

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Wiedeman 28F-432**

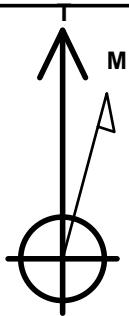
Surface Location: Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4762.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1348159.20	3198078.44	40.286920	-104.789970	

Original Well Elev WELL @ 4777.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 1068'FNL & 540'FWL, SEC.28	1.0	0.0	0.0	Point
BHL 1725'FNL & 500'FEL, SEC.28	7257.0	-640.8	4226.8	Point



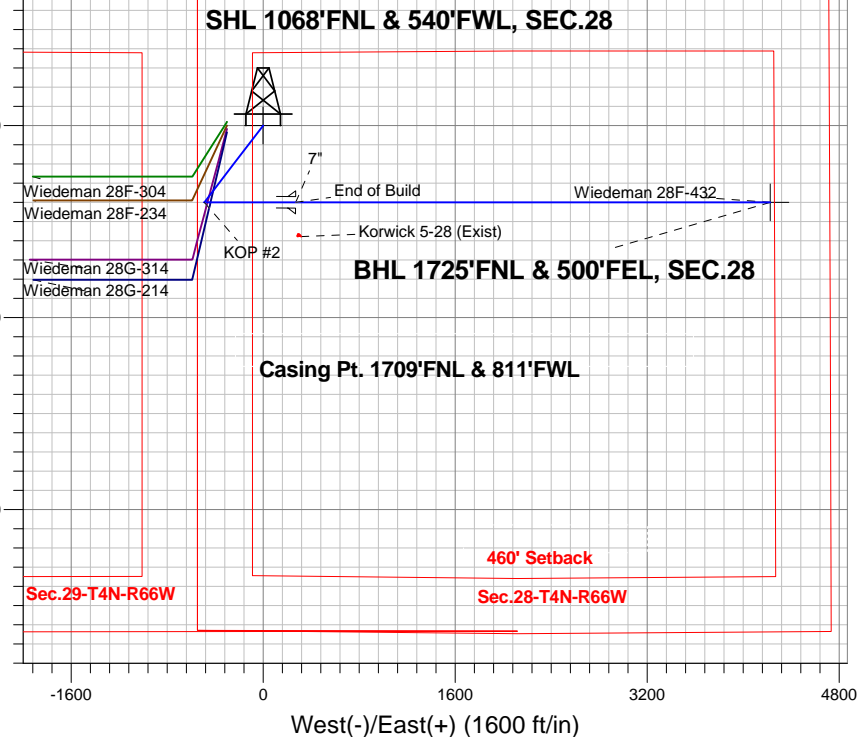
Azimuths to True North
 Magnetic North: 8.45°
 Magnetic Field
 Strength: 52742.3srT
 Dip Angle: 66.85°
 Date: 7/25/2014
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6477.2	6542.0	KOP #2
7241.1	7738.9	End of Build

Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W
 Wiedeman 28F-432
 Plan #1 (7-25-14)

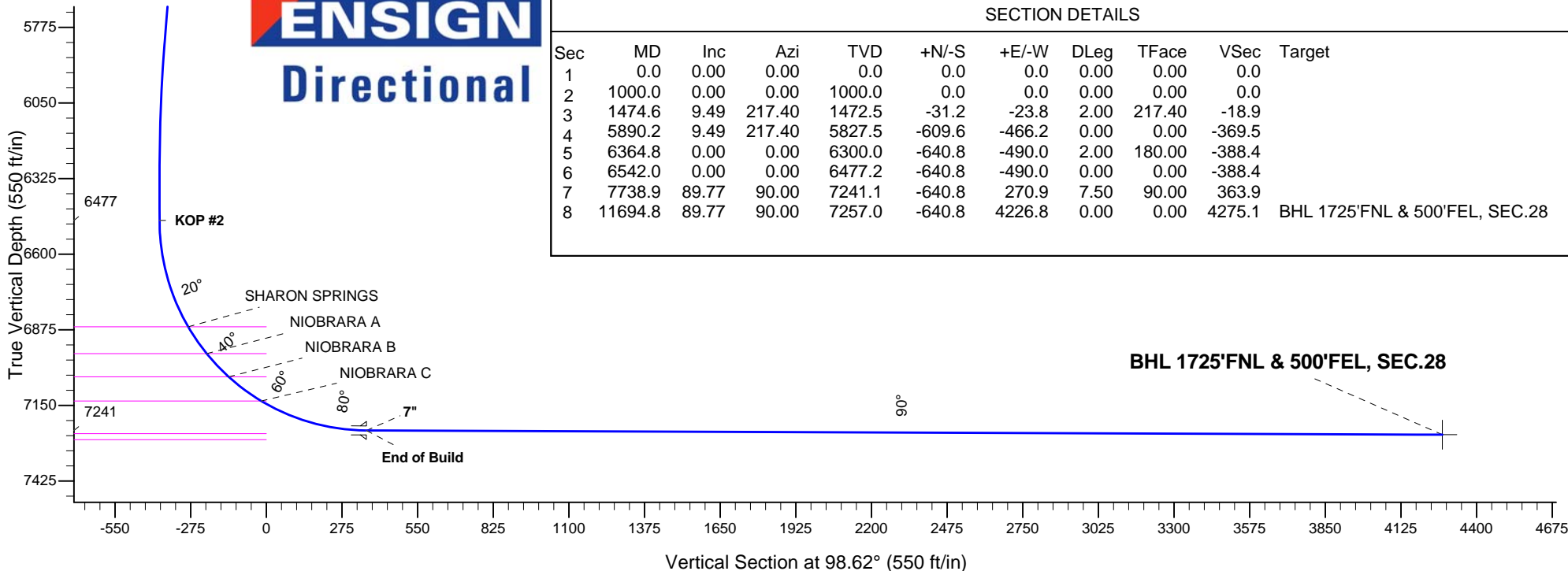
South(-)/North(+) (1600 ft/in)



ENSIGN
 Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1474.6	9.49	217.40	1472.5	-31.2	-23.8	2.00	217.40	-18.9	
4	5890.2	9.49	217.40	5827.5	-609.6	-466.2	0.00	0.00	-369.5	
5	6364.8	0.00	0.00	6300.0	-640.8	-490.0	2.00	180.00	-388.4	
6	6542.0	0.00	0.00	6477.2	-640.8	-490.0	0.00	0.00	-388.4	
7	7738.9	89.77	90.00	7241.1	-640.8	270.9	7.50	90.00	363.9	
8	11694.8	89.77	90.00	7257.0	-640.8	4226.8	0.00	0.00	4275.1	BHL 1725'FNL & 500'FEL, SEC.28





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T4N-R66W

Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W

Wiedeman 28F-432

Wellbore #1

Plan: Plan #1 (7-25-14)

Standard Planning Report

11 August, 2014

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Project	SEC.28-T4N-R66W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site		Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W			
Site Position:		Northing:	1,348,308.56 ft	Latitude:	40.287330
From:	Lat/Long	Easting:	3,198,077.24 ft	Longitude:	-104.789970
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.46 °

Well	Wiedeman 28F-432					
Well Position	+N-S	-149.4 ft	Northing:	1,348,159.20 ft	Latitude:	40.286920
	+E-W	0.0 ft	Easting:	3,198,078.44 ft	Longitude:	-104.789970
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,762.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/25/2014	8.45	66.85	52,742

Design	Plan #1 (7-25-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	98.62

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,474.6	9.49	217.40	1,472.5	-31.2	-23.8	2.00	2.00	0.00	217.40	
5,890.2	9.49	217.40	5,827.5	-609.6	-466.2	0.00	0.00	0.00	0.00	
6,364.8	0.00	0.00	6,300.0	-640.8	-490.0	2.00	-2.00	0.00	180.00	
6,542.0	0.00	0.00	6,477.2	-640.8	-490.0	0.00	0.00	0.00	0.00	
7,738.9	89.77	90.00	7,241.1	-640.8	270.9	7.50	7.50	0.00	90.00	
11,694.8	89.77	90.00	7,257.0	-640.8	4,226.8	0.00	0.00	0.00	0.00	BHL 1725'FNL & 5C

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,100.0	2.00	217.40	1,100.0	-1.4	-1.1	-0.8	2.00	2.00	0.00
1,200.0	4.00	217.40	1,199.8	-5.5	-4.2	-3.4	2.00	2.00	0.00
1,300.0	6.00	217.40	1,299.5	-12.5	-9.5	-7.6	2.00	2.00	0.00
1,400.0	8.00	217.40	1,398.7	-22.1	-16.9	-13.4	2.00	2.00	0.00
1,474.6	9.49	217.40	1,472.5	-31.2	-23.8	-18.9	2.00	2.00	0.00
1,500.0	9.49	217.40	1,497.5	-34.5	-26.4	-20.9	0.00	0.00	0.00
1,600.0	9.49	217.40	1,596.1	-47.6	-36.4	-28.8	0.00	0.00	0.00
1,700.0	9.49	217.40	1,694.7	-60.7	-46.4	-36.8	0.00	0.00	0.00
1,800.0	9.49	217.40	1,793.4	-73.8	-56.4	-44.7	0.00	0.00	0.00
1,900.0	9.49	217.40	1,892.0	-86.9	-66.4	-52.7	0.00	0.00	0.00
2,000.0	9.49	217.40	1,990.6	-100.0	-76.5	-60.6	0.00	0.00	0.00
2,100.0	9.49	217.40	2,089.3	-113.1	-86.5	-68.5	0.00	0.00	0.00
2,200.0	9.49	217.40	2,187.9	-126.2	-96.5	-76.5	0.00	0.00	0.00
2,300.0	9.49	217.40	2,286.5	-139.3	-106.5	-84.4	0.00	0.00	0.00
2,400.0	9.49	217.40	2,385.2	-152.4	-116.5	-92.4	0.00	0.00	0.00
2,500.0	9.49	217.40	2,483.8	-165.5	-126.5	-100.3	0.00	0.00	0.00
2,600.0	9.49	217.40	2,582.4	-178.6	-136.6	-108.3	0.00	0.00	0.00
2,700.0	9.49	217.40	2,681.1	-191.7	-146.6	-116.2	0.00	0.00	0.00
2,800.0	9.49	217.40	2,779.7	-204.8	-156.6	-124.1	0.00	0.00	0.00
2,900.0	9.49	217.40	2,878.3	-217.9	-166.6	-132.1	0.00	0.00	0.00
3,000.0	9.49	217.40	2,976.9	-231.0	-176.6	-140.0	0.00	0.00	0.00
3,100.0	9.49	217.40	3,075.6	-244.1	-186.7	-148.0	0.00	0.00	0.00
3,200.0	9.49	217.40	3,174.2	-257.2	-196.7	-155.9	0.00	0.00	0.00
3,300.0	9.49	217.40	3,272.8	-270.3	-206.7	-163.8	0.00	0.00	0.00
3,400.0	9.49	217.40	3,371.5	-283.4	-216.7	-171.8	0.00	0.00	0.00
3,500.0	9.49	217.40	3,470.1	-296.5	-226.7	-179.7	0.00	0.00	0.00
3,600.0	9.49	217.40	3,568.7	-309.6	-236.7	-187.7	0.00	0.00	0.00
3,700.0	9.49	217.40	3,667.4	-322.7	-246.8	-195.6	0.00	0.00	0.00
3,739.2	9.49	217.40	3,706.0	-327.8	-250.7	-198.7	0.00	0.00	0.00
PARKMAN									
3,800.0	9.49	217.40	3,766.0	-335.8	-256.8	-203.5	0.00	0.00	0.00
3,900.0	9.49	217.40	3,864.6	-348.9	-266.8	-211.5	0.00	0.00	0.00
4,000.0	9.49	217.40	3,963.3	-362.0	-276.8	-219.4	0.00	0.00	0.00
4,100.0	9.49	217.40	4,061.9	-375.1	-286.8	-227.4	0.00	0.00	0.00
4,200.0	9.49	217.40	4,160.5	-388.2	-296.9	-235.3	0.00	0.00	0.00
4,300.0	9.49	217.40	4,259.1	-401.3	-306.9	-243.2	0.00	0.00	0.00
4,395.2	9.49	217.40	4,353.0	-413.8	-316.4	-250.8	0.00	0.00	0.00
SUSSEX									
4,400.0	9.49	217.40	4,357.8	-414.4	-316.9	-251.2	0.00	0.00	0.00
4,500.0	9.49	217.40	4,456.4	-427.5	-326.9	-259.1	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,600.0	9.49	217.40	4,555.0	-440.6	-336.9	-267.1	0.00	0.00	0.00
4,700.0	9.49	217.40	4,653.7	-453.7	-346.9	-275.0	0.00	0.00	0.00
4,800.0	9.49	217.40	4,752.3	-466.8	-357.0	-283.0	0.00	0.00	0.00
4,832.1	9.49	217.40	4,784.0	-471.0	-360.2	-285.5	0.00	0.00	0.00
SHANNON									
4,900.0	9.49	217.40	4,850.9	-479.9	-367.0	-290.9	0.00	0.00	0.00
5,000.0	9.49	217.40	4,949.6	-493.0	-377.0	-298.8	0.00	0.00	0.00
5,100.0	9.49	217.40	5,048.2	-506.1	-387.0	-306.8	0.00	0.00	0.00
5,200.0	9.49	217.40	5,146.8	-519.2	-397.0	-314.7	0.00	0.00	0.00
5,300.0	9.49	217.40	5,245.4	-532.3	-407.0	-322.7	0.00	0.00	0.00
5,400.0	9.49	217.40	5,344.1	-545.4	-417.1	-330.6	0.00	0.00	0.00
5,500.0	9.49	217.40	5,442.7	-558.5	-427.1	-338.5	0.00	0.00	0.00
5,600.0	9.49	217.40	5,541.3	-571.6	-437.1	-346.5	0.00	0.00	0.00
5,700.0	9.49	217.40	5,640.0	-584.7	-447.1	-354.4	0.00	0.00	0.00
5,800.0	9.49	217.40	5,738.6	-597.8	-457.1	-362.4	0.00	0.00	0.00
5,890.2	9.49	217.40	5,827.5	-609.6	-466.2	-369.5	0.00	0.00	0.00
5,900.0	9.30	217.40	5,837.2	-610.9	-467.1	-370.3	2.00	-2.00	0.00
6,000.0	7.30	217.40	5,936.2	-622.4	-475.9	-377.2	2.00	-2.00	0.00
6,100.0	5.30	217.40	6,035.6	-631.1	-482.6	-382.5	2.00	-2.00	0.00
6,200.0	3.30	217.40	6,135.3	-637.0	-487.1	-386.1	2.00	-2.00	0.00
6,300.0	1.30	217.40	6,235.2	-640.2	-489.6	-388.1	2.00	-2.00	0.00
6,364.8	0.00	0.00	6,300.0	-640.8	-490.0	-388.4	2.00	-2.00	0.00
6,400.0	0.00	0.00	6,335.2	-640.8	-490.0	-388.4	0.00	0.00	0.00
6,500.0	0.00	0.00	6,435.2	-640.8	-490.0	-388.4	0.00	0.00	0.00
6,542.0	0.00	0.00	6,477.2	-640.8	-490.0	-388.4	0.00	0.00	0.00
KOP #2									
6,600.0	4.35	90.00	6,535.1	-640.8	-487.8	-386.2	7.50	7.50	0.00
6,700.0	11.85	90.00	6,634.1	-640.8	-473.7	-372.3	7.50	7.50	0.00
6,800.0	19.35	90.00	6,730.3	-640.8	-446.8	-345.7	7.50	7.50	0.00
6,900.0	26.85	90.00	6,822.2	-640.8	-407.6	-307.0	7.50	7.50	0.00
6,947.6	30.42	90.00	6,864.0	-640.8	-384.8	-284.4	7.50	7.50	0.00
SHARON SPRINGS									
7,000.0	34.35	90.00	6,908.2	-640.8	-356.8	-256.7	7.50	7.50	0.00
7,067.2	39.39	90.00	6,962.0	-640.8	-316.4	-216.8	7.50	7.50	0.00
NIOBRARA A									
7,100.0	41.85	90.00	6,986.9	-640.8	-295.1	-195.7	7.50	7.50	0.00
7,183.6	48.12	90.00	7,046.0	-640.8	-236.0	-137.3	7.50	7.50	0.00
NIOBRARA B									
7,200.0	49.35	90.00	7,056.8	-640.8	-223.7	-125.1	7.50	7.50	0.00
7,300.0	56.85	90.00	7,116.8	-640.8	-143.8	-46.1	7.50	7.50	0.00
7,332.5	59.29	90.00	7,134.0	-640.8	-116.2	-18.8	7.50	7.50	0.00
NIOBRARA C									
7,400.0	64.35	90.00	7,165.9	-640.8	-56.7	40.0	7.50	7.50	0.00
7,500.0	71.85	90.00	7,203.1	-640.8	36.0	131.6	7.50	7.50	0.00
7,600.0	79.35	90.00	7,228.0	-640.8	132.8	227.3	7.50	7.50	0.00
7,700.0	86.85	90.00	7,240.0	-640.8	232.0	325.4	7.50	7.50	0.00
7,738.9	89.77	90.00	7,241.1	-640.8	270.9	363.9	7.50	7.50	0.00
End of Build - 7"									
7,800.0	89.77	90.00	7,241.4	-640.8	332.0	424.3	0.00	0.00	0.00
7,900.0	89.77	90.00	7,241.8	-640.8	432.0	523.1	0.00	0.00	0.00
8,000.0	89.77	90.00	7,242.2	-640.8	532.0	622.0	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	North Reference:	True
Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,100.0	89.77	90.00	7,242.6	-640.8	632.0	720.9	0.00	0.00	0.00
8,200.0	89.77	90.00	7,243.0	-640.8	732.0	819.7	0.00	0.00	0.00
8,300.0	89.77	90.00	7,243.4	-640.8	832.0	918.6	0.00	0.00	0.00
8,400.0	89.77	90.00	7,243.8	-640.8	932.0	1,017.5	0.00	0.00	0.00
8,500.0	89.77	90.00	7,244.2	-640.8	1,032.0	1,116.3	0.00	0.00	0.00
8,600.0	89.77	90.00	7,244.6	-640.8	1,132.0	1,215.2	0.00	0.00	0.00
8,700.0	89.77	90.00	7,245.0	-640.8	1,232.0	1,314.1	0.00	0.00	0.00
8,800.0	89.77	90.00	7,245.4	-640.8	1,332.0	1,413.0	0.00	0.00	0.00
8,900.0	89.77	90.00	7,245.8	-640.8	1,432.0	1,511.8	0.00	0.00	0.00
9,000.0	89.77	90.00	7,246.2	-640.8	1,532.0	1,610.7	0.00	0.00	0.00
9,100.0	89.77	90.00	7,246.6	-640.8	1,631.9	1,709.6	0.00	0.00	0.00
9,200.0	89.77	90.00	7,247.0	-640.8	1,731.9	1,808.4	0.00	0.00	0.00
9,300.0	89.77	90.00	7,247.4	-640.8	1,831.9	1,907.3	0.00	0.00	0.00
9,400.0	89.77	90.00	7,247.8	-640.8	1,931.9	2,006.2	0.00	0.00	0.00
9,500.0	89.77	90.00	7,248.2	-640.8	2,031.9	2,105.0	0.00	0.00	0.00
9,600.0	89.77	90.00	7,248.6	-640.8	2,131.9	2,203.9	0.00	0.00	0.00
9,700.0	89.77	90.00	7,249.0	-640.8	2,231.9	2,302.8	0.00	0.00	0.00
9,800.0	89.77	90.00	7,249.4	-640.8	2,331.9	2,401.7	0.00	0.00	0.00
9,900.0	89.77	90.00	7,249.8	-640.8	2,431.9	2,500.5	0.00	0.00	0.00
10,000.0	89.77	90.00	7,250.2	-640.8	2,531.9	2,599.4	0.00	0.00	0.00
10,100.0	89.77	90.00	7,250.6	-640.8	2,631.9	2,698.3	0.00	0.00	0.00
10,200.0	89.77	90.00	7,251.0	-640.8	2,731.9	2,797.1	0.00	0.00	0.00
10,300.0	89.77	90.00	7,251.4	-640.8	2,831.9	2,896.0	0.00	0.00	0.00
10,400.0	89.77	90.00	7,251.8	-640.8	2,931.9	2,994.9	0.00	0.00	0.00
10,500.0	89.77	90.00	7,252.2	-640.8	3,031.9	3,093.7	0.00	0.00	0.00
10,600.0	89.77	90.00	7,252.6	-640.8	3,131.9	3,192.6	0.00	0.00	0.00
10,698.4	89.77	90.00	7,253.0	-640.8	3,230.3	3,289.9	0.00	0.00	0.00
FT. HAYS									
10,700.0	89.77	90.00	7,253.0	-640.8	3,231.9	3,291.5	0.00	0.00	0.00
10,800.0	89.77	90.00	7,253.4	-640.8	3,331.9	3,390.3	0.00	0.00	0.00
10,900.0	89.77	90.00	7,253.8	-640.8	3,431.9	3,489.2	0.00	0.00	0.00
11,000.0	89.77	90.00	7,254.2	-640.8	3,531.9	3,588.1	0.00	0.00	0.00
11,100.0	89.77	90.00	7,254.6	-640.8	3,631.9	3,687.0	0.00	0.00	0.00
11,200.0	89.77	90.00	7,255.0	-640.8	3,731.9	3,785.8	0.00	0.00	0.00
11,300.0	89.77	90.00	7,255.4	-640.8	3,831.9	3,884.7	0.00	0.00	0.00
11,400.0	89.77	90.00	7,255.8	-640.8	3,931.9	3,983.6	0.00	0.00	0.00
11,500.0	89.77	90.00	7,256.2	-640.8	4,031.9	4,082.4	0.00	0.00	0.00
11,600.0	89.77	90.00	7,256.6	-640.8	4,131.9	4,181.3	0.00	0.00	0.00
11,694.8	89.77	90.00	7,257.0	-640.8	4,226.8	4,275.1	0.00	0.00	0.00

