

PETROLEUM DEVELOPMENT CORP Weld County CO

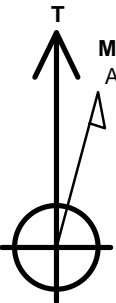
Well Name: **Spaur 10Q-241**

Surface Location: Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 4841.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1360198.09	3172640.53	40.320490	-104.880850	
RKB - 13' WELL @ 4854.0ft (RKB - 13')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50'E/W Hardline (10Q-241)	0.0	2478.5	733.2	Rectangle (Sides: L3975.3 W100.0)
SHL 315'FSL & 1583'FWL	1.0	0.0	0.0	Point
BHL 500'FNL & 2345'FWL	6982.0	4466.4	733.2	Point



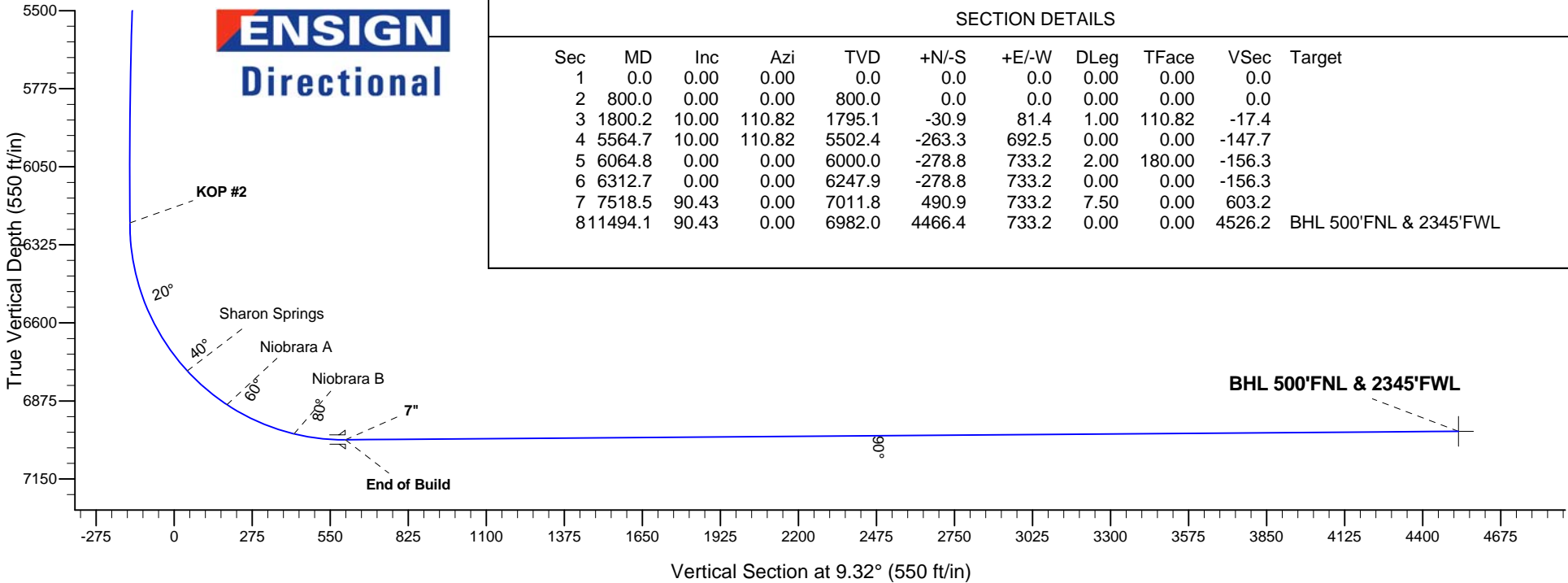
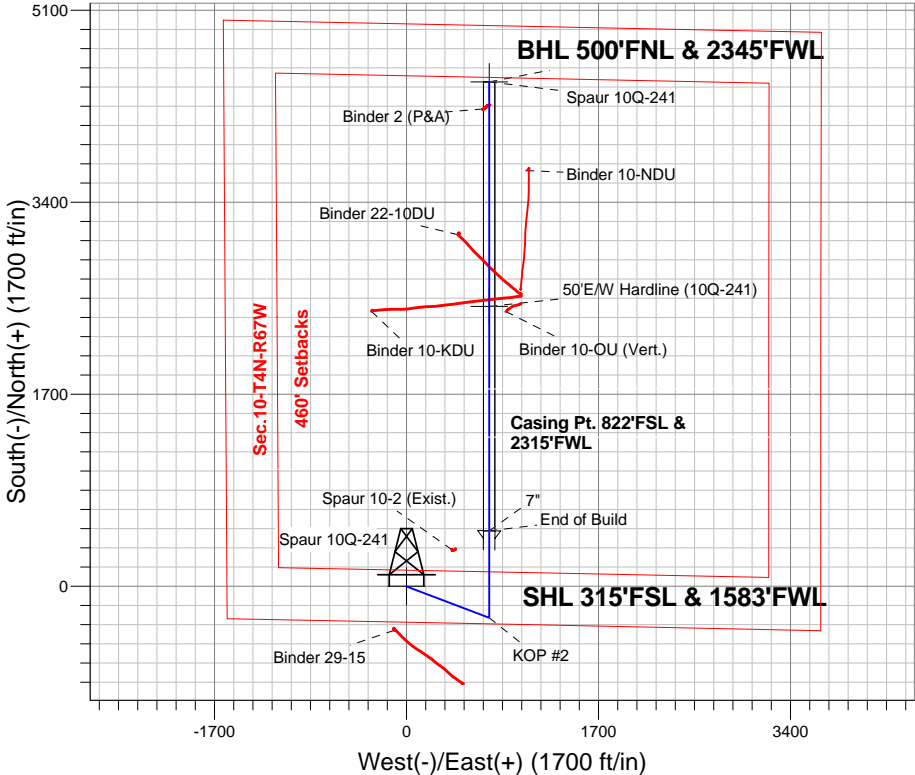
Azimuths to True North
Magnetic North: 8.38°

Magnetic Field
Strength: 52657.6snT
Dip Angle: 66.83°
Date: 6/10/2015
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP #1
6247.9	6312.7	KOP #2
7011.8	7518.5	End of Build

Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W
Spaur 10Q-241
Plan #2 (6-10-15)





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W

Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W

Spaur 10Q-241

Wellbore #1

Plan: Plan #2 (6-10-15)

Standard Planning Report

16 June, 2015

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Spaur 10Q-241
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Project:	SEC.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	North Reference:	True
Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-10-15)		

Project	SEC.10-T4N-R67W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W											
Site Position:						Northing:			1,360,227.24 ft			Latitude:			40.320570		
From:			Lat/Long			Easting:			3,172,640.32 ft			Longitude:			-104.880850		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.40 °		

Well	Spaur 10Q-241					
Well Position	+N-S	-29.2 ft	Northing:	1,360,198.09 ft	Latitude:	40.320490
	+E-W	0.0 ft	Easting:	3,172,640.53 ft	Longitude:	-104.880850
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,841.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/10/2015	8.38	66.83	52,658

Design	Plan #2 (6-10-15)			
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	9.32

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,800.2	10.00	110.82	1,795.1	-30.9	81.4	1.00	1.00	0.00	110.82	
5,564.7	10.00	110.82	5,502.4	-263.3	692.5	0.00	0.00	0.00	0.00	
6,064.8	0.00	0.00	6,000.0	-278.8	733.2	2.00	-2.00	0.00	180.00	
6,312.7	0.00	0.00	6,247.9	-278.8	733.2	0.00	0.00	0.00	0.00	
7,518.5	90.43	0.00	7,011.8	490.9	733.2	7.50	7.50	0.00	0.00	
11,494.1	90.43	0.00	6,982.0	4,466.4	733.2	0.00	0.00	0.00	0.00	BHL 500'FNL & 234

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Project:	SEC.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	North Reference:	True
Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-10-15)		

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
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
900.0	1.00	110.82	900.0	-0.3	0.8	-0.2	1.00	1.00	0.00
1,000.0	2.00	110.82	1,000.0	-1.2	3.3	-0.7	1.00	1.00	0.00
1,100.0	3.00	110.82	1,099.9	-2.8	7.3	-1.6	1.00	1.00	0.00
1,200.0	4.00	110.82	1,199.7	-5.0	13.0	-2.8	1.00	1.00	0.00
1,300.0	5.00	110.82	1,299.4	-7.7	20.4	-4.3	1.00	1.00	0.00
1,400.0	6.00	110.82	1,398.9	-11.2	29.3	-6.3	1.00	1.00	0.00
1,500.0	7.00	110.82	1,498.3	-15.2	39.9	-8.5	1.00	1.00	0.00
1,600.0	8.00	110.82	1,597.4	-19.8	52.1	-11.1	1.00	1.00	0.00
1,700.0	9.00	110.82	1,696.3	-25.1	65.9	-14.1	1.00	1.00	0.00
1,800.0	10.00	110.82	1,794.9	-30.9	81.4	-17.3	1.00	1.00	0.00
1,800.2	10.00	110.82	1,795.1	-30.9	81.4	-17.4	1.00	1.00	0.00
1,900.0	10.00	110.82	1,893.4	-37.1	97.6	-20.8	0.00	0.00	0.00
2,000.0	10.00	110.82	1,991.9	-43.3	113.8	-24.3	0.00	0.00	0.00
2,100.0	10.00	110.82	2,090.4	-49.5	130.1	-27.7	0.00	0.00	0.00
2,200.0	10.00	110.82	2,188.9	-55.6	146.3	-31.2	0.00	0.00	0.00
2,300.0	10.00	110.82	2,287.3	-61.8	162.5	-34.7	0.00	0.00	0.00
2,400.0	10.00	110.82	2,385.8	-68.0	178.8	-38.1	0.00	0.00	0.00
2,500.0	10.00	110.82	2,484.3	-74.1	195.0	-41.6	0.00	0.00	0.00
2,600.0	10.00	110.82	2,582.8	-80.3	211.2	-45.0	0.00	0.00	0.00
2,700.0	10.00	110.82	2,681.3	-86.5	227.5	-48.5	0.00	0.00	0.00
2,800.0	10.00	110.82	2,779.7	-92.7	243.7	-52.0	0.00	0.00	0.00
2,900.0	10.00	110.82	2,878.2	-98.8	259.9	-55.4	0.00	0.00	0.00
3,000.0	10.00	110.82	2,976.7	-105.0	276.2	-58.9	0.00	0.00	0.00
3,100.0	10.00	110.82	3,075.2	-111.2	292.4	-62.3	0.00	0.00	0.00
3,200.0	10.00	110.82	3,173.7	-117.4	308.6	-65.8	0.00	0.00	0.00
3,300.0	10.00	110.82	3,272.1	-123.5	324.9	-69.3	0.00	0.00	0.00
3,400.0	10.00	110.82	3,370.6	-129.7	341.1	-72.7	0.00	0.00	0.00
3,500.0	10.00	110.82	3,469.1	-135.9	357.3	-76.2	0.00	0.00	0.00
3,592.3	10.00	110.82	3,560.0	-141.6	372.3	-79.4	0.00	0.00	0.00
Parkman									
3,600.0	10.00	110.82	3,567.6	-142.0	373.6	-79.7	0.00	0.00	0.00
3,700.0	10.00	110.82	3,666.1	-148.2	389.8	-83.1	0.00	0.00	0.00
3,800.0	10.00	110.82	3,764.5	-154.4	406.1	-86.6	0.00	0.00	0.00
3,900.0	10.00	110.82	3,863.0	-160.6	422.3	-90.0	0.00	0.00	0.00
4,000.0	10.00	110.82	3,961.5	-166.7	438.5	-93.5	0.00	0.00	0.00
4,100.0	10.00	110.82	4,060.0	-172.9	454.8	-97.0	0.00	0.00	0.00
4,140.6	10.00	110.82	4,100.0	-175.4	461.4	-98.4	0.00	0.00	0.00
Sussex									
4,200.0	10.00	110.82	4,158.5	-179.1	471.0	-100.4	0.00	0.00	0.00
4,300.0	10.00	110.82	4,256.9	-185.3	487.2	-103.9	0.00	0.00	0.00
4,400.0	10.00	110.82	4,355.4	-191.4	503.5	-107.3	0.00	0.00	0.00
4,500.0	10.00	110.82	4,453.9	-197.6	519.7	-110.8	0.00	0.00	0.00

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Project:	SEC.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	North Reference:	True
Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-10-15)		

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	10.00	110.82	4,552.4	-203.8	535.9	-114.3	0.00	0.00	0.00
4,684.9	10.00	110.82	4,636.0	-209.0	549.7	-117.2	0.00	0.00	0.00
Shannon									
4,700.0	10.00	110.82	4,650.9	-209.9	552.2	-117.7	0.00	0.00	0.00
4,800.0	10.00	110.82	4,749.3	-216.1	568.4	-121.2	0.00	0.00	0.00
4,900.0	10.00	110.82	4,847.8	-222.3	584.6	-124.6	0.00	0.00	0.00
5,000.0	10.00	110.82	4,946.3	-228.5	600.9	-128.1	0.00	0.00	0.00
5,100.0	10.00	110.82	5,044.8	-234.6	617.1	-131.6	0.00	0.00	0.00
5,200.0	10.00	110.82	5,143.3	-240.8	633.3	-135.0	0.00	0.00	0.00
5,300.0	10.00	110.82	5,241.7	-247.0	649.6	-138.5	0.00	0.00	0.00
5,400.0	10.00	110.82	5,340.2	-253.2	665.8	-142.0	0.00	0.00	0.00
5,500.0	10.00	110.82	5,438.7	-259.3	682.0	-145.4	0.00	0.00	0.00
5,564.7	10.00	110.82	5,502.4	-263.3	692.5	-147.7	0.00	0.00	0.00
5,600.0	9.30	110.82	5,537.2	-265.4	698.1	-148.8	2.00	-2.00	0.00
5,700.0	7.30	110.82	5,636.2	-270.6	711.6	-151.7	2.00	-2.00	0.00
5,800.0	5.30	110.82	5,735.6	-274.5	721.8	-153.9	2.00	-2.00	0.00
5,900.0	3.30	110.82	5,835.3	-277.1	728.8	-155.4	2.00	-2.00	0.00
6,000.0	1.30	110.82	5,935.2	-278.5	732.6	-156.2	2.00	-2.00	0.00
6,064.8	0.00	0.00	6,000.0	-278.8	733.2	-156.3	2.00	-2.00	0.00
6,100.0	0.00	0.00	6,035.2	-278.8	733.2	-156.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,135.2	-278.8	733.2	-156.3	0.00	0.00	0.00
6,300.0	0.00	0.00	6,235.2	-278.8	733.2	-156.3	0.00	0.00	0.00
6,312.7	0.00	0.00	6,247.9	-278.8	733.2	-156.3	0.00	0.00	0.00
KOP #2									
6,400.0	6.54	0.00	6,335.0	-273.8	733.2	-151.4	7.50	7.50	0.00
6,500.0	14.04	0.00	6,433.3	-256.0	733.2	-133.8	7.50	7.50	0.00
6,600.0	21.54	0.00	6,528.5	-225.4	733.2	-103.7	7.50	7.50	0.00
6,700.0	29.04	0.00	6,618.8	-182.7	733.2	-61.5	7.50	7.50	0.00
6,800.0	36.54	0.00	6,702.8	-128.6	733.2	-8.1	7.50	7.50	0.00
6,886.2	43.01	0.00	6,769.0	-73.5	733.2	46.3	7.50	7.50	0.00
Sharon Springs									
6,900.0	44.04	0.00	6,779.0	-64.0	733.2	55.7	7.50	7.50	0.00
7,000.0	51.54	0.00	6,846.2	10.0	733.2	128.7	7.50	7.50	0.00
7,071.6	56.92	0.00	6,888.0	68.1	733.2	186.0	7.50	7.50	0.00
Niobrara A									
7,100.0	59.04	0.00	6,903.0	92.2	733.2	209.8	7.50	7.50	0.00
7,200.0	66.54	0.00	6,948.7	181.1	733.2	297.5	7.50	7.50	0.00
7,300.0	74.04	0.00	6,982.4	275.1	733.2	390.3	7.50	7.50	0.00
7,333.8	76.58	0.00	6,991.0	307.8	733.2	422.6	7.50	7.50	0.00
Niobrara B									
7,400.0	81.54	0.00	7,003.6	372.8	733.2	486.7	7.50	7.50	0.00
7,500.0	89.04	0.00	7,011.8	472.4	733.2	585.0	7.50	7.50	0.00
7,518.5	90.43	0.00	7,011.8	490.9	733.2	603.2	7.49	7.49	0.00
End of Build - 7"									
7,600.0	90.43	0.00	7,011.2	572.4	733.2	683.6	0.00	0.00	0.00
7,700.0	90.43	0.00	7,010.5	672.4	733.2	782.3	0.00	0.00	0.00
7,800.0	90.43	0.00	7,009.7	772.4	733.2	881.0	0.00	0.00	0.00
7,900.0	90.43	0.00	7,009.0	872.4	733.2	979.7	0.00	0.00	0.00
8,000.0	90.43	0.00	7,008.2	972.4	733.2	1,078.3	0.00	0.00	0.00
8,100.0	90.43	0.00	7,007.5	1,072.4	733.2	1,177.0	0.00	0.00	0.00
8,200.0	90.43	0.00	7,006.7	1,172.4	733.2	1,275.7	0.00	0.00	0.00

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Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-10-15)		

