

# PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Alles 22D-212**

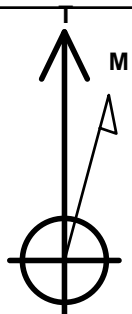
Surface Location: Alles 22S-HZ Pad Sec.22-T5N-R65W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4645.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1383647.79	3239041.95	40.383340	-104.641910	

RKB - 15' WELL @ 4660.0ft (RKB - 15')

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 1830'FSL, 500'FEL	6809.0	-312.7	5315.6	Point



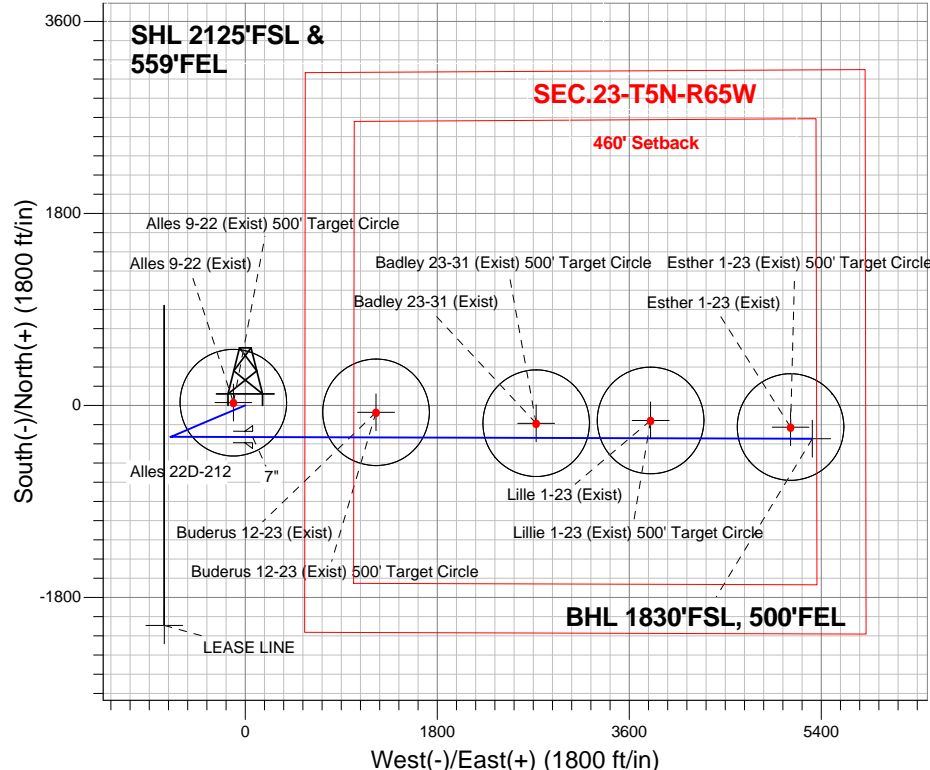
Azimuths to True North  
Magnetic North: 8.54°

Magnetic Field  
Strength: 52933.2nT  
Dip Angle: 66.99°  
Date: 5/22/2013  
Model: IGRF2010

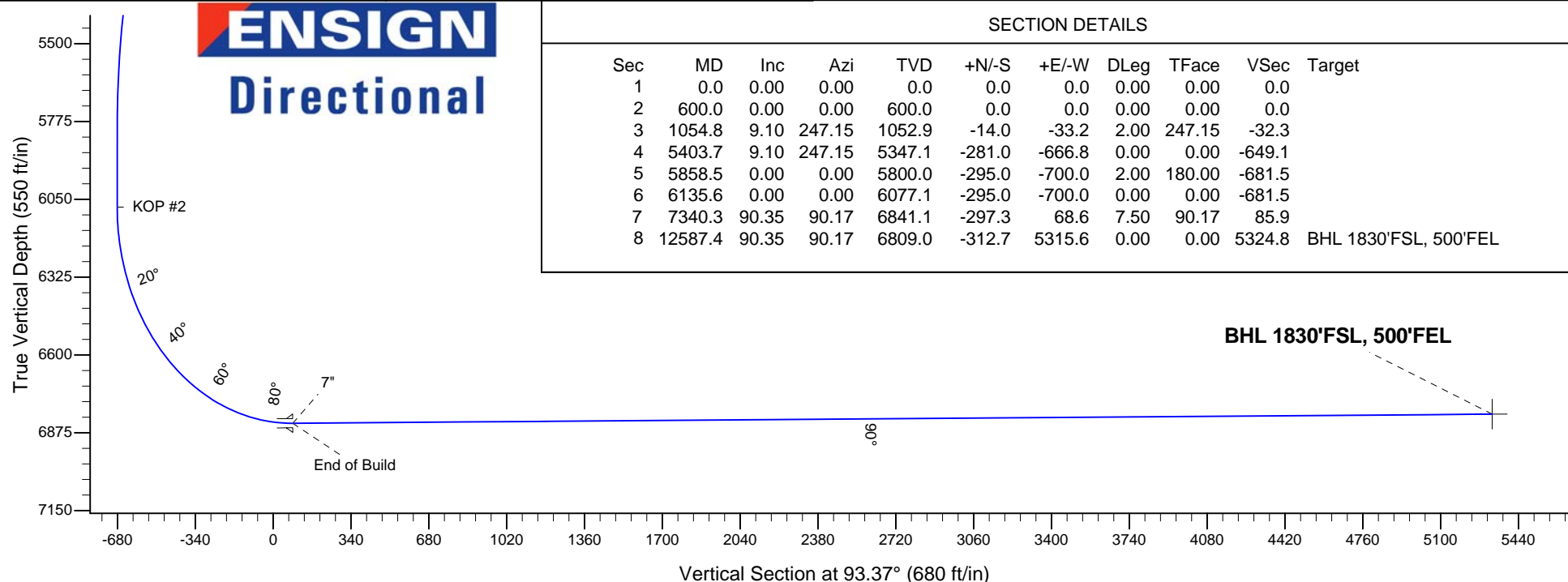
Alles 22D-212  
Plan #1 (5-16-13)  
11:53, May 24 2013

## ANNOTATIONS

TVD	MD	Annotation
600.0	600.0	KOP #1
6077.1	6135.6	KOP #2
6841.1	7340.3	End of Build



**ENSIGN**  
Directional



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	1054.8	9.10	247.15	1052.9	-14.0	-33.2	2.00	247.15	-32.3	
4	5403.7	9.10	247.15	5347.1	-281.0	-666.8	0.00	0.00	-649.1	
5	5858.5	0.00	0.00	5800.0	-295.0	-700.0	2.00	180.00	-681.5	
6	6135.6	0.00	0.00	6077.1	-295.0	-700.0	0.00	0.00	-681.5	
7	7340.3	90.35	90.17	6841.1	-297.3	68.6	7.50	90.17	85.9	
8	12587.4	90.35	90.17	6809.0	-312.7	5315.6	0.00	0.00	5324.8	BHL 1830'FSL, 500'FEL



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.22-T5N-R65W**

**Alles 22S-HZ Pad Sec.22-T5N-R65W**

**Alles 22D-212**

**Wellbore #1**

**Plan: Plan #1 (5-16-13)**

## **Standard Planning Report**

**23 May, 2013**

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Project:</b>	SEC.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-16-13)		

<b>Project</b>	SEC.22-T5N-R65W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W		
<b>Site Position:</b>		<b>Northing:</b>	1,383,618.80 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,239,056.16 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.383260
		<b>Longitude:</b>	-104.641860
		<b>Grid Convergence:</b>	0.55 °

<b>Well</b>	Alles 22D-212		
<b>Well Position</b>	<b>+N/-S</b>	29.1 ft	<b>Northing:</b>
	<b>+E/-W</b>	-13.9 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>
			ft
			<b>Latitude:</b>
			40.383340
			<b>Longitude:</b>
			-104.641910
			<b>Ground Level:</b>
			4,645.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	5/22/2013	8.54	66.99	52,933

<b>Design</b>	Plan #1 (5-16-13)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	93.37

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,054.8	9.10	247.15	1,052.9	-14.0	-33.2	2.00	2.00	0.00	247.15	
5,403.7	9.10	247.15	5,347.1	-281.0	-666.8	0.00	0.00	0.00	0.00	
5,858.5	0.00	0.00	5,800.0	-295.0	-700.0	2.00	-2.00	0.00	180.00	
6,135.6	0.00	0.00	6,077.1	-295.0	-700.0	0.00	0.00	0.00	0.00	
7,340.3	90.35	90.17	6,841.1	-297.3	68.6	7.50	7.50	0.00	90.17	
12,587.4	90.35	90.17	6,809.0	-312.7	5,315.6	0.00	0.00	0.00	0.00	BHL 1830'FSL, 500

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Project:</b>	SEC.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-16-13)		

## 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
<b>KOP #1</b>									
640.0	0.80	247.15	640.0	-0.1	-0.3	-0.3	2.00	2.00	0.00
680.0	1.60	247.15	680.0	-0.4	-1.0	-1.0	2.00	2.00	0.00
720.0	2.40	247.15	720.0	-1.0	-2.3	-2.3	2.00	2.00	0.00
760.0	3.20	247.15	759.9	-1.7	-4.1	-4.0	2.00	2.00	0.00
800.0	4.00	247.15	799.8	-2.7	-6.4	-6.3	2.00	2.00	0.00
840.0	4.80	247.15	839.7	-3.9	-9.3	-9.0	2.00	2.00	0.00
880.0	5.60	247.15	879.6	-5.3	-12.6	-12.3	2.00	2.00	0.00
920.0	6.40	247.15	919.3	-6.9	-16.5	-16.0	2.00	2.00	0.00
960.0	7.20	247.15	959.1	-8.8	-20.8	-20.3	2.00	2.00	0.00
1,000.0	8.00	247.15	998.7	-10.8	-25.7	-25.0	2.00	2.00	0.00
1,040.0	8.80	247.15	1,038.3	-13.1	-31.1	-30.3	2.00	2.00	0.00
1,054.8	9.10	247.15	1,052.9	-14.0	-33.2	-32.3	2.00	2.00	0.00
1,080.0	9.10	247.15	1,077.8	-15.5	-36.9	-35.9	0.00	0.00	0.00
1,120.0	9.10	247.15	1,117.3	-18.0	-42.7	-41.6	0.00	0.00	0.00
1,160.0	9.10	247.15	1,156.8	-20.4	-48.5	-47.2	0.00	0.00	0.00
1,200.0	9.10	247.15	1,196.3	-22.9	-54.4	-52.9	0.00	0.00	0.00
1,240.0	9.10	247.15	1,235.8	-25.4	-60.2	-58.6	0.00	0.00	0.00
1,280.0	9.10	247.15	1,275.3	-27.8	-66.0	-64.3	0.00	0.00	0.00
1,320.0	9.10	247.15	1,314.8	-30.3	-71.8	-69.9	0.00	0.00	0.00
1,360.0	9.10	247.15	1,354.3	-32.7	-77.7	-75.6	0.00	0.00	0.00
1,400.0	9.10	247.15	1,393.8	-35.2	-83.5	-81.3	0.00	0.00	0.00
1,440.0	9.10	247.15	1,433.2	-37.6	-89.3	-87.0	0.00	0.00	0.00
1,480.0	9.10	247.15	1,472.7	-40.1	-95.1	-92.6	0.00	0.00	0.00
1,520.0	9.10	247.15	1,512.2	-42.6	-101.0	-98.3	0.00	0.00	0.00
1,560.0	9.10	247.15	1,551.7	-45.0	-106.8	-104.0	0.00	0.00	0.00
1,600.0	9.10	247.15	1,591.2	-47.5	-112.6	-109.6	0.00	0.00	0.00
1,640.0	9.10	247.15	1,630.7	-49.9	-118.5	-115.3	0.00	0.00	0.00
1,680.0	9.10	247.15	1,670.2	-52.4	-124.3	-121.0	0.00	0.00	0.00
1,720.0	9.10	247.15	1,709.7	-54.8	-130.1	-126.7	0.00	0.00	0.00
1,760.0	9.10	247.15	1,749.2	-57.3	-135.9	-132.3	0.00	0.00	0.00
1,800.0	9.10	247.15	1,788.7	-59.7	-141.8	-138.0	0.00	0.00	0.00
1,840.0	9.10	247.15	1,828.2	-62.2	-147.6	-143.7	0.00	0.00	0.00
1,880.0	9.10	247.15	1,867.7	-64.7	-153.4	-149.4	0.00	0.00	0.00
1,920.0	9.10	247.15	1,907.2	-67.1	-159.3	-155.0	0.00	0.00	0.00
1,960.0	9.10	247.15	1,946.7	-69.6	-165.1	-160.7	0.00	0.00	0.00
2,000.0	9.10	247.15	1,986.2	-72.0	-170.9	-166.4	0.00	0.00	0.00

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<b>Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-16-13)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
2,040.0	9.10	247.15	2,025.7	-74.5	-176.7	-172.1	0.00	0.00	0.00
2,080.0	9.10	247.15	2,065.2	-76.9	-182.6	-177.7	0.00	0.00	0.00
2,120.0	9.10	247.15	2,104.7	-79.4	-188.4	-183.4	0.00	0.00	0.00
2,160.0	9.10	247.15	2,144.2	-81.8	-194.2	-189.1	0.00	0.00	0.00
2,200.0	9.10	247.15	2,183.7	-84.3	-200.0	-194.7	0.00	0.00	0.00
2,240.0	9.10	247.15	2,223.2	-86.8	-205.9	-200.4	0.00	0.00	0.00
2,280.0	9.10	247.15	2,262.7	-89.2	-211.7	-206.1	0.00	0.00	0.00
2,320.0	9.10	247.15	2,302.2	-91.7	-217.5	-211.8	0.00	0.00	0.00
2,360.0	9.10	247.15	2,341.7	-94.1	-223.4	-217.4	0.00	0.00	0.00
2,400.0	9.10	247.15	2,381.2	-96.6	-229.2	-223.1	0.00	0.00	0.00
2,440.0	9.10	247.15	2,420.7	-99.0	-235.0	-228.8	0.00	0.00	0.00
2,480.0	9.10	247.15	2,460.2	-101.5	-240.8	-234.5	0.00	0.00	0.00
2,520.0	9.10	247.15	2,499.7	-104.0	-246.7	-240.1	0.00	0.00	0.00
2,560.0	9.10	247.15	2,539.2	-106.4	-252.5	-245.8	0.00	0.00	0.00
2,600.0	9.10	247.15	2,578.7	-108.9	-258.3	-251.5	0.00	0.00	0.00
2,640.0	9.10	247.15	2,618.2	-111.3	-264.1	-257.2	0.00	0.00	0.00
2,680.0	9.10	247.15	2,657.7	-113.8	-270.0	-262.8	0.00	0.00	0.00
2,720.0	9.10	247.15	2,697.1	-116.2	-275.8	-268.5	0.00	0.00	0.00
2,760.0	9.10	247.15	2,736.6	-118.7	-281.6	-274.2	0.00	0.00	0.00
2,800.0	9.10	247.15	2,776.1	-121.1	-287.5	-279.8	0.00	0.00	0.00
2,840.0	9.10	247.15	2,815.6	-123.6	-293.3	-285.5	0.00	0.00	0.00
2,880.0	9.10	247.15	2,855.1	-126.1	-299.1	-291.2	0.00	0.00	0.00
2,920.0	9.10	247.15	2,894.6	-128.5	-304.9	-296.9	0.00	0.00	0.00
2,960.0	9.10	247.15	2,934.1	-131.0	-310.8	-302.5	0.00	0.00	0.00
3,000.0	9.10	247.15	2,973.6	-133.4	-316.6	-308.2	0.00	0.00	0.00
3,040.0	9.10	247.15	3,013.1	-135.9	-322.4	-313.9	0.00	0.00	0.00
3,080.0	9.10	247.15	3,052.6	-138.3	-328.3	-319.6	0.00	0.00	0.00
3,120.0	9.10	247.15	3,092.1	-140.8	-334.1	-325.2	0.00	0.00	0.00
3,160.0	9.10	247.15	3,131.6	-143.2	-339.9	-330.9	0.00	0.00	0.00
3,200.0	9.10	247.15	3,171.1	-145.7	-345.7	-336.6	0.00	0.00	0.00
3,240.0	9.10	247.15	3,210.6	-148.2	-351.6	-342.3	0.00	0.00	0.00
3,280.0	9.10	247.15	3,250.1	-150.6	-357.4	-347.9	0.00	0.00	0.00
3,320.0	9.10	247.15	3,289.6	-153.1	-363.2	-353.6	0.00	0.00	0.00
3,360.0	9.10	247.15	3,329.1	-155.5	-369.0	-359.3	0.00	0.00	0.00
3,400.0	9.10	247.15	3,368.6	-158.0	-374.9	-365.0	0.00	0.00	0.00
3,440.0	9.10	247.15	3,408.1	-160.4	-380.7	-370.6	0.00	0.00	0.00
3,480.0	9.10	247.15	3,447.6	-162.9	-386.5	-376.3	0.00	0.00	0.00
3,520.0	9.10	247.15	3,487.1	-165.4	-392.4	-382.0	0.00	0.00	0.00
3,560.0	9.10	247.15	3,526.6	-167.8	-398.2	-387.6	0.00	0.00	0.00
3,600.0	9.10	247.15	3,566.1	-170.3	-404.0	-393.3	0.00	0.00	0.00
3,640.0	9.10	247.15	3,605.6	-172.7	-409.8	-399.0	0.00	0.00	0.00
3,680.0	9.10	247.15	3,645.1	-175.2	-415.7	-404.7	0.00	0.00	0.00
3,720.0	9.10	247.15	3,684.6	-177.6	-421.5	-410.3	0.00	0.00	0.00
3,760.0	9.10	247.15	3,724.1	-180.1	-427.3	-416.0	0.00	0.00	0.00
3,800.0	9.10	247.15	3,763.6	-182.5	-433.2	-421.7	0.00	0.00	0.00
3,840.0	9.10	247.15	3,803.1	-185.0	-439.0	-427.4	0.00	0.00	0.00
3,880.0	9.10	247.15	3,842.6	-187.5	-444.8	-433.0	0.00	0.00	0.00
3,920.0	9.10	247.15	3,882.1	-189.9	-450.6	-438.7	0.00	0.00	0.00
3,960.0	9.10	247.15	3,921.6	-192.4	-456.5	-444.4	0.00	0.00	0.00
4,000.0	9.10	247.15	3,961.0	-194.8	-462.3	-450.1	0.00	0.00	0.00
4,040.0	9.10	247.15	4,000.5	-197.3	-468.1	-455.7	0.00	0.00	0.00
4,080.0	9.10	247.15	4,040.0	-199.7	-473.9	-461.4	0.00	0.00	0.00
4,120.0	9.10	247.15	4,079.5	-202.2	-479.8	-467.1	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Project:</b>	SEC.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-16-13)		

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)
4,160.0	9.10	247.15	4,119.0	-204.6	-485.6	-472.7	0.00	0.00	0.00
4,200.0	9.10	247.15	4,158.5	-207.1	-491.4	-478.4	0.00	0.00	0.00
4,240.0	9.10	247.15	4,198.0	-209.6	-497.3	-484.1	0.00	0.00	0.00
4,280.0	9.10	247.15	4,237.5	-212.0	-503.1	-489.8	0.00	0.00	0.00
4,320.0	9.10	247.15	4,277.0	-214.5	-508.9	-495.4	0.00	0.00	0.00
4,360.0	9.10	247.15	4,316.5	-216.9	-514.7	-501.1	0.00	0.00	0.00
4,400.0	9.10	247.15	4,356.0	-219.4	-520.6	-506.8	0.00	0.00	0.00
4,440.0	9.10	247.15	4,395.5	-221.8	-526.4	-512.5	0.00	0.00	0.00
4,480.0	9.10	247.15	4,435.0	-224.3	-532.2	-518.1	0.00	0.00	0.00
4,520.0	9.10	247.15	4,474.5	-226.8	-538.1	-523.8	0.00	0.00	0.00
4,560.0	9.10	247.15	4,514.0	-229.2	-543.9	-529.5	0.00	0.00	0.00
4,600.0	9.10	247.15	4,553.5	-231.7	-549.7	-535.2	0.00	0.00	0.00
4,640.0	9.10	247.15	4,593.0	-234.1	-555.5	-540.8	0.00	0.00	0.00
4,680.0	9.10	247.15	4,632.5	-236.6	-561.4	-546.5	0.00	0.00	0.00
4,720.0	9.10	247.15	4,672.0	-239.0	-567.2	-552.2	0.00	0.00	0.00
4,760.0	9.10	247.15	4,711.5	-241.5	-573.0	-557.8	0.00	0.00	0.00
4,800.0	9.10	247.15	4,751.0	-243.9	-578.8	-563.5	0.00	0.00	0.00
4,840.0	9.10	247.15	4,790.5	-246.4	-584.7	-569.2	0.00	0.00	0.00
4,880.0	9.10	247.15	4,830.0	-248.9	-590.5	-574.9	0.00	0.00	0.00
4,920.0	9.10	247.15	4,869.5	-251.3	-596.3	-580.5	0.00	0.00	0.00
4,960.0	9.10	247.15	4,909.0	-253.8	-602.2	-586.2	0.00	0.00	0.00
5,000.0	9.10	247.15	4,948.5	-256.2	-608.0	-591.9	0.00	0.00	0.00
5,040.0	9.10	247.15	4,988.0	-258.7	-613.8	-597.6	0.00	0.00	0.00
5,080.0	9.10	247.15	5,027.5	-261.1	-619.6	-603.2	0.00	0.00	0.00
5,120.0	9.10	247.15	5,067.0	-263.6	-625.5	-608.9	0.00	0.00	0.00
5,160.0	9.10	247.15	5,106.5	-266.0	-631.3	-614.6	0.00	0.00	0.00
5,200.0	9.10	247.15	5,146.0	-268.5	-637.1	-620.3	0.00	0.00	0.00
5,240.0	9.10	247.15	5,185.5	-271.0	-643.0	-625.9	0.00	0.00	0.00
5,280.0	9.10	247.15	5,225.0	-273.4	-648.8	-631.6	0.00	0.00	0.00
5,320.0	9.10	247.15	5,264.4	-275.9	-654.6	-637.3	0.00	0.00	0.00
5,360.0	9.10	247.15	5,303.9	-278.3	-660.4	-642.9	0.00	0.00	0.00
5,400.0	9.10	247.15	5,343.4	-280.8	-666.3	-648.6	0.00	0.00	0.00
5,403.7	9.10	247.15	5,347.1	-281.0	-666.8	-649.1	0.00	0.00	0.00
5,440.0	8.37	247.15	5,383.0	-283.1	-671.9	-654.1	2.00	-2.00	0.00
5,480.0	7.57	247.15	5,422.6	-285.3	-677.0	-659.1	2.00	-2.00	0.00
5,520.0	6.77	247.15	5,462.3	-287.2	-681.6	-663.5	2.00	-2.00	0.00
5,560.0	5.97	247.15	5,502.0	-289.0	-685.7	-667.5	2.00	-2.00	0.00
5,600.0	5.17	247.15	5,541.8	-290.5	-689.3	-671.0	2.00	-2.00	0.00
5,640.0	4.37	247.15	5,581.7	-291.8	-692.3	-674.0	2.00	-2.00	0.00
5,680.0	3.57	247.15	5,621.6	-292.8	-694.9	-676.5	2.00	-2.00	0.00
5,720.0	2.77	247.15	5,661.5	-293.7	-696.9	-678.5	2.00	-2.00	0.00
5,760.0	1.97	247.15	5,701.5	-294.3	-698.4	-679.9	2.00	-2.00	0.00
5,800.0	1.17	247.15	5,741.5	-294.8	-699.4	-680.9	2.00	-2.00	0.00
5,840.0	0.37	247.15	5,781.5	-295.0	-699.9	-681.4	2.00	-2.00	0.00
5,858.5	0.00	0.00	5,800.0	-295.0	-700.0	-681.5	2.00	-2.00	0.00
5,880.0	0.00	0.00	5,821.5	-295.0	-700.0	-681.5	0.00	0.00	0.00
5,920.0	0.00	0.00	5,861.5	-295.0	-700.0	-681.5	0.00	0.00	0.00
5,960.0	0.00	0.00	5,901.5	-295.0	-700.0	-681.5	0.00	0.00	0.00
6,000.0	0.00	0.00	5,941.5	-295.0	-700.0	-681.5	0.00	0.00	0.00
6,040.0	0.00	0.00	5,981.5	-295.0	-700.0	-681.5	0.00	0.00	0.00
6,080.0	0.00	0.00	6,021.5	-295.0	-700.0	-681.5	0.00	0.00	0.00
6,120.0	0.00	0.00	6,061.5	-295.0	-700.0	-681.5	0.00	0.00	0.00
6,135.6	0.00	0.00	6,077.1	-295.0	-700.0	-681.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Project:</b>	SEC.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-16-13)		

