9	144.6	90.17	-1,482.8	-258.7	630.3	441.8	188.47	3.344				
9,400.0	7,267.6	7,227.6	7,227.6	45.7	144.6	90.20	-1,482.8	-258.7	725.5	535.2	190.27	3.813				
9,500.0	7,267.7	7,227.7	7,227.7	47.5	144.6	90.23	-1,482.8	-258.7	821.8	629.7	192.08	4.278				
9,600.0	7,267.8	7,227.8	7,227.8	49.4	144.6	90.26	-1,482.8	-258.7	918.9	725.0	193.90	4.739				
9,700.0	7,267.9	7,227.9	7,227.9	51.2	144.6	90.29	-1,482.8	-258.7	1,016.6	820.8	195.73	5.194				
9,800.0	7,268.0	7,228.0	7,228.0	53.0	144.6	90.32	-1,482.8	-258.7	1,114.6	917.1	197.56	5.642				
9,900.0	7,268.1	7,228.1	7,228.1	54.8	144.6	90.35	-1,482.8	-258.7	1,213.0	1,013.6	199.40	6.083				
10,000.0	7,268.2	7,228.2	7,228.2	56.7	144.6	90.37	-1,482.8	-258.7	1,311.7	1,110.4	201.25	6.518				
10,100.0	7,268.3	7,228.3	7,228.3	58.5	144.6	90.40	-1,482.8	-258.7	1,410.5	1,207.4	203.10	6.945				
10,200.0	7,268.4	7,228.4	7,228.4	60.4	144.6	90.43	-1,482.8	-258.7	1,509.5	1,304.5	204.96	7.365				
10,300.0	7,268.6	7,228.6	7,228.6	62.3	144.6	90.46	-1,482.8	-258.7	1,608.6	1,401.8	206.81	7.778				
10,400.0	7,268.7	7,228.7	7,228.7	64.1	144.6	90.49	-1,482.8	-258.7	1,707.8	1,499.1	208.68	8.184				
10,500.0	7,268.8	7,228.8	7,228.8	66.0	144.6	90.52	-1,482.8	-258.7	1,807.1	1,596.6	210.54	8.583				
10,600.0	7,268.9	7,228.9	7,228.9	67.9	144.6	90.55	-1,482.8	-258.7	1,906.5	1,694.1	212.41	8.975				
10,700.0	7,269.0	7,229.0	7,229.0	69.7	144.6	90.58	-1,482.8	-258.7	2,005.9	1,791.6	214.29	9.361				
10,800.0	7,269.1	7,229.1	7,229.1	71.6	144.6	90.61	-1,482.8	-258.7	2,105.4	1,889.3	216.16	9.740				
10,900.0	7,269.2	7,229.2	7,229.2	73.5	144.6	90.64	-1,482.8	-258.7	2,205.0	1,986.9	218.04	10.113				
11,000.0	7,269.3	7,229.3	7,229.3	75.4	144.6	90.66	-1,482.8	-258.7	2,304.5	2,084.6	219.92	10.479				
11,100.0	7,269.4	7,229.4	7,229.4	77.2	144.6	90.69	-1,482.8	-258.7	2,404.1	2,182.3	221.80	10.839				
11,200.0	7,269.5	7,229.5	7,229.5	79.1	144.6	90.72	-1,482.8	-258.7	2,503.8	2,280.1	223.69	11.193				
11,300.0	7,269.6	7,229.6	7,229.6	81.0	144.6	90.75	-1,482.8	-258.7	2,603.5	2,377.9	225.57	11.542				
11,400.0	7,269.7	7,229.7	7,229.7	82.9	144.6	90.78	-1,482.8	-258.7	2,703.1	2,475.7	227.46	11.884				
11,500.0	7,269.8	7,229.8	7,229.8	84.8	144.6	90.81	-1,482.8	-258.7	2,802.9	2,573.5	229.35	12.221				
11,600.0	7,269.9	7,229.9	7,229.9	86.7	144.6	90.84	-1,482.8	-258.7	2,902.6	2,671.4	231.24	12.552				
11,681.4	7,270.0	7,230.0	7,230.0	88.2	144.6	90.86	-1,482.8	-258.7	2,983.8	2,751.0	232.78	12.818				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15R-323 - Wellbore #										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	-90.00	0.0	-30.6	30.6					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-30.6	30.6	30.4	0.19	160.137		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-30.6	30.6	30.0	0.64	47.760		
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-30.6	30.6	29.5	1.09	28.065		
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-30.6	30.6	29.1	1.54	19.871		
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-30.6	30.6	28.6	1.99	15.380		
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-30.6	30.6	28.2	2.44	12.545		
700.0	700.0	700.0	700.0	1.4	1.4	-90.00	0.0	-30.6	30.6	27.7	2.89	10.593		
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-30.6	30.6	27.3	3.34	9.166		
900.0	900.0	900.0	900.0	1.9	1.9	-90.00	0.0	-30.6	30.6	26.8	3.79	8.078		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.00	0.0	-30.6	30.6	26.4	4.24	7.221		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	-90.00	0.0	-30.6	30.6	25.9	4.69	6.528		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-90.00	0.0	-30.6	30.6	25.5	5.14	5.957 CC, ES		
1,300.0	1,300.0	1,299.1	1,299.1	2.8	2.8	-88.35	0.9	-32.0	32.1	26.5	5.58	5.749		
1,400.0	1,400.0	1,397.9	1,397.7	3.0	3.0	-84.20	3.7	-36.3	36.6	30.6	6.01	6.085		
1,500.0	1,500.0	1,496.3	1,495.7	3.2	3.2	-79.23	8.3	-43.5	44.5	38.0	6.45	6.888		
1,600.0	1,600.0	1,594.3	1,593.0	3.5	3.5	-74.69	14.6	-53.3	55.7	48.8	6.90	8.079		
1,700.0	1,700.0	1,693.4	1,691.3	3.7	3.7	-71.40	21.6	-64.3	68.4	61.0	7.34	9.311		
1,800.0	1,800.0	1,792.5	1,789.6	3.9	4.0	-69.15	28.6	-75.2	81.1	73.3	7.79	10.418		
1,900.0	1,900.0	1,891.7	1,887.9	4.1	4.3	-67.51	35.7	-86.1	94.0	85.7	8.23	11.414		
2,000.0	2,000.0	1,990.8	1,986.2	4.4	4.5	-66.26	42.7	-97.0	106.9	98.2	8.68	12.310		
2,100.0	2,100.0	2,090.1	2,084.6	4.6	4.8	-55.26	49.7	-108.0	118.9	109.7	9.13	13.020		
2,200.0	2,199.8	2,189.6	2,183.2	4.8	5.1	-56.14	56.7	-118.9	128.9	119.3	9.58	13.455		
2,278.4	2,278.0	2,267.6	2,260.6	5.0	5.4	-57.61	62.2	-127.5	135.4	125.5	9.93	13.635		
2,300.0	2,299.5	2,289.1	2,281.9	5.0	5.4	-58.13	63.8	-129.9	137.1	127.1	10.03	13.666		
2,400.0	2,399.0	2,388.6	2,380.6	5.3	5.7	-60.35	70.8	-140.9	144.9	134.4	10.50	13.806		
2,500.0	2,498.5	2,488.2	2,479.3	5.5	6.0	-62.34	77.9	-151.8	153.0	142.0	10.97	13.942		
2,600.0	2,598.0	2,587.7	2,577.9	5.7	6.3	-64.13	84.9	-162.8	161.2	149.8	11.46	14.071		
2,700.0	2,697.6	2,687.3	2,676.6	6.0	6.7	-65.74	91.9	-173.8	169.6	157.6	11.95	14.193		
2,800.0	2,797.1	2,786.8	2,775.3	6.2	7.0	-67.21	99.0	-184.7	178.1	165.6	12.44	14.307		
2,900.0	2,896.6	2,886.4	2,874.0	6.5	7.3	-68.54	106.0	-195.7	186.6	173.7	12.95	14.414		
