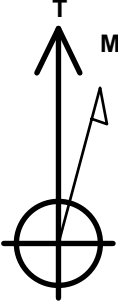
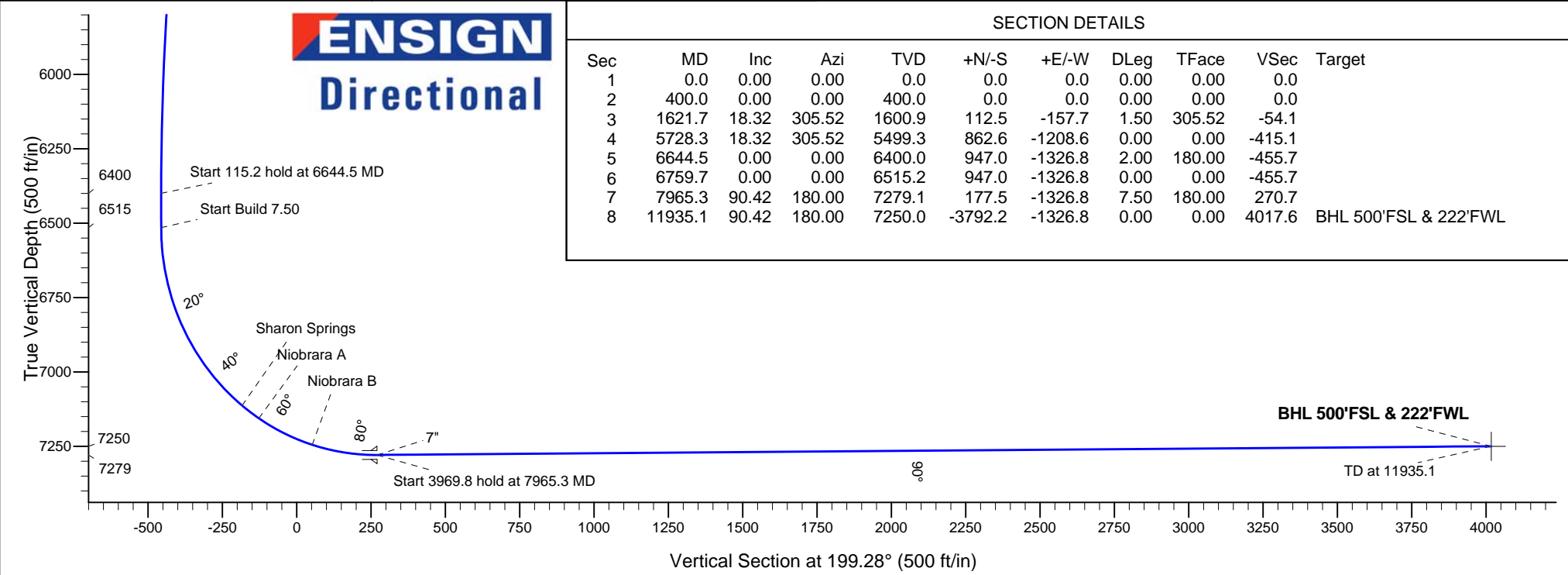
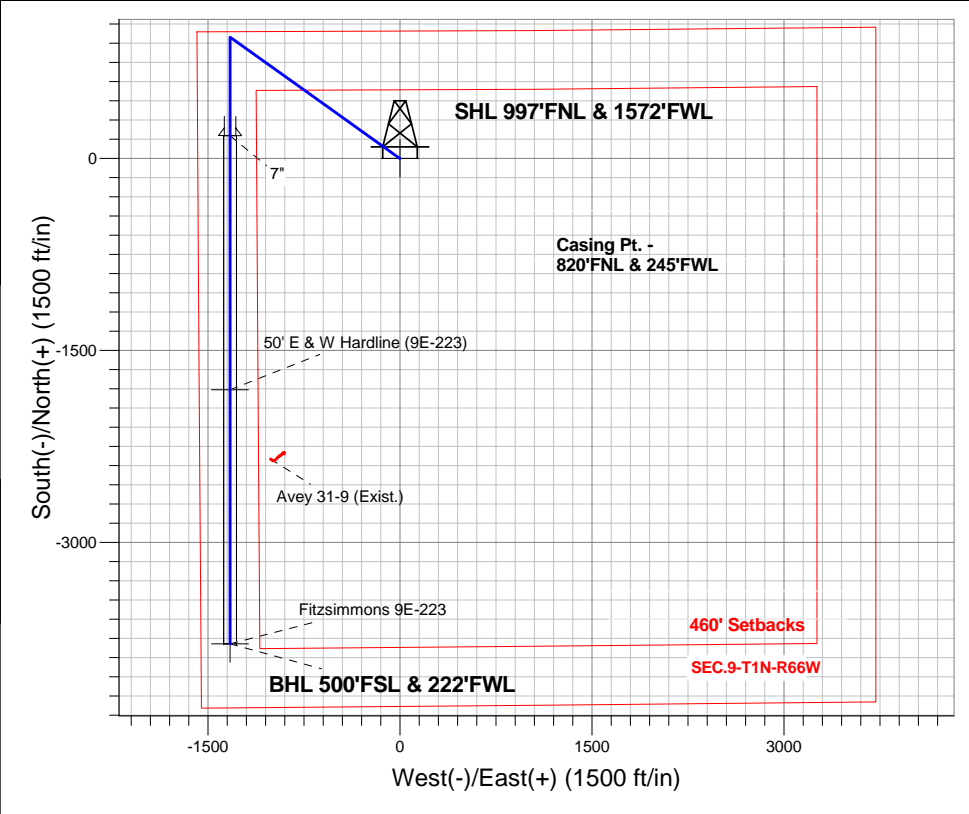


PETROLEUM DEVELOPMENT CORP
 Weld County CO

Well Name: Fitzsimmons 9E-223					
Surface Location: Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W					
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone					
Ground Elevation: 4992.0					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1269230.56	3199804.75	40.070220	-104.786060
RKB - 13' WELL @ 5005.0ft (RKB - 13')					
Slot					

WELLBORE TARGET DETAILS					
Name	TVD	+N/-S	+E/-W	Shape	
50' E & W Hardline (9E-223)	1.0	-1807.4	-1326.8	Rectangle (Sides: L3969.7 W100.0)	
SHL 997'FNL & 1572'FWL	1.0	0.0	0.0	Point	
BHL 500'FSL & 222'FWL	7250.0	-3792.2	-1326.8	Point	

	Azimuths to True North Magnetic North: 8.33°		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W Fitzsimmons 9E-223 Plan #2 (5-01-15) 10:30, May 01 2015	
	Magnetic Field Strength: 52546.3snT Dip Angle: 66.65° Date: 5/1/2015 Model: IGRF2010		ANNOTATIONS	
	TVD	MD	Annotation	
	400.0	400.0	KOP - Start Build 1.50	
	5499.3	5728.3	Start Drop -2.00	
	6400.0	6644.5	Start 115.2 hold at 6644.5 MD	
	6515.2	6759.7	Start Build 7.50	
	7279.1	7965.3	Start 3969.8 hold at 7965.3 MD	
	7250.0	11935.1	TD at 11935.1	



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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	1621.7	18.32	305.52	1600.9	112.5	-157.7	1.50	305.52	-54.1	
4	5728.3	18.32	305.52	5499.3	862.6	-1208.6	0.00	0.00	-415.1	
5	6644.5	0.00	0.00	6400.0	947.0	-1326.8	2.00	180.00	-455.7	
6	6759.7	0.00	0.00	6515.2	947.0	-1326.8	0.00	0.00	-455.7	
7	7965.3	90.42	180.00	7279.1	177.5	-1326.8	7.50	180.00	270.7	
8	11935.1	90.42	180.00	7250.0	-3792.2	-1326.8	0.00	0.00	4017.6	BHL 500'FSL & 222'FWL



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.9-T1N-R66W

Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W

Fitzsimmons 9E-223

Wellbore #1

Plan: Plan #2 (5-01-15)

Standard Planning Report

01 May, 2015

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9E-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

Project	SEC.9-T1N-R66W, Weld County, CO		
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						Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W											
Site Position:						Northing:			1,269,248.97 ft			Latitude:			40.070270		
From:			Lat/Long			Easting:			3,199,826.99 ft			Longitude:			-104.785980		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.46 °		

Well	Fitzsimmons 9E-223					
Well Position	+N/-S	-18.2 ft	Northing:	1,269,230.56 ft	Latitude:	40.070220
	+E/-W	-22.4 ft	Easting:	3,199,804.75 ft	Longitude:	-104.786060
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,992.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/1/2015	8.33	66.65	52,546

Design	Plan #2 (5-01-15)			
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	199.28

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,621.7	18.32	305.52	1,600.9	112.5	-157.7	1.50	1.50	0.00	305.52	
5,728.3	18.32	305.52	5,499.3	862.6	-1,208.6	0.00	0.00	0.00	0.00	
6,644.5	0.00	0.00	6,400.0	947.0	-1,326.8	2.00	-2.00	0.00	180.00	
6,759.7	0.00	0.00	6,515.2	947.0	-1,326.8	0.00	0.00	0.00	0.00	
7,965.3	90.42	180.00	7,279.1	177.5	-1,326.8	7.50	7.50	0.00	180.00	
11,935.1	90.42	180.00	7,250.0	-3,792.2	-1,326.8	0.00	0.00	0.00	0.00	BHL 500'FSL & 222

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9E-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

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
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
50' E & W Hardline (9E-223) - SHL 997'FNL & 1572'FWL									
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
KOP - Start Build 1.50									
500.0	1.50	305.52	500.0	0.8	-1.1	-0.4	1.50	1.50	0.00
600.0	3.00	305.52	599.9	3.0	-4.3	-1.5	1.50	1.50	0.00
700.0	4.50	305.52	699.7	6.8	-9.6	-3.3	1.50	1.50	0.00
800.0	6.00	305.52	799.3	12.2	-17.0	-5.8	1.50	1.50	0.00
900.0	7.50	305.52	898.6	19.0	-26.6	-9.1	1.50	1.50	0.00
1,000.0	9.00	305.52	997.5	27.3	-38.3	-13.1	1.50	1.50	0.00
1,100.0	10.50	305.52	1,096.1	37.2	-52.1	-17.9	1.50	1.50	0.00
1,200.0	12.00	305.52	1,194.2	48.5	-67.9	-23.3	1.50	1.50	0.00
1,300.0	13.50	305.52	1,291.7	61.3	-85.9	-29.5	1.50	1.50	0.00
1,400.0	15.00	305.52	1,388.6	75.6	-105.9	-36.4	1.50	1.50	0.00
1,500.0	16.50	305.52	1,484.9	91.4	-128.0	-44.0	1.50	1.50	0.00
1,600.0	18.00	305.52	1,580.4	108.6	-152.2	-52.3	1.50	1.50	0.00
1,621.7	18.32	305.52	1,600.9	112.5	-157.7	-54.1	1.50	1.50	0.00
1,700.0	18.32	305.52	1,675.3	126.8	-177.7	-61.0	0.00	0.00	0.00
1,800.0	18.32	305.52	1,770.2	145.1	-203.3	-69.8	0.00	0.00	0.00
1,900.0	18.32	305.52	1,865.2	163.4	-228.9	-78.6	0.00	0.00	0.00
2,000.0	18.32	305.52	1,960.1	181.6	-254.5	-87.4	0.00	0.00	0.00
2,100.0	18.32	305.52	2,055.0	199.9	-280.1	-96.2	0.00	0.00	0.00
2,200.0	18.32	305.52	2,150.0	218.2	-305.7	-105.0	0.00	0.00	0.00
2,300.0	18.32	305.52	2,244.9	236.4	-331.3	-113.8	0.00	0.00	0.00
2,400.0	18.32	305.52	2,339.8	254.7	-356.8	-122.6	0.00	0.00	0.00
2,500.0	18.32	305.52	2,434.7	273.0	-382.4	-131.3	0.00	0.00	0.00
2,600.0	18.32	305.52	2,529.7	291.2	-408.0	-140.1	0.00	0.00	0.00
2,700.0	18.32	305.52	2,624.6	309.5	-433.6	-148.9	0.00	0.00	0.00
2,800.0	18.32	305.52	2,719.5	327.8	-459.2	-157.7	0.00	0.00	0.00
2,900.0	18.32	305.52	2,814.5	346.0	-484.8	-166.5	0.00	0.00	0.00
3,000.0	18.32	305.52	2,909.4	364.3	-510.4	-175.3	0.00	0.00	0.00
3,100.0	18.32	305.52	3,004.3	382.5	-536.0	-184.1	0.00	0.00	0.00
3,200.0	18.32	305.52	3,099.2	400.8	-561.6	-192.9	0.00	0.00	0.00
3,300.0	18.32	305.52	3,194.2	419.1	-587.2	-201.7	0.00	0.00	0.00
3,400.0	18.32	305.52	3,289.1	437.3	-612.8	-210.4	0.00	0.00	0.00
3,500.0	18.32	305.52	3,384.0	455.6	-638.3	-219.2	0.00	0.00	0.00
3,600.0	18.32	305.52	3,479.0	473.9	-663.9	-228.0	0.00	0.00	0.00
3,700.0	18.32	305.52	3,573.9	492.1	-689.5	-236.8	0.00	0.00	0.00
3,800.0	18.32	305.52	3,668.8	510.4	-715.1	-245.6	0.00	0.00	0.00
3,900.0	18.32	305.52	3,763.7	528.7	-740.7	-254.4	0.00	0.00	0.00
4,000.0	18.32	305.52	3,858.7	546.9	-766.3	-263.2	0.00	0.00	0.00
4,100.0	18.32	305.52	3,953.6	565.2	-791.9	-272.0	0.00	0.00	0.00
4,200.0	18.32	305.52	4,048.5	583.5	-817.5	-280.8	0.00	0.00	0.00
4,300.0	18.32	305.52	4,143.5	601.7	-843.1	-289.5	0.00	0.00	0.00
4,359.6	18.32	305.52	4,200.0	612.6	-858.3	-294.8	0.00	0.00	0.00
Parkman									
4,400.0	18.32	305.52	4,238.4	620.0	-868.7	-298.3	0.00	0.00	0.00
4,500.0	18.32	305.52	4,333.3	638.3	-894.2	-307.1	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9E-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

