

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Spaur 101-201**

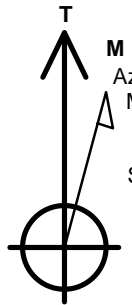
Surface Location: Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

Ground Elevation: 4840.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1360139.80	3172640.93	40.320330	-104.880850	
RKB -13' WELL @ 4853.0ft (RKB -13')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E/W Hardline (10I-201)	1.0	2579.8	-1466.5	Rectangle (Sides: L3984.7 W100.0)
SHL 255'FSL & 1583'FWL	1.0	0.0	0.0	Point
BHL 500'FNL & 144'FWL	6987.0	4572.1	-1466.5	Point



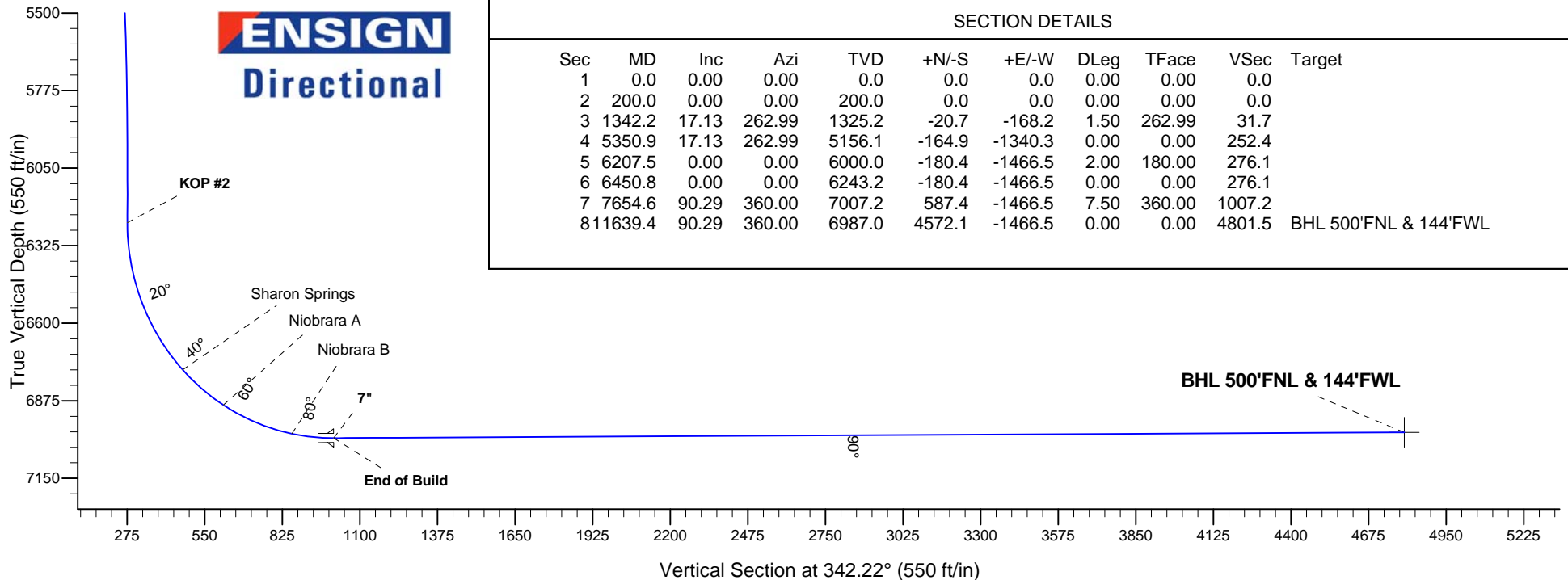
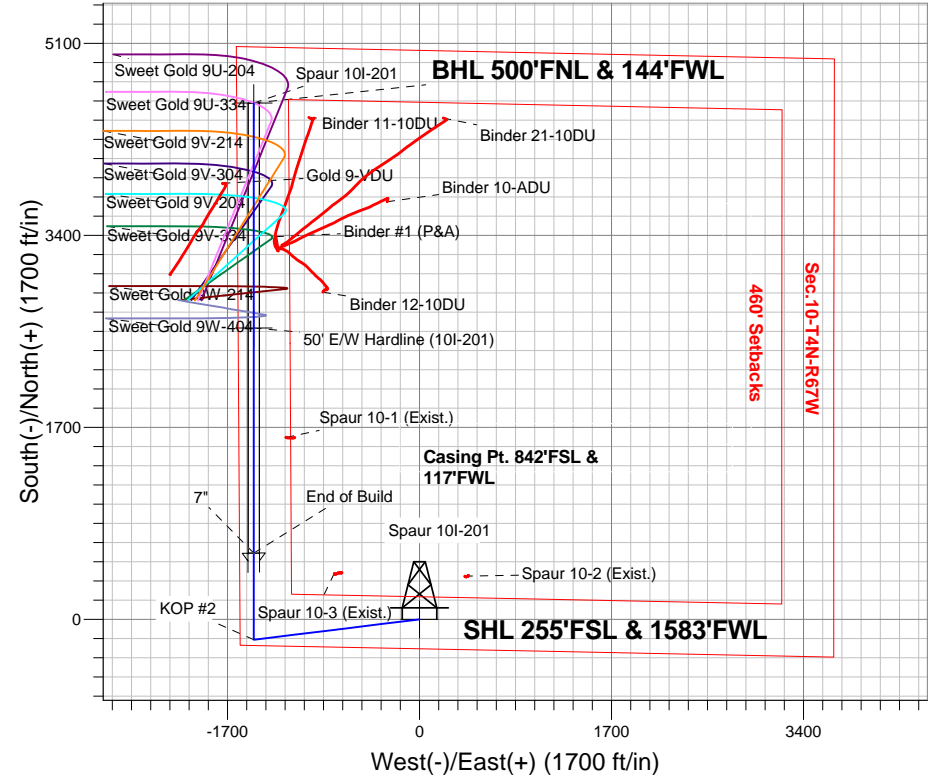
Azimuths to True North
Magnetic North: 8.38°

Magnetic Field
Strength: 52657.5snT
Dip Angle: 66.83°
Date: 6/10/2015
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP #1
6243.3	6450.8	KOP #2
7007.2	7654.6	End of Build

Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W
Spaur 101-201
Plan #1 (6-12-15)





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W

Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W

Spaur 10I-201

Wellbore #1

Plan: Plan #1 (6-12-15)

Standard Planning Report

12 June, 2015

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Spaur 10I-201
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Project:	SEC.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	North Reference:	True
Well:	Spaur 10I-201	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-12-15)		

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 10I-201					
Well Position	+N/-S	-87.4 ft	Northing:	1,360,139.80 ft	Latitude:	40.320330
	+E/-W	0.0 ft	Easting:	3,172,640.93 ft	Longitude:	-104.880850
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,840.0 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 #1 (6-12-15)			
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	342.22

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,342.2	17.13	262.99	1,325.2	-20.7	-168.2	1.50	1.50	0.00	262.99	
5,350.9	17.13	262.99	5,156.1	-164.9	-1,340.3	0.00	0.00	0.00	0.00	
6,207.5	0.00	0.00	6,000.0	-180.4	-1,466.5	2.00	-2.00	0.00	180.00	
6,450.8	0.00	0.00	6,243.2	-180.4	-1,466.5	0.00	0.00	0.00	0.00	
7,654.6	90.29	360.00	7,007.2	587.4	-1,466.5	7.50	7.50	0.00	360.00	
11,639.4	90.29	360.00	6,987.0	4,572.1	-1,466.5	0.00	0.00	0.00	0.00	BHL 500'FNL & 144

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Project:	SEC.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	North Reference:	True
Well:	Spaur 10I-201	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-12-15)		

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
KOP #1									
300.0	1.50	262.99	300.0	-0.2	-1.3	0.2	1.50	1.50	0.00
400.0	3.00	262.99	399.9	-0.6	-5.2	1.0	1.50	1.50	0.00
500.0	4.50	262.99	499.7	-1.4	-11.7	2.2	1.50	1.50	0.00
600.0	6.00	262.99	599.3	-2.6	-20.8	3.9	1.50	1.50	0.00
700.0	7.50	262.99	698.6	-4.0	-32.4	6.1	1.50	1.50	0.00
800.0	9.00	262.99	797.5	-5.7	-46.7	8.8	1.50	1.50	0.00
900.0	10.50	262.99	896.1	-7.8	-63.5	12.0	1.50	1.50	0.00
1,000.0	12.00	262.99	994.2	-10.2	-82.8	15.6	1.50	1.50	0.00
1,100.0	13.50	262.99	1,091.7	-12.9	-104.7	19.7	1.50	1.50	0.00
1,200.0	15.00	262.99	1,188.6	-15.9	-129.2	24.3	1.50	1.50	0.00
1,300.0	16.50	262.99	1,284.9	-19.2	-156.1	29.4	1.50	1.50	0.00
1,342.2	17.13	262.99	1,325.2	-20.7	-168.2	31.7	1.50	1.50	0.00
1,400.0	17.13	262.99	1,380.5	-22.8	-185.1	34.9	0.00	0.00	0.00
1,500.0	17.13	262.99	1,476.1	-26.4	-214.4	40.4	0.00	0.00	0.00
1,600.0	17.13	262.99	1,571.6	-30.0	-243.6	45.9	0.00	0.00	0.00
1,700.0	17.13	262.99	1,667.2	-33.6	-272.9	51.4	0.00	0.00	0.00
1,800.0	17.13	262.99	1,762.7	-37.2	-302.1	56.9	0.00	0.00	0.00
1,900.0	17.13	262.99	1,858.3	-40.8	-331.3	62.4	0.00	0.00	0.00
2,000.0	17.13	262.99	1,953.9	-44.4	-360.6	67.9	0.00	0.00	0.00
2,100.0	17.13	262.99	2,049.4	-48.0	-389.8	73.4	0.00	0.00	0.00
2,200.0	17.13	262.99	2,145.0	-51.5	-419.0	78.9	0.00	0.00	0.00
2,300.0	17.13	262.99	2,240.6	-55.1	-448.3	84.4	0.00	0.00	0.00
2,400.0	17.13	262.99	2,336.1	-58.7	-477.5	89.9	0.00	0.00	0.00
2,500.0	17.13	262.99	2,431.7	-62.3	-506.8	95.4	0.00	0.00	0.00
2,600.0	17.13	262.99	2,527.2	-65.9	-536.0	100.9	0.00	0.00	0.00
2,700.0	17.13	262.99	2,622.8	-69.5	-565.2	106.4	0.00	0.00	0.00
2,800.0	17.13	262.99	2,718.4	-73.1	-594.5	111.9	0.00	0.00	0.00
2,900.0	17.13	262.99	2,813.9	-76.7	-623.7	117.4	0.00	0.00	0.00
3,000.0	17.13	262.99	2,909.5	-80.3	-652.9	122.9	0.00	0.00	0.00
3,100.0	17.13	262.99	3,005.1	-83.9	-682.2	128.4	0.00	0.00	0.00
3,200.0	17.13	262.99	3,100.6	-87.5	-711.4	133.9	0.00	0.00	0.00
3,300.0	17.13	262.99	3,196.2	-91.1	-740.7	139.5	0.00	0.00	0.00
3,400.0	17.13	262.99	3,291.7	-94.7	-769.9	145.0	0.00	0.00	0.00
3,500.0	17.13	262.99	3,387.3	-98.3	-799.1	150.5	0.00	0.00	0.00
3,600.0	17.13	262.99	3,482.9	-101.9	-828.4	156.0	0.00	0.00	0.00
3,680.7	17.13	262.99	3,560.0	-104.8	-852.0	160.4	0.00	0.00	0.00
Parkman									
3,700.0	17.13	262.99	3,578.4	-105.5	-857.6	161.5	0.00	0.00	0.00
3,800.0	17.13	262.99	3,674.0	-109.1	-886.9	167.0	0.00	0.00	0.00
3,900.0	17.13	262.99	3,769.6	-112.7	-916.1	172.5	0.00	0.00	0.00
4,000.0	17.13	262.99	3,865.1	-116.3	-945.3	178.0	0.00	0.00	0.00
4,100.0	17.13	262.99	3,960.7	-119.9	-974.6	183.5	0.00	0.00	0.00
4,200.0	17.13	262.99	4,056.2	-123.5	-1,003.8	189.0	0.00	0.00	0.00
4,245.8	17.13	262.99	4,100.0	-125.1	-1,017.2	191.5	0.00	0.00	0.00
Sussex									
4,300.0	17.13	262.99	4,151.8	-127.1	-1,033.0	194.5	0.00	0.00	0.00
4,400.0	17.13	262.99	4,247.4	-130.7	-1,062.3	200.0	0.00	0.00	0.00
4,500.0	17.13	262.99	4,342.9	-134.3	-1,091.5	205.5	0.00	0.00	0.00

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Site:	Spaur 4N67W10MLVT Pad	North Reference:	True
Well:	Sec.10-T4N-R67W	Survey Calculation Method:	Minimum Curvature
Wellbore:	Spaur 10I-201		
Design:	Wellbore #1		
	Plan #1 (6-12-15)		

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	17.13	262.99	4,438.5	-137.9	-1,120.8	211.0	0.00	0.00	0.00
4,700.0	17.13	262.99	4,534.1	-141.5	-1,150.0	216.5	0.00	0.00	0.00
4,785.8	17.13	262.99	4,616.0	-144.6	-1,175.1	221.2	0.00	0.00	0.00
Shannon									
4,800.0	17.13	262.99	4,629.6	-145.1	-1,179.2	222.0	0.00	0.00	0.00
4,900.0	17.13	262.99	4,725.2	-148.7	-1,208.5	227.5	0.00	0.00	0.00
5,000.0	17.13	262.99	4,820.7	-152.3	-1,237.7	233.0	0.00	0.00	0.00
5,100.0	17.13	262.99	4,916.3	-155.9	-1,266.9	238.5	0.00	0.00	0.00
5,200.0	17.13	262.99	5,011.9	-159.5	-1,296.2	244.0	0.00	0.00	0.00
5,300.0	17.13	262.99	5,107.4	-163.0	-1,325.4	249.6	0.00	0.00	0.00
5,350.9	17.13	262.99	5,156.1	-164.9	-1,340.3	252.4	0.00	0.00	0.00
5,400.0	16.15	262.99	5,203.1	-166.6	-1,354.3	255.0	2.00	-2.00	0.00
5,500.0	14.15	262.99	5,299.6	-169.8	-1,380.2	259.9	2.00	-2.00	0.00
5,600.0	12.15	262.99	5,397.0	-172.6	-1,402.8	264.1	2.00	-2.00	0.00
5,700.0	10.15	262.99	5,495.1	-174.9	-1,422.0	267.7	2.00	-2.00	0.00
5,800.0	8.15	262.99	5,593.8	-176.9	-1,437.8	270.7	2.00	-2.00	0.00
5,900.0	6.15	262.99	5,693.1	-178.4	-1,450.1	273.0	2.00	-2.00	0.00
6,000.0	4.15	262.99	5,792.6	-179.5	-1,459.0	274.7	2.00	-2.00	0.00
6,100.0	2.15	262.99	5,892.5	-180.2	-1,464.5	275.7	2.00	-2.00	0.00
6,200.0	0.15	262.99	5,992.5	-180.4	-1,466.5	276.1	2.00	-2.00	0.00
6,207.5	0.00	0.00	6,000.0	-180.4	-1,466.5	276.1	2.00	-2.00	0.00
6,300.0	0.00	0.00	6,092.5	-180.4	-1,466.5	276.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,192.5	-180.4	-1,466.5	276.1	0.00	0.00	0.00
6,450.8	0.00	0.00	6,243.3	-180.4	-1,466.5	276.1	0.00	0.00	0.00
KOP #2									
6,500.0	3.69	360.00	6,292.4	-178.8	-1,466.5	277.6	7.50	7.50	0.00
6,600.0	11.19	360.00	6,391.5	-165.9	-1,466.5	289.9	7.50	7.50	0.00
6,700.0	18.69	360.00	6,488.1	-140.1	-1,466.5	314.5	7.50	7.50	0.00
6,800.0	26.19	360.00	6,580.4	-102.0	-1,466.5	350.8	7.50	7.50	0.00
6,900.0	33.69	360.00	6,667.0	-52.1	-1,466.5	398.3	7.50	7.50	0.00
7,000.0	41.19	360.00	6,746.4	8.7	-1,466.5	456.1	7.50	7.50	0.00
7,025.1	43.08	360.00	6,765.0	25.5	-1,466.5	472.2	7.50	7.50	0.00
Sharon Springs									
7,100.0	48.69	360.00	6,817.1	79.3	-1,466.5	523.4	7.50	7.50	0.00
7,200.0	56.19	360.00	6,878.0	158.5	-1,466.5	598.8	7.50	7.50	0.00
7,222.0	57.85	360.00	6,890.0	177.0	-1,466.5	616.4	7.50	7.50	0.00
Niobrara A									
7,300.0	63.69	360.00	6,928.1	245.0	-1,466.5	681.2	7.50	7.50	0.00
7,400.0	71.19	360.00	6,966.4	337.2	-1,466.5	769.0	7.50	7.50	0.00
7,498.2	78.56	360.00	6,992.0	432.0	-1,466.5	859.3	7.50	7.50	0.00
Niobrara B									
7,500.0	78.69	360.00	6,992.3	433.7	-1,466.5	860.9	7.50	7.50	0.00
7,600.0	86.19	360.00	7,005.5	532.8	-1,466.5	955.2	7.50	7.50	0.00
7,654.6	90.29	360.00	7,007.2	587.4	-1,466.5	1,007.2	7.50	7.50	0.00
End of Build - 7"									
7,700.0	90.29	360.00	7,006.9	632.8	-1,466.5	1,050.4	0.01	0.01	0.00
7,800.0	90.29	360.00	7,006.4	732.8	-1,466.5	1,145.6	0.00	0.00	0.00
7,900.0	90.29	360.00	7,005.9	832.8	-1,466.5	1,240.9	0.00	0.00	0.00
8,000.0	90.29	360.00	7,005.4	932.8	-1,466.5	1,336.1	0.00	0.00	0.00
8,100.0	90.29	360.00	7,004.9	1,032.8	-1,466.5	1,431.3	0.00	0.00	0.00
8,200.0	90.29	360.00	7,004.4	1,132.8	-1,466.5	1,526.5	0.00	0.00	0.00

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Project:	SEC.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	North Reference:	True
Well:	Spaur 10I-201	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-12-15)		