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (")	Hole Diameter (")
7,738.9	7,241.1	7"		7	7-1/2

Database:	landmark	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Project:	SEC.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site:	Wiedeman 4N66W28F - East Pad	North Reference:	True
	Sec.28-T4N-R66W		
Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (7-25-14)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,739.2	3,706.0	PARKMAN				
4,395.2	4,353.0	SUSSEX				
4,832.1	4,784.0	SHANNON				
6,947.6	6,864.0	SHARON SPRINGS				
7,067.2	6,962.0	NIOBRARA A				
7,183.6	7,046.0	NIOBRARA B				
7,332.5	7,134.0	NIOBRARA C				
10,698.4	7,253.0	FT. HAYS				
	7,275.0	CODELL				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,542.0	6,477.2	-640.8	-490.0	KOP #2
7,738.9	7,241.1	-640.8	270.9	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.28-T4N-R66W

Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W

Wiedeman 28F-432

Wellbore #1

Plan #1 (7-25-14)

Anticollision Report

11 August, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (7-25-14)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 8/10/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,694.8	Plan #1 (7-25-14) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.28-T4N-R66W						
Korwick 5-28 (Exist) - Wellbore #1 - Wellbore #1	7,778.3	7,212.6	276.4	240.3	7.654	CC, ES
Korwick 5-28 (Exist) - Wellbore #1 - Wellbore #1	7,800.0	7,211.9	277.2	240.7	7.596	SF
Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W						
Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-07-14)	1,000.0	1,000.0	29.1	24.9	6.824	CC, ES
Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-07-14)	11,694.8	11,504.7	389.4	175.1	1.817	SF
Wiedeman 28G-212 - Wellbore #1 - Plan #1 (7-25-14)	200.0	199.0	58.3	57.6	86.733	CC, ES
Wiedeman 28G-212 - Wellbore #1 - Plan #1 (7-25-14)	11,694.8	11,638.6	691.7	449.2	2.852	SF
Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-25-14)	400.0	399.0	29.1	27.6	18.550	CC, ES
Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-25-14)	11,694.8	11,678.9	424.5	184.1	1.766	SF
Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W						
Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8-07-14)	6,354.1	6,335.4	101.7	63.7	2.678	CC, ES, SF
Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8-07-14)	5,468.0	5,453.6	209.9	176.7	6.326	CC
Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8-07-14)	5,500.0	5,485.1	209.9	176.6	6.300	ES
Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8-07-14)	5,600.0	5,583.7	211.0	177.3	6.253	SF
Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8-07-14)	200.0	200.0	306.9	306.2	455.130	CC, ES
Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8-07-14)	6,500.0	6,561.3	653.6	606.5	13.874	SF
Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8-07-14)	366.3	367.3	302.7	301.3	212.542	CC
Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8-07-14)	400.0	400.0	302.7	301.1	192.400	ES
Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8-07-14)	6,500.0	6,547.6	488.2	443.0	10.802	SF