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)
<b>KOP #2</b>									
6,160.0	1.83	90.17	6,101.5	-295.0	-699.6	-681.1	7.49	7.49	0.00
6,200.0	4.83	90.17	6,141.4	-295.0	-697.3	-678.8	7.50	7.50	0.00
6,240.0	7.83	90.17	6,181.2	-295.0	-692.9	-674.4	7.50	7.50	0.00
6,280.0	10.83	90.17	6,220.6	-295.0	-686.4	-667.9	7.50	7.50	0.00
6,320.0	13.83	90.17	6,259.7	-295.1	-677.9	-659.4	7.50	7.50	0.00
6,360.0	16.83	90.17	6,298.3	-295.1	-667.3	-648.8	7.50	7.50	0.00
6,400.0	19.83	90.17	6,336.2	-295.1	-654.7	-636.2	7.50	7.50	0.00
6,440.0	22.83	90.17	6,373.5	-295.2	-640.2	-621.7	7.50	7.50	0.00
6,480.0	25.83	90.17	6,409.9	-295.2	-623.7	-605.3	7.50	7.50	0.00
6,520.0	28.83	90.17	6,445.5	-295.3	-605.3	-586.9	7.50	7.50	0.00
6,560.0	31.83	90.17	6,480.0	-295.3	-585.1	-566.8	7.50	7.50	0.00
6,600.0	34.83	90.17	6,513.4	-295.4	-563.2	-544.8	7.50	7.50	0.00
6,640.0	37.83	90.17	6,545.6	-295.5	-539.5	-521.2	7.50	7.50	0.00
6,680.0	40.83	90.17	6,576.6	-295.5	-514.1	-495.9	7.50	7.50	0.00
6,688.7	41.48	90.17	6,583.1	-295.6	-508.4	-490.2	7.50	7.50	0.00
<b>LEASE LINE</b>									
6,720.0	43.83	90.17	6,606.1	-295.6	-487.2	-469.0	7.50	7.50	0.00
6,760.0	46.83	90.17	6,634.3	-295.7	-458.7	-440.6	7.50	7.50	0.00
6,800.0	49.83	90.17	6,660.9	-295.8	-428.9	-410.8	7.50	7.50	0.00
6,840.0	52.83	90.17	6,685.8	-295.9	-397.6	-379.6	7.50	7.50	0.00
6,880.0	55.83	90.17	6,709.2	-296.0	-365.2	-347.1	7.50	7.50	0.00
6,920.0	58.83	90.17	6,730.8	-296.1	-331.5	-313.5	7.50	7.50	0.00
6,960.0	61.83	90.17	6,750.6	-296.2	-296.7	-278.8	7.50	7.50	0.00
7,000.0	64.83	90.17	6,768.5	-296.3	-261.0	-243.1	7.50	7.50	0.00
7,040.0	67.83	90.17	6,784.6	-296.4	-224.4	-206.6	7.50	7.50	0.00
7,080.0	70.83	90.17	6,798.7	-296.5	-186.9	-169.2	7.50	7.50	0.00
7,120.0	73.83	90.17	6,810.8	-296.6	-148.8	-131.2	7.50	7.50	0.00
7,160.0	76.83	90.17	6,821.0	-296.7	-110.2	-92.5	7.50	7.50	0.00
7,200.0	79.83	90.17	6,829.1	-296.9	-71.0	-53.4	7.50	7.50	0.00
7,240.0	82.83	90.17	6,835.1	-297.0	-31.4	-14.0	7.50	7.50	0.00
7,280.0	85.83	90.17	6,839.0	-297.1	8.4	25.8	7.50	7.50	0.00
7,320.0	88.83	90.17	6,840.9	-297.2	48.3	65.7	7.50	7.50	0.00
7,340.3	90.35	90.17	6,841.1	-297.3	68.6	85.9	7.50	7.50	0.00
<b>End of Build - 7"</b>									
7,360.0	90.35	90.17	6,840.9	-297.3	88.3	105.6	0.00	0.00	0.00
7,400.0	90.35	90.17	6,840.7	-297.4	128.3	145.6	0.00	0.00	0.00
7,440.0	90.35	90.17	6,840.4	-297.6	168.3	185.5	0.00	0.00	0.00
7,480.0	90.35	90.17	6,840.2	-297.7	208.3	225.4	0.00	0.00	0.00
7,520.0	90.35	90.17	6,840.0	-297.8	248.3	265.4	0.00	0.00	0.00
7,560.0	90.35	90.17	6,839.7	-297.9	288.3	305.3	0.00	0.00	0.00
7,600.0	90.35	90.17	6,839.5	-298.0	328.3	345.2	0.00	0.00	0.00
7,640.0	90.35	90.17	6,839.2	-298.1	368.3	385.2	0.00	0.00	0.00
7,680.0	90.35	90.17	6,839.0	-298.3	408.3	425.1	0.00	0.00	0.00
7,720.0	90.35	90.17	6,838.7	-298.4	448.3	465.0	0.00	0.00	0.00
7,760.0	90.35	90.17	6,838.5	-298.5	488.3	505.0	0.00	0.00	0.00
7,800.0	90.35	90.17	6,838.2	-298.6	528.3	544.9	0.00	0.00	0.00
7,840.0	90.35	90.17	6,838.0	-298.7	568.3	584.9	0.00	0.00	0.00
7,880.0	90.35	90.17	6,837.8	-298.9	608.3	624.8	0.00	0.00	0.00
7,920.0	90.35	90.17	6,837.5	-299.0	648.3	664.7	0.00	0.00	0.00
7,960.0	90.35	90.17	6,837.3	-299.1	688.3	704.7	0.00	0.00	0.00
8,000.0	90.35	90.17	6,837.0	-299.2	728.3	744.6	0.00	0.00	0.00
8,040.0	90.35	90.17	6,836.8	-299.3	768.3	784.5	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Project:</b>	SEC.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-16-13)		

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)
8,080.0	90.35	90.17	6,836.5	-299.4	808.3	824.5	0.00	0.00	0.00
8,120.0	90.35	90.17	6,836.3	-299.6	848.3	864.4	0.00	0.00	0.00
8,160.0	90.35	90.17	6,836.0	-299.7	888.3	904.4	0.00	0.00	0.00
8,200.0	90.35	90.17	6,835.8	-299.8	928.3	944.3	0.00	0.00	0.00
8,240.0	90.35	90.17	6,835.6	-299.9	968.3	984.2	0.00	0.00	0.00
8,280.0	90.35	90.17	6,835.3	-300.0	1,008.3	1,024.2	0.00	0.00	0.00
8,320.0	90.35	90.17	6,835.1	-300.1	1,048.3	1,064.1	0.00	0.00	0.00
8,360.0	90.35	90.17	6,834.8	-300.3	1,088.3	1,104.0	0.00	0.00	0.00
8,400.0	90.35	90.17	6,834.6	-300.4	1,128.3	1,144.0	0.00	0.00	0.00
8,440.0	90.35	90.17	6,834.3	-300.5	1,168.3	1,183.9	0.00	0.00	0.00
8,480.0	90.35	90.17	6,834.1	-300.6	1,208.3	1,223.8	0.00	0.00	0.00
8,520.0	90.35	90.17	6,833.8	-300.7	1,248.3	1,263.8	0.00	0.00	0.00
8,560.0	90.35	90.17	6,833.6	-300.9	1,288.3	1,303.7	0.00	0.00	0.00
8,600.0	90.35	90.17	6,833.4	-301.0	1,328.3	1,343.7	0.00	0.00	0.00
8,640.0	90.35	90.17	6,833.1	-301.1	1,368.3	1,383.6	0.00	0.00	0.00
8,680.0	90.35	90.17	6,832.9	-301.2	1,408.3	1,423.5	0.00	0.00	0.00
8,720.0	90.35	90.17	6,832.6	-301.3	1,448.3	1,463.5	0.00	0.00	0.00
8,760.0	90.35	90.17	6,832.4	-301.4	1,488.3	1,503.4	0.00	0.00	0.00
8,800.0	90.35	90.17	6,832.1	-301.6	1,528.3	1,543.3	0.00	0.00	0.00
8,840.0	90.35	90.17	6,831.9	-301.7	1,568.3	1,583.3	0.00	0.00	0.00
8,880.0	90.35	90.17	6,831.6	-301.8	1,608.3	1,623.2	0.00	0.00	0.00
8,920.0	90.35	90.17	6,831.4	-301.9	1,648.3	1,663.2	0.00	0.00	0.00
8,960.0	90.35	90.17	6,831.2	-302.0	1,688.3	1,703.1	0.00	0.00	0.00
9,000.0	90.35	90.17	6,830.9	-302.2	1,728.3	1,743.0	0.00	0.00	0.00
9,040.0	90.35	90.17	6,830.7	-302.3	1,768.3	1,783.0	0.00	0.00	0.00
9,080.0	90.35	90.17	6,830.4	-302.4	1,808.3	1,822.9	0.00	0.00	0.00
9,120.0	90.35	90.17	6,830.2	-302.5	1,848.3	1,862.8	0.00	0.00	0.00
9,160.0	90.35	90.17	6,829.9	-302.6	1,888.3	1,902.8	0.00	0.00	0.00
9,200.0	90.35	90.17	6,829.7	-302.7	1,928.3	1,942.7	0.00	0.00	0.00
9,240.0	90.35	90.17	6,829.4	-302.9	1,968.3	1,982.7	0.00	0.00	0.00
9,280.0	90.35	90.17	6,829.2	-303.0	2,008.3	2,022.6	0.00	0.00	0.00
9,320.0	90.35	90.17	6,829.0	-303.1	2,048.3	2,062.5	0.00	0.00	0.00
9,360.0	90.35	90.17	6,828.7	-303.2	2,088.3	2,102.5	0.00	0.00	0.00
9,400.0	90.35	90.17	6,828.5	-303.3	2,128.3	2,142.4	0.00	0.00	0.00
9,440.0	90.35	90.17	6,828.2	-303.4	2,168.3	2,182.3	0.00	0.00	0.00
9,480.0	90.35	90.17	6,828.0	-303.6	2,208.3	2,222.3	0.00	0.00	0.00
9,520.0	90.35	90.17	6,827.7	-303.7	2,248.3	2,262.2	0.00	0.00	0.00
9,560.0	90.35	90.17	6,827.5	-303.8	2,288.3	2,302.1	0.00	0.00	0.00
9,600.0	90.35	90.17	6,827.2	-303.9	2,328.3	2,342.1	0.00	0.00	0.00
9,640.0	90.35	90.17	6,827.0	-304.0	2,368.3	2,382.0	0.00	0.00	0.00
9,680.0	90.35	90.17	6,826.8	-304.2	2,408.3	2,422.0	0.00	0.00	0.00
9,720.0	90.35	90.17	6,826.5	-304.3	2,448.3	2,461.9	0.00	0.00	0.00
9,760.0	90.35	90.17	6,826.3	-304.4	2,488.2	2,501.8	0.00	0.00	0.00
9,800.0	90.35	90.17	6,826.0	-304.5	2,528.2	2,541.8	0.00	0.00	0.00
9,840.0	90.35	90.17	6,825.8	-304.6	2,568.2	2,581.7	0.00	0.00	0.00
9,880.0	90.35	90.17	6,825.5	-304.7	2,608.2	2,621.6	0.00	0.00	0.00
9,920.0	90.35	90.17	6,825.3	-304.9	2,648.2	2,661.6	0.00	0.00	0.00
9,960.0	90.35	90.17	6,825.0	-305.0	2,688.2	2,701.5	0.00	0.00	0.00
10,000.0	90.35	90.17	6,824.8	-305.1	2,728.2	2,741.5	0.00	0.00	0.00
10,040.0	90.35	90.17	6,824.6	-305.2	2,768.2	2,781.4	0.00	0.00	0.00
10,080.0	90.35	90.17	6,824.3	-305.3	2,808.2	2,821.3	0.00	0.00	0.00
10,120.0	90.35	90.17	6,824.1	-305.4	2,848.2	2,861.3	0.00	0.00	0.00
10,160.0	90.35	90.17	6,823.8	-305.6	2,888.2	2,901.2	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Project:</b>	SEC.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-16-13)		

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)
10,200.0	90.35	90.17	6,823.6	-305.7	2,928.2	2,941.1	0.00	0.00	0.00
10,240.0	90.35	90.17	6,823.3	-305.8	2,968.2	2,981.1	0.00	0.00	0.00
10,280.0	90.35	90.17	6,823.1	-305.9	3,008.2	3,021.0	0.00	0.00	0.00
10,320.0	90.35	90.17	6,822.9	-306.0	3,048.2	3,060.9	0.00	0.00	0.00
10,360.0	90.35	90.17	6,822.6	-306.2	3,088.2	3,100.9	0.00	0.00	0.00
10,400.0	90.35	90.17	6,822.4	-306.3	3,128.2	3,140.8	0.00	0.00	0.00
10,440.0	90.35	90.17	6,822.1	-306.4	3,168.2	3,180.8	0.00	0.00	0.00
10,480.0	90.35	90.17	6,821.9	-306.5	3,208.2	3,220.7	0.00	0.00	0.00
10,520.0	90.35	90.17	6,821.6	-306.6	3,248.2	3,260.6	0.00	0.00	0.00
10,560.0	90.35	90.17	6,821.4	-306.7	3,288.2	3,300.6	0.00	0.00	0.00
10,600.0	90.35	90.17	6,821.1	-306.9	3,328.2	3,340.5	0.00	0.00	0.00
10,640.0	90.35	90.17	6,820.9	-307.0	3,368.2	3,380.4	0.00	0.00	0.00
10,680.0	90.35	90.17	6,820.7	-307.1	3,408.2	3,420.4	0.00	0.00	0.00
10,720.0	90.35	90.17	6,820.4	-307.2	3,448.2	3,460.3	0.00	0.00	0.00
10,760.0	90.35	90.17	6,820.2	-307.3	3,488.2	3,500.3	0.00	0.00	0.00
10,800.0	90.35	90.17	6,819.9	-307.5	3,528.2	3,540.2	0.00	0.00	0.00
10,840.0	90.35	90.17	6,819.7	-307.6	3,568.2	3,580.1	0.00	0.00	0.00
10,880.0	90.35	90.17	6,819.4	-307.7	3,608.2	3,620.1	0.00	0.00	0.00
10,920.0	90.35	90.17	6,819.2	-307.8	3,648.2	3,660.0	0.00	0.00	0.00
10,960.0	90.35	90.17	6,818.9	-307.9	3,688.2	3,699.9	0.00	0.00	0.00
11,000.0	90.35	90.17	6,818.7	-308.0	3,728.2	3,739.9	0.00	0.00	0.00
11,040.0	90.35	90.17	6,818.5	-308.2	3,768.2	3,779.8	0.00	0.00	0.00
11,080.0	90.35	90.17	6,818.2	-308.3	3,808.2	3,819.8	0.00	0.00	0.00
11,120.0	90.35	90.17	6,818.0	-308.4	3,848.2	3,859.7	0.00	0.00	0.00
11,160.0	90.35	90.17	6,817.7	-308.5	3,888.2	3,899.6	0.00	0.00	0.00
11,200.0	90.35	90.17	6,817.5	-308.6	3,928.2	3,939.6	0.00	0.00	0.00
11,240.0	90.35	90.17	6,817.2	-308.7	3,968.2	3,979.5	0.00	0.00	0.00
11,280.0	90.35	90.17	6,817.0	-308.9	4,008.2	4,019.4	0.00	0.00	0.00
11,320.0	90.35	90.17	6,816.7	-309.0	4,048.2	4,059.4	0.00	0.00	0.00
11,360.0	90.35	90.17	6,816.5	-309.1	4,088.2	4,099.3	0.00	0.00	0.00
11,400.0	90.35	90.17	6,816.3	-309.2	4,128.2	4,139.2	0.00	0.00	0.00
11,440.0	90.35	90.17	6,816.0	-309.3	4,168.2	4,179.2	0.00	0.00	0.00
11,480.0	90.35	90.17	6,815.8	-309.5	4,208.2	4,219.1	0.00	0.00	0.00
11,520.0	90.35	90.17	6,815.5	-309.6	4,248.2	4,259.1	0.00	0.00	0.00
11,560.0	90.35	90.17	6,815.3	-309.7	4,288.2	4,299.0	0.00	0.00	0.00
11,600.0	90.35	90.17	6,815.0	-309.8	4,328.2	4,338.9	0.00	0.00	0.00
11,640.0	90.35	90.17	6,814.8	-309.9	4,368.2	4,378.9	0.00	0.00	0.00
11,680.0	90.35	90.17	6,814.5	-310.0	4,408.2	4,418.8	0.00	0.00	0.00
11,720.0	90.35	90.17	6,814.3	-310.2	4,448.2	4,458.7	0.00	0.00	0.00
11,760.0	90.35	90.17	6,814.1	-310.3	4,488.2	4,498.7	0.00	0.00	0.00
11,800.0	90.35	90.17	6,813.8	-310.4	4,528.2	4,538.6	0.00	0.00	0.00
11,840.0	90.35	90.17	6,813.6	-310.5	4,568.2	4,578.6	0.00	0.00	0.00
11,880.0	90.35	90.17	6,813.3	-310.6	4,608.2	4,618.5	0.00	0.00	0.00
11,920.0	90.35	90.17	6,813.1	-310.7	4,648.2	4,658.4	0.00	0.00	0.00
11,960.0	90.35	90.17	6,812.8	-310.9	4,688.2	4,698.4	0.00	0.00	0.00
12,000.0	90.35	90.17	6,812.6	-311.0	4,728.2	4,738.3	0.00	0.00	0.00
12,040.0	90.35	90.17	6,812.3	-311.1	4,768.2	4,778.2	0.00	0.00	0.00
12,080.0	90.35	90.17	6,812.1	-311.2	4,808.2	4,818.2	0.00	0.00	0.00
12,120.0	90.35	90.17	6,811.9	-311.3	4,848.2	4,858.1	0.00	0.00	0.00
12,160.0	90.35	90.17	6,811.6	-311.5	4,888.2	4,898.0	0.00	0.00	0.00
12,200.0	90.35	90.17	6,811.4	-311.6	4,928.2	4,938.0	0.00	0.00	0.00
12,240.0	90.35	90.17	6,811.1	-311.7	4,968.2	4,977.9	0.00	0.00	0.00
12,280.0	90.35	90.17	6,810.9	-311.8	5,008.2	5,017.9	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Project:</b>	SEC.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (5-16-13)		

## 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)
12,320.0	90.35	90.17	6,810.6	-311.9	5,048.2	5,057.8	0.00	0.00	0.00
12,360.0	90.35	90.17	6,810.4	-312.0	5,088.2	5,097.7	0.00	0.00	0.00
12,400.0	90.35	90.17	6,810.1	-312.2	5,128.2	5,137.7	0.00	0.00	0.00
12,440.0	90.35	90.17	6,809.9	-312.3	5,168.2	5,177.6	0.00	0.00	0.00
12,480.0	90.35	90.17	6,809.7	-312.4	5,208.2	5,217.5	0.00	0.00	0.00
12,520.0	90.35	90.17	6,809.4	-312.5	5,248.2	5,257.5	0.00	0.00	0.00
12,560.0	90.35	90.17	6,809.2	-312.6	5,288.2	5,297.4	0.00	0.00	0.00
12,587.4	90.35	90.17	6,809.0	-312.7	5,315.6	5,324.8	0.00	0.00	0.00
BHL 1830'FSL, 500'FEL									

## Targets

### Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 1830'FSL, 500'FI - plan hits target center - Point	0.00	0.00	6,809.0	-312.7	5,315.6	1,383,386.53	3,244,360.08	40.382480	-104.622830
LEASE LINE - plan misses target center by 1799.4ft at 6688.7ft MD (6583.1 TVD, -295.6 N, -508.4 E) - Polygon	0.00	0.00	6,807.0	-2,063.2	-759.5	1,381,577.39	3,238,302.52	40.377677	-104.644636
Point 1			6,807.0	0.0	0.0	1,381,577.39	3,238,302.52		
Point 2			6,807.0	3,000.0	0.0	1,384,577.12	3,238,273.49		

## Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,340.3	6,841.1	7"	7	7-1/2

## Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
600.0	600.0	0.0	0.0	KOP #1
6,135.6	6,077.1	-295.0	-700.0	KOP #2
7,340.3	6,841.1	-297.3	68.6	End of Build



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.22-T5N-R65W**

**Alles 22S-HZ Pad Sec.22-T5N-R65W**

**Alles 22D-212**

**Wellbore #1**

**Plan #1 (5-16-13)**

## **Anticollision Report**

**23 May, 2013**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (5-16-13)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b> 5/23/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	12,587.4	Plan #1 (5-16-13) (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						
Alles 22S-HZ Pad Sec.22-T5N-R65W						
Alles 22D-402 - Wellbore #1 - Plan #1 (5-16-13)	200.0	200.0	32.3	31.6	47.900	CC, ES
Alles 22D-402 - Wellbore #1 - Plan #1 (5-16-13)	12,587.4	12,774.7	436.1	131.0	1.429	Level 3, SF
Alles 22S-432 - Wellbore #1 - Plan #1 (5-16-13)	645.6	645.6	27.8	25.2	10.427	CC
Alles 22S-432 - Wellbore #1 - Plan #1 (5-16-13)	700.0	700.0	27.9	25.0	9.596	ES
Alles 22S-432 - Wellbore #1 - Plan #1 (5-16-13)	12,587.4	12,735.0	516.0	205.2	1.660	SF
Lofland 22T & Alles 22S-HZ Existing Wells						
Alles 9-22 (Exist) - Wellbore #1 - Wellbore #1	1,413.8	1,408.4	66.8	35.2	2.113	CC
Alles 9-22 (Exist) - Wellbore #1 - Wellbore #1	1,500.0	1,493.5	68.2	34.6	2.030	ES, SF
Badley 23-31 (Exist) - Wellbore #1 - Wellbore #1	9,998.8	6,822.8	137.7	-88.2	0.609	Level 1, CC
Badley 23-31 (Exist) - Wellbore #1 - Wellbore #1	10,000.0	6,822.8	137.7	-88.3	0.609	Level 1, ES, SF
Buderus 12-23 (Exist) - Wellbore #1 - Wellbore #1	8,496.8	6,832.0	235.1	49.4	1.266	Level 3, CC
Buderus 12-23 (Exist) - Wellbore #1 - Wellbore #1	8,500.0	6,832.0	235.2	49.4	1.266	Level 3, ES, SF
Esther 1-23 (Exist) - Wellbore #1 - Wellbore #1	12,383.7	6,806.2	108.6	-183.1	0.372	Level 1, CC, ES, SF
Lille 1-23 (Exist) - Wellbore #1 - Wellbore #1	11,071.3	6,816.3	166.5	-88.9	0.652	Level 1, CC, ES, SF

