

PETROLEUM DEVELOPMENT CORP Weld County CO

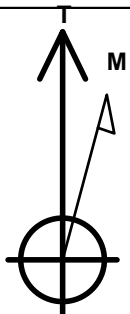
Well Name: **Tarin 32X-304**

Surface Location: Tarin 32X-HZ Pad Sec.32-T4N-R66W
 North American Datum 1983, US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4775.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1339613.42	3197253.81	40.263480	-104.793170	
RKB - 15' WELL @ 4790.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 943'FSL & 355'FEL, Sec.32	1.0	0.0	0.0	Point
BHL 1231'FSL & 2147'FEL, Sec.31	7146.0	248.8	-7088.7	Point



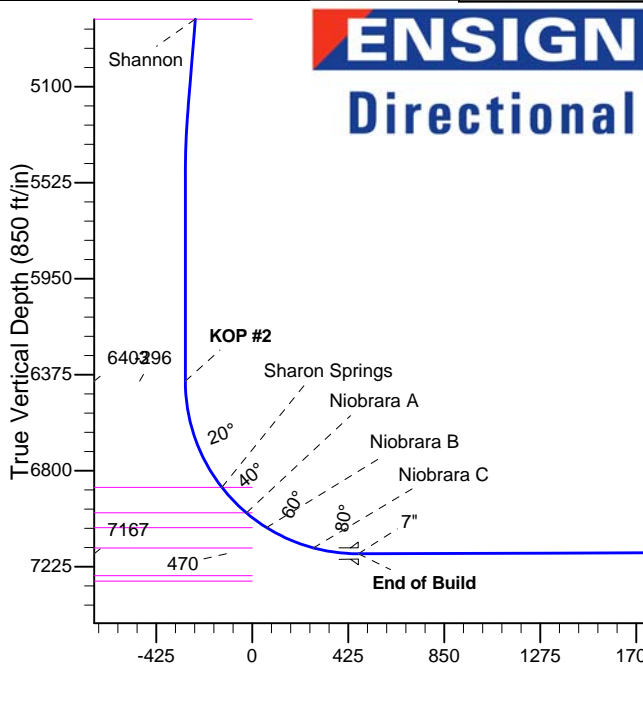
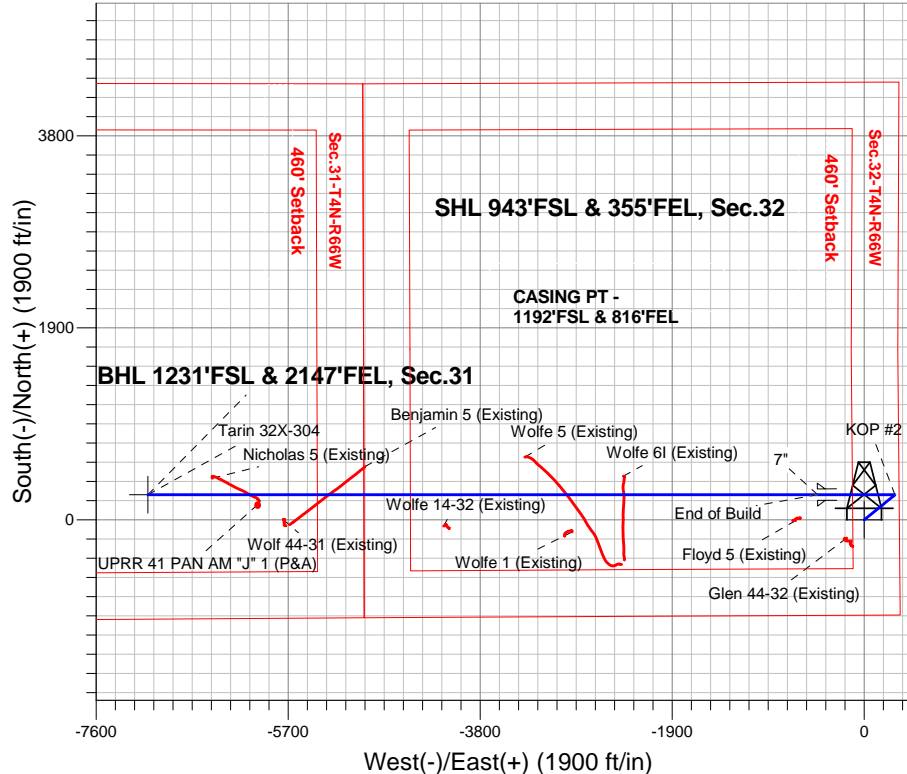
Azimuths to True North
 Magnetic North: 8.39°

Magnetic Field
 Strength: 52687.5srT
 Dip Angle: 68.81°
 Date: 12/18/2014
 Model: IGRF2010

Tarin 32X-HZ Pad Sec.32-T4N-R66W
 Tarin 32X-304
 Plan #3 (12-18-14)
 17:25, December 18 2014

ANNOTATIONS

TVD	MD	Annotation
1500.0	1500.0	KOP #1
6402.9	6423.2	KOP #2
7166.8	7625.6	End of Build



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	1804.0	6.08	50.79	1803.4	10.2	12.5	2.00	50.79	-12.1	
4	5216.4	6.08	50.79	5196.6	238.6	292.5	0.00	0.00	-284.0	
5	5520.3	0.00	0.00	5500.0	248.8	305.0	2.00	180.00	-296.1	
6	6423.2	0.00	0.00	6402.9	248.8	305.0	0.00	0.00	-296.1	
7	7625.6	90.18	270.00	7166.8	248.8	-461.3	7.50	270.00	469.8	
8	14253.0	90.18	270.00	7146.0	248.8	-7088.7	0.00	0.00	7093.1	BHL 1231'FSL & 2147'FEL, Sec.31

BHL 1231'FSL & 2147'FEL, Sec.31



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T4N-R66W

Tarin 32X-HZ Pad Sec.32-T4N-R66W

Tarin 32X-304

Wellbore #1

Plan: Plan #3 (12-18-14)

Standard Planning Report

18 December, 2014



Database:	Landmark	Local Co-ordinate Reference:	Well Tarin 32X-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32X-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

Project	SEC.32-T4N-R66W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Tarin 32X-HZ Pad Sec.32-T4N-R66W				
Site Position:		Northing:	1,339,733.63 ft	Latitude:	40.263810
From:	Lat/Long	Easting:	3,197,250.06 ft	Longitude:	-104.793180
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.46 °

Well	Tarin 32X-304					
Well Position	+N/-S	-120.2 ft	Northing:	1,339,613.42 ft	Latitude:	40.263480
	+E/-W	2.8 ft	Easting:	3,197,253.81 ft	Longitude:	-104.793170
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,775.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/18/2014	8.40	66.81	52,688

Design	Plan #3 (12-18-14)			
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	272.01

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,804.0	6.08	50.79	1,803.4	10.2	12.5	2.00	2.00	0.00	50.79	
5,216.4	6.08	50.79	5,196.6	238.6	292.5	0.00	0.00	0.00	0.00	
5,520.3	0.00	0.00	5,500.0	248.8	305.0	2.00	-2.00	0.00	180.00	
6,423.2	0.00	0.00	6,402.9	248.8	305.0	0.00	0.00	0.00	0.00	
7,625.6	90.18	270.00	7,166.8	248.8	-461.3	7.50	7.50	0.00	270.00	
14,253.0	90.18	270.00	7,146.0	248.8	-7,088.7	0.00	0.00	0.00	0.00	BHL 1231'FSL & 21

Database:	Landmark	Local Co-ordinate Reference:	Well Tarin 32X-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32X-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 943'FSL & 355'FEL, Sec.32									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1									
1,600.0	2.00	50.79	1,600.0	1.1	1.4	-1.3	2.00	2.00	0.00
1,700.0	4.00	50.79	1,699.8	4.4	5.4	-5.2	2.00	2.00	0.00
1,800.0	6.00	50.79	1,799.5	9.9	12.2	-11.8	2.00	2.00	0.00
1,804.0	6.08	50.79	1,803.4	10.2	12.5	-12.1	2.00	2.00	0.00
1,900.0	6.08	50.79	1,898.9	16.6	20.4	-19.8	0.00	0.00	0.00
2,000.0	6.08	50.79	1,998.3	23.3	28.6	-27.7	0.00	0.00	0.00
2,100.0	6.08	50.79	2,097.8	30.0	36.8	-35.7	0.00	0.00	0.00
2,200.0	6.08	50.79	2,197.2	36.7	45.0	-43.7	0.00	0.00	0.00
2,300.0	6.08	50.79	2,296.6	43.4	53.2	-51.6	0.00	0.00	0.00
2,400.0	6.08	50.79	2,396.1	50.1	61.4	-59.6	0.00	0.00	0.00
2,500.0	6.08	50.79	2,495.5	56.8	69.6	-67.6	0.00	0.00	0.00
2,600.0	6.08	50.79	2,595.0	63.5	77.8	-75.5	0.00	0.00	0.00
2,700.0	6.08	50.79	2,694.4	70.2	86.0	-83.5	0.00	0.00	0.00
2,800.0	6.08	50.79	2,793.8	76.9	94.2	-91.5	0.00	0.00	0.00
2,900.0	6.08	50.79	2,893.3	83.6	102.4	-99.4	0.00	0.00	0.00
3,000.0	6.08	50.79	2,992.7	90.2	110.6	-107.4	0.00	0.00	0.00
3,100.0	6.08	50.79	3,092.1	96.9	118.8	-115.4	0.00	0.00	0.00
3,200.0	6.08	50.79	3,191.6	103.6	127.0	-123.3	0.00	0.00	0.00
3,300.0	6.08	50.79	3,291.0	110.3	135.3	-131.3	0.00	0.00	0.00
3,400.0	6.08	50.79	3,390.5	117.0	143.5	-139.3	0.00	0.00	0.00
3,500.0	6.08	50.79	3,489.9	123.7	151.7	-147.2	0.00	0.00	0.00
3,600.0	6.08	50.79	3,589.3	130.4	159.9	-155.2	0.00	0.00	0.00
3,700.0	6.08	50.79	3,688.8	137.1	168.1	-163.2	0.00	0.00	0.00
3,721.4	6.08	50.79	3,710.0	138.5	169.8	-164.9	0.00	0.00	0.00
Parkman									
3,800.0	6.08	50.79	3,788.2	143.8	176.3	-171.1	0.00	0.00	0.00
3,900.0	6.08	50.79	3,887.6	150.5	184.5	-179.1	0.00	0.00	0.00
4,000.0	6.08	50.79	3,987.1	157.2	192.7	-187.1	0.00	0.00	0.00
4,100.0	6.08	50.79	4,086.5	163.9	200.9	-195.0	0.00	0.00	0.00
4,200.0	6.08	50.79	4,186.0	170.6	209.1	-203.0	0.00	0.00	0.00
4,300.0	6.08	50.79	4,285.4	177.3	217.3	-211.0	0.00	0.00	0.00
4,400.0	6.08	50.79	4,384.8	184.0	225.5	-218.9	0.00	0.00	0.00
4,405.2	6.08	50.79	4,390.0	184.3	225.9	-219.3	0.00	0.00	0.00
Sussex									

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Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32X-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

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)
4,500.0	6.08	50.79	4,484.3	190.7	233.7	-226.9	0.00	0.00	0.00
4,600.0	6.08	50.79	4,583.7	197.4	241.9	-234.9	0.00	0.00	0.00
4,700.0	6.08	50.79	4,683.1	204.0	250.1	-242.8	0.00	0.00	0.00
4,800.0	6.08	50.79	4,782.6	210.7	258.3	-250.8	0.00	0.00	0.00
4,817.5	6.08	50.79	4,800.0	211.9	259.8	-252.2	0.00	0.00	0.00
Shannon									
4,900.0	6.08	50.79	4,882.0	217.4	266.6	-258.8	0.00	0.00	0.00
5,000.0	6.08	50.79	4,981.5	224.1	274.8	-266.7	0.00	0.00	0.00
5,100.0	6.08	50.79	5,080.9	230.8	283.0	-274.7	0.00	0.00	0.00
5,200.0	6.08	50.79	5,180.3	237.5	291.2	-282.7	0.00	0.00	0.00
5,216.4	6.08	50.79	5,196.6	238.6	292.5	-284.0	0.00	0.00	0.00
5,300.0	4.41	50.79	5,279.9	243.4	298.4	-289.7	2.00	-2.00	0.00
5,400.0	2.41	50.79	5,379.7	247.2	303.0	-294.2	2.00	-2.00	0.00
5,500.0	0.41	50.79	5,479.7	248.8	304.9	-296.0	2.00	-2.00	0.00
5,520.3	0.00	0.00	5,500.0	248.8	305.0	-296.1	2.00	-2.00	0.00
5,600.0	0.00	0.00	5,579.7	248.8	305.0	-296.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,679.7	248.8	305.0	-296.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,779.7	248.8	305.0	-296.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,879.7	248.8	305.0	-296.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,979.7	248.8	305.0	-296.1	0.00	0.00	0.00
6,100.0	0.00	0.00	6,079.7	248.8	305.0	-296.1	0.00	0.00	0.00
6,200.0	0.00	0.00	6,179.7	248.8	305.0	-296.1	0.00	0.00	0.00
6,300.0	0.00	0.00	6,279.7	248.8	305.0	-296.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,379.7	248.8	305.0	-296.1	0.00	0.00	0.00
6,423.2	0.00	0.00	6,402.9	248.8	305.0	-296.1	0.00	0.00	0.00
KOP #2									
6,500.0	5.76	270.00	6,479.5	248.8	301.1	-292.2	7.50	7.50	0.00
6,600.0	13.26	270.00	6,578.1	248.8	284.6	-275.7	7.50	7.50	0.00
6,700.0	20.76	270.00	6,673.7	248.8	255.4	-246.5	7.50	7.50	0.00
6,800.0	28.26	270.00	6,764.6	248.8	213.9	-205.1	7.50	7.50	0.00
6,900.0	35.76	270.00	6,849.3	248.8	161.0	-152.2	7.50	7.50	0.00
6,929.6	37.98	270.00	6,873.0	248.8	143.2	-134.4	7.50	7.50	0.00
Sharon Springs									
7,000.0	43.26	270.00	6,926.4	248.8	97.4	-88.6	7.50	7.50	0.00
7,086.6	49.76	270.00	6,986.0	248.8	34.6	-25.8	7.50	7.50	0.00
Niobrara A									
7,100.0	50.76	270.00	6,994.6	248.8	24.3	-15.6	7.50	7.50	0.00
7,197.0	58.04	270.00	7,051.0	248.8	-54.5	63.2	7.50	7.50	0.00
Niobrara B									
7,200.0	58.26	270.00	7,052.6	248.8	-57.1	65.7	7.50	7.50	0.00
7,300.0	65.76	270.00	7,099.5	248.8	-145.3	153.9	7.50	7.50	0.00
7,400.0	73.26	270.00	7,134.4	248.8	-238.9	247.5	7.50	7.50	0.00
7,424.0	75.06	270.00	7,141.0	248.8	-262.0	270.6	7.50	7.50	0.00
Niobrara C									
7,500.0	80.76	270.00	7,156.9	248.8	-336.3	344.8	7.50	7.50	0.00
7,600.0	88.26	270.00	7,166.5	248.8	-435.7	444.2	7.50	7.50	0.00
7,625.6	90.18	270.00	7,166.8	248.8	-461.3	469.8	7.50	7.50	0.00
End of Build - 7"									
7,700.0	90.18	270.00	7,166.6	248.8	-535.7	544.1	0.00	0.00	0.00
7,800.0	90.18	270.00	7,166.3	248.8	-635.7	644.1	0.00	0.00	0.00
7,900.0	90.18	270.00	7,166.0	248.8	-735.7	744.0	0.00	0.00	0.00
8,000.0	90.18	270.00	7,165.6	248.8	-835.7	843.9	0.00	0.00	0.00

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Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32X-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

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)
8,100.0	90.18	270.00	7,165.3	248.8	-935.7	943.9	0.00	0.00	0.00
8,200.0	90.18	270.00	7,165.0	248.8	-1,035.7	1,043.8	0.00	0.00	0.00
8,300.0	90.18	270.00	7,164.7	248.8	-1,135.7	1,143.8	0.00	0.00	0.00
8,400.0	90.18	270.00	7,164.4	248.8	-1,235.7	1,243.7	0.00	0.00	0.00
8,500.0	90.18	270.00	7,164.1	248.8	-1,335.7	1,343.6	0.00	0.00	0.00
8,600.0	90.18	270.00	7,163.8	248.8	-1,435.7	1,443.6	0.00	0.00	0.00
8,700.0	90.18	270.00	7,163.4	248.8	-1,535.7	1,543.5	0.00	0.00	0.00
8,800.0	90.18	270.00	7,163.1	248.8	-1,635.7	1,643.4	0.00	0.00	0.00
8,900.0	90.18	270.00	7,162.8	248.8	-1,735.7	1,743.4	0.00	0.00	0.00
9,000.0	90.18	270.00	7,162.5	248.8	-1,835.7	1,843.3	0.00	0.00	0.00
9,100.0	90.18	270.00	7,162.2	248.8	-1,935.7	1,943.3	0.00	0.00	0.00
9,200.0	90.18	270.00	7,161.9	248.8	-2,035.7	2,043.2	0.00	0.00	0.00
9,300.0	90.18	270.00	7,161.6	248.8	-2,135.7	2,143.1	0.00	0.00	0.00
9,400.0	90.18	270.00	7,161.2	248.8	-2,235.7	2,243.1	0.00	0.00	0.00
9,500.0	90.18	270.00	7,160.9	248.8	-2,335.7	2,343.0	0.00	0.00	0.00
9,600.0	90.18	270.00	7,160.6	248.8	-2,435.7	2,443.0	0.00	0.00	0.00
9,700.0	90.18	270.00	7,160.3	248.8	-2,535.7	2,542.9	0.00	0.00	0.00
9,800.0	90.18	270.00	7,160.0	248.8	-2,635.7	2,642.8	0.00	0.00	0.00
9,900.0	90.18	270.00	7,159.7	248.8	-2,735.7	2,742.8	0.00	0.00	0.00
10,000.0	90.18	270.00	7,159.4	248.8	-2,835.7	2,842.7	0.00	0.00	0.00
10,100.0	90.18	270.00	7,159.0	248.8	-2,935.7	2,942.6	0.00	0.00	0.00
10,200.0	90.18	270.00	7,158.7	248.8	-3,035.7	3,042.6	0.00	0.00	0.00
10,300.0	90.18	270.00	7,158.4	248.8	-3,135.7	3,142.5	0.00	0.00	0.00
10,400.0	90.18	270.00	7,158.1	248.8	-3,235.7	3,242.5	0.00	0.00	0.00
10,500.0	90.18	270.00	7,157.8	248.8	-3,335.7	3,342.4	0.00	0.00	0.00
10,600.0	90.18	270.00	7,157.5	248.8	-3,435.7	3,442.3	0.00	0.00	0.00
10,700.0	90.18	270.00	7,157.2	248.8	-3,535.7	3,542.3	0.00	0.00	0.00
10,800.0	90.18	270.00	7,156.8	248.8	-3,635.7	3,642.2	0.00	0.00	0.00
10,900.0	90.18	270.00	7,156.5	248.8	-3,735.7	3,742.1	0.00	0.00	0.00
11,000.0	90.18	270.00	7,156.2	248.8	-3,835.7	3,842.1	0.00	0.00	0.00
11,100.0	90.18	270.00	7,155.9	248.8	-3,935.7	3,942.0	0.00	0.00	0.00
11,200.0	90.18	270.00	7,155.6	248.8	-4,035.7	4,042.0	0.00	0.00	0.00
11,300.0	90.18	270.00	7,155.3	248.8	-4,135.7	4,141.9	0.00	0.00	0.00
11,400.0	90.18	270.00	7,155.0	248.8	-4,235.7	4,241.8	0.00	0.00	0.00
11,500.0	90.18	270.00	7,154.6	248.8	-4,335.7	4,341.8	0.00	0.00	0.00
11,600.0	90.18	270.00	7,154.3	248.8	-4,435.7	4,441.7	0.00	0.00	0.00
11,700.0	90.18	270.00	7,154.0	248.8	-4,535.7	4,541.6	0.00	0.00	0.00
11,800.0	90.18	270.00	7,153.7	248.8	-4,635.7	4,641.6	0.00	0.00	0.00
11,900.0	90.18	270.00	7,153.4	248.8	-4,735.7	4,741.5	0.00	0.00	0.00
12,000.0	90.18	270.00	7,153.1	248.8	-4,835.7	4,841.5	0.00	0.00	0.00
12,100.0	90.18	270.00	7,152.8	248.8	-4,935.7	4,941.4	0.00	0.00	0.00
12,200.0	90.18	270.00	7,152.4	248.8	-5,035.7	5,041.3	0.00	0.00	0.00
12,300.0	90.18	270.00	7,152.1	248.8	-5,135.7	5,141.3	0.00	0.00	0.00
12,400.0	90.18	270.00	7,151.8	248.8	-5,235.7	5,241.2	0.00	0.00	0.00
12,500.0	90.18	270.00	7,151.5	248.8	-5,335.7	5,341.2	0.00	0.00	0.00
12,600.0	90.18	270.00	7,151.2	248.8	-5,435.7	5,441.1	0.00	0.00	0.00
12,700.0	90.18	270.00	7,150.9	248.8	-5,535.7	5,541.0	0.00	0.00	0.00
12,800.0	90.18	270.00	7,150.6	248.8	-5,635.7	5,641.0	0.00	0.00	0.00
12,900.0	90.18	270.00	7,150.3	248.8	-5,735.7	5,740.9	0.00	0.00	0.00
13,000.0	90.18	270.00	7,149.9	248.8	-5,835.7	5,840.8	0.00	0.00	0.00
13,100.0	90.18	270.00	7,149.6	248.8	-5,935.7	5,940.8	0.00	0.00	0.00
13,200.0	90.18	270.00	7,149.3	248.8	-6,035.7	6,040.7	0.00	0.00	0.00
13,300.0	90.18	270.00	7,149.0	248.8	-6,135.7	6,140.7	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Tarin 32X-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32X-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

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)	
13,400.0	90.18	270.00	7,148.7	248.8	-6,235.7	6,240.6	0.00	0.00	0.00	
13,500.0	90.18	270.00	7,148.4	248.8	-6,335.7	6,340.5	0.00	0.00	0.00	
13,600.0	90.18	270.00	7,148.1	248.8	-6,435.7	6,440.5	0.00	0.00	0.00	
13,700.0	90.18	270.00	7,147.7	248.8	-6,535.7	6,540.4	0.00	0.00	0.00	
13,800.0	90.18	270.00	7,147.4	248.8	-6,635.7	6,640.3	0.00	0.00	0.00	
13,900.0	90.18	270.00	7,147.1	248.8	-6,735.7	6,740.3	0.00	0.00	0.00	
14,000.0	90.18	270.00	7,146.8	248.8	-6,835.7	6,840.2	0.00	0.00	0.00	
14,100.0	90.18	270.00	7,146.5	248.8	-6,935.7	6,940.2	0.00	0.00	0.00	
14,200.0	90.18	270.00	7,146.2	248.8	-7,035.7	7,040.1	0.00	0.00	0.00	
14,253.0	90.18	270.00	7,146.0	248.8	-7,088.7	7,093.1	0.00	0.00	0.00	
BHL 1231'FSL & 2147'FEL, Sec.31										

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
SHL 943'FSL & 355'F - hit/miss target - Shape - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,339,613.44	3,197,253.81	40.263480	-104.793170	
BHL 1231'FSL & 2147 - plan hits target center - Point	0.00	0.00	7,146.0	248.8	-7,088.7	1,339,805.66	3,190,163.67	40.264160	-104.818570	

Casing Points						
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")		
7,625.6	7,166.8	7"	7	7-1/2		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,721.4	3,710.0	Parkman		0.00		
4,405.2	4,390.0	Sussex		0.00		
4,817.5	4,800.0	Shannon		0.00		
6,929.6	6,873.0	Sharon Springs		0.00		
7,086.6	6,986.0	Niobrara A		0.00		
7,197.0	7,051.0	Niobrara B		0.00		
7,424.0	7,141.0	Niobrara C		0.00		
	7,264.0	Ft Hays		0.00		
	7,288.0	Codell		0.00		

Database:	Landmark	Local Co-ordinate Reference:	Well Tarin 32X-304
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Project:	SEC.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	North Reference:	True
Well:	Tarin 32X-304	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (12-18-14)		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,500.0	1,500.0	0.0	0.0	KOP #1
6,423.2	6,402.9	248.8	305.0	KOP #2
7,625.6	7,166.8	248.8	-461.3	End of Build



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T4N-R66W

Tarin 32X-HZ Pad Sec.32-T4N-R66W

Tarin 32X-304

Wellbore #1

Plan #3 (12-18-14)

