

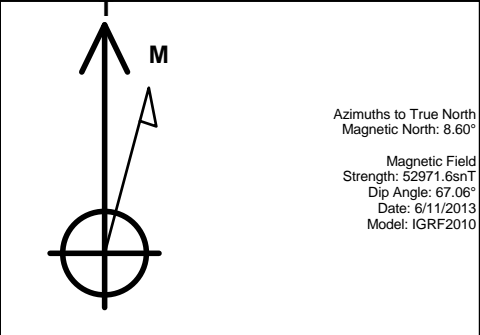
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Harvesters Resources 15M-303**
Surface Location: Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4820.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1423918.32	3205359.59	40.494710	-104.761610	

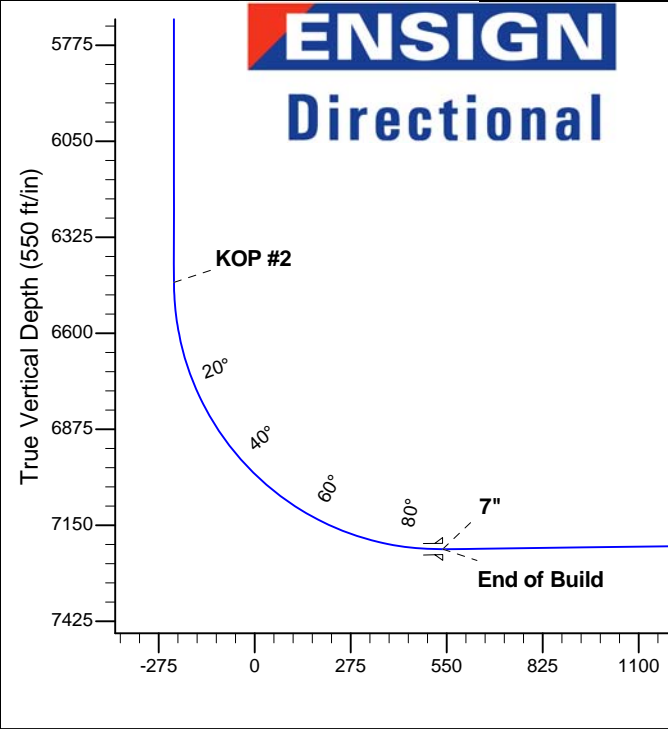
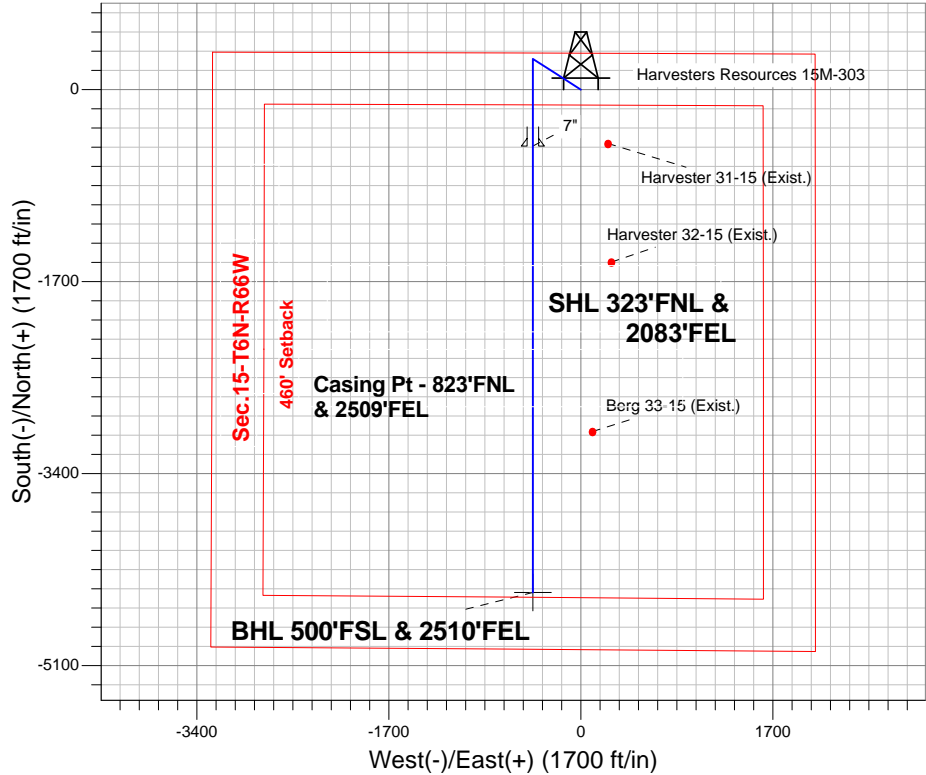
RKB-15' WELL @ 4835.0ft (RKB-15')

WELLBORE TARGET DETAILS				
Name	TVD	+N/-S	+E/-W	Shape Point
BHL 500'FSL & 2510'FEL	7170.0	-4451.9	-425.6	

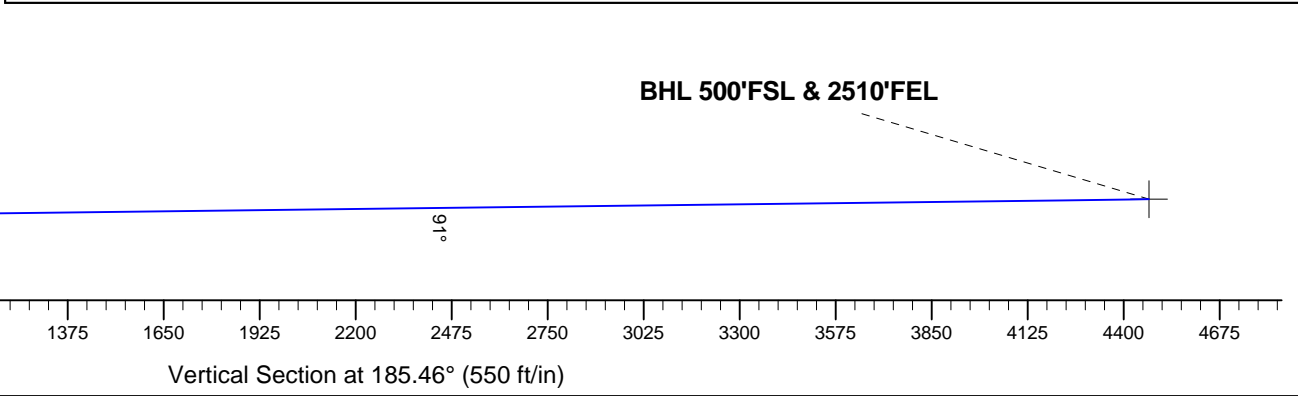


Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W
Harvesters Resources 15M-303
Plan #1 (06-11-13)
10:59, June 11 2013

ANNOTATIONS		
TVD	MD	Annotation
1000.0	1000.0	KOP #1
6454.4	6488.4	KOP #2
7218.3	7697.8	End of Build



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1399.8	8.00	302.68	1398.5	15.0	-23.4	2.00	302.68	-12.7	
4	4634.2	8.00	302.68	4601.5	258.0	-402.2	0.00	0.00	-218.5	
5	5034.0	0.00	0.00	5000.0	273.0	-425.6	2.00	180.00	-231.3	
6	6488.4	0.00	0.00	6454.4	273.0	-425.6	0.00	0.00	-231.3	
7	7697.8	90.70	180.00	7218.3	-500.3	-425.6	7.50	180.00	538.5	
8	11649.7	90.70	180.00	7170.0	-4451.9	-425.6	0.00	0.00	4472.2	BHL 500'FSL & 2510'FEL





Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.15-T6N-R66W

Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W

Harvesters Resources 15M-303

Wellbore #1

Plan: Plan #1 (06-11-13)

Standard Planning Report

11 June, 2013

Database:	Landmark	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Project:	SEC.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	North Reference:	True
Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-11-13)		

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

Site Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W					
Site Position:		Northing:		1,423,918.59 ft	
From:		Easting:		3,205,390.18 ft	
Position Uncertainty:		Slot Radius:		Grid Convergence:	
Lat/Long		"		°	
0.0 ft				0.48	

Well	Harvesters Resources 15M-303					
Well Position	+N-S	0.0 ft	Northing:	1,423,918.32 ft	Latitude:	40.494710
	+E-W	-30.6 ft	Easting:	3,205,359.59 ft	Longitude:	-104.761610
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,820.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/11/2013	8.60	67.06	52,972

Design	Plan #1 (06-11-13)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	185.46

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,399.8	8.00	302.68	1,398.5	15.0	-23.4	2.00	2.00	0.00	302.68	
4,634.2	8.00	302.68	4,601.5	258.0	-402.2	0.00	0.00	0.00	0.00	
5,034.0	0.00	0.00	5,000.0	273.0	-425.6	2.00	-2.00	0.00	180.00	
6,488.4	0.00	0.00	6,454.4	273.0	-425.6	0.00	0.00	0.00	0.00	
7,697.8	90.70	180.00	7,218.3	-500.3	-425.6	7.50	7.50	0.00	180.00	
11,649.7	90.70	180.00	7,170.0	-4,451.9	-425.6	0.00	0.00	0.00	0.00	BHL 500'FSL & 251

Database:	Landmark	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Project:	SEC.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	North Reference:	True
Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-11-13)		

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
KOP #1									
1,040.0	0.80	302.68	1,040.0	0.2	-0.2	-0.1	2.00	2.00	0.00
1,080.0	1.60	302.68	1,080.0	0.6	-0.9	-0.5	2.00	2.00	0.00
1,120.0	2.40	302.68	1,120.0	1.4	-2.1	-1.1	2.00	2.00	0.00
1,160.0	3.20	302.68	1,159.9	2.4	-3.8	-2.0	2.00	2.00	0.00
1,200.0	4.00	302.68	1,199.8	3.8	-5.9	-3.2	2.00	2.00	0.00
1,240.0	4.80	302.68	1,239.7	5.4	-8.5	-4.6	2.00	2.00	0.00
1,280.0	5.60	302.68	1,279.6	7.4	-11.5	-6.3	2.00	2.00	0.00
1,320.0	6.40	302.68	1,319.3	9.6	-15.0	-8.2	2.00	2.00	0.00
1,360.0	7.20	302.68	1,359.1	12.2	-19.0	-10.3	2.00	2.00	0.00
1,399.8	8.00	302.68	1,398.5	15.0	-23.4	-12.7	2.00	2.00	0.00
1,400.0	8.00	302.68	1,398.7	15.1	-23.5	-12.8	0.00	0.00	0.00
1,440.0	8.00	302.68	1,438.3	18.1	-28.2	-15.3	0.00	0.00	0.00
1,480.0	8.00	302.68	1,477.9	21.1	-32.8	-17.8	0.00	0.00	0.00
1,520.0	8.00	302.68	1,517.5	24.1	-37.5	-20.4	0.00	0.00	0.00
1,560.0	8.00	302.68	1,557.1	27.1	-42.2	-22.9	0.00	0.00	0.00
1,600.0	8.00	302.68	1,596.8	30.1	-46.9	-25.5	0.00	0.00	0.00
1,640.0	8.00	302.68	1,636.4	33.1	-51.6	-28.0	0.00	0.00	0.00
1,680.0	8.00	302.68	1,676.0	36.1	-56.3	-30.6	0.00	0.00	0.00
1,720.0	8.00	302.68	1,715.6	39.1	-60.9	-33.1	0.00	0.00	0.00
1,760.0	8.00	302.68	1,755.2	42.1	-65.6	-35.7	0.00	0.00	0.00
1,800.0	8.00	302.68	1,794.8	45.1	-70.3	-38.2	0.00	0.00	0.00
1,840.0	8.00	302.68	1,834.4	48.1	-75.0	-40.7	0.00	0.00	0.00
1,880.0	8.00	302.68	1,874.0	51.1	-79.7	-43.3	0.00	0.00	0.00
1,920.0	8.00	302.68	1,913.6	54.1	-84.4	-45.8	0.00	0.00	0.00
1,960.0	8.00	302.68	1,953.3	57.1	-89.0	-48.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Project:	SEC.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	North Reference:	True
Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-11-13)		

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)
2,000.0	8.00	302.68	1,992.9	60.1	-93.7	-50.9	0.00	0.00	0.00
2,040.0	8.00	302.68	2,032.5	63.1	-98.4	-53.5	0.00	0.00	0.00
2,080.0	8.00	302.68	2,072.1	66.1	-103.1	-56.0	0.00	0.00	0.00
2,120.0	8.00	302.68	2,111.7	69.1	-107.8	-58.6	0.00	0.00	0.00
2,160.0	8.00	302.68	2,151.3	72.1	-112.5	-61.1	0.00	0.00	0.00
2,200.0	8.00	302.68	2,190.9	75.1	-117.1	-63.6	0.00	0.00	0.00
2,240.0	8.00	302.68	2,230.5	78.1	-121.8	-66.2	0.00	0.00	0.00
2,280.0	8.00	302.68	2,270.1	81.1	-126.5	-68.7	0.00	0.00	0.00
2,320.0	8.00	302.68	2,309.8	84.1	-131.2	-71.3	0.00	0.00	0.00
2,360.0	8.00	302.68	2,349.4	87.2	-135.9	-73.8	0.00	0.00	0.00
2,400.0	8.00	302.68	2,389.0	90.2	-140.6	-76.4	0.00	0.00	0.00
2,440.0	8.00	302.68	2,428.6	93.2	-145.2	-78.9	0.00	0.00	0.00
2,480.0	8.00	302.68	2,468.2	96.2	-149.9	-81.5	0.00	0.00	0.00
2,520.0	8.00	302.68	2,507.8	99.2	-154.6	-84.0	0.00	0.00	0.00
2,560.0	8.00	302.68	2,547.4	102.2	-159.3	-86.6	0.00	0.00	0.00
2,600.0	8.00	302.68	2,587.0	105.2	-164.0	-89.1	0.00	0.00	0.00
2,640.0	8.00	302.68	2,626.6	108.2	-168.7	-91.6	0.00	0.00	0.00
2,680.0	8.00	302.68	2,666.3	111.2	-173.3	-94.2	0.00	0.00	0.00
2,720.0	8.00	302.68	2,705.9	114.2	-178.0	-96.7	0.00	0.00	0.00
2,760.0	8.00	302.68	2,745.5	117.2	-182.7	-99.3	0.00	0.00	0.00
2,800.0	8.00	302.68	2,785.1	120.2	-187.4	-101.8	0.00	0.00	0.00
2,840.0	8.00	302.68	2,824.7	123.2	-192.1	-104.4	0.00	0.00	0.00
2,880.0	8.00	302.68	2,864.3	126.2	-196.8	-106.9	0.00	0.00	0.00
2,920.0	8.00	302.68	2,903.9	129.2	-201.4	-109.5	0.00	0.00	0.00
2,960.0	8.00	302.68	2,943.5	132.2	-206.1	-112.0	0.00	0.00	0.00
3,000.0	8.00	302.68	2,983.1	135.2	-210.8	-114.5	0.00	0.00	0.00
3,040.0	8.00	302.68	3,022.8	138.2	-215.5	-117.1	0.00	0.00	0.00
3,080.0	8.00	302.68	3,062.4	141.2	-220.2	-119.6	0.00	0.00	0.00
3,120.0	8.00	302.68	3,102.0	144.2	-224.9	-122.2	0.00	0.00	0.00
3,160.0	8.00	302.68	3,141.6	147.2	-229.6	-124.7	0.00	0.00	0.00
3,200.0	8.00	302.68	3,181.2	150.2	-234.2	-127.3	0.00	0.00	0.00
3,240.0	8.00	302.68	3,220.8	153.2	-238.9	-129.8	0.00	0.00	0.00
3,280.0	8.00	302.68	3,260.4	156.3	-243.6	-132.4	0.00	0.00	0.00
3,320.0	8.00	302.68	3,300.0	159.3	-248.3	-134.9	0.00	0.00	0.00
3,360.0	8.00	302.68	3,339.6	162.3	-253.0	-137.4	0.00	0.00	0.00
3,400.0	8.00	302.68	3,379.3	165.3	-257.7	-140.0	0.00	0.00	0.00
3,440.0	8.00	302.68	3,418.9	168.3	-262.3	-142.5	0.00	0.00	0.00
3,480.0	8.00	302.68	3,458.5	171.3	-267.0	-145.1	0.00	0.00	0.00
3,520.0	8.00	302.68	3,498.1	174.3	-271.7	-147.6	0.00	0.00	0.00
3,560.0	8.00	302.68	3,537.7	177.3	-276.4	-150.2	0.00	0.00	0.00
3,600.0	8.00	302.68	3,577.3	180.3	-281.1	-152.7	0.00	0.00	0.00
3,640.0	8.00	302.68	3,616.9	183.3	-285.8	-155.3	0.00	0.00	0.00
3,680.0	8.00	302.68	3,656.5	186.3	-290.4	-157.8	0.00	0.00	0.00
3,720.0	8.00	302.68	3,696.1	189.3	-295.1	-160.4	0.00	0.00	0.00
3,760.0	8.00	302.68	3,735.8	192.3	-299.8	-162.9	0.00	0.00	0.00
3,800.0	8.00	302.68	3,775.4	195.3	-304.5	-165.4	0.00	0.00	0.00
3,840.0	8.00	302.68	3,815.0	198.3	-309.2	-168.0	0.00	0.00	0.00
3,880.0	8.00	302.68	3,854.6	201.3	-313.9	-170.5	0.00	0.00	0.00
3,920.0	8.00	302.68	3,894.2	204.3	-318.5	-173.1	0.00	0.00	0.00
3,960.0	8.00	302.68	3,933.8	207.3	-323.2	-175.6	0.00	0.00	0.00
4,000.0	8.00	302.68	3,973.4	210.3	-327.9	-178.2	0.00	0.00	0.00
4,040.0	8.00	302.68	4,013.0	213.3	-332.6	-180.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Project:	SEC.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	North Reference:	True
Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-11-13)		