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)
8,300.0	90.43	0.00	7,006.0	1,272.4	733.2	1,374.4	0.00	0.00	0.00
8,400.0	90.43	0.00	7,005.2	1,372.4	733.2	1,473.0	0.00	0.00	0.00
8,500.0	90.43	0.00	7,004.5	1,472.4	733.2	1,571.7	0.00	0.00	0.00
8,600.0	90.43	0.00	7,003.7	1,572.4	733.2	1,670.4	0.00	0.00	0.00
8,700.0	90.43	0.00	7,003.0	1,672.4	733.2	1,769.1	0.00	0.00	0.00
8,800.0	90.43	0.00	7,002.2	1,772.4	733.2	1,867.7	0.00	0.00	0.00
8,900.0	90.43	0.00	7,001.5	1,872.4	733.2	1,966.4	0.00	0.00	0.00
9,000.0	90.43	0.00	7,000.7	1,972.4	733.2	2,065.1	0.00	0.00	0.00
9,100.0	90.43	0.00	7,000.0	2,072.4	733.2	2,163.8	0.00	0.00	0.00
9,200.0	90.43	0.00	6,999.2	2,172.4	733.2	2,262.4	0.00	0.00	0.00
9,300.0	90.43	0.00	6,998.5	2,272.4	733.2	2,361.1	0.00	0.00	0.00
9,400.0	90.43	0.00	6,997.7	2,372.4	733.2	2,459.8	0.00	0.00	0.00
9,500.0	90.43	0.00	6,997.0	2,472.4	733.2	2,558.5	0.00	0.00	0.00
9,600.0	90.43	0.00	6,996.2	2,572.3	733.2	2,657.2	0.00	0.00	0.00
9,700.0	90.43	0.00	6,995.5	2,672.3	733.2	2,755.8	0.00	0.00	0.00
9,800.0	90.43	0.00	6,994.7	2,772.3	733.2	2,854.5	0.00	0.00	0.00
9,900.0	90.43	0.00	6,994.0	2,872.3	733.2	2,953.2	0.00	0.00	0.00
10,000.0	90.43	0.00	6,993.2	2,972.3	733.2	3,051.9	0.00	0.00	0.00
10,100.0	90.43	0.00	6,992.5	3,072.3	733.2	3,150.5	0.00	0.00	0.00
10,200.0	90.43	0.00	6,991.7	3,172.3	733.2	3,249.2	0.00	0.00	0.00
10,300.0	90.43	0.00	6,991.0	3,272.3	733.2	3,347.9	0.00	0.00	0.00
10,400.0	90.43	0.00	6,990.2	3,372.3	733.2	3,446.6	0.00	0.00	0.00
10,500.0	90.43	0.00	6,989.5	3,472.3	733.2	3,545.2	0.00	0.00	0.00
10,600.0	90.43	0.00	6,988.7	3,572.3	733.2	3,643.9	0.00	0.00	0.00
10,700.0	90.43	0.00	6,988.0	3,672.3	733.2	3,742.6	0.00	0.00	0.00
10,800.0	90.43	0.00	6,987.2	3,772.3	733.2	3,841.3	0.00	0.00	0.00
10,900.0	90.43	0.00	6,986.5	3,872.3	733.2	3,939.9	0.00	0.00	0.00
11,000.0	90.43	0.00	6,985.7	3,972.3	733.2	4,038.6	0.00	0.00	0.00
11,100.0	90.43	0.00	6,985.0	4,072.3	733.2	4,137.3	0.00	0.00	0.00
11,200.0	90.43	0.00	6,984.2	4,172.3	733.2	4,236.0	0.00	0.00	0.00
11,300.0	90.43	0.00	6,983.5	4,272.3	733.2	4,334.7	0.00	0.00	0.00
11,400.0	90.43	0.00	6,982.7	4,372.3	733.2	4,433.3	0.00	0.00	0.00
11,494.1	90.43	0.00	6,982.0	4,466.4	733.2	4,526.2	0.00	0.00	0.00

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 315'FSL & 1583'	0.00	0.00	1.0	0.0	0.0	1,360,198.10	3,172,640.53	40.320490	-104.880850
- plan hits target center									
- Point									
50'E/W Hardline (10Q	0.00	0.00	0.0	2,478.5	733.2	1,362,681.59	3,173,356.37	40.327293	-104.878220
- plan misses target center by 2584.7ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W3,975.3 H100.0 D0.0)									
BHL 500'FNL & 2345'	0.00	0.00	6,982.0	4,466.4	733.2	1,364,669.33	3,173,342.53	40.332750	-104.878220
- plan hits target center									
- Point									

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Spaur 10Q-241
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Project:	SEC.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	North Reference:	True
Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (6-10-15)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,518.5	7,011.8	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,592.3	3,560.0	Parkman		0.00		
4,140.6	4,100.0	Sussex		0.00		
4,684.9	4,636.0	Shannon		0.00		
6,886.2	6,769.0	Sharon Springs		0.00		
7,071.6	6,888.0	Niobrara A		0.00		
7,333.8	6,991.0	Niobrara B		0.00		
	7,070.0	Niobrara C		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
800.0	800.0	0.0	0.0	KOP #1	
6,312.7	6,247.9	-278.8	733.2	KOP #2	
7,518.5	7,011.8	490.9	733.2	End of Build	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W

Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W

Spaur 10Q-241

Wellbore #1

Plan #2 (6-10-15)

Anticollision Report

16 June, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (6-10-15)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 6/15/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,494.1	Plan #2 (6-10-15) (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						
Binder 10-NDU Pad Sec.10-T4N-R67W						
Binder 10-KDU - Wellbore #1 - Wellbore #1						Out of range
Binder 10-NDU - Wellbore #1 - Wellbore #1	10,710.3	7,083.0	335.0	238.2	3.463	CC, ES, SF
Binder 10-OU (Vert.) - Wellbore #1 - Wellbore #1	9,467.5	6,941.1	155.2	90.5	2.400	CC, ES, SF
Binder 22-10DU - Wellbore #1 - Wellbore #1	10,144.8	7,016.7	270.7	190.3	3.368	CC, ES, SF
Existing Wells Sec.10-T4N-R67W						
Binder 2 (P&A) - Wellbore #1 - Wellbore #1	11,251.2	6,884.4	51.3	-47.6	0.519	Level 1, CC, ES, SF
Binder 29-15 - Wellbore #1 - Wellbore #1	3,375.1	3,410.2	494.5	473.7	23.717	CC
Binder 29-15 - Wellbore #1 - Wellbore #1	3,400.0	3,433.7	494.6	473.5	23.491	ES
Binder 29-15 - Wellbore #1 - Wellbore #1	3,900.0	3,907.6	527.4	502.8	21.410	SF
Spaur 10PD Pad Sec. 10-T4N-67W						
Spaur 10-2 (Exist.) - Wellbore #1 - Wellbore #1	7,348.1	6,992.6	330.4	298.3	10.293	CC, ES
Spaur 10-2 (Exist.) - Wellbore #1 - Wellbore #1	7,400.0	7,002.5	334.3	301.7	10.262	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W						
Spaur 10I-201 - Wellbore #1 - Plan #1 (6-12-15)	200.0	199.0	58.3	57.7	90.682	CC
Spaur 10I-201 - Wellbore #1 - Plan #1 (6-12-15)	300.0	298.8	58.5	57.4	54.113	ES
Spaur 10I-201 - Wellbore #1 - Plan #1 (6-12-15)	800.0	793.1	78.9	75.6	23.406	SF
Spaur 10I-321 - Wellbore #1 - Plan #2 (6-10-15)	400.0	399.0	43.7	42.2	28.353	CC
Spaur 10I-321 - Wellbore #1 - Plan #2 (6-10-15)	500.0	498.9	43.9	41.9	22.206	ES
Spaur 10I-321 - Wellbore #1 - Plan #2 (6-10-15)	900.0	897.0	52.2	48.5	14.004	SF
Spaur 10L-201 - Wellbore #1 - Plan #2 (6-10-15)	800.0	799.0	29.1	25.8	8.726	CC
Spaur 10L-201 - Wellbore #1 - Plan #2 (6-10-15)	900.0	899.0	29.5	25.7	7.814	ES
Spaur 10L-201 - Wellbore #1 - Plan #2 (6-10-15)	11,494.1	11,411.4	883.9	707.9	5.024	SF
Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)	877.7	876.6	29.1	25.5	7.955	CC
Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)	900.0	898.8	29.1	25.4	7.762	ES
Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)	1,100.0	1,097.8	32.2	27.7	7.084	SF
Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)	1,021.1	1,020.0	13.7	9.4	3.200	CC, ES
Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)	1,100.0	1,098.6	14.6	10.0	3.183	SF
Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)	800.0	800.0	14.6	11.2	4.360	CC
Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)	900.0	900.0	14.9	11.1	3.950	ES
Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)	11,494.1	11,545.8	396.6	223.7	2.295	SF
Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)	800.0	800.0	43.7	40.4	13.080	CC
Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)	900.0	900.0	44.0	40.3	11.670	ES
Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)	11,494.1	11,635.0	659.4	493.1	3.966	SF