Offset Design	Existing Wells Sec.28-T4N-R66W - Korwick 5-28 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0ft
Survey Program:	100-NS-GYRO-MS											Offset Well Error:	0.0ft
Reference	Offset	Semi Major Axis			Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	161.67	-918.0	304.1	967.3				
100.0	100.0	77.2	77.2	0.1	0.1	161.67	-918.2	304.2	967.3	967.0	0.21	4,500.613	
200.0	200.0	178.4	178.4	0.3	0.3	161.66	-918.5	304.5	967.7	967.0	0.66	1,468.121	
300.0	300.0	282.7	282.7	0.6	0.5	161.67	-918.6	304.4	967.7	966.7	1.04	927.316	
400.0	400.0	382.2	382.2	0.8	0.6	161.67	-918.5	304.2	967.5	966.1	1.39	693.705	
469.7	469.7	450.7	450.7	0.9	0.7	161.69	-918.5	303.9	967.5	965.8	1.68	575.412	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells Sec.28-T4N-R66W - Korwick 5-28 (Exist) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft	
Survey Program: 100-NS-GYRO-MS														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				
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)					
500.0	500.0	480.5	480.5	1.0	0.8	161.70	-918.6	303.8	967.5	965.7	1.81	533.696				
600.0	600.0	583.0	583.0	1.2	1.0	161.71	-918.6	303.6	967.5	965.3	2.22	436.056				
700.0	700.0	684.5	684.5	1.5	1.2	161.71	-918.3	303.5	967.2	964.6	2.61	370.096				
771.2	771.2	752.2	752.2	1.6	1.3	161.72	-918.2	303.3	967.0	964.1	2.90	333.347				
800.0	800.0	779.1	779.1	1.7	1.3	161.72	-918.3	303.2	967.0	964.0	3.02	320.390				
900.0	900.0	878.6	878.6	1.9	1.5	161.73	-918.6	303.3	967.3	963.9	3.43	282.226				
1,000.0	1,000.0	977.6	977.6	2.1	1.7	161.74	-918.9	303.2	967.6	963.8	3.85	251.017				
1,100.0	1,100.0	1,080.6	1,080.6	2.3	2.0	-55.73	-919.3	302.7	966.9	962.6	4.29	225.549				
1,200.0	1,199.8	1,180.6	1,180.6	2.5	2.2	-56.01	-919.5	302.2	963.9	959.2	4.70	204.950				
1,300.0	1,299.5	1,278.8	1,278.8	2.7	2.4	-56.49	-919.7	301.9	959.2	954.0	5.14	186.755				
1,400.0	1,398.7	1,381.6	1,381.6	2.9	2.7	-57.17	-920.0	300.9	952.5	946.9	5.60	170.211				
1,500.0	1,497.5	1,476.7	1,476.7	3.2	2.9	-57.97	-920.3	300.0	944.0	938.0	6.07	155.622				
1,600.0	1,596.1	1,577.5	1,577.5	3.5	3.2	-58.77	-920.9	299.0	935.5	928.9	6.58	142.078				
1,700.0	1,694.7	1,678.2	1,678.2	3.8	3.4	-59.57	-921.1	297.8	926.7	919.6	7.12	130.198				
1,800.0	1,793.4	1,775.4	1,775.4	4.1	3.7	-60.38	-921.3	296.8	918.2	910.5	7.66	119.874				
1,900.0	1,892.0	1,873.1	1,873.0	4.4	3.9	-61.21	-921.6	296.1	910.0	901.8	8.22	110.707				
2,000.0	1,990.6	1,968.1	1,968.1	4.8	4.1	-62.04	-922.0	295.4	902.2	893.5	8.78	102.716				
2,100.0	2,089.3	2,068.2	2,068.2	5.1	4.4	-62.91	-922.8	294.7	895.0	885.6	9.37	95.511				
2,200.0	2,187.9	2,167.5	2,167.5	5.5	4.7	-63.80	-923.3	294.0	887.6	877.7	9.97	89.062				
2,300.0	2,286.5	2,268.4	2,268.4	5.8	4.9	-64.69	-924.0	292.8	880.5	869.9	10.57	83.264				
2,400.0	2,385.2	2,371.4	2,371.4	6.2	5.2	-65.62	-924.2	291.6	873.1	861.9	11.18	78.101				
2,500.0	2,483.8	2,472.2	2,472.1	6.6	5.4	-66.58	-923.9	290.6	865.6	853.8	11.77	73.574				
2,600.0	2,582.4	2,571.6	2,571.5	6.9	5.6	-67.54	-923.5	289.6	858.2	845.8	12.35	69.493				
2,700.0	2,681.1	2,668.6	2,668.5	7.3	5.8	-68.49	-923.1	288.5	851.0	838.1	12.94	65.767				
2,800.0	2,779.7	2,763.4	2,763.3	7.7	6.1	-69.43	-923.0	287.6	844.5	830.9	13.55	62.346				
2,900.0	2,878.3	2,861.7	2,861.6	8.0	6.3	-70.40	-923.4	286.6	838.5	824.4	14.17	59.157				
3,000.0	2,976.9	2,961.8	2,961.7	8.4	6.6	-71.41	-923.5	285.7	832.7	817.9	14.81	56.236				
3,100.0	3,075.6	3,060.2	3,060.1	8.8	6.8	-72.46	-923.3	285.2	827.0	811.6	15.42	53.637				
3,200.0	3,174.2	3,158.1	3,158.0	9.2	7.0	-73.52	-923.1	284.8	821.8	805.8	16.01	51.314				
3,300.0	3,272.8	3,254.8	3,254.7	9.6	7.1	-74.60	-922.9	284.7	816.9	800.4	16.55	49.364				
3,400.0	3,371.5	3,350.1	3,350.0	9.9	7.2	-75.70	-922.6	285.2	812.7	795.7	17.00	47.796				
3,500.0	3,470.1	3,448.6	3,448.5	10.3	7.2	-76.85	-922.7	285.8	809.2	791.8	17.43	46.421				
3,600.0	3,568.7	3,548.0	3,547.9	10.7	7.3	-78.03	-922.4	286.4	805.7	787.9	17.87	45.095				
3,700.0	3,667.4	3,646.3	3,646.2	11.1	7.3	-79.21	-922.2	287.1	802.8	784.5	18.31	43.836				
3,800.0	3,766.0	3,745.6	3,745.5	11.5	7.4	-80.37	-922.2	287.3	800.0	781.2	18.77	42.615				
3,900.0	3,864.6	3,846.6	3,846.4	11.8	7.5	-81.58	-922.1	287.8	797.5	778.3	19.25	41.430				
4,000.0	3,963.3	3,948.0	3,947.9	12.2	7.6	-82.82	-921.4	287.9	794.9	775.1	19.77	40.212				
4,100.0	4,061.9	4,044.5	4,044.4	12.6	7.7	-83.98	-920.9	287.8	792.6	772.3	20.29	39.058				
4,200.0	4,160.5	4,142.0	4,141.8	13.0	7.8	-85.16	-920.6	288.1	791.0	770.2	20.80	38.031				
4,300.0	4,259.1	4,241.6	4,241.5	13.4	7.9	-86.41	-920.0	288.5	789.6	768.3	21.30	37.071				
4,400.0	4,357.8	4,342.0	4,341.9	13.8	8.1	-87.67	-919.2	288.8	788.5	766.7	21.82	36.134				
4,500.0	4,456.4	4,442.5	4,442.4	14.2	8.2	-88.93	-918.2	288.9	787.4	765.0	22.36	35.207				
4,600.0	4,555.0	4,541.7	4,541.6	14.5	8.4	-90.20	-917.0	289.1	786.7	763.8	22.91	34.332				
4,700.0	4,653.7	4,643.1	4,643.0	14.9	8.6	-91.47	-915.8	288.8	785.9	762.5	23.49	33.463				
4,800.0	4,752.3	4,740.3	4,740.2	15.3	8.7	-92.68	-914.8	288.3	785.6	761.5	24.06	32.649				
4,818.5	4,770.5	4,758.3	4,758.1	15.4	8.8	-92.91	-914.5	288.3	785.6	761.4	24.17	32.508				
4,900.0	4,850.9	4,837.8	4,837.7	15.7	8.9	-93.93	-913.5	288.3	785.7	761.1	24.63	31.908				
5,000.0	4,949.6	4,935.7	4,935.6	16.1	9.1	-95.16	-912.5	288.1	786.3	761.2	25.19	31.221				
5,100.0	5,048.2	5,032.0	5,031.8	16.5	9.3	-96.38	-911.3	288.2	787.5	761.8	25.73	30.603				
5,200.0	5,146.8	5,127.8	5,127.7	16.9	9.4	-97.58	-910.6	288.5	789.4	763.2	26.26	30.067				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.28-T4N-R66W - Korwick 5-28 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft
Survey Program: 100-NS-GYRO-MS													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	
5,300.0	5,245.4	5,226.6	5,226.5	17.3	9.6	-98.78	-910.2	288.8	791.9	765.1	26.78	29.573	
5,400.0	5,344.1	5,326.7	5,326.5	17.7	9.8	-99.98	-909.8	288.8	794.4	767.1	27.32	29.082	
5,500.0	5,442.7	5,422.9	5,422.7	18.0	10.0	-101.14	-909.3	289.1	797.5	769.6	27.84	28.642	
5,600.0	5,541.3	5,521.5	5,521.3	18.4	10.1	-102.33	-908.9	289.4	801.0	772.7	28.35	28.254	
5,700.0	5,640.0	5,620.0	5,619.8	18.8	10.3	-103.49	-908.5	289.8	804.9	776.0	28.85	27.896	
5,800.0	5,738.6	5,720.4	5,720.2	19.2	10.5	-104.67	-908.0	290.0	809.0	779.6	29.37	27.543	
5,900.0	5,837.2	5,820.1	5,819.9	19.6	10.7	-105.83	-907.5	290.1	813.2	783.3	29.90	27.196	
6,000.0	5,936.2	5,917.6	5,917.4	19.8	10.9	-106.92	-906.7	290.2	817.2	786.9	30.31	26.964	
6,100.0	6,035.6	6,015.7	6,015.5	20.1	11.0	-107.74	-906.2	290.5	820.5	789.8	30.67	26.750	
6,200.0	6,135.3	6,114.0	6,113.8	20.3	11.2	-108.31	-905.8	290.9	823.1	792.1	31.01	26.545	
6,300.0	6,235.2	6,219.1	6,218.9	20.4	11.4	-108.64	-905.3	290.9	824.2	792.9	31.36	26.287	
6,400.0	6,335.2	6,313.5	6,313.3	20.6	11.6	108.68	-904.9	291.1	824.5	797.6	26.95	30.596	
6,500.0	6,435.2	6,411.2	6,411.0	20.7	11.8	108.63	-904.4	291.7	825.0	797.7	27.29	30.236	
6,600.0	6,535.1	6,507.4	6,507.2	20.8	11.9	18.69	-904.3	292.7	823.8	791.7	32.12	25.645	
6,700.0	6,634.1	6,603.8	6,603.6	20.8	12.1	19.27	-904.3	293.9	811.7	779.9	31.84	25.490	
6,800.0	6,730.3	6,699.5	6,699.2	20.8	12.2	20.53	-904.5	295.3	787.7	756.6	31.16	25.282	
6,900.0	6,822.2	6,786.3	6,786.1	20.7	12.3	22.55	-905.0	296.9	752.7	722.5	30.12	24.986	
7,000.0	6,908.2	6,866.0	6,865.7	20.6	12.4	25.54	-905.9	299.0	707.7	678.8	28.87	24.508	
7,100.0	6,986.9	6,942.1	6,941.7	20.4	12.5	30.01	-907.5	301.4	653.9	626.2	27.67	23.636	
7,200.0	7,056.8	7,012.3	7,011.9	20.3	12.6	36.49	-909.5	303.7	592.4	565.5	26.91	22.016	
7,300.0	7,116.8	7,072.8	7,072.3	20.1	12.7	45.39	-911.6	305.7	525.4	498.2	27.13	19.363	
7,400.0	7,165.9	7,124.2	7,123.6	20.0	12.7	56.77	-913.4	307.6	455.6	427.0	28.64	15.907	
7,500.0	7,203.1	7,164.6	7,164.0	20.0	12.8	69.20	-915.0	309.0	387.4	356.5	30.91	12.536	
7,600.0	7,228.0	7,192.4	7,191.8	20.4	12.8	79.79	-916.1	309.8	327.8	294.8	32.99	9.937	
7,700.0	7,240.0	7,207.4	7,206.8	21.9	12.8	86.17	-916.8	310.3	287.2	252.5	34.73	8.270	
7,778.3	7,242.7	7,212.6	7,211.9	23.3	12.8	87.56	-917.0	310.5	276.4	240.3	36.12	7.654 CC, ES	
7,800.0	7,241.4	7,211.9	7,211.3	23.7	12.8	87.71	-917.0	310.5	277.2	240.7	36.50	7.596 SF	
7,900.0	7,241.8	7,215.4	7,214.8	25.7	12.8	88.44	-917.1	310.6	301.9	263.5	38.44	7.854	
8,000.0	7,242.2	7,218.9	7,218.2	27.8	12.8	89.16	-917.3	310.7	354.2	313.6	40.53	8.739	
8,100.0	7,242.6	7,222.4	7,221.7	30.0	12.8	89.89	-917.4	310.8	423.9	381.2	42.73	9.921	
8,200.0	7,243.0	7,225.9	7,225.2	32.4	12.9	90.61	-917.6	310.9	503.9	458.9	45.01	11.194	
8,300.0	7,243.4	7,229.4	7,228.7	34.8	12.9	91.34	-917.7	311.0	590.0	542.6	47.37	12.455	
8,400.0	7,243.8	7,232.9	7,232.2	37.2	12.9	92.06	-917.9	311.1	679.9	630.1	49.78	13.659	
8,500.0	7,244.2	7,236.4	7,235.7	39.7	12.9	92.78	-918.0	311.2	772.3	720.1	52.23	14.787	
8,600.0	7,244.6	7,239.9	7,239.2	42.2	12.9	93.50	-918.2	311.3	866.3	811.6	54.71	15.836	
8,700.0	7,245.0	7,243.4	7,242.7	44.8	12.9	94.21	-918.3	311.4	961.6	904.4	57.21	16.809	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.665		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.222		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.933		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.524		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	29.1	0.0	29.1	27.1	2.02	14.407		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	29.1	0.0	29.1	26.7	2.47	11.788		
700.0	700.0	700.0	700.0	1.5	1.5	0.00	29.1	0.0	29.1	26.2	2.92	9.974		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	29.1	0.0	29.1	25.8	3.37	8.644		
900.0	900.0	900.0	900.0	1.9	1.9	0.00	29.1	0.0	29.1	25.3	3.82	7.627		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	29.1	0.0	29.1	24.9	4.27	6.824 CC, ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.3	2.4	144.57	29.1	0.0	30.5	25.9	4.69	6.507		
1,200.0	1,199.8	1,199.8	1,199.8	2.5	2.6	149.50	29.1	0.0	34.9	29.8	5.10	6.855		
1,300.0	1,299.5	1,300.5	1,300.5	2.7	2.8	153.80	28.1	-1.4	41.4	35.9	5.48	7.551		
1,400.0	1,398.7	1,401.4	1,401.2	2.9	3.0	155.82	25.1	-5.8	48.6	42.7	5.86	8.297		
1,500.0	1,497.5	1,502.5	1,501.9	3.2	3.2	156.31	20.0	-13.1	56.3	50.0	6.25	8.998		
1,600.0	1,596.1	1,603.7	1,602.4	3.5	3.4	154.93	12.9	-23.3	62.2	55.5	6.69	9.295		
1,700.0	1,694.7	1,703.6	1,701.3	3.8	3.7	152.94	5.0	-34.5	67.1	59.9	7.16	9.370		
1,800.0	1,793.4	1,803.5	1,800.2	4.1	3.9	151.21	-2.8	-45.8	72.1	64.4	7.65	9.416		
1,900.0	1,892.0	1,903.3	1,899.1	4.4	4.2	149.72	-10.7	-57.1	77.1	68.9	8.17	9.440		
2,000.0	1,990.6	2,003.2	1,998.0	4.8	4.5	148.40	-18.6	-68.3	82.2	73.5	8.70	9.446		
2,100.0	2,089.3	2,103.0	2,096.9	5.1	4.8	147.24	-26.4	-79.6	87.3	78.0	9.25	9.439		
2,200.0	2,187.9	2,202.9	2,195.8	5.5	5.1	146.21	-34.3	-90.8	92.4	82.6	9.81	9.423		
2,300.0	2,286.5	2,302.7	2,294.8	5.8	5.4	145.29	-42.1	-102.1	97.6	87.2	10.38	9.400		
2,400.0	2,385.2	2,402.6	2,393.7	6.2	5.7	144.46	-50.0	-113.4	102.8	91.8	10.97	9.373		
2,500.0	2,483.8	2,502.4	2,492.6	6.6	6.0	143.71	-57.9	-124.6	108.0	96.5	11.56	9.344		
2,600.0	2,582.4	2,602.3	2,591.5	6.9	6.3	143.02	-65.7	-135.9	113.2	101.1	12.16	9.312		
2,700.0	2,681.1	2,702.1	2,690.4	7.3	6.7	142.40	-73.6	-147.1	118.5	105.7	12.77	9.279		
2,800.0	2,779.7	2,802.0	2,789.3	7.7	7.0	141.84	-81.4	-158.4	123.8	110.4	13.38	9.247		
2,900.0	2,878.3	2,901.9	2,888.2	8.0	7.3	141.31	-89.3	-169.7	129.0	115.0	14.00	9.214		
3,000.0	2,976.9	3,001.7	2,987.1	8.4	7.6	140.83	-97.2	-180.9	134.3	119.7	14.63	9.182		
3,100.0	3,075.6	3,101.6	3,086.0	8.8	8.0	140.39	-105.0	-192.2	139.6	124.3	15.25	9.150		
3,200.0	3,174.2	3,201.4	3,184.9	9.2	8.3	139.98	-112.9	-203.4	144.9	129.0	15.89	9.120		
3,300.0	3,272.8	3,301.3	3,283.8	9.6	8.6	139.59	-120.7	-214.7	150.2	133.7	16.52	9.090		
3,400.0	3,371.5	3,401.1	3,382.7	9.9	9.0	139.24	-128.6	-226.0	155.5	138.3	17.16	9.061		
3,500.0	3,470.1	3,501.0	3,481.6	10.3	9.3	138.90	-136.5	-237.2	160.8	143.0	17.80	9.034		
3,600.0	3,568.7	3,600.8	3,580.5	10.7	9.6	138.59	-144.3	-248.5	166.1	147.7	18.44	9.007		
3,700.0	3,667.4	3,700.7	3,679.4	11.1	10.0	138.30	-152.2	-259.7	171.4	152.4	19.09	8.981		
3,800.0	3,766.0	3,800.5	3,778.3	11.5	10.3	138.03	-160.0	-271.0	176.8	157.0	19.74	8.956		
3,900.0	3,864.6	3,900.4	3,877.2	11.8	10.7	137.77	-167.9	-282.3	182.1	161.7	20.39	8.933		
4,000.0	3,963.3	4,000.3	3,976.2	12.2	11.0	137.52	-175.8	-293.5	187.4	166.4	21.04	8.910		
4,100.0	4,061.9	4,100.1	4,075.1	12.6	11.3	137.29	-183.6	-304.8	192.8	171.1	21.69	8.888		
4,200.0	4,160.5	4,200.0	4,174.0	13.0	11.7	137.07	-191.5	-316.0	198.1	175.8	22.34	8.867		
4,300.0	4,259.1	4,299.8	4,272.9	13.4	12.0	136.87	-199.3	-327.3	203.5	180.5	23.00	8.847		
4,400.0	4,357.8	4,399.7	4,371.8	13.8	12.4	136.67	-207.2	-338.6	208.8	185.2	23.66	8.827		
4,500.0	4,456.4	4,499.5	4,470.7	14.2	12.7	136.49	-215.1	-349.8	214.2	189.8	24.31	8.809		
4,600.0	4,555.0	4,599.4	4,569.6	14.5	13.0	136.31	-222.9	-361.1	219.5	194.5	24.97	8.791		
4,700.0	4,653.7	4,699.2	4,668.5	14.9	13.4	136.14	-230.8	-372.3	224.9	199.2	25.63	8.773		
4,800.0	4,752.3	4,799.1	4,767.4	15.3	13.7	135.98	-238.6	-383.6	230.2	203.9	26.29	8.757		
4,900.0	4,850.9	4,898.9	4,866.3	15.7	14.1	135.82	-246.5	-394.9	235.6	208.6	26.95	8.741		
5,000.0	4,949.6	4,998.8	4,965.2	16.1	14.4	135.68	-254.4	-406.1	240.9	213.3	27.61	8.725		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-								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		
5,100.0	5,048.2	5,098.7	5,064.1	16.5	14.8	135.54	-262.2	-417.4	246.3	218.0	28.27	8.711		
5,200.0	5,146.8	5,198.5	5,163.0	16.9	15.1	135.40	-270.1	-428.6	251.7	222.7	28.94	8.696		
5,300.0	5,245.4	5,298.4	5,261.9	17.3	15.5	135.27	-278.0	-439.9	257.0	227.4	29.60	8.683		
5,400.0	5,344.1	5,398.2	5,360.8	17.7	15.8	135.15	-285.8	-451.2	262.4	232.1	30.27	8.669		
5,500.0	5,442.7	5,498.1	5,459.7	18.0	16.2	135.03	-293.7	-462.4	267.7	236.8	30.93	8.656		
