



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.27-T7N-R64W

Richter 27T-HZ Pad Sec.27-T7N-R64W

Richter 34U-203

Wellbore #1

Plan #1 (9-28-12)

Anticollision Report

04 January, 2013



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (9-28-12)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 10,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	1/4/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,780.9	Plan #1 (9-28-12) (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						
Richter 27T-HZ Pad Sec.27-T7N-R64W						
Dryer USX AB35-67-1HN (Exist.) - Wellbore #1 - Wellbor	8,572.3	6,925.7	378.0	326.3	7.305	CC, ES
Dryer USX AB35-67-1HN (Exist.) - Wellbore #1 - Wellbor	8,600.0	6,926.6	379.0	326.8	7.260	SF
Dryer USX AB35-68-1HN (Exist.) - Wellbore #1 - Wellbor	8,003.9	6,753.0	587.0	544.6	13.837	CC, ES
Dryer USX AB35-68-1HN (Exist.) - Wellbore #1 - Wellbor	8,100.0	6,753.0	594.8	551.1	13.601	SF

Offset Design		Richter 27T-HZ Pad Sec.27-T7N-R64W - Dryer USX AB35-67-1HN (Exist.) - Wellbore #1 - Wellbore #1										Offset Site Error:		0.0 ft	
Survey Program:		839-MWD										Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning		
0.0	0.0	2.0	2.0	0.0	0.0	122.16	-601.1	956.2	1,129.4						
100.0	100.0	102.0	102.0	0.1	0.1	122.16	-601.1	956.2	1,129.4	1,129.2	0.23	4,971.327			
200.0	200.0	202.0	202.0	0.3	0.2	122.16	-601.1	956.2	1,129.4	1,128.9	0.56	2,001.424			
300.0	300.0	302.0	302.0	0.6	0.3	33.62	-601.1	956.2	1,128.0	1,127.1	0.89	1,263.494			
400.0	399.8	401.8	401.8	0.8	0.5	33.81	-601.1	956.2	1,123.6	1,122.4	1.22	917.595			
500.0	499.5	501.5	501.5	1.0	0.6	34.14	-601.1	956.2	1,116.4	1,114.8	1.57	710.043			
600.0	598.7	600.7	600.7	1.3	0.7	34.61	-601.1	956.2	1,106.3	1,104.4	1.94	570.209			
700.0	697.5	699.5	699.5	1.6	0.8	35.22	-601.1	956.2	1,093.4	1,091.1	2.33	468.422			
800.0	795.6	797.6	797.6	2.0	0.9	35.99	-601.1	956.2	1,077.8	1,075.1	2.76	390.313			
903.7	896.6	924.7	924.7	2.5	1.1	37.10	-599.2	955.7	1,057.7	1,054.3	3.36	314.705			
1,000.0	990.1	1,003.8	1,003.7	3.0	1.3	37.67	-596.8	955.1	1,036.7	1,032.8	3.85	268.941			
1,100.0	1,087.1	1,069.7	1,069.6	3.5	1.4	38.21	-596.8	955.5	1,017.8	1,013.5	4.34	234.710			
1,200.0	1,184.1	1,165.0	1,164.9	4.0	1.6	39.04	-597.8	957.1	1,000.5	995.6	4.89	204.576			
1,300.0	1,281.1	1,250.0	1,249.9	4.5	1.8	39.89	-600.6	958.2	984.5	979.1	5.45	180.712			
1,400.0	1,378.0	1,329.7	1,329.4	5.0	2.0	40.86	-605.9	958.7	970.3	964.3	6.00	161.670			
1,500.0	1,475.0	1,409.8	1,409.1	5.5	2.1	41.98	-613.6	958.7	958.0	951.4	6.58	145.518			
1,600.0	1,572.0	1,485.3	1,484.0	6.0	2.3	43.17	-623.1	958.6	948.1	940.9	7.18	132.011			
1,700.0	1,669.0	1,556.9	1,554.7	6.6	2.5	44.38	-634.2	958.8	941.2	933.4	7.80	120.725			
1,800.0	1,766.0	1,629.0	1,625.6	7.1	2.7	45.64	-647.2	960.2	937.9	929.5	8.44	111.184			
1,865.8	1,829.9	1,680.0	1,675.6	7.4	2.9	46.57	-657.5	961.5	937.4	928.6	8.89	105.459			
1,900.0	1,863.0	1,709.1	1,703.9	7.6	2.9	47.11	-663.7	962.1	937.5	928.4	9.14	102.628			
2,000.0	1,960.0	1,785.2	1,778.1	8.1	3.2	48.60	-681.0	963.6	939.6	929.8	9.85	95.388			