3,000.0	2,996.2	2,985.9	2,972.7	6.7	7.6	-69.75	113.1	-206.7	195.3	181.9	13.46	14.513		
3,100.0	3,095.7	3,085.4	3,071.4	7.0	7.9	-70.86	120.1	-217.6	204.1	190.1	13.97	14.606		
3,200.0	3,195.2	3,185.0	3,170.0	7.3	8.2	-71.88	127.2	-228.6	212.9	198.4	14.49	14.692		
3,300.0	3,294.7	3,284.5	3,268.7	7.5	8.6	-72.81	134.2	-239.6	221.8	206.8	15.01	14.772		
3,400.0	3,394.3	3,384.1	3,367.4	7.8	8.9	-73.68	141.2	-250.5	230.7	215.2	15.54	14.847		
3,500.0	3,493.8	3,483.6	3,466.1	8.0	9.2	-74.48	148.3	-261.5	239.7	223.6	16.07	14.916		
3,600.0	3,593.3	3,583.1	3,564.8	8.3	9.5	-75.22	155.3	-272.5	248.7	232.1	16.60	14.981		
3,700.0	3,692.9	3,682.7	3,663.5	8.6	9.8	-75.91	162.4	-283.4	257.8	240.7	17.14	15.042		
3,800.0	3,792.4	3,782.2	3,762.2	8.8	10.2	-76.55	169.4	-294.4	266.9	249.2	17.68	15.099		
3,900.0	3,891.9	3,881.8	3,860.8	9.1	10.5	-77.15	176.5	-305.4	276.1	257.8	18.22	15.152		
4,000.0	3,991.4	3,981.3	3,959.5	9.4	10.8	-77.71	183.5	-316.3	285.2	266.5	18.76	15.201		
4,100.0	4,091.0	4,080.9	4,058.2	9.6	11.1	-78.24	190.5	-327.3	294.4	275.1	19.31	15.248		
4,200.0	4,190.5	4,180.4	4,156.9	9.9	11.5	-78.73	197.6	-338.3	303.6	283.8	19.86	15.292		
4,300.0	4,290.0	4,279.9	4,255.6	10.2	11.8	-79.20	204.6	-349.2	312.9	292.5	20.40	15.333		
4,400.0	4,389.6	4,379.5	4,354.3	10.5	12.1	-79.64	211.7	-360.2	322.1	301.2	20.95	15.372		
4,500.0	4,489.1	4,479.0	4,452.9	10.7	12.4	-80.05	218.7	-371.2	331.4	309.9	21.51	15.409		
4,600.0	4,588.6	4,578.6	4,551.6	11.0	12.8	-80.44	225.8	-382.1	340.7	318.6	22.06	15.444		
4,700.0	4,688.1	4,678.1	4,650.3	11.3	13.1	-80.82	232.8	-393.1	350.0	327.4	22.61	15.477		
4,800.0	4,787.7	4,777.6	4,749.0	11.6	13.4	-81.17	239.8	-404.1	359.3	336.1	23.17	15.508		
4,900.0	4,887.2	4,877.2	4,847.7	11.8	13.8	-81.50	246.9	-415.0	368.6	344.9	23.72	15.538		

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15R-323 - Wellbore #										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		
4,935.0	4,922.0	4,912.0	4,882.2	11.9	13.9	-81.61	249.4	-418.9	371.9	348.0	23.92	15.548		
5,000.0	4,986.8	4,976.7	4,946.4	12.1	14.1	-81.83	253.9	-426.0	378.1	353.8	24.26	15.586		
5,100.0	5,086.6	5,076.2	5,045.0	12.3	14.4	-81.74	261.0	-437.0	388.0	363.3	24.71	15.701		
5,200.0	5,186.6	5,177.9	5,145.9	12.5	14.7	-81.16	268.1	-448.1	398.4	373.3	25.12	15.861		
5,213.4	5,200.0	5,193.0	5,160.8	12.5	14.8	-91.57	269.1	-449.6	399.7	374.5	25.17	15.883		
5,300.0	5,286.6	5,290.6	5,257.9	12.6	15.0	-90.78	274.5	-458.0	407.0	381.5	25.48	15.972		
5,400.0	5,386.6	5,403.9	5,371.0	12.8	15.2	-90.22	278.4	-464.1	412.4	386.6	25.87	15.943		
5,500.0	5,486.6	5,517.7	5,484.7	13.0	15.4	-90.00	280.0	-466.6	414.6	388.3	26.26	15.787		
5,600.0	5,586.6	5,619.6	5,586.6	13.2	15.6	-90.00	280.0	-466.6	414.6	387.9	26.65	15.558		
5,700.0	5,686.6	5,719.6	5,686.6	13.4	15.7	-90.00	280.0	-466.6	414.6	387.5	27.05	15.328		
5,800.0	5,786.6	5,819.6	5,786.6	13.7	15.9	-90.00	280.0	-466.6	414.6	387.1	27.45	15.104		
5,900.0	5,886.6	5,919.6	5,886.6	13.9	16.1	-90.00	280.0	-466.6	414.6	386.7	27.85	14.885		
6,000.0	5,986.6	6,019.6	5,986.6	14.1	16.3	-90.00	280.0	-466.6	414.6	386.3	28.26	14.672		
6,100.0	6,086.6	6,119.6	6,086.6	14.3	16.4	-90.00	280.0	-466.6	414.6	385.9	28.66	14.465		
6,200.0	6,186.6	6,219.6	6,186.6	14.5	16.6	-90.00	280.0	-466.6	414.6	385.5	29.07	14.262		
6,300.0	6,286.6	6,319.6	6,286.6	14.7	16.8	-90.00	280.0	-466.6	414.6	385.1	29.48	14.064		
6,400.0	6,386.6	6,419.6	6,386.6	14.9	17.0	-90.00	280.0	-466.6	414.6	384.7	29.89	13.872		
6,447.9	6,434.5	6,467.4	6,434.5	15.0	17.1	-90.02	279.8	-466.6	414.6	384.5	30.08	13.783		
6,505.6	6,492.2	6,525.0	6,491.9	15.1	17.1	-90.49	276.4	-466.6	414.6	384.3	30.31	13.681		
6,550.0	6,536.6	6,568.8	6,535.4	15.2	17.2	88.94	270.9	-466.6	414.7	384.2	30.45	13.616		
6,600.0	6,586.4	6,618.0	6,583.6	15.3	17.2	88.28	261.8	-466.6	414.8	384.2	30.57	13.566		
6,650.0	6,635.7	6,666.8	6,630.9	15.3	17.2	87.64	249.7	-466.6	414.9	384.3	30.66	13.532		
6,700.0	6,684.5	6,715.3	6,677.1	15.3	17.2	87.00	234.7	-466.6	415.2	384.4	30.72	13.513		
6,750.0	6,732.4	6,763.6	6,722.0	15.3	17.2	86.38	216.9	-466.6	415.4	384.7	30.76	13.507		
6,800.0	6,779.4	6,811.6	6,765.4	15.3	17.2	85.78	196.4	-466.6	415.7	385.0	30.77	13.510		
6,850.0	6,825.0	6,859.4	6,807.2	15.4	17.2	85.19	173.4	-466.5	416.1	385.3	30.78	13.519		
6,900.0	6,869.3	6,906.9	6,847.3	15.4	17.2	84.63	147.9	-466.5	416.4	385.7	30.78	13.531		
6,950.0	6,911.9	6,954.2	6,885.6	15.4	17.2	84.09	120.2	-466.5	416.8	386.0	30.78	13.542		
7,000.0	6,952.8	7,000.0	6,921.0	15.4	17.2	83.59	91.1	-466.5	417.2	386.4	30.80	13.548		
7,050.0	6,991.7	7,048.2	6,956.2	15.4	17.2	83.10	58.2	-466.5	417.6	386.8	30.84	13.542		
7,100.0	7,028.4	7,094.9	6,988.3	15.4	17.2	82.64	24.3	-466.5	418.0	387.1	30.92	13.520		
7,150.0	7,062.8	7,141.5	7,018.2	15.5	17.2	82.21	-11.4	-466.5	418.5	387.4	31.05	13.479		
7,200.0	7,094.8	7,187.8	7,045.8	15.6	17.2	81.82	-48.6	-466.5	418.9	387.6	31.22	13.415		
7,250.0	7,124.3	7,234.1	7,071.0	15.7	17.3	81.46	-87.4	-466.4	419.2	387.8	31.48	13.318		
7,300.0	7,151.0	7,280.2	7,093.7	15.9	17.3	81.13	-127.5	-466.4	419.6	387.8	31.80	13.196		
7,350.0	7,174.9	7,326.2	7,113.9	16.1	17.4	80.84	-168.8	-466.4	419.9	387.7	32.20	13.042		