Offset Design		Binder 10-NDU Pad Sec.10-T4N-R67W - Binder 10-NDU - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft
Survey Program:		452-MWD										Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
9,800.0	6,994.7	7,097.3	6,947.0	57.6	23.2	93.44	3,682.6	1,067.9	969.9	890.3	79.61	12.183		
9,900.0	6,994.0	7,095.0	6,944.7	59.4	23.2	93.05	3,682.6	1,067.9	876.7	795.2	81.49	10.759		
10,000.0	6,993.2	7,094.2	6,943.9	61.2	23.2	92.91	3,682.6	1,068.0	785.3	701.9	83.35	9.421		
10,100.0	6,992.5	7,092.6	6,942.3	63.0	23.2	92.64	3,682.6	1,068.0	696.1	610.9	85.22	8.168		
10,200.0	6,991.7	7,091.1	6,940.8	64.9	23.2	92.37	3,682.6	1,068.0	610.4	523.3	87.10	7.008		
10,300.0	6,991.0	7,089.5	6,939.2	66.7	23.2	92.10	3,682.6	1,068.0	529.6	440.7	88.98	5.952		
10,400.0	6,990.2	7,087.9	6,937.6	68.5	23.2	91.83	3,682.6	1,068.1	456.6	365.7	90.87	5.025		
10,500.0	6,989.5	7,086.3	6,936.0	70.4	23.2	91.56	3,682.7	1,068.1	395.5	302.8	92.75	4.264		
10,600.0	6,988.7	7,084.7	6,934.4	72.2	23.2	91.29	3,682.7	1,068.1	352.7	258.0	94.64	3.726		
10,700.0	6,988.0	7,083.1	6,932.8	74.1	23.2	91.02	3,682.7	1,068.2	335.1	238.6	96.53	3.472		
10,710.3	6,987.9	7,083.0	6,932.7	74.3	23.2	90.99	3,682.7	1,068.2	335.0	238.2	96.73	3.463	CC, ES, SF	
10,800.0	6,987.2	7,081.5	6,931.2	75.9	23.2	90.74	3,682.7	1,068.2	346.8	248.3	98.42	3.523		
10,900.0	6,986.5	7,079.9	6,929.6	77.8	23.2	90.47	3,682.7	1,068.2	384.9	284.6	100.31	3.837		
11,000.0	6,985.7	7,078.3	6,928.0	79.7	23.2	90.19	3,682.7	1,068.2	442.8	340.6	102.20	4.333		
11,100.0	6,985.0	7,076.7	6,926.4	81.5	23.2	89.92	3,682.7	1,068.3	513.8	409.7	104.09	4.936		
11,200.0	6,984.2	7,075.1	6,924.8	83.4	23.2	89.64	3,682.7	1,068.3	593.2	487.3	105.98	5.598		
11,300.0	6,983.5	7,073.5	6,923.2	85.3	23.2	89.36	3,682.8	1,068.3	678.1	570.2	107.87	6.286		
11,400.0	6,982.7	7,071.8	6,921.5	87.1	23.2	89.09	3,682.8	1,068.3	766.6	656.9	109.76	6.985		
11,494.1	6,982.0	7,070.3	6,920.0	88.9	23.2	88.82	3,682.8	1,068.4	852.3	740.8	111.54	7.641		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Binder 10-NDU Pad Sec.10-T4N-R67W - Binder 10-OU (Vert.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 500-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	
8,500.0	7,004.5	6,964.9	6,962.9	34.9	14.3	99.78	2,439.5	888.0	979.6	932.8	46.74	20.958		
8,600.0	7,003.7	6,962.4	6,960.4	36.5	14.3	98.88	2,439.5	888.0	881.0	832.5	48.54	18.149		
8,700.0	7,003.0	6,959.9	6,957.9	38.2	14.3	97.98	2,439.6	888.1	782.8	732.4	50.37	15.542		
8,800.0	7,002.2	6,957.4	6,955.4	39.9	14.3	97.08	2,439.6	888.1	685.1	632.9	52.21	13.123		
8,900.0	7,001.5	6,955.0	6,953.0	41.6	14.3	96.18	2,439.6	888.2	588.2	534.1	54.06	10.881		
9,000.0	7,000.7	6,952.5	6,950.5	43.3	14.3	95.27	2,439.7	888.2	492.5	436.5	55.92	8.807		
9,100.0	7,000.0	6,950.0	6,948.1	45.1	14.3	94.37	2,439.7	888.2	398.8	341.0	57.78	6.902		
9,200.0	6,999.2	6,947.6	6,945.6	46.8	14.3	93.47	2,439.8	888.3	309.2	249.5	59.65	5.183		
9,300.0	6,998.5	6,945.1	6,943.2	48.6	14.3	92.57	2,439.8	888.3	228.3	166.8	61.52	3.711		
9,400.0	6,997.7	6,942.7	6,940.7	50.4	14.3	91.66	2,439.8	888.4	169.2	105.8	63.39	2.670		
9,467.5	6,997.2	6,941.1	6,939.1	51.6	14.3	91.06	2,439.9	888.4	155.2	90.5	64.65	2.400 CC, ES, SF		
9,500.0	6,997.0	6,940.3	6,938.3	52.1	14.3	90.77	2,439.9	888.4	158.6	93.3	65.26	2.430		
9,600.0	6,996.2	6,937.8	6,935.9	53.9	14.3	89.87	2,439.9	888.5	204.0	136.9	67.12	3.040		
9,700.0	6,995.5	6,935.4	6,933.4	55.7	14.3	88.98	2,440.0	888.5	279.5	210.5	68.97	4.052		
9,800.0	6,994.7	6,933.0	6,931.0	57.6	14.3	88.08	2,440.0	888.6	366.8	296.0	70.82	5.180		
9,900.0	6,994.0	6,930.6	6,928.6	59.4	14.3	87.20	2,440.0	888.6	459.4	386.7	72.65	6.323		
10,000.0	6,993.2	6,928.2	6,926.2	61.2	14.2	86.31	2,440.1	888.6	554.5	480.0	74.47	7.446		
10,100.0	6,992.5	6,925.8	6,923.8	63.0	14.2	85.43	2,440.1	888.7	651.1	574.8	76.28	8.535		
10,200.0	6,991.7	6,923.4	6,921.4	64.9	14.2	84.56	2,440.2	888.7	748.5	670.5	78.07	9.588		
10,300.0	6,991.0	6,921.0	6,919.0	66.7	14.2	83.69	2,440.2	888.8	846.6	766.7	79.85	10.602		
10,400.0	6,990.2	6,918.6	6,916.6	68.5	14.2	82.83	2,440.2	888.8	945.1	863.4	81.62	11.579		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design		Binder 10-NDU Pad Sec.10-T4N-R67W - Binder 22-10DU - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft
Survey Program: 457-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
9,200.0	6,999.2	7,032.4	6,944.0	46.8	19.8	-92.72	3,117.0	462.4	982.7	919.5	63.16	15.560		
9,300.0	6,998.5	7,030.7	6,942.3	48.6	19.8	-92.37	3,117.0	462.4	887.0	822.0	64.96	13.655		
9,400.0	6,997.7	7,029.1	6,940.7	50.4	19.8	-92.02	3,117.0	462.4	792.4	725.6	66.76	11.868		
9,500.0	6,997.0	7,027.4	6,939.0	52.1	19.8	-91.67	3,117.0	462.4	699.2	630.7	68.58	10.196		
9,600.0	6,996.2	7,025.8	6,937.3	53.9	19.8	-91.31	3,117.0	462.5	608.3	537.9	70.40	8.641		
9,700.0	6,995.5	7,024.1	6,935.7	55.7	19.8	-90.96	3,117.0	462.5	520.6	448.4	72.22	7.209		
9,800.0	6,994.7	7,022.4	6,934.0	57.6	19.8	-90.61	3,117.1	462.5	438.3	364.3	74.05	5.919		
9,900.0	6,994.0	7,020.8	6,932.4	59.4	19.7	-90.26	3,117.1	462.5	365.0	289.1	75.88	4.809		
10,000.0	6,993.2	7,019.1	6,930.7	61.2	19.7	-89.91	3,117.1	462.5	307.0	229.3	77.72	3.950		
10,100.0	6,992.5	7,017.5	6,929.1	63.0	19.7	-89.56	3,117.1	462.5	274.4	194.8	79.56	3.449		
10,144.8	6,992.1	7,016.7	6,928.3	63.8	19.7	-89.40	3,117.1	462.6	270.7	190.3	80.38	3.368	CC, ES, SF	
10,200.0	6,991.7	7,015.8	6,927.4	64.9	19.7	-89.21	3,117.1	462.6	276.3	194.9	81.39	3.394		
10,300.0	6,991.0	7,014.2	6,925.7	66.7	19.7	-88.86	3,117.1	462.6	312.0	228.8	83.23	3.749		
10,400.0	6,990.2	7,012.5	6,924.1	68.5	19.7	-88.51	3,117.1	462.6	372.0	286.9	85.07	4.373		
10,500.0	6,989.5	7,010.8	6,922.4	70.4	19.7	-88.16	3,117.2	462.6	446.6	359.6	86.92	5.138		
10,600.0	6,988.7	7,009.2	6,920.8	72.2	19.7	-87.81	3,117.2	462.6	529.6	440.8	88.76	5.967		
10,700.0	6,988.0	7,007.5	6,919.1	74.1	19.7	-87.46	3,117.2	462.7	617.6	527.0	90.59	6.817		
10,800.0	6,987.2	7,005.9	6,917.4	75.9	19.7	-87.11	3,117.2	462.7	708.8	616.4	92.43	7.669		
10,900.0	6,986.5	7,004.2	6,915.8	77.8	19.7	-86.76	3,117.2	462.7	802.2	707.9	94.27	8.509		
11,000.0	6,985.7	7,002.6	6,914.1	79.7	19.7	-86.41	3,117.2	462.7	896.9	800.8	96.10	9.333		
11,100.0	6,985.0	7,000.9	6,912.5	81.5	19.7	-86.06	3,117.3	462.7	992.7	894.8	97.94	10.136		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.10-T4N-R67W - Binder 2 (P&A) - 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	
10,300.0	6,991.0	6,900.0	6,899.3	66.7	15.4	-104.57	4,223.3	681.3	952.4	872.7	79.70	11.950	
10,400.0	6,990.2	6,900.0	6,899.3	68.5	15.4	-104.57	4,223.3	681.3	852.6	771.1	81.51	10.460	
10,500.0	6,989.5	6,900.0	6,899.3	70.4	15.4	-104.57	4,223.3	681.3	752.8	669.5	83.32	9.035	
10,600.0	6,988.7	6,900.0	6,899.3	72.2	15.4	-104.57	4,223.3	681.3	653.1	568.0	85.13	7.672	
10,700.0	6,988.0	6,895.6	6,894.9	74.1	15.4	-99.94	4,223.4	681.5	553.5	465.4	88.06	6.286	
10,800.0	6,987.2	6,893.6	6,892.9	75.9	15.4	-97.84	4,223.4	681.6	454.0	363.8	90.26	5.031	
10,900.0	6,986.5	6,891.6	6,891.0	77.8	15.4	-95.68	4,223.4	681.7	354.9	262.5	92.38	3.842	
11,000.0	6,985.7	6,889.6	6,888.9	79.7	15.4	-93.46	4,223.4	681.8	256.4	162.0	94.40	2.716	
11,100.0	6,985.0	6,887.6	6,886.9	81.5	15.4	-91.19	4,223.5	681.8	159.7	63.3	96.31	1.658	
11,200.0	6,984.2	6,885.5	6,884.8	83.4	15.4	-88.88	4,223.5	681.9	72.5	-25.6	98.10	0.739 Level 1	
11,251.2	6,983.8	6,884.4	6,883.7	84.4	15.4	-87.68	4,223.5	682.0	51.3	-47.6	98.96	0.519 Level 1, CC, ES, SF	
11,300.0	6,983.5	6,883.4	6,882.7	85.3	15.4	-86.52	4,223.5	682.0	70.8	-28.9	99.74	0.710 Level 1	
11,400.0	6,982.7	6,881.2	6,880.6	87.1	15.4	-84.13	4,223.6	682.1	157.3	56.1	101.23	1.554	
11,494.1	6,982.0	6,879.2	6,878.5	88.9	15.4	-81.86	4,223.6	682.2	248.2	145.7	102.47	2.422	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.10-T4N-R67W - Binder 29-15 - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 635-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	149.56	-859.4	505.0	996.8					
100.0	100.0	99.0	99.0	0.1	0.1	149.56	-859.4	505.0	996.8	996.6	0.21	4,764.761		
200.0	200.0	199.0	199.0	0.3	0.2	149.56	-859.4	505.0	996.8	996.2	0.55	1,824.565		
300.0	300.0	299.0	299.0	0.5	0.3	149.56	-859.4	505.0	996.8	995.9	0.88	1,128.315		
400.0	400.0	399.0	399.0	0.8	0.4	149.56	-859.4	505.0	996.8	995.6	1.22	816.674		
500.0	500.0	499.0	499.0	1.0	0.6	149.56	-859.4	505.0	996.8	995.2	1.56	639.926		
600.0	600.0	599.0	599.0	1.2	0.7	149.56	-859.4	505.0	996.8	994.9	1.89	526.071		
700.0	700.0	698.6	698.6	1.4	0.8	149.58	-859.6	504.8	996.8	994.5	2.29	435.347		
800.0	800.0	799.2	799.2	1.7	1.1	149.62	-860.0	504.1	996.8	994.1	2.72	366.272		
900.0	900.0	899.7	899.7	1.9	1.3	38.89	-860.4	503.3	996.1	993.0	3.14	317.670		
1,000.0	1,000.0	1,000.3	1,000.3	2.1	1.5	39.06	-860.8	502.4	994.0	990.4	3.54	280.883		
1,100.0	1,099.9	1,101.2	1,101.2	2.3	1.7	39.31	-861.2	501.3	990.4	986.4	3.96	249.921		
1,200.0	1,199.7	1,204.9	1,204.8	2.5	1.9	39.65	-861.6	500.0	985.4	981.0	4.40	223.980		
1,300.0	1,299.4	1,413.9	1,413.2	2.7	2.4	40.73	-852.7	487.8	972.4	967.3	5.11	190.185		
1,400.0	1,398.9	1,612.8	1,608.3	3.0	3.0	42.75	-830.7	456.3	947.8	941.9	5.87	161.376		
1,500.0	1,498.3	1,703.1	1,695.8	3.2	3.3	44.07	-817.8	438.4	917.8	911.5	6.34	144.840		
1,600.0	1,597.4	1,798.1	1,787.9	3.5	3.7	45.65	-804.8	419.4	887.5	880.7	6.84	129.785		
1,700.0	1,696.3	1,884.1	1,871.5	3.8	4.0	47.19	-792.1	403.2	856.3	848.9	7.33	116.735		
1,800.0	1,794.9	1,990.9	1,975.2	4.1	4.4	49.19	-775.6	384.4	824.2	816.2	7.93	103.924		
1,900.0	1,893.4	2,079.5	2,061.3	4.5	4.8	50.78	-761.1	368.8	791.3	782.8	8.51	93.032		
2,000.0	1,991.9	2,162.0	2,141.4	4.8	5.2	52.36	-747.9	354.5	759.7	750.6	9.08	83.626		
2,100.0	2,090.4	2,247.6	2,224.9	5.2	5.5	54.09	-735.0	340.3	729.8	720.1	9.70	75.215		
2,200.0	2,188.9	2,344.0	2,318.7	5.5	5.9	56.29	-721.2	323.3	701.0	690.6	10.42	67.289		
2,300.0	2,287.3	2,435.3	2,407.6	5.9	6.3	58.62	-708.5	306.2	673.5	662.4	11.16	60.359		
2,400.0	2,385.8	2,537.9	2,506.9	6.3	6.8	61.58	-693.5	285.4	646.2	634.2	12.03	53.714		
2,500.0	2,484.3	2,633.6	2,599.2	6.7	7.3	64.61	-678.3	265.4	619.2	606.3	12.91	47.958		
2,600.0	2,582.8	2,725.7	2,688.0	7.0	7.8	67.73	-663.1	246.5	593.4	579.6	13.80	42.995		
2,700.0	2,681.3	2,807.6	2,767.4	7.4	8.1	70.57	-650.1	231.0	570.4	555.7	14.64	38.969		
2,800.0	2,779.7	2,894.8	2,852.1	7.8	8.6	73.83	-637.6	214.1	550.6	535.1	15.55	35.412		
2,900.0	2,878.2	2,987.5	2,941.7	8.2	9.0	77.64	-624.8	194.7	533.9	517.3	16.54	32.280		
3,000.0	2,976.7	3,073.7	3,025.5	8.6	9.4	81.23	-612.6	178.0	519.4	501.9	17.47	29.727		
3,100.0	3,075.2	3,166.7	3,116.3	9.0	9.8	85.02	-600.9	161.8	508.6	490.2	18.41	27.622		
3,200.0	3,173.7	3,256.6	3,203.7	9.4	10.2	88.98	-589.0	144.8	500.2	480.9	19.35	25.856		
3,300.0	3,272.1	3,345.0	3,289.8	9.8	10.6	92.94	-577.9	128.0	495.5	475.3	20.24	24.485		
3,375.1	3,346.1	3,410.2	3,353.7	10.1	10.9	95.72	-570.8	116.8	494.5	473.7	20.85	23.717 CC		
3,400.0	3,370.6	3,433.7	3,376.7	10.2	11.0	96.71	-568.4	112.9	494.6	473.5	21.05	23.491 ES		
3,500.0	3,469.1	3,532.3	3,472.8	10.6	11.4	101.11	-556.5	94.4	496.1	474.2	21.90	22.652		
3,600.0	3,567.6	3,621.1	3,559.1	10.9	11.8	105.15	-545.1	77.1	500.4	477.8	22.65	22.090		
3,700.0	3,666.1	3,724.3	3,659.5	11.3	12.3	109.77	-530.9	57.4	506.9	483.5	23.39	21.675		
3,800.0	3,764.5	3,816.2	3,747.9	11.7	12.8	114.12	-515.3	38.1	515.6	491.6	24.05	21.443		
3,900.0	3,863.0	3,907.6	3,835.6	12.1	13.3	118.42	-498.8	18.4	527.4	502.8	24.63	21.410 SF		
4,000.0	3,961.5	4,001.1	3,925.3	12.5	13.8	122.65	-481.6	-1.5	542.2	517.1	25.15	21.560		
4,100.0	4,060.0	4,096.6	4,017.6	12.9	14.3	126.53	-465.4	-20.1	559.2	533.6	25.58	21.858		
4,200.0	4,158.5	4,212.3	4,130.5	13.3	14.8	130.55	-448.1	-38.4	576.7	550.7	25.95	22.222		
4,300.0	4,256.9	4,303.1	4,219.5	13.7	15.2	133.41	-434.6	-50.4	593.7	567.4	26.28	22.596		
4,400.0	4,355.4	4,404.7	4,319.4	14.1	15.6	136.29	-420.8	-62.7	611.8	585.2	26.57	23.024		
4,500.0	4,453.9	4,489.8	4,403.3	14.5	15.9	138.49	-410.3	-73.2	631.9	605.0	26.87	23.519		
4,600.0	4,552.4	4,596.6	4,508.6	14.9	16.3	140.96	-398.2	-85.4	652.5	625.3	27.14	24.041		
4,700.0	4,650.9	4,691.6	4,602.8	15.3	16.5	142.82	-389.5	-94.3	672.6	645.2	27.41	24.535		
4,800.0	4,749.3	4,792.5	4,703.1	15.7	16.8	144.44	-382.9	-103.3	693.6	665.9	27.69	25.044		
4,900.0	4,847.8	4,908.8	4,818.9	16.1	17.1	146.11	-375.8	-111.1	713.0	685.0	27.97	25.492		

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 Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.10-T4N-R67W - Binder 29-15 - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft		
Survey Program: 635-MWD												Offset Well Error: 0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,000.0	4,946.3	5,055.1	4,965.0	16.5	17.3	147.67	-370.4	-111.9	727.0	698.8	28.24	25.745		
5,100.0	5,044.8	5,147.0	5,056.9	16.9	17.4	148.26	-371.0	-109.6	739.4	710.9	28.54	25.907		
5,200.0	5,143.3	5,234.7	5,144.5	17.3	17.5	148.73	-372.7	-108.6	753.6	724.7	28.85	26.118		
5,300.0	5,241.7	5,332.3	5,242.1	17.7	17.6	149.24	-374.7	-108.0	768.2	739.1	29.17	26.336		
5,400.0	5,340.2	5,427.3	5,337.1	18.1	17.7	149.76	-376.1	-107.8	783.3	753.8	29.49	26.562		
5,500.0	5,438.7	5,521.2	5,431.0	18.5	17.8	150.28	-377.3	-108.1	798.9	769.1	29.81	26.798		
5,600.0	5,537.2	5,614.6	5,524.4	18.9	17.9	150.82	-378.5	-109.0	815.0	784.9	30.15	27.036		
5,700.0	5,636.2	5,713.0	5,622.8	19.2	18.1	151.36	-379.9	-110.6	829.5	799.0	30.45	27.236		
5,800.0	5,735.6	5,813.7	5,723.5	19.4	18.2	151.74	-381.4	-112.1	840.8	810.0	30.77	27.329		
5,900.0	5,835.3	5,918.0	5,827.8	19.6	18.3	151.99	-382.6	-113.0	848.4	817.3	31.08	27.298		
6,000.0	5,935.2	6,019.9	5,929.7	19.8	18.5	152.10	-383.5	-113.5	852.6	821.2	31.38	27.166		
6,100.0	6,035.2	6,121.9	6,031.6	19.9	18.6	-97.09	-384.2	-113.9	853.6	821.9	31.70	26.931		
6,200.0	6,135.2	6,223.8	6,133.6	20.0	18.7	-97.11	-384.5	-114.0	853.8	821.8	32.01	26.669		
6,300.0	6,235.2	6,324.1	6,233.8	20.2	18.9	-97.12	-384.6	-114.1	853.9	821.5	32.34	26.403		
6,400.0	6,335.0	6,424.1	6,333.9	20.3	19.0	-97.40	-384.7	-114.1	854.5	821.9	32.68	26.149		
6,500.0	6,433.3	6,522.0	6,431.8	20.4	19.1	-98.38	-384.7	-114.1	857.1	824.0	33.03	25.950		
6,600.0	6,528.5	6,616.1	6,525.8	20.4	19.3	-99.89	-385.0	-114.2	862.3	829.0	33.34	25.867		
6,700.0	6,618.8	6,705.5	6,615.3	20.4	19.4	-101.73	-385.5	-114.3	871.4	837.9	33.55	25.974		
6,800.0	6,702.8	6,792.4	6,702.1	20.4	19.5	-103.72	-385.9	-114.3	885.7	852.1	33.65	26.324		
6,900.0	6,779.0	6,871.5	6,781.2	20.3	19.6	-105.42	-386.0	-114.1	906.5	872.9	33.60	26.980		
7,000.0	6,846.2	6,941.6	6,851.3	20.3	19.7	-106.51	-385.9	-113.8	935.0	901.5	33.48	27.930		
7,100.0	6,903.0	6,998.0	6,907.7	20.3	19.8	-106.50	-385.8	-113.4	972.3	938.8	33.42	29.089		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 10PD Pad Sec. 10-T4N-67W - Spaur 10-2 (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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	52.69	331.5	435.0	546.9						
100.0	100.0	96.0	96.0	0.1	0.1	52.69	331.7	435.2	547.2	547.0	0.21	2,622.205			
200.0	200.0	195.8	195.8	0.3	0.4	52.70	332.0	435.7	547.8	547.1	0.69	791.542			
300.0	300.0	298.8	298.8	0.5	0.6	52.69	332.2	436.0	548.1	547.0	1.14	479.832			
400.0	400.0	399.7	399.7	0.8	0.7	52.70	332.1	436.0	548.1	546.6	1.50	366.064			
500.0	500.0	499.2	499.2	1.0	0.9	52.75	331.7	436.2	548.0	546.1	1.85	295.544			
600.0	600.0	599.7	599.7	1.2	1.0	52.79	331.3	436.4	547.9	545.6	2.26	242.038			
700.0	700.0	700.8	700.8	1.4	1.2	52.81	331.0	436.3	547.7	545.0	2.66	205.912			
800.0	800.0	802.2	802.2	1.7	1.4	52.83	330.6	436.0	547.2	544.1	3.06	178.963			
900.0	900.0	902.0	902.0	1.9	1.6	-58.06	330.1	435.7	546.2	542.7	3.46	157.738			
1,000.0	1,000.0	1,002.3	1,002.2	2.1	1.8	-58.30	329.7	435.3	544.2	540.3	3.87	140.661			
1,100.0	1,099.9	1,101.6	1,101.6	2.3	2.0	-58.70	329.3	434.9	541.4	537.1	4.29	126.130			
1,200.0	1,199.7	1,200.0	1,200.0	2.5	2.2	-59.27	329.0	434.6	537.9	533.1	4.73	113.817			
1,300.0	1,299.4	1,299.8	1,299.8	2.7	2.4	-60.04	328.9	434.4	533.6	528.5	5.15	103.520			
1,400.0	1,398.9	1,400.2	1,400.2	3.0	2.7	-61.02	328.9	434.0	528.5	522.9	5.60	94.464			
1,500.0	1,498.3	1,499.9	1,499.9	3.2	2.9	-62.17	328.7	433.5	522.7	516.6	6.07	86.034			
1,600.0	1,597.4	1,598.9	1,598.9	3.5	3.1	-63.50	328.4	433.1	516.2	509.6	6.59	78.341			
1,700.0	1,696.3	1,696.7	1,696.7	3.8	3.4	-65.02	328.1	432.9	509.3	502.2	7.12	71.500			
1,800.0	1,794.9	1,795.4	1,795.4	4.1	3.6	-66.78	328.0	432.6	502.2	494.5	7.68	65.349			
1,900.0	1,893.4	1,894.4	1,894.4	4.5	3.9	-68.61	327.7	432.4	495.2	486.9	8.27	59.869			
2,000.0	1,991.9	1,992.9	1,992.9	4.8	4.1	-70.45	327.2	432.3	488.6	479.7	8.86	55.127			
2,100.0	2,090.4	2,090.8	2,090.8	5.2	4.3	-72.32	326.8	432.4	482.6	473.2	9.45	51.083			
2,200.0	2,188.9	2,187.7	2,187.7	5.5	4.5	-74.22	326.5	432.5	477.4	467.5	9.95	47.964			
2,300.0	2,287.3	2,286.1	2,286.1	5.9	4.6	-76.20	326.5	432.6	473.0	462.6	10.42	45.381			
2,400.0	2,385.8	2,384.3	2,384.3	6.3	4.7	-78.22	326.6	432.6	469.2	458.3	10.90	43.041			
2,500.0	2,484.3	2,482.6	2,482.6	6.7	4.7	-80.29	326.7	432.6	466.0	454.6	11.37	40.977			
2,600.0	2,582.8	2,581.2	2,581.1	7.0	4.9	-82.41	327.0	432.5	463.5	451.6	11.87	39.033			
2,700.0	2,681.3	2,679.8	2,679.7	7.4	5.0	-84.56	327.2	432.3	461.6	449.2	12.41	37.214			
2,800.0	2,779.7	2,779.1	2,779.1	7.8	5.2	-86.75	327.4	431.9	460.3	447.4	12.96	35.506			
2,900.0	2,878.2	2,880.1	2,880.1	8.2	5.4	-89.02	327.4	431.1	459.4	445.8	13.57	33.856			
3,000.0	2,976.7	2,979.8	2,979.8	8.6	5.6	-91.24	326.9	430.4	458.6	444.4	14.19	32.319			
3,086.6	3,062.0	3,065.4	3,065.3	8.9	5.8	-93.15	326.2	429.7	458.3	443.6	14.73	31.124			
3,100.0	3,075.2	3,078.6	3,078.6	9.0	5.8	-93.45	326.1	429.6	458.4	443.5	14.81	30.950			
3,200.0	3,173.7	3,178.0	3,178.0	9.4	6.1	-95.69	325.4	428.6	458.7	443.3	15.43	29.734			
3,300.0	3,272.1	3,276.1	3,276.1	9.8	6.3	-97.92	324.5	427.4	459.6	443.6	16.04	28.663			
3,400.0	3,370.6	3,375.5	3,375.4	10.2	6.6	-100.17	323.6	426.1	461.3	444.6	16.64	27.721			
3,500.0	3,469.1	3,474.0	3,473.9	10.6	6.8	-102.43	322.6	424.5	463.4	446.2	17.23	26.892			
3,600.0	3,567.6	3,571.8	3,571.7	10.9	7.1	-104.67	321.7	422.6	466.3	448.5	17.81	26.180			
3,700.0	3,666.1	3,669.6	3,669.4	11.3	7.3	-106.88	320.8	420.8	470.1	451.7	18.38	25.572			
3,800.0	3,764.5	3,767.5	3,767.4	11.7	7.6	-109.07	320.1	418.9	474.6	455.7	18.94	25.058			
3,900.0	3,863.0	3,866.1	3,866.0	12.1	7.8	-111.24	319.3	416.9	479.9	460.4	19.49	24.621			
4,000.0	3,961.5	3,963.8	3,963.6	12.5	8.0	-113.29	318.5	415.4	485.8	465.8	20.03	24.248			
4,100.0	4,060.0	4,061.2	4,061.0	12.9	8.3	-115.18	317.9	414.7	492.5	471.9	20.57	23.947			
4,200.0	4,158.5	4,159.1	4,158.9	13.3	8.5	-116.97	317.6	414.6	499.9	478.8	21.09	23.704			
4,300.0	4,256.9	4,257.3	4,257.1	13.7	8.8	-118.71	317.3	414.4	507.8	486.2	21.61	23.502			
4,400.0	4,355.4	4,355.8	4,355.6	14.1	9.0	-120.43	317.0	414.0	516.3	494.2	22.13	23.334			
4,500.0	4,453.9	4,452.8	4,452.6	14.5	9.3	-122.06	316.8	413.7	525.2	502.6	22.62	23.220			
4,600.0	4,552.4	4,549.6	4,549.4	14.9	9.5	-123.64	317.0	413.2	535.0	511.9	23.08	23.183			
4,700.0	4,650.9	4,648.0	4,647.8	15.3	9.6	-125.18	317.3	412.8	545.3	521.8	23.51	23.192			
4,800.0	4,749.3	4,746.8	4,746.6	15.7	9.8	-126.67	317.5	412.3	556.0	532.0	23.95	23.211			
4,900.0	4,847.8	4,844.6	4,844.4	16.1	10.0	-128.10	317.7	411.8	567.0	542.6	24.39	23.248			