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

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Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 839-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		
2,100.0	2,057.0	1,857.8	1,848.4	8.6	3.5	50.03	-699.0	965.7	944.8	934.3	10.57	89.406		
2,200.0	2,154.0	1,933.6	1,921.5	9.2	3.9	51.45	-718.6	969.8	953.4	942.1	11.31	84.331		
2,300.0	2,251.0	2,009.0	1,994.0	9.7	4.2	52.88	-739.0	973.8	964.1	952.0	12.05	80.010		
2,400.0	2,348.0	2,088.1	2,069.4	10.2	4.6	54.45	-762.4	977.5	977.4	964.6	12.84	76.126		
2,500.0	2,445.0	2,163.6	2,140.8	10.7	5.1	55.96	-786.7	981.2	994.1	980.4	13.63	72.942		
2,600.0	2,542.0	2,253.6	2,225.6	11.3	5.6	57.72	-816.6	986.1	1,012.9	998.5	14.48	69.971		
2,700.0	2,639.0	2,371.0	2,336.4	11.8	6.2	59.97	-854.8	991.2	1,031.9	1,016.5	15.42	66.911		
2,800.0	2,736.0	2,449.3	2,410.5	12.3	6.6	61.48	-880.0	993.1	1,050.9	1,034.7	16.22	64.781		
2,900.0	2,833.0	2,553.9	2,509.2	12.8	7.2	63.43	-914.7	996.4	1,072.0	1,054.9	17.13	62.587		
3,000.0	2,930.0	2,659.8	2,609.7	13.4	7.8	65.31	-947.8	998.9	1,092.0	1,074.0	18.02	60.614		
3,100.0	3,027.0	2,729.0	2,675.4	13.9	8.2	66.48	-969.4	1,001.2	1,113.5	1,094.7	18.77	59.336		
3,200.0	3,124.0	2,807.3	2,749.2	14.4	8.6	67.72	-995.4	1,005.2	1,137.8	1,118.3	19.55	58.203		
3,300.0	3,221.0	2,904.0	2,840.3	14.9	9.2	69.21	-1,027.4	1,009.8	1,162.8	1,142.5	20.39	57.019		
3,400.0	3,318.0	3,001.2	2,932.1	15.5	9.8	70.61	-1,059.2	1,015.1	1,188.4	1,167.2	21.23	55.978		
3,500.0	3,415.0	3,094.4	3,020.1	16.0	10.3	71.93	-1,089.4	1,019.3	1,214.1	1,192.1	22.05	55.054		
3,600.0	3,512.0	3,176.4	3,097.4	16.5	10.9	73.08	-1,116.6	1,022.5	1,241.0	1,218.2	22.84	54.328		
3,700.0	3,609.0	3,262.0	3,177.8	17.0	11.4	74.27	-1,145.8	1,025.5	1,269.3	1,245.6	23.65	53.676		
3,800.0	3,706.0	3,361.3	3,271.2	17.6	12.0	75.54	-1,179.1	1,029.9	1,297.8	1,273.4	24.49	52.996		
3,900.0	3,803.0	3,447.3	3,352.1	18.1	12.5	76.61	-1,208.1	1,033.3	1,327.0	1,301.8	25.29	52.483		
4,000.0	3,900.0	3,563.2	3,461.1	18.6	13.2	78.00	-1,247.2	1,037.8	1,356.8	1,330.7	26.18	51.836		
4,100.0	3,997.0	3,709.7	3,600.9	19.1	14.0	79.59	-1,290.7	1,044.3	1,382.8	1,355.6	27.14	50.955		
4,200.0	4,094.0	3,785.9	3,673.7	19.7	14.5	80.35	-1,312.7	1,048.5	1,408.8	1,380.9	27.89	50.518		
4,300.0	4,191.0	3,864.3	3,748.3	20.2	14.9	81.09	-1,336.2	1,053.4	1,436.4	1,407.7	28.65	50.139		
4,400.0	4,288.0	3,931.1	3,811.7	20.7	15.3	81.69	-1,356.9	1,057.7	1,465.3	1,435.9	29.38	49.876		
4,415.9	4,303.4	3,939.0	3,819.1	20.8	15.4	81.77	-1,359.4	1,058.2	1,470.2	1,440.7	29.49	49.857		
4,500.0	4,385.3	3,980.5	3,858.1	21.2	15.7	82.69	-1,373.5	1,060.5	1,497.2	1,467.2	30.00	49.903		
4,600.0	4,483.3	4,040.5	3,913.9	21.5	16.1	83.89	-1,395.3	1,063.3	1,532.2	1,501.6	30.55	50.150		
4,700.0	4,582.0	4,121.9	3,989.3	21.8	16.6	85.24	-1,426.2	1,064.9	1,569.1	1,538.0	31.13	50.405		
4,800.0	4,681.1	4,279.7	4,136.4	22.1	17.6	86.81	-1,483.0	1,068.1	1,604.7	1,572.8	31.89	50.321		
4,900.0	4,780.7	4,414.4	4,263.8	22.3	18.4	87.95	-1,526.7	1,071.1	1,636.8	1,604.3	32.51	50.342		
5,000.0	4,880.5	4,508.1	4,352.6	22.4	19.0	88.76	-1,556.5	1,073.9	1,668.6	1,635.6	32.97	50.604		
5,100.0	4,980.5	4,603.2	4,442.8	22.5	19.5	89.42	-1,586.3	1,077.5	1,700.1	1,666.7	33.40	50.908		
5,119.5	5,000.0	4,617.6	4,456.5	22.6	19.6	178.14	-1,590.9	1,078.1	1,706.3	1,672.8	33.46	50.991		
5,200.0	5,080.5	4,800.6	4,631.2	22.6	20.6	177.96	-1,644.7	1,085.1	1,730.6	1,696.5	34.05	50.822		
5,300.0	5,180.5	4,920.5	4,747.0	22.7	21.2	177.88	-1,675.5	1,088.7	1,756.5	1,722.1	34.47	50.951		
5,400.0	5,280.5	5,144.3	4,965.5	22.8	22.2	177.88	-1,723.8	1,090.6	1,778.5	1,743.3	35.14	50.608		
5,500.0	5,380.5	5,377.6	5,196.7	22.9	22.9	177.74	-1,754.1	1,095.9	1,790.2	1,754.4	35.76	50.062		
5,600.0	5,480.5	5,520.5	5,338.7	23.1	23.2	177.66	-1,768.5	1,099.1	1,800.8	1,764.6	36.16	49.796		
5,700.0	5,580.5	5,682.7	5,500.7	23.2	23.6	177.59	-1,778.2	1,101.6	1,806.6	1,770.1	36.58	49.386		
5,800.0	5,680.5	5,778.9	5,596.8	23.3	23.7	177.56	-1,782.4	1,102.6	1,811.0	1,774.2	36.87	49.117		
5,900.0	5,780.5	5,916.2	5,733.9	23.4	23.9	177.53	-1,787.9	1,103.9	1,815.3	1,778.0	37.24	48.751		
6,000.0	5,880.5	6,068.7	5,886.4	23.5	24.1	177.48	-1,789.3	1,105.5	1,816.1	1,778.5	37.61	48.283		
6,100.0	5,980.5	6,181.3	5,999.0	23.6	24.2	177.44	-1,788.6	1,106.7	1,815.4	1,777.5	37.92	47.878		
6,200.0	6,080.5	6,286.1	6,103.8	23.8	24.3	177.42	-1,787.4	1,107.4	1,814.4	1,776.2	38.21	47.483		
6,300.0	6,180.5	6,387.1	6,204.8	23.9	24.4	177.38	-1,786.2	1,108.7	1,813.2	1,774.7	38.50	47.098		
6,310.4	6,190.8	6,396.5	6,214.1	23.9	24.4	177.37	-1,786.0	1,108.9	1,813.1	1,774.5	38.53	47.060		
6,350.0	6,230.5	6,436.2	6,253.8	23.9	24.4	-2.66	-1,785.5	1,110.6	1,811.6	1,772.9	38.74	46.764		
6,400.0	6,280.3	6,457.9	6,275.4	24.0	24.5	-2.74	-1,785.3	1,112.5	1,807.2	1,768.3	38.83	46.544		
6,450.0	6,329.7	6,488.1	6,305.4	24.0	24.5	-2.89	-1,785.5	1,116.4	1,800.2	1,761.4	38.78	46.418		
6,500.0	6,378.5	6,545.6	6,361.9	24.1	24.6	-3.30	-1,785.7	1,127.0	1,790.2	1,751.6	38.64	46.327		
6,550.0	6,426.6	6,595.0	6,409.6	24.1	24.7	-3.81	-1,785.3	1,139.6	1,776.8	1,738.4	38.34	46.337		