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	90.29	360.00	7,003.9	1,232.8	-1,466.5	1,621.7	0.00	0.00	0.00	
8,400.0	90.29	360.00	7,003.4	1,332.8	-1,466.5	1,717.0	0.00	0.00	0.00	
8,500.0	90.29	360.00	7,002.9	1,432.8	-1,466.5	1,812.2	0.00	0.00	0.00	
8,600.0	90.29	360.00	7,002.4	1,532.8	-1,466.5	1,907.4	0.00	0.00	0.00	
8,700.0	90.29	360.00	7,001.9	1,632.8	-1,466.5	2,002.6	0.00	0.00	0.00	
8,800.0	90.29	360.00	7,001.4	1,732.8	-1,466.5	2,097.9	0.00	0.00	0.00	
8,900.0	90.29	360.00	7,000.9	1,832.8	-1,466.5	2,193.1	0.00	0.00	0.00	
9,000.0	90.29	360.00	7,000.4	1,932.8	-1,466.5	2,288.3	0.00	0.00	0.00	
9,100.0	90.29	360.00	6,999.9	2,032.8	-1,466.5	2,383.5	0.00	0.00	0.00	
9,200.0	90.29	360.00	6,999.3	2,132.7	-1,466.5	2,478.7	0.00	0.00	0.00	
9,300.0	90.29	360.00	6,998.8	2,232.7	-1,466.5	2,574.0	0.00	0.00	0.00	
9,400.0	90.29	360.00	6,998.3	2,332.7	-1,466.5	2,669.2	0.00	0.00	0.00	
9,500.0	90.29	360.00	6,997.8	2,432.7	-1,466.5	2,764.4	0.00	0.00	0.00	
9,600.0	90.29	360.00	6,997.3	2,532.7	-1,466.5	2,859.6	0.00	0.00	0.00	
9,700.0	90.29	360.00	6,996.8	2,632.7	-1,466.5	2,954.8	0.00	0.00	0.00	
9,800.0	90.29	360.00	6,996.3	2,732.7	-1,466.5	3,050.1	0.00	0.00	0.00	
9,900.0	90.29	360.00	6,995.8	2,832.7	-1,466.5	3,145.3	0.00	0.00	0.00	
10,000.0	90.29	360.00	6,995.3	2,932.7	-1,466.5	3,240.5	0.00	0.00	0.00	
10,100.0	90.29	360.00	6,994.8	3,032.7	-1,466.5	3,335.7	0.00	0.00	0.00	
10,200.0	90.29	360.00	6,994.3	3,132.7	-1,466.5	3,430.9	0.00	0.00	0.00	
10,300.0	90.29	360.00	6,993.8	3,232.7	-1,466.5	3,526.2	0.00	0.00	0.00	
10,400.0	90.29	360.00	6,993.3	3,332.7	-1,466.5	3,621.4	0.00	0.00	0.00	
10,500.0	90.29	360.00	6,992.8	3,432.7	-1,466.5	3,716.6	0.00	0.00	0.00	
10,600.0	90.29	360.00	6,992.3	3,532.7	-1,466.5	3,811.8	0.00	0.00	0.00	
10,700.0	90.29	360.00	6,991.8	3,632.7	-1,466.5	3,907.0	0.00	0.00	0.00	
10,800.0	90.29	360.00	6,991.2	3,732.7	-1,466.5	4,002.3	0.00	0.00	0.00	
10,900.0	90.29	360.00	6,990.7	3,832.7	-1,466.5	4,097.5	0.00	0.00	0.00	
11,000.0	90.29	360.00	6,990.2	3,932.7	-1,466.5	4,192.7	0.00	0.00	0.00	
11,100.0	90.29	360.00	6,989.7	4,032.7	-1,466.5	4,287.9	0.00	0.00	0.00	
11,200.0	90.29	360.00	6,989.2	4,132.7	-1,466.5	4,383.1	0.00	0.00	0.00	
11,300.0	90.29	360.00	6,988.7	4,232.7	-1,466.5	4,478.4	0.00	0.00	0.00	
11,400.0	90.29	360.00	6,988.2	4,332.7	-1,466.5	4,573.6	0.00	0.00	0.00	
11,500.0	90.29	360.00	6,987.7	4,432.7	-1,466.5	4,668.8	0.00	0.00	0.00	
11,600.0	90.29	360.00	6,987.2	4,532.7	-1,466.5	4,764.0	0.00	0.00	0.00	
11,639.4	90.29	360.00	6,987.0	4,572.1	-1,466.5	4,801.5	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 255'FSL & 1583'I	0.00	0.00	1.0	0.0	0.0	1,360,139.82	3,172,640.93	40.320330		-104.880850
- plan hits target center										
- Point										
BHL 500'FNL & 144'F	0.00	0.00	6,987.0	4,572.1	-1,466.5	1,364,701.37	3,171,142.63	40.332880		-104.886110
- plan hits target center										
- Point										
50' E/W Hardline (10I-	0.00	0.00	1.0	2,579.8	-1,466.5	1,362,709.14	3,171,156.52	40.327411		-104.886110
- plan misses target center by 2967.4ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)										
- Rectangle (sides W3,984.7 H100.0 D0.0)										

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Spaur 10I-201
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Project:	SEC.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	North Reference:	True
Well:	Spaur 10I-201	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (6-12-15)		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,654.6	7,007.2	7"	7	7-1/2	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,680.7	3,560.0	Parkman		0.00		
4,245.8	4,100.0	Sussex		0.00		
4,785.8	4,616.0	Shannon		0.00		
7,025.1	6,765.0	Sharon Springs		0.00		
7,222.0	6,890.0	Niobrara A		0.00		
7,498.2	6,992.0	Niobrara B		0.00		
	7,071.0	Niobrara C		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP #1	
6,450.8	6,243.3	-180.4	-1,466.5	KOP #2	
7,654.6	7,007.2	587.4	-1,466.5	End of Build	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.10-T4N-R67W

Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W

Spaur 10I-201

Wellbore #1

Plan #1 (6-12-15)

Anticollision Report

12 June, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (6-12-15)		
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 6/12/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,639.4	Plan #1 (6-12-15) (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 12-10DU Pad Sec.10-T4N-R67W						
Binder #1 (P&A) - Wellbore #1 - Wellbore #1	10,433.4	6,915.6	198.8	116.9	2.427	CC, ES, SF
Binder 10-ADU - Wellbore #1 - Wellbore #1						Out of range
Binder 11-10DU - Wellbore #1 - Wellbore #1	11,500.9	7,107.6	505.0	392.3	4.483	CC, ES, SF
Binder 12-10DU - Wellbore #1 - Wellbore #1	9,971.4	6,969.3	615.4	540.3	8.196	CC, ES
Binder 12-10DU - Wellbore #1 - Wellbore #1	10,100.0	6,967.2	628.7	551.3	8.120	SF
Binder 21-10DU - Wellbore #1 - Wellbore #1						Out of range
Existing Wells Sec.10-T4N-R67W						
Spaur 10-3 (Exist.) - Wellbore #1 - Wellbore #1	2,980.0	2,860.8	495.1	473.5	22.949	CC
Spaur 10-3 (Exist.) - Wellbore #1 - Wellbore #1	3,000.0	2,880.0	495.1	473.4	22.768	ES
Spaur 10-3 (Exist.) - Wellbore #1 - Wellbore #1	7,600.0	6,981.1	724.8	686.6	19.008	SF
Gold 9-VDU Pad Sec.9-T4N-R67W						
Gold 9-VDU - Gold 9-VDU - Gold 9-VDU	10,924.6	7,018.5	271.5	174.8	2.807	CC, ES, SF
Spaur 10GD Pad Sec.10-T4N-R67W						
Spaur 10-1 (Exist.) - Wellbore #1 - Wellbore #1	8,679.3	6,951.4	285.1	233.0	5.476	CC, ES
Spaur 10-1 (Exist.) - Wellbore #1 - Wellbore #1	8,700.0	6,951.5	285.8	233.4	5.454	SF
Spaur 10PD Pad Sec. 10-T4N-67W						
Spaur 10-2 (Exist.) - Wellbore #1 - Wellbore #1	0.0	0.0	584.1			
Spaur 10-2 (Exist.) - Wellbore #1 - Wellbore #1	2,300.0	2,239.7	984.6	973.7	90.771	SF

Binder 12-10DU Pad Sec.10-T4N-R67W - Binder #1 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 240-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 +N/-S	Wellbore Centre +E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
9,500.0	6,997.8	6,886.2	6,884.9	55.7	14.4	81.94	3,365.1	-1,267.5	953.9	890.3	63.55	15.010	
9,600.0	6,997.3	6,889.4	6,888.1	57.3	14.4	82.84	3,365.2	-1,267.5	856.4	790.9	65.53	13.069	
9,700.0	6,996.8	6,892.5	6,891.3	58.9	14.4	83.74	3,365.3	-1,267.6	759.5	692.0	67.51	11.250	
9,800.0	6,996.3	6,895.7	6,894.5	60.6	14.4	84.64	3,365.4	-1,267.6	663.6	594.1	69.49	9.549	
9,900.0	6,995.8	6,898.9	6,897.6	62.3	14.4	85.55	3,365.5	-1,267.6	569.0	497.5	71.47	7.961	
10,000.0	6,995.3	6,902.0	6,900.8	64.0	14.4	86.45	3,365.7	-1,267.6	476.6	403.2	73.44	6.490	
10,100.0	6,994.8	6,905.2	6,903.9	65.7	14.4	87.36	3,365.8	-1,267.6	388.0	312.6	75.41	5.146	
10,200.0	6,994.3	6,908.3	6,907.1	67.4	14.4	88.26	3,365.9	-1,267.7	306.5	229.1	77.37	3.962	
10,300.0	6,993.8	6,911.5	6,910.2	69.1	14.4	89.16	3,366.0	-1,267.7	239.4	160.1	79.32	3.018	
10,400.0	6,993.3	6,914.6	6,913.3	70.8	14.4	90.07	3,366.1	-1,267.7	201.6	120.3	81.25	2.481	
10,433.4	6,993.1	6,915.6	6,914.4	71.4	14.4	90.37	3,366.2	-1,267.7	198.8	116.9	81.90	2.427	CC, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:		0.0 ft
Survey Program: 240-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		
10,500.0	6,992.8	6,917.7	6,916.5	72.6	14.5	90.97	3,366.2	-1,267.7	209.6	126.5	83.18	2.520		
10,600.0	6,992.3	6,920.8	6,919.6	74.3	14.5	91.87	3,366.3	-1,267.7	259.3	174.2	85.09	3.048		
10,700.0	6,991.8	6,924.0	6,922.7	76.1	14.5	92.76	3,366.5	-1,267.8	332.4	245.5	86.98	3.822		
10,800.0	6,991.2	6,927.1	6,925.8	77.9	14.5	93.66	3,366.6	-1,267.8	416.9	328.0	88.86	4.691		
10,900.0	6,990.7	6,930.2	6,928.9	79.7	14.5	94.55	3,366.7	-1,267.8	507.0	416.2	90.72	5.588		
11,000.0	6,990.2	6,933.3	6,932.0	81.4	14.5	95.43	3,366.8	-1,267.8	600.2	507.6	92.55	6.485		
11,100.0	6,989.7	6,936.4	6,935.1	83.2	14.5	96.32	3,366.9	-1,267.8	695.3	600.9	94.37	7.367		
11,200.0	6,989.2	6,939.4	6,938.2	85.0	14.5	97.19	3,367.0	-1,267.9	791.6	695.4	96.17	8.231		
11,300.0	6,988.7	6,942.5	6,941.3	86.8	14.5	98.07	3,367.1	-1,267.9	888.7	790.7	97.95	9.073		
11,400.0	6,988.2	6,945.6	6,944.3	88.6	14.5	98.94	3,367.2	-1,267.9	986.4	886.7	99.70	9.893		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design Binder 12-10DU Pad Sec.10-T4N-R67W - Binder 11-10DU - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 154-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		
10,700.0	6,991.8	7,089.5	6,910.1	76.1	25.7	90.27	4,433.3	-961.2	946.7	849.1	97.56	9.703		
10,800.0	6,991.2	7,091.7	6,912.3	77.9	25.7	90.52	4,433.3	-961.3	863.7	764.3	99.44	8.686		
10,900.0	6,990.7	7,093.9	6,914.5	79.7	25.7	90.78	4,433.4	-961.4	784.8	683.5	101.32	7.746		
11,000.0	6,990.2	7,096.2	6,916.8	81.4	25.7	91.03	4,433.4	-961.5	711.2	608.0	103.21	6.891		
11,100.0	6,989.7	7,098.4	6,919.0	83.2	25.7	91.29	4,433.5	-961.5	644.7	539.6	105.09	6.135		
11,200.0	6,989.2	7,100.7	6,921.3	85.0	25.7	91.55	4,433.6	-961.6	587.8	480.8	106.97	5.495		
11,300.0	6,988.7	7,103.0	6,923.6	86.8	25.7	91.81	4,433.6	-961.7	543.5	434.6	108.85	4.993		
11,400.0	6,988.2	7,105.3	6,925.9	88.6	25.7	92.07	4,433.7	-961.8	515.0	404.2	110.74	4.650		
11,500.0	6,987.7	7,107.6	6,928.2	90.4	25.7	92.33	4,433.8	-961.9	505.0	392.4	112.62	4.484		
11,500.9	6,987.7	7,107.6	6,928.3	90.5	25.7	92.33	4,433.8	-961.9	505.0	392.3	112.64	4.483 CC, ES, SF		
11,600.0	6,987.2	7,110.0	6,930.6	92.3	25.7	92.60	4,433.8	-962.0	514.6	400.1	114.50	4.494		
11,639.4	6,987.0	7,110.9	6,931.5	93.0	25.7	92.70	4,433.8	-962.1	523.6	408.4	115.24	4.544		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design Binder 12-10DU Pad Sec.10-T4N-R67W - Binder 12-10DU - Wellbore #1 - Wellbore #1														Offset Site Error: 0.0 ft
Survey Program: 127-MWD														Offset Well Error: 0.0 ft
Reference	Offset	Semi Major Axis		Distance										Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.0	6,999.3	6,981.7	6,934.5	51.0	17.4	91.77	2,904.1	-851.3	986.7	925.4	61.32	16.092		
9,300.0	6,998.8	6,980.1	6,932.9	52.5	17.4	91.62	2,904.1	-851.2	910.7	847.6	63.07	14.440		
9,400.0	6,998.3	6,978.5	6,931.3	54.1	17.4	91.47	2,904.1	-851.2	839.7	774.9	64.83	12.952		
9,500.0	6,997.8	6,976.9	6,929.7	55.7	17.4	91.32	2,904.1	-851.2	775.2	708.6	66.61	11.638		
9,600.0	6,997.3	6,975.3	6,928.1	57.3	17.4	91.17	2,904.1	-851.2	718.8	650.4	68.39	10.510		
9,700.0	6,996.8	6,973.7	6,926.4	58.9	17.4	91.02	2,904.2	-851.2	672.6	602.4	70.18	9.583		
9,800.0	6,996.3	6,972.0	6,924.7	60.6	17.4	90.86	2,904.2	-851.2	638.8	566.8	71.98	8.875		
9,900.0	6,995.8	6,970.5	6,923.2	62.3	17.4	90.72	2,904.2	-851.1	619.5	545.7	73.79	8.396		
9,971.4	6,995.4	6,969.3	6,922.1	63.5	17.4	90.62	2,904.2	-851.1	615.4	540.3	75.08	8.196 CC, ES		
10,000.0	6,995.3	6,968.9	6,921.6	64.0	17.4	90.57	2,904.2	-851.1	616.0	540.4	75.60	8.149		
10,100.0	6,994.8	6,967.2	6,919.9	65.7	17.4	90.42	2,904.2	-851.1	628.7	551.3	77.42	8.120 SF		
10,200.0	6,994.3	6,965.5	6,918.3	67.4	17.4	90.26	2,904.3	-851.1	656.5	577.2	79.24	8.284		
10,300.0	6,993.8	6,963.8	6,916.6	69.1	17.4	90.10	2,904.3	-851.1	697.6	616.5	81.07	8.605		
10,400.0	6,993.3	6,962.1	6,914.8	70.8	17.4	89.94	2,904.3	-851.0	749.9	667.0	82.90	9.046		
10,500.0	6,992.8	6,960.4	6,913.1	72.6	17.4	89.78	2,904.3	-851.0	811.2	726.4	84.73	9.573		
10,600.0	6,992.3	6,958.6	6,911.3	74.3	17.4	89.62	2,904.3	-851.0	879.6	793.0	86.57	10.160		
10,700.0	6,991.8	6,956.8	6,909.6	76.1	17.4	89.45	2,904.4	-851.0	953.6	865.2	88.41	10.786		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.10-T4N-R67W - Spaur 10-3 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-58.81	415.3	-686.0	802.4					
100.0	100.0	71.5	71.5	0.1	0.1	-58.83	415.1	-686.1	801.9	801.7	0.19	4,156.753		
200.0	200.0	171.1	171.1	0.3	0.3	-58.90	414.2	-686.5	801.8	801.2	0.64	1,245.261		
300.0	300.0	270.9	270.9	0.5	0.6	38.13	413.6	-686.9	800.8	799.7	1.12	713.651		
400.0	399.9	369.1	369.1	0.8	0.8	38.29	413.2	-687.3	797.8	796.2	1.59	501.217		
500.0	499.7	468.4	468.4	1.0	1.1	38.59	412.8	-687.8	793.0	790.9	2.07	382.668		
600.0	599.3	568.2	568.2	1.3	1.3	39.03	412.6	-688.3	786.1	783.5	2.57	306.227		
700.0	698.6	667.4	667.4	1.5	1.6	39.62	412.3	-688.8	777.2	774.2	3.08	252.370		
800.0	797.5	765.9	765.8	1.9	1.9	40.36	411.9	-689.4	766.5	762.9	3.61	212.214		
900.0	896.1	864.4	864.4	2.2	2.1	41.26	411.5	-690.1	754.0	749.8	4.17	180.900		
1,000.0	994.2	963.2	963.1	2.6	2.4	42.35	411.2	-690.7	739.6	734.9	4.75	155.577		
1,100.0	1,091.7	1,061.3	1,061.3	3.1	2.6	43.64	410.8	-691.2	723.5	718.2	5.38	134.602		
1,200.0	1,188.6	1,157.7	1,157.7	3.6	2.9	45.13	410.5	-691.7	705.9	699.8	6.03	116.986		
1,300.0	1,284.9	1,253.2	1,253.2	4.1	3.1	46.84	410.1	-692.5	687.0	680.3	6.74	101.947		
1,400.0	1,380.5	1,348.6	1,348.5	4.7	3.4	48.64	409.6	-693.4	667.3	659.8	7.50	88.978		
1,500.0	1,476.1	1,444.1	1,444.1	5.3	3.6	50.45	409.2	-694.3	648.1	639.8	8.29	78.136		
1,600.0	1,571.6	1,539.3	1,539.2	5.9	3.9	52.35	408.6	-695.5	629.7	620.6	9.11	69.090		
1,700.0	1,667.2	1,633.7	1,633.6	6.5	4.1	54.34	408.3	-696.7	612.3	602.3	9.95	61.524		
1,800.0	1,762.7	1,728.1	1,728.1	7.2	4.4	56.45	408.2	-698.0	595.9	585.1	10.80	55.155		
1,900.0	1,858.3	1,822.9	1,822.8	7.8	4.6	58.68	408.3	-699.3	580.6	569.0	11.67	49.755		
2,000.0	1,953.9	1,917.8	1,917.7	8.4	4.8	61.03	408.7	-700.8	566.6	554.0	12.55	45.154		
2,100.0	2,049.4	2,014.3	2,014.2	9.0	5.0	63.55	409.2	-702.1	553.6	540.2	13.44	41.185		
2,200.0	2,145.0	2,111.3	2,111.2	9.6	5.2	66.22	409.6	-703.1	541.7	527.3	14.35	37.744		
2,300.0	2,240.6	2,208.2	2,208.1	10.3	5.4	69.00	410.0	-704.0	530.8	515.5	15.28	34.741		
2,400.0	2,336.1	2,304.0	2,303.9	10.9	5.7	71.85	410.3	-704.7	521.2	504.9	16.22	32.136		
2,500.0	2,431.7	2,399.2	2,399.1	11.5	5.9	74.76	410.6	-705.6	513.0	495.9	17.16	29.903		
2,600.0	2,527.2	2,495.3	2,495.2	12.2	6.1	77.79	410.9	-706.4	506.4	488.3	18.10	27.985		
2,700.0	2,622.8	2,591.5	2,591.4	12.8	6.3	80.87	411.2	-707.4	501.3	482.2	19.03	26.337		
2,800.0	2,718.4	2,687.7	2,687.5	13.4	6.6	84.00	411.3	-708.3	497.7	477.7	19.96	24.933		
2,900.0	2,813.9	2,783.7	2,783.6	14.0	6.8	87.15	411.4	-709.3	495.6	474.7	20.87	23.751		
2,980.0	2,890.4	2,860.8	2,860.6	14.5	7.0	89.68	411.5	-710.1	495.1	473.5	21.57	22.949 CC		
3,000.0	2,909.5	2,880.0	2,879.8	14.7	7.1	90.32	411.5	-710.3	495.1	473.4	21.75	22.768 ES		
3,100.0	3,005.1	2,975.8	2,975.6	15.3	7.3	93.48	411.5	-711.2	496.3	473.7	22.59	21.964		
3,200.0	3,100.6	3,070.7	3,070.6	15.9	7.5	96.63	411.6	-711.8	499.1	475.7	23.37	21.360		
3,300.0	3,196.2	3,165.8	3,165.6	16.6	7.7	99.78	411.9	-712.0	503.8	479.7	24.07	20.934		
3,400.0	3,291.7	3,261.3	3,261.1	17.2	7.9	102.87	412.2	-712.3	510.2	485.4	24.71	20.643		
3,500.0	3,387.3	3,356.9	3,356.8	17.8	8.1	105.90	412.5	-712.4	518.1	492.8	25.32	20.464		
3,600.0	3,482.9	3,453.3	3,453.2	18.5	8.3	108.85	412.8	-712.7	527.5	501.6	25.91	20.363		
3,700.0	3,578.4	3,549.5	3,549.3	19.1	8.5	111.69	412.9	-713.0	538.2	511.7	26.49	20.321		
3,800.0	3,674.0	3,644.9	3,644.7	19.7	8.7	114.40	413.0	-713.3	550.2	523.2	27.03	20.352		
3,900.0	3,769.6	3,740.7	3,740.6	20.4	9.0	117.01	413.2	-713.5	563.5	536.0	27.55	20.457		
4,000.0	3,865.1	3,837.4	3,837.3	21.0	9.2	119.53	413.2	-713.9	577.9	549.8	28.04	20.610		
4,100.0	3,960.7	3,936.8	3,936.7	21.6	9.5	121.97	413.0	-714.5	593.0	564.5	28.51	20.802		
4,200.0	4,056.2	4,037.8	4,037.6	22.2	9.7	124.30	412.1	-715.9	608.2	579.2	28.95	21.006		
4,300.0	4,151.8	4,134.1	4,133.9	22.9	10.0	126.39	411.2	-717.6	624.0	594.6	29.39	21.235		
4,400.0	4,247.4	4,229.9	4,229.7	23.5	10.2	128.36	410.2	-719.3	640.5	610.7	29.81	21.491		
4,500.0	4,342.9	4,324.1	4,323.9	24.1	10.5	130.20	409.5	-720.9	658.1	627.9	30.22	21.777		
4,600.0	4,438.5	4,420.8	4,420.5	24.8	10.7	132.00	408.8	-722.6	676.4	645.7	30.63	22.085		
4,700.0	4,534.1	4,516.6	4,516.3	25.4	11.0	133.69	408.0	-724.2	695.3	664.2	31.02	22.412		
4,800.0	4,629.6	4,612.9	4,612.6	26.0	11.2	135.30	407.3	-725.8	714.7	683.3	31.41	22.753		
4,900.0	4,725.2	4,708.7	4,708.5	26.7	11.4	136.81	406.6	-727.5	734.7	702.9	31.80	23.102		

