

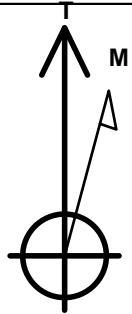
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Tarin 32X-404**

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 1339646.22 3197253.55 40.263570 -104.793170
 RKB - 15' WELL @ 4790.0ft (RKB - 15')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 973'FSL & 355'FEL, Sec.32	1.0	0.0	0.0	Point
BHL 1296'FSL & 2147'FEL, Sec.31	7295.0	280.9	-7091.4	Point



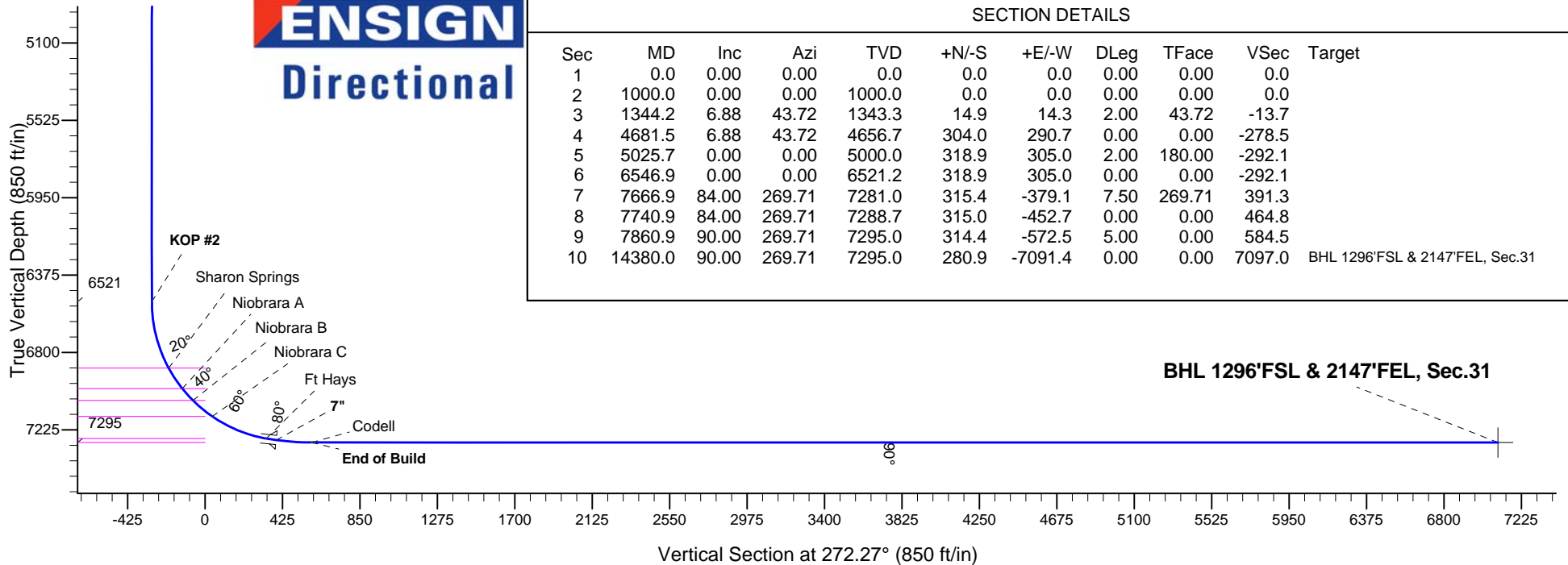
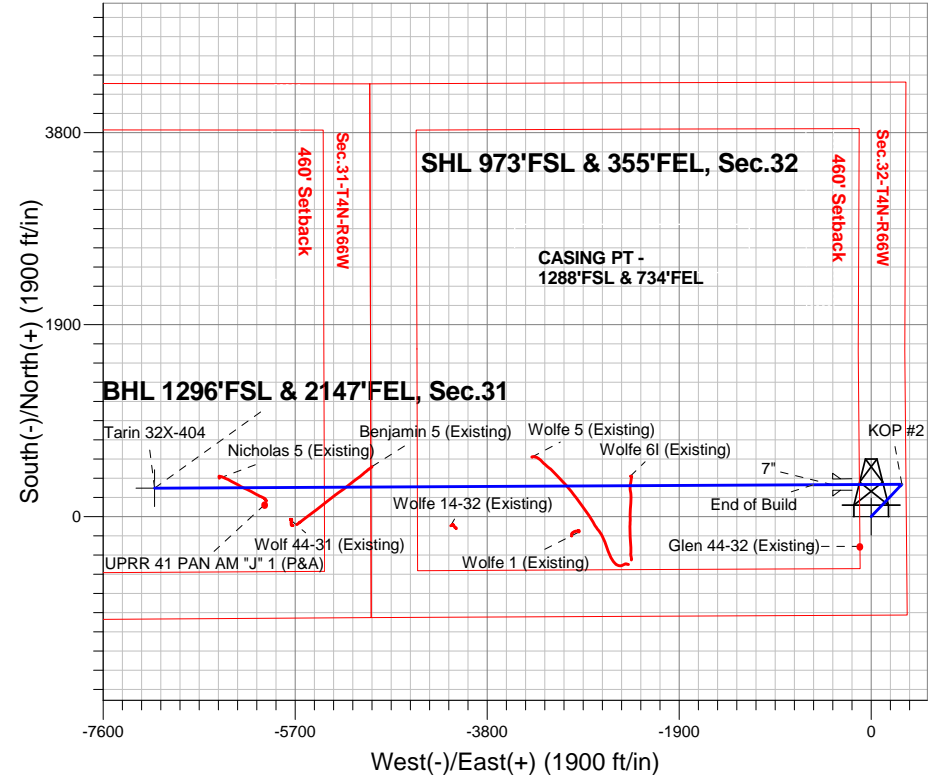
Azimuths to True North
 Magnetic North: 8.48°

