PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Wiedeman 29K-403**

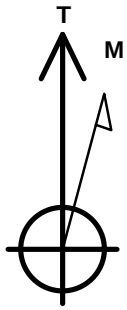
Surface Location: Wiedeman 29K-HZ Pad Sec.29-T4N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4762.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1346126.49	3193488.32	40.281440	-104.806480	

RKB-15' WELL @ 4777.0ft (RKB-15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL 2139'FNL & 1525'FWL, SEC.32	7287.0	-4357.1	290.2	Point



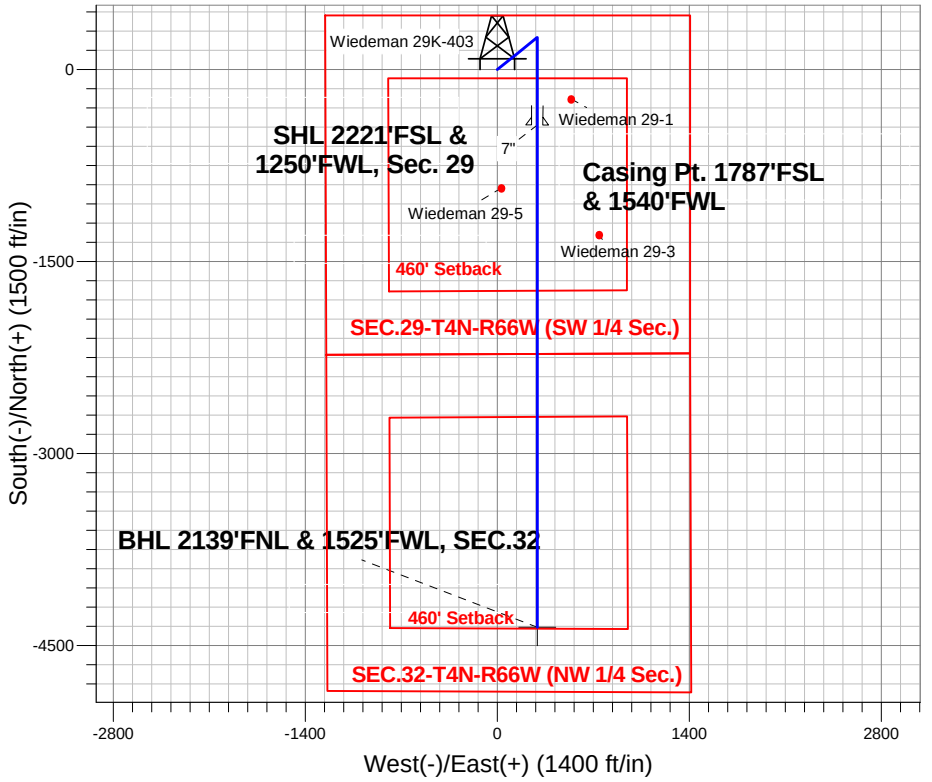
Azimuths to True North
Magnetic North: 8.61°

Magnetic Field
Strength: 52894.4snT
Dip Angle: 66.88°
Date: 6/12/2013
Model: IGRF2010

Wiedeman 29K-HZ Pad Sec.29-T4N-R66W
Wiedeman 29K-403
Plan #1 (06-12-13)
9:09, June 14 2013

ANNOTATIONS

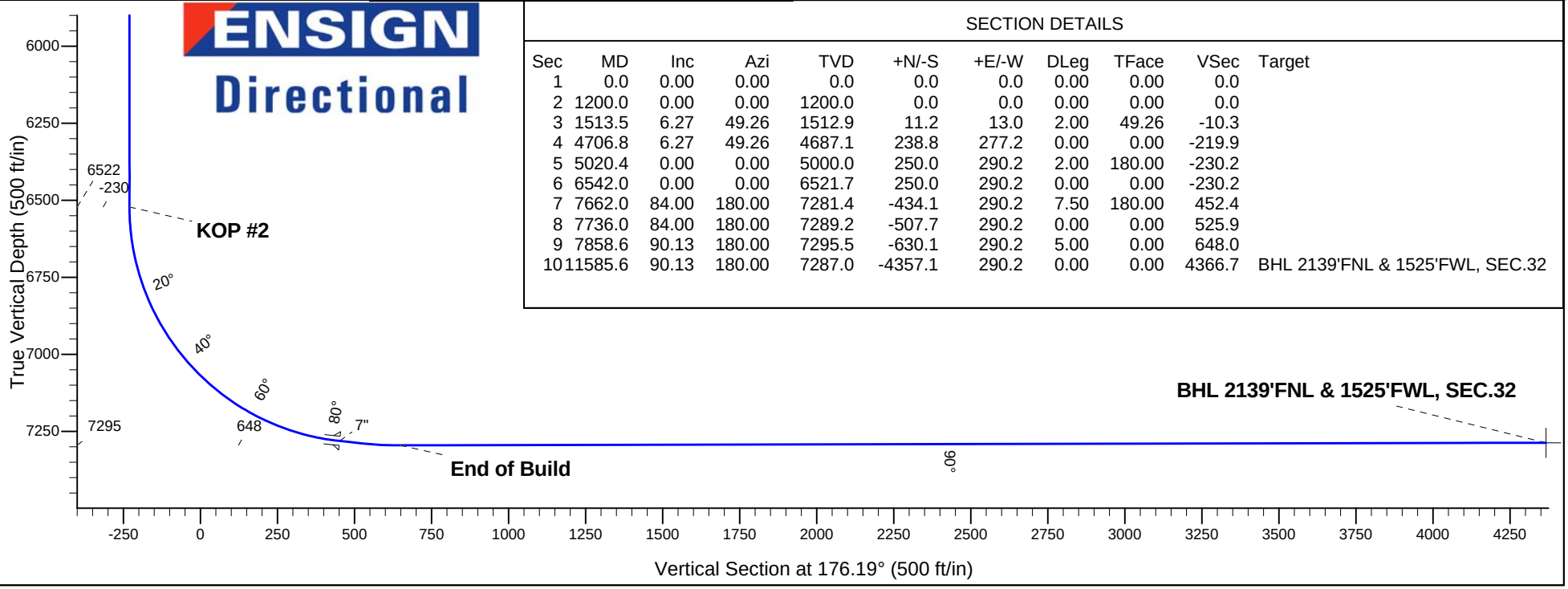
TVD	MD	Annotation
1200.0	1200.0	KOP #1
6521.6	6542.0	KOP #2
7295.5	7858.6	End of Build



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1513.5	6.27	49.26	1512.9	11.2	13.0	2.00	49.26	-10.3	
4	4706.8	6.27	49.26	4687.1	238.8	277.2	0.00	0.00	-219.9	
5	5020.4	0.00	0.00	5000.0	250.0	290.2	2.00	180.00	-230.2	
6	6542.0	0.00	0.00	6521.7	250.0	290.2	0.00	0.00	-230.2	
7	7662.0	84.00	180.00	7281.4	-434.1	290.2	7.50	180.00	452.4	
8	7736.0	84.00	180.00	7289.2	-507.7	290.2	0.00	0.00	525.9	
9	7858.6	90.13	180.00	7295.5	-630.1	290.2	5.00	0.00	648.0	
10	11585.6	90.13	180.00	7287.0	-4357.1	290.2	0.00	0.00	4366.7	BHL 2139'FNL & 1525'FWL, SEC.32



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.29-T4N-R66W
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W
Wiedeman 29K-403

Wellbore #1

Plan: Plan #1 (06-12-13)

Standard Planning Report

13 June, 2013

PDC ENERGY
Growing E&P Value

Database:	Landmark	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Project:	SEC.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**North Reference:**	True
Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-12-13)		

Project SEC.29-T4N-R66W

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 29K-HZ Pad Sec.29-T4N-R66W

Site Position:		**Northing:**	1,346,126.76 ft	**Latitude:**	40.281440
From:	Lat/Long	**Easting:**	3,193,519.01 ft	**Longitude:**	-104.806370
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.45 °

Well Wiedeman 29K-403

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,346,126.49 ft	**Latitude:**	40.281440
	+E/-W	-30.7 ft	**Easting:**	3,193,488.32 ft	**Longitude:**	-104.806480
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	6/12/2013	8.61	66.88	52,894

Design Plan #1 (06-12-13)

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	176.19

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,513.5	6.27	49.26	1,512.9	11.2	13.0	2.00	2.00	0.00	49.26	
4,706.8	6.27	49.26	4,687.1	238.8	277.2	0.00	0.00	0.00	0.00	
5,020.4	0.00	0.00	5,000.0	250.0	290.2	2.00	-2.00	0.00	180.00	
6,542.0	0.00	0.00	6,521.7	250.0	290.2	0.00	0.00	0.00	0.00	
7,662.0	84.00	180.00	7,281.4	-434.1	290.2	7.50	7.50	0.00	180.00	
7,736.0	84.00	180.00	7,289.2	-507.7	290.2	0.00	0.00	0.00	0.00	
7,858.6	90.13	180.00	7,295.5	-630.1	290.2	5.00	5.00	0.00	0.00	
11,585.6	90.13	180.00	7,287.0	-4,357.1	290.2	0.00	0.00	0.00	0.00	BHL 2139'FNL & 15

Database:	Landmark	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Project:	SEC.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**North Reference:**	True
Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-12-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,300.0	2.00	49.26	1,300.0	1.1	1.3	-1.0	2.00	2.00	0.00
1,400.0	4.00	49.26	1,399.8	4.6	5.3	-4.2	2.00	2.00	0.00
1,500.0	6.00	49.26	1,499.5	10.2	11.9	-9.4	2.00	2.00	0.00
1,513.5	6.27	49.26	1,512.9	11.2	13.0	-10.3	2.00	2.00	0.00
1,600.0	6.27	49.26	1,598.9	17.3	20.1	-16.0	0.00	0.00	0.00
1,700.0	6.27	49.26	1,698.3	24.5	28.4	-22.5	0.00	0.00	0.00
1,800.0	6.27	49.26	1,797.7	31.6	36.7	-29.1	0.00	0.00	0.00
1,900.0	6.27	49.26	1,897.1	38.7	45.0	-35.7	0.00	0.00	0.00
2,000.0	6.27	49.26	1,996.5	45.9	53.2	-42.2	0.00	0.00	0.00
2,100.0	6.27	49.26	2,095.9	53.0	61.5	-48.8	0.00	0.00	0.00
2,200.0	6.27	49.26	2,195.3	60.1	69.8	-55.3	0.00	0.00	0.00
2,300.0	6.27	49.26	2,294.7	67.2	78.1	-61.9	0.00	0.00	0.00
2,400.0	6.27	49.26	2,394.1	74.4	86.3	-68.5	0.00	0.00	0.00
2,500.0	6.27	49.26	2,493.5	81.5	94.6	-75.0	0.00	0.00	0.00
2,600.0	6.27	49.26	2,592.9	88.6	102.9	-81.6	0.00	0.00	0.00
2,700.0	6.27	49.26	2,692.3	95.8	111.2	-88.2	0.00	0.00	0.00
2,800.0	6.27	49.26	2,791.7	102.9	119.4	-94.7	0.00	0.00	0.00
2,900.0	6.27	49.26	2,891.1	110.0	127.7	-101.3	0.00	0.00	0.00
3,000.0	6.27	49.26	2,990.5	117.1	136.0	-107.8	0.00	0.00	0.00
3,100.0	6.27	49.26	3,089.9	124.3	144.3	-114.4	0.00	0.00	0.00
3,200.0	6.27	49.26	3,189.3	131.4	152.5	-121.0	0.00	0.00	0.00
3,300.0	6.27	49.26	3,288.7	138.5	160.8	-127.5	0.00	0.00	0.00
3,400.0	6.27	49.26	3,388.1	145.7	169.1	-134.1	0.00	0.00	0.00
3,500.0	6.27	49.26	3,487.5	152.8	177.4	-140.7	0.00	0.00	0.00
3,600.0	6.27	49.26	3,586.9	159.9	185.6	-147.2	0.00	0.00	0.00
3,700.0	6.27	49.26	3,686.3	167.0	193.9	-153.8	0.00	0.00	0.00
3,800.0	6.27	49.26	3,785.7	174.2	202.2	-160.3	0.00	0.00	0.00
3,900.0	6.27	49.26	3,885.1	181.3	210.5	-166.9	0.00	0.00	0.00
4,000.0	6.27	49.26	3,984.5	188.4	218.8	-173.5	0.00	0.00	0.00
4,100.0	6.27	49.26	4,083.9	195.6	227.0	-180.0	0.00	0.00	0.00
4,200.0	6.27	49.26	4,183.3	202.7	235.3	-186.6	0.00	0.00	0.00
4,300.0	6.27	49.26	4,282.7	209.8	243.6	-193.2	0.00	0.00	0.00
4,400.0	6.27	49.26	4,382.1	216.9	251.9	-199.7	0.00	0.00	0.00
4,500.0	6.27	49.26	4,481.5	224.1	260.1	-206.3	0.00	0.00	0.00
4,600.0	6.27	49.26	4,580.9	231.2	268.4	-212.8	0.00	0.00	0.00
4,700.0	6.27	49.26	4,680.3	238.3	276.7	-219.4	0.00	0.00	0.00
4,706.8	6.27	49.26	4,687.1	238.8	277.2	-219.9	0.00	0.00	0.00
4,800.0	4.41	49.26	4,779.9	244.5	283.8	-225.1	2.00	-2.00	0.00
4,900.0	2.41	49.26	4,879.7	248.4	288.3	-228.6	2.00	-2.00	0.00