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	18.32	305.52	4,428.2	656.5	-919.8	-315.9	0.00	0.00	0.00
4,700.0	18.32	305.52	4,523.2	674.8	-945.4	-324.7	0.00	0.00	0.00
4,800.0	18.32	305.52	4,618.1	693.1	-971.0	-333.5	0.00	0.00	0.00
4,812.5	18.32	305.52	4,630.0	695.3	-974.2	-334.6	0.00	0.00	0.00
Sussex									
4,900.0	18.32	305.52	4,713.0	711.3	-996.6	-342.3	0.00	0.00	0.00
5,000.0	18.32	305.52	4,808.0	729.6	-1,022.2	-351.1	0.00	0.00	0.00
5,100.0	18.32	305.52	4,902.9	747.8	-1,047.8	-359.9	0.00	0.00	0.00
5,200.0	18.32	305.52	4,997.8	766.1	-1,073.4	-368.6	0.00	0.00	0.00
5,300.0	18.32	305.52	5,092.7	784.4	-1,099.0	-377.4	0.00	0.00	0.00
5,307.6	18.32	305.52	5,100.0	785.8	-1,100.9	-378.1	0.00	0.00	0.00
Shannon									
5,400.0	18.32	305.52	5,187.7	802.6	-1,124.6	-386.2	0.00	0.00	0.00
5,500.0	18.32	305.52	5,282.6	820.9	-1,150.2	-395.0	0.00	0.00	0.00
5,600.0	18.32	305.52	5,377.5	839.2	-1,175.7	-403.8	0.00	0.00	0.00
5,700.0	18.32	305.52	5,472.5	857.4	-1,201.3	-412.6	0.00	0.00	0.00
5,728.3	18.32	305.52	5,499.3	862.6	-1,208.6	-415.1	0.00	0.00	0.00
Start Drop -2.00									
5,800.0	16.89	305.52	5,567.7	875.2	-1,226.2	-421.1	2.00	-2.00	0.00
5,900.0	14.89	305.52	5,663.8	891.1	-1,248.5	-428.8	2.00	-2.00	0.00
6,000.0	12.89	305.52	5,760.9	905.1	-1,268.1	-435.5	2.00	-2.00	0.00
6,100.0	10.89	305.52	5,858.8	917.0	-1,284.8	-441.3	2.00	-2.00	0.00
6,200.0	8.89	305.52	5,957.3	927.0	-1,298.8	-446.1	2.00	-2.00	0.00
6,300.0	6.89	305.52	6,056.3	935.0	-1,310.0	-449.9	2.00	-2.00	0.00
6,400.0	4.89	305.52	6,155.8	940.9	-1,318.3	-452.8	2.00	-2.00	0.00
6,500.0	2.89	305.52	6,255.6	944.9	-1,323.9	-454.7	2.00	-2.00	0.00
6,600.0	0.89	305.52	6,355.5	946.8	-1,326.5	-455.6	2.00	-2.00	0.00
6,644.5	0.00	305.52	6,400.0	947.0	-1,326.8	-455.7	2.00	-2.00	0.00
Start 115.2 hold at 6644.5 MD									
6,700.0	0.00	0.00	6,455.5	947.0	-1,326.8	-455.7	0.00	0.00	0.00
6,759.7	0.00	0.00	6,515.2	947.0	-1,326.8	-455.7	0.00	0.00	0.00
Start Build 7.50									
6,800.0	3.02	180.00	6,555.5	945.9	-1,326.8	-454.7	7.50	7.50	0.00
6,900.0	10.52	180.00	6,654.7	934.2	-1,326.8	-443.6	7.50	7.50	0.00
7,000.0	18.02	180.00	6,751.5	909.5	-1,326.8	-420.3	7.50	7.50	0.00
7,100.0	25.52	180.00	6,844.3	872.4	-1,326.8	-385.3	7.50	7.50	0.00
7,200.0	33.02	180.00	6,931.5	823.6	-1,326.8	-339.2	7.50	7.50	0.00
7,300.0	40.52	180.00	7,011.6	763.8	-1,326.8	-282.7	7.50	7.50	0.00
7,400.0	48.02	180.00	7,083.1	694.0	-1,326.8	-216.9	7.50	7.50	0.00
7,446.3	51.49	180.00	7,113.0	658.7	-1,326.8	-183.5	7.50	7.50	0.00
Sharon Springs									
7,500.0	55.52	180.00	7,144.9	615.5	-1,326.8	-142.8	7.50	7.50	0.00
7,519.9	57.02	180.00	7,156.0	598.9	-1,326.8	-127.2	7.50	7.50	0.00
Niobrara A									
7,600.0	63.02	180.00	7,196.0	529.6	-1,326.8	-61.7	7.50	7.50	0.00
7,700.0	70.52	180.00	7,235.4	437.8	-1,326.8	25.0	7.50	7.50	0.00
7,730.5	72.81	180.00	7,245.0	408.8	-1,326.8	52.3	7.50	7.50	0.00
Niobrara B									
7,800.0	78.02	180.00	7,262.5	341.6	-1,326.8	115.8	7.50	7.50	0.00
7,900.0	85.52	180.00	7,276.8	242.7	-1,326.8	209.1	7.50	7.50	0.00
7,965.3	90.42	180.00	7,279.1	177.4	-1,326.8	270.7	7.50	7.50	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9E-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

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)
Start 3969.8 hold at 7965.3 MD - 7"									
8,000.0	90.42	180.00	7,278.8	142.7	-1,326.8	303.4	0.00	0.00	0.00
8,100.0	90.42	180.00	7,278.1	42.7	-1,326.8	397.8	0.00	0.00	0.00
8,200.0	90.42	180.00	7,277.4	-57.3	-1,326.8	492.2	0.00	0.00	0.00
8,300.0	90.42	180.00	7,276.6	-157.2	-1,326.8	586.6	0.00	0.00	0.00
8,400.0	90.42	180.00	7,275.9	-257.2	-1,326.8	681.0	0.00	0.00	0.00
8,500.0	90.42	180.00	7,275.2	-357.2	-1,326.8	775.4	0.00	0.00	0.00
8,600.0	90.42	180.00	7,274.4	-457.2	-1,326.8	869.8	0.00	0.00	0.00
8,700.0	90.42	180.00	7,273.7	-557.2	-1,326.8	964.2	0.00	0.00	0.00
8,800.0	90.42	180.00	7,273.0	-657.2	-1,326.8	1,058.5	0.00	0.00	0.00
8,900.0	90.42	180.00	7,272.2	-757.2	-1,326.8	1,152.9	0.00	0.00	0.00
9,000.0	90.42	180.00	7,271.5	-857.2	-1,326.8	1,247.3	0.00	0.00	0.00
9,100.0	90.42	180.00	7,270.8	-957.2	-1,326.8	1,341.7	0.00	0.00	0.00
9,200.0	90.42	180.00	7,270.0	-1,057.2	-1,326.8	1,436.1	0.00	0.00	0.00
9,300.0	90.42	180.00	7,269.3	-1,157.2	-1,326.8	1,530.5	0.00	0.00	0.00
9,400.0	90.42	180.00	7,268.6	-1,257.2	-1,326.8	1,624.9	0.00	0.00	0.00
9,500.0	90.42	180.00	7,267.8	-1,357.2	-1,326.8	1,719.2	0.00	0.00	0.00
9,600.0	90.42	180.00	7,267.1	-1,457.2	-1,326.8	1,813.6	0.00	0.00	0.00
9,700.0	90.42	180.00	7,266.4	-1,557.2	-1,326.8	1,908.0	0.00	0.00	0.00
9,800.0	90.42	180.00	7,265.7	-1,657.2	-1,326.8	2,002.4	0.00	0.00	0.00
9,900.0	90.42	180.00	7,264.9	-1,757.2	-1,326.8	2,096.8	0.00	0.00	0.00
10,000.0	90.42	180.00	7,264.2	-1,857.2	-1,326.8	2,191.2	0.00	0.00	0.00
10,100.0	90.42	180.00	7,263.5	-1,957.2	-1,326.8	2,285.6	0.00	0.00	0.00
10,200.0	90.42	180.00	7,262.7	-2,057.2	-1,326.8	2,380.0	0.00	0.00	0.00
10,300.0	90.42	180.00	7,262.0	-2,157.2	-1,326.8	2,474.3	0.00	0.00	0.00
10,400.0	90.42	180.00	7,261.3	-2,257.2	-1,326.8	2,568.7	0.00	0.00	0.00
10,500.0	90.42	180.00	7,260.5	-2,357.2	-1,326.8	2,663.1	0.00	0.00	0.00
10,600.0	90.42	180.00	7,259.8	-2,457.2	-1,326.8	2,757.5	0.00	0.00	0.00
10,700.0	90.42	180.00	7,259.1	-2,557.2	-1,326.8	2,851.9	0.00	0.00	0.00
10,800.0	90.42	180.00	7,258.3	-2,657.2	-1,326.8	2,946.3	0.00	0.00	0.00
10,900.0	90.42	180.00	7,257.6	-2,757.2	-1,326.8	3,040.7	0.00	0.00	0.00
11,000.0	90.42	180.00	7,256.9	-2,857.2	-1,326.8	3,135.1	0.00	0.00	0.00
11,100.0	90.42	180.00	7,256.1	-2,957.2	-1,326.8	3,229.4	0.00	0.00	0.00
11,200.0	90.42	180.00	7,255.4	-3,057.2	-1,326.8	3,323.8	0.00	0.00	0.00
11,300.0	90.42	180.00	7,254.7	-3,157.2	-1,326.8	3,418.2	0.00	0.00	0.00
11,400.0	90.42	180.00	7,253.9	-3,257.2	-1,326.8	3,512.6	0.00	0.00	0.00
11,500.0	90.42	180.00	7,253.2	-3,357.2	-1,326.8	3,607.0	0.00	0.00	0.00
11,600.0	90.42	180.00	7,252.5	-3,457.2	-1,326.8	3,701.4	0.00	0.00	0.00
11,700.0	90.42	180.00	7,251.7	-3,557.2	-1,326.8	3,795.8	0.00	0.00	0.00
11,800.0	90.42	180.00	7,251.0	-3,657.2	-1,326.8	3,890.1	0.00	0.00	0.00
11,900.0	90.42	180.00	7,250.3	-3,757.2	-1,326.8	3,984.5	0.00	0.00	0.00
11,935.1	90.42	180.00	7,250.0	-3,792.2	-1,326.8	4,017.6	0.00	0.00	0.00
BHL 500'FSL & 222'FWL									

Database:	Landmark	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Project:	SEC.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	North Reference:	True
Well:	Fitzsimmons 9E-223	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (5-01-15)		

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude Longitude
50' E & W Hardline (9	- plan misses target center by 2242.1ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)	0.00	0.00	1.0	-1,807.4	-1,326.8	1,267,412.66	3,198,492.60	40.065259 -104.790800
- Rectangle (sides W3,969.7 H100.0 D0.0)									
BHL 500'FSL & 222'F	- plan hits target center	0.00	0.00	7,250.0	-3,792.2	-1,326.8	1,265,427.93	3,198,508.56	40.059810 -104.790800
- Point									
SHL 997'FNL & 1572'	- plan hits target center	0.00	0.00	1.0	0.0	0.0	1,269,230.58	3,199,804.75	40.070220 -104.786060
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,965.3	7,279.1	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,359.6	4,200.0	Parkman		0.00		
4,812.5	4,630.0	Sussex		0.00		
5,307.6	5,100.0	Shannon		0.00		
7,446.3	7,113.0	Sharon Springs		0.00		
7,519.9	7,156.0	Niobrara A		0.00		
7,730.5	7,245.0	Niobrara B		0.00		
	7,330.0	Niobrara C		0.00		
	7,473.0	Ft Hays		0.00		
	7,495.0	Codell		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment	
400.0	400.0	0.0	0.0	KOP - Start Build 1.50	
5,728.3	5,499.3	862.6	-1,208.6	Start Drop -2.00	
6,644.5	6,400.0	947.0	-1,326.8	Start 115.2 hold at 6644.5 MD	
6,759.7	6,515.2	947.0	-1,326.8	Start Build 7.50	
7,965.3	7,279.1	177.4	-1,326.8	Start 3969.8 hold at 7965.3 MD	
11,935.1	7,250.0	-3,792.3	-1,326.8	TD at 11935.1	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.9-T1N-R66W

Fitzsimmons 1N66W9JM (West) Pad

Sec.9-T1N-R66W

Fitzsimmons 9E-223

Wellbore #1

Plan #2 (5-01-15)

Anticollision Report

01 May, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (5-01-15)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 800.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 5/1/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,935.1	Plan #2 (5-01-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.9-T1N-R66W						
Avey 31-9 (Exist.) - Wellbore #1 - Wellbore #1	10,498.1	7,251.0	324.7	255.1	4.662	CC
Avey 31-9 (Exist.) - Wellbore #1 - Wellbore #1	10,500.0	7,251.0	324.7	255.0	4.660	ES, SF
Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W						
Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4-30-15)	400.0	398.0	657.0	655.4	418.780	CC
Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4-30-15)	500.0	498.0	657.4	655.4	326.510	ES
Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4-30-15)	2,700.0	2,745.5	795.5	778.4	46.407	SF
Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W						
Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (4-30-15)	400.0	400.0	28.9	27.3	18.340	CC
Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (4-30-15)	500.0	500.0	29.2	27.2	14.486	ES
Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (4-30-15)	11,935.1	11,975.4	221.0	65.9	1.425	Level 3, SF
Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (4-30-15)	200.0	200.0	31.1	30.4	46.110	CC, ES
Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (4-30-15)	11,935.1	12,168.8	292.1	185.9	2.750	SF
Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (4-30-15)	400.0	400.0	62.2	60.6	39.535	CC
Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (4-30-15)	500.0	500.0	62.5	60.5	30.994	ES
Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (4-30-15)	11,935.1	11,853.9	490.0	330.0	3.062	SF
Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (5-01-15)	400.0	400.0	91.1	89.5	57.878	CC
Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (5-01-15)	500.0	500.0	91.4	89.4	45.298	ES
Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (5-01-15)	11,935.1	12,010.9	793.0	636.7	5.074	SF

Offset Design	Existing Wells Sec.9-T1N-R66W - Avey 31-9 (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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,800.0	7,265.7	7,257.6	7,255.8	44.8	15.7	-91.80	-2,355.3	-1,002.2	769.9	712.0	57.84	13.311		
9,900.0	7,264.9	7,256.7	7,254.8	46.4	15.7	-91.64	-2,355.3	-1,002.2	680.5	621.0	59.48	11.442		
10,000.0	7,264.2	7,255.7	7,253.9	48.0	15.7	-91.47	-2,355.3	-1,002.2	594.6	533.4	61.14	9.725		
10,100.0	7,263.5	7,254.8	7,252.9	49.6	15.7	-91.30	-2,355.3	-1,002.2	513.7	450.9	62.82	8.177		
10,200.0	7,262.7	7,253.9	7,252.0	51.3	15.7	-91.14	-2,355.3	-1,002.2	440.8	376.3	64.52	6.832		
10,300.0	7,262.0	7,252.9	7,251.0	53.0	15.7	-90.97	-2,355.3	-1,002.2	380.4	314.1	66.23	5.743		