Offset Design												Offset Site Error:		0.0 ft
Survey Program: 0-MWVD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation			Separation Factor
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
0.0	0.0	0.0	0.0	0.0	0.0	154.45	-29.1	13.9	32.3					
100.0	100.0	100.0	100.0	0.1	0.1	154.45	-29.1	13.9	32.3	32.1	0.22	143.700		
200.0	200.0	200.0	200.0	0.3	0.3	154.45	-29.1	13.9	32.3	31.6	0.67	47.900	CC, ES	
300.0	300.0	299.6	299.6	0.6	0.5	157.32	-30.3	12.7	32.9	31.8	1.10	29.771		
400.0	400.0	399.0	398.8	0.8	0.8	165.26	-33.9	8.9	35.1	33.5	1.54	22.766		
500.0	500.0	497.9	497.3	1.0	1.0	176.11	-39.8	2.7	40.0	38.0	2.01	19.931		
600.0	600.0	596.1	594.8	1.2	1.3	-173.00	-48.0	-5.9	48.6	46.1	2.51	19.345		
700.0	700.0	693.6	691.1	1.4	1.6	-52.15	-58.3	-16.8	60.3	57.4	2.93	20.563		
800.0	799.8	791.5	787.3	1.6	2.0	-47.63	-70.9	-30.0	73.2	69.8	3.39	21.612		
900.0	899.5	890.8	884.8	1.9	2.4	-45.90	-84.0	-43.8	84.5	80.6	3.86	21.895		
1,000.0	998.7	990.4	982.6	2.1	2.8	-46.10	-97.1	-57.6	93.4	89.0	4.37	21.378		
1,054.8	1,052.9	1,045.1	1,036.3	2.3	3.0	-46.83	-104.3	-65.2	97.3	92.6	4.67	20.826		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Alles 22S-HZ Pad Sec.22-T5N-R65W - Alles 22D-402 - Wellbore #1 - Plan #1 (5-16-13)													
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
1,100.0	1,097.5	1,090.1	1,080.5	2.4	3.2	-47.62	-110.2	-71.5	100.2	95.2	4.93	20.312	
1,200.0	1,196.3	1,189.9	1,178.4	2.7	3.6	-49.20	-123.4	-85.3	106.7	101.1	5.53	19.286	
1,300.0	1,295.0	1,289.6	1,276.3	3.1	4.1	-50.60	-136.5	-99.2	113.2	107.1	6.15	18.406	
1,400.0	1,393.8	1,389.4	1,374.2	3.4	4.5	-51.85	-149.7	-113.0	119.9	113.1	6.79	17.648	
1,500.0	1,492.5	1,489.1	1,472.1	3.8	4.9	-52.96	-162.9	-126.9	126.6	119.1	7.45	16.994	
1,600.0	1,591.2	1,588.9	1,570.0	4.1	5.4	-53.97	-176.0	-140.7	133.3	125.2	8.11	16.426	
1,700.0	1,690.0	1,688.6	1,667.9	4.5	5.8	-54.87	-189.2	-154.6	140.0	131.3	8.79	15.931	
1,800.0	1,788.7	1,788.4	1,765.8	4.8	6.2	-55.70	-202.3	-168.4	146.8	137.4	9.48	15.497	
1,900.0	1,887.5	1,888.1	1,863.7	5.2	6.7	-56.45	-215.5	-182.3	153.7	143.5	10.17	15.114	
2,000.0	1,986.2	1,987.9	1,961.6	5.6	7.1	-57.13	-228.6	-196.1	160.5	149.7	10.87	14.773	
2,100.0	2,084.9	2,087.6	2,059.5	5.9	7.5	-57.76	-241.8	-210.0	167.4	155.8	11.57	14.470	
2,200.0	2,183.7	2,187.4	2,157.4	6.3	8.0	-58.34	-254.9	-223.8	174.3	162.0	12.27	14.198	
2,300.0	2,282.4	2,287.1	2,255.3	6.7	8.4	-58.88	-268.1	-237.7	181.2	168.2	12.99	13.952	
2,400.0	2,381.2	2,386.9	2,353.2	7.1	8.8	-59.38	-281.2	-251.6	188.1	174.4	13.70	13.730	
2,500.0	2,479.9	2,486.6	2,451.1	7.4	9.3	-59.84	-294.4	-265.4	195.0	180.6	14.42	13.529	
2,600.0	2,578.7	2,586.4	2,549.0	7.8	9.7	-60.27	-307.5	-279.3	202.0	186.8	15.13	13.345	
2,700.0	2,677.4	2,686.1	2,646.9	8.2	10.1	-60.67	-320.7	-293.1	208.9	193.1	15.86	13.177	
2,800.0	2,776.1	2,785.9	2,744.8	8.6	10.6	-61.04	-333.9	-307.0	215.9	199.3	16.58	13.022	
2,900.0	2,874.9	2,885.6	2,842.7	8.9	11.0	-61.40	-347.0	-320.8	222.9	205.6	17.30	12.880	
3,000.0	2,973.6	2,985.4	2,940.6	9.3	11.4	-61.73	-360.2	-334.7	229.8	211.8	18.03	12.748	
3,100.0	3,072.4	3,085.1	3,038.5	9.7	11.9	-62.04	-373.3	-348.5	236.8	218.1	18.76	12.626	
3,200.0	3,171.1	3,184.8	3,136.4	10.1	12.3	-62.33	-386.5	-362.4	243.8	224.3	19.49	12.513	
3,300.0	3,269.9	3,284.6	3,234.3	10.4	12.7	-62.61	-399.6	-376.2	250.8	230.6	20.22	12.407	
3,400.0	3,368.6	3,384.3	3,332.2	10.8	13.2	-62.87	-412.8	-390.1	257.8	236.9	20.95	12.309	
3,500.0	3,467.3	3,484.1	3,430.1	11.2	13.6	-63.12	-425.9	-403.9	264.8	243.2	21.68	12.217	
3,600.0	3,566.1	3,583.8	3,528.0	11.6	14.0	-63.35	-439.1	-417.8	271.9	249.4	22.41	12.130	
3,700.0	3,664.8	3,683.6	3,625.9	12.0	14.5	-63.58	-452.2	-431.6	278.9	255.7	23.14	12.049	
3,800.0	3,763.6	3,783.3	3,723.8	12.3	14.9	-63.79	-465.4	-445.5	285.9	262.0	23.88	11.973	
3,900.0	3,862.3	3,883.1	3,821.7	12.7	15.3	-63.99	-478.5	-459.3	292.9	268.3	24.61	11.901	
4,000.0	3,961.0	3,982.8	3,919.6	13.1	15.8	-64.18	-491.7	-473.2	300.0	274.6	25.35	11.833	
4,100.0	4,059.8	4,082.6	4,017.5	13.5	16.2	-64.37	-504.9	-487.0	307.0	280.9	26.08	11.769	
4,200.0	4,158.5	4,182.3	4,115.4	13.9	16.6	-64.54	-518.0	-500.9	314.0	287.2	26.82	11.709	
4,300.0	4,257.3	4,282.1	4,213.3	14.2	17.1	-64.71	-531.2	-514.7	321.1	293.5	27.56	11.651	
4,400.0	4,356.0	4,381.8	4,311.2	14.6	17.5	-64.87	-544.3	-528.6	328.1	299.8	28.29	11.596	
4,500.0	4,454.8	4,481.6	4,409.1	15.0	17.9	-65.02	-557.5	-542.4	335.1	306.1	29.03	11.544	
4,600.0	4,553.5	4,581.3	4,507.0	15.4	18.4	-65.17	-570.6	-556.3	342.2	312.4	29.77	11.495	
4,700.0	4,652.2	4,681.1	4,604.9	15.8	18.8	-65.31	-583.8	-570.2	349.2	318.7	30.51	11.448	
4,800.0	4,751.0	4,780.8	4,702.8	16.1	19.2	-65.45	-596.9	-584.0	356.3	325.0	31.25	11.403	
4,900.0	4,849.7	4,880.6	4,800.7	16.5	19.7	-65.58	-610.1	-597.9	363.3	331.4	31.98	11.360	
5,000.0	4,948.5	4,980.3	4,898.6	16.9	20.1	-65.71	-623.2	-611.7	370.4	337.7	32.72	11.319	
5,100.0	5,047.2	5,080.1	4,996.5	17.3	20.6	-65.83	-636.4	-625.6	377.5	344.0	33.46	11.280	
5,200.0	5,146.0	5,179.8	5,094.4	17.7	21.0	-65.94	-649.5	-639.4	384.5	350.3	34.20	11.242	
5,300.0	5,244.7	5,279.5	5,192.3	18.0	21.4	-66.06	-662.7	-653.3	391.6	356.6	34.94	11.207	
5,403.7	5,347.1	5,387.6	5,298.5	18.4	21.9	-66.22	-676.7	-668.0	398.6	362.9	35.71	11.163	
5,500.0	5,442.4	5,494.2	5,403.7	18.7	22.1	-66.57	-688.2	-680.1	403.7	367.4	36.32	11.116	
5,600.0	5,541.8	5,604.9	5,513.7	18.9	22.4	-66.85	-697.3	-689.7	407.8	370.9	36.82	11.076	
5,700.0	5,641.6	5,715.8	5,624.2	19.1	22.6	-67.03	-703.4	-696.2	410.5	373.3	37.22	11.028	
5,800.0	5,741.5	5,826.8	5,735.1	19.3	22.8	-67.12	-706.6	-699.5	411.9	374.4	37.55	10.970	
5,858.5	5,800.0	5,891.7	5,800.0	19.4	22.8	-179.99	-707.1	-700.1	412.1	378.5	33.66	12.244	
5,900.0	5,841.5	5,933.2	5,841.5	19.4	22.9	-179.99	-707.1	-700.1	412.1	378.4	33.78	12.200	
6,000.0	5,941.5	6,033.2	5,941.5	19.5	23.0	-179.99	-707.1	-700.1	412.1	378.1	34.07	12.098	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Alles 22S-HZ Pad Sec.22-T5N-R65W - Alles 22D-402 - Wellbore #1 - Plan #1 (5-16-13)		Offset Site Error:		0.0 ft
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor				
6,100.0	6,041.5	6,133.2	6,041.5	19.7	23.1	-179.99	-707.1	-700.1	412.1	377.8	34.35	11.997				
6,135.6	6,077.1	6,168.9	6,077.1	19.7	23.1	-179.99	-707.1	-700.1	412.1	377.7	34.46	11.961				
6,150.0	6,091.5	6,183.2	6,091.5	19.7	23.1	89.86	-707.1	-700.1	412.1	373.7	38.48	10.712				
6,177.5	6,118.9	6,210.7	6,118.9	19.8	23.2	90.00	-707.1	-700.1	412.1	373.6	38.50	10.704				
6,200.0	6,141.4	6,233.1	6,141.4	19.8	23.2	90.22	-707.1	-700.1	412.1	373.6	38.50	10.704				
6,250.0	6,191.1	6,282.8	6,191.1	19.8	23.2	91.02	-707.1	-700.1	412.2	373.8	38.41	10.732				
6,300.0	6,240.2	6,332.2	6,240.4	19.8	23.3	92.23	-707.1	-700.0	412.5	374.3	38.19	10.799				
6,350.0	6,288.7	6,382.6	6,290.8	19.7	23.3	93.59	-707.1	-697.7	413.0	375.1	37.90	10.897				
6,400.0	6,336.2	6,433.7	6,341.6	19.7	23.3	94.95	-707.2	-691.9	413.7	376.2	37.56	11.016				
6,450.0	6,382.7	6,485.5	6,392.5	19.6	23.3	96.28	-707.2	-682.6	414.7	377.5	37.18	11.155				
6,500.0	6,427.8	6,538.1	6,443.5	19.5	23.3	97.59	-707.2	-669.7	415.9	379.2	36.77	11.311				
6,550.0	6,471.5	6,591.4	6,494.1	19.4	23.2	98.88	-707.3	-653.1	417.3	381.0	36.35	11.482				
6,600.0	6,513.4	6,645.5	6,544.2	19.3	23.1	100.12	-707.3	-632.6	418.9	383.0	35.92	11.662				
6,650.0	6,553.5	6,700.4	6,593.4	19.2	23.0	101.32	-707.4	-608.3	420.6	385.1	35.51	11.845				
6,700.0	6,591.5	6,756.1	6,641.4	19.1	22.9	102.48	-707.5	-580.0	422.4	387.3	35.13	12.025				
6,750.0	6,627.4	6,812.5	6,687.8	19.1	22.8	103.57	-707.6	-547.9	424.3	389.5	34.80	12.191				
6,800.0	6,660.9	6,869.8	6,732.3	19.0	22.6	104.61	-707.7	-512.0	426.2	391.6	34.56	12.332				
6,850.0	6,691.8	6,927.8	6,774.5	19.0	22.5	105.57	-707.8	-472.2	428.1	393.7	34.43	12.436				
6,900.0	6,720.2	6,986.5	6,814.1	19.1	22.4	106.46	-707.9	-428.9	430.0	395.6	34.43	12.491				
6,950.0	6,745.8	7,045.9	6,850.6	19.2	22.2	107.27	-708.0	-382.0	431.8	397.2	34.58	12.487				
7,000.0	6,768.5	7,106.0	6,883.7	19.4	22.1	108.00	-708.2	-331.9	433.5	398.6	34.93	12.412				
7,050.0	6,788.3	7,166.6	6,913.0	19.7	22.1	108.64	-708.3	-278.8	435.1	399.6	35.48	12.262				
7,100.0	6,805.0	7,227.8	6,938.2	20.0	22.0	109.18	-708.5	-223.1	436.4	400.2	36.24	12.043				
7,150.0	6,818.6	7,289.4	6,959.1	20.5	22.1	109.62	-708.6	-165.2	437.6	400.4	37.21	11.760				
7,200.0	6,829.1	7,351.4	6,975.2	21.0	22.2	109.97	-708.8	-105.3	438.5	400.1	38.38	11.424				
7,250.0	6,836.3	7,413.6	6,986.5	21.6	22.5	110.21	-709.0	-44.1	439.1	399.4	39.76	11.045				
7,300.0	6,840.2	7,469.3	6,992.9	22.3	22.9	110.40	-709.1	11.1	439.7	398.5	41.20	10.672				
7,340.3	6,841.1	7,509.4	6,997.1	22.9	23.2	110.73	-709.2	51.1	440.9	398.6	42.31	10.420				
7,400.0	6,840.7	7,577.4	7,002.5	23.9	24.1	111.44	-709.4	118.9	442.7	398.7	44.04	10.054				
7,500.0	6,840.1	7,687.4	7,003.6	25.6	25.9	111.65	-709.7	228.7	443.3	395.8	47.44	9.345				
7,600.0	6,839.5	7,787.4	7,002.6	27.6	27.8	111.60	-710.0	328.7	443.1	392.0	51.09	8.673				
7,700.0	6,838.9	7,887.4	7,001.6	29.7	29.8	111.56	-710.3	428.7	443.0	388.0	55.01	8.053				
7,800.0	6,838.2	7,987.4	7,000.6	31.9	32.0	111.51	-710.6	528.7	442.8	383.7	59.14	7.488				
7,900.0	6,837.6	8,087.3	6,999.6	34.2	34.3	111.46	-710.9	628.7	442.7	379.2	63.44	6.978				
8,000.0	6,837.0	8,187.3	6,998.6	36.6	36.7	111.42	-711.2	728.7	442.5	374.7	67.88	6.519				
8,100.0	6,836.4	8,287.3	6,997.6	39.0	39.1	111.37	-711.5	828.7	442.4	370.0	72.43	6.107				
8,200.0	6,835.8	8,387.3	6,996.6	41.5	41.6	111.33	-711.8	928.7	442.2	365.2	77.09	5.737				
8,300.0	6,835.2	8,487.3	6,995.6	44.0	44.1	111.28	-712.0	1,028.7	442.1	360.3	81.82	5.404				
8,400.0	6,834.6	8,587.3	6,994.6	46.6	46.6	111.23	-712.3	1,128.7	442.0	355.3	86.61	5.103				
8,500.0	6,834.0	8,687.3	6,993.6	49.2	49.2	111.19	-712.6	1,228.7	441.8	350.3	91.47	4.830				
8,600.0	6,833.4	8,787.3	6,992.7	51.8	51.8	111.14	-712.9	1,328.7	441.7	345.3	96.37	4.583				
8,700.0	6,832.7	8,887.3	6,991.7	54.4	54.4	111.10	-713.2	1,428.7	441.5	340.2	101.31	4.358				
8,800.0	6,832.1	8,987.3	6,990.7	57.0	57.0	111.05	-713.5	1,528.7	441.4	335.1	106.30	4.152				
8,900.0	6,831.5	9,087.3	6,989.7	59.7	59.7	111.00	-713.8	1,628.7	441.2	329.9	111.31	3.964				
9,000.0	6,830.9	9,187.3	6,988.7	62.3	62.3	110.96	-714.1	1,728.6	441.1	324.7	116.35	3.791				
9,100.0	6,830.3	9,287.3	6,987.7	65.0	65.0	110.91	-714.3	1,828.6	440.9	319.5	121.42	3.632				
9,200.0	6,829.7	9,387.3	6,986.7	67.7	67.7	110.87	-714.6	1,928.6	440.8	314.3	126.51	3.484				
9,300.0	6,829.1	9,487.3	6,985.7	70.4	70.4	110.82	-714.9	2,028.6	440.7	309.0	131.62	3.348				
9,400.0	6,828.5	9,587.3	6,984.7	73.1	73.1	110.77	-715.2	2,128.6	440.5	303.8	136.75	3.221				
9,500.0	6,827.9	9,687.3	6,983.7	75.8	75.8	110.73	-715.5	2,228.6	440.4	298.5	141.90	3.104				
9,600.0	6,827.2	9,787.3	6,982.7	78.6	78.5	110.68	-715.8	2,328.6	440.2	293.2	147.06	2.994				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design    Alles 22S-HZ Pad Sec.22-T5N-R65W - Alles 22D-402 - Wellbore #1 - Plan #1 (5-16-13)												Offset Site Error:    0.0 ft	
Survey Program:    0-MWD												Offset Well Error:    0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
9,700.0	6,826.6	9,887.3	6,981.7	81.3	81.2	110.63	-716.1	2,428.6	440.1	287.9	152.23	2.891	
9,800.0	6,826.0	9,987.3	6,980.7	84.0	84.0	110.59	-716.4	2,528.6	440.0	282.5	157.42	2.795	
9,900.0	6,825.4	10,087.3	6,979.7	86.8	86.7	110.54	-716.7	2,628.6	439.8	277.2	162.62	2.705	
10,000.0	6,824.8	10,187.3	6,978.7	89.5	89.4	110.50	-716.9	2,728.6	439.7	271.8	167.83	2.620	
10,100.0	6,824.2	10,287.3	6,977.7	92.3	92.2	110.45	-717.2	2,828.6	439.5	266.5	173.05	2.540	
10,200.0	6,823.6	10,387.3	6,976.8	95.0	94.9	110.40	-717.5	2,928.6	439.4	261.1	178.28	2.465	
10,300.0	6,823.0	10,487.3	6,975.8	97.8	97.7	110.36	-717.8	3,028.6	439.3	255.7	183.52	2.393	
10,400.0	6,822.4	10,587.3	6,974.8	100.5	100.4	110.31	-718.1	3,128.6	439.1	250.3	188.77	2.326	
10,500.0	6,821.8	10,687.3	6,973.8	103.3	103.2	110.26	-718.4	3,228.6	439.0	244.9	194.03	2.262	
10,600.0	6,821.1	10,787.3	6,972.8	106.0	105.9	110.22	-718.7	3,328.6	438.8	239.5	199.29	2.202	
10,700.0	6,820.5	10,887.3	6,971.8	108.8	108.7	110.17	-719.0	3,428.5	438.7	234.1	204.57	2.145	
10,800.0	6,819.9	10,987.3	6,970.8	111.6	111.4	110.12	-719.2	3,528.5	438.6	228.7	209.85	2.090	
10,900.0	6,819.3	11,087.3	6,969.8	114.3	114.2	110.08	-719.5	3,628.5	438.4	223.3	215.13	2.038	
11,000.0	6,818.7	11,187.3	6,968.8	117.1	117.0	110.03	-719.8	3,728.5	438.3	217.9	220.42	1.988	
11,100.0	6,818.1	11,287.3	6,967.8	119.9	119.7	109.98	-720.1	3,828.5	438.1	212.4	225.72	1.941	
11,200.0	6,817.5	11,387.3	6,966.8	122.7	122.5	109.94	-720.4	3,928.5	438.0	207.0	231.03	1.896	
11,300.0	6,816.9	11,487.3	6,965.8	125.4	125.3	109.89	-720.7	4,028.5	437.9	201.5	236.34	1.853	
11,400.0	6,816.3	11,587.3	6,964.8	128.2	128.1	109.84	-721.0	4,128.5	437.7	196.1	241.65	1.811	
11,500.0	6,815.6	11,687.3	6,963.8	131.0	130.8	109.80	-721.3	4,228.5	437.6	190.6	246.97	1.772	
11,600.0	6,815.0	11,787.3	6,962.8	133.8	133.6	109.75	-721.5	4,328.5	437.5	185.2	252.30	1.734	
11,700.0	6,814.4	11,887.3	6,961.8	136.6	136.4	109.70	-721.8	4,428.5	437.3	179.7	257.63	1.698	
11,800.0	6,813.8	11,987.3	6,960.9	139.3	139.2	109.65	-722.1	4,528.5	437.2	174.2	262.96	1.663	
11,900.0	6,813.2	12,087.3	6,959.9	142.1	142.0	109.61	-722.4	4,628.5	437.1	168.8	268.30	1.629	
12,000.0	6,812.6	12,187.3	6,958.9	144.9	144.7	109.56	-722.7	4,728.5	436.9	163.3	273.65	1.597	
12,100.0	6,812.0	12,287.3	6,957.9	147.7	147.5	109.51	-723.0	4,828.5	436.8	157.8	279.00	1.566	
12,200.0	6,811.4	12,387.3	6,956.9	150.5	150.3	109.47	-723.3	4,928.5	436.7	152.3	284.35	1.536	
12,300.0	6,810.8	12,487.3	6,955.9	153.3	153.1	109.42	-723.6	5,028.4	436.5	146.8	289.71	1.507	
12,400.0	6,810.1	12,587.3	6,954.9	156.0	155.9	109.37	-723.8	5,128.4	436.4	141.3	295.07	1.479 Level 3	
12,500.0	6,809.5	12,687.3	6,953.9	158.8	158.7	109.32	-724.1	5,228.4	436.3	135.8	300.44	1.452 Level 3	
12,587.4	6,809.0	12,774.7	6,953.0	161.3	161.1	109.28	-724.4	5,315.8	436.1	131.0	305.13	1.429 Level 3, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Alles 22S-HZ Pad Sec.22-T5N-R65W - Alles 22S-432 - Wellbore #1 - Plan #1 (5-16-13)		Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-23.60	25.5	-11.1	27.8							
100.0	100.0	100.0	100.0	0.1	0.1	-23.60	25.5	-11.1	27.8	27.6	0.22	123.835				
200.0	200.0	200.0	200.0	0.3	0.3	-23.60	25.5	-11.1	27.8	27.2	0.67	41.278				
300.0	300.0	300.0	300.0	0.6	0.6	-23.60	25.5	-11.1	27.8	26.7	1.12	24.767				
400.0	400.0	400.0	400.0	0.8	0.8	-23.60	25.5	-11.1	27.8	26.3	1.57	17.691				
500.0	500.0	500.0	500.0	1.0	1.0	-23.60	25.5	-11.1	27.8	25.8	2.02	13.759				
600.0	600.0	600.0	600.0	1.2	1.2	-23.60	25.5	-11.1	27.8	25.4	2.47	11.258				
645.6	645.6	645.6	645.6	1.3	1.3	90.00	25.5	-11.1	27.8	25.2	2.67	10.427 CC				
700.0	700.0	700.0	700.0	1.4	1.5	92.84	25.5	-11.1	27.9	25.0	2.90	9.596 ES				
800.0	799.8	799.8	799.8	1.6	1.7	103.34	25.5	-11.1	28.6	25.3	3.33	8.593				
900.0	899.5	899.5	899.5	1.9	1.9	118.71	25.5	-11.1	31.8	28.0	3.77	8.426				
1,000.0	998.7	998.7	998.7	2.1	2.1	134.39	25.5	-11.1	39.1	34.9	4.22	9.278				
1,054.8	1,052.9	1,053.1	1,053.1	2.3	2.2	141.10	25.6	-11.6	45.1	40.7	4.46	10.123				
1,100.0	1,097.5	1,098.1	1,098.1	2.4	2.3	144.89	25.9	-12.8	50.5	45.9	4.66	10.852				
1,200.0	1,196.3	1,198.0	1,197.9	2.7	2.6	148.79	27.2	-17.8	62.1	57.0	5.10	12.169				
1,300.0	1,295.0	1,298.4	1,297.8	3.1	2.8	148.92	29.3	-26.2	72.4	66.8	5.57	12.992				
1,400.0	1,393.8	1,398.9	1,397.6	3.4	3.0	146.71	32.3	-38.0	81.5	75.4	6.09	13.382				
1,500.0	1,492.5	1,498.9	1,496.4	3.8	3.3	143.06	36.1	-52.8	89.8	83.1	6.67	13.470				
1,600.0	1,591.2	1,598.4	1,594.7	4.1	3.6	139.76	40.0	-68.0	98.3	91.0	7.28	13.501				
1,700.0	1,690.0	1,697.9	1,692.9	4.5	3.9	136.99	43.8	-83.1	107.0	99.1	7.91	13.518				
1,800.0	1,788.7	1,797.4	1,791.2	4.8	4.2	134.64	47.7	-98.3	115.9	107.4	8.57	13.527				
1,900.0	1,887.5	1,896.9	1,889.5	5.2	4.5	132.63	51.6	-113.5	125.0	115.8	9.24	13.532				
2,000.0	1,986.2	1,996.4	1,987.7	5.6	4.9	130.89	55.4	-128.7	134.3	124.4	9.92	13.534				
2,100.0	2,084.9	2,095.9	2,086.0	5.9	5.2	129.38	59.3	-143.9	143.6	133.0	10.61	13.534				
2,200.0	2,183.7	2,195.4	2,184.2	6.3	5.6	128.06	63.2	-159.1	153.1	141.8	11.31	13.534				
2,300.0	2,282.4	2,294.9	2,282.5	6.7	5.9	126.88	67.1	-174.2	162.6	150.6	12.01	13.534				
2,400.0	2,381.2	2,394.4	2,380.7	7.1	6.3	125.84	70.9	-189.4	172.2	159.4	12.72	13.534				
2,500.0	2,479.9	2,493.8	2,479.0	7.4	6.6	124.91	74.8	-204.6	181.8	168.3	13.43	13.534				
2,600.0	2,578.7	2,593.3	2,577.2	7.8	7.0	124.07	78.7	-219.8	191.4	177.3	14.15	13.534				
2,700.0	2,677.4	2,692.8	2,675.5	8.2	7.3	123.31	82.5	-235.0	201.1	186.3	14.86	13.535				
2,800.0	2,776.1	2,792.3	2,773.7	8.6	7.7	122.63	86.4	-250.1	210.9	195.3	15.58	13.535				
2,900.0	2,874.9	2,891.8	2,872.0	8.9	8.0	122.00	90.3	-265.3	220.6	204.3	16.30	13.536				
3,000.0	2,973.6	2,991.3	2,970.2	9.3	8.4	121.43	94.1	-280.5	230.4	213.4	17.02	13.538				
3,100.0	3,072.4	3,090.8	3,068.5	9.7	8.8	120.90	98.0	-295.7	240.2	222.5	17.74	13.539				
3,200.0	3,171.1	3,190.3	3,166.8	10.1	9.1	120.41	101.9	-310.9	250.0	231.6	18.47	13.541				
3,300.0	3,269.9	3,289.8	3,265.0	10.4	9.5	119.96	105.7	-326.1	259.9	240.7	19.19	13.542				
3,400.0	3,368.6	3,389.3	3,363.3	10.8	9.9	119.55	109.6	-341.2	269.7	249.8	19.92	13.544				
3,500.0	3,467.3	3,488.8	3,461.5	11.2	10.2	119.16	113.5	-356.4	279.6	259.0	20.64	13.546				
3,600.0	3,566.1	3,588.3	3,559.8	11.6	10.6	118.80	117.3	-371.6	289.5	268.1	21.37	13.548				
3,700.0	3,664.8	3,687.8	3,658.0	12.0	10.9	118.46	121.2	-386.8	299.4	277.3	22.09	13.549				
3,800.0	3,763.6	3,787.3	3,756.3	12.3	11.3	118.15	125.1	-402.0	309.3	286.4	22.82	13.551				
3,900.0	3,862.3	3,886.8	3,854.5	12.7	11.7	117.85	128.9	-417.2	319.2	295.6	23.55	13.553				
4,000.0	3,961.0	3,986.3	3,952.8	13.1	12.0	117.57	132.8	-432.3	329.1	304.8	24.28	13.555				
4,100.0	4,059.8	4,085.8	4,051.0	13.5	12.4	117.31	136.7	-447.5	339.0	314.0	25.01	13.557				
4,200.0	4,158.5	4,185.3	4,149.3	13.9	12.8	117.07	140.5	-462.7	348.9	323.2	25.74	13.559				
4,300.0	4,257.3	4,284.8	4,247.5	14.2	13.2	116.83	144.4	-477.9	358.9	332.4	26.46	13.561				
4,400.0	4,356.0	4,384.3	4,345.8	14.6	13.5	116.61	148.3	-493.1	368.8	341.6	27.19	13.563				
4,500.0	4,454.8	4,483.7	4,444.1	15.0	13.9	116.40	152.1	-508.2	378.8	350.8	27.92	13.564				
4,600.0	4,553.5	4,583.2	4,542.3	15.4	14.3	116.21	156.0	-523.4	388.7	360.1	28.65	13.566				
4,700.0	4,652.2	4,682.7	4,640.6	15.8	14.6	116.02	159.9	-538.6	398.7	369.3	29.38	13.568				
4,800.0	4,751.0	4,782.2	4,738.8	16.1	15.0	115.84	163.7	-553.8	408.6	378.5	30.11	13.570				