Magnetic Field
 Strength: 52756.4nT
 Dip Angle: 66.84°
 Date: 4/23/2014
 Model: IGRF2010

Tarin 32X-HZ Pad Sec.32-T4N-R66W
 Tarin 32X-404
 Plan #1 (4-14-14)
 8:59, April 25 2014

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6521.2	6546.9	KOP #2
7295.0	7860.9	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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1344.2	6.88	43.72	1343.3	14.9	14.3	2.00	43.72	-13.7	
4	4681.5	6.88	43.72	4656.7	304.0	290.7	0.00	0.00	-278.5	
5	5025.7	0.00	0.00	5000.0	318.9	305.0	2.00	180.00	-292.1	
6	6546.9	0.00	0.00	6521.2	318.9	305.0	0.00	0.00	-292.1	
7	7666.9	84.00	269.71	7281.0	315.4	-379.1	7.50	269.71	391.3	
8	7740.9	84.00	269.71	7288.7	315.0	-452.7	0.00	0.00	464.8	
9	7860.9	90.00	269.71	7295.0	314.4	-572.5	5.00	0.00	584.5	
10	14380.0	90.00	269.71	7295.0	280.9	-7091.4	0.00	0.00	7097.0	BHL 1296'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-404

Wellbore #1

Plan: Plan #1 (4-14-14)

Standard Planning Report

25 April, 2014

Database:	landmark	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-14-14)		

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:	1,339,733.63ft	Latitude:	40.263810
From:	Lat/Long	Easting:	3,197,250.06ft	Longitude:	-104.793180
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.46 °

Well	Tarin 32X-404					
Well Position	+N-S	-87.4 ft	Northing:	1,339,646.22 ft	Latitude:	40.263570
	+E-W	2.8 ft	Easting:	3,197,253.55 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	4/23/2014	8.48	66.84	52,756

Design	Plan #1 (4-14-14)			
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	272.27

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,344.2	6.88	43.72	1,343.3	14.9	14.3	2.00	2.00	0.00	43.72	
4,681.5	6.88	43.72	4,656.7	304.0	290.7	0.00	0.00	0.00	0.00	
5,025.7	0.00	0.00	5,000.0	318.9	305.0	2.00	-2.00	0.00	180.00	
6,546.9	0.00	0.00	6,521.2	318.9	305.0	0.00	0.00	0.00	0.00	
7,666.9	84.00	269.71	7,281.0	315.4	-379.1	7.50	7.50	0.00	269.71	
7,740.9	84.00	269.71	7,288.7	315.0	-452.7	0.00	0.00	0.00	0.00	
7,860.9	90.00	269.71	7,295.0	314.4	-572.5	5.00	5.00	0.00	0.00	
14,380.0	90.00	269.71	7,295.0	280.9	-7,091.4	0.00	0.00	0.00	0.00	BHL 1296'FSL & 21

Database:	landmark	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-14-14)		