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	8.00	302.68	4,052.6	216.3	-337.3	-183.3	0.00	0.00	0.00
4,120.0	8.00	302.68	4,092.3	219.3	-342.0	-185.8	0.00	0.00	0.00
4,160.0	8.00	302.68	4,131.9	222.3	-346.6	-188.3	0.00	0.00	0.00
4,200.0	8.00	302.68	4,171.5	225.3	-351.3	-190.9	0.00	0.00	0.00
4,240.0	8.00	302.68	4,211.1	228.4	-356.0	-193.4	0.00	0.00	0.00
4,280.0	8.00	302.68	4,250.7	231.4	-360.7	-196.0	0.00	0.00	0.00
4,320.0	8.00	302.68	4,290.3	234.4	-365.4	-198.5	0.00	0.00	0.00
4,360.0	8.00	302.68	4,329.9	237.4	-370.1	-201.1	0.00	0.00	0.00
4,400.0	8.00	302.68	4,369.5	240.4	-374.7	-203.6	0.00	0.00	0.00
4,440.0	8.00	302.68	4,409.1	243.4	-379.4	-206.2	0.00	0.00	0.00
4,480.0	8.00	302.68	4,448.8	246.4	-384.1	-208.7	0.00	0.00	0.00
4,520.0	8.00	302.68	4,488.4	249.4	-388.8	-211.2	0.00	0.00	0.00
4,560.0	8.00	302.68	4,528.0	252.4	-393.5	-213.8	0.00	0.00	0.00
4,600.0	8.00	302.68	4,567.6	255.4	-398.2	-216.3	0.00	0.00	0.00
4,634.2	8.00	302.68	4,601.5	258.0	-402.2	-218.5	0.00	0.00	0.00
4,640.0	7.88	302.68	4,607.2	258.4	-402.8	-218.9	2.00	-2.00	0.00
4,680.0	7.08	302.68	4,646.9	261.2	-407.2	-221.3	2.00	-2.00	0.00
4,720.0	6.28	302.68	4,686.6	263.7	-411.1	-223.4	2.00	-2.00	0.00
4,760.0	5.48	302.68	4,726.4	265.9	-414.6	-225.3	2.00	-2.00	0.00
4,800.0	4.68	302.68	4,766.2	267.8	-417.6	-226.9	2.00	-2.00	0.00
4,840.0	3.88	302.68	4,806.1	269.5	-420.1	-228.3	2.00	-2.00	0.00
4,880.0	3.08	302.68	4,846.0	270.8	-422.1	-229.4	2.00	-2.00	0.00
4,920.0	2.28	302.68	4,886.0	271.8	-423.7	-230.2	2.00	-2.00	0.00
4,960.0	1.48	302.68	4,926.0	272.5	-424.8	-230.8	2.00	-2.00	0.00
5,000.0	0.68	302.68	4,966.0	272.9	-425.4	-231.2	2.00	-2.00	0.00
5,034.0	0.00	0.00	5,000.0	273.0	-425.6	-231.3	2.00	-2.00	0.00
5,040.0	0.00	0.00	5,006.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,080.0	0.00	0.00	5,046.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,120.0	0.00	0.00	5,086.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,160.0	0.00	0.00	5,126.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,166.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,240.0	0.00	0.00	5,206.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,280.0	0.00	0.00	5,246.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,320.0	0.00	0.00	5,286.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,360.0	0.00	0.00	5,326.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,366.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,440.0	0.00	0.00	5,406.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,480.0	0.00	0.00	5,446.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,520.0	0.00	0.00	5,486.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,560.0	0.00	0.00	5,526.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,566.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,640.0	0.00	0.00	5,606.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,680.0	0.00	0.00	5,646.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,720.0	0.00	0.00	5,686.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,760.0	0.00	0.00	5,726.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,766.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,840.0	0.00	0.00	5,806.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,880.0	0.00	0.00	5,846.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,920.0	0.00	0.00	5,886.0	273.0	-425.6	-231.3	0.00	0.00	0.00
5,960.0	0.00	0.00	5,926.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,966.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,040.0	0.00	0.00	6,006.0	273.0	-425.6	-231.3	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Project:	SEC.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	North Reference:	True
Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-11-13)		

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	6,046.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,120.0	0.00	0.00	6,086.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,160.0	0.00	0.00	6,126.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,166.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,240.0	0.00	0.00	6,206.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,280.0	0.00	0.00	6,246.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,320.0	0.00	0.00	6,286.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,360.0	0.00	0.00	6,326.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,366.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,406.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,446.0	273.0	-425.6	-231.3	0.00	0.00	0.00
6,488.4	0.00	0.00	6,454.4	273.0	-425.6	-231.3	0.00	0.00	0.00
KOP #2									
6,520.0	2.37	180.00	6,485.9	272.3	-425.6	-230.6	7.49	7.49	0.00
6,560.0	5.37	180.00	6,525.9	269.7	-425.6	-227.9	7.50	7.50	0.00
6,600.0	8.37	180.00	6,565.6	264.9	-425.6	-223.2	7.50	7.50	0.00
6,640.0	11.37	180.00	6,605.0	258.0	-425.6	-216.3	7.50	7.50	0.00
6,680.0	14.37	180.00	6,644.0	249.1	-425.6	-207.5	7.50	7.50	0.00
6,720.0	17.37	180.00	6,682.4	238.2	-425.6	-196.6	7.50	7.50	0.00
6,760.0	20.37	180.00	6,720.3	225.2	-425.6	-183.7	7.50	7.50	0.00
6,800.0	23.37	180.00	6,757.4	210.3	-425.6	-168.9	7.50	7.50	0.00
6,840.0	26.37	180.00	6,793.7	193.5	-425.6	-152.1	7.50	7.50	0.00
6,880.0	29.37	180.00	6,829.0	174.8	-425.6	-133.5	7.50	7.50	0.00
6,920.0	32.37	180.00	6,863.4	154.3	-425.6	-113.1	7.50	7.50	0.00
6,960.0	35.37	180.00	6,896.6	132.0	-425.6	-90.9	7.50	7.50	0.00
7,000.0	38.37	180.00	6,928.6	108.0	-425.6	-67.0	7.50	7.50	0.00
7,040.0	41.37	180.00	6,959.3	82.4	-425.6	-41.5	7.50	7.50	0.00
7,080.0	44.37	180.00	6,988.6	55.2	-425.6	-14.4	7.50	7.50	0.00
7,120.0	47.37	180.00	7,016.4	26.5	-425.6	14.2	7.50	7.50	0.00
7,160.0	50.37	180.00	7,042.7	-3.7	-425.6	44.1	7.50	7.50	0.00
7,200.0	53.37	180.00	7,067.4	-35.1	-425.6	75.5	7.50	7.50	0.00
7,240.0	56.37	180.00	7,090.5	-67.8	-425.6	108.0	7.50	7.50	0.00
7,280.0	59.37	180.00	7,111.7	-101.7	-425.6	141.7	7.50	7.50	0.00
7,320.0	62.37	180.00	7,131.2	-136.6	-425.6	176.5	7.50	7.50	0.00
7,360.0	65.37	180.00	7,148.8	-172.5	-425.6	212.3	7.50	7.50	0.00
7,400.0	68.37	180.00	7,164.5	-209.3	-425.6	248.9	7.50	7.50	0.00
7,440.0	71.37	180.00	7,178.3	-246.9	-425.6	286.2	7.50	7.50	0.00
7,480.0	74.37	180.00	7,190.1	-285.1	-425.6	324.3	7.50	7.50	0.00
7,520.0	77.37	180.00	7,199.8	-323.9	-425.6	362.9	7.50	7.50	0.00
7,560.0	80.37	180.00	7,207.6	-363.1	-425.6	402.0	7.50	7.50	0.00
7,600.0	83.37	180.00	7,213.2	-402.7	-425.6	441.4	7.50	7.50	0.00
7,640.0	86.37	180.00	7,216.8	-442.5	-425.6	481.0	7.50	7.50	0.00
7,680.0	89.37	180.00	7,218.3	-482.5	-425.6	520.8	7.50	7.50	0.00
7,697.8	90.70	180.00	7,218.3	-500.3	-425.6	538.5	7.49	7.49	0.00
End of Build - 7"									
7,720.0	90.70	180.00	7,218.0	-522.5	-425.6	560.6	0.00	0.00	0.00
7,760.0	90.70	180.00	7,217.5	-562.5	-425.6	600.5	0.00	0.00	0.00
7,800.0	90.70	180.00	7,217.0	-602.5	-425.6	640.3	0.00	0.00	0.00
7,840.0	90.70	180.00	7,216.5	-642.5	-425.6	680.1	0.00	0.00	0.00
7,880.0	90.70	180.00	7,216.1	-682.5	-425.6	719.9	0.00	0.00	0.00
7,920.0	90.70	180.00	7,215.6	-722.5	-425.6	759.7	0.00	0.00	0.00
7,960.0	90.70	180.00	7,215.1	-762.5	-425.6	799.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Project:	SEC.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	North Reference:	True
Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-11-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,000.0	90.70	180.00	7,214.6	-802.5	-425.6	839.3	0.00	0.00	0.00
8,040.0	90.70	180.00	7,214.1	-842.5	-425.6	879.2	0.00	0.00	0.00
8,080.0	90.70	180.00	7,213.6	-882.5	-425.6	919.0	0.00	0.00	0.00
8,120.0	90.70	180.00	7,213.1	-922.5	-425.6	958.8	0.00	0.00	0.00
8,160.0	90.70	180.00	7,212.6	-962.5	-425.6	998.6	0.00	0.00	0.00
8,200.0	90.70	180.00	7,212.1	-1,002.5	-425.6	1,038.4	0.00	0.00	0.00
8,240.0	90.70	180.00	7,211.7	-1,042.5	-425.6	1,078.2	0.00	0.00	0.00
8,280.0	90.70	180.00	7,211.2	-1,082.5	-425.6	1,118.1	0.00	0.00	0.00
8,320.0	90.70	180.00	7,210.7	-1,122.5	-425.6	1,157.9	0.00	0.00	0.00
8,360.0	90.70	180.00	7,210.2	-1,162.5	-425.6	1,197.7	0.00	0.00	0.00
8,400.0	90.70	180.00	7,209.7	-1,202.5	-425.6	1,237.5	0.00	0.00	0.00
8,440.0	90.70	180.00	7,209.2	-1,242.5	-425.6	1,277.3	0.00	0.00	0.00
8,480.0	90.70	180.00	7,208.7	-1,282.4	-425.6	1,317.1	0.00	0.00	0.00
8,520.0	90.70	180.00	7,208.2	-1,322.4	-425.6	1,356.9	0.00	0.00	0.00
8,560.0	90.70	180.00	7,207.7	-1,362.4	-425.6	1,396.8	0.00	0.00	0.00
8,600.0	90.70	180.00	7,207.3	-1,402.4	-425.6	1,436.6	0.00	0.00	0.00
8,640.0	90.70	180.00	7,206.8	-1,442.4	-425.6	1,476.4	0.00	0.00	0.00
8,680.0	90.70	180.00	7,206.3	-1,482.4	-425.6	1,516.2	0.00	0.00	0.00
8,720.0	90.70	180.00	7,205.8	-1,522.4	-425.6	1,556.0	0.00	0.00	0.00
8,760.0	90.70	180.00	7,205.3	-1,562.4	-425.6	1,595.8	0.00	0.00	0.00
8,800.0	90.70	180.00	7,204.8	-1,602.4	-425.6	1,635.7	0.00	0.00	0.00
8,840.0	90.70	180.00	7,204.3	-1,642.4	-425.6	1,675.5	0.00	0.00	0.00
8,880.0	90.70	180.00	7,203.8	-1,682.4	-425.6	1,715.3	0.00	0.00	0.00
8,920.0	90.70	180.00	7,203.3	-1,722.4	-425.6	1,755.1	0.00	0.00	0.00
8,960.0	90.70	180.00	7,202.9	-1,762.4	-425.6	1,794.9	0.00	0.00	0.00
9,000.0	90.70	180.00	7,202.4	-1,802.4	-425.6	1,834.7	0.00	0.00	0.00
9,040.0	90.70	180.00	7,201.9	-1,842.4	-425.6	1,874.6	0.00	0.00	0.00
9,080.0	90.70	180.00	7,201.4	-1,882.4	-425.6	1,914.4	0.00	0.00	0.00
9,120.0	90.70	180.00	7,200.9	-1,922.4	-425.6	1,954.2	0.00	0.00	0.00
9,160.0	90.70	180.00	7,200.4	-1,962.4	-425.6	1,994.0	0.00	0.00	0.00
9,200.0	90.70	180.00	7,199.9	-2,002.4	-425.6	2,033.8	0.00	0.00	0.00
9,240.0	90.70	180.00	7,199.4	-2,042.4	-425.6	2,073.6	0.00	0.00	0.00
9,280.0	90.70	180.00	7,199.0	-2,082.4	-425.6	2,113.4	0.00	0.00	0.00
9,320.0	90.70	180.00	7,198.5	-2,122.4	-425.6	2,153.3	0.00	0.00	0.00
9,360.0	90.70	180.00	7,198.0	-2,162.4	-425.6	2,193.1	0.00	0.00	0.00
9,400.0	90.70	180.00	7,197.5	-2,202.4	-425.6	2,232.9	0.00	0.00	0.00
9,440.0	90.70	180.00	7,197.0	-2,242.4	-425.6	2,272.7	0.00	0.00	0.00
9,480.0	90.70	180.00	7,196.5	-2,282.4	-425.6	2,312.5	0.00	0.00	0.00
9,520.0	90.70	180.00	7,196.0	-2,322.4	-425.6	2,352.3	0.00	0.00	0.00
9,560.0	90.70	180.00	7,195.5	-2,362.4	-425.6	2,392.2	0.00	0.00	0.00
9,600.0	90.70	180.00	7,195.0	-2,402.4	-425.6	2,432.0	0.00	0.00	0.00
9,640.0	90.70	180.00	7,194.6	-2,442.4	-425.6	2,471.8	0.00	0.00	0.00
9,680.0	90.70	180.00	7,194.1	-2,482.4	-425.6	2,511.6	0.00	0.00	0.00
9,720.0	90.70	180.00	7,193.6	-2,522.4	-425.6	2,551.4	0.00	0.00	0.00
9,760.0	90.70	180.00	7,193.1	-2,562.4	-425.6	2,591.2	0.00	0.00	0.00
9,800.0	90.70	180.00	7,192.6	-2,602.4	-425.6	2,631.0	0.00	0.00	0.00
9,840.0	90.70	180.00	7,192.1	-2,642.3	-425.6	2,670.9	0.00	0.00	0.00
9,880.0	90.70	180.00	7,191.6	-2,682.3	-425.6	2,710.7	0.00	0.00	0.00
9,920.0	90.70	180.00	7,191.1	-2,722.3	-425.6	2,750.5	0.00	0.00	0.00
9,960.0	90.70	180.00	7,190.6	-2,762.3	-425.6	2,790.3	0.00	0.00	0.00
10,000.0	90.70	180.00	7,190.2	-2,802.3	-425.6	2,830.1	0.00	0.00	0.00
10,040.0	90.70	180.00	7,189.7	-2,842.3	-425.6	2,869.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Project:	SEC.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	North Reference:	True
Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-11-13)		

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)
10,080.0	90.70	180.00	7,189.2	-2,882.3	-425.6	2,909.8	0.00	0.00	0.00
10,120.0	90.70	180.00	7,188.7	-2,922.3	-425.6	2,949.6	0.00	0.00	0.00
10,160.0	90.70	180.00	7,188.2	-2,962.3	-425.6	2,989.4	0.00	0.00	0.00
10,200.0	90.70	180.00	7,187.7	-3,002.3	-425.6	3,029.2	0.00	0.00	0.00
10,240.0	90.70	180.00	7,187.2	-3,042.3	-425.6	3,069.0	0.00	0.00	0.00
10,280.0	90.70	180.00	7,186.7	-3,082.3	-425.6	3,108.8	0.00	0.00	0.00
10,320.0	90.70	180.00	7,186.2	-3,122.3	-425.6	3,148.6	0.00	0.00	0.00
10,360.0	90.70	180.00	7,185.8	-3,162.3	-425.6	3,188.5	0.00	0.00	0.00
10,400.0	90.70	180.00	7,185.3	-3,202.3	-425.6	3,228.3	0.00	0.00	0.00
10,440.0	90.70	180.00	7,184.8	-3,242.3	-425.6	3,268.1	0.00	0.00	0.00
10,480.0	90.70	180.00	7,184.3	-3,282.3	-425.6	3,307.9	0.00	0.00	0.00
10,520.0	90.70	180.00	7,183.8	-3,322.3	-425.6	3,347.7	0.00	0.00	0.00
10,560.0	90.70	180.00	7,183.3	-3,362.3	-425.6	3,387.5	0.00	0.00	0.00
10,600.0	90.70	180.00	7,182.8	-3,402.3	-425.6	3,427.4	0.00	0.00	0.00
10,640.0	90.70	180.00	7,182.3	-3,442.3	-425.6	3,467.2	0.00	0.00	0.00
10,680.0	90.70	180.00	7,181.8	-3,482.3	-425.6	3,507.0	0.00	0.00	0.00
10,720.0	90.70	180.00	7,181.4	-3,522.3	-425.6	3,546.8	0.00	0.00	0.00
10,760.0	90.70	180.00	7,180.9	-3,562.3	-425.6	3,586.6	0.00	0.00	0.00
10,800.0	90.70	180.00	7,180.4	-3,602.3	-425.6	3,626.4	0.00	0.00	0.00
10,840.0	90.70	180.00	7,179.9	-3,642.3	-425.6	3,666.2	0.00	0.00	0.00
10,880.0	90.70	180.00	7,179.4	-3,682.3	-425.6	3,706.1	0.00	0.00	0.00
10,920.0	90.70	180.00	7,178.9	-3,722.3	-425.6	3,745.9	0.00	0.00	0.00
10,960.0	90.70	180.00	7,178.4	-3,762.3	-425.6	3,785.7	0.00	0.00	0.00
11,000.0	90.70	180.00	7,177.9	-3,802.3	-425.6	3,825.5	0.00	0.00	0.00
11,040.0	90.70	180.00	7,177.4	-3,842.3	-425.6	3,865.3	0.00	0.00	0.00
11,080.0	90.70	180.00	7,177.0	-3,882.3	-425.6	3,905.1	0.00	0.00	0.00
11,120.0	90.70	180.00	7,176.5	-3,922.3	-425.6	3,945.0	0.00	0.00	0.00
11,160.0	90.70	180.00	7,176.0	-3,962.2	-425.6	3,984.8	0.00	0.00	0.00
11,200.0	90.70	180.00	7,175.5	-4,002.2	-425.6	4,024.6	0.00	0.00	0.00
11,240.0	90.70	180.00	7,175.0	-4,042.2	-425.6	4,064.4	0.00	0.00	0.00
11,280.0	90.70	180.00	7,174.5	-4,082.2	-425.6	4,104.2	0.00	0.00	0.00
11,320.0	90.70	180.00	7,174.0	-4,122.2	-425.6	4,144.0	0.00	0.00	0.00
11,360.0	90.70	180.00	7,173.5	-4,162.2	-425.6	4,183.8	0.00	0.00	0.00
11,400.0	90.70	180.00	7,173.1	-4,202.2	-425.6	4,223.7	0.00	0.00	0.00
11,440.0	90.70	180.00	7,172.6	-4,242.2	-425.6	4,263.5	0.00	0.00	0.00
11,480.0	90.70	180.00	7,172.1	-4,282.2	-425.6	4,303.3	0.00	0.00	0.00
11,520.0	90.70	180.00	7,171.6	-4,322.2	-425.6	4,343.1	0.00	0.00	0.00
11,560.0	90.70	180.00	7,171.1	-4,362.2	-425.6	4,382.9	0.00	0.00	0.00
11,600.0	90.70	180.00	7,170.6	-4,402.2	-425.6	4,422.7	0.00	0.00	0.00
11,640.0	90.70	180.00	7,170.1	-4,442.2	-425.6	4,462.6	0.00	0.00	0.00
11,649.7	90.70	180.00	7,170.0	-4,451.9	-425.6	4,472.2	0.00	0.00	0.00
BHL 500'FSL & 2510'FEL									