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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.9-T1N-R66W - Avey 31-9 (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		
10,400.0	7,261.3	7,252.0	7,250.1	54.7	15.7	-90.80	-2,355.3	-1,002.1	339.2	271.2	67.95	4.992		
10,498.1	7,260.5	7,251.0	7,249.1	56.3	15.7	-90.64	-2,355.3	-1,002.1	324.7	255.1	69.65	4.662	CC	
10,500.0	7,260.5	7,251.0	7,249.1	56.4	15.7	-90.63	-2,355.3	-1,002.1	324.7	255.0	69.69	4.660	ES, SF	
10,600.0	7,259.8	7,250.1	7,248.2	58.1	15.7	-90.47	-2,355.3	-1,002.1	340.3	268.9	71.43	4.764		
10,700.0	7,259.1	7,249.1	7,247.2	59.8	15.7	-90.30	-2,355.3	-1,002.1	382.4	309.2	73.19	5.224		
10,800.0	7,258.3	7,248.1	7,246.3	61.5	15.7	-90.13	-2,355.3	-1,002.1	443.4	368.4	74.95	5.915		
10,900.0	7,257.6	7,247.2	7,245.3	63.3	15.7	-89.96	-2,355.3	-1,002.1	516.7	440.0	76.73	6.734		
11,000.0	7,256.9	7,246.2	7,244.4	65.0	15.7	-89.79	-2,355.3	-1,002.1	597.8	519.3	78.50	7.614		
11,100.0	7,256.1	7,245.3	7,243.4	66.8	15.7	-89.62	-2,355.3	-1,002.1	683.9	603.6	80.29	8.518		
11,200.0	7,255.4	7,244.3	7,242.4	68.5	15.7	-89.45	-2,355.3	-1,002.1	773.4	691.3	82.08	9.422		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Fitzsimmons 1N66W9JM (East) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-303 - Wellbore #1 - Plan #2 (4)														Offset Well Error:	0.0 ft
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	51.61	408.0	515.0	657.0						
100.0	100.0	98.0	98.0	0.1	0.1	51.61	408.0	515.0	657.0	656.8	0.22	2,952.555			
200.0	200.0	198.0	198.0	0.3	0.3	51.61	408.0	515.0	657.0	656.3	0.67	980.900			
300.0	300.0	298.0	298.0	0.6	0.6	51.61	408.0	515.0	657.0	655.9	1.12	586.964			
400.0	400.0	398.0	398.0	0.8	0.8	51.61	408.0	515.0	657.0	655.4	1.57	418.780 CC			
500.0	500.0	498.0	498.0	1.0	1.0	106.20	408.0	515.0	657.4	655.4	2.01	326.510 ES			
600.0	599.9	597.9	597.9	1.2	1.2	106.51	408.0	515.0	658.5	656.0	2.46	267.905			
700.0	699.7	697.7	697.7	1.5	1.5	107.02	408.0	515.0	660.4	657.5	2.91	226.759			
800.0	799.3	797.3	797.3	1.7	1.7	107.74	408.0	515.0	663.1	659.7	3.38	196.128			
900.0	898.6	896.6	896.6	2.0	1.9	108.64	408.0	515.0	666.8	662.9	3.87	172.333			
1,000.0	997.5	995.5	995.5	2.3	2.1	109.72	408.0	515.0	671.6	667.2	4.38	153.278			
1,100.0	1,096.1	1,098.4	1,098.4	2.6	2.4	110.97	408.5	514.3	677.2	672.3	4.92	137.538			
1,200.0	1,194.2	1,201.7	1,201.6	3.0	2.6	112.25	410.0	512.1	683.5	678.0	5.49	124.429			
1,300.0	1,291.7	1,305.1	1,305.0	3.4	2.8	113.57	412.7	508.3	690.5	684.4	6.10	113.221			
1,400.0	1,388.6	1,408.8	1,408.4	3.9	3.0	114.92	416.3	503.0	698.1	691.4	6.74	103.553			
1,500.0	1,484.9	1,512.6	1,511.9	4.4	3.3	116.29	421.1	496.2	706.5	699.1	7.42	95.157			
1,600.0	1,580.4	1,616.6	1,615.4	5.0	3.5	117.68	427.0	487.8	715.7	707.6	8.15	87.829			
1,621.7	1,600.9	1,639.2	1,637.9	5.1	3.6	117.98	428.4	485.7	717.8	709.5	8.31	86.362			
1,700.0	1,675.3	1,721.1	1,719.1	5.6	3.8	119.13	433.9	477.8	725.3	716.4	8.91	81.411			
1,800.0	1,770.2	1,826.2	1,823.4	6.2	4.1	120.46	442.0	466.2	734.4	724.7	9.69	75.816			
1,900.0	1,865.2	1,932.1	1,928.0	6.8	4.4	121.64	451.2	452.9	742.9	732.4	10.48	70.877			
2,000.0	1,960.1	2,038.6	2,032.9	7.4	4.8	122.67	461.7	437.9	750.6	739.3	11.30	66.452			
2,100.0	2,055.0	2,145.6	2,138.0	8.1	5.1	123.56	473.3	421.3	757.5	745.4	12.13	62.456			
2,200.0	2,150.0	2,248.6	2,238.8	8.7	5.5	124.30	485.3	404.0	763.7	750.7	12.97	58.880			
2,300.0	2,244.9	2,348.0	2,336.0	9.3	5.9	124.99	497.1	387.1	769.8	756.0	13.81	55.756			
2,400.0	2,339.8	2,447.3	2,433.2	10.0	6.3	125.67	508.8	370.2	776.1	761.5	14.64	52.996			
2,500.0	2,434.7	2,546.7	2,530.5	10.6	6.7	126.34	520.6	353.4	782.5	767.0	15.48	50.546			
2,600.0	2,529.7	2,646.1	2,627.7	11.3	7.1	127.00	532.3	336.5	789.0	772.6	16.31	48.362			
2,700.0	2,624.6	2,745.5	2,724.9	11.9	7.5	127.64	544.1	319.6	795.5	778.4	17.14	46.407 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (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	50.89	18.2	22.4	28.9					
100.0	100.0	100.0	100.0	0.1	0.1	50.89	18.2	22.4	28.9	28.6	0.22	128.379		
200.0	200.0	200.0	200.0	0.3	0.3	50.89	18.2	22.4	28.9	28.2	0.67	42.793		
300.0	300.0	300.0	300.0	0.6	0.6	50.89	18.2	22.4	28.9	27.7	1.12	25.676		
400.0	400.0	400.0	400.0	0.8	0.8	50.89	18.2	22.4	28.9	27.3	1.57	18.340 CC		
500.0	500.0	500.0	500.0	1.0	1.0	107.84	18.2	22.4	29.2	27.2	2.02	14.486 ES		
600.0	599.9	599.9	599.9	1.2	1.2	114.82	18.2	22.4	30.7	28.2	2.46	12.453		
700.0	699.7	700.1	700.1	1.5	1.5	122.96	19.0	21.4	33.3	30.4	2.91	11.438		
800.0	799.3	800.5	800.4	1.7	1.7	129.64	21.5	18.3	36.6	33.2	3.36	10.885		
900.0	898.6	901.0	900.7	2.0	1.9	134.99	25.7	13.2	40.4	36.6	3.82	10.566		
1,000.0	997.5	1,001.6	1,000.9	2.3	2.2	139.22	31.5	6.0	44.6	40.3	4.30	10.373		
1,100.0	1,096.1	1,102.4	1,101.0	2.6	2.4	142.55	38.9	-3.3	49.1	44.3	4.79	10.244		
1,200.0	1,194.2	1,203.3	1,200.8	3.0	2.7	145.17	48.1	-14.6	53.8	48.5	5.30	10.142		
1,300.0	1,291.7	1,304.4	1,300.4	3.4	3.0	147.21	58.9	-28.0	58.6	52.8	5.84	10.048		
1,400.0	1,388.6	1,405.5	1,399.6	3.9	3.4	148.81	71.4	-43.4	63.6	57.2	6.39	9.949		
1,500.0	1,484.9	1,506.9	1,498.4	4.4	3.8	150.04	85.6	-60.9	68.7	61.7	6.98	9.838		
1,600.0	1,580.4	1,608.3	1,596.6	5.0	4.3	150.98	101.4	-80.5	73.9	66.2	7.61	9.711		
1,621.7	1,600.9	1,630.3	1,617.9	5.1	4.4	151.16	105.0	-85.0	75.0	67.2	7.75	9.677		
1,700.0	1,675.3	1,709.9	1,694.3	5.6	4.8	151.44	118.9	-102.1	78.4	70.1	8.29	9.454		
1,800.0	1,770.2	1,809.8	1,790.1	6.2	5.3	151.40	136.8	-124.3	81.9	72.8	9.02	9.078		
1,900.0	1,865.2	1,909.8	1,885.9	6.8	5.8	151.36	154.8	-146.5	85.4	75.6	9.76	8.745		
2,000.0	1,960.1	2,009.7	1,981.6	7.4	6.4	151.33	172.8	-168.7	88.8	78.3	10.52	8.449		
2,100.0	2,055.0	2,109.6	2,077.4	8.1	7.0	151.30	190.7	-191.0	92.3	81.1	11.28	8.186		
2,200.0	2,150.0	2,209.6	2,173.2	8.7	7.5	151.28	208.7	-213.2	95.8	83.8	12.05	7.951		
2,300.0	2,244.9	2,309.5	2,268.9	9.3	8.1	151.25	226.7	-235.4	99.3	86.5	12.83	7.741		
2,400.0	2,339.8	2,409.5	2,364.7	10.0	8.7	151.23	244.6	-257.6	102.8	89.2	13.62	7.551		
2,500.0	2,434.7	2,509.4	2,460.5	10.6	9.3	151.21	262.6	-279.8	106.3	91.9	14.41	7.380		
2,600.0	2,529.7	2,609.3	2,556.3	11.3	9.8	151.19	280.5	-302.0	109.8	94.6	15.20	7.225		
2,700.0	2,624.6	2,709.3	2,652.0	11.9	10.4	151.17	298.5	-324.2	113.3	97.3	16.00	7.084		
2,800.0	2,719.5	2,809.2	2,747.8	12.6	11.0	151.15	316.5	-346.4	116.8	100.0	16.80	6.955		
2,900.0	2,814.5	2,909.2	2,843.6	13.2	11.6	151.13	334.4	-368.6	120.3	102.7	17.60	6.836		
3,000.0	2,909.4	3,009.1	2,939.3	13.9	12.2	151.12	352.4	-390.9	123.8	105.4	18.40	6.728		
3,100.0	3,004.3	3,109.0	3,035.1	14.5	12.8	151.10	370.4	-413.1	127.3	108.1	19.21	6.627		
3,200.0	3,099.2	3,209.0	3,130.9	15.2	13.4	151.09	388.3	-435.3	130.8	110.8	20.02	6.535		
3,300.0	3,194.2	3,308.9	3,226.6	15.8	14.0	151.07	406.3	-457.5	134.3	113.5	20.82	6.449		
3,400.0	3,289.1	3,408.8	3,322.4	16.5	14.5	151.06	424.2	-479.7	137.8	116.1	21.64	6.369		
3,500.0	3,384.0	3,508.8	3,418.2	17.2	15.1	151.05	442.2	-501.9	141.3	118.8	22.45	6.294		
3,600.0	3,479.0	3,608.7	3,514.0	17.8	15.7	151.04	460.2	-524.1	144.8	121.5	23.26	6.224		
3,700.0	3,573.9	3,708.7	3,609.7	18.5	16.3	151.02	478.1	-546.3	148.3	124.2	24.07	6.159		
3,800.0	3,668.8	3,808.6	3,705.5	19.1	16.9	151.01	496.1	-568.5	151.8	126.9	24.89	6.098		
3,900.0	3,763.7	3,908.5	3,801.3	19.8	17.5	151.00	514.1	-590.8	155.3	129.6	25.70	6.041		
4,000.0	3,858.7	4,008.5	3,897.0	20.4	18.1	150.99	532.0	-613.0	158.8	132.2	26.52	5.986		
4,100.0	3,953.6	4,108.4	3,992.8	21.1	18.7	150.98	550.0	-635.2	162.3	134.9	27.34	5.935		
4,200.0	4,048.5	4,208.4	4,088.6	21.7	19.3	150.98	567.9	-657.4	165.7	137.6	28.15	5.887		
4,300.0	4,143.5	4,308.3	4,184.3	22.4	19.9	150.97	585.9	-679.6	169.2	140.3	28.97	5.842		
4,400.0	4,238.4	4,408.2	4,280.1	23.1	20.5	150.96	603.9	-701.8	172.7	142.9	29.79	5.799		
4,500.0	4,333.3	4,508.2	4,375.9	23.7	21.1	150.95	621.8	-724.0	176.2	145.6	30.61	5.758		
4,600.0	4,428.2	4,608.1	4,471.6	24.4	21.7	150.94	639.8	-746.2	179.7	148.3	31.43	5.719		
4,700.0	4,523.2	4,708.1	4,567.4	25.0	22.3	150.94	657.8	-768.4	183.2	151.0	32.25	5.682		
4,800.0	4,618.1	4,808.0	4,663.2	25.7	22.9	150.93	675.7	-790.7	186.7	153.7	33.07	5.647		
4,900.0	4,713.0	4,907.9	4,759.0	26.4	23.5	150.92	693.7	-812.9	190.2	156.3	33.89	5.613		