5,600.0	5,541.3	5,595.7	5,556.5	18.4	16.5	135.01	-301.1	-473.1	273.3	241.8	31.55	8.663		
5,700.0	5,640.0	5,691.1	5,651.4	18.8	16.7	135.50	-306.7	-481.1	280.3	248.3	32.02	8.754		
5,800.0	5,738.6	5,786.1	5,746.1	19.2	16.9	136.52	-310.6	-486.6	288.9	256.5	32.37	8.923		
5,900.0	5,837.2	5,880.4	5,840.4	19.6	17.0	138.00	-312.6	-489.5	299.2	266.6	32.62	9.171		
6,000.0	5,936.2	5,976.2	5,936.2	19.8	17.2	139.76	-312.9	-490.0	309.8	277.0	32.75	9.457		
6,100.0	6,035.6	6,075.6	6,035.6	20.1	17.3	141.14	-312.9	-490.0	318.2	285.3	32.91	9.670		
6,200.0	6,135.3	6,175.3	6,135.3	20.3	17.5	142.04	-312.9	-490.0	324.1	291.0	33.11	9.789		
6,300.0	6,235.2	6,275.2	6,235.2	20.4	17.6	142.51	-312.9	-490.0	327.3	294.0	33.34	9.816		
6,400.0	6,335.2	6,375.2	6,335.2	20.6	17.8	0.05	-312.9	-489.7	327.9	293.8	34.07	9.624		
6,500.0	6,435.2	6,474.2	6,433.7	20.7	17.8	1.66	-312.9	-480.5	328.0	293.4	34.60	9.481		
6,600.0	6,535.1	6,569.8	6,526.9	20.8	17.8	-84.98	-312.9	-459.6	329.2	296.0	33.19	9.919		
6,700.0	6,634.1	6,663.0	6,614.5	20.8	17.8	-81.57	-312.9	-428.1	331.6	299.0	32.65	10.157		
6,800.0	6,730.3	6,754.0	6,695.9	20.8	17.7	-78.36	-312.9	-387.3	335.0	302.9	32.08	10.444		
6,900.0	6,822.2	6,843.3	6,770.4	20.7	17.6	-75.41	-312.9	-338.2	339.1	307.6	31.55	10.750		
7,000.0	6,908.2	6,931.1	6,837.6	20.6	17.5	-72.76	-312.9	-281.8	343.7	312.5	31.14	11.036		
7,100.0	6,986.9	7,017.5	6,896.9	20.4	17.5	-70.42	-312.9	-219.1	348.4	317.4	30.94	11.259		
7,200.0	7,056.8	7,100.0	6,946.7	20.3	17.6	-68.46	-312.9	-153.3	353.0	321.9	31.04	11.372		
7,300.0	7,116.8	7,187.1	6,991.2	20.1	17.9	-66.75	-312.9	-78.5	357.1	325.6	31.57	11.312		
7,400.0	7,165.9	7,270.7	7,025.6	20.0	18.4	-65.42	-312.9	-2.3	360.7	328.1	32.59	11.070		
7,500.0	7,203.1	7,350.0	7,050.4	20.0	19.2	-64.47	-312.9	72.9	363.6	329.5	34.08	10.668		
7,600.0	7,228.0	7,436.4	7,068.4	20.4	20.4	-63.79	-312.9	157.4	365.5	329.3	36.19	10.099		
7,700.0	7,240.0	7,518.8	7,076.6	21.9	21.7	-63.48	-312.9	239.4	366.4	327.7	38.72	9.464		
7,800.0	7,241.4	7,610.2	7,076.9	23.7	23.4	-63.36	-312.9	330.7	366.8	325.1	41.74	8.788		
7,900.0	7,241.8	7,710.2	7,076.2	25.7	25.4	-63.20	-312.9	430.7	367.3	322.1	45.20	8.126		
8,000.0	7,242.2	7,810.2	7,075.4	27.8	27.5	-63.04	-312.9	530.7	367.9	318.9	48.93	7.519		
8,100.0	7,242.6	7,910.2	7,074.6	30.0	29.7	-62.88	-312.9	630.7	368.4	315.5	52.85	6.970		
8,200.0	7,243.0	8,010.1	7,073.8	32.4	32.1	-62.72	-312.9	730.7	368.9	312.0	56.93	6.480		
8,300.0	7,243.4	8,110.1	7,073.1	34.8	34.5	-62.55	-312.9	830.6	369.5	308.3	61.14	6.043		
8,400.0	7,243.8	8,210.1	7,072.3	37.2	36.9	-62.39	-312.9	930.6	370.0	304.6	65.43	5.655		
8,500.0	7,244.2	8,310.1	7,071.5	39.7	39.4	-62.23	-312.9	1,030.6	370.5	300.7	69.81	5.308		
8,600.0	7,244.6	8,410.1	7,070.8	42.2	42.0	-62.07	-312.9	1,130.6	371.1	296.9	74.24	4.999		
8,700.0	7,245.0	8,510.1	7,070.0	44.8	44.6	-61.91	-312.9	1,230.6	371.6	292.9	78.72	4.721		
8,800.0	7,245.4	8,610.1	7,069.2	47.4	47.2	-61.76	-312.9	1,330.6	372.2	289.0	83.23	4.472		
8,900.0	7,245.8	8,710.1	7,068.5	50.0	49.8	-61.60	-312.9	1,430.6	372.7	285.0	87.78	4.247		
9,000.0	7,246.2	8,810.1	7,067.7	52.6	52.4	-61.44	-312.9	1,530.6	373.3	281.0	92.34	4.043		
9,100.0	7,246.6	8,910.1	7,066.9	55.3	55.1	-61.28	-312.9	1,630.6	373.9	276.9	96.92	3.857		
9,200.0	7,247.0	9,010.1	7,066.2	57.9	57.8	-61.13	-312.9	1,730.6	374.4	272.9	101.52	3.688		
9,300.0	7,247.4	9,110.1	7,065.4	60.6	60.4	-60.97	-312.9	1,830.6	375.0	268.9	106.12	3.534		
9,400.0	7,247.8	9,210.1	7,064.6	63.3	63.1	-60.81	-312.9	1,930.5	375.6	264.8	110.73	3.392		
9,500.0	7,248.2	9,310.1	7,063.9	66.0	65.8	-60.66	-312.9	2,030.5	376.1	260.8	115.34	3.261		
9,600.0	7,248.6	9,410.1	7,063.1	68.7	68.5	-60.50	-312.9	2,130.5	376.7	256.8	119.96	3.140		
9,700.0	7,249.0	9,510.0	7,062.3	71.4	71.3	-60.35	-312.9	2,230.5	377.3	252.7	124.57	3.029		
9,800.0	7,249.4	9,610.0	7,061.6	74.1	74.0	-60.19	-312.9	2,330.5	377.9	248.7	129.18	2.925		
9,900.0	7,249.8	9,710.0	7,060.8	76.8	76.7	-60.04	-312.9	2,430.5	378.5	244.7	133.79	2.829		
10,000.0	7,250.2	9,810.0	7,060.0	79.6	79.5	-59.89	-312.9	2,530.5	379.0	240.6	138.40	2.739		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design													Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28F-202 - Wellbore #1 - Plan #1 (8-		Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
10,100.0	7,250.6	9,910.0	7,059.3	82.3	82.2	-59.73	-312.9	2,630.5	379.6	236.6	143.00	2.655				
10,200.0	7,251.0	10,010.0	7,058.5	85.1	84.9	-59.58	-312.9	2,730.5	380.2	232.6	147.59	2.576				
10,300.0	7,251.4	10,110.0	7,057.7	87.8	87.7	-59.43	-312.9	2,830.5	380.8	228.6	152.17	2.502				
10,400.0	7,251.8	10,210.0	7,057.0	90.5	90.4	-59.28	-312.9	2,930.4	381.4	224.7	156.75	2.433				
10,500.0	7,252.2	10,310.0	7,056.2	93.3	93.2	-59.13	-312.9	3,030.4	382.0	220.7	161.32	2.368				
10,600.0	7,252.6	10,410.0	7,055.4	96.1	96.0	-58.98	-312.9	3,130.4	382.6	216.7	165.88	2.306				
10,700.0	7,253.0	10,510.0	7,054.7	98.8	98.7	-58.83	-312.9	3,230.4	383.2	212.8	170.44	2.248				
10,800.0	7,253.4	10,610.0	7,053.9	101.6	101.5	-58.68	-312.9	3,330.4	383.8	208.8	174.98	2.194				
10,900.0	7,253.8	10,710.0	7,053.1	104.3	104.3	-58.53	-312.9	3,430.4	384.4	204.9	179.51	2.142				
11,000.0	7,254.2	10,810.0	7,052.3	107.1	107.0	-58.38	-312.9	3,530.4	385.0	201.0	184.03	2.092				
11,100.0	7,254.6	10,909.9	7,051.6	109.9	109.8	-58.23	-312.9	3,630.4	385.7	197.1	188.54	2.045				
11,200.0	7,255.0	11,009.9	7,050.8	112.6	112.6	-58.09	-312.9	3,730.4	386.3	193.2	193.04	2.001				
11,300.0	7,255.4	11,109.9	7,050.0	115.4	115.3	-57.94	-312.9	3,830.4	386.9	189.4	197.53	1.959				
11,400.0	7,255.8	11,209.9	7,049.3	118.2	118.1	-57.79	-312.9	3,930.3	387.5	185.5	202.01	1.918				
11,500.0	7,256.2	11,309.9	7,048.5	121.0	120.9	-57.65	-312.9	4,030.3	388.1	181.7	206.48	1.880				
11,600.0	7,256.6	11,409.9	7,047.7	123.7	123.6	-57.50	-312.9	4,130.3	388.8	177.9	210.85	1.844				
11,694.8	7,257.0	11,504.7	7,047.0	126.4	125.3	-57.36	-312.9	4,225.2	389.4	175.1	214.25	1.817 SF				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28G-212 - Wellbore #1 - Plan #1 (7-										Offset Site Error:		0.0 ft		
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-58.3	0.0	58.3							
100.0	100.0	99.0	99.0	0.1	0.1	-180.00	-58.3	0.0	58.3	58.1	0.22	260.632				
200.0	200.0	199.0	199.0	0.3	0.3	-180.00	-58.3	0.0	58.3	57.6	0.67	86.733	CC, ES			
300.0	300.0	297.1	297.1	0.6	0.5	-179.42	-59.8	-0.6	59.9	58.8	1.10	54.611				
400.0	400.0	395.0	394.9	0.8	0.7	-177.84	-64.5	-2.4	64.6	63.1	1.53	42.373				
500.0	500.0	492.4	491.9	1.0	1.0	-175.66	-72.2	-5.5	72.7	70.7	1.98	36.698				
600.0	600.0	589.2	588.0	1.2	1.2	-173.33	-82.8	-9.7	84.1	81.7	2.46	34.156				
700.0	700.0	685.0	682.7	1.5	1.6	-171.14	-96.4	-15.0	98.9	95.9	2.97	33.314				
800.0	800.0	779.8	775.9	1.7	1.9	-169.22	-112.7	-21.5	117.0	113.5	3.50	33.455				
900.0	900.0	873.3	867.2	1.9	2.3	-167.61	-131.6	-28.9	138.4	134.4	4.05	34.180				
1,000.0	1,000.0	968.6	959.6	2.1	2.8	-166.27	-153.1	-37.4	162.4	157.8	4.62	35.134				
1,100.0	1,100.0	1,066.0	1,054.0	2.3	3.3	-22.69	-175.2	-46.1	185.1	180.4	4.74	39.023				
1,200.0	1,199.8	1,164.0	1,149.0	2.5	3.8	-22.28	-197.6	-54.9	204.7	199.6	5.18	39.556				
1,300.0	1,299.5	1,262.7	1,244.7	2.7	4.2	-22.29	-220.0	-63.8	221.2	215.5	5.63	39.318				
1,400.0	1,398.7	1,361.8	1,340.8	2.9	4.8	-22.63	-242.6	-72.7	234.4	228.3	6.09	38.486				
1,500.0	1,497.5	1,461.2	1,437.2	3.2	5.3	-23.28	-265.2	-81.6	244.6	238.0	6.58	37.170				
1,600.0	1,596.1	1,560.7	1,533.7	3.5	5.8	-24.02	-287.9	-90.6	253.9	246.8	7.09	35.787				
1,700.0	1,694.7	1,660.2	1,630.1	3.8	6.3	-24.71	-310.5	-99.5	263.2	255.6	7.62	34.539				
1,800.0	1,793.4	1,759.7	1,726.6	4.1	6.8	-25.36	-333.2	-108.5	272.6	264.5	8.16	33.412				
1,900.0	1,892.0	1,859.2	1,823.1	4.4	7.3	-25.95	-355.9	-117.4	282.1	273.4	8.71	32.392				
2,000.0	1,990.6	1,958.8	1,919.6	4.8	7.8	-26.52	-378.5	-126.4	291.5	282.2	9.26	31.466				
2,100.0	2,089.3	2,058.3	2,016.1	5.1	8.3	-27.04	-401.2	-135.3	301.0	291.2	9.83	30.624				
2,200.0	2,187.9	2,157.8	2,112.6	5.5	8.9	-27.53	-423.8	-144.2	310.5	300.1	10.40	29.855				
2,300.0	2,286.5	2,257.3	2,209.1	5.8	9.4	-28.00	-446.5	-153.2	320.0	309.0	10.98	29.152				
2,400.0	2,385.2	2,356.8	2,305.5	6.2	9.9	-28.44	-469.2	-162.1	329.6	318.0	11.56	28.506				
2,500.0	2,483.8	2,456.3	2,402.0	6.6	10.4	-28.85	-491.8	-171.1	339.1	327.0	12.15	27.912				
2,600.0	2,582.4	2,555.8	2,498.5	6.9	10.9	-29.24	-514.5	-180.0	348.7	335.9	12.74	27.365				
2,700.0	2,681.1	2,655.3	2,595.0	7.3	11.4	-29.61	-537.2	-188.9	358.3	344.9	13.34	26.858				
2,800.0	2,779.7	2,754.9	2,691.5	7.7	11.9	-29.96	-559.8	-197.9	367.9	353.9	13.94	26.389				
2,900.0	2,878.3	2,854.4	2,788.0	8.0	12.5	-30.29	-582.5	-206.8	377.5	363.0	14.55	25.953				
3,000.0	2,976.9	2,953.9	2,884.5	8.4	13.0	-30.60	-605.1	-215.8	387.1	372.0	15.15	25.547				
3,100.0	3,075.6	3,053.4	2,980.9	8.8	13.5	-30.91	-627.8	-224.7	396.8	381.0	15.77	25.168				
3,200.0	3,174.2	3,152.9	3,077.4	9.2	14.0	-31.19	-650.5	-233.6	406.4	390.1	16.38	24.814				
3,300.0	3,272.8	3,252.4	3,173.9	9.6	14.5	-31.46	-673.1	-242.6	416.1	399.1	17.00	24.482				
3,400.0	3,371.5	3,351.9	3,270.4	9.9	15.1	-31.72	-695.8	-251.5	425.8	408.2	17.61	24.171				
3,500.0	3,470.1	3,451.4	3,366.9	10.3	15.6	-31.97	-718.4	-260.5	435.4	417.2	18.24	23.878				
3,600.0	3,568.7	3,551.0	3,463.4	10.7	16.1	-32.21	-741.1	-269.4	445.1	426.3	18.86	23.603				
3,700.0	3,667.4	3,650.5	3,559.8	11.1	16.6	-32.44	-763.8	-278.3	454.8	435.3	19.48	23.343				
3,800.0	3,766.0	3,750.0	3,656.3	11.5	17.1	-32.66	-786.4	-287.3	464.5	444.4	20.11	23.097				
3,900.0	3,864.6	3,849.5	3,752.8	11.8	17.6	-32.87	-809.1	-296.2	474.2	453.5	20.74	22.865				
4,000.0	3,963.3	3,949.0	3,849.3	12.2	18.2	-33.07	-831.7	-305.2	483.9	462.6	21.37	22.645				
4,100.0	4,061.9	4,048.5	3,945.8	12.6	18.7	-33.26	-854.4	-314.1	493.7	471.7	22.00	22.436				
4,200.0	4,160.5	4,148.0	4,042.3	13.0	19.2	-33.45	-877.1	-323.0	503.4	480.8	22.64	22.238				
4,300.0	4,259.1	4,247.6	4,138.8	13.4	19.7	-33.62	-899.7	-332.0	513.1	489.8	23.27	22.050				
4,400.0	4,357.8	4,347.1	4,235.2	13.8	20.2	-33.80	-922.4	-340.9	522.9	498.9	23.91	21.871				
4,500.0	4,456.4	4,446.6	4,331.7	14.2	20.7	-33.96	-945.0	-349.9	532.6	508.0	24.54	21.700				
4,600.0	4,555.0	4,546.1	4,428.2	14.5	21.3	-34.12	-967.7	-358.8	542.3	517.2	25.18	21.537				
4,700.0	4,653.7	4,645.6	4,524.7	14.9	21.8	-34.28	-990.4	-367.8	552.1	526.3	25.82	21.381				
4,800.0	4,752.3	4,745.1	4,621.2	15.3	22.3	-34.42	-1,013.0	-376.7	561.8	535.4	26.46	21.232				
4,900.0	4,850.9	4,844.6	4,717.7	15.7	22.8	-34.57	-1,035.7	-385.6	571.6	544.5	27.10	21.090				
5,000.0	4,949.6	4,944.1	4,814.2	16.1	23.3	-34.71	-1,058.3	-394.6	581.3	553.6	27.74	20.954				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28G-212 - Wellbore #1 - Plan #1 (7-								Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,048.2	5,043.7	4,910.6	16.5	23.9	-34.84	-1,081.0	-403.5	591.1	562.7	28.39	20.823		
5,200.0	5,146.8	5,143.2	5,007.1	16.9	24.4	-34.97	-1,103.7	-412.5	600.9	571.8	29.03	20.698		
5,300.0	5,245.4	5,242.7	5,103.6	17.3	24.9	-35.10	-1,126.3	-421.4	610.6	581.0	29.67	20.578		
5,400.0	5,344.1	5,342.2	5,200.1	17.7	25.4	-35.22	-1,149.0	-430.3	620.4	590.1	30.32	20.462		
5,500.0	5,442.7	5,441.7	5,296.6	18.0	25.9	-35.34	-1,171.6	-439.3	630.2	599.2	30.97	20.351		
5,600.0	5,541.3	5,541.2	5,393.1	18.4	26.4	-35.45	-1,194.3	-448.2	640.0	608.3	31.61	20.244		
5,700.0	5,640.0	5,640.7	5,489.6	18.8	27.0	-35.56	-1,217.0	-457.2	649.7	617.5	32.26	20.141		
5,800.0	5,738.6	5,765.0	5,610.6	19.2	27.4	-35.77	-1,243.2	-467.5	657.8	624.9	32.94	19.969		
5,900.0	5,837.2	5,892.4	5,735.8	19.6	27.8	-36.14	-1,265.0	-476.1	661.8	628.2	33.63	19.680		
6,000.0	5,936.2	6,019.9	5,862.0	19.8	28.1	-36.56	-1,281.6	-482.7	663.3	629.1	34.19	19.402		
6,100.0	6,035.6	6,147.5	5,989.0	20.1	28.4	-36.91	-1,293.0	-487.1	663.5	628.8	34.66	19.140		
6,200.0	6,135.3	6,274.9	6,116.3	20.3	28.5	-37.18	-1,299.1	-489.6	662.3	627.2	35.06	18.890		
6,300.0	6,235.2	6,392.9	6,234.2	20.4	28.7	-37.37	-1,300.2	-490.0	660.0	624.6	35.37	18.661		
6,399.6	6,334.8	6,492.5	6,333.8	20.6	28.7	179.98	-1,300.2	-490.0	659.1	623.5	35.61	18.507		
6,400.0	6,335.2	6,492.9	6,334.2	20.6	28.7	180.00	-1,300.2	-490.0	659.4	613.3	46.08	14.311		
6,424.0	6,359.2	6,516.8	6,358.1	20.6	28.8	179.95	-1,300.2	-489.5	659.4	613.3	46.12	14.297		
6,500.0	6,435.2	6,592.2	6,433.2	20.7	28.8	179.38	-1,300.2	-482.9	659.4	613.3	46.17	14.283		
6,600.0	6,535.1	6,688.7	6,527.7	20.8	28.8	87.88	-1,300.2	-463.8	659.9	623.3	36.55	18.054		
6,700.0	6,634.1	6,782.8	6,616.9	20.8	28.7	86.32	-1,300.2	-433.8	660.8	623.9	36.93	17.894		
6,800.0	6,730.3	6,875.0	6,700.0	20.8	28.7	84.84	-1,300.2	-394.0	662.2	625.0	37.11	17.843		
6,900.0	6,822.2	6,965.6	6,776.4	20.7	28.6	83.45	-1,300.2	-345.5	663.8	626.7	37.13	17.880		
7,000.0	6,908.2	7,054.6	6,845.4	20.6	28.4	82.17	-1,300.2	-289.3	665.7	628.7	37.05	17.970		
7,100.0	6,986.9	7,142.4	6,906.6	20.4	28.3	81.03	-1,300.2	-226.4	667.7	630.7	36.98	18.053		
7,200.0	7,056.8	7,229.1	6,959.5	20.3	28.2	80.02	-1,300.2	-157.8	669.6	632.5	37.09	18.053		
7,300.0	7,116.8	7,315.0	7,004.0	20.1	28.1	79.17	-1,300.2	-84.4	671.4	633.9	37.53	17.890		
7,400.0	7,165.9	7,400.0	7,039.6	20.0	28.0	78.48	-1,300.2	-7.2	673.0	634.6	38.45	17.503		
7,500.0	7,203.1	7,484.6	7,066.3	20.0	27.9	77.96	-1,300.2	73.0	674.2	634.3	39.98	16.865		
7,600.0	7,228.0	7,568.8	7,083.9	20.4	27.9	77.62	-1,300.2	155.3	675.1	633.0	42.13	16.025		
7,700.0	7,240.0	7,650.0	7,092.3	21.9	28.0	77.46	-1,300.2	236.0	675.5	630.7	44.79	15.083		
7,800.0	7,241.4	7,744.2	7,092.6	23.7	28.3	77.37	-1,300.2	330.2	675.7	627.6	48.10	14.049		
7,900.0	7,241.8	7,844.2	7,091.4	25.7	29.0	77.24	-1,300.2	430.2	676.1	624.3	51.80	13.051		
8,000.0	7,242.2	7,944.2	7,090.3	27.8	30.3	77.11	-1,300.2	530.2	676.4	620.6	55.80	12.123		