Anticollision Report

18 December, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #3 (12-18-14)		
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	12/18/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,253.0	Plan #3 (12-18-14) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Sec.32-T4N-R66W						
Benjamin 5 (Existing) - Wellbore #1 - Wellbore #1	12,103.3	7,228.3	278.9	117.6	1.729	CC, ES, SF
Floyd 5 (Existing) - Wellbore #1 - Wellbore #1	7,845.1	7,149.0	255.1	125.3	1.965	CC, ES, SF
Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1	1,516.5	1,505.2	281.2	274.3	40.371	CC, ES
Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1	7,400.0	7,126.0	433.9	400.6	13.031	SF
Nicholas 5 (Existing) - Wellbore #1 - Wellbore #1	13,618.0	7,187.2	172.6	-28.3	0.859	Level 1, CC, ES, SF
UPRR 41 PAN AM "J" 1 (P&A) - Wellbore #1 - Wellbore	13,164.6	7,135.4	98.7	-216.1	0.313	Level 1, CC, ES, SF
Wolf 44-31 (Existing) - Wellbore #1 - Wellbore #1	12,910.3	7,136.0	245.7	66.4	1.370	Level 3, CC, ES, SF
Wolfe 1 (Existing) - Wellbore #1 - Wellbore #1	10,057.4	7,138.5	365.0	265.4	3.665	CC, ES
Wolfe 1 (Existing) - Wellbore #1 - Wellbore #1	10,100.0	7,138.4	367.4	266.7	3.647	SF
Wolfe 14-32 (Existing) - Wellbore #1 - Wellbore #1	11,320.0	7,135.4	305.7	170.3	2.257	CC, ES, SF
Wolfe 5 (Existing) - Wellbore #1 - Wellbore #1	10,519.3	7,403.2	373.4	255.2	3.158	CC, ES, SF
Wolfe 6I (Existing) - Wellbore #1 - Wellbore #1	9,539.8	7,211.0	184.6	95.6	2.074	CC, ES, SF
Tarin 32X-HZ Pad Sec.32-T4N-R66W						
Tarin 32W-234 - Wellbore #1 - Plan #1 (4-14-14)	200.0	199.0	120.2	119.6	178.928	CC, ES
Tarin 32W-234 - Wellbore #1 - Plan #1 (4-14-14)	5,300.0	5,181.1	994.3	966.5	35.749	SF
Tarin 32W-434 - Wellbore #1 - Plan #1 (12-18-14)	400.0	399.0	91.1	89.5	57.972	CC, ES
Tarin 32W-434 - Wellbore #1 - Plan #1 (12-18-14)	14,253.0	14,446.4	776.3	373.1	1.926	SF
Tarin 32X-204 - Wellbore #1 - Plan #2 (12-18-14)	1,000.0	1,000.0	32.8	28.5	7.678	CC
Tarin 32X-204 - Wellbore #1 - Plan #2 (12-18-14)	14,253.0	14,160.2	105.0	-163.0	0.392	Level 1, ES, SF
Tarin 32X-314 - Wellbore #1 - Plan #1 (4-14-14)	600.0	600.0	61.9	59.5	25.052	CC, ES
Tarin 32X-314 - Wellbore #1 - Plan #1 (4-14-14)	14,253.0	14,298.8	495.5	90.6	1.224	Level 2, SF
Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)	1,200.0	1,200.0	29.1	24.0	5.638	CC, ES
Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)	14,253.0	14,163.3	751.6	349.7	1.870	SF
Tarin 32Y-314 - Wellbore #1 - Plan #3 (12-18-14)	966.3	967.3	58.3	54.2	14.142	CC
Tarin 32Y-314 - Wellbore #1 - Plan #3 (12-18-14)	1,000.0	1,001.0	58.3	54.0	13.642	ES
Tarin 32Y-314 - Wellbore #1 - Plan #3 (12-18-14)	1,200.0	1,197.0	64.7	59.6	12.704	SF
Tarin 32Y-404 - Wellbore #1 - Plan #2 (7-15-14)	466.3	467.3	87.4	85.6	46.661	CC
Tarin 32Y-404 - Wellbore #1 - Plan #2 (7-15-14)	500.0	500.0	87.4	85.4	43.224	ES
Tarin 32Y-404 - Wellbore #1 - Plan #2 (7-15-14)	900.0	887.5	113.3	109.6	30.485	SF

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 464-NS-GYRO-MS Existing Wells Sec.32-T4N-R66W - Benjamin 5 (Existing) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,200.0	7,155.6	7,227.1	7,137.6	117.3	19.5	89.76	527.7	-4,939.0	945.4	809.1	136.22	6.940		
11,300.0	7,155.3	7,227.3	7,137.7	120.1	19.5	89.79	527.7	-4,939.0	850.3	711.3	139.00	6.118		
11,400.0	7,155.0	7,227.4	7,137.8	122.9	19.5	89.81	527.7	-4,939.0	756.6	614.8	141.78	5.336		
11,500.0	7,154.6	7,227.5	7,138.0	125.6	19.5	89.84	527.7	-4,939.0	664.6	520.1	144.56	4.598		
11,600.0	7,154.3	7,227.6	7,138.1	128.4	19.5	89.87	527.7	-4,939.0	575.4	428.1	147.34	3.905		
11,700.0	7,154.0	7,227.8	7,138.2	131.2	19.5	89.89	527.7	-4,939.0	490.3	340.2	150.12	3.266		
11,800.0	7,153.7	7,227.9	7,138.4	134.0	19.5	89.92	527.7	-4,939.0	412.0	259.1	152.91	2.695		
11,900.0	7,153.4	7,228.0	7,138.5	136.8	19.5	89.95	527.7	-4,939.0	345.1	189.4	155.69	2.217		
12,000.0	7,153.1	7,228.2	7,138.6	139.6	19.5	89.97	527.7	-4,939.0	297.4	138.9	158.48	1.877		
12,100.0	7,152.8	7,228.3	7,138.7	142.4	19.5	90.00	527.7	-4,939.0	278.9	117.7	161.26	1.730		
12,103.3	7,152.8	7,228.3	7,138.8	142.4	19.5	90.00	527.7	-4,939.0	278.9	117.6	161.36	1.729	CC, ES, SF	
12,200.0	7,152.4	7,228.4	7,138.9	145.1	19.5	90.02	527.7	-4,939.0	295.2	131.2	164.05	1.800		
12,300.0	7,152.1	7,228.5	7,139.0	147.9	19.5	90.05	527.7	-4,939.0	341.3	174.5	166.84	2.046		
12,400.0	7,151.8	7,228.7	7,139.1	150.7	19.5	90.08	527.7	-4,939.0	407.2	237.6	169.63	2.401		
12,500.0	7,151.5	7,228.8	7,139.3	153.5	19.5	90.10	527.7	-4,939.0	485.0	312.5	172.42	2.813		
12,600.0	7,151.2	7,228.9	7,139.4	156.3	19.5	90.13	527.7	-4,939.0	569.7	394.5	175.21	3.251		
12,700.0	7,150.9	7,229.0	7,139.5	159.1	19.5	90.15	527.7	-4,939.0	658.7	480.7	178.00	3.701		
12,800.0	7,150.6	7,229.2	7,139.6	161.9	19.5	90.18	527.7	-4,939.0	750.5	569.7	180.79	4.151		
12,900.0	7,150.3	7,229.3	7,139.8	164.7	19.5	90.20	527.7	-4,939.0	844.1	660.5	183.58	4.598		
13,000.0	7,149.9	7,229.4	7,139.9	167.5	19.5	90.23	527.7	-4,939.0	939.1	752.7	186.37	5.039		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.0 ft
Existing Wells Sec.32-T4N-R66W - Floyd 5 (Existing) - Wellbore #1 - Wellbore #1														
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	-88.02	21.9	-633.5	634.2					
100.0	100.0	85.3	85.3	0.1	1.7	-88.03	21.8	-633.2	633.6	631.8	1.82	348.186		
200.0	200.0	181.0	181.0	0.3	3.8	-88.06	21.4	-632.8	633.2	629.0	4.13	153.158		
300.0	300.0	284.1	284.1	0.6	5.4	-88.07	21.3	-632.7	633.1	627.1	6.01	105.404		
378.9	378.9	359.9	359.9	0.7	6.5	-88.07	21.3	-632.4	632.8	625.5	7.24	87.387		
400.0	400.0	379.7	379.7	0.8	6.8	-88.08	21.2	-632.5	632.8	625.2	7.56	83.696		
500.0	500.0	481.1	481.1	1.0	9.3	-88.15	20.4	-632.7	633.0	622.7	10.29	61.494		
600.0	600.0	581.3	581.3	1.2	13.0	-88.22	19.7	-632.7	633.0	618.8	14.19	44.596		
619.0	619.0	600.0	600.0	1.3	13.7	-88.23	19.6	-632.6	632.9	618.0	14.96	42.307		
700.0	700.0	678.0	678.0	1.5	16.4	-88.27	19.1	-632.8	633.1	615.3	17.82	35.524		
800.0	800.0	780.1	780.1	1.7	20.0	-88.38	17.9	-633.3	633.5	611.9	21.65	29.267		
900.0	900.0	881.4	881.4	1.9	23.9	-88.49	16.7	-633.3	633.5	607.7	25.82	24.537		
938.9	938.9	919.9	919.9	2.0	25.4	-88.53	16.3	-633.3	633.5	606.1	27.42	23.105		
1,000.0	1,000.0	979.5	979.4	2.1	27.7	-88.59	15.6	-633.4	633.6	603.7	29.86	21.216		
1,100.0	1,100.0	1,080.6	1,080.5	2.4	31.7	-88.69	14.5	-633.7	633.8	599.8	34.02	18.632		
1,200.0	1,200.0	1,181.2	1,181.1	2.6	35.7	-88.77	13.6	-633.7	633.8	595.6	38.24	16.574		
1,214.4	1,214.4	1,195.6	1,195.6	2.6	36.2	-88.77	13.6	-633.7	633.8	595.0	38.85	16.313		
1,300.0	1,300.0	1,278.2	1,278.2	2.8	38.0	-88.80	13.3	-633.8	634.0	593.1	40.84	15.522		
1,400.0	1,400.0	1,376.1	1,376.0	3.0	39.7	-88.82	13.1	-634.5	634.6	591.9	42.69	14.865		
1,500.0	1,500.0	1,477.0	1,476.9	3.3	40.7	-88.85	12.8	-635.3	635.4	591.5	43.92	14.468		
1,600.0	1,600.0	1,576.3	1,576.2	3.5	41.7	-139.72	12.8	-635.9	637.4	592.3	45.12	14.127		
1,700.0	1,699.8	1,672.4	1,672.4	3.7	43.9	-139.99	12.3	-636.9	642.4	594.8	47.52	13.518		
1,800.0	1,799.5	1,770.4	1,770.3	3.9	45.8	-140.40	12.0	-638.3	650.6	601.1	49.51	13.140		
1,900.0	1,898.9	1,868.7	1,868.6	4.2	46.6	-140.93	12.4	-639.9	660.4	609.9	50.51	13.075		
2,000.0	1,998.3	1,965.6	1,965.5	4.4	47.0	-141.41	13.3	-641.7	670.5	619.4	51.10	13.121		
2,100.0	2,097.8	2,062.8	2,062.6	4.6	47.5	-141.86	14.4	-643.9	681.1	629.3	51.82	13.144		
2,200.0	2,197.2	2,156.2	2,156.0	4.9	48.3	-142.25	15.8	-646.5	692.1	639.3	52.83	13.101		
2,300.0	2,296.6	2,253.0	2,252.7	5.2	49.8	-142.65	17.1	-650.0	704.1	649.6	54.55	12.907		
2,400.0	2,396.1	2,352.0	2,351.7	5.4	52.2	-143.11	17.6	-653.4	716.0	658.9	57.12	12.535		
2,500.0	2,495.5	2,449.6	2,449.2	5.7	55.1	-143.57	17.8	-657.0	728.2	668.0	60.22	12.092		
2,600.0	2,595.0	2,552.0	2,551.6	6.0	58.5	-144.09	17.4	-660.7	740.4	676.5	63.88	11.589		
2,700.0	2,694.4	2,650.5	2,650.0	6.2	62.1	-144.59	16.9	-663.8	752.1	684.5	67.65	11.118		
2,800.0	2,793.8	2,747.2	2,746.7	6.5	65.8	-145.09	16.0	-667.3	764.4	693.0	71.48	10.694		
2,900.0	2,893.3	2,851.4	2,850.8	6.8	69.8	-145.62	14.8	-670.8	776.6	700.9	75.72	10.256		
3,000.0	2,992.7	2,955.5	2,954.8	7.1	73.9	-146.15	13.6	-673.4	788.0	708.0	80.02	9.848		
3,100.0	3,092.1	3,054.9	3,054.2	7.3	77.8	-146.69	11.7	-675.5	799.2	715.0	84.15	9.497		
3,200.0	3,191.6	3,161.5	3,160.7	7.6	82.0	-147.24	10.0	-677.6	810.2	721.7	88.50	9.155		
3,300.0	3,291.0	3,267.6	3,266.9	7.9	85.6	-147.76	8.6	-678.4	820.0	727.7	92.37	8.878		
3,400.0	3,390.5	3,370.7	3,370.0	8.2	88.4	-148.28	6.8	-678.6	829.5	734.1	95.32	8.702		
3,500.0	3,489.9	3,461.0	3,460.2	8.5	90.9	-148.69	5.8	-678.9	839.0	741.0	98.04	8.557		
3,600.0	3,589.3	3,554.8	3,554.0	8.7	94.2	-149.08	4.9	-680.6	849.9	748.4	101.55	8.370		
3,700.0	3,688.8	3,652.8	3,652.0	9.0	98.0	-149.52	3.5	-682.2	860.9	755.3	105.59	8.154		
3,800.0	3,788.2	3,749.5	3,748.6	9.3	101.8	-149.91	2.4	-684.3	872.3	762.7	109.60	7.959		
3,900.0	3,887.6	3,851.0	3,850.1	9.6	105.8	-150.36	0.7	-686.4	883.9	770.0	113.83	7.764		
4,000.0	3,987.1	3,950.4	3,949.5	9.9	109.8	-150.77	-0.9	-688.1	895.0	777.0	118.00	7.585		
4,100.0	4,086.5	4,052.4	4,051.4	10.2	113.8	-151.21	-2.9	-689.9	906.4	784.3	122.15	7.420		
4,200.0	4,186.0	4,159.9	4,158.9	10.5	117.7	-151.66	-4.8	-690.9	917.0	790.6	126.34	7.258		
4,300.0	4,285.4	4,256.3	4,255.3	10.8	121.4	-152.01	-5.7	-691.6	927.2	797.0	130.18	7.122		
4,400.0	4,384.8	4,355.9	4,354.9	11.0	125.3	-152.36	-6.8	-692.8	938.0	803.7	134.31	6.983		
4,500.0	4,484.3	4,454.1	4,453.1	11.3	129.2	-152.68	-7.4	-693.7	948.4	809.9	138.45	6.850		
4,600.0	4,583.7	4,551.3	4,550.3	11.6	133.0	-153.00	-8.2	-695.0	959.4	816.9	142.44	6.735		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 100-UNKNOWN													Offset Well Error:	0.0 ft
Existing Wells Sec.32-T4N-R66W - Floyd 5 (Existing) - Wellbore #1 - Wellbore #1														
Reference				Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,700.0	4,683.1	4,644.7	4,643.7	11.9	136.3	-153.27	-8.5	-696.5	970.4	824.4	145.95	6.649		
4,800.0	4,782.6	4,735.9	4,734.9	12.2	139.1	-153.47	-8.3	-699.1	982.6	833.6	149.00	6.595		
4,900.0	4,882.0	4,836.4	4,835.2	12.5	142.1	-153.70	-8.1	-702.0	994.8	842.6	152.19	6.537		
6,700.0	6,673.7	6,670.7	6,669.3	16.0	114.4	-16.08	-4.3	-689.3	978.1	855.2	122.94	7.956		
6,800.0	6,764.6	6,759.8	6,758.4	16.0	112.3	-17.85	-5.0	-687.8	936.9	821.2	115.69	8.098		
6,900.0	6,849.3	6,844.3	6,842.8	16.0	110.6	-20.49	-5.5	-686.5	884.9	776.9	107.91	8.200		
7,000.0	6,926.4	6,921.9	6,920.4	16.1	108.9	-24.44	-6.1	-685.0	823.0	722.6	100.46	8.192		
7,100.0	6,994.6	6,991.3	6,989.8	16.3	107.2	-30.29	-6.4	-683.7	752.7	657.5	95.20	7.907		
7,200.0	7,052.6	7,046.8	7,045.2	16.9	105.5	-38.64	-6.4	-682.6	675.7	580.8	94.89	7.121		
7,300.0	7,099.5	7,091.0	7,089.5	17.8	104.1	-50.27	-6.4	-681.8	594.2	492.4	101.79	5.837		
7,400.0	7,134.4	7,124.4	7,122.9	19.1	103.1	-64.76	-6.4	-681.3	510.7	397.7	113.08	4.516		
7,500.0	7,156.9	7,145.5	7,143.9	20.7	102.4	-79.04	-6.4	-680.9	428.9	307.4	121.45	3.531		
7,600.0	7,166.5	7,153.4	7,151.9	22.5	102.2	-89.32	-6.3	-680.8	353.8	229.2	124.61	2.839		
7,700.0	7,166.6	7,151.9	7,150.3	24.5	102.2	-90.72	-6.3	-680.8	293.5	166.9	126.57	2.319		
7,800.0	7,166.3	7,149.9	7,148.3	26.6	102.3	-90.27	-6.3	-680.8	259.1	130.3	128.77	2.012		
7,845.1	7,166.1	7,149.0	7,147.4	27.6	102.3	-90.07	-6.3	-680.9	255.1	125.3	129.82	1.965 CC, ES, SF		
7,900.0	7,166.0	7,147.9	7,146.3	28.9	102.3	-89.82	-6.3	-680.9	261.0	129.9	131.09	1.991		
8,000.0	7,165.6	7,145.9	7,144.3	31.2	102.4	-89.37	-6.4	-680.9	298.5	165.0	133.50	2.236		
8,100.0	7,165.3	7,143.8	7,142.3	33.6	102.5	-88.92	-6.4	-680.9	360.6	224.6	135.97	2.652		
8,200.0	7,165.0	7,141.8	7,140.3	36.0	102.5	-88.47	-6.4	-681.0	437.0	298.5	138.49	3.156		
8,300.0	7,164.7	7,139.8	7,138.3	38.5	102.6	-88.02	-6.4	-681.0	521.5	380.4	141.05	3.697		
8,400.0	7,164.4	7,137.8	7,136.3	41.1	102.7	-87.57	-6.4	-681.0	610.6	467.0	143.63	4.251		
8,500.0	7,164.1	7,135.8	7,134.3	43.7	102.7	-87.12	-6.4	-681.1	702.7	556.5	146.24	4.805		
8,600.0	7,163.8	7,133.8	7,132.3	46.3	102.8	-86.67	-6.4	-681.1	796.7	647.8	148.87	5.352		
8,700.0	7,163.4	7,131.8	7,130.3	48.9	102.8	-86.22	-6.4	-681.1	892.0	740.5	151.50	5.888		
8,800.0	7,163.1	7,129.8	7,128.3	51.5	102.9	-85.78	-6.4	-681.2	988.2	834.0	154.15	6.411		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.32-T4N-R66W - Glen 44-32 (Existing) - 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	-156.95	-262.3	-111.6	285.4					
100.0	100.0	85.8	85.8	0.1	0.1	-156.86	-262.3	-112.1	285.3	285.0	0.23	1,259.904		
200.0	200.0	184.7	184.7	0.3	0.4	-156.62	-262.4	-113.4	285.9	285.2	0.69	412.022		
300.0	300.0	287.5	287.5	0.6	0.6	-156.39	-262.3	-114.7	286.3	285.1	1.17	243.759		
400.0	400.0	388.0	388.0	0.8	0.9	-156.13	-261.5	-115.7	286.0	284.3	1.65	173.713		
451.0	451.0	438.0	438.0	0.9	1.0	-155.98	-261.1	-116.3	285.8	284.0	1.89	151.434		
500.0	500.0	485.8	485.8	1.0	1.1	-155.87	-261.0	-116.9	286.0	283.8	2.12	134.864		
600.0	600.0	587.4	587.4	1.2	1.4	-155.59	-260.6	-118.3	286.2	283.6	2.61	109.760		
700.0	700.0	689.9	689.9	1.5	1.6	-155.31	-259.5	-119.3	285.6	282.6	3.06	93.229		
800.0	800.0	787.7	787.6	1.7	1.8	-155.15	-258.6	-119.8	285.0	281.4	3.51	81.139		
900.0	900.0	888.9	888.8	1.9	2.1	-154.88	-257.7	-120.8	284.6	280.6	4.00	71.229		
1,000.0	1,000.0	988.0	987.9	2.1	2.3	-154.61	-256.7	-121.8	284.1	279.6	4.48	63.469		
1,100.0	1,100.0	1,088.9	1,088.8	2.4	2.6	-154.46	-255.9	-122.3	283.7	278.7	4.95	57.275		
1,200.0	1,200.0	1,188.5	1,188.4	2.6	2.8	-154.28	-255.0	-122.9	283.1	277.6	5.43	52.167		
1,300.0	1,300.0	1,288.2	1,288.1	2.8	3.1	-154.05	-254.1	-123.7	282.6	276.7	5.91	47.819		
1,400.0	1,400.0	1,389.5	1,389.4	3.0	3.4	-153.75	-253.0	-124.7	282.0	275.6	6.40	44.068		
1,500.0	1,500.0	1,488.7	1,488.6	3.3	3.6	-153.38	-251.5	-126.0	281.3	274.4	6.89	40.856		
1,516.5	1,516.5	1,505.2	1,505.0	3.3	3.7	155.88	-251.3	-126.2	281.2	274.3	6.97	40.371 CC, ES		
1,600.0	1,600.0	1,588.7	1,588.6	3.5	3.9	156.29	-250.2	-127.3	282.3	275.0	7.37	38.320		
1,700.0	1,699.8	1,687.8	1,687.6	3.7	4.2	157.03	-249.0	-128.6	286.7	278.9	7.84	36.585		
1,800.0	1,799.5	1,787.2	1,787.0	3.9	4.4	158.03	-247.9	-130.3	294.6	286.3	8.30	35.482		
1,900.0	1,898.9	1,887.5	1,887.3	4.2	4.7	159.18	-246.6	-132.0	304.1	295.3	8.79	34.609		
2,000.0	1,998.3	1,986.6	1,986.4	4.4	4.9	160.30	-245.0	-133.8	313.6	304.3	9.27	33.821		
2,100.0	2,097.8	2,088.0	2,087.8	4.6	5.2	161.42	-243.1	-135.8	323.1	313.3	9.76	33.083		
2,200.0	2,197.2	2,189.2	2,188.9	4.9	5.5	162.43	-240.7	-137.2	332.0	321.7	10.25	32.398		
2,300.0	2,296.6	2,293.6	2,293.3	5.2	5.7	163.25	-238.1	-137.3	340.0	329.3	10.70	31.783		
2,400.0	2,396.1	2,393.0	2,392.6	5.4	5.9	164.03	-234.8	-137.1	347.3	336.2	11.13	31.196		
2,500.0	2,495.5	2,495.4	2,494.9	5.7	6.1	164.85	-231.0	-137.0	354.5	342.9	11.58	30.603		
2,600.0	2,595.0	2,593.6	2,593.1	6.0	6.3	165.52	-227.5	-136.3	361.4	349.4	12.01	30.082		
2,700.0	2,694.4	2,691.9	2,691.3	6.2	6.5	166.15	-224.3	-135.8	368.8	356.4	12.45	29.615		
2,800.0	2,793.8	2,792.5	2,791.9	6.5	6.8	166.80	-221.1	-135.4	376.3	363.4	12.91	29.160		
2,900.0	2,893.3	2,892.0	2,891.3	6.8	7.0	167.39	-217.8	-134.9	383.8	370.4	13.35	28.745		
3,000.0	2,992.7	2,993.8	2,993.0	7.1	7.2	167.88	-214.7	-133.7	391.0	377.2	13.79	28.361		
3,100.0	3,092.1	3,094.0	3,093.2	7.3	7.4	168.24	-211.8	-131.7	397.9	383.7	14.19	28.035		
3,200.0	3,191.6	3,190.0	3,189.1	7.6	7.5	168.40	-210.1	-129.1	405.2	390.6	14.55	27.852		
3,300.0	3,291.0	3,285.1	3,284.2	7.9	7.6	168.56	-209.2	-127.2	413.5	398.6	14.91	27.743		
3,400.0	3,390.5	3,379.6	3,378.7	8.2	7.8	168.84	-208.5	-126.7	423.0	407.7	15.32	27.607		
3,500.0	3,489.9	3,474.0	3,473.1	8.5	8.0	169.24	-208.0	-127.7	433.7	417.9	15.77	27.501		
3,600.0	3,589.3	3,567.4	3,566.4	8.7	8.2	169.75	-207.7	-130.2	445.6	429.4	16.20	27.508		
3,700.0	3,688.8	3,663.6	3,662.6	9.0	8.4	170.31	-208.0	-133.9	458.7	442.1	16.62	27.604		
3,800.0	3,788.2	3,760.3	3,759.2	9.3	8.6	170.87	-208.3	-138.0	472.2	455.2	17.04	27.717		
3,900.0	3,887.6	3,856.4	3,855.2	9.6	8.8	171.53	-208.4	-143.2	486.4	468.9	17.46	27.853		
4,000.0	3,987.1	3,954.7	3,953.3	9.9	9.0	172.17	-208.6	-149.0	501.0	483.1	17.89	28.002		
4,100.0	4,086.5	4,053.0	4,051.4	10.2	9.2	172.71	-209.3	-154.2	515.6	497.3	18.32	28.143		
4,200.0	4,186.0	4,152.8	4,151.1	10.5	9.4	173.34	-209.4	-160.4	530.4	511.7	18.76	28.270		
4,300.0	4,285.4	4,253.7	4,251.8	10.8	9.6	173.96	-208.9	-166.4	544.8	525.6	19.22	28.346		
4,400.0	4,384.8	4,355.0	4,352.9	11.0	9.8	174.56	-208.3	-172.3	559.0	539.3	19.68	28.398		
4,500.0	4,484.3	4,457.9	4,455.7	11.3	10.1	175.14	-207.1	-177.8	572.6	552.4	20.16	28.400		
4,600.0	4,583.7	4,563.7	4,561.2	11.6	10.4	175.74	-205.0	-183.1	585.4	564.7	20.66	28.339		
4,700.0	4,683.1	4,668.2	4,665.7	11.9	10.6	176.31	-202.1	-187.4	597.0	575.9	21.16	28.217		
4,800.0	4,782.6	4,773.7	4,771.0	12.2	10.9	176.81	-199.0	-190.7	607.9	586.2	21.67	28.058		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.32-T4N-R66W - Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.0	4,882.0	4,874.8	4,872.0	12.5	11.2	177.31	-195.1	-193.6	618.0	595.8	22.16	27.885		
5,000.0	4,981.5	4,974.1	4,971.3	12.8	11.4	177.71	-191.9	-195.8	628.1	605.5	22.65	27.727		
5,100.0	5,080.9	5,073.7	5,070.8	13.1	11.7	177.96	-189.8	-197.0	638.3	615.1	23.14	27.579		
5,200.0	5,180.3	5,180.4	5,177.5	13.4	11.9	178.09	-188.5	-197.0	648.0	624.4	23.60	27.453		
5,300.0	5,279.9	5,276.2	5,273.3	13.6	12.1	178.18	-187.1	-196.3	655.9	631.8	24.04	27.281		
5,400.0	5,379.7	5,380.5	5,377.6	13.8	12.3	178.32	-185.2	-196.4	660.7	636.3	24.46	27.010		
5,500.0	5,479.7	5,481.2	5,478.3	14.0	12.5	178.39	-183.5	-195.5	661.4	636.6	24.81	26.654		
5,600.0	5,579.7	5,585.1	5,582.2	14.2	12.7	-130.80	-182.0	-194.1	659.5	632.7	26.80	24.605		
5,700.0	5,679.7	5,678.4	5,675.4	14.4	12.8	-130.85	-181.2	-192.3	657.5	630.4	27.08	24.280		
5,800.0	5,779.7	5,780.8	5,777.8	14.5	12.8	-130.99	-181.5	-190.2	656.2	628.9	27.32	24.016		
5,900.0	5,879.7	5,874.5	5,871.5	14.7	12.9	-131.18	-182.3	-187.8	654.8	627.3	27.55	23.771		
5,977.9	5,957.6	5,947.6	5,944.6	14.9	12.9	-131.30	-183.2	-186.8	654.6	626.8	27.72	23.617		
6,000.0	5,979.7	5,968.7	5,965.6	14.9	12.9	-131.33	-183.5	-186.5	654.6	626.8	27.76	23.578		
6,100.0	6,079.7	6,073.0	6,069.9	15.1	12.9	-131.44	-184.5	-185.7	654.6	626.6	28.00	23.381		
6,182.9	6,162.6	6,152.6	6,149.6	15.3	13.0	-131.50	-184.7	-185.0	654.2	626.0	28.20	23.198		
6,200.0	6,179.7	6,168.1	6,165.1	15.3	13.0	-131.52	-184.9	-184.9	654.2	626.0	28.24	23.164		
6,300.0	6,279.7	6,262.9	6,259.8	15.5	13.0	-131.62	-186.2	-184.6	655.0	626.5	28.49	22.992		
6,400.0	6,379.7	6,363.5	6,360.4	15.7	13.1	-131.74	-188.0	-184.6	656.1	627.4	28.74	22.832		
6,500.0	6,479.5	6,470.3	6,467.2	15.9	13.1	-42.25	-189.6	-183.9	653.8	626.4	27.40	23.861		
6,600.0	6,578.1	6,577.9	6,574.8	16.0	13.2	-44.15	-190.1	-182.2	640.9	613.5	27.34	23.441		
6,700.0	6,673.7	6,683.2	6,680.0	16.0	13.3	-47.57	-189.0	-179.9	617.7	590.5	27.23	22.681		
6,800.0	6,764.6	6,778.1	6,774.9	16.0	13.5	-52.54	-186.7	-177.4	586.0	558.7	27.24	21.514		
6,900.0	6,849.3	6,857.6	6,854.3	16.0	13.7	-58.74	-184.1	-175.8	548.7	521.2	27.51	19.946		
7,000.0	6,926.4	6,928.1	6,924.8	16.1	13.8	-66.14	-182.2	-175.1	510.0	481.8	28.21	18.077		
7,100.0	6,994.6	6,990.6	6,987.3	16.3	13.9	-74.23	-181.1	-174.7	473.8	444.5	29.32	16.160		
7,200.0	7,052.6	7,046.9	7,043.5	16.9	14.1	-82.26	-180.6	-174.4	445.2	414.6	30.62	14.538		
7,300.0	7,099.5	7,092.2	7,088.9	17.8	14.1	-88.72	-180.4	-174.1	430.1	398.2	31.93	13.470		
7,332.0	7,112.0	7,104.3	7,101.0	18.3	14.2	-90.29	-180.3	-174.0	429.1	396.7	32.39	13.248		
7,400.0	7,134.4	7,126.0	7,122.7	19.1	14.2	-92.66	-180.2	-173.8	433.9	400.6	33.30	13.031 SF		
7,500.0	7,156.9	7,147.4	7,144.1	20.7	14.2	-93.52	-180.1	-173.6	458.7	423.8	34.89	13.148		
7,600.0	7,166.5	7,150.0	7,146.7	22.5	14.2	-90.16	-180.1	-173.5	502.7	466.0	36.69	13.701		
7,700.0	7,166.6	7,150.0	7,146.7	24.5	14.2	-88.93	-180.1	-173.5	561.4	522.8	38.63	14.533		
7,800.0	7,166.3	7,150.0	7,146.7	26.6	14.2	-88.93	-180.1	-173.5	630.6	589.8	40.75	15.476		
7,900.0	7,166.0	7,150.0	7,146.7	28.9	14.2	-88.93	-180.1	-173.5	707.1	664.2	42.98	16.453		
8,000.0	7,165.6	7,150.0	7,146.7	31.2	14.2	-88.93	-180.1	-173.5	789.0	743.7	45.31	17.414		
8,100.0	7,165.3	7,150.0	7,146.7	33.6	14.2	-88.93	-180.1	-173.5	874.6	826.9	47.71	18.332		
8,200.0	7,165.0	7,149.5	7,146.2	36.0	14.2	-88.86	-180.1	-173.5	963.0	912.8	50.16	19.197		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft		
Reference													Distance		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis 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				
12,700.0	7,150.9	7,203.8	7,153.7	159.1	16.5	97.19	420.8	-6,453.5	934.0	760.0	173.96	5.369				
12,800.0	7,150.6	7,201.9	7,151.9	161.9	16.5	96.59	420.9	-6,453.5	835.9	659.0	176.95	4.724				
12,900.0	7,150.3	7,200.1	7,150.1	164.7	16.5	96.00	420.9	-6,453.6	738.4	558.4	179.94	4.104				
13,000.0	7,149.9	7,198.1	7,148.1	167.5	16.5	95.33	421.0	-6,453.6	641.6	458.7	182.93	3.507				
13,100.0	7,149.6	7,196.2	7,146.1	170.3	16.5	94.68	421.0	-6,453.6	545.9	360.1	185.90	2.937				
13,200.0	7,149.3	7,194.3	7,144.2	173.1	16.5	94.06	421.1	-6,453.6	452.2	263.4	188.84	2.395				
13,300.0	7,149.0	7,192.5	7,142.4	175.9	16.5	93.46	421.1	-6,453.7	361.8	170.0	191.77	1.887				
13,400.0	7,148.7	7,190.7	7,140.7	178.6	16.5	92.89	421.2	-6,453.7	278.0	83.4	194.67	1.428	Level 3			
13,500.0	7,148.4	7,189.1	7,139.0	181.4	16.5	92.33	421.2	-6,453.7	209.1	11.5	197.56	1.058	Level 2			
13,600.0	7,148.1	7,187.5	7,137.4	184.2	16.5	91.80	421.3	-6,453.7	173.5	-26.9	200.43	0.866	Level 1			
13,618.0	7,148.0	7,187.2	7,137.1	184.7	16.5	91.70	421.3	-6,453.7	172.6	-28.3	200.94	0.859	Level 1, CC, ES, SF			
13,700.0	7,147.7	7,185.9	7,135.9	187.0	16.5	91.28	421.3	-6,453.8	191.1	-12.2	203.28	0.940	Level 1			
13,800.0	7,147.4	7,184.4	7,134.4	189.8	16.5	90.78	421.4	-6,453.8	250.8	44.7	206.12	1.217	Level 2			
13,900.0	7,147.1	7,183.0	7,132.9	192.6	16.5	90.30	421.4	-6,453.8	330.6	121.6	208.95	1.582				
14,000.0	7,146.8	7,181.6	7,131.5	195.4	16.5	89.84	421.5	-6,453.8	419.1	207.4	211.76	1.979				
14,100.0	7,146.5	7,180.2	7,130.2	198.2	16.5	89.39	421.5	-6,453.8	511.9	297.3	214.56	2.386				
14,200.0	7,146.2	7,178.9	7,128.9	201.0	16.5	88.96	421.5	-6,453.8	607.0	389.6	217.34	2.793				
14,253.0	7,146.0	7,178.2	7,128.2	202.5	16.5	88.73	421.6	-6,453.8	658.0	439.1	218.81	3.007				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 7970-UNKNOWN													Offset Well Error:	0.0 ft		
Reference													Distance		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis 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				
12,200.0	7,152.4	7,138.4	7,138.4	145.1	142.8	-91.76	150.1	-6,000.3	969.6	681.8	287.79	3.369				
12,300.0	7,152.1	7,138.1	7,138.1	147.9	142.8	-91.58	150.1	-6,000.3	870.2	579.6	290.59	2.994				
12,400.0	7,151.8	7,137.8	7,137.8	150.7	142.8	-91.39	150.1	-6,000.3	770.9	477.5	293.40	2.627				
12,500.0	7,151.5	7,137.5	7,137.5	153.5	142.8	-91.21	150.1	-6,000.3	671.8	375.6	296.20	2.268				
12,600.0	7,151.2	7,137.2	7,137.2	156.3	142.7	-91.03	150.1	-6,000.3	573.1	274.1	299.00	1.917				
12,700.0	7,150.9	7,136.9	7,136.9	159.1	142.7	-90.85	150.1	-6,000.3	474.9	173.1	301.79	1.574				
12,800.0	7,150.6	7,136.6	7,136.6	161.9	142.7	-90.67	150.1	-6,000.3	377.7	73.1	304.59	1.240	Level 2			
12,900.0	7,150.3	7,136.3	7,136.3	164.7	142.7	-90.48	150.1	-6,000.3	282.4	-25.0	307.38	0.919	Level 1			
13,000.0	7,149.9	7,135.9	7,135.9	167.5	142.7	-90.30	150.1	-6,000.3	191.9	-118.3	310.17	0.619	Level 1			
13,100.0	7,149.6	7,135.6	7,135.6	170.3	142.7	-90.12	150.1	-6,000.3	117.9	-195.1	312.96	0.377	Level 1			
13,164.6	7,149.4	7,135.4	7,135.4	172.1	142.7	-90.00	150.1	-6,000.3	98.7	-216.1	314.76	0.313	Level 1, CC, ES, SF			
13,200.0	7,149.3	7,135.3	7,135.3	173.1	142.7	-89.94	150.1	-6,000.3	104.8	-210.9	315.75	0.332	Level 1			
13,300.0	7,149.0	7,135.0	7,135.0	175.9	142.7	-89.75	150.1	-6,000.3	167.6	-151.0	318.53	0.526	Level 1			
13,400.0	7,148.7	7,134.7	7,134.7	178.6	142.7	-89.57	150.1	-6,000.3	255.3	-66.0	321.31	0.794	Level 1			
13,500.0	7,148.4	7,134.4	7,134.4	181.4	142.7	-89.39	150.1	-6,000.3	349.6	25.6	324.09	1.079	Level 2			
13,600.0	7,148.1	7,134.1	7,134.1	184.2	142.7	-89.21	150.1	-6,000.3	446.5	119.6	326.86	1.366	Level 3			
13,700.0	7,147.7	7,133.7	7,133.7	187.0	142.7	-89.02	150.1	-6,000.3	544.5	214.8	329.63	1.652				
13,800.0	7,147.4	7,133.4	7,133.4	189.8	142.7	-88.84	150.1	-6,000.3	643.1	310.7	332.40	1.935				
13,900.0	7,147.1	7,133.1	7,133.1	192.6	142.7	-88.66	150.1	-6,000.3	742.0	406.9	335.16	2.214				
14,000.0	7,146.8	7,132.8	7,132.8	195.4	142.7	-88.48	150.1	-6,000.3	841.2	503.3	337.92	2.489				
14,100.0	7,146.5	7,132.5	7,132.5	198.2	142.6	-88.29	150.1	-6,000.3	940.6	599.9	340.68	2.761				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft					
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft					
Reference													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							
12,000.0	7,153.1	7,134.3	7,133.1	139.6	14.3	-89.50	3.1	-5,746.1	942.9	789.1	153.86	6.128							
12,100.0	7,152.8	7,134.5	7,133.3	142.4	14.3	-89.55	3.1	-5,746.1	846.8	690.1	156.65	5.406							
12,200.0	7,152.4	7,134.7	7,133.5	145.1	14.3	-89.59	3.1	-5,746.1	751.7	592.2	159.44	4.714							
12,300.0	7,152.1	7,134.9	7,133.7	147.9	14.3	-89.64	3.1	-5,746.1	658.0	495.7	162.23	4.056							
12,400.0	7,151.8	7,135.1	7,133.8	150.7	14.3	-89.68	3.1	-5,746.1	566.4	401.4	165.02	3.432							
12,500.0	7,151.5	7,135.2	7,134.0	153.5	14.3	-89.73	3.1	-5,746.1	478.3	310.5	167.82	2.850							
12,600.0	7,151.2	7,135.4	7,134.2	156.3	14.3	-89.77	3.1	-5,746.1	395.8	225.2	170.61	2.320							
12,700.0	7,150.9	7,135.6	7,134.4	159.1	14.3	-89.82	3.1	-5,746.1	323.5	150.0	173.40	1.865							
12,800.0	7,150.6	7,135.8	7,134.6	161.9	14.3	-89.86	3.1	-5,746.1	269.3	93.1	176.20	1.529							
12,900.0	7,150.3	7,136.0	7,134.8	164.7	14.3	-89.91	3.1	-5,746.1	245.9	66.9	178.99	1.374	Level 3						
12,910.3	7,150.2	7,136.0	7,134.8	165.0	14.3	-89.91	3.1	-5,746.1	245.7	66.4	179.28	1.370	Level 3, CC, ES, SF						
13,000.0	7,149.9	7,136.2	7,135.0	167.5	14.3	-89.95	3.1	-5,746.1	261.5	79.7	181.78	1.439	Level 3						
13,100.0	7,149.6	7,136.4	7,135.2	170.3	14.3	-89.99	3.1	-5,746.1	310.4	125.8	184.58	1.681							
13,200.0	7,149.3	7,136.6	7,135.4	173.1	14.3	-90.04	3.1	-5,746.1	379.8	192.4	187.37	2.027							
13,300.0	7,149.0	7,136.8	7,135.6	175.9	14.3	-90.08	3.1	-5,746.1	460.6	270.5	190.17	2.422							
13,400.0	7,148.7	7,137.0	7,135.8	178.6	14.3	-90.13	3.1	-5,746.1	547.8	354.8	192.97	2.839							
13,500.0	7,148.4	7,137.2	7,136.0	181.4	14.3	-90.17	3.1	-5,746.1	638.8	443.0	195.76	3.263							
13,600.0	7,148.1	7,137.4	7,136.2	184.2	14.3	-90.22	3.1	-5,746.1	732.1	533.5	198.56	3.687							
13,700.0	7,147.7	7,137.6	7,136.3	187.0	14.3	-90.26	3.1	-5,746.1	827.0	625.6	201.35	4.107							
13,800.0	7,147.4	7,137.7	7,136.5	189.8	14.3	-90.31	3.1	-5,746.1	922.9	718.8	204.15	4.521							