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
4,900.0	4,849.7	4,881.7	4,837.1	16.5	15.4	115.67	167.6	-569.0	418.6	387.7	30.84	13.572	
5,000.0	4,948.5	4,981.2	4,935.3	16.9	15.7	115.50	171.5	-584.2	428.6	397.0	31.57	13.573	
5,100.0	5,047.2	5,080.7	5,033.6	17.3	16.1	115.35	175.3	-599.3	438.5	406.2	32.30	13.575	
5,200.0	5,146.0	5,180.2	5,131.8	17.7	16.5	115.20	179.2	-614.5	448.5	415.5	33.03	13.576	
5,300.0	5,244.7	5,279.7	5,230.1	18.0	16.9	115.06	183.1	-629.7	458.5	424.7	33.77	13.578	
5,403.7	5,347.1	5,382.9	5,331.9	18.4	17.2	114.92	187.1	-645.4	468.8	434.3	34.52	13.580	
5,500.0	5,442.4	5,478.7	5,426.6	18.7	17.6	114.78	190.8	-660.1	477.8	442.6	35.19	13.577	
5,600.0	5,541.8	5,581.2	5,528.0	18.9	17.9	114.36	194.5	-674.6	485.4	449.6	35.77	13.570	
5,700.0	5,641.6	5,684.9	5,631.1	19.1	18.2	113.93	197.4	-685.9	490.9	454.7	36.23	13.549	
5,800.0	5,741.5	5,789.0	5,734.8	19.3	18.4	113.52	199.3	-693.5	494.2	457.6	36.61	13.499	
5,858.5	5,800.0	5,849.9	5,795.7	19.4	18.5	0.43	200.0	-696.3	495.1	466.5	28.53	17.350	
5,900.0	5,841.5	5,893.2	5,838.9	19.4	18.6	0.29	200.3	-697.5	495.4	466.7	28.67	17.275	
6,000.0	5,941.5	5,995.8	5,941.5	19.5	18.7	0.21	200.5	-698.1	495.5	466.5	29.02	17.077	
6,100.0	6,041.5	6,095.8	6,041.5	19.7	18.8	0.21	200.5	-698.1	495.5	466.1	29.37	16.869	
6,135.6	6,077.1	6,131.4	6,077.1	19.7	18.9	0.21	200.5	-698.1	495.5	466.0	29.50	16.796	
6,150.0	6,091.5	6,145.8	6,091.5	19.7	18.9	-89.97	200.5	-698.1	495.5	457.9	37.65	13.162	
6,160.3	6,101.8	6,156.0	6,101.8	19.8	18.9	-90.00	200.5	-698.1	495.5	457.8	37.67	13.154	
6,200.0	6,141.4	6,195.7	6,141.4	19.8	19.0	-90.27	200.5	-698.1	495.5	457.7	37.77	13.119	
6,250.0	6,191.1	6,245.3	6,191.1	19.8	19.1	-90.93	200.5	-698.1	495.6	457.7	37.87	13.085	
6,300.0	6,240.2	6,294.7	6,240.4	19.8	19.1	-91.94	200.5	-698.1	495.8	457.9	37.95	13.064	
6,350.0	6,288.7	6,345.2	6,290.8	19.7	19.2	-93.07	200.5	-695.7	496.3	458.3	37.97	13.069	
6,400.0	6,336.2	6,396.3	6,341.7	19.7	19.2	-94.20	200.5	-690.0	496.9	459.0	37.93	13.101	
6,450.0	6,382.7	6,448.2	6,392.7	19.6	19.2	-95.31	200.5	-680.7	497.7	459.9	37.83	13.157	
6,500.0	6,427.8	6,500.8	6,443.7	19.5	19.2	-96.41	200.4	-667.7	498.7	461.1	37.68	13.235	
6,550.0	6,471.5	6,554.2	6,494.4	19.4	19.1	-97.48	200.4	-651.1	499.9	462.4	37.50	13.333	
6,600.0	6,513.4	6,608.4	6,544.5	19.3	19.0	-98.52	200.3	-630.6	501.2	464.0	37.28	13.446	
6,650.0	6,553.5	6,663.3	6,593.7	19.2	18.9	-99.53	200.2	-606.2	502.7	465.6	37.05	13.569	
6,700.0	6,591.5	6,719.0	6,641.7	19.1	18.8	-100.50	200.1	-577.9	504.2	467.4	36.82	13.694	
6,750.0	6,627.4	6,775.6	6,688.2	19.1	18.7	-101.42	200.1	-545.7	505.8	469.2	36.62	13.813	
6,800.0	6,660.9	6,832.8	6,732.7	19.0	18.7	-102.30	199.9	-509.7	507.4	470.9	36.46	13.916	
6,850.0	6,691.8	6,890.9	6,774.9	19.0	18.6	-103.11	199.8	-469.9	509.0	472.6	36.39	13.989	
6,900.0	6,720.2	6,949.7	6,814.5	19.1	18.7	-103.87	199.7	-426.5	510.6	474.2	36.41	14.022	
6,950.0	6,745.8	7,009.1	6,851.0	19.2	18.7	-104.55	199.6	-379.6	512.2	475.6	36.59	13.998	
7,000.0	6,768.5	7,069.2	6,884.1	19.4	18.9	-105.17	199.4	-329.4	513.6	476.7	36.92	13.910	
7,050.0	6,788.3	7,129.9	6,913.4	19.7	19.2	-105.71	199.3	-276.3	514.9	477.4	37.44	13.753	
7,100.0	6,805.0	7,191.1	6,938.6	20.0	19.6	-106.17	199.1	-220.5	516.0	477.9	38.15	13.525	
7,150.0	6,818.6	7,252.8	6,959.4	20.5	20.2	-106.55	198.9	-162.5	517.0	477.9	39.07	13.231	
7,200.0	6,829.1	7,314.8	6,975.5	21.0	20.8	-106.84	198.7	-102.6	517.7	477.5	40.21	12.875	
7,250.0	6,836.3	7,377.1	6,986.7	21.6	21.6	-107.04	198.6	-41.4	518.3	476.7	41.54	12.476	
7,300.0	6,840.2	7,432.5	6,993.0	22.3	22.4	-107.20	198.4	13.7	518.8	475.8	42.95	12.080	
7,340.3	6,841.1	7,472.7	6,997.2	22.9	23.0	-107.48	198.3	53.7	519.8	475.7	44.05	11.799	
7,400.0	6,840.7	7,540.9	7,002.6	23.9	24.1	-108.09	198.1	121.6	521.3	475.4	45.95	11.346	
7,500.0	6,840.1	7,650.7	7,003.6	25.6	26.1	-108.27	197.7	231.4	521.8	472.3	49.50	10.540	
7,600.0	6,839.5	7,750.7	7,002.6	27.6	28.1	-108.23	197.5	331.4	521.7	468.4	53.26	9.794	
7,700.0	6,838.9	7,850.7	7,001.6	29.7	30.2	-108.19	197.2	431.4	521.5	464.3	57.28	9.105	
7,800.0	6,838.2	7,950.7	7,000.6	31.9	32.4	-108.15	196.9	531.4	521.4	459.9	61.50	8.478	
7,900.0	6,837.6	8,050.7	6,999.6	34.2	34.7	-108.11	196.6	631.4	521.3	455.4	65.89	7.912	
8,000.0	6,837.0	8,150.7	6,998.6	36.6	37.0	-108.07	196.3	731.4	521.2	450.8	70.42	7.401	
8,100.0	6,836.4	8,250.7	6,997.6	39.0	39.5	-108.03	196.0	831.4	521.1	446.0	75.06	6.942	
8,200.0	6,835.8	8,350.7	6,996.6	41.5	41.9	-107.99	195.7	931.3	520.9	441.2	79.79	6.529	
8,300.0	6,835.2	8,450.7	6,995.7	44.0	44.4	-107.94	195.4	1,031.3	520.8	436.2	84.60	6.156	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Alles 22S-HZ Pad Sec.22-T5N-R65W - Alles 22S-432 - Wellbore #1 - Plan #1 (5-16-13)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
8,400.0	6,834.6	8,550.7	6,994.7	46.6	47.0	-107.90	195.1	1,131.3	520.7	431.2	89.48	5.819		
8,500.0	6,834.0	8,650.7	6,993.7	49.2	49.6	-107.86	194.8	1,231.3	520.6	426.2	94.42	5.514		
8,600.0	6,833.4	8,750.7	6,992.7	51.8	52.2	-107.82	194.5	1,331.3	520.5	421.1	99.40	5.236		
8,700.0	6,832.7	8,850.7	6,991.7	54.4	54.8	-107.78	194.2	1,431.3	520.3	415.9	104.42	4.983		
8,800.0	6,832.1	8,950.7	6,990.7	57.0	57.4	-107.74	193.9	1,531.3	520.2	410.7	109.48	4.752		
8,900.0	6,831.5	9,050.7	6,989.7	59.7	60.1	-107.70	193.6	1,631.3	520.1	405.5	114.57	4.540		
9,000.0	6,830.9	9,150.7	6,988.7	62.3	62.7	-107.66	193.3	1,731.3	520.0	400.3	119.69	4.344		
9,100.0	6,830.3	9,250.7	6,987.7	65.0	65.4	-107.62	193.0	1,831.3	519.9	395.0	124.84	4.164		
9,200.0	6,829.7	9,350.7	6,986.7	67.7	68.1	-107.58	192.7	1,931.3	519.8	389.8	130.01	3.998		
9,300.0	6,829.1	9,450.7	6,985.7	70.4	70.8	-107.54	192.4	2,031.3	519.6	384.5	135.19	3.844		
9,400.0	6,828.5	9,550.7	6,984.7	73.1	73.5	-107.50	192.1	2,131.3	519.5	379.1	140.40	3.700		
9,500.0	6,827.9	9,650.7	6,983.7	75.8	76.2	-107.46	191.8	2,231.3	519.4	373.8	145.62	3.567		
9,600.0	6,827.2	9,750.7	6,982.7	78.6	78.9	-107.42	191.6	2,331.3	519.3	368.4	150.85	3.442		
9,700.0	6,826.6	9,850.7	6,981.7	81.3	81.7	-107.38	191.3	2,431.3	519.2	363.1	156.10	3.326		
9,800.0	6,826.0	9,950.7	6,980.7	84.0	84.4	-107.34	191.0	2,531.3	519.1	357.7	161.36	3.217		
9,900.0	6,825.4	10,050.7	6,979.7	86.8	87.1	-107.30	190.7	2,631.2	519.0	352.3	166.64	3.114		
10,000.0	6,824.8	10,150.7	6,978.7	89.5	89.9	-107.26	190.4	2,731.2	518.8	346.9	171.92	3.018		
10,100.0	6,824.2	10,250.7	6,977.7	92.3	92.6	-107.22	190.1	2,831.2	518.7	341.5	177.21	2.927		
10,200.0	6,823.6	10,350.7	6,976.7	95.0	95.4	-107.18	189.8	2,931.2	518.6	336.1	182.52	2.841		
10,300.0	6,823.0	10,450.7	6,975.7	97.8	98.1	-107.14	189.5	3,031.2	518.5	330.7	187.83	2.760		
10,400.0	6,822.4	10,550.7	6,974.7	100.5	100.9	-107.10	189.2	3,131.2	518.4	325.2	193.15	2.684		
10,500.0	6,821.8	10,650.7	6,973.7	103.3	103.6	-107.06	188.9	3,231.2	518.3	319.8	198.47	2.611		
10,600.0	6,821.1	10,750.7	6,972.8	106.0	106.4	-107.01	188.6	3,331.2	518.2	314.3	203.81	2.542		
10,700.0	6,820.5	10,850.7	6,971.8	108.8	109.2	-106.97	188.3	3,431.2	518.0	308.9	209.15	2.477		
10,800.0	6,819.9	10,950.7	6,970.8	111.6	111.9	-106.93	188.0	3,531.2	517.9	303.4	214.49	2.415		
10,900.0	6,819.3	11,050.7	6,969.8	114.3	114.7	-106.89	187.7	3,631.2	517.8	298.0	219.85	2.355		
11,000.0	6,818.7	11,150.6	6,968.8	117.1	117.5	-106.85	187.4	3,731.2	517.7	292.5	225.20	2.299		
11,100.0	6,818.1	11,250.6	6,967.8	119.9	120.2	-106.81	187.1	3,831.2	517.6	287.0	230.57	2.245		
11,200.0	6,817.5	11,350.6	6,966.8	122.7	123.0	-106.77	186.8	3,931.2	517.5	281.5	235.94	2.193		
11,300.0	6,816.9	11,450.6	6,965.8	125.4	125.8	-106.73	186.5	4,031.2	517.4	276.1	241.31	2.144		
11,400.0	6,816.3	11,550.6	6,964.8	128.2	128.5	-106.69	186.2	4,131.2	517.3	270.6	246.69	2.097		
11,500.0	6,815.6	11,650.6	6,963.8	131.0	131.3	-106.65	185.9	4,231.1	517.1	265.1	252.07	2.052		
11,600.0	6,815.0	11,750.6	6,962.8	133.8	134.1	-106.61	185.7	4,331.1	517.0	259.6	257.46	2.008		
11,700.0	6,814.4	11,850.6	6,961.8	136.6	136.9	-106.57	185.4	4,431.1	516.9	254.1	262.86	1.967		
11,800.0	6,813.8	11,950.6	6,960.8	139.3	139.7	-106.53	185.1	4,531.1	516.8	248.6	268.25	1.927		
11,900.0	6,813.2	12,050.6	6,959.8	142.1	142.4	-106.48	184.8	4,631.1	516.7	243.1	273.65	1.888		
12,000.0	6,812.6	12,150.6	6,958.8	144.9	145.2	-106.44	184.5	4,731.1	516.6	237.5	279.06	1.851		
12,100.0	6,812.0	12,250.6	6,957.8	147.7	148.0	-106.40	184.2	4,831.1	516.5	232.0	284.47	1.816		
12,200.0	6,811.4	12,350.6	6,956.8	150.5	150.8	-106.36	183.9	4,931.1	516.4	226.5	289.88	1.781		
12,300.0	6,810.8	12,450.6	6,955.8	153.3	153.6	-106.32	183.6	5,031.1	516.3	221.0	295.30	1.748		
12,400.0	6,810.1	12,550.6	6,954.8	156.0	156.4	-106.28	183.3	5,131.1	516.2	215.4	300.72	1.716		
12,500.0	6,809.5	12,650.6	6,953.8	158.8	159.2	-106.24	183.0	5,231.1	516.1	209.9	306.14	1.686		
12,564.8	6,809.1	12,715.4	6,953.2	160.6	161.0	-106.21	182.8	5,295.9	516.0	206.3	309.65	1.666		
12,587.4	6,809.0	12,735.0	6,953.0	161.3	161.5	-106.20	182.8	5,315.5	516.0	205.2	310.80	1.660 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference														
Offset														
Semi Major Axis														
Distance														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	1.0	1.0	0.0	0.0	-77.10	25.5	-111.4	114.3	114.3	0.02	5,659.444		
100.0	100.0	101.0	101.0	0.1	2.0	-77.10	25.5	-111.4	114.3	112.2	2.13	53.607		
200.0	200.0	201.0	201.0	0.3	4.0	-77.10	25.5	-111.4	114.3	110.0	4.36	26.236		
274.2	274.2	275.2	275.2	0.5	5.5	-77.10	25.5	-111.4	114.3	108.3	6.01	19.029		
300.0	300.0	301.0	301.0	0.6	6.0	-77.10	25.5	-111.4	114.3	107.7	6.58	17.368		
378.9	378.9	379.9	379.9	0.7	7.6	-77.10	25.5	-111.4	114.3	106.0	8.34	13.713		
400.0	400.0	401.0	401.0	0.8	8.0	-77.10	25.5	-111.4	114.3	105.5	8.81	12.981		
478.9	478.9	479.9	479.9	1.0	9.6	-77.10	25.5	-111.4	114.3	103.8	10.56	10.824		
500.0	500.0	501.0	501.0	1.0	10.0	-77.10	25.5	-111.4	114.3	103.3	11.03	10.363		
574.0	574.0	575.0	575.0	1.2	11.5	-77.10	25.5	-111.4	114.3	101.6	12.68	9.017		
600.0	600.0	601.0	601.0	1.2	12.0	-77.10	25.5	-111.4	114.3	101.1	13.26	8.624		
700.0	700.0	701.0	701.0	1.4	14.0	36.28	25.5	-111.4	112.9	97.5	15.46	7.305		
800.0	799.8	800.8	800.8	1.6	16.0	37.97	25.5	-111.4	108.7	91.1	17.63	6.167		
900.0	899.5	900.5	900.5	1.9	18.0	41.06	25.5	-111.4	102.0	82.2	19.80	5.151		
1,000.0	998.7	999.7	999.7	2.1	20.0	46.10	25.5	-111.4	93.1	71.1	21.98	4.237		
1,054.8	1,052.9	1,053.9	1,053.9	2.3	21.1	50.01	25.5	-111.4	87.6	64.4	23.20	3.778		
1,100.0	1,097.5	1,098.5	1,098.5	2.4	22.0	53.74	25.5	-111.4	83.2	59.0	24.23	3.433		
1,200.0	1,196.3	1,197.3	1,197.3	2.7	23.9	63.45	25.5	-111.4	74.9	48.3	26.57	2.818		
1,300.0	1,295.0	1,296.0	1,296.0	3.1	25.9	75.11	25.5	-111.4	69.2	40.2	28.94	2.390		
1,400.0	1,393.8	1,394.8	1,394.8	3.4	27.9	88.16	25.5	-111.4	66.8	35.5	31.30	2.135		
1,413.8	1,407.4	1,408.4	1,408.4	3.4	28.2	90.00	25.5	-111.4	66.8	35.2	31.62	2.113 CC		
1,500.0	1,492.5	1,493.5	1,493.5	3.8	29.9	101.39	25.5	-111.4	68.2	34.6	33.58	2.030 ES, SF		
1,600.0	1,591.2	1,592.2	1,592.2	4.1	31.8	113.52	25.5	-111.4	73.0	37.2	35.78	2.040		
1,700.0	1,690.0	1,691.0	1,691.0	4.5	33.8	123.78	25.5	-111.4	80.7	42.8	37.91	2.128		
1,800.0	1,788.7	1,789.7	1,789.7	4.8	35.8	132.07	25.5	-111.4	90.5	50.5	40.01	2.262		
1,900.0	1,887.5	1,888.5	1,888.5	5.2	37.8	138.65	25.5	-111.4	101.8	59.7	42.12	2.418		
2,000.0	1,986.2	1,987.2	1,987.2	5.6	39.7	143.88	25.5	-111.4	114.2	70.0	44.23	2.583		
2,100.0	2,084.9	2,085.9	2,085.9	5.9	41.7	148.06	25.5	-111.4	127.4	81.1	46.35	2.749		
2,200.0	2,183.7	2,184.7	2,184.7	6.3	43.7	151.45	25.5	-111.4	141.1	92.6	48.48	2.911		
2,300.0	2,282.4	2,283.4	2,283.4	6.7	45.7	154.23	25.5	-111.4	155.2	104.6	50.63	3.066		
2,400.0	2,381.2	2,382.2	2,382.2	7.1	47.6	156.55	25.5	-111.4	169.6	116.8	52.78	3.214		
2,500.0	2,479.9	2,480.9	2,480.9	7.4	49.6	158.50	25.5	-111.4	184.3	129.3	54.94	3.354		
2,600.0	2,578.7	2,579.7	2,579.7	7.8	51.6	160.17	25.5	-111.4	199.1	142.0	57.11	3.486		
2,700.0	2,677.4	2,678.4	2,678.4	8.2	53.6	161.60	25.5	-111.4	214.0	154.8	59.28	3.611		
2,800.0	2,776.1	2,777.1	2,777.1	8.6	55.5	162.85	25.5	-111.4	229.1	167.7	61.45	3.728		
2,900.0	2,874.9	2,875.9	2,875.9	8.9	57.5	163.94	25.5	-111.4	244.3	180.7	63.63	3.839		
3,000.0	2,973.6	2,974.6	2,974.6	9.3	59.5	164.91	25.5	-111.4	259.5	193.7	65.81	3.944		
3,100.0	3,072.4	3,073.4	3,073.4	9.7	61.5	165.76	25.5	-111.4	274.8	206.8	67.99	4.042		
3,200.0	3,171.1	3,172.1	3,172.1	10.1	63.4	166.53	25.5	-111.4	290.2	220.0	70.18	4.135		
3,300.0	3,269.9	3,270.9	3,270.9	10.4	65.4	167.22	25.5	-111.4	305.6	233.2	72.37	4.223		
3,400.0	3,368.6	3,369.6	3,369.6	10.8	67.4	167.84	25.5	-111.4	321.1	246.5	74.55	4.306		
3,500.0	3,467.3	3,468.3	3,468.3	11.2	69.4	168.41	25.5	-111.4	336.5	259.8	76.74	4.385		
3,600.0	3,566.1	3,567.1	3,567.1	11.6	71.3	168.93	25.5	-111.4	352.0	273.1	78.93	4.460		
3,700.0	3,664.8	3,665.8	3,665.8	12.0	73.3	169.40	25.5	-111.4	367.6	286.5	81.12	4.531		
3,800.0	3,763.6	3,764.6	3,764.6	12.3	75.3	169.84	25.5	-111.4	383.1	299.8	83.32	4.599		
3,900.0	3,862.3	3,863.3	3,863.3	12.7	77.3	170.24	25.5	-111.4	398.7	313.2	85.51	4.663		
4,000.0	3,961.0	3,962.0	3,962.0	13.1	79.2	170.61	25.5	-111.4	414.3	326.6	87.70	4.724		
4,100.0	4,059.8	4,060.8	4,060.8	13.5	81.2	170.95	25.5	-111.4	429.9	340.0	89.90	4.782		
4,200.0	4,158.5	4,159.5	4,159.5	13.9	83.2	171.27	25.5	-111.4	445.5	353.5	92.09	4.838		
4,300.0	4,257.3	4,258.3	4,258.3	14.2	85.2	171.57	25.5	-111.4	461.2	366.9	94.29	4.891		
4,400.0	4,356.0	4,357.0	4,357.0	14.6	87.1	171.85	25.5	-111.4	476.8	380.3	96.48	4.942		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Lofland 22T & Alles 22S-HZ Existing Wells - Alles 9-22 (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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
4,500.0	4,454.8	4,455.8	4,455.8	15.0	89.1	172.11	25.5	-111.4	492.5	393.8	98.68	4.991					
4,600.0	4,553.5	4,554.5	4,554.5	15.4	91.1	172.35	25.5	-111.4	508.2	407.3	100.87	5.038					
4,700.0	4,652.2	4,653.2	4,653.2	15.8	93.1	172.58	25.5	-111.4	523.8	420.8	103.07	5.082					
4,800.0	4,751.0	4,752.0	4,752.0	16.1	95.0	172.80	25.5	-111.4	539.5	434.3	105.27	5.125					
4,900.0	4,849.7	4,850.7	4,850.7	16.5	97.0	173.00	25.5	-111.4	555.2	447.7	107.46	5.167					
5,000.0	4,948.5	4,949.5	4,949.5	16.9	99.0	173.20	25.5	-111.4	570.9	461.3	109.66	5.206					
5,100.0	5,047.2	5,048.2	5,048.2	17.3	101.0	173.38	25.5	-111.4	586.6	474.8	111.86	5.244					
5,200.0	5,146.0	5,147.0	5,147.0	17.7	102.9	173.55	25.5	-111.4	602.3	488.3	114.05	5.281					
5,300.0	5,244.7	5,245.7	5,245.7	18.0	104.9	173.72	25.5	-111.4	618.0	501.8	116.25	5.316					
5,403.7	5,347.1	5,348.1	5,348.1	18.4	107.0	173.88	25.5	-111.4	634.3	515.8	118.53	5.352					
5,500.0	5,442.4	5,443.4	5,443.4	18.7	108.9	174.04	25.5	-111.4	647.9	526.8	121.14	5.348					
5,600.0	5,541.8	5,542.8	5,542.8	18.9	110.9	174.16	25.5	-111.4	658.6	534.9	123.70	5.324					
5,700.0	5,641.6	5,642.6	5,642.6	19.1	112.9	174.23	25.5	-111.4	665.8	539.7	126.13	5.279					
5,800.0	5,741.5	5,742.5	5,742.5	19.3	114.8	174.27	25.5	-111.4	669.6	541.2	128.41	5.214					
5,858.5	5,800.0	5,801.0	5,801.0	19.4	116.0	61.43	25.5	-111.4	670.2	534.8	135.35	4.951					
5,900.0	5,841.5	5,842.5	5,842.5	19.4	116.8	61.43	25.5	-111.4	670.2	533.9	136.23	4.919					
6,000.0	5,941.5	5,942.5	5,942.5	19.5	118.8	61.43	25.5	-111.4	670.2	531.8	138.37	4.844					
6,100.0	6,041.5	6,042.5	6,042.5	19.7	120.8	61.43	25.5	-111.4	670.2	529.7	140.50	4.770					
6,135.6	6,077.1	6,078.1	6,078.1	19.7	121.6	61.43	25.5	-111.4	670.2	528.9	141.26	4.744					
6,150.0	6,091.5	6,092.5	6,092.5	19.7	121.8	-28.75	25.5	-111.4	670.1	534.1	135.99	4.927					
6,200.0	6,141.4	6,142.4	6,142.4	19.8	122.8	-28.94	25.5	-111.4	667.8	531.2	136.63	4.888					
6,250.0	6,191.1	6,192.1	6,192.1	19.8	123.8	-29.37	25.5	-111.4	662.7	525.9	136.83	4.843					
6,300.0	6,240.2	6,241.2	6,241.2	19.8	124.8	-30.06	25.5	-111.4	654.8	518.2	136.61	4.793					
6,350.0	6,288.7	6,289.7	6,289.7	19.7	125.8	-31.02	25.5	-111.4	644.1	508.1	136.00	4.736					
6,400.0	6,336.2	6,337.2	6,337.2	19.7	126.7	-32.28	25.5	-111.4	630.8	495.8	135.08	4.670					
6,450.0	6,382.7	6,383.7	6,383.7	19.6	127.7	-33.87	25.5	-111.4	615.0	481.1	133.95	4.592					
6,500.0	6,427.8	6,428.8	6,428.8	19.5	128.6	-35.83	25.5	-111.4	596.8	464.1	132.76	4.496					
6,550.0	6,471.5	6,472.5	6,472.5	19.4	129.4	-38.21	25.5	-111.4	576.5	444.7	131.71	4.377					
6,600.0	6,513.4	6,514.4	6,514.4	19.3	130.3	-41.05	25.5	-111.4	554.1	423.1	131.03	4.229					
6,650.0	6,553.5	6,554.5	6,554.5	19.2	131.1	-44.40	25.5	-111.4	530.1	399.1	130.99	4.047					
6,700.0	6,591.5	6,592.5	6,592.5	19.1	131.9	-48.29	25.5	-111.4	504.7	372.9	131.86	3.828					
6,750.0	6,627.4	6,628.4	6,628.4	19.1	132.6	-52.72	25.5	-111.4	478.4	344.6	133.78	3.576					
6,800.0	6,660.9	6,661.9	6,661.9	19.0	133.2	-57.64	25.5	-111.4	451.7	314.9	136.76	3.303					
6,850.0	6,691.8	6,692.8	6,692.8	19.0	133.9	-62.94	25.5	-111.4	425.1	284.6	140.52	3.025					
6,900.0	6,720.2	6,721.2	6,721.2	19.1	134.4	-68.42	25.5	-111.4	399.5	254.9	144.61	2.763					
6,950.0	6,745.8	6,746.8	6,746.8	19.2	134.9	-73.84	25.5	-111.4	375.7	227.2	148.47	2.530					
7,000.0	6,768.5	6,769.5	6,769.5	19.4	135.4	-78.90	25.5	-111.4	354.9	203.2	151.67	2.340					
7,050.0	6,788.3	6,789.3	6,789.3	19.7	135.8	-83.36	25.5	-111.4	338.2	184.2	154.03	2.196					
7,100.0	6,805.0	6,806.0	6,806.0	20.0	136.1	-87.00	25.5	-111.4	327.0	171.4	155.60	2.102					
7,150.0	6,818.6	6,819.6	6,819.6	20.5	136.4	-89.68	25.5	-111.4	322.3	165.7	156.64	2.058					
7,157.7	6,820.4	6,821.4	6,821.4	20.6	136.4	-90.00	25.5	-111.4	322.3	165.5	156.78	2.055					
7,200.0	6,829.1	6,830.1	6,830.1	21.0	136.6	-91.30	25.5	-111.4	324.9	167.5	157.43	2.064					
7,250.0	6,836.3	6,837.3	6,837.3	21.6	136.7	-91.81	25.5	-111.4	334.8	176.6	158.20	2.116					
7,300.0	6,840.2	6,841.2	6,841.2	22.3	136.8	-91.17	25.5	-111.4	351.6	192.6	159.03	2.211					
7,340.3	6,841.1	6,842.1	6,842.1	22.9	136.8	-89.80	25.5	-111.4	369.6	209.9	159.68	2.315					
7,400.0	6,840.7	6,841.7	6,841.7	23.9	136.8	-89.74	25.5	-111.4	402.2	241.6	160.65	2.504					
7,500.0	6,840.1	6,841.1	6,841.1	25.6	136.8	-89.63	25.5	-111.4	468.9	306.5	162.44	2.887					
7,600.0	6,839.5	6,840.5	6,840.5	27.6	136.8	-89.52	25.5	-111.4	545.9	381.5	164.39	3.321					
7,700.0	6,838.9	6,839.9	6,839.9	29.7	136.8	-89.41	25.5	-111.4	629.4	463.0	166.48	3.781					
7,800.0	6,838.2	6,839.2	6,839.2	31.9	136.8	-89.30	25.5	-111.4	717.2	548.5	168.67	4.252					
7,900.0	6,837.6	6,838.6	6,838.6	34.2	136.8	-89.20	25.5	-111.4	807.7	636.8	170.96	4.725					