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 973'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
KOP #1									
1,100.0	2.00	43.72	1,100.0	1.3	1.2	-1.2	2.00	2.00	0.00
1,200.0	4.00	43.72	1,199.8	5.0	4.8	-4.6	2.00	2.00	0.00
1,300.0	6.00	43.72	1,299.5	11.3	10.8	-10.4	2.00	2.00	0.00
1,344.2	6.88	43.72	1,343.3	14.9	14.3	-13.7	2.00	2.00	0.00
1,400.0	6.88	43.72	1,398.8	19.8	18.9	-18.1	0.00	0.00	0.00
1,500.0	6.88	43.72	1,498.0	28.4	27.2	-26.0	0.00	0.00	0.00
1,600.0	6.88	43.72	1,597.3	37.1	35.5	-34.0	0.00	0.00	0.00
1,700.0	6.88	43.72	1,696.6	45.7	43.7	-41.9	0.00	0.00	0.00
1,800.0	6.88	43.72	1,795.9	54.4	52.0	-49.8	0.00	0.00	0.00
1,900.0	6.88	43.72	1,895.2	63.1	60.3	-57.8	0.00	0.00	0.00
2,000.0	6.88	43.72	1,994.4	71.7	68.6	-65.7	0.00	0.00	0.00
2,100.0	6.88	43.72	2,093.7	80.4	76.9	-73.6	0.00	0.00	0.00
2,200.0	6.88	43.72	2,193.0	89.0	85.2	-81.6	0.00	0.00	0.00
2,300.0	6.88	43.72	2,292.3	97.7	93.4	-89.5	0.00	0.00	0.00
2,400.0	6.88	43.72	2,391.6	106.4	101.7	-97.4	0.00	0.00	0.00
2,500.0	6.88	43.72	2,490.8	115.0	110.0	-105.4	0.00	0.00	0.00
2,600.0	6.88	43.72	2,590.1	123.7	118.3	-113.3	0.00	0.00	0.00
2,700.0	6.88	43.72	2,689.4	132.4	126.6	-121.2	0.00	0.00	0.00
2,800.0	6.88	43.72	2,788.7	141.0	134.9	-129.2	0.00	0.00	0.00
2,900.0	6.88	43.72	2,888.0	149.7	143.2	-137.1	0.00	0.00	0.00
3,000.0	6.88	43.72	2,987.2	158.3	151.4	-145.0	0.00	0.00	0.00
3,100.0	6.88	43.72	3,086.5	167.0	159.7	-153.0	0.00	0.00	0.00
3,200.0	6.88	43.72	3,185.8	175.7	168.0	-160.9	0.00	0.00	0.00
3,300.0	6.88	43.72	3,285.1	184.3	176.3	-168.9	0.00	0.00	0.00
3,400.0	6.88	43.72	3,384.4	193.0	184.6	-176.8	0.00	0.00	0.00
3,500.0	6.88	43.72	3,483.6	201.6	192.9	-184.7	0.00	0.00	0.00
3,600.0	6.88	43.72	3,582.9	210.3	201.1	-192.7	0.00	0.00	0.00
3,700.0	6.88	43.72	3,682.2	219.0	209.4	-200.6	0.00	0.00	0.00
3,728.0	6.88	43.72	3,710.0	221.4	211.7	-202.8	0.00	0.00	0.00
Parkman									
3,800.0	6.88	43.72	3,781.5	227.6	217.7	-208.5	0.00	0.00	0.00
3,900.0	6.88	43.72	3,880.8	236.3	226.0	-216.5	0.00	0.00	0.00
4,000.0	6.88	43.72	3,980.0	244.9	234.3	-224.4	0.00	0.00	0.00
4,100.0	6.88	43.72	4,079.3	253.6	242.6	-232.3	0.00	0.00	0.00
4,200.0	6.88	43.72	4,178.6	262.3	250.8	-240.3	0.00	0.00	0.00
4,300.0	6.88	43.72	4,277.9	270.9	259.1	-248.2	0.00	0.00	0.00
4,400.0	6.88	43.72	4,377.1	279.6	267.4	-256.1	0.00	0.00	0.00
4,412.9	6.88	43.72	4,390.0	280.7	268.5	-257.2	0.00	0.00	0.00
Sussex									

Database:	landmark	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-14-14)		

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	6.88	43.72	4,476.4	288.3	275.7	-264.1	0.00	0.00	0.00
4,600.0	6.88	43.72	4,575.7	296.9	284.0	-272.0	0.00	0.00	0.00
4,681.5	6.88	43.72	4,656.7	304.0	290.7	-278.5	0.00	0.00	0.00
4,700.0	6.51	43.72	4,675.0	305.5	292.2	-279.9	2.00	-2.00	0.00
4,800.0	4.51	43.72	4,774.5	312.5	298.9	-286.3	2.00	-2.00	0.00
4,825.5	4.00	43.72	4,800.0	313.8	300.2	-287.5	2.00	-2.00	0.00
Shannon									
4,900.0	2.51	43.72	4,874.3	316.9	303.1	-290.3	2.00	-2.00	0.00
5,000.0	0.51	43.72	4,974.3	318.8	304.9	-292.1	2.00	-2.00	0.00
5,025.7	0.00	0.00	5,000.0	318.9	305.0	-292.1	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,074.3	318.9	305.0	-292.1	0.00	0.00	0.00
5,200.0	0.00	0.00	5,174.3	318.9	305.0	-292.1	0.00	0.00	0.00
5,300.0	0.00	0.00	5,274.3	318.9	305.0	-292.1	0.00	0.00	0.00
5,400.0	0.00	0.00	5,374.3	318.9	305.0	-292.1	0.00	0.00	0.00
5,500.0	0.00	0.00	5,474.3	318.9	305.0	-292.1	0.00	0.00	0.00
5,600.0	0.00	0.00	5,574.3	318.9	305.0	-292.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,674.3	318.9	305.0	-292.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,774.3	318.9	305.0	-292.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,874.3	318.9	305.0	-292.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,974.3	318.9	305.0	-292.1	0.00	0.00	0.00
6,100.0	0.00	0.00	6,074.3	318.9	305.0	-292.1	0.00	0.00	0.00
6,200.0	0.00	0.00	6,174.3	318.9	305.0	-292.1	0.00	0.00	0.00
6,300.0	0.00	0.00	6,274.3	318.9	305.0	-292.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,374.3	318.9	305.0	-292.1	0.00	0.00	0.00
6,500.0	0.00	0.00	6,474.3	318.9	305.0	-292.1	0.00	0.00	0.00
6,546.9	0.00	0.00	6,521.2	318.9	305.0	-292.1	0.00	0.00	0.00
KOP #2									
6,600.0	3.98	269.71	6,574.2	318.9	303.2	-290.3	7.49	7.49	0.00
6,700.0	11.48	269.71	6,673.3	318.8	289.7	-276.9	7.50	7.50	0.00
6,800.0	18.98	269.71	6,769.7	318.7	263.5	-250.6	7.50	7.50	0.00
6,900.0	26.48	269.71	6,861.9	318.5	224.9	-212.1	7.50	7.50	0.00
6,927.2	28.52	269.71	6,886.0	318.4	212.3	-199.5	7.50	7.50	0.00
Sharon Springs									
7,000.0	33.98	269.71	6,948.2	318.2	174.5	-161.8	7.50	7.50	0.00
7,061.8	38.62	269.71	6,998.0	318.0	138.0	-125.3	7.50	7.50	0.00
Niobrara A									
7,100.0	41.48	269.71	7,027.2	317.9	113.4	-100.7	7.50	7.50	0.00
7,150.6	45.27	269.71	7,064.0	317.7	78.7	-66.0	7.50	7.50	0.00
Niobrara B									
7,200.0	48.98	269.71	7,097.6	317.6	42.5	-29.9	7.50	7.50	0.00
7,287.3	55.52	269.71	7,151.0	317.2	-26.5	39.0	7.50	7.50	0.00
Niobrara C									
7,300.0	56.48	269.71	7,158.1	317.1	-37.1	49.6	7.50	7.50	0.00
7,400.0	63.98	269.71	7,207.7	316.7	-123.8	136.2	7.50	7.50	0.00
7,500.0	71.48	269.71	7,245.6	316.2	-216.3	228.6	7.50	7.50	0.00
7,600.0	78.98	269.71	7,271.1	315.7	-312.9	325.2	7.50	7.50	0.00
7,610.4	79.76	269.71	7,273.0	315.7	-323.1	335.3	7.50	7.50	0.00
Ft Hays									
7,666.9	84.00	269.71	7,281.0	315.4	-379.0	391.2	7.50	7.50	0.00
7"									
7,700.0	84.00	269.71	7,284.4	315.2	-412.0	424.1	0.01	0.01	0.00
7,740.9	84.00	269.71	7,288.7	315.0	-452.7	464.8	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-14-14)		