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference													Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,200.0	7,161.9	7,141.6	7,140.4	62.3	14.0	-90.03	-116.2	-2,893.1	931.8	855.7	76.18	12.233		
9,300.0	7,161.6	7,141.3	7,140.0	65.0	14.0	-89.97	-116.2	-2,893.1	840.7	761.9	78.88	10.658		
9,400.0	7,161.2	7,140.9	7,139.6	67.7	14.0	-89.91	-116.2	-2,893.1	751.9	670.3	81.60	9.215		
9,500.0	7,160.9	7,140.5	7,139.3	70.4	14.0	-89.86	-116.2	-2,893.1	666.2	581.9	84.32	7.901		
9,600.0	7,160.6	7,140.1	7,138.9	73.1	14.0	-89.80	-116.2	-2,893.1	585.2	498.1	87.05	6.722		
9,700.0	7,160.3	7,139.8	7,138.5	75.9	14.0	-89.74	-116.2	-2,893.1	510.8	421.0	89.78	5.689		
9,800.0	7,160.0	7,139.4	7,138.2	78.6	14.0	-89.69	-116.2	-2,893.1	446.6	354.1	92.52	4.827		
9,900.0	7,159.7	7,139.1	7,137.8	81.4	14.0	-89.63	-116.2	-2,893.1	397.5	302.2	95.26	4.172		
10,000.0	7,159.4	7,138.7	7,137.5	84.1	14.0	-89.58	-116.2	-2,893.1	369.4	271.4	98.01	3.769		
10,057.4	7,159.2	7,138.5	7,137.3	85.7	13.9	-89.55	-116.2	-2,893.1	365.0	265.4	99.59	3.665 CC, ES		
10,100.0	7,159.0	7,138.4	7,137.1	86.9	13.9	-89.52	-116.2	-2,893.1	367.4	266.7	100.76	3.647 SF		
10,200.0	7,158.7	7,138.1	7,136.8	89.6	13.9	-89.47	-116.2	-2,893.1	391.8	288.3	103.52	3.785		
10,300.0	7,158.4	7,137.7	7,136.5	92.4	13.9	-89.42	-116.2	-2,893.1	438.2	332.0	106.27	4.124		
10,400.0	7,158.1	7,137.4	7,136.1	95.1	13.9	-89.37	-116.2	-2,893.1	500.6	391.5	109.03	4.591		
10,500.0	7,157.8	7,137.1	7,135.8	97.9	13.9	-89.31	-116.2	-2,893.1	573.7	461.9	111.80	5.131		
10,600.0	7,157.5	7,136.7	7,135.5	100.7	13.9	-89.26	-116.2	-2,893.1	653.9	539.4	114.56	5.708		
10,700.0	7,157.2	7,136.4	7,135.2	103.4	13.9	-89.21	-116.2	-2,893.1	739.0	621.7	117.33	6.299		
10,800.0	7,156.8	7,136.1	7,134.9	106.2	13.9	-89.16	-116.1	-2,893.1	827.4	707.3	120.10	6.890		
10,900.0	7,156.5	7,135.8	7,134.5	109.0	13.9	-89.12	-116.1	-2,893.1	918.2	795.4	122.87	7.473		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft		
Reference													Distance		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor				
10,400.0	7,158.1	7,126.0	7,125.2	95.1	14.8	-87.74	-56.9	-4,155.6	969.4	859.6	109.80	8.829				
10,500.0	7,157.8	7,127.0	7,126.2	97.9	14.8	-87.94	-56.9	-4,155.6	875.1	762.5	112.58	7.773				
10,600.0	7,157.5	7,128.0	7,127.2	100.7	14.8	-88.13	-56.9	-4,155.6	782.2	666.8	115.36	6.780				
10,700.0	7,157.2	7,129.0	7,128.2	103.4	14.8	-88.32	-56.9	-4,155.6	691.3	573.1	118.15	5.851				
10,800.0	7,156.8	7,130.1	7,129.3	106.2	14.8	-88.51	-56.9	-4,155.6	603.2	482.3	120.93	4.988				
10,900.0	7,156.5	7,131.1	7,130.3	109.0	14.8	-88.70	-56.9	-4,155.7	519.5	395.8	123.72	4.199				
11,000.0	7,156.2	7,132.1	7,131.3	111.8	14.8	-88.90	-56.9	-4,155.7	442.6	316.1	126.51	3.498				
11,100.0	7,155.9	7,133.1	7,132.4	114.5	14.8	-89.09	-56.9	-4,155.7	376.6	247.4	129.30	2.913				
11,200.0	7,155.6	7,134.2	7,133.4	117.3	14.8	-89.28	-56.9	-4,155.7	328.4	196.3	132.09	2.486				
11,300.0	7,155.3	7,135.2	7,134.4	120.1	14.8	-89.47	-56.9	-4,155.7	306.4	171.5	134.87	2.272				
11,320.0	7,155.2	7,135.4	7,134.6	120.6	14.8	-89.51	-56.9	-4,155.7	305.7	170.3	135.43	2.257	CC, ES, SF			
11,400.0	7,155.0	7,136.2	7,135.4	122.9	14.8	-89.67	-56.9	-4,155.7	316.0	178.3	137.66	2.296				
11,500.0	7,154.6	7,137.2	7,136.5	125.6	14.8	-89.86	-56.9	-4,155.7	354.8	214.3	140.45	2.526				
11,600.0	7,154.3	7,138.3	7,137.5	128.4	14.8	-90.05	-57.0	-4,155.8	414.5	271.3	143.24	2.894				
11,700.0	7,154.0	7,139.3	7,138.5	131.2	14.8	-90.24	-57.0	-4,155.8	487.7	341.7	146.03	3.340				
11,800.0	7,153.7	7,140.3	7,139.5	134.0	14.8	-90.43	-57.0	-4,155.8	569.1	420.2	148.82	3.824				
11,900.0	7,153.4	7,141.3	7,140.6	136.8	14.8	-90.63	-57.0	-4,155.8	655.6	504.0	151.60	4.325				
12,000.0	7,153.1	7,142.4	7,141.6	139.6	14.8	-90.82	-57.0	-4,155.8	745.5	591.1	154.39	4.829				
12,100.0	7,152.8	7,143.4	7,142.6	142.4	14.8	-91.01	-57.0	-4,155.8	837.7	680.6	157.17	5.330				
12,200.0	7,152.4	7,144.4	7,143.6	145.1	14.8	-91.20	-57.0	-4,155.8	931.5	771.6	159.96	5.824				