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 Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 10PD Pad Sec. 10-T4N-67W - Spaur 10-2 (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						
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	4,946.3	4,942.6	4,942.4	16.5	10.2	-129.47	318.1	411.4	578.5	553.7	24.80	23.323	
5,100.0	5,044.8	5,041.2	5,041.0	16.9	10.4	-130.78	318.5	411.1	590.2	565.0	25.20	23.417	
5,200.0	5,143.3	5,138.3	5,138.0	17.3	10.6	-132.02	318.9	410.7	602.3	576.7	25.60	23.525	
5,300.0	5,241.7	5,236.0	5,235.7	17.7	10.7	-133.23	319.6	410.2	615.1	589.1	25.99	23.661	
5,400.0	5,340.2	5,336.4	5,336.2	18.1	10.9	-134.40	320.1	409.9	627.8	601.4	26.37	23.804	
5,500.0	5,438.7	5,434.7	5,434.4	18.5	11.0	-135.51	320.5	409.6	640.6	613.9	26.76	23.940	
5,600.0	5,537.2	5,531.9	5,531.6	18.9	11.2	-136.62	320.9	409.2	653.6	626.5	27.17	24.061	
5,700.0	5,636.2	5,629.7	5,629.5	19.2	11.4	-137.67	321.4	408.3	665.1	637.6	27.54	24.152	
5,800.0	5,735.6	5,731.7	5,731.5	19.4	11.6	-138.45	321.8	407.8	673.9	646.0	27.90	24.155	
5,900.0	5,835.3	5,831.5	5,831.3	19.6	11.8	-138.95	322.2	407.6	680.0	651.8	28.22	24.093	
6,000.0	5,935.2	5,931.8	5,931.5	19.8	12.0	-139.22	322.5	407.4	683.4	654.9	28.55	23.941	
6,100.0	6,035.2	6,033.1	6,032.9	19.9	12.2	-28.47	322.8	407.0	684.3	655.4	28.90	23.680	
6,200.0	6,135.2	6,136.8	6,136.6	20.0	12.5	-28.54	322.3	406.4	684.2	654.9	29.29	23.363	
6,300.0	6,235.2	6,237.8	6,237.6	20.2	12.7	-28.61	321.4	405.8	683.8	654.1	29.67	23.048	
6,400.0	6,335.0	6,337.1	6,336.9	20.3	12.9	-29.06	320.6	405.3	678.9	649.1	29.77	22.805	
6,500.0	6,433.3	6,433.3	6,433.1	20.4	13.1	-30.44	320.1	405.0	663.0	633.6	29.43	22.531	
6,600.0	6,528.5	6,526.6	6,526.3	20.4	13.4	-32.92	320.0	404.6	636.8	608.0	28.73	22.165	
6,700.0	6,618.8	6,617.2	6,616.9	20.4	13.6	-36.79	319.9	404.3	600.7	572.9	27.83	21.589	
6,800.0	6,702.8	6,700.0	6,699.8	20.4	13.8	-42.31	320.0	404.1	556.5	529.5	27.01	20.605	
6,900.0	6,779.0	6,774.9	6,774.7	20.3	13.9	-49.79	320.3	403.8	506.2	479.5	26.71	18.949	
7,000.0	6,846.2	6,841.8	6,841.5	20.3	14.1	-59.26	320.7	403.5	453.1	425.7	27.37	16.555	
7,100.0	6,903.0	6,898.9	6,898.6	20.3	14.2	-69.91	321.2	403.2	401.7	372.9	28.83	13.935	
7,200.0	6,948.7	6,945.6	6,945.4	20.4	14.2	-80.02	321.6	403.0	358.9	328.5	30.39	11.808	
7,300.0	6,982.4	6,980.4	6,980.1	20.6	14.3	-87.55	321.8	402.9	333.6	302.0	31.60	10.558	
7,348.1	6,994.2	6,992.6	6,992.3	20.7	14.3	-89.85	321.9	402.9	330.4	298.3	32.10	10.293 CC, ES	
7,400.0	7,003.6	7,002.5	7,002.2	20.9	14.3	-91.23	322.0	402.9	334.3	301.7	32.57	10.262 SF	
7,500.0	7,011.8	7,011.5	7,011.2	21.6	14.4	-90.52	322.1	402.8	363.0	329.5	33.53	10.827	
7,600.0	7,011.2	7,011.8	7,011.5	22.4	14.4	-89.90	322.1	402.8	414.5	379.9	34.58	11.986	
7,700.0	7,010.5	7,011.9	7,011.6	23.4	14.4	-89.92	322.1	402.8	481.5	445.8	35.78	13.457	
7,800.0	7,009.7	7,012.0	7,011.7	24.6	14.4	-89.93	322.1	402.8	558.5	521.4	37.08	15.061	
7,900.0	7,009.0	7,012.1	7,011.8	25.9	14.4	-89.95	322.1	402.8	641.9	603.4	38.47	16.686	
8,000.0	7,008.2	7,012.2	7,011.9	27.3	14.4	-89.97	322.1	402.8	729.4	689.5	39.92	18.273	
8,100.0	7,007.5	7,012.2	7,012.0	28.7	14.4	-89.98	322.1	402.8	819.8	778.4	41.43	19.788	
8,200.0	7,006.7	7,012.3	7,012.1	30.2	14.4	-90.00	322.1	402.8	912.2	869.3	42.99	21.220	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10I-201 - Wellbore #1 - Plan #1 (6-12-15)													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	180.00	-58.3	0.0	58.3				
100.0	100.0	99.0	99.0	0.1	0.1	180.00	-58.3	0.0	58.3	58.1	0.19	299.602	
200.0	200.0	199.0	199.0	0.3	0.3	180.00	-58.3	0.0	58.3	57.7	0.64	90.682 CC	
300.0	300.0	298.8	298.8	0.5	0.5	-178.76	-58.4	-1.3	58.5	57.4	1.08	54.113 ES	
400.0	400.0	398.5	398.4	0.8	0.7	-175.04	-58.9	-5.1	59.1	57.6	1.52	38.885	
500.0	500.0	497.8	497.5	1.0	1.0	-169.08	-59.7	-11.5	60.8	58.9	1.97	30.875	
600.0	600.0	596.8	596.1	1.2	1.2	-161.42	-60.8	-20.4	64.2	61.8	2.42	26.482	
700.0	700.0	695.3	693.9	1.4	1.5	-152.91	-62.2	-31.8	70.1	67.2	2.89	24.250	
800.0	800.0	793.1	790.7	1.7	1.8	-144.49	-63.9	-45.6	78.9	75.6	3.37	23.406 SF	
900.0	900.0	890.0	886.2	1.9	2.2	112.67	-65.9	-61.7	91.5	87.6	3.89	23.497	
1,000.0	1,000.0	985.6	980.0	2.1	2.6	120.05	-68.1	-79.9	108.4	104.0	4.34	24.995	
1,100.0	1,099.9	1,079.7	1,071.9	2.3	3.0	126.37	-70.6	-100.1	129.9	125.1	4.78	27.189	
1,200.0	1,199.7	1,172.1	1,161.6	2.5	3.4	131.55	-73.3	-122.1	155.9	150.7	5.22	29.888	
1,300.0	1,299.4	1,262.5	1,248.9	2.7	3.9	135.71	-76.2	-145.7	186.4	180.7	5.66	32.933	
1,400.0	1,398.9	1,351.4	1,334.1	3.0	4.4	139.04	-79.3	-170.9	221.0	214.9	6.11	36.188	
1,500.0	1,498.3	1,443.4	1,422.0	3.2	5.0	141.82	-82.6	-197.8	258.3	251.8	6.56	39.386	
1,600.0	1,597.4	1,534.8	1,509.3	3.5	5.5	144.04	-85.9	-224.5	297.5	290.5	7.01	42.437	
1,700.0	1,696.3	1,625.4	1,595.9	3.8	6.1	145.87	-89.2	-251.0	338.3	330.9	7.47	45.309	
1,800.0	1,794.9	1,715.4	1,681.9	4.1	6.6	147.40	-92.4	-277.3	380.8	372.9	7.93	48.025	
1,900.0	1,893.4	1,805.0	1,767.5	4.5	7.2	148.90	-95.6	-303.5	424.2	415.8	8.41	50.443	
2,000.0	1,991.9	1,894.5	1,853.1	4.8	7.7	150.13	-98.9	-329.7	467.8	458.9	8.90	52.573	
2,100.0	2,090.4	1,984.1	1,938.7	5.2	8.3	151.15	-102.1	-355.9	511.5	502.1	9.39	54.459	
2,200.0	2,188.9	2,073.7	2,024.3	5.5	8.9	152.01	-105.3	-382.1	555.4	545.5	9.89	56.137	
2,300.0	2,287.3	2,163.3	2,109.9	5.9	9.4	152.74	-108.5	-408.3	599.3	588.9	10.40	57.638	
2,400.0	2,385.8	2,252.9	2,195.5	6.3	10.0	153.37	-111.7	-434.5	643.3	632.4	10.91	58.985	
2,500.0	2,484.3	2,342.5	2,281.1	6.7	10.5	153.92	-115.0	-460.7	687.4	676.0	11.42	60.200	
2,600.0	2,582.8	2,432.1	2,366.7	7.0	11.1	154.41	-118.2	-486.9	731.5	719.5	11.93	61.301	
2,700.0	2,681.3	2,521.6	2,452.4	7.4	11.7	154.84	-121.4	-513.1	775.6	763.2	12.45	62.301	
2,800.0	2,779.7	2,611.2	2,538.0	7.8	12.2	155.23	-124.6	-539.3	819.8	806.8	12.97	63.213	
2,900.0	2,878.2	2,700.8	2,623.6	8.2	12.8	155.57	-127.9	-565.5	864.0	850.5	13.49	64.049	
3,000.0	2,976.7	2,790.4	2,709.2	8.6	13.3	155.88	-131.1	-591.7	908.2	894.2	14.01	64.815	
3,100.0	3,075.2	2,880.0	2,794.8	9.0	13.9	156.17	-134.3	-617.9	952.5	937.9	14.54	65.522	
3,200.0	3,173.7	2,969.6	2,880.4	9.4	14.5	156.43	-137.5	-644.0	996.7	981.7	15.06	66.174	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10I-321 - Wellbore #1 - Plan #2 (6-10-15)												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
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-43.7	0.0	43.7				
100.0	100.0	99.0	99.0	0.1	0.1	180.00	-43.7	0.0	43.7	43.5	0.19	224.686	
200.0	200.0	199.0	199.0	0.3	0.3	180.00	-43.7	0.0	43.7	43.1	0.64	68.007	
300.0	300.0	299.0	299.0	0.5	0.5	180.00	-43.7	0.0	43.7	42.6	1.09	40.020	
400.0	400.0	399.0	399.0	0.8	0.8	180.00	-43.7	0.0	43.7	42.2	1.54	28.353 CC	
500.0	500.0	498.9	498.8	1.0	1.0	-178.90	-43.9	-0.8	43.9	41.9	1.98	22.206 ES	
600.0	600.0	598.6	598.6	1.2	1.2	-175.63	-44.3	-3.4	44.5	42.1	2.40	18.497	
700.0	700.0	698.3	698.2	1.4	1.4	-170.40	-45.1	-7.6	45.8	42.9	2.84	16.117	
800.0	800.0	797.8	797.5	1.7	1.6	-163.63	-46.2	-13.6	48.2	44.9	3.28	14.688	
900.0	900.0	897.0	896.4	1.9	1.9	94.07	-47.6	-21.2	52.2	48.5	3.73	14.004 SF	
1,000.0	1,000.0	995.7	994.6	2.1	2.1	104.04	-49.3	-30.4	58.9	54.7	4.16	14.165	
1,100.0	1,099.9	1,093.7	1,092.0	2.3	2.4	113.90	-51.3	-41.2	69.0	64.4	4.59	15.047	
1,200.0	1,199.7	1,190.9	1,188.3	2.5	2.7	122.57	-53.6	-53.6	83.1	78.1	5.02	16.564	
1,300.0	1,299.4	1,287.1	1,283.5	2.7	3.0	129.63	-56.2	-67.4	101.3	95.9	5.46	18.573	
1,400.0	1,398.9	1,382.2	1,377.3	3.0	3.3	135.18	-59.0	-82.6	123.4	117.5	5.90	20.936	
1,500.0	1,498.3	1,476.0	1,469.7	3.2	3.7	139.50	-62.0	-99.1	149.2	142.9	6.34	23.541	
1,600.0	1,597.4	1,568.4	1,560.4	3.5	4.0	142.85	-65.3	-116.8	178.6	171.8	6.79	26.307	
1,700.0	1,696.3	1,659.4	1,649.3	3.8	4.4	145.49	-68.7	-135.6	211.3	204.0	7.24	29.169	
1,800.0	1,794.9	1,748.7	1,736.3	4.1	4.8	147.57	-72.4	-155.4	247.2	239.5	7.70	32.105	
1,900.0	1,893.4	1,839.9	1,824.9	4.5	5.2	149.42	-76.3	-176.6	285.1	276.9	8.18	34.872	
2,000.0	1,991.9	1,932.1	1,914.4	4.8	5.7	150.86	-80.3	-198.1	323.3	314.6	8.66	37.348	
2,100.0	2,090.4	2,024.2	2,003.9	5.2	6.1	152.00	-84.2	-219.6	361.6	352.4	9.14	39.551	
2,200.0	2,188.9	2,116.4	2,093.5	5.5	6.6	152.92	-88.2	-241.0	400.0	390.4	9.63	41.518	
2,300.0	2,287.3	2,208.5	2,183.0	5.9	7.0	153.68	-92.2	-262.5	438.5	428.4	10.13	43.282	
2,400.0	2,385.8	2,300.7	2,272.5	6.3	7.5	154.31	-96.1	-284.0	477.0	466.4	10.63	44.870	
2,500.0	2,484.3	2,392.8	2,362.1	6.7	8.0	154.85	-100.1	-305.5	515.6	504.5	11.14	46.305	
2,600.0	2,582.8	2,485.0	2,451.6	7.0	8.4	155.32	-104.1	-327.0	554.2	542.6	11.64	47.606	
2,700.0	2,681.3	2,577.1	2,541.1	7.4	8.9	155.72	-108.0	-348.4	592.9	580.7	12.15	48.791	
2,800.0	2,779.7	2,669.3	2,630.7	7.8	9.4	156.08	-112.0	-369.9	631.5	618.9	12.66	49.873	
2,900.0	2,878.2	2,761.5	2,720.2	8.2	9.8	156.39	-115.9	-391.4	670.2	657.0	13.18	50.865	
3,000.0	2,976.7	2,853.6	2,809.7	8.6	10.3	156.67	-119.9	-412.9	708.9	695.2	13.69	51.777	
3,100.0	3,075.2	2,945.8	2,899.2	9.0	10.8	156.93	-123.9	-434.4	747.6	733.4	14.21	52.617	
3,200.0	3,173.7	3,037.9	2,988.8	9.4	11.2	157.15	-127.8	-455.8	786.4	771.6	14.73	53.394	
3,300.0	3,272.1	3,130.1	3,078.3	9.8	11.7	157.36	-131.8	-477.3	825.1	809.8	15.25	54.114	
3,400.0	3,370.6	3,222.2	3,167.8	10.2	12.2	157.54	-135.8	-498.8	863.8	848.1	15.77	54.783	
3,500.0	3,469.1	3,314.4	3,257.4	10.6	12.7	157.72	-139.7	-520.3	902.6	886.3	16.29	55.406	
3,600.0	3,567.6	3,406.5	3,346.9	10.9	13.1	157.87	-143.7	-541.8	941.3	924.5	16.81	55.988	
3,700.0	3,666.1	3,498.7	3,436.4	11.3	13.6	158.02	-147.7	-563.2	980.1	962.8	17.34	56.531	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-201 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.2					
100.0	100.0	99.0	99.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.19	149.790		
200.0	200.0	199.0	199.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.64	45.338		
300.0	300.0	299.0	299.0	0.5	0.5	0.00	29.1	0.0	29.1	28.1	1.09	26.680		
400.0	400.0	399.0	399.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.54	18.902		
500.0	500.0	499.0	499.0	1.0	1.0	0.00	29.1	0.0	29.1	27.2	1.99	14.635		
600.0	600.0	599.0	599.0	1.2	1.2	0.00	29.1	0.0	29.1	26.7	2.44	11.940		
700.0	700.0	699.0	699.0	1.4	1.4	0.00	29.1	0.0	29.1	26.3	2.89	10.083		
800.0	800.0	799.0	799.0	1.7	1.7	0.00	29.1	0.0	29.1	25.8	3.34	8.726 CC		
900.0	900.0	899.0	899.0	1.9	1.9	-112.40	29.1	0.0	29.5	25.7	3.77	7.814 ES		
1,000.0	1,000.0	999.0	999.0	2.1	2.1	-116.93	29.1	0.0	30.6	26.4	4.19	7.293		
1,100.0	1,099.9	1,098.9	1,098.9	2.3	2.3	-123.73	29.1	0.0	32.8	28.2	4.62	7.098		
1,200.0	1,199.7	1,198.7	1,198.7	2.5	2.6	-131.68	29.1	0.0	36.5	31.5	5.05	7.233		
1,300.0	1,299.4	1,298.4	1,298.4	2.7	2.8	-139.63	29.1	0.0	42.1	36.7	5.48	7.688		
1,400.0	1,398.9	1,397.9	1,397.9	3.0	3.0	-146.73	29.1	0.0	49.8	43.9	5.92	8.425		
1,500.0	1,498.3	1,497.3	1,497.3	3.2	3.2	-152.65	29.1	0.0	59.6	53.3	6.35	9.393		
1,600.0	1,597.4	1,596.4	1,596.4	3.5	3.5	-157.41	29.1	0.0	71.5	64.7	6.78	10.541		
1,700.0	1,696.3	1,695.3	1,695.3	3.8	3.7	-161.17	29.1	0.0	85.4	78.1	7.22	11.827		
1,800.0	1,794.9	1,793.9	1,793.9	4.1	3.9	-164.15	29.1	0.0	101.1	93.5	7.65	13.219		
1,900.0	1,893.4	1,892.6	1,892.5	4.5	4.1	-166.82	28.5	-0.4	117.9	109.8	8.07	14.604		
2,000.0	1,991.9	1,991.0	1,991.0	4.8	4.3	-169.55	26.4	-1.6	134.8	126.3	8.47	15.908		
2,100.0	2,090.4	2,089.3	2,089.2	5.2	4.5	-172.31	22.8	-3.6	152.0	143.1	8.88	17.116		
2,200.0	2,188.9	2,187.3	2,187.0	5.5	4.6	-175.08	17.8	-6.5	169.5	160.2	9.29	18.243		
2,300.0	2,287.3	2,285.0	2,284.5	5.9	4.8	-177.83	11.3	-10.2	187.5	177.8	9.72	19.304		
2,400.0	2,385.8	2,382.4	2,381.4	6.3	5.0	179.44	3.5	-14.6	206.2	196.1	10.15	20.308		
2,500.0	2,484.3	2,479.6	2,478.1	6.7	5.2	176.79	-5.7	-19.9	225.6	214.9	10.61	21.260		
2,600.0	2,582.8	2,577.2	2,575.0	7.0	5.4	174.49	-15.1	-25.2	245.4	234.3	11.08	22.144		
2,700.0	2,681.3	2,674.8	2,672.0	7.4	5.7	172.53	-24.5	-30.6	265.5	254.0	11.56	22.959		
2,800.0	2,779.7	2,772.3	2,769.0	7.8	5.9	170.85	-33.9	-36.0	285.9	273.9	12.06	23.713		
2,900.0	2,878.2	2,869.9	2,865.9	8.2	6.2	169.39	-43.4	-41.3	306.5	294.0	12.56	24.405		
3,000.0	2,976.7	2,967.5	2,962.9	8.6	6.4	168.12	-52.8	-46.7	327.3	314.2	13.07	25.043		
3,100.0	3,075.2	3,065.1	3,059.9	9.0	6.6	166.99	-62.2	-52.0	348.2	334.6	13.59	25.630		
3,200.0	3,173.7	3,162.6	3,156.8	9.4	6.9	166.00	-71.6	-57.4	369.2	355.1	14.11	26.173		
3,300.0	3,272.1	3,260.2	3,253.8	9.8	7.2	165.11	-81.0	-62.8	390.4	375.7	14.63	26.674		
3,400.0	3,370.6	3,357.8	3,350.8	10.2	7.4	164.31	-90.4	-68.1	411.6	396.4	15.17	27.137		
3,500.0	3,469.1	3,455.4	3,447.8	10.6	7.7	163.59	-99.8	-73.5	432.8	417.1	15.70	27.567		
3,600.0	3,567.6	3,552.9	3,544.7	10.9	8.0	162.94	-109.3	-78.9	454.2	437.9	16.24	27.967		
3,700.0	3,666.1	3,650.5	3,641.7	11.3	8.2	162.35	-118.7	-84.2	475.5	458.8	16.78	28.339		
3,800.0	3,764.5	3,748.1	3,738.7	11.7	8.5	161.80	-128.1	-89.6	497.0	479.6	17.32	28.685		
3,900.0	3,863.0	3,845.7	3,835.6	12.1	8.8	161.31	-137.5	-95.0	518.4	500.6	17.87	29.009		
4,000.0	3,961.5	3,943.2	3,932.6	12.5	9.1	160.85	-146.9	-100.3	539.9	521.5	18.42	29.312		
4,100.0	4,060.0	4,040.8	4,029.6	12.9	9.3	160.43	-156.3	-105.7	561.5	542.5	18.97	29.596		
4,200.0	4,158.5	4,138.4	4,126.5	13.3	9.6	160.03	-165.7	-111.1	583.0	563.5	19.52	29.862		
4,300.0	4,256.9	4,236.0	4,223.5	13.7	9.9	159.67	-175.2	-116.4	604.6	584.5	20.08	30.113		
4,400.0	4,355.4	4,333.5	4,320.5	14.1	10.2	159.33	-184.6	-121.8	626.2	605.6	20.63	30.349		
4,500.0	4,453.9	4,431.1	4,417.5	14.5	10.5	159.01	-194.0	-127.2	647.8	626.6	21.19	30.571		
4,600.0	4,552.4	4,528.7	4,514.4	14.9	10.8	158.72	-203.4	-132.5	669.5	647.7	21.75	30.781		
4,700.0	4,650.9	4,626.3	4,611.4	15.3	11.0	158.44	-212.8	-137.9	691.1	668.8	22.31	30.980		
4,800.0	4,749.3	4,727.7	4,712.2	15.7	11.3	158.18	-222.5	-143.4	712.7	689.9	22.86	31.172		
4,900.0	4,847.8	4,839.9	4,824.1	16.1	11.6	158.13	-230.4	-147.9	732.9	709.5	23.39	31.335		
5,000.0	4,946.3	4,932.9	4,937.0	16.5	11.8	158.39	-234.5	-150.2	751.1	727.3	23.88	31.455		