Database:	Landmark	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Project:	SEC.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	North Reference:	True
Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-11-13)		

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 & 2510'I - plan hits target center - Point	0.00	0.00	7,170.0	-4,451.9	-425.6	1,419,463.15	3,204,971.07	40.482490	-104.763140

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,697.8	7,218.3	7"	7	7-1/2	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,488.4	6,454.4	273.0	-425.6	KOP #2
7,697.8	7,218.3	-500.3	-425.6	End of Build



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.15-T6N-R66W

Harvesters Resources 15RM-HZ Pad

Sec.15-T6N-R66W

Harvesters Resources 15M-303

Wellbore #1

Plan #1 (06-11-13)

Anticollision Report

11 June, 2013



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (06-11-13)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 6/11/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,649.7	Plan #1 (06-11-13) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells						
Berg 33-15 (Exist.) - Wellbore #1 - Wellbore #1	10,225.2	7,135.4	528.5	324.7	2.593	CC, ES, SF
Harvester 31-15 (Exist.) - Wellbore #1 - Wellbore #1	1,000.0	975.0	535.1	513.5	24.751	CC
Harvester 31-15 (Exist.) - Wellbore #1 - Wellbore #1	7,674.7	7,193.2	667.6	505.0	4.105	ES
Harvester 31-15 (Exist.) - Wellbore #1 - Wellbore #1	7,700.0	7,193.3	668.1	505.2	4.102	SF
Harvester 32-15 (Exist.) - Wellbore #1 - Wellbore #1	8,724.1	7,170.7	695.4	517.9	3.917	CC, ES
Harvester 32-15 (Exist.) - Wellbore #1 - Wellbore #1	8,800.0	7,169.8	699.6	520.8	3.912	SF
Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W						
Harvesters Resources 15M-423 - Wellbore #1 - Plan #1 (	1,000.0	1,000.0	30.6	26.4	7.221	CC, ES
Harvesters Resources 15M-423 - Wellbore #1 - Plan #1 (	11,649.7	11,700.8	345.8	175.7	2.033	SF
Harvesters Resources 15R-243 - Wellbore #1 - Plan #1 (	1,000.0	1,000.0	58.4	54.2	13.786	CC, ES
Harvesters Resources 15R-243 - Wellbore #1 - Plan #1 (	11,649.7	11,560.4	810.2	635.1	4.627	SF