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference													Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis 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		
9,600.0	7,160.6	7,394.3	7,132.6	73.1	21.7	88.91	622.2	-3,354.9	992.2	899.2	92.95	10.675		
9,700.0	7,160.3	7,395.3	7,133.6	75.9	21.7	89.06	622.2	-3,354.9	900.3	804.7	95.68	9.410		
9,800.0	7,160.0	7,396.3	7,134.6	78.6	21.7	89.21	622.2	-3,354.9	810.4	712.0	98.42	8.234		
9,900.0	7,159.7	7,397.3	7,135.6	81.4	21.7	89.37	622.2	-3,355.0	723.1	622.0	101.16	7.148		
10,000.0	7,159.4	7,398.3	7,136.6	84.1	21.7	89.52	622.2	-3,355.0	639.6	535.7	103.91	6.155		
10,100.0	7,159.0	7,399.2	7,137.5	86.9	21.7	89.66	622.2	-3,355.0	561.4	454.8	106.66	5.264		
10,200.0	7,158.7	7,400.2	7,138.5	89.6	21.7	89.81	622.2	-3,355.0	491.3	381.9	109.41	4.490		
10,300.0	7,158.4	7,401.2	7,139.5	92.4	21.7	89.96	622.2	-3,355.0	433.0	320.8	112.16	3.860		
10,400.0	7,158.1	7,402.1	7,140.4	95.1	21.7	90.11	622.1	-3,355.0	392.0	277.0	114.92	3.411		
10,500.0	7,157.8	7,403.0	7,141.4	97.9	21.7	90.25	622.1	-3,355.0	373.9	256.2	117.68	3.177		
10,519.3	7,157.7	7,403.2	7,141.5	98.4	21.7	90.28	622.1	-3,355.0	373.4	255.2	118.21	3.158	CC, ES, SF	
10,600.0	7,157.5	7,404.0	7,142.3	100.7	21.7	90.39	622.1	-3,355.0	382.0	261.5	120.44	3.172		
10,700.0	7,157.2	7,404.9	7,143.2	103.4	21.7	90.53	622.1	-3,355.1	414.8	291.6	123.20	3.367		
10,800.0	7,156.8	7,405.8	7,144.1	106.2	21.7	90.68	622.1	-3,355.1	467.1	341.1	125.96	3.708		
10,900.0	7,156.5	7,406.7	7,145.0	109.0	21.7	90.81	622.1	-3,355.1	533.2	404.5	128.73	4.142		
11,000.0	7,156.2	7,407.6	7,145.9	111.8	21.7	90.95	622.1	-3,355.1	608.6	477.2	131.49	4.629		
11,100.0	7,155.9	7,408.5	7,146.8	114.5	21.7	91.09	622.1	-3,355.1	690.3	556.1	134.26	5.142		
11,200.0	7,155.6	7,409.4	7,147.7	117.3	21.7	91.23	622.1	-3,355.1	776.3	639.3	137.02	5.666		
11,300.0	7,155.3	7,410.3	7,148.6	120.1	21.7	91.36	622.1	-3,355.1	865.3	725.6	139.79	6.190		
11,400.0	7,155.0	7,411.2	7,149.5	122.9	21.7	91.50	622.1	-3,355.1	956.5	814.0	142.56	6.710		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 668-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference													Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis 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		
8,600.0	7,163.8	7,192.2	7,123.9	46.3	18.8	84.16	433.4	-2,375.2	957.7	893.9	63.73	15.027		
8,700.0	7,163.4	7,194.1	7,125.9	48.9	18.8	84.76	433.4	-2,375.2	859.8	793.4	66.38	12.953		
8,800.0	7,163.1	7,196.1	7,127.8	51.5	18.8	85.36	433.4	-2,375.3	762.4	693.4	69.04	11.043		
8,900.0	7,162.8	7,198.1	7,129.8	54.2	18.8	85.98	433.4	-2,375.3	665.9	594.1	71.72	9.284		
9,000.0	7,162.5	7,200.0	7,131.8	56.9	18.8	86.59	433.4	-2,375.4	570.5	496.1	74.41	7.667		
9,100.0	7,162.2	7,202.1	7,133.8	59.6	18.8	87.21	433.4	-2,375.4	477.0	399.9	77.11	6.186		
9,200.0	7,161.9	7,204.1	7,135.8	62.3	18.8	87.84	433.4	-2,375.5	386.7	306.9	79.81	4.846		
9,300.0	7,161.6	7,206.1	7,137.9	65.0	18.8	88.47	433.4	-2,375.5	302.7	220.1	82.51	3.668		
9,400.0	7,161.2	7,208.1	7,139.9	67.7	18.8	89.10	433.4	-2,375.5	231.6	146.4	85.22	2.718		
9,500.0	7,160.9	7,210.2	7,142.0	70.4	18.8	89.74	433.4	-2,375.6	188.9	100.9	87.92	2.148		
9,539.8	7,160.8	7,211.0	7,142.8	71.5	18.8	89.99	433.4	-2,375.6	184.6	95.6	89.00	2.074	CC, ES, SF	
9,600.0	7,160.6	7,212.3	7,144.0	73.1	18.8	90.38	433.4	-2,375.6	194.1	103.5	90.62	2.142		
9,700.0	7,160.3	7,214.4	7,146.1	75.9	18.8	91.03	433.4	-2,375.7	244.3	151.0	93.32	2.618		
9,800.0	7,160.0	7,216.5	7,148.2	78.6	18.8	91.68	433.4	-2,375.7	318.9	222.9	96.00	3.322		
9,900.0	7,159.7	7,218.6	7,150.3	81.4	18.8	92.33	433.4	-2,375.8	404.6	305.9	98.68	4.100		
10,000.0	7,159.4	7,220.7	7,152.4	84.1	18.8	92.99	433.4	-2,375.8	495.7	394.3	101.35	4.891		
10,100.0	7,159.0	7,222.8	7,154.6	86.9	18.8	93.65	433.4	-2,375.9	589.6	485.6	104.00	5.670		
10,200.0	7,158.7	7,225.0	7,156.7	89.6	18.8	94.31	433.4	-2,375.9	685.3	578.7	106.64	6.426		
10,300.0	7,158.4	7,227.1	7,158.9	92.4	18.8	94.98	433.4	-2,376.0	782.0	672.8	109.27	7.157		
10,400.0	7,158.1	7,229.3	7,161.1	95.1	18.8	95.65	433.4	-2,376.1	879.5	767.6	111.87	7.862		
10,500.0	7,157.8	7,231.5	7,163.3	97.9	18.8	96.33	433.4	-2,376.1	977.5	863.0	114.46	8.540		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Offset Well Error:	0.0 ft		
Reference													Distance		Warning	
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				
0.0	0.0	0.0	0.0	0.0	0.0	-1.33	120.2	-2.8	120.3							
100.0	100.0	99.0	99.0	0.1	0.1	-1.33	120.2	-2.8	120.2	120.0	0.22	537.677				
200.0	200.0	199.0	199.0	0.3	0.3	-1.33	120.2	-2.8	120.2	119.6	0.67	178.928	CC, ES			
300.0	300.0	295.1	295.1	0.6	0.6	-1.14	121.8	-2.4	121.8	120.7	1.11	109.476				
400.0	400.0	391.0	390.8	0.8	0.8	-0.60	126.4	-1.3	126.7	125.1	1.56	81.217				
500.0	500.0	486.4	485.9	1.0	1.0	0.22	134.1	0.5	134.8	132.7	2.02	66.718				
600.0	600.0	581.2	580.0	1.2	1.3	1.21	144.9	3.1	146.1	143.6	2.50	58.431				
700.0	700.0	675.1	673.0	1.5	1.6	2.28	158.5	6.3	160.7	157.7	3.01	53.438				
800.0	800.0	768.1	764.3	1.7	1.9	3.34	174.8	10.2	178.5	175.0	3.54	50.395				
900.0	900.0	859.8	854.0	1.9	2.3	4.34	193.8	14.7	199.5	195.4	4.11	48.582				
1,000.0	1,000.0	954.1	945.6	2.1	2.7	5.27	215.7	19.9	223.1	218.4	4.71	47.411				
1,100.0	1,100.0	1,051.2	1,039.7	2.4	3.1	6.06	238.5	25.3	247.1	241.8	5.33	46.369				
1,200.0	1,200.0	1,148.2	1,133.9	2.6	3.6	6.71	261.4	30.8	271.1	265.1	5.96	45.518				
1,300.0	1,300.0	1,245.2	1,228.1	2.8	4.1	7.25	284.2	36.2	295.1	288.5	6.59	44.811				
1,400.0	1,400.0	1,342.3	1,322.2	3.0	4.5	7.72	307.0	41.6	319.2	311.9	7.22	44.218				
1,500.0	1,500.0	1,439.3	1,416.4	3.3	5.0	8.11	329.8	47.0	343.2	335.4	7.85	43.715				
1,600.0	1,600.0	1,536.7	1,510.9	3.5	5.5	-42.21	352.7	52.5	366.0	358.8	7.22	50.726				
1,700.0	1,699.8	1,634.6	1,605.9	3.7	6.0	-42.15	375.7	57.9	386.3	378.6	7.70	50.154				
1,800.0	1,799.5	1,732.9	1,701.3	3.9	6.5	-42.44	398.8	63.4	404.1	395.9	8.20	49.281				
1,900.0	1,898.9	1,831.4	1,796.9	4.2	6.9	-43.10	422.0	68.9	420.6	411.9	8.71	48.293				
2,000.0	1,998.3	1,930.0	1,892.5	4.4	7.4	-43.71	445.1	74.4	437.1	427.9	9.22	47.382				
2,100.0	2,097.8	2,028.5	1,988.1	4.6	7.9	-44.28	468.3	79.9	453.6	443.9	9.75	46.542				
2,200.0	2,197.2	2,127.0	2,083.7	4.9	8.4	-44.82	491.5	85.4	470.2	459.9	10.27	45.767				
2,300.0	2,296.6	2,225.5	2,179.3	5.2	8.9	-45.31	514.6	90.9	486.8	476.0	10.81	45.050				
2,400.0	2,396.1	2,324.0	2,274.9	5.4	9.4	-45.77	537.8	96.4	503.5	492.2	11.34	44.386				
2,500.0	2,495.5	2,422.6	2,370.5	5.7	9.9	-46.21	560.9	102.0	520.2	508.3	11.89	43.769				
2,600.0	2,595.0	2,521.1	2,466.1	6.0	10.4	-46.61	584.1	107.5	536.9	524.5	12.43	43.194				
2,700.0	2,694.4	2,619.6	2,561.7	6.2	10.9	-46.99	607.3	113.0	553.7	540.7	12.98	42.659				
2,800.0	2,793.8	2,718.1	2,657.3	6.5	11.3	-47.35	630.4	118.5	570.4	556.9	13.53	42.159				
2,900.0	2,893.3	2,816.7	2,752.9	6.8	11.8	-47.69	653.6	124.0	587.2	573.1	14.08	41.692				
3,000.0	2,992.7	2,915.2	2,848.5	7.1	12.3	-48.01	676.8	129.5	604.0	589.4	14.64	41.254				
3,100.0	3,092.1	3,013.7	2,944.1	7.3	12.8	-48.31	699.9	135.0	620.8	605.6	15.20	40.842				
3,200.0	3,191.6	3,112.2	3,039.7	7.6	13.3	-48.60	723.1	140.5	637.7	621.9	15.76	40.456				
3,300.0	3,291.0	3,210.8	3,135.3	7.9	13.8	-48.87	746.2	146.0	654.5	638.2	16.33	40.091				
3,400.0	3,390.5	3,309.3	3,230.9	8.2	14.3	-49.13	769.4	151.5	671.4	654.5	16.89	39.748				
3,500.0	3,489.9	3,407.8	3,326.5	8.5	14.8	-49.38	792.6	157.0	688.3	670.8	17.46	39.424				
3,600.0	3,589.3	3,506.3	3,422.1	8.7	15.3	-49.61	815.7	162.5	705.2	687.1	18.03	39.117				
3,700.0	3,688.8	3,604.9	3,517.8	9.0	15.8	-49.83	838.9	168.0	722.1	703.5	18.60	38.826				
3,800.0	3,788.2	3,703.4	3,613.4	9.3	16.3	-50.05	862.0	173.5	739.0	719.8	19.17	38.551				
3,900.0	3,887.6	3,801.9	3,709.0	9.6	16.7	-50.25	885.2	179.0	755.9	736.2	19.74	38.290				
4,000.0	3,987.1	3,900.4	3,804.6	9.9	17.2	-50.44	908.4	184.5	772.8	752.5	20.32	38.041				
4,100.0	4,086.5	3,998.9	3,900.2	10.2	17.7	-50.63	931.5	190.0	789.8	768.9	20.89	37.804				
4,200.0	4,186.0	4,097.5	3,995.8	10.5	18.2	-50.81	954.7	195.5	806.7	785.3	21.47	37.579				
4,300.0	4,285.4	4,196.0	4,091.4	10.8	18.7	-50.98	977.9	201.0	823.7	801.6	22.04	37.364				
4,400.0	4,384.8	4,294.5	4,187.0	11.0	19.2	-51.14	1,001.0	206.5	840.6	818.0	22.62	37.159				
4,500.0	4,484.3	4,393.0	4,282.6	11.3	19.7	-51.30	1,024.2	212.0	857.6	834.4	23.20	36.963				
4,600.0	4,583.7	4,491.6	4,378.2	11.6	20.2	-51.45	1,047.3	217.5	874.6	850.8	23.78	36.775				
4,700.0	4,683.1	4,590.1	4,473.8	11.9	20.7	-51.60	1,070.5	223.0	891.6	867.2	24.36	36.596				
4,800.0	4,782.6	4,688.6	4,569.4	12.2	21.2	-51.74	1,093.7	228.6	908.5	883.6	24.94	36.424				
4,900.0	4,882.0	4,787.1	4,665.0	12.5	21.7	-51.87	1,116.8	234.1	925.5	900.0	25.53	36.259				
5,000.0	4,981.5	4,885.7	4,760.6	12.8	22.2	-52.00	1,140.0	239.6	942.5	916.4	26.11	36.101				