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 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.10-T4N-R67W - Spaur 10-3 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 100-NS-GYRO-MS													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
5,000.0	4,820.7	4,806.0	4,805.6	27.3	11.7	138.26	405.9	-729.3	755.1	722.9	32.19	23.456		
5,100.0	4,916.3	4,900.0	4,899.7	27.9	11.9	139.60	405.3	-731.0	776.1	743.5	32.58	23.818		
5,200.0	5,011.9	4,996.1	4,995.8	28.6	12.2	140.90	404.6	-732.4	797.6	764.6	32.97	24.193		
5,300.0	5,107.4	5,092.5	5,092.2	29.2	12.4	142.15	403.9	-734.0	819.4	786.1	33.35	24.569		
5,400.0	5,203.1	5,189.1	5,188.7	29.8	12.7	143.44	403.2	-735.5	841.2	807.5	33.73	24.944		
5,500.0	5,299.6	5,286.8	5,286.4	30.2	12.9	144.68	402.3	-737.1	860.9	826.8	34.05	25.284		
5,600.0	5,397.0	5,386.0	5,385.6	30.6	13.2	145.72	401.3	-738.7	877.8	843.5	34.38	25.535		
5,700.0	5,495.1	5,482.9	5,482.5	30.9	13.4	146.55	400.2	-740.3	892.1	857.4	34.71	25.703		
5,800.0	5,593.8	5,574.9	5,574.5	31.2	13.7	147.19	399.4	-741.4	903.9	868.9	35.03	25.807		
5,900.0	5,693.1	5,671.6	5,671.2	31.5	13.9	147.69	399.1	-742.2	913.6	878.3	35.35	25.844		
6,000.0	5,792.6	5,768.8	5,768.4	31.6	14.2	148.03	398.9	-742.9	920.6	884.9	35.67	25.806		
6,100.0	5,892.5	5,868.1	5,867.6	31.8	14.4	148.23	399.0	-743.5	924.8	888.8	35.99	25.698		
6,200.0	5,992.5	5,967.5	5,967.1	31.9	14.7	148.28	399.1	-744.1	926.1	889.8	36.29	25.517		
6,300.0	6,092.5	6,067.5	6,067.0	32.0	14.9	51.23	399.3	-744.8	925.7	889.0	36.66	25.249		
6,400.0	6,192.5	6,167.9	6,167.5	32.1	15.2	51.18	399.7	-745.6	925.3	888.2	37.04	24.979		
6,500.0	6,292.4	6,267.1	6,266.6	32.1	15.4	51.26	400.2	-746.5	923.9	886.6	37.24	24.808		
6,600.0	6,391.5	6,366.9	6,366.4	32.2	15.6	52.30	401.1	-747.7	915.5	878.6	36.86	24.838		
6,700.0	6,488.1	6,464.6	6,464.1	32.3	15.9	54.49	402.0	-749.0	899.2	863.2	36.03	24.959		
6,800.0	6,580.4	6,555.8	6,555.3	32.3	16.1	57.81	402.6	-750.1	876.2	841.3	34.98	25.051		
6,900.0	6,667.0	6,641.3	6,640.8	32.3	16.3	62.22	402.9	-750.7	848.2	814.2	34.03	24.925		
7,000.0	6,746.4	6,721.3	6,720.8	32.4	16.5	67.61	403.3	-751.2	816.9	783.4	33.54	24.359		
7,100.0	6,817.1	6,793.4	6,792.9	32.4	16.7	73.60	403.4	-751.7	784.9	751.2	33.70	23.293		
7,200.0	6,878.0	6,855.4	6,854.8	32.5	16.8	79.57	403.5	-752.2	755.2	720.8	34.38	21.962		
7,300.0	6,928.1	6,906.1	6,905.6	32.6	16.9	84.84	403.7	-752.7	731.2	695.9	35.30	20.714		
7,400.0	6,966.4	6,942.8	6,942.3	32.8	17.0	88.65	403.9	-753.0	716.6	680.4	36.22	19.783		
7,470.6	6,986.0	6,961.8	6,961.3	33.0	17.1	90.36	404.0	-753.1	713.3	676.4	36.90	19.333		
7,500.0	6,992.3	6,968.0	6,967.5	33.1	17.1	90.80	404.0	-753.2	713.9	676.8	37.16	19.211		
7,600.0	7,005.5	6,981.1	6,980.6	33.4	17.1	91.02	404.1	-753.3	724.8	686.6	38.13	19.008 SF		
7,700.0	7,006.9	6,983.1	6,982.6	33.9	17.1	90.28	404.1	-753.3	749.0	709.9	39.11	19.150		
7,800.0	7,006.4	6,983.2	6,982.7	34.5	17.1	90.29	404.1	-753.3	785.3	745.1	40.26	19.508		
7,900.0	7,005.9	6,983.4	6,982.9	35.2	17.1	90.30	404.1	-753.3	832.1	790.6	41.50	20.052		
8,000.0	7,005.4	6,983.5	6,983.0	35.9	17.1	90.31	404.1	-753.3	887.8	845.0	42.83	20.730		
8,100.0	7,004.9	6,983.7	6,983.2	36.8	17.1	90.33	404.1	-753.3	950.8	906.5	44.22	21.499		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Gold 9-VDU Pad Sec.9-T4N-R67W - Gold 9-VDU - Gold 9-VDU - Gold 9-VDU													Offset Well Error:	0.0 ft
Survey Program: 605-MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,000.0	6,995.3	7,031.0	6,923.7	64.0	21.5	-91.70	3,857.2	-1,738.1	963.6	884.2	79.42	12.132		
10,100.0	6,994.8	7,029.7	6,922.4	65.7	21.5	-91.43	3,857.2	-1,738.1	868.1	786.8	81.28	10.680		
10,200.0	6,994.3	7,028.4	6,921.1	67.4	21.5	-91.16	3,857.2	-1,738.1	773.8	690.6	83.14	9.306		
10,300.0	6,993.8	7,027.1	6,919.8	69.1	21.5	-90.89	3,857.3	-1,738.1	681.0	596.0	85.01	8.011		
10,400.0	6,993.3	7,025.8	6,918.5	70.8	21.5	-90.61	3,857.3	-1,738.1	590.7	503.8	86.88	6.799		
10,500.0	6,992.8	7,024.4	6,917.2	72.6	21.5	-90.33	3,857.3	-1,738.0	504.0	415.2	88.75	5.679		
10,600.0	6,992.3	7,023.1	6,915.8	74.3	21.5	-90.04	3,857.3	-1,738.0	423.2	332.5	90.62	4.670		
10,700.0	6,991.8	7,021.7	6,914.4	76.1	21.5	-89.75	3,857.3	-1,738.0	352.4	259.9	92.50	3.809		
10,800.0	6,991.2	7,020.3	6,913.0	77.9	21.5	-89.45	3,857.3	-1,738.0	298.7	204.4	94.37	3.165		
10,900.0	6,990.7	7,018.9	6,911.6	79.7	21.5	-89.15	3,857.3	-1,737.9	272.6	176.4	96.25	2.832		
10,924.6	6,990.6	7,018.5	6,911.2	80.1	21.5	-89.07	3,857.3	-1,737.9	271.5	174.8	96.71	2.807	CC, ES, SF	
11,000.0	6,990.2	7,017.4	6,910.1	81.4	21.5	-88.84	3,857.3	-1,737.9	281.8	183.6	98.13	2.871		
11,100.0	6,989.7	7,015.9	6,908.6	83.2	21.5	-88.53	3,857.4	-1,737.9	323.2	223.2	100.00	3.232		
11,200.0	6,989.2	7,014.4	6,907.1	85.0	21.5	-88.21	3,857.4	-1,737.9	386.7	284.8	101.88	3.795		
11,300.0	6,988.7	7,012.9	6,905.6	86.8	21.5	-87.89	3,857.4	-1,737.8	463.2	359.5	103.76	4.465		
11,400.0	6,988.2	7,011.3	6,904.0	88.6	21.5	-87.56	3,857.4	-1,737.8	547.4	441.8	105.63	5.182		
11,500.0	6,987.7	7,009.7	6,902.5	90.4	21.5	-87.22	3,857.4	-1,737.8	636.2	528.6	107.50	5.918		
11,600.0	6,987.2	7,008.1	6,900.8	92.3	21.5	-86.88	3,857.4	-1,737.8	727.8	618.5	109.37	6.655		
11,639.4	6,987.0	7,007.5	6,900.2	93.0	21.5	-86.75	3,857.4	-1,737.8	764.5	654.4	110.11	6.943		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 10GD Pad Sec.10-T4N-R67W - Spaur 10-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:		0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Distance								Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
7,800.0	7,006.4	6,950.2	6,949.5	34.5	16.0	89.51	1,612.1	-1,181.4	924.4	885.4	39.02	23.690			
7,900.0	7,005.9	6,950.3	6,949.7	35.2	16.0	89.54	1,612.1	-1,181.4	829.8	789.6	40.26	20.610			
8,000.0	7,005.4	6,950.5	6,949.8	35.9	16.0	89.57	1,612.1	-1,181.4	736.7	695.1	41.59	17.713			
8,100.0	7,004.9	6,950.6	6,950.0	36.8	16.0	89.60	1,612.1	-1,181.4	645.7	602.7	42.99	15.019			
8,200.0	7,004.4	6,950.8	6,950.1	37.8	16.0	89.62	1,612.1	-1,181.4	557.7	513.2	44.45	12.546			
8,300.0	7,003.9	6,950.9	6,950.3	38.8	16.0	89.65	1,612.1	-1,181.4	474.5	428.5	45.96	10.324			
8,400.0	7,003.4	6,951.1	6,950.4	39.9	16.0	89.68	1,612.1	-1,181.4	399.1	351.6	47.52	8.399			
8,500.0	7,002.9	6,951.2	6,950.5	41.1	16.0	89.71	1,612.1	-1,181.4	336.8	287.7	49.11	6.857			
8,600.0	7,002.4	6,951.3	6,950.7	42.4	16.0	89.74	1,612.1	-1,181.4	295.9	245.2	50.74	5.831			
8,679.3	7,002.0	6,951.4	6,950.8	43.4	16.0	89.76	1,612.1	-1,181.4	285.1	233.0	52.06	5.476 CC, ES			
8,700.0	7,001.9	6,951.5	6,950.8	43.7	16.0	89.76	1,612.1	-1,181.4	285.8	233.4	52.40	5.454 SF			
8,800.0	7,001.4	6,951.6	6,951.0	45.1	16.0	89.79	1,612.1	-1,181.4	309.6	255.5	54.08	5.724			
8,900.0	7,000.9	6,951.7	6,951.1	46.5	16.0	89.82	1,612.1	-1,181.4	360.5	304.7	55.78	6.462			
9,000.0	7,000.4	6,951.9	6,951.2	48.0	16.0	89.85	1,612.1	-1,181.4	429.1	371.5	57.51	7.461			
9,100.0	6,999.9	6,952.0	6,951.4	49.4	16.0	89.88	1,612.1	-1,181.4	508.2	448.9	59.25	8.577			
9,200.0	6,999.3	6,952.2	6,951.5	51.0	16.0	89.90	1,612.1	-1,181.4	593.6	532.6	61.00	9.731			
9,300.0	6,998.8	6,952.3	6,951.6	52.5	16.0	89.93	1,612.1	-1,181.4	683.0	620.2	62.77	10.882			
9,400.0	6,998.3	6,952.4	6,951.8	54.1	16.0	89.96	1,612.1	-1,181.4	775.0	710.5	64.55	12.007			
9,500.0	6,997.8	6,952.6	6,951.9	55.7	16.0	89.99	1,612.1	-1,181.4	868.8	802.4	66.33	13.097			
9,600.0	6,997.3	6,952.7	6,952.1	57.3	16.0	90.01	1,612.1	-1,181.4	963.8	895.7	68.13	14.146			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	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		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	48.14	389.8	435.0	584.1						
100.0	100.0	96.8	96.8	0.1	0.1	48.14	390.0	435.2	584.4	584.2	0.21	2,788.513			
200.0	200.0	196.6	196.5	0.3	0.4	48.15	390.3	435.7	585.0	584.3	0.69	842.700			
300.0	300.0	299.8	299.8	0.5	0.6	145.22	390.5	436.0	586.4	585.2	1.13	517.437			
400.0	399.9	400.8	400.8	0.8	0.7	145.43	390.4	436.0	589.5	588.0	1.48	399.306			
500.0	499.7	500.2	500.2	1.0	0.9	145.78	390.0	436.2	594.8	593.0	1.83	324.512			
600.0	599.3	600.2	600.2	1.3	1.0	146.25	389.6	436.4	602.3	600.0	2.25	267.602			
700.0	698.6	700.6	700.6	1.5	1.2	146.80	389.3	436.3	611.9	609.2	2.66	229.665			
800.0	797.5	801.2	801.2	1.9	1.4	147.45	388.9	436.0	623.5	620.4	3.09	201.789			
900.0	896.1	899.6	899.6	2.2	1.6	148.17	388.4	435.7	637.3	633.8	3.55	179.483			
1,000.0	994.2	998.1	998.1	2.6	1.8	148.95	388.0	435.3	653.5	649.5	4.04	161.899			
1,100.0	1,091.7	1,095.1	1,095.1	3.1	2.0	149.78	387.6	434.9	672.0	667.5	4.54	148.025			
1,200.0	1,188.6	1,190.5	1,190.5	3.6	2.2	150.62	387.3	434.7	693.2	688.1	5.05	137.142			
1,300.0	1,284.9	1,286.9	1,286.9	4.1	2.4	151.50	387.2	434.4	716.9	711.3	5.57	128.795			
1,400.0	1,380.5	1,383.7	1,383.7	4.7	2.6	152.49	387.2	434.0	742.6	736.5	6.09	121.936			
1,500.0	1,476.1	1,479.9	1,479.9	5.3	2.8	153.49	387.0	433.6	768.6	762.0	6.64	115.806			
1,600.0	1,571.6	1,575.5	1,575.5	5.9	3.1	154.43	386.7	433.2	794.8	787.6	7.20	110.442			
1,700.0	1,667.2	1,669.9	1,669.9	6.5	3.3	155.31	386.5	432.9	821.3	813.6	7.76	105.894			
1,800.0	1,762.7	1,765.2	1,765.1	7.2	3.5	156.13	386.3	432.7	848.1	839.8	8.31	102.006			
1,900.0	1,858.3	1,861.1	1,861.1	7.8	3.8	156.91	386.1	432.5	875.0	866.1	8.87	98.645			
2,000.0	1,953.9	1,956.6	1,956.6	8.4	4.0	157.66	385.7	432.4	902.0	892.6	9.42	95.773			
2,100.0	2,049.4	2,051.1	2,051.1	9.0	4.2	158.36	385.3	432.3	929.3	919.3	9.95	93.389			
2,200.0	2,145.0	2,145.1	2,145.1	9.6	4.4	159.02	384.9	432.4	956.8	946.4	10.43	91.735			
2,300.0	2,240.6	2,239.7	2,239.7	10.3	4.5	159.63	384.8	432.5	984.6	973.7	10.85	90.771 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 101-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 101-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 101-321 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
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	74.542		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	14.6	0.0	14.6	13.9	0.65	22.596 CC		
300.0	300.0	300.0	300.0	0.5	0.5	102.05	14.6	0.0	14.8	13.7	1.08	13.664 ES		
400.0	399.9	399.9	399.9	0.8	0.8	115.84	14.6	0.0	16.1	14.6	1.52	10.547		
500.0	499.7	499.9	499.9	1.0	1.0	131.30	14.4	-0.9	19.2	17.2	1.96	9.778		
600.0	599.3	600.0	600.0	1.3	1.2	143.39	13.9	-3.4	23.9	21.5	2.40	9.982		
700.0	698.6	700.1	700.0	1.5	1.4	152.22	13.1	-7.7	30.1	27.3	2.84	10.599		
800.0	797.5	800.4	800.0	1.9	1.6	158.62	12.0	-13.7	37.5	34.2	3.29	11.411		
900.0	896.1	900.6	900.0	2.2	1.9	163.32	10.6	-21.5	46.0	42.3	3.74	12.309		
1,000.0	994.2	1,001.0	999.9	2.6	2.1	166.85	8.9	-31.0	55.6	51.4	4.20	13.239		
1,100.0	1,091.7	1,101.5	1,099.7	3.1	2.4	169.57	6.8	-42.2	66.1	61.4	4.66	14.173		
1,200.0	1,188.6	1,202.0	1,199.4	3.6	2.7	171.71	4.4	-55.1	77.6	72.4	5.14	15.096		
1,300.0	1,284.9	1,302.7	1,298.9	4.1	3.0	173.43	1.7	-69.8	89.9	84.3	5.62	15.999		
1,400.0	1,380.5	1,403.5	1,398.4	4.7	3.4	174.82	-1.3	-86.2	102.8	96.7	6.13	16.775		
1,500.0	1,476.1	1,504.8	1,497.9	5.3	3.8	175.91	-4.7	-104.4	114.2	107.5	6.66	17.156		
1,600.0	1,571.6	1,606.4	1,597.5	5.9	4.2	176.81	-8.4	-124.4	123.9	116.7	7.20	17.213		
1,700.0	1,667.2	1,708.3	1,697.0	6.5	4.6	177.59	-12.4	-146.3	131.8	124.0	7.74	17.014		
1,800.0	1,762.7	1,809.6	1,795.4	7.2	5.1	178.29	-16.7	-169.5	138.1	129.8	8.30	16.629		
1,900.0	1,858.3	1,909.4	1,892.4	7.8	5.6	178.93	-21.0	-192.8	144.0	135.2	8.86	16.248		
2,000.0	1,953.9	2,009.2	1,989.4	8.4	6.1	179.51	-25.3	-216.1	150.0	140.6	9.43	15.906		
2,100.0	2,049.4	2,109.0	2,086.3	9.0	6.6	-179.95	-29.6	-239.3	156.0	146.0	10.00	15.596		
2,200.0	2,145.0	2,208.8	2,183.3	9.6	7.0	-179.44	-33.9	-262.6	162.0	151.5	10.58	15.315		
2,300.0	2,240.6	2,308.6	2,280.3	10.3	7.5	-178.98	-38.2	-285.9	168.1	156.9	11.16	15.059		
2,400.0	2,336.1	2,408.4	2,377.2	10.9	8.0	-178.55	-42.5	-309.1	174.1	162.4	11.74	14.824		
2,500.0	2,431.7	2,508.3	2,474.2	11.5	8.5	-178.14	-46.8	-332.4	180.2	167.8	12.33	14.608		
2,600.0	2,527.2	2,608.1	2,571.2	12.2	9.1	-177.76	-51.1	-355.6	186.2	173.3	12.92	14.409		
2,700.0	2,622.8	2,707.9	2,668.1	12.8	9.6	-177.41	-55.3	-378.9	192.3	178.8	13.52	14.225		
2,800.0	2,718.4	2,807.7	2,765.1	13.4	10.1	-177.08	-59.6	-402.2	198.3	184.2	14.11	14.055		
2,900.0	2,813.9	2,907.5	2,862.1	14.0	10.6	-176.77	-63.9	-425.4	204.4	189.7	14.71	13.896		
3,000.0	2,909.5	3,007.3	2,959.0	14.7	11.1	-176.47	-68.2	-448.7	210.5	195.2	15.31	13.747		
3,100.0	3,005.1	3,107.1	3,056.0	15.3	11.6	-176.19	-72.5	-472.0	216.6	200.7	15.92	13.609		
3,200.0	3,100.6	3,206.9	3,153.0	15.9	12.1	-175.93	-76.8	-495.2	222.7	206.2	16.52	13.479		
3,300.0	3,196.2	3,306.7	3,249.9	16.6	12.6	-175.68	-81.1	-518.5	228.8	211.7	17.13	13.357		
3,400.0	3,291.7	3,406.5	3,346.9	17.2	13.1	-175.45	-85.4	-541.8	234.9	217.2	17.74	13.242		
3,500.0	3,387.3	3,506.3	3,443.9	17.8	13.6	-175.22	-89.7	-565.0	241.0	222.6	18.35	13.134		
3,600.0	3,482.9	3,606.2	3,540.8	18.5	14.1	-175.01	-94.0	-588.3	247.1	228.1	18.96	13.032		
3,700.0	3,578.4	3,706.0	3,637.8	19.1	14.7	-174.81	-98.3	-611.6	253.2	233.6	19.57	12.936		
3,800.0	3,674.0	3,805.8	3,734.7	19.7	15.2	-174.61	-102.6	-634.8	259.3	239.1	20.19	12.845		
3,900.0	3,769.6	3,905.6	3,831.7	20.4	15.7	-174.43	-106.9	-658.1	265.5	244.6	20.81	12.758		
4,000.0	3,865.1	4,005.4	3,928.7	21.0	16.2	-174.25	-111.2	-681.3	271.6	250.1	21.42	12.676		
4,100.0	3,960.7	4,105.2	4,025.6	21.6	16.7	-174.09	-115.5	-704.6	277.7	255.7	22.04	12.598		
4,200.0	4,056.2	4,205.0	4,122.6	22.2	17.2	-173.92	-119.7	-727.9	283.8	261.2	22.66	12.524		
4,300.0	4,151.8	4,304.8	4,219.6	22.9	17.7	-173.77	-124.0	-751.1	289.9	266.7	23.28	12.453		
4,400.0	4,247.4	4,404.6	4,316.5	23.5	18.3	-173.62	-128.3	-774.4	296.1	272.2	23.91	12.385		
4,500.0	4,342.9	4,504.4	4,413.5	24.1	18.8	-173.48	-132.6	-797.7	302.2	277.7	24.53	12.321		
4,600.0	4,438.5	4,604.2	4,510.5	24.8	19.3	-173.35	-136.9	-820.9	308.3	283.2	25.15	12.259		
4,700.0	4,534.1	4,704.1	4,607.4	25.4	19.8	-173.21	-141.2	-844.2	314.5	288.7	25.78	12.200		
4,800.0	4,629.6	4,803.9	4,704.4	26.0	20.3	-173.09	-145.5	-867.5	320.6	294.2	26.40	12.143		
4,900.0	4,725.2	4,903.7	4,801.4	26.7	20.8	-172.97	-149.8	-890.7	326.7	299.7	27.03	12.089		
5,000.0	4,820.7	5,003.5	4,898.3	27.3	21.4	-172.85	-154.1	-914.0	332.9	305.2	27.65	12.037		