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

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Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 839-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		
6,600.0	6,473.6	6,627.0	6,439.9	24.2	24.7	-4.28	-1,785.2	1,149.8	1,760.7	1,722.8	37.87	46.491		
6,650.0	6,519.4	6,636.9	6,449.2	24.3	24.8	-4.53	-1,785.3	1,153.3	1,742.2	1,705.0	37.22	46.806		
6,700.0	6,563.8	6,659.0	6,469.7	24.3	24.8	-4.99	-1,785.8	1,161.5	1,721.6	1,685.1	36.46	47.219		
6,750.0	6,606.6	6,684.3	6,492.9	24.4	24.9	-5.59	-1,786.5	1,171.5	1,698.7	1,663.1	35.58	47.741		
6,800.0	6,647.6	6,714.8	6,520.5	24.5	24.9	-6.40	-1,787.3	1,184.6	1,673.2	1,638.6	34.60	48.364		
6,850.0	6,686.7	6,745.8	6,548.0	24.6	25.0	-7.37	-1,788.1	1,198.9	1,645.5	1,612.0	33.51	49.100		
6,900.0	6,723.7	6,766.8	6,566.3	24.7	25.1	-8.27	-1,788.6	1,209.2	1,615.6	1,583.2	32.33	49.975		
6,950.0	6,758.3	6,785.0	6,581.8	24.8	25.2	-9.25	-1,789.2	1,218.6	1,583.7	1,552.6	31.08	50.960		
7,000.0	6,790.6	6,785.0	6,581.8	25.0	25.2	-9.81	-1,789.2	1,218.6	1,550.0	1,520.3	29.75	52.107		
7,050.0	6,820.2	6,803.1	6,597.0	25.1	25.2	-11.11	-1,790.0	1,228.4	1,514.6	1,486.1	28.49	53.169		
7,100.0	6,847.2	6,817.0	6,608.5	25.3	25.3	-12.50	-1,790.8	1,236.2	1,477.7	1,450.4	27.29	54.144		
7,150.0	6,871.4	6,817.0	6,608.5	25.5	25.3	-13.51	-1,790.8	1,236.2	1,439.3	1,413.1	26.15	55.029		
7,200.0	6,892.6	6,829.2	6,618.4	25.8	25.3	-15.34	-1,791.6	1,243.2	1,399.4	1,374.0	25.36	55.190		
7,250.0	6,910.9	6,837.3	6,624.9	26.0	25.4	-17.34	-1,792.2	1,248.0	1,358.2	1,333.3	24.91	54.529		
7,300.0	6,926.0	6,848.0	6,633.5	26.4	25.4	-19.97	-1,793.0	1,254.4	1,315.7	1,290.6	25.08	52.470		
7,350.0	6,938.0	6,848.0	6,633.5	26.7	25.4	-22.39	-1,793.0	1,254.4	1,272.1	1,246.4	25.66	49.574		
7,400.0	6,946.8	6,859.0	6,642.1	27.1	25.5	-26.44	-1,793.9	1,261.1	1,227.4	1,199.9	27.48	44.662		
7,450.0	6,952.4	6,864.6	6,646.5	27.5	25.5	-31.05	-1,794.4	1,264.6	1,181.8	1,151.7	30.10	39.261		
7,500.0	6,954.7	6,868.5	6,649.5	27.9	25.5	-36.76	-1,794.7	1,267.0	1,135.4	1,101.7	33.63	33.761		
7,515.7	6,954.8	6,869.4	6,650.2	28.0	25.5	-38.83	-1,794.8	1,267.6	1,120.6	1,085.7	34.91	32.104		
7,600.0	6,954.2	6,873.7	6,653.6	28.8	25.5	-39.46	-1,795.1	1,270.3	1,041.8	1,005.8	36.02	28.927		
7,700.0	6,953.5	6,880.0	6,658.4	29.9	25.6	-40.39	-1,795.7	1,274.3	949.5	912.1	37.48	25.336		
7,800.0	6,952.8	6,885.8	6,662.9	31.0	25.6	-41.25	-1,796.1	1,278.0	858.9	819.9	38.97	22.039		
7,900.0	6,952.1	6,892.6	6,668.1	32.3	25.6	-42.25	-1,796.7	1,282.4	770.5	729.9	40.60	18.980		