Offset Design	Existing Wells - Berg 33-15 (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)	Offset Wellbore Centre +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	178.05	-3,027.5	102.9	3,029.7					
100.0	100.0	48.0	48.0	0.1	1.0	178.05	-3,027.5	102.9	3,029.2	3,028.2	1.06	2,869.333		
200.0	200.0	148.0	148.0	0.3	3.0	178.05	-3,027.5	102.9	3,029.2	3,025.9	3.28	923.407		
300.0	300.0	248.0	248.0	0.5	5.0	178.05	-3,027.5	102.9	3,029.2	3,023.7	5.51	550.243		
400.0	400.0	348.0	348.0	0.8	7.0	178.05	-3,027.5	102.9	3,029.2	3,021.5	7.73	391.878		
500.0	500.0	448.0	448.0	1.0	9.0	178.05	-3,027.5	102.9	3,029.2	3,019.3	9.95	304.299		
600.0	600.0	548.0	548.0	1.2	11.0	178.05	-3,027.5	102.9	3,029.2	3,017.0	12.18	248.714		
700.0	700.0	648.0	648.0	1.4	13.0	178.05	-3,027.5	102.9	3,029.2	3,014.8	14.40	210.300		
800.0	800.0	748.0	748.0	1.7	15.0	178.05	-3,027.5	102.9	3,029.2	3,012.6	16.63	182.164		
900.0	900.0	848.0	848.0	1.9	17.0	178.05	-3,027.5	102.9	3,029.2	3,010.4	18.85	160.669		
1,000.0	1,000.0	948.0	948.0	2.1	19.0	178.05	-3,027.5	102.9	3,029.2	3,008.1	21.08	143.711		
1,100.0	1,100.0	1,048.0	1,048.0	2.3	21.0	-124.63	-3,027.5	102.9	3,030.2	3,006.9	23.29	130.090		
1,200.0	1,199.8	1,147.8	1,147.8	2.6	23.0	-124.67	-3,027.5	102.9	3,033.2	3,007.7	25.49	118.980		
1,300.0	1,299.5	1,247.5	1,247.5	2.8	24.9	-124.72	-3,027.5	102.9	3,038.2	3,010.5	27.68	109.741		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells - Berg 33-15 (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
1,399.8	1,398.5	1,346.5	1,346.5	3.0	26.9	-124.79	-3,027.5	102.9	3,045.1	3,015.3	29.86	101.965	
1,500.0	1,497.7	1,445.7	1,445.7	3.3	28.9	-125.01	-3,027.5	102.9	3,053.2	3,021.1	32.10	95.116	
1,600.0	1,596.8	1,544.8	1,544.8	3.6	30.9	-125.22	-3,027.5	102.9	3,061.2	3,026.9	34.34	89.145	
1,700.0	1,695.8	1,643.8	1,643.8	3.9	32.9	-125.43	-3,027.5	102.9	3,069.3	3,032.7	36.59	83.890	
1,800.0	1,794.8	1,742.8	1,742.8	4.2	34.9	-125.64	-3,027.5	102.9	3,077.4	3,038.6	38.84	79.232	
1,900.0	1,893.8	1,841.8	1,841.8	4.5	36.8	-125.85	-3,027.5	102.9	3,085.6	3,044.5	41.10	75.078	
2,000.0	1,992.9	1,940.9	1,940.9	4.8	38.8	-126.05	-3,027.5	102.9	3,093.8	3,050.5	43.36	71.352	
2,100.0	2,091.9	2,039.9	2,039.9	5.1	40.8	-126.26	-3,027.5	102.9	3,102.1	3,056.5	45.62	67.992	
2,200.0	2,190.9	2,138.9	2,138.9	5.4	42.8	-126.47	-3,027.5	102.9	3,110.4	3,062.5	47.89	64.948	
2,300.0	2,290.0	2,238.0	2,238.0	5.8	44.8	-126.67	-3,027.5	102.9	3,118.7	3,068.6	50.16	62.177	
2,400.0	2,389.0	2,337.0	2,337.0	6.1	46.7	-126.87	-3,027.5	102.9	3,127.1	3,074.7	52.43	59.646	
2,500.0	2,488.0	2,436.0	2,436.0	6.4	48.7	-127.08	-3,027.5	102.9	3,135.5	3,080.8	54.70	57.324	
2,600.0	2,587.0	2,535.0	2,535.0	6.7	50.7	-127.28	-3,027.5	102.9	3,144.0	3,087.0	56.97	55.187	
2,700.0	2,686.1	2,634.1	2,634.1	7.1	52.7	-127.48	-3,027.5	102.9	3,152.5	3,093.3	59.24	53.215	
2,800.0	2,785.1	2,733.1	2,733.1	7.4	54.7	-127.68	-3,027.5	102.9	3,161.0	3,099.5	61.51	51.388	
2,900.0	2,884.1	2,832.1	2,832.1	7.7	56.6	-127.87	-3,027.5	102.9	3,169.6	3,105.8	63.79	49.692	
3,000.0	2,983.1	2,931.1	2,931.1	8.1	58.6	-128.07	-3,027.5	102.9	3,178.2	3,112.2	66.06	48.112	
3,100.0	3,082.2	3,030.2	3,030.2	8.4	60.6	-128.27	-3,027.5	102.9	3,186.9	3,118.5	68.33	46.639	
3,200.0	3,181.2	3,129.2	3,129.2	8.7	62.6	-128.46	-3,027.5	102.9	3,195.6	3,125.0	70.60	45.261	
3,300.0	3,280.2	3,228.2	3,228.2	9.1	64.6	-128.65	-3,027.5	102.9	3,204.3	3,131.4	72.88	43.969	
3,400.0	3,379.3	3,327.3	3,327.3	9.4	66.5	-128.85	-3,027.5	102.9	3,213.0	3,137.9	75.15	42.756	
3,500.0	3,478.3	3,426.3	3,426.3	9.7	68.5	-129.04	-3,027.5	102.9	3,221.8	3,144.4	77.42	41.615	
3,600.0	3,577.3	3,525.3	3,525.3	10.1	70.5	-129.23	-3,027.5	102.9	3,230.7	3,151.0	79.69	40.540	
3,700.0	3,676.3	3,624.3	3,624.3	10.4	72.5	-129.42	-3,027.5	102.9	3,239.5	3,157.6	81.96	39.524	
3,800.0	3,775.4	3,723.4	3,723.4	10.8	74.5	-129.61	-3,027.5	102.9	3,248.4	3,164.2	84.23	38.564	
3,900.0	3,874.4	3,822.4	3,822.4	11.1	76.4	-129.79	-3,027.5	102.9	3,257.4	3,170.9	86.50	37.655	
4,000.0	3,973.4	3,921.4	3,921.4	11.4	78.4	-129.98	-3,027.5	102.9	3,266.3	3,177.6	88.78	36.793	
4,100.0	4,072.4	4,020.4	4,020.4	11.8	80.4	-130.17	-3,027.5	102.9	3,275.3	3,184.3	91.05	35.975	
4,200.0	4,171.5	4,119.5	4,119.5	12.1	82.4	-130.35	-3,027.5	102.9	3,284.4	3,191.1	93.31	35.197	
4,300.0	4,270.5	4,218.5	4,218.5	12.5	84.4	-130.53	-3,027.5	102.9	3,293.5	3,197.9	95.58	34.456	
4,400.0	4,369.5	4,317.5	4,317.5	12.8	86.4	-130.72	-3,027.5	102.9	3,302.6	3,204.7	97.85	33.751	
4,500.0	4,468.6	4,416.6	4,416.6	13.1	88.3	-130.90	-3,027.5	102.9	3,311.7	3,211.6	100.12	33.077	
4,600.0	4,567.6	4,515.6	4,515.6	13.5	90.3	-131.08	-3,027.5	102.9	3,320.9	3,218.5	102.39	32.434	
4,634.2	4,601.5	4,549.5	4,549.5	13.6	91.0	-131.14	-3,027.5	102.9	3,324.0	3,220.9	103.16	32.221	
4,700.0	4,666.7	4,614.7	4,614.7	13.8	92.3	-131.33	-3,027.5	102.9	3,329.6	3,224.9	104.74	31.789	
4,800.0	4,766.2	4,714.2	4,714.2	14.0	94.3	-131.56	-3,027.5	102.9	3,336.2	3,229.1	107.05	31.163	
4,900.0	4,866.0	4,814.0	4,814.0	14.2	96.3	-131.70	-3,027.5	102.9	3,340.4	3,231.1	109.31	30.559	
5,000.0	4,966.0	4,914.0	4,914.0	14.4	98.3	-131.77	-3,027.5	102.9	3,342.4	3,230.9	111.50	29.977	
5,034.0	5,000.0	4,948.0	4,948.0	14.4	99.0	170.90	-3,027.5	102.9	3,342.5	3,230.3	112.23	29.783	
5,100.0	5,066.0	5,014.0	5,014.0	14.5	100.3	170.90	-3,027.5	102.9	3,342.5	3,228.9	113.65	29.410	
5,200.0	5,166.0	5,114.0	5,114.0	14.7	102.3	170.90	-3,027.5	102.9	3,342.5	3,226.7	115.84	28.856	
5,300.0	5,266.0	5,214.0	5,214.0	14.9	104.3	170.90	-3,027.5	102.9	3,342.5	3,224.5	118.02	28.322	
5,400.0	5,366.0	5,314.0	5,314.0	15.0	106.3	170.90	-3,027.5	102.9	3,342.5	3,222.3	120.20	27.807	
5,500.0	5,466.0	5,414.0	5,414.0	15.2	108.3	170.90	-3,027.5	102.9	3,342.5	3,220.1	122.39	27.311	
5,600.0	5,566.0	5,514.0	5,514.0	15.4	110.3	170.90	-3,027.5	102.9	3,342.5	3,218.0	124.58	26.831	
5,700.0	5,666.0	5,614.0	5,614.0	15.5	112.3	170.90	-3,027.5	102.9	3,342.5	3,215.8	126.76	26.368	
5,800.0	5,766.0	5,714.0	5,714.0	15.7	114.3	170.90	-3,027.5	102.9	3,342.5	3,213.6	128.95	25.921	
5,900.0	5,866.0	5,814.0	5,814.0	15.9	116.3	170.90	-3,027.5	102.9	3,342.5	3,211.4	131.14	25.488	
6,000.0	5,966.0	5,914.0	5,914.0	16.1	118.3	170.90	-3,027.5	102.9	3,342.5	3,209.2	133.33	25.069	
6,100.0	6,066.0	6,014.0	6,014.0	16.3	120.3	170.90	-3,027.5	102.9	3,342.5	3,207.0	135.52	24.664	
6,200.0	6,166.0	6,114.0	6,114.0	16.4	122.3	170.90	-3,027.5	102.9	3,342.5	3,204.8	137.72	24.271	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells - Berg 33-15 (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							
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	
6,300.0	6,266.0	6,214.0	6,214.0	16.6	124.3	170.90	-3,027.5	102.9	3,342.5	3,202.6	139.91	23.891		
6,400.0	6,366.0	6,314.0	6,314.0	16.8	126.3	170.90	-3,027.5	102.9	3,342.5	3,200.4	142.10	23.522		
6,488.4	6,454.4	6,402.4	6,402.4	17.0	128.0	170.90	-3,027.5	102.9	3,342.5	3,198.5	144.04	23.205		
6,500.0	6,466.0	6,414.0	6,414.0	17.0	128.3	-9.10	-3,027.5	102.9	3,342.4	3,198.2	144.27	23.168		
6,550.0	6,515.9	6,463.9	6,463.9	17.0	129.3	-9.13	-3,027.5	102.9	3,340.1	3,195.2	144.87	23.056		
6,600.0	6,565.6	6,513.6	6,513.6	17.1	130.3	-9.22	-3,027.5	102.9	3,334.5	3,189.6	144.85	23.020		
6,650.0	6,614.8	6,562.8	6,562.8	17.1	131.3	-9.35	-3,027.5	102.9	3,325.7	3,181.5	144.22	23.060		
6,700.0	6,663.3	6,611.3	6,611.3	17.2	132.2	-9.53	-3,027.5	102.9	3,313.8	3,170.8	142.96	23.180		
6,750.0	6,710.9	6,658.9	6,658.9	17.2	133.2	-9.78	-3,027.5	102.9	3,298.8	3,157.7	141.07	23.383		
6,800.0	6,757.4	6,705.4	6,705.4	17.2	134.1	-10.08	-3,027.5	102.9	3,280.7	3,142.1	138.57	23.675		
6,850.0	6,802.6	6,750.6	6,750.6	17.2	135.0	-10.46	-3,027.5	102.9	3,259.6	3,124.2	135.47	24.062		
6,900.0	6,846.3	6,794.3	6,794.3	17.2	135.9	-10.92	-3,027.5	102.9	3,235.7	3,103.9	131.79	24.552		
6,950.0	6,888.4	6,836.4	6,836.4	17.2	136.7	-11.47	-3,027.5	102.9	3,209.1	3,081.5	127.57	25.154		
7,000.0	6,928.6	6,876.6	6,876.6	17.2	137.5	-12.13	-3,027.5	102.9	3,179.7	3,056.9	122.87	25.878		
7,050.0	6,966.7	6,914.7	6,914.7	17.2	138.3	-12.93	-3,027.5	102.9	3,147.9	3,030.1	117.76	26.730		
7,100.0	7,002.7	6,950.7	6,950.7	17.2	139.0	-13.89	-3,027.5	102.9	3,113.7	3,001.3	112.36	27.712		
7,150.0	7,036.3	6,984.3	6,984.3	17.2	139.7	-15.06	-3,027.5	102.9	3,077.2	2,970.4	106.82	28.809		
7,200.0	7,067.4	7,015.4	7,015.4	17.2	140.3	-16.49	-3,027.5	102.9	3,038.7	2,937.3	101.37	29.976		
7,250.0	7,095.9	7,043.9	7,043.9	17.2	140.9	-18.26	-3,027.5	102.9	2,998.2	2,901.9	96.38	31.109		
7,300.0	7,121.7	7,069.7	7,069.7	17.3	141.4	-20.47	-3,027.5	102.9	2,956.1	2,863.7	92.37	32.002		
7,350.0	7,144.6	7,092.6	7,092.6	17.4	141.9	-23.29	-3,027.5	102.9	2,912.4	2,822.2	90.13	32.314		
7,400.0	7,164.5	7,112.5	7,112.5	17.5	142.3	-26.96	-3,027.5	102.9	2,867.3	2,776.6	90.71	31.610		
7,450.0	7,181.4	7,129.4	7,129.4	17.8	142.6	-31.85	-3,027.5	102.9	2,821.1	2,725.7	95.38	29.576		
7,500.0	7,195.2	7,143.2	7,143.2	18.1	142.9	-38.48	-3,027.5	102.9	2,773.9	2,668.6	105.31	26.340		
7,550.0	7,205.8	7,153.8	7,153.8	18.4	143.1	-47.64	-3,027.5	102.9	2,725.9	2,605.1	120.88	22.551		
7,600.0	7,213.2	7,161.2	7,161.2	18.8	143.2	-60.16	-3,027.5	102.9	2,677.5	2,537.2	140.23	19.094		
7,650.0	7,217.4	7,165.4	7,165.4	19.3	143.3	-76.23	-3,027.5	102.9	2,628.6	2,471.6	156.99	16.744		
7,697.8	7,218.3	7,166.3	7,166.3	19.8	143.3	-93.34	-3,027.5	102.9	2,581.9	2,419.8	162.12	15.925		
7,700.0	7,218.3	7,166.3	7,166.3	19.8	143.3	-93.34	-3,027.5	102.9	2,579.7	2,417.5	162.15	15.909		
7,800.0	7,217.0	7,165.0	7,165.0	20.9	143.3	-93.21	-3,027.5	102.9	2,481.9	2,318.6	163.27	15.201		
7,900.0	7,215.8	7,163.8	7,163.8	22.1	143.3	-93.08	-3,027.5	102.9	2,384.3	2,219.8	164.50	14.494		
8,000.0	7,214.6	7,162.6	7,162.6	23.4	143.3	-92.94	-3,027.5	102.9	2,286.9	2,121.1	165.83	13.791		
8,100.0	7,213.4	7,161.4	7,161.4	24.8	143.2	-92.81	-3,027.5	102.9	2,189.7	2,022.5	167.24	13.094		
8,200.0	7,212.1	7,160.1	7,160.1	26.3	143.2	-92.68	-3,027.5	102.9	2,092.8	1,924.1	168.71	12.405		
8,300.0	7,210.9	7,158.9	7,158.9	27.8	143.2	-92.55	-3,027.5	102.9	1,996.3	1,826.0	170.23	11.726		
8,400.0	7,209.7	7,157.7	7,157.7	29.3	143.2	-92.42	-3,027.5	102.9	1,900.0	1,728.2	171.81	11.059		
8,500.0	7,208.5	7,156.5	7,156.5	30.9	143.1	-92.28	-3,027.5	102.9	1,804.2	1,630.8	173.42	10.404		
8,600.0	7,207.3	7,155.3	7,155.3	32.6	143.1	-92.15	-3,027.5	102.9	1,708.8	1,533.8	175.06	9.761		
8,700.0	7,206.0	7,154.0	7,154.0	34.2	143.1	-92.02	-3,027.5	102.9	1,614.0	1,437.3	176.73	9.133		
8,800.0	7,204.8	7,152.8	7,152.8	35.9	143.1	-91.89	-3,027.5	102.9	1,519.9	1,341.5	178.42	8.519		
8,900.0	7,203.6	7,151.6	7,151.6	37.6	143.0	-91.75	-3,027.5	102.9	1,426.6	1,246.4	180.14	7.919		
9,000.0	7,202.4	7,150.4	7,150.4	39.4	143.0	-91.62	-3,027.5	102.9	1,334.2	1,152.4	181.87	7.336		
9,100.0	7,201.2	7,149.2	7,149.2	41.1	143.0	-91.49	-3,027.5	102.9	1,243.0	1,059.4	183.61	6.770		
9,200.0	7,199.9	7,147.9	7,147.9	42.9	143.0	-91.36	-3,027.5	102.9	1,153.3	967.9	185.37	6.222		
9,300.0	7,198.7	7,146.7	7,146.7	44.6	142.9	-91.22	-3,027.5	102.9	1,065.4	878.3	187.14	5.693		
9,400.0	7,197.5	7,145.5	7,145.5	46.4	142.9	-91.09	-3,027.5	102.9	979.9	790.9	188.92	5.187		
9,500.0	7,196.3	7,144.3	7,144.3	48.2	142.9	-90.96	-3,027.5	102.9	897.3	706.6	190.71	4.705		
9,600.0	7,195.0	7,143.0	7,143.0	50.0	142.9	-90.83	-3,027.5	102.9	818.6	626.1	192.51	4.252		
9,700.0	7,193.8	7,141.8	7,141.8	51.8	142.8	-90.70	-3,027.5	102.9	745.1	550.7	194.32	3.834		
9,800.0	7,192.6	7,140.6	7,140.6	53.7	142.8	-90.56	-3,027.5	102.9	678.3	482.2	196.12	3.458		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells - Berg 33-15 (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			
9,900.0	7,191.4	7,139.4	7,139.4	55.5	142.8	-90.43	-3,027.5	102.9	620.5	422.6	197.94	3.135	CC, ES, SF		
10,000.0	7,190.2	7,138.2	7,138.2	57.3	142.8	-90.30	-3,027.5	102.9	574.5	374.7	199.76	2.876			
10,100.0	7,188.9	7,136.9	7,136.9	59.2	142.7	-90.17	-3,027.5	102.9	543.2	341.6	201.58	2.694			
10,200.0	7,187.7	7,135.7	7,135.7	61.0	142.7	-90.03	-3,027.5	102.9	529.1	325.7	203.41	2.601			
10,225.2	7,187.4	7,135.4	7,135.4	61.5	142.7	-90.00	-3,027.5	102.9	528.5	324.7	203.87	2.593			
10,300.0	7,186.5	7,134.5	7,134.5	62.9	142.7	-89.90	-3,027.5	102.9	533.8	328.6	205.24	2.601			
10,400.0	7,185.3	7,133.3	7,133.3	64.7	142.7	-89.77	-3,027.5	102.9	556.7	349.6	207.07	2.688			
10,500.0	7,184.0	7,132.0	7,132.0	66.6	142.6	-89.64	-3,027.5	102.9	595.7	386.8	208.91	2.852			
10,600.0	7,182.8	7,130.8	7,130.8	68.4	142.6	-89.50	-3,027.5	102.9	648.0	437.2	210.75	3.075			
10,700.0	7,181.6	7,129.6	7,129.6	70.3	142.6	-89.37	-3,027.5	102.9	710.5	497.9	212.59	3.342			
10,800.0	7,180.4	7,128.4	7,128.4	72.2	142.6	-89.24	-3,027.5	102.9	780.9	566.4	214.43	3.642			
10,900.0	7,179.2	7,127.2	7,127.2	74.0	142.5	-89.11	-3,027.5	102.9	857.1	640.9	216.27	3.963			
11,000.0	7,177.9	7,125.9	7,125.9	75.9	142.5	-88.97	-3,027.5	102.9	937.9	719.8	218.11	4.300			
11,100.0	7,176.7	7,124.7	7,124.7	77.8	142.5	-88.84	-3,027.5	102.9	1,022.1	802.1	219.96	4.647			
11,200.0	7,175.5	7,123.5	7,123.5	79.7	142.5	-88.71	-3,027.5	102.9	1,108.8	887.0	221.80	4.999			
11,300.0	7,174.3	7,122.3	7,122.3	81.5	142.4	-88.58	-3,027.5	102.9	1,197.7	974.0	223.65	5.355			
11,400.0	7,173.1	7,121.1	7,121.1	83.4	142.4	-88.44	-3,027.5	102.9	1,288.2	1,062.7	225.50	5.713			
11,500.0	7,171.8	7,119.8	7,119.8	85.3	142.4	-88.31	-3,027.5	102.9	1,380.0	1,152.6	227.34	6.070			
11,600.0	7,170.6	7,118.6	7,118.6	87.2	142.4	-88.18	-3,027.5	102.9	1,472.8	1,243.7	229.19	6.426			
11,649.7	7,170.0	7,118.0	7,118.0	88.1	142.4	-88.11	-3,027.5	102.9	1,519.4	1,289.3	230.11	6.603			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells - Harvester 31-15 (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	153.11	-477.3	242.0	535.7					
100.0	100.0	75.0	75.0	0.1	1.5	153.11	-477.3	242.0	535.1	533.5	1.60	335.328		
200.0	200.0	175.0	175.0	0.3	3.5	153.11	-477.3	242.0	535.1	531.3	3.82	140.058		
300.0	300.0	275.0	275.0	0.5	5.5	153.11	-477.3	242.0	535.1	529.0	6.05	88.514		
400.0	400.0	375.0	375.0	0.8	7.5	153.11	-477.3	242.0	535.1	526.8	8.27	64.703		
500.0	500.0	475.0	475.0	1.0	9.5	153.11	-477.3	242.0	535.1	524.6	10.49	50.986		
600.0	600.0	575.0	575.0	1.2	11.5	153.11	-477.3	242.0	535.1	522.4	12.72	42.068		
700.0	700.0	675.0	675.0	1.4	13.5	153.11	-477.3	242.0	535.1	520.1	14.94	35.806		
800.0	800.0	775.0	775.0	1.7	15.5	153.11	-477.3	242.0	535.1	517.9	17.17	31.166		
900.0	900.0	875.0	875.0	1.9	17.5	153.11	-477.3	242.0	535.1	515.7	19.39	27.591		
1,000.0	1,000.0	975.0	975.0	2.1	19.5	153.11	-477.3	242.0	535.1	513.5	21.62	24.751 CC		
1,100.0	1,100.0	1,075.0	1,075.0	2.3	21.5	-149.64	-477.3	242.0	536.6	512.8	23.83	22.521		
1,200.0	1,199.8	1,174.8	1,174.8	2.6	23.5	-149.88	-477.3	242.0	541.1	515.1	26.00	20.808		
1,300.0	1,299.5	1,274.5	1,274.5	2.8	25.5	-150.26	-477.3	242.0	548.7	520.5	28.15	19.490		
1,399.8	1,398.5	1,373.5	1,373.5	3.0	27.5	-150.77	-477.3	242.0	559.3	529.0	30.26	18.484		
1,500.0	1,497.7	1,472.7	1,472.7	3.3	29.5	-151.45	-477.3	242.0	571.5	539.1	32.46	17.606		
1,600.0	1,596.8	1,571.8	1,571.8	3.6	31.4	-152.10	-477.3	242.0	583.8	549.1	34.67	16.841		
1,700.0	1,695.8	1,670.8	1,670.8	3.9	33.4	-152.73	-477.3	242.0	596.2	559.3	36.87	16.168		
1,800.0	1,794.8	1,769.8	1,769.8	4.2	35.4	-153.33	-477.3	242.0	608.6	569.5	39.08	15.572		
1,900.0	1,893.8	1,868.8	1,868.8	4.5	37.4	-153.90	-477.3	242.0	621.1	579.8	41.29	15.041		
2,000.0	1,992.9	1,967.9	1,967.9	4.8	39.4	-154.45	-477.3	242.0	633.6	590.1	43.50	14.564		