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32W-234 - Wellbore #1 - Plan #1 (4-14-14)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,080.9	4,984.2	4,856.2	13.1	22.6	-52.13	1,163.2	245.1	959.5	932.8	26.69	35.949		
5,200.0	5,180.3	5,082.7	4,951.8	13.4	23.1	-52.25	1,186.3	250.6	976.5	949.3	27.28	35.803		
5,300.0	5,279.9	5,181.1	5,047.3	13.6	23.6	-52.55	1,209.4	256.1	994.3	966.5	27.81	35.749 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32W-434 - Wellbore #1 - Plan #1 (12-18-14)														
Reference				Offset			Semi Major Axis			Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.00	91.1	0.0	91.1					
100.0	100.0	99.0	99.0	0.1	0.1	0.00	91.1	0.0	91.1	90.9	0.22	407.254		
200.0	200.0	199.0	199.0	0.3	0.3	0.00	91.1	0.0	91.1	90.4	0.67	135.526		
300.0	300.0	299.0	299.0	0.6	0.6	0.00	91.1	0.0	91.1	90.0	1.12	81.207		
400.0	400.0	399.0	399.0	0.8	0.8	0.00	91.1	0.0	91.1	89.5	1.57	57.972 CC, ES		
500.0	500.0	496.1	496.0	1.0	1.0	0.31	92.6	0.5	92.7	90.6	2.01	46.024		
600.0	600.0	592.9	592.7	1.2	1.2	1.19	97.2	2.0	97.5	95.0	2.46	39.646		
700.0	700.0	689.2	688.8	1.5	1.5	2.48	104.9	4.5	105.5	102.6	2.91	36.217		
800.0	800.0	785.0	783.8	1.7	1.7	3.98	115.6	8.0	116.9	113.5	3.39	34.508		
900.0	900.0	879.8	877.6	1.9	2.0	5.52	129.2	12.5	131.5	127.6	3.89	33.855		
1,000.0	1,000.0	977.1	973.4	2.1	2.3	6.97	145.3	17.8	148.6	144.2	4.41	33.692		
1,100.0	1,100.0	1,075.5	1,070.3	2.4	2.6	8.14	161.7	23.1	165.9	160.9	4.95	33.498		
1,200.0	1,200.0	1,174.0	1,167.2	2.6	3.0	9.09	178.2	28.5	183.2	177.7	5.50	33.313		
1,300.0	1,300.0	1,272.4	1,264.1	2.8	3.4	9.88	194.6	33.9	200.6	194.6	6.05	33.144		
1,400.0	1,400.0	1,370.9	1,361.0	3.0	3.7	10.54	211.1	39.3	218.0	211.4	6.61	32.993		
1,500.0	1,500.0	1,469.3	1,457.9	3.3	4.1	11.11	227.5	44.7	235.4	228.3	7.17	32.860		
1,600.0	1,600.0	1,568.0	1,555.1	3.5	4.5	-39.25	244.0	50.1	251.6	244.5	7.08	35.540		
1,700.0	1,699.8	1,667.1	1,652.6	3.7	4.8	-39.35	260.5	55.5	265.0	257.5	7.54	35.126		
1,800.0	1,799.5	1,766.4	1,750.4	3.9	5.2	-39.93	277.1	60.9	275.8	267.8	8.02	34.394		
1,900.0	1,898.9	1,865.9	1,848.3	4.2	5.6	-40.83	293.7	66.3	285.2	276.7	8.51	33.525		
2,000.0	1,998.3	1,965.4	1,946.3	4.4	6.0	-41.68	310.3	71.8	294.7	285.7	9.00	32.731		
2,100.0	2,097.8	2,064.8	2,044.2	4.6	6.4	-42.48	326.9	77.2	304.2	294.7	9.51	32.005		
2,200.0	2,197.2	2,164.3	2,142.1	4.9	6.8	-43.23	343.5	82.6	313.8	303.8	10.01	31.339		
2,300.0	2,296.6	2,263.7	2,240.0	5.2	7.1	-43.93	360.1	88.1	323.5	313.0	10.53	30.726		
2,400.0	2,396.1	2,363.2	2,337.9	5.4	7.5	-44.59	376.7	93.5	333.2	322.1	11.05	30.162		
2,500.0	2,495.5	2,462.6	2,435.8	5.7	7.9	-45.22	393.3	99.0	342.9	331.3	11.57	29.640		
2,600.0	2,595.0	2,562.1	2,533.7	6.0	8.3	-45.81	410.0	104.4	352.7	340.6	12.10	29.156		
2,700.0	2,694.4	2,661.6	2,631.6	6.2	8.7	-46.37	426.6	109.8	362.5	349.9	12.63	28.707		
2,800.0	2,793.8	2,761.0	2,729.5	6.5	9.1	-46.90	443.2	115.3	372.3	359.2	13.16	28.289		
2,900.0	2,893.3	2,860.5	2,827.4	6.8	9.5	-47.40	459.8	120.7	382.2	368.5	13.70	27.900		
3,000.0	2,992.7	2,959.9	2,925.4	7.1	9.9	-47.88	476.4	126.1	392.1	377.9	14.24	27.536		
3,100.0	3,092.1	3,059.4	3,023.3	7.3	10.2	-48.33	493.0	131.6	402.0	387.2	14.78	27.195		
3,200.0	3,191.6	3,158.8	3,121.2	7.6	10.6	-48.77	509.6	137.0	412.0	396.6	15.33	26.875		
3,300.0	3,291.0	3,258.3	3,219.1	7.9	11.0	-49.18	526.2	142.5	421.9	406.1	15.88	26.575		
3,400.0	3,390.5	3,357.8	3,317.0	8.2	11.4	-49.57	542.8	147.9	431.9	415.5	16.43	26.292		
3,500.0	3,489.9	3,457.2	3,414.9	8.5	11.8	-49.94	559.4	153.3	441.9	424.9	16.98	26.026		
3,600.0	3,589.3	3,556.7	3,512.8	8.7	12.2	-50.30	576.0	158.8	452.0	434.4	17.53	25.775		
3,700.0	3,688.8	3,656.1	3,610.7	9.0	12.6	-50.64	592.6	164.2	462.0	443.9	18.09	25.538		
3,800.0	3,788.2	3,755.6	3,708.6	9.3	13.0	-50.97	609.2	169.6	472.1	453.4	18.65	25.313		
3,900.0	3,887.6	3,855.0	3,806.5	9.6	13.4	-51.29	625.8	175.1	482.1	462.9	19.21	25.100		
4,000.0	3,987.1	3,954.5	3,904.5	9.9	13.7	-51.59	642.4	180.5	492.2	472.4	19.77	24.898		
4,100.0	4,086.5	4,054.0	4,002.4	10.2	14.1	-51.88	659.0	185.9	502.3	482.0	20.33	24.706		
4,200.0	4,186.0	4,153.4	4,100.3	10.5	14.5	-52.16	675.7	191.4	512.4	491.5	20.90	24.524		
4,300.0	4,285.4	4,252.9	4,198.2	10.8	14.9	-52.42	692.3	196.8	522.6	501.1	21.46	24.350		
4,400.0	4,384.8	4,352.3	4,296.1	11.0	15.3	-52.68	708.9	202.3	532.7	510.7	22.03	24.184		
4,500.0	4,484.3	4,451.8	4,394.0	11.3	15.7	-52.93	725.5	207.7	542.8	520.2	22.59	24.026		
4,600.0	4,583.7	4,551.2	4,491.9	11.6	16.1	-53.17	742.1	213.1	553.0	529.8	23.16	23.875		
4,700.0	4,683.1	4,650.7	4,589.8	11.9	16.5	-53.40	758.7	218.6	563.1	539.4	23.73	23.731		
4,800.0	4,782.6	4,750.2	4,687.7	12.2	16.9	-53.62	775.3	224.0	573.3	549.0	24.30	23.593		
4,900.0	4,882.0	4,849.6	4,785.6	12.5	17.3	-53.83	791.9	229.4	583.5	558.6	24.87	23.461		
5,000.0	4,981.5	4,949.1	4,883.6	12.8	17.6	-54.04	808.5	234.9	593.7	568.2	25.44	23.334		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference													Warning	
Reference				Offset		Semi Major Axis			Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,100.0	5,080.9	5,048.5	4,981.5	13.1	18.0	-54.24	825.1	240.3	603.9	577.9	26.01	23.213		
5,200.0	5,180.3	5,148.0	5,079.4	13.4	18.4	-54.43	841.7	245.8	614.1	587.5	26.59	23.096		
5,300.0	5,279.9	5,247.4	5,177.2	13.6	18.8	-54.68	858.3	251.2	625.0	597.9	27.11	23.050		
5,400.0	5,379.7	5,346.5	5,274.8	13.8	19.2	-54.73	874.9	256.6	637.9	610.3	27.55	23.150		
5,500.0	5,479.7	5,445.3	5,372.1	14.0	19.6	-54.56	891.4	262.0	652.8	624.9	27.94	23.361		
5,600.0	5,579.7	5,543.8	5,469.0	14.2	20.0	-3.27	907.8	267.4	669.1	636.9	32.22	20.765		
5,700.0	5,679.7	5,642.2	5,565.9	14.4	20.4	-2.73	924.2	272.8	685.5	652.7	32.85	20.870		
5,800.0	5,779.7	5,740.6	5,662.8	14.5	20.8	-2.22	940.7	278.1	702.0	668.5	33.47	20.973		
5,900.0	5,879.7	5,839.1	5,759.7	14.7	21.1	-1.74	957.1	283.5	718.5	684.4	34.09	21.075		
6,000.0	5,979.7	5,937.5	5,856.6	14.9	21.5	-1.27	973.5	288.9	735.1	700.4	34.72	21.175		
6,100.0	6,079.7	6,055.1	5,972.5	15.1	21.9	-0.77	992.2	295.0	751.0	715.7	35.35	21.247		
6,200.0	6,179.7	6,187.4	6,103.8	15.3	22.3	-0.36	1,008.1	300.2	763.0	727.1	35.92	21.239		
6,300.0	6,279.7	6,321.1	6,237.0	15.5	22.5	-0.11	1,018.3	303.6	770.6	734.2	36.42	21.157		
6,400.0	6,379.7	6,455.5	6,371.3	15.7	22.7	0.00	1,022.5	305.0	773.8	736.9	36.84	21.003		
6,500.0	6,479.5	6,562.7	6,478.5	15.9	22.9	90.28	1,022.7	305.0	773.9	741.9	31.95	24.223		
6,600.0	6,578.1	6,662.5	6,578.3	16.0	23.0	91.38	1,022.7	303.5	774.1	742.0	32.09	24.120		
6,700.0	6,673.7	6,764.7	6,679.6	16.0	23.1	92.61	1,022.7	290.4	774.7	742.6	32.13	24.113		
6,800.0	6,764.6	6,869.4	6,780.6	16.0	23.1	93.80	1,022.7	263.1	775.6	743.5	32.13	24.140		
6,900.0	6,849.3	6,976.6	6,879.2	16.0	23.1	94.93	1,022.7	221.1	776.8	744.6	32.18	24.138		
7,000.0	6,926.4	7,086.4	6,972.9	16.1	23.1	95.99	1,022.6	164.3	778.2	745.8	32.40	24.015		
7,100.0	6,994.6	7,198.6	7,059.4	16.3	23.0	96.95	1,022.6	92.9	779.7	746.7	32.94	23.667		
7,200.0	7,052.6	7,313.1	7,135.8	16.9	23.0	97.79	1,022.6	7.8	781.1	747.1	33.98	22.987		
7,300.0	7,099.5	7,429.6	7,199.7	17.8	23.1	98.47	1,022.6	-89.5	782.4	746.7	35.64	21.953		
7,400.0	7,134.4	7,547.8	7,248.7	19.1	23.3	98.99	1,022.6	-197.0	783.4	745.4	38.01	20.612		
7,500.0	7,156.9	7,667.3	7,280.7	20.7	23.9	99.33	1,022.5	-312.0	784.1	743.1	41.08	19.090		
7,600.0	7,166.5	7,787.5	7,294.5	22.5	25.2	99.47	1,022.5	-431.2	784.4	739.7	44.71	17.546		
7,700.0	7,166.6	7,896.6	7,292.7	24.5	26.9	99.33	1,022.5	-540.3	784.1	735.4	48.66	16.113		
7,800.0	7,166.3	7,996.6	7,289.2	26.6	28.8	99.10	1,022.5	-640.2	783.6	730.8	52.81	14.838		
7,900.0	7,166.0	8,096.5	7,285.8	28.9	30.8	98.88	1,022.5	-740.1	783.0	725.8	57.20	13.690		
8,000.0	7,165.6	8,196.5	7,282.3	31.2	33.0	98.65	1,022.4	-840.0	782.5	720.8	61.79	12.665		
8,100.0	7,165.3	8,296.4	7,278.9	33.6	35.3	98.42	1,022.4	-939.9	782.1	715.5	66.54	11.754		
8,200.0	7,165.0	8,396.4	7,275.4	36.0	37.6	98.19	1,022.4	-1,039.7	781.6	710.2	71.41	10.945		
8,300.0	7,164.7	8,496.3	7,271.9	38.5	40.0	97.97	1,022.4	-1,139.6	781.1	704.7	76.39	10.226		
8,400.0	7,164.4	8,596.3	7,268.5	41.1	42.5	97.74	1,022.3	-1,239.5	780.7	699.2	81.45	9.585		
8,500.0	7,164.1	8,696.2	7,265.0	43.7	45.0	97.51	1,022.3	-1,339.4	780.2	693.7	86.58	9.012		
8,600.0	7,163.8	8,796.2	7,261.6	46.3	47.5	97.28	1,022.3	-1,439.3	779.8	688.0	91.78	8.497		
8,700.0	7,163.4	8,896.1	7,258.1	48.9	50.0	97.05	1,022.3	-1,539.2	779.4	682.4	97.02	8.033		
8,800.0	7,163.1	8,996.1	7,254.7	51.5	52.6	96.82	1,022.3	-1,639.1	779.0	676.7	102.31	7.614		
8,900.0	7,162.8	9,096.0	7,251.2	54.2	55.2	96.59	1,022.2	-1,739.0	778.6	671.0	107.63	7.234		
9,000.0	7,162.5	9,196.0	7,247.8	56.9	57.9	96.37	1,022.2	-1,838.9	778.2	665.2	112.99	6.888		
9,100.0	7,162.2	9,295.9	7,244.3	59.6	60.5	96.14	1,022.2	-1,938.8	777.9	659.5	118.37	6.571		
9,200.0	7,161.9	9,395.9	7,240.9	62.3	63.1	95.91	1,022.2	-2,038.7	777.5	653.7	123.78	6.281		
9,300.0	7,161.6	9,495.8	7,237.4	65.0	65.8	95.68	1,022.2	-2,138.5	777.2	648.0	129.22	6.015		
9,400.0	7,161.2	9,595.8	7,234.0	67.7	68.5	95.45	1,022.1	-2,238.4	776.9	642.2	134.67	5.769		
9,500.0	7,160.9	9,695.7	7,230.5	70.4	71.2	95.21	1,022.1	-2,338.3	776.5	636.4	140.14	5.541		
9,600.0	7,160.6	9,795.7	7,227.1	73.1	73.9	94.98	1,022.1	-2,438.2	776.2	630.6	145.62	5.331		
9,700.0	7,160.3	9,895.6	7,223.6	75.9	76.6	94.75	1,022.1	-2,538.1	776.0	624.8	151.12	5.135		
9,800.0	7,160.0	9,995.6	7,220.1	78.6	79.3	94.52	1,022.0	-2,638.0	775.7	619.1	156.63	4.952		
9,900.0	7,159.7	10,095.5	7,216.7	81.4	82.0	94.29	1,022.0	-2,737.9	775.4	613.3	162.15	4.782		
10,000.0	7,159.4	10,195.5	7,213.2	84.1	84.7	94.06	1,022.0	-2,837.8	775.2	607.5	167.68	4.623		
10,100.0	7,159.0	10,295.4	7,209.8	86.9	87.4	93.83	1,022.0	-2,937.7	774.9	601.7	173.21	4.474		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32W-434 - Wellbore #1 - Plan #1 (12-18-14)														
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		
10,200.0	7,158.7	10,395.4	7,206.3	89.6	90.2	93.60	1,022.0	-3,037.6	774.7	595.9	178.76	4.334		
10,300.0	7,158.4	10,495.3	7,202.9	92.4	92.9	93.37	1,021.9	-3,137.5	774.5	590.2	184.31	4.202		
10,400.0	7,158.1	10,595.3	7,199.4	95.1	95.6	93.13	1,021.9	-3,237.3	774.3	584.4	189.87	4.078		
10,500.0	7,157.8	10,695.2	7,196.0	97.9	98.4	92.90	1,021.9	-3,337.2	774.1	578.7	195.43	3.961		
10,600.0	7,157.5	10,795.2	7,192.5	100.7	101.1	92.67	1,021.9	-3,437.1	773.9	572.9	201.00	3.851		
10,700.0	7,157.2	10,895.1	7,189.1	103.4	103.9	92.44	1,021.9	-3,537.0	773.8	567.2	206.57	3.746		
10,800.0	7,156.8	10,995.1	7,185.6	106.2	106.6	92.21	1,021.8	-3,636.9	773.6	561.5	212.14	3.647		
10,900.0	7,156.5	11,095.0	7,182.2	109.0	109.4	91.97	1,021.8	-3,736.8	773.5	555.8	217.71	3.553		
11,000.0	7,156.2	11,195.0	7,178.7	111.8	112.1	91.74	1,021.8	-3,836.7	773.4	550.1	223.29	3.464		
11,100.0	7,155.9	11,294.9	7,175.3	114.5	114.9	91.51	1,021.8	-3,936.6	773.3	544.4	228.87	3.379		
11,200.0	7,155.6	11,394.9	7,171.8	117.3	117.7	91.28	1,021.7	-4,036.5	773.2	538.7	234.45	3.298		
11,300.0	7,155.3	11,494.8	7,168.3	120.1	120.4	91.04	1,021.7	-4,136.4	773.1	533.0	240.03	3.221		
11,400.0	7,155.0	11,594.8	7,164.9	122.9	123.2	90.81	1,021.7	-4,236.3	773.0	527.4	245.61	3.147		
11,500.0	7,154.6	11,694.7	7,161.4	125.6	126.0	90.58	1,021.7	-4,336.2	772.9	521.8	251.19	3.077		
11,600.0	7,154.3	11,794.7	7,158.0	128.4	128.7	90.34	1,021.7	-4,436.0	772.9	516.1	256.76	3.010		
11,700.0	7,154.0	11,894.6	7,154.5	131.2	131.5	90.11	1,021.6	-4,535.9	772.9	510.5	262.34	2.946		
11,800.0	7,153.7	11,994.6	7,151.1	134.0	134.3	89.88	1,021.6	-4,635.8	772.8	504.9	267.92	2.885		
11,900.0	7,153.4	12,094.5	7,147.6	136.8	137.0	89.65	1,021.6	-4,735.7	772.8	499.3	273.49	2.826		
11,912.6	7,153.4	12,107.1	7,147.2	137.1	137.4	89.62	1,021.6	-4,748.3	772.8	498.6	274.19	2.819		
12,000.0	7,153.1	12,194.5	7,144.2	139.6	139.8	89.41	1,021.6	-4,835.6	772.8	493.8	279.06	2.769		
12,100.0	7,152.8	12,294.4	7,140.7	142.4	142.6	89.18	1,021.6	-4,935.5	772.9	488.2	284.63	2.715		
12,200.0	7,152.4	12,394.4	7,137.3	145.1	145.4	88.95	1,021.5	-5,035.4	772.9	482.7	290.19	2.663		
12,300.0	7,152.1	12,494.3	7,133.8	147.9	148.1	88.72	1,021.5	-5,135.3	772.9	477.2	295.75	2.613		
12,400.0	7,151.8	12,594.3	7,130.4	150.7	150.9	88.48	1,021.5	-5,235.2	773.0	471.7	301.31	2.565		
12,500.0	7,151.5	12,694.2	7,126.9	153.5	153.7	88.25	1,021.5	-5,335.1	773.1	466.2	306.86	2.519		
12,600.0	7,151.2	12,794.2	7,123.5	156.3	156.5	88.02	1,021.4	-5,435.0	773.1	460.7	312.41	2.475		
12,700.0	7,150.9	12,894.1	7,120.0	159.1	159.2	87.79	1,021.4	-5,534.8	773.2	455.3	317.95	2.432		
12,800.0	7,150.6	12,994.1	7,116.5	161.9	162.0	87.55	1,021.4	-5,634.7	773.3	449.9	323.49	2.391		
12,900.0	7,150.3	13,094.0	7,113.1	164.7	164.8	87.32	1,021.4	-5,734.6	773.5	444.4	329.02	2.351		
13,000.0	7,149.9	13,194.0	7,109.6	167.5	167.6	87.09	1,021.4	-5,834.5	773.6	439.0	334.55	2.312		
13,100.0	7,149.6	13,293.9	7,106.2	170.3	170.4	86.86	1,021.3	-5,934.4	773.7	433.7	340.07	2.275		
13,200.0	7,149.3	13,393.9	7,102.7	173.1	173.2	86.62	1,021.3	-6,034.3	773.9	428.3	345.58	2.239		
13,300.0	7,149.0	13,493.8	7,099.3	175.9	175.9	86.39	1,021.3	-6,134.2	774.1	423.0	351.09	2.205		
13,400.0	7,148.7	13,593.8	7,095.8	178.6	178.7	86.16	1,021.3	-6,234.1	774.2	417.7	356.59	2.171		
13,500.0	7,148.4	13,693.8	7,092.4	181.4	181.5	85.93	1,021.2	-6,334.0	774.4	412.4	362.08	2.139		
13,600.0	7,148.1	13,793.7	7,088.9	184.2	184.3	85.70	1,021.2	-6,433.9	774.7	407.1	367.57	2.108		
13,700.0	7,147.7	13,893.7	7,085.5	187.0	187.1	85.46	1,021.2	-6,533.8	774.9	401.8	373.04	2.077		
13,800.0	7,147.4	13,993.6	7,082.0	189.8	189.9	85.23	1,021.2	-6,633.6	775.1	396.6	378.51	2.048		
13,900.0	7,147.1	14,093.6	7,078.6	192.6	192.7	85.00	1,021.2	-6,733.5	775.4	391.4	383.97	2.019		
14,000.0	7,146.8	14,193.5	7,075.1	195.4	195.5	84.77	1,021.1	-6,833.4	775.6	386.2	389.42	1.992		
14,100.0	7,146.5	14,293.5	7,071.7	198.2	198.2	84.54	1,021.1	-6,933.3	775.9	381.0	394.87	1.965		
14,200.0	7,146.2	14,393.4	7,068.2	201.0	201.0	84.31	1,021.1	-7,033.2	776.2	375.9	400.30	1.939		
14,253.0	7,146.0	14,446.4	7,066.4	202.5	202.5	84.19	1,021.1	-7,086.2	776.3	373.1	403.18	1.926 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32X-204 - Wellbore #1 - Plan #2 (12-18-14)														
Reference				Offset			Semi Major Axis			Distance			Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	0.00	32.8	0.0	32.8					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	32.8	0.0	32.8	32.6	0.22	145.891		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	32.8	0.0	32.8	32.1	0.67	48.630		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	32.8	0.0	32.8	31.7	1.12	29.178		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	32.8	0.0	32.8	31.2	1.57	20.842		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	32.8	0.0	32.8	30.8	2.02	16.210		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	32.8	0.0	32.8	30.3	2.47	13.263		
700.0	700.0	700.0	700.0	1.5	1.5	0.00	32.8	0.0	32.8	29.9	2.92	11.222		
800.0	800.0	800.0	800.0	1.7	1.7	0.00	32.8	0.0	32.8	29.4	3.37	9.726		
900.0	900.0	900.0	900.0	1.9	1.9	0.00	32.8	0.0	32.8	29.0	3.82	8.582		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	32.8	0.0	32.8	28.5	4.27	7.678 CC		
1,100.0	1,100.0	1,099.1	1,099.1	2.4	2.4	2.00	34.0	1.2	34.1	29.3	4.71	7.226		
1,200.0	1,200.0	1,198.0	1,197.9	2.6	2.6	7.14	37.7	4.7	38.1	32.9	5.16	7.387		
1,300.0	1,300.0	1,296.5	1,295.9	2.8	2.8	13.58	43.9	10.6	45.3	39.7	5.61	8.081		
1,400.0	1,400.0	1,395.1	1,393.9	3.0	3.0	19.53	52.1	18.5	55.6	49.6	6.07	9.162		
1,500.0	1,500.0	1,494.4	1,492.5	3.3	3.3	23.75	60.7	26.7	66.8	60.2	6.55	10.192		
1,600.0	1,600.0	1,593.8	1,591.2	3.5	3.6	-24.49	69.3	35.0	76.6	69.6	6.95	11.009		
1,700.0	1,699.8	1,693.6	1,690.3	3.7	3.8	-23.46	78.0	43.2	83.3	75.9	7.39	11.261		
1,800.0	1,799.5	1,793.5	1,789.5	3.9	4.1	-23.49	86.6	51.5	86.8	79.0	7.84	11.076		
1,900.0	1,898.9	1,893.5	1,888.7	4.2	4.4	-24.02	95.3	59.8	88.6	80.3	8.30	10.676		
2,000.0	1,998.3	1,993.5	1,988.0	4.4	4.7	-24.54	104.0	68.1	90.4	81.6	8.77	10.311		
2,100.0	2,097.8	2,093.5	2,087.3	4.6	5.0	-25.03	112.6	76.3	92.2	83.0	9.24	9.980		
2,200.0	2,197.2	2,193.5	2,186.5	4.9	5.3	-25.51	121.3	84.6	94.0	84.3	9.71	9.678		
2,300.0	2,296.6	2,293.4	2,285.8	5.2	5.6	-25.97	129.9	92.9	95.8	85.6	10.20	9.400		
2,400.0	2,396.1	2,393.4	2,385.0	5.4	5.9	-26.41	138.6	101.2	97.7	87.0	10.68	9.146		
2,500.0	2,495.5	2,493.4	2,484.3	5.7	6.2	-26.83	147.3	109.5	99.5	88.3	11.17	8.912		
2,600.0	2,595.0	2,593.4	2,583.6	6.0	6.5	-27.24	155.9	117.8	101.3	89.7	11.66	8.695		
2,700.0	2,694.4	2,693.4	2,682.8	6.2	6.8	-27.64	164.6	126.0	103.2	91.0	12.15	8.494		
2,800.0	2,793.8	2,793.3	2,782.1	6.5	7.1	-28.02	173.2	134.3	105.0	92.4	12.64	8.308		
2,900.0	2,893.3	2,893.3	2,881.3	6.8	7.4	-28.38	181.9	142.6	106.9	93.8	13.14	8.135		
3,000.0	2,992.7	2,993.3	2,980.6	7.1	7.7	-28.74	190.5	150.9	108.7	95.1	13.64	7.973		
3,100.0	3,092.1	3,093.3	3,079.9	7.3	8.0	-29.08	199.2	159.2	110.6	96.5	14.14	7.822		
3,200.0	3,191.6	3,193.3	3,179.1	7.6	8.3	-29.41	207.9	167.4	112.5	97.8	14.64	7.681		
3,300.0	3,291.0	3,293.3	3,278.4	7.9	8.6	-29.74	216.5	175.7	114.3	99.2	15.15	7.548		
3,400.0	3,390.5	3,393.2	3,377.6	8.2	8.9	-30.05	225.2	184.0	116.2	100.6	15.66	7.423		
3,500.0	3,489.9	3,493.2	3,476.9	8.5	9.2	-30.35	233.8	192.3	118.1	101.9	16.17	7.306		
3,600.0	3,589.3	3,593.2	3,576.2	8.7	9.5	-30.64	242.5	200.6	120.0	103.3	16.68	7.195		
3,700.0	3,688.8	3,693.2	3,675.4	9.0	9.8	-30.92	251.2	208.9	121.9	104.7	17.19	7.090		
3,800.0	3,788.2	3,793.2	3,774.7	9.3	10.1	-31.19	259.8	217.1	123.7	106.0	17.70	6.991		
3,900.0	3,887.6	3,893.1	3,873.9	9.6	10.4	-31.46	268.5	225.4	125.6	107.4	18.21	6.898		
4,000.0	3,987.1	3,993.1	3,973.2	9.9	10.8	-31.72	277.1	233.7	127.5	108.8	18.73	6.809		
4,100.0	4,086.5	4,093.1	4,072.5	10.2	11.1	-31.97	285.8	242.0	129.4	110.2	19.25	6.725		
4,200.0	4,186.0	4,193.1	4,171.7	10.5	11.4	-32.21	294.5	250.3	131.3	111.6	19.76	6.644		
4,300.0	4,285.4	4,293.1	4,271.0	10.8	11.7	-32.45	303.1	258.5	133.2	112.9	20.28	6.568		
4,400.0	4,384.8	4,393.0	4,370.2	11.0	12.0	-32.67	311.8	266.8	135.1	114.3	20.80	6.495		
4,500.0	4,484.3	4,493.0	4,469.5	11.3	12.3	-32.90	320.4	275.1	137.0	115.7	21.32	6.426		
4,600.0	4,583.7	4,593.0	4,568.8	11.6	12.6	-33.11	329.1	283.4	138.9	117.1	21.84	6.359		
4,700.0	4,683.1	4,693.5	4,668.5	11.9	12.9	-33.33	337.8	291.7	140.8	118.4	22.37	6.296		
4,800.0	4,782.6	4,798.1	4,772.6	12.2	13.2	-33.97	345.2	298.8	140.7	117.9	22.86	6.156		
4,900.0	4,882.0	4,902.5	4,876.8	12.5	13.4	-35.35	349.8	303.2	137.4	114.0	23.38	5.877		
5,000.0	4,981.5	5,006.4	4,980.7	12.8	13.5	-37.61	351.6	305.0	131.0	107.1	23.95	5.471		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference													Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32X-204 - Wellbore #1 - Plan #2 (12-18-14)	
Reference				Offset			Semi Major Axis			Distance			Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,080.9	5,106.6	5,080.9	13.1	13.7	-40.62	351.7	305.0	122.9	98.3	24.58	4.997		
5,200.0	5,180.3	5,206.0	5,180.3	13.4	13.9	-44.05	351.7	305.0	115.0	89.7	25.27	4.551		
5,300.0	5,279.9	5,305.6	5,279.9	13.6	14.1	-47.41	351.7	305.0	108.4	82.5	25.92	4.184		
5,400.0	5,379.7	5,405.4	5,379.7	13.8	14.2	-49.75	351.7	305.0	104.5	78.1	26.45	3.952		
5,500.0	5,479.7	5,505.4	5,479.7	14.0	14.4	-50.76	351.7	305.0	102.9	76.1	26.86	3.833		
5,546.8	5,526.5	5,552.2	5,526.5	14.1	14.5	-50.87	351.7	305.0	102.8	75.7	27.04	3.801		
5,600.0	5,579.7	5,605.4	5,579.7	14.2	14.6	0.00	351.7	305.0	102.9	76.2	26.66	3.860		
5,700.0	5,679.7	5,705.4	5,679.7	14.4	14.8	0.00	351.7	305.0	102.9	75.8	27.06	3.803		
5,800.0	5,779.7	5,805.4	5,779.7	14.5	15.0	0.00	351.7	305.0	102.9	75.4	27.45	3.748		
5,900.0	5,879.7	5,905.4	5,879.7	14.7	15.2	0.00	351.7	305.0	102.9	75.0	27.85	3.694		
6,000.0	5,979.7	6,005.4	5,979.7	14.9	15.3	0.00	351.7	305.0	102.9	74.6	28.26	3.641		
6,100.0	6,079.7	6,105.4	6,079.7	15.1	15.5	0.00	351.7	305.0	102.9	74.2	28.66	3.590		
6,200.0	6,179.7	6,205.4	6,179.7	15.3	15.7	0.00	351.7	305.0	102.9	73.8	29.06	3.540		
6,300.0	6,279.7	6,305.4	6,279.7	15.5	15.9	0.00	351.7	305.0	102.9	73.4	29.47	3.492		
6,353.2	6,332.9	6,358.6	6,332.9	15.6	16.0	-0.29	351.7	304.5	102.9	73.2	29.66	3.469		
6,400.0	6,379.7	6,405.2	6,379.4	15.7	16.1	-2.04	351.7	301.3	102.9	73.2	29.74	3.462		
6,500.0	6,479.5	6,503.2	6,476.1	15.9	16.1	81.22	351.6	285.5	104.0	72.9	31.14	3.341		
6,600.0	6,578.1	6,600.0	6,568.7	16.0	16.2	74.66	351.5	257.9	106.5	75.0	31.52	3.378		
6,700.0	6,673.7	6,694.8	6,655.5	16.0	16.2	68.76	351.3	219.7	110.0	78.4	31.61	3.481		
6,800.0	6,764.6	6,788.7	6,736.0	16.0	16.2	63.56	351.0	171.6	114.3	82.9	31.41	3.638		
6,900.0	6,849.3	6,881.4	6,809.1	16.0	16.1	59.11	350.7	114.8	118.9	87.9	31.00	3.836		
7,000.0	6,926.4	6,973.1	6,874.2	16.1	16.2	55.38	350.4	50.2	123.6	93.1	30.51	4.051		
7,100.0	6,994.6	7,064.0	6,930.6	16.3	16.4	52.33	350.0	-20.9	128.0	97.9	30.11	4.251		
7,200.0	7,052.6	7,154.1	6,977.8	16.9	17.1	49.89	349.7	-97.7	132.0	101.9	30.01	4.396		
7,300.0	7,099.5	7,243.7	7,015.5	17.8	18.1	48.01	349.2	-178.9	135.2	104.8	30.39	4.449		
7,400.0	7,134.4	7,332.8	7,043.2	19.1	19.4	46.64	348.8	-263.5	137.6	106.2	31.38	4.385		
7,500.0	7,156.9	7,421.6	7,060.9	20.7	20.9	45.74	348.4	-350.5	139.1	106.0	33.04	4.209		
7,600.0	7,166.5	7,510.3	7,068.4	22.5	22.5	45.28	347.9	-438.8	139.5	104.2	35.35	3.947		
7,700.0	7,166.6	7,607.6	7,068.6	24.5	24.4	45.19	347.4	-536.2	139.1	100.9	38.14	3.646		
7,800.0	7,166.3	7,707.6	7,068.5	26.6	26.5	45.11	346.9	-636.2	138.5	97.4	41.14	3.367		
7,900.0	7,166.0	7,807.6	7,068.4	28.9	28.8	45.03	346.4	-736.2	138.0	93.7	44.30	3.115		
8,000.0	7,165.6	7,907.6	7,068.4	31.2	31.1	44.96	345.9	-836.2	137.5	89.9	47.60	2.888		
8,100.0	7,165.3	8,007.6	7,068.3	33.6	33.5	44.88	345.4	-936.2	136.9	85.9	51.00	2.685		
8,200.0	7,165.0	8,107.6	7,068.2	36.0	36.0	44.80	344.9	-1,036.1	136.4	81.9	54.48	2.504		
8,300.0	7,164.7	8,207.6	7,068.2	38.5	38.5	44.72	344.4	-1,136.1	135.9	77.9	58.02	2.342		
8,400.0	7,164.4	8,307.6	7,068.1	41.1	41.0	44.64	343.9	-1,236.1	135.4	73.7	61.62	2.197		
8,500.0	7,164.1	8,407.6	7,068.0	43.7	43.6	44.57	343.4	-1,336.1	134.8	69.6	65.25	2.066		
8,600.0	7,163.8	8,507.6	7,067.9	46.3	46.2	44.48	342.9	-1,436.1	134.3	65.4	68.92	1.948		
8,700.0	7,163.4	8,607.6	7,067.9	48.9	48.8	44.40	342.4	-1,536.1	133.8	61.2	72.62	1.842		
8,800.0	7,163.1	8,707.6	7,067.8	51.5	51.5	44.32	341.9	-1,636.1	133.2	56.9	76.33	1.746		
8,900.0	7,162.8	8,807.6	7,067.7	54.2	54.1	44.24	341.4	-1,736.1	132.7	52.7	80.06	1.658		
9,000.0	7,162.5	8,907.6	7,067.7	56.9	56.8	44.16	340.9	-1,836.1	132.2	48.4	83.81	1.577		
9,100.0	7,162.2	9,007.6	7,067.6	59.6	59.5	44.07	340.4	-1,936.1	131.7	44.1	87.56	1.504		
9,200.0	7,161.9	9,107.6	7,067.5	62.3	62.2	43.99	339.9	-2,036.1	131.1	39.8	91.31	1.436 Level 3		
9,300.0	7,161.6	9,207.6	7,067.5	65.0	64.9	43.90	339.4	-2,136.1	130.6	35.5	95.07	1.374 Level 3		
9,400.0	7,161.2	9,307.6	7,067.4	67.7	67.6	43.82	338.9	-2,236.1	130.1	31.2	98.84	1.316 Level 3		
9,500.0	7,160.9	9,407.6	7,067.3	70.4	70.4	43.73	338.3	-2,336.1	129.6	27.0	102.60	1.263 Level 3		
9,600.0	7,160.6	9,507.6	7,067.2	73.1	73.1	43.65	337.8	-2,436.1	129.0	22.7	106.36	1.213 Level 2		
9,700.0	7,160.3	9,607.6	7,067.2	75.9	75.8	43.56	337.3	-2,536.1	128.5	18.4	110.11	1.167 Level 2		
9,800.0	7,160.0	9,707.6	7,067.1	78.6	78.6	43.47	336.8	-2,636.1	128.0	14.1	113.87	1.124 Level 2		
9,900.0	7,159.7	9,807.6	7,067.0	81.4	81.3	43.38	336.3	-2,736.1	127.5	9.8	117.61	1.084 Level 2		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32X-204 - Wellbore #1 - Plan #2 (12-18-14)		Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning			
10,000.0	7,159.4	9,907.6	7,067.0	84.1	84.0	43.29	335.8	-2,836.1	126.9	5.6	121.36	1.046	Level 2			
10,100.0	7,159.0	10,007.6	7,066.9	86.9	86.8	43.20	335.3	-2,936.1	126.4	1.3	125.09	1.011	Level 2			
10,200.0	7,158.7	10,107.6	7,066.8	89.6	89.5	43.11	334.8	-3,036.1	125.9	-2.9	128.82	0.977	Level 1			
10,300.0	7,158.4	10,207.6	7,066.8	92.4	92.3	43.02	334.3	-3,136.1	125.4	-7.2	132.54	0.946	Level 1			
10,400.0	7,158.1	10,307.6	7,066.7	95.1	95.1	42.92	333.8	-3,236.1	124.8	-11.4	136.25	0.916	Level 1			
10,500.0	7,157.8	10,407.6	7,066.6	97.9	97.8	42.83	333.3	-3,336.1	124.3	-15.6	139.95	0.888	Level 1			
10,600.0	7,157.5	10,507.6	7,066.5	100.7	100.6	42.74	332.8	-3,436.1	123.8	-19.8	143.64	0.862	Level 1			
10,700.0	7,157.2	10,607.6	7,066.5	103.4	103.4	42.64	332.3	-3,536.1	123.3	-24.0	147.32	0.837	Level 1			
10,800.0	7,156.8	10,707.6	7,066.4	106.2	106.1	42.55	331.8	-3,636.1	122.8	-28.2	150.99	0.813	Level 1			
10,900.0	7,156.5	10,807.6	7,066.3	109.0	108.9	42.45	331.3	-3,736.1	122.2	-32.4	154.64	0.790	Level 1			
11,000.0	7,156.2	10,907.6	7,066.3	111.8	111.7	42.35	330.8	-3,836.1	121.7	-36.6	158.29	0.769	Level 1			
11,100.0	7,155.9	11,007.6	7,066.2	114.5	114.4	42.25	330.3	-3,936.1	121.2	-40.7	161.92	0.748	Level 1			
11,200.0	7,155.6	11,107.6	7,066.1	117.3	117.2	42.15	329.8	-4,036.1	120.7	-44.9	165.54	0.729	Level 1			
11,300.0	7,155.3	11,207.6	7,066.1	120.1	120.0	42.05	329.3	-4,136.1	120.2	-49.0	169.15	0.710	Level 1			
11,400.0	7,155.0	11,307.6	7,066.0	122.9	122.8	41.95	328.7	-4,236.1	119.6	-53.1	172.74	0.693	Level 1			
11,500.0	7,154.6	11,407.6	7,065.9	125.6	125.6	41.85	328.2	-4,336.1	119.1	-57.2	176.32	0.676	Level 1			
11,600.0	7,154.3	11,507.6	7,065.9	128.4	128.3	41.75	327.7	-4,436.1	118.6	-61.3	179.88	0.659	Level 1			
11,700.0	7,154.0	11,607.6	7,065.8	131.2	131.1	41.64	327.2	-4,536.0	118.1	-65.4	183.43	0.644	Level 1			
11,800.0	7,153.7	11,707.6	7,065.7	134.0	133.9	41.54	326.7	-4,636.0	117.6	-69.4	186.97	0.629	Level 1			
11,900.0	7,153.4	11,807.6	7,065.6	136.8	136.7	41.43	326.2	-4,736.0	117.0	-73.4	190.49	0.614	Level 1			
12,000.0	7,153.1	11,907.6	7,065.6	139.6	139.5	41.33	325.7	-4,836.0	116.5	-77.5	193.99	0.601	Level 1			
12,100.0	7,152.8	12,007.6	7,065.5	142.4	142.3	41.22	325.2	-4,936.0	116.0	-81.5	197.48	0.587	Level 1			
12,200.0	7,152.4	12,107.6	7,065.4	145.1	145.0	41.11	324.7	-5,036.0	115.5	-85.5	200.95	0.575	Level 1			
12,300.0	7,152.1	12,207.6	7,065.4	147.9	147.8	41.00	324.2	-5,136.0	115.0	-89.4	204.40	0.562	Level 1			
12,400.0	7,151.8	12,307.6	7,065.3	150.7	150.6	40.89	323.7	-5,236.0	114.5	-93.4	207.84	0.551	Level 1			
12,500.0	7,151.5	12,407.6	7,065.2	153.5	153.4	40.78	323.2	-5,336.0	113.9	-97.3	211.26	0.539	Level 1			
12,600.0	7,151.2	12,507.6	7,065.2	156.3	156.2	40.67	322.7	-5,436.0	113.4	-101.2	214.66	0.528	Level 1			
12,700.0	7,150.9	12,607.6	7,065.1	159.1	159.0	40.55	322.2	-5,536.0	112.9	-105.1	218.04	0.518	Level 1			
12,800.0	7,150.6	12,707.6	7,065.0	161.9	161.8	40.44	321.7	-5,636.0	112.4	-109.0	221.41	0.508	Level 1			
12,900.0	7,150.3	12,807.6	7,064.9	164.7	164.6	40.32	321.2	-5,736.0	111.9	-112.9	224.75	0.498	Level 1			
13,000.0	7,149.9	12,907.6	7,064.9	167.5	167.4	40.21	320.7	-5,836.0	111.4	-116.7	228.08	0.488	Level 1			
13,100.0	7,149.6	13,007.6	7,064.8	170.3	170.2	40.09	320.2	-5,936.0	110.9	-120.5	231.39	0.479	Level 1			
13,200.0	7,149.3	13,107.6	7,064.7	173.1	172.9	39.97	319.7	-6,036.0	110.4	-124.3	234.67	0.470	Level 1			
13,300.0	7,149.0	13,207.6	7,064.7	175.9	175.7	39.85	319.1	-6,136.0	109.8	-128.1	237.94	0.462	Level 1			
13,400.0	7,148.7	13,307.6	7,064.6	178.6	178.5	39.73	318.6	-6,236.0	109.3	-131.9	241.18	0.453	Level 1			
13,500.0	7,148.4	13,407.6	7,064.5	181.4	181.3	39.61	318.1	-6,336.0	108.8	-135.6	244.41	0.445	Level 1			
13,600.0	7,148.1	13,507.6	7,064.5	184.2	184.1	39.48	317.6	-6,436.0	108.3	-139.3	247.61	0.437	Level 1			
13,700.0	7,147.7	13,607.6	7,064.4	187.0	186.9	39.36	317.1	-6,536.0	107.8	-143.0	250.79	0.430	Level 1			
13,800.0	7,147.4	13,707.6	7,064.3	189.8	189.7	39.23	316.6	-6,636.0	107.3	-146.7	253.95	0.422	Level 1			
13,900.0	7,147.1	13,807.6	7,064.2	192.6	192.5	39.11	316.1	-6,736.0	106.8	-150.3	257.09	0.415	Level 1			
14,000.0	7,146.8	13,907.6	7,064.2	195.4	195.3	38.98	315.6	-6,836.0	106.3	-153.9	260.20	0.408	Level 1			
14,100.0	7,146.5	14,007.6	7,064.1	198.2	198.1	38.85	315.1	-6,936.0	105.8	-157.5	263.29	0.402	Level 1			
14,200.0	7,146.2	14,107.6	7,064.0	201.0	200.9	38.72	314.6	-7,036.0	105.3	-161.1	266.36	0.395	Level 1			
14,253.0	7,146.0	14,160.2	7,064.0	202.5	202.4	38.65	314.3	-7,088.6	105.0	-163.0	267.97	0.392	Level 1, ES, SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Offset Well Error:	0.0 ft		
Reference													Distance		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	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	61.9	0.0	61.9							
100.0	100.0	100.0	100.0	0.1	0.1	0.00	61.9	0.0	61.9	61.7	0.22	275.575				
200.0	200.0	200.0	200.0	0.3	0.3	0.00	61.9	0.0	61.9	61.3	0.67	91.858				
300.0	300.0	300.0	300.0	0.6	0.6	0.00	61.9	0.0	61.9	60.8	1.12	55.115				
400.0	400.0	400.0	400.0	0.8	0.8	0.00	61.9	0.0	61.9	60.4	1.57	39.368				
500.0	500.0	500.0	500.0	1.0	1.0	0.00	61.9	0.0	61.9	59.9	2.02	30.619				
600.0	600.0	600.0	600.0	1.2	1.2	0.00	61.9	0.0	61.9	59.5	2.47	25.052 CC, ES				
700.0	700.0	698.0	698.0	1.5	1.5	0.62	63.5	0.7	63.5	60.6	2.92	21.778				
800.0	800.0	795.8	795.7	1.7	1.7	2.30	68.0	2.7	68.2	64.9	3.36	20.302				
900.0	900.0	893.2	892.7	1.9	1.9	4.62	75.6	6.1	76.2	72.4	3.82	19.979				
1,000.0	1,000.0	989.8	988.6	2.1	2.2	7.15	86.1	10.8	87.5	83.2	4.29	20.427				
1,100.0	1,100.0	1,088.5	1,086.3	2.4	2.4	9.45	98.7	16.4	101.0	96.2	4.78	21.134				
1,200.0	1,200.0	1,187.5	1,184.4	2.6	2.7	11.21	111.3	22.1	114.5	109.3	5.28	21.695				
1,300.0	1,300.0	1,286.6	1,282.4	2.8	3.0	12.60	123.9	27.7	128.2	122.4	5.79	22.149				
1,400.0	1,400.0	1,385.6	1,380.5	3.0	3.3	13.73	136.6	33.4	141.9	135.6	6.30	22.523				
1,500.0	1,500.0	1,484.6	1,478.5	3.3	3.6	14.65	149.2	39.0	155.7	148.9	6.82	22.838				
1,600.0	1,600.0	1,583.8	1,576.8	3.5	3.9	-35.57	161.8	44.7	168.1	161.1	7.01	23.963				
1,700.0	1,699.8	1,683.3	1,675.3	3.7	4.3	-35.74	174.5	50.3	177.6	170.2	7.47	23.787				
1,800.0	1,799.5	1,783.1	1,774.1	3.9	4.6	-36.56	187.2	56.0	184.4	176.5	7.93	23.258				
1,900.0	1,898.9	1,882.8	1,872.9	4.2	4.9	-37.73	200.0	61.7	189.8	181.3	8.41	22.570				
2,000.0	1,998.3	1,982.6	1,971.7	4.4	5.2	-38.84	212.7	67.4	195.2	186.3	8.89	21.945				
2,100.0	2,097.8	2,082.4	2,070.5	4.6	5.6	-39.89	225.4	73.1	200.6	191.2	9.38	21.378				
2,200.0	2,197.2	2,182.2	2,169.3	4.9	5.9	-40.89	238.1	78.8	206.2	196.3	9.88	20.861				
2,300.0	2,296.6	2,282.0	2,268.1	5.2	6.2	-41.83	250.9	84.5	211.8	201.4	10.39	20.388				
2,400.0	2,396.1	2,381.8	2,366.9	5.4	6.6	-42.73	263.6	90.1	217.4	206.5	10.89	19.955				
2,500.0	2,495.5	2,481.6	2,465.7	5.7	6.9	-43.58	276.3	95.8	223.1	211.7	11.41	19.555				
2,600.0	2,595.0	2,581.3	2,564.5	6.0	7.2	-44.38	289.0	101.5	228.8	216.9	11.93	19.187				
2,700.0	2,694.4	2,681.1	2,663.3	6.2	7.6	-45.15	301.8	107.2	234.6	222.2	12.45	18.847				
2,800.0	2,793.8	2,780.9	2,762.2	6.5	7.9	-45.88	314.5	112.9	240.5	227.5	12.98	18.531				
2,900.0	2,893.3	2,880.7	2,861.0	6.8	8.2	-46.58	327.2	118.6	246.3	232.8	13.51	18.238				
3,000.0	2,992.7	2,980.5	2,959.8	7.1	8.6	-47.24	339.9	124.3	252.2	238.2	14.04	17.964				
3,100.0	3,092.1	3,080.3	3,058.6	7.3	8.9	-47.87	352.7	130.0	258.2	243.6	14.58	17.710				
3,200.0	3,191.6	3,180.0	3,157.4	7.6	9.2	-48.48	365.4	135.7	264.1	249.0	15.12	17.471				
3,300.0	3,291.0	3,279.8	3,256.2	7.9	9.6	-49.05	378.1	141.3	270.1	254.4	15.66	17.248				
3,400.0	3,390.5	3,379.6	3,355.0	8.2	9.9	-49.61	390.8	147.0	276.1	259.9	16.21	17.039				
3,500.0	3,489.9	3,479.4	3,453.8	8.5	10.3	-50.14	403.6	152.7	282.2	265.4	16.75	16.842				
3,600.0	3,589.3	3,579.2	3,552.6	8.7	10.6	-50.64	416.3	158.4	288.2	270.9	17.30	16.657				
3,700.0	3,688.8	3,679.0	3,651.4	9.0	10.9	-51.13	429.0	164.1	294.3	276.5	17.86	16.483				
3,800.0	3,788.2	3,778.8	3,750.2	9.3	11.3	-51.59	441.7	169.8	300.4	282.0	18.41	16.318				
3,900.0	3,887.6	3,878.5	3,849.0	9.6	11.6	-52.04	454.5	175.5	306.5	287.6	18.97	16.163				
4,000.0	3,987.1	3,978.3	3,947.8	9.9	11.9	-52.47	467.2	181.2	312.7	293.2	19.52	16.015				
4,100.0	4,086.5	4,078.1	4,046.6	10.2	12.3	-52.88	479.9	186.8	318.8	298.8	20.08	15.876				
4,200.0	4,186.0	4,177.9	4,145.4	10.5	12.6	-53.28	492.6	192.5	325.0	304.4	20.64	15.744				
4,300.0	4,285.4	4,277.7	4,244.2	10.8	12.9	-53.66	505.4	198.2	331.2	310.0	21.21	15.618				
4,400.0	4,384.8	4,377.5	4,343.0	11.0	13.3	-54.03	518.1	203.9	337.4	315.6	21.77	15.498				
4,500.0	4,484.3	4,477.2	4,441.9	11.3	13.6	-54.39	530.8	209.6	343.6	321.3	22.34	15.385				
4,600.0	4,583.7	4,577.0	4,540.7	11.6	14.0	-54.73	543.5	215.3	349.9	327.0	22.90	15.276				
4,700.0	4,683.1	4,676.8	4,639.5	11.9	14.3	-55.06	556.3	221.0	356.1	332.6	23.47	15.173				
4,800.0	4,782.6	4,776.6	4,738.3	12.2	14.6	-55.38	569.0	226.7	362.4	338.3	24.04	15.074				
4,900.0	4,882.0	4,876.4	4,837.1	12.5	15.0	-55.69	581.7	232.4	368.6	344.0	24.61	14.980				
5,000.0	4,981.5	4,976.2	4,935.9	12.8	15.3	-55.99	594.4	238.0	374.9	349.7	25.18	14.890				