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference														
Offset														
Semi Major Axis														
Distance														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,000.0	6,837.0	6,838.0	6,838.0	36.6	136.8	-89.09	25.5	-111.4	900.3	727.0	173.31	5.195		
8,100.0	6,836.4	6,837.4	6,837.4	39.0	136.7	-88.98	25.5	-111.4	994.3	818.6	175.72	5.659		
8,200.0	6,835.8	6,836.8	6,836.8	41.5	136.7	-88.87	25.5	-111.4	1,089.4	911.2	178.18	6.114		
8,300.0	6,835.2	6,836.2	6,836.2	44.0	136.7	-88.76	25.5	-111.4	1,185.3	1,004.6	180.68	6.560		
8,400.0	6,834.6	6,835.6	6,835.6	46.6	136.7	-88.65	25.5	-111.4	1,281.8	1,098.6	183.21	6.997		
8,500.0	6,834.0	6,835.0	6,835.0	49.2	136.7	-88.54	25.5	-111.4	1,378.9	1,193.1	185.76	7.423		
8,600.0	6,833.4	6,834.4	6,834.4	51.8	136.7	-88.44	25.5	-111.4	1,476.3	1,287.9	188.34	7.838		
8,700.0	6,832.7	6,833.7	6,833.7	54.4	136.7	-88.33	25.5	-111.4	1,574.0	1,383.1	190.94	8.243		
8,800.0	6,832.1	6,833.1	6,833.1	57.0	136.7	-88.22	25.5	-111.4	1,672.0	1,478.5	193.56	8.638		
8,900.0	6,831.5	6,832.5	6,832.5	59.7	136.7	-88.11	25.5	-111.4	1,770.2	1,574.1	196.19	9.023		
9,000.0	6,830.9	6,831.9	6,831.9	62.3	136.6	-88.00	25.5	-111.4	1,868.7	1,669.8	198.83	9.398		
9,100.0	6,830.3	6,831.3	6,831.3	65.0	136.6	-87.89	25.5	-111.4	1,967.2	1,765.7	201.49	9.764		
9,200.0	6,829.7	6,830.7	6,830.7	67.7	136.6	-87.78	25.5	-111.4	2,065.9	1,861.8	204.15	10.120		
9,300.0	6,829.1	6,830.1	6,830.1	70.4	136.6	-87.68	25.5	-111.4	2,164.8	1,958.0	206.82	10.467		
9,400.0	6,828.5	6,829.5	6,829.5	73.1	136.6	-87.57	25.5	-111.4	2,263.7	2,054.2	209.50	10.805		
9,500.0	6,827.9	6,828.9	6,828.9	75.8	136.6	-87.46	25.5	-111.4	2,362.7	2,150.5	212.18	11.135		
9,600.0	6,827.2	6,828.2	6,828.2	78.6	136.6	-87.35	25.5	-111.4	2,461.8	2,247.0	214.87	11.457		
9,700.0	6,826.6	6,827.6	6,827.6	81.3	136.6	-87.24	25.5	-111.4	2,561.0	2,343.4	217.57	11.771		
9,800.0	6,826.0	6,827.0	6,827.0	84.0	136.5	-87.13	25.5	-111.4	2,660.2	2,440.0	220.26	12.078		
9,900.0	6,825.4	6,826.4	6,826.4	86.8	136.5	-87.03	25.5	-111.4	2,759.5	2,536.6	222.97	12.376		
10,000.0	6,824.8	6,825.8	6,825.8	89.5	136.5	-86.92	25.5	-111.4	2,858.9	2,633.2	225.67	12.668		
10,100.0	6,824.2	6,825.2	6,825.2	92.3	136.5	-86.81	25.5	-111.4	2,958.2	2,729.9	228.38	12.953		
10,200.0	6,823.6	6,824.6	6,824.6	95.0	136.5	-86.70	25.5	-111.4	3,057.7	2,826.6	231.09	13.232		
10,300.0	6,823.0	6,824.0	6,824.0	97.8	136.5	-86.59	25.5	-111.4	3,157.1	2,923.3	233.80	13.504		
10,400.0	6,822.4	6,823.4	6,823.4	100.5	136.5	-86.48	25.5	-111.4	3,256.6	3,020.1	236.51	13.769		
10,500.0	6,821.8	6,822.8	6,822.8	103.3	136.5	-86.38	25.5	-111.4	3,356.1	3,116.9	239.23	14.029		
10,600.0	6,821.1	6,822.1	6,822.1	106.0	136.4	-86.27	25.5	-111.4	3,455.7	3,213.7	241.94	14.283		
10,700.0	6,820.5	6,821.5	6,821.5	108.8	136.4	-86.16	25.5	-111.4	3,555.3	3,310.6	244.66	14.531		
10,800.0	6,819.9	6,820.9	6,820.9	111.6	136.4	-86.05	25.5	-111.4	3,654.9	3,407.5	247.38	14.774		
10,900.0	6,819.3	6,820.3	6,820.3	114.3	136.4	-85.94	25.5	-111.4	3,754.5	3,504.4	250.10	15.012		
11,000.0	6,818.7	6,819.7	6,819.7	117.1	136.4	-85.84	25.5	-111.4	3,854.1	3,601.3	252.82	15.245		
11,100.0	6,818.1	6,819.1	6,819.1	119.9	136.4	-85.73	25.5	-111.4	3,953.8	3,698.2	255.54	15.473		
11,200.0	6,817.5	6,818.5	6,818.5	122.7	136.4	-85.62	25.5	-111.4	4,053.4	3,795.2	258.25	15.696		
11,300.0	6,816.9	6,817.9	6,817.9	125.4	136.4	-85.51	25.5	-111.4	4,153.1	3,892.2	260.97	15.914		
11,400.0	6,816.3	6,817.3	6,817.3	128.2	136.3	-85.40	25.5	-111.4	4,252.8	3,989.1	263.69	16.128		
11,500.0	6,815.6	6,816.6	6,816.6	131.0	136.3	-85.30	25.5	-111.4	4,352.6	4,086.1	266.41	16.338		
11,600.0	6,815.0	6,816.0	6,816.0	133.8	136.3	-85.19	25.5	-111.4	4,452.3	4,183.2	269.13	16.543		
11,700.0	6,814.4	6,815.4	6,815.4	136.6	136.3	-85.08	25.5	-111.4	4,552.0	4,280.2	271.85	16.745		
11,800.0	6,813.8	6,814.8	6,814.8	139.3	136.3	-84.97	25.5	-111.4	4,651.8	4,377.2	274.56	16.942		
11,900.0	6,813.2	6,814.2	6,814.2	142.1	136.3	-84.86	25.5	-111.4	4,751.5	4,474.3	277.28	17.136		
12,000.0	6,812.6	6,813.6	6,813.6	144.9	136.3	-84.76	25.5	-111.4	4,851.3	4,571.3	279.99	17.326		
12,100.0	6,812.0	6,813.0	6,813.0	147.7	136.3	-84.65	25.5	-111.4	4,951.1	4,668.4	282.71	17.513		
12,200.0	6,811.4	6,812.4	6,812.4	150.5	136.2	-84.54	25.5	-111.4	5,050.9	4,765.5	285.42	17.696		
12,300.0	6,810.8	6,811.8	6,811.8	153.3	136.2	-84.43	25.5	-111.4	5,150.7	4,862.6	288.14	17.876		
12,400.0	6,810.1	6,811.1	6,811.1	156.0	136.2	-84.33	25.5	-111.4	5,250.5	4,959.6	290.85	18.052		
12,500.0	6,809.5	6,810.5	6,810.5	158.8	136.2	-84.22	25.5	-111.4	5,350.3	5,056.8	293.56	18.226		
12,587.4	6,809.0	6,810.0	6,810.0	161.3	136.2	-84.13	25.5	-111.4	5,437.5	5,141.6	295.93	18.375		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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	93.51	-167.4	2,727.4	2,732.6					
100.0	100.0	98.0	98.0	0.1	2.0	93.51	-167.4	2,727.4	2,732.6	2,730.5	2.07	1,318.431		
200.0	200.0	198.0	198.0	0.3	4.0	93.51	-167.4	2,727.4	2,732.6	2,728.3	4.30	635.871		
300.0	300.0	298.0	298.0	0.6	6.0	93.51	-167.4	2,727.4	2,732.6	2,726.0	6.52	418.968		
400.0	400.0	398.0	398.0	0.8	8.0	93.51	-167.4	2,727.4	2,732.6	2,723.8	8.75	312.404		
500.0	500.0	498.0	498.0	1.0	10.0	93.51	-167.4	2,727.4	2,732.6	2,721.6	10.97	249.056		
600.0	600.0	598.0	598.0	1.2	12.0	93.51	-167.4	2,727.4	2,732.6	2,719.4	13.20	207.068		
700.0	700.0	698.0	698.0	1.4	14.0	-153.64	-167.4	2,727.4	2,734.1	2,718.7	15.39	177.598		
800.0	799.8	797.8	797.8	1.6	16.0	-153.64	-167.4	2,727.4	2,738.8	2,721.2	17.56	155.949		
900.0	899.5	897.5	897.5	1.9	17.9	-153.66	-167.4	2,727.4	2,746.6	2,726.9	19.71	139.345		
1,000.0	998.7	996.7	996.7	2.1	19.9	-153.67	-167.4	2,727.4	2,757.6	2,735.7	21.83	126.293		
1,054.8	1,052.9	1,050.9	1,050.9	2.3	21.0	-153.68	-167.4	2,727.4	2,764.9	2,741.9	22.99	120.283		
1,100.0	1,097.5	1,095.5	1,095.5	2.4	21.9	-153.75	-167.4	2,727.4	2,771.3	2,747.3	23.98	115.583		
1,200.0	1,196.3	1,194.3	1,194.3	2.7	23.9	-153.89	-167.4	2,727.4	2,785.5	2,759.3	26.18	106.417		
1,300.0	1,295.0	1,293.0	1,293.0	3.1	25.9	-154.03	-167.4	2,727.4	2,799.8	2,771.4	28.38	98.647		
1,400.0	1,393.8	1,391.8	1,391.8	3.4	27.8	-154.17	-167.4	2,727.4	2,814.0	2,783.4	30.59	91.983		
1,500.0	1,492.5	1,490.5	1,490.5	3.8	29.8	-154.31	-167.4	2,727.4	2,828.3	2,795.5	32.81	86.208		
1,600.0	1,591.2	1,589.2	1,589.2	4.1	31.8	-154.45	-167.4	2,727.4	2,842.6	2,807.6	35.03	81.157		
1,700.0	1,690.0	1,688.0	1,688.0	4.5	33.8	-154.58	-167.4	2,727.4	2,856.9	2,819.6	37.25	76.705		
1,800.0	1,788.7	1,786.7	1,786.7	4.8	35.7	-154.72	-167.4	2,727.4	2,871.2	2,831.7	39.47	72.750		
1,900.0	1,887.5	1,885.5	1,885.5	5.2	37.7	-154.85	-167.4	2,727.4	2,885.5	2,843.9	41.69	69.216		
2,000.0	1,986.2	1,984.2	1,984.2	5.6	39.7	-154.99	-167.4	2,727.4	2,899.9	2,856.0	43.91	66.038		
2,100.0	2,084.9	2,082.9	2,082.9	5.9	41.7	-155.12	-167.4	2,727.4	2,914.3	2,868.1	46.14	63.166		
2,200.0	2,183.7	2,181.7	2,181.7	6.3	43.6	-155.25	-167.4	2,727.4	2,928.6	2,880.3	48.36	60.558		
2,300.0	2,282.4	2,280.4	2,280.4	6.7	45.6	-155.38	-167.4	2,727.4	2,943.0	2,892.5	50.59	58.179		
2,400.0	2,381.2	2,379.2	2,379.2	7.1	47.6	-155.50	-167.4	2,727.4	2,957.5	2,904.6	52.81	56.001		
2,500.0	2,479.9	2,477.9	2,477.9	7.4	49.6	-155.63	-167.4	2,727.4	2,971.9	2,916.8	55.04	53.999		
2,600.0	2,578.7	2,576.7	2,576.7	7.8	51.5	-155.75	-167.4	2,727.4	2,986.3	2,929.1	57.26	52.153		
2,700.0	2,677.4	2,675.4	2,675.4	8.2	53.5	-155.88	-167.4	2,727.4	3,000.8	2,941.3	59.49	50.445		
2,800.0	2,776.1	2,774.1	2,774.1	8.6	55.5	-156.00	-167.4	2,727.4	3,015.2	2,953.5	61.71	48.861		
2,900.0	2,874.9	2,872.9	2,872.9	8.9	57.5	-156.12	-167.4	2,727.4	3,029.7	2,965.8	63.94	47.387		
3,000.0	2,973.6	2,971.6	2,971.6	9.3	59.4	-156.24	-167.4	2,727.4	3,044.2	2,978.0	66.16	46.012		
3,100.0	3,072.4	3,070.4	3,070.4	9.7	61.4	-156.36	-167.4	2,727.4	3,058.7	2,990.3	68.39	44.728		
3,200.0	3,171.1	3,169.1	3,169.1	10.1	63.4	-156.48	-167.4	2,727.4	3,073.2	3,002.6	70.61	43.525		
3,300.0	3,269.9	3,267.9	3,267.9	10.4	65.4	-156.60	-167.4	2,727.4	3,087.8	3,014.9	72.83	42.395		
3,400.0	3,368.6	3,366.6	3,366.6	10.8	67.3	-156.71	-167.4	2,727.4	3,102.3	3,027.3	75.06	41.333		
3,500.0	3,467.3	3,465.3	3,465.3	11.2	69.3	-156.83	-167.4	2,727.4	3,116.9	3,039.6	77.28	40.332		
3,600.0	3,566.1	3,564.1	3,564.1	11.6	71.3	-156.94	-167.4	2,727.4	3,131.4	3,051.9	79.50	39.387		
3,700.0	3,664.8	3,662.8	3,662.8	12.0	73.3	-157.05	-167.4	2,727.4	3,146.0	3,064.3	81.73	38.494		
3,800.0	3,763.6	3,761.6	3,761.6	12.3	75.2	-157.16	-167.4	2,727.4	3,160.6	3,076.7	83.95	37.649		
3,900.0	3,862.3	3,860.3	3,860.3	12.7	77.2	-157.27	-167.4	2,727.4	3,175.2	3,089.0	86.17	36.847		
4,000.0	3,961.0	3,959.0	3,959.0	13.1	79.2	-157.38	-167.4	2,727.4	3,189.8	3,101.4	88.39	36.086		
4,100.0	4,059.8	4,057.8	4,057.8	13.5	81.2	-157.49	-167.4	2,727.4	3,204.5	3,113.8	90.62	35.363		
4,200.0	4,158.5	4,156.5	4,156.5	13.9	83.1	-157.60	-167.4	2,727.4	3,219.1	3,126.3	92.84	34.674		
4,300.0	4,257.3	4,255.3	4,255.3	14.2	85.1	-157.71	-167.4	2,727.4	3,233.7	3,138.7	95.06	34.018		
4,400.0	4,356.0	4,354.0	4,354.0	14.6	87.1	-157.81	-167.4	2,727.4	3,248.4	3,151.1	97.28	33.392		
4,500.0	4,454.8	4,452.8	4,452.8	15.0	89.1	-157.92	-167.4	2,727.4	3,263.1	3,163.6	99.50	32.795		
4,600.0	4,553.5	4,551.5	4,551.5	15.4	91.0	-158.02	-167.4	2,727.4	3,277.8	3,176.0	101.72	32.223		
4,700.0	4,652.2	4,650.2	4,650.2	15.8	93.0	-158.12	-167.4	2,727.4	3,292.4	3,188.5	103.94	31.676		
4,800.0	4,751.0	4,749.0	4,749.0	16.1	95.0	-158.23	-167.4	2,727.4	3,307.2	3,201.0	106.16	31.152		
4,900.0	4,849.7	4,847.7	4,847.7	16.5	97.0	-158.33	-167.4	2,727.4	3,321.9	3,213.5	108.38	30.650		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
5,000.0	4,948.5	4,946.5	4,946.5	16.9	98.9	-158.43	-167.4	2,727.4	3,336.6	3,226.0	110.60	30.168		
5,100.0	5,047.2	5,045.2	5,045.2	17.3	100.9	-158.53	-167.4	2,727.4	3,351.3	3,238.5	112.82	29.705		
5,200.0	5,146.0	5,144.0	5,144.0	17.7	102.9	-158.62	-167.4	2,727.4	3,366.1	3,251.0	115.04	29.261		
5,300.0	5,244.7	5,242.7	5,242.7	18.0	104.9	-158.72	-167.4	2,727.4	3,380.8	3,263.6	117.26	28.833		
5,403.7	5,347.1	5,345.1	5,345.1	18.4	106.9	-158.82	-167.4	2,727.4	3,396.1	3,276.6	119.56	28.406		
5,500.0	5,442.4	5,440.4	5,440.4	18.7	108.8	-159.00	-167.4	2,727.4	3,408.8	3,286.7	122.10	27.918		
5,600.0	5,541.8	5,539.8	5,539.8	18.9	110.8	-159.13	-167.4	2,727.4	3,418.9	3,294.3	124.61	27.437		
5,700.0	5,641.6	5,639.6	5,639.6	19.1	112.8	-159.22	-167.4	2,727.4	3,425.7	3,298.7	126.99	26.976		
5,800.0	5,741.5	5,739.5	5,739.5	19.3	114.8	-159.27	-167.4	2,727.4	3,429.2	3,300.0	129.25	26.532		
5,858.5	5,800.0	5,798.0	5,798.0	19.4	116.0	87.87	-167.4	2,727.4	3,429.8	3,295.2	134.64	25.474		
5,900.0	5,841.5	5,839.5	5,839.5	19.4	116.8	87.87	-167.4	2,727.4	3,429.8	3,294.3	135.53	25.307		
6,000.0	5,941.5	5,939.5	5,939.5	19.5	118.8	87.87	-167.4	2,727.4	3,429.8	3,292.1	137.66	24.915		
6,100.0	6,041.5	6,039.5	6,039.5	19.7	120.8	87.87	-167.4	2,727.4	3,429.8	3,290.0	139.80	24.533		
6,135.6	6,077.1	6,075.1	6,075.1	19.7	121.5	87.87	-167.4	2,727.4	3,429.8	3,289.2	140.56	24.400		
6,150.0	6,091.5	6,089.5	6,089.5	19.7	121.8	-2.30	-167.4	2,727.4	3,429.7	3,292.9	136.78	25.074		
6,200.0	6,141.4	6,139.4	6,139.4	19.8	122.8	-2.31	-167.4	2,727.4	3,427.1	3,289.8	137.30	24.960		
6,250.0	6,191.1	6,189.1	6,189.1	19.8	123.8	-2.33	-167.4	2,727.4	3,421.3	3,284.0	137.22	24.932		
6,300.0	6,240.2	6,238.2	6,238.2	19.8	124.8	-2.37	-167.4	2,727.4	3,412.2	3,275.7	136.53	24.993		
6,350.0	6,288.7	6,286.7	6,286.7	19.7	125.7	-2.42	-167.4	2,727.4	3,399.9	3,264.7	135.21	25.145		
6,400.0	6,336.2	6,334.2	6,334.2	19.7	126.7	-2.48	-167.4	2,727.4	3,384.5	3,251.3	133.28	25.395		
6,450.0	6,382.7	6,380.7	6,380.7	19.6	127.6	-2.56	-167.4	2,727.4	3,366.1	3,235.4	130.71	25.751		
6,500.0	6,427.8	6,425.8	6,425.8	19.5	128.5	-2.66	-167.4	2,727.4	3,344.6	3,217.1	127.53	26.225		
6,550.0	6,471.5	6,469.5	6,469.5	19.4	129.4	-2.77	-167.4	2,727.4	3,320.2	3,196.5	123.74	26.832		
6,600.0	6,513.4	6,511.4	6,511.4	19.3	130.2	-2.92	-167.4	2,727.4	3,293.1	3,173.7	119.36	27.589		
6,650.0	6,553.5	6,551.5	6,551.5	19.2	131.0	-3.09	-167.4	2,727.4	3,263.2	3,148.8	114.40	28.523		
6,700.0	6,591.5	6,589.5	6,589.5	19.1	131.8	-3.30	-167.4	2,727.4	3,230.8	3,121.9	108.90	29.666		
6,750.0	6,627.4	6,625.4	6,625.4	19.1	132.5	-3.56	-167.4	2,727.4	3,196.0	3,093.1	102.90	31.061		
6,800.0	6,660.9	6,658.9	6,658.9	19.0	133.2	-3.87	-167.4	2,727.4	3,158.9	3,062.5	96.42	32.761		
6,850.0	6,691.8	6,689.8	6,689.8	19.0	133.8	-4.25	-167.4	2,727.4	3,119.7	3,030.2	89.54	34.840		
6,900.0	6,720.2	6,718.2	6,718.2	19.1	134.4	-4.74	-167.4	2,727.4	3,078.6	2,996.2	82.34	37.388		
6,950.0	6,745.8	6,743.8	6,743.8	19.2	134.9	-5.36	-167.4	2,727.4	3,035.7	2,960.8	74.92	40.518		
7,000.0	6,768.5	6,766.5	6,766.5	19.4	135.3	-6.18	-167.4	2,727.4	2,991.2	2,923.7	67.46	44.338		
7,050.0	6,788.3	6,786.3	6,786.3	19.7	135.7	-7.30	-167.4	2,727.4	2,945.3	2,885.0	60.28	48.857		
7,100.0	6,805.0	6,803.0	6,803.0	20.0	136.1	-8.90	-167.4	2,727.4	2,898.3	2,844.2	54.04	53.635		
7,150.0	6,818.6	6,816.6	6,816.6	20.5	136.3	-11.36	-167.4	2,727.4	2,850.2	2,800.0	50.23	56.744		
7,200.0	6,829.1	6,827.1	6,827.1	21.0	136.5	-15.57	-167.4	2,727.4	2,801.4	2,749.0	52.42	53.444		
7,250.0	6,836.3	6,834.3	6,834.3	21.6	136.7	-24.12	-167.4	2,727.4	2,752.0	2,683.4	68.55	40.143		
7,300.0	6,840.2	6,838.2	6,838.2	22.3	136.8	-47.57	-167.4	2,727.4	2,702.2	2,584.3	117.94	22.911		
7,340.3	6,841.1	6,839.1	6,839.1	22.9	136.8	-96.73	-167.4	2,727.4	2,662.0	2,503.4	158.63	16.781		
7,400.0	6,840.7	6,838.7	6,838.7	23.9	136.8	-96.58	-167.4	2,727.4	2,602.4	2,442.7	159.64	16.301		
7,500.0	6,840.1	6,838.1	6,838.1	25.6	136.8	-96.33	-167.4	2,727.4	2,502.5	2,341.0	161.49	15.496		
7,600.0	6,839.5	6,837.5	6,837.5	27.6	136.7	-96.08	-167.4	2,727.4	2,402.7	2,239.2	163.51	14.694		
7,700.0	6,838.9	6,836.9	6,836.9	29.7	136.7	-95.82	-167.4	2,727.4	2,302.8	2,137.2	165.66	13.901		
7,800.0	6,838.2	6,836.2	6,836.2	31.9	136.7	-95.57	-167.4	2,727.4	2,203.0	2,035.1	167.92	13.119		
7,900.0	6,837.6	6,835.6	6,835.6	34.2	136.7	-95.32	-167.4	2,727.4	2,103.2	1,933.0	170.27	12.353		
8,000.0	6,837.0	6,835.0	6,835.0	36.6	136.7	-95.07	-167.4	2,727.4	2,003.5	1,830.8	172.68	11.602		
8,100.0	6,836.4	6,834.4	6,834.4	39.0	136.7	-94.82	-167.4	2,727.4	1,903.7	1,728.6	175.15	10.869		
8,200.0	6,835.8	6,833.8	6,833.8	41.5	136.7	-94.56	-167.4	2,727.4	1,804.0	1,626.3	177.67	10.154		
8,300.0	6,835.2	6,833.2	6,833.2	44.0	136.7	-94.31	-167.4	2,727.4	1,704.3	1,524.1	180.22	9.457		
8,400.0	6,834.6	6,832.6	6,832.6	46.6	136.7	-94.06	-167.4	2,727.4	1,604.7	1,421.9	182.81	8.778		
8,500.0	6,834.0	6,832.0	6,832.0	49.2	136.6	-93.80	-167.4	2,727.4	1,505.1	1,319.6	185.42	8.117		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN												Offset Well Error:	0.0 ft
Lofland 22T & Alles 22S-HZ Existing Wells - Badley 23-31 (Exist) - Wellbore #1 - Wellbore #1													
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
8,600.0	6,833.4	6,831.4	6,831.4	51.8	136.6	-93.55	-167.4	2,727.4	1,405.5	1,217.5	188.05	7.474	
8,700.0	6,832.7	6,830.7	6,830.7	54.4	136.6	-93.30	-167.4	2,727.4	1,306.0	1,115.3	190.71	6.848	
8,800.0	6,832.1	6,830.1	6,830.1	57.0	136.6	-93.04	-167.4	2,727.4	1,206.6	1,013.3	193.37	6.240	
8,900.0	6,831.5	6,829.5	6,829.5	59.7	136.6	-92.79	-167.4	2,727.4	1,107.3	911.3	196.05	5.648	
9,000.0	6,830.9	6,828.9	6,828.9	62.3	136.6	-92.54	-167.4	2,727.4	1,008.2	809.5	198.74	5.073	
9,100.0	6,830.3	6,828.3	6,828.3	65.0	136.6	-92.28	-167.4	2,727.4	909.2	707.8	201.44	4.514	
9,200.0	6,829.7	6,827.7	6,827.7	67.7	136.6	-92.03	-167.4	2,727.4	810.5	606.4	204.15	3.970	
9,300.0	6,829.1	6,827.1	6,827.1	70.4	136.5	-91.78	-167.4	2,727.4	712.2	505.3	206.87	3.443	
9,400.0	6,828.5	6,826.5	6,826.5	73.1	136.5	-91.52	-167.4	2,727.4	614.4	404.8	209.58	2.931	