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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (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	
5,000.0	4,808.0	5,007.9	4,854.7	27.0	24.1	150.92	711.6	-835.1	193.7	159.0	34.71	5.581		
5,100.0	4,902.9	5,107.8	4,950.5	27.7	24.7	150.91	729.6	-857.3	197.2	161.7	35.53	5.550		
5,200.0	4,997.8	5,207.7	5,046.3	28.3	25.3	150.90	747.6	-879.5	200.7	164.3	36.35	5.521		
5,300.0	5,092.7	5,307.7	5,142.0	29.0	25.9	150.90	765.5	-901.7	204.2	167.0	37.17	5.493		
5,400.0	5,187.7	5,407.6	5,237.8	29.6	26.5	150.89	783.5	-923.9	207.7	169.7	38.00	5.466		
5,500.0	5,282.6	5,507.6	5,333.6	30.3	27.1	150.89	801.5	-946.1	211.2	172.4	38.82	5.441		
5,600.0	5,377.5	5,607.5	5,429.3	31.0	27.7	150.88	819.4	-968.3	214.7	175.0	39.64	5.416		
5,700.0	5,472.5	5,707.4	5,525.1	31.6	28.3	150.88	837.4	-990.6	218.2	177.7	40.46	5.392		
5,728.3	5,499.3	5,735.7	5,552.2	31.8	28.4	150.87	842.5	-996.8	219.2	178.5	40.70	5.386		
5,800.0	5,567.7	5,807.4	5,620.9	32.2	28.9	150.77	855.3	-1,012.8	220.9	179.6	41.33	5.345		
5,900.0	5,663.8	5,905.1	5,714.6	32.7	29.4	150.28	872.8	-1,034.3	220.9	178.6	42.30	5.222		
6,000.0	5,760.9	6,000.0	5,806.3	33.1	29.8	149.71	888.2	-1,053.4	220.1	176.9	43.18	5.096		
6,100.0	5,858.8	6,093.0	5,896.9	33.4	30.2	149.16	901.4	-1,069.8	219.0	175.0	43.99	4.978		
6,200.0	5,957.3	6,187.1	5,989.1	33.7	30.5	148.61	912.9	-1,084.0	217.6	172.9	44.73	4.866		
6,300.0	6,056.3	6,281.2	6,082.0	34.0	30.8	148.06	922.5	-1,095.8	216.0	170.6	45.40	4.758		
6,400.0	6,155.8	6,375.4	6,175.4	34.2	31.0	147.52	930.2	-1,105.3	214.2	168.2	46.00	4.656		
6,500.0	6,255.6	6,469.7	6,269.3	34.4	31.2	146.97	936.0	-1,112.4	212.0	165.5	46.53	4.557		
6,600.0	6,355.5	6,564.1	6,363.5	34.5	31.4	146.43	939.8	-1,117.1	209.7	162.7	46.99	4.461		
6,644.5	6,400.0	6,606.2	6,405.5	34.5	31.4	91.70	940.8	-1,118.5	208.5	161.3	47.18	4.420		
6,700.0	6,455.5	6,658.6	6,457.9	34.6	31.5	91.49	941.6	-1,119.4	207.5	160.0	47.42	4.375		
6,759.7	6,515.2	6,715.9	6,515.2	34.6	31.5	91.44	941.8	-1,119.7	207.2	159.6	47.59	4.354		
6,800.0	6,555.5	6,756.2	6,555.5	34.6	31.6	-88.86	941.8	-1,119.7	207.2	159.3	47.83	4.332		
6,848.9	6,604.1	6,804.8	6,604.1	34.7	31.6	-90.00	941.8	-1,119.7	207.1	158.6	48.51	4.270		
6,850.0	6,605.3	6,806.0	6,605.3	34.7	31.6	-90.04	941.8	-1,119.7	207.1	158.6	48.53	4.268		
6,900.0	6,654.7	6,855.8	6,655.1	34.6	31.7	-91.70	940.3	-1,119.7	207.2	157.8	49.45	4.191		
6,950.0	6,703.5	6,906.1	6,705.1	34.6	31.7	-93.37	935.6	-1,119.7	207.5	157.2	50.26	4.128		
7,000.0	6,751.5	6,956.7	6,755.1	34.5	31.6	-95.02	927.5	-1,119.7	207.9	157.0	50.96	4.081		
7,050.0	6,798.6	7,007.8	6,804.8	34.4	31.6	-96.65	916.0	-1,119.7	208.6	157.0	51.52	4.048		
7,100.0	6,844.3	7,059.3	6,854.1	34.3	31.5	-98.25	901.1	-1,119.7	209.3	157.4	51.92	4.032		
7,150.0	6,888.7	7,111.2	6,902.6	34.2	31.4	-99.81	882.7	-1,119.7	210.3	158.1	52.16	4.031		
7,200.0	6,931.5	7,163.5	6,950.2	34.1	31.3	-101.32	860.9	-1,119.7	211.3	159.1	52.22	4.046		
7,250.0	6,972.5	7,216.3	6,996.5	33.9	31.1	-102.77	835.6	-1,119.7	212.4	160.3	52.10	4.077		
7,300.0	7,011.6	7,269.5	7,041.3	33.7	31.0	-104.15	807.0	-1,119.7	213.7	161.9	51.82	4.124		
7,350.0	7,048.5	7,323.1	7,084.4	33.5	30.8	-105.47	775.1	-1,119.7	215.0	163.6	51.37	4.185		
7,400.0	7,083.1	7,377.1	7,125.4	33.4	30.6	-106.70	739.9	-1,119.7	216.3	165.6	50.78	4.261		
7,450.0	7,115.3	7,431.5	7,164.1	33.1	30.4	-107.86	701.7	-1,119.7	217.7	167.6	50.06	4.349		
7,500.0	7,144.9	7,486.3	7,200.2	32.9	30.1	-108.92	660.5	-1,119.7	219.0	169.8	49.24	4.449		
7,550.0	7,171.9	7,541.4	7,233.4	32.7	29.9	-109.90	616.6	-1,119.7	220.4	172.0	48.35	4.557		
7,600.0	7,196.0	7,596.9	7,263.6	32.5	29.7	-110.78	570.0	-1,119.7	221.6	174.2	47.43	4.673		
7,650.0	7,217.2	7,652.6	7,290.5	32.3	29.4	-111.56	521.2	-1,119.7	222.8	176.3	46.51	4.790		
7,700.0	7,235.4	7,708.7	7,313.8	32.1	29.2	-112.24	470.2	-1,119.7	223.8	178.2	45.63	4.906		
7,750.0	7,250.5	7,765.0	7,333.4	31.9	28.9	-112.83	417.5	-1,119.7	224.8	179.9	44.83	5.014		
7,800.0	7,262.5	7,821.4	7,349.1	31.7	28.7	-113.31	363.3	-1,119.7	225.6	181.4	44.14	5.110		
7,850.0	7,271.3	7,878.1	7,360.8	31.5	28.5	-113.68	307.8	-1,119.7	226.2	182.6	43.61	5.187		
7,900.0	7,276.8	7,934.9	7,368.4	31.3	28.2	-113.95	251.6	-1,119.7	226.7	183.4	43.24	5.242		
7,950.0	7,279.1	7,991.8	7,371.8	31.1	28.0	-114.12	194.8	-1,119.7	226.9	183.9	43.07	5.270		
7,965.3	7,279.1	8,009.2	7,372.0	31.1	28.0	-114.14	177.4	-1,119.7	227.0	183.9	43.05	5.273		
8,000.0	7,278.8	8,044.9	7,371.6	31.0	27.9	-114.12	141.7	-1,119.7	227.0	183.7	43.25	5.248		
8,100.0	7,278.1	8,144.9	7,370.5	30.7	27.6	-114.03	41.7	-1,119.7	226.8	182.8	43.97	5.157		
8,200.0	7,277.4	8,244.9	7,369.3	30.5	27.4	-113.94	-58.3	-1,119.7	226.6	181.7	44.96	5.041		

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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-323 - Wellbore #1 - Plan #2 (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			
8,300.0	7,276.6	8,344.9	7,368.2	30.4	27.2	-113.84	-158.3	-1,119.7	226.5	180.3	46.20	4.902			
8,400.0	7,275.9	8,444.9	7,367.1	30.3	27.3	-113.75	-258.3	-1,119.7	226.3	178.6	47.67	4.747			
8,500.0	7,275.2	8,544.9	7,365.9	30.4	27.5	-113.66	-358.3	-1,119.7	226.1	176.8	49.35	4.582			
8,600.0	7,274.4	8,644.9	7,364.8	30.6	27.9	-113.56	-458.3	-1,119.7	226.0	174.7	51.23	4.411			
8,700.0	7,273.7	8,744.9	7,363.6	31.1	28.7	-113.47	-558.3	-1,119.7	225.8	172.5	53.28	4.238			
8,800.0	7,273.0	8,844.9	7,362.5	31.7	29.7	-113.38	-658.3	-1,119.7	225.7	170.2	55.49	4.067			
8,900.0	7,272.2	8,944.9	7,361.4	32.6	30.8	-113.28	-758.2	-1,119.7	225.5	167.7	57.84	3.899			
9,000.0	7,271.5	9,044.9	7,360.2	33.6	32.0	-113.19	-858.2	-1,119.7	225.3	165.0	60.30	3.737			
9,100.0	7,270.8	9,144.9	7,359.1	34.8	33.4	-113.10	-958.2	-1,119.7	225.2	162.3	62.88	3.581			
9,200.0	7,270.0	9,244.9	7,358.0	36.0	34.8	-113.00	-1,058.2	-1,119.7	225.0	159.5	65.55	3.433			
9,300.0	7,269.3	9,344.9	7,356.8	37.4	36.2	-112.91	-1,158.2	-1,119.7	224.9	156.6	68.31	3.292			
9,400.0	7,268.6	9,444.9	7,355.7	38.8	37.7	-112.81	-1,258.2	-1,119.7	224.7	153.6	71.15	3.158			
9,500.0	7,267.8	9,544.9	7,354.6	40.2	39.2	-112.72	-1,358.2	-1,119.7	224.6	150.5	74.06	3.032			
9,600.0	7,267.1	9,644.9	7,353.4	41.7	40.8	-112.62	-1,458.2	-1,119.7	224.4	147.4	77.02	2.914			
9,700.0	7,266.4	9,744.9	7,352.3	43.2	42.3	-112.53	-1,558.2	-1,119.7	224.3	144.2	80.04	2.802			
9,800.0	7,265.7	9,844.9	7,351.2	44.8	44.0	-112.44	-1,658.2	-1,119.7	224.1	141.0	83.11	2.696			
9,900.0	7,264.9	9,944.9	7,350.0	46.4	45.6	-112.34	-1,758.2	-1,119.7	223.9	137.7	86.23	2.597			
10,000.0	7,264.2	10,044.9	7,348.9	48.0	47.2	-112.25	-1,858.2	-1,119.7	223.8	134.4	89.39	2.504			
10,100.0	7,263.5	10,144.9	7,347.8	49.6	48.9	-112.15	-1,958.2	-1,119.7	223.6	131.1	92.58	2.416			
10,200.0	7,262.7	10,244.9	7,346.6	51.3	50.6	-112.05	-2,058.1	-1,119.7	223.5	127.7	95.80	2.333			
10,300.0	7,262.0	10,344.9	7,345.5	53.0	52.3	-111.96	-2,158.1	-1,119.7	223.3	124.3	99.06	2.255			
10,400.0	7,261.3	10,444.9	7,344.4	54.7	54.0	-111.86	-2,258.1	-1,119.7	223.2	120.8	102.35	2.181			
10,500.0	7,260.5	10,544.9	7,343.2	56.4	55.7	-111.77	-2,358.1	-1,119.7	223.0	117.4	105.66	2.111			
10,600.0	7,259.8	10,644.9	7,342.1	58.1	57.5	-111.67	-2,458.1	-1,119.7	222.9	113.9	108.99	2.045			
10,700.0	7,259.1	10,744.9	7,341.0	59.8	59.2	-111.58	-2,558.1	-1,119.7	222.7	110.4	112.35	1.983			
10,800.0	7,258.3	10,844.9	7,339.8	61.5	61.0	-111.48	-2,658.1	-1,119.7	222.6	106.9	115.73	1.923			
10,900.0	7,257.6	10,944.9	7,338.7	63.3	62.7	-111.38	-2,758.1	-1,119.7	222.5	103.3	119.12	1.867			
11,000.0	7,256.9	11,044.9	7,337.6	65.0	64.5	-111.29	-2,858.1	-1,119.7	222.3	99.8	122.54	1.814			
11,100.0	7,256.1	11,144.9	7,336.4	66.8	66.3	-111.19	-2,958.1	-1,119.7	222.2	96.2	125.97	1.764			
11,200.0	7,255.4	11,244.9	7,335.3	68.5	68.1	-111.09	-3,058.1	-1,119.7	222.0	92.6	129.42	1.715			
11,300.0	7,254.7	11,344.9	7,334.2	70.3	69.8	-111.00	-3,158.1	-1,119.7	221.9	89.0	132.88	1.670			
11,400.0	7,253.9	11,444.8	7,333.0	72.1	71.6	-110.90	-3,258.1	-1,119.7	221.7	85.4	136.36	1.626			
11,500.0	7,253.2	11,544.8	7,331.9	73.9	73.5	-110.80	-3,358.1	-1,119.7	221.6	81.7	139.84	1.585			
11,600.0	7,252.5	11,644.8	7,330.8	75.7	75.3	-110.71	-3,458.0	-1,119.7	221.4	78.1	143.35	1.545			
11,700.0	7,251.7	11,744.8	7,329.6	77.5	77.1	-110.61	-3,558.0	-1,119.7	221.3	74.4	146.86	1.507			
11,800.0	7,251.0	11,844.8	7,328.5	79.3	78.9	-110.51	-3,658.0	-1,119.7	221.2	70.8	150.38	1.471 Level 3			
11,900.0	7,250.3	11,944.8	7,327.3	81.1	80.7	-110.41	-3,758.0	-1,119.7	221.0	67.1	153.92	1.436 Level 3			
11,928.1	7,250.1	11,972.9	7,327.0	81.6	81.2	-110.39	-3,786.1	-1,119.7	221.0	66.1	154.91	1.426 Level 3			
11,935.1	7,250.0	11,975.4	7,327.0	81.7	81.3	-110.38	-3,788.6	-1,119.7	221.0	65.9	155.08	1.425 Level 3, SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	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	-125.89	-18.2	-25.2	31.1						
100.0	100.0	100.0	100.0	0.1	0.1	-125.89	-18.2	-25.2	31.1	30.9	0.22	138.330			
200.0	200.0	200.0	200.0	0.3	0.3	-125.89	-18.2	-25.2	31.1	30.4	0.67	46.110 CC, ES			
300.0	300.0	299.7	299.7	0.6	0.6	-123.68	-17.5	-26.3	31.6	30.5	1.12	28.218			
400.0	400.0	399.2	399.1	0.8	0.8	-117.51	-15.4	-29.5	33.3	31.7	1.57	21.240			
500.0	500.0	498.6	498.3	1.0	1.0	-55.86	-11.8	-35.0	36.2	34.2	2.02	17.956			
600.0	599.9	597.9	597.1	1.2	1.3	-49.95	-6.9	-42.5	39.6	37.1	2.47	16.024			
700.0	699.7	697.0	695.6	1.5	1.6	-45.14	-0.5	-52.2	43.4	40.5	2.94	14.763			
800.0	799.3	795.9	793.5	1.7	1.9	-41.24	7.2	-64.0	47.6	44.2	3.43	13.877			
900.0	898.6	894.8	890.9	2.0	2.2	-38.09	16.3	-77.9	51.9	48.0	3.93	13.213			
1,000.0	997.5	993.5	987.8	2.3	2.6	-35.53	26.7	-93.9	56.5	52.0	4.45	12.683			
1,100.0	1,096.1	1,092.1	1,084.0	2.6	3.0	-33.45	38.6	-112.0	61.1	56.1	4.99	12.239			
1,200.0	1,194.2	1,190.5	1,179.5	3.0	3.5	-31.76	51.7	-132.1	65.9	60.3	5.56	11.849			
1,300.0	1,291.7	1,288.9	1,274.2	3.4	4.0	-30.38	66.2	-154.2	70.6	64.5	6.15	11.495			
1,400.0	1,388.6	1,387.1	1,368.1	3.9	4.6	-29.26	82.0	-178.3	75.5	68.7	6.76	11.163			
1,500.0	1,484.9	1,485.3	1,461.2	4.4	5.2	-28.35	99.1	-204.4	80.3	72.9	7.41	10.849			
1,600.0	1,580.4	1,585.2	1,555.6	5.0	5.9	-28.05	117.0	-231.9	83.9	75.8	8.10	10.354			
1,621.7	1,600.9	1,606.9	1,576.0	5.1	6.0	-28.09	120.9	-237.8	84.4	76.1	8.26	10.210			
1,700.0	1,675.3	1,685.2	1,650.0	5.6	6.5	-28.35	135.0	-259.3	85.9	77.0	8.87	9.678			
1,800.0	1,770.2	1,785.2	1,744.4	6.2	7.2	-28.66	153.0	-286.8	87.8	78.1	9.66	9.082			
1,900.0	1,865.2	1,885.2	1,838.9	6.8	7.9	-28.96	171.0	-314.3	89.7	79.2	10.47	8.564			
2,000.0	1,960.1	1,985.1	1,933.3	7.4	8.5	-29.24	189.0	-341.8	91.6	80.3	11.29	8.111			
2,100.0	2,055.0	2,085.1	2,027.7	8.1	9.2	-29.52	206.9	-369.2	93.5	81.4	12.12	7.712			
2,200.0	2,150.0	2,185.1	2,122.2	8.7	9.9	-29.78	224.9	-396.7	95.4	82.5	12.97	7.359			
2,300.0	2,244.9	2,285.1	2,216.6	9.3	10.6	-30.03	242.9	-424.2	97.3	83.5	13.82	7.045			
2,400.0	2,339.8	2,385.1	2,311.1	10.0	11.2	-30.28	260.9	-451.6	99.3	84.6	14.68	6.763			
2,500.0	2,434.7	2,485.0	2,405.5	10.6	11.9	-30.51	278.9	-479.1	101.2	85.6	15.54	6.510			
2,600.0	2,529.7	2,585.0	2,499.9	11.3	12.6	-30.74	296.8	-506.6	103.1	86.7	16.42	6.280			
2,700.0	2,624.6	2,685.0	2,594.4	11.9	13.3	-30.95	314.8	-534.1	105.0	87.7	17.30	6.072			
2,800.0	2,719.5	2,785.0	2,688.8	12.6	14.0	-31.16	332.8	-561.5	107.0	88.8	18.18	5.883			
2,900.0	2,814.5	2,885.0	2,783.2	13.2	14.7	-31.36	350.8	-589.0	108.9	89.8	19.07	5.709			
3,000.0	2,909.4	2,984.9	2,877.7	13.9	15.3	-31.56	368.8	-616.5	110.8	90.9	19.97	5.550			
3,100.0	3,004.3	3,084.9	2,972.1	14.5	16.0	-31.74	386.7	-643.9	112.7	91.9	20.87	5.404			
3,200.0	3,099.2	3,184.9	3,066.5	15.2	16.7	-31.93	404.7	-671.4	114.7	92.9	21.77	5.268			
3,300.0	3,194.2	3,284.9	3,161.0	15.8	17.4	-32.10	422.7	-698.9	116.6	93.9	22.68	5.143			
3,400.0	3,289.1	3,384.9	3,255.4	16.5	18.1	-32.27	440.7	-726.4	118.5	95.0	23.59	5.026			
3,500.0	3,384.0	3,484.9	3,349.8	17.2	18.8	-32.44	458.7	-753.8	120.5	96.0	24.50	4.917			
3,600.0	3,479.0	3,584.8	3,444.3	17.8	19.5	-32.60	476.6	-781.3	122.4	97.0	25.42	4.816			
3,700.0	3,573.9	3,684.8	3,538.7	18.5	20.2	-32.75	494.6	-808.8	124.4	98.0	26.34	4.721			
3,800.0	3,668.8	3,784.8	3,633.2	19.1	20.8	-32.90	512.6	-836.2	126.3	99.0	27.26	4.632			
3,900.0	3,763.7	3,884.8	3,727.6	19.8	21.5	-33.04	530.6	-863.7	128.2	100.0	28.19	4.549			
4,000.0	3,858.7	3,984.8	3,822.0	20.4	22.2	-33.18	548.6	-891.2	130.2	101.1	29.12	4.471			
4,100.0	3,953.6	4,084.7	3,916.5	21.1	22.9	-33.32	566.5	-918.7	132.1	102.1	30.05	4.397			
4,200.0	4,048.5	4,184.7	4,010.9	21.7	23.6	-33.45	584.5	-946.1	134.1	103.1	30.98	4.327			
4,300.0	4,143.5	4,284.7	4,105.3	22.4	24.3	-33.58	602.5	-973.6	136.0	104.1	31.92	4.261			
4,400.0	4,238.4	4,384.7	4,199.8	23.1	25.0	-33.71	620.5	-1,001.1	137.9	105.1	32.85	4.198			
4,500.0	4,333.3	4,484.7	4,294.2	23.7	25.7	-33.83	638.5	-1,028.5	139.9	106.1	33.79	4.139			
4,600.0	4,428.2	4,584.6	4,388.6	24.4	26.4	-33.95	656.4	-1,056.0	141.8	107.1	34.73	4.083			
4,700.0	4,523.2	4,684.6	4,483.1	25.0	27.0	-34.06	674.4	-1,083.5	143.8	108.1	35.68	4.030			
4,800.0	4,618.1	4,784.6	4,577.5	25.7	27.7	-34.17	692.4	-1,111.0	145.7	109.1	36.62	3.979			
4,900.0	4,713.0	4,884.6	4,672.0	26.4	28.4	-34.28	710.4	-1,138.4	147.7	110.1	37.57	3.930			