2,100.0	2,091.9	2,066.9	2,066.9	5.1	41.3	-154.98	-477.3	242.0	646.2	600.5	45.72	14.135		
2,200.0	2,190.9	2,165.9	2,165.9	5.4	43.3	-155.50	-477.3	242.0	658.9	610.9	47.93	13.747		
2,300.0	2,290.0	2,265.0	2,265.0	5.8	45.3	-155.99	-477.3	242.0	671.6	621.4	50.14	13.393		
2,400.0	2,389.0	2,364.0	2,364.0	6.1	47.3	-156.46	-477.3	242.0	684.3	632.0	52.35	13.071		
2,500.0	2,488.0	2,463.0	2,463.0	6.4	49.3	-156.92	-477.3	242.0	697.1	642.5	54.57	12.775		
2,600.0	2,587.0	2,562.0	2,562.0	6.7	51.2	-157.36	-477.3	242.0	709.9	653.2	56.78	12.503		
2,700.0	2,686.1	2,661.1	2,661.1	7.1	53.2	-157.78	-477.3	242.0	722.8	663.8	58.99	12.253		
2,800.0	2,785.1	2,760.1	2,760.1	7.4	55.2	-158.19	-477.3	242.0	735.7	674.5	61.21	12.021		
2,900.0	2,884.1	2,859.1	2,859.1	7.7	57.2	-158.58	-477.3	242.0	748.7	685.3	63.42	11.806		
3,000.0	2,983.1	2,958.1	2,958.1	8.1	59.2	-158.97	-477.3	242.0	761.7	696.0	65.63	11.606		
3,100.0	3,082.2	3,057.2	3,057.2	8.4	61.1	-159.33	-477.3	242.0	774.7	706.8	67.84	11.419		
3,200.0	3,181.2	3,156.2	3,156.2	8.7	63.1	-159.69	-477.3	242.0	787.7	717.7	70.05	11.245		
3,300.0	3,280.2	3,255.2	3,255.2	9.1	65.1	-160.04	-477.3	242.0	800.8	728.5	72.26	11.082		
3,400.0	3,379.3	3,354.3	3,354.3	9.4	67.1	-160.37	-477.3	242.0	813.9	739.4	74.47	10.929		
3,500.0	3,478.3	3,453.3	3,453.3	9.7	69.1	-160.69	-477.3	242.0	827.0	750.4	76.69	10.785		
3,600.0	3,577.3	3,552.3	3,552.3	10.1	71.0	-161.01	-477.3	242.0	840.2	761.3	78.90	10.650		
3,700.0	3,676.3	3,651.3	3,651.3	10.4	73.0	-161.31	-477.3	242.0	853.4	772.3	81.11	10.522		
3,800.0	3,775.4	3,750.4	3,750.4	10.8	75.0	-161.60	-477.3	242.0	866.6	783.3	83.32	10.401		
3,900.0	3,874.4	3,849.4	3,849.4	11.1	77.0	-161.89	-477.3	242.0	879.8	794.3	85.52	10.287		
4,000.0	3,973.4	3,948.4	3,948.4	11.4	79.0	-162.17	-477.3	242.0	893.0	805.3	87.73	10.179		
4,100.0	4,072.4	4,047.4	4,047.4	11.8	80.9	-162.44	-477.3	242.0	906.3	816.4	89.94	10.077		
4,200.0	4,171.5	4,146.5	4,146.5	12.1	82.9	-162.70	-477.3	242.0	919.6	827.4	92.15	9.979		
4,300.0	4,270.5	4,245.5	4,245.5	12.5	84.9	-162.95	-477.3	242.0	932.9	838.5	94.36	9.887		
4,400.0	4,369.5	4,344.5	4,344.5	12.8	86.9	-163.20	-477.3	242.0	946.2	849.6	96.57	9.798		
4,500.0	4,468.6	4,443.6	4,443.6	13.1	88.9	-163.44	-477.3	242.0	959.6	860.8	98.78	9.714		
4,600.0	4,567.6	4,542.6	4,542.6	13.5	90.9	-163.67	-477.3	242.0	972.9	871.9	100.99	9.634		
4,634.2	4,601.5	4,576.5	4,576.5	13.6	91.5	-163.75	-477.3	242.0	977.5	875.7	101.74	9.607		
4,700.0	4,666.7	4,641.7	4,641.7	13.8	92.8	-163.93	-477.3	242.0	985.6	882.1	103.43	9.529		
4,800.0	4,766.2	4,741.2	4,741.2	14.0	94.8	-164.14	-477.3	242.0	995.1	889.2	105.88	9.398		
4,900.0	4,866.0	4,841.0	4,841.0	14.2	96.8	-164.28	-477.3	242.0	1,001.3	893.0	108.23	9.251		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells - Harvester 31-15 (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				
5,000.0	4,966.0	4,941.0	4,941.0	14.4	98.8	-164.34	-477.3	242.0	1,004.1	893.6	110.47	9.090				
5,034.0	5,000.0	4,975.0	4,975.0	14.4	99.5	138.34	-477.3	242.0	1,004.3	893.1	111.20	9.031				
5,100.0	5,066.0	5,041.0	5,041.0	14.5	100.8	138.34	-477.3	242.0	1,004.3	891.6	112.64	8.916				
5,200.0	5,166.0	5,141.0	5,141.0	14.7	102.8	138.34	-477.3	242.0	1,004.3	889.4	114.84	8.745				
5,300.0	5,266.0	5,241.0	5,241.0	14.9	104.8	138.34	-477.3	242.0	1,004.3	887.2	117.04	8.580				
5,400.0	5,366.0	5,341.0	5,341.0	15.0	106.8	138.34	-477.3	242.0	1,004.3	885.0	119.25	8.422				
5,500.0	5,466.0	5,441.0	5,441.0	15.2	108.8	138.34	-477.3	242.0	1,004.3	882.8	121.45	8.269				
5,600.0	5,566.0	5,541.0	5,541.0	15.4	110.8	138.34	-477.3	242.0	1,004.3	880.6	123.66	8.122				
5,700.0	5,666.0	5,641.0	5,641.0	15.5	112.8	138.34	-477.3	242.0	1,004.3	878.4	125.86	7.979				
5,800.0	5,766.0	5,741.0	5,741.0	15.7	114.8	138.34	-477.3	242.0	1,004.3	876.2	128.07	7.842				
5,900.0	5,866.0	5,841.0	5,841.0	15.9	116.8	138.34	-477.3	242.0	1,004.3	874.0	130.27	7.709				
6,000.0	5,966.0	5,941.0	5,941.0	16.1	118.8	138.34	-477.3	242.0	1,004.3	871.8	132.48	7.580				
6,100.0	6,066.0	6,041.0	6,041.0	16.3	120.8	138.34	-477.3	242.0	1,004.3	869.6	134.69	7.456				
6,200.0	6,166.0	6,141.0	6,141.0	16.4	122.8	138.34	-477.3	242.0	1,004.3	867.4	136.90	7.336				
6,300.0	6,266.0	6,241.0	6,241.0	16.6	124.8	138.34	-477.3	242.0	1,004.3	865.2	139.11	7.219				
6,400.0	6,366.0	6,341.0	6,341.0	16.8	126.8	138.34	-477.3	242.0	1,004.3	863.0	141.32	7.107				
6,488.4	6,454.4	6,429.4	6,429.4	17.0	128.6	138.34	-477.3	242.0	1,004.3	861.0	143.27	7.010				
6,500.0	6,466.0	6,441.0	6,441.0	17.0	128.8	-41.67	-477.3	242.0	1,004.2	860.7	143.50	6.998				
6,550.0	6,515.9	6,490.9	6,490.9	17.0	129.8	-41.85	-477.3	242.0	1,002.4	858.1	144.29	6.947				
6,600.0	6,565.6	6,540.6	6,540.6	17.1	130.8	-42.28	-477.3	242.0	998.2	853.5	144.73	6.897				
6,650.0	6,614.8	6,589.8	6,589.8	17.1	131.8	-42.96	-477.3	242.0	991.6	846.8	144.86	6.846				
6,700.0	6,663.3	6,638.3	6,638.3	17.2	132.8	-43.90	-477.3	242.0	982.7	838.0	144.71	6.791				
6,750.0	6,710.9	6,685.9	6,685.9	17.2	133.7	-45.11	-477.3	242.0	971.6	827.2	144.36	6.730				
6,800.0	6,757.4	6,732.4	6,732.4	17.2	134.6	-46.61	-477.3	242.0	958.4	814.5	143.90	6.660				
6,850.0	6,802.6	6,777.6	6,777.6	17.2	135.6	-48.38	-477.3	242.0	943.2	799.7	143.44	6.575				
6,900.0	6,846.3	6,821.3	6,821.3	17.2	136.4	-50.46	-477.3	242.0	926.2	783.1	143.12	6.472				
6,950.0	6,888.4	6,863.4	6,863.4	17.2	137.3	-52.83	-477.3	242.0	907.7	764.6	143.07	6.345				
7,000.0	6,928.6	6,903.6	6,903.6	17.2	138.1	-55.50	-477.3	242.0	887.8	744.4	143.40	6.191				
7,050.0	6,966.7	6,941.7	6,941.7	17.2	138.8	-58.43	-477.3	242.0	866.9	722.7	144.21	6.011				
7,100.0	7,002.7	6,977.7	6,977.7	17.2	139.6	-61.61	-477.3	242.0	845.1	699.6	145.53	5.807				
7,150.0	7,036.3	7,011.3	7,011.3	17.2	140.2	-64.96	-477.3	242.0	823.0	675.7	147.30	5.587				
7,200.0	7,067.4	7,042.4	7,042.4	17.2	140.8	-68.44	-477.3	242.0	800.7	651.3	149.41	5.359				
7,250.0	7,095.9	7,070.9	7,070.9	17.2	141.4	-71.94	-477.3	242.0	778.8	627.1	151.67	5.135				
7,300.0	7,121.7	7,096.7	7,096.7	17.3	141.9	-75.36	-477.3	242.0	757.6	603.7	153.91	4.922				
7,350.0	7,144.6	7,119.6	7,119.6	17.4	142.4	-78.61	-477.3	242.0	737.7	581.7	155.96	4.730				
7,400.0	7,164.5	7,139.5	7,139.5	17.5	142.8	-81.58	-477.3	242.0	719.4	561.6	157.71	4.561				
7,450.0	7,181.4	7,156.4	7,156.4	17.8	143.1	-84.20	-477.3	242.0	703.2	544.1	159.12	4.419				
7,500.0	7,195.2	7,170.2	7,170.2	18.1	143.4	-86.38	-477.3	242.0	689.6	529.4	160.21	4.304				
7,550.0	7,205.8	7,180.8	7,180.8	18.4	143.6	-88.08	-477.3	242.0	679.0	518.0	161.06	4.216				
7,600.0	7,213.2	7,188.2	7,188.2	18.8	143.8	-89.26	-477.3	242.0	671.7	510.0	161.75	4.153				
7,650.0	7,217.4	7,192.4	7,192.4	19.3	143.8	-89.89	-477.3	242.0	668.1	505.7	162.34	4.115				
7,674.7	7,218.2	7,193.2	7,193.2	19.5	143.9	-90.00	-477.3	242.0	667.6	505.0	162.61	4.105 ES				
7,697.8	7,218.3	7,193.3	7,193.3	19.8	143.9	-89.98	-477.3	242.0	668.0	505.1	162.85	4.102				
7,700.0	7,218.3	7,193.3	7,193.3	19.8	143.9	-89.97	-477.3	242.0	668.1	505.2	162.87	4.102 SF				
7,800.0	7,217.0	7,192.0	7,192.0	20.9	143.8	-89.87	-477.3	242.0	679.2	515.3	163.97	4.142				
7,900.0	7,215.8	7,190.8	7,190.8	22.1	143.8	-89.76	-477.3	242.0	704.6	539.4	165.19	4.265				
8,000.0	7,214.6	7,189.6	7,189.6	23.4	143.8	-89.66	-477.3	242.0	742.6	576.1	166.49	4.460				
8,100.0	7,213.4	7,188.4	7,188.4	24.8	143.8	-89.55	-477.3	242.0	791.5	623.6	167.88	4.715				
8,200.0	7,212.1	7,187.1	7,187.1	26.3	143.7	-89.45	-477.3	242.0	849.4	680.1	169.33	5.016				
8,300.0	7,210.9	7,185.9	7,185.9	27.8	143.7	-89.34	-477.3	242.0	914.6	743.8	170.84	5.354				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells - Harvester 31-15 (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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
							+N/-S (ft)	+E/-W (ft)								
8,400.0	7,209.7	7,184.7	7,184.7	29.3	143.7	-89.24	-477.3	242.0	985.7	813.3	172.39	5.718				
8,500.0	7,208.5	7,183.5	7,183.5	30.9	143.7	-89.13	-477.3	242.0	1,061.4	887.4	173.99	6.101				
8,600.0	7,207.3	7,182.3	7,182.3	32.6	143.6	-89.03	-477.3	242.0	1,140.9	965.3	175.61	6.497				
8,700.0	7,206.0	7,181.0	7,181.0	34.2	143.6	-88.93	-477.3	242.0	1,223.4	1,046.1	177.26	6.902				
8,800.0	7,204.8	7,179.8	7,179.8	35.9	143.6	-88.82	-477.3	242.0	1,308.3	1,129.4	178.94	7.312				
8,900.0	7,203.6	7,178.6	7,178.6	37.6	143.6	-88.72	-477.3	242.0	1,395.2	1,214.6	180.63	7.724				
9,000.0	7,202.4	7,177.4	7,177.4	39.4	143.5	-88.61	-477.3	242.0	1,483.8	1,301.5	182.35	8.137				
9,100.0	7,201.2	7,176.2	7,176.2	41.1	143.5	-88.51	-477.3	242.0	1,573.8	1,389.7	184.08	8.550				
9,200.0	7,199.9	7,174.9	7,174.9	42.9	143.5	-88.40	-477.3	242.0	1,664.9	1,479.0	185.82	8.960				
9,300.0	7,198.7	7,173.7	7,173.7	44.6	143.5	-88.30	-477.3	242.0	1,756.9	1,569.3	187.57	9.367				
9,400.0	7,197.5	7,172.5	7,172.5	46.4	143.4	-88.19	-477.3	242.0	1,849.8	1,660.5	189.33	9.770				
9,500.0	7,196.3	7,171.3	7,171.3	48.2	143.4	-88.09	-477.3	242.0	1,943.4	1,752.3	191.10	10.169				
9,600.0	7,195.0	7,170.0	7,170.0	50.0	143.4	-87.98	-477.3	242.0	2,037.6	1,844.7	192.88	10.564				
9,700.0	7,193.8	7,168.8	7,168.8	51.8	143.4	-87.88	-477.3	242.0	2,132.3	1,937.6	194.67	10.953				
9,800.0	7,192.6	7,167.6	7,167.6	53.7	143.4	-87.77	-477.3	242.0	2,227.5	2,031.0	196.46	11.338				
9,900.0	7,191.4	7,166.4	7,166.4	55.5	143.3	-87.67	-477.3	242.0	2,323.1	2,124.8	198.26	11.717				
10,000.0	7,190.2	7,165.2	7,165.2	57.3	143.3	-87.56	-477.3	242.0	2,419.0	2,219.0	200.06	12.091				
10,100.0	7,188.9	7,163.9	7,163.9	59.2	143.3	-87.46	-477.3	242.0	2,515.3	2,313.4	201.87	12.460				
10,200.0	7,187.7	7,162.7	7,162.7	61.0	143.3	-87.35	-477.3	242.0	2,611.8	2,408.2	203.68	12.823				
10,300.0	7,186.5	7,161.5	7,161.5	62.9	143.2	-87.25	-477.3	242.0	2,708.6	2,503.1	205.49	13.181				
10,400.0	7,185.3	7,160.3	7,160.3	64.7	143.2	-87.15	-477.3	242.0	2,805.6	2,598.3	207.31	13.534				
10,500.0	7,184.0	7,159.0	7,159.0	66.6	143.2	-87.04	-477.3	242.0	2,902.9	2,693.7	209.13	13.881				
10,600.0	7,182.8	7,157.8	7,157.8	68.4	143.2	-86.94	-477.3	242.0	3,000.3	2,789.3	210.95	14.223				
10,700.0	7,181.6	7,156.6	7,156.6	70.3	143.1	-86.83	-477.3	242.0	3,097.8	2,885.1	212.77	14.560				
10,800.0	7,180.4	7,155.4	7,155.4	72.2	143.1	-86.73	-477.3	242.0	3,195.5	2,980.9	214.59	14.891				
10,900.0	7,179.2	7,154.2	7,154.2	74.0	143.1	-86.62	-477.3	242.0	3,293.4	3,077.0	216.42	15.218				
11,000.0	7,177.9	7,152.9	7,152.9	75.9	143.1	-86.52	-477.3	242.0	3,391.4	3,173.1	218.25	15.539				
11,100.0	7,176.7	7,151.7	7,151.7	77.8	143.0	-86.41	-477.3	242.0	3,489.5	3,269.4	220.08	15.856				
11,200.0	7,175.5	7,150.5	7,150.5	79.7	143.0	-86.31	-477.3	242.0	3,587.7	3,365.8	221.91	16.167				
11,300.0	7,174.3	7,149.3	7,149.3	81.5	143.0	-86.20	-477.3	242.0	3,685.9	3,462.2	223.74	16.475				
11,400.0	7,173.1	7,148.1	7,148.1	83.4	143.0	-86.10	-477.3	242.0	3,784.3	3,558.8	225.57	16.777				
11,500.0	7,171.8	7,146.8	7,146.8	85.3	142.9	-86.00	-477.3	242.0	3,882.8	3,655.4	227.40	17.075				
11,600.0	7,170.6	7,145.6	7,145.6	87.2	142.9	-85.89	-477.3	242.0	3,981.3	3,752.1	229.23	17.368				
11,649.7	7,170.0	7,145.0	7,145.0	88.1	142.9	-85.84	-477.3	242.0	4,030.4	3,800.2	230.14	17.513				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells - Harvester 32-15 (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	169.98	-1,526.5	269.8	1,550.5							
100.0	100.0	65.0	65.0	0.1	1.3	169.98	-1,526.5	269.8	1,550.1	1,548.8	1.40	1,110.640				
200.0	200.0	165.0	165.0	0.3	3.3	169.98	-1,526.5	269.8	1,550.1	1,546.5	3.62	428.160				
300.0	300.0	265.0	265.0	0.5	5.3	169.98	-1,526.5	269.8	1,550.1	1,544.3	5.85	265.198				
400.0	400.0	365.0	365.0	0.8	7.3	169.98	-1,526.5	269.8	1,550.1	1,542.1	8.07	192.087				
500.0	500.0	465.0	465.0	1.0	9.3	169.98	-1,526.5	269.8	1,550.1	1,539.9	10.29	150.576				
600.0	600.0	565.0	565.0	1.2	11.3	169.98	-1,526.5	269.8	1,550.1	1,537.6	12.52	123.818				
700.0	700.0	665.0	665.0	1.4	13.3	169.98	-1,526.5	269.8	1,550.1	1,535.4	14.74	105.135				
800.0	800.0	765.0	765.0	1.7	15.3	169.98	-1,526.5	269.8	1,550.1	1,533.2	16.97	91.351				
900.0	900.0	865.0	865.0	1.9	17.3	169.98	-1,526.5	269.8	1,550.1	1,531.0	19.19	80.763				
1,000.0	1,000.0	965.0	965.0	2.1	19.3	169.98	-1,526.5	269.8	1,550.1	1,528.7	21.42	72.374				
1,100.0	1,100.0	1,065.0	1,065.0	2.3	21.3	-132.73	-1,526.5	269.8	1,551.3	1,527.7	23.63	65.648				
1,200.0	1,199.8	1,164.8	1,164.8	2.6	23.3	-132.82	-1,526.5	269.8	1,554.9	1,529.1	25.82	60.210				
1,300.0	1,299.5	1,264.5	1,264.5	2.8	25.3	-132.97	-1,526.5	269.8	1,560.8	1,532.8	28.00	55.741				
1,399.8	1,398.5	1,363.5	1,363.5	3.0	27.3	-133.17	-1,526.5	269.8	1,569.2	1,539.0	30.16	52.033				
1,500.0	1,497.7	1,462.7	1,462.7	3.3	29.3	-133.54	-1,526.5	269.8	1,578.8	1,546.4	32.38	48.755				
1,600.0	1,596.8	1,561.8	1,561.8	3.6	31.2	-133.90	-1,526.5	269.8	1,588.4	1,553.8	34.61	45.895				
1,700.0	1,695.8	1,660.8	1,660.8	3.9	33.2	-134.25	-1,526.5	269.8	1,598.2	1,561.3	36.84	43.376				
1,800.0	1,794.8	1,759.8	1,759.8	4.2	35.2	-134.61	-1,526.5	269.8	1,608.0	1,568.9	39.08	41.142				
1,900.0	1,893.8	1,858.8	1,858.8	4.5	37.2	-134.96	-1,526.5	269.8	1,617.8	1,576.5	41.33	39.148				
2,000.0	1,992.9	1,957.9	1,957.9	4.8	39.2	-135.30	-1,526.5	269.8	1,627.7	1,584.1	43.57	37.358				
2,100.0	2,091.9	2,056.9	2,056.9	5.1	41.1	-135.64	-1,526.5	269.8	1,637.7	1,591.9	45.82	35.744				
2,200.0	2,190.9	2,155.9	2,155.9	5.4	43.1	-135.98	-1,526.5	269.8	1,647.7	1,599.6	48.06	34.281				
2,300.0	2,290.0	2,255.0	2,255.0	5.8	45.1	-136.31	-1,526.5	269.8	1,657.8	1,607.5	50.31	32.950				
2,400.0	2,389.0	2,354.0	2,354.0	6.1	47.1	-136.64	-1,526.5	269.8	1,667.9	1,615.4	52.56	31.732				
2,500.0	2,488.0	2,453.0	2,453.0	6.4	49.1	-136.97	-1,526.5	269.8	1,678.1	1,623.3	54.81	30.616				
2,600.0	2,587.0	2,552.0	2,552.0	6.7	51.0	-137.29	-1,526.5	269.8	1,688.3	1,631.3	57.06	29.589				
2,700.0	2,686.1	2,651.1	2,651.1	7.1	53.0	-137.60	-1,526.5	269.8	1,698.6	1,639.3	59.31	28.640				
2,800.0	2,785.1	2,750.1	2,750.1	7.4	55.0	-137.92	-1,526.5	269.8	1,709.0	1,647.4	61.56	27.761				
2,900.0	2,884.1	2,849.1	2,849.1	7.7	57.0	-138.23	-1,526.5	269.8	1,719.4	1,655.6	63.81	26.946				
3,000.0	2,983.1	2,948.1	2,948.1	8.1	59.0	-138.53	-1,526.5	269.8	1,729.8	1,663.8	66.06	26.187				
3,100.0	3,082.2	3,047.2	3,047.2	8.4	60.9	-138.83	-1,526.5	269.8	1,740.3	1,672.0	68.31	25.478				
3,200.0	3,181.2	3,146.2	3,146.2	8.7	62.9	-139.13	-1,526.5	269.8	1,750.9	1,680.3	70.55	24.816				
3,300.0	3,280.2	3,245.2	3,245.2	9.1	64.9	-139.43	-1,526.5	269.8	1,761.4	1,688.6	72.80	24.195				
3,400.0	3,379.3	3,344.3	3,344.3	9.4	66.9	-139.72	-1,526.5	269.8	1,772.1	1,697.0	75.05	23.613				
3,500.0	3,478.3	3,443.3	3,443.3	9.7	68.9	-140.01	-1,526.5	269.8	1,782.7	1,705.5	77.29	23.065				
3,600.0	3,577.3	3,542.3	3,542.3	10.1	70.8	-140.29	-1,526.5	269.8	1,793.5	1,713.9	79.54	22.548				
3,700.0	3,676.3	3,641.3	3,641.3	10.4	72.8	-140.57	-1,526.5	269.8	1,804.2	1,722.5	81.78	22.061				
3,800.0	3,775.4	3,740.4	3,740.4	10.8	74.8	-140.85	-1,526.5	269.8	1,815.0	1,731.0	84.03	21.600				
3,900.0	3,874.4	3,839.4	3,839.4	11.1	76.8	-141.12	-1,526.5	269.8	1,825.9	1,739.6	86.27	21.164				
4,000.0	3,973.4	3,938.4	3,938.4	11.4	78.8	-141.39	-1,526.5	269.8	1,836.8	1,748.3	88.52	20.751				
4,100.0	4,072.4	4,037.4	4,037.4	11.8	80.7	-141.66	-1,526.5	269.8	1,847.7	1,757.0	90.76	20.359				
4,200.0	4,171.5	4,136.5	4,136.5	12.1	82.7	-141.93	-1,526.5	269.8	1,858.7	1,765.7	93.00	19.986				