9,500.0	6,827.9	6,825.9	6,825.9	75.8	136.5	-91.27	-167.4	2,727.4	517.4	305.1	212.31	2.437	
9,600.0	6,827.2	6,825.2	6,825.2	78.6	136.5	-91.01	-167.4	2,727.4	421.9	206.8	215.03	1.962	
9,700.0	6,826.6	6,824.6	6,824.6	81.3	136.5	-90.76	-167.4	2,727.4	329.0	111.2	217.76	1.511	
9,800.0	6,826.0	6,824.0	6,824.0	84.0	136.5	-90.51	-167.4	2,727.4	241.8	21.3	220.49	1.097	Level 2
9,900.0	6,825.4	6,823.4	6,823.4	86.8	136.5	-90.25	-167.4	2,727.4	169.4	-53.8	223.22	0.759	Level 1
9,998.8	6,824.8	6,822.8	6,822.8	89.5	136.5	-90.00	-167.4	2,727.4	137.7	-88.2	225.92	0.609	Level 1, CC
10,000.0	6,824.8	6,822.8	6,822.8	89.5	136.5	-90.00	-167.4	2,727.4	137.7	-88.3	225.95	0.609	Level 1, ES, SF
10,100.0	6,824.2	6,822.2	6,822.2	92.3	136.4	-89.74	-167.4	2,727.4	170.9	-57.8	228.68	0.747	Level 1
10,200.0	6,823.6	6,821.6	6,821.6	95.0	136.4	-89.49	-167.4	2,727.4	243.8	12.4	231.41	1.054	Level 2
10,300.0	6,823.0	6,821.0	6,821.0	97.8	136.4	-89.23	-167.4	2,727.4	331.2	97.1	234.14	1.415	Level 3
10,400.0	6,822.4	6,820.4	6,820.4	100.5	136.4	-88.98	-167.4	2,727.4	424.2	187.3	236.87	1.791	
10,500.0	6,821.8	6,819.8	6,819.8	103.3	136.4	-88.73	-167.4	2,727.4	519.8	280.2	239.59	2.169	
10,600.0	6,821.1	6,819.1	6,819.1	106.0	136.4	-88.47	-167.4	2,727.4	616.8	374.5	242.31	2.545	
10,700.0	6,820.5	6,818.5	6,818.5	108.8	136.4	-88.22	-167.4	2,727.4	714.6	469.6	245.03	2.916	
10,800.0	6,819.9	6,817.9	6,817.9	111.6	136.4	-87.96	-167.4	2,727.4	813.0	565.2	247.75	3.281	
10,900.0	6,819.3	6,817.3	6,817.3	114.3	136.3	-87.71	-167.4	2,727.4	911.7	661.2	250.46	3.640	
11,000.0	6,818.7	6,816.7	6,816.7	117.1	136.3	-87.46	-167.4	2,727.4	1,010.6	757.5	253.17	3.992	
11,100.0	6,818.1	6,816.1	6,816.1	119.9	136.3	-87.20	-167.4	2,727.4	1,109.8	853.9	255.88	4.337	
11,200.0	6,817.5	6,815.5	6,815.5	122.7	136.3	-86.95	-167.4	2,727.4	1,209.1	950.5	258.58	4.676	
11,300.0	6,816.9	6,814.9	6,814.9	125.4	136.3	-86.70	-167.4	2,727.4	1,308.5	1,047.2	261.27	5.008	
11,400.0	6,816.3	6,814.3	6,814.3	128.2	136.3	-86.44	-167.4	2,727.4	1,407.9	1,144.0	263.97	5.334	
11,500.0	6,815.6	6,813.6	6,813.6	131.0	136.3	-86.19	-167.4	2,727.4	1,507.5	1,240.8	266.65	5.653	
11,600.0	6,815.0	6,813.0	6,813.0	133.8	136.3	-85.94	-167.4	2,727.4	1,607.1	1,337.8	269.34	5.967	
11,700.0	6,814.4	6,812.4	6,812.4	136.6	136.2	-85.68	-167.4	2,727.4	1,706.8	1,434.7	272.01	6.275	
11,800.0	6,813.8	6,811.8	6,811.8	139.3	136.2	-85.43	-167.4	2,727.4	1,806.4	1,531.8	274.68	6.576	
11,900.0	6,813.2	6,811.2	6,811.2	142.1	136.2	-85.18	-167.4	2,727.4	1,906.2	1,628.8	277.35	6.873	
12,000.0	6,812.6	6,810.6	6,810.6	144.9	136.2	-84.93	-167.4	2,727.4	2,005.9	1,725.9	280.01	7.164	
12,100.0	6,812.0	6,810.0	6,810.0	147.7	136.2	-84.67	-167.4	2,727.4	2,105.7	1,823.0	282.66	7.450	
12,200.0	6,811.4	6,809.4	6,809.4	150.5	136.2	-84.42	-167.4	2,727.4	2,205.5	1,920.2	285.31	7.730	
12,300.0	6,810.8	6,808.8	6,808.8	153.3	136.2	-84.17	-167.4	2,727.4	2,305.3	2,017.4	287.95	8.006	
12,400.0	6,810.1	6,808.1	6,808.1	156.0	136.2	-83.92	-167.4	2,727.4	2,405.1	2,114.5	290.58	8.277	
12,500.0	6,809.5	6,807.5	6,807.5	158.8	136.2	-83.67	-167.4	2,727.4	2,505.0	2,211.8	293.21	8.543	
12,587.4	6,809.0	6,807.0	6,807.0	161.3	136.1	-83.45	-167.4	2,727.4	2,592.2	2,296.7	295.50	8.772	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	93.06	-65.5	1,225.8	1,227.6					
100.0	100.0	98.0	98.0	0.1	2.0	93.06	-65.5	1,225.8	1,227.6	1,225.5	2.07	592.282		
200.0	200.0	198.0	198.0	0.3	4.0	93.06	-65.5	1,225.8	1,227.6	1,223.3	4.30	285.654		
300.0	300.0	298.0	298.0	0.6	6.0	93.06	-65.5	1,225.8	1,227.6	1,221.0	6.52	188.214		
400.0	400.0	398.0	398.0	0.8	8.0	93.06	-65.5	1,225.8	1,227.6	1,218.8	8.75	140.342		
500.0	500.0	498.0	498.0	1.0	10.0	93.06	-65.5	1,225.8	1,227.6	1,216.6	10.97	111.884		
600.0	600.0	598.0	598.0	1.2	12.0	93.06	-65.5	1,225.8	1,227.6	1,214.4	13.20	93.022		
700.0	700.0	698.0	698.0	1.4	14.0	-154.11	-65.5	1,225.8	1,229.1	1,213.7	15.39	79.839		
800.0	799.8	797.8	797.8	1.6	16.0	-154.17	-65.5	1,225.8	1,233.8	1,216.3	17.56	70.256		
900.0	899.5	897.5	897.5	1.9	17.9	-154.28	-65.5	1,225.8	1,241.7	1,222.0	19.71	62.998		
1,000.0	998.7	996.7	996.7	2.1	19.9	-154.43	-65.5	1,225.8	1,252.7	1,230.9	21.83	57.379		
1,054.8	1,052.9	1,050.9	1,050.9	2.3	21.0	-154.52	-65.5	1,225.8	1,260.1	1,237.1	22.98	54.828		
1,100.0	1,097.5	1,095.5	1,095.5	2.4	21.9	-154.66	-65.5	1,225.8	1,266.5	1,242.6	23.97	52.835		
1,200.0	1,196.3	1,194.3	1,194.3	2.7	23.9	-154.96	-65.5	1,225.8	1,280.9	1,254.7	26.17	48.949		
1,300.0	1,295.0	1,293.0	1,293.0	3.1	25.9	-155.26	-65.5	1,225.8	1,295.2	1,266.9	28.37	45.655		
1,400.0	1,393.8	1,391.8	1,391.8	3.4	27.8	-155.55	-65.5	1,225.8	1,309.6	1,279.1	30.58	42.830		
1,500.0	1,492.5	1,490.5	1,490.5	3.8	29.8	-155.83	-65.5	1,225.8	1,324.1	1,291.3	32.79	40.383		
1,600.0	1,591.2	1,589.2	1,589.2	4.1	31.8	-156.11	-65.5	1,225.8	1,338.6	1,303.6	35.00	38.244		
1,700.0	1,690.0	1,688.0	1,688.0	4.5	33.8	-156.38	-65.5	1,225.8	1,353.1	1,315.8	37.21	36.358		
1,800.0	1,788.7	1,786.7	1,786.7	4.8	35.7	-156.64	-65.5	1,225.8	1,367.6	1,328.2	39.43	34.684		
1,900.0	1,887.5	1,885.5	1,885.5	5.2	37.7	-156.90	-65.5	1,225.8	1,382.1	1,340.5	41.65	33.188		
2,000.0	1,986.2	1,984.2	1,984.2	5.6	39.7	-157.16	-65.5	1,225.8	1,396.7	1,352.9	43.86	31.844		
2,100.0	2,084.9	2,082.9	2,082.9	5.9	41.7	-157.40	-65.5	1,225.8	1,411.3	1,365.3	46.08	30.629		
2,200.0	2,183.7	2,181.7	2,181.7	6.3	43.6	-157.65	-65.5	1,225.8	1,426.0	1,377.7	48.29	29.526		
2,300.0	2,282.4	2,280.4	2,280.4	6.7	45.6	-157.89	-65.5	1,225.8	1,440.6	1,390.1	50.51	28.521		
2,400.0	2,381.2	2,379.2	2,379.2	7.1	47.6	-158.12	-65.5	1,225.8	1,455.3	1,402.6	52.73	27.600		
2,500.0	2,479.9	2,477.9	2,477.9	7.4	49.6	-158.35	-65.5	1,225.8	1,470.0	1,415.1	54.94	26.755		
2,600.0	2,578.7	2,576.7	2,576.7	7.8	51.5	-158.57	-65.5	1,225.8	1,484.8	1,427.6	57.16	25.975		
2,700.0	2,677.4	2,675.4	2,675.4	8.2	53.5	-158.80	-65.5	1,225.8	1,499.5	1,440.1	59.38	25.255		
2,800.0	2,776.1	2,774.1	2,774.1	8.6	55.5	-159.01	-65.5	1,225.8	1,514.3	1,452.7	61.59	24.586		
2,900.0	2,874.9	2,872.9	2,872.9	8.9	57.5	-159.22	-65.5	1,225.8	1,529.1	1,465.3	63.81	23.964		
3,000.0	2,973.6	2,971.6	2,971.6	9.3	59.4	-159.43	-65.5	1,225.8	1,543.9	1,477.9	66.02	23.385		
3,100.0	3,072.4	3,070.4	3,070.4	9.7	61.4	-159.63	-65.5	1,225.8	1,558.7	1,490.5	68.24	22.843		
3,200.0	3,171.1	3,169.1	3,169.1	10.1	63.4	-159.83	-65.5	1,225.8	1,573.6	1,503.1	70.45	22.336		
3,300.0	3,269.9	3,267.9	3,267.9	10.4	65.4	-160.03	-65.5	1,225.8	1,588.5	1,515.8	72.66	21.861		
3,400.0	3,368.6	3,366.6	3,366.6	10.8	67.3	-160.22	-65.5	1,225.8	1,603.3	1,528.5	74.88	21.413		
3,500.0	3,467.3	3,465.3	3,465.3	11.2	69.3	-160.41	-65.5	1,225.8	1,618.3	1,541.2	77.09	20.992		
3,600.0	3,566.1	3,564.1	3,564.1	11.6	71.3	-160.60	-65.5	1,225.8	1,633.2	1,553.9	79.30	20.595		
3,700.0	3,664.8	3,662.8	3,662.8	12.0	73.3	-160.78	-65.5	1,225.8	1,648.1	1,566.6	81.51	20.219		
3,800.0	3,763.6	3,761.6	3,761.6	12.3	75.2	-160.96	-65.5	1,225.8	1,663.1	1,579.4	83.73	19.863		
3,900.0	3,862.3	3,860.3	3,860.3	12.7	77.2	-161.14	-65.5	1,225.8	1,678.0	1,592.1	85.94	19.527		
4,000.0	3,961.0	3,959.0	3,959.0	13.1	79.2	-161.31	-65.5	1,225.8	1,693.0	1,604.9	88.15	19.207		
4,100.0	4,059.8	4,057.8	4,057.8	13.5	81.2	-161.48	-65.5	1,225.8	1,708.0	1,617.7	90.36	18.903		
4,200.0	4,158.5	4,156.5	4,156.5	13.9	83.1	-161.65	-65.5	1,225.8	1,723.1	1,630.5	92.57	18.614		
4,300.0	4,257.3	4,255.3	4,255.3	14.2	85.1	-161.81	-65.5	1,225.8	1,738.1	1,643.3	94.78	18.338		
4,400.0	4,356.0	4,354.0	4,354.0	14.6	87.1	-161.97	-65.5	1,225.8	1,753.1	1,656.1	96.99	18.076		
4,500.0	4,454.8	4,452.8	4,452.8	15.0	89.1	-162.13	-65.5	1,225.8	1,768.2	1,669.0	99.20	17.825		
4,600.0	4,553.5	4,551.5	4,551.5	15.4	91.0	-162.28	-65.5	1,225.8	1,783.3	1,681.9	101.41	17.585		
4,700.0	4,652.2	4,650.2	4,650.2	15.8	93.0	-162.44	-65.5	1,225.8	1,798.3	1,694.7	103.62	17.356		
4,800.0	4,751.0	4,749.0	4,749.0	16.1	95.0	-162.59	-65.5	1,225.8	1,813.4	1,707.6	105.83	17.136		
4,900.0	4,849.7	4,847.7	4,847.7	16.5	97.0	-162.74	-65.5	1,225.8	1,828.6	1,720.5	108.03	16.926		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
5,000.0	4,948.5	4,946.5	4,946.5	16.9	98.9	-162.88	-65.5	1,225.8	1,843.7	1,733.4	110.24	16.724		
5,100.0	5,047.2	5,045.2	5,045.2	17.3	100.9	-163.03	-65.5	1,225.8	1,858.8	1,746.4	112.45	16.530		
5,200.0	5,146.0	5,144.0	5,144.0	17.7	102.9	-163.17	-65.5	1,225.8	1,873.9	1,759.3	114.66	16.344		
5,300.0	5,244.7	5,242.7	5,242.7	18.0	104.9	-163.30	-65.5	1,225.8	1,889.1	1,772.2	116.86	16.165		
5,403.7	5,347.1	5,345.1	5,345.1	18.4	106.9	-163.45	-65.5	1,225.8	1,904.8	1,785.7	119.15	15.986		
5,500.0	5,442.4	5,440.4	5,440.4	18.7	108.8	-163.64	-65.5	1,225.8	1,917.9	1,796.2	121.72	15.757		
5,600.0	5,541.8	5,539.8	5,539.8	18.9	110.8	-163.78	-65.5	1,225.8	1,928.2	1,804.0	124.25	15.519		
5,700.0	5,641.6	5,639.6	5,639.6	19.1	112.8	-163.88	-65.5	1,225.8	1,935.2	1,808.6	126.64	15.281		
5,800.0	5,741.5	5,739.5	5,739.5	19.3	114.8	-163.93	-65.5	1,225.8	1,938.9	1,809.9	128.91	15.041		
5,858.5	5,800.0	5,798.0	5,798.0	19.4	116.0	83.21	-65.5	1,225.8	1,939.4	1,804.5	134.90	14.377		
5,900.0	5,841.5	5,839.5	5,839.5	19.4	116.8	83.21	-65.5	1,225.8	1,939.4	1,803.6	135.78	14.283		
6,000.0	5,941.5	5,939.5	5,939.5	19.5	118.8	83.21	-65.5	1,225.8	1,939.4	1,801.5	137.92	14.062		
6,100.0	6,041.5	6,039.5	6,039.5	19.7	120.8	83.21	-65.5	1,225.8	1,939.4	1,799.4	140.05	13.848		
6,135.6	6,077.1	6,075.1	6,075.1	19.7	121.5	83.21	-65.5	1,225.8	1,939.4	1,798.6	140.81	13.773		
6,150.0	6,091.5	6,089.5	6,089.5	19.7	121.8	-6.97	-65.5	1,225.8	1,939.3	1,802.8	136.45	14.212		
6,200.0	6,141.4	6,139.4	6,139.4	19.8	122.8	-7.00	-65.5	1,225.8	1,936.7	1,799.8	136.98	14.139		
6,250.0	6,191.1	6,189.1	6,189.1	19.8	123.8	-7.07	-65.5	1,225.8	1,930.9	1,794.0	136.91	14.104		
6,300.0	6,240.2	6,238.2	6,238.2	19.8	124.8	-7.19	-65.5	1,225.8	1,921.9	1,785.7	136.24	14.107		
6,350.0	6,288.7	6,286.7	6,286.7	19.7	125.7	-7.36	-65.5	1,225.8	1,909.8	1,774.8	134.95	14.151		
6,400.0	6,336.2	6,334.2	6,334.2	19.7	126.7	-7.57	-65.5	1,225.8	1,894.5	1,761.4	133.06	14.238		
6,450.0	6,382.7	6,380.7	6,380.7	19.6	127.6	-7.85	-65.5	1,225.8	1,876.1	1,745.6	130.56	14.370		
6,500.0	6,427.8	6,425.8	6,425.8	19.5	128.5	-8.19	-65.5	1,225.8	1,854.8	1,727.4	127.47	14.551		
6,550.0	6,471.5	6,469.5	6,469.5	19.4	129.4	-8.60	-65.5	1,225.8	1,830.6	1,706.8	123.81	14.786		
6,600.0	6,513.4	6,511.4	6,511.4	19.3	130.2	-9.10	-65.5	1,225.8	1,803.7	1,684.1	119.61	15.079		
6,650.0	6,553.5	6,551.5	6,551.5	19.2	131.0	-9.71	-65.5	1,225.8	1,774.1	1,659.1	114.92	15.437		
6,700.0	6,591.5	6,589.5	6,589.5	19.1	131.8	-10.44	-65.5	1,225.8	1,741.9	1,632.1	109.81	15.864		
6,750.0	6,627.4	6,625.4	6,625.4	19.1	132.5	-11.33	-65.5	1,225.8	1,707.4	1,603.0	104.36	16.360		
6,800.0	6,660.9	6,658.9	6,658.9	19.0	133.2	-12.43	-65.5	1,225.8	1,670.6	1,571.9	98.74	16.920		
6,850.0	6,691.8	6,689.8	6,689.8	19.0	133.8	-13.78	-65.5	1,225.8	1,631.8	1,538.6	93.15	17.519		
6,900.0	6,720.2	6,718.2	6,718.2	19.1	134.4	-15.47	-65.5	1,225.8	1,591.1	1,503.1	87.93	18.094		
6,950.0	6,745.8	6,743.8	6,743.8	19.2	134.9	-17.62	-65.5	1,225.8	1,548.6	1,465.0	83.63	18.516		
7,000.0	6,768.5	6,766.5	6,766.5	19.4	135.3	-20.40	-65.5	1,225.8	1,504.6	1,423.5	81.08	18.558		
7,050.0	6,788.3	6,786.3	6,786.3	19.7	135.7	-24.08	-65.5	1,225.8	1,459.3	1,377.8	81.46	17.914		
7,100.0	6,805.0	6,803.0	6,803.0	20.0	136.1	-29.07	-65.5	1,225.8	1,412.8	1,326.5	86.33	16.366		
7,150.0	6,818.6	6,816.6	6,816.6	20.5	136.3	-36.00	-65.5	1,225.8	1,365.4	1,268.2	97.17	14.052		
7,200.0	6,829.1	6,827.1	6,827.1	21.0	136.5	-45.77	-65.5	1,225.8	1,317.3	1,202.7	114.59	11.495		
7,250.0	6,836.3	6,834.3	6,834.3	21.6	136.7	-59.33	-65.5	1,225.8	1,268.6	1,132.2	136.37	9.303		
7,300.0	6,840.2	6,838.2	6,838.2	22.3	136.8	-76.65	-65.5	1,225.8	1,219.7	1,065.1	154.62	7.888		
7,340.3	6,841.1	6,839.1	6,839.1	22.9	136.8	-91.72	-65.5	1,225.8	1,180.2	1,020.6	159.57	7.396		
7,400.0	6,840.7	6,838.7	6,838.7	23.9	136.8	-91.63	-65.5	1,225.8	1,121.7	961.2	160.55	6.987		
7,500.0	6,840.1	6,838.1	6,838.1	25.6	136.8	-91.48	-65.5	1,225.8	1,024.2	861.8	162.35	6.308		
7,600.0	6,839.5	6,837.5	6,837.5	27.6	136.7	-91.33	-65.5	1,225.8	927.1	762.8	164.31	5.642		
7,700.0	6,838.9	6,836.9	6,836.9	29.7	136.7	-91.19	-65.5	1,225.8	830.8	664.4	166.41	4.992		
7,800.0	6,838.2	6,836.2	6,836.2	31.9	136.7	-91.04	-65.5	1,225.8	735.4	566.8	168.62	4.361		
7,900.0	6,837.6	6,835.6	6,835.6	34.2	136.7	-90.89	-65.5	1,225.8	641.5	470.6	170.91	3.753		
8,000.0	6,837.0	6,835.0	6,835.0	36.6	136.7	-90.74	-65.5	1,225.8	549.7	376.4	173.28	3.172		
8,100.0	6,836.4	6,834.4	6,834.4	39.0	136.7	-90.59	-65.5	1,225.8	461.3	285.6	175.70	2.625		
8,200.0	6,835.8	6,833.8	6,833.8	41.5	136.7	-90.44	-65.5	1,225.8	378.7	200.5	178.17	2.125		
8,300.0	6,835.2	6,833.2	6,833.2	44.0	136.7	-90.29	-65.5	1,225.8	306.6	126.0	180.67	1.697		
8,400.0	6,834.6	6,832.6	6,832.6	46.6	136.7	-90.14	-65.5	1,225.8	254.3	71.1	183.21	1.388 Level 3		
8,496.8	6,834.0	6,832.0	6,832.0	49.1	136.6	-90.00	-65.5	1,225.8	235.1	49.4	185.69	1.266 Level 3, CC		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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	6,834.0	6,832.0	6,832.0	49.2	136.6	-90.00	-65.5	1,225.8	235.2	49.4	185.78	1.266	Level 3, ES, SF	
8,600.0	6,833.4	6,831.4	6,831.4	51.8	136.6	-89.85	-65.5	1,225.8	256.8	68.4	188.37	1.363	Level 3	
8,700.0	6,832.7	6,830.7	6,830.7	54.4	136.6	-89.70	-65.5	1,225.8	310.7	119.8	190.97	1.627		
8,800.0	6,832.1	6,830.1	6,830.1	57.0	136.6	-89.55	-65.5	1,225.8	383.7	190.1	193.60	1.982		
8,900.0	6,831.5	6,829.5	6,829.5	59.7	136.6	-89.40	-65.5	1,225.8	466.7	270.5	196.24	2.378		
9,000.0	6,830.9	6,828.9	6,828.9	62.3	136.6	-89.25	-65.5	1,225.8	555.4	356.5	198.89	2.793		
9,100.0	6,830.3	6,828.3	6,828.3	65.0	136.6	-89.10	-65.5	1,225.8	647.4	445.8	201.55	3.212		
9,200.0	6,829.7	6,827.7	6,827.7	67.7	136.6	-88.95	-65.5	1,225.8	741.4	537.2	204.21	3.631		
9,300.0	6,829.1	6,827.1	6,827.1	70.4	136.5	-88.80	-65.5	1,225.8	836.9	630.0	206.89	4.045		
9,400.0	6,828.5	6,826.5	6,826.5	73.1	136.5	-88.66	-65.5	1,225.8	933.3	723.7	209.57	4.453		
9,500.0	6,827.9	6,825.9	6,825.9	75.8	136.5	-88.51	-65.5	1,225.8	1,030.3	818.1	212.26	4.854		
9,600.0	6,827.2	6,825.2	6,825.2	78.6	136.5	-88.36	-65.5	1,225.8	1,127.9	913.0	214.96	5.247		
9,700.0	6,826.6	6,824.6	6,824.6	81.3	136.5	-88.21	-65.5	1,225.8	1,225.9	1,008.3	217.65	5.632		
9,800.0	6,826.0	6,824.0	6,824.0	84.0	136.5	-88.06	-65.5	1,225.8	1,324.2	1,103.8	220.36	6.009		
9,900.0	6,825.4	6,823.4	6,823.4	86.8	136.5	-87.91	-65.5	1,225.8	1,422.7	1,199.6	223.06	6.378		
10,000.0	6,824.8	6,822.8	6,822.8	89.5	136.5	-87.76	-65.5	1,225.8	1,521.4	1,295.7	225.77	6.739		
10,100.0	6,824.2	6,822.2	6,822.2	92.3	136.4	-87.62	-65.5	1,225.8	1,620.3	1,391.8	228.48	7.092		
10,200.0	6,823.6	6,821.6	6,821.6	95.0	136.4	-87.47	-65.5	1,225.8	1,719.3	1,488.1	231.19	7.437		
10,300.0	6,823.0	6,821.0	6,821.0	97.8	136.4	-87.32	-65.5	1,225.8	1,818.4	1,584.5	233.90	7.774		
10,400.0	6,822.4	6,820.4	6,820.4	100.5	136.4	-87.17	-65.5	1,225.8	1,917.6	1,681.0	236.61	8.104		
10,500.0	6,821.8	6,819.8	6,819.8	103.3	136.4	-87.02	-65.5	1,225.8	2,016.9	1,777.6	239.32	8.427		
10,600.0	6,821.1	6,819.1	6,819.1	106.0	136.4	-86.87	-65.5	1,225.8	2,116.2	1,874.2	242.04	8.743		
10,700.0	6,820.5	6,818.5	6,818.5	108.8	136.4	-86.72	-65.5	1,225.8	2,215.6	1,970.9	244.75	9.053		
10,800.0	6,819.9	6,817.9	6,817.9	111.6	136.4	-86.58	-65.5	1,225.8	2,315.1	2,067.6	247.46	9.355		
10,900.0	6,819.3	6,817.3	6,817.3	114.3	136.3	-86.43	-65.5	1,225.8	2,414.6	2,164.4	250.18	9.652		
11,000.0	6,818.7	6,816.7	6,816.7	117.1	136.3	-86.28	-65.5	1,225.8	2,514.1	2,261.3	252.89	9.942		
11,100.0	6,818.1	6,816.1	6,816.1	119.9	136.3	-86.13	-65.5	1,225.8	2,613.7	2,358.1	255.60	10.226		
11,200.0	6,817.5	6,815.5	6,815.5	122.7	136.3	-85.98	-65.5	1,225.8	2,713.3	2,455.0	258.31	10.504		