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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft	
Survey Program:		0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,000.0	4,808.0	4,984.6	4,766.4	27.0	29.1	-34.39	728.4	-1,165.9	149.6	111.1	38.52	3.884			
5,100.0	4,902.9	5,084.5	4,860.8	27.7	29.8	-34.49	746.3	-1,193.4	151.5	112.1	39.47	3.840			
5,200.0	4,997.8	5,184.5	4,955.3	28.3	30.5	-34.59	764.3	-1,220.9	153.5	113.1	40.42	3.798			
5,300.0	5,092.7	5,284.5	5,049.7	29.0	31.2	-34.69	782.3	-1,248.3	155.4	114.1	41.37	3.757			
5,400.0	5,187.7	5,384.5	5,144.1	29.6	31.9	-34.79	800.3	-1,275.8	157.4	115.1	42.32	3.719			
5,500.0	5,282.6	5,484.5	5,238.6	30.3	32.6	-34.88	818.3	-1,303.3	159.3	116.1	43.28	3.682			
5,600.0	5,377.5	5,584.4	5,333.0	31.0	33.3	-34.97	836.2	-1,330.7	161.3	117.1	44.24	3.646			
5,700.0	5,472.5	5,684.4	5,427.4	31.6	33.9	-35.06	854.2	-1,358.2	163.2	118.0	45.19	3.612			
5,728.3	5,499.3	5,712.7	5,454.1	31.8	34.1	-35.09	859.3	-1,366.0	163.8	118.3	45.46	3.603			
5,800.0	5,567.7	5,787.8	5,525.3	32.2	34.6	-35.14	872.4	-1,385.9	165.2	119.1	46.10	3.585			
5,900.0	5,663.8	5,892.9	5,626.0	32.7	35.1	-35.21	888.9	-1,411.2	167.1	120.2	46.84	3.567			
6,000.0	5,760.9	5,998.0	5,727.7	33.1	35.6	-35.26	903.5	-1,433.5	168.7	121.2	47.49	3.552			
6,100.0	5,858.8	6,103.2	5,830.4	33.4	35.9	-35.31	916.0	-1,452.5	170.1	122.0	48.05	3.540			
6,200.0	5,957.3	6,208.5	5,933.9	33.7	36.3	-35.35	926.4	-1,468.5	171.2	122.7	48.53	3.529			
6,300.0	6,056.3	6,313.8	6,038.1	34.0	36.6	-35.38	934.7	-1,481.2	172.2	123.3	48.92	3.520			
6,400.0	6,155.8	6,419.1	6,142.8	34.2	36.8	-35.40	940.9	-1,490.7	172.9	123.6	49.22	3.512			
6,500.0	6,255.6	6,524.4	6,247.8	34.4	37.0	-35.42	945.1	-1,497.0	173.3	123.9	49.44	3.506			
6,600.0	6,355.5	6,629.7	6,353.1	34.5	37.1	-35.43	947.1	-1,500.1	173.5	124.0	49.58	3.500			
6,644.5	6,400.0	6,676.6	6,400.0	34.5	37.1	-89.91	947.3	-1,500.4	173.6	124.0	49.62	3.498			
6,700.0	6,455.5	6,732.1	6,455.5	34.6	37.2	-89.91	947.3	-1,500.4	173.6	123.8	49.74	3.489			
6,759.7	6,515.2	6,791.8	6,515.2	34.6	37.2	-89.91	947.3	-1,500.4	173.6	123.7	49.88	3.480			
6,760.7	6,516.2	6,792.8	6,516.2	34.6	37.2	90.09	947.3	-1,500.4	173.6	123.7	49.88	3.480			
6,800.0	6,555.5	6,832.1	6,555.5	34.6	37.2	90.44	947.3	-1,500.4	173.6	123.8	49.74	3.490			
6,850.0	6,605.3	6,881.9	6,605.3	34.7	37.3	91.84	947.3	-1,500.4	173.7	124.7	48.94	3.549			
6,900.0	6,654.7	6,931.3	6,654.7	34.6	37.3	94.25	947.3	-1,500.4	174.1	126.6	47.49	3.666			
6,950.0	6,703.5	6,980.2	6,703.5	34.6	37.4	97.59	947.3	-1,500.4	175.2	129.7	45.49	3.852			
7,000.0	6,751.5	7,030.0	6,753.3	34.5	37.4	101.60	946.4	-1,500.4	177.5	134.3	43.15	4.113			
7,050.0	6,798.6	7,081.1	6,804.3	34.4	37.4	105.56	942.3	-1,500.4	180.7	139.7	40.94	4.413			
7,100.0	6,844.3	7,133.2	6,855.8	34.3	37.4	109.36	934.5	-1,500.4	184.7	145.8	38.94	4.744			
7,150.0	6,888.7	7,186.4	6,907.7	34.2	37.3	112.95	923.1	-1,500.4	189.5	152.4	37.14	5.102			
7,200.0	6,931.5	7,240.6	6,959.7	34.1	37.3	116.32	907.7	-1,500.4	194.9	159.4	35.53	5.486			
7,250.0	6,972.5	7,295.9	7,011.5	33.9	37.2	119.45	888.2	-1,500.4	200.8	166.8	34.06	5.896			
7,300.0	7,011.6	7,352.4	7,062.7	33.7	37.1	122.32	864.5	-1,500.4	207.1	174.4	32.71	6.332			
7,350.0	7,048.5	7,410.0	7,113.1	33.5	36.9	124.95	836.5	-1,500.4	213.6	182.2	31.42	6.799			
7,400.0	7,083.1	7,468.8	7,162.1	33.4	36.7	127.33	804.1	-1,500.4	220.2	190.0	30.18	7.296			
7,450.0	7,115.3	7,528.8	7,209.4	33.1	36.5	129.47	767.3	-1,500.4	226.8	197.8	28.98	7.824			
7,500.0	7,144.9	7,589.9	7,254.5	32.9	36.3	131.38	726.1	-1,500.4	233.2	205.3	27.83	8.378			
7,550.0	7,171.9	7,652.1	7,296.9	32.7	36.1	133.06	680.5	-1,500.4	239.2	212.5	26.75	8.945			
7,600.0	7,196.0	7,715.4	7,336.1	32.5	35.8	134.53	630.8	-1,500.4	244.9	219.1	25.78	9.501			
7,650.0	7,217.2	7,779.8	7,371.5	32.3	35.6	135.79	577.2	-1,500.4	250.1	225.1	24.98	10.013			
7,700.0	7,235.4	7,845.0	7,402.7	32.1	35.3	136.84	519.9	-1,500.4	254.7	230.3	24.39	10.440			
7,750.0	7,250.5	7,911.1	7,429.2	31.9	35.1	137.70	459.4	-1,500.4	258.6	234.5	24.09	10.731			
7,800.0	7,262.5	7,977.9	7,450.6	31.7	34.8	138.38	396.1	-1,500.4	261.7	237.6	24.12	10.851			
7,850.0	7,271.3	8,045.2	7,466.5	31.5	34.5	138.86	330.8	-1,500.4	264.0	239.5	24.48	10.785			
7,900.0	7,276.8	8,112.8	7,476.6	31.3	34.3	139.17	263.9	-1,500.4	265.5	240.3	25.20	10.538			
7,950.0	7,279.1	8,180.7	7,480.7	31.1	34.1	139.29	196.1	-1,500.4	266.1	239.9	26.22	10.148			
7,965.3	7,279.1	8,199.2	7,480.8	31.1	34.0	139.29	177.7	-1,500.4	266.1	239.5	26.59	10.010			
8,000.0	7,278.8	8,233.9	7,480.9	31.0	33.9	139.33	143.0	-1,500.4	266.4	239.7	26.63	10.003			
8,100.0	7,278.1	8,333.9	7,481.0	30.7	33.6	139.45	43.0	-1,500.4	267.0	240.1	26.89	9.929			
8,200.0	7,277.4	8,433.9	7,481.1	30.5	33.4	139.57	-57.0	-1,500.4	267.6	240.2	27.43	9.758			