8,000.0	6,951.4	6,898.7	6,672.7	33.6	25.7	-43.17	-1,797.1	1,286.3	685.3	643.1	42.23	16.227		
8,100.0	6,950.7	6,904.4	6,676.9	34.9	25.7	-44.01	-1,797.5	1,290.0	604.5	560.7	43.87	13.779		
8,200.0	6,950.0	6,912.0	6,682.6	36.3	25.7	-45.17	-1,798.1	1,295.1	530.3	484.6	45.73	11.596		
8,300.0	6,949.3	6,912.0	6,682.6	37.8	25.7	-45.17	-1,798.1	1,295.1	465.7	418.7	46.99	9.911		
8,400.0	6,948.6	6,919.0	6,687.8	39.3	25.8	-46.22	-1,798.5	1,299.8	415.4	366.5	48.88	8.498		
8,500.0	6,947.9	6,923.0	6,690.8	40.8	25.8	-46.83	-1,798.8	1,302.5	384.9	334.3	50.55	7.614		
8,572.3	6,947.4	6,925.7	6,692.7	42.0	25.8	-47.23	-1,798.9	1,304.3	378.0	326.3	51.75	7.305 CC, ES		
8,600.0	6,947.2	6,926.6	6,693.4	42.4	25.8	-47.38	-1,799.0	1,304.9	379.0	326.8	52.21	7.260 SF		
8,700.0	6,946.5	6,929.8	6,695.8	44.0	25.8	-47.87	-1,799.1	1,307.1	399.0	345.1	53.86	7.407		
8,800.0	6,945.8	6,932.7	6,697.9	45.6	25.8	-48.30	-1,799.3	1,309.1	441.2	385.7	55.51	7.948		
8,900.0	6,945.1	6,935.4	6,699.8	47.3	25.8	-48.70	-1,799.4	1,310.9	500.1	443.0	57.16	8.749		
9,000.0	6,944.4	6,943.0	6,705.3	48.9	25.9	-49.85	-1,799.7	1,316.2	570.6	511.3	59.31	9.621		
9,100.0	6,943.7	6,943.0	6,705.3	50.6	25.9	-49.85	-1,799.7	1,316.2	648.8	588.1	60.75	10.681		
9,200.0	6,943.0	6,943.0	6,705.3	52.3	25.9	-49.85	-1,799.7	1,316.2	732.4	670.2	62.19	11.776		
9,300.0	6,942.3	6,943.0	6,705.3	54.1	25.9	-49.85	-1,799.7	1,316.2	819.6	756.0	63.65	12.877		
9,400.0	6,941.6	6,947.1	6,708.3	55.8	25.9	-50.48	-1,799.9	1,319.0	909.5	843.9	65.54	13.876		
9,500.0	6,940.9	6,950.1	6,710.4	57.5	25.9	-50.92	-1,800.0	1,321.1	1,001.2	933.9	67.33	14.871		
9,600.0	6,940.2	6,953.1	6,712.5	59.3	25.9	-51.38	-1,800.2	1,323.2	1,094.4	1,025.3	69.14	15.829		
9,700.0	6,939.5	6,956.2	6,714.7	61.1	25.9	-51.84	-1,800.3	1,325.4	1,188.7	1,117.8	70.97	16.749		
9,800.0	6,938.8	6,959.3	6,717.0	62.9	26.0	-52.31	-1,800.4	1,327.6	1,283.9	1,211.1	72.83	17.628		
9,900.0	6,938.1	6,962.6	6,719.2	64.6	26.0	-52.79	-1,800.6	1,329.9	1,379.7	1,305.0	74.71	18.468		
10,000.0	6,937.4	6,965.8	6,721.5	66.4	26.0	-53.28	-1,800.7	1,332.2	1,476.1	1,399.5	76.61	19.268		
10,100.0	6,936.7	6,969.2	6,723.9	68.2	26.0	-53.77	-1,800.9	1,334.6	1,572.9	1,494.4	78.53	20.030		
10,200.0	6,936.0	6,972.6	6,726.3	70.0	26.0	-54.28	-1,801.0	1,337.0	1,670.1	1,589.6	80.47	20.754		
10,300.0	6,935.3	6,975.0	6,728.0	71.9	26.0	-54.63	-1,801.1	1,338.7	1,767.6	1,685.3	82.31	21.474		
10,400.0	6,934.6	6,979.8	6,731.3	73.7	26.1	-55.34	-1,801.3	1,342.2	1,865.3	1,780.9	84.44	22.091		
10,500.0	6,933.9	6,983.6	6,733.9	75.5	26.1	-55.89	-1,801.5	1,344.9	1,963.3	1,876.8	86.46	22.709		