7,400.0	7,195.8	7,372.0	7,131.6	16.4	17.6	80.59	-211.2	-466.4	420.2	387.6	32.69	12.857		
7,450.0	7,213.8	7,417.9	7,146.6	16.7	17.8	80.37	-254.4	-466.4	420.5	387.3	33.26	12.643		
7,500.0	7,228.6	7,463.6	7,159.1	17.0	18.1	80.19	-298.4	-466.3	420.7	386.8	33.92	12.403		
7,550.0	7,240.3	7,509.2	7,168.8	17.4	18.4	80.05	-343.0	-466.3	420.9	386.2	34.67	12.139		
7,600.0	7,248.8	7,554.9	7,175.9	17.9	18.7	79.94	-388.1	-466.3	421.0	385.5	35.51	11.858		
7,625.6	7,251.9	7,578.2	7,178.5	18.1	19.0	79.91	-411.3	-466.3	421.1	385.1	35.97	11.708		
7,699.6	7,259.7	7,645.5	7,181.9	18.8	19.6	79.43	-478.4	-466.3	421.8	384.5	37.32	11.302		
7,800.0	7,265.8	7,744.8	7,181.6	19.9	20.7	78.52	-577.7	-466.2	423.0	383.6	39.49	10.712		
7,818.4	7,266.0	7,763.1	7,181.5	20.2	20.9	78.48	-596.1	-466.2	423.1	383.2	39.92	10.597		
7,900.0	7,266.0	7,844.7	7,181.2	21.2	21.9	78.43	-677.7	-466.2	423.2	381.3	41.90	10.101		
8,000.0	7,266.1	7,944.7	7,180.8	22.5	23.1	78.36	-777.7	-466.1	423.3	378.8	44.48	9.515		
8,100.0	7,266.2	8,044.7	7,180.4	23.9	24.5	78.30	-877.7	-466.1	423.4	376.1	47.23	8.964		
8,200.0	7,266.4	8,144.7	7,180.0	25.4	26.0	78.23	-977.7	-466.1	423.5	373.4	50.11	8.451		
8,300.0	7,266.5	8,244.7	7,179.6	26.9	27.4	78.16	-1,077.7	-466.0	423.6	370.5	53.10	7.977		

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15R-323 - Wellbore #										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	7,266.6	8,344.7	7,179.2	28.5	29.0	78.09	-1,177.7	-466.0	423.7	367.5	56.18	7.542		
8,500.0	7,266.7	8,444.7	7,178.8	30.1	30.6	78.03	-1,277.7	-465.9	423.8	364.4	59.34	7.142		
8,600.0	7,266.8	8,544.7	7,178.4	31.7	32.2	77.96	-1,377.7	-465.9	423.9	361.3	62.56	6.775		
8,700.0	7,266.9	8,644.7	7,178.0	33.4	33.9	77.89	-1,477.7	-465.8	424.0	358.1	65.85	6.439		
8,800.0	7,267.0	8,744.7	7,177.6	35.1	35.5	77.83	-1,577.7	-465.8	424.1	354.9	69.18	6.131		
8,900.0	7,267.1	8,844.7	7,177.2	36.9	37.2	77.76	-1,677.7	-465.8	424.2	351.6	72.55	5.847		
9,000.0	7,267.2	8,944.7	7,176.7	38.6	39.0	77.69	-1,777.7	-465.7	424.3	348.3	75.95	5.586		
9,100.0	7,267.3	9,044.7	7,176.3	40.4	40.7	77.63	-1,877.7	-465.7	424.4	345.0	79.39	5.346		
9,200.0	7,267.4	9,144.7	7,175.9	42.1	42.5	77.56	-1,977.7	-465.6	424.5	341.7	82.85	5.124		
9,300.0	7,267.5	9,244.7	7,175.5	43.9	44.2	77.49	-2,077.7	-465.6	424.6	338.3	86.33	4.918		
9,400.0	7,267.6	9,344.7	7,175.1	45.7	46.0	77.43	-2,177.7	-465.5	424.7	334.9	89.84	4.728		
9,500.0	7,267.7	9,444.7	7,174.7	47.5	47.8	77.36	-2,277.7	-465.5	424.8	331.5	93.36	4.550		
9,600.0	7,267.8	9,544.7	7,174.3	49.4	49.6	77.29	-2,377.7	-465.5	424.9	328.0	96.90	4.385		
9,700.0	7,267.9	9,644.7	7,173.9	51.2	51.4	77.23	-2,477.7	-465.4	425.1	324.6	100.45	4.232		
9,800.0	7,268.0	9,744.7	7,173.5	53.0	53.3	77.16	-2,577.7	-465.4	425.2	321.1	104.01	4.088		
9,900.0	7,268.1	9,844.7	7,173.1	54.8	55.1	77.09	-2,677.7	-465.3	425.3	317.7	107.59	3.953		
10,000.0	7,268.2	9,944.7	7,172.7	56.7	56.9	77.03	-2,777.7	-465.3	425.4	314.2	111.17	3.826		
10,100.0	7,268.3	10,044.7	7,172.3	58.5	58.8	76.96	-2,877.7	-465.2	425.5	310.7	114.76	3.708		
10,200.0	7,268.4	10,144.7	7,171.9	60.4	60.6	76.89	-2,977.7	-465.2	425.6	307.2	118.36	3.596		
10,300.0	7,268.6	10,244.7	7,171.5	62.3	62.4	76.83	-3,077.7	-465.2	425.7	303.8	121.97	3.490		
10,400.0	7,268.7	10,344.7	7,171.1	64.1	64.3	76.76	-3,177.7	-465.1	425.8	300.3	125.58	3.391		
10,500.0	7,268.8	10,444.7	7,170.7	66.0	66.2	76.69	-3,277.7	-465.1	425.9	296.8	129.19	3.297		
10,600.0	7,268.9	10,544.7	7,170.3	67.9	68.0	76.63	-3,377.7	-465.0	426.1	293.2	132.81	3.208		
10,700.0	7,269.0	10,644.7	7,169.9	69.7	69.9	76.56	-3,477.7	-465.0	426.2	289.7	136.44	3.124		
10,800.0	7,269.1	10,744.7	7,169.5	71.6	71.7	76.49	-3,577.6	-464.9	426.3	286.2	140.07	3.043		
10,900.0	7,269.2	10,844.7	7,169.1	73.5	73.6	76.43	-3,677.6	-464.9	426.4	282.7	143.70	2.967		
11,000.0	7,269.3	10,944.7	7,168.7	75.4	75.5	76.36	-3,777.6	-464.8	426.5	279.2	147.33	2.895		
11,100.0	7,269.4	11,044.7	7,168.3	77.2	77.4	76.30	-3,877.6	-464.8	426.6	275.7	150.97	2.826		
11,200.0	7,269.5	11,144.7	7,167.9	79.1	79.2	76.23	-3,977.6	-464.8	426.8	272.2	154.61	2.760		
11,300.0	7,269.6	11,244.7	7,167.5	81.0	81.1	76.16	-4,077.6	-464.7	426.9	268.6	158.25	2.698		
11,400.0	7,269.7	11,344.7	7,167.1	82.9	83.0	76.10	-4,177.6	-464.7	427.0	265.1	161.89	2.638		
11,500.0	7,269.8	11,444.7	7,166.7	84.8	84.9	76.03	-4,277.6	-464.6	427.1	261.6	165.53	2.580		
11,600.0	7,269.9	11,544.7	7,166.3	86.7	86.8	75.97	-4,377.6	-464.6	427.2	258.1	169.18	2.525		
11,636.8	7,270.0	11,581.5	7,166.2	87.4	87.5	75.94	-4,414.5	-464.6	427.3	256.8	170.52	2.506		
11,681.4	7,270.0	11,623.5	7,166.0	88.2	88.3	75.91	-4,456.5	-464.6	427.3	255.2	172.10	2.483 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design											Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15R-403 - Wellbore #			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	-90.00	0.0	-61.2	61.2							
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-61.2	61.2	61.0	0.19	320.275				
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-61.2	61.2	60.5	0.64	95.521				
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-61.2	61.2	60.1	1.09	56.131				