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)
7,800.0	86.95	269.71	7,293.4	314.7	-511.5	523.6	5.00	5.00	0.00
7,860.9	90.00	269.71	7,295.0	314.4	-572.5	584.5	5.00	5.00	0.00
End of Build - Codell									
7,900.0	90.00	269.71	7,295.0	314.2	-611.5	623.5	0.00	0.00	0.00
8,000.0	90.00	269.71	7,295.0	313.7	-711.5	723.4	0.00	0.00	0.00
8,100.0	90.00	269.71	7,295.0	313.2	-811.5	823.3	0.00	0.00	0.00
8,200.0	90.00	269.71	7,295.0	312.7	-911.5	923.2	0.00	0.00	0.00
8,300.0	90.00	269.71	7,295.0	312.1	-1,011.5	1,023.1	0.00	0.00	0.00
8,400.0	90.00	269.71	7,295.0	311.6	-1,111.5	1,123.0	0.00	0.00	0.00
8,500.0	90.00	269.71	7,295.0	311.1	-1,211.5	1,222.9	0.00	0.00	0.00
8,600.0	90.00	269.71	7,295.0	310.6	-1,311.5	1,322.8	0.00	0.00	0.00
8,700.0	90.00	269.71	7,295.0	310.1	-1,411.5	1,422.7	0.00	0.00	0.00
8,800.0	90.00	269.71	7,295.0	309.6	-1,511.5	1,522.6	0.00	0.00	0.00
8,900.0	90.00	269.71	7,295.0	309.1	-1,611.5	1,622.5	0.00	0.00	0.00
9,000.0	90.00	269.71	7,295.0	308.5	-1,711.5	1,722.4	0.00	0.00	0.00
9,100.0	90.00	269.71	7,295.0	308.0	-1,811.5	1,822.3	0.00	0.00	0.00
9,200.0	90.00	269.71	7,295.0	307.5	-1,911.5	1,922.2	0.00	0.00	0.00
9,300.0	90.00	269.71	7,295.0	307.0	-2,011.5	2,022.1	0.00	0.00	0.00
9,400.0	90.00	269.71	7,295.0	306.5	-2,111.5	2,122.0	0.00	0.00	0.00
9,500.0	90.00	269.71	7,295.0	306.0	-2,211.5	2,221.9	0.00	0.00	0.00
9,600.0	90.00	269.71	7,295.0	305.5	-2,311.5	2,321.8	0.00	0.00	0.00
9,700.0	90.00	269.71	7,295.0	304.9	-2,411.5	2,421.7	0.00	0.00	0.00
9,800.0	90.00	269.71	7,295.0	304.4	-2,511.5	2,521.6	0.00	0.00	0.00
9,900.0	90.00	269.71	7,295.0	303.9	-2,611.5	2,621.5	0.00	0.00	0.00
10,000.0	90.00	269.71	7,295.0	303.4	-2,711.5	2,721.4	0.00	0.00	0.00
10,100.0	90.00	269.71	7,295.0	302.9	-2,811.5	2,821.3	0.00	0.00	0.00
10,200.0	90.00	269.71	7,295.0	302.4	-2,911.5	2,921.2	0.00	0.00	0.00
10,300.0	90.00	269.71	7,295.0	301.9	-3,011.5	3,021.1	0.00	0.00	0.00
10,400.0	90.00	269.71	7,295.0	301.3	-3,111.5	3,121.0	0.00	0.00	0.00
10,500.0	90.00	269.71	7,295.0	300.8	-3,211.5	3,220.9	0.00	0.00	0.00
10,600.0	90.00	269.71	7,295.0	300.3	-3,311.5	3,320.8	0.00	0.00	0.00
10,700.0	90.00	269.71	7,295.0	299.8	-3,411.5	3,420.7	0.00	0.00	0.00
10,800.0	90.00	269.71	7,295.0	299.3	-3,511.5	3,520.6	0.00	0.00	0.00
10,900.0	90.00	269.71	7,295.0	298.8	-3,611.5	3,620.5	0.00	0.00	0.00
11,000.0	90.00	269.71	7,295.0	298.3	-3,711.5	3,720.4	0.00	0.00	0.00
11,100.0	90.00	269.71	7,295.0	297.8	-3,811.5	3,820.3	0.00	0.00	0.00
11,200.0	90.00	269.71	7,295.0	297.2	-3,911.5	3,920.2	0.00	0.00	0.00
11,300.0	90.00	269.71	7,295.0	296.7	-4,011.5	4,020.1	0.00	0.00	0.00
11,400.0	90.00	269.71	7,295.0	296.2	-4,111.5	4,120.0	0.00	0.00	0.00
11,500.0	90.00	269.71	7,295.0	295.7	-4,211.5	4,219.9	0.00	0.00	0.00
11,600.0	90.00	269.71	7,295.0	295.2	-4,311.5	4,319.8	0.00	0.00	0.00
11,700.0	90.00	269.71	7,295.0	294.7	-4,411.5	4,419.7	0.00	0.00	0.00
11,800.0	90.00	269.71	7,295.0	294.2	-4,511.5	4,519.6	0.00	0.00	0.00
11,900.0	90.00	269.71	7,295.0	293.6	-4,611.5	4,619.5	0.00	0.00	0.00
12,000.0	90.00	269.71	7,295.0	293.1	-4,711.5	4,719.4	0.00	0.00	0.00
12,100.0	90.00	269.71	7,295.0	292.6	-4,811.5	4,819.3	0.00	0.00	0.00
12,200.0	90.00	269.71	7,295.0	292.1	-4,911.5	4,919.2	0.00	0.00	0.00
12,300.0	90.00	269.71	7,295.0	291.6	-5,011.5	5,019.1	0.00	0.00	0.00
12,400.0	90.00	269.71	7,295.0	291.1	-5,111.5	5,119.0	0.00	0.00	0.00
12,500.0	90.00	269.71	7,295.0	290.6	-5,211.5	5,218.9	0.00	0.00	0.00
12,600.0	90.00	269.71	7,295.0	290.0	-5,311.5	5,318.8	0.00	0.00	0.00
12,700.0	90.00	269.71	7,295.0	289.5	-5,411.5	5,418.7	0.00	0.00	0.00
12,800.0	90.00	269.71	7,295.0	289.0	-5,511.5	5,518.6	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (4-14-14)		