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 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	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							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)			
5,100.0	4,916.3	5,103.3	4,995.3	27.9	21.9	-172.74	-158.4	-937.3	339.0	310.7	28.28	11.987		
5,200.0	5,011.9	5,203.1	5,092.3	28.6	22.4	-172.63	-162.7	-960.5	345.2	316.3	28.91	11.939		
5,300.0	5,107.4	5,302.9	5,189.2	29.2	22.9	-172.53	-167.0	-983.8	351.3	321.8	29.54	11.893		
5,400.0	5,203.1	5,402.7	5,286.2	29.8	23.4	-172.42	-171.3	-1,007.1	357.0	326.9	30.18	11.831		
5,500.0	5,299.6	5,495.6	5,376.6	30.2	23.9	-172.29	-175.2	-1,028.2	360.4	329.7	30.74	11.725		
5,600.0	5,397.0	5,584.6	5,463.7	30.6	24.2	-172.18	-178.4	-1,045.9	363.1	331.9	31.19	11.642		
5,700.0	5,495.1	5,673.5	5,551.2	30.9	24.4	-172.08	-181.2	-1,060.9	365.5	333.9	31.58	11.571		
5,800.0	5,593.8	5,762.3	5,639.2	31.2	24.7	-172.01	-183.5	-1,073.2	367.4	335.5	31.91	11.512		
5,900.0	5,693.1	5,851.1	5,727.4	31.5	24.9	-171.95	-185.3	-1,082.9	368.9	336.7	32.18	11.462		
6,000.0	5,792.6	5,939.9	5,815.9	31.6	25.0	-171.91	-186.5	-1,089.9	370.0	337.6	32.39	11.422		
6,100.0	5,892.5	6,028.6	5,904.6	31.8	25.1	-171.88	-187.3	-1,094.1	370.6	338.1	32.53	11.392		
6,200.0	5,992.5	6,117.4	5,993.3	31.9	25.2	-171.87	-187.6	-1,095.7	370.9	338.2	32.63	11.366		
6,300.0	6,092.5	6,216.5	6,092.5	32.0	25.4	91.12	-187.6	-1,095.7	370.9	337.9	32.92	11.264		
6,400.0	6,192.5	6,316.5	6,192.5	32.1	25.5	91.12	-187.6	-1,095.7	370.9	337.6	33.24	11.159		
6,434.0	6,226.5	6,350.6	6,226.5	32.1	25.5	91.17	-187.6	-1,095.7	370.9	337.5	33.36	11.119		
6,500.0	6,292.4	6,416.5	6,292.4	32.1	25.6	91.36	-187.6	-1,095.7	370.9	337.3	33.60	11.037		
6,600.0	6,391.5	6,516.9	6,392.8	32.2	25.7	93.11	-186.2	-1,095.7	371.4	337.1	34.30	10.828		
6,700.0	6,488.1	6,619.6	6,494.6	32.3	25.8	95.13	-173.0	-1,095.7	372.3	337.3	34.98	10.643		
6,800.0	6,580.4	6,724.3	6,595.5	32.3	25.8	97.06	-145.7	-1,095.7	373.7	338.2	35.51	10.524		
6,900.0	6,667.0	6,830.9	6,693.5	32.3	25.9	98.87	-104.0	-1,095.7	375.4	339.5	35.85	10.471		
7,000.0	6,746.4	6,939.3	6,786.3	32.4	25.9	100.53	-48.0	-1,095.7	377.2	341.2	36.02	10.471		
7,100.0	6,817.1	7,049.6	6,871.5	32.4	25.9	101.99	21.9	-1,095.7	379.1	343.0	36.14	10.490		
7,200.0	6,878.0	7,161.4	6,946.8	32.5	26.0	103.23	104.5	-1,095.7	381.0	344.6	36.38	10.472		
7,300.0	6,928.1	7,274.7	7,009.9	32.6	26.1	104.22	198.4	-1,095.7	382.6	345.7	36.90	10.366		
7,400.0	6,966.4	7,389.1	7,058.8	32.8	26.3	104.95	301.6	-1,095.7	383.8	345.9	37.93	10.119		
7,500.0	6,992.3	7,504.2	7,092.0	33.1	26.7	105.38	411.8	-1,095.7	384.6	345.0	39.57	9.718		
7,600.0	7,005.5	7,619.7	7,108.3	33.4	27.2	105.52	526.0	-1,095.7	384.8	343.0	41.85	9.195		
7,700.0	7,006.9	7,727.3	7,109.5	33.9	27.8	105.46	633.5	-1,095.7	384.7	340.4	44.30	8.685		
7,800.0	7,006.4	7,827.3	7,108.8	34.5	28.6	105.43	733.5	-1,095.7	384.7	338.1	46.59	8.257		
7,900.0	7,005.9	7,927.3	7,108.0	35.2	29.4	105.39	833.5	-1,095.7	384.6	335.5	49.05	7.841		
8,000.0	7,005.4	8,027.3	7,107.3	35.9	30.4	105.36	933.5	-1,095.7	384.5	332.9	51.67	7.442		
8,100.0	7,004.9	8,127.3	7,106.5	36.8	31.5	105.32	1,033.5	-1,095.7	384.5	330.1	54.41	7.066		
8,200.0	7,004.4	8,227.3	7,105.8	37.8	32.7	105.29	1,133.5	-1,095.7	384.4	327.1	57.27	6.712		
8,300.0	7,003.9	8,327.3	7,105.0	38.8	34.0	105.25	1,233.5	-1,095.7	384.3	324.1	60.22	6.382		
8,400.0	7,003.4	8,427.3	7,104.3	39.9	35.3	105.22	1,333.5	-1,095.7	384.3	321.0	63.26	6.075		
8,500.0	7,002.9	8,527.3	7,103.5	41.1	36.7	105.18	1,433.5	-1,095.7	384.2	317.8	66.36	5.789		
8,600.0	7,002.4	8,627.3	7,102.8	42.4	38.2	105.15	1,533.5	-1,095.7	384.1	314.6	69.53	5.525		
8,700.0	7,001.9	8,727.3	7,102.0	43.7	39.7	105.11	1,633.5	-1,095.7	384.1	311.3	72.75	5.279		
8,800.0	7,001.4	8,827.3	7,101.2	45.1	41.2	105.08	1,733.5	-1,095.7	384.0	308.0	76.02	5.051		
8,900.0	7,000.9	8,927.3	7,100.5	46.5	42.8	105.04	1,833.5	-1,095.7	384.0	304.6	79.33	4.840		
9,000.0	7,000.4	9,027.3	7,099.7	48.0	44.4	105.01	1,933.5	-1,095.7	383.9	301.2	82.68	4.643		
9,100.0	6,999.9	9,127.3	7,099.0	49.4	46.0	104.97	2,033.5	-1,095.7	383.8	297.8	86.06	4.460		
9,200.0	6,999.3	9,227.3	7,098.2	51.0	47.6	104.93	2,133.5	-1,095.7	383.8	294.3	89.47	4.289		
9,300.0	6,998.8	9,327.3	7,097.5	52.5	49.3	104.90	2,233.5	-1,095.7	383.7	290.8	92.91	4.130		
9,400.0	6,998.3	9,427.3	7,096.7	54.1	51.0	104.86	2,333.5	-1,095.7	383.6	287.3	96.36	3.981		
9,500.0	6,997.8	9,527.3	7,096.0	55.7	52.7	104.83	2,433.5	-1,095.7	383.6	283.7	99.84	3.842		
9,600.0	6,997.3	9,627.3	7,095.2	57.3	54.4	104.79	2,533.5	-1,095.7	383.5	280.2	103.34	3.711		
9,700.0	6,996.8	9,727.3	7,094.5	58.9	56.1	104.76	2,633.5	-1,095.7	383.5	276.6	106.86	3.588		
9,800.0	6,996.3	9,827.3	7,093.7	60.6	57.9	104.72	2,733.5	-1,095.7	383.4	273.0	110.39	3.473		
9,900.0	6,995.8	9,927.3	7,093.0	62.3	59.6	104.69	2,833.5	-1,095.7	383.3	269.4	113.93	3.365		