4,300.0	4,270.5	4,235.5	4,235.5	12.5	84.7	-142.19	-1,526.5	269.8	1,869.7	1,774.5	95.24	19.632				
4,400.0	4,369.5	4,334.5	4,334.5	12.8	86.7	-142.45	-1,526.5	269.8	1,880.8	1,783.3	97.48	19.294				
4,500.0	4,468.6	4,433.6	4,433.6	13.1	88.7	-142.70	-1,526.5	269.8	1,891.8	1,792.1	99.72	18.972				
4,600.0	4,567.6	4,532.6	4,532.6	13.5	90.7	-142.96	-1,526.5	269.8	1,903.0	1,801.0	101.96	18.664				
4,634.2	4,601.5	4,566.5	4,566.5	13.6	91.3	-143.04	-1,526.5	269.8	1,906.8	1,804.1	102.72	18.562				
4,700.0	4,666.7	4,631.7	4,631.7	13.8	92.6	-143.28	-1,526.5	269.8	1,913.5	1,809.2	104.34	18.339				
4,800.0	4,766.2	4,731.2	4,731.2	14.0	94.6	-143.55	-1,526.5	269.8	1,921.5	1,814.8	106.71	18.007				
4,900.0	4,866.0	4,831.0	4,831.0	14.2	96.6	-143.72	-1,526.5	269.8	1,926.7	1,817.7	109.00	17.676				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells - Harvester 32-15 (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				
5,000.0	4,966.0	4,931.0	4,931.0	14.4	98.6	-143.80	-1,526.5	269.8	1,929.0	1,817.8	111.21	17.346				
5,034.0	5,000.0	4,965.0	4,965.0	14.4	99.3	158.87	-1,526.5	269.8	1,929.2	1,817.3	111.94	17.235				
5,100.0	5,066.0	5,031.0	5,031.0	14.5	100.6	158.87	-1,526.5	269.8	1,929.2	1,815.8	113.37	17.017				
5,200.0	5,166.0	5,131.0	5,131.0	14.7	102.6	158.87	-1,526.5	269.8	1,929.2	1,813.6	115.56	16.695				
5,300.0	5,266.0	5,231.0	5,231.0	14.9	104.6	158.87	-1,526.5	269.8	1,929.2	1,811.4	117.75	16.384				
5,400.0	5,366.0	5,331.0	5,331.0	15.0	106.6	158.87	-1,526.5	269.8	1,929.2	1,809.2	119.94	16.085				
5,500.0	5,466.0	5,431.0	5,431.0	15.2	108.6	158.87	-1,526.5	269.8	1,929.2	1,807.1	122.13	15.796				
5,600.0	5,566.0	5,531.0	5,531.0	15.4	110.6	158.87	-1,526.5	269.8	1,929.2	1,804.9	124.33	15.517				
5,700.0	5,666.0	5,631.0	5,631.0	15.5	112.6	158.87	-1,526.5	269.8	1,929.2	1,802.7	126.52	15.248				
5,800.0	5,766.0	5,731.0	5,731.0	15.7	114.6	158.87	-1,526.5	269.8	1,929.2	1,800.5	128.72	14.988				
5,900.0	5,866.0	5,831.0	5,831.0	15.9	116.6	158.87	-1,526.5	269.8	1,929.2	1,798.3	130.91	14.736				
6,000.0	5,966.0	5,931.0	5,931.0	16.1	118.6	158.87	-1,526.5	269.8	1,929.2	1,796.1	133.11	14.493				
6,100.0	6,066.0	6,031.0	6,031.0	16.3	120.6	158.87	-1,526.5	269.8	1,929.2	1,793.9	135.31	14.258				
6,200.0	6,166.0	6,131.0	6,131.0	16.4	122.6	158.87	-1,526.5	269.8	1,929.2	1,791.7	137.51	14.030				
6,300.0	6,266.0	6,231.0	6,231.0	16.6	124.6	158.87	-1,526.5	269.8	1,929.2	1,789.5	139.71	13.809				
6,400.0	6,366.0	6,331.0	6,331.0	16.8	126.6	158.87	-1,526.5	269.8	1,929.2	1,787.3	141.91	13.595				
6,488.4	6,454.4	6,419.4	6,419.4	17.0	128.4	158.87	-1,526.5	269.8	1,929.2	1,785.3	143.85	13.411				
6,500.0	6,466.0	6,431.0	6,431.0	17.0	128.6	-21.13	-1,526.5	269.8	1,929.1	1,785.0	144.08	13.389				
6,550.0	6,515.9	6,480.9	6,480.9	17.0	129.6	-21.22	-1,526.5	269.8	1,926.9	1,782.2	144.72	13.315				
6,600.0	6,565.6	6,530.6	6,530.6	17.1	130.6	-21.42	-1,526.5	269.8	1,921.6	1,776.8	144.82	13.269				
6,650.0	6,614.8	6,579.8	6,579.8	17.1	131.6	-21.75	-1,526.5	269.8	1,913.3	1,769.0	144.37	13.253				
6,700.0	6,663.3	6,628.3	6,628.3	17.2	132.6	-22.21	-1,526.5	269.8	1,902.1	1,758.7	143.39	13.265				
6,750.0	6,710.9	6,675.9	6,675.9	17.2	133.5	-22.81	-1,526.5	269.8	1,887.9	1,746.0	141.90	13.305				
6,800.0	6,757.4	6,722.4	6,722.4	17.2	134.4	-23.57	-1,526.5	269.8	1,870.9	1,730.9	139.94	13.369				
6,850.0	6,802.6	6,767.6	6,767.6	17.2	135.4	-24.49	-1,526.5	269.8	1,851.1	1,713.5	137.57	13.456				
6,900.0	6,846.3	6,811.3	6,811.3	17.2	136.2	-25.60	-1,526.5	269.8	1,828.7	1,693.8	134.88	13.558				
6,950.0	6,888.4	6,853.4	6,853.4	17.2	137.1	-26.92	-1,526.5	269.8	1,803.7	1,671.7	131.99	13.666				
7,000.0	6,928.6	6,893.6	6,893.6	17.2	137.9	-28.49	-1,526.5	269.8	1,776.3	1,647.2	129.05	13.765				
7,050.0	6,966.7	6,931.7	6,931.7	17.2	138.6	-30.33	-1,526.5	269.8	1,746.6	1,620.4	126.27	13.832				
7,100.0	7,002.7	6,967.7	6,967.7	17.2	139.4	-32.50	-1,526.5	269.8	1,714.8	1,590.9	123.92	13.838				
7,150.0	7,036.3	7,001.3	7,001.3	17.2	140.0	-35.04	-1,526.5	269.8	1,681.1	1,558.8	122.30	13.746				
7,200.0	7,067.4	7,032.4	7,032.4	17.2	140.6	-38.01	-1,526.5	269.8	1,645.5	1,523.8	121.76	13.515				
7,250.0	7,095.9	7,060.9	7,060.9	17.2	141.2	-41.45	-1,526.5	269.8	1,608.4	1,485.8	122.63	13.116				
7,300.0	7,121.7	7,086.7	7,086.7	17.3	141.7	-45.42	-1,526.5	269.8	1,569.9	1,444.8	125.13	12.546				
7,350.0	7,144.6	7,109.6	7,109.6	17.4	142.2	-49.96	-1,526.5	269.8	1,530.2	1,400.9	129.31	11.833				
7,400.0	7,164.5	7,129.5	7,129.5	17.5	142.6	-55.08	-1,526.5	269.8	1,489.5	1,354.5	134.94	11.038				
7,450.0	7,181.4	7,146.4	7,146.4	17.8	142.9	-60.71	-1,526.5	269.8	1,448.0	1,306.6	141.48	10.235				
7,500.0	7,195.2	7,160.2	7,160.2	18.1	143.2	-66.78	-1,526.5	269.8	1,406.1	1,257.9	148.17	9.490				
7,550.0	7,205.8	7,170.8	7,170.8	18.4	143.4	-73.09	-1,526.5	269.8	1,363.8	1,209.7	154.15	8.848				
7,600.0	7,213.2	7,178.2	7,178.2	18.8	143.6	-79.43	-1,526.5	269.8	1,321.6	1,162.8	158.74	8.325				
7,650.0	7,217.4	7,182.4	7,182.4	19.3	143.6	-85.56	-1,526.5	269.8	1,279.5	1,117.9	161.57	7.919				
7,697.8	7,218.3	7,183.3	7,183.3	19.8	143.7	-91.03	-1,526.5	269.8	1,239.6	1,077.0	162.65	7.622				
7,700.0	7,218.3	7,183.3	7,183.3	19.8	143.7	-91.03	-1,526.5	269.8	1,237.8	1,075.1	162.67	7.609				
7,800.0	7,217.0	7,182.0	7,182.0	20.9	143.6	-90.93	-1,526.5	269.8	1,156.4	992.7	163.78	7.061				
7,900.0	7,215.8	7,180.8	7,180.8	22.1	143.6	-90.83	-1,526.5	269.8	1,078.2	913.2	165.00	6.535				
8,000.0	7,214.6	7,179.6	7,179.6	23.4	143.6	-90.73	-1,526.5	269.8	1,003.9	837.6	166.31	6.036				
8,100.0	7,213.4	7,178.4	7,178.4	24.8	143.6	-90.63	-1,526.5	269.8	934.3	766.6	167.71	5.571				
8,200.0	7,212.1	7,177.1	7,177.1	26.3	143.5	-90.53	-1,526.5	269.8	870.7	701.6	169.16	5.147				
8,300.0	7,210.9	7,175.9	7,175.9	27.8	143.5	-90.43	-1,526.5	269.8	814.5	643.8	170.68	4.772				
8,400.0	7,209.7	7,174.7	7,174.7	29.3	143.5	-90.33	-1,526.5	269.8	767.2	595.0	172.24	4.454				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells - Harvester 32-15 (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	7,208.5	7,173.5	7,173.5	30.9	143.5	-90.23	-1,526.5	269.8	730.6	556.8	173.83	4.203			
8,600.0	7,207.3	7,172.3	7,172.3	32.6	143.4	-90.12	-1,526.5	269.8	706.4	530.9	175.46	4.026			
8,700.0	7,206.0	7,171.0	7,171.0	34.2	143.4	-90.02	-1,526.5	269.8	695.8	518.7	177.12	3.929			
8,724.1	7,205.7	7,170.7	7,170.7	34.6	143.4	-90.00	-1,526.5	269.8	695.4	517.9	177.53	3.917 CC, ES			
8,800.0	7,204.8	7,169.8	7,169.8	35.9	143.4	-89.92	-1,526.5	269.8	699.6	520.8	178.80	3.912 SF			
8,900.0	7,203.6	7,168.6	7,168.6	37.6	143.4	-89.82	-1,526.5	269.8	717.3	536.8	180.51	3.974			
9,000.0	7,202.4	7,167.4	7,167.4	39.4	143.3	-89.72	-1,526.5	269.8	748.2	565.9	182.23	4.106			
9,100.0	7,201.2	7,166.2	7,166.2	41.1	143.3	-89.62	-1,526.5	269.8	790.5	606.6	183.96	4.297			
9,200.0	7,199.9	7,164.9	7,164.9	42.9	143.3	-89.52	-1,526.5	269.8	842.7	657.0	185.71	4.538			
9,300.0	7,198.7	7,163.7	7,163.7	44.6	143.3	-89.42	-1,526.5	269.8	902.9	715.5	187.47	4.816			
9,400.0	7,197.5	7,162.5	7,162.5	46.4	143.2	-89.32	-1,526.5	269.8	969.8	780.5	189.24	5.125			
9,500.0	7,196.3	7,161.3	7,161.3	48.2	143.2	-89.22	-1,526.5	269.8	1,041.9	850.9	191.02	5.455			
9,600.0	7,195.0	7,160.0	7,160.0	50.0	143.2	-89.12	-1,526.5	269.8	1,118.4	925.6	192.81	5.801			
9,700.0	7,193.8	7,158.8	7,158.8	51.8	143.2	-89.02	-1,526.5	269.8	1,198.3	1,003.7	194.60	6.158			
9,800.0	7,192.6	7,157.6	7,157.6	53.7	143.2	-88.92	-1,526.5	269.8	1,281.1	1,084.7	196.40	6.523			
9,900.0	7,191.4	7,156.4	7,156.4	55.5	143.1	-88.82	-1,526.5	269.8	1,366.1	1,167.9	198.20	6.892			
10,000.0	7,190.2	7,155.2	7,155.2	57.3	143.1	-88.72	-1,526.5	269.8	1,453.1	1,253.1	200.02	7.265			
10,100.0	7,188.9	7,153.9	7,153.9	59.2	143.1	-88.62	-1,526.5	269.8	1,541.6	1,339.8	201.83	7.638			
10,200.0	7,187.7	7,152.7	7,152.7	61.0	143.1	-88.51	-1,526.5	269.8	1,631.5	1,427.8	203.65	8.011			
10,300.0	7,186.5	7,151.5	7,151.5	62.9	143.0	-88.41	-1,526.5	269.8	1,722.5	1,517.0	205.47	8.383			
10,400.0	7,185.3	7,150.3	7,150.3	64.7	143.0	-88.31	-1,526.5	269.8	1,814.4	1,607.1	207.30	8.753			
10,500.0	7,184.0	7,149.0	7,149.0	66.6	143.0	-88.21	-1,526.5	269.8	1,907.1	1,698.0	209.12	9.120			
10,600.0	7,182.8	7,147.8	7,147.8	68.4	143.0	-88.11	-1,526.5	269.8	2,000.6	1,789.6	210.95	9.483			
10,700.0	7,181.6	7,146.6	7,146.6	70.3	142.9	-88.01	-1,526.5	269.8	2,094.6	1,881.8	212.79	9.844			
10,800.0	7,180.4	7,145.4	7,145.4	72.2	142.9	-87.91	-1,526.5	269.8	2,189.2	1,974.6	214.62	10.200			
10,900.0	7,179.2	7,144.2	7,144.2	74.0	142.9	-87.81	-1,526.5	269.8	2,284.2	2,067.8	216.46	10.553			
11,000.0	7,177.9	7,142.9	7,142.9	75.9	142.9	-87.71	-1,526.5	269.8	2,379.7	2,161.4	218.29	10.901			
11,100.0	7,176.7	7,141.7	7,141.7	77.8	142.8	-87.61	-1,526.5	269.8	2,475.5	2,255.3	220.13	11.245			
11,200.0	7,175.5	7,140.5	7,140.5	79.7	142.8	-87.51	-1,526.5	269.8	2,571.6	2,349.6	221.97	11.585			
11,300.0	7,174.3	7,139.3	7,139.3	81.5	142.8	-87.41	-1,526.5	269.8	2,668.0	2,444.2	223.81	11.921			
11,400.0	7,173.1	7,138.1	7,138.1	83.4	142.8	-87.31	-1,526.5	269.8	2,764.6	2,539.0	225.65	12.252			
11,500.0	7,171.8	7,136.8	7,136.8	85.3	142.7	-87.21	-1,526.5	269.8	2,861.5	2,634.0	227.50	12.578			
11,600.0	7,170.6	7,135.6	7,135.6	87.2	142.7	-87.11	-1,526.5	269.8	2,958.6	2,729.3	229.34	12.901			
11,649.7	7,170.0	7,135.0	7,135.0	88.1	142.7	-87.06	-1,526.5	269.8	3,007.0	2,776.7	230.26	13.059			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design												Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15M-423 - 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	89.99	0.0	30.6	30.6							
100.0	100.0	100.0	100.0	0.1	0.1	89.99	0.0	30.6	30.6	30.4	0.19	160.137				
200.0	200.0	200.0	200.0	0.3	0.3	89.99	0.0	30.6	30.6	30.0	0.64	47.760				
300.0	300.0	300.0	300.0	0.5	0.5	89.99	0.0	30.6	30.6	29.5	1.09	28.065				
400.0	400.0	400.0	400.0	0.8	0.8	89.99	0.0	30.6	30.6	29.1	1.54	19.871				
500.0	500.0	500.0	500.0	1.0	1.0	89.99	0.0	30.6	30.6	28.6	1.99	15.380				
600.0	600.0	600.0	600.0	1.2	1.2	89.99	0.0	30.6	30.6	28.2	2.44	12.545				
700.0	700.0	700.0	700.0	1.4	1.4	89.99	0.0	30.6	30.6	27.7	2.89	10.593				
800.0	800.0	800.0	800.0	1.7	1.7	89.99	0.0	30.6	30.6	27.3	3.34	9.166				
900.0	900.0	900.0	900.0	1.9	1.9	89.99	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	89.99	0.0	30.6	30.6	26.4	4.24	7.221 CC, ES				
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	148.98	0.0	30.6	32.1	27.4	4.68	6.855				
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	153.16	0.0	30.6	36.7	31.5	5.11	7.169				
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	158.16	0.0	30.6	44.6	39.1	5.55	8.045				
1,399.8	1,398.5	1,398.5	1,398.5	3.0	3.0	162.71	0.0	30.6	56.1	50.1	5.97	9.391				
1,500.0	1,497.7	1,497.7	1,497.7	3.3	3.2	166.12	0.0	30.6	69.5	63.1	6.42	10.838				
1,600.0	1,596.8	1,596.8	1,596.8	3.6	3.5	168.42	0.0	30.6	83.1	76.2	6.86	12.113				
1,700.0	1,695.8	1,695.8	1,695.8	3.9	3.7	170.08	0.0	30.6	96.8	89.5	7.31	13.241				
1,800.0	1,794.8	1,794.8	1,794.8	4.2	3.9	171.32	0.0	30.6	110.5	102.8	7.76	14.243				
1,900.0	1,893.8	1,893.8	1,893.8	4.5	4.1	172.29	0.0	30.6	124.3	116.1	8.21	15.136				
2,000.0	1,992.9	1,992.9	1,992.9	4.8	4.4	173.06	0.0	30.6	138.1	129.4	8.67	15.936				
2,100.0	2,091.9	2,095.8	2,095.8	5.1	4.6	173.33	1.5	29.9	150.7	141.6	9.13	16.516				
2,200.0	2,190.9	2,199.7	2,199.5	5.4	4.8	172.72	6.3	27.7	160.6	151.0	9.59	16.749				
2,300.0	2,290.0	2,303.9	2,303.3	5.8	5.1	171.34	14.6	23.9	167.7	157.7	10.06	16.679				
2,400.0	2,389.0	2,404.3	2,403.1	6.1	5.3	169.60	24.8	19.2	173.2	162.7	10.53	16.460				
2,500.0	2,488.0	2,504.0	2,502.2	6.4	5.5	167.97	34.9	14.6	178.9	167.9	11.00	16.259				
2,600.0	2,587.0	2,603.7	2,601.3	6.7	5.8	166.44	45.0	10.0	184.6	173.2	11.49	16.076				
2,700.0	2,686.1	2,703.4	2,700.4	7.1	6.0	165.00	55.1	5.4	190.5	178.6	11.98	15.907				
2,800.0	2,785.1	2,803.2	2,799.5	7.4	6.3	163.65	65.1	0.7	196.5	184.1	12.48	15.752				
2,900.0	2,884.1	2,902.9	2,898.6	7.7	6.5	162.38	75.2	-3.9	202.6	189.7	12.98	15.608				
3,000.0	2,983.1	3,002.6	2,997.7	8.1	6.8	161.19	85.3	-8.5	208.9	195.4	13.50	15.474				
3,100.0	3,082.2	3,102.3	3,096.8	8.4	7.1	160.06	95.4	-13.2	215.1	201.1	14.02	15.349				
3,200.0	3,181.2	3,202.0	3,195.9	8.7	7.3	159.00	105.5	-17.8	221.5	207.0	14.54	15.232				
3,300.0	3,280.2	3,301.7	3,295.0	9.1	7.6	158.00	115.6	-22.4	227.9	212.9	15.07	15.123				
3,400.0	3,379.3	3,401.4	3,394.1	9.4	7.9	157.05	125.7	-27.0	234.4	218.8	15.61	15.020				
3,500.0	3,478.3	3,501.2	3,493.2	9.7	8.1	156.16	135.8	-31.7	241.0	224.9	16.15	14.923				
3,600.0	3,577.3	3,600.9	3,592.2	10.1	8.4	155.31	145.9	-36.3	247.6	230.9	16.70	14.832				
3,700.0	3,676.3	3,700.6	3,691.3	10.4	8.7	154.51	156.0	-40.9	254.3	237.0	17.24	14.746				
3,800.0	3,775.4	3,800.3	3,790.4	10.8	9.0	153.74	166.1	-45.6	261.0	243.2	17.80	14.665				
3,900.0	3,874.4	3,900.0	3,889.5	11.1	9.3	153.02	176.2	-50.2	267.8	249.4	18.36	14.588				
4,000.0	3,973.4	3,999.7	3,988.6	11.4	9.6	152.33	186.3	-54.8	274.6	255.7	18.92	14.515				
4,100.0	4,072.4	4,099.5	4,087.7	11.8	9.8	151.68	196.4	-59.4	281.4	261.9	19.48	14.447				
4,200.0	4,171.5	4,199.2	4,186.8	12.1	10.1	151.05	206.5	-64.1	288.3	268.2	20.04	14.382				
4,300.0	4,270.5	4,298.9	4,285.9	12.5	10.4	150.46	216.6	-68.7	295.2	274.6	20.61	14.320				
4,400.0	4,369.5	4,398.6	4,385.0	12.8	10.7	149.89	226.7	-73.3	302.1	280.9	21.18	14.261				
4,500.0	4,468.6	4,498.3	4,484.1	13.1	11.0	149.35	236.8	-78.0	309.1	287.3	21.76	14.205				
4,600.0	4,567.6	4,598.0	4,583.2	13.5	11.3	148.83	246.9	-82.6	316.1	293.7	22.33	14.152				
4,634.2	4,601.5	4,632.2	4,617.1	13.6	11.4	148.66	250.3	-84.2	318.5	295.9	22.53	14.134				
4,700.0	4,666.7	4,697.7	4,682.3	13.8	11.6	148.31	256.9	-87.2	322.4	299.5	22.91	14.073				
4,800.0	4,766.2	4,792.9	4,777.0	14.0	11.8	147.80	265.1	-91.0	326.8	303.4	23.37	13.984				
4,900.0	4,866.0	4,888.2	4,872.2	14.2	12.0	147.48	270.4	-93.4	329.6	305.9	23.77	13.871				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15M-423 - 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		
5,000.0	4,966.0	4,983.6	4,967.5	14.4	12.1	147.33	272.8	-94.5	330.9	306.8	24.10	13.732		
5,034.0	5,000.0	5,016.1	5,000.0	14.4	12.2	90.00	273.0	-94.6	331.0	306.8	24.20	13.677		
5,100.0	5,066.0	5,082.1	5,066.0	14.5	12.3	90.00	273.0	-94.6	331.0	306.6	24.44	13.545		
5,200.0	5,166.0	5,182.1	5,166.0	14.7	12.5	90.00	273.0	-94.6	331.0	306.2	24.83	13.333		
5,300.0	5,266.0	5,282.1	5,266.0	14.9	12.7	90.00	273.0	-94.6	331.0	305.8	25.22	13.124		
5,400.0	5,366.0	5,382.1	5,366.0	15.0	12.9	90.00	273.0	-94.6	331.0	305.4	25.62	12.921		
5,500.0	5,466.0	5,482.1	5,466.0	15.2	13.1	90.00	273.0	-94.6	331.0	305.0	26.02	12.723		
5,600.0	5,566.0	5,582.1	5,566.0	15.4	13.3	90.00	273.0	-94.6	331.0	304.6	26.42	12.531		
5,700.0	5,666.0	5,682.1	5,666.0	15.5	13.5	90.00	273.0	-94.6	331.0	304.2	26.82	12.343		
5,800.0	5,766.0	5,782.1	5,766.0	15.7	13.7	90.00	273.0	-94.6	331.0	303.8	27.22	12.160		
5,900.0	5,866.0	5,882.1	5,866.0	15.9	13.9	90.00	273.0	-94.6	331.0	303.4	27.63	11.982		
6,000.0	5,966.0	5,982.1	5,966.0	16.1	14.1	90.00	273.0	-94.6	331.0	303.0	28.03	11.809		
6,100.0	6,066.0	6,082.1	6,066.0	16.3	14.3	90.00	273.0	-94.6	331.0	302.6	28.44	11.640		
6,200.0	6,166.0	6,182.1	6,166.0	16.4	14.5	90.00	273.0	-94.6	331.0	302.2	28.85	11.475		
6,300.0	6,266.0	6,282.1	6,266.0	16.6	14.7	90.00	273.0	-94.6	331.0	301.8	29.26	11.314		
6,400.0	6,366.0	6,382.1	6,366.0	16.8	14.9	90.00	273.0	-94.6	331.0	301.4	29.67	11.158		