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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9E-403 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,300.0	7,276.6	8,533.9	7,481.2	30.4	33.3	139.68	-157.0	-1,500.4	268.3	240.0	28.21	9.508		
8,400.0	7,275.9	8,633.9	7,481.3	30.3	33.2	139.80	-257.0	-1,500.4	268.9	239.7	29.23	9.199		
8,500.0	7,275.2	8,733.9	7,481.4	30.4	33.2	139.91	-357.0	-1,500.4	269.5	239.1	30.46	8.850		
8,600.0	7,274.4	8,833.9	7,481.5	30.6	33.3	140.03	-457.0	-1,500.4	270.2	238.3	31.86	8.480		
8,700.0	7,273.7	8,933.9	7,481.6	31.1	33.6	140.14	-557.0	-1,500.4	270.8	237.4	33.42	8.104		
8,800.0	7,273.0	9,033.9	7,481.7	31.7	34.1	140.26	-657.0	-1,500.4	271.5	236.4	35.11	7.732		
8,900.0	7,272.2	9,133.9	7,481.8	32.6	34.7	140.37	-757.0	-1,500.4	272.1	235.2	36.91	7.372		
9,000.0	7,271.5	9,233.9	7,481.9	33.6	35.5	140.48	-857.0	-1,500.4	272.8	234.0	38.81	7.029		
9,100.0	7,270.8	9,333.9	7,482.0	34.8	36.5	140.59	-957.0	-1,500.4	273.4	232.6	40.78	6.704		
9,200.0	7,270.0	9,433.9	7,482.1	36.0	37.6	140.70	-1,057.0	-1,500.4	274.1	231.2	42.82	6.399		
9,300.0	7,269.3	9,533.9	7,482.2	37.4	38.8	140.81	-1,157.0	-1,500.4	274.7	229.8	44.92	6.115		
9,400.0	7,268.6	9,633.9	7,482.3	38.8	40.0	140.92	-1,257.0	-1,500.4	275.3	228.3	47.07	5.850		
9,500.0	7,267.8	9,733.9	7,482.4	40.2	41.4	141.03	-1,357.0	-1,500.4	276.0	226.7	49.26	5.603		
9,600.0	7,267.1	9,833.8	7,482.6	41.7	42.8	141.14	-1,457.0	-1,500.4	276.7	225.2	51.48	5.374		
9,700.0	7,266.4	9,933.8	7,482.7	43.2	44.3	141.25	-1,557.0	-1,500.4	277.3	223.6	53.73	5.161		
9,800.0	7,265.7	10,033.8	7,482.8	44.8	45.8	141.36	-1,657.0	-1,500.4	278.0	222.0	56.00	4.964		
9,900.0	7,264.9	10,133.8	7,482.9	46.4	47.3	141.47	-1,757.0	-1,500.4	278.6	220.3	58.29	4.780		
10,000.0	7,264.2	10,233.8	7,483.0	48.0	48.9	141.58	-1,857.0	-1,500.4	279.3	218.7	60.60	4.608		
10,100.0	7,263.5	10,333.8	7,483.1	49.6	50.5	141.68	-1,957.0	-1,500.4	279.9	217.0	62.92	4.449		
10,200.0	7,262.7	10,433.8	7,483.2	51.3	52.1	141.79	-2,057.0	-1,500.4	280.6	215.3	65.26	4.300		
10,300.0	7,262.0	10,533.8	7,483.3	53.0	53.7	141.89	-2,157.0	-1,500.4	281.2	213.6	67.60	4.160		
10,400.0	7,261.3	10,633.8	7,483.4	54.7	55.4	142.00	-2,257.0	-1,500.4	281.9	211.9	69.95	4.030		
10,500.0	7,260.5	10,733.8	7,483.5	56.4	57.0	142.10	-2,357.0	-1,500.4	282.6	210.3	72.31	3.908		
10,600.0	7,259.8	10,833.8	7,483.6	58.1	58.7	142.21	-2,457.0	-1,500.4	283.2	208.6	74.67	3.793		
10,700.0	7,259.1	10,933.8	7,483.7	59.8	60.4	142.31	-2,557.0	-1,500.4	283.9	206.8	77.03	3.685		
10,800.0	7,258.3	11,033.8	7,483.8	61.5	62.1	142.41	-2,656.9	-1,500.4	284.5	205.1	79.40	3.584		
10,900.0	7,257.6	11,133.8	7,483.9	63.3	63.9	142.52	-2,756.9	-1,500.4	285.2	203.4	81.77	3.488		
11,000.0	7,256.9	11,233.8	7,484.0	65.0	65.6	142.62	-2,856.9	-1,500.4	285.9	201.7	84.14	3.398		
11,100.0	7,256.1	11,333.8	7,484.1	66.8	67.3	142.72	-2,956.9	-1,500.4	286.5	200.0	86.51	3.312		
11,200.0	7,255.4	11,433.8	7,484.2	68.5	69.1	142.82	-3,056.9	-1,500.4	287.2	198.3	88.88	3.231		
11,300.0	7,254.7	11,533.8	7,484.3	70.3	70.8	142.92	-3,156.9	-1,500.4	287.9	196.6	91.25	3.155		
11,400.0	7,253.9	11,633.8	7,484.4	72.1	72.6	143.02	-3,256.9	-1,500.4	288.5	194.9	93.62	3.082		
11,500.0	7,253.2	11,733.8	7,484.5	73.9	74.4	143.12	-3,356.9	-1,500.4	289.2	193.2	95.98	3.013		
11,600.0	7,252.5	11,833.8	7,484.6	75.7	76.1	143.22	-3,456.9	-1,500.4	289.9	191.5	98.34	2.948		
11,700.0	7,251.7	11,933.8	7,484.8	77.5	77.9	143.32	-3,556.9	-1,500.4	290.6	189.9	100.70	2.885		
11,800.0	7,251.0	12,033.8	7,484.9	79.3	79.7	143.42	-3,656.9	-1,500.4	291.2	188.2	103.06	2.826		
11,900.0	7,250.3	12,133.8	7,485.0	81.1	81.5	143.52	-3,756.9	-1,500.4	291.9	186.5	105.41	2.769		
11,935.1	7,250.0	12,168.8	7,485.0	81.7	82.1	143.55	-3,792.0	-1,500.4	292.1	185.9	106.24	2.750 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (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	49.90	40.1	47.6	62.2					
100.0	100.0	100.0	100.0	0.1	0.1	49.90	40.1	47.6	62.2	62.0	0.22	276.745		
200.0	200.0	200.0	200.0	0.3	0.3	49.90	40.1	47.6	62.2	61.5	0.67	92.248		
300.0	300.0	300.0	300.0	0.6	0.6	49.90	40.1	47.6	62.2	61.1	1.12	55.349		
400.0	400.0	400.0	400.0	0.8	0.8	49.90	40.1	47.6	62.2	60.6	1.57	39.535 CC		
500.0	500.0	500.0	500.0	1.0	1.0	105.54	40.1	47.6	62.5	60.5	2.02	30.994 ES		
600.0	599.9	599.9	599.9	1.2	1.2	108.92	40.1	47.6	63.7	61.2	2.46	25.872		
700.0	699.7	699.7	699.7	1.5	1.5	114.25	40.1	47.6	66.1	63.2	2.92	22.680		
800.0	799.3	799.3	799.3	1.7	1.7	120.98	40.1	47.6	70.4	67.0	3.38	20.836		
900.0	898.6	899.2	899.2	2.0	1.9	127.86	40.7	47.0	76.7	72.9	3.84	19.953		
1,000.0	997.5	999.2	999.2	2.3	2.1	133.91	42.6	45.2	84.8	80.5	4.31	19.666		
1,100.0	1,096.1	1,099.3	1,099.2	2.6	2.3	139.07	45.7	42.1	94.6	89.8	4.79	19.761		
1,200.0	1,194.2	1,199.6	1,199.2	3.0	2.6	143.38	50.1	37.9	105.9	100.7	5.27	20.106		
1,300.0	1,291.7	1,299.9	1,299.3	3.4	2.8	146.94	55.7	32.4	118.7	112.9	5.76	20.614		
1,400.0	1,388.6	1,400.3	1,399.2	3.9	3.1	149.88	62.6	25.7	132.7	126.4	6.25	21.221		
1,500.0	1,484.9	1,500.9	1,499.2	4.4	3.3	152.29	70.8	17.7	147.9	141.2	6.76	21.887		
1,600.0	1,580.4	1,601.6	1,599.0	5.0	3.6	154.28	80.2	8.6	164.3	157.0	7.28	22.581		
1,621.7	1,600.9	1,623.4	1,620.6	5.1	3.7	154.66	82.4	6.4	168.0	160.6	7.39	22.729		
1,700.0	1,675.3	1,702.6	1,698.9	5.6	3.9	155.90	90.9	-1.9	181.0	173.2	7.82	23.132		
1,800.0	1,770.2	1,804.1	1,799.0	6.2	4.2	156.99	103.0	-13.6	196.4	188.0	8.40	23.387		
1,900.0	1,865.2	1,906.2	1,899.3	6.8	4.6	157.66	116.4	-26.6	210.4	201.4	9.00	23.394		
2,000.0	1,960.1	2,008.7	1,999.7	7.4	5.0	158.00	131.1	-40.9	223.0	213.4	9.62	23.187		
2,100.0	2,055.0	2,111.5	2,100.1	8.1	5.4	158.06	147.2	-56.6	234.0	223.7	10.26	22.796		
2,200.0	2,150.0	2,214.7	2,200.4	8.7	5.8	157.89	164.7	-73.5	243.5	232.5	10.94	22.249		
2,300.0	2,244.9	2,318.2	2,300.5	9.3	6.3	157.50	183.5	-91.8	251.5	239.8	11.66	21.567		
2,400.0	2,339.8	2,421.8	2,400.2	10.0	6.8	156.91	203.6	-111.3	257.9	245.5	12.42	20.774		
2,500.0	2,434.7	2,523.3	2,497.5	10.6	7.3	156.18	224.3	-131.5	263.2	250.0	13.21	19.926		
2,600.0	2,529.7	2,623.1	2,593.1	11.3	7.9	155.46	244.8	-151.4	268.4	254.3	14.02	19.144		
2,700.0	2,624.6	2,722.9	2,688.8	11.9	8.4	154.78	265.3	-171.4	273.6	258.7	14.85	18.426		
2,800.0	2,719.5	2,822.7	2,784.4	12.6	9.0	154.12	285.8	-191.3	278.8	263.1	15.69	17.767		
2,900.0	2,814.5	2,922.5	2,880.0	13.2	9.5	153.49	306.4	-211.3	284.1	267.5	16.55	17.160		
3,000.0	2,909.4	3,022.3	2,975.6	13.9	10.1	152.88	326.9	-231.2	289.4	271.9	17.43	16.601		
3,100.0	3,004.3	3,122.2	3,071.3	14.5	10.6	152.29	347.4	-251.1	294.7	276.4	18.32	16.085		
3,200.0	3,099.2	3,222.0	3,166.9	15.2	11.2	151.72	367.9	-271.1	300.1	280.8	19.23	15.607		
3,300.0	3,194.2	3,321.8	3,262.5	15.8	11.8	151.17	388.4	-291.0	305.5	285.3	20.14	15.165		
3,400.0	3,289.1	3,421.6	3,358.1	16.5	12.3	150.64	408.9	-311.0	310.9	289.8	21.07	14.755		
3,500.0	3,384.0	3,521.4	3,453.7	17.2	12.9	150.13	429.4	-330.9	316.3	294.3	22.01	14.374		
3,600.0	3,479.0	3,621.2	3,549.4	17.8	13.5	149.64	450.0	-350.8	321.8	298.8	22.96	14.019		
3,700.0	3,573.9	3,721.0	3,645.0	18.5	14.1	149.16	470.5	-370.8	327.3	303.4	23.91	13.688		
3,800.0	3,668.8	3,820.8	3,740.6	19.1	14.7	148.70	491.0	-390.7	332.8	307.9	24.88	13.378		
3,900.0	3,763.7	3,920.7	3,836.2	19.8	15.2	148.25	511.5	-410.7	338.4	312.5	25.85	13.088		
4,000.0	3,858.7	4,020.5	3,931.9	20.4	15.8	147.82	532.0	-430.6	343.9	317.1	26.83	12.817		
4,100.0	3,953.6	4,120.3	4,027.5	21.1	16.4	147.40	552.5	-450.5	349.5	321.7	27.82	12.562		
4,200.0	4,048.5	4,220.1	4,123.1	21.7	17.0	147.00	573.0	-470.5	355.1	326.3	28.81	12.323		
4,300.0	4,143.5	4,319.9	4,218.7	22.4	17.6	146.61	593.6	-490.4	360.7	330.9	29.82	12.097		
4,400.0	4,238.4	4,419.7	4,314.4	23.1	18.2	146.22	614.1	-510.4	366.3	335.5	30.82	11.885		
4,500.0	4,333.3	4,519.5	4,410.0	23.7	18.8	145.86	634.6	-530.3	372.0	340.1	31.83	11.684		
4,600.0	4,428.2	4,619.3	4,505.6	24.4	19.3	145.50	655.1	-550.2	377.6	344.8	32.85	11.494		
4,700.0	4,523.2	4,719.2	4,601.2	25.0	19.9	145.15	675.6	-570.2	383.3	349.4	33.87	11.315		
4,800.0	4,618.1	4,819.0	4,696.9	25.7	20.5	144.81	696.1	-590.1	389.0	354.1	34.90	11.145		
4,900.0	4,713.0	4,918.8	4,792.5	26.4	21.1	144.49	716.6	-610.1	394.7	358.7	35.93	10.983		

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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft
Survey Program:		0-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,808.0	5,018.6	4,888.1	27.0	21.7	144.17	737.1	-630.0	400.4	363.4	36.97	10.830		
5,100.0	4,902.9	5,118.4	4,983.7	27.7	22.3	143.86	757.7	-649.9	406.1	368.1	38.01	10.685		
5,200.0	4,997.8	5,218.2	5,079.4	28.3	22.9	143.56	778.2	-669.9	411.8	372.8	39.05	10.546		
5,300.0	5,092.7	5,318.0	5,175.0	29.0	23.5	143.27	798.7	-689.8	417.6	377.5	40.10	10.414		
5,400.0	5,187.7	5,417.8	5,270.6	29.6	24.1	142.98	819.2	-709.8	423.3	382.2	41.15	10.288		
5,500.0	5,282.6	5,517.7	5,366.2	30.3	24.7	142.71	839.7	-729.7	429.1	386.9	42.20	10.168		
5,600.0	5,377.5	5,617.5	5,461.9	31.0	25.2	142.44	860.2	-749.6	434.9	391.6	43.26	10.053		
5,700.0	5,472.5	5,709.6	5,550.4	31.6	25.7	142.29	878.5	-767.4	441.4	397.2	44.18	9.990		
5,728.3	5,499.3	5,735.1	5,575.0	31.8	25.8	142.29	883.2	-772.0	443.6	399.2	44.40	9.990		
5,800.0	5,567.7	5,800.0	5,638.0	32.2	26.1	142.42	894.5	-782.9	449.3	404.4	44.91	10.003		
5,900.0	5,663.8	5,889.9	5,725.8	32.7	26.4	142.60	908.4	-796.4	456.6	411.1	45.51	10.034		
6,000.0	5,760.9	5,979.9	5,814.2	33.1	26.7	142.78	920.3	-808.0	463.3	417.3	46.02	10.067		
6,100.0	5,858.8	6,069.7	5,903.0	33.4	27.0	142.98	930.2	-817.7	469.4	422.9	46.45	10.105		
6,200.0	5,957.3	6,159.5	5,992.1	33.7	27.2	143.19	938.2	-825.4	474.8	428.0	46.80	10.146		
6,300.0	6,056.3	6,249.2	6,081.4	34.0	27.4	143.41	944.1	-831.1	479.6	432.5	47.06	10.191		
6,400.0	6,155.8	6,338.8	6,170.8	34.2	27.5	143.64	948.0	-834.9	483.7	436.4	47.24	10.239		
6,500.0	6,255.6	6,428.2	6,260.2	34.4	27.7	143.88	949.9	-836.8	487.1	439.8	47.34	10.290		
6,600.0	6,355.5	6,523.5	6,355.5	34.5	27.8	144.10	950.1	-837.0	489.6	442.2	47.39	10.331		
6,644.5	6,400.0	6,568.0	6,400.0	34.5	27.8	89.64	950.1	-837.0	489.9	442.4	47.44	10.327		
6,700.0	6,455.5	6,623.5	6,455.5	34.6	27.9	89.64	950.1	-837.0	489.9	442.3	47.57	10.298		
6,759.7	6,515.2	6,683.2	6,515.2	34.6	27.9	89.64	950.1	-837.0	489.9	442.1	47.72	10.266		
6,800.0	6,555.5	6,723.7	6,555.6	34.6	28.0	-90.36	949.0	-837.0	489.9	442.1	47.78	10.253		
6,850.0	6,605.3	6,773.9	6,605.6	34.7	28.0	-90.35	944.6	-837.0	489.9	442.1	47.79	10.250		
6,900.0	6,654.7	6,824.1	6,655.2	34.6	27.9	-90.34	937.0	-837.0	489.9	442.1	47.73	10.262		
6,950.0	6,703.5	6,874.3	6,704.2	34.6	27.9	-90.34	926.2	-837.0	489.9	442.3	47.61	10.290		
7,000.0	6,751.5	6,924.4	6,752.4	34.5	27.8	-90.33	912.2	-837.0	489.9	442.4	47.41	10.332		
7,050.0	6,798.6	6,974.6	6,799.6	34.4	27.7	-90.32	895.0	-837.0	489.9	442.7	47.16	10.388		
7,100.0	6,844.3	7,024.8	6,845.5	34.3	27.6	-90.30	874.8	-837.0	489.9	443.0	46.85	10.457		
7,150.0	6,888.7	7,075.0	6,889.9	34.2	27.4	-90.29	851.6	-837.0	489.9	443.4	46.49	10.537		
7,200.0	6,931.5	7,125.1	6,932.8	34.1	27.3	-90.27	825.5	-837.0	489.9	443.8	46.09	10.629		
7,250.0	6,972.5	7,175.3	6,973.8	33.9	27.1	-90.26	796.7	-837.0	489.9	444.2	45.65	10.730		
7,300.0	7,011.6	7,225.4	7,012.9	33.7	26.9	-90.24	765.3	-837.0	489.9	444.7	45.20	10.839		
7,350.0	7,048.5	7,275.5	7,049.8	33.5	26.7	-90.22	731.4	-837.0	489.9	445.1	44.72	10.953		
7,400.0	7,083.1	7,325.7	7,084.4	33.4	26.5	-90.20	695.2	-837.0	489.9	445.6	44.24	11.072		
7,450.0	7,115.3	7,375.8	7,116.5	33.1	26.2	-90.18	656.7	-837.0	489.9	446.1	43.77	11.193		
7,500.0	7,144.9	7,425.9	7,146.1	32.9	26.0	-90.16	616.3	-837.0	489.9	446.5	43.30	11.312		
7,550.0	7,171.9	7,475.9	7,172.9	32.7	25.8	-90.14	574.0	-837.0	489.9	447.0	42.87	11.427		
7,600.0	7,196.0	7,526.0	7,196.9	32.5	25.5	-90.12	530.1	-837.0	489.9	447.4	42.46	11.535		
7,650.0	7,217.2	7,576.1	7,218.0	32.3	25.3	-90.10	484.7	-837.0	489.9	447.7	42.11	11.633		
7,700.0	7,235.4	7,626.1	7,236.0	32.1	25.1	-90.07	438.0	-837.0	489.9	448.0	41.80	11.718		
7,750.0	7,250.5	7,676.2	7,250.9	31.9	24.8	-90.05	390.2	-837.0	489.9	448.3	41.56	11.786		
7,800.0	7,262.5	7,726.2	7,262.7	31.7	24.6	-90.03	341.6	-837.0	489.9	448.5	41.39	11.836		
7,850.0	7,271.3	7,776.2	7,271.3	31.5	24.4	-90.00	292.4	-837.0	489.9	448.6	41.28	11.866		
7,855.3	7,272.0	7,781.5	7,272.0	31.5	24.4	-90.00	287.1	-837.0	489.9	448.6	41.28	11.867		
7,900.0	7,276.8	7,826.2	7,276.6	31.3	24.2	-89.98	242.7	-837.0	489.9	448.6	41.26	11.874		
7,950.0	7,279.1	7,876.2	7,278.7	31.1	24.0	-89.96	192.7	-837.0	489.9	448.5	41.30	11.860		
7,965.3	7,279.1	7,891.4	7,278.7	31.1	24.0	-89.95	177.5	-837.0	489.9	448.5	41.33	11.851		
8,000.0	7,278.8	7,926.2	7,278.5	31.0	23.8	-89.96	142.7	-837.0	489.9	448.4	41.45	11.817		
8,100.0	7,278.1	8,026.2	7,278.0	30.7	23.5	-89.99	42.7	-837.0	489.9	447.9	41.99	11.666		
8,128.5	7,277.9	8,054.6	7,277.9	30.6	23.4	-90.00	14.3	-837.0	489.9	447.6	42.23	11.601		