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 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	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					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	6,995.3	10,027.3	7,092.2	64.0	61.4	104.65	2,933.5	-1,095.7	383.3	265.8	117.49	3.262	
10,100.0	6,994.8	10,127.3	7,091.5	65.7	63.2	104.62	3,033.5	-1,095.7	383.2	262.1	121.06	3.165	
10,200.0	6,994.3	10,227.3	7,090.7	67.4	65.0	104.58	3,133.5	-1,095.7	383.1	258.5	124.64	3.074	
10,300.0	6,993.8	10,327.3	7,090.0	69.1	66.7	104.55	3,233.5	-1,095.7	383.1	254.8	128.23	2.987	
10,400.0	6,993.3	10,427.3	7,089.2	70.8	68.5	104.51	3,333.5	-1,095.7	383.0	251.2	131.83	2.905	
10,500.0	6,992.8	10,527.3	7,088.5	72.6	70.3	104.48	3,433.5	-1,095.7	383.0	247.5	135.44	2.827	
10,600.0	6,992.3	10,627.3	7,087.7	74.3	72.2	104.44	3,533.4	-1,095.7	382.9	243.8	139.06	2.753	
10,700.0	6,991.8	10,727.3	7,087.0	76.1	74.0	104.40	3,633.4	-1,095.7	382.8	240.1	142.69	2.683	
10,800.0	6,991.2	10,827.3	7,086.2	77.9	75.8	104.37	3,733.4	-1,095.7	382.8	236.5	146.32	2.616	
10,900.0	6,990.7	10,927.3	7,085.5	79.7	77.6	104.33	3,833.4	-1,095.7	382.7	232.8	149.96	2.552	
11,000.0	6,990.2	11,027.3	7,084.7	81.4	79.4	104.30	3,933.4	-1,095.7	382.7	229.0	153.61	2.491	
11,100.0	6,989.7	11,127.3	7,084.0	83.2	81.3	104.26	4,033.4	-1,095.7	382.6	225.3	157.26	2.433	
11,200.0	6,989.2	11,227.3	7,083.2	85.0	83.1	104.23	4,133.4	-1,095.7	382.5	221.6	160.91	2.377	
11,300.0	6,988.7	11,327.3	7,082.5	86.8	84.9	104.19	4,233.4	-1,095.7	382.5	217.9	164.58	2.324	
11,400.0	6,988.2	11,427.3	7,081.7	88.6	86.8	104.16	4,333.4	-1,095.7	382.4	214.2	168.24	2.273	
11,500.0	6,987.7	11,527.3	7,081.0	90.4	88.6	104.12	4,433.4	-1,095.7	382.4	210.4	171.92	2.224	
11,600.0	6,987.2	11,627.3	7,080.2	92.3	90.5	104.09	4,533.4	-1,095.7	382.3	206.7	175.59	2.177	
11,628.7	6,987.1	11,656.0	7,080.0	92.8	91.0	104.08	4,562.1	-1,095.7	382.3	205.6	176.65	2.164	
11,639.4	6,987.0	11,658.7	7,080.0	93.0	91.1	104.07	4,564.8	-1,095.7	382.4	205.5	176.89	2.161 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10I-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		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	87.4	0.0	87.4					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	87.4	0.0	87.4		0.20	447.146		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	87.4	0.0	87.4	87.2	0.65	135.546 CC		
300.0	300.0	300.0	300.0	0.5	0.5	97.86	87.4	0.0	87.6	86.5	1.08	80.925 ES		
400.0	399.9	399.9	399.9	0.8	0.8	100.38	87.4	0.0	88.2	86.7	1.52	57.891		
500.0	499.7	499.7	499.7	1.0	1.0	104.46	87.4	0.0	89.6	87.7	1.98	45.174		
600.0	599.3	599.3	599.3	1.3	1.2	109.91	87.4	0.0	92.4	89.9	2.46	37.491		
700.0	698.6	698.6	698.6	1.5	1.4	116.35	87.4	0.0	97.0	94.1	2.96	32.782		
800.0	797.5	797.5	797.5	1.9	1.7	123.29	87.4	0.0	104.2	100.8	3.47	30.073		
900.0	896.1	896.1	896.1	2.2	1.9	130.22	87.4	0.0	114.5	110.5	3.97	28.809		
1,000.0	994.2	994.2	994.2	2.6	2.1	136.70	87.4	0.0	128.0	123.6	4.48	28.610 SF		
1,100.0	1,091.7	1,091.7	1,091.7	3.1	2.3	142.48	87.4	0.0	145.0	140.1	4.97	29.191		
1,200.0	1,188.6	1,188.6	1,188.6	3.6	2.5	147.46	87.4	0.0	165.4	160.0	5.45	30.335		
1,300.0	1,284.9	1,284.9	1,284.9	4.1	2.8	151.68	87.4	0.0	189.1	183.1	5.93	31.880		
1,400.0	1,380.5	1,380.5	1,380.5	4.7	3.0	155.27	87.4	0.0	215.5	209.0	6.41	33.619		
1,500.0	1,476.1	1,476.1	1,476.1	5.3	3.2	158.17	87.4	0.0	242.7	235.8	6.89	35.228		
1,600.0	1,571.6	1,571.6	1,571.6	5.9	3.4	160.48	87.4	0.0	270.4	263.1	7.37	36.687		
1,700.0	1,667.2	1,667.2	1,667.2	6.5	3.6	162.36	87.4	0.0	298.5	290.6	7.85	38.002		
1,800.0	1,762.7	1,762.7	1,762.7	7.2	3.8	163.92	87.4	0.0	326.8	318.4	8.34	39.184		
1,900.0	1,858.3	1,861.2	1,861.2	7.8	4.0	165.30	87.2	-0.2	355.0	346.2	8.81	40.278		
2,000.0	1,953.9	1,962.1	1,962.1	8.4	4.2	166.67	85.4	-1.1	382.2	373.0	9.26	41.261		
2,100.0	2,049.4	2,063.5	2,063.4	9.0	4.4	168.02	82.2	-3.0	408.3	398.6	9.71	42.072		
2,200.0	2,145.0	2,165.5	2,165.2	9.6	4.6	169.38	77.3	-5.8	433.4	423.2	10.15	42.685		
2,300.0	2,240.6	2,267.8	2,267.3	10.3	4.8	170.75	70.9	-9.4	457.3	446.7	10.61	43.120		
2,400.0	2,336.1	2,370.5	2,369.6	10.9	5.0	172.14	62.8	-14.1	480.3	469.2	11.07	43.393		
2,500.0	2,431.7	2,471.4	2,469.9	11.5	5.2	173.52	53.4	-19.4	502.4	490.8	11.54	43.537		
2,600.0	2,527.2	2,568.3	2,566.2	12.2	5.4	174.76	44.0	-24.7	524.4	512.4	12.02	43.629		
2,700.0	2,622.8	2,665.3	2,662.5	12.8	5.7	175.90	34.7	-30.1	546.7	534.2	12.51	43.696		
2,800.0	2,718.4	2,762.2	2,758.9	13.4	5.9	176.95	25.3	-35.4	569.1	556.1	13.02	43.726		
2,900.0	2,813.9	2,859.1	2,855.2	14.0	6.1	177.93	16.0	-40.7	591.8	578.2	13.53	43.733		
3,000.0	2,909.5	2,956.0	2,951.5	14.7	6.4	178.83	6.6	-46.0	614.5	600.5	14.06	43.718		
3,100.0	3,005.1	3,053.0	3,047.8	15.3	6.6	179.67	-2.7	-51.4	637.4	622.9	14.59	43.686		
3,200.0	3,100.6	3,149.9	3,144.2	15.9	6.9	-179.55	-12.1	-56.7	660.5	645.3	15.14	43.639		
3,300.0	3,196.2	3,246.8	3,240.5	16.6	7.1	-178.82	-21.4	-62.0	683.6	667.9	15.69	43.580		
3,400.0	3,291.7	3,343.7	3,336.8	17.2	7.4	-178.14	-30.8	-67.4	706.9	690.6	16.25	43.511		
3,500.0	3,387.3	3,440.7	3,433.1	17.8	7.6	-177.50	-40.1	-72.7	730.2	713.4	16.81	43.434		
3,600.0	3,482.9	3,537.6	3,529.5	18.5	7.9	-176.90	-49.5	-78.0	753.6	736.2	17.38	43.352		
3,700.0	3,578.4	3,634.5	3,625.8	19.1	8.2	-176.34	-58.8	-83.4	777.1	759.1	17.96	43.265		
3,800.0	3,674.0	3,731.4	3,722.1	19.7	8.5	-175.81	-68.2	-88.7	800.7	782.1	18.54	43.174		
3,900.0	3,769.6	3,828.4	3,818.4	20.4	8.7	-175.31	-77.5	-94.0	824.3	805.1	19.13	43.081		
4,000.0	3,865.1	3,925.3	3,914.8	21.0	9.0	-174.84	-86.9	-99.3	848.0	828.2	19.73	42.987		
4,100.0	3,960.7	4,022.2	4,011.1	21.6	9.3	-174.39	-96.2	-104.7	871.7	851.4	20.32	42.892		
4,200.0	4,056.2	4,119.1	4,107.4	22.2	9.6	-173.97	-105.6	-110.0	895.4	874.5	20.92	42.797		
4,300.0	4,151.8	4,216.1	4,203.8	22.9	9.8	-173.57	-114.9	-115.3	919.3	897.7	21.53	42.703		
4,400.0	4,247.4	4,313.0	4,300.1	23.5	10.1	-173.19	-124.3	-120.7	943.1	921.0	22.13	42.609		
4,500.0	4,342.9	4,409.9	4,396.4	24.1	10.4	-172.83	-133.7	-126.0	967.0	944.3	22.74	42.515		
4,600.0	4,438.5	4,506.8	4,492.7	24.8	10.7	-172.48	-143.0	-131.3	990.9	967.6	23.36	42.424		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	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	0.00	29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	29.0	0.20	149.063		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.65	45.186 CC		
300.0	300.0	300.0	300.0	0.5	0.5	99.55	29.1	0.0	29.3	28.3	1.08	27.099 ES		
400.0	399.9	399.9	399.9	0.8	0.8	106.89	29.1	0.0	30.2	28.7	1.52	19.839		
500.0	499.7	499.7	499.7	1.0	1.0	117.85	29.1	0.0	32.7	30.8	1.98	16.518		
600.0	599.3	599.3	599.3	1.3	1.2	130.09	29.1	0.0	37.9	35.5	2.45	15.472		
700.0	698.6	698.6	698.6	1.5	1.4	141.16	29.1	0.0	46.4	43.5	2.92	15.899		
800.0	797.5	797.5	797.5	1.9	1.7	149.93	29.1	0.0	58.3	54.9	3.38	17.245		
900.0	896.1	897.3	897.3	2.2	1.9	156.38	28.9	-0.8	72.7	68.8	3.82	19.014		
1,000.0	994.2	997.2	997.2	2.6	2.1	161.05	28.1	-3.2	88.4	84.2	4.25	20.806		
1,100.0	1,091.7	1,097.3	1,097.1	3.1	2.3	164.59	26.9	-7.4	105.3	100.6	4.68	22.485		
1,200.0	1,188.6	1,197.5	1,197.2	3.6	2.5	167.38	25.1	-13.2	123.3	118.2	5.13	24.051		
1,300.0	1,284.9	1,297.8	1,297.2	4.1	2.7	169.65	22.7	-20.6	142.4	136.8	5.58	25.512		
1,400.0	1,380.5	1,398.5	1,397.4	4.7	3.0	171.54	19.9	-29.8	162.0	155.9	6.05	26.760		
1,500.0	1,476.1	1,499.7	1,498.0	5.3	3.2	173.09	16.5	-40.8	180.2	173.6	6.54	27.535		
1,600.0	1,571.6	1,601.6	1,599.0	5.9	3.5	174.39	12.6	-53.5	196.8	189.7	7.05	27.923		
1,700.0	1,667.2	1,704.0	1,700.3	6.5	3.8	175.54	8.1	-68.0	211.7	204.1	7.56	27.997		
1,800.0	1,762.7	1,805.1	1,799.9	7.2	4.1	176.57	3.1	-83.8	225.1	217.0	8.08	27.850		
1,900.0	1,858.3	1,904.1	1,897.6	7.8	4.5	177.47	-1.7	-99.5	238.3	229.7	8.61	27.687		
2,000.0	1,953.9	2,003.2	1,995.3	8.4	4.8	178.28	-6.6	-115.3	251.6	242.5	9.14	27.525		
2,100.0	2,049.4	2,102.2	2,093.0	9.0	5.2	179.00	-11.5	-131.0	264.9	255.3	9.68	27.370		
2,200.0	2,145.0	2,201.3	2,190.6	9.6	5.5	179.66	-16.4	-146.8	278.3	268.1	10.22	27.221		
2,300.0	2,240.6	2,300.3	2,288.3	10.3	5.9	-179.75	-21.3	-162.5	291.7	280.9	10.77	27.078		
2,400.0	2,336.1	2,399.4	2,386.0	10.9	6.2	-179.20	-26.2	-178.3	305.1	293.8	11.33	26.941		
2,500.0	2,431.7	2,498.4	2,483.7	11.5	6.6	-178.70	-31.1	-194.0	318.6	306.7	11.88	26.810		
2,600.0	2,527.2	2,597.5	2,581.3	12.2	7.0	-178.25	-35.9	-209.7	332.1	319.6	12.44	26.685		
2,700.0	2,622.8	2,696.5	2,679.0	12.8	7.4	-177.83	-40.8	-225.5	345.6	332.6	13.01	26.566		
2,800.0	2,718.4	2,795.6	2,776.7	13.4	7.7	-177.44	-45.7	-241.2	359.1	345.5	13.57	26.452		
2,900.0	2,813.9	2,894.7	2,874.3	14.0	8.1	-177.07	-50.6	-257.0	372.6	358.5	14.14	26.343		
3,000.0	2,909.5	2,993.7	2,972.0	14.7	8.5	-176.74	-55.5	-272.7	386.1	371.4	14.72	26.239		
3,100.0	3,005.1	3,092.8	3,069.7	15.3	8.9	-176.42	-60.4	-288.5	399.7	384.4	15.29	26.140		
3,200.0	3,100.6	3,191.8	3,167.4	15.9	9.2	-176.13	-65.3	-304.2	413.3	397.4	15.87	26.045		
3,300.0	3,196.2	3,290.9	3,265.0	16.6	9.6	-175.86	-70.1	-319.9	426.8	410.4	16.45	25.954		
3,400.0	3,291.7	3,389.9	3,362.7	17.2	10.0	-175.60	-75.0	-335.7	440.4	423.4	17.03	25.867		
3,500.0	3,387.3	3,489.0	3,460.4	17.8	10.4	-175.36	-79.9	-351.4	454.0	436.4	17.61	25.784		
3,600.0	3,482.9	3,588.0	3,558.1	18.5	10.8	-175.13	-84.8	-367.2	467.6	449.4	18.19	25.705		
3,700.0	3,578.4	3,687.1	3,655.7	19.1	11.1	-174.91	-89.7	-382.9	481.2	462.4	18.78	25.629		
3,800.0	3,674.0	3,786.1	3,753.4	19.7	11.5	-174.71	-94.6	-398.7	494.8	475.5	19.36	25.556		
3,900.0	3,769.6	3,885.2	3,851.1	20.4	11.9	-174.52	-99.5	-414.4	508.4	488.5	19.95	25.487		
4,000.0	3,865.1	3,984.3	3,948.8	21.0	12.3	-174.34	-104.3	-430.1	522.1	501.5	20.54	25.420		
4,100.0	3,960.7	4,083.3	4,046.4	21.6	12.7	-174.16	-109.2	-445.9	535.7	514.6	21.13	25.355		
4,200.0	4,056.2	4,182.4	4,144.1	22.2	13.1	-174.00	-114.1	-461.6	549.3	527.6	21.72	25.294		
4,300.0	4,151.8	4,281.4	4,241.8	22.9	13.4	-173.84	-119.0	-477.4	563.0	540.6	22.31	25.234		
4,400.0	4,247.4	4,380.5	4,339.4	23.5	13.8	-173.69	-123.9	-493.1	576.6	553.7	22.90	25.177		
4,500.0	4,342.9	4,479.5	4,437.1	24.1	14.2	-173.55	-128.8	-508.9	590.2	566.7	23.49	25.123		
4,600.0	4,438.5	4,578.6	4,534.8	24.8	14.6	-173.41	-133.7	-524.6	603.9	579.8	24.09	25.070		
4,700.0	4,534.1	4,677.6	4,632.5	25.4	15.0	-173.28	-138.5	-540.4	617.5	592.9	24.68	25.019		
4,800.0	4,629.6	4,776.7	4,730.1	26.0	15.4	-173.16	-143.4	-556.1	631.2	605.9	25.28	24.970		
4,900.0	4,725.2	4,875.7	4,827.8	26.7	15.8	-173.04	-148.3	-571.8	644.8	619.0	25.87	24.923		
5,000.0	4,820.7	4,974.8	4,925.5	27.3	16.2	-172.93	-153.2	-587.6	658.5	632.0	26.47	24.877		

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 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	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:		0.0 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	4,916.3	5,073.9	5,023.2	27.9	16.5	-172.82	-158.1	-603.3	672.2	645.1	27.07	24.833		
5,200.0	5,011.9	5,172.9	5,120.8	28.6	16.9	-172.71	-163.0	-619.1	685.8	658.2	27.66	24.791		
5,300.0	5,107.4	5,272.0	5,218.5	29.2	17.3	-172.61	-167.9	-634.8	699.5	671.2	28.26	24.750		
5,400.0	5,203.1	5,371.1	5,316.2	29.8	17.7	-172.53	-172.8	-650.6	712.8	683.9	28.88	24.680		
5,500.0	5,299.6	5,470.5	5,414.3	30.2	18.1	-172.42	-177.7	-666.4	723.0	693.6	29.47	24.536		
5,600.0	5,397.0	5,570.3	5,512.6	30.6	18.5	-172.28	-182.6	-682.2	729.8	699.8	30.02	24.311		
5,700.0	5,495.1	5,652.7	5,594.1	30.9	18.7	-172.15	-186.4	-694.5	734.3	703.8	30.44	24.122		
5,800.0	5,593.8	5,733.0	5,673.7	31.2	18.9	-172.05	-189.4	-704.3	737.9	707.1	30.79	23.969		
5,900.0	5,693.1	5,813.3	5,753.6	31.5	19.1	-171.97	-191.8	-711.9	740.8	709.7	31.07	23.838		
6,000.0	5,792.6	5,900.0	5,840.1	31.6	19.3	-171.91	-193.6	-717.8	742.9	711.5	31.32	23.720		
6,100.0	5,892.5	5,973.7	5,913.7	31.8	19.4	-171.88	-194.6	-720.8	744.1	712.6	31.48	23.639		
6,200.0	5,992.5	6,053.9	5,994.0	31.9	19.5	-171.87	-194.9	-722.1	744.5	712.9	31.61	23.557		
6,300.0	6,092.5	6,152.5	6,092.5	32.0	19.6	91.12	-195.0	-722.1	744.5	712.6	31.91	23.329		
6,400.0	6,192.5	6,252.5	6,192.5	32.1	19.8	91.12	-195.0	-722.1	744.5	712.3	32.24	23.095		
6,500.0	6,292.4	6,353.2	6,293.2	32.1	19.9	91.17	-194.0	-722.1	744.5	712.0	32.57	22.860		
6,600.0	6,391.5	6,455.3	6,394.5	32.2	20.0	91.26	-182.0	-722.1	744.6	711.7	32.83	22.680		
6,700.0	6,488.1	6,557.6	6,493.5	32.3	20.1	91.33	-156.6	-722.1	744.6	711.6	32.99	22.568		
6,800.0	6,580.4	6,659.9	6,588.3	32.3	20.1	91.38	-118.1	-722.1	744.6	711.5	33.10	22.496		
6,900.0	6,667.0	6,762.4	6,677.1	32.3	20.1	91.41	-67.3	-722.1	744.6	711.4	33.21	22.421		
7,000.0	6,746.4	6,864.8	6,758.4	32.4	20.1	91.41	-5.1	-722.1	744.6	711.2	33.40	22.291		
7,100.0	6,817.1	6,967.3	6,830.6	32.4	20.2	91.38	67.5	-722.1	744.6	710.8	33.77	22.052		
7,200.0	6,878.0	7,069.6	6,892.5	32.5	20.2	91.33	148.9	-722.1	744.6	710.2	34.38	21.659		
7,300.0	6,928.1	7,171.9	6,942.8	32.6	20.4	91.26	237.9	-722.1	744.6	709.3	35.30	21.093		
7,400.0	6,966.4	7,274.0	6,980.8	32.8	20.7	91.17	332.5	-722.1	744.5	708.0	36.57	20.362		
7,500.0	6,992.3	7,375.9	7,005.8	33.1	21.1	91.05	431.3	-722.1	744.5	706.3	38.17	19.503		
7,600.0	7,005.5	7,477.6	7,017.5	33.4	21.8	90.92	532.2	-722.1	744.5	704.4	40.09	18.571		
7,700.0	7,006.9	7,578.3	7,017.7	33.9	22.7	90.83	632.9	-722.1	744.5	702.2	42.25	17.622		
7,800.0	7,006.4	7,678.3	7,016.7	34.5	23.7	90.79	732.9	-722.1	744.5	699.9	44.61	16.688		
7,900.0	7,005.9	7,778.3	7,015.7	35.2	24.9	90.75	832.9	-722.1	744.5	697.3	47.16	15.784		
8,000.0	7,005.4	7,878.3	7,014.7	35.9	26.2	90.71	932.9	-722.1	744.4	694.6	49.88	14.924		
8,100.0	7,004.9	7,978.3	7,013.7	36.8	27.5	90.67	1,032.9	-722.1	744.4	691.7	52.74	14.115		
8,200.0	7,004.4	8,078.3	7,012.7	37.8	28.9	90.64	1,132.8	-722.1	744.4	688.7	55.72	13.361		
8,300.0	7,003.9	8,178.3	7,011.7	38.8	30.4	90.60	1,232.8	-722.1	744.4	685.6	58.79	12.662		
8,400.0	7,003.4	8,278.3	7,010.6	39.9	31.9	90.56	1,332.8	-722.1	744.4	682.5	61.95	12.016		
8,500.0	7,002.9	8,378.3	7,009.6	41.1	33.5	90.52	1,432.8	-722.1	744.4	679.2	65.18	11.420		
8,600.0	7,002.4	8,478.3	7,008.6	42.4	35.1	90.48	1,532.8	-722.1	744.4	675.9	68.48	10.871		
8,700.0	7,001.9	8,578.3	7,007.6	43.7	36.8	90.44	1,632.8	-722.1	744.4	672.6	71.83	10.364		
8,800.0	7,001.4	8,678.3	7,006.6	45.1	38.4	90.40	1,732.8	-722.1	744.4	669.2	75.22	9.896		
8,900.0	7,000.9	8,778.3	7,005.6	46.5	40.1	90.36	1,832.8	-722.1	744.4	665.8	78.65	9.464		
9,000.0	7,000.4	8,878.3	7,004.6	48.0	41.8	90.32	1,932.8	-722.1	744.4	662.3	82.12	9.064		
9,100.0	6,999.9	8,978.3	7,003.6	49.4	43.5	90.29	2,032.8	-722.1	744.4	658.8	85.63	8.694		
9,200.0	6,999.3	9,078.3	7,002.5	51.0	45.3	90.25	2,132.8	-722.1	744.4	655.2	89.15	8.349		
9,300.0	6,998.8	9,178.3	7,001.5	52.5	47.0	90.21	2,232.8	-722.1	744.4	651.7	92.71	8.029		
9,400.0	6,998.3	9,278.3	7,000.5	54.1	48.8	90.17	2,332.8	-722.1	744.4	648.1	96.28	7.731		
9,500.0	6,997.8	9,378.3	6,999.5	55.7	50.6	90.13	2,432.8	-722.1	744.4	644.5	99.88	7.453		
9,600.0	6,997.3	9,478.3	6,998.5	57.3	52.3	90.09	2,532.8	-722.1	744.4	640.9	103.49	7.193		
9,700.0	6,996.8	9,578.3	6,997.5	58.9	54.1	90.05	2,632.8	-722.1	744.4	637.3	107.11	6.950		
9,800.0	6,996.3	9,678.3	6,996.5	60.6	55.9	90.01	2,732.7	-722.1	744.4	633.6	110.75	6.721		
9,832.1	6,996.1	9,710.4	6,996.1	61.1	56.5	90.00	2,764.9	-722.1	744.4	632.5	111.93	6.651		
9,900.0	6,995.8	9,778.2	6,995.5	62.3	57.7	89.97	2,832.7	-722.1	744.4	630.0	114.41	6.506		