8,100.0	7,242.6	8,044.2	7,089.1	30.0	32.1	76.98	-1,300.2	630.2	676.8	616.8	60.02	11.276		
8,200.0	7,243.0	8,144.2	7,087.9	32.4	34.1	76.85	-1,300.2	730.2	677.1	612.7	64.42	10.511		
8,300.0	7,243.4	8,244.2	7,086.8	34.8	36.3	76.72	-1,300.2	830.1	677.5	608.5	68.98	9.822		
8,400.0	7,243.8	8,344.2	7,085.6	37.2	38.6	76.59	-1,300.2	930.1	677.9	604.2	73.65	9.205		
8,500.0	7,244.2	8,444.1	7,084.4	39.7	41.0	76.46	-1,300.2	1,030.1	678.2	599.8	78.41	8.650		
8,600.0	7,244.6	8,544.1	7,083.2	42.2	43.4	76.33	-1,300.2	1,130.1	678.6	595.4	83.25	8.151		
8,700.0	7,245.0	8,644.1	7,082.1	44.8	45.9	76.21	-1,300.2	1,230.1	679.0	590.8	88.16	7.702		
8,800.0	7,245.4	8,744.1	7,080.9	47.4	48.4	76.08	-1,300.2	1,330.0	679.4	586.2	93.12	7.296		
8,900.0	7,245.8	8,844.1	7,079.7	50.0	50.9	75.95	-1,300.2	1,430.0	679.7	581.6	98.12	6.927		
9,000.0	7,246.2	8,944.1	7,078.6	52.6	53.5	75.82	-1,300.2	1,530.0	680.1	577.0	103.16	6.593		
9,100.0	7,246.6	9,044.1	7,077.4	55.3	56.1	75.69	-1,300.2	1,630.0	680.5	572.3	108.23	6.287		
9,200.0	7,247.0	9,144.1	7,076.2	57.9	58.7	75.56	-1,300.2	1,730.0	680.9	567.6	113.33	6.008		
9,300.0	7,247.4	9,244.0	7,075.1	60.6	61.4	75.44	-1,300.2	1,829.9	681.3	562.8	118.44	5.752		
9,400.0	7,247.8	9,344.0	7,073.9	63.3	64.0	75.31	-1,300.2	1,929.9	681.7	558.1	123.58	5.516		
9,500.0	7,248.2	9,444.0	7,072.7	66.0	66.7	75.18	-1,300.2	2,029.9	682.1	553.4	128.73	5.299		
9,600.0	7,248.6	9,544.0	7,071.6	68.7	69.3	75.05	-1,300.2	2,129.9	682.5	548.6	133.89	5.098		
9,700.0	7,249.0	9,644.0	7,070.4	71.4	72.0	74.93	-1,300.2	2,229.9	682.9	543.8	139.06	4.911		
9,800.0	7,249.4	9,744.0	7,069.2	74.1	74.7	74.80	-1,300.2	2,329.8	683.3	539.1	144.24	4.737		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28G-212 - Wellbore #1 - Plan #1 (7-25-14)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
9,900.0	7,249.8	9,844.0	7,068.0	76.8	77.4	74.67	-1,300.2	2,429.8	683.7	534.3	149.42	4.576			
10,000.0	7,250.2	9,944.0	7,066.9	79.6	80.1	74.54	-1,300.2	2,529.8	684.1	529.5	154.61	4.425			
10,100.0	7,250.6	10,043.9	7,065.7	82.3	82.8	74.42	-1,300.2	2,629.8	684.6	524.8	159.80	4.284			
10,200.0	7,251.0	10,143.9	7,064.5	85.1	85.5	74.29	-1,300.2	2,729.8	685.0	520.0	165.00	4.151			
10,300.0	7,251.4	10,243.9	7,063.4	87.8	88.2	74.17	-1,300.2	2,829.8	685.4	515.2	170.20	4.027			
10,400.0	7,251.8	10,343.9	7,062.2	90.5	91.0	74.04	-1,300.2	2,929.7	685.8	510.4	175.40	3.910			
10,500.0	7,252.2	10,443.9	7,061.0	93.3	93.7	73.91	-1,300.2	3,029.7	686.3	505.7	180.60	3.800			
10,600.0	7,252.6	10,543.9	7,059.9	96.1	96.4	73.79	-1,300.2	3,129.7	686.7	500.9	185.80	3.696			
10,700.0	7,253.0	10,643.9	7,058.7	98.8	99.2	73.66	-1,300.2	3,229.7	687.1	496.2	191.00	3.598			
10,800.0	7,253.4	10,743.9	7,057.5	101.6	101.9	73.54	-1,300.2	3,329.7	687.6	491.4	196.19	3.505			
10,900.0	7,253.8	10,843.8	7,056.4	104.3	104.7	73.41	-1,300.2	3,429.6	688.0	486.6	201.39	3.416			
11,000.0	7,254.2	10,943.8	7,055.2	107.1	107.4	73.29	-1,300.2	3,529.6	688.5	481.9	206.58	3.333			
11,100.0	7,254.6	11,043.8	7,054.0	109.9	110.2	73.16	-1,300.2	3,629.6	688.9	477.2	211.77	3.253			
11,200.0	7,255.0	11,143.8	7,052.8	112.6	112.9	73.04	-1,300.2	3,729.6	689.4	472.4	216.95	3.178			
11,300.0	7,255.4	11,243.8	7,051.7	115.4	115.7	72.91	-1,300.2	3,829.6	689.9	467.7	222.14	3.106			
11,400.0	7,255.8	11,343.8	7,050.5	118.2	118.4	72.79	-1,300.2	3,929.5	690.3	463.0	227.31	3.037			
11,500.0	7,256.2	11,443.8	7,049.3	121.0	121.2	72.66	-1,300.2	4,029.5	690.8	458.3	232.49	2.971			
11,600.0	7,256.6	11,543.8	7,048.2	123.7	124.0	72.54	-1,300.2	4,129.5	691.3	453.6	237.66	2.909			
11,694.8	7,257.0	11,638.6	7,047.1	126.4	126.6	72.42	-1,300.2	4,224.3	691.7	449.2	242.56	2.852 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-25-14)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-29.1	0.0	29.2						
100.0	100.0	99.0	99.0	0.1	0.1	-180.00	-29.1	0.0	29.1	28.9	0.22	130.316			
200.0	200.0	199.0	199.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.67	43.366			
300.0	300.0	299.0	299.0	0.6	0.6	-180.00	-29.1	0.0	29.1	28.0	1.12	25.985			
400.0	400.0	399.0	399.0	0.8	0.8	-180.00	-29.1	0.0	29.1	27.6	1.57	18.550 CC, ES			
500.0	500.0	498.1	498.0	1.0	1.0	-178.63	-30.7	-0.7	30.7	28.7	1.99	15.384			
600.0	600.0	596.9	596.7	1.2	1.2	-175.22	-35.2	-2.9	35.4	33.0	2.41	14.693			
700.0	700.0	695.2	694.7	1.5	1.4	-171.21	-42.8	-6.6	43.5	40.7	2.85	15.274			
800.0	800.0	792.9	791.7	1.7	1.6	-167.61	-53.4	-11.7	55.1	51.8	3.31	16.631			
900.0	900.0	889.6	887.3	1.9	1.9	-164.75	-66.7	-18.2	70.1	66.3	3.80	18.457			
1,000.0	1,000.0	985.3	981.2	2.1	2.3	-162.59	-82.8	-26.0	88.6	84.2	4.31	20.552			
1,100.0	1,100.0	1,083.0	1,076.8	2.3	2.7	-18.58	-101.0	-34.8	107.5	102.9	4.62	23.260			
1,200.0	1,199.8	1,181.8	1,173.4	2.5	3.1	-18.07	-119.5	-43.7	123.2	118.2	5.03	24.489			
1,300.0	1,299.5	1,281.0	1,270.5	2.7	3.5	-18.13	-138.0	-52.7	135.7	130.2	5.46	24.858			
1,400.0	1,398.7	1,380.5	1,367.9	2.9	3.9	-18.62	-156.6	-61.7	144.8	138.9	5.90	24.547			
1,500.0	1,497.5	1,480.3	1,465.5	3.2	4.4	-19.50	-175.3	-70.7	150.8	144.5	6.36	23.715			
1,600.0	1,596.1	1,580.2	1,563.1	3.5	4.8	-20.46	-193.9	-79.8	155.9	149.1	6.85	22.756			
1,700.0	1,694.7	1,680.0	1,660.8	3.8	5.2	-21.36	-212.6	-88.8	161.1	153.8	7.36	21.898			
1,800.0	1,793.4	1,779.8	1,758.5	4.1	5.7	-22.20	-231.2	-97.8	166.3	158.4	7.87	21.123			
1,900.0	1,892.0	1,879.7	1,856.1	4.4	6.1	-23.00	-249.9	-106.8	171.5	163.1	8.40	20.422			
2,000.0	1,990.6	1,979.5	1,953.8	4.8	6.6	-23.74	-268.6	-115.9	176.8	167.9	8.94	19.785			
2,100.0	2,089.3	2,079.3	2,051.4	5.1	7.0	-24.44	-287.2	-124.9	182.1	172.6	9.48	19.206			
2,200.0	2,187.9	2,179.2	2,149.1	5.5	7.5	-25.11	-305.9	-133.9	187.4	177.4	10.03	18.678			
2,300.0	2,286.5	2,279.0	2,246.8	5.8	7.9	-25.73	-324.5	-143.0	192.7	182.2	10.59	18.194			
2,400.0	2,385.2	2,378.9	2,344.4	6.2	8.4	-26.32	-343.2	-152.0	198.1	186.9	11.16	17.751			
2,500.0	2,483.8	2,478.7	2,442.1	6.6	8.8	-26.88	-361.9	-161.0	203.5	191.8	11.73	17.343			
2,600.0	2,582.4	2,578.5	2,539.7	6.9	9.3	-27.42	-380.5	-170.1	208.9	196.6	12.31	16.966			
2,700.0	2,681.1	2,678.4	2,637.4	7.3	9.8	-27.92	-399.2	-179.1	214.3	201.4	12.90	16.618			
2,800.0	2,779.7	2,778.2	2,735.1	7.7	10.2	-28.40	-417.8	-188.1	219.7	206.3	13.48	16.296			
2,900.0	2,878.3	2,878.0	2,832.7	8.0	10.7	-28.86	-436.5	-197.2	225.2	211.1	14.08	15.996			
3,000.0	2,976.9	2,977.9	2,930.4	8.4	11.1	-29.29	-455.2	-206.2	230.7	216.0	14.68	15.717			
3,100.0	3,075.6	3,077.7	3,028.0	8.8	11.6	-29.71	-473.8	-215.2	236.1	220.8	15.28	15.457			
3,200.0	3,174.2	3,177.5	3,125.7	9.2	12.0	-30.10	-492.5	-224.3	241.6	225.7	15.88	15.213			
3,300.0	3,272.8	3,277.4	3,223.4	9.6	12.5	-30.48	-511.1	-233.3	247.1	230.6	16.49	14.986			
3,400.0	3,371.5	3,377.2	3,321.0	9.9	12.9	-30.85	-529.8	-242.3	252.6	235.5	17.10	14.772			
3,500.0	3,470.1	3,477.0	3,418.7	10.3	13.4	-31.19	-548.5	-251.4	258.1	240.4	17.71	14.571			
3,600.0	3,568.7	3,576.9	3,516.3	10.7	13.9	-31.52	-567.1	-260.4	263.7	245.3	18.33	14.382			
3,700.0	3,667.4	3,676.7	3,614.0	11.1	14.3	-31.84	-585.8	-269.4	269.2	250.2	18.95	14.204			
3,800.0	3,766.0	3,776.6	3,711.7	11.5	14.8	-32.15	-604.4	-278.4	274.7	255.2	19.57	14.036			
3,900.0	3,864.6	3,876.4	3,809.3	11.8	15.2	-32.44	-623.1	-287.5	280.3	260.1	20.20	13.877			
4,000.0	3,963.3	3,976.2	3,907.0	12.2	15.7	-32.72	-641.8	-296.5	285.8	265.0	20.82	13.727			
4,100.0	4,061.9	4,076.1	4,004.6	12.6	16.1	-33.00	-660.4	-305.5	291.4	270.0	21.45	13.584			
4,200.0	4,160.5	4,175.9	4,102.3	13.0	16.6	-33.26	-679.1	-314.6	297.0	274.9	22.08	13.449			
4,300.0	4,259.1	4,275.7	4,200.0	13.4	17.1	-33.51	-697.7	-323.6	302.5	279.8	22.71	13.320			
4,400.0	4,357.8	4,375.6	4,297.6	13.8	17.5	-33.75	-716.4	-332.6	308.1	284.8	23.35	13.198			
4,500.0	4,456.4	4,475.4	4,395.3	14.2	18.0	-33.99	-735.1	-341.7	313.7	289.7	23.98	13.082			
4,600.0	4,555.0	4,575.2	4,492.9	14.5	18.4	-34.21	-753.7	-350.7	319.3	294.7	24.62	12.970			
4,700.0	4,653.7	4,675.1	4,590.6	14.9	18.9	-34.43	-772.4	-359.7	324.9	299.6	25.26	12.864			
4,800.0	4,752.3	4,774.9	4,688.3	15.3	19.3	-34.64	-791.0	-368.8	330.5	304.6	25.90	12.763			
4,900.0	4,850.9	4,874.7	4,785.9	15.7	19.8	-34.84	-809.7	-377.8	336.1	309.6	26.54	12.666			
5,000.0	4,949.6	4,974.6	4,883.6	16.1	20.3	-35.04	-828.4	-386.8	341.7	314.5	27.18	12.574			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-25-14)								Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,100.0	5,048.2	5,074.4	4,981.2	16.5	20.7	-35.23	-847.0	-395.9	347.3	319.5	27.82	12.485		
5,200.0	5,146.8	5,174.3	5,078.9	16.9	21.2	-35.42	-865.7	-404.9	353.0	324.5	28.46	12.400		
5,300.0	5,245.4	5,274.1	5,176.6	17.3	21.6	-35.59	-884.3	-413.9	358.6	329.5	29.11	12.318		
5,400.0	5,344.1	5,373.9	5,274.2	17.7	22.1	-35.77	-903.0	-422.9	364.2	334.4	29.75	12.240		
5,500.0	5,442.7	5,473.8	5,371.9	18.0	22.6	-35.93	-921.7	-432.0	369.8	339.4	30.40	12.165		
5,600.0	5,541.3	5,573.6	5,469.5	18.4	23.0	-36.10	-940.3	-441.0	375.5	344.4	31.05	12.092		
5,700.0	5,640.0	5,673.4	5,567.2	18.8	23.5	-36.26	-959.0	-450.0	381.1	349.4	31.70	12.023		
5,800.0	5,738.6	5,773.3	5,664.9	19.2	23.9	-36.41	-977.6	-459.1	386.7	354.4	32.35	11.956		
5,900.0	5,837.2	5,881.4	5,770.8	19.6	24.4	-36.62	-997.2	-468.5	391.8	358.7	33.01	11.869		
6,000.0	5,936.2	5,995.5	5,883.3	19.8	24.7	-36.93	-1,014.1	-476.7	395.2	361.6	33.55	11.778		
6,100.0	6,035.6	6,109.7	5,996.6	20.1	24.9	-37.16	-1,027.0	-483.0	397.8	363.8	34.01	11.695		
6,200.0	6,135.3	6,224.0	6,110.5	20.3	25.2	-37.31	-1,035.9	-487.3	399.6	365.2	34.39	11.617		
6,300.0	6,235.2	6,338.4	6,224.7	20.4	25.3	-37.39	-1,040.7	-489.6	400.5	365.8	34.70	11.543		
6,400.0	6,335.2	6,447.9	6,334.2	20.6	25.4	180.00	-1,041.5	-490.0	400.7	358.2	42.58	9.411		
6,462.9	6,398.1	6,510.8	6,397.1	20.6	25.5	180.00	-1,041.5	-490.0	400.7	358.0	42.74	9.377		
6,500.0	6,435.2	6,547.9	6,434.2	20.7	25.5	179.96	-1,041.5	-489.7	400.7	357.9	42.82	9.359		
6,600.0	6,535.1	6,647.2	6,533.0	20.8	25.6	88.97	-1,041.5	-480.7	400.8	365.1	35.74	11.216		
6,700.0	6,634.1	6,745.4	6,628.8	20.8	25.6	87.85	-1,041.5	-459.2	401.0	365.0	36.03	11.130		
6,800.0	6,730.3	6,842.7	6,720.2	20.8	25.5	86.76	-1,041.5	-426.0	401.4	365.3	36.13	11.110		
6,900.0	6,822.2	6,939.1	6,805.9	20.7	25.4	85.73	-1,041.5	-381.9	401.9	365.8	36.08	11.139		
7,000.0	6,908.2	7,034.7	6,884.7	20.6	25.3	84.78	-1,041.5	-327.9	402.4	366.5	35.95	11.194		
7,100.0	6,986.9	7,129.6	6,955.6	20.4	25.1	83.92	-1,041.5	-264.9	403.0	367.1	35.87	11.235		
7,200.0	7,056.8	7,223.9	7,017.8	20.3	25.0	83.16	-1,041.5	-194.2	403.6	367.6	36.00	11.211		
7,300.0	7,116.8	7,317.6	7,070.5	20.1	24.9	82.52	-1,041.5	-116.8	404.2	367.7	36.51	11.070		
7,400.0	7,165.9	7,410.8	7,113.2	20.0	24.7	81.99	-1,041.5	-34.0	404.7	367.1	37.56	10.776		
7,500.0	7,203.1	7,503.7	7,145.4	20.0	24.6	81.60	-1,041.5	53.1	405.1	365.9	39.23	10.326		
7,600.0	7,228.0	7,596.4	7,166.8	20.4	24.6	81.33	-1,041.5	143.2	405.4	363.8	41.55	9.755		
7,700.0	7,240.0	7,688.9	7,177.1	21.9	24.6	81.21	-1,041.5	235.1	405.5	361.1	44.45	9.122		
7,800.0	7,241.4	7,784.8	7,177.2	23.7	25.3	81.05	-1,041.5	331.0	405.7	357.9	47.83	8.482		
7,900.0	7,241.8	7,884.8	7,175.7	25.7	26.8	80.77	-1,041.5	430.9	406.0	354.4	51.62	7.866		
8,000.0	7,242.2	7,984.8	7,174.1	27.8	28.7	80.50	-1,041.5	530.9	406.3	350.6	55.68	7.297		
8,100.0	7,242.6	8,084.7	7,172.5	30.0	30.9	80.23	-1,041.5	630.9	406.6	346.7	59.98	6.780		
8,200.0	7,243.0	8,184.7	7,171.0	32.4	33.1	79.95	-1,041.5	730.8	407.0	342.5	64.45	6.314		
8,300.0	7,243.4	8,284.7	7,169.4	34.8	35.4	79.68	-1,041.5	830.8	407.3	338.3	69.07	5.897		
8,400.0	7,243.8	8,384.7	7,167.8	37.2	37.8	79.41	-1,041.5	930.8	407.7	333.9	73.80	5.524		
8,500.0	7,244.2	8,484.7	7,166.3	39.7	40.3	79.13	-1,041.5	1,030.7	408.1	329.4	78.61	5.191		
8,600.0	7,244.6	8,584.7	7,164.7	42.2	42.8	78.86	-1,041.5	1,130.7	408.4	324.9	83.50	4.891		
8,700.0	7,245.0	8,684.6	7,163.1	44.8	45.3	78.59	-1,041.5	1,230.7	408.8	320.4	88.45	4.622		
8,800.0	7,245.4	8,784.6	7,161.5	47.4	47.9	78.32	-1,041.5	1,330.7	409.2	315.8	93.44	4.379		
8,900.0	7,245.8	8,884.6	7,160.0	50.0	50.4	78.05	-1,041.5	1,430.6	409.6	311.1	98.47	4.160		
9,000.0	7,246.2	8,984.6	7,158.4	52.6	53.0	77.78	-1,041.5	1,530.6	410.0	306.5	103.53	3.960		
9,100.0	7,246.6	9,084.6	7,156.8	55.3	55.7	77.51	-1,041.5	1,630.6	410.4	301.8	108.61	3.779		
9,200.0	7,247.0	9,184.5	7,155.3	57.9	58.3	77.24	-1,041.5	1,730.5	410.9	297.2	113.72	3.613		
9,300.0	7,247.4	9,284.5	7,153.7	60.6	60.9	76.98	-1,041.5	1,830.5	411.3	292.5	118.83	3.461		
9,400.0	7,247.8	9,384.5	7,152.1	63.3	63.6	76.71	-1,041.5	1,930.5	411.8	287.8	123.96	3.322		
9,500.0	7,248.2	9,484.5	7,150.5	66.0	66.3	76.44	-1,041.5	2,030.4	412.2	283.1	129.09	3.193		
9,600.0	7,248.6	9,584.5	7,149.0	68.7	69.0	76.18	-1,041.5	2,130.4	412.7	278.5	134.22	3.075		
9,700.0	7,249.0	9,684.4	7,147.4	71.4	71.7	75.91	-1,041.5	2,230.4	413.2	273.8	139.36	2.965		
9,800.0	7,249.4	9,784.4	7,145.8	74.1	74.4	75.65	-1,041.5	2,330.3	413.7	269.2	144.50	2.863		
9,900.0	7,249.8	9,884.4	7,144.3	76.8	77.1	75.38	-1,041.5	2,430.3	414.1	264.5	149.64	2.768		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W - Wiedeman 28G-312 - Wellbore #1 - Plan #1 (7-													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.0	7,250.2	9,984.4	7,142.7	79.6	79.8	75.12	-1,041.5	2,530.3	414.6	259.9	154.77	2.679		
10,100.0	7,250.6	10,084.4	7,141.1	82.3	82.5	74.85	-1,041.5	2,630.2	415.2	255.3	159.90	2.596		
10,200.0	7,251.0	10,184.3	7,139.6	85.1	85.2	74.59	-1,041.5	2,730.2	415.7	250.7	165.02	2.519		
10,300.0	7,251.4	10,284.3	7,138.0	87.8	88.0	74.33	-1,041.5	2,830.2	416.2	246.1	170.14	2.446		
10,400.0	7,251.8	10,384.3	7,136.4	90.5	90.7	74.07	-1,041.5	2,930.1	416.7	241.5	175.25	2.378		
10,500.0	7,252.2	10,484.3	7,134.8	93.3	93.4	73.81	-1,041.5	3,030.1	417.3	236.9	180.35	2.314		
10,600.0	7,252.6	10,584.3	7,133.3	96.1	96.2	73.55	-1,041.5	3,130.1	417.8	232.4	185.44	2.253		