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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design														Offset Site Error:	0.0 ft
Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-243 - Wellbore #1 - Plan #2 (Offset Well Error:	0.0 ft
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
8,200.0	7,277.4	8,126.2	7,277.6	30.5	23.2	-90.02	-57.3	-837.0	489.9	447.0	42.86	11.428			
8,300.0	7,276.6	8,226.2	7,277.1	30.4	23.1	-90.05	-157.3	-837.0	489.9	445.8	44.05	11.119			
8,400.0	7,275.9	8,326.2	7,276.6	30.3	23.3	-90.08	-257.2	-837.0	489.9	444.3	45.54	10.757			
8,500.0	7,275.2	8,426.2	7,276.2	30.4	24.1	-90.11	-357.2	-837.0	489.9	442.6	47.29	10.359			
8,600.0	7,274.4	8,526.2	7,275.7	30.6	25.1	-90.14	-457.2	-837.0	489.9	440.6	49.27	9.942			
8,700.0	7,273.7	8,626.2	7,275.2	31.1	26.4	-90.18	-557.2	-837.0	489.9	438.4	51.47	9.518			
8,800.0	7,273.0	8,726.2	7,274.7	31.7	27.6	-90.21	-657.2	-837.0	489.9	436.0	53.84	9.098			
8,900.0	7,272.2	8,826.2	7,274.3	32.6	29.0	-90.24	-757.2	-837.0	489.9	433.5	56.38	8.688			
9,000.0	7,271.5	8,926.2	7,273.8	33.6	30.4	-90.27	-857.2	-837.0	489.9	430.8	59.06	8.294			
9,100.0	7,270.8	9,026.2	7,273.3	34.8	31.8	-90.30	-957.2	-837.0	489.9	428.0	61.86	7.918			
9,200.0	7,270.0	9,126.2	7,272.9	36.0	33.3	-90.33	-1,057.2	-837.0	489.9	425.1	64.77	7.563			
9,300.0	7,269.3	9,226.2	7,272.4	37.4	34.9	-90.36	-1,157.2	-837.0	489.9	422.1	67.77	7.229			
9,400.0	7,268.6	9,326.2	7,271.9	38.8	36.4	-90.39	-1,257.2	-837.0	489.9	419.0	70.85	6.914			
9,500.0	7,267.8	9,426.2	7,271.4	40.2	38.0	-90.42	-1,357.2	-837.0	489.9	415.9	74.00	6.620			
9,600.0	7,267.1	9,526.2	7,271.0	41.7	39.6	-90.45	-1,457.2	-837.0	489.9	412.7	77.21	6.345			
9,700.0	7,266.4	9,626.2	7,270.5	43.2	41.3	-90.48	-1,557.2	-837.0	489.9	409.4	80.47	6.087			
9,800.0	7,265.7	9,726.2	7,270.0	44.8	42.9	-90.51	-1,657.2	-837.0	489.9	406.1	83.79	5.846			
9,900.0	7,264.9	9,826.2	7,269.6	46.4	44.6	-90.54	-1,757.2	-837.0	489.9	402.7	87.15	5.621			
10,000.0	7,264.2	9,926.2	7,269.1	48.0	46.3	-90.57	-1,857.2	-837.0	489.9	399.3	90.54	5.411			
10,100.0	7,263.5	10,026.2	7,268.6	49.6	48.0	-90.60	-1,957.2	-837.0	489.9	395.9	93.97	5.213			
10,200.0	7,262.7	10,126.2	7,268.1	51.3	49.7	-90.63	-2,057.2	-837.0	489.9	392.5	97.43	5.028			
10,300.0	7,262.0	10,226.2	7,267.7	53.0	51.5	-90.66	-2,157.2	-837.0	489.9	389.0	100.91	4.854			
10,400.0	7,261.3	10,326.2	7,267.2	54.7	53.2	-90.70	-2,257.2	-837.0	489.9	385.5	104.42	4.691			
10,500.0	7,260.5	10,426.2	7,266.7	56.4	55.0	-90.73	-2,357.2	-837.0	489.9	381.9	107.96	4.538			
10,600.0	7,259.8	10,526.2	7,266.3	58.1	56.7	-90.76	-2,457.2	-837.0	489.9	378.4	111.51	4.393			
10,700.0	7,259.1	10,626.2	7,265.8	59.8	58.5	-90.79	-2,557.2	-837.0	489.9	374.8	115.08	4.257			
10,800.0	7,258.3	10,726.2	7,265.3	61.5	60.3	-90.82	-2,657.2	-837.0	489.9	371.2	118.67	4.128			
10,900.0	7,257.6	10,826.2	7,264.8	63.3	62.1	-90.85	-2,757.2	-837.0	489.9	367.6	122.27	4.007			
11,000.0	7,256.9	10,926.2	7,264.4	65.0	63.9	-90.88	-2,857.2	-837.0	489.9	364.0	125.88	3.892			
11,100.0	7,256.1	11,026.2	7,263.9	66.8	65.7	-90.91	-2,957.2	-837.0	489.9	360.4	129.51	3.783			
11,200.0	7,255.4	11,126.2	7,263.4	68.5	67.5	-90.94	-3,057.2	-837.0	489.9	356.8	133.15	3.679			
11,300.0	7,254.7	11,226.2	7,263.0	70.3	69.3	-90.97	-3,157.2	-837.0	489.9	353.1	136.80	3.581			
11,400.0	7,253.9	11,326.2	7,262.5	72.1	71.1	-91.00	-3,257.2	-837.0	489.9	349.5	140.46	3.488			
11,500.0	7,253.2	11,426.1	7,262.0	73.9	72.9	-91.03	-3,357.2	-837.0	489.9	345.8	144.12	3.399			
11,600.0	7,252.5	11,526.1	7,261.5	75.7	74.8	-91.06	-3,457.2	-837.0	489.9	342.1	147.80	3.315			
11,700.0	7,251.7	11,626.1	7,261.1	77.5	76.6	-91.09	-3,557.2	-837.0	489.9	338.5	151.49	3.234			
11,800.0	7,251.0	11,726.1	7,260.6	79.3	78.4	-91.12	-3,657.2	-837.0	489.9	334.8	155.18	3.157			
11,900.0	7,250.3	11,826.1	7,260.1	81.1	80.3	-91.15	-3,757.2	-837.0	490.0	331.1	158.87	3.084			
11,914.7	7,250.1	11,840.8	7,260.1	81.4	80.5	-91.16	-3,771.9	-837.0	490.0	330.5	159.42	3.073			
11,935.1	7,250.0	11,853.9	7,260.0	81.7	80.8	-91.16	-3,785.0	-837.0	490.0	330.0	160.04	3.062 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			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	50.21	58.3	70.0	91.1					
100.0	100.0	100.0	100.0	0.1	0.1	50.21	58.3	70.0	91.1	90.8	0.22	405.147		
200.0	200.0	200.0	200.0	0.3	0.3	50.21	58.3	70.0	91.1	90.4	0.67	135.049		
300.0	300.0	300.0	300.0	0.6	0.6	50.21	58.3	70.0	91.1	89.9	1.12	81.029		
400.0	400.0	400.0	400.0	0.8	0.8	50.21	58.3	70.0	91.1	89.5	1.57	57.878 CC		
500.0	500.0	500.0	500.0	1.0	1.0	105.48	58.3	70.0	91.4	89.4	2.02	45.298 ES		
600.0	599.9	599.9	599.9	1.2	1.2	107.80	58.3	70.0	92.5	90.1	2.46	37.578		
700.0	699.7	699.7	699.7	1.5	1.5	111.53	58.3	70.0	94.7	91.8	2.92	32.490		
800.0	799.3	799.3	799.3	1.7	1.7	116.43	58.3	70.0	98.5	95.1	3.38	29.128		
900.0	898.6	898.6	898.6	2.0	1.9	122.12	58.3	70.0	104.3	100.4	3.86	27.035		
1,000.0	997.5	997.5	997.5	2.3	2.1	128.18	58.3	70.0	112.6	108.2	4.34	25.943		
1,100.0	1,096.1	1,096.1	1,096.1	2.6	2.4	134.18	58.3	70.0	123.8	119.0	4.83	25.664		
1,200.0	1,194.2	1,194.2	1,194.2	3.0	2.6	139.80	58.3	70.0	138.3	132.9	5.31	26.043		
1,300.0	1,291.7	1,293.2	1,293.2	3.4	2.8	144.70	58.9	69.5	155.5	149.7	5.79	26.861		
1,400.0	1,388.6	1,392.5	1,392.4	3.9	3.0	148.61	60.9	68.1	174.7	168.4	6.26	27.891		
1,500.0	1,484.9	1,491.9	1,491.8	4.4	3.2	151.72	64.3	65.6	195.7	188.9	6.74	29.023		
1,600.0	1,580.4	1,591.4	1,591.1	5.0	3.5	154.20	69.1	62.1	218.2	211.0	7.23	30.194		
1,621.7	1,600.9	1,613.0	1,612.7	5.1	3.5	154.67	70.3	61.3	223.3	215.9	7.33	30.448		
1,700.0	1,675.3	1,691.3	1,690.7	5.6	3.7	156.21	75.3	57.6	241.4	233.7	7.74	31.201		
1,800.0	1,770.2	1,792.0	1,791.0	6.2	3.9	157.66	83.1	52.1	263.6	255.4	8.27	31.889		
1,900.0	1,865.2	1,893.4	1,891.7	6.8	4.2	158.64	92.3	45.4	284.6	275.8	8.81	32.302		
2,000.0	1,960.1	1,995.5	1,992.9	7.4	4.5	159.28	103.0	37.7	304.3	295.0	9.37	32.468		
2,100.0	2,055.0	2,098.1	2,094.5	8.1	4.7	159.64	115.2	28.8	322.7	312.8	9.96	32.417		
2,200.0	2,150.0	2,201.4	2,196.3	8.7	5.1	159.76	129.0	18.9	339.7	329.1	10.56	32.173		
2,300.0	2,244.9	2,305.1	2,298.2	9.3	5.4	159.68	144.4	7.8	355.3	344.1	11.19	31.759		
2,400.0	2,339.8	2,409.2	2,400.2	10.0	5.8	159.42	161.3	-4.5	369.5	357.7	11.85	31.194		
2,500.0	2,434.7	2,513.7	2,502.2	10.6	6.1	159.00	179.8	-17.8	382.3	369.8	12.54	30.498		
2,600.0	2,529.7	2,618.4	2,604.0	11.3	6.6	158.43	199.9	-32.3	393.7	380.5	13.26	29.690		
2,700.0	2,624.6	2,717.8	2,700.3	11.9	7.0	157.84	219.6	-46.6	404.5	390.5	14.00	28.894		
2,800.0	2,719.5	2,817.1	2,796.6	12.6	7.4	157.28	239.3	-60.8	415.3	400.5	14.75	28.151		
2,900.0	2,814.5	2,916.4	2,892.9	13.2	7.9	156.75	259.1	-75.1	426.1	410.6	15.52	27.458		
3,000.0	2,909.4	3,015.8	2,989.2	13.9	8.3	156.24	278.8	-89.4	437.0	420.7	16.30	26.811		
3,100.0	3,004.3	3,115.1	3,085.5	14.5	8.8	155.76	298.5	-103.6	447.9	430.8	17.09	26.206		
3,200.0	3,099.2	3,214.4	3,181.8	15.2	9.2	155.30	318.2	-117.9	458.8	440.9	17.89	25.641		
3,300.0	3,194.2	3,313.8	3,278.1	15.8	9.7	154.86	338.0	-132.1	469.8	451.1	18.71	25.113		
3,400.0	3,289.1	3,413.1	3,374.4	16.5	10.2	154.45	357.7	-146.4	480.8	461.2	19.53	24.619		
3,500.0	3,384.0	3,512.4	3,470.8	17.2	10.7	154.05	377.4	-160.6	491.8	471.4	20.36	24.157		
3,600.0	3,479.0	3,611.8	3,567.1	17.8	11.1	153.67	397.2	-174.9	502.8	481.6	21.20	23.722		
3,700.0	3,573.9	3,711.1	3,663.4	18.5	11.6	153.30	416.9	-189.1	513.9	491.8	22.04	23.315		
3,800.0	3,668.8	3,810.5	3,759.7	19.1	12.1	152.95	436.6	-203.4	524.9	502.0	22.89	22.932		
3,900.0	3,763.7	3,909.8	3,856.0	19.8	12.6	152.62	456.4	-217.6	536.0	512.3	23.75	22.572		
4,000.0	3,858.7	4,009.1	3,952.3	20.4	13.1	152.30	476.1	-231.9	547.1	522.5	24.61	22.232		
4,100.0	3,953.6	4,108.5	4,048.6	21.1	13.6	151.99	495.8	-246.2	558.3	532.8	25.48	21.912		
4,200.0	4,048.5	4,207.8	4,144.9	21.7	14.1	151.69	515.5	-260.4	569.4	543.1	26.35	21.609		
4,300.0	4,143.5	4,307.1	4,241.2	22.4	14.6	151.41	535.3	-274.7	580.6	553.3	27.23	21.323		
4,400.0	4,238.4	4,406.5	4,337.5	23.1	15.1	151.13	555.0	-288.9	591.7	563.6	28.11	21.052		
4,500.0	4,333.3	4,505.8	4,433.8	23.7	15.6	150.87	574.7	-303.2	602.9	573.9	28.99	20.795		
4,600.0	4,428.2	4,605.1	4,530.1	24.4	16.1	150.61	594.5	-317.4	614.1	584.2	29.88	20.552		
4,700.0	4,523.2	4,704.5	4,626.4	25.0	16.6	150.37	614.2	-331.7	625.3	594.5	30.77	20.321		
4,800.0	4,618.1	4,803.8	4,722.7	25.7	17.1	150.13	633.9	-345.9	636.5	604.9	31.67	20.101		
4,900.0	4,713.0	4,903.1	4,819.0	26.4	17.6	149.90	653.7	-360.2	647.8	615.2	32.57	19.891		