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 Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design		Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-201 - Wellbore #1 - Plan #2 (6-10-15)										Offset Site Error:		0.0 ft
Survey Program: 0-MWD												Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,044.8	5,059.7	5,043.8	16.9	12.0	158.86	-235.1	-150.6	767.7	743.3	24.34	31.544		
5,200.0	5,143.3	5,158.2	5,142.3	17.3	12.2	159.31	-235.1	-150.6	783.9	759.1	24.77	31.644		
5,300.0	5,241.7	5,256.7	5,240.7	17.7	12.3	159.75	-235.1	-150.6	800.2	775.0	25.21	31.744		
5,400.0	5,340.2	5,355.2	5,339.2	18.1	12.5	160.17	-235.1	-150.6	816.6	790.9	25.64	31.842		
5,500.0	5,438.7	5,453.6	5,437.7	18.5	12.7	160.58	-235.1	-150.6	832.9	806.9	26.08	31.936		
5,600.0	5,537.2	5,552.2	5,536.2	18.9	12.9	161.00	-235.1	-150.6	849.2	822.6	26.53	32.006		
5,700.0	5,636.2	5,651.1	5,635.2	19.2	13.1	161.40	-235.1	-150.6	862.8	835.9	26.96	32.009		
5,800.0	5,735.6	5,750.5	5,734.6	19.4	13.3	161.69	-235.1	-150.6	873.2	845.9	27.35	31.924		
5,900.0	5,835.3	5,850.2	5,834.3	19.6	13.4	161.89	-235.1	-150.6	880.4	852.6	27.72	31.754		
6,000.0	5,935.2	5,950.1	5,934.2	19.8	13.6	162.00	-235.1	-150.6	884.2	856.1	28.07	31.504		
6,100.0	6,035.2	6,050.1	6,034.2	19.9	13.8	-87.17	-235.1	-150.6	884.9	856.5	28.41	31.149		
6,200.0	6,135.2	6,150.1	6,134.2	20.0	14.0	-87.17	-235.1	-150.6	884.9	856.1	28.77	30.753		
6,300.0	6,235.2	6,250.1	6,234.2	20.2	14.2	-87.17	-235.1	-150.6	884.9	855.7	29.14	30.365		
6,400.0	6,335.0	6,346.0	6,330.0	20.3	14.4	-87.26	-231.6	-150.6	884.8	855.3	29.46	30.034		
6,500.0	6,433.3	6,440.9	6,423.6	20.4	14.5	-87.40	-216.8	-150.6	884.7	855.0	29.67	29.819		
6,600.0	6,528.5	6,536.0	6,514.9	20.4	14.6	-87.59	-190.4	-150.6	884.6	854.8	29.79	29.690		
6,700.0	6,618.8	6,631.5	6,602.6	20.4	14.6	-87.83	-152.8	-150.6	884.4	854.6	29.88	29.600		
6,800.0	6,702.8	6,727.5	6,685.3	20.4	14.6	-88.09	-104.2	-150.6	884.3	854.3	29.99	29.490		
6,900.0	6,779.0	6,823.9	6,761.6	20.3	14.7	-88.39	-45.3	-150.6	884.1	854.0	30.19	29.289		
7,000.0	6,846.2	6,921.0	6,830.3	20.3	14.7	-88.72	23.2	-150.6	884.0	853.5	30.56	28.926		
7,100.0	6,903.0	7,018.6	6,890.1	20.3	14.9	-89.07	100.3	-150.6	883.9	852.7	31.19	28.344		
7,200.0	6,948.7	7,117.0	6,939.9	20.4	15.4	-89.43	185.0	-150.6	883.8	851.7	32.12	27.517		
7,300.0	6,982.4	7,216.1	6,978.6	20.6	16.0	-89.81	276.1	-150.6	883.8	850.4	33.40	26.462		
7,350.2	6,994.6	7,266.1	6,993.6	20.7	16.4	-90.00	323.9	-150.6	883.8	849.6	34.19	25.847		
7,400.0	7,003.6	7,315.9	7,005.4	20.9	16.9	-90.19	372.2	-150.6	883.8	848.8	35.02	25.233		
7,500.0	7,011.8	7,416.5	7,019.5	21.6	17.8	-90.57	471.7	-150.6	883.8	846.9	36.97	23.906		
7,600.0	7,011.2	7,517.3	7,021.4	22.4	19.0	-90.72	572.5	-150.6	883.9	844.7	39.18	22.558		
7,700.0	7,010.5	7,617.3	7,020.6	23.4	20.2	-90.72	672.5	-150.6	883.9	842.3	41.61	21.241		
7,800.0	7,009.7	7,717.3	7,019.9	24.6	21.5	-90.72	772.5	-150.6	883.9	839.6	44.24	19.978		
7,900.0	7,009.0	7,817.3	7,019.1	25.9	23.0	-90.72	872.5	-150.6	883.9	836.8	47.04	18.791		
8,000.0	7,008.2	7,917.3	7,018.4	27.3	24.4	-90.72	972.5	-150.6	883.9	833.9	49.97	17.687		
8,100.0	7,007.5	8,017.3	7,017.6	28.7	26.0	-90.72	1,072.5	-150.6	883.9	830.8	53.02	16.670		
8,200.0	7,006.7	8,117.3	7,016.9	30.2	27.6	-90.72	1,172.5	-150.6	883.9	827.7	56.17	15.736		
8,300.0	7,006.0	8,217.3	7,016.1	31.7	29.2	-90.72	1,272.5	-150.6	883.9	824.5	59.40	14.880		
8,400.0	7,005.2	8,317.3	7,015.4	33.3	30.9	-90.72	1,372.5	-150.6	883.9	821.2	62.69	14.098		
8,500.0	7,004.5	8,417.3	7,014.6	34.9	32.5	-90.72	1,472.5	-150.6	883.9	817.8	66.05	13.382		
8,600.0	7,003.7	8,517.3	7,013.9	36.5	34.3	-90.72	1,572.5	-150.6	883.9	814.4	69.46	12.725		
8,700.0	7,003.0	8,617.3	7,013.1	38.2	36.0	-90.72	1,672.5	-150.6	883.9	811.0	72.91	12.123		
8,800.0	7,002.2	8,717.3	7,012.4	39.9	37.7	-90.72	1,772.5	-150.6	883.9	807.5	76.39	11.570		
8,900.0	7,001.5	8,817.3	7,011.6	41.6	39.5	-90.72	1,872.5	-150.6	883.9	804.0	79.91	11.061		
9,000.0	7,000.7	8,917.3	7,010.9	43.3	41.3	-90.72	1,972.4	-150.6	883.9	800.4	83.46	10.591		
9,100.0	7,000.0	9,017.3	7,010.1	45.1	43.1	-90.72	2,072.4	-150.6	883.9	796.8	87.03	10.156		
9,200.0	6,999.2	9,117.3	7,009.4	46.8	44.9	-90.72	2,172.4	-150.6	883.9	793.2	90.62	9.753		
9,300.0	6,998.5	9,217.3	7,008.6	48.6	46.7	-90.72	2,272.4	-150.6	883.9	789.6	94.23	9.379		
9,400.0	6,997.7	9,317.3	7,007.9	50.4	48.5	-90.72	2,372.4	-150.6	883.9	786.0	97.86	9.032		
9,500.0	6,997.0	9,417.3	7,007.1	52.1	50.3	-90.72	2,472.4	-150.6	883.9	782.4	101.51	8.707		
9,600.0	6,996.2	9,517.3	7,006.4	53.9	52.2	-90.72	2,572.4	-150.6	883.9	778.7	105.17	8.404		
9,700.0	6,995.5	9,617.3	7,005.6	55.7	54.0	-90.72	2,672.4	-150.6	883.9	775.0	108.84	8.121		
9,800.0	6,994.7	9,717.3	7,004.9	57.6	55.9	-90.72	2,772.4	-150.6	883.9	771.3	112.52	7.855		
9,900.0	6,994.0	9,817.3	7,004.1	59.4	57.7	-90.72	2,872.4	-150.6	883.9	767.6	116.22	7.605		