6,488.4	6,454.4	6,470.5	6,454.4	17.0	15.1	90.00	273.0	-94.6	331.0	301.0	30.03	11.022		
6,488.4	6,454.4	6,470.5	6,454.4	17.0	15.1	90.00	273.0	-94.6	331.0	301.0	30.03	11.022		
6,500.0	6,466.0	6,482.1	6,466.0	17.0	15.2	-90.02	273.0	-94.6	331.0	301.0	30.08	11.006		
6,550.0	6,515.9	6,532.0	6,515.9	17.0	15.3	-90.43	273.0	-94.6	331.0	300.8	30.28	10.934		
6,600.0	6,565.6	6,582.1	6,566.0	17.1	15.3	-91.19	271.8	-94.6	331.1	300.7	30.45	10.874		
6,650.0	6,614.8	6,632.5	6,616.1	17.1	15.4	-91.95	267.2	-94.6	331.2	300.6	30.59	10.830		
6,700.0	6,663.3	6,683.2	6,666.2	17.2	15.4	-92.71	259.3	-94.6	331.4	300.7	30.69	10.800		
6,750.0	6,710.9	6,734.2	6,716.0	17.2	15.5	-93.46	248.1	-94.6	331.6	300.9	30.76	10.783		
6,800.0	6,757.4	6,785.5	6,765.1	17.2	15.5	-94.19	233.4	-94.6	331.9	301.1	30.80	10.777		
6,850.0	6,802.6	6,837.1	6,813.5	17.2	15.5	-94.91	215.4	-94.6	332.3	301.4	30.82	10.780		
6,900.0	6,846.3	6,889.0	6,860.8	17.2	15.5	-95.60	194.0	-94.6	332.6	301.8	30.83	10.790		
6,950.0	6,888.4	6,941.3	6,906.7	17.2	15.5	-96.27	169.3	-94.6	333.0	302.2	30.83	10.803		
7,000.0	6,928.6	6,993.7	6,951.2	17.2	15.5	-96.92	141.3	-94.6	333.5	302.6	30.83	10.815		
7,050.0	6,966.7	7,046.5	6,993.8	17.2	15.5	-97.53	110.2	-94.6	333.9	303.1	30.86	10.822		
7,100.0	7,002.7	7,099.6	7,034.4	17.2	15.5	-98.11	76.1	-94.6	334.4	303.5	30.91	10.818		
7,150.0	7,036.3	7,152.9	7,072.7	17.2	15.6	-98.65	39.0	-94.6	334.9	303.8	31.01	10.799		
7,200.0	7,067.4	7,206.4	7,108.4	17.2	15.6	-99.15	-0.8	-94.6	335.3	304.2	31.16	10.759		
7,250.0	7,095.9	7,260.2	7,141.5	17.2	15.7	-99.62	-43.3	-94.6	335.8	304.4	31.39	10.696		
7,300.0	7,121.7	7,314.2	7,171.5	17.3	15.8	-100.04	-88.1	-94.6	336.2	304.5	31.70	10.604		
7,350.0	7,144.6	7,368.4	7,198.4	17.4	16.1	-100.41	-135.1	-94.6	336.6	304.5	32.11	10.482		
7,400.0	7,164.5	7,422.8	7,222.0	17.5	16.4	-100.73	-184.1	-94.6	336.9	304.3	32.62	10.331		
7,450.0	7,181.4	7,477.3	7,242.1	17.8	16.7	-101.01	-234.8	-94.6	337.2	304.0	33.23	10.149		
7,500.0	7,195.2	7,531.9	7,258.6	18.1	17.1	-101.23	-286.8	-94.6	337.5	303.6	33.95	9.942		
7,550.0	7,205.8	7,586.7	7,271.3	18.4	17.5	-101.41	-340.1	-94.6	337.7	302.9	34.77	9.711		
7,600.0	7,213.2	7,641.5	7,280.2	18.8	18.0	-101.53	-394.2	-94.6	337.8	302.1	35.70	9.462		
7,650.0	7,217.4	7,693.0	7,285.8	19.3	18.5	-101.72	-445.3	-94.6	338.1	301.4	36.69	9.216		
7,697.8	7,218.3	7,741.1	7,290.8	19.8	19.0	-102.34	-493.2	-94.6	338.9	301.3	37.66	9.000		
7,700.0	7,218.3	7,743.5	7,291.0	19.8	19.0	-102.38	-495.6	-94.6	339.0	301.3	37.70	8.991		
7,800.0	7,217.0	7,850.4	7,296.2	20.9	20.2	-103.45	-602.4	-94.6	340.4	300.5	39.91	8.528		
7,900.0	7,215.8	7,951.1	7,295.5	22.1	21.5	-103.54	-703.0	-94.6	340.5	298.1	42.35	8.040		
8,000.0	7,214.6	8,051.1	7,294.9	23.4	22.8	-103.63	-803.0	-94.6	340.6	295.7	44.96	7.577		
8,100.0	7,213.4	8,151.1	7,294.2	24.8	24.3	-103.72	-903.0	-94.6	340.8	293.0	47.71	7.142		
8,200.0	7,212.1	8,251.1	7,293.5	26.3	25.7	-103.81	-1,003.0	-94.6	340.9	290.3	50.59	6.738		
8,300.0	7,210.9	8,351.1	7,292.8	27.8	27.3	-103.90	-1,103.0	-94.6	341.0	287.4	53.58	6.365		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15M-423 - 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	7,209.7	8,451.1	7,292.1	29.3	28.9	-103.98	-1,203.0	-94.6	341.1	284.5	56.65	6.022		
8,500.0	7,208.5	8,551.1	7,291.5	30.9	30.5	-104.07	-1,303.0	-94.6	341.3	281.5	59.80	5.707		
8,600.0	7,207.3	8,651.1	7,290.8	32.6	32.1	-104.16	-1,403.0	-94.6	341.4	278.4	63.01	5.419		
8,700.0	7,206.0	8,751.1	7,290.1	34.2	33.8	-104.25	-1,503.0	-94.6	341.5	275.3	66.27	5.154		
8,800.0	7,204.8	8,851.1	7,289.4	35.9	35.5	-104.34	-1,603.0	-94.6	341.7	272.1	69.57	4.911		
8,900.0	7,203.6	8,951.1	7,288.7	37.6	37.3	-104.42	-1,703.0	-94.6	341.8	268.9	72.92	4.688		
9,000.0	7,202.4	9,051.1	7,288.1	39.4	39.0	-104.51	-1,803.0	-94.6	341.9	265.6	76.29	4.482		
9,100.0	7,201.2	9,151.1	7,287.4	41.1	40.8	-104.60	-1,903.0	-94.6	342.1	262.4	79.70	4.292		
9,200.0	7,199.9	9,251.1	7,286.7	42.9	42.5	-104.69	-2,003.0	-94.6	342.2	259.1	83.13	4.117		
9,300.0	7,198.7	9,351.1	7,286.0	44.6	44.3	-104.78	-2,103.0	-94.6	342.4	255.8	86.58	3.954		
9,400.0	7,197.5	9,451.1	7,285.3	46.4	46.1	-104.86	-2,203.0	-94.6	342.5	252.4	90.05	3.803		
9,500.0	7,196.3	9,551.1	7,284.7	48.2	47.9	-104.95	-2,303.0	-94.6	342.6	249.1	93.53	3.663		
9,600.0	7,195.0	9,651.1	7,284.0	50.0	49.8	-105.04	-2,403.0	-94.6	342.8	245.7	97.03	3.532		
9,700.0	7,193.8	9,751.1	7,283.3	51.8	51.6	-105.12	-2,503.0	-94.6	342.9	242.4	100.54	3.411		
9,800.0	7,192.6	9,851.1	7,282.6	53.7	53.4	-105.21	-2,603.0	-94.6	343.1	239.0	104.07	3.296		
9,900.0	7,191.4	9,951.1	7,281.9	55.5	55.3	-105.30	-2,703.0	-94.6	343.2	235.6	107.60	3.190		
10,000.0	7,190.2	10,051.1	7,281.2	57.3	57.1	-105.39	-2,803.0	-94.6	343.3	232.2	111.14	3.089		
10,100.0	7,188.9	10,151.1	7,280.6	59.2	59.0	-105.47	-2,903.0	-94.6	343.5	228.8	114.68	2.995		
10,200.0	7,187.7	10,251.1	7,279.9	61.0	60.8	-105.56	-3,002.9	-94.6	343.6	225.4	118.24	2.906		
10,300.0	7,186.5	10,351.1	7,279.2	62.9	62.7	-105.65	-3,102.9	-94.6	343.8	222.0	121.79	2.823		
10,400.0	7,185.3	10,451.1	7,278.5	64.7	64.5	-105.73	-3,202.9	-94.6	343.9	218.6	125.36	2.744		
10,500.0	7,184.0	10,551.1	7,277.8	66.6	66.4	-105.82	-3,302.9	-94.6	344.1	215.1	128.92	2.669		
10,600.0	7,182.8	10,651.1	7,277.2	68.4	68.3	-105.91	-3,402.9	-94.6	344.2	211.7	132.49	2.598		
10,700.0	7,181.6	10,751.1	7,276.5	70.3	70.1	-105.99	-3,502.9	-94.6	344.4	208.3	136.07	2.531		
10,800.0	7,180.4	10,851.1	7,275.8	72.2	72.0	-106.08	-3,602.9	-94.6	344.5	204.9	139.64	2.467		
10,900.0	7,179.2	10,951.1	7,275.1	74.0	73.9	-106.17	-3,702.9	-94.6	344.7	201.4	143.22	2.407		
11,000.0	7,177.9	11,051.1	7,274.4	75.9	75.8	-106.25	-3,802.9	-94.6	344.8	198.0	146.80	2.349		
11,100.0	7,176.7	11,151.1	7,273.8	77.8	77.6	-106.34	-3,902.9	-94.6	345.0	194.6	150.38	2.294		
11,200.0	7,175.5	11,251.1	7,273.1	79.7	79.5	-106.43	-4,002.9	-94.6	345.1	191.2	153.96	2.242		
11,300.0	7,174.3	11,351.1	7,272.4	81.5	81.4	-106.51	-4,102.9	-94.6	345.3	187.7	157.54	2.192		
11,400.0	7,173.1	11,451.1	7,271.7	83.4	83.3	-106.60	-4,202.9	-94.6	345.4	184.3	161.12	2.144		
11,500.0	7,171.8	11,551.1	7,271.0	85.3	85.2	-106.68	-4,302.9	-94.6	345.6	180.9	164.70	2.098		
11,600.0	7,170.6	11,651.1	7,270.4	87.2	87.1	-106.77	-4,402.9	-94.6	345.7	177.4	168.29	2.054		
11,649.7	7,170.0	11,700.8	7,270.0	88.1	88.0	-106.81	-4,452.6	-94.6	345.8	175.7	170.07	2.033 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15R-243 - 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	58.4	58.4					
100.0	100.0	100.0	100.0	0.1	0.1	90.00	0.0	58.4	58.4	58.2	0.19	305.717		
200.0	200.0	200.0	200.0	0.3	0.3	90.00	0.0	58.4	58.4	57.8	0.64	91.179		
300.0	300.0	300.0	300.0	0.5	0.5	90.00	0.0	58.4	58.4	57.3	1.09	53.579		
400.0	400.0	400.0	400.0	0.8	0.8	90.00	0.0	58.4	58.4	56.9	1.54	37.936		
500.0	500.0	500.0	500.0	1.0	1.0	90.00	0.0	58.4	58.4	56.4	1.99	29.363		
600.0	600.0	600.0	600.0	1.2	1.2	90.00	0.0	58.4	58.4	56.0	2.44	23.950		
700.0	700.0	700.0	700.0	1.4	1.4	90.00	0.0	58.4	58.4	55.5	2.89	20.223		
800.0	800.0	800.0	800.0	1.7	1.7	90.00	0.0	58.4	58.4	55.1	3.34	17.499		
900.0	900.0	900.0	900.0	1.9	1.9	90.00	0.0	58.4	58.4	54.6	3.79	15.422		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.00	0.0	58.4	58.4	54.2	4.24	13.786	CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.3	148.21	0.0	58.4	59.9	55.2	4.68	12.798		
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	150.62	0.0	58.4	64.4	59.3	5.11	12.591		
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	153.95	0.0	58.4	72.1	66.6	5.55	13.001		
1,399.8	1,398.5	1,398.5	1,398.5	3.0	3.0	157.54	0.0	58.4	83.2	77.2	5.98	13.926		
1,500.0	1,497.7	1,497.7	1,497.7	3.3	3.2	160.70	0.0	58.4	96.3	89.8	6.42	14.994		
1,600.0	1,596.8	1,594.7	1,594.7	3.6	3.5	162.38	1.0	59.6	110.4	103.5	6.86	16.095		
1,700.0	1,695.8	1,691.2	1,691.0	3.9	3.7	162.43	4.1	63.3	126.5	119.2	7.30	17.324		
1,800.0	1,794.8	1,786.9	1,786.4	4.2	3.9	161.39	9.3	69.4	144.4	136.7	7.75	18.642		
1,900.0	1,893.8	1,881.7	1,880.6	4.5	4.1	159.68	16.4	77.8	164.4	156.2	8.21	20.033		
2,000.0	1,992.9	1,979.2	1,977.1	4.8	4.3	157.86	24.9	87.8	185.6	176.9	8.68	21.379		
2,100.0	2,091.9	2,076.7	2,073.8	5.1	4.6	156.41	33.3	97.8	206.9	197.8	9.16	22.584		
2,200.0	2,190.9	2,174.3	2,170.5	5.4	4.9	155.23	41.8	107.8	228.4	218.7	9.65	23.662		
2,300.0	2,290.0	2,271.9	2,267.2	5.8	5.1	154.26	50.3	117.9	249.9	239.7	10.15	24.626		
2,400.0	2,389.0	2,369.5	2,363.9	6.1	5.4	153.43	58.8	127.9	271.4	260.8	10.65	25.495		
2,500.0	2,488.0	2,467.0	2,460.6	6.4	5.7	152.73	67.3	137.9	293.1	281.9	11.15	26.278		
2,600.0	2,587.0	2,564.6	2,557.3	6.7	6.0	152.13	75.7	147.9	314.7	303.1	11.66	26.988		
2,700.0	2,686.1	2,662.2	2,654.0	7.1	6.3	151.60	84.2	158.0	336.4	324.2	12.17	27.633		
2,800.0	2,785.1	2,759.8	2,750.7	7.4	6.6	151.14	92.7	168.0	358.1	345.4	12.69	28.221		
2,900.0	2,884.1	2,857.3	2,847.3	7.7	6.9	150.73	101.2	178.0	379.8	366.6	13.21	28.759		
3,000.0	2,983.1	2,954.9	2,944.0	8.1	7.2	150.36	109.7	188.0	401.6	387.8	13.73	29.252		
3,100.0	3,082.2	3,052.5	3,040.7	8.4	7.5	150.03	118.1	198.1	423.3	409.1	14.25	29.707		
3,200.0	3,181.2	3,150.1	3,137.4	8.7	7.8	149.74	126.6	208.1	445.1	430.3	14.77	30.126		
3,300.0	3,280.2	3,247.7	3,234.1	9.1	8.1	149.47	135.1	218.1	466.9	451.6	15.30	30.513		
3,400.0	3,379.3	3,345.2	3,330.8	9.4	8.4	149.23	143.6	228.1	488.7	472.8	15.83	30.873		
3,500.0	3,478.3	3,442.8	3,427.5	9.7	8.7	149.00	152.1	238.2	510.5	494.1	16.36	31.207		
3,600.0	3,577.3	3,540.4	3,524.2	10.1	9.0	148.80	160.5	248.2	532.3	515.4	16.89	31.519		
3,700.0	3,676.3	3,638.0	3,620.9	10.4	9.3	148.61	169.0	258.2	554.1	536.7	17.42	31.810		
3,800.0	3,775.4	3,735.5	3,717.6	10.8	9.6	148.43	177.5	268.2	575.9	557.9	17.95	32.082		
3,900.0	3,874.4	3,833.1	3,814.2	11.1	9.9	148.27	186.0	278.2	597.7	579.2	18.48	32.337		
4,000.0	3,973.4	3,930.7	3,910.9	11.4	10.2	148.12	194.5	288.3	619.5	600.5	19.02	32.577		
4,100.0	4,072.4	4,028.3	4,007.6	11.8	10.6	147.98	202.9	298.3	641.4	621.8	19.55	32.802		
4,200.0	4,171.5	4,125.9	4,104.3	12.1	10.9	147.85	211.4	308.3	663.2	643.1	20.09	33.015		
4,300.0	4,270.5	4,223.4	4,201.0	12.5	11.2	147.72	219.9	318.3	685.0	664.4	20.62	33.215		
4,400.0	4,369.5	4,321.0	4,297.7	12.8	11.5	147.61	228.4	328.4	706.9	685.7	21.16	33.405		
4,500.0	4,468.6	4,418.6	4,394.4	13.1	11.8	147.50	236.9	338.4	728.7	707.0	21.70	33.584		
4,600.0	4,567.6	4,516.2	4,491.1	13.5	12.2	147.40	245.3	348.4	750.6	728.3	22.24	33.754		
4,634.2	4,601.5	4,549.6	4,524.2	13.6	12.3	147.37	248.2	351.8	758.0	735.6	22.42	33.810		
4,700.0	4,666.7	4,613.9	4,587.9	13.8	12.5	147.42	253.8	358.4	771.8	749.0	22.79	33.866		
4,800.0	4,766.2	4,731.0	4,704.2	14.0	12.8	147.38	263.1	369.4	789.4	766.1	23.32	33.858		
4,900.0	4,866.0	4,857.0	4,829.7	14.2	13.1	147.34	269.7	377.2	801.0	777.3	23.78	33.684		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15R-243 - 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			
5,000.0	4,966.0	4,984.0	4,956.6	14.4	13.3	147.32	272.8	380.8	806.3	782.2	24.19	33.333			
5,034.0	5,000.0	5,027.4	5,000.0	14.4	13.4	90.00	273.0	381.1	806.7	782.4	24.32	33.174			
5,100.0	5,066.0	5,093.3	5,066.0	14.5	13.5	90.00	273.0	381.1	806.7	782.2	24.55	32.856			
5,200.0	5,166.0	5,193.3	5,166.0	14.7	13.6	90.00	273.0	381.1	806.7	781.8	24.94	32.349			
5,300.0	5,266.0	5,293.3	5,266.0	14.9	13.8	90.00	273.0	381.1	806.7	781.4	25.33	31.853			
5,400.0	5,366.0	5,393.3	5,366.0	15.0	14.0	90.00	273.0	381.1	806.7	781.0	25.72	31.369			
5,500.0	5,466.0	5,493.3	5,466.0	15.2	14.2	90.00	273.0	381.1	806.7	780.6	26.11	30.898			
5,600.0	5,566.0	5,593.3	5,566.0	15.4	14.4	90.00	273.0	381.1	806.7	780.2	26.50	30.438			
5,700.0	5,666.0	5,693.3	5,666.0	15.5	14.6	90.00	273.0	381.1	806.7	779.8	26.90	29.990			
5,800.0	5,766.0	5,793.3	5,766.0	15.7	14.8	90.00	273.0	381.1	806.7	779.4	27.30	29.554			
5,900.0	5,866.0	5,893.3	5,866.0	15.9	14.9	90.00	273.0	381.1	806.7	779.0	27.70	29.128			
6,000.0	5,966.0	5,993.3	5,966.0	16.1	15.1	90.00	273.0	381.1	806.7	778.6	28.10	28.712			
6,100.0	6,066.0	6,093.3	6,066.0	16.3	15.3	90.00	273.0	381.1	806.7	778.2	28.50	28.307			
6,200.0	6,166.0	6,193.3	6,166.0	16.4	15.5	90.00	273.0	381.1	806.7	777.8	28.90	27.912			
6,300.0	6,266.0	6,293.3	6,266.0	16.6	15.7	90.00	273.0	381.1	806.7	777.4	29.31	27.527			
6,400.0	6,366.0	6,393.3	6,366.0	16.8	15.9	90.00	273.0	381.1	806.7	777.0	29.71	27.150			
6,427.9	6,393.9	6,421.2	6,393.8	16.9	15.9	90.02	272.7	381.1	806.7	776.9	29.82	27.054			
6,488.4	6,454.4	6,481.5	6,453.9	17.0	16.0	90.31	268.7	381.1	806.7	776.7	30.02	26.871			
6,500.0	6,466.0	6,492.9	6,465.3	17.0	16.0	-89.60	267.4	381.1	806.7	776.7	30.06	26.842			
6,550.0	6,515.9	6,542.1	6,513.9	17.0	16.1	-89.23	259.8	381.1	806.8	776.6	30.16	26.746			
6,600.0	6,565.6	6,590.9	6,561.6	17.1	16.1	-88.86	249.3	381.1	806.9	776.6	30.24	26.681			
6,650.0	6,614.8	6,639.5	6,608.2	17.1	16.1	-88.50	235.8	381.1	807.0	776.7	30.29	26.642			
6,700.0	6,663.3	6,687.7	6,653.6	17.2	16.1	-88.14	219.4	381.1	807.1	776.8	30.32	26.624			
6,750.0	6,710.9	6,735.7	6,697.6	17.2	16.1	-87.79	200.4	381.1	807.3	777.0	30.33	26.621			
6,800.0	6,757.4	6,783.4	6,740.1	17.2	16.1	-87.46	178.8	381.1	807.5	777.2	30.33	26.628			
6,850.0	6,802.6	6,830.8	6,780.9	17.2	16.1	-87.13	154.7	381.1	807.7	777.4	30.32	26.637			
6,900.0	6,846.3	6,877.9	6,820.0	17.2	16.1	-86.82	128.3	381.1	808.0	777.6	30.33	26.640			
6,950.0	6,888.4	6,924.9	6,857.1	17.2	16.1	-86.52	99.7	381.1	808.2	777.9	30.35	26.630			
7,000.0	6,928.6	6,971.6	6,892.3	17.2	16.1	-86.23	69.0	381.1	808.5	778.1	30.40	26.597			
7,050.0	6,966.7	7,018.0	6,925.4	17.2	16.1	-85.96	36.3	381.1	808.7	778.3	30.48	26.534			
7,100.0	7,002.7	7,064.3	6,956.3	17.2	16.1	-85.71	1.9	381.1	809.0	778.4	30.61	26.433			
7,150.0	7,036.3	7,110.5	6,985.0	17.2	16.2	-85.47	-34.3	381.1	809.3	778.5	30.79	26.287			
7,200.0	7,067.4	7,156.4	7,011.3	17.2	16.2	-85.25	-71.9	381.1	809.5	778.5	31.03	26.090			
7,250.0	7,095.9	7,202.2	7,035.3	17.2	16.3	-85.06	-111.0	381.1	809.7	778.4	31.34	25.840			
7,300.0	7,121.7	7,250.0	7,057.7	17.3	16.4	-84.87	-153.1	381.1	810.0	778.2	31.73	25.527			
7,350.0	7,144.6	7,293.5	7,075.9	17.4	16.6	-84.72	-192.6	381.1	810.2	778.0	32.19	25.172			
7,400.0	7,164.5	7,338.9	7,092.4	17.5	16.8	-84.58	-235.0	381.1	810.3	777.6	32.73	24.759			
7,450.0	7,181.4	7,384.3	7,106.3	17.8	17.1	-84.46	-278.2	381.1	810.5	777.1	33.35	24.300			
7,500.0	7,195.2	7,429.6	7,117.6	18.1	17.5	-84.37	-322.0	381.1	810.6	776.6	34.06	23.802			
7,550.0	7,205.8	7,474.9	7,126.3	18.4	17.9	-84.29	-366.4	381.1	810.7	775.9	34.84	23.272			
7,600.0	7,213.2	7,520.1	7,132.3	18.8	18.3	-84.24	-411.2	381.1	810.8	775.1	35.69	22.719			
7,650.0	7,217.4	7,565.2	7,135.7	19.3	18.7	-84.22	-456.2	381.1	810.8	774.2	36.61	22.150			
7,697.8	7,218.3	7,608.4	7,136.5	19.8	19.2	-84.21	-499.4	381.1	810.9	773.3	37.54	21.601			
7,700.0	7,218.3	7,610.7	7,136.4	19.8	19.2	-84.21	-501.7	381.1	810.9	773.3	37.59	21.573			
7,800.0	7,217.0	7,710.7	7,135.4	20.9	20.3	-84.22	-601.6	381.1	810.8	771.0	39.85	20.348			
7,900.0	7,215.8	7,810.7	7,134.4	22.1	21.6	-84.23	-701.6	381.1	810.8	768.5	42.33	19.154			
8,000.0	7,214.6	7,910.7	7,133.3	23.4	22.9	-84.25	-801.6	381.1	810.8	765.8	45.01	18.016			
8,100.0	7,213.4	8,010.7	7,132.3	24.8	24.3	-84.26	-901.6	381.1	810.8	762.9	47.84	16.949			
8,200.0	7,212.1	8,110.7	7,131.2	26.3	25.8	-84.27	-1,001.6	381.1	810.8	760.0	50.80	15.960			
8,300.0	7,210.9	8,210.7	7,130.2	27.8	27.3	-84.28	-1,101.6	381.1	810.7	756.9	53.87	15.050			