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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (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	
5,000.0	4,808.0	5,002.5	4,915.4	27.0	18.1	149.68	673.4	-374.4	659.0	625.5	33.47	19.692		
5,100.0	4,902.9	5,101.8	5,011.7	27.7	18.6	149.47	693.1	-388.7	670.2	635.9	34.37	19.502		
5,200.0	4,997.8	5,201.1	5,108.0	28.3	19.1	149.26	712.8	-403.0	681.5	646.2	35.27	19.320		
5,300.0	5,092.7	5,300.5	5,204.3	29.0	19.6	149.06	732.6	-417.2	692.8	656.6	36.18	19.147		
5,400.0	5,187.7	5,399.8	5,300.6	29.6	20.1	148.87	752.3	-431.5	704.0	666.9	37.09	18.981		
5,500.0	5,282.6	5,499.2	5,396.9	30.3	20.6	148.68	772.0	-445.7	715.3	677.3	38.00	18.822		
5,600.0	5,377.5	5,598.5	5,493.2	31.0	21.1	148.50	791.8	-460.0	726.6	687.7	38.92	18.670		
5,700.0	5,472.5	5,697.8	5,589.5	31.6	21.6	148.32	811.5	-474.2	737.9	698.1	39.83	18.524		
5,728.3	5,499.3	5,725.9	5,616.7	31.8	21.7	148.27	817.1	-478.3	741.1	701.0	40.09	18.484		
5,800.0	5,567.7	5,797.2	5,685.9	32.2	22.1	148.19	831.2	-488.5	748.4	707.7	40.76	18.362		
5,900.0	5,663.8	5,896.8	5,782.4	32.7	22.6	147.94	851.0	-502.8	756.2	714.5	41.68	18.142		
6,000.0	5,760.9	5,996.5	5,879.1	33.1	23.1	147.52	870.8	-517.1	761.0	718.4	42.62	17.855		
6,100.0	5,858.8	6,084.7	5,964.8	33.4	23.5	147.06	887.7	-529.3	763.5	720.1	43.45	17.573		
6,200.0	5,957.3	6,170.2	6,048.5	33.7	23.8	146.64	902.0	-539.7	765.0	720.9	44.15	17.328		
6,300.0	6,056.3	6,255.9	6,132.8	34.0	24.1	146.22	914.4	-548.6	765.5	720.7	44.77	17.099		
6,400.0	6,155.8	6,341.8	6,217.7	34.2	24.3	145.83	924.7	-556.0	765.0	719.7	45.31	16.883		
6,500.0	6,255.6	6,427.8	6,303.1	34.4	24.6	145.45	933.0	-562.0	763.4	717.6	45.77	16.678		
6,600.0	6,355.5	6,513.9	6,388.8	34.5	24.7	145.08	939.2	-566.5	760.8	714.7	46.16	16.482		
6,644.5	6,400.0	6,552.3	6,427.1	34.5	24.8	90.43	941.3	-568.0	759.3	713.0	46.31	16.398		
6,700.0	6,455.5	6,600.0	6,474.8	34.6	24.9	90.28	943.3	-569.4	757.6	711.1	46.52	16.287		
6,759.7	6,515.2	6,651.8	6,526.6	34.6	25.0	90.17	944.7	-570.5	756.4	709.7	46.71	16.194		
6,800.0	6,555.5	6,686.7	6,561.4	34.6	25.0	-89.97	945.3	-570.9	755.9	709.1	46.86	16.133		
6,842.2	6,597.6	6,723.1	6,597.9	34.7	25.1	-90.22	945.5	-571.0	755.8	708.8	47.02	16.074		
6,850.0	6,605.3	6,730.5	6,605.3	34.7	25.1	-90.29	945.5	-571.0	755.8	708.7	47.06	16.062		
6,900.0	6,654.7	6,779.9	6,654.7	34.6	25.1	-90.84	945.5	-571.0	755.9	708.5	47.33	15.970		
6,950.0	6,703.5	6,828.8	6,703.5	34.6	25.2	-91.62	945.5	-571.0	756.1	708.4	47.66	15.865		
7,000.0	6,751.5	6,878.4	6,753.1	34.5	25.2	-92.57	944.7	-571.0	756.6	708.6	48.00	15.764		
7,050.0	6,798.6	6,929.4	6,803.9	34.4	25.2	-93.54	940.8	-571.0	757.3	709.1	48.25	15.695		
7,100.0	6,844.3	6,981.3	6,855.4	34.3	25.2	-94.51	933.2	-571.0	758.3	709.9	48.41	15.663		
7,150.0	6,888.7	7,034.3	6,907.1	34.2	25.2	-95.46	922.0	-571.0	759.5	711.0	48.47	15.669		
7,200.0	6,931.5	7,088.4	6,959.1	34.1	25.1	-96.40	906.8	-571.0	760.8	712.4	48.42	15.715		
7,250.0	6,972.5	7,143.6	7,010.8	33.9	25.0	-97.32	887.6	-571.0	762.4	714.1	48.25	15.800		
7,300.0	7,011.6	7,200.0	7,062.0	33.7	24.8	-98.22	864.2	-571.0	764.1	716.1	47.98	15.924		
7,350.0	7,048.5	7,257.5	7,112.4	33.5	24.6	-99.08	836.5	-571.0	765.9	718.3	47.61	16.087		
7,400.0	7,083.1	7,316.2	7,161.5	33.4	24.4	-99.91	804.4	-571.0	767.8	720.7	47.14	16.286		
7,450.0	7,115.3	7,376.1	7,208.9	33.1	24.2	-100.70	767.8	-571.0	769.7	723.1	46.60	16.519		
7,500.0	7,144.9	7,437.1	7,254.2	32.9	23.9	-101.45	726.8	-571.0	771.7	725.7	45.99	16.780		
7,550.0	7,171.9	7,499.4	7,296.8	32.7	23.6	-102.14	681.5	-571.0	773.6	728.3	45.33	17.065		
7,600.0	7,196.0	7,562.7	7,336.2	32.5	23.3	-102.77	631.9	-571.0	775.4	730.8	44.66	17.363		
7,650.0	7,217.2	7,627.1	7,371.9	32.3	23.0	-103.34	578.4	-571.0	777.2	733.2	44.00	17.663		
7,700.0	7,235.4	7,692.4	7,403.4	32.1	22.7	-103.84	521.2	-571.0	778.7	735.3	43.37	17.954		
7,750.0	7,250.5	7,758.6	7,430.3	31.9	22.4	-104.26	460.7	-571.0	780.0	737.2	42.82	18.219		
7,800.0	7,262.5	7,825.5	7,451.9	31.7	22.1	-104.60	397.4	-571.0	781.2	738.8	42.36	18.441		
7,850.0	7,271.3	7,893.0	7,468.1	31.5	21.9	-104.86	331.9	-571.0	782.0	740.0	42.03	18.608		
7,900.0	7,276.8	7,960.9	7,478.5	31.3	21.6	-105.02	264.8	-571.0	782.5	740.7	41.84	18.704		
7,950.0	7,279.1	8,029.1	7,482.9	31.1	21.4	-105.10	196.8	-571.0	782.8	741.0	41.81	18.723		
7,965.3	7,279.1	8,048.1	7,483.1	31.1	21.3	-105.10	177.8	-571.0	782.8	741.0	41.83	18.715		
8,000.0	7,278.8	8,082.8	7,483.1	31.0	21.2	-105.13	143.1	-571.0	782.9	740.9	41.99	18.645		
8,100.0	7,278.1	8,182.8	7,483.3	30.7	20.9	-105.19	43.1	-571.0	783.1	740.5	42.67	18.354		
8,200.0	7,277.4	8,282.8	7,483.5	30.5	20.8	-105.25	-56.9	-571.0	783.4	739.7	43.65	17.947		

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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Offset Design		Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W - Fitzsimmons 9J-443 - Wellbore #1 - Plan #2 (Offset Site Error:		0.0 ft	
Survey Program:		0-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
8,300.0	7,276.6	8,382.8	7,483.7	30.4	21.2	-105.32	-156.9	-571.0	783.6	738.7	44.92	17.446			
8,400.0	7,275.9	8,482.8	7,483.8	30.3	22.2	-105.38	-256.9	-571.0	783.9	737.4	46.45	16.876			
8,500.0	7,275.2	8,582.8	7,484.0	30.4	23.2	-105.45	-356.9	-571.0	784.1	735.9	48.22	16.261			
8,600.0	7,274.4	8,682.8	7,484.2	30.6	24.4	-105.51	-456.9	-571.0	784.3	734.1	50.20	15.624			
8,700.0	7,273.7	8,782.8	7,484.4	31.1	25.6	-105.57	-556.9	-571.0	784.6	732.2	52.37	14.982			
8,800.0	7,273.0	8,882.8	7,484.5	31.7	27.0	-105.64	-656.9	-571.0	784.8	730.1	54.70	14.347			
8,900.0	7,272.2	8,982.8	7,484.7	32.6	28.3	-105.70	-756.9	-571.0	785.1	727.9	57.18	13.730			
9,000.0	7,271.5	9,082.8	7,484.9	33.6	29.8	-105.77	-856.9	-571.0	785.3	725.5	59.78	13.136			
9,100.0	7,270.8	9,182.8	7,485.1	34.8	31.2	-105.83	-956.9	-571.0	785.6	723.1	62.50	12.570			
9,200.0	7,270.0	9,282.8	7,485.2	36.0	32.7	-105.89	-1,056.8	-571.0	785.8	720.5	65.31	12.033			
9,300.0	7,269.3	9,382.8	7,485.4	37.4	34.3	-105.96	-1,156.8	-571.0	786.1	717.9	68.20	11.526			
9,400.0	7,268.6	9,482.8	7,485.6	38.8	35.9	-106.02	-1,256.8	-571.0	786.3	715.1	71.17	11.049			
9,500.0	7,267.8	9,582.8	7,485.8	40.2	37.5	-106.08	-1,356.8	-571.0	786.6	712.4	74.20	10.601			
9,600.0	7,267.1	9,682.7	7,485.9	41.7	39.1	-106.15	-1,456.8	-571.0	786.8	709.5	77.28	10.181			
9,700.0	7,266.4	9,782.7	7,486.1	43.2	40.8	-106.21	-1,556.8	-571.0	787.1	706.6	80.42	9.787			
9,800.0	7,265.7	9,882.7	7,486.3	44.8	42.4	-106.27	-1,656.8	-571.0	787.3	703.7	83.60	9.418			
9,900.0	7,264.9	9,982.7	7,486.5	46.4	44.1	-106.34	-1,756.8	-571.0	787.6	700.8	86.81	9.072			
10,000.0	7,264.2	10,082.7	7,486.6	48.0	45.9	-106.40	-1,856.8	-571.0	787.8	697.8	90.07	8.747			
10,100.0	7,263.5	10,182.7	7,486.8	49.6	47.6	-106.46	-1,956.8	-571.0	788.1	694.7	93.35	8.442			
10,200.0	7,262.7	10,282.7	7,487.0	51.3	49.3	-106.53	-2,056.8	-571.0	788.3	691.7	96.66	8.156			
10,300.0	7,262.0	10,382.7	7,487.2	53.0	51.1	-106.59	-2,156.8	-571.0	788.6	688.6	99.99	7.887			
10,400.0	7,261.3	10,482.7	7,487.3	54.7	52.8	-106.65	-2,256.8	-571.0	788.9	685.5	103.35	7.633			
10,500.0	7,260.5	10,582.7	7,487.5	56.4	54.6	-106.72	-2,356.8	-571.0	789.1	682.4	106.72	7.394			
10,600.0	7,259.8	10,682.7	7,487.7	58.1	56.4	-106.78	-2,456.8	-571.0	789.4	679.3	110.12	7.169			
10,700.0	7,259.1	10,782.7	7,487.9	59.8	58.2	-106.84	-2,556.8	-571.0	789.6	676.1	113.52	6.956			
10,800.0	7,258.3	10,882.7	7,488.0	61.5	60.0	-106.91	-2,656.8	-571.0	789.9	673.0	116.94	6.755			
10,900.0	7,257.6	10,982.7	7,488.2	63.3	61.8	-106.97	-2,756.8	-571.0	790.2	669.8	120.38	6.564			
11,000.0	7,256.9	11,082.7	7,488.4	65.0	63.6	-107.03	-2,856.8	-571.0	790.4	666.6	123.82	6.384			
11,100.0	7,256.1	11,182.7	7,488.6	66.8	65.4	-107.09	-2,956.8	-571.0	790.7	663.4	127.28	6.212			
11,200.0	7,255.4	11,282.7	7,488.7	68.5	67.2	-107.16	-3,056.8	-571.0	791.0	660.2	130.74	6.050			
11,300.0	7,254.7	11,382.7	7,488.9	70.3	69.0	-107.22	-3,156.8	-571.0	791.2	657.0	134.22	5.895			
11,400.0	7,253.9	11,482.7	7,489.1	72.1	70.9	-107.28	-3,256.8	-571.0	791.5	653.8	137.70	5.748			
11,500.0	7,253.2	11,582.7	7,489.3	73.9	72.7	-107.35	-3,356.8	-571.0	791.8	650.6	141.18	5.608			
11,600.0	7,252.5	11,682.7	7,489.4	75.7	74.5	-107.41	-3,456.7	-571.0	792.1	647.4	144.68	5.475			
11,700.0	7,251.7	11,782.7	7,489.6	77.5	76.4	-107.47	-3,556.7	-571.0	792.3	644.1	148.18	5.347			
11,800.0	7,251.0	11,882.7	7,489.8	79.3	78.2	-107.53	-3,656.7	-571.0	792.6	640.9	151.68	5.225			
11,900.0	7,250.3	11,982.7	7,490.0	81.1	80.1	-107.60	-3,756.7	-571.0	792.9	637.7	155.19	5.109			
11,935.1	7,250.0	12,010.9	7,490.0	81.7	80.6	-107.61	-3,785.0	-571.0	793.0	636.7	156.30	5.074 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5005.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Fitzsimmons 9E-223
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 Fitzsimmons 9E-223
Project:	SEC.9-T1N-R66W	TVD Reference:	WELL @ 5005.0ft (RKB - 13')
Reference Site:	Fitzsimmons 1N66W9JM (West) Pad Sec.9-T1N-R66W	MD Reference:	WELL @ 5005.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Fitzsimmons 9E-223	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 #2 (5-01-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5005.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Fitzsimmons 9E-223
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