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 Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 839-MWD												Offset Well Error:	0.0 ft
Richter 27T-HZ Pad Sec.27-T7N-R64W - Dryer USX AB35-67-1HN (Exist.) - Wellbore #1 - Wellbore #1													
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
10,600.0	6,933.2	6,987.5	6,736.6	77.3	26.1	-56.45	-1,801.7	1,347.7	2,061.5	1,973.0	88.50	23.294	
10,700.0	6,932.5	6,991.4	6,739.3	79.2	26.1	-57.03	-1,801.9	1,350.5	2,159.8	2,069.2	90.56	23.850	
10,800.0	6,931.8	6,995.5	6,742.1	81.0	26.2	-57.61	-1,802.1	1,353.5	2,258.2	2,165.6	92.64	24.377	
10,900.0	6,931.1	6,999.6	6,744.9	82.8	26.2	-58.20	-1,802.3	1,356.5	2,356.8	2,262.1	94.74	24.877	
11,000.0	6,930.5	7,003.8	6,747.8	84.7	26.2	-58.80	-1,802.5	1,359.6	2,455.5	2,358.6	96.86	25.352	
11,100.0	6,929.8	7,010.6	6,752.4	86.5	26.2	-59.75	-1,802.8	1,364.6	2,554.3	2,455.0	99.26	25.733	
11,200.0	6,929.1	7,026.6	6,763.0	88.4	26.3	-61.95	-1,803.7	1,376.4	2,653.1	2,550.5	102.60	25.859	
11,300.0	6,928.4	7,039.0	6,771.2	90.2	26.4	-63.60	-1,804.4	1,385.8	2,752.0	2,646.5	105.51	26.084	
11,400.0	6,927.7	7,045.4	6,775.3	92.1	26.5	-64.44	-1,804.8	1,390.7	2,851.0	2,743.2	107.83	26.441	
11,500.0	6,927.0	7,050.2	6,778.4	94.0	26.5	-65.05	-1,805.1	1,394.3	2,950.0	2,840.0	109.99	26.822	
11,600.0	6,926.3	7,054.9	6,781.4	95.8	26.5	-65.66	-1,805.4	1,398.0	3,049.1	2,936.9	112.15	27.188	
11,700.0	6,925.6	7,059.8	6,784.5	97.7	26.5	-66.26	-1,805.7	1,401.7	3,148.2	3,033.9	114.32	27.539	
11,780.9	6,925.0	7,063.7	6,787.0	99.2	26.6	-66.75	-1,806.0	1,404.8	3,228.5	3,112.4	116.08	27.813	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 839-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	2.0	2.0	0.0	0.0	122.21	-586.5	931.2	1,100.5					
100.0	100.0	102.0	102.0	0.1	0.1	122.21	-586.5	931.2	1,100.5	1,100.3	0.23	4,843.969		
200.0	200.0	202.0	202.0	0.3	0.2	122.21	-586.5	931.2	1,100.5	1,099.9	0.56	1,950.150		
300.0	300.0	302.0	302.0	0.6	0.3	33.67	-586.5	931.2	1,099.0	1,098.2	0.89	1,231.087		
400.0	399.8	401.8	401.8	0.8	0.5	33.87	-586.5	931.2	1,094.7	1,093.5	1.22	893.969		
500.0	499.5	501.5	501.5	1.0	0.6	34.21	-586.5	931.2	1,087.5	1,085.9	1.57	691.638		
600.0	598.7	600.7	600.7	1.3	0.7	34.69	-586.5	931.2	1,077.4	1,075.4	1.94	555.283		
700.0	697.5	699.5	699.5	1.6	0.8	35.31	-586.5	931.2	1,064.5	1,062.2	2.33	456.001		
800.0	795.6	797.6	797.6	2.0	0.9	36.10	-586.5	931.2	1,048.9	1,046.2	2.76	379.792		
903.7	896.6	925.4	925.4	2.5	1.1	37.30	-585.4	929.9	1,028.6	1,025.3	3.35	306.800		
1,000.0	990.1	1,018.4	1,018.3	3.0	1.3	38.09	-583.8	928.0	1,007.4	1,003.5	3.88	259.914		
1,100.0	1,087.1	1,114.9	1,114.8	3.5	1.5	38.95	-582.3	926.0	985.5	981.1	4.44	222.121		
1,200.0	1,184.1	1,212.0	1,211.9	4.0	1.7	39.85	-580.8	923.9	963.9	958.9	5.02	192.131		
1,300.0	1,281.1	1,309.5	1,309.4	4.5	1.9	40.81	-579.3	921.7	942.4	936.8	5.61	167.869		
1,400.0	1,378.0	1,406.9	1,406.7	5.0	2.1	41.81	-577.9	919.3	921.1	914.9	6.23	147.961		
1,500.0	1,475.0	1,504.0	1,503.8	5.5	2.3	42.87	-576.4	916.8	899.9	893.1	6.85	131.288		
1,600.0	1,572.0	1,601.0	1,600.7	6.0	2.6	43.96	-574.8	914.4	879.0	871.5	7.50	117.199		