10,700.0	7,253.0	10,684.2	7,131.7	98.8	98.9	73.29	-1,041.5	3,230.0	418.4	227.9	190.52	2.196		
10,800.0	7,253.4	10,784.2	7,130.1	101.6	101.7	73.03	-1,041.5	3,330.0	419.0	223.4	195.58	2.142		
10,900.0	7,253.8	10,884.2	7,128.6	104.3	104.4	72.78	-1,041.5	3,430.0	419.6	218.9	200.64	2.091		
11,000.0	7,254.2	10,984.2	7,127.0	107.1	107.2	72.52	-1,041.5	3,530.0	420.1	214.5	205.69	2.043		
11,100.0	7,254.6	11,084.2	7,125.4	109.9	110.0	72.26	-1,041.5	3,629.9	420.7	210.0	210.72	1.997		
11,200.0	7,255.0	11,184.1	7,123.9	112.6	112.7	72.01	-1,041.5	3,729.9	421.3	205.6	215.73	1.953		
11,300.0	7,255.4	11,284.1	7,122.3	115.4	115.5	71.75	-1,041.5	3,829.9	422.0	201.2	220.74	1.912		
11,400.0	7,255.8	11,384.1	7,120.7	118.2	118.2	71.50	-1,041.5	3,929.8	422.6	196.9	225.73	1.872		
11,500.0	7,256.2	11,484.1	7,119.1	121.0	121.0	71.25	-1,041.5	4,029.8	423.2	192.5	230.70	1.834		
11,600.0	7,256.6	11,584.1	7,117.6	123.7	123.8	70.99	-1,041.5	4,129.8	423.9	188.2	235.66	1.799		
11,694.8	7,257.0	11,678.9	7,116.1	126.4	126.4	70.75	-1,041.5	4,224.6	424.5	184.1	240.35	1.766 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8)										Offset Site Error:		0.0 ft	
Survey Program: 0-MWD												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
0.0	0.0	1.0	1.0	0.0	0.0	-90.00	0.0	-301.3	301.3						
100.0	100.0	101.0	101.0	0.1	0.1	-90.00	0.0	-301.3	301.3	301.1	0.23	1,327.261			
200.0	200.0	201.0	201.0	0.3	0.3	-90.00	0.0	-301.3	301.3	300.6	0.68	445.360			
300.0	300.0	301.0	301.0	0.6	0.6	-90.00	0.0	-301.3	301.3	300.2	1.13	267.572			
400.0	400.0	401.0	401.0	0.8	0.8	-90.00	0.0	-301.3	301.3	299.7	1.58	191.232			
500.0	500.0	501.0	501.0	1.0	1.0	-90.00	0.0	-301.3	301.3	299.3	2.03	148.783			
566.3	566.3	567.3	567.3	1.2	1.2	-90.00	0.0	-301.3	301.3	299.0	2.32	129.688			
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-301.3	301.3	298.8	2.47	121.867			
700.0	700.0	696.7	696.7	1.5	1.4	-90.28	-1.5	-302.0	302.0	299.1	2.89	104.525			
800.0	800.0	792.2	792.1	1.7	1.6	-91.10	-5.8	-304.0	304.2	300.9	3.29	92.376			
900.0	900.0	887.3	886.8	1.9	1.8	-92.43	-13.1	-307.3	308.0	304.2	3.71	83.028			
1,000.0	1,000.0	983.6	982.4	2.1	2.0	-94.26	-23.3	-312.1	313.5	309.3	4.14	75.740			
1,100.0	1,100.0	1,081.0	1,079.0	2.3	2.3	46.44	-35.1	-317.5	319.0	314.4	4.60	69.424			
1,200.0	1,199.8	1,180.6	1,177.7	2.5	2.6	45.03	-47.1	-323.1	322.4	317.4	5.03	64.064			
1,300.0	1,299.5	1,280.5	1,276.7	2.7	2.9	44.11	-59.2	-328.7	323.5	318.0	5.49	58.913			
1,400.0	1,398.7	1,380.4	1,375.7	2.9	3.2	43.65	-71.3	-334.3	322.1	316.1	5.97	53.944			
1,500.0	1,497.5	1,480.4	1,474.8	3.2	3.5	43.62	-83.5	-339.9	318.2	311.8	6.48	49.122			
1,600.0	1,596.1	1,580.3	1,573.8	3.5	3.8	43.68	-95.6	-345.5	313.7	306.7	7.02	44.710			
1,700.0	1,694.7	1,680.2	1,672.8	3.8	4.1	43.74	-107.7	-351.1	309.2	301.6	7.57	40.828			
1,800.0	1,793.4	1,780.0	1,771.8	4.1	4.5	43.80	-119.8	-356.7	304.6	296.5	8.14	37.415			
1,900.0	1,892.0	1,879.9	1,870.8	4.4	4.8	43.86	-131.9	-362.3	300.1	291.4	8.72	34.403			
2,000.0	1,990.6	1,979.8	1,969.8	4.8	5.1	43.92	-144.0	-367.9	295.6	286.2	9.31	31.736			
2,100.0	2,089.3	2,079.7	2,068.8	5.1	5.4	43.99	-156.1	-373.5	291.0	281.1	9.91	29.364			
2,200.0	2,187.9	2,179.6	2,167.8	5.5	5.8	44.05	-168.2	-379.1	286.5	276.0	10.52	27.245			
2,300.0	2,286.5	2,279.5	2,266.8	5.8	6.1	44.12	-180.3	-384.7	282.0	270.8	11.13	25.343			
2,400.0	2,385.2	2,379.4	2,365.8	6.2	6.4	44.19	-192.4	-390.3	277.4	265.7	11.74	23.630			
2,500.0	2,483.8	2,479.3	2,464.8	6.6	6.8	44.27	-204.5	-395.9	272.9	260.5	12.36	22.080			
2,600.0	2,582.4	2,579.2	2,563.8	6.9	7.1	44.34	-216.6	-401.5	268.4	255.4	12.98	20.671			
2,700.0	2,681.1	2,679.1	2,662.8	7.3	7.5	44.42	-228.7	-407.1	263.8	250.2	13.61	19.387			
2,800.0	2,779.7	2,779.0	2,761.8	7.7	7.8	44.50	-240.8	-412.7	259.3	245.1	14.24	18.212			
2,900.0	2,878.3	2,878.9	2,860.8	8.0	8.1	44.59	-252.9	-418.3	254.8	239.9	14.87	17.133			
3,000.0	2,976.9	2,978.8	2,959.8	8.4	8.5	44.68	-265.0	-423.9	250.2	234.7	15.50	16.140			
3,100.0	3,075.6	3,078.7	3,058.8	8.8	8.8	44.77	-277.1	-429.5	245.7	229.6	16.14	15.222			
3,200.0	3,174.2	3,178.6	3,157.8	9.2	9.1	44.86	-289.2	-435.1	241.2	224.4	16.78	14.373			
3,300.0	3,272.8	3,278.5	3,256.8	9.6	9.5	44.96	-301.3	-440.7	236.7	219.2	17.42	13.583			
3,400.0	3,371.5	3,378.4	3,355.8	9.9	9.8	45.06	-313.4	-446.3	232.1	214.1	18.07	12.849			
3,500.0	3,470.1	3,478.3	3,454.8	10.3	10.2	45.17	-325.5	-451.9	227.6	208.9	18.71	12.164			
3,600.0	3,568.7	3,578.2	3,553.8	10.7	10.5	45.28	-337.6	-457.5	223.1	203.7	19.36	11.523			
3,700.0	3,667.4	3,678.1	3,652.8	11.1	10.8	45.39	-349.7	-463.1	218.5	198.5	20.01	10.923			
3,800.0	3,766.0	3,778.0	3,751.8	11.5	11.2	45.51	-361.8	-468.7	214.0	193.4	20.66	10.359			
3,900.0	3,864.6	3,877.9	3,850.8	11.8	11.5	45.64	-373.9	-474.3	209.5	188.2	21.31	9.829			
4,000.0	3,963.3	3,977.8	3,949.8	12.2	11.9	45.77	-386.0	-479.9	205.0	183.0	21.97	9.330			
4,100.0	4,061.9	4,077.7	4,048.8	12.6	12.2	45.90	-398.1	-485.5	200.5	177.8	22.63	8.859			
4,200.0	4,160.5	4,177.6	4,147.8	13.0	12.5	46.05	-410.2	-491.1	195.9	172.7	23.29	8.414			
4,300.0	4,259.1	4,277.5	4,246.8	13.4	12.9	46.20	-422.3	-496.7	191.4	167.5	23.95	7.993			
4,400.0	4,357.8	4,377.4	4,345.8	13.8	13.2	46.35	-434.4	-502.3	186.9	162.3	24.61	7.594			
4,500.0	4,456.4	4,477.3	4,444.8	14.2	13.6	46.52	-446.5	-507.9	182.4	157.1	25.28	7.215			
4,600.0	4,555.0	4,577.2	4,543.8	14.5	13.9	46.69	-458.6	-513.5	177.9	151.9	25.95	6.855			
4,700.0	4,653.7	4,677.0	4,642.9	14.9	14.3	46.87	-470.7	-519.1	173.4	146.7	26.62	6.512			
4,800.0	4,752.3	4,776.9	4,741.9	15.3	14.6	47.06	-482.8	-524.7	168.9	141.6	27.30	6.186			
4,900.0	4,850.9	4,876.8	4,840.9	15.7	14.9	47.26	-494.9	-530.3	164.3	136.4	27.97	5.875			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-234 - Wellbore #1 - Plan #1 (8)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,000.0	4,949.6	4,976.7	4,939.9	16.1	15.3	47.48	-507.0	-535.9	159.8	131.2	28.65	5.578		
5,100.0	5,048.2	5,076.6	5,038.9	16.5	15.6	47.70	-519.1	-541.5	155.3	126.0	29.34	5.295		
5,200.0	5,146.8	5,176.5	5,137.9	16.9	16.0	47.94	-531.3	-547.1	150.8	120.8	30.03	5.023		
5,300.0	5,245.4	5,276.4	5,236.9	17.3	16.3	48.19	-543.4	-552.7	146.3	115.6	30.72	4.764		
5,400.0	5,344.1	5,376.3	5,335.9	17.7	16.6	48.46	-555.5	-558.3	141.8	110.4	31.41	4.515		
5,500.0	5,442.7	5,476.2	5,434.9	18.0	17.0	48.75	-567.6	-563.9	137.4	105.2	32.11	4.277		
5,600.0	5,541.3	5,576.1	5,533.9	18.4	17.3	49.06	-579.7	-569.5	132.9	100.0	32.82	4.048		
5,700.0	5,640.0	5,676.0	5,632.9	18.8	17.7	49.38	-591.8	-575.1	128.4	94.8	33.53	3.829		
5,800.0	5,738.6	5,776.2	5,732.2	19.2	18.0	49.75	-603.9	-580.7	123.9	89.6	34.24	3.618		
5,900.0	5,837.2	5,878.0	5,833.3	19.6	18.2	51.13	-614.1	-585.4	118.4	83.4	35.02	3.381		
6,000.0	5,936.2	5,979.5	5,934.5	19.8	18.4	53.36	-621.0	-588.6	112.7	76.9	35.79	3.150		
6,100.0	6,035.6	6,080.7	6,035.7	20.1	18.6	56.05	-624.7	-590.3	107.9	71.4	36.55	2.953		
6,200.0	6,135.3	6,181.3	6,136.3	20.3	18.7	59.06	-625.4	-590.6	104.1	66.9	37.27	2.794		
6,300.0	6,235.2	6,281.3	6,236.2	20.4	18.9	60.95	-625.4	-590.6	102.1	64.4	37.78	2.703		
6,354.1	6,289.3	6,335.4	6,290.3	20.5	18.9	61.39	-625.4	-590.6	101.7	63.7	37.98	2.678 CC, ES, SF		
6,400.0	6,335.2	6,376.3	6,331.3	20.6	19.0	-81.36	-625.4	-591.5	102.8	71.8	30.99	3.317		
6,500.0	6,435.2	6,463.6	6,418.0	20.7	19.2	-82.07	-625.4	-600.7	113.2	81.8	31.46	3.599		
6,600.0	6,535.1	6,550.0	6,502.3	20.8	19.4	-173.17	-625.4	-619.5	136.8	98.5	38.29	3.573		
6,700.0	6,634.1	6,621.4	6,570.0	20.8	19.7	-174.18	-625.4	-642.1	181.2	143.5	37.69	4.806		
6,800.0	6,730.3	6,682.1	6,625.7	20.8	19.9	-174.88	-625.4	-666.2	244.0	207.4	36.55	6.676		
6,900.0	6,822.2	6,728.5	6,666.9	20.7	20.1	-175.08	-625.4	-687.6	321.0	286.1	34.91	9.195		
7,000.0	6,908.2	6,761.3	6,695.1	20.6	20.2	-174.69	-625.4	-704.2	408.4	375.5	32.89	12.418		
7,100.0	6,986.9	6,782.2	6,712.8	20.4	20.4	-173.21	-625.4	-715.4	502.6	471.9	30.67	16.388		
7,200.0	7,056.8	6,800.0	6,727.5	20.3	20.4	-168.56	-625.4	-725.3	600.8	571.9	28.84	20.829		
7,300.0	7,116.8	6,800.0	6,727.5	20.1	20.4	-60.41	-625.4	-725.3	700.5	671.4	29.06	24.104		
7,400.0	7,165.9	6,800.0	6,727.5	20.0	20.4	-8.23	-625.4	-725.3	800.1	780.1	20.08	39.841		
7,500.0	7,203.1	6,782.0	6,712.6	20.0	20.4	-3.78	-625.4	-715.3	897.9	879.7	18.19	49.371		
7,600.0	7,228.0	6,768.0	6,700.8	20.4	20.3	-2.43	-625.4	-707.7	992.8	976.0	16.80	59.099		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	1.0	1.0	0.0	0.0	-84.47	29.1	-301.3	302.7						
100.0	100.0	101.0	101.0	0.1	0.1	-84.47	29.1	-301.3	302.7	302.5	0.23	1,333.455			
200.0	200.0	201.0	201.0	0.3	0.3	-84.47	29.1	-301.3	302.7	302.0	0.68	447.438			
300.0	300.0	301.0	301.0	0.6	0.6	-84.47	29.1	-301.3	302.7	301.6	1.13	268.820			
400.0	400.0	401.0	401.0	0.8	0.8	-84.47	29.1	-301.3	302.7	301.1	1.58	192.124			
500.0	500.0	501.0	501.0	1.0	1.0	-84.47	29.1	-301.3	302.7	300.7	2.03	149.477			
600.0	600.0	601.0	601.0	1.2	1.2	-84.47	29.1	-301.3	302.7	300.2	2.47	122.324			
700.0	700.0	701.0	701.0	1.5	1.5	-84.47	29.1	-301.3	302.7	299.8	2.92	103.520			
800.0	800.0	801.0	801.0	1.7	1.7	-84.47	29.1	-301.3	302.7	299.3	3.37	89.726			
900.0	900.0	901.0	901.0	1.9	1.9	-84.47	29.1	-301.3	302.7	298.9	3.82	79.176			
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-84.47	29.1	-301.3	302.7	298.4	4.27	70.846			
1,100.0	1,100.0	1,101.0	1,101.0	2.3	2.4	58.42	29.1	-301.3	301.8	297.1	4.70	64.266			
1,200.0	1,199.8	1,200.8	1,200.8	2.5	2.6	59.32	29.1	-301.3	299.1	294.0	5.10	58.643			
1,300.0	1,299.5	1,300.5	1,300.5	2.7	2.8	60.85	29.1	-301.3	294.7	289.2	5.52	53.426			
1,400.0	1,398.7	1,399.7	1,399.7	2.9	3.0	63.05	29.1	-301.3	289.0	283.0	5.95	48.538			
1,500.0	1,497.5	1,495.3	1,495.3	3.2	3.2	65.53	27.8	-302.2	282.8	276.4	6.39	44.265			
1,600.0	1,596.1	1,591.7	1,591.5	3.5	3.4	67.58	23.7	-304.7	277.7	270.9	6.83	40.636			
1,700.0	1,694.7	1,688.6	1,688.1	3.8	3.6	69.06	16.9	-309.1	274.0	266.7	7.31	37.476			
1,800.0	1,793.4	1,786.0	1,784.9	4.1	3.8	69.92	7.2	-315.2	271.3	263.5	7.82	34.697			
1,900.0	1,892.0	1,884.2	1,881.9	4.4	4.0	70.13	-5.2	-323.1	269.6	261.2	8.36	32.237			
2,000.0	1,990.6	1,984.2	1,980.6	4.8	4.3	70.15	-18.7	-331.7	268.1	259.1	8.94	29.981			
2,100.0	2,089.3	2,084.2	2,079.3	5.1	4.5	70.16	-32.2	-340.2	266.6	257.0	9.54	27.929			
2,200.0	2,187.9	2,184.2	2,178.0	5.5	4.8	70.18	-45.7	-348.8	265.0	254.9	10.17	26.068			
2,300.0	2,286.5	2,284.2	2,276.7	5.8	5.1	70.20	-59.1	-357.3	263.5	252.7	10.81	24.383			
2,400.0	2,385.2	2,384.1	2,375.5	6.2	5.4	70.22	-72.6	-365.9	262.0	250.5	11.46	22.858			
2,500.0	2,483.8	2,484.1	2,474.2	6.6	5.7	70.24	-86.1	-374.4	260.5	248.4	12.13	21.476			
2,600.0	2,582.4	2,584.1	2,572.9	6.9	6.1	70.26	-99.6	-383.0	259.0	246.2	12.81	20.222			
2,700.0	2,681.1	2,684.1	2,671.6	7.3	6.4	70.28	-113.1	-391.5	257.5	244.0	13.49	19.083			
2,800.0	2,779.7	2,784.1	2,770.3	7.7	6.7	70.30	-126.5	-400.1	256.0	241.8	14.19	18.043			
2,900.0	2,878.3	2,884.1	2,869.0	8.0	7.1	70.32	-140.0	-408.6	254.4	239.6	14.88	17.094			
3,000.0	2,976.9	2,984.1	2,967.7	8.4	7.4	70.35	-153.5	-417.2	252.9	237.3	15.59	16.224			
3,100.0	3,075.6	3,084.1	3,066.4	8.8	7.8	70.37	-167.0	-425.7	251.4	235.1	16.30	15.424			
3,200.0	3,174.2	3,184.1	3,165.1	9.2	8.1	70.39	-180.4	-434.3	249.9	232.9	17.01	14.688			
3,300.0	3,272.8	3,284.0	3,263.8	9.6	8.5	70.41	-193.9	-442.8	248.4	230.7	17.73	14.008			
3,400.0	3,371.5	3,384.0	3,362.5	9.9	8.8	70.43	-207.4	-451.4	246.9	228.4	18.45	13.379			
3,500.0	3,470.1	3,484.0	3,461.2	10.3	9.2	70.45	-220.9	-459.9	245.4	226.2	19.18	12.795			
3,600.0	3,568.7	3,584.0	3,559.9	10.7	9.6	70.48	-234.3	-468.5	243.8	223.9	19.90	12.251			
3,700.0	3,667.4	3,684.0	3,658.6	11.1	9.9	70.50	-247.8	-477.0	242.3	221.7	20.63	11.745			
3,800.0	3,766.0	3,784.0	3,757.3	11.5	10.3	70.52	-261.3	-485.6	240.8	219.4	21.36	11.272			
3,900.0	3,864.6	3,884.0	3,856.1	11.8	10.7	70.55	-274.8	-494.1	239.3	217.2	22.10	10.830			
4,000.0	3,963.3	3,984.0	3,954.8	12.2	11.0	70.57	-288.3	-502.7	237.8	215.0	22.83	10.415			
4,100.0	4,061.9	4,084.0	4,053.5	12.6	11.4	70.60	-301.7	-511.2	236.3	212.7	23.57	10.025			
4,200.0	4,160.5	4,183.9	4,152.2	13.0	11.8	70.62	-315.2	-519.8	234.8	210.5	24.30	9.659			
4,300.0	4,259.1	4,283.9	4,250.9	13.4	12.1	70.64	-328.7	-528.3	233.2	208.2	25.04	9.313			
4,400.0	4,357.8	4,383.9	4,349.6	13.8	12.5	70.67	-342.2	-536.9	231.7	205.9	25.78	8.987			
4,500.0	4,456.4	4,483.9	4,448.3	14.2	12.9	70.69	-355.6	-545.4	230.2	203.7	26.53	8.679			
4,600.0	4,555.0	4,583.9	4,547.0	14.5	13.3	70.72	-369.1	-554.0	228.7	201.4	27.27	8.387			
4,700.0	4,653.7	4,683.9	4,645.7	14.9	13.6	70.75	-382.6	-562.5	227.2	199.2	28.01	8.110			
4,800.0	4,752.3	4,783.9	4,744.4	15.3	14.0	70.77	-396.1	-571.1	225.7	196.9	28.76	7.848			
4,900.0	4,850.9	4,885.8	4,845.3	15.7	14.3	71.27	-408.2	-578.8	223.7	194.3	29.44	7.600			
5,000.0	4,949.6	4,987.4	4,946.4	16.1	14.5	72.68	-417.4	-584.6	221.0	190.8	30.14	7.332			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28F-304 - Wellbore #1 - Plan #1 (8)														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
5,100.0	5,048.2	5,088.5	5,047.2	16.5	14.7	75.04	-423.4	-588.4	217.7	186.9	30.86	7.056			
5,200.0	5,146.8	5,188.8	5,147.4	16.9	14.9	78.37	-426.4	-590.3	214.4	182.9	31.57	6.793			
5,300.0	5,245.4	5,287.9	5,246.4	17.3	15.0	82.58	-426.9	-590.6	211.7	179.5	32.24	6.567			
5,400.0	5,344.1	5,386.5	5,345.1	17.7	15.2	86.98	-426.9	-590.6	210.2	177.4	32.82	6.403			
5,468.0	5,411.2	5,453.6	5,412.2	17.9	15.3	90.00	-426.9	-590.6	209.9	176.7	33.18	6.326 CC			
5,500.0	5,442.7	5,485.1	5,443.7	18.0	15.3	91.42	-426.9	-590.6	209.9	176.6	33.33	6.300 ES			
5,600.0	5,541.3	5,583.7	5,542.3	18.4	15.5	95.84	-426.9	-590.6	211.0	177.3	33.75	6.253 SF			
5,700.0	5,640.0	5,682.4	5,641.0	18.8	15.6	100.19	-426.9	-590.6	213.3	179.3	34.08	6.260			