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 Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-201 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,000.0	6,993.2	9,917.3	7,003.3	61.2	59.6	-90.72	2,972.4	-150.6	883.9	763.9	119.92	7.371	
10,100.0	6,992.5	10,017.3	7,002.6	63.0	61.4	-90.72	3,072.4	-150.6	883.9	760.2	123.63	7.149	
10,200.0	6,991.7	10,117.3	7,001.8	64.9	63.3	-90.72	3,172.4	-150.6	883.9	756.5	127.35	6.941	
10,300.0	6,991.0	10,217.3	7,001.1	66.7	65.2	-90.72	3,272.4	-150.6	883.9	752.8	131.07	6.743	
10,400.0	6,990.2	10,317.3	7,000.3	68.5	67.0	-90.72	3,372.4	-150.6	883.9	749.1	134.80	6.557	
10,500.0	6,989.5	10,417.3	6,999.6	70.4	68.9	-90.72	3,472.4	-150.6	883.9	745.3	138.54	6.380	
10,600.0	6,988.7	10,517.3	6,998.8	72.2	70.8	-90.72	3,572.4	-150.6	883.9	741.6	142.28	6.212	
10,700.0	6,988.0	10,617.3	6,998.1	74.1	72.7	-90.72	3,672.4	-150.6	883.9	737.8	146.03	6.053	
10,800.0	6,987.2	10,717.3	6,997.3	75.9	74.5	-90.72	3,772.4	-150.6	883.9	734.1	149.78	5.901	
10,900.0	6,986.5	10,817.3	6,996.6	77.8	76.4	-90.72	3,872.4	-150.6	883.9	730.3	153.54	5.757	
11,000.0	6,985.7	10,917.3	6,995.8	79.7	78.3	-90.72	3,972.4	-150.6	883.9	726.6	157.30	5.619	
11,100.0	6,985.0	11,017.3	6,995.1	81.5	80.2	-90.72	4,072.4	-150.6	883.9	722.8	161.06	5.488	
11,200.0	6,984.2	11,117.3	6,994.3	83.4	82.1	-90.72	4,172.4	-150.6	883.9	719.0	164.83	5.362	
11,300.0	6,983.5	11,217.3	6,993.6	85.3	84.0	-90.72	4,272.4	-150.6	883.9	715.3	168.60	5.242	
11,400.0	6,982.7	11,317.3	6,992.8	87.1	85.8	-90.72	4,372.4	-150.6	883.9	711.5	172.37	5.128	
11,494.1	6,982.0	11,411.4	6,992.1	88.9	87.6	-90.72	4,466.5	-150.6	883.9	707.9	175.93	5.024 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-241 - Wellbore #1 - Plan #2 (6-10-15)													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	180.00	-29.1	0.0	29.2				
100.0	100.0	99.0	99.0	0.1	0.1	180.00	-29.1	0.0	29.1	28.9	0.19	149.790	
200.0	200.0	199.0	199.0	0.3	0.3	180.00	-29.1	0.0	29.1	28.5	0.64	45.338	
300.0	300.0	299.0	299.0	0.5	0.5	180.00	-29.1	0.0	29.1	28.1	1.09	26.680	
400.0	400.0	399.0	399.0	0.8	0.8	180.00	-29.1	0.0	29.1	27.6	1.54	18.902	
500.0	500.0	499.0	499.0	1.0	1.0	180.00	-29.1	0.0	29.1	27.2	1.99	14.635	
600.0	600.0	599.0	599.0	1.2	1.2	180.00	-29.1	0.0	29.1	26.7	2.44	11.940	
700.0	700.0	699.0	699.0	1.4	1.4	180.00	-29.1	0.0	29.1	26.3	2.89	10.083	
800.0	800.0	799.0	799.0	1.7	1.7	180.00	-29.1	0.0	29.1	25.8	3.34	8.726	
877.7	877.7	876.6	876.6	1.8	1.8	71.11	-29.3	-0.5	29.1	25.5	3.66	7.955 CC	
900.0	900.0	898.8	898.8	1.9	1.9	72.39	-29.4	-0.8	29.1	25.4	3.75	7.762 ES	
1,000.0	1,000.0	998.5	998.4	2.1	2.1	81.90	-30.2	-3.3	29.7	25.5	4.14	7.158	
1,100.0	1,099.9	1,097.8	1,097.7	2.3	2.3	96.28	-31.4	-7.4	32.2	27.7	4.55	7.084 SF	
1,200.0	1,199.7	1,196.7	1,196.4	2.5	2.5	111.70	-33.2	-13.1	38.6	33.6	4.97	7.763	
1,300.0	1,299.4	1,294.9	1,294.3	2.7	2.7	124.53	-35.5	-20.4	49.5	44.1	5.39	9.175	
1,400.0	1,398.9	1,392.3	1,391.3	3.0	2.9	133.78	-38.2	-29.2	64.8	59.0	5.82	11.138	
1,500.0	1,498.3	1,488.8	1,487.2	3.2	3.2	140.16	-41.4	-39.5	84.2	78.0	6.25	13.468	
1,600.0	1,597.4	1,584.2	1,581.8	3.5	3.5	144.56	-45.0	-51.2	107.3	100.6	6.69	16.037	
1,700.0	1,696.3	1,678.4	1,675.0	3.8	3.7	147.68	-49.1	-64.2	133.9	126.7	7.14	18.758	
1,800.0	1,794.9	1,771.7	1,767.0	4.1	4.0	149.93	-53.5	-78.5	163.7	156.1	7.59	21.571	
1,900.0	1,893.4	1,866.5	1,860.5	4.5	4.4	151.74	-58.2	-93.6	194.9	186.9	8.05	24.212	
2,000.0	1,991.9	1,961.3	1,954.1	4.8	4.7	153.05	-62.9	-108.6	226.3	217.8	8.52	26.554	
2,100.0	2,090.4	2,056.2	2,047.6	5.2	5.0	154.04	-67.5	-123.7	257.8	248.8	9.00	28.644	
2,200.0	2,188.9	2,151.0	2,141.1	5.5	5.3	154.82	-72.2	-138.8	289.4	279.9	9.48	30.511	
2,300.0	2,287.3	2,245.8	2,234.6	5.9	5.7	155.44	-76.9	-153.8	320.9	311.0	9.97	32.186	
2,400.0	2,385.8	2,340.7	2,328.1	6.3	6.0	155.95	-81.6	-168.9	352.5	342.1	10.46	33.694	
2,500.0	2,484.3	2,435.5	2,421.6	6.7	6.4	156.38	-86.2	-184.0	384.2	373.2	10.96	35.057	
2,600.0	2,582.8	2,530.3	2,515.1	7.0	6.7	156.74	-90.9	-199.1	415.8	404.4	11.46	36.295	
2,700.0	2,681.3	2,625.2	2,608.6	7.4	7.1	157.06	-95.6	-214.1	447.5	435.5	11.96	37.422	
2,800.0	2,779.7	2,720.0	2,702.1	7.8	7.4	157.33	-100.3	-229.2	479.1	466.7	12.46	38.451	
2,900.0	2,878.2	2,814.8	2,795.6	8.2	7.8	157.56	-105.0	-244.3	510.8	497.9	12.97	39.396	
3,000.0	2,976.7	2,909.7	2,889.1	8.6	8.2	157.77	-109.6	-259.4	542.5	529.0	13.47	40.264	
3,100.0	3,075.2	3,004.5	2,982.7	9.0	8.5	157.96	-114.3	-274.4	574.2	560.2	13.98	41.065	
3,200.0	3,173.7	3,099.3	3,076.2	9.4	8.9	158.12	-119.0	-289.5	605.9	591.4	14.49	41.805	
3,300.0	3,272.1	3,194.2	3,169.7	9.8	9.2	158.27	-123.7	-304.6	637.6	622.6	15.00	42.491	
3,400.0	3,370.6	3,289.0	3,263.2	10.2	9.6	158.41	-128.3	-319.6	669.3	653.8	15.52	43.129	
3,500.0	3,469.1	3,383.8	3,356.7	10.6	10.0	158.53	-133.0	-334.7	701.0	684.9	16.03	43.724	
3,600.0	3,567.6	3,478.6	3,450.2	10.9	10.3	158.65	-137.7	-349.8	732.7	716.1	16.55	44.279	
3,700.0	3,666.1	3,573.5	3,543.7	11.3	10.7	158.75	-142.4	-364.9	764.4	747.3	17.06	44.798	
3,800.0	3,764.5	3,668.3	3,637.2	11.7	11.1	158.84	-147.1	-379.9	796.1	778.5	17.58	45.284	
3,900.0	3,863.0	3,763.1	3,730.7	12.1	11.4	158.93	-151.7	-395.0	827.8	809.7	18.10	45.741	
4,000.0	3,961.5	3,858.0	3,824.2	12.5	11.8	159.01	-156.4	-410.1	859.5	840.9	18.62	46.170	
4,100.0	4,060.0	3,952.8	3,917.7	12.9	12.2	159.09	-161.1	-425.1	891.2	872.1	19.14	46.575	
4,200.0	4,158.5	4,047.6	4,011.2	13.3	12.5	159.16	-165.8	-440.2	923.0	903.3	19.66	46.957	
4,300.0	4,256.9	4,142.5	4,104.8	13.7	12.9	159.23	-170.4	-455.3	954.7	934.5	20.18	47.318	
4,400.0	4,355.4	4,237.3	4,198.3	14.1	13.3	159.29	-175.1	-470.4	986.4	965.7	20.70	47.659	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-14.6	0.0	14.6					
100.0	100.0	99.0	99.0	0.1	0.1	180.00	-14.6	0.0	14.6	14.4	0.19	74.937		
200.0	200.0	199.0	199.0	0.3	0.3	180.00	-14.6	0.0	14.6	13.9	0.64	22.682		
300.0	300.0	299.0	299.0	0.5	0.5	180.00	-14.6	0.0	14.6	13.5	1.09	13.348		
400.0	400.0	399.0	399.0	0.8	0.8	180.00	-14.6	0.0	14.6	13.0	1.54	9.456		
500.0	500.0	499.0	499.0	1.0	1.0	180.00	-14.6	0.0	14.6	12.6	1.99	7.322		
600.0	600.0	599.0	599.0	1.2	1.2	180.00	-14.6	0.0	14.6	12.1	2.44	5.973		
700.0	700.0	699.0	699.0	1.4	1.4	180.00	-14.6	0.0	14.6	11.7	2.89	5.044		
800.0	800.0	799.0	799.0	1.7	1.7	180.00	-14.6	0.0	14.6	11.2	3.34	4.365		
900.0	900.0	899.0	899.0	1.9	1.9	72.46	-14.6	0.0	14.3	10.5	3.77	3.790		
1,000.0	1,000.0	999.0	999.0	2.1	2.1	82.93	-14.6	0.0	13.7	9.5	4.19	3.277		
1,021.1	1,021.1	1,020.0	1,020.0	2.1	2.2	86.26	-14.6	0.0	13.7	9.4	4.28	3.200 CC, ES		
1,100.0	1,099.9	1,098.6	1,098.6	2.3	2.3	102.64	-15.0	-0.7	14.6	10.0	4.60	3.183 SF		
1,200.0	1,199.7	1,198.0	1,198.0	2.5	2.5	123.89	-16.2	-3.0	19.6	14.6	5.00	3.928		
1,300.0	1,299.4	1,297.0	1,296.9	2.7	2.7	137.62	-18.3	-6.7	29.1	23.7	5.40	5.395		
1,400.0	1,398.9	1,395.4	1,395.1	3.0	2.9	145.15	-21.2	-11.9	42.6	36.8	5.81	7.323		
1,500.0	1,498.3	1,493.1	1,492.4	3.2	3.1	149.31	-24.8	-18.5	59.5	53.2	6.23	9.539		
1,600.0	1,597.4	1,589.9	1,588.8	3.5	3.3	151.73	-29.3	-26.5	79.6	72.9	6.66	11.947		
1,700.0	1,696.3	1,686.3	1,684.7	3.8	3.6	153.24	-34.4	-35.8	102.7	95.6	7.10	14.465		
1,800.0	1,794.9	1,783.1	1,780.9	4.1	3.8	154.45	-39.7	-45.3	127.7	120.1	7.54	16.922		
1,900.0	1,893.4	1,879.7	1,876.9	4.5	4.1	155.49	-44.9	-54.9	153.4	145.4	8.01	19.168		
2,000.0	1,991.9	1,976.3	1,972.8	4.8	4.4	156.23	-50.2	-64.4	179.2	170.8	8.47	21.150		
2,100.0	2,090.4	2,072.9	2,068.8	5.2	4.6	156.78	-55.5	-73.9	205.1	196.1	8.95	22.915		
2,200.0	2,188.9	2,169.5	2,164.8	5.5	4.9	157.21	-60.7	-83.4	230.9	221.5	9.43	24.487		
2,300.0	2,287.3	2,266.1	2,260.8	5.9	5.2	157.55	-66.0	-92.9	256.8	246.8	9.92	25.896		
2,400.0	2,385.8	2,362.7	2,356.7	6.3	5.4	157.83	-71.3	-102.4	282.6	272.2	10.40	27.163		
2,500.0	2,484.3	2,459.3	2,452.7	6.7	5.7	158.06	-76.6	-112.0	308.5	297.6	10.90	28.308		
2,600.0	2,582.8	2,555.9	2,548.7	7.0	6.0	158.26	-81.8	-121.5	334.3	323.0	11.39	29.347		
2,700.0	2,681.3	2,652.4	2,644.7	7.4	6.3	158.42	-87.1	-131.0	360.2	348.3	11.89	30.292		
2,800.0	2,779.7	2,749.0	2,740.7	7.8	6.6	158.57	-92.4	-140.5	386.1	373.7	12.39	31.155		
2,900.0	2,878.2	2,845.6	2,836.6	8.2	6.9	158.70	-97.6	-150.0	412.0	399.1	12.90	31.947		
3,000.0	2,976.7	2,942.2	2,932.6	8.6	7.2	158.81	-102.9	-159.5	437.8	424.4	13.40	32.675		
3,100.0	3,075.2	3,038.8	3,028.6	9.0	7.4	158.91	-108.2	-169.1	463.7	449.8	13.91	33.346		
3,200.0	3,173.7	3,135.4	3,124.6	9.4	7.7	159.00	-113.4	-178.6	489.6	475.2	14.41	33.966		
3,300.0	3,272.1	3,232.0	3,220.5	9.8	8.0	159.08	-118.7	-188.1	515.5	500.6	14.92	34.541		
3,400.0	3,370.6	3,328.6	3,316.5	10.2	8.3	159.15	-124.0	-197.6	541.4	525.9	15.43	35.076		
3,500.0	3,469.1	3,425.2	3,412.5	10.6	8.6	159.22	-129.2	-207.1	567.2	551.3	15.95	35.574		
3,600.0	3,567.6	3,521.8	3,508.5	10.9	8.9	159.28	-134.5	-216.6	593.1	576.7	16.46	36.039		
3,700.0	3,666.1	3,618.4	3,604.4	11.3	9.2	159.33	-139.8	-226.1	619.0	602.0	16.97	36.474		
3,800.0	3,764.5	3,714.9	3,700.4	11.7	9.5	159.38	-145.0	-235.7	644.9	627.4	17.49	36.881		
3,900.0	3,863.0	3,811.5	3,796.4	12.1	9.8	159.43	-150.3	-245.2	670.8	652.8	18.00	37.264		
4,000.0	3,961.5	3,908.1	3,892.4	12.5	10.1	159.47	-155.6	-254.7	696.6	678.1	18.52	37.624		
4,100.0	4,060.0	4,004.7	3,988.3	12.9	10.4	159.52	-160.8	-264.2	722.5	703.5	19.03	37.963		
4,200.0	4,158.5	4,101.3	4,084.3	13.3	10.7	159.55	-166.1	-273.7	748.4	728.9	19.55	38.283		
4,300.0	4,256.9	4,197.9	4,180.3	13.7	11.0	159.59	-171.4	-283.2	774.3	754.2	20.07	38.585		
4,400.0	4,355.4	4,294.5	4,276.3	14.1	11.3	159.62	-176.6	-292.8	800.2	779.6	20.59	38.872		
4,500.0	4,453.9	4,391.1	4,372.3	14.5	11.6	159.65	-181.9	-302.3	826.1	805.0	21.10	39.143		
4,600.0	4,552.4	4,487.7	4,468.2	14.9	11.9	159.68	-187.2	-311.8	852.0	830.3	21.62	39.400		
4,700.0	4,650.9	4,584.3	4,564.2	15.3	12.2	159.71	-192.4	-321.3	877.8	855.7	22.14	39.645		
4,800.0	4,749.3	4,680.9	4,660.2	15.7	12.5	159.73	-197.7	-330.8	903.7	881.1	22.66	39.877		
4,900.0	4,847.8	4,777.4	4,756.2	16.1	12.8	159.76	-203.0	-340.3	929.6	906.4	23.18	40.099		