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Project:	SEC.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**North Reference:**	True
Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-12-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.0	0.41	49.26	4,979.6	250.0	290.2	-230.1	2.00	-2.00	0.00
5,020.4	0.00	0.00	5,000.0	250.0	290.2	-230.2	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,079.6	250.0	290.2	-230.2	0.00	0.00	0.00
5,200.0	0.00	0.00	5,179.6	250.0	290.2	-230.2	0.00	0.00	0.00
5,300.0	0.00	0.00	5,279.6	250.0	290.2	-230.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,379.6	250.0	290.2	-230.2	0.00	0.00	0.00
5,500.0	0.00	0.00	5,479.6	250.0	290.2	-230.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,579.6	250.0	290.2	-230.2	0.00	0.00	0.00
5,700.0	0.00	0.00	5,679.6	250.0	290.2	-230.2	0.00	0.00	0.00
5,800.0	0.00	0.00	5,779.6	250.0	290.2	-230.2	0.00	0.00	0.00
5,900.0	0.00	0.00	5,879.6	250.0	290.2	-230.2	0.00	0.00	0.00
6,000.0	0.00	0.00	5,979.6	250.0	290.2	-230.2	0.00	0.00	0.00
6,100.0	0.00	0.00	6,079.6	250.0	290.2	-230.2	0.00	0.00	0.00
6,200.0	0.00	0.00	6,179.6	250.0	290.2	-230.2	0.00	0.00	0.00
6,300.0	0.00	0.00	6,279.6	250.0	290.2	-230.2	0.00	0.00	0.00
6,400.0	0.00	0.00	6,379.6	250.0	290.2	-230.2	0.00	0.00	0.00
6,500.0	0.00	0.00	6,479.6	250.0	290.2	-230.2	0.00	0.00	0.00
6,542.0	0.00	0.00	6,521.6	250.0	290.2	-230.2	0.00	0.00	0.00
KOP #2									
6,600.0	4.35	180.00	6,579.6	247.8	290.2	-228.0	7.49	7.49	0.00
6,700.0	11.85	180.00	6,678.5	233.7	290.2	-213.9	7.50	7.50	0.00
6,800.0	19.35	180.00	6,774.8	206.9	290.2	-187.1	7.50	7.50	0.00
6,900.0	26.85	180.00	6,866.7	167.7	290.2	-148.0	7.50	7.50	0.00
7,000.0	34.35	180.00	6,952.7	116.8	290.2	-97.2	7.50	7.50	0.00
7,100.0	41.85	180.00	7,031.3	55.1	290.2	-35.7	7.50	7.50	0.00
7,200.0	49.35	180.00	7,101.3	-16.3	290.2	35.5	7.50	7.50	0.00
7,300.0	56.85	180.00	7,161.3	-96.2	290.2	115.2	7.50	7.50	0.00
7,400.0	64.35	180.00	7,210.3	-183.2	290.2	202.1	7.50	7.50	0.00
7,500.0	71.85	180.00	7,247.6	-275.9	290.2	294.6	7.50	7.50	0.00
7,600.0	79.35	180.00	7,272.5	-372.7	290.2	391.2	7.50	7.50	0.00
7,662.0	84.00	180.00	7,281.4	-434.0	290.2	452.4	7.50	7.50	0.00
7"									
7,700.0	84.00	180.00	7,285.4	-471.8	290.2	490.1	0.01	0.01	0.00
7,736.0	84.00	180.00	7,289.2	-507.7	290.2	525.9	0.00	0.00	0.00
7,800.0	87.20	180.00	7,294.1	-571.4	290.2	589.5	5.00	5.00	0.00
7,858.6	90.13	180.00	7,295.5	-630.0	290.2	647.9	5.00	5.00	0.00
End of Build									
7,900.0	90.13	180.00	7,295.4	-671.4	290.2	689.2	0.01	0.01	0.00
8,000.0	90.13	180.00	7,295.1	-771.4	290.2	789.0	0.00	0.00	0.00
8,100.0	90.13	180.00	7,294.9	-871.4	290.2	888.8	0.00	0.00	0.00
8,200.0	90.13	180.00	7,294.7	-971.4	290.2	988.6	0.00	0.00	0.00
8,300.0	90.13	180.00	7,294.5	-1,071.4	290.2	1,088.3	0.00	0.00	0.00
8,400.0	90.13	180.00	7,294.2	-1,171.4	290.2	1,188.1	0.00	0.00	0.00
8,500.0	90.13	180.00	7,294.0	-1,271.4	290.2	1,287.9	0.00	0.00	0.00
8,600.0	90.13	180.00	7,293.8	-1,371.4	290.2	1,387.7	0.00	0.00	0.00
8,700.0	90.13	180.00	7,293.5	-1,471.4	290.2	1,487.5	0.00	0.00	0.00
8,800.0	90.13	180.00	7,293.3	-1,571.4	290.2	1,587.2	0.00	0.00	0.00
8,900.0	90.13	180.00	7,293.1	-1,671.4	290.2	1,687.0	0.00	0.00	0.00
9,000.0	90.13	180.00	7,292.9	-1,771.4	290.2	1,786.8	0.00	0.00	0.00
9,100.0	90.13	180.00	7,292.6	-1,871.4	290.2	1,886.6	0.00	0.00	0.00
9,200.0	90.13	180.00	7,292.4	-1,971.4	290.2	1,986.3	0.00	0.00	0.00
9,300.0	90.13	180.00	7,292.2	-2,071.4	290.2	2,086.1	0.00	0.00	0.00
9,400.0	90.13	180.00	7,292.0	-2,171.4	290.2	2,185.9	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
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Project:	SEC.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**North Reference:**	True
Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-12-13)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,500.0	90.13	180.00	7,291.7	-2,271.4	290.2	2,285.7	0.00	0.00	0.00
9,600.0	90.13	180.00	7,291.5	-2,371.4	290.2	2,385.5	0.00	0.00	0.00
9,700.0	90.13	180.00	7,291.3	-2,471.4	290.2	2,485.2	0.00	0.00	0.00
9,800.0	90.13	180.00	7,291.1	-2,571.4	290.2	2,585.0	0.00	0.00	0.00
9,900.0	90.13	180.00	7,290.8	-2,671.4	290.2	2,684.8	0.00	0.00	0.00
10,000.0	90.13	180.00	7,290.6	-2,771.4	290.2	2,784.6	0.00	0.00	0.00
10,100.0	90.13	180.00	7,290.4	-2,871.4	290.2	2,884.4	0.00	0.00	0.00
10,200.0	90.13	180.00	7,290.1	-2,971.4	290.2	2,984.1	0.00	0.00	0.00
10,300.0	90.13	180.00	7,289.9	-3,071.4	290.2	3,083.9	0.00	0.00	0.00
10,400.0	90.13	180.00	7,289.7	-3,171.4	290.2	3,183.7	0.00	0.00	0.00
10,500.0	90.13	180.00	7,289.5	-3,271.4	290.2	3,283.5	0.00	0.00	0.00
10,600.0	90.13	180.00	7,289.2	-3,371.4	290.2	3,383.3	0.00	0.00	0.00
10,700.0	90.13	180.00	7,289.0	-3,471.4	290.2	3,483.0	0.00	0.00	0.00
10,800.0	90.13	180.00	7,288.8	-3,571.4	290.2	3,582.8	0.00	0.00	0.00
10,900.0	90.13	180.00	7,288.6	-3,671.4	290.2	3,682.6	0.00	0.00	0.00
11,000.0	90.13	180.00	7,288.3	-3,771.4	290.2	3,782.4	0.00	0.00	0.00
11,100.0	90.13	180.00	7,288.1	-3,871.4	290.2	3,882.1	0.00	0.00	0.00
11,200.0	90.13	180.00	7,287.9	-3,971.4	290.2	3,981.9	0.00	0.00	0.00
11,300.0	90.13	180.00	7,287.6	-4,071.4	290.2	4,081.7	0.00	0.00	0.00
11,400.0	90.13	180.00	7,287.4	-4,171.4	290.2	4,181.5	0.00	0.00	0.00
11,500.0	90.13	180.00	7,287.2	-4,271.4	290.2	4,281.3	0.00	0.00	0.00
11,585.6	90.13	180.00	7,287.0	-4,357.1	290.2	4,366.7	0.00	0.00	0.00
BHL 2139'FNL & 1525'FWL, SEC.32									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,662.0	7,281.4	7"	7	7-1/2

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,200.0	1,200.0	0.0	0.0	KOP #1
6,542.0	6,521.6	250.0	290.2	KOP #2
7,858.6	7,295.5	-630.0	290.2	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.29-T4N-R66W
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W
Wiedeman 29K-403

Wellbore #1
Plan #1 (06-12-13)

Anticollision Report

13 June, 2013

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Reference Plan #1 (06-12-13)

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** 6/13/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,585.6	Plan #1 (06-12-13) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Pad						
Wiedeman 29-1 - Wellbore #1 - Wellbore #1	7,450.6	7,215.7	248.3	223.6	10.047	CC, ES, SF
Wiedeman 29-3 - Wellbore #1 - Wellbore #1	8,518.2	7,281.0	452.0	413.8	11.823	CC, ES
Wiedeman 29-3 - Wellbore #1 - Wellbore #1	8,600.0	7,280.8	459.3	419.8	11.608	SF
Wiedeman 29-5 - Wellbore #1 - Wellbore #1	8,153.9	7,278.8	259.5	227.0	7.967	CC, ES
Wiedeman 29-5 - Wellbore #1 - Wellbore #1	8,200.0	7,278.7	263.6	230.4	7.929	SF
Wiedeman 29K-HZ Pad Sec.29-T4N-R66W						
Wiedeman 29K-123 - Wellbore #1 - Plan #1 (06-12-13)	1,000.0	999.0	30.7	26.4	7.190	CC, ES
Wiedeman 29K-123 - Wellbore #1 - Plan #1 (06-12-13)	11,585.6	11,328.2	467.3	326.4	3.316	SF
Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)	1,200.0	1,200.0	30.7	25.5	5.937	CC, ES
Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)	11,585.6	11,401.3	509.0	351.7	3.235	SF
Wiedeman 29O-443 - Wellbore #1 - Plan #1 (06-12-13)	200.0	199.0	61.4	60.7	91.336	CC, ES
Wiedeman 29O-443 - Wellbore #1 - Plan #1 (06-12-13)	11,585.6	11,643.5	708.8	536.9	4.123	SF