5,800.0	5,738.6	5,781.0	5,739.6	19.2	15.8	104.43	-426.9	-590.6	216.9	182.6	34.34	6.316			
5,900.0	5,837.2	5,879.6	5,838.2	19.6	15.9	108.52	-426.9	-590.6	221.6	187.1	34.53	6.418			
6,000.0	5,936.2	5,978.6	5,937.2	19.8	16.1	112.04	-426.9	-590.6	226.7	192.1	34.60	6.551			
6,100.0	6,035.6	6,078.0	6,036.6	20.1	16.2	114.63	-426.9	-590.6	231.1	196.3	34.71	6.657			
6,200.0	6,135.3	6,177.7	6,136.3	20.3	16.4	116.35	-426.9	-590.6	234.3	199.4	34.86	6.721			
6,300.0	6,235.2	6,277.6	6,236.2	20.4	16.6	117.25	-426.9	-590.6	236.1	201.0	35.07	6.732			
6,400.0	6,335.2	6,377.6	6,336.2	20.6	16.7	-25.18	-426.9	-590.6	236.4	205.7	30.76	7.686			
6,442.1	6,377.3	6,419.7	6,378.3	20.6	16.8	-25.18	-426.9	-590.6	236.4	205.5	30.91	7.650			
6,500.0	6,435.2	6,472.6	6,431.2	20.7	16.9	-25.39	-426.9	-591.5	236.9	205.8	31.07	7.624			
6,600.0	6,535.1	6,559.5	6,517.6	20.8	17.1	-117.46	-426.9	-600.7	242.6	206.3	36.29	6.686			
6,700.0	6,634.1	6,639.4	6,595.6	20.8	17.3	-121.84	-426.9	-617.8	260.9	224.1	36.89	7.073			
6,800.0	6,730.3	6,707.1	6,660.0	20.8	17.6	-126.31	-426.9	-638.5	296.0	259.0	37.04	7.992			
6,900.0	6,822.2	6,760.4	6,709.3	20.7	17.8	-128.90	-426.9	-658.9	349.1	312.5	36.60	9.538			
7,000.0	6,908.2	6,800.0	6,744.9	20.6	18.0	-128.62	-426.9	-676.1	418.1	382.3	35.80	11.677			
7,100.0	6,986.9	6,825.6	6,767.4	20.4	18.1	-124.26	-426.9	-688.3	499.0	464.0	35.03	14.245			
7,200.0	7,056.8	6,850.0	6,788.5	20.3	18.3	-116.42	-426.9	-700.6	588.0	553.3	34.66	16.964			
7,300.0	7,116.8	6,850.0	6,788.5	20.1	18.3	-97.65	-426.9	-700.6	681.3	646.9	34.43	19.789			
7,400.0	7,165.9	6,850.0	6,788.5	20.0	18.3	-73.74	-426.9	-700.6	776.8	744.5	32.30	24.047			
7,500.0	7,203.1	6,850.0	6,788.5	20.0	18.3	-52.27	-426.9	-700.6	872.4	844.4	27.92	31.240			
7,600.0	7,228.0	6,826.0	6,767.7	20.4	18.1	-35.36	-426.9	-688.5	965.9	942.9	23.03	41.941			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design				Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8										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				
0.0	0.0	0.0	0.0	0.0	0.0	-100.95	-58.3	-301.3	306.9							
100.0	100.0	100.0	100.0	0.1	0.1	-100.95	-58.3	-301.3	306.9	306.7	0.22	1,365.389				
200.0	200.0	200.0	200.0	0.3	0.3	-100.95	-58.3	-301.3	306.9	306.2	0.67	455.130	CC, ES			
300.0	300.0	295.8	295.7	0.6	0.5	-101.22	-59.8	-301.7	307.6	306.5	1.09	281.257				
400.0	400.0	391.3	391.2	0.8	0.7	-102.03	-64.5	-302.8	309.7	308.2	1.52	203.995				
500.0	500.0	486.4	485.9	1.0	1.0	-103.34	-72.2	-304.6	313.3	311.4	1.96	159.855				
600.0	600.0	580.9	579.8	1.2	1.2	-105.11	-82.9	-307.1	318.7	316.3	2.41	132.044				
700.0	700.0	674.6	672.4	1.5	1.5	-107.27	-96.5	-310.3	326.1	323.2	2.88	113.380				
800.0	800.0	767.2	763.5	1.7	1.9	-109.74	-112.8	-314.2	335.8	332.4	3.34	100.412				
900.0	900.0	858.7	852.9	1.9	2.3	-112.45	-131.7	-318.6	348.0	344.1	3.81	91.247				
1,000.0	1,000.0	954.4	946.0	2.1	2.7	-115.36	-153.5	-323.8	362.3	358.1	4.29	84.497				
1,100.0	1,100.0	1,052.0	1,040.8	2.3	3.2	24.48	-175.8	-329.0	376.1	370.9	5.17	72.767				
1,200.0	1,199.8	1,150.2	1,136.3	2.5	3.6	22.12	-198.2	-334.3	387.4	381.7	5.69	68.071				
1,300.0	1,299.5	1,248.9	1,232.2	2.7	4.1	20.09	-220.7	-339.6	396.1	389.8	6.22	63.715				
1,400.0	1,398.7	1,348.0	1,328.5	2.9	4.6	18.32	-243.4	-345.0	401.8	395.1	6.74	59.617				
1,500.0	1,497.5	1,447.3	1,425.1	3.2	5.1	16.76	-266.1	-350.3	404.8	397.5	7.27	55.666				
1,600.0	1,596.1	1,546.7	1,521.7	3.5	5.6	15.26	-288.8	-355.7	407.0	399.2	7.81	52.083				
1,700.0	1,694.7	1,646.1	1,618.3	3.8	6.1	13.79	-311.5	-361.0	409.6	401.2	8.35	49.025				
1,800.0	1,793.4	1,745.5	1,715.0	4.1	6.6	12.33	-334.2	-366.4	412.4	403.5	8.89	46.398				
1,900.0	1,892.0	1,844.9	1,811.6	4.4	7.1	10.90	-356.9	-371.8	415.5	406.0	9.42	44.127				
2,000.0	1,990.6	1,944.3	1,908.2	4.8	7.6	9.48	-379.7	-377.1	418.8	408.9	9.94	42.152				
2,100.0	2,089.3	2,043.8	2,004.9	5.1	8.1	8.09	-402.4	-382.5	422.4	411.9	10.45	40.424				
2,200.0	2,187.9	2,143.2	2,101.5	5.5	8.6	6.72	-425.1	-387.8	426.2	415.3	10.96	38.903				
2,300.0	2,286.5	2,242.6	2,198.1	5.8	9.1	5.38	-447.8	-393.2	430.3	418.9	11.46	37.556				
2,400.0	2,385.2	2,342.0	2,294.8	6.2	9.5	4.07	-470.5	-398.5	434.6	422.7	11.95	36.358				
2,500.0	2,483.8	2,441.4	2,391.4	6.6	10.0	2.78	-493.2	-403.9	439.2	426.7	12.45	35.286				
2,600.0	2,582.4	2,540.8	2,488.0	6.9	10.5	1.51	-515.9	-409.3	443.9	431.0	12.93	34.323				
2,700.0	2,681.1	2,640.2	2,584.6	7.3	11.0	0.28	-538.6	-414.6	448.9	435.5	13.42	33.452				
2,800.0	2,779.7	2,739.6	2,681.3	7.7	11.5	-0.93	-561.4	-420.0	454.1	440.2	13.90	32.661				
2,900.0	2,878.3	2,839.0	2,777.9	8.0	12.0	-2.11	-584.1	-425.3	459.4	445.1	14.38	31.940				
3,000.0	2,976.9	2,938.4	2,874.5	8.4	12.5	-3.27	-606.8	-430.7	465.0	450.1	14.87	31.279				
3,100.0	3,075.6	3,037.8	2,971.2	8.8	13.0	-4.39	-629.5	-436.0	470.8	455.4	15.35	30.671				
3,200.0	3,174.2	3,137.2	3,067.8	9.2	13.5	-5.49	-652.2	-441.4	476.7	460.9	15.83	30.109				
3,300.0	3,272.8	3,236.6	3,164.4	9.6	14.0	-6.56	-674.9	-446.8	482.8	466.5	16.32	29.587				
3,400.0	3,371.5	3,336.1	3,261.0	9.9	14.5	-7.61	-697.6	-452.1	489.1	472.3	16.81	29.101				
3,500.0	3,470.1	3,435.5	3,357.7	10.3	15.0	-8.63	-720.3	-457.5	495.5	478.2	17.30	28.646				
3,600.0	3,568.7	3,534.9	3,454.3	10.7	15.5	-9.62	-743.1	-462.8	502.1	484.3	17.79	28.219				
3,700.0	3,667.4	3,634.3	3,550.9	11.1	16.0	-10.58	-765.8	-468.2	508.8	490.5	18.29	27.818				
3,800.0	3,766.0	3,733.7	3,647.6	11.5	16.5	-11.52	-788.5	-473.5	515.7	496.9	18.79	27.439				
3,900.0	3,864.6	3,833.1	3,744.2	11.8	17.0	-12.44	-811.2	-478.9	522.7	503.4	19.30	27.080				
4,000.0	3,963.3	3,932.5	3,840.8	12.2	17.5	-13.33	-833.9	-484.3	529.8	510.0	19.81	26.739				
4,100.0	4,061.9	4,031.9	3,937.5	12.6	18.0	-14.20	-856.6	-489.6	537.1	516.7	20.33	26.414				
4,200.0	4,160.5	4,131.3	4,034.1	13.0	18.5	-15.05	-879.3	-495.0	544.5	523.6	20.86	26.105				
4,300.0	4,259.1	4,230.7	4,130.7	13.4	19.0	-15.87	-902.1	-500.3	552.0	530.6	21.39	25.809				
4,400.0	4,357.8	4,330.1	4,227.3	13.8	19.5	-16.67	-924.8	-505.7	559.6	537.6	21.92	25.526				
4,500.0	4,456.4	4,429.5	4,324.0	14.2	20.0	-17.45	-947.5	-511.0	567.3	544.8	22.46	25.255				
4,600.0	4,555.0	4,528.9	4,420.6	14.5	20.5	-18.20	-970.2	-516.4	575.1	552.1	23.01	24.995				
4,700.0	4,653.7	4,628.4	4,517.2	14.9	21.0	-18.94	-992.9	-521.8	583.0	559.4	23.56	24.745				
4,800.0	4,752.3	4,727.8	4,613.9	15.3	21.5	-19.66	-1,015.6	-527.1	591.0	566.9	24.12	24.504				
4,900.0	4,850.9	4,827.2	4,710.5	15.7	22.0	-20.36	-1,038.3	-532.5	599.1	574.4	24.68	24.272				
5,000.0	4,949.6	4,926.6	4,807.1	16.1	22.5	-21.04	-1,061.0	-537.8	607.3	582.0	25.25	24.049				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-214 - Wellbore #1 - Plan #1 (8)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	5,048.2	5,026.0	4,903.8	16.5	23.0	-21.70	-1,083.8	-543.2	615.6	589.7	25.83	23.833		
5,200.0	5,146.8	5,125.4	5,000.4	16.9	23.5	-22.34	-1,106.5	-548.5	623.9	597.5	26.41	23.625		
5,300.0	5,245.4	5,224.8	5,097.0	17.3	24.0	-22.97	-1,129.2	-553.9	632.3	605.3	26.99	23.424		
5,400.0	5,344.1	5,324.2	5,193.6	17.7	24.5	-23.58	-1,151.9	-559.3	640.8	613.2	27.59	23.230		
5,500.0	5,442.7	5,423.6	5,290.3	18.0	25.0	-24.18	-1,174.6	-564.6	649.4	621.2	28.18	23.043		
5,600.0	5,541.3	5,523.0	5,386.9	18.4	25.5	-24.76	-1,197.3	-570.0	658.0	629.2	28.78	22.861		
5,700.0	5,640.0	5,639.9	5,500.7	18.8	26.0	-25.42	-1,223.1	-576.1	666.0	636.6	29.42	22.638		
5,800.0	5,738.6	5,769.9	5,628.4	19.2	26.4	-26.16	-1,246.7	-581.6	669.9	639.8	30.06	22.288		
5,900.0	5,837.2	5,900.1	5,757.3	19.6	26.7	-26.91	-1,264.8	-585.9	669.3	638.6	30.68	21.817		
6,000.0	5,936.2	6,030.1	5,886.7	19.8	26.9	-27.56	-1,277.0	-588.8	666.2	635.0	31.18	21.368		
6,100.0	6,035.6	6,159.9	6,016.3	20.1	27.1	-28.06	-1,283.6	-590.3	661.6	630.0	31.60	20.938		
6,200.0	6,135.3	6,278.9	6,135.3	20.3	27.3	-28.37	-1,284.8	-590.6	656.0	624.0	31.94	20.538		
6,300.0	6,235.2	6,378.8	6,235.2	20.4	27.3	-28.50	-1,284.8	-590.6	652.4	620.3	32.18	20.277		
6,371.5	6,306.7	6,448.9	6,305.3	20.5	27.4	-28.53	-1,284.8	-590.7	651.5	619.2	32.35	20.139		
6,400.0	6,335.2	6,474.0	6,330.4	20.6	27.4	-171.05	-1,284.8	-591.5	651.9	605.1	46.79	13.934		
6,500.0	6,435.2	6,561.3	6,417.2	20.7	27.6	-170.26	-1,284.8	-600.6	653.6	606.5	47.11	13.874 SF		
6,600.0	6,535.1	6,645.0	6,498.8	20.8	27.7	101.20	-1,284.8	-618.5	658.1	625.4	32.72	20.112		
6,700.0	6,634.1	6,719.2	6,569.2	20.8	27.9	103.21	-1,284.8	-641.8	668.7	636.1	32.60	20.513		
6,800.0	6,730.3	6,780.0	6,625.1	20.8	28.0	104.94	-1,284.8	-665.9	688.3	655.9	32.40	21.246		
6,900.0	6,822.2	6,826.5	6,666.3	20.7	28.2	105.54	-1,284.8	-687.3	719.2	686.9	32.25	22.298		
7,000.0	6,908.2	6,859.3	6,694.7	20.6	28.3	104.46	-1,284.8	-703.9	762.1	729.7	32.38	23.540		
7,100.0	6,986.9	6,880.2	6,712.3	20.4	28.3	101.38	-1,284.8	-715.1	816.4	783.4	33.03	24.717		
7,200.0	7,056.8	6,900.0	6,728.7	20.3	28.4	96.94	-1,284.8	-726.1	880.2	846.0	34.23	25.713		
7,300.0	7,116.8	6,900.0	6,728.7	20.1	28.4	89.42	-1,284.8	-726.1	951.0	915.0	36.06	26.374		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design		Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8)										Offset Site Error:		0.0 ft		
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
				(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)								
0.0	0.0	1.0	1.0	0.0	0.0	-95.52	-29.1	-301.3	302.7							
100.0	100.0	101.0	101.0	0.1	0.1	-95.52	-29.1	-301.3	302.7	302.5	0.23	1,333.456				
200.0	200.0	201.0	201.0	0.3	0.3	-95.52	-29.1	-301.3	302.7	302.0	0.68	447.439				
300.0	300.0	301.0	301.0	0.6	0.6	-95.52	-29.1	-301.3	302.7	301.6	1.13	268.821				
366.3	366.3	367.3	367.3	0.7	0.7	-95.52	-29.1	-301.3	302.7	301.3	1.42	212.542 CC				
400.0	400.0	400.0	400.0	0.8	0.8	-95.52	-29.1	-301.3	302.7	301.1	1.57	192.400 ES				
500.0	500.0	497.4	497.4	1.0	1.0	-95.82	-30.7	-301.7	303.3	301.3	1.99	152.243				
600.0	600.0	593.6	593.4	1.2	1.2	-96.68	-35.5	-303.0	305.1	302.7	2.40	126.990				
700.0	700.0	689.3	688.8	1.5	1.4	-98.07	-43.3	-305.1	308.3	305.5	2.83	108.950				
800.0	800.0	784.4	783.3	1.7	1.6	-99.95	-54.0	-307.9	313.1	309.9	3.27	95.720				
900.0	900.0	878.7	876.5	1.9	1.9	-102.26	-67.7	-311.5	319.8	316.0	3.72	85.871				
1,000.0	1,000.0	971.9	968.1	2.1	2.2	-104.91	-84.1	-315.9	328.6	324.4	4.18	78.534				
1,100.0	1,100.0	1,067.6	1,061.7	2.3	2.6	34.78	-103.5	-321.1	338.2	333.4	4.83	70.078				
1,200.0	1,199.8	1,166.2	1,158.0	2.5	3.0	32.25	-123.7	-326.4	345.8	340.5	5.34	64.733				
1,300.0	1,299.5	1,265.2	1,254.8	2.7	3.4	30.13	-144.1	-331.8	351.1	345.2	5.87	59.817				
1,400.0	1,398.7	1,364.6	1,351.9	2.9	3.9	28.36	-164.5	-337.3	353.8	347.3	6.41	55.220				
1,500.0	1,497.5	1,464.2	1,449.2	3.2	4.3	26.88	-184.9	-342.7	353.7	346.8	6.95	50.876				
1,600.0	1,596.1	1,563.8	1,546.6	3.5	4.7	25.47	-205.4	-348.1	353.0	345.5	7.52	46.947				
1,700.0	1,694.7	1,663.4	1,643.9	3.8	5.2	24.05	-225.8	-353.5	352.5	344.5	8.09	43.603				
1,800.0	1,793.4	1,763.0	1,741.3	4.1	5.6	22.63	-246.3	-359.0	352.3	343.6	8.65	40.738				
1,867.1	1,859.5	1,829.9	1,806.6	4.3	5.9	21.68	-260.0	-362.6	352.2	343.2	9.02	39.037				
1,900.0	1,892.0	1,862.7	1,838.6	4.4	6.1	21.21	-266.7	-364.4	352.3	343.0	9.20	38.269				
2,000.0	1,990.6	1,962.3	1,935.9	4.8	6.6	19.80	-287.2	-369.8	352.4	342.7	9.75	36.131				
2,100.0	2,089.3	2,061.9	2,033.3	5.1	7.0	18.38	-307.6	-375.3	352.8	342.5	10.30	34.268				
2,200.0	2,187.9	2,161.5	2,130.6	5.5	7.5	16.97	-328.1	-380.7	353.4	342.6	10.83	32.637				
2,300.0	2,286.5	2,261.1	2,228.0	5.8	7.9	15.56	-348.5	-386.1	354.3	342.9	11.35	31.202				
2,400.0	2,385.2	2,360.7	2,325.3	6.2	8.4	14.16	-369.0	-391.6	355.3	343.5	11.87	29.934				
2,500.0	2,483.8	2,460.4	2,422.7	6.6	8.8	12.77	-389.4	-397.0	356.6	344.2	12.38	28.808				
2,600.0	2,582.4	2,560.0	2,520.0	6.9	9.3	11.39	-409.9	-402.4	358.0	345.2	12.88	27.805				
2,700.0	2,681.1	2,659.6	2,617.3	7.3	9.8	10.02	-430.3	-407.9	359.7	346.3	13.37	26.907				
2,800.0	2,779.7	2,759.2	2,714.7	7.7	10.2	8.67	-450.8	-413.3	361.6	347.7	13.85	26.099				
2,900.0	2,878.3	2,858.8	2,812.0	8.0	10.7	7.33	-471.2	-418.7	363.7	349.3	14.33	25.371				
3,000.0	2,976.9	2,958.4	2,909.4	8.4	11.1	6.01	-491.7	-424.2	366.0	351.1	14.81	24.712				
3,100.0	3,075.6	3,058.0	3,006.7	8.8	11.6	4.70	-512.1	-429.6	368.4	353.1	15.28	24.113				
3,200.0	3,174.2	3,157.7	3,104.1	9.2	12.1	3.41	-532.6	-435.0	371.1	355.3	15.75	23.566				
3,300.0	3,272.8	3,257.3	3,201.4	9.6	12.5	2.14	-553.0	-440.5	373.9	357.7	16.21	23.065				
3,400.0	3,371.5	3,356.9	3,298.7	9.9	13.0	0.89	-573.5	-445.9	377.0	360.3	16.68	22.605				
3,500.0	3,470.1	3,456.5	3,396.1	10.3	13.4	-0.34	-593.9	-451.3	380.2	363.0	17.14	22.181				
3,600.0	3,568.7	3,556.1	3,493.4	10.7	13.9	-1.55	-614.4	-456.8	383.5	365.9	17.60	21.787				
3,700.0	3,667.4	3,655.7	3,590.8	11.1	14.4	-2.74	-634.8	-462.2	387.1	369.0	18.07	21.422				
3,800.0	3,766.0	3,755.4	3,688.1	11.5	14.8	-3.90	-655.3	-467.6	390.8	372.3	18.54	21.081				
3,900.0	3,864.6	3,855.0	3,785.4	11.8	15.3	-5.05	-675.7	-473.0	394.7	375.7	19.01	20.762				
4,000.0	3,963.3	3,954.6	3,882.8	12.2	15.8	-6.17	-696.2	-478.5	398.7	379.2	19.49	20.462				
4,100.0	4,061.9	4,054.2	3,980.1	12.6	16.2	-7.26	-716.6	-483.9	402.9	382.9	19.97	20.180				
4,200.0	4,160.5	4,153.8	4,077.5	13.0	16.7	-8.34	-737.1	-489.3	407.2	386.8	20.45	19.912				
4,300.0	4,259.1	4,253.4	4,174.8	13.4	17.1	-9.39	-757.5	-494.8	411.7	390.7	20.94	19.659				
4,400.0	4,357.8	4,353.0	4,272.2	13.8	17.6	-10.42	-778.0	-500.2	416.3	394.8	21.44	19.419				
4,500.0	4,456.4	4,452.7	4,369.5	14.2	18.1	-11.43	-798.4	-505.6	421.0	399.1	21.94	19.189				
4,600.0	4,555.0	4,552.3	4,466.8	14.5	18.5	-12.41	-818.9	-511.1	425.9	403.4	22.45	18.970				
4,700.0	4,653.7	4,651.9	4,564.2	14.9	19.0	-13.38	-839.3	-516.5	430.9	407.9	22.97	18.761				
4,800.0	4,752.3	4,751.5	4,661.5	15.3	19.5	-14.31	-859.8	-521.9	436.0	412.5	23.49	18.560				