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 Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design												Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-301 - Wellbore #1 - Plan #2 (6-10-15)		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 +N/-S (ft)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor					
5,000.0	4,946.3	4,874.0	4,852.1	16.5	13.1	159.78	-208.2	-349.9	955.5	931.8	23.70	40.310					
5,100.0	5,044.8	4,970.6	4,948.1	16.9	13.4	159.80	-213.5	-359.4	981.4	957.2	24.22	40.511					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
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	0.00	14.6	0.0	14.6					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	14.6	0.0	14.6	14.4	0.20	74.521		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	14.6	0.0	14.6	13.9	0.65	22.590		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	14.6	0.0	14.6	13.5	1.09	13.313		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	14.6	0.0	14.6	13.0	1.54	9.437		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	14.6	0.0	14.6	12.6	1.99	7.309		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	14.6	0.0	14.6	12.1	2.44	5.964		
700.0	700.0	700.0	700.0	1.4	1.4	0.00	14.6	0.0	14.6	11.7	2.89	5.038		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	14.6	0.0	14.6	11.2	3.34	4.360 CC		
900.0	900.0	900.0	900.0	1.9	1.9	-113.95	14.6	0.0	14.9	11.1	3.77	3.950 ES		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-122.46	14.6	0.0	16.1	12.0	4.19	3.851		
1,100.0	1,099.9	1,099.9	1,099.9	2.3	2.3	-133.69	14.6	0.0	18.9	14.2	4.62	4.082		
1,200.0	1,199.7	1,199.7	1,199.7	2.5	2.6	-144.49	14.6	0.0	23.5	18.4	5.05	4.655		
1,300.0	1,299.4	1,299.4	1,299.4	2.7	2.8	-153.13	14.6	0.0	30.2	24.8	5.47	5.521		
1,400.0	1,398.9	1,398.9	1,398.9	3.0	3.0	-159.47	14.6	0.0	39.0	33.1	5.90	6.608		
1,500.0	1,498.3	1,499.1	1,499.1	3.2	3.2	-164.09	14.0	0.7	48.9	42.6	6.31	7.751		
1,600.0	1,597.4	1,599.5	1,599.4	3.5	3.4	-167.69	12.4	2.7	59.0	52.3	6.70	8.806		
1,700.0	1,696.3	1,700.0	1,699.9	3.8	3.6	-170.71	9.6	6.1	69.3	62.2	7.10	9.758		
1,800.0	1,794.9	1,800.7	1,800.4	4.1	3.8	-173.36	5.7	10.8	79.7	72.2	7.50	10.620		
1,900.0	1,893.4	1,901.6	1,901.0	4.5	4.0	-175.73	0.6	17.0	89.4	81.4	7.93	11.273		
2,000.0	1,991.9	2,002.8	2,001.7	4.8	4.2	-177.92	-5.5	24.5	97.5	89.1	8.36	11.657		
2,100.0	2,090.4	2,104.2	2,102.5	5.2	4.5	179.92	-12.9	33.4	104.1	95.2	8.81	11.811		
2,200.0	2,188.9	2,204.3	2,201.8	5.5	4.7	177.83	-20.8	43.1	109.7	100.4	9.27	11.832		
2,300.0	2,287.3	2,304.1	2,300.7	5.9	5.0	175.95	-28.8	52.8	115.4	105.6	9.74	11.849		
2,400.0	2,385.8	2,403.9	2,399.7	6.3	5.2	174.25	-36.7	62.5	121.2	111.0	10.22	11.863		
2,500.0	2,484.3	2,503.6	2,498.7	6.7	5.5	172.70	-44.7	72.2	127.1	116.4	10.71	11.873		
2,600.0	2,582.8	2,603.4	2,597.7	7.0	5.8	171.29	-52.7	81.9	133.1	121.9	11.20	11.879		
2,700.0	2,681.3	2,703.2	2,696.6	7.4	6.1	170.00	-60.6	91.6	139.2	127.5	11.71	11.882		
2,800.0	2,779.7	2,802.9	2,795.6	7.8	6.4	168.83	-68.6	101.3	145.3	133.1	12.23	11.881		
2,900.0	2,878.2	2,902.7	2,894.6	8.2	6.7	167.74	-76.5	111.0	151.5	138.7	12.76	11.878		
3,000.0	2,976.7	3,002.5	2,993.6	8.6	7.0	166.75	-84.5	120.7	157.7	144.5	13.29	11.872		
3,100.0	3,075.2	3,102.2	3,092.6	9.0	7.3	165.83	-92.5	130.4	164.0	150.2	13.83	11.864		
3,200.0	3,173.7	3,202.0	3,191.5	9.4	7.6	164.97	-100.4	140.1	170.4	156.0	14.37	11.855		
3,300.0	3,272.1	3,301.8	3,290.5	9.8	7.9	164.18	-108.4	149.8	176.7	161.8	14.92	11.844		
3,400.0	3,370.6	3,401.5	3,389.5	10.2	8.2	163.44	-116.3	159.5	183.1	167.6	15.48	11.832		
3,500.0	3,469.1	3,501.3	3,488.5	10.6	8.5	162.76	-124.3	169.2	189.5	173.5	16.04	11.819		
3,600.0	3,567.6	3,601.1	3,587.4	10.9	8.8	162.12	-132.3	178.9	196.0	179.4	16.60	11.805		
3,700.0	3,666.1	3,700.9	3,686.4	11.3	9.1	161.52	-140.2	188.6	202.5	185.3	17.17	11.791		
3,800.0	3,764.5	3,800.6	3,785.4	11.7	9.4	160.95	-148.2	198.2	208.9	191.2	17.74	11.777		
3,900.0	3,863.0	3,900.4	3,884.4	12.1	9.7	160.42	-156.1	207.9	215.4	197.1	18.32	11.762		
4,000.0	3,961.5	4,000.2	3,983.3	12.5	10.1	159.92	-164.1	217.6	222.0	203.1	18.90	11.748		
4,100.0	4,060.0	4,099.9	4,082.3	12.9	10.4	159.45	-172.1	227.3	228.5	209.0	19.48	11.733		
4,200.0	4,158.5	4,199.7	4,181.3	13.3	10.7	159.01	-180.0	237.0	235.1	215.0	20.06	11.718		
4,300.0	4,256.9	4,299.5	4,280.3	13.7	11.0	158.59	-188.0	246.7	241.6	221.0	20.65	11.704		
4,400.0	4,355.4	4,399.2	4,379.3	14.1	11.3	158.19	-195.9	256.4	248.2	227.0	21.23	11.690		
4,500.0	4,453.9	4,499.0	4,478.2	14.5	11.6	157.82	-203.9	266.1	254.8	233.0	21.82	11.676		
4,600.0	4,552.4	4,598.8	4,577.2	14.9	12.0	157.46	-211.9	275.8	261.4	239.0	22.42	11.662		
4,700.0	4,650.9	4,698.5	4,676.2	15.3	12.3	157.12	-219.8	285.5	268.0	245.0	23.01	11.648		
4,800.0	4,749.3	4,798.3	4,775.2	15.7	12.6	156.79	-227.8	295.2	274.7	251.0	23.61	11.635		
4,900.0	4,847.8	4,898.1	4,874.1	16.1	12.9	156.48	-235.7	304.9	281.3	257.1	24.20	11.622		
5,000.0	4,946.3	4,997.8	4,973.1	16.5	13.3	156.19	-243.7	314.6	287.9	263.1	24.80	11.609		

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 Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
5,100.0	5,044.8	5,097.6	5,072.1	16.9	13.6	155.91	-251.7	324.3	294.6	269.2	25.40	11.596	
5,200.0	5,143.3	5,195.1	5,168.8	17.3	13.9	155.67	-259.3	333.7	301.3	275.4	25.98	11.597	
5,300.0	5,241.7	5,287.5	5,260.8	17.7	14.1	155.74	-265.2	340.8	309.9	283.5	26.46	11.714	
5,400.0	5,340.2	5,379.4	5,352.5	18.1	14.3	156.16	-269.1	345.6	320.9	294.0	26.87	11.941	
5,500.0	5,438.7	5,470.6	5,443.6	18.5	14.4	156.89	-271.2	348.1	334.2	307.0	27.23	12.274	
5,600.0	5,537.2	5,564.2	5,537.2	18.9	14.6	157.92	-271.5	348.5	349.6	322.1	27.55	12.689	
5,700.0	5,636.2	5,663.2	5,636.2	19.2	14.8	158.87	-271.5	348.5	363.1	335.2	27.84	13.040	
5,800.0	5,735.6	5,762.6	5,735.6	19.4	14.9	159.55	-271.5	348.5	373.3	345.2	28.13	13.270	
5,900.0	5,835.3	5,862.3	5,835.3	19.6	15.1	159.99	-271.5	348.5	380.4	351.9	28.42	13.383	
6,000.0	5,935.2	5,962.2	5,935.2	19.8	15.3	160.22	-271.5	348.5	384.1	355.4	28.70	13.384	
6,100.0	6,035.2	6,062.2	6,035.2	19.9	15.4	-88.92	-271.5	348.5	384.8	355.8	29.01	13.266	
6,200.0	6,135.2	6,162.2	6,135.2	20.0	15.6	-88.92	-271.5	348.5	384.8	355.4	29.36	13.105	
6,300.0	6,235.2	6,262.2	6,235.2	20.2	15.8	-88.92	-271.5	348.5	384.8	355.1	29.72	12.948	
6,400.0	6,335.0	6,362.0	6,335.0	20.3	15.9	-89.66	-271.5	348.5	384.7	354.6	30.14	12.767	
6,418.7	6,353.5	6,380.5	6,353.5	20.3	16.0	-90.00	-271.5	348.5	384.7	354.5	30.23	12.728	
6,500.0	6,433.3	6,461.8	6,434.5	20.4	16.1	-91.51	-266.1	348.5	384.9	354.3	30.60	12.579	
6,600.0	6,528.5	6,563.2	6,534.1	20.4	16.2	-93.36	-247.5	348.5	385.4	354.5	30.93	12.462	
6,700.0	6,618.8	6,666.3	6,632.0	20.4	16.2	-95.16	-215.1	348.5	386.3	355.2	31.13	12.409	
6,800.0	6,702.8	6,771.3	6,726.2	20.4	16.2	-96.87	-169.0	348.5	387.6	356.3	31.25	12.402	
6,900.0	6,779.0	6,877.9	6,814.5	20.3	16.2	-98.47	-109.4	348.5	389.0	357.7	31.35	12.408	
7,000.0	6,846.2	6,986.3	6,894.9	20.3	16.2	-99.92	-36.8	348.5	390.6	359.1	31.54	12.383	
7,100.0	6,903.0	7,096.3	6,965.1	20.3	16.2	-101.19	47.8	348.5	392.2	360.3	31.95	12.277	
7,200.0	6,948.7	7,207.8	7,023.1	20.4	16.2	-102.25	142.8	348.5	393.7	361.0	32.69	12.044	
7,300.0	6,982.4	7,320.4	7,067.1	20.6	16.6	-103.08	246.3	348.5	395.0	361.1	33.87	11.661	
7,400.0	7,003.6	7,433.9	7,095.6	20.9	17.6	-103.66	356.1	348.5	396.0	360.4	35.53	11.146	
7,500.0	7,011.8	7,548.1	7,107.5	21.6	18.7	-103.98	469.5	348.5	396.5	358.9	37.63	10.538	
7,600.0	7,011.2	7,651.6	7,107.3	22.4	19.9	-104.02	573.1	348.5	396.6	356.7	39.86	9.950	
7,700.0	7,010.5	7,751.6	7,106.5	23.4	21.1	-104.02	673.1	348.5	396.6	354.3	42.23	9.390	
7,800.0	7,009.7	7,851.6	7,105.8	24.6	22.5	-104.02	773.1	348.5	396.6	351.8	44.79	8.854	
7,900.0	7,009.0	7,951.6	7,105.0	25.9	23.9	-104.02	873.1	348.5	396.6	349.0	47.51	8.347	
8,000.0	7,008.2	8,051.6	7,104.3	27.3	25.3	-104.02	973.1	348.5	396.6	346.2	50.36	7.875	
8,100.0	7,007.5	8,151.6	7,103.5	28.7	26.9	-104.02	1,073.1	348.5	396.6	343.2	53.32	7.438	
8,200.0	7,006.7	8,251.6	7,102.8	30.2	28.4	-104.02	1,173.1	348.5	396.6	340.2	56.37	7.035	
8,300.0	7,006.0	8,351.6	7,102.0	31.7	30.0	-104.02	1,273.1	348.5	396.6	337.0	59.50	6.665	
8,400.0	7,005.2	8,451.6	7,101.3	33.3	31.7	-104.02	1,373.1	348.5	396.6	333.9	62.70	6.325	
8,500.0	7,004.5	8,551.6	7,100.5	34.9	33.4	-104.02	1,473.1	348.5	396.6	330.6	65.96	6.012	
8,600.0	7,003.7	8,651.6	7,099.8	36.5	35.1	-104.02	1,573.1	348.5	396.6	327.3	69.26	5.725	
8,700.0	7,003.0	8,751.6	7,099.0	38.2	36.8	-104.02	1,673.1	348.5	396.6	323.9	72.61	5.461	
8,800.0	7,002.2	8,851.6	7,098.3	39.9	38.5	-104.02	1,773.1	348.5	396.6	320.6	75.99	5.218	
8,900.0	7,001.5	8,951.6	7,097.5	41.6	40.3	-104.02	1,873.1	348.5	396.6	317.1	79.41	4.994	
9,000.0	7,000.7	9,051.6	7,096.8	43.3	42.0	-104.02	1,973.1	348.5	396.6	313.7	82.86	4.786	
9,100.0	7,000.0	9,151.6	7,096.0	45.1	43.8	-104.02	2,073.1	348.5	396.6	310.2	86.33	4.594	
9,200.0	6,999.2	9,251.6	7,095.3	46.8	45.6	-104.02	2,173.1	348.5	396.6	306.7	89.82	4.415	
9,300.0	6,998.5	9,351.6	7,094.5	48.6	47.4	-104.02	2,273.1	348.5	396.6	303.2	93.33	4.249	
9,400.0	6,997.7	9,451.6	7,093.8	50.4	49.2	-104.02	2,373.1	348.5	396.6	299.7	96.86	4.094	
9,500.0	6,997.0	9,551.6	7,093.0	52.1	51.0	-104.02	2,473.1	348.5	396.6	296.2	100.40	3.950	
9,600.0	6,996.2	9,651.6	7,092.3	53.9	52.8	-104.02	2,573.1	348.5	396.6	292.6	103.96	3.815	
9,700.0	6,995.5	9,751.6	7,091.5	55.7	54.7	-104.02	2,673.1	348.5	396.6	289.0	107.53	3.688	
9,800.0	6,994.7	9,851.6	7,090.8	57.6	56.5	-104.02	2,773.1	348.5	396.6	285.4	111.11	3.569	
9,900.0	6,994.0	9,951.6	7,090.0	59.4	58.4	-104.02	2,873.1	348.5	396.6	281.9	114.70	3.457	

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 Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-321 - Wellbore #1 - Plan #2 (6-10-15)														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		
10,000.0	6,993.2	10,051.6	7,089.3	61.2	60.2	-104.02	2,973.1	348.5	396.6	278.2	118.30	3.352			
10,100.0	6,992.5	10,151.6	7,088.5	63.0	62.1	-104.02	3,073.1	348.5	396.6	274.6	121.91	3.253			
10,200.0	6,991.7	10,251.6	7,087.8	64.9	63.9	-104.02	3,173.1	348.5	396.6	271.0	125.53	3.159			
10,300.0	6,991.0	10,351.6	7,087.0	66.7	65.8	-104.02	3,273.0	348.5	396.6	267.4	129.15	3.070			
10,400.0	6,990.2	10,451.6	7,086.3	68.5	67.6	-104.02	3,373.0	348.5	396.6	263.8	132.78	2.986			
10,500.0	6,989.5	10,551.6	7,085.5	70.4	69.5	-104.02	3,473.0	348.5	396.6	260.1	136.42	2.907			
10,600.0	6,988.7	10,651.6	7,084.8	72.2	71.4	-104.02	3,573.0	348.5	396.6	256.5	140.06	2.831			
10,700.0	6,988.0	10,751.6	7,084.0	74.1	73.2	-104.02	3,673.0	348.5	396.6	252.8	143.71	2.759			
10,800.0	6,987.2	10,851.6	7,083.3	75.9	75.1	-104.02	3,773.0	348.5	396.6	249.2	147.36	2.691			
10,900.0	6,986.5	10,951.6	7,082.5	77.8	77.0	-104.02	3,873.0	348.5	396.6	245.5	151.02	2.626			
11,000.0	6,985.7	11,051.6	7,081.8	79.7	78.9	-104.02	3,973.0	348.5	396.6	241.9	154.68	2.564			
11,100.0	6,985.0	11,151.6	7,081.0	81.5	80.7	-104.02	4,073.0	348.5	396.6	238.2	158.35	2.504			
11,200.0	6,984.2	11,251.6	7,080.3	83.4	82.6	-104.02	4,173.0	348.5	396.6	234.5	162.01	2.448			
11,300.0	6,983.5	11,351.6	7,079.5	85.3	84.5	-104.02	4,273.0	348.5	396.6	230.9	165.69	2.393			
11,400.0	6,982.7	11,451.6	7,078.8	87.1	86.4	-104.02	4,373.0	348.5	396.6	227.2	169.36	2.341			
11,494.1	6,982.0	11,545.8	7,078.0	88.9	88.2	-104.02	4,467.2	348.5	396.6	223.7	172.82	2.295 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0ft
Survey Program: 0-MWD													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	43.7	0.0	43.7					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	43.7	0.0	43.7	43.5	0.20	223.562		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	43.7	0.0	43.7	43.1	0.65	67.770		
300.0	300.0	300.0	300.0	0.5	0.5	0.00	43.7	0.0	43.7	42.6	1.09	39.938		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	43.7	0.0	43.7	42.2	1.54	28.311		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	43.7	0.0	43.7	41.7	1.99	21.928		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	43.7	0.0	43.7	41.3	2.44	17.893		
700.0	700.0	700.0	700.0	1.4	1.4	0.00	43.7	0.0	43.7	40.8	2.89	15.113		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	43.7	0.0	43.7	40.4	3.34	13.080 CC		
900.0	900.0	900.0	900.0	1.9	1.9	-111.88	43.7	0.0	44.0	40.3	3.77	11.670 ES		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-114.96	43.7	0.0	45.1	40.9	4.19	10.751		
1,100.0	1,099.9	1,099.9	1,099.9	2.3	2.3	-119.75	43.7	0.0	47.1	42.5	4.62	10.192		
1,200.0	1,199.7	1,199.7	1,199.7	2.5	2.6	-125.75	43.7	0.0	50.4	45.3	5.05	9.974		
1,300.0	1,299.4	1,299.4	1,299.4	2.7	2.8	-132.31	43.7	0.0	55.4	49.9	5.49	10.082		
1,400.0	1,398.9	1,398.9	1,398.9	3.0	3.0	-138.79	43.7	0.0	62.2	56.3	5.93	10.494		
1,500.0	1,498.3	1,498.3	1,498.3	3.2	3.2	-144.75	43.7	0.0	71.1	64.8	6.37	11.172		
1,600.0	1,597.4	1,597.4	1,597.4	3.5	3.5	-149.94	43.7	0.0	82.2	75.4	6.81	12.074		
1,700.0	1,696.3	1,696.3	1,696.3	3.8	3.7	-154.33	43.7	0.0	95.3	88.0	7.24	13.156		
1,800.0	1,794.9	1,794.9	1,794.9	4.1	3.9	-157.98	43.7	0.0	110.4	102.7	7.68	14.381		
1,900.0	1,893.4	1,893.4	1,893.4	4.5	4.1	-160.92	43.7	0.0	126.7	118.6	8.13	15.592		
2,000.0	1,991.9	1,991.9	1,991.9	4.8	4.4	-163.19	43.7	0.0	143.3	134.7	8.58	16.702		
2,100.0	2,090.4	2,090.4	2,090.4	5.2	4.6	-164.98	43.7	0.0	160.0	151.0	9.03	17.716		
2,200.0	2,188.9	2,188.9	2,188.9	5.5	4.8	-166.44	43.7	0.0	176.8	167.4	9.49	18.642		
2,300.0	2,287.3	2,289.8	2,289.8	5.9	5.0	-167.79	43.1	0.3	193.2	183.3	9.92	19.475		
2,400.0	2,385.8	2,391.4	2,391.4	6.3	5.2	-169.24	40.7	1.2	208.3	198.0	10.33	20.162		
2,500.0	2,484.3	2,493.3	2,493.2	6.7	5.4	-170.77	36.7	2.7	222.1	211.4	10.74	20.675		
2,600.0	2,582.8	2,595.5	2,595.2	7.0	5.5	-172.41	31.0	5.0	234.7	223.5	11.16	21.029		
2,700.0	2,681.3	2,697.8	2,697.2	7.4	5.7	-174.16	23.6	7.9	246.1	234.5	11.59	21.245		
2,800.0	2,779.7	2,800.3	2,799.2	7.8	5.9	-176.04	14.5	11.5	256.5	244.4	12.02	21.337		
2,900.0	2,878.2	2,900.4	2,898.7	8.2	6.1	-177.93	4.3	15.5	266.1	253.6	12.46	21.352		
3,000.0	2,976.7	2,999.6	2,997.3	8.6	6.4	-179.69	-5.8	19.5	275.9	263.0	12.92	21.364		
3,100.0	3,075.2	3,098.8	3,095.9	9.0	6.6	178.67	-16.0	23.5	286.0	272.6	13.38	21.375		
3,200.0	3,173.7	3,197.9	3,194.4	9.4	6.8	177.15	-26.1	27.5	296.3	282.4	13.86	21.383		
3,300.0	3,272.1	3,297.1	3,293.0	9.8	7.0	175.73	-36.3	31.5	306.8	292.4	14.34	21.388		
3,400.0	3,370.6	3,396.3	3,391.6	10.2	7.3	174.40	-46.4	35.5	317.5	302.6	14.84	21.390		
3,500.0	3,469.1	3,495.5	3,490.1	10.6	7.5	173.16	-56.6	39.5	328.3	312.9	15.35	21.389		
3,600.0	3,567.6	3,594.6	3,588.7	10.9	7.8	172.00	-66.7	43.5	339.2	323.4	15.86	21.385		
3,700.0	3,666.1	3,693.8	3,687.3	11.3	8.0	170.91	-76.9	47.5	350.3	333.9	16.39	21.379		
3,800.0	3,764.5	3,793.0	3,785.8	11.7	8.3	169.89	-87.0	51.5	361.5	344.6	16.92	21.370		
3,900.0	3,863.0	3,892.1	3,884.4	12.1	8.6	168.93	-97.2	55.5	372.9	355.4	17.46	21.359		
4,000.0	3,961.5	3,991.3	3,983.0	12.5	8.8	168.03	-107.3	59.5	384.3	366.3	18.00	21.347		
4,100.0	4,060.0	4,090.5	4,081.5	12.9	9.1	167.18	-117.5	63.5	395.8	377.2	18.55	21.333		
4,200.0	4,158.5	4,189.6	4,180.1	13.3	9.4	166.37	-127.6	67.5	407.4	388.3	19.11	21.318		
4,300.0	4,256.9	4,288.8	4,278.7	13.7	9.6	165.61	-137.8	71.5	419.0	399.4	19.67	21.302		
4,400.0	4,355.4	4,388.0	4,377.2	14.1	9.9	164.90	-147.9	75.5	430.8	410.5	20.24	21.286		
4,500.0	4,453.9	4,487.1	4,475.8	14.5	10.2	164.22	-158.1	79.4	442.6	421.7	20.81	21.269		
4,600.0	4,552.4	4,586.3	4,574.4	14.9	10.5	163.57	-168.2	83.4	454.4	433.0	21.38	21.252		
4,700.0	4,650.9	4,685.5	4,672.9	15.3	10.7	162.96	-178.4	87.4	466.3	444.4	21.96	21.234		
4,800.0	4,749.3	4,784.6	4,771.5	15.7	11.0	162.38	-188.5	91.4	478.3	455.7	22.54	21.217		
4,900.0	4,847.8	4,883.8	4,870.1	16.1	11.3	161.83	-198.7	95.4	490.3	467.1	23.13	21.199		
5,000.0	4,946.3	4,983.0	4,968.6	16.5	11.6	161.30	-208.8	99.4	502.3	478.6	23.71	21.181		