Offset Design Existing Wells Pad - Wiedeman 29-1 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7400-MWD **Offset Well Error:** 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	113.08	-229.5	538.5	585.5				
100.0	100.0	85.0	85.0	0.1	0.1	113.08	-229.5	538.5	585.4	585.1	0.21	2,812.773	
200.0	200.0	185.0	185.0	0.3	0.2	113.08	-229.5	538.5	585.4	584.8	0.55	1,073.550	
300.0	300.0	285.0	285.0	0.6	0.3	113.08	-229.5	538.5	585.4	584.5	0.88	663.369	
400.0	400.0	385.0	385.0	0.8	0.4	113.08	-229.5	538.5	585.4	584.1	1.22	479.979	
500.0	500.0	485.0	485.0	1.0	0.5	113.08	-229.5	538.5	585.4	583.8	1.56	376.025	
600.0	600.0	585.0	585.0	1.2	0.7	113.08	-229.5	538.5	585.4	583.5	1.89	309.084	
700.0	700.0	685.0	685.0	1.5	0.8	113.08	-229.5	538.5	585.4	583.1	2.23	262.376	
800.0	800.0	785.0	785.0	1.7	0.9	113.08	-229.5	538.5	585.4	582.8	2.57	227.931	
900.0	900.0	885.0	885.0	1.9	1.0	113.08	-229.5	538.5	585.4	582.5	2.91	201.480	
1,000.0	1,000.0	985.0	985.0	2.1	1.1	113.08	-229.5	538.5	585.4	582.1	3.24	180.530	
1,100.0	1,100.0	1,085.0	1,085.0	2.4	1.2	113.08	-229.5	538.5	585.4	581.8	3.58	163.527	
1,200.0	1,200.0	1,185.0	1,185.0	2.6	1.3	113.08	-229.5	538.5	585.4	581.4	3.92	149.451	
1,300.0	1,300.0	1,285.0	1,285.0	2.8	1.4	63.99	-229.5	538.5	584.6	580.3	4.25	137.605	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad - Wiedeman 29-1 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7400-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
1,400.0	1,399.8	1,384.8	1,384.8	3.0	1.6	64.49	-229.5	538.5	582.3	577.7	4.58	127.250	
1,500.0	1,499.5	1,484.5	1,484.5	3.3	1.7	65.34	-229.5	538.5	578.6	573.7	4.91	117.854	
1,600.0	1,598.9	1,583.9	1,583.9	3.5	1.8	66.33	-229.5	538.5	574.1	568.9	5.25	109.267	
1,700.0	1,698.3	1,683.3	1,683.3	3.7	1.9	67.33	-229.5	538.5	569.8	564.2	5.61	101.602	
1,800.0	1,797.7	1,782.7	1,782.7	4.0	2.0	68.35	-229.5	538.5	565.7	559.7	5.97	94.756	
1,900.0	1,897.1	1,882.1	1,882.1	4.3	2.1	69.38	-229.5	538.5	561.7	555.4	6.34	88.630	
2,000.0	1,996.5	1,981.5	1,981.5	4.5	2.2	70.42	-229.5	538.5	557.9	551.2	6.71	83.133	
2,100.0	2,095.9	2,080.9	2,080.9	4.8	2.3	71.48	-229.5	538.5	554.3	547.3	7.09	78.188	
2,200.0	2,195.3	2,180.3	2,180.3	5.1	2.5	72.55	-229.5	538.5	551.0	543.5	7.47	73.726	
2,300.0	2,294.7	2,279.7	2,279.7	5.3	2.6	73.64	-229.5	538.5	547.8	539.9	7.86	69.691	
2,400.0	2,394.1	2,379.1	2,379.1	5.6	2.7	74.73	-229.5	538.5	544.8	536.5	8.25	66.031	
2,500.0	2,493.5	2,478.5	2,478.5	5.9	2.8	75.84	-229.5	538.5	542.0	533.3	8.64	62.702	
2,600.0	2,592.9	2,577.9	2,577.9	6.2	2.9	76.96	-229.5	538.5	539.4	530.4	9.04	59.669	
2,700.0	2,692.3	2,677.3	2,677.3	6.5	3.0	78.09	-229.5	538.5	537.0	527.6	9.44	56.898	
2,800.0	2,791.7	2,776.7	2,776.7	6.8	3.1	79.23	-229.5	538.5	534.9	525.0	9.84	54.362	
2,900.0	2,891.1	2,876.1	2,876.1	7.0	3.2	80.37	-229.5	538.5	532.9	522.7	10.24	52.036	
3,000.0	2,990.5	2,975.5	2,975.5	7.3	3.3	81.53	-229.5	538.5	531.2	520.5	10.65	49.899	
3,100.0	3,089.9	3,074.9	3,074.9	7.6	3.5	82.69	-229.5	538.5	529.7	518.6	11.05	47.932	
3,200.0	3,189.3	3,174.3	3,174.3	7.9	3.6	83.86	-229.5	538.5	528.4	516.9	11.46	46.120	
3,300.0	3,288.7	3,273.7	3,273.7	8.2	3.7	85.03	-229.5	538.5	527.3	515.5	11.86	44.447	
3,400.0	3,388.1	3,373.1	3,373.1	8.5	3.8	86.21	-229.5	538.5	526.5	514.2	12.27	42.901	
3,500.0	3,487.5	3,472.5	3,472.5	8.8	3.9	87.39	-229.5	538.5	525.9	513.2	12.68	41.472	
3,600.0	3,586.9	3,571.9	3,571.9	9.1	4.0	88.57	-229.5	538.5	525.5	512.4	13.09	40.148	
3,700.0	3,686.3	3,671.3	3,671.3	9.4	4.1	89.75	-229.5	538.5	525.3	511.8	13.50	38.921	
3,720.8	3,707.0	3,692.0	3,692.0	9.4	4.1	90.00	-229.5	538.5	525.3	511.7	13.58	38.677	
3,800.0	3,785.7	3,770.7	3,770.7	9.7	4.2	90.94	-229.5	538.5	525.4	511.5	13.91	37.783	
3,900.0	3,885.1	3,870.1	3,870.1	10.0	4.3	92.12	-229.5	538.5	525.7	511.4	14.31	36.727	
4,000.0	3,984.5	3,969.5	3,969.5	10.3	4.5	93.30	-229.5	538.5	526.2	511.5	14.72	35.746	
4,100.0	4,083.9	4,068.9	4,068.9	10.6	4.6	94.48	-229.5	538.5	527.0	511.8	15.13	34.835	
4,200.0	4,183.3	4,168.3	4,168.3	10.9	4.7	95.66	-229.5	538.5	527.9	512.4	15.53	33.988	
4,300.0	4,282.7	4,267.7	4,267.7	11.1	4.8	96.83	-229.5	538.5	529.1	513.2	15.94	33.200	
4,400.0	4,382.1	4,367.1	4,367.1	11.4	4.9	97.99	-229.5	538.5	530.5	514.2	16.34	32.467	
4,500.0	4,481.5	4,466.5	4,466.5	11.7	5.0	99.15	-229.5	538.5	532.2	515.4	16.74	31.785	
4,600.0	4,580.9	4,565.9	4,565.9	12.0	5.1	100.30	-229.5	538.5	534.0	516.9	17.14	31.150	
4,700.0	4,680.3	4,665.3	4,665.3	12.3	5.2	101.44	-229.5	538.5	536.1	518.6	17.54	30.560	
4,800.0	4,779.9	4,764.9	4,764.9	12.6	5.4	102.45	-229.5	538.5	538.1	520.2	17.90	30.060	
4,900.0	4,879.7	4,864.7	4,864.7	12.8	5.5	103.10	-229.5	538.5	539.4	521.2	18.20	29.639	
5,000.0	4,979.6	4,964.6	4,964.6	13.0	5.6	103.36	-229.5	538.5	539.9	521.5	18.47	29.226	
5,100.0	5,079.6	5,064.6	5,064.6	13.1	5.7	152.63	-229.5	538.5	539.9	521.2	18.75	28.795	
5,200.0	5,179.6	5,164.6	5,164.6	13.3	5.8	152.63	-229.5	538.5	539.9	520.9	19.05	28.342	
5,300.0	5,279.6	5,264.6	5,264.6	13.5	5.9	152.63	-229.5	538.5	539.9	520.6	19.35	27.902	
5,400.0	5,379.6	5,364.6	5,364.6	13.7	6.0	152.63	-229.5	538.5	539.9	520.3	19.65	27.473	
5,500.0	5,479.6	5,464.6	5,464.6	13.9	6.1	152.63	-229.5	538.5	539.9	520.0	19.96	27.056	
5,600.0	5,579.6	5,564.6	5,564.6	14.1	6.3	152.63	-229.5	538.5	539.9	519.7	20.26	26.650	
5,700.0	5,679.6	5,664.6	5,664.6	14.2	6.4	152.63	-229.5	538.5	539.9	519.4	20.57	26.255	
5,800.0	5,779.6	5,764.6	5,764.6	14.4	6.5	152.63	-229.5	538.5	539.9	519.1	20.87	25.870	
5,900.0	5,879.6	5,864.6	5,864.6	14.6	6.6	152.63	-229.5	538.5	539.9	518.8	21.18	25.496	
6,000.0	5,979.6	5,964.6	5,964.6	14.8	6.7	152.63	-229.5	538.5	539.9	518.5	21.49	25.131	
6,100.0	6,079.6	6,064.6	6,064.6	15.0	6.8	152.63	-229.5	538.5	539.9	518.2	21.79	24.775	
6,200.0	6,179.6	6,164.6	6,164.6	15.2	6.9	152.63	-229.5	538.5	539.9	517.8	22.10	24.428	
6,300.0	6,279.6	6,264.6	6,264.6	15.4	7.0	152.63	-229.5	538.5	539.9	517.5	22.41	24.091	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad - Wiedeman 29-1 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7400-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,400.0	6,379.6	6,364.6	6,364.6	15.6	7.2	152.63	-229.5	538.5	539.9	517.2	22.72	23.761	
6,500.0	6,479.6	6,464.6	6,464.6	15.8	7.3	152.63	-229.5	538.5	539.9	516.9	23.04	23.440	
6,600.0	6,579.6	6,564.6	6,564.6	16.0	7.4	-27.55	-229.5	538.5	538.0	514.7	23.28	23.112	
6,700.0	6,678.5	6,663.5	6,663.5	16.1	7.5	-28.71	-229.5	538.5	525.6	502.2	23.31	22.544	
6,800.0	6,774.8	6,759.8	6,759.8	16.1	7.6	-31.09	-229.5	538.5	502.0	478.9	23.18	21.662	
6,900.0	6,866.7	6,851.7	6,851.7	16.2	7.7	-35.02	-229.5	538.5	468.4	445.4	22.93	20.427	
7,000.0	6,952.7	6,937.7	6,937.7	16.2	7.8	-40.97	-229.5	538.5	426.1	403.4	22.69	18.780	
7,100.0	7,031.3	7,016.3	7,016.3	16.2	7.9	-49.50	-229.5	538.5	377.7	355.0	22.65	16.676	
7,200.0	7,101.3	7,086.3	7,086.3	16.2	8.0	-60.77	-229.5	538.5	327.3	304.3	22.99	14.233	
7,300.0	7,161.3	7,146.3	7,146.3	16.4	8.0	-73.63	-229.5	538.5	281.8	258.1	23.67	11.904	
7,400.0	7,210.3	7,195.3	7,195.3	16.7	8.1	-85.39	-229.5	538.5	252.5	228.2	24.38	10.360	
7,450.6	7,230.7	7,215.7	7,215.7	17.0	8.1	-90.00	-229.5	538.5	248.3	223.6	24.71	10.047	CC, ES, SF
7,500.0	7,247.6	7,232.6	7,232.6	17.3	8.1	-93.34	-229.5	538.5	252.6	227.6	24.99	10.107	
7,600.0	7,272.5	7,257.5	7,257.5	18.1	8.2	-96.09	-229.5	538.5	286.6	260.9	25.72	11.145	
7,700.0	7,285.4	7,270.4	7,270.4	19.0	8.2	-95.83	-229.5	538.5	346.9	320.3	26.67	13.008	
7,800.0	7,294.1	7,279.1	7,279.1	20.1	8.2	-93.85	-229.5	538.5	422.6	394.8	27.82	15.189	
7,900.0	7,295.4	7,280.4	7,280.4	21.3	8.2	-89.77	-229.5	538.5	506.9	477.8	29.12	17.408	
8,000.0	7,295.1	7,280.1	7,280.1	22.6	8.2	-89.72	-229.5	538.5	596.1	565.7	30.42	19.598	
8,100.0	7,294.9	7,279.9	7,279.9	23.9	8.2	-89.66	-229.5	538.5	688.3	656.5	31.80	21.643	