11,300.0	6,816.9	6,814.9	6,814.9	125.4	136.3	-85.83	-65.5	1,225.8	2,813.0	2,551.9	261.02	10.777		
11,400.0	6,816.3	6,814.3	6,814.3	128.2	136.3	-85.69	-65.5	1,225.8	2,912.6	2,648.9	263.73	11.044		
11,500.0	6,815.6	6,813.6	6,813.6	131.0	136.3	-85.54	-65.5	1,225.8	3,012.3	2,745.9	266.44	11.306		
11,600.0	6,815.0	6,813.0	6,813.0	133.8	136.3	-85.39	-65.5	1,225.8	3,112.0	2,842.9	269.15	11.563		
11,700.0	6,814.4	6,812.4	6,812.4	136.6	136.2	-85.24	-65.5	1,225.8	3,211.7	2,939.9	271.85	11.814		
11,800.0	6,813.8	6,811.8	6,811.8	139.3	136.2	-85.10	-65.5	1,225.8	3,311.5	3,036.9	274.55	12.061		
11,900.0	6,813.2	6,811.2	6,811.2	142.1	136.2	-84.95	-65.5	1,225.8	3,411.2	3,134.0	277.25	12.304		
12,000.0	6,812.6	6,810.6	6,810.6	144.9	136.2	-84.80	-65.5	1,225.8	3,511.0	3,231.0	279.95	12.541		
12,100.0	6,812.0	6,810.0	6,810.0	147.7	136.2	-84.65	-65.5	1,225.8	3,610.8	3,328.1	282.65	12.775		
12,200.0	6,811.4	6,809.4	6,809.4	150.5	136.2	-84.50	-65.5	1,225.8	3,710.6	3,425.2	285.35	13.004		
12,300.0	6,810.8	6,808.8	6,808.8	153.3	136.2	-84.36	-65.5	1,225.8	3,810.4	3,522.3	288.04	13.229		
12,400.0	6,810.1	6,808.1	6,808.1	156.0	136.2	-84.21	-65.5	1,225.8	3,910.2	3,619.4	290.73	13.450		
12,500.0	6,809.5	6,807.5	6,807.5	158.8	136.2	-84.06	-65.5	1,225.8	4,010.0	3,716.6	293.42	13.666		
12,587.4	6,809.0	6,807.0	6,807.0	161.3	136.1	-83.93	-65.5	1,225.8	4,097.2	3,801.5	295.77	13.853		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	92.28	-203.5	5,112.2	5,116.2					
100.0	100.0	96.0	96.0	0.1	1.9	92.28	-203.5	5,112.2	5,116.2	5,114.2	2.03	2,517.110		
200.0	200.0	196.0	196.0	0.3	3.9	92.28	-203.5	5,112.2	5,116.2	5,112.0	4.26	1,201.742		
300.0	300.0	296.0	296.0	0.6	5.9	92.28	-203.5	5,112.2	5,116.2	5,109.7	6.48	789.285		
400.0	400.0	396.0	396.0	0.8	7.9	92.28	-203.5	5,112.2	5,116.2	5,107.5	8.71	587.608		
500.0	500.0	496.0	496.0	1.0	9.9	92.28	-203.5	5,112.2	5,116.2	5,105.3	10.93	468.020		
600.0	600.0	596.0	596.0	1.2	11.9	92.28	-203.5	5,112.2	5,116.2	5,103.1	13.16	388.878		
700.0	700.0	696.0	696.0	1.4	13.9	-154.86	-203.5	5,112.2	5,117.8	5,102.5	15.35	333.302		
800.0	799.8	795.8	795.8	1.6	15.9	-154.85	-203.5	5,112.2	5,122.5	5,105.0	17.52	292.357		
900.0	899.5	895.5	895.5	1.9	17.9	-154.82	-203.5	5,112.2	5,130.4	5,110.8	19.67	260.838		
1,000.0	998.7	994.7	994.7	2.1	19.9	-154.79	-203.5	5,112.2	5,141.5	5,119.7	21.79	235.947		
1,054.8	1,052.9	1,048.9	1,048.9	2.3	21.0	-154.76	-203.5	5,112.2	5,148.9	5,125.9	22.94	224.437		
1,100.0	1,097.5	1,093.5	1,093.5	2.4	21.9	-154.79	-203.5	5,112.2	5,155.3	5,131.4	23.93	215.427		
1,200.0	1,196.3	1,192.3	1,192.3	2.7	23.8	-154.87	-203.5	5,112.2	5,169.7	5,143.6	26.13	197.855		
1,300.0	1,295.0	1,291.0	1,291.0	3.1	25.8	-154.94	-203.5	5,112.2	5,184.0	5,155.7	28.33	182.964		
1,400.0	1,393.8	1,389.8	1,389.8	3.4	27.8	-155.02	-203.5	5,112.2	5,198.4	5,167.9	30.54	170.195		
1,500.0	1,492.5	1,488.5	1,488.5	3.8	29.8	-155.09	-203.5	5,112.2	5,212.8	5,180.0	32.76	159.130		
1,600.0	1,591.2	1,587.2	1,587.2	4.1	31.7	-155.16	-203.5	5,112.2	5,227.1	5,192.2	34.97	149.454		
1,700.0	1,690.0	1,686.0	1,686.0	4.5	33.7	-155.23	-203.5	5,112.2	5,241.5	5,204.3	37.19	140.922		
1,800.0	1,788.7	1,784.7	1,784.7	4.8	35.7	-155.31	-203.5	5,112.2	5,255.9	5,216.5	39.42	133.346		
1,900.0	1,887.5	1,883.5	1,883.5	5.2	37.7	-155.38	-203.5	5,112.2	5,270.3	5,228.7	41.64	126.574		
2,000.0	1,986.2	1,982.2	1,982.2	5.6	39.6	-155.45	-203.5	5,112.2	5,284.7	5,240.9	43.86	120.485		
2,100.0	2,084.9	2,080.9	2,080.9	5.9	41.6	-155.52	-203.5	5,112.2	5,299.1	5,253.1	46.09	114.982		
2,200.0	2,183.7	2,179.7	2,179.7	6.3	43.6	-155.59	-203.5	5,112.2	5,313.6	5,265.2	48.31	109.985		
2,300.0	2,282.4	2,278.4	2,278.4	6.7	45.6	-155.66	-203.5	5,112.2	5,328.0	5,277.5	50.54	105.426		
2,400.0	2,381.2	2,377.2	2,377.2	7.1	47.5	-155.73	-203.5	5,112.2	5,342.4	5,289.7	52.76	101.252		
2,500.0	2,479.9	2,475.9	2,475.9	7.4	49.5	-155.80	-203.5	5,112.2	5,356.9	5,301.9	54.99	97.415		
2,600.0	2,578.7	2,574.7	2,574.7	7.8	51.5	-155.87	-203.5	5,112.2	5,371.3	5,314.1	57.22	93.876		
2,700.0	2,677.4	2,673.4	2,673.4	8.2	53.5	-155.94	-203.5	5,112.2	5,385.8	5,326.4	59.44	90.603		
2,800.0	2,776.1	2,772.1	2,772.1	8.6	55.4	-156.01	-203.5	5,112.2	5,400.3	5,338.6	61.67	87.565		
2,900.0	2,874.9	2,870.9	2,870.9	8.9	57.4	-156.07	-203.5	5,112.2	5,414.7	5,350.8	63.90	84.740		
3,000.0	2,973.6	2,969.6	2,969.6	9.3	59.4	-156.14	-203.5	5,112.2	5,429.2	5,363.1	66.13	82.105		
3,100.0	3,072.4	3,068.4	3,068.4	9.7	61.4	-156.21	-203.5	5,112.2	5,443.7	5,375.4	68.35	79.642		
3,200.0	3,171.1	3,167.1	3,167.1	10.1	63.3	-156.28	-203.5	5,112.2	5,458.2	5,387.6	70.58	77.334		
3,300.0	3,269.9	3,265.9	3,265.9	10.4	65.3	-156.34	-203.5	5,112.2	5,472.7	5,399.9	72.81	75.168		
3,400.0	3,368.6	3,364.6	3,364.6	10.8	67.3	-156.41	-203.5	5,112.2	5,487.2	5,412.2	75.03	73.130		
3,500.0	3,467.3	3,463.3	3,463.3	11.2	69.3	-156.47	-203.5	5,112.2	5,501.8	5,424.5	77.26	71.210		
3,600.0	3,566.1	3,562.1	3,562.1	11.6	71.2	-156.54	-203.5	5,112.2	5,516.3	5,436.8	79.49	69.398		
3,700.0	3,664.8	3,660.8	3,660.8	12.0	73.2	-156.60	-203.5	5,112.2	5,530.8	5,449.1	81.71	67.685		
3,800.0	3,763.6	3,759.6	3,759.6	12.3	75.2	-156.67	-203.5	5,112.2	5,545.4	5,461.4	83.94	66.063		
3,900.0	3,862.3	3,858.3	3,858.3	12.7	77.2	-156.73	-203.5	5,112.2	5,559.9	5,473.8	86.17	64.524		
4,000.0	3,961.0	3,957.0	3,957.0	13.1	79.1	-156.80	-203.5	5,112.2	5,574.5	5,486.1	88.39	63.064		
4,100.0	4,059.8	4,055.8	4,055.8	13.5	81.1	-156.86	-203.5	5,112.2	5,589.0	5,498.4	90.62	61.675		
4,200.0	4,158.5	4,154.5	4,154.5	13.9	83.1	-156.92	-203.5	5,112.2	5,603.6	5,510.8	92.85	60.354		
4,300.0	4,257.3	4,253.3	4,253.3	14.2	85.1	-156.99	-203.5	5,112.2	5,618.2	5,523.1	95.07	59.094		
4,400.0	4,356.0	4,352.0	4,352.0	14.6	87.0	-157.05	-203.5	5,112.2	5,632.8	5,535.5	97.30	57.892		
4,500.0	4,454.8	4,450.8	4,450.8	15.0	89.0	-157.11	-203.5	5,112.2	5,647.4	5,547.8	99.52	56.744		
4,600.0	4,553.5	4,549.5	4,549.5	15.4	91.0	-157.18	-203.5	5,112.2	5,662.0	5,560.2	101.75	55.647		
4,700.0	4,652.2	4,648.2	4,648.2	15.8	93.0	-157.24	-203.5	5,112.2	5,676.6	5,572.6	103.97	54.596		
4,800.0	4,751.0	4,747.0	4,747.0	16.1	94.9	-157.30	-203.5	5,112.2	5,691.2	5,585.0	106.20	53.590		
4,900.0	4,849.7	4,845.7	4,845.7	16.5	96.9	-157.36	-203.5	5,112.2	5,705.8	5,597.4	108.42	52.625		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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	4,948.5	4,944.5	4,944.5	16.9	98.9	-157.42	-203.5	5,112.2	5,720.4	5,609.8	110.65	51.699		
5,100.0	5,047.2	5,043.2	5,043.2	17.3	100.9	-157.48	-203.5	5,112.2	5,735.0	5,622.2	112.87	50.810		
5,200.0	5,146.0	5,142.0	5,142.0	17.7	102.8	-157.54	-203.5	5,112.2	5,749.7	5,634.6	115.10	49.955		
5,300.0	5,244.7	5,240.7	5,240.7	18.0	104.8	-157.60	-203.5	5,112.2	5,764.3	5,647.0	117.32	49.133		
5,403.7	5,347.1	5,343.1	5,343.1	18.4	106.9	-157.66	-203.5	5,112.2	5,779.5	5,659.9	119.63	48.313		
5,500.0	5,442.4	5,438.4	5,438.4	18.7	108.8	-157.81	-203.5	5,112.2	5,792.1	5,670.0	122.17	47.411		
5,600.0	5,541.8	5,537.8	5,537.8	18.9	110.8	-157.93	-203.5	5,112.2	5,802.1	5,677.4	124.67	46.540		
5,700.0	5,641.6	5,637.6	5,637.6	19.1	112.8	-158.00	-203.5	5,112.2	5,808.8	5,681.8	127.05	45.720		
5,800.0	5,741.5	5,737.5	5,737.5	19.3	114.7	-158.04	-203.5	5,112.2	5,812.3	5,683.0	129.31	44.950		
5,858.5	5,800.0	5,796.0	5,796.0	19.4	115.9	89.10	-203.5	5,112.2	5,812.9	5,678.4	134.52	43.211		
5,900.0	5,841.5	5,837.5	5,837.5	19.4	116.7	89.10	-203.5	5,112.2	5,812.9	5,677.5	135.41	42.928		
6,000.0	5,941.5	5,937.5	5,937.5	19.5	118.7	89.10	-203.5	5,112.2	5,812.9	5,675.4	137.55	42.261		
6,100.0	6,041.5	6,037.5	6,037.5	19.7	120.7	89.10	-203.5	5,112.2	5,812.9	5,673.2	139.69	41.614		
6,135.6	6,077.1	6,073.1	6,073.1	19.7	121.5	89.10	-203.5	5,112.2	5,812.9	5,672.5	140.45	41.388		
6,150.0	6,091.5	6,087.5	6,087.5	19.7	121.7	-1.07	-203.5	5,112.2	5,812.8	5,675.9	136.84	42.480		
6,200.0	6,141.4	6,137.4	6,137.4	19.8	122.7	-1.08	-203.5	5,112.2	5,810.2	5,672.8	137.36	42.300		
6,250.0	6,191.1	6,187.1	6,187.1	19.8	123.7	-1.08	-203.5	5,112.2	5,804.4	5,667.1	137.28	42.282		
6,300.0	6,240.2	6,236.2	6,236.2	19.8	124.7	-1.10	-203.5	5,112.2	5,795.3	5,658.7	136.58	42.430		
6,350.0	6,288.7	6,284.7	6,284.7	19.7	125.7	-1.12	-203.5	5,112.2	5,783.0	5,647.8	135.27	42.752		
6,400.0	6,336.2	6,332.2	6,332.2	19.7	126.6	-1.15	-203.5	5,112.2	5,767.6	5,634.3	133.33	43.258		
6,450.0	6,382.7	6,378.7	6,378.7	19.6	127.6	-1.18	-203.5	5,112.2	5,749.1	5,618.4	130.76	43.966		
6,500.0	6,427.8	6,423.8	6,423.8	19.5	128.5	-1.22	-203.5	5,112.2	5,727.7	5,600.1	127.58	44.895		
6,550.0	6,471.5	6,467.5	6,467.5	19.4	129.3	-1.27	-203.5	5,112.2	5,703.3	5,579.5	123.78	46.075		
6,600.0	6,513.4	6,509.4	6,509.4	19.3	130.2	-1.34	-203.5	5,112.2	5,676.1	5,556.7	119.39	47.544		
6,650.0	6,553.5	6,549.5	6,549.5	19.2	131.0	-1.41	-203.5	5,112.2	5,646.2	5,531.8	114.41	49.349		
6,700.0	6,591.5	6,587.5	6,587.5	19.1	131.8	-1.50	-203.5	5,112.2	5,613.8	5,504.9	108.89	51.557		
6,750.0	6,627.4	6,623.4	6,623.4	19.1	132.5	-1.61	-203.5	5,112.2	5,578.9	5,476.1	102.84	54.251		
6,800.0	6,660.9	6,656.9	6,656.9	19.0	133.1	-1.74	-203.5	5,112.2	5,541.8	5,445.5	96.30	57.549		
6,850.0	6,691.8	6,687.8	6,687.8	19.0	133.8	-1.90	-203.5	5,112.2	5,502.6	5,413.3	89.32	61.607		
6,900.0	6,720.2	6,716.2	6,716.2	19.1	134.3	-2.11	-203.5	5,112.2	5,461.4	5,379.5	81.95	66.644		
6,950.0	6,745.8	6,741.8	6,741.8	19.2	134.8	-2.37	-203.5	5,112.2	5,418.5	5,344.2	74.25	72.974		
7,000.0	6,768.5	6,764.5	6,764.5	19.4	135.3	-2.72	-203.5	5,112.2	5,374.0	5,307.7	66.31	81.044		
7,050.0	6,788.3	6,784.3	6,784.3	19.7	135.7	-3.20	-203.5	5,112.2	5,328.1	5,269.8	58.23	91.498		
7,100.0	6,805.0	6,801.0	6,801.0	20.0	136.0	-3.88	-203.5	5,112.2	5,281.0	5,230.8	50.21	105.183		
7,150.0	6,818.6	6,814.6	6,814.6	20.5	136.3	-4.93	-203.5	5,112.2	5,232.9	5,190.2	42.67	122.642		
7,200.0	6,829.1	6,825.1	6,825.1	21.0	136.5	-6.77	-203.5	5,112.2	5,184.0	5,147.0	36.96	140.263		
7,250.0	6,836.3	6,832.3	6,832.3	21.6	136.6	-10.71	-203.5	5,112.2	5,134.5	5,096.4	38.19	134.454		
7,300.0	6,840.2	6,836.2	6,836.2	22.3	136.7	-24.62	-203.5	5,112.2	5,084.7	5,015.9	68.82	73.886		
7,340.3	6,841.1	6,837.1	6,837.1	22.9	136.7	-105.83	-203.5	5,112.2	5,044.4	4,890.6	153.85	32.788		
7,400.0	6,840.7	6,836.7	6,836.7	23.9	136.7	-105.65	-203.5	5,112.2	4,984.8	4,829.8	154.92	32.177		
7,500.0	6,840.1	6,836.1	6,836.1	25.6	136.7	-105.35	-203.5	5,112.2	4,884.8	4,727.9	156.86	31.140		
7,600.0	6,839.5	6,835.5	6,835.5	27.6	136.7	-105.05	-203.5	5,112.2	4,784.8	4,625.8	158.97	30.098		
7,700.0	6,838.9	6,834.9	6,834.9	29.7	136.7	-104.75	-203.5	5,112.2	4,684.8	4,523.6	161.21	29.060		
7,800.0	6,838.2	6,834.2	6,834.2	31.9	136.7	-104.45	-203.5	5,112.2	4,584.9	4,421.3	163.56	28.032		
7,900.0	6,837.6	6,833.6	6,833.6	34.2	136.7	-104.15	-203.5	5,112.2	4,484.9	4,318.9	165.99	27.019		
8,000.0	6,837.0	6,833.0	6,833.0	36.6	136.7	-103.85	-203.5	5,112.2	4,384.9	4,216.4	168.49	26.025		
8,100.0	6,836.4	6,832.4	6,832.4	39.0	136.6	-103.54	-203.5	5,112.2	4,285.0	4,113.9	171.05	25.051		
8,200.0	6,835.8	6,831.8	6,831.8	41.5	136.6	-103.24	-203.5	5,112.2	4,185.0	4,011.3	173.66	24.099		
8,300.0	6,835.2	6,831.2	6,831.2	44.0	136.6	-102.93	-203.5	5,112.2	4,085.0	3,908.7	176.31	23.170		
8,400.0	6,834.6	6,830.6	6,830.6	46.6	136.6	-102.62	-203.5	5,112.2	3,985.1	3,806.1	178.99	22.264		
8,500.0	6,834.0	6,830.0	6,830.0	49.2	136.6	-102.32	-203.5	5,112.2	3,885.1	3,703.4	181.71	21.381		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												Lofland 22T & Alles 22S-HZ Existing Wells - Esther 1-23 (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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
8,600.0	6,833.4	6,829.4	6,829.4	51.8	136.6	-102.01	-203.5	5,112.2	3,785.2	3,600.7	184.44	20.522			
8,700.0	6,832.7	6,828.7	6,828.7	54.4	136.6	-101.70	-203.5	5,112.2	3,685.2	3,498.0	187.20	19.686			
8,800.0	6,832.1	6,828.1	6,828.1	57.0	136.6	-101.39	-203.5	5,112.2	3,585.3	3,395.3	189.98	18.872			
8,900.0	6,831.5	6,827.5	6,827.5	59.7	136.6	-101.08	-203.5	5,112.2	3,485.3	3,292.5	192.77	18.080			
9,000.0	6,830.9	6,826.9	6,826.9	62.3	136.5	-100.77	-203.5	5,112.2	3,385.4	3,189.8	195.57	17.310			
9,100.0	6,830.3	6,826.3	6,826.3	65.0	136.5	-100.46	-203.5	5,112.2	3,285.4	3,087.0	198.39	16.561			
9,200.0	6,829.7	6,825.7	6,825.7	67.7	136.5	-100.15	-203.5	5,112.2	3,185.5	2,984.3	201.21	15.831			
9,300.0	6,829.1	6,825.1	6,825.1	70.4	136.5	-99.84	-203.5	5,112.2	3,085.5	2,881.5	204.05	15.122			
9,400.0	6,828.5	6,824.5	6,824.5	73.1	136.5	-99.52	-203.5	5,112.2	2,985.6	2,778.7	206.89	14.431			
9,500.0	6,827.9	6,823.9	6,823.9	75.8	136.5	-99.21	-203.5	5,112.2	2,885.7	2,675.9	209.74	13.758			
9,600.0	6,827.2	6,823.2	6,823.2	78.6	136.5	-98.90	-203.5	5,112.2	2,785.7	2,573.1	212.59	13.104			
9,700.0	6,826.6	6,822.6	6,822.6	81.3	136.5	-98.58	-203.5	5,112.2	2,685.8	2,470.4	215.45	12.466			
9,800.0	6,826.0	6,822.0	6,822.0	84.0	136.4	-98.27	-203.5	5,112.2	2,585.9	2,367.6	218.31	11.845			
9,900.0	6,825.4	6,821.4	6,821.4	86.8	136.4	-97.95	-203.5	5,112.2	2,486.0	2,264.8	221.17	11.240			
10,000.0	6,824.8	6,820.8	6,820.8	89.5	136.4	-97.63	-203.5	5,112.2	2,386.1	2,162.1	224.04	10.650			
10,100.0	6,824.2	6,820.2	6,820.2	92.3	136.4	-97.32	-203.5	5,112.2	2,286.2	2,059.3	226.91	10.076			
10,200.0	6,823.6	6,819.6	6,819.6	95.0	136.4	-97.00	-203.5	5,112.2	2,186.3	1,956.6	229.77	9.515			
10,300.0	6,823.0	6,819.0	6,819.0	97.8	136.4	-96.68	-203.5	5,112.2	2,086.5	1,853.8	232.64	8.969			
10,400.0	6,822.4	6,818.4	6,818.4	100.5	136.4	-96.36	-203.5	5,112.2	1,986.6	1,751.1	235.51	8.435			
10,500.0	6,821.8	6,817.8	6,817.8	103.3	136.4	-96.05	-203.5	5,112.2	1,886.8	1,648.4	238.38	7.915			
10,600.0	6,821.1	6,817.1	6,817.1	106.0	136.3	-95.73	-203.5	5,112.2	1,786.9	1,545.7	241.24	7.407			
10,700.0	6,820.5	6,816.5	6,816.5	108.8	136.3	-95.41	-203.5	5,112.2	1,687.1	1,443.0	244.11	6.911			
10,800.0	6,819.9	6,815.9	6,815.9	111.6	136.3	-95.09	-203.5	5,112.2	1,587.4	1,340.4	246.97	6.427			
10,900.0	6,819.3	6,815.3	6,815.3	114.3	136.3	-94.77	-203.5	5,112.2	1,487.6	1,237.8	249.83	5.955			
11,000.0	6,818.7	6,814.7	6,814.7	117.1	136.3	-94.45	-203.5	5,112.2	1,387.9	1,135.2	252.69	5.493			
11,100.0	6,818.1	6,814.1	6,814.1	119.9	136.3	-94.13	-203.5	5,112.2	1,288.2	1,032.7	255.54	5.041			
11,200.0	6,817.5	6,813.5	6,813.5	122.7	136.3	-93.81	-203.5	5,112.2	1,188.6	930.2	258.39	4.600			
11,300.0	6,816.9	6,812.9	6,812.9	125.4	136.3	-93.49	-203.5	5,112.2	1,089.1	827.9	261.23	4.169			
11,400.0	6,816.3	6,812.3	6,812.3	128.2	136.2	-93.17	-203.5	5,112.2	989.6	725.6	264.07	3.748			
11,500.0	6,815.6	6,811.6	6,811.6	131.0	136.2	-92.84	-203.5	5,112.2	890.3	623.4	266.91	3.336			
11,600.0	6,815.0	6,811.0	6,811.0	133.8	136.2	-92.52	-203.5	5,112.2	791.2	521.4	269.74	2.933			
11,700.0	6,814.4	6,810.4	6,810.4	136.6	136.2	-92.20	-203.5	5,112.2	692.2	419.7	272.56	2.540			
11,800.0	6,813.8	6,809.8	6,809.8	139.3	136.2	-91.88	-203.5	5,112.2	593.7	318.3	275.38	2.156			
11,900.0	6,813.2	6,809.2	6,809.2	142.1	136.2	-91.56	-203.5	5,112.2	495.7	217.5	278.19	1.782			
12,000.0	6,812.6	6,808.6	6,808.6	144.9	136.2	-91.24	-203.5	5,112.2	398.7	117.8	281.00	1.419 Level 3			
12,100.0	6,812.0	6,808.0	6,808.0	147.7	136.2	-90.91	-203.5	5,112.2	303.8	20.0	283.80	1.070 Level 2			
12,200.0	6,811.4	6,807.4	6,807.4	150.5	136.1	-90.59	-203.5	5,112.2	213.4	-73.2	286.59	0.745 Level 1			
12,300.0	6,810.8	6,806.8	6,806.8	153.3	136.1	-90.27	-203.5	5,112.2	137.1	-152.2	289.37	0.474 Level 1			
12,383.7	6,810.2	6,806.2	6,806.2	155.6	136.1	-90.00	-203.5	5,112.2	108.6	-183.1	291.70	0.372 Level 1, CC, ES, SF			
12,400.0	6,810.1	6,806.1	6,806.1	156.0	136.1	-89.95	-203.5	5,112.2	109.9	-182.3	292.15	0.376 Level 1			
12,500.0	6,809.5	6,805.5	6,805.5	158.8	136.1	-89.63	-203.5	5,112.2	159.2	-135.7	294.92	0.540 Level 1			
12,587.4	6,809.0	6,805.0	6,805.0	161.3	136.1	-89.34	-203.5	5,112.2	230.9	-66.5	297.33	0.776 Level 1			