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-61.2	61.2	59.6	1.54	39.742				
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-61.2	61.2	59.2	1.99	30.761				
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-61.2	61.2	58.8	2.44	25.091				
700.0	700.0	700.0	700.0	1.4	1.4	-90.00	0.0	-61.2	61.2	58.3	2.89	21.186				
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-61.2	61.2	57.9	3.34	18.332 CC, ES				
900.0	900.0	898.0	898.0	1.9	1.9	-89.46	0.6	-62.8	62.8	59.0	3.77	16.635				
1,000.0	1,000.0	995.8	995.6	2.1	2.1	-87.98	2.4	-67.4	67.6	63.4	4.21	16.068				
1,100.0	1,100.0	1,093.1	1,092.6	2.3	2.3	-85.95	5.3	-75.2	75.7	71.1	4.65	16.301				
1,200.0	1,200.0	1,189.7	1,188.5	2.6	2.6	-83.75	9.4	-85.9	87.2	82.1	5.09	17.138				
1,300.0	1,300.0	1,287.0	1,284.7	2.8	2.8	-81.67	14.6	-99.5	101.7	96.1	5.54	18.369				
1,400.0	1,400.0	1,385.8	1,382.3	3.0	3.1	-80.04	20.0	-113.7	116.8	110.8	5.98	19.520				
1,500.0	1,500.0	1,484.6	1,480.0	3.2	3.4	-78.78	25.4	-127.9	131.9	125.5	6.43	20.512				
1,600.0	1,600.0	1,583.4	1,577.6	3.5	3.8	-77.78	30.8	-142.1	147.1	140.2	6.88	21.372				
1,700.0	1,700.0	1,682.2	1,675.2	3.7	4.1	-76.97	36.2	-156.3	162.3	155.0	7.34	22.122				
1,800.0	1,800.0	1,781.0	1,772.9	3.9	4.4	-76.29	41.6	-170.5	177.6	169.8	7.80	22.781				
1,900.0	1,900.0	1,879.9	1,870.5	4.1	4.8	-75.73	47.0	-184.7	192.9	184.6	8.26	23.364				
2,000.0	2,000.0	1,978.7	1,968.1	4.4	5.1	-75.24	52.4	-198.9	208.2	199.5	8.72	23.882				
2,100.0	2,100.0	2,077.6	2,065.9	4.6	5.4	-64.45	57.8	-213.2	222.7	213.6	9.17	24.300				
2,200.0	2,199.8	2,176.7	2,163.8	4.8	5.8	-64.97	63.2	-227.4	235.8	226.2	9.63	24.495				
2,278.4	2,278.0	2,254.4	2,240.6	5.0	6.1	-65.87	67.5	-238.6	245.1	235.1	9.99	24.530				
2,300.0	2,299.5	2,275.8	2,261.7	5.0	6.1	-66.21	68.7	-241.7	247.6	237.5	10.09	24.526				
2,400.0	2,399.0	2,374.9	2,359.7	5.3	6.5	-67.71	74.1	-255.9	259.1	248.5	10.57	24.508				
2,500.0	2,498.5	2,474.0	2,457.6	5.5	6.8	-69.08	79.5	-270.2	270.7	259.7	11.06	24.488				
2,600.0	2,598.0	2,573.2	2,555.6	5.7	7.2	-70.33	84.9	-284.4	282.5	271.0	11.55	24.467				
2,700.0	2,697.6	2,672.3	2,653.5	6.0	7.6	-71.49	90.4	-298.7	294.4	282.4	12.04	24.444				
2,800.0	2,797.1	2,771.4	2,751.4	6.2	7.9	-72.55	95.8	-313.0	306.4	293.9	12.55	24.420				
2,900.0	2,896.6	2,870.5	2,849.4	6.5	8.3	-73.54	101.2	-327.2	318.6	305.5	13.06	24.394				
3,000.0	2,996.2	2,969.6	2,947.3	6.7	8.6	-74.45	106.6	-341.5	330.8	317.2	13.57	24.368				
3,100.0	3,095.7	3,068.8	3,045.3	7.0	9.0	-75.30	112.0	-355.7	343.0	328.9	14.09	24.341				
3,200.0	3,195.2	3,167.9	3,143.2	7.3	9.3	-76.09	117.5	-370.0	355.4	340.8	14.62	24.313				
3,300.0	3,294.7	3,267.0	3,241.1	7.5	9.7	-76.82	122.9	-384.2	367.8	352.7	15.14	24.285				
3,400.0	3,394.3	3,366.1	3,339.1	7.8	10.1	-77.51	128.3	-398.5	380.3	364.6	15.68	24.258				
3,500.0	3,493.8	3,465.2	3,437.0	8.0	10.4	-78.16	133.7	-412.7	392.8	376.6	16.21	24.230				
3,600.0	3,593.3	3,564.4	3,535.0	8.3	10.8	-78.76	139.2	-427.0	405.3	388.6	16.75	24.203				
3,700.0	3,692.9	3,663.5	3,632.9	8.6	11.1	-79.33	144.6	-441.3	417.9	400.7	17.29	24.176				
3,800.0	3,792.4	3,762.6	3,730.8	8.8	11.5	-79.87	150.0	-455.5	430.6	412.8	17.83	24.150				
3,900.0	3,891.9	3,861.7	3,828.8	9.1	11.9	-80.37	155.4	-469.8	443.3	424.9	18.37	24.124				
4,000.0	3,991.4	3,960.8	3,926.7	9.4	12.2	-80.85	160.9	-484.0	456.0	437.1	18.92	24.099				
4,100.0	4,091.0	4,060.0	4,024.6	9.6	12.6	-81.30	166.3	-498.3	468.7	449.2	19.47	24.074				
4,200.0	4,190.5	4,159.1	4,122.6	9.9	13.0	-81.72	171.7	-512.5	481.5	461.5	20.02	24.050				
4,300.0	4,290.0	4,258.2	4,220.5	10.2	13.3	-82.13	177.1	-526.8	494.3	473.7	20.57	24.026				
4,400.0	4,389.6	4,357.3	4,318.5	10.5	13.7	-82.51	182.5	-541.0	507.1	486.0	21.13	24.004				
4,500.0	4,489.1	4,456.4	4,416.4	10.7	14.0	-82.88	188.0	-555.3	519.9	498.2	21.68	23.982				
4,600.0	4,588.6	4,555.6	4,514.3	11.0	14.4	-83.23	193.4	-569.6	532.8	510.5	22.24	23.960				
4,700.0	4,688.1	4,654.7	4,612.3	11.3	14.8	-83.56	198.8	-583.8	545.7	522.9	22.79	23.939				
4,800.0	4,787.7	4,753.8	4,710.2	11.6	15.1	-83.87	204.2	-598.1	558.5	535.2	23.35	23.919				
4,900.0	4,887.2	4,852.9	4,808.2	11.8	15.5	-84.18	209.7	-612.3	571.5	547.5	23.91	23.899				

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15R-403 - Wellbore #										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		
4,935.0	4,922.0	4,887.6	4,842.5	11.9	15.6	-84.28	211.6	-617.3	576.0	551.9	24.11	23.893		
5,000.0	4,986.8	4,952.0	4,906.1	12.1	15.9	-84.56	215.1	-626.6	584.4	560.0	24.45	23.902		
5,100.0	5,086.6	5,051.1	5,004.0	12.3	16.2	-84.72	220.5	-640.8	597.7	572.8	24.92	23.987		
5,200.0	5,186.6	5,150.1	5,101.8	12.5	16.6	-84.56	225.9	-655.1	611.4	586.0	25.35	24.122		
5,213.4	5,200.0	5,163.4	5,114.9	12.5	16.6	-95.04	226.7	-657.0	613.2	587.8	25.40	24.145		
5,300.0	5,286.6	5,248.9	5,199.4	12.6	17.0	-94.51	231.3	-669.3	625.3	599.5	25.75	24.284		
5,400.0	5,386.6	5,347.7	5,297.1	12.8	17.3	-93.92	236.7	-683.5	639.3	613.1	26.18	24.421		
5,500.0	5,486.6	5,446.5	5,394.7	13.0	17.7	-93.36	242.1	-697.7	653.3	626.7	26.61	24.555		
5,600.0	5,586.6	5,545.3	5,492.3	13.2	18.0	-92.82	247.6	-711.9	667.4	640.4	27.04	24.686		