8,200.0	7,294.7	7,279.7	7,279.7	25.4	8.2	-89.61	-229.5	538.5	782.4	749.1	33.25	23.526	
8,300.0	7,294.5	7,279.5	7,279.5	26.9	8.2	-89.56	-229.5	538.5	877.8	843.0	34.77	25.246	
8,400.0	7,294.2	7,279.2	7,279.2	28.4	8.2	-89.51	-229.5	538.5	974.1	937.8	36.33	26.811	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad - Wiedeman 29-3 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7400-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,700.0	7,285.4	7,272.4	7,272.4	19.0	8.2	-79.29	-1,289.6	742.2	934.4	907.6	26.72	34.972	
7,800.0	7,294.1	7,281.1	7,281.1	20.1	8.2	-85.56	-1,289.6	742.2	848.6	820.6	27.94	30.372	
7,900.0	7,295.4	7,282.4	7,282.4	21.3	8.2	-90.18	-1,289.6	742.2	765.8	736.7	29.11	26.304	
8,000.0	7,295.1	7,282.1	7,282.1	22.6	8.2	-90.15	-1,289.6	742.2	687.6	657.2	30.41	22.610	
8,100.0	7,294.9	7,281.9	7,281.9	23.9	8.2	-90.12	-1,289.6	742.2	615.8	584.0	31.79	19.367	
8,200.0	7,294.7	7,281.7	7,281.7	25.4	8.2	-90.09	-1,289.6	742.2	552.7	519.5	33.25	16.624	
8,300.0	7,294.5	7,281.5	7,281.5	26.9	8.2	-90.06	-1,289.6	742.2	501.9	467.1	34.76	14.438	
8,400.0	7,294.2	7,281.2	7,281.2	28.4	8.2	-90.03	-1,289.6	742.2	467.2	430.9	36.33	12.861	
8,500.0	7,294.0	7,281.0	7,281.0	30.0	8.2	-90.01	-1,289.6	742.2	452.3	414.4	37.93	11.926	
8,518.2	7,294.0	7,281.0	7,281.0	30.3	8.2	-90.00	-1,289.6	742.2	452.0	413.8	38.23	11.823	CC, ES
8,600.0	7,293.8	7,280.8	7,280.8	31.7	8.2	-89.98	-1,289.6	742.2	459.3	419.8	39.57	11.608	SF
8,700.0	7,293.5	7,280.5	7,280.5	33.3	8.2	-89.95	-1,289.6	742.2	487.2	445.9	41.24	11.813	
8,800.0	7,293.3	7,280.3	7,280.3	35.0	8.2	-89.92	-1,289.6	742.2	532.6	489.7	42.94	12.405	
8,900.0	7,293.1	7,280.1	7,280.1	36.7	8.2	-89.89	-1,289.6	742.2	591.7	547.0	44.65	13.250	
9,000.0	7,292.9	7,279.9	7,279.9	38.4	8.2	-89.86	-1,289.6	742.2	660.6	614.2	46.39	14.240	
9,100.0	7,292.6	7,279.6	7,279.6	40.2	8.2	-89.83	-1,289.6	742.2	736.7	688.6	48.15	15.302	
9,200.0	7,292.4	7,279.4	7,279.4	41.9	8.2	-89.80	-1,289.6	742.2	818.0	768.1	49.91	16.389	
9,300.0	7,292.2	7,279.2	7,279.2	43.7	8.2	-89.78	-1,289.6	742.2	903.1	851.4	51.70	17.469	
9,400.0	7,292.0	7,279.0	7,279.0	45.5	8.2	-89.75	-1,289.6	742.2	990.9	937.4	53.49	18.526	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Existing Wells Pad - Wiedeman 29-5 - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 7400-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	178.10	-925.3	30.7	926.0				
100.0	100.0	84.0	84.0	0.1	0.1	178.10	-925.3	30.7	925.8	925.6	0.21	4,472.944	
200.0	200.0	184.0	184.0	0.3	0.2	178.10	-925.3	30.7	925.8	925.3	0.54	1,701.474	
300.0	300.0	284.0	284.0	0.6	0.3	178.10	-925.3	30.7	925.8	924.9	0.88	1,050.547	
400.0	400.0	384.0	384.0	0.8	0.4	178.10	-925.3	30.7	925.8	924.6	1.22	759.853	
500.0	500.0	484.0	484.0	1.0	0.5	178.10	-925.3	30.7	925.8	924.3	1.56	595.166	
600.0	600.0	584.0	584.0	1.2	0.7	178.10	-925.3	30.7	925.8	923.9	1.89	489.150	
700.0	700.0	684.0	684.0	1.5	0.8	178.10	-925.3	30.7	925.8	923.6	2.23	415.192	
800.0	800.0	784.0	784.0	1.7	0.9	178.10	-925.3	30.7	925.8	923.3	2.57	360.662	
900.0	900.0	884.0	884.0	1.9	1.0	178.10	-925.3	30.7	925.8	922.9	2.90	318.792	
1,000.0	1,000.0	984.0	984.0	2.1	1.1	178.10	-925.3	30.7	925.8	922.6	3.24	285.633	
1,100.0	1,100.0	1,084.0	1,084.0	2.4	1.2	178.10	-925.3	30.7	925.8	922.2	3.58	258.722	
1,200.0	1,200.0	1,184.0	1,184.0	2.6	1.3	178.10	-925.3	30.7	925.8	921.9	3.92	236.445	
1,300.0	1,300.0	1,284.0	1,284.0	2.8	1.4	128.91	-925.3	30.7	926.9	922.7	4.25	218.199	
1,400.0	1,399.8	1,383.8	1,383.8	3.0	1.6	129.11	-925.3	30.7	930.2	925.6	4.58	203.204	
1,500.0	1,499.5	1,483.5	1,483.5	3.3	1.7	129.44	-925.3	30.7	935.7	930.8	4.91	190.486	
1,600.0	1,598.9	1,582.9	1,582.9	3.5	1.8	129.93	-925.3	30.7	942.7	937.5	5.26	179.303	
1,700.0	1,698.3	1,682.3	1,682.3	3.7	1.9	130.43	-925.3	30.7	949.8	944.2	5.61	169.324	
1,800.0	1,797.7	1,781.7	1,781.7	4.0	2.0	130.93	-925.3	30.7	956.9	951.0	5.97	160.411	
1,900.0	1,897.1	1,881.1	1,881.1	4.3	2.1	131.42	-925.3	30.7	964.2	957.8	6.33	152.429	
2,000.0	1,996.5	1,980.5	1,980.5	4.5	2.2	131.90	-925.3	30.7	971.4	964.7	6.69	145.255	
2,100.0	2,095.9	2,079.9	2,079.9	4.8	2.3	132.37	-925.3	30.7	978.8	971.7	7.05	138.786	
2,200.0	2,195.3	2,179.3	2,179.3	5.1	2.4	132.84	-925.3	30.7	986.2	978.8	7.42	132.932	
2,300.0	2,294.7	2,278.7	2,278.7	5.3	2.6	133.30	-925.3	30.7	993.7	985.9	7.79	127.617	
7,200.0	7,101.3	7,085.3	7,085.3	16.2	8.0	23.66	-925.3	30.7	945.4	925.1	20.28	46.614	
7,300.0	7,161.3	7,145.3	7,145.3	16.4	8.0	29.79	-925.3	30.7	868.8	848.7	20.16	43.106	
7,400.0	7,210.3	7,194.3	7,194.3	16.7	8.1	38.93	-925.3	30.7	786.2	765.4	20.77	37.845	
7,500.0	7,247.6	7,231.6	7,231.6	17.3	8.1	52.06	-925.3	30.7	699.3	676.9	22.44	31.165	
7,600.0	7,272.5	7,256.5	7,256.5	18.1	8.2	68.51	-925.3	30.7	610.5	585.8	24.75	24.666	
7,700.0	7,285.4	7,269.4	7,269.4	19.0	8.2	79.65	-925.3	30.7	522.5	496.0	26.46	19.748	
7,800.0	7,294.1	7,278.1	7,278.1	20.1	8.2	86.19	-925.3	30.7	438.8	411.0	27.82	15.773	
7,900.0	7,295.4	7,279.4	7,279.4	21.3	8.2	90.13	-925.3	30.7	363.1	334.0	29.12	12.470	
8,000.0	7,295.1	7,279.1	7,279.1	22.6	8.2	90.08	-925.3	30.7	301.7	271.3	30.41	9.921	
8,100.0	7,294.9	7,278.9	7,278.9	23.9	8.2	90.03	-925.3	30.7	265.1	233.3	31.79	8.337	
8,153.9	7,294.8	7,278.8	7,278.8	24.7	8.2	90.00	-925.3	30.7	259.5	227.0	32.58	7.967	CC, ES
8,200.0	7,294.7	7,278.7	7,278.7	25.4	8.2	89.98	-925.3	30.7	263.6	230.4	33.25	7.929	SF
8,300.0	7,294.5	7,278.5	7,278.5	26.9	8.2	89.93	-925.3	30.7	297.8	263.1	34.76	8.569	
8,400.0	7,294.2	7,278.2	7,278.2	28.4	8.2	89.88	-925.3	30.7	357.7	321.4	36.32	9.848	
8,500.0	7,294.0	7,278.0	7,278.0	30.0	8.2	89.83	-925.3	30.7	432.6	394.7	37.92	11.407	
8,600.0	7,293.8	7,277.8	7,277.8	31.7	8.2	89.78	-925.3	30.7	516.1	476.5	39.56	13.046	
8,700.0	7,293.5	7,277.5	7,277.5	33.3	8.2	89.73	-925.3	30.7	604.6	563.4	41.23	14.665	
8,800.0	7,293.3	7,277.3	7,277.3	35.0	8.2	89.68	-925.3	30.7	696.3	653.4	42.92	16.221	
8,900.0	7,293.1	7,277.1	7,277.1	36.7	8.2	89.63	-925.3	30.7	790.0	745.3	44.64	17.696	
9,000.0	7,292.9	7,276.9	7,276.9	38.4	8.2	89.58	-925.3	30.7	885.0	838.6	46.38	19.083	
9,100.0	7,292.6	7,276.6	7,276.6	40.2	8.2	89.53	-925.3	30.7	981.1	932.9	48.13	20.384	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-123 - Wellbore #1 - Plan #1 (06-12-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.99	0.0	30.7	30.7				
100.0	100.0	99.0	99.0	0.1	0.1	89.99	0.0	30.7	30.7	30.5	0.22	137.232	
200.0	200.0	199.0	199.0	0.3	0.3	89.99	0.0	30.7	30.7	30.0	0.67	45.668	
300.0	300.0	299.0	299.0	0.6	0.6	89.99	0.0	30.7	30.7	29.6	1.12	27.364	
400.0	400.0	399.0	399.0	0.8	0.8	89.99	0.0	30.7	30.7	29.1	1.57	19.535	
500.0	500.0	499.0	499.0	1.0	1.0	89.99	0.0	30.7	30.7	28.7	2.02	15.189	
600.0	600.0	599.0	599.0	1.2	1.2	89.99	0.0	30.7	30.7	28.2	2.47	12.425	
700.0	700.0	699.0	699.0	1.5	1.5	89.99	0.0	30.7	30.7	27.8	2.92	10.512	
800.0	800.0	799.0	799.0	1.7	1.7	89.99	0.0	30.7	30.7	27.3	3.37	9.109	
900.0	900.0	899.0	899.0	1.9	1.9	89.99	0.0	30.7	30.7	26.9	3.82	8.037	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	89.99	0.0	30.7	30.7	26.4	4.27	7.190	CC, ES
1,100.0	1,100.0	1,098.0	1,098.0	2.4	2.3	88.88	0.6	32.2	32.3	27.6	4.71	6.854	
1,200.0	1,200.0	1,196.7	1,196.6	2.6	2.6	86.08	2.5	37.0	37.1	32.0	5.14	7.215	
1,300.0	1,300.0	1,295.2	1,294.6	2.8	2.8	34.67	5.7	44.8	43.9	38.3	5.57	7.884	
1,400.0	1,399.8	1,393.3	1,392.1	3.0	3.0	34.24	10.1	55.7	51.2	45.2	5.99	8.536	
1,500.0	1,499.5	1,492.5	1,490.2	3.3	3.3	35.13	15.5	69.1	58.1	51.6	6.42	9.040	
1,600.0	1,598.9	1,592.4	1,589.0	3.5	3.6	37.01	21.0	82.8	63.4	56.5	6.87	9.222	
1,700.0	1,698.3	1,692.2	1,687.7	3.7	3.9	38.62	26.5	96.5	68.7	61.4	7.34	9.369	
1,800.0	1,797.7	1,792.0	1,786.5	4.0	4.2	40.00	32.1	110.1	74.1	66.3	7.81	9.491	
1,900.0	1,897.1	1,891.9	1,885.2	4.3	4.5	41.18	37.6	123.8	79.6	71.3	8.30	9.592	