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference													Warning	
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		
5,100.0	5,080.9	5,075.9	5,034.7	13.1	15.7	-56.28	607.2	243.7	381.2	355.4	25.75	14.803		
5,200.0	5,180.3	5,175.7	5,133.5	13.4	16.0	-56.56	619.9	249.4	387.5	361.2	26.32	14.721		
5,300.0	5,279.9	5,275.5	5,232.3	13.6	16.3	-56.78	632.6	255.1	394.4	367.6	26.85	14.693		
5,400.0	5,379.7	5,375.1	5,330.9	13.8	16.7	-56.63	645.3	260.8	403.3	376.0	27.27	14.787		
5,500.0	5,479.7	5,474.4	5,429.2	14.0	17.0	-56.13	658.0	266.4	414.1	386.5	27.64	14.981		
5,600.0	5,579.7	5,573.4	5,527.2	14.2	17.3	-4.46	670.6	272.1	426.3	396.9	29.39	14.504		
5,700.0	5,679.7	5,672.4	5,625.3	14.4	17.7	-3.59	683.2	277.7	438.7	408.7	29.99	14.628		
5,800.0	5,779.7	5,771.4	5,723.3	14.5	18.0	-2.77	695.8	283.4	451.1	420.5	30.58	14.752		
5,900.0	5,879.7	5,870.4	5,821.4	14.7	18.3	-1.99	708.5	289.0	463.6	432.5	31.17	14.875		
6,000.0	5,979.7	5,973.0	5,922.9	14.9	18.7	-1.23	721.5	294.8	476.2	444.4	31.76	14.994		
6,100.0	6,079.7	6,090.2	6,039.4	15.1	19.0	-0.57	733.4	300.2	486.3	454.0	32.30	15.055		
6,200.0	6,179.7	6,208.4	6,157.3	15.3	19.2	-0.17	741.0	303.5	492.7	459.9	32.77	15.034		
6,300.0	6,279.7	6,327.0	6,275.9	15.5	19.4	0.00	744.1	305.0	495.3	462.2	33.18	14.929		
6,400.0	6,379.7	6,430.8	6,379.7	15.7	19.5	0.00	744.2	305.0	495.4	461.9	33.54	14.770		
6,500.0	6,479.5	6,530.9	6,479.7	15.9	19.7	90.16	744.2	302.5	495.4	464.0	31.38	15.787		
6,600.0	6,578.1	6,631.1	6,578.8	16.0	19.8	90.38	744.2	287.8	495.4	463.9	31.56	15.699		
6,700.0	6,673.7	6,731.7	6,675.4	16.0	19.8	90.60	744.2	260.3	495.4	463.8	31.65	15.654		
6,800.0	6,764.6	6,832.5	6,767.8	16.0	19.8	90.80	744.2	220.1	495.5	463.7	31.72	15.621		
6,900.0	6,849.3	6,933.5	6,854.2	16.0	19.7	91.00	744.2	168.1	495.5	463.6	31.87	15.550		
7,000.0	6,926.4	7,034.7	6,933.3	16.1	19.7	91.17	744.2	104.9	495.5	463.3	32.22	15.377		
7,100.0	6,994.6	7,136.1	7,003.4	16.3	19.7	91.33	744.2	31.7	495.5	462.6	32.95	15.038		
7,200.0	7,052.6	7,237.7	7,063.2	16.9	19.7	91.46	744.2	-50.3	495.6	461.4	34.20	14.491		
7,300.0	7,099.5	7,339.5	7,111.8	17.8	19.8	91.57	744.2	-139.6	495.6	459.5	36.06	13.744		
7,400.0	7,134.4	7,441.3	7,148.1	19.1	20.4	91.65	744.2	-234.7	495.6	457.1	38.56	12.852		
7,500.0	7,156.9	7,543.3	7,171.4	20.7	21.8	91.70	744.2	-333.9	495.6	454.0	41.66	11.898		
7,600.0	7,166.5	7,645.3	7,181.4	22.5	23.5	91.72	744.2	-435.3	495.6	450.4	45.22	10.962		
7,700.0	7,166.6	7,745.8	7,181.3	24.5	25.4	91.71	744.2	-535.8	495.6	446.5	49.13	10.089		
7,800.0	7,166.3	7,845.8	7,180.8	26.6	27.5	91.68	744.2	-635.8	495.6	442.3	53.32	9.296		
7,900.0	7,166.0	7,945.8	7,180.3	28.9	29.6	91.66	744.2	-735.8	495.6	437.9	57.75	8.582		
8,000.0	7,165.6	8,045.8	7,179.8	31.2	31.9	91.63	744.2	-835.8	495.6	433.2	62.37	7.946		
8,100.0	7,165.3	8,145.8	7,179.2	33.6	34.2	91.61	744.2	-935.8	495.6	428.5	67.15	7.381		
8,200.0	7,165.0	8,245.8	7,178.7	36.0	36.7	91.58	744.2	-1,035.8	495.6	423.6	72.04	6.879		
8,300.0	7,164.7	8,345.8	7,178.2	38.5	39.1	91.56	744.2	-1,135.8	495.6	418.6	77.04	6.433		
8,400.0	7,164.4	8,445.8	7,177.7	41.1	41.6	91.54	744.2	-1,235.8	495.6	413.5	82.11	6.036		
8,500.0	7,164.1	8,545.8	7,177.2	43.7	44.2	91.51	744.2	-1,335.8	495.6	408.3	87.25	5.680		
8,600.0	7,163.8	8,645.8	7,176.6	46.3	46.7	91.49	744.2	-1,435.8	495.6	403.1	92.45	5.361		
8,700.0	7,163.4	8,745.8	7,176.1	48.9	49.3	91.46	744.2	-1,535.8	495.6	397.9	97.69	5.073		
8,800.0	7,163.1	8,845.8	7,175.6	51.5	52.0	91.44	744.2	-1,635.8	495.6	392.6	102.97	4.813		
8,900.0	7,162.8	8,945.8	7,175.1	54.2	54.6	91.42	744.2	-1,735.8	495.6	387.3	108.29	4.576		
9,000.0	7,162.5	9,045.8	7,174.5	56.9	57.2	91.39	744.2	-1,835.8	495.6	381.9	113.63	4.361		
9,100.0	7,162.2	9,145.8	7,174.0	59.6	59.9	91.37	744.2	-1,935.8	495.6	376.6	119.00	4.164		
9,200.0	7,161.9	9,245.8	7,173.5	62.3	62.6	91.34	744.2	-2,035.8	495.6	371.2	124.39	3.984		
9,300.0	7,161.6	9,345.8	7,173.0	65.0	65.3	91.32	744.2	-2,135.8	495.6	365.8	129.80	3.818		
9,400.0	7,161.2	9,445.8	7,172.4	67.7	68.0	91.29	744.2	-2,235.8	495.6	360.3	135.23	3.664		
9,500.0	7,160.9	9,545.8	7,171.9	70.4	70.7	91.27	744.2	-2,335.8	495.5	354.9	140.67	3.523		
9,600.0	7,160.6	9,645.8	7,171.4	73.1	73.4	91.25	744.2	-2,435.8	495.5	349.4	146.13	3.391		
9,700.0	7,160.3	9,745.8	7,170.9	75.9	76.1	91.22	744.2	-2,535.8	495.5	343.9	151.59	3.269		
9,800.0	7,160.0	9,845.8	7,170.3	78.6	78.8	91.20	744.2	-2,635.8	495.5	338.5	157.07	3.155		
9,900.0	7,159.7	9,945.8	7,169.8	81.4	81.6	91.17	744.2	-2,735.8	495.5	333.0	162.56	3.048		
10,000.0	7,159.4	10,045.8	7,169.3	84.1	84.3	91.15	744.2	-2,835.8	495.5	327.5	168.05	2.949		
10,100.0	7,159.0	10,145.8	7,168.8	86.9	87.1	91.12	744.2	-2,935.8	495.5	322.0	173.56	2.855		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 0-MWD													Offset Well Error:	0.0 ft		
Reference													Distance		Warning	
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				
10,200.0	7,158.7	10,245.8	7,168.2	89.6	89.8	91.10	744.2	-3,035.8	495.5	316.5	179.07	2.767				
10,300.0	7,158.4	10,345.8	7,167.7	92.4	92.6	91.08	744.2	-3,135.8	495.5	310.9	184.58	2.685				
10,400.0	7,158.1	10,445.8	7,167.2	95.1	95.3	91.05	744.2	-3,235.8	495.5	305.4	190.11	2.607				
10,500.0	7,157.8	10,545.8	7,166.7	97.9	98.1	91.03	744.2	-3,335.8	495.5	299.9	195.63	2.533				
10,600.0	7,157.5	10,645.8	7,166.2	100.7	100.8	91.00	744.2	-3,435.8	495.5	294.3	201.17	2.463				
10,700.0	7,157.2	10,745.8	7,165.6	103.4	103.6	90.98	744.2	-3,535.8	495.5	288.8	206.70	2.397				
10,800.0	7,156.8	10,845.8	7,165.1	106.2	106.3	90.96	744.2	-3,635.8	495.5	283.3	212.24	2.335				
10,900.0	7,156.5	10,945.8	7,164.6	109.0	109.1	90.93	744.2	-3,735.8	495.5	277.7	217.79	2.275				
11,000.0	7,156.2	11,045.8	7,164.1	111.8	111.9	90.91	744.2	-3,835.8	495.5	272.2	223.34	2.219				
11,100.0	7,155.9	11,145.8	7,163.5	114.5	114.6	90.88	744.2	-3,935.8	495.5	266.6	228.89	2.165				
11,200.0	7,155.6	11,245.8	7,163.0	117.3	117.4	90.86	744.2	-4,035.8	495.5	261.0	234.45	2.113				
11,300.0	7,155.3	11,345.8	7,162.5	120.1	120.2	90.83	744.2	-4,135.8	495.5	255.5	240.00	2.065				
11,400.0	7,155.0	11,445.8	7,162.0	122.9	123.0	90.81	744.2	-4,235.8	495.5	249.9	245.56	2.018				
11,500.0	7,154.6	11,545.8	7,161.4	125.6	125.7	90.79	744.2	-4,335.8	495.5	244.4	251.13	1.973				
11,600.0	7,154.3	11,645.8	7,160.9	128.4	128.5	90.76	744.2	-4,435.7	495.5	238.8	256.69	1.930				
11,700.0	7,154.0	11,745.8	7,160.4	131.2	131.3	90.74	744.2	-4,535.7	495.5	233.2	262.26	1.889				
11,800.0	7,153.7	11,845.8	7,159.9	134.0	134.1	90.71	744.2	-4,635.7	495.5	227.6	267.83	1.850				
11,900.0	7,153.4	11,945.8	7,159.3	136.8	136.9	90.69	744.2	-4,735.7	495.5	222.1	273.40	1.812				
12,000.0	7,153.1	12,045.8	7,158.8	139.6	139.6	90.66	744.2	-4,835.7	495.5	216.5	278.97	1.776				
12,100.0	7,152.8	12,145.8	7,158.3	142.4	142.4	90.64	744.2	-4,935.7	495.5	210.9	284.55	1.741				
12,200.0	7,152.4	12,245.8	7,157.8	145.1	145.2	90.62	744.2	-5,035.7	495.5	205.3	290.13	1.708				
12,300.0	7,152.1	12,345.8	7,157.3	147.9	148.0	90.59	744.2	-5,135.7	495.5	199.8	295.70	1.676				
12,400.0	7,151.8	12,445.8	7,156.7	150.7	150.8	90.57	744.2	-5,235.7	495.5	194.2	301.28	1.645				
12,500.0	7,151.5	12,545.8	7,156.2	153.5	153.6	90.54	744.2	-5,335.7	495.5	188.6	306.87	1.615				
12,600.0	7,151.2	12,645.8	7,155.7	156.3	156.3	90.52	744.2	-5,435.7	495.5	183.0	312.45	1.586				
12,700.0	7,150.9	12,745.8	7,155.2	159.1	159.1	90.50	744.2	-5,535.7	495.5	177.4	318.03	1.558				
12,800.0	7,150.6	12,845.8	7,154.6	161.9	161.9	90.47	744.2	-5,635.7	495.5	171.8	323.62	1.531				
12,900.0	7,150.3	12,945.8	7,154.1	164.7	164.7	90.45	744.2	-5,735.7	495.5	166.3	329.20	1.505				
13,000.0	7,149.9	13,045.8	7,153.6	167.5	167.5	90.42	744.2	-5,835.7	495.5	160.7	334.79	1.480	Level 3			
13,100.0	7,149.6	13,145.8	7,153.1	170.3	170.3	90.40	744.2	-5,935.7	495.5	155.1	340.38	1.456	Level 3			
13,200.0	7,149.3	13,245.8	7,152.5	173.1	173.1	90.37	744.2	-6,035.7	495.5	149.5	345.96	1.432	Level 3			
13,300.0	7,149.0	13,345.8	7,152.0	175.9	175.9	90.35	744.2	-6,135.7	495.5	143.9	351.55	1.409	Level 3			
13,400.0	7,148.7	13,445.8	7,151.5	178.6	178.7	90.33	744.2	-6,235.7	495.5	138.3	357.14	1.387	Level 3			
13,500.0	7,148.4	13,545.8	7,151.0	181.4	181.5	90.30	744.2	-6,335.7	495.5	132.7	362.73	1.366	Level 3			
13,600.0	7,148.1	13,645.8	7,150.4	184.2	184.2	90.28	744.2	-6,435.7	495.5	127.1	368.33	1.345	Level 3			
13,700.0	7,147.7	13,745.8	7,149.9	187.0	187.0	90.25	744.2	-6,535.7	495.5	121.5	373.92	1.325	Level 3			
13,800.0	7,147.4	13,845.8	7,149.4	189.8	189.8	90.23	744.2	-6,635.7	495.5	115.9	379.51	1.306	Level 3			
13,900.0	7,147.1	13,945.8	7,148.9	192.6	192.6	90.20	744.2	-6,735.7	495.5	110.4	385.11	1.287	Level 3			
14,000.0	7,146.8	14,045.8	7,148.4	195.4	195.4	90.18	744.2	-6,835.7	495.5	104.8	390.70	1.268	Level 3			
14,100.0	7,146.5	14,145.8	7,147.8	198.2	198.2	90.16	744.2	-6,935.7	495.5	99.2	396.29	1.250	Level 3			
14,104.7	7,146.5	14,150.5	7,147.8	198.4	198.3	90.15	744.2	-6,940.4	495.5	98.9	396.56	1.249	Level 2			
14,200.0	7,146.2	14,245.8	7,147.3	201.0	201.0	90.13	744.2	-7,035.7	495.5	93.6	401.89	1.233	Level 2			
14,253.0	7,146.0	14,298.8	7,147.0	202.5	202.5	90.12	744.2	-7,088.7	495.5	90.6	404.86	1.224	Level 2, SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)														
Reference				Offset			Semi Major Axis			Distance			Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-29.1	0.0	29.1	28.9	0.22	129.683		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.67	43.228		
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-29.1	0.0	29.1	28.0	1.12	25.937		
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-29.1	0.0	29.1	27.6	1.57	18.526		
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-29.1	0.0	29.1	27.1	2.02	14.409		
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-29.1	0.0	29.1	26.7	2.47	11.789		
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-29.1	0.0	29.1	26.2	2.92	9.976		
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-29.1	0.0	29.1	25.8	3.37	8.646		
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-29.1	0.0	29.1	25.3	3.82	7.628		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-29.1	0.0	29.1	24.9	4.27	6.825		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-180.00	-29.1	0.0	29.1	24.4	4.72	6.175		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-180.00	-29.1	0.0	29.1	24.0	5.17	5.638	CC, ES	
1,300.0	1,300.0	1,299.1	1,299.1	2.8	2.8	178.25	-30.6	0.9	30.6	25.0	5.59	5.475		
1,400.0	1,400.0	1,398.0	1,397.8	3.0	3.0	173.89	-34.9	3.7	35.1	29.2	5.99	5.864		
1,500.0	1,500.0	1,496.4	1,495.9	3.3	3.2	168.73	-42.0	8.4	43.0	36.6	6.40	6.717		
1,600.0	1,600.0	1,594.7	1,593.5	3.5	3.4	114.79	-51.7	14.7	54.9	48.0	6.83	8.036		
1,700.0	1,699.8	1,693.7	1,691.7	3.7	3.6	115.16	-62.1	21.4	68.9	61.6	7.24	9.508		
1,800.0	1,799.5	1,792.4	1,789.7	3.9	3.8	117.45	-72.4	28.2	84.4	76.7	7.67	11.006		
1,900.0	1,898.9	1,891.0	1,887.4	4.2	4.1	120.14	-82.7	34.9	101.0	92.9	8.11	12.448		
2,000.0	1,998.3	1,989.5	1,985.2	4.4	4.4	122.09	-93.0	41.6	117.8	109.2	8.57	13.739		
2,100.0	2,097.8	2,088.0	2,082.9	4.6	4.6	123.55	-103.3	48.3	134.6	125.6	9.04	14.894		
2,200.0	2,197.2	2,186.5	2,180.7	4.9	4.9	124.68	-113.6	55.0	151.5	142.0	9.51	15.930		
2,300.0	2,296.6	2,285.0	2,278.4	5.2	5.2	125.59	-123.9	61.7	168.5	158.5	9.99	16.859		
2,400.0	2,396.1	2,383.6	2,376.2	5.4	5.5	126.33	-134.2	68.4	185.5	175.0	10.48	17.696		
2,500.0	2,495.5	2,482.1	2,473.9	5.7	5.8	126.95	-144.5	75.2	202.5	191.5	10.97	18.453		
2,600.0	2,595.0	2,580.6	2,571.7	6.0	6.1	127.47	-154.8	81.9	219.6	208.1	11.47	19.138		
2,700.0	2,694.4	2,679.1	2,669.4	6.2	6.4	127.91	-165.1	88.6	236.6	224.6	11.97	19.761		
2,800.0	2,793.8	2,777.6	2,767.2	6.5	6.7	128.30	-175.4	95.3	253.7	241.2	12.48	20.330		
2,900.0	2,893.3	2,876.2	2,864.9	6.8	7.0	128.63	-185.7	102.0	270.8	257.8	12.99	20.850		
3,000.0	2,992.7	2,974.7	2,962.7	7.1	7.3	128.93	-196.0	108.7	287.8	274.4	13.50	21.328		
3,100.0	3,092.1	3,073.2	3,060.4	7.3	7.6	129.20	-206.3	115.4	304.9	290.9	14.01	21.767		
3,200.0	3,191.6	3,171.7	3,158.2	7.6	7.9	129.43	-216.6	122.2	322.0	307.5	14.52	22.173		
3,300.0	3,291.0	3,270.2	3,255.9	7.9	8.2	129.64	-226.9	128.9	339.1	324.1	15.04	22.548		
3,400.0	3,390.5	3,368.7	3,353.7	8.2	8.5	129.83	-237.2	135.6	356.3	340.7	15.56	22.896		
3,500.0	3,489.9	3,467.3	3,451.4	8.5	8.8	130.01	-247.5	142.3	373.4	357.3	16.08	23.220		
3,600.0	3,589.3	3,565.8	3,549.2	8.7	9.2	130.17	-257.8	149.0	390.5	373.9	16.60	23.522		
3,700.0	3,688.8	3,664.3	3,646.9	9.0	9.5	130.31	-268.1	155.7	407.6	390.5	17.12	23.803		
3,800.0	3,788.2	3,762.8	3,744.6	9.3	9.8	130.45	-278.4	162.4	424.7	407.1	17.65	24.067		
3,900.0	3,887.6	3,861.3	3,842.4	9.6	10.1	130.57	-288.7	169.1	441.8	423.7	18.17	24.313		
4,000.0	3,987.1	3,959.9	3,940.1	9.9	10.4	130.68	-299.1	175.9	459.0	440.3	18.70	24.545		
4,100.0	4,086.5	4,058.4	4,037.9	10.2	10.7	130.79	-309.4	182.6	476.1	456.9	19.23	24.763		
4,200.0	4,186.0	4,156.9	4,135.6	10.5	11.1	130.89	-319.7	189.3	493.2	473.5	19.75	24.969		
4,300.0	4,285.4	4,255.4	4,233.4	10.8	11.4	130.98	-330.0	196.0	510.3	490.1	20.28	25.163		
4,400.0	4,384.8	4,353.9	4,331.1	11.0	11.7	131.07	-340.3	202.7	527.5	506.7	20.81	25.346		
4,500.0	4,484.3	4,452.5	4,428.9	11.3	12.0	131.15	-350.6	209.4	544.6	523.3	21.34	25.519		
4,600.0	4,583.7	4,551.0	4,526.6	11.6	12.3	131.22	-360.9	216.1	561.7	539.9	21.87	25.684		
4,700.0	4,683.1	4,649.5	4,624.4	11.9	12.7	131.29	-371.2	222.9	578.9	556.5	22.40	25.839		
4,800.0	4,782.6	4,748.0	4,722.1	12.2	13.0	131.36	-381.5	229.6	596.0	573.1	22.93	25.988		
4,900.0	4,882.0	4,846.5	4,819.9	12.5	13.3	131.43	-391.8	236.3	613.1	589.7	23.47	26.128		
5,000.0	4,981.5	4,945.1	4,917.6	12.8	13.6	131.49	-402.1	243.0	630.3	606.3	24.00	26.263		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)														
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,080.9	5,043.6	5,015.4	13.1	13.9	131.54	-412.4	249.7	647.4	622.9	24.53	26.390		
5,200.0	5,180.3	5,142.1	5,113.1	13.4	14.3	131.60	-422.7	256.4	664.5	639.5	25.06	26.512		
5,300.0	5,279.9	5,240.7	5,211.0	13.6	14.6	131.77	-433.0	263.1	680.9	655.3	25.60	26.597		
5,400.0	5,379.7	5,339.7	5,309.2	13.8	14.9	131.75	-443.4	269.9	694.9	668.9	26.07	26.653		
5,500.0	5,479.7	5,438.9	5,407.6	14.0	15.2	131.48	-453.7	276.6	706.7	680.2	26.51	26.654		
5,600.0	5,579.7	5,538.1	5,506.0	14.2	15.6	-178.26	-464.1	283.4	717.0	689.3	27.76	25.831		
5,700.0	5,679.7	5,637.3	5,604.5	14.4	15.9	-178.82	-474.5	290.2	727.3	699.1	28.27	25.725		
5,800.0	5,779.7	5,753.2	5,719.5	14.5	16.2	-179.41	-485.7	297.5	737.0	708.2	28.78	25.607		
5,900.0	5,879.7	5,880.3	5,846.3	14.7	16.5	-179.83	-493.8	302.7	743.3	714.1	29.25	25.416		
6,000.0	5,979.7	6,008.1	5,974.0	14.9	16.7	-180.00	-497.1	304.9	746.0	716.3	29.67	25.140		
6,100.0	6,079.7	6,113.7	6,079.7	15.1	16.8	-180.00	-497.2	305.0	746.0	716.0	30.05	24.827		
6,200.0	6,179.7	6,213.7	6,179.7	15.3	17.0	-180.00	-497.2	305.0	746.0	715.6	30.41	24.533		
6,300.0	6,279.7	6,313.7	6,279.7	15.5	17.1	-180.00	-497.2	305.0	746.0	715.3	30.77	24.245		
6,341.2	6,320.8	6,354.9	6,320.8	15.6	17.2	-179.99	-497.2	304.8	746.0	715.1	30.92	24.129		
6,400.0	6,379.7	6,413.5	6,379.3	15.7	17.3	-179.72	-497.2	301.4	746.1	714.9	31.12	23.971		
6,500.0	6,479.5	6,511.5	6,476.0	15.9	17.3	-88.79	-497.2	285.6	746.2	715.7	30.50	24.469		
6,600.0	6,578.1	6,608.0	6,568.4	16.0	17.4	-87.85	-497.2	258.1	746.6	715.9	30.65	24.362		
6,700.0	6,673.7	6,703.0	6,655.3	16.0	17.4	-86.95	-497.2	219.9	747.1	716.4	30.73	24.316		
6,800.0	6,764.6	6,796.8	6,735.8	16.0	17.3	-86.11	-497.2	171.9	747.8	717.0	30.81	24.269		
6,900.0	6,849.3	6,889.5	6,809.0	16.0	17.3	-85.34	-497.2	115.1	748.5	717.5	31.01	24.137		
7,000.0	6,926.4	6,981.2	6,874.1	16.1	17.3	-84.65	-497.2	50.6	749.3	717.9	31.45	23.824		
7,100.0	6,994.6	7,072.0	6,930.6	16.3	17.3	-84.04	-497.2	-20.5	750.1	717.9	32.27	23.245		
7,200.0	7,052.6	7,162.2	6,977.8	16.9	17.2	-83.52	-497.2	-97.2	750.9	717.3	33.58	22.359		
7,300.0	7,099.5	7,250.0	7,014.9	17.8	17.7	-83.12	-497.2	-176.8	751.5	716.1	35.44	21.207		
7,400.0	7,134.4	7,340.9	7,043.3	19.1	19.1	-82.80	-497.2	-263.1	752.0	714.1	37.92	19.829		
7,500.0	7,156.9	7,429.7	7,061.1	20.7	20.6	-82.61	-497.2	-350.1	752.3	711.4	40.91	18.391		
7,600.0	7,166.5	7,518.4	7,068.6	22.5	22.2	-82.52	-497.2	-438.4	752.4	708.1	44.30	16.986		
7,700.0	7,166.6	7,615.6	7,068.7	24.5	24.2	-82.53	-497.2	-535.5	752.4	704.3	48.18	15.618		
7,800.0	7,166.3	7,715.6	7,068.5	26.6	26.3	-82.53	-497.2	-635.5	752.4	700.0	52.40	14.359		
7,900.0	7,166.0	7,815.6	7,068.3	28.9	28.6	-82.54	-497.2	-735.5	752.4	695.6	56.85	13.234		
8,000.0	7,165.6	7,915.6	7,068.1	31.2	31.0	-82.55	-497.2	-835.5	752.4	690.9	61.49	12.236		
8,100.0	7,165.3	8,015.6	7,067.9	33.6	33.4	-82.56	-497.2	-935.5	752.4	686.1	66.27	11.353		
8,200.0	7,165.0	8,115.6	7,067.7	36.0	35.8	-82.57	-497.2	-1,035.5	752.4	681.2	71.17	10.572		
8,300.0	7,164.7	8,215.6	7,067.5	38.5	38.4	-82.57	-497.2	-1,135.5	752.4	676.2	76.16	9.879		
8,400.0	7,164.4	8,315.6	7,067.2	41.1	40.9	-82.58	-497.2	-1,235.5	752.3	671.1	81.22	9.263		
8,500.0	7,164.1	8,415.6	7,067.0	43.7	43.5	-82.59	-497.2	-1,335.5	752.3	666.0	86.35	8.713		
8,600.0	7,163.8	8,515.6	7,066.8	46.3	46.1	-82.60	-497.2	-1,435.5	752.3	660.8	91.53	8.219		
8,700.0	7,163.4	8,615.6	7,066.6	48.9	48.8	-82.61	-497.2	-1,535.5	752.3	655.5	96.75	7.776		
8,800.0	7,163.1	8,715.6	7,066.4	51.5	51.4	-82.61	-497.2	-1,635.5	752.3	650.3	102.01	7.374		
8,900.0	7,162.8	8,815.6	7,066.2	54.2	54.1	-82.62	-497.2	-1,735.5	752.3	645.0	107.30	7.011		
9,000.0	7,162.5	8,915.6	7,066.0	56.9	56.7	-82.63	-497.2	-1,835.5	752.3	639.6	112.62	6.679		
9,100.0	7,162.2	9,015.6	7,065.8	59.6	59.4	-82.64	-497.2	-1,935.5	752.2	634.3	117.97	6.377		
9,200.0	7,161.9	9,115.6	7,065.6	62.3	62.1	-82.64	-497.2	-2,035.5	752.2	628.9	123.33	6.099		
9,300.0	7,161.6	9,215.6	7,065.4	65.0	64.9	-82.65	-497.2	-2,135.5	752.2	623.5	128.71	5.844		
9,400.0	7,161.2	9,315.6	7,065.2	67.7	67.6	-82.66	-497.2	-2,235.5	752.2	618.1	134.11	5.609		
9,500.0	7,160.9	9,415.6	7,064.9	70.4	70.3	-82.67	-497.2	-2,335.5	752.2	612.7	139.52	5.391		
9,600.0	7,160.6	9,515.6	7,064.7	73.1	73.0	-82.68	-497.2	-2,435.5	752.2	607.2	144.94	5.189		
9,700.0	7,160.3	9,615.6	7,064.5	75.9	75.8	-82.68	-497.2	-2,535.5	752.2	601.8	150.37	5.002		
9,800.0	7,160.0	9,715.6	7,064.3	78.6	78.5	-82.69	-497.2	-2,635.5	752.1	596.3	155.82	4.827		
9,900.0	7,159.7	9,815.6	7,064.1	81.4	81.2	-82.70	-497.2	-2,735.5	752.1	590.9	161.27	4.664		
10,000.0	7,159.4	9,915.6	7,063.9	84.1	84.0	-82.71	-497.2	-2,835.5	752.1	585.4	166.73	4.511		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-214 - Wellbore #1 - Plan #3 (12-18-14)														
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		
10,100.0	7,159.0	10,015.6	7,063.7	86.9	86.8	-82.72	-497.2	-2,935.5	752.1	579.9	172.20	4.368		
10,200.0	7,158.7	10,115.6	7,063.5	89.6	89.5	-82.72	-497.2	-3,035.5	752.1	574.4	177.68	4.233		
10,300.0	7,158.4	10,215.6	7,063.3	92.4	92.3	-82.73	-497.2	-3,135.5	752.1	568.9	183.16	4.106		
10,400.0	7,158.1	10,315.6	7,063.1	95.1	95.0	-82.74	-497.2	-3,235.5	752.1	563.4	188.65	3.987		
10,500.0	7,157.8	10,415.6	7,062.8	97.9	97.8	-82.75	-497.2	-3,335.5	752.0	557.9	194.14	3.874		
10,600.0	7,157.5	10,515.6	7,062.6	100.7	100.6	-82.76	-497.2	-3,435.5	752.0	552.4	199.64	3.767		
10,700.0	7,157.2	10,615.6	7,062.4	103.4	103.3	-82.76	-497.2	-3,535.5	752.0	546.9	205.14	3.666		
10,800.0	7,156.8	10,715.6	7,062.2	106.2	106.1	-82.77	-497.2	-3,635.5	752.0	541.4	210.64	3.570		
10,900.0	7,156.5	10,815.6	7,062.0	109.0	108.9	-82.78	-497.2	-3,735.5	752.0	535.8	216.15	3.479		
11,000.0	7,156.2	10,915.6	7,061.8	111.8	111.7	-82.79	-497.2	-3,835.5	752.0	530.3	221.67	3.392		
11,100.0	7,155.9	11,015.6	7,061.6	114.5	114.4	-82.79	-497.2	-3,935.5	752.0	524.8	227.18	3.310		
11,200.0	7,155.6	11,115.6	7,061.4	117.3	117.2	-82.80	-497.2	-4,035.5	751.9	519.2	232.70	3.231		
11,300.0	7,155.3	11,215.6	7,061.2	120.1	120.0	-82.81	-497.2	-4,135.5	751.9	513.7	238.22	3.156		
11,400.0	7,155.0	11,315.6	7,061.0	122.9	122.8	-82.82	-497.2	-4,235.5	751.9	508.2	243.75	3.085		
11,500.0	7,154.6	11,415.6	7,060.8	125.6	125.6	-82.83	-497.2	-4,335.5	751.9	502.6	249.28	3.016		
11,600.0	7,154.3	11,515.6	7,060.5	128.4	128.3	-82.83	-497.2	-4,435.5	751.9	497.1	254.80	2.951		
11,700.0	7,154.0	11,615.6	7,060.3	131.2	131.1	-82.84	-497.2	-4,535.5	751.9	491.5	260.34	2.888		
11,800.0	7,153.7	11,715.6	7,060.1	134.0	133.9	-82.85	-497.2	-4,635.5	751.9	486.0	265.87	2.828		
11,900.0	7,153.4	11,815.6	7,059.9	136.8	136.7	-82.86	-497.2	-4,735.5	751.9	480.4	271.41	2.770		
12,000.0	7,153.1	11,915.6	7,059.7	139.6	139.5	-82.87	-497.2	-4,835.5	751.8	474.9	276.94	2.715		
12,100.0	7,152.8	12,015.6	7,059.5	142.4	142.3	-82.87	-497.2	-4,935.5	751.8	469.3	282.48	2.661		
12,200.0	7,152.4	12,115.6	7,059.3	145.1	145.1	-82.88	-497.2	-5,035.5	751.8	463.8	288.02	2.610		
12,300.0	7,152.1	12,215.6	7,059.1	147.9	147.8	-82.89	-497.2	-5,135.5	751.8	458.2	293.57	2.561		
12,400.0	7,151.8	12,315.6	7,058.9	150.7	150.6	-82.90	-497.2	-5,235.5	751.8	452.7	299.11	2.513		
12,500.0	7,151.5	12,415.6	7,058.7	153.5	153.4	-82.91	-497.2	-5,335.5	751.8	447.1	304.65	2.468		
12,600.0	7,151.2	12,515.6	7,058.5	156.3	156.2	-82.91	-497.2	-5,435.5	751.8	441.6	310.20	2.423		
12,700.0	7,150.9	12,615.6	7,058.2	159.1	159.0	-82.92	-497.2	-5,535.5	751.7	436.0	315.75	2.381		
12,800.0	7,150.6	12,715.6	7,058.0	161.9	161.8	-82.93	-497.2	-5,635.5	751.7	430.4	321.30	2.340		
12,900.0	7,150.3	12,815.6	7,057.8	164.7	164.6	-82.94	-497.2	-5,735.5	751.7	424.9	326.85	2.300		
13,000.0	7,149.9	12,915.6	7,057.6	167.5	167.4	-82.95	-497.2	-5,835.5	751.7	419.3	332.40	2.261		
13,100.0	7,149.6	13,015.6	7,057.4	170.3	170.2	-82.95	-497.2	-5,935.5	751.7	413.7	337.95	2.224		
13,200.0	7,149.3	13,115.6	7,057.2	173.1	173.0	-82.96	-497.2	-6,035.5	751.7	408.2	343.51	2.188		
13,300.0	7,149.0	13,215.6	7,057.0	175.9	175.8	-82.97	-497.2	-6,135.5	751.7	402.6	349.06	2.153		
13,400.0	7,148.7	13,315.6	7,056.8	178.6	178.6	-82.98	-497.2	-6,235.5	751.6	397.0	354.62	2.120		
13,500.0	7,148.4	13,415.6	7,056.6	181.4	181.4	-82.98	-497.2	-6,335.5	751.6	391.5	360.17	2.087		
13,600.0	7,148.1	13,515.6	7,056.4	184.2	184.2	-82.99	-497.2	-6,435.5	751.6	385.9	365.73	2.055		
13,700.0	7,147.7	13,615.6	7,056.1	187.0	186.9	-83.00	-497.2	-6,535.5	751.6	380.3	371.29	2.024		
13,800.0	7,147.4	13,715.6	7,055.9	189.8	189.7	-83.01	-497.2	-6,635.5	751.6	374.7	376.85	1.994		
13,900.0	7,147.1	13,815.6	7,055.7	192.6	192.5	-83.02	-497.2	-6,735.5	751.6	369.2	382.41	1.965		
14,000.0	7,146.8	13,915.6	7,055.5	195.4	195.3	-83.02	-497.2	-6,835.5	751.6	363.6	387.97	1.937		
14,100.0	7,146.5	14,015.6	7,055.3	198.2	198.1	-83.03	-497.2	-6,935.5	751.6	358.0	393.53	1.910		
14,200.0	7,146.2	14,115.6	7,055.1	201.0	200.9	-83.04	-497.2	-7,035.5	751.5	352.4	399.09	1.883		
14,239.0	7,146.0	14,154.5	7,055.0	202.1	202.0	-83.04	-497.2	-7,074.5	751.5	350.3	401.26	1.873		
14,253.0	7,146.0	14,163.3	7,055.0	202.5	202.3	-83.04	-497.2	-7,083.3	751.6	349.7	401.89	1.870 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-314 - Wellbore #1 - Plan #3 (12-18-14)														
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	180.00	-58.3	0.0	58.3	58.3	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	180.00	-58.3	0.0	58.3	58.1	0.23	256.744		
200.0	200.0	201.0	201.0	0.3	0.3	180.00	-58.3	0.0	58.3	57.6	0.68	86.150		
300.0	300.0	301.0	301.0	0.6	0.6	180.00	-58.3	0.0	58.3	57.2	1.13	51.759		
400.0	400.0	401.0	401.0	0.8	0.8	180.00	-58.3	0.0	58.3	56.7	1.58	36.992		
500.0	500.0	501.0	501.0	1.0	1.0	180.00	-58.3	0.0	58.3	56.3	2.03	28.780		
600.0	600.0	601.0	601.0	1.2	1.2	180.00	-58.3	0.0	58.3	55.8	2.47	23.552		
700.0	700.0	701.0	701.0	1.5	1.5	180.00	-58.3	0.0	58.3	55.4	2.92	19.932		
800.0	800.0	801.0	801.0	1.7	1.7	180.00	-58.3	0.0	58.3	54.9	3.37	17.276		
900.0	900.0	901.0	901.0	1.9	1.9	180.00	-58.3	0.0	58.3	54.5	3.82	15.245		
966.3	966.3	967.3	967.3	2.1	2.1	180.00	-58.3	0.0	58.3	54.2	4.12	14.142 CC		
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	180.00	-58.3	0.0	58.3	54.0	4.27	13.642 ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.3	179.33	-59.9	0.7	59.9	55.2	4.69	12.763		
1,200.0	1,200.0	1,197.0	1,196.9	2.6	2.5	177.60	-64.5	2.7	64.7	59.6	5.09	12.704 SF		
1,300.0	1,300.0	1,294.4	1,293.9	2.8	2.7	175.21	-72.1	6.0	72.7	67.2	5.50	13.223		
1,400.0	1,400.0	1,391.2	1,390.0	3.0	2.9	172.65	-82.7	10.7	84.1	78.2	5.92	14.206		
1,500.0	1,500.0	1,487.1	1,484.7	3.3	3.1	170.25	-96.1	16.5	98.9	92.5	6.36	15.550		
1,600.0	1,600.0	1,584.4	1,580.5	3.5	3.4	117.83	-112.0	23.4	117.1	110.3	6.78	17.265		
1,700.0	1,699.8	1,682.3	1,676.9	3.7	3.7	117.81	-128.1	30.5	137.0	129.8	7.21	19.007		
1,800.0	1,799.5	1,779.9	1,772.8	3.9	4.0	118.81	-144.2	37.5	158.6	150.9	7.65	20.739		
1,900.0	1,898.9	1,877.2	1,868.6	4.2	4.4	120.38	-160.2	44.5	181.1	173.0	8.10	22.359		
2,000.0	1,998.3	1,974.5	1,964.3	4.4	4.7	121.62	-176.2	51.4	203.8	195.2	8.57	23.780		
2,100.0	2,097.8	2,071.9	2,060.0	4.6	5.1	122.61	-192.2	58.4	226.6	217.5	9.05	25.038		
2,200.0	2,197.2	2,169.2	2,155.8	4.9	5.4	123.41	-208.2	65.4	249.4	239.8	9.54	26.152		
2,300.0	2,296.6	2,266.5	2,251.5	5.2	5.8	124.09	-224.2	72.4	272.2	262.2	10.03	27.141		
2,400.0	2,396.1	2,363.8	2,347.2	5.4	6.2	124.65	-240.2	79.4	295.1	284.5	10.53	28.025		
2,500.0	2,495.5	2,461.1	2,443.0	5.7	6.6	125.14	-256.2	86.3	318.0	306.9	11.03	28.817		
2,600.0	2,595.0	2,558.4	2,538.7	6.0	6.9	125.56	-272.2	93.3	340.9	329.3	11.54	29.530		
2,700.0	2,694.4	2,655.7	2,634.4	6.2	7.3	125.93	-288.2	100.3	363.8	351.7	12.06	30.173		
2,800.0	2,793.8	2,753.0	2,730.2	6.5	7.7	126.25	-304.2	107.3	386.7	374.2	12.57	30.757		
2,900.0	2,893.3	2,850.3	2,825.9	6.8	8.1	126.54	-320.2	114.3	409.7	396.6	13.09	31.288		
3,000.0	2,992.7	2,947.7	2,921.6	7.1	8.5	126.80	-336.2	121.3	432.6	419.0	13.62	31.773		
3,100.0	3,092.1	3,045.0	3,017.4	7.3	8.9	127.03	-352.2	128.2	455.6	441.5	14.14	32.217		
3,200.0	3,191.6	3,142.3	3,113.1	7.6	9.2	127.24	-368.2	135.2	478.6	463.9	14.67	32.625		
3,300.0	3,291.0	3,239.6	3,208.8	7.9	9.6	127.43	-384.2	142.2	501.6	486.4	15.20	33.001		
3,400.0	3,390.5	3,336.9	3,304.6	8.2	10.0	127.60	-400.2	149.2	524.5	508.8	15.73	33.348		
3,500.0	3,489.9	3,434.2	3,400.3	8.5	10.4	127.76	-416.2	156.2	547.5	531.3	16.26	33.669		
3,600.0	3,589.3	3,531.5	3,496.0	8.7	10.8	127.91	-432.2	163.2	570.5	553.7	16.80	33.968		
3,700.0	3,688.8	3,628.8	3,591.8	9.0	11.2	128.04	-448.3	170.1	593.5	576.2	17.33	34.245		
3,800.0	3,788.2	3,726.1	3,687.5	9.3	11.6	128.17	-464.3	177.1	616.5	598.6	17.87	34.504		
3,900.0	3,887.6	3,823.5	3,783.2	9.6	12.0	128.29	-480.3	184.1	639.5	621.1	18.41	34.746		
4,000.0	3,987.1	3,920.8	3,879.0	9.9	12.4	128.39	-496.3	191.1	662.5	643.6	18.94	34.973		
4,100.0	4,086.5	4,018.1	3,974.7	10.2	12.8	128.49	-512.3	198.1	685.5	666.0	19.48	35.185		
4,200.0	4,186.0	4,115.4	4,070.4	10.5	13.2	128.59	-528.3	205.0	708.5	688.5	20.02	35.385		
4,300.0	4,285.4	4,212.7	4,166.2	10.8	13.6	128.68	-544.3	212.0	731.5	711.0	20.56	35.573		
4,400.0	4,384.8	4,310.0	4,261.9	11.0	14.0	128.76	-560.3	219.0	754.5	733.4	21.11	35.750		
4,500.0	4,484.3	4,407.3	4,357.6	11.3	14.4	128.84	-576.3	226.0	777.5	755.9	21.65	35.917		
4,600.0	4,583.7	4,504.6	4,453.3	11.6	14.8	128.91	-592.3	233.0	800.5	778.4	22.19	36.075		
4,700.0	4,683.1	4,602.0	4,549.1	11.9	15.2	128.98	-608.3	240.0	823.6	800.8	22.73	36.225		
4,800.0	4,782.6	4,699.3	4,644.8	12.2	15.6	129.04	-624.3	246.9	846.6	823.3	23.28	36.367		
4,900.0	4,882.0	4,796.6	4,740.5	12.5	16.0	129.11	-640.3	253.9	869.6	845.8	23.82	36.501		