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)
12,900.0	90.00	269.71	7,295.0	288.5	-5,611.4	5,618.5	0.00	0.00	0.00
13,000.0	90.00	269.71	7,295.0	288.0	-5,711.4	5,718.4	0.00	0.00	0.00
13,100.0	90.00	269.71	7,295.0	287.5	-5,811.4	5,818.3	0.00	0.00	0.00
13,200.0	90.00	269.71	7,295.0	287.0	-5,911.4	5,918.2	0.00	0.00	0.00
13,300.0	90.00	269.71	7,295.0	286.4	-6,011.4	6,018.1	0.00	0.00	0.00
13,400.0	90.00	269.71	7,295.0	285.9	-6,111.4	6,118.0	0.00	0.00	0.00
13,500.0	90.00	269.71	7,295.0	285.4	-6,211.4	6,217.9	0.00	0.00	0.00
13,600.0	90.00	269.71	7,295.0	284.9	-6,311.4	6,317.8	0.00	0.00	0.00
13,700.0	90.00	269.71	7,295.0	284.4	-6,411.4	6,417.7	0.00	0.00	0.00
13,800.0	90.00	269.71	7,295.0	283.9	-6,511.4	6,517.6	0.00	0.00	0.00
13,900.0	90.00	269.71	7,295.0	283.4	-6,611.4	6,617.5	0.00	0.00	0.00
14,000.0	90.00	269.71	7,295.0	282.9	-6,711.4	6,717.4	0.00	0.00	0.00
14,100.0	90.00	269.71	7,295.0	282.3	-6,811.4	6,817.3	0.00	0.00	0.00
14,200.0	90.00	269.71	7,295.0	281.8	-6,911.4	6,917.2	0.00	0.00	0.00
14,300.0	90.00	269.71	7,295.0	281.3	-7,011.4	7,017.1	0.00	0.00	0.00
14,380.0	90.00	269.71	7,295.0	280.9	-7,091.4	7,097.0	0.00	0.00	0.00
BHL 1296'FSL & 2147'FEL, Sec.31									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,666.9	7,281.0	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,728.0	3,710.0	Parkman		0.00	
4,412.9	4,390.0	Sussex		0.00	
4,825.5	4,800.0	Shannon		0.00	
6,927.2	6,886.0	Sharon Springs		0.00	
7,061.8	6,998.0	Niobrara A		0.00	
7,150.6	7,064.0	Niobrara B		0.00	
7,287.3	7,151.0	Niobrara C		0.00	
7,610.4	7,273.0	Ft Hays		0.00	
7,860.9	7,295.0	Codell		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,000.0	1,000.0	0.0	0.0	KOP #1
6,546.9	6,521.2	318.9	305.0	KOP #2
7,860.9	7,295.0	314.4	-572.4	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T4N-R66W