2,000.0	1,996.5	1,991.7	1,984.0	4.5	4.8	42.22	43.1	137.5	85.1	76.3	8.79	9.676	
2,100.0	2,095.9	2,091.6	2,082.7	4.8	5.1	43.13	48.6	151.1	90.6	81.3	9.29	9.746	
2,200.0	2,195.3	2,191.4	2,181.4	5.1	5.5	43.93	54.1	164.8	96.1	86.3	9.80	9.805	
2,300.0	2,294.7	2,291.2	2,280.2	5.3	5.8	44.65	59.6	178.5	101.6	91.3	10.31	9.853	
2,400.0	2,394.1	2,391.1	2,378.9	5.6	6.1	45.30	65.2	192.2	107.2	96.3	10.83	9.894	
2,500.0	2,493.5	2,490.9	2,477.7	5.9	6.5	45.88	70.7	205.8	112.7	101.4	11.35	9.928	
2,600.0	2,592.9	2,590.8	2,576.4	6.2	6.8	46.40	76.2	219.5	118.3	106.4	11.88	9.956	
2,700.0	2,692.3	2,690.6	2,675.2	6.5	7.1	46.88	81.7	233.2	123.9	111.5	12.41	9.980	
2,800.0	2,791.7	2,790.4	2,773.9	6.8	7.5	47.32	87.2	246.8	129.5	116.5	12.95	10.000	
2,900.0	2,891.1	2,890.3	2,872.7	7.0	7.8	47.72	92.7	260.5	135.0	121.6	13.48	10.016	
3,000.0	2,990.5	2,990.1	2,971.4	7.3	8.2	48.09	98.3	274.2	140.6	126.6	14.02	10.030	
3,100.0	3,089.9	3,090.0	3,070.1	7.6	8.5	48.43	103.8	287.9	146.3	131.7	14.56	10.042	
3,200.0	3,189.3	3,189.8	3,168.9	7.9	8.9	48.74	109.3	301.5	151.9	136.8	15.11	10.052	
3,300.0	3,288.7	3,289.6	3,267.6	8.2	9.2	49.04	114.8	315.2	157.5	141.8	15.65	10.060	
3,400.0	3,388.1	3,389.5	3,366.4	8.5	9.5	49.31	120.3	328.9	163.1	146.9	16.20	10.067	
3,500.0	3,487.5	3,489.3	3,465.1	8.8	9.9	49.56	125.8	342.5	168.7	152.0	16.75	10.073	
3,600.0	3,586.9	3,589.2	3,563.9	9.1	10.2	49.80	131.4	356.2	174.3	157.0	17.30	10.077	
3,700.0	3,686.3	3,689.0	3,662.6	9.4	10.6	50.03	136.9	369.9	180.0	162.1	17.85	10.081	
3,800.0	3,785.7	3,788.8	3,761.4	9.7	10.9	50.24	142.4	383.6	185.6	167.2	18.41	10.084	
3,900.0	3,885.1	3,888.7	3,860.1	10.0	11.3	50.43	147.9	397.2	191.2	172.3	18.96	10.086	
4,000.0	3,984.5	3,988.5	3,958.8	10.3	11.6	50.62	153.4	410.9	196.9	177.4	19.51	10.088	
4,100.0	4,083.9	4,088.3	4,057.6	10.6	12.0	50.79	159.0	424.6	202.5	182.4	20.07	10.089	
4,200.0	4,183.3	4,188.2	4,156.3	10.9	12.3	50.96	164.5	438.2	208.1	187.5	20.63	10.090	
4,300.0	4,282.7	4,288.0	4,255.1	11.1	12.7	51.12	170.0	451.9	213.8	192.6	21.19	10.091	
4,400.0	4,382.1	4,387.9	4,353.8	11.4	13.1	51.27	175.5	465.6	219.4	197.7	21.74	10.091	
4,500.0	4,481.5	4,487.7	4,452.6	11.7	13.4	51.41	181.0	479.3	225.1	202.8	22.30	10.091	
4,600.0	4,580.9	4,587.5	4,551.3	12.0	13.8	51.54	186.5	492.9	230.7	207.8	22.86	10.091	
4,700.0	4,680.3	4,687.4	4,650.1	12.3	14.1	51.67	192.1	506.6	236.4	212.9	23.42	10.091	
4,800.0	4,779.9	4,787.2	4,748.7	12.6	14.5	51.61	197.6	520.3	242.9	219.0	23.93	10.153	
4,900.0	4,879.7	4,886.7	4,847.2	12.8	14.8	50.98	203.1	533.9	251.7	227.4	24.33	10.346	
5,000.0	4,979.6	4,985.9	4,945.3	13.0	15.2	49.84	208.5	547.5	262.7	238.1	24.65	10.657	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-123 - Wellbore #1 - Plan #1 (06-12-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,079.6	5,084.8	5,043.2	13.1	15.5	97.57	214.0	561.0	275.5	250.5	24.96	11.037	
5,200.0	5,179.6	5,183.7	5,141.0	13.3	15.9	96.13	219.5	574.6	288.4	263.2	25.30	11.403	
5,300.0	5,279.6	5,282.6	5,238.8	13.5	16.2	94.81	224.9	588.1	301.6	275.9	25.64	11.761	
5,400.0	5,379.6	5,381.6	5,336.6	13.7	16.6	93.60	230.4	601.7	314.9	288.9	26.00	12.110	
5,500.0	5,479.6	5,480.5	5,434.4	13.9	16.9	92.49	235.9	615.2	328.3	301.9	26.37	12.451	
5,600.0	5,579.6	5,586.2	5,539.2	14.1	17.3	91.44	241.5	629.1	341.2	314.5	26.74	12.761	
5,700.0	5,679.6	5,698.1	5,650.4	14.2	17.5	90.67	245.9	640.1	351.0	323.9	27.10	12.952	
5,800.0	5,779.6	5,810.8	5,762.8	14.4	17.7	90.20	248.8	647.2	357.3	329.8	27.48	13.003	
5,900.0	5,879.6	5,923.9	5,875.8	14.6	17.9	90.01	250.0	650.1	359.9	332.0	27.86	12.918	
6,000.0	5,979.6	6,026.7	5,978.6	14.8	18.1	90.00	250.0	650.2	360.0	331.7	28.25	12.743	
6,100.0	6,079.6	6,126.7	6,078.6	15.0	18.2	90.00	250.0	650.2	360.0	331.3	28.65	12.567	
6,200.0	6,179.6	6,226.7	6,178.6	15.2	18.4	90.00	250.0	650.2	360.0	330.9	29.04	12.395	
6,262.5	6,242.2	6,289.2	6,241.2	15.3	18.5	90.00	250.0	650.2	360.0	330.7	29.29	12.289	
6,300.0	6,279.6	6,326.6	6,278.6	15.4	18.5	90.17	248.9	650.2	360.0	330.6	29.44	12.228	
6,400.0	6,379.6	6,425.1	6,376.3	15.6	18.6	92.00	237.4	650.2	360.2	330.3	29.90	12.048	
6,500.0	6,479.6	6,519.2	6,467.5	15.8	18.7	95.59	214.7	650.2	361.9	331.5	30.43	11.893	
6,600.0	6,579.6	6,607.3	6,549.9	16.0	18.7	-79.57	183.5	650.2	366.8	335.8	30.99	11.835	
6,700.0	6,678.5	6,692.1	6,625.2	16.1	18.7	-74.79	144.7	650.2	374.5	343.1	31.41	11.924	
6,800.0	6,774.8	6,774.4	6,693.8	16.1	18.7	-70.42	99.2	650.2	384.1	352.6	31.59	12.160	
6,900.0	6,866.7	6,854.7	6,755.6	16.2	18.7	-66.52	48.1	650.2	395.0	363.5	31.52	12.531	
7,000.0	6,952.7	6,933.2	6,810.5	16.2	18.7	-63.09	-8.0	650.2	406.3	375.1	31.21	13.018	
7,100.0	7,031.3	7,010.3	6,858.6	16.2	18.8	-60.16	-68.2	650.2	417.5	386.7	30.79	13.560	
7,200.0	7,101.3	7,086.2	6,899.8	16.2	18.9	-57.71	-132.0	650.2	428.0	397.7	30.32	14.115	
7,300.0	7,161.3	7,161.2	6,934.0	16.4	19.1	-55.71	-198.7	650.2	437.4	407.4	29.99	14.585	
7,400.0	7,210.3	7,235.4	6,961.3	16.7	19.4	-54.15	-267.7	650.2	445.2	415.3	29.96	14.863	
7,500.0	7,247.6	7,309.1	6,981.7	17.3	19.8	-53.00	-338.5	650.2	451.3	421.0	30.37	14.862	
7,600.0	7,272.5	7,382.4	6,995.1	18.1	20.3	-52.26	-410.5	650.2	455.4	424.1	31.33	14.537	
7,700.0	7,285.4	7,455.5	7,001.5	19.0	20.9	-51.87	-483.2	650.2	458.0	425.3	32.71	14.001	
7,800.0	7,294.1	7,542.6	7,001.9	20.1	21.7	-51.07	-570.4	650.2	463.0	428.7	34.33	13.487	
7,900.0	7,295.4	7,642.6	7,001.5	21.3	22.7	-50.87	-670.4	650.2	464.1	427.6	36.44	12.735	
8,000.0	7,295.1	7,742.6	7,001.2	22.6	23.9	-50.86	-770.3	650.2	464.1	425.6	38.56	12.037	
8,100.0	7,294.9	7,842.6	7,000.8	23.9	25.2	-50.85	-870.3	650.2	464.2	423.4	40.81	11.376	
8,200.0	7,294.7	7,942.6	7,000.4	25.4	26.6	-50.83	-970.3	650.2	464.3	421.2	43.16	10.758	
8,300.0	7,294.5	8,042.6	7,000.1	26.9	28.0	-50.82	-1,070.3	650.2	464.4	418.8	45.61	10.183	
8,400.0	7,294.2	8,142.6	6,999.7	28.4	29.5	-50.81	-1,170.3	650.2	464.5	416.4	48.13	9.651	
8,500.0	7,294.0	8,242.6	6,999.3	30.0	31.0	-50.79	-1,270.3	650.2	464.6	413.9	50.72	9.161	
8,600.0	7,293.8	8,342.6	6,999.0	31.7	32.6	-50.78	-1,370.3	650.2	464.7	411.3	53.36	8.709	
8,700.0	7,293.5	8,442.6	6,998.6	33.3	34.2	-50.77	-1,470.3	650.2	464.8	408.7	56.05	8.292	
8,800.0	7,293.3	8,542.6	6,998.2	35.0	35.9	-50.75	-1,570.3	650.2	464.8	406.1	58.78	7.908	
8,900.0	7,293.1	8,642.6	6,997.9	36.7	37.5	-50.74	-1,670.3	650.2	464.9	403.4	61.54	7.554	
9,000.0	7,292.9	8,742.6	6,997.5	38.4	39.2	-50.73	-1,770.3	650.2	465.0	400.7	64.34	7.228	
9,100.0	7,292.6	8,842.6	6,997.1	40.2	40.9	-50.71	-1,870.3	650.2	465.1	397.9	67.16	6.925	
9,200.0	7,292.4	8,942.6	6,996.8	41.9	42.7	-50.70	-1,970.3	650.2	465.2	395.2	70.01	6.645	
9,300.0	7,292.2	9,042.6	6,996.4	43.7	44.4	-50.69	-2,070.3	650.2	465.3	392.4	72.88	6.385	
9,400.0	7,292.0	9,142.6	6,996.0	45.5	46.2	-50.67	-2,170.3	650.2	465.4	389.6	75.76	6.143	
9,500.0	7,291.7	9,242.6	6,995.7	47.3	47.9	-50.66	-2,270.3	650.2	465.5	386.8	78.66	5.917	
9,600.0	7,291.5	9,342.6	6,995.3	49.1	49.7	-50.65	-2,370.3	650.2	465.6	384.0	81.58	5.707	
9,700.0	7,291.3	9,442.6	6,994.9	50.9	51.5	-50.63	-2,470.3	650.2	465.6	381.1	84.50	5.510	
9,800.0	7,291.1	9,542.6	6,994.6	52.7	53.3	-50.62	-2,570.3	650.2	465.7	378.3	87.44	5.326	
9,900.0	7,290.8	9,642.6	6,994.2	54.6	55.1	-50.61	-2,670.3	650.2	465.8	375.4	90.39	5.153	
10,000.0	7,290.6	9,742.6	6,993.8	56.4	56.9	-50.59	-2,770.3	650.2	465.9	372.6	93.35	4.991	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-123 - Wellbore #1 - Plan #1 (06-12-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,290.4	9,842.6	6,993.5	58.2	58.8	-50.58	-2,870.3	650.2	466.0	369.7	96.31	4.838	
10,200.0	7,290.1	9,942.6	6,993.1	60.1	60.6	-50.57	-2,970.3	650.2	466.1	366.8	99.28	4.694	
10,300.0	7,289.9	10,042.6	6,992.7	61.9	62.4	-50.55	-3,070.3	650.2	466.2	363.9	102.26	4.559	