1,700.0	1,669.0	1,698.0	1,697.6	6.6	2.8	45.10	-573.1	911.9	858.4	850.2	8.16	105.201		
1,800.0	1,766.0	1,770.8	1,770.5	7.1	2.9	45.99	-572.2	910.5	839.0	830.3	8.76	95.805		
1,900.0	1,863.0	1,836.7	1,836.3	7.6	3.1	46.81	-573.0	911.2	823.6	814.3	9.33	88.234		
2,000.0	1,960.0	1,914.0	1,913.5	8.1	3.2	47.78	-576.0	914.2	812.2	802.2	9.94	81.686		
2,100.0	2,057.0	1,990.9	1,990.2	8.6	3.3	48.75	-580.2	918.7	803.6	793.0	10.57	76.042		
2,200.0	2,154.0	2,070.4	2,069.3	9.2	3.5	49.77	-585.5	924.1	797.2	786.0	11.21	71.112		
2,300.0	2,251.0	2,146.6	2,144.9	9.7	3.6	50.77	-592.2	930.6	793.8	781.9	11.86	66.935		
2,354.5	2,303.9	2,187.5	2,185.4	10.0	3.7	51.32	-596.7	934.5	793.3	781.0	12.22	64.939		
2,400.0	2,348.0	2,221.9	2,219.4	10.2	3.8	51.80	-600.9	938.0	793.6	781.1	12.52	63.393		
2,500.0	2,445.0	2,294.0	2,290.3	10.7	4.0	52.83	-611.2	945.6	796.7	783.5	13.18	60.436		
2,600.0	2,542.0	2,367.2	2,361.9	11.3	4.2	53.91	-623.7	954.3	803.4	789.5	13.87	57.938		
2,700.0	2,639.0	2,441.2	2,433.7	11.8	4.4	54.99	-638.4	964.4	813.8	799.2	14.56	55.882		
2,800.0	2,736.0	2,526.2	2,515.6	12.3	4.7	56.23	-657.2	977.0	827.1	811.8	15.31	54.038		
2,900.0	2,833.0	2,623.7	2,609.6	12.8	5.1	57.62	-679.1	991.4	841.2	825.1	16.10	52.251		
3,000.0	2,930.0	2,714.8	2,697.3	13.4	5.4	58.90	-699.8	1,004.6	855.9	839.0	16.88	50.708		
3,100.0	3,027.0	2,814.6	2,793.2	13.9	5.9	60.22	-723.0	1,019.9	872.0	854.3	17.69	49.286		
3,200.0	3,124.0	2,922.4	2,897.2	14.4	6.3	61.56	-746.2	1,036.0	886.8	868.3	18.54	47.841		
3,300.0	3,221.0	3,008.0	2,979.7	14.9	6.7	62.55	-764.5	1,049.5	902.2	882.9	19.31	46.724		
3,400.0	3,318.0	3,098.4	3,066.5	15.5	7.1	63.56	-785.0	1,064.4	919.5	899.3	20.11	45.729		
3,500.0	3,415.0	3,212.4	3,176.1	16.0	7.6	64.77	-810.1	1,083.1	936.4	915.4	20.99	44.612		
3,600.0	3,512.0	3,299.0	3,259.6	16.5	8.0	65.69	-828.5	1,096.5	952.6	930.8	21.78	43.727		
3,700.0	3,609.0	3,393.5	3,350.5	17.0	8.5	66.74	-850.6	1,110.6	970.8	948.2	22.62	42.915		
3,800.0	3,706.0	3,506.9	3,459.8	17.6	9.0	67.95	-875.8	1,126.7	988.0	964.5	23.53	41.994		
3,900.0	3,803.0	3,607.6	3,557.1	18.1	9.5	68.92	-896.8	1,142.0	1,004.5	980.1	24.39	41.190		
4,000.0	3,900.0	3,714.8	3,660.8	18.6	10.0	69.91	-918.6	1,158.1	1,020.8	995.5	25.28	40.385		
4,100.0	3,997.0	3,798.3	3,741.6	19.1	10.4	70.67	-935.7	1,170.4	1,037.4	1,011.3	26.08	39.769		
4,200.0	4,094.0	3,875.8	3,816.3	19.7	10.8	71.38	-952.9	1,181.8	1,055.8	1,028.9	26.88	39.279		
4,300.0	4,191.0	3,954.6	3,891.9	20.2	11.2	72.09	-971.8	1,193.8	1,076.2	1,048.5	27.68	38.874		
4,400.0	4,288.0	4,041.9	3,975.2	20.7	11.7	72.83	-993.6	1,207.6	1,098.2	1,069.7	28.53	38.497		
4,415.9	4,303.4	4,057.2	3,989.9	20.8	11.8	72.96	-997.5	1,210.1	1,101.8	1,073.1	28.67	38.433		
4,500.0	4,385.3	4,131.7	4,060.9	21.2	12.2	73.87	-1,016.3	1,222.4	1,121.1	1,091.7	29.35	38.199		
4,600.0	4,483.3	4,222.9	4,147.5	21.5	12.7	74.81	-1,040.1	1,238.1	1,146.1	1,116.0	30.06	38.125		
4,700.0	4,582.0	4,355.7	4,274.3	21.8	13.4	75.73	-1,073.0	1,259.8	1,170.4	1,139.6	30.85	37.939		
4,800.0	4,681.1	4,505.9	4,419.6	22.1	14.1	76.48	-1,104.5	1,280.8	1,191.1	1,159.5	31.61	37.684		