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

Tarin 32X-404

Wellbore #1

Plan #1 (4-14-14)

Anticollision Report

25 April, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (4-14-14)
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	MD Interval 100.0ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 1,000.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCWSA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program		Date	4/25/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	14,380.0	Plan #1 (4-14-14) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Tarin 32X-HZ Pad Sec.32-T4N-R66W						
Tarin 32W-234 - Wellbore #1 - Plan #1 (4-14-14)	200.0	199.0	87.5	86.8	130.146	CC, ES
Tarin 32W-234 - Wellbore #1 - Plan #1 (4-14-14)	5,100.0	5,007.4	841.8	807.3	24.376	SF
Tarin 32W-434 - Wellbore #1 - Plan #1 (4-14-14)	400.0	399.0	58.3	56.7	37.098	CC, ES
Tarin 32W-434 - Wellbore #1 - Plan #1 (4-14-14)	14,380.0	14,438.3	709.0	304.1	1.751	SF
Tarin 32X-234 - Wellbore #1 - Plan #1 (4-14-14)	1,000.0	1,000.0	32.8	28.5	7.678	CC, ES
Tarin 32X-234 - Wellbore #1 - Plan #1 (4-14-14)	14,380.0	14,158.7	248.1	103.1	1.711	SF
Tarin 32X-314 - Wellbore #1 - Plan #1 (4-14-14)	600.0	600.0	29.1	26.7	11.788	CC, ES
Tarin 32X-314 - Wellbore #1 - Plan #1 (4-14-14)	14,380.0	14,300.7	455.2	69.8	1.181	Level 2, SF
Tarin 32X-434 - Wellbore #1 - Plan #1 (4-14-14)	1,000.0	1,000.0	61.9	57.7	14.503	CC, ES
Tarin 32X-434 - Wellbore #1 - Plan #1 (4-14-14)	14,380.0	14,370.9	676.5	271.8	1.671	SF
Tarin 32Y-314 - Wellbore #1 - Plan #1 (4-14-14)	966.3	967.3	91.1	87.0	22.099	CC
Tarin 32Y-314 - Wellbore #1 - Plan #1 (4-14-14)	1,000.0	1,000.0	91.1	86.8	21.329	ES
Tarin 32Y-314 - Wellbore #1 - Plan #1 (4-14-14)	14,380.0	14,273.5	902.2	503.4	2.262	SF
Tarin 32Y-404 - Wellbore #1 - Plan #1 (4-14-14)	466.3	467.3	120.2	118.4	64.161	CC
Tarin 32Y-404 - Wellbore #1 - Plan #1 (4-14-14)	500.0	500.0	120.2	118.2	59.434	ES
Tarin 32Y-404 - Wellbore #1 - Plan #1 (4-14-14)	1,100.0	1,077.3	176.5	171.9	38.428	SF
Tarin Existing Wells Sec.32-T4N-R66W						
Benjamin 5 (Existing) - Wellbore #1 - Wellbore #1	12,227.0	7,370.1	203.1	41.7	1.259	Level 3, CC, ES, SF
Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1	1,000.0	987.0	315.5	293.6	14.423	CC
Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1	1,100.0	1,087.0	317.1	293.0	13.167	ES
Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1	7,400.0	7,194.7	611.9	450.2	3.783	SF
Nicholas 5 (Existing) - Wellbore #1 - Wellbore #1	13,739.6	7,332.1	100.1	-100.7	0.499	Level 1, CC, ES, SF
UPRR 41 PAN AM "J" 1 (P&A) - Wellbore #1 - Wellbore	13,289.7	7,281.0	169.2	-148.4	0.533	Level 1, CC, ES, SF
Wolf 44-31 (Existing) - Wellbore #1 - Wellbore #1	13,037.0	7,280.0	318.0	138.5	1.772	CC, ES, SF
Wolfe 1 (Existing) - Wellbore #1 - Wellbore #1	10,183.5	7,273.2	452.5	352.7	4.533	CC
Wolfe 1 (Existing) - Wellbore #1 - Wellbore #1	10,200.0	7,273.1	452.8	352.5	4.515	ES, SF
Wolfe 14-32 (Existing) - Wellbore #1 - Wellbore #1	11,448.1	7,274.5	386.9	251.1	2.849	CC, ES
Wolfe 14-32 (Existing) - Wellbore #1 - Wellbore #1	11,500.0	7,275.2	390.4	253.1	2.845	SF
Wolfe 5 (Existing) - Wellbore #1 - Wellbore #1	10,643.4	7,539.5	288.8	170.3	2.438	CC, ES, SF
Wolfe 6I (Existing) - Wellbore #1 - Wellbore #1	9,666.7	7,345.2	95.4	6.2	1.069	Level 2, CC, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	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										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	-1.83	87.4	-2.8	87.5					
100.0	100.0	99.0	99.0	0.1	0.1	-1.83	87.4	-2.8	87.5	87.2	0.22	391.090		
200.0	200.0	199.0	199.0	0.3	0.3	-1.83	87.4	-2.8	87.5	86.8	0.67	130.146 CC, ES		
300.0	300.0	296.1	296.1	0.6	0.6	-1.56	89.0	-2.4	89.1	88.0	1.12	79.844		
400.0	400.0	393.0	392.9	0.8	0.8	-0.79	93.7	-1.3	94.0	92.4	1.57	60.017		
500.0	500.0	489.5	489.0	1.0	1.0	0.33	101.6	0.6	102.1	100.1	2.03	50.365		