10,400.0	7,289.7	10,142.6	6,992.4	63.8	64.3	-50.54	-3,170.3	650.2	466.3	361.0	105.25	4.430	
10,500.0	7,289.5	10,242.6	6,992.0	65.6	66.1	-50.53	-3,270.3	650.2	466.3	358.1	108.24	4.309	
10,600.0	7,289.2	10,342.6	6,991.6	67.5	68.0	-50.51	-3,370.3	650.2	466.4	355.2	111.23	4.193	
10,700.0	7,289.0	10,442.6	6,991.3	69.4	69.8	-50.50	-3,470.3	650.2	466.5	352.3	114.23	4.084	
10,800.0	7,288.8	10,542.6	6,990.9	71.2	71.7	-50.49	-3,570.3	650.2	466.6	349.4	117.23	3.980	
10,900.0	7,288.6	10,642.6	6,990.5	73.1	73.5	-50.47	-3,670.3	650.2	466.7	346.5	120.24	3.881	
11,000.0	7,288.3	10,742.6	6,990.2	75.0	75.4	-50.46	-3,770.3	650.2	466.8	343.5	123.25	3.787	
11,100.0	7,288.1	10,842.6	6,989.8	76.8	77.2	-50.45	-3,870.3	650.2	466.9	340.6	126.26	3.698	
11,200.0	7,287.9	10,942.6	6,989.4	78.7	79.1	-50.43	-3,970.3	650.2	467.0	337.7	129.28	3.612	
11,300.0	7,287.6	11,042.6	6,989.1	80.6	81.0	-50.42	-4,070.3	650.2	467.1	334.8	132.30	3.530	
11,400.0	7,287.4	11,142.6	6,988.7	82.5	82.8	-50.41	-4,170.3	650.2	467.1	331.8	135.32	3.452	
11,500.0	7,287.2	11,242.6	6,988.3	84.4	84.7	-50.39	-4,270.3	650.2	467.2	328.9	138.34	3.377	
11,585.6	7,287.0	11,328.2	6,988.0	86.0	86.3	-50.38	-4,356.0	650.2	467.3	326.4	140.93	3.316 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	-89.98	0.0	-30.7	30.7	30.5	0.22	136.547	
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-30.7	30.7	30.0	0.67	45.516	
300.0	300.0	300.0	300.0	0.6	0.6	-89.98	0.0	-30.7	30.7	29.6	1.12	27.309	
400.0	400.0	400.0	400.0	0.8	0.8	-89.98	0.0	-30.7	30.7	29.1	1.57	19.507	
500.0	500.0	500.0	500.0	1.0	1.0	-89.98	0.0	-30.7	30.7	28.7	2.02	15.172	
600.0	600.0	600.0	600.0	1.2	1.2	-89.98	0.0	-30.7	30.7	28.2	2.47	12.413	
700.0	700.0	700.0	700.0	1.5	1.5	-89.98	0.0	-30.7	30.7	27.8	2.92	10.504	
800.0	800.0	800.0	800.0	1.7	1.7	-89.98	0.0	-30.7	30.7	27.3	3.37	9.103	
900.0	900.0	900.0	900.0	1.9	1.9	-89.98	0.0	-30.7	30.7	26.9	3.82	8.032	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-89.98	0.0	-30.7	30.7	26.4	4.27	7.187	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-89.98	0.0	-30.7	30.7	26.0	4.72	6.502	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-89.98	0.0	-30.7	30.7	25.5	5.17	5.937	CC, ES
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-141.26	0.0	-30.7	32.0	26.4	5.61	5.707	
1,400.0	1,399.8	1,399.8	1,399.8	3.0	3.0	-146.39	0.0	-30.7	36.3	30.2	6.05	5.996	
1,500.0	1,499.5	1,499.5	1,499.5	3.3	3.3	-152.64	0.0	-30.7	43.8	37.3	6.48	6.760	
1,600.0	1,598.9	1,598.9	1,598.9	3.5	3.5	-157.97	0.0	-30.7	53.7	46.8	6.92	7.764	
1,700.0	1,698.3	1,698.3	1,698.3	3.7	3.7	-161.64	0.0	-30.7	64.0	56.6	7.36	8.691	
1,800.0	1,797.7	1,797.7	1,797.7	4.0	3.9	-164.29	0.0	-30.7	74.4	66.6	7.81	9.533	
1,900.0	1,897.1	1,897.1	1,897.1	4.3	4.2	-166.28	0.0	-30.7	85.0	76.7	8.25	10.298	
2,000.0	1,996.5	1,996.5	1,996.5	4.5	4.4	-167.83	0.0	-30.7	95.6	86.9	8.70	10.990	
2,100.0	2,095.9	2,095.9	2,095.9	4.8	4.6	-168.21	1.4	-31.5	106.3	97.2	9.15	11.621	
2,200.0	2,195.3	2,195.2	2,195.1	5.1	4.8	-166.81	5.8	-33.9	117.1	107.5	9.60	12.195	
2,300.0	2,294.7	2,294.2	2,293.7	5.3	5.0	-164.12	13.2	-38.0	128.1	118.0	10.06	12.735	
2,400.0	2,394.1	2,393.3	2,392.2	5.6	5.3	-161.03	22.3	-43.1	139.6	129.0	10.53	13.259	
2,500.0	2,493.5	2,492.3	2,490.7	5.9	5.5	-158.41	31.4	-48.2	151.4	140.4	11.00	13.758	
2,600.0	2,592.9	2,591.4	2,589.2	6.2	5.7	-156.17	40.6	-53.3	163.5	152.0	11.49	14.230	
2,700.0	2,692.3	2,690.5	2,687.8	6.5	6.0	-154.24	49.7	-58.4	175.8	163.8	11.98	14.673	
2,800.0	2,791.7	2,789.6	2,786.3	6.8	6.2	-152.57	58.8	-63.5	188.3	175.8	12.48	15.089	
2,900.0	2,891.1	2,888.7	2,884.8	7.0	6.5	-151.10	68.0	-68.6	200.9	187.9	12.98	15.479	
3,000.0	2,990.5	2,987.7	2,983.3	7.3	6.8	-149.81	77.1	-73.7	213.6	200.1	13.48	15.843	
3,100.0	3,089.9	3,086.8	3,081.9	7.6	7.0	-148.66	86.2	-78.8	226.5	212.5	13.99	16.183	
3,200.0	3,189.3	3,185.9	3,180.4	7.9	7.3	-147.64	95.4	-83.9	239.4	224.9	14.50	16.502	
3,300.0	3,288.7	3,285.0	3,278.9	8.2	7.5	-146.72	104.5	-89.0	252.3	237.3	15.02	16.801	
3,400.0	3,388.1	3,384.0	3,377.4	8.5	7.8	-145.89	113.7	-94.1	265.4	249.8	15.54	17.081	
3,500.0	3,487.5	3,483.1	3,476.0	8.8	8.1	-145.14	122.8	-99.2	278.4	262.4	16.05	17.344	
3,600.0	3,586.9	3,582.2	3,574.5	9.1	8.3	-144.46	131.9	-104.3	291.6	275.0	16.58	17.591	
3,700.0	3,686.3	3,681.3	3,673.0	9.4	8.6	-143.83	141.1	-109.4	304.7	287.6	17.10	17.823	
3,800.0	3,785.7	3,780.4	3,771.5	9.7	8.9	-143.26	150.2	-114.5	317.9	300.3	17.62	18.043	
3,900.0	3,885.1	3,879.4	3,870.1	10.0	9.2	-142.73	159.3	-119.6	331.2	313.0	18.15	18.249	
4,000.0	3,984.5	3,978.5	3,968.6	10.3	9.4	-142.24	168.5	-124.7	344.4	325.7	18.67	18.445	
4,100.0	4,083.9	4,077.6	4,067.1	10.6	9.7	-141.79	177.6	-129.8	357.7	338.5	19.20	18.629	
4,200.0	4,183.3	4,176.7	4,165.6	10.9	10.0	-141.37	186.7	-134.9	371.0	351.2	19.73	18.804	
4,300.0	4,282.7	4,275.7	4,264.2	11.1	10.3	-140.98	195.9	-140.0	384.3	364.0	20.26	18.970	
4,400.0	4,382.1	4,374.8	4,362.7	11.4	10.6	-140.62	205.0	-145.1	397.6	376.8	20.79	19.127	
4,500.0	4,481.5	4,473.9	4,461.2	11.7	10.8	-140.28	214.1	-150.2	410.9	389.6	21.32	19.277	
4,600.0	4,580.9	4,573.0	4,559.7	12.0	11.1	-139.96	223.3	-155.3	424.3	402.4	21.85	19.419	
4,700.0	4,680.3	4,672.1	4,658.2	12.3	11.4	-139.66	232.4	-160.4	437.7	415.3	22.38	19.555	
4,800.0	4,779.9	4,776.1	4,761.8	12.6	11.7	-139.46	241.4	-165.4	449.6	426.7	22.90	19.633	
4,900.0	4,879.7	4,884.1	4,869.6	12.8	11.9	-139.32	247.4	-168.8	457.2	433.9	23.32	19.603	
5,000.0	4,979.6	4,992.5	4,977.9	13.0	12.1	-139.26	249.9	-170.2	460.4	436.7	23.69	19.432	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,079.6	5,094.2	5,079.6	13.1	12.3	-90.00	250.0	-170.2	460.5	436.4	24.05	19.144	
5,200.0	5,179.6	5,194.2	5,179.6	13.3	12.5	-90.00	250.0	-170.2	460.5	436.0	24.45	18.829	
5,300.0	5,279.6	5,294.2	5,279.6	13.5	12.7	-90.00	250.0	-170.2	460.5	435.6	24.86	18.522	
5,400.0	5,379.6	5,394.2	5,379.6	13.7	12.9	-90.00	250.0	-170.2	460.5	435.2	25.27	18.224	
5,500.0	5,479.6	5,494.2	5,479.6	13.9	13.1	-90.00	250.0	-170.2	460.5	434.8	25.67	17.935	
5,600.0	5,579.6	5,594.2	5,579.6	14.1	13.3	-90.00	250.0	-170.2	460.5	434.4	26.08	17.653	
5,700.0	5,679.6	5,694.2	5,679.6	14.2	13.5	-90.00	250.0	-170.2	460.5	434.0	26.49	17.379	
5,800.0	5,779.6	5,794.2	5,779.6	14.4	13.7	-90.00	250.0	-170.2	460.5	433.5	26.91	17.113	
5,900.0	5,879.6	5,894.2	5,879.6	14.6	13.9	-90.00	250.0	-170.2	460.5	433.1	27.32	16.855	
6,000.0	5,979.6	5,994.2	5,979.6	14.8	14.1	-90.00	250.0	-170.2	460.5	432.7	27.73	16.603	
6,100.0	6,079.6	6,094.2	6,079.6	15.0	14.3	-90.00	250.0	-170.2	460.5	432.3	28.15	16.358	
6,200.0	6,179.6	6,194.2	6,179.6	15.2	14.5	-90.00	250.0	-170.2	460.5	431.9	28.57	16.119	
6,300.0	6,279.6	6,294.2	6,279.6	15.4	14.7	-90.00	250.0	-170.2	460.5	431.5	28.98	15.887	
6,360.0	6,339.6	6,354.2	6,339.6	15.5	14.8	-90.00	250.0	-170.2	460.5	431.2	29.23	15.751	
6,400.0	6,379.6	6,394.2	6,379.6	15.6	14.9	-90.09	249.3	-170.2	460.5	431.1	29.39	15.668	
6,500.0	6,479.6	6,492.9	6,477.6	15.8	15.0	-91.43	238.5	-170.2	460.6	430.9	29.69	15.513	
6,600.0	6,579.6	6,587.9	6,569.9	16.0	15.1	86.01	216.3	-170.2	461.6	431.7	29.89	15.445	
6,700.0	6,678.5	6,680.2	6,656.4	16.1	15.1	83.40	183.9	-170.2	463.7	433.7	29.97	15.469	
6,800.0	6,774.8	6,770.5	6,736.4	16.1	15.1	80.94	142.5	-170.2	466.5	436.5	30.00	15.553	
6,900.0	6,866.7	6,858.8	6,809.6	16.2	15.2	78.65	93.0	-170.2	470.0	440.0	29.99	15.671	
7,000.0	6,952.7	6,945.6	6,875.4	16.2	15.2	76.57	36.5	-170.2	473.8	443.8	30.00	15.791	
7,100.0	7,031.3	7,031.0	6,933.5	16.2	15.3	74.72	-26.1	-170.2	477.7	447.6	30.09	15.877	
7,200.0	7,101.3	7,115.3	6,983.6	16.2	15.4	73.12	-93.7	-170.2	481.5	451.2	30.31	15.889	
7,300.0	7,161.3	7,200.0	7,026.2	16.4	15.8	71.75	-166.9	-170.2	485.1	454.3	30.71	15.796	
7,400.0	7,210.3	7,281.1	7,059.1	16.7	16.3	70.69	-241.0	-170.2	488.1	456.7	31.35	15.567	