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 Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 839-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
4,900.0	4,780.7	4,597.5	4,508.6	22.3	14.6	76.95	-1,123.1	1,292.6	1,211.9	1,179.8	32.12	37.736		
5,000.0	4,880.5	4,716.2	4,624.3	22.4	15.1	77.31	-1,145.5	1,306.4	1,231.6	1,198.9	32.64	37.733		
5,100.0	4,980.5	4,824.6	4,730.0	22.5	15.6	77.45	-1,165.8	1,319.5	1,252.2	1,219.2	33.06	37.873		
5,119.5	5,000.0	4,853.1	4,757.9	22.6	15.7	166.05	-1,170.8	1,322.7	1,256.1	1,222.9	33.16	37.876		
5,200.0	5,080.5	5,015.7	4,918.1	22.6	16.3	165.64	-1,194.0	1,337.8	1,269.0	1,235.4	33.60	37.770		
5,300.0	5,180.5	5,171.7	5,073.0	22.7	16.7	165.44	-1,208.9	1,346.2	1,279.5	1,245.5	34.02	37.605		
5,400.0	5,280.5	5,302.3	5,203.4	22.8	17.0	165.40	-1,217.7	1,349.5	1,286.6	1,252.2	34.39	37.412		
5,500.0	5,380.5	5,427.2	5,328.0	22.9	17.3	165.39	-1,223.9	1,351.3	1,291.8	1,257.1	34.74	37.185		
5,600.0	5,480.5	5,542.9	5,443.7	23.1	17.5	165.39	-1,227.9	1,352.2	1,295.3	1,260.2	35.07	36.935		
5,700.0	5,580.5	5,658.1	5,558.8	23.2	17.6	165.41	-1,231.2	1,352.6	1,298.2	1,262.8	35.40	36.676		
5,800.0	5,680.5	5,781.1	5,681.9	23.3	17.8	165.39	-1,231.5	1,353.3	1,298.5	1,262.8	35.73	36.341		
5,900.0	5,780.5	5,887.2	5,787.9	23.4	18.0	165.34	-1,231.1	1,354.3	1,298.4	1,262.4	36.04	36.030		
6,000.0	5,880.5	5,988.0	5,888.7	23.5	18.1	165.29	-1,230.4	1,355.3	1,297.9	1,261.6	36.33	35.723		
6,100.0	5,980.5	6,086.9	5,987.6	23.6	18.2	165.24	-1,229.6	1,356.3	1,297.5	1,260.8	36.62	35.426		
6,178.5	6,059.0	6,160.3	6,061.0	23.7	18.3	165.20	-1,229.3	1,357.1	1,297.3	1,260.5	36.85	35.206		
6,200.0	6,080.5	6,180.2	6,081.0	23.8	18.3	165.19	-1,229.2	1,357.3	1,297.3	1,260.4	36.91	35.148		
6,300.0	6,180.5	6,278.0	6,178.7	23.9	18.5	165.15	-1,229.2	1,358.2	1,297.5	1,260.3	37.21	34.870		
6,310.4	6,190.8	6,284.3	6,185.0	23.9	18.5	165.15	-1,229.2	1,358.3	1,297.6	1,260.4	37.24	34.848		
6,350.0	6,230.5	6,310.0	6,210.7	23.9	18.5	-14.88	-1,229.2	1,359.3	1,297.0	1,259.7	37.36	34.714		
6,400.0	6,280.3	6,345.8	6,246.4	24.0	18.6	-15.11	-1,229.2	1,362.4	1,294.0	1,256.6	37.39	34.605		
6,450.0	6,329.7	6,387.7	6,287.8	24.0	18.7	-15.57	-1,228.8	1,368.6	1,288.3	1,251.0	37.28	34.555		
6,500.0	6,378.5	6,423.9	6,323.2	24.1	18.8	-16.15	-1,228.2	1,375.9	1,279.9	1,242.9	37.01	34.583		
6,550.0	6,426.6	6,452.9	6,351.4	24.1	18.9	-16.81	-1,227.6	1,383.0	1,269.1	1,232.6	36.58	34.694		
6,600.0	6,473.6	6,469.0	6,366.9	24.2	19.0	-17.37	-1,227.4	1,387.3	1,256.3	1,220.3	35.99	34.903		
6,650.0	6,519.4	6,500.0	6,396.5	24.3	19.1	-18.32	-1,227.5	1,396.5	1,241.5	1,206.2	35.30	35.172		
6,700.0	6,563.8	6,513.3	6,409.1	24.3	19.1	-19.03	-1,227.8	1,400.7	1,224.9	1,190.4	34.46	35.542		
6,750.0	6,606.6	6,532.0	6,426.7	24.4	19.2	-19.97	-1,228.3	1,407.0	1,206.6	1,173.1	33.54	35.979		
6,800.0	6,647.6	6,564.0	6,456.4	24.5	19.4	-21.43	-1,229.2	1,418.8	1,186.4	1,153.9	32.55	36.450		
6,850.0	6,686.7	6,593.5	6,483.4	24.6	19.5	-23.08	-1,229.8	1,430.8	1,164.2	1,132.7	31.52	36.939		
6,900.0	6,723.7	6,615.2	6,502.9	24.7	19.6	-24.70	-1,230.1	1,440.3	1,140.2	1,109.8	30.47	37.416		
6,950.0	6,758.3	6,637.5	6,522.7	24.8	19.8	-26.56	-1,230.4	1,450.5	1,114.7	1,085.2	29.49	37.805		
7,000.0	6,790.6	6,662.0	6,544.1	25.0	19.9	-28.80	-1,230.5	1,462.3	1,087.7	1,059.1	28.64	37.983		
7,050.0	6,820.2	6,690.0	6,568.3	25.1	20.1	-31.54	-1,230.3	1,476.5	1,059.2	1,031.2	28.04	37.774		
7,100.0	6,847.2	6,704.2	6,580.5	25.3	20.2	-33.84	-1,230.1	1,483.9	1,029.5	1,001.9	27.65	37.236		
7,150.0	6,871.4	6,722.0	6,595.5	25.5	20.3	-36.61	-1,229.9	1,493.3	999.0	971.4	27.66	36.116		
7,200.0	6,892.6	6,722.0	6,595.5	25.8	20.3	-38.44	-1,229.9	1,493.3	967.7	939.9	27.80	34.809		
7,250.0	6,910.9	6,733.1	6,604.8	26.0	20.4	-41.22	-1,229.8	1,499.3	935.8	907.3	28.52	32.818		
7,300.0	6,926.0	6,739.0	6,609.8	26.4	20.4	-43.82	-1,229.8	1,502.6	903.6	874.1	29.51	30.614		
7,350.0	6,938.0	6,743.9	6,613.8	26.7	20.4	-46.49	-1,229.8	1,505.3	871.0	840.2	30.82	28.267		
7,400.0	6,946.8	6,753.0	6,621.3	27.1	20.5	-49.69	-1,229.8	1,510.5	838.4	805.9	32.50	25.800		
7,450.0	6,952.4	6,753.0	6,621.3	27.5	20.5	-52.19	-1,229.8	1,510.5	805.9	771.8	34.10	23.631		
7,500.0	6,954.7	6,753.0	6,621.3	27.9	20.5	-54.74	-1,229.8	1,510.5	773.5	737.7	35.80	21.607		
7,515.7	6,954.8	6,753.0	6,621.3	28.0	20.5	-55.55	-1,229.8	1,510.5	763.5	727.1	36.34	21.007		
7,600.0	6,954.2	6,753.0	6,621.3	28.8	20.5	-55.55	-1,229.8	1,510.5	712.5	675.2	37.30	19.102		
7,700.0	6,953.5	6,753.0	6,621.3	29.9	20.5	-55.55	-1,229.8	1,510.5	661.0	622.5	38.50	17.170		
7,800.0	6,952.8	6,753.0	6,621.3	31.0	20.5	-55.55	-1,229.8	1,510.5	621.4	581.7	39.74	15.635		
7,900.0	6,952.1	6,753.0	6,621.3	32.3	20.5	-55.55	-1,229.8	1,510.5	596.1	555.1	41.04	14.526		
8,000.0	6,951.4	6,753.0	6,621.3	33.6	20.5	-55.55	-1,229.8	1,510.5	587.0	544.7	42.37	13.855		
8,003.9	6,951.4	6,753.0	6,621.3	33.6	20.5	-55.55	-1,229.8	1,510.5	587.0	544.6	42.42	13.837 CC, ES		
8,100.0	6,950.7	6,753.0	6,621.3	34.9	20.5	-55.55	-1,229.8	1,510.5	594.8	551.1	43.73	13.601 SF		
8,200.0	6,950.0	6,753.0	6,621.3	36.3	20.5	-55.55	-1,229.8	1,510.5	618.9	573.8	45.13	13.715		