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

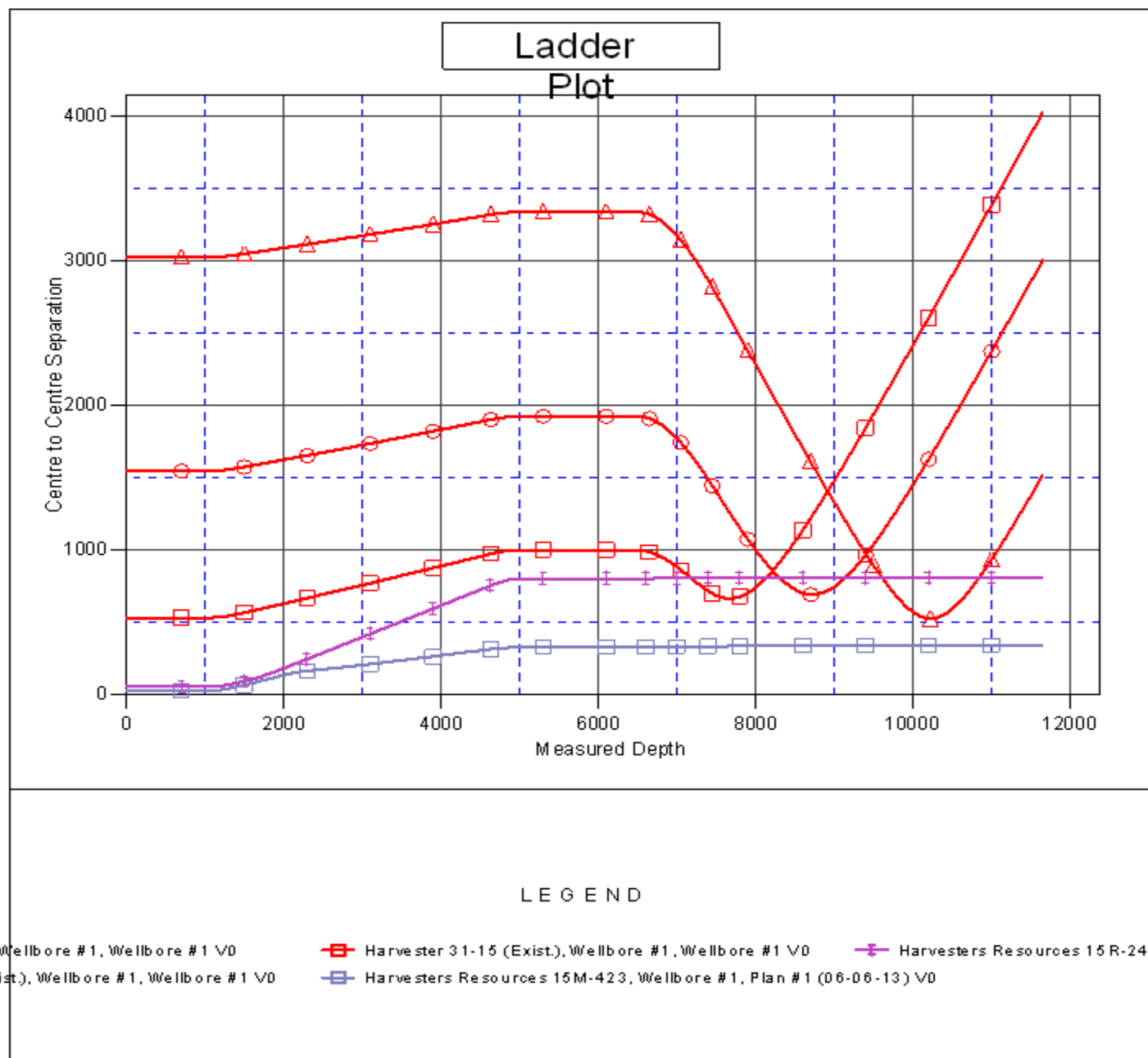
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Offset Design		Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W - Harvesters Resources 15R-243 - 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	7,209.7	8,310.7	7,129.1	29.3	28.9	-84.30	-1,201.6	381.1	810.7	753.7	57.04	14.214			
8,500.0	7,208.5	8,410.7	7,128.1	30.9	30.5	-84.31	-1,301.6	381.1	810.7	750.4	60.28	13.450			
8,600.0	7,207.3	8,510.7	7,127.0	32.6	32.2	-84.32	-1,401.6	381.1	810.7	747.1	63.58	12.750			
8,700.0	7,206.0	8,610.7	7,126.0	34.2	33.9	-84.33	-1,501.6	381.1	810.7	743.7	66.95	12.109			
8,800.0	7,204.8	8,710.7	7,124.9	35.9	35.6	-84.34	-1,601.6	381.1	810.7	740.3	70.36	11.522			
8,900.0	7,203.6	8,810.7	7,123.9	37.6	37.3	-84.36	-1,701.6	381.1	810.6	736.8	73.81	10.982			
9,000.0	7,202.4	8,910.7	7,122.8	39.4	39.0	-84.37	-1,801.6	381.1	810.6	733.3	77.30	10.487			
9,100.0	7,201.2	9,010.7	7,121.8	41.1	40.8	-84.38	-1,901.6	381.1	810.6	729.8	80.82	10.030			
9,200.0	7,199.9	9,110.7	7,120.7	42.9	42.6	-84.39	-2,001.6	381.1	810.6	726.2	84.37	9.608			
9,300.0	7,198.7	9,210.7	7,119.7	44.6	44.3	-84.41	-2,101.6	381.1	810.6	722.6	87.94	9.217			
9,400.0	7,197.5	9,310.7	7,118.6	46.4	46.1	-84.42	-2,201.6	381.1	810.6	719.0	91.53	8.856			
9,500.0	7,196.3	9,410.7	7,117.6	48.2	47.9	-84.43	-2,301.5	381.1	810.5	715.4	95.14	8.519			
9,600.0	7,195.0	9,510.7	7,116.5	50.0	49.8	-84.44	-2,401.5	381.1	810.5	711.8	98.77	8.206			
9,700.0	7,193.8	9,610.7	7,115.5	51.8	51.6	-84.45	-2,501.5	381.1	810.5	708.1	102.41	7.914			
9,800.0	7,192.6	9,710.7	7,114.5	53.7	53.4	-84.47	-2,601.5	381.1	810.5	704.4	106.07	7.641			
9,900.0	7,191.4	9,810.7	7,113.4	55.5	55.2	-84.48	-2,701.5	381.1	810.5	700.7	109.74	7.385			
10,000.0	7,190.2	9,910.7	7,112.4	57.3	57.1	-84.49	-2,801.5	381.1	810.5	697.0	113.42	7.146			
10,100.0	7,188.9	10,010.7	7,111.3	59.2	58.9	-84.50	-2,901.5	381.1	810.4	693.3	117.11	6.920			
10,200.0	7,187.7	10,110.7	7,110.3	61.0	60.8	-84.52	-3,001.5	381.1	810.4	689.6	120.81	6.708			
10,300.0	7,186.5	10,210.7	7,109.2	62.9	62.6	-84.53	-3,101.5	381.1	810.4	685.9	124.51	6.509			
10,400.0	7,185.3	10,310.7	7,108.2	64.7	64.5	-84.54	-3,201.5	381.1	810.4	682.2	128.23	6.320			
10,500.0	7,184.0	10,410.7	7,107.1	66.6	66.4	-84.55	-3,301.5	381.1	810.4	678.4	131.95	6.142			
10,600.0	7,182.8	10,510.7	7,106.1	68.4	68.2	-84.57	-3,401.5	381.1	810.4	674.7	135.68	5.973			
10,700.0	7,181.6	10,610.7	7,105.0	70.3	70.1	-84.58	-3,501.5	381.1	810.3	670.9	139.41	5.813			
10,800.0	7,180.4	10,710.7	7,104.0	72.2	72.0	-84.59	-3,601.5	381.1	810.3	667.2	143.15	5.661			
10,900.0	7,179.2	10,810.7	7,102.9	74.0	73.8	-84.60	-3,701.5	381.1	810.3	663.4	146.89	5.516			
11,000.0	7,177.9	10,910.7	7,101.9	75.9	75.7	-84.61	-3,801.5	381.1	810.3	659.6	150.64	5.379			
11,100.0	7,176.7	11,010.7	7,100.8	77.8	77.6	-84.63	-3,901.5	381.1	810.3	655.9	154.40	5.248			
11,200.0	7,175.5	11,110.7	7,099.8	79.7	79.5	-84.64	-4,001.5	381.1	810.3	652.1	158.15	5.123			
11,300.0	7,174.3	11,210.7	7,098.7	81.5	81.4	-84.65	-4,101.4	381.1	810.2	648.3	161.91	5.004			
11,400.0	7,173.1	11,310.7	7,097.7	83.4	83.3	-84.66	-4,201.4	381.1	810.2	644.5	165.68	4.890			
11,500.0	7,171.8	11,410.7	7,096.7	85.3	85.1	-84.68	-4,301.4	381.1	810.2	640.8	169.45	4.782			
11,600.0	7,170.6	11,510.7	7,095.6	87.2	87.0	-84.69	-4,401.4	381.1	810.2	637.0	173.22	4.677			
11,649.7	7,170.0	11,560.4	7,095.1	88.1	88.0	-84.69	-4,451.2	381.1	810.2	635.1	175.09	4.627 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4835.0ft (RKB-15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Harvesters Resources 15M-303
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.48°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Harvesters Resources 15M-303
Project:	SEC.15-T6N-R66W	TVD Reference:	WELL @ 4835.0ft (RKB-15')
Reference Site:	Harvesters Resources 15RM-HZ Pad Sec.15-T6N-R66W	MD Reference:	WELL @ 4835.0ft (RKB-15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Harvesters Resources 15M-303	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (06-11-13)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4835.0ft (RKB-15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Harvesters Resources 15M-303
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.48°