7,500.0	7,247.6	7,363.1	7,084.3	17.3	16.9	69.88	-319.0	-170.2	490.5	458.2	32.28	15.195	
7,600.0	7,272.5	7,444.7	7,100.8	18.1	17.7	69.35	-398.9	-170.2	492.1	458.6	33.50	14.688	
7,700.0	7,285.4	7,526.0	7,108.8	19.0	18.5	69.03	-479.8	-170.2	493.2	458.2	35.05	14.073	
7,800.0	7,294.1	7,615.8	7,109.0	20.1	19.5	68.14	-569.5	-170.2	496.3	459.5	36.80	13.487	
7,900.0	7,295.4	7,715.8	7,108.0	21.3	20.7	67.85	-669.5	-170.2	497.1	458.2	38.96	12.758	
8,000.0	7,295.1	7,815.7	7,106.9	22.6	22.0	67.77	-769.5	-170.2	497.4	456.0	41.39	12.019	
8,100.0	7,294.9	7,915.7	7,105.9	23.9	23.4	67.68	-869.5	-170.2	497.7	453.8	43.97	11.321	
8,200.0	7,294.7	8,015.7	7,104.9	25.4	24.9	67.60	-969.5	-170.2	498.0	451.4	46.67	10.671	
8,300.0	7,294.5	8,115.7	7,103.9	26.9	26.4	67.51	-1,069.5	-170.2	498.3	448.9	49.49	10.070	
8,400.0	7,294.2	8,215.7	7,102.8	28.4	28.0	67.43	-1,169.5	-170.2	498.7	446.3	52.39	9.518	
8,500.0	7,294.0	8,315.7	7,101.8	30.0	29.6	67.34	-1,269.4	-170.2	499.0	443.6	55.37	9.011	
8,600.0	7,293.8	8,415.7	7,100.8	31.7	31.2	67.26	-1,369.4	-170.2	499.3	440.9	58.41	8.548	
8,700.0	7,293.5	8,515.7	7,099.7	33.3	32.9	67.17	-1,469.4	-170.2	499.6	438.1	61.50	8.123	
8,800.0	7,293.3	8,615.7	7,098.7	35.0	34.6	67.09	-1,569.4	-170.2	499.9	435.2	64.64	7.733	
8,900.0	7,293.1	8,715.7	7,097.7	36.7	36.4	67.00	-1,669.4	-170.2	500.2	432.4	67.82	7.376	
9,000.0	7,292.9	8,815.7	7,096.6	38.4	38.1	66.92	-1,769.4	-170.2	500.5	429.5	71.02	7.047	
9,100.0	7,292.6	8,915.7	7,095.6	40.2	39.9	66.83	-1,869.4	-170.2	500.8	426.6	74.26	6.744	
9,200.0	7,292.4	9,015.7	7,094.6	41.9	41.6	66.75	-1,969.4	-170.2	501.1	423.6	77.52	6.465	
9,300.0	7,292.2	9,115.7	7,093.6	43.7	43.4	66.67	-2,069.4	-170.2	501.5	420.7	80.79	6.207	
9,400.0	7,292.0	9,215.7	7,092.5	45.5	45.2	66.58	-2,169.4	-170.2	501.8	417.7	84.09	5.967	
9,500.0	7,291.7	9,315.7	7,091.5	47.3	47.0	66.50	-2,269.4	-170.2	502.1	414.7	87.40	5.745	
9,600.0	7,291.5	9,415.7	7,090.5	49.1	48.8	66.41	-2,369.3	-170.2	502.4	411.7	90.72	5.538	
9,700.0	7,291.3	9,515.7	7,089.4	50.9	50.7	66.33	-2,469.3	-170.2	502.7	408.7	94.05	5.345	
9,800.0	7,291.1	9,615.7	7,088.4	52.7	52.5	66.25	-2,569.3	-170.2	503.1	405.7	97.39	5.165	
9,900.0	7,290.8	9,715.7	7,087.4	54.6	54.3	66.16	-2,669.3	-170.2	503.4	402.6	100.74	4.997	
10,000.0	7,290.6	9,815.7	7,086.4	56.4	56.2	66.08	-2,769.3	-170.2	503.7	399.6	104.10	4.839	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29K-243 - Wellbore #1 - Plan #1 (06-12-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,290.4	9,915.7	7,085.3	58.2	58.0	65.99	-2,869.3	-170.2	504.0	396.6	107.46	4.690	
10,200.0	7,290.1	10,015.7	7,084.3	60.1	59.9	65.91	-2,969.3	-170.2	504.4	393.5	110.83	4.551	
10,300.0	7,289.9	10,115.7	7,083.3	61.9	61.7	65.83	-3,069.3	-170.2	504.7	390.5	114.20	4.419	
10,400.0	7,289.7	10,215.7	7,082.2	63.8	63.6	65.75	-3,169.3	-170.2	505.0	387.4	117.58	4.295	
10,500.0	7,289.5	10,315.7	7,081.2	65.6	65.4	65.66	-3,269.3	-170.2	505.4	384.4	120.96	4.178	
10,600.0	7,289.2	10,415.7	7,080.2	67.5	67.3	65.58	-3,369.3	-170.2	505.7	381.4	124.34	4.067	
10,700.0	7,289.0	10,515.7	7,079.1	69.4	69.2	65.50	-3,469.3	-170.2	506.0	378.3	127.72	3.962	
10,800.0	7,288.8	10,615.7	7,078.1	71.2	71.0	65.41	-3,569.2	-170.2	506.4	375.3	131.10	3.862	
10,900.0	7,288.6	10,715.7	7,077.1	73.1	72.9	65.33	-3,669.2	-170.2	506.7	372.2	134.48	3.768	
11,000.0	7,288.3	10,815.7	7,076.1	75.0	74.8	65.25	-3,769.2	-170.2	507.0	369.2	137.87	3.678	
11,100.0	7,288.1	10,915.6	7,075.0	76.8	76.7	65.17	-3,869.2	-170.2	507.4	366.1	141.25	3.592	
11,200.0	7,287.9	11,015.6	7,074.0	78.7	78.6	65.08	-3,969.2	-170.2	507.7	363.1	144.63	3.510	
11,300.0	7,287.6	11,115.6	7,073.0	80.6	80.4	65.00	-4,069.2	-170.2	508.0	360.0	148.02	3.432	
11,400.0	7,287.4	11,215.6	7,071.9	82.5	82.3	64.92	-4,169.2	-170.2	508.4	357.0	151.40	3.358	
11,500.0	7,287.2	11,315.6	7,070.9	84.4	84.2	64.84	-4,269.2	-170.2	508.7	354.0	154.73	3.288	
11,585.6	7,287.0	11,401.3	7,070.0	86.0	85.5	64.77	-4,354.8	-170.2	509.0	351.7	157.32	3.235	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29O-443 - Wellbore #1 - Plan #1 (06-12-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.98	0.0	61.4	61.4				
100.0	100.0	99.0	99.0	0.1	0.1	89.98	0.0	61.4	61.4	61.2	0.22	274.464	
200.0	200.0	199.0	199.0	0.3	0.3	89.98	0.0	61.4	61.4	60.7	0.67	91.336	CC, ES
300.0	300.0	297.0	296.9	0.6	0.5	89.60	0.4	63.0	63.0	61.9	1.11	56.699	
400.0	400.0	394.7	394.5	0.8	0.8	88.55	1.7	67.8	67.9	66.4	1.56	43.601	
500.0	500.0	491.9	491.4	1.0	1.0	87.09	3.8	75.7	76.2	74.2	2.02	37.755	
600.0	600.0	588.5	587.3	1.2	1.3	85.52	6.8	86.8	87.8	85.3	2.50	35.179	
700.0	700.0	684.3	682.0	1.5	1.6	84.03	10.5	100.8	102.8	99.8	3.00	34.325	
800.0	800.0	782.9	779.2	1.7	1.9	82.78	14.8	116.8	119.4	115.9	3.52	33.949	
900.0	900.0	881.5	876.4	1.9	2.3	81.84	19.0	132.7	136.0	131.9	4.04	33.626	
1,000.0	1,000.0	980.1	973.6	2.1	2.7	81.10	23.3	148.7	152.6	148.0	4.58	33.325	
1,100.0	1,100.0	1,078.7	1,070.8	2.4	3.0	80.50	27.5	164.6	169.3	164.1	5.12	33.056	
1,200.0	1,200.0	1,177.3	1,168.0	2.6	3.4	80.01	31.8	180.5	185.9	180.3	5.67	32.818	
1,300.0	1,300.0	1,276.1	1,265.4	2.8	3.8	30.45	36.1	196.5	201.1	195.4	5.70	35.295	
1,400.0	1,399.8	1,375.3	1,363.3	3.0	4.2	30.67	40.3	212.6	213.3	207.2	6.16	34.645	
1,500.0	1,499.5	1,474.8	1,461.4	3.3	4.6	31.34	44.6	228.7	222.6	216.0	6.62	33.617	
1,600.0	1,598.9	1,574.5	1,559.6	3.5	4.9	32.33	48.9	244.8	230.0	222.9	7.10	32.412	
1,700.0	1,698.3	1,674.1	1,657.9	3.7	5.3	33.27	53.2	260.9	237.5	230.0	7.58	31.332	
1,800.0	1,797.7	1,773.8	1,756.1	4.0	5.7	34.16	57.5	277.0	245.1	237.0	8.07	30.365	
1,900.0	1,897.1	1,873.4	1,854.4	4.3	6.1	34.99	61.8	293.1	252.7	244.1	8.57	29.496	
2,000.0	1,996.5	1,973.1	1,952.6	4.5	6.5	35.77	66.1	309.2	260.3	251.3	9.07	28.710	
2,100.0	2,095.9	2,072.7	2,050.8	4.8	6.9	36.51	70.4	325.3	268.0	258.5	9.57	27.998	
2,200.0	2,195.3	2,172.4	2,149.1	5.1	7.2	37.21	74.7	341.5	275.8	265.7	10.08	27.348	
2,300.0	2,294.7	2,272.0	2,247.3	5.3	7.6	37.87	79.0	357.6	283.6	273.0	10.60	26.755	
2,400.0	2,394.1	2,371.7	2,345.6	5.6	8.0	38.49	83.3	373.7	291.4	280.3	11.12	26.210	
2,500.0	2,493.5	2,471.3	2,443.8	5.9	8.4	39.08	87.6	389.8	299.2	287.6	11.64	25.709	
2,600.0	2,592.9	2,570.9	2,542.0	6.2	8.8	39.64	91.9	405.9	307.1	294.9	12.16	25.247	
2,700.0	2,692.3	2,670.6	2,640.3	6.5	9.2	40.17	96.2	422.0	315.0	302.3	12.69	24.819	
2,800.0	2,791.7	2,770.2	2,738.5	6.8	9.6	40.68	100.5	438.1	322.9	309.7	13.22	24.422	
2,900.0	2,891.1	2,869.9	2,836.8	7.0	9.9	41.16	104.8	454.2	330.9	317.1	13.76	24.052	
3,000.0	2,990.5	2,969.5	2,935.0	7.3	10.3	41.62	109.1	470.4	338.9	324.6	14.29	23.708	
3,100.0	3,089.9	3,069.2	3,033.2	7.6	10.7	42.06	113.4	486.5	346.9	332.0	14.83	23.386	
3,200.0	3,189.3	3,168.8	3,131.5	7.9	11.1	42.48	117.6	502.6	354.9	339.5	15.37	23.085	
3,300.0	3,288.7	3,268.5	3,229.7	8.2	11.5	42.88	121.9	518.7	362.9	347.0	15.92	22.802	
3,400.0	3,388.1	3,368.1	3,328.0	8.5	11.9	43.26	126.2	534.8	371.0	354.5	16.46	22.537	
3,500.0	3,487.5	3,467.8	3,426.2	8.8	12.3	43.62	130.5	550.9	379.0	362.0	17.01	22.287	
3,600.0	3,586.9	3,567.4	3,524.4	9.1	12.7	43.98	134.8	567.0	387.1	369.6	17.55	22.052	
3,700.0	3,686.3	3,667.0	3,622.7	9.4	13.0	44.31	139.1	583.1	395.2	377.1	18.10	21.830	
3,800.0	3,785.7	3,766.7	3,720.9	9.7	13.4	44.64	143.4	599.2	403.3	384.7	18.66	21.619	
3,900.0	3,885.1	3,866.3	3,819.2	10.0	13.8	44.95	147.7	615.4	411.4	392.2	19.21	21.420	
4,000.0	3,984.5	3,966.0	3,917.4	10.3	14.2	45.24	152.0	631.5	419.6	399.8	19.76	21.232	
4,100.0	4,083.9	4,065.6	4,015.6	10.6	14.6	45.53	156.3	647.6	427.7	407.4	20.32	21.053	
4,200.0	4,183.3	4,165.3	4,113.9	10.9	15.0	45.81	160.6	663.7	435.9	415.0	20.87	20.882	
4,300.0	4,282.7	4,264.9	4,212.1	11.1	15.4	46.07	164.9	679.8	444.0	422.6	21.43	20.720	