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 Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 839-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,300.0	6,949.3	6,753.0	6,621.3	37.8	20.5	-55.55	-1,229.8	1,510.5	657.5	610.9	46.54	14.126		
8,400.0	6,948.6	6,753.0	6,621.3	39.3	20.5	-55.55	-1,229.8	1,510.5	708.2	660.2	47.98	14.759		
8,500.0	6,947.9	6,753.0	6,621.3	40.8	20.5	-55.55	-1,229.8	1,510.5	768.6	719.1	49.44	15.546		
8,600.0	6,947.2	6,753.0	6,621.3	42.4	20.5	-55.55	-1,229.8	1,510.5	836.6	785.7	50.91	16.432		
8,700.0	6,946.5	6,753.0	6,621.3	44.0	20.5	-55.55	-1,229.8	1,510.5	910.6	858.2	52.40	17.377		
8,800.0	6,945.8	6,753.0	6,621.3	45.6	20.5	-55.55	-1,229.8	1,510.5	989.1	935.2	53.90	18.351		
8,900.0	6,945.1	6,753.0	6,621.3	47.3	20.5	-55.55	-1,229.8	1,510.5	1,071.3	1,015.9	55.41	19.333		
9,000.0	6,944.4	6,753.0	6,621.3	48.9	20.5	-55.55	-1,229.8	1,510.5	1,156.2	1,099.3	56.93	20.308		
9,100.0	6,943.7	6,753.0	6,621.3	50.6	20.5	-55.55	-1,229.8	1,510.5	1,243.4	1,184.9	58.46	21.268		
9,200.0	6,943.0	6,753.0	6,621.3	52.3	20.5	-55.55	-1,229.8	1,510.5	1,332.4	1,272.4	60.00	22.206		
9,300.0	6,942.3	6,753.0	6,621.3	54.1	20.5	-55.55	-1,229.8	1,510.5	1,422.8	1,361.3	61.55	23.118		
9,400.0	6,941.6	6,753.0	6,621.3	55.8	20.5	-55.55	-1,229.8	1,510.5	1,514.5	1,451.4	63.10	24.002		
9,500.0	6,940.9	6,753.0	6,621.3	57.5	20.5	-55.55	-1,229.8	1,510.5	1,607.2	1,542.5	64.66	24.857		
9,600.0	6,940.2	6,753.0	6,621.3	59.3	20.5	-55.55	-1,229.8	1,510.5	1,700.6	1,634.4	66.22	25.682		
9,700.0	6,939.5	6,753.0	6,621.3	61.1	20.5	-55.55	-1,229.8	1,510.5	1,794.8	1,727.0	67.79	26.477		
9,800.0	6,938.8	6,753.0	6,621.3	62.9	20.5	-55.55	-1,229.8	1,510.5	1,889.6	1,820.2	69.36	27.244		
9,900.0	6,938.1	6,753.0	6,621.3	64.6	20.5	-55.55	-1,229.8	1,510.5	1,984.9	1,914.0	70.94	27.982		
10,000.0	6,937.4	6,753.0	6,621.3	66.4	20.5	-55.55	-1,229.8	1,510.5	2,080.6	2,008.1	72.52	28.693		
10,100.0	6,936.7	6,753.0	6,621.3	68.2	20.5	-55.55	-1,229.8	1,510.5	2,176.8	2,102.7	74.10	29.377		
10,200.0	6,936.0	6,753.0	6,621.3	70.0	20.5	-55.55	-1,229.8	1,510.5	2,273.2	2,197.5	75.68	30.035		
10,300.0	6,935.3	6,753.0	6,621.3	71.9	20.5	-55.55	-1,229.8	1,510.5	2,370.0	2,292.7	77.27	30.670		
10,400.0	6,934.6	6,753.0	6,621.3	73.7	20.5	-55.55	-1,229.8	1,510.5	2,467.0	2,388.1	78.87	31.281		
10,500.0	6,933.9	6,753.0	6,621.3	75.5	20.5	-55.55	-1,229.8	1,510.5	2,564.2	2,483.8	80.46	31.870		
10,600.0	6,933.2	6,753.0	6,621.3	77.3	20.5	-55.55	-1,229.8	1,510.5	2,661.7	2,579.6	82.06	32.437		
10,700.0	6,932.5	6,753.0	6,621.3	79.2	20.5	-55.55	-1,229.8	1,510.5	2,759.3	2,675.6	83.65	32.984		
10,800.0	6,931.8	6,753.0	6,621.3	81.0	20.5	-55.55	-1,229.8	1,510.5	2,857.1	2,771.8	85.26	33.512		
10,900.0	6,931.1	6,753.0	6,621.3	82.8	20.5	-55.55	-1,229.8	1,510.5	2,955.0	2,868.2	86.86	34.021		
11,000.0	6,930.5	6,753.0	6,621.3	84.7	20.5	-55.55	-1,229.8	1,510.5	3,053.1	2,964.6	88.46	34.513		
11,100.0	6,929.8	6,753.0	6,621.3	86.5	20.5	-55.55	-1,229.8	1,510.5	3,151.3	3,061.2	90.07	34.988		
11,200.0	6,929.1	6,753.0	6,621.3	88.4	20.5	-55.55	-1,229.8	1,510.5	3,249.6	3,157.9	91.67	35.447		
11,300.0	6,928.4	6,753.0	6,621.3	90.2	20.5	-55.55	-1,229.8	1,510.5	3,348.0	3,254.7	93.28	35.891		
11,400.0	6,927.7	6,753.0	6,621.3	92.1	20.5	-55.55	-1,229.8	1,510.5	3,446.5	3,351.6	94.89	36.320		
11,500.0	6,927.0	6,753.0	6,621.3	94.0	20.5	-55.55	-1,229.8	1,510.5	3,545.1	3,448.6	96.50	36.735		
11,600.0	6,926.3	6,714.6	6,589.3	95.8	20.2	-51.81	-1,230.0	1,489.4	3,643.7	3,549.0	94.69	38.480		
11,700.0	6,925.6	6,712.8	6,587.8	97.7	20.2	-51.64	-1,230.0	1,488.4	3,742.4	3,646.3	96.08	38.952		
11,780.9	6,925.0	6,711.4	6,586.5	99.2	20.2	-51.50	-1,230.0	1,487.6	3,822.3	3,725.1	97.19	39.328		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4883.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Richter 34U-203
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Richter 34U-203
Project:	SEC.27-T7N-R64W	TVD Reference:	WELL @ 4883.0ft (RKB - 13')
Reference Site:	Richter 27T-HZ Pad Sec.27-T7N-R64W	MD Reference:	WELL @ 4883.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Richter 34U-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (9-28-12)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4883.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Richter 34U-203
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.63°