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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	92.14	-141.8	3,800.0	3,802.6					
100.0	100.0	98.0	98.0	0.1	2.0	92.14	-141.8	3,800.0	3,802.6	3,800.6	2.07	1,834.738		
200.0	200.0	198.0	198.0	0.3	4.0	92.14	-141.8	3,800.0	3,802.6	3,798.3	4.30	884.882		
300.0	300.0	298.0	298.0	0.6	6.0	92.14	-141.8	3,800.0	3,802.6	3,796.1	6.52	583.039		
400.0	400.0	398.0	398.0	0.8	8.0	92.14	-141.8	3,800.0	3,802.6	3,793.9	8.75	434.743		
500.0	500.0	498.0	498.0	1.0	10.0	92.14	-141.8	3,800.0	3,802.6	3,791.7	10.97	346.589		
600.0	600.0	598.0	598.0	1.2	12.0	92.14	-141.8	3,800.0	3,802.6	3,789.4	13.20	288.158		
700.0	700.0	698.0	698.0	1.4	14.0	-155.01	-141.8	3,800.0	3,804.2	3,788.8	15.39	247.111		
800.0	799.8	797.8	797.8	1.6	16.0	-155.00	-141.8	3,800.0	3,809.0	3,791.4	17.56	216.895		
900.0	899.5	897.5	897.5	1.9	17.9	-154.99	-141.8	3,800.0	3,816.9	3,797.2	19.71	193.665		
1,000.0	998.7	996.7	996.7	2.1	19.9	-154.97	-141.8	3,800.0	3,827.9	3,806.1	21.83	175.353		
1,054.8	1,052.9	1,050.9	1,050.9	2.3	21.0	-154.96	-141.8	3,800.0	3,835.3	3,812.4	22.98	166.900		
1,100.0	1,097.5	1,095.5	1,095.5	2.4	21.9	-155.01	-141.8	3,800.0	3,841.8	3,817.8	23.97	160.281		
1,200.0	1,196.3	1,194.3	1,194.3	2.7	23.9	-155.11	-141.8	3,800.0	3,856.2	3,830.0	26.17	147.371		
1,300.0	1,295.0	1,293.0	1,293.0	3.1	25.9	-155.20	-141.8	3,800.0	3,870.6	3,842.2	28.37	136.428		
1,400.0	1,393.8	1,391.8	1,391.8	3.4	27.8	-155.30	-141.8	3,800.0	3,885.0	3,854.4	30.58	127.042		
1,500.0	1,492.5	1,490.5	1,490.5	3.8	29.8	-155.40	-141.8	3,800.0	3,899.4	3,866.6	32.79	118.907		
1,600.0	1,591.2	1,589.2	1,589.2	4.1	31.8	-155.49	-141.8	3,800.0	3,913.8	3,878.8	35.01	111.791		
1,700.0	1,690.0	1,688.0	1,688.0	4.5	33.8	-155.59	-141.8	3,800.0	3,928.2	3,891.0	37.23	105.517		
1,800.0	1,788.7	1,786.7	1,786.7	4.8	35.7	-155.68	-141.8	3,800.0	3,942.6	3,903.2	39.45	99.945		
1,900.0	1,887.5	1,885.5	1,885.5	5.2	37.7	-155.78	-141.8	3,800.0	3,957.1	3,915.4	41.67	94.964		
2,000.0	1,986.2	1,984.2	1,984.2	5.6	39.7	-155.87	-141.8	3,800.0	3,971.5	3,927.6	43.89	90.485		
2,100.0	2,084.9	2,082.9	2,082.9	5.9	41.7	-155.97	-141.8	3,800.0	3,986.0	3,939.9	46.11	86.436		
2,200.0	2,183.7	2,181.7	2,181.7	6.3	43.6	-156.06	-141.8	3,800.0	4,000.5	3,952.1	48.34	82.759		
2,300.0	2,282.4	2,280.4	2,280.4	6.7	45.6	-156.15	-141.8	3,800.0	4,014.9	3,964.4	50.56	79.405		
2,400.0	2,381.2	2,379.2	2,379.2	7.1	47.6	-156.24	-141.8	3,800.0	4,029.4	3,976.6	52.79	76.334		
2,500.0	2,479.9	2,477.9	2,477.9	7.4	49.6	-156.33	-141.8	3,800.0	4,043.9	3,988.9	55.01	73.511		
2,600.0	2,578.7	2,576.7	2,576.7	7.8	51.5	-156.42	-141.8	3,800.0	4,058.5	4,001.2	57.24	70.907		
2,700.0	2,677.4	2,675.4	2,675.4	8.2	53.5	-156.51	-141.8	3,800.0	4,073.0	4,013.5	59.46	68.498		
2,800.0	2,776.1	2,774.1	2,774.1	8.6	55.5	-156.60	-141.8	3,800.0	4,087.5	4,025.8	61.69	66.263		
2,900.0	2,874.9	2,872.9	2,872.9	8.9	57.5	-156.68	-141.8	3,800.0	4,102.1	4,038.1	63.91	64.183		
3,000.0	2,973.6	2,971.6	2,971.6	9.3	59.4	-156.77	-141.8	3,800.0	4,116.6	4,050.5	66.14	62.244		
3,100.0	3,072.4	3,070.4	3,070.4	9.7	61.4	-156.86	-141.8	3,800.0	4,131.2	4,062.8	68.36	60.431		
3,200.0	3,171.1	3,169.1	3,169.1	10.1	63.4	-156.94	-141.8	3,800.0	4,145.7	4,075.2	70.59	58.733		
3,300.0	3,269.9	3,267.9	3,267.9	10.4	65.4	-157.03	-141.8	3,800.0	4,160.3	4,087.5	72.81	57.139		
3,400.0	3,368.6	3,366.6	3,366.6	10.8	67.3	-157.11	-141.8	3,800.0	4,174.9	4,099.9	75.04	55.639		
3,500.0	3,467.3	3,465.3	3,465.3	11.2	69.3	-157.20	-141.8	3,800.0	4,189.5	4,112.2	77.26	54.226		
3,600.0	3,566.1	3,564.1	3,564.1	11.6	71.3	-157.28	-141.8	3,800.0	4,204.1	4,124.6	79.48	52.892		
3,700.0	3,664.8	3,662.8	3,662.8	12.0	73.3	-157.36	-141.8	3,800.0	4,218.7	4,137.0	81.71	51.632		
3,800.0	3,763.6	3,761.6	3,761.6	12.3	75.2	-157.44	-141.8	3,800.0	4,233.3	4,149.4	83.93	50.438		
3,900.0	3,862.3	3,860.3	3,860.3	12.7	77.2	-157.53	-141.8	3,800.0	4,248.0	4,161.8	86.16	49.306		
4,000.0	3,961.0	3,959.0	3,959.0	13.1	79.2	-157.61	-141.8	3,800.0	4,262.6	4,174.2	88.38	48.231		
4,100.0	4,059.8	4,057.8	4,057.8	13.5	81.2	-157.69	-141.8	3,800.0	4,277.3	4,186.7	90.60	47.209		
4,200.0	4,158.5	4,156.5	4,156.5	13.9	83.1	-157.77	-141.8	3,800.0	4,291.9	4,199.1	92.83	46.236		
4,300.0	4,257.3	4,255.3	4,255.3	14.2	85.1	-157.85	-141.8	3,800.0	4,306.6	4,211.5	95.05	45.309		
4,400.0	4,356.0	4,354.0	4,354.0	14.6	87.1	-157.93	-141.8	3,800.0	4,321.3	4,224.0	97.27	44.425		
4,500.0	4,454.8	4,452.8	4,452.8	15.0	89.1	-158.00	-141.8	3,800.0	4,335.9	4,236.5	99.49	43.580		
4,600.0	4,553.5	4,551.5	4,551.5	15.4	91.0	-158.08	-141.8	3,800.0	4,350.6	4,248.9	101.72	42.772		
4,700.0	4,652.2	4,650.2	4,650.2	15.8	93.0	-158.16	-141.8	3,800.0	4,365.3	4,261.4	103.94	41.999		
4,800.0	4,751.0	4,749.0	4,749.0	16.1	95.0	-158.24	-141.8	3,800.0	4,380.0	4,273.9	106.16	41.259		
4,900.0	4,849.7	4,847.7	4,847.7	16.5	97.0	-158.31	-141.8	3,800.0	4,394.7	4,286.4	108.38	40.549		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7300-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
5,000.0	4,948.5	4,946.5	4,946.5	16.9	98.9	-158.39	-141.8	3,800.0	4,409.5	4,298.9	110.60	39.868		
5,100.0	5,047.2	5,045.2	5,045.2	17.3	100.9	-158.46	-141.8	3,800.0	4,424.2	4,311.4	112.82	39.213		
5,200.0	5,146.0	5,144.0	5,144.0	17.7	102.9	-158.54	-141.8	3,800.0	4,438.9	4,323.9	115.04	38.584		
5,300.0	5,244.7	5,242.7	5,242.7	18.0	104.9	-158.61	-141.8	3,800.0	4,453.7	4,336.4	117.27	37.979		
5,403.7	5,347.1	5,345.1	5,345.1	18.4	106.9	-158.69	-141.8	3,800.0	4,469.0	4,349.4	119.57	37.376		
5,500.0	5,442.4	5,440.4	5,440.4	18.7	108.8	-158.85	-141.8	3,800.0	4,481.7	4,359.6	122.12	36.700		
5,600.0	5,541.8	5,539.8	5,539.8	18.9	110.8	-158.97	-141.8	3,800.0	4,491.7	4,367.1	124.62	36.043		
5,700.0	5,641.6	5,639.6	5,639.6	19.1	112.8	-159.05	-141.8	3,800.0	4,498.5	4,371.5	127.01	35.420		
5,800.0	5,741.5	5,739.5	5,739.5	19.3	114.8	-159.09	-141.8	3,800.0	4,502.0	4,372.8	129.26	34.829		
5,858.5	5,800.0	5,798.0	5,798.0	19.4	116.0	88.05	-141.8	3,800.0	4,502.6	4,368.0	134.63	33.445		
5,900.0	5,841.5	5,839.5	5,839.5	19.4	116.8	88.05	-141.8	3,800.0	4,502.6	4,367.1	135.51	33.226		
6,000.0	5,941.5	5,939.5	5,939.5	19.5	118.8	88.05	-141.8	3,800.0	4,502.6	4,365.0	137.65	32.710		
6,100.0	6,041.5	6,039.5	6,039.5	19.7	120.8	88.05	-141.8	3,800.0	4,502.6	4,362.8	139.79	32.210		
6,135.6	6,077.1	6,075.1	6,075.1	19.7	121.5	88.05	-141.8	3,800.0	4,502.6	4,362.1	140.55	32.035		
6,150.0	6,091.5	6,089.5	6,089.5	19.7	121.8	-2.12	-141.8	3,800.0	4,502.5	4,365.7	136.79	32.914		
6,200.0	6,141.4	6,139.4	6,139.4	19.8	122.8	-2.13	-141.8	3,800.0	4,499.9	4,362.6	137.32	32.770		
6,250.0	6,191.1	6,189.1	6,189.1	19.8	123.8	-2.15	-141.8	3,800.0	4,494.1	4,356.8	137.24	32.747		
6,300.0	6,240.2	6,238.2	6,238.2	19.8	124.8	-2.18	-141.8	3,800.0	4,485.0	4,348.5	136.54	32.847		
6,350.0	6,288.7	6,286.7	6,286.7	19.7	125.7	-2.22	-141.8	3,800.0	4,472.7	4,337.5	135.23	33.076		
6,400.0	6,336.2	6,334.2	6,334.2	19.7	126.7	-2.28	-141.8	3,800.0	4,457.3	4,324.1	133.29	33.441		
6,450.0	6,382.7	6,380.7	6,380.7	19.6	127.6	-2.34	-141.8	3,800.0	4,438.9	4,308.2	130.73	33.955		
6,500.0	6,427.8	6,425.8	6,425.8	19.5	128.5	-2.43	-141.8	3,800.0	4,417.4	4,289.9	127.54	34.634		
6,550.0	6,471.5	6,469.5	6,469.5	19.4	129.4	-2.54	-141.8	3,800.0	4,393.0	4,269.3	123.75	35.499		
6,600.0	6,513.4	6,511.4	6,511.4	19.3	130.2	-2.66	-141.8	3,800.0	4,365.9	4,246.5	119.37	36.575		
6,650.0	6,553.5	6,551.5	6,551.5	19.2	131.0	-2.81	-141.8	3,800.0	4,336.0	4,221.6	114.41	37.900		
6,700.0	6,591.5	6,589.5	6,589.5	19.1	131.8	-3.00	-141.8	3,800.0	4,303.6	4,194.7	108.90	39.519		
6,750.0	6,627.4	6,625.4	6,625.4	19.1	132.5	-3.22	-141.8	3,800.0	4,268.8	4,165.9	102.88	41.493		
6,800.0	6,660.9	6,658.9	6,658.9	19.0	133.2	-3.49	-141.8	3,800.0	4,231.7	4,135.3	96.39	43.901		
6,850.0	6,691.8	6,689.8	6,689.8	19.0	133.8	-3.83	-141.8	3,800.0	4,192.5	4,103.0	89.49	46.850		
6,900.0	6,720.2	6,718.2	6,718.2	19.1	134.4	-4.25	-141.8	3,800.0	4,151.3	4,069.1	82.24	50.478		
6,950.0	6,745.8	6,743.8	6,743.8	19.2	134.9	-4.79	-141.8	3,800.0	4,108.4	4,033.7	74.75	54.964		
7,000.0	6,768.5	6,766.5	6,766.5	19.4	135.3	-5.51	-141.8	3,800.0	4,063.9	3,996.8	67.16	60.510		
7,050.0	6,788.3	6,786.3	6,786.3	19.7	135.7	-6.48	-141.8	3,800.0	4,018.1	3,958.3	59.74	67.257		
7,100.0	6,805.0	6,803.0	6,803.0	20.0	136.1	-7.87	-141.8	3,800.0	3,971.0	3,918.0	53.02	74.890		
7,150.0	6,818.6	6,816.6	6,816.6	20.5	136.3	-10.01	-141.8	3,800.0	3,922.9	3,874.7	48.27	81.268		
7,200.0	6,829.1	6,827.1	6,827.1	21.0	136.5	-13.69	-141.8	3,800.0	3,874.1	3,825.4	48.67	79.594		
7,250.0	6,836.3	6,834.3	6,834.3	21.6	136.7	-21.28	-141.8	3,800.0	3,824.7	3,762.7	62.00	61.691		
7,300.0	6,840.2	6,838.2	6,838.2	22.3	136.8	-43.43	-141.8	3,800.0	3,774.9	3,664.8	110.12	34.281		
7,340.3	6,841.1	6,839.1	6,839.1	22.9	136.8	-97.80	-141.8	3,800.0	3,734.6	3,576.4	158.27	23.596		
7,400.0	6,840.7	6,838.7	6,838.7	23.9	136.8	-97.67	-141.8	3,800.0	3,675.0	3,515.7	159.28	23.072		
7,500.0	6,840.1	6,838.1	6,838.1	25.6	136.8	-97.47	-141.8	3,800.0	3,575.1	3,414.0	161.13	22.188		
7,600.0	6,839.5	6,837.5	6,837.5	27.6	136.7	-97.26	-141.8	3,800.0	3,475.2	3,312.1	163.14	21.302		
7,700.0	6,838.9	6,836.9	6,836.9	29.7	136.7	-97.05	-141.8	3,800.0	3,375.3	3,210.0	165.29	20.421		
7,800.0	6,838.2	6,836.2	6,836.2	31.9	136.7	-96.84	-141.8	3,800.0	3,275.5	3,107.9	167.54	19.550		
7,900.0	6,837.6	6,835.6	6,835.6	34.2	136.7	-96.64	-141.8	3,800.0	3,175.6	3,005.7	169.88	18.693		
8,000.0	6,837.0	6,835.0	6,835.0	36.6	136.7	-96.43	-141.8	3,800.0	3,075.7	2,903.4	172.29	17.852		
8,100.0	6,836.4	6,834.4	6,834.4	39.0	136.7	-96.22	-141.8	3,800.0	2,975.9	2,801.1	174.76	17.028		
8,200.0	6,835.8	6,833.8	6,833.8	41.5	136.7	-96.01	-141.8	3,800.0	2,876.1	2,698.8	177.28	16.223		
8,300.0	6,835.2	6,833.2	6,833.2	44.0	136.7	-95.81	-141.8	3,800.0	2,776.2	2,596.4	179.83	15.438		
8,400.0	6,834.6	6,832.6	6,832.6	46.6	136.7	-95.60	-141.8	3,800.0	2,676.4	2,494.0	182.42	14.672		
8,500.0	6,834.0	6,832.0	6,832.0	49.2	136.6	-95.39	-141.8	3,800.0	2,576.6	2,391.6	185.03	13.925		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													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		
8,600.0	6,833.4	6,831.4	6,831.4	51.8	136.6	-95.18	-141.8	3,800.0	2,476.8	2,289.2	187.67	13.198		
8,700.0	6,832.7	6,830.7	6,830.7	54.4	136.6	-94.97	-141.8	3,800.0	2,377.1	2,186.8	190.33	12.489		
8,800.0	6,832.1	6,830.1	6,830.1	57.0	136.6	-94.76	-141.8	3,800.0	2,277.3	2,084.3	193.01	11.799		
8,900.0	6,831.5	6,829.5	6,829.5	59.7	136.6	-94.56	-141.8	3,800.0	2,177.6	1,981.9	195.69	11.128		
9,000.0	6,830.9	6,828.9	6,828.9	62.3	136.6	-94.35	-141.8	3,800.0	2,077.9	1,879.5	198.40	10.474		
9,100.0	6,830.3	6,828.3	6,828.3	65.0	136.6	-94.14	-141.8	3,800.0	1,978.3	1,777.2	201.11	9.837		
9,200.0	6,829.7	6,827.7	6,827.7	67.7	136.6	-93.93	-141.8	3,800.0	1,878.6	1,674.8	203.83	9.217		
9,300.0	6,829.1	6,827.1	6,827.1	70.4	136.5	-93.72	-141.8	3,800.0	1,779.1	1,572.5	206.56	8.613		
9,400.0	6,828.5	6,826.5	6,826.5	73.1	136.5	-93.51	-141.8	3,800.0	1,679.5	1,470.2	209.29	8.025		
9,500.0	6,827.9	6,825.9	6,825.9	75.8	136.5	-93.30	-141.8	3,800.0	1,580.1	1,368.0	212.04	7.452		
9,600.0	6,827.2	6,825.2	6,825.2	78.6	136.5	-93.09	-141.8	3,800.0	1,480.6	1,265.9	214.78	6.894		
9,700.0	6,826.6	6,824.6	6,824.6	81.3	136.5	-92.88	-141.8	3,800.0	1,381.3	1,163.8	217.53	6.350		
9,800.0	6,826.0	6,824.0	6,824.0	84.0	136.5	-92.67	-141.8	3,800.0	1,282.1	1,061.8	220.29	5.820		
9,900.0	6,825.4	6,823.4	6,823.4	86.8	136.5	-92.46	-141.8	3,800.0	1,183.0	960.0	223.04	5.304		
10,000.0	6,824.8	6,822.8	6,822.8	89.5	136.5	-92.25	-141.8	3,800.0	1,084.1	858.3	225.80	4.801		
10,100.0	6,824.2	6,822.2	6,822.2	92.3	136.4	-92.04	-141.8	3,800.0	985.4	756.9	228.56	4.311		
10,200.0	6,823.6	6,821.6	6,821.6	95.0	136.4	-91.83	-141.8	3,800.0	887.0	655.7	231.33	3.835		
10,300.0	6,823.0	6,821.0	6,821.0	97.8	136.4	-91.62	-141.8	3,800.0	789.0	554.9	234.09	3.371		
10,400.0	6,822.4	6,820.4	6,820.4	100.5	136.4	-91.41	-141.8	3,800.0	691.6	454.8	236.85	2.920		
10,500.0	6,821.8	6,819.8	6,819.8	103.3	136.4	-91.20	-141.8	3,800.0	595.0	355.4	239.62	2.483		
10,600.0	6,821.1	6,819.1	6,819.1	106.0	136.4	-90.99	-141.8	3,800.0	499.8	257.4	242.38	2.062		
10,700.0	6,820.5	6,818.5	6,818.5	108.8	136.4	-90.78	-141.8	3,800.0	406.9	161.8	245.14	1.660		
10,800.0	6,819.9	6,817.9	6,817.9	111.6	136.4	-90.57	-141.8	3,800.0	318.3	70.4	247.91	1.284 Level 3		
10,900.0	6,819.3	6,817.3	6,817.3	114.3	136.3	-90.36	-141.8	3,800.0	238.9	-11.8	250.67	0.953 Level 1		
11,000.0	6,818.7	6,816.7	6,816.7	117.1	136.3	-90.15	-141.8	3,800.0	181.1	-72.3	253.43	0.715 Level 1		
11,071.3	6,818.3	6,816.3	6,816.3	119.1	136.3	-90.00	-141.8	3,800.0	166.5	-88.9	255.40	0.652 Level 1, CC, ES, SF		
11,100.0	6,818.1	6,816.1	6,816.1	119.9	136.3	-89.94	-141.8	3,800.0	168.9	-87.3	256.19	0.659 Level 1		
11,200.0	6,817.5	6,815.5	6,815.5	122.7	136.3	-89.73	-141.8	3,800.0	210.4	-48.5	258.95	0.813 Level 1		
11,300.0	6,816.9	6,814.9	6,814.9	125.4	136.3	-89.52	-141.8	3,800.0	282.9	21.2	261.70	1.081 Level 2		
11,400.0	6,816.3	6,814.3	6,814.3	128.2	136.3	-89.31	-141.8	3,800.0	368.5	104.0	264.46	1.393 Level 3		
11,500.0	6,815.6	6,813.6	6,813.6	131.0	136.3	-89.10	-141.8	3,800.0	459.9	192.7	267.21	1.721		
11,600.0	6,815.0	6,813.0	6,813.0	133.8	136.3	-88.89	-141.8	3,800.0	554.3	284.3	269.96	2.053		
11,700.0	6,814.4	6,812.4	6,812.4	136.6	136.2	-88.68	-141.8	3,800.0	650.4	377.7	272.70	2.385		
11,800.0	6,813.8	6,811.8	6,811.8	139.3	136.2	-88.47	-141.8	3,800.0	747.5	472.0	275.45	2.714		
11,900.0	6,813.2	6,811.2	6,811.2	142.1	136.2	-88.26	-141.8	3,800.0	845.3	567.1	278.19	3.038		
12,000.0	6,812.6	6,810.6	6,810.6	144.9	136.2	-88.05	-141.8	3,800.0	943.5	662.6	280.93	3.359		
12,100.0	6,812.0	6,810.0	6,810.0	147.7	136.2	-87.84	-141.8	3,800.0	1,042.1	758.4	283.66	3.674		
12,200.0	6,811.4	6,809.4	6,809.4	150.5	136.2	-87.63	-141.8	3,800.0	1,140.9	854.5	286.39	3.984		
12,300.0	6,810.8	6,808.8	6,808.8	153.3	136.2	-87.42	-141.8	3,800.0	1,239.9	950.8	289.12	4.289		
12,400.0	6,810.1	6,808.1	6,808.1	156.0	136.2	-87.21	-141.8	3,800.0	1,339.1	1,047.2	291.84	4.588		
12,500.0	6,809.5	6,807.5	6,807.5	158.8	136.2	-87.00	-141.8	3,800.0	1,438.4	1,143.8	294.56	4.883		
12,587.4	6,809.0	6,807.0	6,807.0	161.3	136.1	-86.82	-141.8	3,800.0	1,525.2	1,228.3	296.94	5.136		

Reference Depths are relative to WELL @ 4660.0ft (RKB - 15')	Coordinates are relative to: Alles 22D-212
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.55°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Alles 22D-212
<b>Project:</b>	SEC.22-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Reference Site:</b>	Alles 22S-HZ Pad Sec.22-T5N-R65W	<b>MD Reference:</b>	WELL @ 4660.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Alles 22D-212	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	Landmark
<b>Reference Design:</b>	Plan #1 (5-16-13)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4660.0ft (RKB - 15')  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: Alles 22D-212  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.55°