5,700.0	5,686.6	5,644.1	5,590.0	13.4	18.4	-92.30	253.0	-726.1	681.5	654.1	27.47	24.814		
5,800.0	5,786.6	5,743.0	5,687.6	13.7	18.8	-91.80	258.4	-740.3	695.7	667.8	27.90	24.938		
5,900.0	5,886.6	5,841.8	5,785.2	13.9	19.1	-91.32	263.8	-754.5	710.0	681.7	28.33	25.060		
6,000.0	5,986.6	5,948.0	5,890.2	14.1	19.5	-90.84	269.5	-769.6	724.2	695.4	28.77	25.167		
6,100.0	6,086.6	6,078.1	6,019.4	14.3	19.8	-90.38	275.1	-784.3	735.4	706.2	29.23	25.163		
6,200.0	6,186.6	6,209.5	6,150.4	14.5	20.1	-90.11	278.6	-793.5	742.4	712.8	29.66	25.032		
6,300.0	6,286.6	6,341.5	6,282.3	14.7	20.3	-90.00	280.0	-797.1	745.2	715.1	30.08	24.769		
6,400.0	6,386.6	6,445.8	6,386.6	14.9	20.4	-90.00	280.0	-797.2	745.2	714.7	30.48	24.449		
6,505.6	6,492.2	6,551.4	6,492.2	15.1	20.6	-90.00	280.0	-797.2	745.2	714.3	30.90	24.117		
6,550.0	6,536.6	6,595.8	6,536.6	15.2	20.7	90.02	278.7	-797.2	745.2	714.1	31.05	24.002		
6,600.0	6,586.4	6,645.8	6,586.4	15.3	20.7	90.02	274.2	-797.2	745.2	714.0	31.16	23.912		
6,650.0	6,635.7	6,695.8	6,635.8	15.3	20.7	90.02	266.4	-797.2	745.2	713.9	31.25	23.847		
6,700.0	6,684.5	6,745.8	6,684.6	15.3	20.8	90.02	255.4	-797.2	745.2	713.9	31.30	23.805		
6,750.0	6,732.4	6,795.9	6,732.5	15.3	20.8	90.02	241.2	-797.2	745.2	713.9	31.33	23.782		
6,800.0	6,779.4	6,845.9	6,779.4	15.3	20.8	90.02	223.9	-797.2	745.2	713.8	31.35	23.772		
6,850.0	6,825.0	6,895.9	6,825.1	15.4	20.8	90.02	203.6	-797.2	745.2	713.8	31.35	23.771		
6,900.0	6,869.3	6,945.9	6,869.4	15.4	20.8	90.02	180.4	-797.2	745.2	713.8	31.35	23.771		
6,950.0	6,911.9	6,995.9	6,912.1	15.4	20.8	90.02	154.3	-797.1	745.2	713.8	31.36	23.765		
7,000.0	6,952.8	7,045.9	6,952.9	15.4	20.8	90.02	125.4	-797.1	745.2	713.8	31.38	23.747		
7,050.0	6,991.7	7,095.9	6,991.8	15.4	20.8	90.02	94.0	-797.1	745.2	713.8	31.43	23.708		
7,100.0	7,028.4	7,146.0	7,028.5	15.4	20.8	90.02	60.1	-797.1	745.2	713.7	31.52	23.640		
7,150.0	7,062.8	7,196.0	7,063.0	15.5	20.8	90.02	23.8	-797.1	745.2	713.5	31.66	23.537		
7,200.0	7,094.8	7,246.0	7,095.0	15.6	20.8	90.01	-14.6	-797.1	745.2	713.3	31.86	23.390		
7,250.0	7,124.3	7,296.0	7,124.4	15.7	20.8	90.01	-55.1	-797.1	745.2	713.1	32.13	23.197		
7,300.0	7,151.0	7,346.0	7,151.1	15.9	20.8	90.01	-97.3	-797.1	745.2	712.7	32.47	22.953		
7,350.0	7,174.9	7,396.0	7,175.0	16.1	20.9	90.01	-141.3	-797.0	745.2	712.3	32.89	22.658		
7,400.0	7,195.8	7,446.0	7,195.9	16.4	21.0	90.01	-186.6	-797.0	745.2	711.8	33.40	22.313		
7,450.0	7,213.8	7,496.0	7,213.9	16.7	21.1	90.01	-233.3	-797.0	745.2	711.2	33.99	21.922		
7,500.0	7,228.6	7,546.0	7,228.7	17.0	21.3	90.01	-281.1	-797.0	745.2	710.5	34.68	21.490		
7,550.0	7,240.3	7,596.0	7,240.4	17.4	21.5	90.01	-329.7	-797.0	745.2	709.8	35.45	21.024		
7,600.0	7,248.8	7,646.0	7,248.9	17.9	21.8	90.00	-378.9	-797.0	745.2	708.9	36.30	20.532		
7,625.6	7,251.9	7,671.6	7,252.0	18.1	21.9	90.00	-404.3	-797.0	745.2	708.5	36.76	20.274		
7,699.6	7,259.7	7,745.6	7,259.7	18.8	22.4	90.00	-477.9	-796.9	745.2	707.0	38.21	19.504		
7,800.0	7,265.8	7,846.0	7,265.8	19.9	23.3	90.00	-578.1	-796.9	745.2	704.8	40.41	18.443		
7,818.4	7,266.0	7,864.4	7,266.0	20.2	23.4	90.00	-596.5	-796.9	745.2	704.4	40.83	18.252		
7,900.0	7,266.0	7,946.0	7,266.0	21.2	24.3	90.00	-678.1	-796.9	745.3	702.4	42.83	17.402		
8,000.0	7,266.1	8,046.0	7,266.2	22.5	25.4	90.00	-778.1	-796.8	745.3	699.8	45.43	16.404		
8,100.0	7,266.2	8,146.0	7,266.3	23.9	26.6	90.00	-878.1	-796.8	745.3	697.1	48.20	15.461		
8,200.0	7,266.4	8,246.0	7,266.4	25.4	27.9	90.00	-978.1	-796.8	745.3	694.2	51.11	14.581		
8,300.0	7,266.5	8,346.0	7,266.5	26.9	29.3	90.00	-1,078.1	-796.7	745.3	691.1	54.14	13.765		
8,400.0	7,266.6	8,446.0	7,266.6	28.5	30.8	90.00	-1,178.1	-796.7	745.3	688.0	57.27	13.014		

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15R-403 - Wellbore #		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		
8,500.0	7,266.7	8,546.0	7,266.7	30.1	32.3	90.00	-1,278.1	-796.7	745.3	684.8	60.48	12.324			
8,600.0	7,266.8	8,646.0	7,266.8	31.7	33.8	90.00	-1,378.1	-796.6	745.3	681.5	63.76	11.690			
8,700.0	7,266.9	8,746.0	7,266.9	33.4	35.4	90.00	-1,478.1	-796.6	745.3	678.2	67.10	11.108			
8,800.0	7,267.0	8,846.0	7,267.0	35.1	37.0	90.00	-1,578.1	-796.6	745.3	674.8	70.49	10.573			
8,900.0	7,267.1	8,946.0	7,267.1	36.9	38.6	90.00	-1,678.1	-796.5	745.3	671.4	73.93	10.082			
9,000.0	7,267.2	9,046.0	7,267.2	38.6	40.3	90.00	-1,778.1	-796.5	745.3	667.9	77.40	9.629			
9,100.0	7,267.3	9,146.0	7,267.3	40.4	42.0	90.00	-1,878.1	-796.5	745.3	664.4	80.91	9.212			
9,200.0	7,267.4	9,246.0	7,267.4	42.1	43.7	90.00	-1,978.1	-796.4	745.3	660.9	84.45	8.826			
9,300.0	7,267.5	9,346.0	7,267.5	43.9	45.4	90.00	-2,078.1	-796.4	745.4	657.3	88.01	8.469			
9,400.0	7,267.6	9,446.0	7,267.6	45.7	47.2	90.00	-2,178.1	-796.4	745.4	653.8	91.60	8.137			
9,500.0	7,267.7	9,546.0	7,267.7	47.5	48.9	90.00	-2,278.1	-796.3	745.4	650.2	95.21	7.829			
9,600.0	7,267.8	9,646.0	7,267.8	49.4	50.7	90.00	-2,378.1	-796.3	745.4	646.5	98.83	7.542			
9,700.0	7,267.9	9,746.0	7,267.9	51.2	52.5	90.00	-2,478.1	-796.3	745.4	642.9	102.47	7.274			
9,800.0	7,268.0	9,846.0	7,268.0	53.0	54.3	90.00	-2,578.1	-796.2	745.4	639.3	106.13	7.023			
9,900.0	7,268.1	9,946.0	7,268.1	54.8	56.1	90.00	-2,678.1	-796.2	745.4	635.6	109.80	6.789			