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 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	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:	0.0 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	6,995.3	9,878.2	6,994.4	64.0	59.6	89.93	2,932.7	-722.1	744.4	626.3	118.07	6.305			
10,100.0	6,994.8	9,978.2	6,993.4	65.7	61.4	89.90	3,032.7	-722.1	744.4	622.6	121.75	6.114			
10,200.0	6,994.3	10,078.2	6,992.4	67.4	63.2	89.86	3,132.7	-722.1	744.4	619.0	125.43	5.935			
10,300.0	6,993.8	10,178.2	6,991.4	69.1	65.1	89.82	3,232.7	-722.1	744.4	615.3	129.13	5.765			
10,400.0	6,993.3	10,278.2	6,990.4	70.8	66.9	89.78	3,332.7	-722.1	744.4	611.6	132.83	5.604			
10,500.0	6,992.8	10,378.2	6,989.4	72.6	68.7	89.74	3,432.7	-722.1	744.4	607.9	136.54	5.452			
10,600.0	6,992.3	10,478.2	6,988.4	74.3	70.6	89.70	3,532.7	-722.1	744.4	604.2	140.25	5.308			
10,700.0	6,991.8	10,578.2	6,987.4	76.1	72.4	89.66	3,632.7	-722.1	744.4	600.4	143.97	5.170			
10,800.0	6,991.2	10,678.2	6,986.3	77.9	74.3	89.62	3,732.7	-722.1	744.4	596.7	147.70	5.040			
10,900.0	6,990.7	10,778.2	6,985.3	79.7	76.1	89.58	3,832.7	-722.1	744.4	593.0	151.43	4.916			
11,000.0	6,990.2	10,878.2	6,984.3	81.4	78.0	89.55	3,932.7	-722.1	744.4	589.2	155.17	4.797			
11,100.0	6,989.7	10,978.2	6,983.3	83.2	79.9	89.51	4,032.7	-722.1	744.4	585.5	158.91	4.685			
11,200.0	6,989.2	11,078.2	6,982.3	85.0	81.7	89.47	4,132.7	-722.1	744.4	581.8	162.66	4.577			
11,300.0	6,988.7	11,178.2	6,981.3	86.8	83.6	89.43	4,232.6	-722.1	744.4	578.0	166.41	4.474			
11,400.0	6,988.2	11,278.2	6,980.3	88.6	85.5	89.39	4,332.6	-722.1	744.4	574.3	170.16	4.375			
11,500.0	6,987.7	11,378.2	6,979.3	90.4	87.3	89.35	4,432.6	-722.1	744.4	570.5	173.92	4.280			
11,600.0	6,987.2	11,478.2	6,978.3	92.3	89.2	89.31	4,532.6	-722.1	744.4	566.8	177.68	4.190			
11,612.9	6,987.1	11,491.1	6,978.1	92.5	89.5	89.31	4,545.5	-722.1	744.4	566.3	178.16	4.178			
11,639.4	6,987.0	11,503.1	6,978.0	93.0	89.7	89.30	4,557.5	-722.1	744.6	565.7	178.89	4.162 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	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:	0.0ft
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	223.541		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	43.7	0.0	43.7	43.1	0.65	67.763 CC		
300.0	300.0	300.0	300.0	0.5	0.5	98.71	43.7	0.0	43.9	42.8	1.08	40.543 ES		
400.0	399.9	399.9	399.9	0.8	0.8	103.68	43.7	0.0	44.7	43.1	1.52	29.299		
500.0	499.7	499.7	499.7	1.0	1.0	111.46	43.7	0.0	46.6	44.7	1.98	23.515		
600.0	599.3	599.3	599.3	1.3	1.2	121.05	43.7	0.0	50.7	48.3	2.46	20.647		
700.0	698.6	698.6	698.6	1.5	1.4	130.98	43.7	0.0	57.7	54.7	2.93	19.657 SF		
800.0	797.5	797.5	797.5	1.9	1.7	140.01	43.7	0.0	68.0	64.6	3.41	19.942		
900.0	896.1	896.1	896.1	2.2	1.9	147.51	43.7	0.0	81.8	77.9	3.88	21.076		
1,000.0	994.2	994.2	994.2	2.6	2.1	153.46	43.7	0.0	98.8	94.5	4.34	22.754		
1,100.0	1,091.7	1,093.6	1,093.6	3.1	2.3	158.17	43.3	-0.7	118.3	113.5	4.79	24.716		
1,200.0	1,188.6	1,193.3	1,193.3	3.6	2.5	161.92	42.1	-2.9	139.1	133.9	5.21	26.688		
1,300.0	1,284.9	1,293.2	1,293.0	4.1	2.7	165.01	40.1	-6.6	161.1	155.4	5.64	28.548		
1,400.0	1,380.5	1,393.2	1,392.9	4.7	2.9	167.65	37.2	-11.8	183.8	177.7	6.09	30.179		
1,500.0	1,476.1	1,494.0	1,493.4	5.3	3.1	169.84	33.4	-18.6	205.4	198.9	6.56	31.323		
1,600.0	1,571.6	1,595.4	1,594.3	5.9	3.4	171.73	28.7	-27.0	225.5	218.5	7.04	32.055		
1,700.0	1,667.2	1,694.7	1,693.1	6.5	3.6	173.35	23.5	-36.5	244.5	237.0	7.52	32.512		
1,800.0	1,762.7	1,792.7	1,790.5	7.2	3.9	174.73	18.3	-45.9	263.6	255.6	8.02	32.878		
1,900.0	1,858.3	1,890.7	1,887.9	7.8	4.1	175.92	13.1	-55.3	282.7	274.2	8.52	33.185		
2,000.0	1,953.9	1,988.7	1,985.3	8.4	4.4	176.96	7.9	-64.7	302.0	293.0	9.03	33.447		
2,100.0	2,049.4	2,086.7	2,082.7	9.0	4.7	177.87	2.7	-74.2	321.4	311.8	9.55	33.660		
2,200.0	2,145.0	2,184.7	2,180.1	9.6	4.9	178.69	-2.6	-83.6	340.8	330.8	10.07	33.841		
2,300.0	2,240.6	2,282.7	2,277.4	10.3	5.2	179.41	-7.8	-93.0	360.3	349.7	10.60	33.993		
2,400.0	2,336.1	2,380.6	2,374.8	10.9	5.5	-179.94	-13.0	-102.4	379.9	368.7	11.13	34.120		
2,500.0	2,431.7	2,478.6	2,472.2	11.5	5.8	-179.36	-18.2	-111.8	399.4	387.8	11.67	34.227		
2,600.0	2,527.2	2,576.6	2,569.6	12.2	6.0	-178.82	-23.4	-121.3	419.1	406.8	12.21	34.317		
2,700.0	2,622.8	2,674.6	2,667.0	12.8	6.3	-178.34	-28.6	-130.7	438.7	426.0	12.76	34.393		
2,800.0	2,718.4	2,772.6	2,764.4	13.4	6.6	-177.90	-33.8	-140.1	458.4	445.1	13.30	34.457		
2,900.0	2,813.9	2,870.6	2,861.8	14.0	6.9	-177.49	-39.0	-149.5	478.1	464.2	13.85	34.510		
3,000.0	2,909.5	2,968.6	2,959.2	14.7	7.2	-177.12	-44.3	-158.9	497.8	483.4	14.41	34.555		
3,100.0	3,005.1	3,066.5	3,056.6	15.3	7.5	-176.77	-49.5	-168.3	517.6	502.6	14.96	34.593		
3,200.0	3,100.6	3,164.5	3,154.0	15.9	7.8	-176.45	-54.7	-177.8	537.3	521.8	15.52	34.625		
3,300.0	3,196.2	3,262.5	3,251.4	16.6	8.1	-176.16	-59.9	-187.2	557.1	541.0	16.08	34.651		
3,400.0	3,291.7	3,360.5	3,348.8	17.2	8.4	-175.88	-65.1	-196.6	576.9	560.2	16.64	34.673		
3,500.0	3,387.3	3,458.5	3,446.2	17.8	8.7	-175.62	-70.3	-206.0	596.7	579.5	17.20	34.691		
3,600.0	3,482.9	3,556.5	3,543.5	18.5	9.0	-175.38	-75.5	-215.4	616.5	598.7	17.76	34.705		
3,700.0	3,578.4	3,654.5	3,640.9	19.1	9.3	-175.15	-80.8	-224.9	636.3	618.0	18.33	34.717		
3,800.0	3,674.0	3,752.4	3,738.3	19.7	9.6	-174.94	-86.0	-234.3	656.2	637.3	18.90	34.726		
3,900.0	3,769.6	3,850.4	3,835.7	20.4	9.9	-174.74	-91.2	-243.7	676.0	656.5	19.46	34.733		
4,000.0	3,865.1	3,948.4	3,933.1	21.0	10.2	-174.55	-96.4	-253.1	695.8	675.8	20.03	34.739		
4,100.0	3,960.7	4,046.4	4,030.5	21.6	10.5	-174.37	-101.6	-262.5	715.7	695.1	20.60	34.742		
4,200.0	4,056.2	4,144.4	4,127.9	22.2	10.8	-174.20	-106.8	-271.9	735.5	714.4	21.17	34.745		
4,300.0	4,151.8	4,242.4	4,225.3	22.9	11.0	-174.04	-112.0	-281.4	755.4	733.7	21.74	34.746		
4,400.0	4,247.4	4,340.4	4,322.7	23.5	11.3	-173.89	-117.2	-290.8	775.3	753.0	22.31	34.746		
4,500.0	4,342.9	4,438.3	4,420.1	24.1	11.6	-173.75	-122.5	-300.2	795.2	772.3	22.89	34.746		
4,600.0	4,438.5	4,536.3	4,517.5	24.8	11.9	-173.61	-127.7	-309.6	815.0	791.6	23.46	34.744		
4,700.0	4,534.1	4,634.3	4,614.9	25.4	12.2	-173.48	-132.9	-319.0	834.9	810.9	24.03	34.742		
4,800.0	4,629.6	4,732.3	4,712.3	26.0	12.5	-173.35	-138.1	-328.5	854.8	830.2	24.61	34.739		
4,900.0	4,725.2	4,830.3	4,809.7	26.7	12.8	-173.23	-143.3	-337.9	874.7	849.5	25.18	34.736		
5,000.0	4,820.7	4,928.3	4,907.0	27.3	13.1	-173.12	-148.5	-347.3	894.6	868.8	25.76	34.732		