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 Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference													Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-314 - Wellbore #1 - Plan #3 (12-18-14)	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,981.5	4,893.9	4,836.3	12.8	16.4	129.17	-656.3	260.9	892.6	868.2	24.37	36.629		
5,100.0	5,080.9	4,991.2	4,932.0	13.1	16.8	129.22	-672.3	267.9	915.6	890.7	24.91	36.751		
5,200.0	5,180.3	5,088.5	5,027.7	13.4	17.2	129.27	-688.3	274.9	938.6	913.2	25.46	36.867		
5,300.0	5,279.9	5,186.0	5,123.6	13.6	17.6	129.56	-704.4	281.9	960.9	934.9	26.03	36.918		
5,400.0	5,379.7	5,299.6	5,235.5	13.8	18.0	129.68	-722.6	289.8	980.7	954.2	26.56	36.920		
5,500.0	5,479.7	5,444.1	5,378.6	14.0	18.4	129.59	-740.8	297.8	994.8	967.8	27.07	36.755		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference													Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (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		
0.0	0.0	1.0	1.0	0.0	0.0	180.00	-87.4	0.0	87.4	87.4	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	180.00	-87.4	0.0	87.4	87.2	0.23	385.143		
200.0	200.0	201.0	201.0	0.3	0.3	180.00	-87.4	0.0	87.4	86.8	0.68	129.234		
300.0	300.0	301.0	301.0	0.6	0.6	180.00	-87.4	0.0	87.4	86.3	1.13	77.644		
400.0	400.0	401.0	401.0	0.8	0.8	180.00	-87.4	0.0	87.4	85.9	1.58	55.491		
466.3	466.3	467.3	467.3	0.9	0.9	180.00	-87.4	0.0	87.4	85.6	1.87	46.661 CC		
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-87.4	0.0	87.4	85.4	2.02	43.224 ES		
600.0	600.0	598.2	598.1	1.2	1.2	179.62	-89.0	0.6	89.1	86.6	2.44	36.455		
700.0	700.0	695.1	695.0	1.5	1.4	178.58	-93.7	2.3	93.9	91.0	2.85	32.927		
800.0	800.0	791.6	791.1	1.7	1.6	177.08	-101.3	5.2	101.9	98.7	3.28	31.126		
900.0	900.0	887.5	886.3	1.9	1.8	175.34	-111.9	9.1	113.3	109.6	3.72	30.485 SF		
1,000.0	1,000.0	983.6	981.3	2.1	2.1	173.56	-125.5	14.2	127.8	123.6	4.18	30.575		
1,100.0	1,100.0	1,082.3	1,078.8	2.4	2.4	172.02	-140.1	19.6	143.2	138.6	4.66	30.722		
1,200.0	1,200.0	1,181.1	1,176.3	2.6	2.7	170.79	-154.8	25.1	158.7	153.6	5.16	30.780		
1,300.0	1,300.0	1,279.8	1,273.8	2.8	3.1	169.78	-169.5	30.6	174.3	168.7	5.66	30.775		
1,400.0	1,400.0	1,378.6	1,371.3	3.0	3.4	168.93	-184.1	36.0	189.9	183.8	6.18	30.734		
1,500.0	1,500.0	1,477.3	1,468.8	3.3	3.8	168.21	-198.8	41.5	205.6	198.9	6.70	30.673		
1,600.0	1,600.0	1,575.9	1,566.2	3.5	4.1	116.91	-213.4	46.9	222.1	215.2	6.86	32.380		
1,700.0	1,699.8	1,674.2	1,663.2	3.7	4.5	117.16	-228.0	52.4	240.1	232.8	7.31	32.852		
1,800.0	1,799.5	1,772.2	1,759.9	3.9	4.9	117.99	-242.6	57.8	259.8	252.0	7.77	33.448		
1,900.0	1,898.9	1,869.8	1,856.3	4.2	5.2	119.34	-257.1	63.2	280.4	272.2	8.24	34.022		
2,000.0	1,998.3	1,967.4	1,952.7	4.4	5.6	120.51	-271.6	68.6	301.2	292.5	8.73	34.513		
2,100.0	2,097.8	2,065.1	2,049.1	4.6	5.9	121.53	-286.1	74.0	322.1	312.9	9.22	34.936		
2,200.0	2,197.2	2,162.7	2,145.5	4.9	6.3	122.43	-300.6	79.4	343.1	333.4	9.72	35.304		
2,300.0	2,296.6	2,260.4	2,242.0	5.2	6.7	123.23	-315.1	84.8	364.1	353.9	10.22	35.627		
2,400.0	2,396.1	2,358.0	2,338.4	5.4	7.0	123.94	-329.6	90.2	385.2	374.5	10.73	35.910		
2,500.0	2,495.5	2,455.6	2,434.8	5.7	7.4	124.57	-344.1	95.6	406.4	395.2	11.24	36.162		
2,600.0	2,595.0	2,553.3	2,531.2	6.0	7.8	125.14	-358.6	101.0	427.6	415.9	11.75	36.386		
2,700.0	2,694.4	2,650.9	2,627.6	6.2	8.1	125.66	-373.1	106.4	448.9	436.6	12.27	36.586		
2,800.0	2,793.8	2,748.6	2,724.0	6.5	8.5	126.13	-387.6	111.8	470.1	457.3	12.79	36.767		
2,900.0	2,893.3	2,846.2	2,820.4	6.8	8.9	126.56	-402.1	117.2	491.4	478.1	13.31	36.930		
3,000.0	2,992.7	2,943.8	2,916.8	7.1	9.3	126.96	-416.6	122.6	512.8	498.9	13.83	37.078		
3,100.0	3,092.1	3,041.5	3,013.2	7.3	9.6	127.32	-431.1	128.0	534.1	519.8	14.35	37.212		
3,200.0	3,191.6	3,139.1	3,109.6	7.6	10.0	127.66	-445.6	133.4	555.5	540.6	14.88	37.336		
3,300.0	3,291.0	3,236.8	3,206.0	7.9	10.4	127.97	-460.1	138.8	576.9	561.5	15.40	37.449		
3,400.0	3,390.5	3,334.4	3,302.4	8.2	10.7	128.25	-474.6	144.2	598.3	582.3	15.93	37.553		
3,500.0	3,489.9	3,432.1	3,398.8	8.5	11.1	128.52	-489.1	149.6	619.7	603.2	16.46	37.649		
3,600.0	3,589.3	3,529.7	3,495.2	8.7	11.5	128.77	-503.6	155.0	641.1	624.1	16.99	37.737		
3,700.0	3,688.8	3,627.3	3,591.7	9.0	11.8	129.01	-518.1	160.4	662.5	645.0	17.52	37.820		
3,800.0	3,788.2	3,725.0	3,688.1	9.3	12.2	129.23	-532.6	165.8	684.0	665.9	18.05	37.896		
3,900.0	3,887.6	3,822.6	3,784.5	9.6	12.6	129.43	-547.1	171.2	705.4	686.8	18.58	37.968		
4,000.0	3,987.1	3,920.3	3,880.9	9.9	13.0	129.63	-561.6	176.6	726.9	707.8	19.11	38.034		
4,100.0	4,086.5	4,017.9	3,977.3	10.2	13.3	129.81	-576.1	182.0	748.4	728.7	19.64	38.097		
4,200.0	4,186.0	4,115.5	4,073.7	10.5	13.7	129.98	-590.6	187.4	769.8	749.7	20.18	38.155		
4,300.0	4,285.4	4,213.2	4,170.1	10.8	14.1	130.15	-605.1	192.8	791.3	770.6	20.71	38.210		
4,400.0	4,384.8	4,310.8	4,266.5	11.0	14.4	130.30	-619.6	198.3	812.8	791.6	21.24	38.262		
4,500.0	4,484.3	4,408.5	4,362.9	11.3	14.8	130.45	-634.1	203.7	834.3	812.5	21.78	38.310		
4,600.0	4,583.7	4,506.1	4,459.3	11.6	15.2	130.59	-648.6	209.1	855.8	833.5	22.31	38.356		
4,700.0	4,683.1	4,603.7	4,555.7	11.9	15.5	130.72	-663.1	214.5	877.3	854.5	22.85	38.399		
4,800.0	4,782.6	4,701.4	4,652.1	12.2	15.9	130.85	-677.6	219.9	898.8	875.4	23.38	38.440		
4,900.0	4,882.0	4,799.0	4,748.5	12.5	16.3	130.97	-692.1	225.3	920.3	896.4	23.92	38.479		