10,000.0	7,268.2	10,046.0	7,268.2	56.7	57.9	90.00	-2,778.1	-796.2	745.4	631.9	113.48	6.569			
10,100.0	7,268.3	10,146.0	7,268.4	58.5	59.7	90.00	-2,878.1	-796.1	745.4	628.2	117.17	6.362			
10,200.0	7,268.4	10,246.0	7,268.5	60.4	61.5	90.00	-2,978.1	-796.1	745.4	624.5	120.87	6.167			
10,300.0	7,268.6	10,346.0	7,268.6	62.3	63.3	90.00	-3,078.1	-796.1	745.4	620.8	124.58	5.983			
10,400.0	7,268.7	10,446.0	7,268.7	64.1	65.1	90.00	-3,178.1	-796.0	745.4	617.1	128.30	5.810			
10,500.0	7,268.8	10,546.0	7,268.8	66.0	67.0	90.00	-3,278.1	-796.0	745.4	613.4	132.03	5.646			
10,600.0	7,268.9	10,646.0	7,268.9	67.9	68.8	90.00	-3,378.1	-796.0	745.4	609.7	135.76	5.491			
10,700.0	7,269.0	10,746.0	7,269.0	69.7	70.7	90.00	-3,478.1	-795.9	745.4	605.9	139.50	5.344			
10,800.0	7,269.1	10,846.0	7,269.1	71.6	72.5	90.00	-3,578.1	-795.9	745.5	602.2	143.24	5.204			
10,900.0	7,269.2	10,946.0	7,269.2	73.5	74.4	90.00	-3,678.1	-795.9	745.5	598.5	146.99	5.071			
11,000.0	7,269.3	11,046.0	7,269.3	75.4	76.2	90.00	-3,778.1	-795.8	745.5	594.7	150.74	4.945			
11,100.0	7,269.4	11,146.0	7,269.4	77.2	78.1	90.00	-3,878.1	-795.8	745.5	591.0	154.50	4.825			
11,200.0	7,269.5	11,246.0	7,269.5	79.1	79.9	90.00	-3,978.1	-795.7	745.5	587.2	158.27	4.710			
11,300.0	7,269.6	11,346.0	7,269.6	81.0	81.8	90.00	-4,078.1	-795.7	745.5	583.5	162.03	4.601			
11,400.0	7,269.7	11,446.0	7,269.7	82.9	83.7	90.00	-4,178.1	-795.7	745.5	579.7	165.80	4.496			
11,500.0	7,269.8	11,546.0	7,269.8	84.8	85.5	90.00	-4,278.1	-795.6	745.5	575.9	169.58	4.396			
11,600.0	7,269.9	11,646.0	7,269.9	86.7	87.4	90.00	-4,378.1	-795.6	745.5	572.2	173.36	4.300			
11,645.6	7,270.0	11,691.6	7,270.0	87.5	88.3	90.00	-4,423.7	-795.6	745.5	570.4	175.08	4.258			
11,681.4	7,270.0	11,719.8	7,270.0	88.2	88.8	90.00	-4,451.9	-795.6	745.6	569.3	176.29	4.229 SF			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15U-203 - Wellbore #										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	90.00	0.0	30.6	30.6					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	30.6	30.6	30.4	0.19	160.137		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	30.6	30.6	30.0	0.64	47.760		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	30.6	30.6	29.5	1.09	28.065		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	30.6	30.6	29.1	1.54	19.871		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	30.6	30.6	28.6	1.99	15.380		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	30.6	30.6	28.2	2.44	12.545		
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	30.6	30.6	27.7	2.89	10.593		
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	30.6	30.6	27.3	3.34	9.166		
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	30.6	30.6	26.8	3.79	8.078		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	30.6	30.6	26.4	4.24	7.221		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	90.00	0.0	30.6	30.6	25.9	4.69	6.528		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.00	0.0	30.6	30.6	25.5	5.14	5.957		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.00	0.0	30.6	30.6	25.0	5.59	5.478		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.00	0.0	30.6	30.6	24.6	6.03	5.070		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.2	90.00	0.0	30.6	30.6	24.1	6.48	4.718 CC, ES		
1,600.0	1,600.0	1,596.8	1,596.2	3.5	3.5	80.97	6.2	38.9	39.6	32.7	6.92	5.723		
1,700.0	1,700.0	1,696.2	1,695.1	3.7	3.7	75.21	12.6	47.5	49.4	42.1	7.36	6.713		
1,800.0	1,800.0	1,795.6	1,793.9	3.9	3.9	71.37	18.9	56.1	59.6	51.8	7.80	7.632		
1,900.0	1,900.0	1,895.0	1,892.7	4.1	4.2	68.66	25.3	64.7	69.9	61.6	8.25	8.473		
2,000.0	2,000.0	1,994.5	1,991.6	4.4	4.4	66.65	31.7	73.3	80.3	71.6	8.69	9.239		
2,100.0	2,100.0	2,093.9	2,090.5	4.6	4.7	76.50	38.0	81.9	90.4	81.3	9.13	9.900		
2,200.0	2,199.8	2,193.5	2,189.4	4.8	4.9	77.90	44.4	90.6	99.8	90.2	9.58	10.412		
2,278.4	2,278.0	2,271.4	2,266.9	5.0	5.2	80.09	49.4	97.3	106.7	96.7	9.94	10.736		
2,300.0	2,299.5	2,292.9	2,288.3	5.0	5.2	80.84	50.8	99.2	108.6	98.5	10.03	10.819		
2,400.0	2,399.0	2,392.3	2,387.1	5.3	5.5	83.97	57.2	107.8	117.5	107.0	10.50	11.194		
2,500.0	2,498.5	2,491.7	2,486.0	5.5	5.8	86.65	63.5	116.3	126.8	115.8	10.97	11.556		
2,600.0	2,598.0	2,591.1	2,584.8	5.7	6.0	88.96	69.9	124.9	136.3	124.8	11.45	11.900		
2,700.0	2,697.6	2,690.5	2,683.6	6.0	6.3	90.97	76.3	133.5	145.9	134.0	11.94	12.226		
2,800.0	2,797.1	2,789.9	2,782.5	6.2	6.6	92.73	82.6	142.1	155.8	143.4	12.43	12.533		
2,900.0	2,896.6	2,889.4	2,881.3	6.5	6.9	94.28	89.0	150.7	165.7	152.8	12.93	12.822		
3,000.0	2,996.2	2,988.8	2,980.1	6.7	7.1	95.65	95.4	159.3	175.8	162.4	13.43	13.092		
3,100.0	3,095.7	3,088.2	3,078.9	7.0	7.4	96.87	101.7	167.9	186.0	172.0	13.94	13.346		
3,200.0	3,195.2	3,187.6	3,177.8	7.3	7.7	97.97	108.1	176.5	196.2	181.8	14.45	13.583		
3,300.0	3,294.7	3,287.0	3,276.6	7.5	8.0	98.95	114.5	185.1	206.5	191.6	14.96	13.806		
3,400.0	3,394.3	3,386.4	3,375.4	7.8	8.3	99.85	120.8	193.7	216.9	201.4	15.48	14.015		
3,500.0	3,493.8	3,485.8	3,474.3	8.0	8.6	100.66	127.2	202.3	227.3	211.3	15.99	14.211		
3,600.0	3,593.3	3,585.2	3,573.1	8.3	8.9	101.40	133.6	210.9	237.7	221.2	16.51	14.396		