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 Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)												Offset Site Error: 0.0 ft		
Survey Program: 0-MWD												Offset Well Error: 0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,044.8	5,082.1	5,067.2	16.9	11.9	160.80	-219.0	103.4	514.4	490.1	24.31	21.164		
5,200.0	5,143.3	5,181.3	5,165.8	17.3	12.2	160.32	-229.1	107.4	526.5	501.6	24.90	21.147		
5,300.0	5,241.7	5,280.5	5,264.3	17.7	12.4	159.86	-239.3	111.4	538.7	513.2	25.49	21.130		
5,400.0	5,340.2	5,379.7	5,362.9	18.1	12.7	159.43	-249.4	115.4	550.9	524.8	26.09	21.113		
5,500.0	5,438.7	5,473.6	5,456.4	18.5	13.0	159.11	-258.2	118.9	563.4	536.8	26.64	21.148		
5,600.0	5,537.2	5,565.9	5,548.5	18.9	13.2	159.12	-264.2	121.2	577.0	549.8	27.13	21.264		
5,700.0	5,636.2	5,658.2	5,640.7	19.2	13.4	159.36	-267.3	122.4	589.1	561.6	27.54	21.391		
5,800.0	5,735.6	5,753.1	5,735.6	19.4	13.6	159.73	-267.9	122.7	599.2	571.3	27.90	21.478		
5,900.0	5,835.3	5,852.8	5,835.3	19.6	13.7	160.02	-267.9	122.7	606.2	578.0	28.23	21.475		
6,000.0	5,935.2	5,952.7	5,935.2	19.8	13.9	160.18	-267.9	122.7	610.0	581.4	28.54	21.376		
6,100.0	6,035.2	6,052.7	6,035.2	19.9	14.1	-88.98	-267.9	122.7	610.7	581.8	28.86	21.161		
6,200.0	6,135.2	6,152.7	6,135.2	20.0	14.3	-88.98	-267.9	122.7	610.7	581.5	29.21	20.904		
6,300.0	6,235.2	6,252.7	6,235.2	20.2	14.5	-88.98	-267.9	122.7	610.7	581.1	29.57	20.651		
6,400.0	6,335.0	6,352.5	6,335.0	20.3	14.7	-89.45	-267.9	122.7	610.6	580.7	29.95	20.389		
6,442.0	6,376.6	6,394.1	6,376.6	20.3	14.7	-90.00	-267.9	122.7	610.6	580.5	30.11	20.276		
6,500.0	6,433.3	6,450.8	6,433.3	20.4	14.8	-91.09	-267.9	122.7	610.7	580.3	30.37	20.108		
6,600.0	6,528.5	6,550.3	6,532.7	20.4	15.0	-93.44	-263.2	122.7	611.8	581.0	30.77	19.880		
6,700.0	6,618.8	6,653.8	6,634.4	20.4	15.1	-95.79	-244.9	122.7	613.9	582.9	31.03	19.782		
6,800.0	6,702.8	6,761.4	6,736.5	20.4	15.1	-98.07	-211.4	122.7	617.1	585.9	31.17	19.798		
6,900.0	6,779.0	6,873.3	6,836.8	20.3	15.2	-100.25	-161.7	122.7	621.0	589.8	31.23	19.888		
7,000.0	6,846.2	6,989.9	6,932.2	20.3	15.2	-102.27	-95.1	122.7	625.5	594.2	31.30	19.983		
7,100.0	6,903.0	7,111.0	7,019.5	20.3	15.3	-104.07	-11.2	122.7	630.1	598.6	31.53	19.982		
7,200.0	6,948.7	7,236.6	7,094.8	20.4	15.5	-105.61	89.1	122.7	634.5	602.4	32.08	19.776		
7,300.0	6,982.4	7,366.2	7,154.2	20.6	16.1	-106.83	204.1	122.7	638.2	605.1	33.11	19.278		
7,400.0	7,003.6	7,498.9	7,194.1	20.9	17.0	-107.68	330.5	122.7	641.0	606.3	34.70	18.475		
7,500.0	7,011.8	7,633.7	7,211.5	21.6	18.3	-108.13	464.0	122.7	642.5	605.6	36.87	17.427		
7,600.0	7,011.2	7,741.2	7,212.6	22.4	19.5	-108.25	571.5	122.7	642.9	603.9	39.06	16.458		
7,700.0	7,010.5	7,841.2	7,213.0	23.4	20.7	-108.35	671.4	122.7	643.3	601.9	41.37	15.551		
7,800.0	7,009.7	7,941.2	7,213.5	24.6	22.0	-108.46	771.4	122.7	643.7	599.8	43.85	14.678		
7,900.0	7,009.0	8,041.2	7,214.0	25.9	23.4	-108.56	871.4	122.7	644.1	597.6	46.49	13.853		
8,000.0	7,008.2	8,141.1	7,214.5	27.3	24.8	-108.66	971.4	122.7	644.5	595.2	49.26	13.083		
8,100.0	7,007.5	8,241.1	7,214.9	28.7	26.4	-108.77	1,071.4	122.7	644.9	592.7	52.14	12.369		
8,200.0	7,006.7	8,341.1	7,215.4	30.2	27.9	-108.87	1,171.4	122.7	645.2	590.1	55.10	11.711		
8,300.0	7,006.0	8,441.1	7,215.9	31.7	29.5	-108.97	1,271.4	122.7	645.6	587.5	58.14	11.106		
8,400.0	7,005.2	8,541.1	7,216.3	33.3	31.2	-109.07	1,371.4	122.7	646.0	584.8	61.24	10.550		
8,500.0	7,004.5	8,641.1	7,216.8	34.9	32.9	-109.18	1,471.4	122.7	646.4	582.1	64.39	10.039		
8,600.0	7,003.7	8,741.1	7,217.3	36.5	34.6	-109.28	1,571.4	122.7	646.8	579.3	67.59	9.570		
8,700.0	7,003.0	8,841.1	7,217.8	38.2	36.3	-109.38	1,671.4	122.7	647.2	576.4	70.83	9.138		
8,800.0	7,002.2	8,941.1	7,218.2	39.9	38.0	-109.48	1,771.4	122.7	647.7	573.6	74.10	8.740		
8,900.0	7,001.5	9,041.1	7,218.7	41.6	39.8	-109.58	1,871.3	122.7	648.1	570.7	77.40	8.373		
9,000.0	7,000.7	9,141.1	7,219.2	43.3	41.5	-109.69	1,971.3	122.7	648.5	567.8	80.72	8.034		
9,100.0	7,000.0	9,241.1	7,219.6	45.1	43.3	-109.79	2,071.3	122.7	648.9	564.8	84.06	7.719		
9,200.0	6,999.2	9,341.1	7,220.1	46.8	45.1	-109.89	2,171.3	122.7	649.3	561.9	87.42	7.427		
9,300.0	6,998.5	9,441.1	7,220.6	48.6	46.9	-109.99	2,271.3	122.7	649.7	558.9	90.80	7.156		
9,400.0	6,997.7	9,541.0	7,221.1	50.4	48.7	-110.09	2,371.3	122.7	650.1	556.0	94.19	6.903		
9,500.0	6,997.0	9,641.0	7,221.5	52.1	50.6	-110.19	2,471.3	122.7	650.6	553.0	97.59	6.666		
9,600.0	6,996.2	9,741.0	7,222.0	53.9	52.4	-110.29	2,571.3	122.7	651.0	550.0	101.00	6.446		
9,700.0	6,995.5	9,841.0	7,222.5	55.7	54.2	-110.39	2,671.3	122.7	651.4	547.0	104.41	6.239		
9,800.0	6,994.7	9,941.0	7,222.9	57.6	56.1	-110.49	2,771.3	122.7	651.8	544.0	107.84	6.044		
9,900.0	6,994.0	10,041.0	7,223.4	59.4	57.9	-110.59	2,871.3	122.7	652.3	541.0	111.27	5.862		

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 Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10L-421 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,000.0	6,993.2	10,141.0	7,223.9	61.2	59.8	-110.70	2,971.2	122.7	652.7	538.0	114.71	5.690	
10,100.0	6,992.5	10,241.0	7,224.4	63.0	61.6	-110.80	3,071.2	122.7	653.1	535.0	118.15	5.528	
10,200.0	6,991.7	10,341.0	7,224.8	64.9	63.5	-110.90	3,171.2	122.7	653.6	532.0	121.59	5.375	
10,300.0	6,991.0	10,441.0	7,225.3	66.7	65.3	-111.00	3,271.2	122.7	654.0	529.0	125.04	5.230	
10,400.0	6,990.2	10,541.0	7,225.8	68.5	67.2	-111.10	3,371.2	122.7	654.4	525.9	128.49	5.093	
10,500.0	6,989.5	10,641.0	7,226.2	70.4	69.1	-111.20	3,471.2	122.7	654.9	522.9	131.94	4.964	
10,600.0	6,988.7	10,741.0	7,226.7	72.2	71.0	-111.29	3,571.2	122.7	655.3	519.9	135.39	4.840	
10,700.0	6,988.0	10,840.9	7,227.2	74.1	72.8	-111.39	3,671.2	122.7	655.8	516.9	138.84	4.723	
10,800.0	6,987.2	10,940.9	7,227.7	75.9	74.7	-111.49	3,771.2	122.7	656.2	513.9	142.29	4.612	
10,900.0	6,986.5	11,040.9	7,228.1	77.8	76.6	-111.59	3,871.2	122.7	656.7	510.9	145.75	4.505	
11,000.0	6,985.7	11,140.9	7,228.6	79.7	78.5	-111.69	3,971.2	122.7	657.1	507.9	149.20	4.404	
11,100.0	6,985.0	11,240.9	7,229.1	81.5	80.3	-111.79	4,071.2	122.7	657.6	504.9	152.65	4.308	
11,200.0	6,984.2	11,340.9	7,229.5	83.4	82.2	-111.89	4,171.1	122.7	658.0	501.9	156.10	4.215	
11,300.0	6,983.5	11,440.9	7,230.0	85.3	84.1	-111.99	4,271.1	122.7	658.5	498.9	159.55	4.127	
11,400.0	6,982.7	11,540.9	7,230.5	87.1	86.0	-112.09	4,371.1	122.7	658.9	495.9	163.00	4.043	
11,494.1	6,982.0	11,635.0	7,230.9	88.9	87.8	-112.18	4,465.3	122.7	659.4	493.1	166.24	3.966 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (6-10-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4854.0ft (RKB - 13')

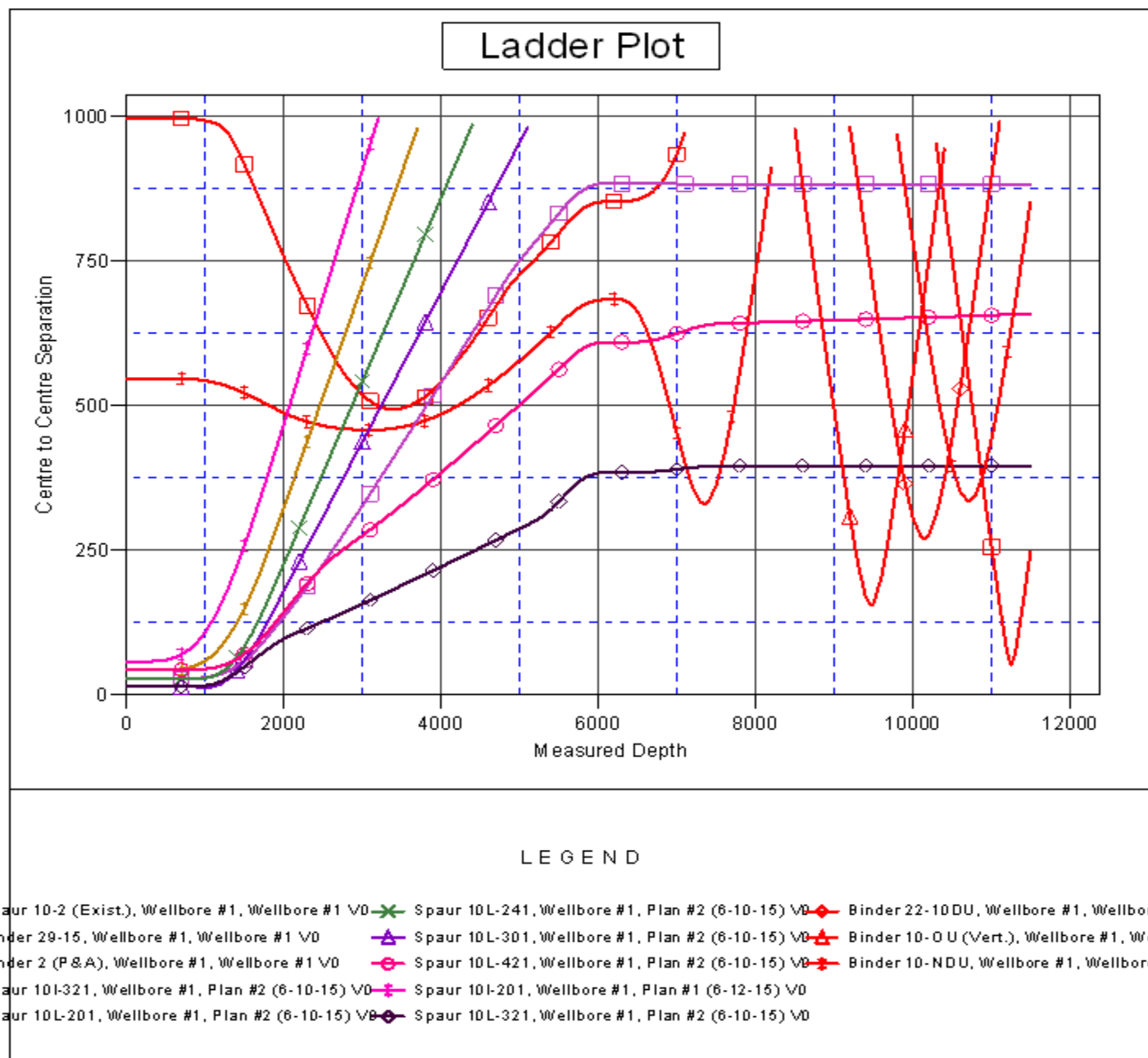
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Spaur 10Q-241

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.40°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10Q-241
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4854.0ft (RKB - 13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4854.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10Q-241	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
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Reference Depths are relative to WELL @ 4854.0ft (RKB - 13')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Spaur 10Q-241

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.40°