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 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:		0.0 ft	
Survey Program: 0-MWD												Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	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)				
5,100.0	4,916.3	5,026.3	5,004.4	27.9	13.4	-173.01	-153.7	-356.7	914.5	888.2	26.33	34.728			
5,200.0	5,011.9	5,124.2	5,101.8	28.6	13.8	-172.91	-159.0	-366.1	934.4	907.5	26.91	34.724			
5,300.0	5,107.4	5,222.2	5,199.2	29.2	14.1	-172.81	-164.2	-375.5	954.3	926.8	27.49	34.719			
5,400.0	5,203.1	5,320.3	5,296.7	29.8	14.4	-172.73	-169.4	-385.0	973.8	945.7	28.09	34.669			
5,500.0	5,299.6	5,418.9	5,394.7	30.2	14.7	-172.66	-174.6	-394.4	990.3	961.7	28.67	34.546			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	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		
0.0	0.0	1.0	1.0	0.0	0.0	0.00	72.9	0.0	72.9					
100.0	100.0	101.0	101.0	0.1	0.1	0.00	72.9	0.0	72.9	72.7	0.20	368.390		
200.0	200.0	201.0	201.0	0.3	0.3	0.00	72.9	0.0	72.9	72.2	0.65	112.564 CC		
300.0	300.0	301.0	301.0	0.5	0.5	98.03	72.9	0.0	73.0	72.0	1.08	67.326 ES		
400.0	399.9	400.9	400.9	0.8	0.8	101.04	72.9	0.0	73.7	72.2	1.53	48.278		
500.0	499.7	500.7	500.7	1.0	1.0	105.90	72.9	0.0	75.2	73.2	1.99	37.866		
600.0	599.3	600.3	600.3	1.3	1.2	112.30	72.9	0.0	78.2	75.8	2.46	31.744		
700.0	698.6	699.6	699.6	1.5	1.4	119.68	72.9	0.0	83.4	80.5	2.96	28.217		
800.0	797.5	798.5	798.5	1.9	1.7	127.37	72.9	0.0	91.4	88.0	3.45	26.464		
900.0	896.1	897.1	897.1	2.2	1.9	134.73	72.9	0.0	102.7	98.7	3.95	25.986 SF		
1,000.0	994.2	995.2	995.2	2.6	2.1	141.32	72.9	0.0	117.3	112.9	4.44	26.428		
1,100.0	1,091.7	1,092.7	1,092.7	3.1	2.3	146.98	72.9	0.0	135.4	130.5	4.92	27.520		
1,200.0	1,188.6	1,189.6	1,189.6	3.6	2.5	151.70	72.9	0.0	156.7	151.3	5.39	29.065		
1,300.0	1,284.9	1,285.9	1,285.9	4.1	2.8	155.59	72.9	0.0	181.2	175.4	5.86	30.921		
1,400.0	1,380.5	1,381.5	1,381.5	4.7	3.0	158.83	72.9	0.0	208.4	202.0	6.34	32.891		
1,500.0	1,476.1	1,475.8	1,475.8	5.3	3.2	161.49	72.5	0.4	236.4	229.6	6.79	34.798		
1,600.0	1,571.6	1,569.1	1,569.1	5.9	3.3	163.87	71.2	1.9	265.6	258.3	7.23	36.717		
1,700.0	1,667.2	1,661.7	1,661.6	6.5	3.5	166.04	69.0	4.5	295.8	288.1	7.67	38.580		
1,800.0	1,762.7	1,753.6	1,753.4	7.2	3.7	168.04	65.7	8.3	327.1	319.0	8.10	40.367		
1,900.0	1,858.3	1,844.7	1,844.2	7.8	3.9	169.90	61.6	13.1	359.6	351.0	8.55	42.079		
2,000.0	1,953.9	1,934.9	1,934.1	8.4	4.1	171.62	56.6	18.9	393.2	384.2	8.99	43.716		
2,100.0	2,049.4	2,024.3	2,023.1	9.0	4.3	173.24	50.7	25.7	428.0	418.5	9.45	45.280		
2,200.0	2,145.0	2,112.8	2,110.9	9.6	4.5	174.75	43.9	33.5	463.9	453.9	9.92	46.771		
2,300.0	2,240.6	2,203.7	2,201.1	10.3	4.7	176.19	36.3	42.3	500.7	490.3	10.40	48.144		
2,400.0	2,336.1	2,295.9	2,292.5	10.9	5.0	177.46	28.6	51.3	537.9	527.0	10.90	49.367		
2,500.0	2,431.7	2,388.1	2,384.0	11.5	5.2	178.57	20.8	60.3	575.2	563.8	11.40	50.453		
2,600.0	2,527.2	2,480.3	2,475.4	12.2	5.5	179.54	13.1	69.3	612.7	600.8	11.91	51.431		
2,700.0	2,622.8	2,572.5	2,566.9	12.8	5.7	-179.59	5.3	78.3	650.4	637.9	12.43	52.307		
2,800.0	2,718.4	2,664.7	2,658.3	13.4	6.0	-178.82	-2.4	87.3	688.1	675.2	12.96	53.096		
2,900.0	2,813.9	2,757.0	2,749.8	14.0	6.3	-178.13	-10.2	96.3	726.0	712.5	13.49	53.811		
3,000.0	2,909.5	2,849.2	2,841.2	14.7	6.5	-177.51	-17.9	105.3	763.9	749.9	14.03	54.459		
3,100.0	3,005.1	2,941.4	2,932.7	15.3	6.8	-176.95	-25.7	114.3	802.0	787.4	14.57	55.049		
3,200.0	3,100.6	3,033.6	3,024.1	15.9	7.1	-176.44	-33.5	123.3	840.0	824.9	15.11	55.589		
3,300.0	3,196.2	3,125.8	3,115.6	16.6	7.4	-175.97	-41.2	132.3	878.1	862.5	15.66	56.083		
3,400.0	3,291.7	3,218.1	3,207.0	17.2	7.6	-175.54	-49.0	141.3	916.3	900.1	16.21	56.537		
3,500.0	3,387.3	3,310.3	3,298.5	17.8	7.9	-175.14	-56.7	150.2	954.5	937.8	16.76	56.956		
3,600.0	3,482.9	3,402.5	3,389.9	18.5	8.2	-174.78	-64.5	159.2	992.8	975.5	17.31	57.343		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	1.0	1.0	0.0	0.0	0.00	102.0	0.0	102.0					
100.0	100.0	101.0	101.0	0.1	0.1	0.00	102.0	0.0	102.0	101.8	0.20	515.738		
200.0	200.0	201.0	201.0	0.3	0.3	0.00	102.0	0.0	102.0	101.4	0.65	157.587 CC		
300.0	300.0	301.0	301.0	0.5	0.5	97.74	102.0	0.0	102.2	101.1	1.08	94.189 ES		
400.0	399.9	400.9	400.9	0.8	0.8	99.90	102.0	0.0	102.8	101.3	1.53	67.339		
500.0	499.7	500.7	500.7	1.0	1.0	103.42	102.0	0.0	104.1	102.1	1.99	52.401		
600.0	599.3	600.3	600.3	1.3	1.2	108.15	102.0	0.0	106.6	104.1	2.47	43.219		
700.0	698.6	699.6	699.6	1.5	1.4	113.84	102.0	0.0	110.9	107.9	2.97	37.384		
800.0	797.5	798.5	798.5	1.9	1.7	120.12	102.0	0.0	117.4	113.9	3.48	33.769		
900.0	896.1	897.1	897.1	2.2	1.9	126.58	102.0	0.0	126.8	122.9	4.00	31.751		
1,000.0	994.2	995.2	995.2	2.6	2.1	132.82	102.0	0.0	139.5	135.0	4.51	30.923 SF		
1,100.0	1,091.7	1,092.7	1,092.7	3.1	2.3	138.57	102.0	0.0	155.5	150.5	5.02	30.988		
1,200.0	1,188.6	1,189.6	1,189.6	3.6	2.5	143.68	102.0	0.0	174.9	169.4	5.51	31.715		
1,300.0	1,284.9	1,285.9	1,285.9	4.1	2.8	148.12	102.0	0.0	197.7	191.6	6.00	32.927		
1,400.0	1,380.5	1,381.5	1,381.5	4.7	3.0	151.97	102.0	0.0	223.3	216.8	6.49	34.412		
1,500.0	1,476.1	1,477.1	1,477.1	5.3	3.2	155.12	102.0	0.0	249.9	242.9	6.97	35.840		
1,600.0	1,571.6	1,572.6	1,572.6	5.9	3.4	157.67	102.0	0.0	277.1	269.6	7.45	37.168		
1,700.0	1,667.2	1,668.2	1,668.2	6.5	3.6	159.76	102.0	0.0	304.7	296.7	7.94	38.386		
1,800.0	1,762.7	1,763.7	1,763.7	7.2	3.8	161.51	102.0	0.0	332.6	324.2	8.42	39.497		
1,900.0	1,858.3	1,859.3	1,859.3	7.8	4.1	162.99	102.0	0.0	360.8	351.9	8.91	40.508		
2,000.0	1,953.9	1,954.9	1,954.9	8.4	4.3	164.25	102.0	0.0	389.1	379.7	9.39	41.427		
2,100.0	2,049.4	2,050.4	2,050.4	9.0	4.5	165.35	102.0	0.0	417.7	407.8	9.88	42.262		
2,200.0	2,145.0	2,146.0	2,146.0	9.6	4.7	166.30	102.0	0.0	446.3	435.9	10.37	43.024		
2,300.0	2,240.6	2,241.4	2,241.4	10.3	4.9	167.16	101.9	0.1	475.0	464.2	10.85	43.768		
2,400.0	2,336.1	2,336.5	2,336.5	10.9	5.1	168.07	100.5	0.6	503.9	492.6	11.31	44.576		
2,500.0	2,431.7	2,431.2	2,431.2	11.5	5.2	169.06	97.7	1.7	533.0	521.3	11.74	45.410		
2,600.0	2,527.2	2,525.6	2,525.4	12.2	5.4	170.11	93.4	3.4	562.4	550.3	12.17	46.207		
2,700.0	2,622.8	2,619.6	2,619.2	12.8	5.6	171.21	87.7	5.6	592.1	579.5	12.61	46.966		
2,800.0	2,718.4	2,713.1	2,712.4	13.4	5.8	172.34	80.6	8.4	622.2	609.2	13.05	47.687		
2,900.0	2,813.9	2,806.1	2,804.9	14.0	5.9	173.51	72.2	11.7	652.7	639.2	13.50	48.365		
3,000.0	2,909.5	2,899.8	2,898.1	14.7	6.1	174.67	62.7	15.5	683.7	669.7	13.96	48.982		
3,100.0	3,005.1	2,994.0	2,991.7	15.3	6.3	175.75	53.0	19.3	714.9	700.4	14.43	49.528		
3,200.0	3,100.6	3,088.2	3,085.3	15.9	6.6	176.74	43.4	23.1	746.3	731.3	14.92	50.013		
3,300.0	3,196.2	3,182.3	3,178.9	16.6	6.8	177.65	33.8	26.9	777.8	762.4	15.42	50.443		
3,400.0	3,291.7	3,276.5	3,272.5	17.2	7.0	178.49	24.1	30.7	809.6	793.7	15.93	50.825		
3,500.0	3,387.3	3,370.7	3,366.1	17.8	7.2	179.27	14.5	34.5	841.5	825.0	16.45	51.164		
3,600.0	3,482.9	3,464.8	3,459.7	18.5	7.5	179.99	4.8	38.3	873.5	856.5	16.97	51.465		
3,700.0	3,578.4	3,559.0	3,553.3	19.1	7.7	-179.34	-4.8	42.1	905.7	888.2	17.51	51.733		
3,800.0	3,674.0	3,653.2	3,646.9	19.7	7.9	-178.71	-14.4	45.8	937.9	919.9	18.05	51.972		
3,900.0	3,769.6	3,747.4	3,740.5	20.4	8.2	-178.13	-24.1	49.6	970.3	951.7	18.59	52.186		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W - Spaur 10Q-241 - Wellbore #1 - Plan #2 (6-10-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	1.0	1.0	0.0	0.0	0.00	58.3	0.0	58.3					
100.0	100.0	101.0	101.0	0.1	0.1	0.00	58.3	0.0	58.3	58.1	0.20	294.716		
200.0	200.0	201.0	201.0	0.3	0.3	0.00	58.3	0.0	58.3	57.6	0.65	90.052 CC		
300.0	300.0	301.0	301.0	0.5	0.5	98.28	58.3	0.0	58.5	57.4	1.08	53.896 ES		
400.0	399.9	400.9	400.9	0.8	0.8	102.04	58.3	0.0	59.2	57.6	1.53	38.760		
500.0	499.7	500.7	500.7	1.0	1.0	108.03	58.3	0.0	60.9	58.9	1.99	30.645		
600.0	599.3	600.3	600.3	1.3	1.2	115.74	58.3	0.0	64.3	61.8	2.46	26.113		
700.0	698.6	699.6	699.6	1.5	1.4	124.29	58.3	0.0	70.2	67.3	2.95	23.815		
800.0	797.5	798.5	798.5	1.9	1.7	132.75	58.3	0.0	79.2	75.8	3.44	23.058 SF		
900.0	896.1	896.5	896.5	2.2	1.9	140.81	58.0	0.8	92.0	88.1	3.90	23.586		
1,000.0	994.2	993.4	993.3	2.6	2.1	148.27	57.1	3.0	109.1	104.8	4.34	25.150		
1,100.0	1,091.7	1,088.9	1,088.8	3.1	2.3	154.67	55.6	6.8	130.9	126.1	4.77	27.428		
1,200.0	1,188.6	1,182.9	1,182.6	3.6	2.5	159.94	53.5	11.9	157.4	152.2	5.21	30.221		
1,300.0	1,284.9	1,275.1	1,274.6	4.1	2.7	164.20	51.0	18.3	188.3	182.7	5.64	33.368		
1,400.0	1,380.5	1,365.6	1,364.7	4.7	2.9	167.69	47.9	25.9	223.2	217.1	6.09	36.643		
1,500.0	1,476.1	1,454.9	1,453.5	5.3	3.1	170.48	44.4	34.7	260.0	253.5	6.55	39.694		
1,600.0	1,571.6	1,543.2	1,541.1	5.9	3.3	172.75	40.4	44.7	298.4	291.4	7.02	42.526		
1,700.0	1,667.2	1,630.3	1,627.4	6.5	3.6	174.63	36.0	55.8	338.4	330.9	7.49	45.161		
1,800.0	1,762.7	1,716.3	1,712.4	7.2	3.8	176.24	31.1	67.9	379.7	371.7	7.97	47.620		
1,900.0	1,858.3	1,801.2	1,796.1	7.8	4.1	177.62	25.9	81.0	422.4	414.0	8.46	49.924		
2,000.0	1,953.9	1,890.3	1,883.8	8.4	4.4	178.87	20.1	95.5	466.0	457.1	8.96	51.984		
2,100.0	2,049.4	1,979.9	1,972.0	9.0	4.7	179.91	14.3	110.0	509.8	500.3	9.47	53.805		
2,200.0	2,145.0	2,069.4	2,060.2	9.6	5.1	-179.21	8.5	124.6	553.6	543.6	9.99	55.440		
2,300.0	2,240.6	2,159.0	2,148.4	10.3	5.4	-178.46	2.6	139.2	597.6	587.1	10.50	56.895		
2,400.0	2,336.1	2,248.6	2,236.6	10.9	5.7	-177.82	-3.2	153.7	641.6	630.6	11.02	58.199		
2,500.0	2,431.7	2,338.1	2,324.8	11.5	6.1	-177.25	-9.0	168.3	685.7	674.1	11.55	59.373		
2,600.0	2,527.2	2,427.7	2,413.0	12.2	6.4	-176.76	-14.8	182.8	729.8	717.7	12.08	60.435		
2,700.0	2,622.8	2,517.3	2,501.1	12.8	6.7	-176.32	-20.7	197.4	774.0	761.4	12.61	61.400		
2,800.0	2,718.4	2,606.9	2,589.3	13.4	7.1	-175.92	-26.5	211.9	818.2	805.0	13.14	62.278		
2,900.0	2,813.9	2,696.4	2,677.5	14.0	7.4	-175.57	-32.3	226.5	862.4	848.7	13.67	63.081		
3,000.0	2,909.5	2,786.0	2,765.7	14.7	7.8	-175.25	-38.1	241.1	906.6	892.4	14.21	63.818		
3,100.0	3,005.1	2,875.6	2,853.9	15.3	8.1	-174.96	-44.0	255.6	950.9	936.2	14.74	64.496		
3,200.0	3,100.6	2,965.1	2,942.1	15.9	8.5	-174.70	-49.8	270.2	995.2	979.9	15.28	65.121		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design		Sweet Gold 4N67W9V Pad Sec.9-T4N-R67W - Sweet Gold 9U-204 - Wellbore #1 - Plan #1 (1-21-15)										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	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)						
11,000.0	6,990.2	7,110.3	6,681.6	81.4	42.7	32.68	4,890.1	-1,317.1	997.6	926.1	71.58	13.937					
11,100.0	6,989.7	7,144.5	6,706.6	83.2	42.7	31.67	4,899.5	-1,338.4	901.5	830.0	71.51	12.606					
11,200.0	6,989.2	7,176.5	6,729.3	85.0	42.8	30.08	4,908.0	-1,359.3	805.1	734.5	70.62	11.401					
11,300.0	6,988.7	7,206.5	6,749.7	86.8	42.8	27.77	4,915.7	-1,379.8	708.7	640.0	68.69	10.317					
11,400.0	6,988.2	7,234.5	6,768.1	88.6	42.8	24.54	4,922.7	-1,399.8	612.2	546.7	65.49	9.347					
11,500.0	6,987.7	7,260.6	6,784.6	90.4	42.9	20.12	4,929.0	-1,419.0	515.7	454.9	60.85	8.476					
11,600.0	6,987.2	7,285.1	6,799.5	92.3	42.9	14.16	4,934.7	-1,437.6	419.5	364.5	55.04	7.622					
11,639.4	6,987.0	7,294.3	6,805.0	93.0	42.9	11.30	4,936.8	-1,444.7	381.8	329.1	52.74	7.240 CC, ES, SF					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Sweet Gold 4N67W9V Pad Sec.9-T4N-R67W - Sweet Gold 9U-334 - Wellbore #1 - Plan #2 (2-24-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,700.0	6,991.8	6,970.1	6,672.2	76.1	36.7	15.65	4,541.0	-1,398.2	944.2	897.8	46.39	20.353		
10,800.0	6,991.2	6,997.8	6,695.3	77.9	36.7	13.93	4,548.4	-1,411.7	847.8	802.0	45.86	18.487		
10,900.0	6,990.7	7,024.7	6,717.2	79.7	36.8	11.61	4,555.3	-1,425.6	751.5	706.6	44.98	16.708		
11,000.0	6,990.2	7,050.5	6,737.8	81.4	36.8	8.53	4,561.8	-1,439.8	655.3	611.4	43.91	14.924		
11,100.0	6,989.7	7,075.3	6,757.1	83.2	36.8	4.48	4,568.0	-1,454.0	559.3	516.2	43.14	12.964		
11,200.0	6,989.2	7,099.1	6,775.2	85.0	36.9	-0.76	4,573.8	-1,468.3	463.7	419.9	43.80	10.586		
11,300.0	6,988.7	7,122.0	6,792.2	86.8	36.9	-7.44	4,579.3	-1,482.6	368.9	321.2	47.76	7.725		
11,400.0	6,988.2	7,143.9	6,808.1	88.6	36.9	-15.71	4,584.4	-1,496.8	276.0	219.4	56.60	4.876		
11,500.0	6,987.7	7,164.9	6,823.0	90.4	36.9	-25.51	4,589.2	-1,510.8	187.7	117.7	70.05	2.680		
11,600.0	6,987.2	7,184.9	6,836.8	92.3	37.0	-36.34	4,593.7	-1,524.7	115.8	29.8	85.95	1.347 Level 3		
11,639.4	6,987.0	7,192.6	6,842.0	93.0	37.0	-40.70	4,595.4	-1,530.0	100.3	8.1	92.23	1.087 Level 2, CC, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design		Sweet Gold 4N67W9V Pad Sec.9-T4N-R67W - Sweet Gold 9V-204 - Wellbore #1 - Plan #2 (2-24-15)										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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
							+N/-S (ft)	+E/-W (ft)							
9,900.0	6,995.8	7,016.7	6,777.9	62.3	25.8	9.59	3,728.4	-1,442.3	908.1	873.8	34.29	26.480			
10,000.0	6,995.3	7,029.3	6,785.9	64.0	25.8	6.19	3,730.0	-1,451.8	809.5	775.2	34.24	23.644			
10,100.0	6,994.8	7,041.4	6,793.6	65.7	25.8	2.40	3,731.5	-1,461.1	711.0	676.3	34.66	20.513			
10,200.0	6,994.3	7,053.1	6,800.8	67.4	25.7	-1.80	3,732.9	-1,470.3	612.8	576.9	35.85	17.091			
10,300.0	6,993.8	7,064.5	6,807.7	69.1	25.7	-6.39	3,734.3	-1,479.2	515.0	476.9	38.09	13.521			
10,400.0	6,993.3	7,075.4	6,814.1	70.8	25.7	-11.32	3,735.6	-1,487.9	417.9	376.4	41.52	10.065			
10,500.0	6,992.8	7,086.0	6,820.3	72.6	25.7	-16.54	3,736.8	-1,496.4	322.2	276.1	46.12	6.987			
10,600.0	6,992.3	7,096.3	6,826.2	74.3	25.6	-21.93	3,737.9	-1,504.8	229.8	178.1	51.68	4.447			
10,700.0	6,991.8	7,106.1	6,831.7	76.1	25.6	-27.40	3,739.0	-1,512.9	146.9	89.0	57.88	2.537			
10,800.0	6,991.2	7,115.7	6,837.0	77.9	25.6	-32.81	3,740.1	-1,520.8	100.5	36.2	64.35	1.562			
10,807.8	6,991.2	7,116.4	6,837.4	78.0	25.6	-33.23	3,740.2	-1,521.4	100.2	35.4	64.86	1.545 CC, ES, SF			
10,900.0	6,990.7	7,125.0	6,842.0	79.7	25.6	-38.06	3,741.1	-1,528.5	135.8	65.0	70.80	1.919			
11,000.0	6,990.2	7,133.9	6,846.7	81.4	25.5	-43.04	3,742.0	-1,536.0	215.9	138.9	76.99	2.804			
11,100.0	6,989.7	7,142.6	6,851.2	83.2	25.5	-47.70	3,743.0	-1,543.4	307.5	224.8	82.77	3.716			
11,200.0	6,989.2	7,150.0	6,855.0	85.0	25.5	-51.52	3,743.7	-1,549.7	403.0	315.3	87.65	4.597			
11,300.0	6,988.7	7,159.1	6,859.6	86.8	25.5	-55.92	3,744.6	-1,557.5	500.0	407.1	92.88	5.383			
11,400.0	6,988.2	7,166.9	6,863.5	88.6	25.5	-59.46	3,745.4	-1,564.3	597.9	500.7	97.23	6.150			
11,500.0	6,987.7	7,174.6	6,867.2	90.4	25.4	-62.65	3,746.2	-1,570.9	696.3	595.1	101.16	6.883			
11,600.0	6,987.2	7,182.0	6,870.7	92.3	25.4	-65.52	3,746.9	-1,577.4	795.0	690.3	104.73	7.591			
11,639.4	6,987.0	7,184.8	6,872.0	93.0	25.4	-66.57	3,747.2	-1,579.9	833.9	727.9	106.05	7.863			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design		Sweet Gold 4N67W9V Pad Sec.9-T4N-R67W - Sweet Gold 9V-214 - Wellbore #1 - Plan #2 (2-24-15)										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	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)					
10,400.0	6,993.3	7,026.4	6,731.0	70.8	32.5	20.46	4,254.7	-1,396.5	944.4	897.6	46.78	20.188				
10,500.0	6,992.8	7,047.6	6,745.7	72.6	32.5	17.74	4,258.9	-1,411.2	846.7	801.3	45.41	18.647				
10,600.0	6,992.3	7,067.9	6,759.4	74.3	32.4	14.40	4,262.7	-1,425.6	749.1	705.3	43.74	17.126				
10,700.0	6,991.8	7,087.1	6,772.0	76.1	32.4	10.37	4,266.3	-1,439.7	651.6	609.6	42.04	15.499				
10,800.0	6,991.2	7,105.5	6,783.8	77.9	32.4	5.56	4,269.7	-1,453.4	554.4	513.5	40.90	13.557				
10,900.0	6,990.7	7,122.9	6,794.6	79.7	32.4	-0.08	4,272.8	-1,466.7	457.8	416.5	41.29	11.087				
11,000.0	6,990.2	7,139.6	6,804.7	81.4	32.4	-6.57	4,275.7	-1,479.6	362.1	317.7	44.39	8.157				
11,100.0	6,989.7	7,155.4	6,814.1	83.2	32.3	-13.78	4,278.3	-1,492.1	268.6	217.8	50.81	5.287				
11,200.0	6,989.2	7,170.5	6,822.7	85.0	32.3	-21.50	4,280.8	-1,504.2	180.8	120.8	59.96	3.015				
11,300.0	6,988.7	7,184.9	6,830.8	86.8	32.3	-29.41	4,283.2	-1,515.9	112.8	42.2	70.54	1.599				
11,352.0	6,988.5	7,192.1	6,834.7	87.8	32.3	-33.47	4,284.3	-1,521.8	100.4	24.2	76.17	1.318	Level 3, CC, ES, SF			
11,400.0	6,988.2	7,200.0	6,839.0	88.6	32.3	-37.91	4,285.5	-1,528.4	111.0	28.8	82.20	1.351	Level 3			
11,500.0	6,987.7	7,211.7	6,845.2	90.4	32.2	-44.37	4,287.3	-1,538.1	177.6	86.4	91.16	1.948				
11,600.0	6,987.2	7,224.2	6,851.7	92.3	32.2	-50.91	4,289.2	-1,548.7	265.2	165.5	99.77	2.658				
11,639.4	6,987.0	7,229.0	6,854.1	93.0	32.2	-53.27	4,289.9	-1,552.7	301.7	198.9	102.78	2.936				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design Sweet Gold 4N67W9V Pad Sec.9-T4N-R67W - Sweet Gold 9V-304 - Wellbore #1 - Plan #2 (2-24-15)										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	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)		
10,100.0	6,994.8	6,929.1	6,729.6	65.7	28.0	9.57	3,954.0	-1,434.4	942.3	906.4	35.88	26.265	
10,200.0	6,994.3	6,948.1	6,744.7	67.4	27.9	6.93	3,957.6	-1,445.2	844.5	808.6	35.83	23.566	
10,300.0	6,993.8	6,966.4	6,759.1	69.1	27.9	3.73	3,961.0	-1,456.0	746.7	710.7	36.06	20.710	
10,400.0	6,993.3	6,984.2	6,772.9	70.8	27.9	-0.14	3,964.3	-1,466.8	649.2	612.3	36.92	17.585	
10,500.0	6,992.8	7,001.5	6,785.9	72.6	27.9	-4.76	3,967.4	-1,477.6	552.0	513.0	38.95	14.172	
10,600.0	6,992.3	7,018.2	6,798.4	74.3	27.9	-10.21	3,970.4	-1,488.4	455.4	412.6	42.74	10.653	
10,700.0	6,991.8	7,034.3	6,810.2	76.1	27.9	-16.52	3,973.2	-1,499.1	359.7	311.1	48.65	7.394	
10,800.0	6,991.2	7,050.0	6,821.4	77.9	27.9	-23.64	3,975.9	-1,509.7	266.4	209.8	56.58	4.708	
10,900.0	6,990.7	7,065.1	6,832.0	79.7	27.8	-31.35	3,978.4	-1,520.1	178.8	112.9	65.90	2.713	
11,000.0	6,990.2	7,079.7	6,842.1	81.4	27.8	-39.37	3,980.8	-1,530.4	111.8	36.1	75.74	1.476 Level 3	
11,049.7	6,990.0	7,086.8	6,846.9	82.3	27.8	-43.35	3,982.0	-1,535.5	100.5	20.0	80.52	1.248 Level 2, CC, ES, SF	
11,100.0	6,989.7	7,093.9	6,851.7	83.2	27.8	-47.32	3,983.2	-1,540.6	112.1	27.0	85.16	1.317 Level 3	
11,200.0	6,989.2	7,107.6	6,860.8	85.0	27.8	-54.84	3,985.4	-1,550.5	179.5	86.0	93.49	1.920	
11,300.0	6,988.7	7,120.8	6,869.4	86.8	27.8	-61.68	3,987.4	-1,560.4	267.2	166.8	100.41	2.661	
11,400.0	6,988.2	7,133.6	6,877.5	88.6	27.7	-67.72	3,989.4	-1,570.0	360.9	254.9	105.96	3.406	
11,500.0	6,987.7	7,150.0	6,887.8	90.4	27.7	-74.52	3,991.9	-1,582.6	456.8	345.8	111.00	4.115	
11,600.0	6,987.2	7,157.9	6,892.6	92.3	27.7	-77.40	3,993.1	-1,588.7	553.8	440.0	113.84	4.865	
11,639.4	6,987.0	7,162.5	6,895.4	93.0	27.7	-78.97	3,993.8	-1,592.3	592.3	477.2	115.02	5.149	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design		Sweet Gold 4N67W9V Pad Sec.9-T4N-R67W - Sweet Gold 9V-334 - Wellbore #1 - Plan #2 (2-24-15)										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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
							+N/-S (ft)	+E/-W (ft)							
9,600.0	6,997.3	6,942.4	6,793.0	57.3	22.6	-5.63	3,445.2	-1,479.3	922.3	890.1	32.20	28.645			
9,700.0	6,996.8	6,951.6	6,799.9	58.9	22.5	-8.76	3,446.1	-1,485.4	823.4	789.2	34.17	24.098			
9,800.0	6,996.3	6,960.7	6,806.6	60.6	22.5	-12.17	3,447.0	-1,491.5	724.6	688.0	36.64	19.779			
9,900.0	6,995.8	6,969.6	6,813.0	62.3	22.5	-15.84	3,447.9	-1,497.6	626.1	586.5	39.65	15.792			
10,000.0	6,995.3	6,978.3	6,819.3	64.0	22.5	-19.74	3,448.7	-1,503.6	528.1	484.8	43.21	12.221			
10,100.0	6,994.8	6,986.9	6,825.3	65.7	22.5	-23.87	3,449.5	-1,509.6	430.7	383.4	47.27	9.110			
10,200.0	6,994.3	6,995.2	6,831.2	67.4	22.4	-28.15	3,450.3	-1,515.5	334.6	282.8	51.76	6.464			
10,300.0	6,993.8	7,003.4	6,836.8	69.1	22.4	-32.56	3,451.1	-1,521.3	241.3	184.8	56.56	4.267			
10,400.0	6,993.3	7,011.4	6,842.3	70.8	22.4	-37.01	3,451.8	-1,527.1	156.3	94.7	61.53	2.539			
10,500.0	6,992.8	7,019.2	6,847.6	72.6	22.4	-41.45	3,452.5	-1,532.8	102.2	35.7	66.55	1.536			
10,520.3	6,992.7	7,020.7	6,848.6	72.9	22.4	-42.34	3,452.7	-1,534.0	100.2	32.6	67.57	1.483	Level 3, CC, ES, SF		
10,600.0	6,992.3	7,026.8	6,852.7	74.3	22.4	-45.80	3,453.2	-1,538.5	127.8	56.3	71.50	1.788			
10,700.0	6,991.8	7,034.3	6,857.6	76.1	22.3	-50.02	3,453.9	-1,544.0	205.2	128.9	76.26	2.691			
10,800.0	6,991.2	7,041.7	6,862.4	77.9	22.3	-54.05	3,454.6	-1,549.6	296.2	215.4	80.77	3.667			
10,900.0	6,990.7	7,050.0	6,867.8	79.7	22.3	-58.46	3,455.3	-1,555.9	391.5	306.1	85.39	4.585			
11,000.0	6,990.2	7,055.9	6,871.5	81.4	22.3	-61.43	3,455.8	-1,560.4	488.5	399.6	88.90	5.495			
11,100.0	6,989.7	7,062.7	6,875.9	83.2	22.3	-64.75	3,456.4	-1,565.7	586.4	493.9	92.52	6.339			
11,200.0	6,989.2	7,069.5	6,880.0	85.0	22.3	-67.81	3,457.0	-1,570.9	684.9	589.0	95.85	7.146			
11,300.0	6,988.7	7,076.0	6,884.1	86.8	22.3	-70.62	3,457.5	-1,576.1	783.7	684.7	98.92	7.922			
11,400.0	6,988.2	7,082.5	6,888.0	88.6	22.2	-73.20	3,458.1	-1,581.2	882.7	780.9	101.77	8.673			
11,500.0	6,987.7	7,088.8	6,891.8	90.4	22.2	-75.56	3,458.6	-1,586.2	981.8	877.4	104.43	9.402			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design		Sweet Gold 4N67W9V Pad Sec.9-T4N-R67W - Sweet Gold 9W-214 - Wellbore #1 - Plan #1 (1-21-15)										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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
							+N/-S (ft)	+E/-W (ft)							
9,100.0	6,999.9	7,050.0	6,818.7	49.4	22.1	-26.44	2,947.8	-1,520.0	923.4	885.7	37.69	24.503			
9,200.0	6,999.3	7,050.0	6,818.7	51.0	22.1	-26.44	2,947.8	-1,520.0	824.4	785.7	38.66	21.322			
9,300.0	6,998.8	7,053.6	6,820.6	52.5	22.1	-28.16	2,947.8	-1,523.0	725.6	684.9	40.63	17.858			
9,400.0	6,998.3	7,054.7	6,821.2	54.1	22.1	-28.67	2,947.8	-1,523.9	627.2	585.2	41.96	14.947			
9,500.0	6,997.8	7,055.8	6,821.8	55.7	22.1	-29.19	2,947.8	-1,524.8	529.3	486.0	43.31	12.222			
9,600.0	6,997.3	7,056.8	6,822.4	57.3	22.1	-29.70	2,947.9	-1,525.7	432.5	387.8	44.69	9.678			
9,700.0	6,996.8	7,057.9	6,822.9	58.9	22.1	-30.21	2,947.9	-1,526.6	337.5	291.4	46.09	7.323			
9,800.0	6,996.3	7,059.0	6,823.5	60.6	22.1	-30.72	2,947.9	-1,527.5	246.6	199.1	47.51	5.189			
9,900.0	6,995.8	7,060.0	6,824.1	62.3	22.1	-31.23	2,947.9	-1,528.4	166.3	117.4	48.96	3.397			
10,000.0	6,995.3	7,061.1	6,824.6	64.0	22.1	-31.74	2,947.9	-1,529.3	120.5	70.1	50.43	2.390			
10,015.7	6,995.2	7,061.3	6,824.7	64.2	22.1	-31.82	2,947.9	-1,529.5	119.5	68.8	50.66	2.358	CC, ES, SF		
10,100.0	6,994.8	7,062.1	6,825.2	65.7	22.1	-32.24	2,947.9	-1,530.2	146.2	94.3	51.92	2.816			
10,200.0	6,994.3	7,063.2	6,825.7	67.4	22.1	-32.75	2,948.0	-1,531.1	219.6	166.2	53.44	4.110			
10,300.0	6,993.8	7,064.2	6,826.3	69.1	22.1	-33.25	2,948.0	-1,532.0	308.4	253.4	54.97	5.610			
10,400.0	6,993.3	7,065.3	6,826.8	70.8	22.2	-33.74	2,948.0	-1,532.9	402.4	345.9	56.53	7.119			
10,500.0	6,992.8	7,066.3	6,827.3	72.6	22.2	-34.24	2,948.0	-1,533.8	498.8	440.7	58.10	8.585			
10,600.0	6,992.3	7,067.3	6,827.9	74.3	22.2	-34.73	2,948.0	-1,534.7	596.3	536.7	59.69	9.990			
10,700.0	6,991.8	7,068.4	6,828.4	76.1	22.2	-35.22	2,948.0	-1,535.5	694.6	633.3	61.31	11.330			
10,800.0	6,991.2	7,069.4	6,828.9	77.9	22.2	-35.71	2,948.1	-1,536.4	793.3	730.4	62.94	12.604			
10,900.0	6,990.7	7,070.4	6,829.5	79.7	22.2	-36.20	2,948.1	-1,537.3	892.3	827.7	64.59	13.814			
11,000.0	6,990.2	7,071.4	6,830.0	81.4	22.2	-36.68	2,948.1	-1,538.1	991.5	925.2	66.26	14.963			