3,700.0	3,692.9	3,684.6	3,671.9	8.6	9.1	102.08	139.9	219.5	248.2	231.2	17.04	14.569		
3,800.0	3,792.4	3,784.0	3,770.8	8.8	9.4	102.70	146.3	228.1	258.7	241.2	17.56	14.733		
3,900.0	3,891.9	3,883.4	3,869.6	9.1	9.7	103.28	152.7	236.7	269.3	251.2	18.09	14.887		
4,000.0	3,991.4	3,982.8	3,968.4	9.4	10.0	103.81	159.1	245.3	279.8	261.2	18.62	15.033		
4,100.0	4,091.0	4,082.3	4,067.3	9.6	10.3	104.30	165.4	253.9	290.4	271.3	19.14	15.171		
4,200.0	4,190.5	4,181.7	4,166.1	9.9	10.6	104.76	171.8	262.5	301.0	281.4	19.67	15.301		
4,300.0	4,290.0	4,281.1	4,264.9	10.2	10.9	105.18	178.2	271.1	311.7	291.5	20.21	15.425		
4,400.0	4,389.6	4,380.5	4,363.7	10.5	11.2	105.58	184.5	279.7	322.3	301.6	20.74	15.542		
4,500.0	4,489.1	4,479.9	4,462.6	10.7	11.5	105.96	190.9	288.3	333.0	311.7	21.27	15.654		
4,600.0	4,588.6	4,579.3	4,561.4	11.0	11.8	106.31	197.3	296.9	343.6	321.8	21.80	15.760		
4,700.0	4,688.1	4,678.7	4,660.2	11.3	12.1	106.63	203.6	305.5	354.3	332.0	22.34	15.860		
4,800.0	4,787.7	4,778.1	4,759.1	11.6	12.3	106.94	210.0	314.1	365.0	342.1	22.87	15.957		
4,900.0	4,887.2	4,877.5	4,857.9	11.8	12.6	107.24	216.4	322.7	375.7	352.3	23.41	16.048		

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 Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15U-203 - Wellbore #				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			
4,935.0	4,922.0	4,912.3	4,892.5	11.9	12.7	107.33	218.6	325.7	379.5	355.9	23.60	16.079				
5,000.0	4,986.8	4,977.0	4,956.8	12.1	12.9	107.54	222.7	331.3	386.2	362.3	23.93	16.137				
5,100.0	5,086.6	5,076.5	5,055.7	12.3	13.2	107.43	229.1	339.9	395.7	371.3	24.39	16.223				
5,200.0	5,186.6	5,176.0	5,154.6	12.5	13.5	106.84	235.5	348.5	404.2	379.4	24.82	16.288				
5,213.4	5,200.0	5,189.3	5,167.9	12.5	13.6	96.20	236.3	349.7	405.3	380.4	24.87	16.295				
5,300.0	5,286.6	5,275.4	5,253.5	12.6	13.8	95.33	241.9	357.1	412.2	387.0	25.23	16.335				
5,400.0	5,386.6	5,374.8	5,352.3	12.8	14.1	94.35	248.2	365.7	420.3	394.6	25.67	16.371				
5,500.0	5,486.6	5,474.2	5,451.1	13.0	14.4	93.41	254.6	374.3	428.5	402.4	26.11	16.411				
5,600.0	5,586.6	5,573.6	5,550.0	13.2	14.7	92.51	261.0	382.9	436.8	410.3	26.55	16.454				
5,700.0	5,686.6	5,673.1	5,648.8	13.4	15.0	91.64	267.3	391.5	445.3	418.3	26.99	16.500				
5,800.0	5,786.6	5,780.6	5,755.8	13.7	15.3	90.79	273.8	400.2	453.3	425.9	27.42	16.529				
5,900.0	5,886.6	5,894.9	5,869.9	13.9	15.5	90.22	278.2	406.2	458.5	430.7	27.84	16.472				
6,000.0	5,986.6	6,009.7	5,984.6	14.1	15.7	90.00	280.0	408.6	460.6	432.3	28.24	16.311				
6,100.0	6,086.6	6,111.7	6,086.6	14.3	15.9	90.00	280.0	408.6	460.6	432.0	28.63	16.088				
6,200.0	6,186.6	6,211.7	6,186.6	14.5	16.1	90.00	280.0	408.6	460.6	431.6	29.04	15.862				
6,300.0	6,286.6	6,311.7	6,286.6	14.7	16.3	90.00	280.0	408.6	460.6	431.1	29.45	15.641				
6,350.8	6,337.4	6,362.5	6,337.4	14.8	16.3	90.00	280.0	408.6	460.6	430.9	29.66	15.532				
6,400.0	6,386.6	6,411.6	6,386.5	14.9	16.4	90.19	278.5	408.6	460.6	430.8	29.84	15.434				
6,505.6	6,492.2	6,515.2	6,489.2	15.1	16.5	91.87	265.0	408.6	460.8	430.6	30.21	15.253				
6,550.0	6,536.6	6,557.7	6,530.5	15.2	16.5	-87.05	255.5	408.6	461.2	430.9	30.34	15.202				
6,600.0	6,586.4	6,605.0	6,575.9	15.3	16.6	-85.87	242.2	408.6	461.8	431.4	30.44	15.171				
6,650.0	6,635.7	6,651.7	6,619.8	15.3	16.6	-84.72	226.3	408.6	462.6	432.1	30.51	15.162				
6,700.0	6,684.5	6,698.0	6,662.3	15.3	16.6	-83.60	208.0	408.6	463.6	433.0	30.55	15.172				
6,750.0	6,732.4	6,743.7	6,703.1	15.3	16.6	-82.51	187.3	408.6	464.7	434.1	30.57	15.199				
6,800.0	6,779.4	6,789.1	6,742.3	15.3	16.6	-81.46	164.5	408.6	465.9	435.3	30.57	15.239				
6,850.0	6,825.0	6,834.0	6,779.7	15.4	16.5	-80.45	139.7	408.6	467.2	436.6	30.56	15.289				
6,900.0	6,869.3	6,878.5	6,815.3	15.4	16.5	-79.48	112.9	408.6	468.6	438.1	30.54	15.345				
6,950.0	6,911.9	6,922.7	6,849.0	15.4	16.5	-78.56	84.3	408.6	470.1	439.6	30.52	15.402				
7,000.0	6,952.8	6,966.6	6,880.8	15.4	16.5	-77.68	54.1	408.6	471.6	441.1	30.51	15.455				
7,050.0	6,991.7	7,010.1	6,910.6	15.4	16.5	-76.86	22.3	408.6	473.1	442.6	30.52	15.499				
7,100.0	7,028.4	7,053.4	6,938.3	15.4	16.5	-76.10	-10.9	408.6	474.6	444.0	30.56	15.529				
7,150.0	7,062.8	7,096.4	6,964.0	15.5	16.6	-75.39	-45.3	408.6	476.1	445.4	30.65	15.534				
7,200.0	7,094.8	7,139.2	6,987.5	15.6	16.6	-74.73	-81.0	408.6	477.5	446.7	30.78	15.511				
7,250.0	7,124.3	7,181.7	7,009.0	15.7	16.7	-74.14	-117.8	408.6	478.9	447.9	30.98	15.459				
7,300.0	7,151.0	7,224.1	7,028.2	15.9	16.8	-73.60	-155.5	408.6	480.1	448.9	31.24	15.370				
7,350.0	7,174.9	7,266.3	7,045.3	16.1	17.0	-73.13	-194.1	408.6	481.3	449.7	31.57	15.243				
7,400.0	7,195.8	7,308.4	7,060.2	16.4	17.2	-72.71	-233.5	408.6	482.3	450.3	31.99	15.077				
7,450.0	7,213.8	7,350.0	7,072.8	16.7	17.4	-72.36	-273.2	408.6	483.2	450.7	32.49	14.872				
7,500.0	7,228.6	7,392.1	7,083.3	17.0	17.7	-72.07	-314.0	408.6	483.9	450.9	33.09	14.626				
7,550.0	7,240.3	7,433.9	7,091.4	17.4	18.1	-71.84	-354.9	408.6	484.5	450.8	33.77	14.347				
7,600.0	7,248.8	7,475.6	7,097.4	17.9	18.5	-71.67	-396.2	408.6	485.0	450.4	34.54	14.040				
7,625.6	7,251.9	7,500.0	7,099.8	18.1	18.7	-71.61	-420.5	408.6	485.1	450.1	34.99	13.865				