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

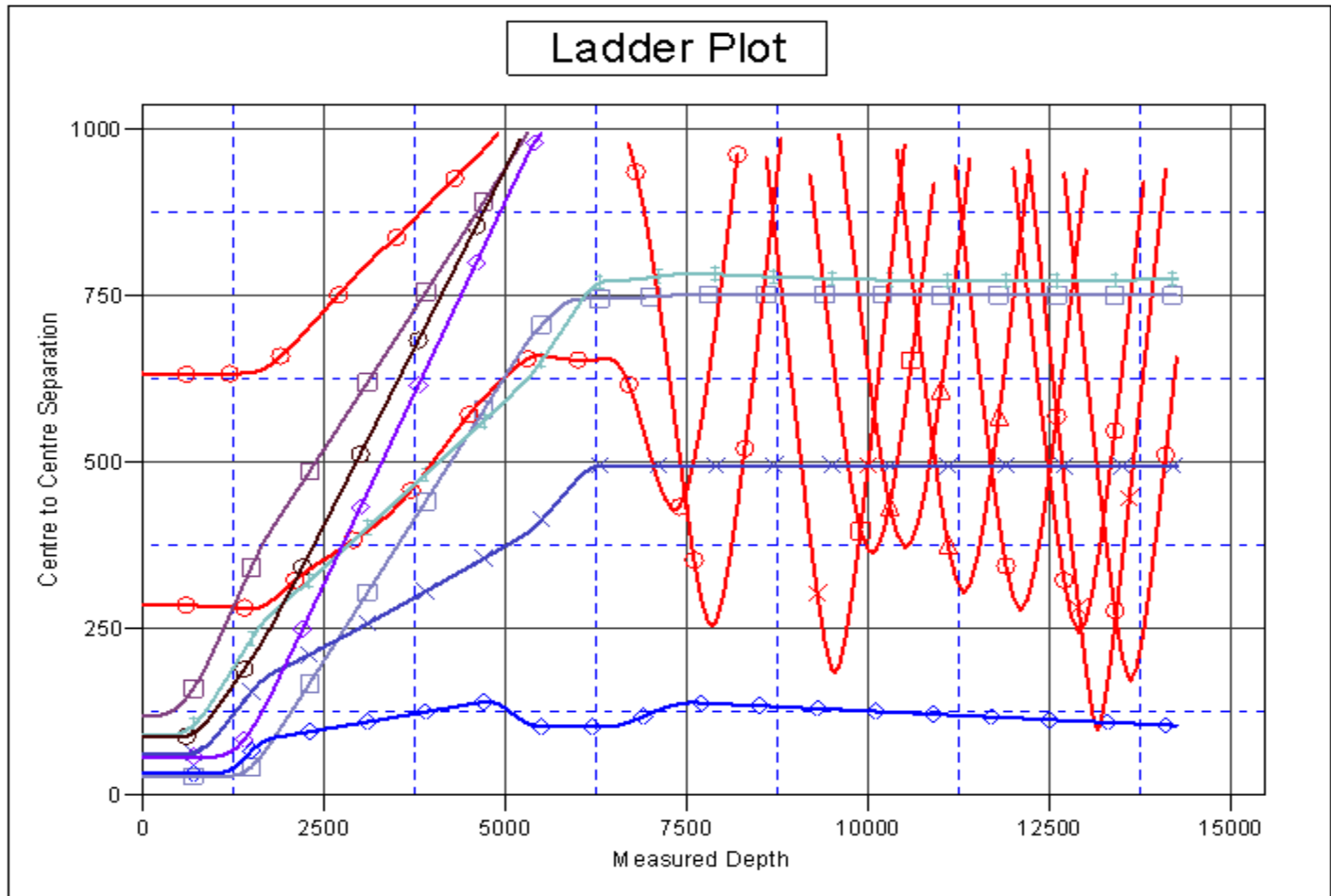
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	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														
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	
5,000.0	4,981.5	4,896.7	4,844.9	12.8	16.7	131.08	-706.6	230.7	941.8	917.4	24.45	38.516		
5,100.0	5,080.9	4,994.3	4,941.4	13.1	17.0	131.19	-721.1	236.1	963.4	938.4	24.99	38.551		
5,200.0	5,180.3	5,092.0	5,037.8	13.4	17.4	131.30	-735.6	241.5	984.9	959.4	25.53	38.584		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4790.0ft (RKB - 15')
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Tarin 32X-304
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.46°



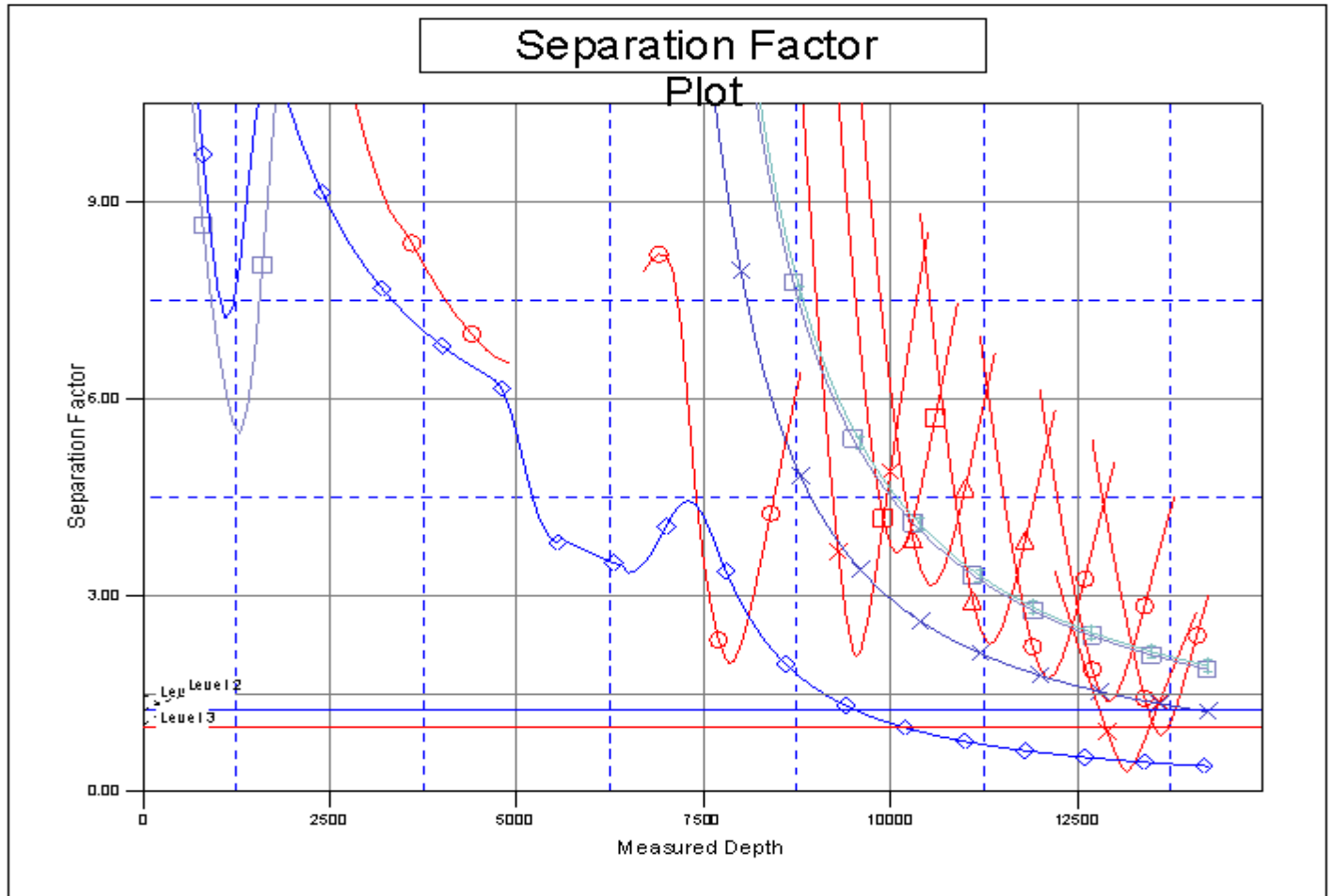
LEGEND

- | | | |
|--|---|-------------------------------------|
| Existing), Wellbore #1, Wellbore #1 VD | Wolf44-31 (Existing), Wellbore #1, Wellbore #1 VD | Tarin 32X-314, Wellbore #1, Plan #1 |
| ng), Wellbore #1, Wellbore #1 VD | Wolf 5 (Existing), Wellbore #1, Wellbore #1 VD | Tarin 32W-434, Wellbore #1, Plan # |
| isting), Wellbore #1, Wellbore #1 VD | Nicholas 5 (Existing), Wellbore #1, Wellbore #1 VD | Tarin 32W-234, Wellbore #1, Plan # |
| ing), Wellbore #1, Wellbore #1 VD | UPRR 41 PAN AM "J" 1 (P&A), Wellbore #1, Wellbore #1 VD | Tarin 32Y-404, Wellbore #1, Plan #2 |
| isting), Wellbore #1, Wellbore #1 VD | Tarin 32Y-214, Wellbore #1, Plan #3 (12-18-14) VD | Tarin 32Y-314, Wellbore #1, Plan #3 |
| ng), Wellbore #1, Wellbore #1 VD | Tarin 32X-204, Wellbore #1, Plan #2 (12-18-14) VD | |

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-304
Project:	SEC.32-T4N-R66W	TVD Reference:	WELL @ 4790.0ft (RKB - 15')
Reference Site:	Tarin 32X-HZ Pad Sec.32-T4N-R66W	MD Reference:	WELL @ 4790.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Tarin 32X-304	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 #3 (12-18-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4790.0ft (RKB - 15')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Tarin 32X-304
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.46°



LEGEND

(Existing), Wellbore #1, Wellbore #1 VD	Wolf 44-31 (Existing), Wellbore #1, Wellbore #1 VD	Tarin 32X-314, Wellbore #1, Plan #1
ng), Wellbore #1, Wellbore #1 VD	Wolf 5 (Existing), Wellbore #1, Wellbore #1 VD	Tarin 32W-434, Wellbore #1, Plan #1
(isting), Wellbore #1, Wellbore #1 VD	Nicholas 5 (Existing), Wellbore #1, Wellbore #1 VD	Tarin 32W-234, Wellbore #1, Plan #1
ing), Wellbore #1, Wellbore #1 VD	UPRR 41 PAN AM "J" 1 (P&A), Wellbore #1, Wellbore #1 VD	Tarin 32Y-404, Wellbore #1, Plan #2
(isting), Wellbore #1, Wellbore #1 VD	Tarin 32Y-214, Wellbore #1, Plan #3 (12-18-14) VD	Tarin 32Y-314, Wellbore #1, Plan #3
ng), Wellbore #1, Wellbore #1 VD	Tarin 32X-204, Wellbore #1, Plan #2 (12-18-14) VD	