600.0	600.0	585.2	584.1	1.2	1.3	1.62	112.6	3.2	113.6	111.1	2.51	45.291		
700.0	700.0	680.2	677.9	1.5	1.6	2.94	126.5	6.5	128.4	125.4	3.01	42.627		
800.0	800.0	774.0	770.2	1.7	1.9	4.18	143.2	10.5	146.4	142.9	3.54	41.369		
900.0	900.0	866.7	860.7	1.9	2.3	5.29	162.6	15.1	167.7	163.6	4.09	40.978		
1,000.0	1,000.0	961.8	953.1	2.1	2.7	6.28	184.8	20.3	191.5	186.8	4.67	40.965		
1,100.0	1,100.0	1,059.2	1,047.6	2.4	3.2	-36.65	207.6	25.8	214.1	209.3	4.83	44.353		
1,200.0	1,199.8	1,157.2	1,142.7	2.6	3.6	-36.52	230.7	31.3	234.0	228.7	5.30	44.157		
1,300.0	1,299.5	1,255.7	1,238.2	2.8	4.1	-36.89	253.8	36.8	251.2	245.4	5.79	43.417		
1,400.0	1,398.8	1,354.5	1,334.1	3.1	4.6	-37.69	277.1	42.3	266.1	259.8	6.29	42.281		
1,500.0	1,498.0	1,453.3	1,430.0	3.3	5.1	-38.53	300.3	47.8	280.8	274.0	6.82	41.193		
1,600.0	1,597.3	1,552.2	1,525.9	3.6	5.6	-39.29	323.5	53.3	295.5	288.2	7.35	40.218		
1,700.0	1,696.6	1,651.0	1,621.8	3.8	6.1	-39.97	346.8	58.8	310.3	302.4	7.89	39.342		
1,800.0	1,795.9	1,749.8	1,717.7	4.1	6.5	-40.60	370.0	64.4	325.1	316.7	8.43	38.552		
1,900.0	1,895.2	1,848.7	1,813.6	4.4	7.0	-41.16	393.2	69.9	340.0	331.0	8.99	37.837		
2,000.0	1,994.4	1,947.5	1,909.5	4.7	7.5	-41.68	416.5	75.4	354.9	345.3	9.54	37.187		
2,100.0	2,093.7	2,046.4	2,005.4	5.0	8.0	-42.16	439.7	80.9	369.8	359.7	10.10	36.595		
2,200.0	2,193.0	2,145.2	2,101.3	5.3	8.5	-42.60	462.9	86.5	384.7	374.1	10.67	36.054		
2,300.0	2,292.3	2,244.0	2,197.3	5.6	9.0	-43.01	486.2	92.0	399.7	388.4	11.24	35.558		
2,400.0	2,391.6	2,342.9	2,293.2	5.9	9.5	-43.39	509.4	97.5	414.7	402.9	11.81	35.102		
2,500.0	2,490.8	2,441.7	2,389.1	6.2	10.0	-43.74	532.6	103.0	429.7	417.3	12.39	34.681		
2,600.0	2,590.1	2,540.5	2,485.0	6.5	10.5	-44.07	555.9	108.5	444.7	431.7	12.97	34.292		
2,700.0	2,689.4	2,639.4	2,580.9	6.8	11.0	-44.38	579.1	114.1	459.7	446.1	13.55	33.931		
2,800.0	2,788.7	2,738.2	2,676.8	7.1	11.4	-44.66	602.4	119.6	474.7	460.6	14.13	33.596		
2,900.0	2,888.0	2,837.0	2,772.7	7.4	11.9	-44.93	625.6	125.1	489.8	475.1	14.71	33.284		
3,000.0	2,987.2	2,935.9	2,868.6	7.7	12.4	-45.19	648.8	130.6	504.8	489.5	15.30	32.993		
3,100.0	3,086.5	3,034.7	2,964.5	8.0	12.9	-45.43	672.1	136.2	519.9	504.0	15.89	32.720		
3,200.0	3,185.8	3,133.6	3,060.4	8.3	13.4	-45.65	695.3	141.7	535.0	518.5	16.48	32.464		
3,300.0	3,285.1	3,232.4	3,156.3	8.6	13.9	-45.87	718.5	147.2	550.0	533.0	17.07	32.224		
3,400.0	3,384.4	3,331.2	3,252.2	8.9	14.4	-46.07	741.8	152.7	565.1	547.5	17.66	31.999		
3,500.0	3,483.6	3,430.1	3,348.1	9.2	14.9	-46.26	765.0	158.2	580.2	562.0	18.25	31.786		
3,600.0	3,582.9	3,528.9	3,444.1	9.5	15.4	-46.44	788.2	163.8	595.3	576.5	18.85	31.585		
3,700.0	3,682.2	3,627.7	3,540.0	9.8	15.9	-46.61	811.5	169.3	610.4	591.0	19.44	31.395		
3,800.0	3,781.5	3,726.6	3,635.9	10.2	16.4	-46.78	834.7	174.8	625.5	605.5	20.04	31.216		
3,900.0	3,880.8	3,825.4	3,731.8	10.5	16.9	-46.94	857.9	180.3	640.7	620.0	20.64	31.046		
4,000.0	3,980.0	3,924.2	3,827.7	10.8	17.4	-47.09	881.2	185.8	655.8	634.5	21.23	30.884		
4,100.0	4,079.3	4,023.1	3,923.6	11.1	17.8	-47.23	904.4	191.4	670.9	649.1	21.83	30.731		
4,200.0	4,178.6	4,121.9	4,019.5	11.4	18.3	-47.36	927.6	196.9	686.0	663.6	22.43	30.584		
4,300.0	4,277.9	4,220.8	4,115.4	11.7	18.8	-47.49	950.9	202.4	701.2	678.1	23.03	30.445		
4,400.0	4,377.1	4,319.6	4,211.3	12.0	19.3	-47.62	974.1	207.9	716.3	692.7	23.63	30.313		
4,500.0	4,476.4	4,418.4	4,307.2	12.3	19.8	-47.74	997.4	213.5	731.4	707.2	24.23	30.186		
4,600.0	4,575.7	4,517.3	4,403.1	12.6	20.3	-47.85	1,020.6	219.0	746.6	721.7	24.83	30.065		
4,700.0	4,675.0	4,616.1	4,499.0	12.9	20.8	-48.00	1,043.8	224.5	761.8	736.3	25.43	29.960		
4,800.0	4,774.5	4,714.7	4,594.7	13.2	21.3	-48.23	1,067.0	230.0	778.5	752.6	25.92	30.031		
4,900.0	4,874.3	4,812.8	4,689.9	13.4	21.8	-48.30	1,090.1	235.5	797.5	771.1	26.37	30.245		
5,000.0	4,974.3	4,910.4	4,784.6	13.5	22.3	-48.24	1,113.0	240.9	818.8	792.0	26.76	30.597		