7,626.1	7,252.0	7,500.0	7,099.8	18.1	18.7	-71.61	-420.5	408.6	485.1	450.1	35.00	13.863				
7,699.6	7,259.7	7,558.3	7,102.4	18.8	19.3	-71.22	-478.7	408.6	486.5	450.3	36.20	13.437				
7,800.0	7,265.8	7,657.0	7,102.2	19.9	20.4	-70.44	-577.4	408.7	488.5	450.3	38.27	12.767				
7,818.4	7,266.0	7,675.4	7,102.1	20.2	20.6	-70.41	-595.8	408.7	488.6	449.9	38.69	12.630				
7,900.0	7,266.0	7,757.0	7,101.9	21.2	21.6	-70.37	-677.4	408.7	488.7	448.1	40.60	12.036				
8,000.0	7,266.1	7,857.0	7,101.6	22.5	22.9	-70.33	-777.4	408.7	488.8	445.6	43.11	11.338				
8,100.0	7,266.2	7,957.0	7,101.4	23.9	24.3	-70.29	-877.4	408.7	488.8	443.1	45.77	10.680				
8,200.0	7,266.4	8,057.0	7,101.1	25.4	25.7	-70.25	-977.4	408.7	488.9	440.4	48.56	10.069				

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

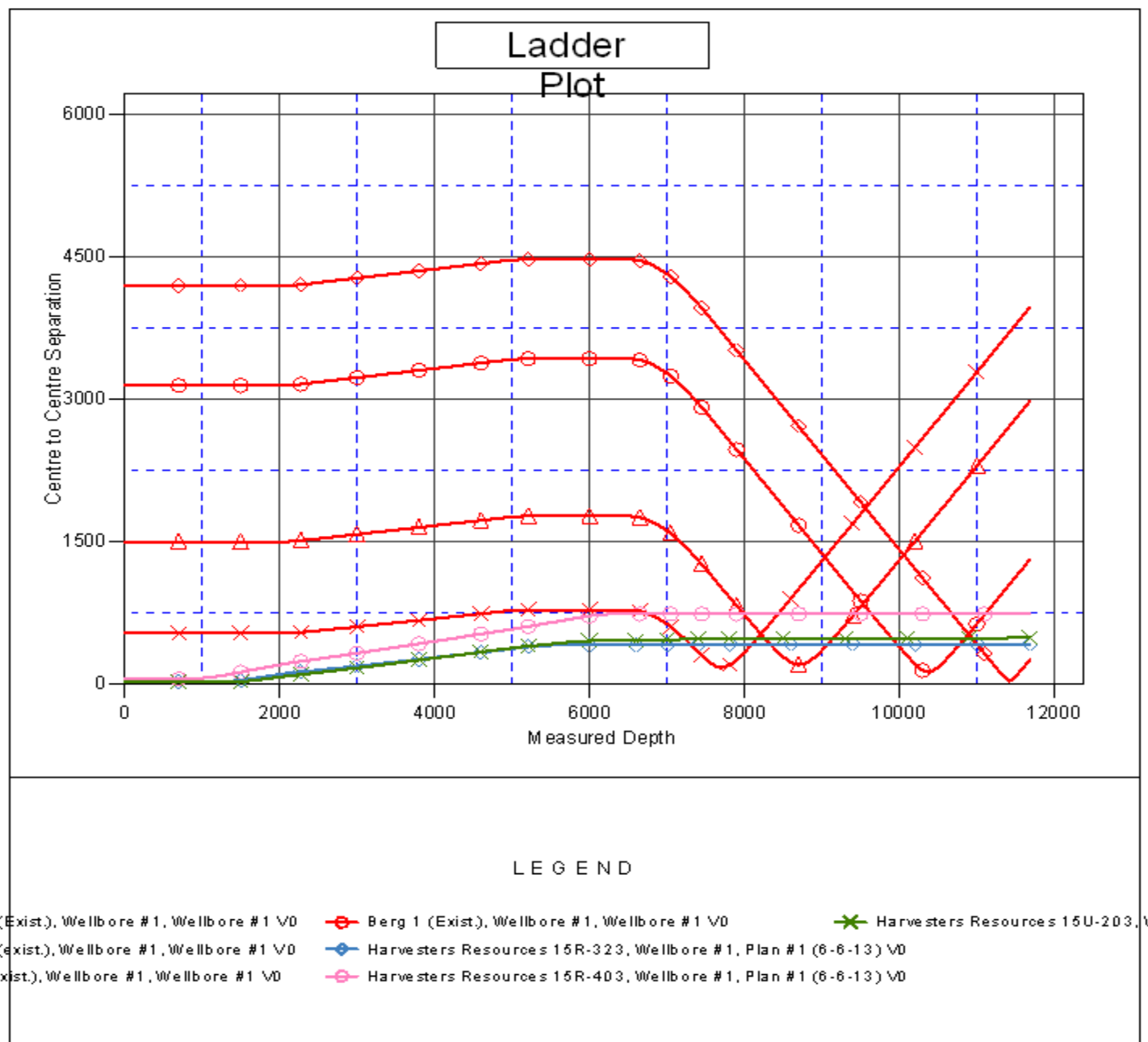
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15U-203 - Wellbore #				Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
8,300.0	7,266.5	8,157.0	7,100.9	26.9	27.2	-70.21	-1,077.4	408.7	489.0	437.6	51.45	9.504				
8,400.0	7,266.6	8,257.0	7,100.6	28.5	28.8	-70.17	-1,177.4	408.7	489.1	434.7	54.44	8.985				
8,500.0	7,266.7	8,357.0	7,100.3	30.1	30.4	-70.12	-1,277.4	408.7	489.2	431.7	57.50	8.508				
8,600.0	7,266.8	8,457.0	7,100.1	31.7	32.0	-70.08	-1,377.4	408.7	489.3	428.7	60.62	8.072				
8,700.0	7,266.9	8,557.0	7,099.8	33.4	33.7	-70.04	-1,477.4	408.7	489.4	425.6	63.80	7.671				
8,800.0	7,267.0	8,657.0	7,099.6	35.1	35.4	-70.00	-1,577.4	408.7	489.5	422.5	67.02	7.304				
8,900.0	7,267.1	8,757.0	7,099.3	36.9	37.1	-69.96	-1,677.4	408.7	489.6	419.3	70.28	6.966				
9,000.0	7,267.2	8,857.0	7,099.0	38.6	38.8	-69.92	-1,777.4	408.7	489.7	416.1	73.58	6.655				
9,100.0	7,267.3	8,957.0	7,098.8	40.4	40.6	-69.87	-1,877.4	408.7	489.8	412.9	76.90	6.369				
9,200.0	7,267.4	9,057.0	7,098.5	42.1	42.3	-69.83	-1,977.4	408.8	489.9	409.6	80.25	6.104				
9,300.0	7,267.5	9,157.0	7,098.2	43.9	44.1	-69.79	-2,077.4	408.8	490.0	406.3	83.62	5.859				
9,400.0	7,267.6	9,257.0	7,098.0	45.7	45.9	-69.75	-2,177.4	408.8	490.1	403.0	87.01	5.632				
9,500.0	7,267.7	9,357.0	7,097.7	47.5	47.7	-69.71	-2,277.4	408.8	490.2	399.7	90.42	5.421				
9,600.0	7,267.8	9,457.0	7,097.5	49.4	49.5	-69.67	-2,377.4	408.8	490.2	396.4	93.84	5.224				
9,700.0	7,267.9	9,557.0	7,097.2	51.2	51.3	-69.62	-2,477.4	408.8	490.3	393.1	97.28	5.041				
9,800.0	7,268.0	9,657.0	7,096.9	53.0	53.1	-69.58	-2,577.4	408.8	490.4	389.7	100.73	4.869				
9,900.0	7,268.1	9,757.0	7,096.7	54.8	55.0	-69.54	-2,677.4	408.8	490.5	386.4	104.18	4.708				
10,000.0	7,268.2	9,857.0	7,096.4	56.7	56.8	-69.50	-2,777.4	408.8	490.6	383.0	107.65	4.558				
10,100.0	7,268.3	9,957.0	7,096.2	58.5	58.7	-69.46	-2,877.4	408.8	490.7	379.6	111.12	4.416				
10,200.0	7,268.4	10,057.0	7,095.9	60.4	60.5	-69.42	-2,977.4	408.8	490.8	376.2	114.61	4.283				
10,300.0	7,268.6	10,157.0	7,095.6	62.3	62.4	-69.38	-3,077.4	408.8	490.9	372.8	118.09	4.157				
10,400.0	7,268.7	10,257.0	7,095.4	64.1	64.2	-69.33	-3,177.4	408.8	491.0	369.4	121.59	4.038				
10,500.0	7,268.8	10,357.0	7,095.1	66.0	66.1	-69.29	-3,277.4	408.8	491.1	366.0	125.09	3.926				
10,600.0	7,268.9	10,457.0	7,094.8	67.9	67.9	-69.25	-3,377.4	408.8	491.2	362.6	128.59	3.820				
10,700.0	7,269.0	10,557.0	7,094.6	69.7	69.8	-69.21	-3,477.4	408.9	491.3	359.2	132.10	3.719				
10,800.0	7,269.1	10,657.0	7,094.3	71.6	71.7	-69.17	-3,577.4	408.9	491.4	355.8	135.61	3.624				
10,900.0	7,269.2	10,757.0	7,094.1	73.5	73.5	-69.13	-3,677.4	408.9	491.5	352.4	139.12	3.533				
11,000.0	7,269.3	10,857.0	7,093.8	75.4	75.4	-69.09	-3,777.4	408.9	491.6	349.0	142.64	3.447				
11,100.0	7,269.4	10,957.0	7,093.5	77.2	77.3	-69.04	-3,877.4	408.9	491.7	345.6	146.16	3.364				
11,200.0	7,269.5	11,057.0	7,093.3	79.1	79.2	-69.00	-3,977.4	408.9	491.8	342.1	149.68	3.286				
11,300.0	7,269.6	11,157.0	7,093.0	81.0	81.1	-68.96	-4,077.4	408.9	491.9	338.7	153.20	3.211				
11,400.0	7,269.7	11,257.0	7,092.7	82.9	82.9	-68.92	-4,177.4	408.9	492.0	335.3	156.73	3.139				
11,500.0	7,269.8	11,357.0	7,092.5	84.8	84.8	-68.88	-4,277.4	408.9	492.1	331.9	160.26	3.071				
11,600.0	7,269.9	11,457.0	7,092.2	86.7	86.7	-68.84	-4,377.4	408.9	492.2	328.4	163.78	3.005				
11,681.4	7,270.0	11,538.4	7,092.0	88.2	88.2	-68.80	-4,458.7	408.9	492.3	325.6	166.65	2.954 SF				

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4830.0ft (RKB - 15')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Harvesters Resources 15U-443  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.48°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Harvesters Resources 15U-443
<b>Project:</b>	SEC.15-T6N-R66W	<b>TVD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Reference Site:</b>	Harvesters Resources 15UR-HZ Pad Sec.15-T6N-R66W	<b>MD Reference:</b>	WELL @ 4830.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Harvesters Resources 15U-443	<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 (6-10-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4830.0ft (RKB - 15')  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Harvesters Resources 15U-443  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.48°