4,400.0	4,382.1	4,364.6	4,310.4	11.4	15.7	46.33	169.2	695.9	452.2	430.2	21.99	20.566	
4,500.0	4,481.5	4,464.2	4,408.6	11.7	16.1	46.58	173.5	712.0	460.4	437.8	22.55	20.419	
4,600.0	4,580.9	4,563.9	4,506.8	12.0	16.5	46.82	177.8	728.1	468.6	445.5	23.11	20.278	
4,700.0	4,680.3	4,663.5	4,605.1	12.3	16.9	47.05	182.1	744.3	476.8	453.1	23.67	20.144	
4,800.0	4,779.9	4,763.1	4,703.2	12.6	17.3	47.27	186.4	760.4	486.0	461.8	24.18	20.100	
4,900.0	4,879.7	4,862.4	4,801.2	12.8	17.7	47.23	190.7	776.4	497.6	473.0	24.61	20.221	
5,000.0	4,979.6	4,961.3	4,898.7	13.0	18.1	46.95	194.9	792.4	511.5	486.5	24.98	20.477	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29O-443 - Wellbore #1 - Plan #1 (06-12-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,079.6	5,059.9	4,995.9	13.1	18.4	95.60	199.2	808.4	527.1	501.8	25.35	20.796	
5,200.0	5,179.6	5,158.5	5,093.1	13.3	18.8	94.98	203.4	824.3	542.9	517.1	25.74	21.088	
5,300.0	5,279.6	5,257.1	5,190.3	13.5	19.2	94.40	207.7	840.2	558.7	532.5	26.14	21.369	
5,400.0	5,379.6	5,355.7	5,287.5	13.7	19.6	93.85	211.9	856.2	574.5	548.0	26.55	21.642	
5,500.0	5,479.6	5,454.3	5,384.7	13.9	20.0	93.33	216.2	872.1	590.4	563.4	26.95	21.904	
5,600.0	5,579.6	5,552.8	5,481.9	14.1	20.4	92.83	220.4	888.1	606.3	579.0	27.36	22.158	
5,700.0	5,679.6	5,651.4	5,579.1	14.2	20.7	92.36	224.7	904.0	622.3	594.5	27.78	22.403	
5,800.0	5,779.6	5,750.0	5,676.3	14.4	21.1	91.92	228.9	919.9	638.3	610.1	28.19	22.640	
5,900.0	5,879.6	5,848.6	5,773.5	14.6	21.5	91.49	233.2	935.9	654.4	625.8	28.61	22.869	
6,000.0	5,979.6	5,947.2	5,870.7	14.8	21.9	91.09	237.4	951.8	670.5	641.4	29.04	23.090	
6,100.0	6,079.6	6,060.2	5,982.2	15.0	22.3	90.66	242.1	969.4	686.1	656.6	29.46	23.286	
6,200.0	6,179.6	6,189.6	6,110.6	15.2	22.6	90.31	246.2	984.9	698.0	668.1	29.89	23.350	
6,300.0	6,279.6	6,320.2	6,240.8	15.4	22.8	90.09	248.9	994.8	705.6	675.2	30.31	23.275	
6,400.0	6,379.6	6,451.4	6,371.9	15.6	23.0	90.00	250.0	998.9	708.7	678.0	30.73	23.061	
6,500.0	6,479.6	6,558.1	6,478.6	15.8	23.2	90.00	250.0	999.0	708.8	677.7	31.12	22.774	
6,600.0	6,579.6	6,658.1	6,578.6	16.0	23.3	-90.00	247.8	999.0	708.8	677.4	31.46	22.528	
6,700.0	6,678.5	6,758.1	6,677.5	16.1	23.4	-90.00	233.7	999.0	708.8	677.1	31.67	22.381	
6,800.0	6,774.8	6,858.1	6,773.7	16.1	23.4	-89.99	206.8	999.0	708.8	677.0	31.78	22.303	
6,900.0	6,866.7	6,958.1	6,865.6	16.2	23.4	-89.99	167.6	999.0	708.8	677.0	31.84	22.261	
7,000.0	6,952.7	7,058.1	6,951.6	16.2	23.4	-89.99	116.7	999.0	708.8	676.9	31.91	22.213	
7,100.0	7,031.3	7,158.1	7,030.2	16.2	23.4	-89.99	55.0	999.0	708.8	676.7	32.07	22.105	
7,200.0	7,101.3	7,258.1	7,100.1	16.2	23.5	-89.98	-16.4	999.0	708.8	676.4	32.39	21.885	
7,300.0	7,161.3	7,358.0	7,160.1	16.4	23.6	-89.98	-96.3	999.0	708.8	675.9	32.95	21.510	
7,400.0	7,210.3	7,458.0	7,209.1	16.7	23.8	-89.98	-183.3	999.0	708.8	675.0	33.82	20.960	
7,500.0	7,247.6	7,558.0	7,246.3	17.3	24.0	-89.98	-276.0	999.0	708.8	673.8	35.02	20.243	
7,600.0	7,272.5	7,657.9	7,271.2	18.1	24.5	-89.98	-372.8	999.0	708.8	672.3	36.55	19.394	
7,700.0	7,285.4	7,757.9	7,284.1	19.0	25.0	-89.98	-471.9	999.0	708.8	670.4	38.39	18.461	
7,800.0	7,294.1	7,857.9	7,292.8	20.1	25.7	-89.98	-571.5	999.0	708.8	668.3	40.51	17.497	
7,900.0	7,295.4	7,957.9	7,294.1	21.3	26.6	-89.98	-671.4	999.0	708.8	666.0	42.84	16.544	
8,000.0	7,295.1	8,057.9	7,293.9	22.6	27.6	-89.98	-771.4	999.0	708.8	663.4	45.38	15.618	
8,100.0	7,294.9	8,157.9	7,293.7	23.9	28.6	-89.98	-871.4	999.0	708.8	660.7	48.09	14.738	
8,200.0	7,294.7	8,257.9	7,293.5	25.4	29.8	-89.99	-971.4	999.0	708.8	657.9	50.95	13.912	
8,300.0	7,294.5	8,357.9	7,293.3	26.9	31.1	-89.99	-1,071.4	999.0	708.8	654.9	53.93	13.144	
8,400.0	7,294.2	8,457.9	7,293.1	28.4	32.4	-89.99	-1,171.4	999.0	708.8	651.8	57.01	12.434	
8,500.0	7,294.0	8,557.9	7,292.9	30.0	33.8	-89.99	-1,271.4	999.0	708.8	648.6	60.17	11.779	
8,600.0	7,293.8	8,657.9	7,292.7	31.7	35.3	-90.00	-1,371.4	999.0	708.8	645.4	63.42	11.177	
8,700.0	7,293.5	8,757.9	7,292.5	33.3	36.7	-90.00	-1,471.4	999.0	708.8	642.1	66.72	10.623	
8,800.0	7,293.3	8,857.9	7,292.4	35.0	38.3	-90.00	-1,571.4	999.0	708.8	638.7	70.08	10.114	
8,900.0	7,293.1	8,957.9	7,292.2	36.7	39.8	-90.01	-1,671.4	999.0	708.8	635.3	73.49	9.645	
9,000.0	7,292.9	9,057.9	7,292.0	38.4	41.4	-90.01	-1,771.4	999.0	708.8	631.9	76.94	9.213	
9,100.0	7,292.6	9,157.9	7,291.8	40.2	43.1	-90.01	-1,871.4	999.0	708.8	628.4	80.42	8.814	
9,200.0	7,292.4	9,257.9	7,291.6	41.9	44.7	-90.01	-1,971.4	999.0	708.8	624.9	83.93	8.445	
9,300.0	7,292.2	9,357.9	7,291.4	43.7	46.4	-90.02	-2,071.4	999.0	708.8	621.3	87.47	8.103	
9,400.0	7,292.0	9,457.9	7,291.2	45.5	48.1	-90.02	-2,171.4	999.0	708.8	617.8	91.04	7.786	
9,500.0	7,291.7	9,557.9	7,291.0	47.3	49.8	-90.02	-2,271.4	999.0	708.8	614.2	94.63	7.491	
9,600.0	7,291.5	9,657.9	7,290.8	49.1	51.5	-90.03	-2,371.4	999.0	708.8	610.6	98.23	7.216	
9,700.0	7,291.3	9,757.9	7,290.6	50.9	53.2	-90.03	-2,471.4	999.0	708.8	607.0	101.85	6.959	
9,800.0	7,291.1	9,857.9	7,290.4	52.7	55.0	-90.03	-2,571.4	999.0	708.8	603.3	105.49	6.719	
9,900.0	7,290.8	9,957.9	7,290.2	54.6	56.7	-90.03	-2,671.4	999.0	708.8	599.7	109.14	6.494	
10,000.0	7,290.6	10,057.9	7,290.1	56.4	58.5	-90.04	-2,771.4	999.0	708.8	596.0	112.81	6.283	
10,100.0	7,290.4	10,157.9	7,289.9	58.2	60.3	-90.04	-2,871.4	999.0	708.8	592.3	116.48	6.085	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Offset Design Wiedeman 29K-HZ Pad Sec.29-T4N-R66W - Wiedeman 29O-443 - Wellbore #1 - Plan #1 (06-12-13)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,200.0	7,290.1	10,257.9	7,289.7	60.1	62.0	-90.04	-2,971.4	999.0	708.8	588.6	120.17	5.898	
10,300.0	7,289.9	10,357.9	7,289.5	61.9	63.8	-90.05	-3,071.4	999.0	708.8	584.9	123.86	5.722	
10,400.0	7,289.7	10,457.9	7,289.3	63.8	65.6	-90.05	-3,171.4	999.0	708.8	581.2	127.57	5.556	
10,500.0	7,289.5	10,557.9	7,289.1	65.6	67.4	-90.05	-3,271.4	999.0	708.8	577.5	131.28	5.399	
10,600.0	7,289.2	10,657.9	7,288.9	67.5	69.2	-90.05	-3,371.4	999.0	708.8	573.8	135.00	5.251	
10,700.0	7,289.0	10,757.9	7,288.7	69.4	71.1	-90.06	-3,471.4	999.0	708.8	570.1	138.72	5.110	
10,800.0	7,288.8	10,857.9	7,288.5	71.2	72.9	-90.06	-3,571.4	999.0	708.8	566.3	142.45	4.976	
10,900.0	7,288.6	10,957.9	7,288.3	73.1	74.7	-90.06	-3,671.4	999.0	708.8	562.6	146.19	4.849	
11,000.0	7,288.3	11,057.9	7,288.1	75.0	76.5	-90.06	-3,771.4	999.0	708.8	558.9	149.93	4.728	
11,100.0	7,288.1	11,157.9	7,287.9	76.8	78.4	-90.07	-3,871.4	999.0	708.8	555.1	153.68	4.612	
11,200.0	7,287.9	11,257.9	7,287.7	78.7	80.2	-90.07	-3,971.4	999.0	708.8	551.4	157.43	4.502	
11,300.0	7,287.6	11,357.9	7,287.6	80.6	82.1	-90.07	-4,071.4	999.0	708.8	547.6	161.18	4.397	
11,400.0	7,287.4	11,457.9	7,287.4	82.5	83.9	-90.08	-4,171.4	999.0	708.8	543.9	164.94	4.297	
11,500.0	7,287.2	11,557.9	7,287.2	84.4	85.8	-90.08	-4,271.4	999.0	708.8	540.1	168.71	4.201	
11,585.6	7,287.0	11,643.5	7,287.0	86.0	87.3	-90.08	-4,357.1	999.0	708.8	536.9	171.93	4.123	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Wiedeman 29K-403
Project:	SEC.29-T4N-R66W	**TVD Reference:**	WELL @ 4777.0ft (RKB-15')
Reference Site:	Wiedeman 29K-HZ Pad Sec.29-T4N-R66W	**MD Reference:**	WELL @ 4777.0ft (RKB-15')
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Wellbore #1	**Database:**	Landmark
Reference Design:	Plan #1 (06-12-13)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 4777.0ft (RKB-15')	Coordinates are relative to: Wiedeman 29K-403
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: 0.45°

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Reference Well:	Wiedeman 29K-403	**Survey Calculation Method:**	Minimum Curvature
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Reference Wellbore	Wellbore #1	**Database:**	Landmark
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