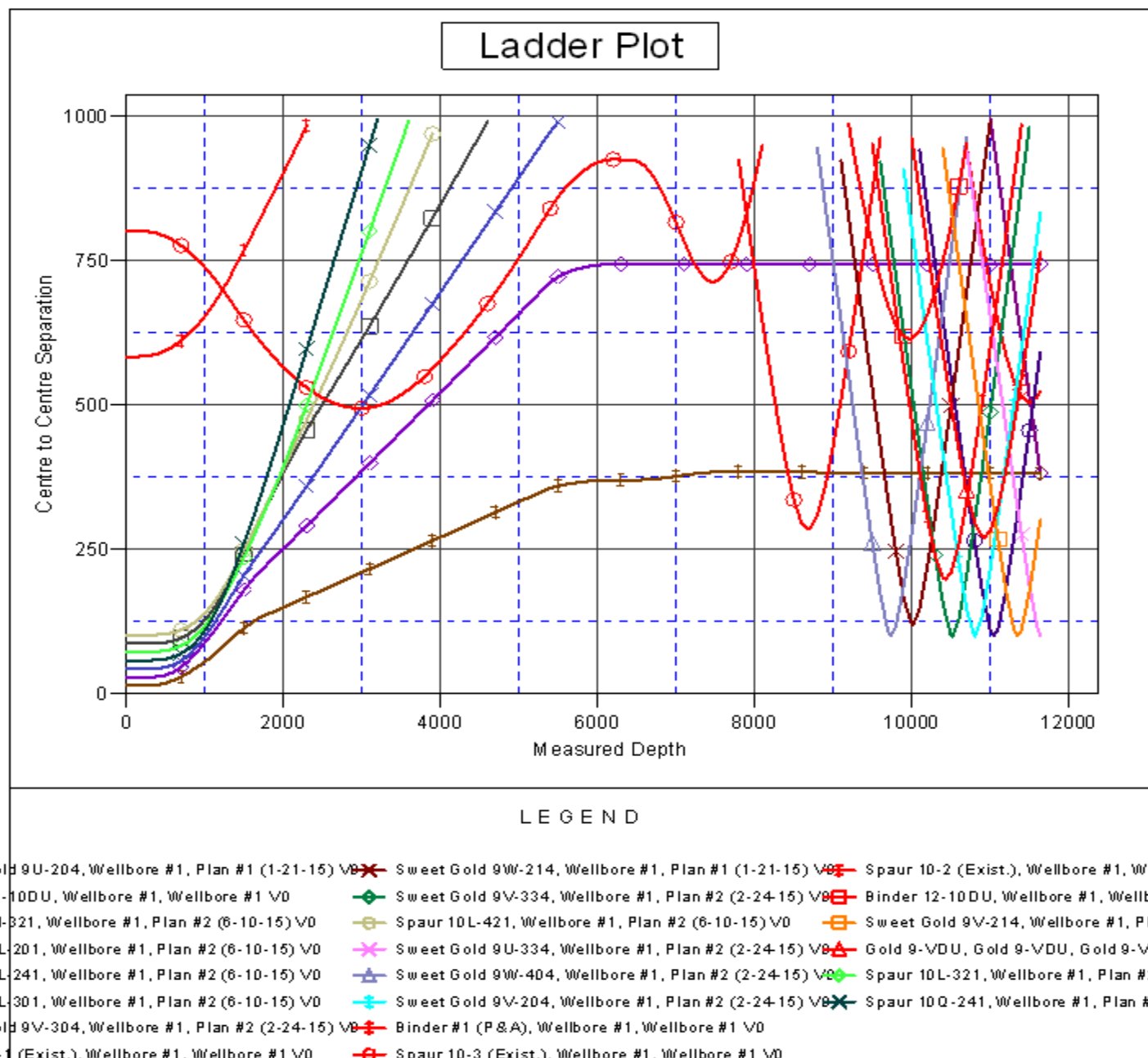
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Offset Design		Sweet Gold 4N67W9V Pad Sec.9-T4N-R67W - Sweet Gold 9W-404 - Wellbore #1 - Plan #2 (2-24-15)										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		
8,800.0	7,001.4	7,012.8	6,881.6	45.1	20.2	-63.81	2,673.2	-1,560.1	946.5	895.6	50.87	18.606		
8,900.0	7,000.9	7,010.1	6,879.6	46.5	20.2	-62.39	2,673.3	-1,558.2	847.2	795.2	52.01	16.289		
9,000.0	7,000.4	7,007.4	6,877.6	48.0	20.2	-60.93	2,673.4	-1,556.4	748.0	694.9	53.09	14.088		
9,100.0	6,999.9	7,004.7	6,875.6	49.4	20.2	-59.45	2,673.5	-1,554.6	649.1	595.0	54.13	11.992		
9,200.0	6,999.3	7,000.0	6,872.1	51.0	20.2	-56.88	2,673.6	-1,551.5	550.6	495.9	54.68	10.069		
9,300.0	6,998.8	7,000.0	6,872.1	52.5	20.2	-56.88	2,673.6	-1,551.5	452.7	396.5	56.19	8.056		
9,400.0	6,998.3	6,996.4	6,869.4	54.1	20.2	-54.86	2,673.7	-1,549.1	355.9	299.1	56.84	6.262		
9,500.0	6,997.8	6,993.6	6,867.3	55.7	20.2	-53.29	2,673.8	-1,547.3	261.5	204.0	57.60	4.541		
9,600.0	6,997.3	6,990.8	6,865.2	57.3	20.2	-51.70	2,673.8	-1,545.5	173.6	115.3	58.28	2.979		
9,700.0	6,996.8	6,988.0	6,863.1	58.9	20.2	-50.10	2,673.9	-1,543.6	108.8	49.9	58.88	1.848		
9,741.5	6,996.6	6,986.8	6,862.2	59.6	20.2	-49.43	2,674.0	-1,542.9	100.6	41.5	59.11	1.701CC, ES, SF		
9,800.0	6,996.3	6,985.2	6,860.9	60.6	20.2	-48.49	2,674.0	-1,541.8	116.3	56.9	59.40	1.958		
9,900.0	6,995.8	6,982.3	6,858.8	62.3	20.2	-46.87	2,674.1	-1,540.0	187.6	127.8	59.85	3.135		
10,000.0	6,995.3	6,979.5	6,856.6	64.0	20.2	-45.24	2,674.2	-1,538.1	277.2	217.0	60.21	4.605		
10,100.0	6,994.8	6,976.6	6,854.4	65.7	20.2	-43.62	2,674.3	-1,536.3	372.1	311.6	60.49	6.152		
10,200.0	6,994.3	6,973.7	6,852.1	67.4	20.2	-41.99	2,674.3	-1,534.4	469.1	408.5	60.69	7.731		
10,300.0	6,993.8	6,970.8	6,849.9	69.1	20.2	-40.37	2,674.4	-1,532.6	567.2	506.4	60.81	9.327		
10,400.0	6,993.3	6,967.8	6,847.6	70.8	20.2	-38.76	2,674.5	-1,530.7	665.8	604.9	60.87	10.938		
10,500.0	6,992.8	6,964.9	6,845.3	72.6	20.2	-37.16	2,674.6	-1,528.8	764.7	703.9	60.86	12.566		
10,600.0	6,992.3	6,961.9	6,843.0	74.3	20.2	-35.57	2,674.7	-1,527.0	863.9	803.1	60.78	14.213		
10,700.0	6,991.8	6,958.9	6,840.7	76.1	20.2	-34.00	2,674.8	-1,525.1	963.3	902.6	60.65	15.882		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Spaur 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Spaur 10I-201	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 #1 (6-12-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4853.0ft (RKB -13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Spaur 10I-201
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 10I-201
Project:	SEC.10-T4N-R67W	TVD Reference:	WELL @ 4853.0ft (RKB -13')
Reference Site:	Spaur 4N67W10MLVT Pad Sec.10-T4N-R67W	MD Reference:	WELL @ 4853.0ft (RKB -13')
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Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
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Reference Depths are relative to WELL @ 4853.0ft (RKB -13')
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Coordinates are relative to: Spaur 10I-201
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