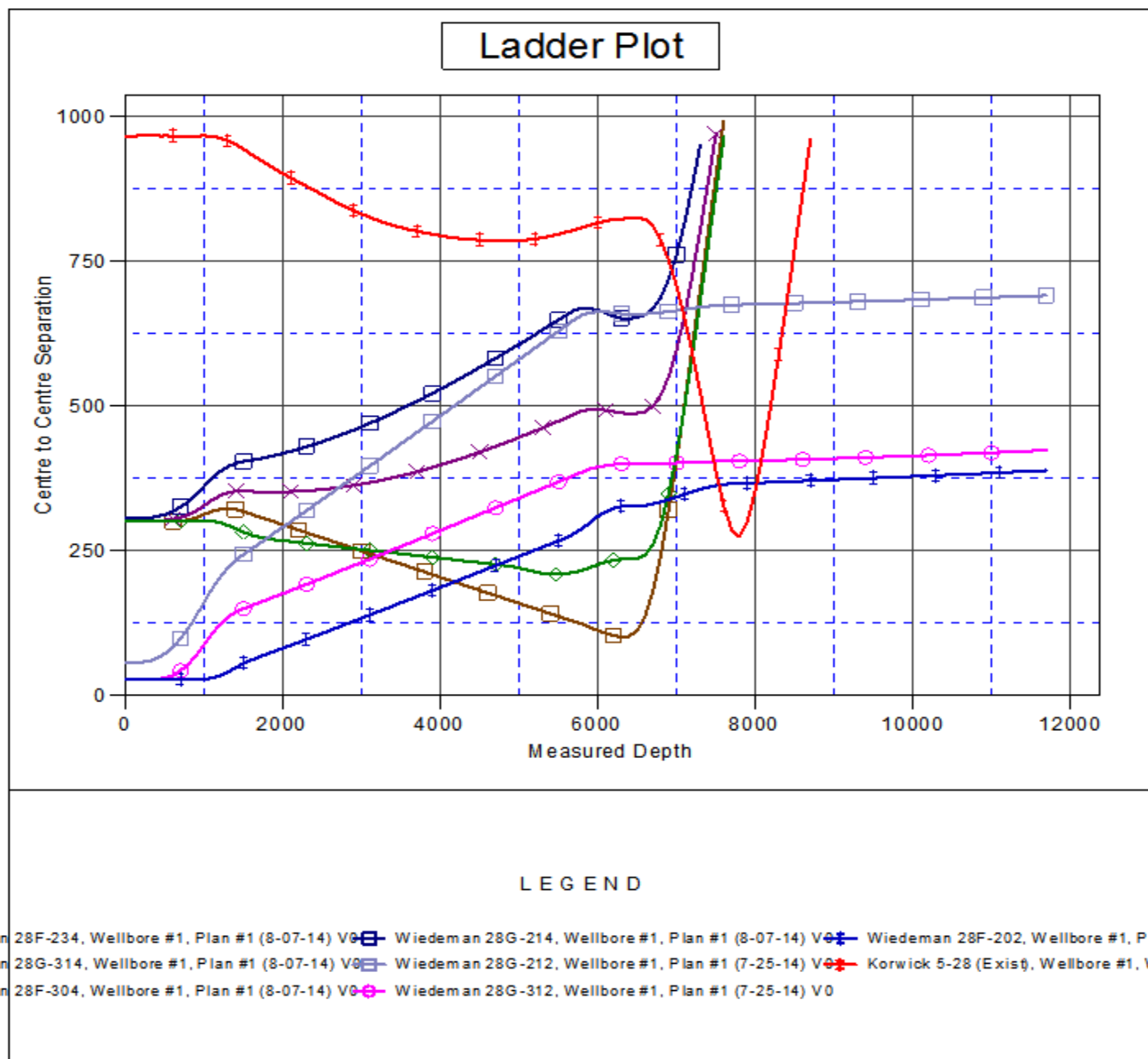
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Wiedeman 4N66W28F - West Pad Sec.28-T4N-R66W - Wiedeman 28G-314 - Wellbore #1 - Plan #1 (8													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.0	4,850.9	4,851.1	4,758.9	15.7	19.9	-15.23	-880.2	-527.4	441.2	417.2	24.02	18.366		
5,000.0	4,949.6	4,950.7	4,856.2	16.1	20.4	-16.13	-900.7	-532.8	446.5	421.9	24.56	18.181		
5,100.0	5,048.2	5,050.4	4,953.6	16.5	20.8	-17.00	-921.1	-538.2	451.9	426.8	25.10	18.002		
5,200.0	5,146.8	5,150.0	5,050.9	16.9	21.3	-17.86	-941.6	-543.7	457.5	431.8	25.66	17.829		
5,300.0	5,245.4	5,249.6	5,148.2	17.3	21.8	-18.69	-962.0	-549.1	463.1	436.9	26.22	17.663		
5,400.0	5,344.1	5,349.2	5,245.6	17.7	22.2	-19.51	-982.5	-554.5	468.8	442.1	26.79	17.502		
5,500.0	5,442.7	5,448.8	5,342.9	18.0	22.7	-20.30	-1,002.9	-560.0	474.7	447.3	27.36	17.347		
5,600.0	5,541.3	5,548.4	5,440.3	18.4	23.2	-21.07	-1,023.4	-565.4	480.6	452.6	27.95	17.197		
5,700.0	5,640.0	5,648.1	5,537.6	18.8	23.6	-21.83	-1,043.8	-570.8	486.6	458.1	28.54	17.052		
5,800.0	5,738.6	5,756.9	5,644.1	19.2	24.1	-22.64	-1,065.7	-576.6	492.3	463.1	29.15	16.888		
5,900.0	5,837.2	5,877.4	5,762.8	19.6	24.4	-23.52	-1,085.9	-582.0	494.5	464.7	29.76	16.614		
6,000.0	5,936.2	5,998.1	5,882.4	19.8	24.7	-24.29	-1,101.3	-586.1	494.4	464.2	30.27	16.334		
6,100.0	6,035.6	6,118.8	6,002.6	20.1	25.0	-24.87	-1,111.8	-588.9	493.5	462.7	30.71	16.069		
6,200.0	6,135.3	6,239.5	6,123.1	20.3	25.1	-25.27	-1,117.3	-590.3	491.4	460.4	31.07	15.816		
6,300.0	6,235.2	6,352.6	6,236.2	20.4	25.3	-25.48	-1,118.3	-590.6	488.7	457.3	31.36	15.582		
6,399.7	6,334.9	6,452.2	6,335.9	20.6	25.4	-168.12	-1,118.3	-590.6	487.7	456.0	31.63	15.418		
6,400.0	6,335.2	6,452.6	6,336.2	20.6	25.4	-168.10	-1,118.3	-590.6	488.0	443.1	44.97	10.853		
6,442.1	6,377.3	6,494.7	6,378.3	20.6	25.4	-168.10	-1,118.3	-590.6	488.0	443.0	45.06	10.830		
6,500.0	6,435.2	6,547.6	6,431.2	20.7	25.5	-168.00	-1,118.3	-591.5	488.2	443.0	45.20	10.802 SF		
6,600.0	6,535.1	6,634.5	6,517.6	20.8	25.6	103.11	-1,118.3	-600.7	491.1	459.0	32.07	15.312		
6,700.0	6,634.1	6,714.4	6,595.6	20.8	25.7	105.55	-1,118.3	-617.8	500.4	468.4	31.93	15.670		
6,800.0	6,730.3	6,782.1	6,660.0	20.8	25.9	108.23	-1,118.3	-638.6	519.5	487.8	31.65	16.413		
6,900.0	6,822.2	6,835.4	6,709.3	20.7	26.1	109.88	-1,118.3	-658.9	551.5	520.1	31.36	17.588		
7,000.0	6,908.2	6,874.4	6,744.3	20.6	26.2	109.64	-1,118.3	-675.9	597.5	566.3	31.24	19.128		
7,100.0	6,986.9	6,900.0	6,766.9	20.4	26.3	106.92	-1,118.3	-688.0	656.7	625.1	31.65	20.751		
7,200.0	7,056.8	6,915.7	6,780.5	20.3	26.3	101.50	-1,118.3	-695.8	726.5	693.6	32.90	22.083		
7,300.0	7,116.8	6,921.8	6,785.8	20.1	26.3	93.06	-1,118.3	-698.9	804.0	769.1	34.93	23.016		
7,400.0	7,165.9	6,920.5	6,784.6	20.0	26.3	82.03	-1,118.3	-698.3	886.4	849.5	36.89	24.031		
7,500.0	7,203.1	6,913.1	6,778.3	20.0	26.3	69.66	-1,118.3	-694.5	971.1	933.6	37.50	25.894		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4777.0ft (Original Well Elev) Coordinates are relative to: Wiedeman 28F-432
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.46°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Wiedeman 28F-432
Project:	SEC.28-T4N-R66W	TVD Reference:	WELL @ 4777.0ft (Original Well Elev)
Reference Site:	Wiedeman 4N66W28F - East Pad Sec.28-T4N-R66W	MD Reference:	WELL @ 4777.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Wiedeman 28F-432	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (7-25-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4777.0ft (Original Well Elev) Coordinates are relative to: Wiedeman 28F-432
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: 0.46°