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32W-234 - Wellbore #1 - Plan #1 (4-14-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,074.3	5,007.4	4,878.8	13.7	22.8	-4.11	1,135.8	246.4	841.8	807.3	34.53	24.376 SF	
5,200.0	5,174.3	5,104.5	4,972.9	13.9	23.2	-3.63	1,158.6	251.8	864.9	829.7	35.25	24.536	
5,300.0	5,274.3	5,201.5	5,067.1	14.0	23.7	-3.17	1,181.4	257.2	888.1	852.2	35.97	24.693	
5,400.0	5,374.3	5,298.5	5,161.2	14.2	24.2	-2.74	1,204.3	262.6	911.4	874.7	36.68	24.846	
5,500.0	5,474.3	5,395.6	5,255.4	14.4	24.7	-2.33	1,227.1	268.1	934.7	897.3	37.39	24.995	
5,600.0	5,574.3	5,492.6	5,349.6	14.6	25.2	-1.94	1,249.9	273.5	958.0	919.9	38.11	25.141	
5,700.0	5,674.3	5,589.6	5,443.7	14.8	25.7	-1.57	1,272.7	278.9	981.4	942.6	38.82	25.283	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	58.3	0.0	58.3				
100.0	100.0	99.0	99.0	0.1	0.1	0.00	0.00	58.3	0.0	58.3	58.1	0.22	260.612	
200.0	200.0	199.0	199.0	0.3	0.3	0.00	0.00	58.3	0.0	58.3	57.6	0.67	86.726	
300.0	300.0	299.0	299.0	0.6	0.6	0.00	0.00	58.3	0.0	58.3	57.2	1.12	51.966	
400.0	400.0	399.0	399.0	0.8	0.8	0.00	0.00	58.3	0.0	58.3	56.7	1.57	37.098 CC, ES	
500.0	500.0	497.1	497.1	1.0	1.0	0.49	0.49	59.8	0.5	59.9	57.9	2.02	29.706	
600.0	600.0	594.9	594.8	1.2	1.2	1.83	1.83	64.6	2.1	64.8	62.3	2.46	26.280	
700.0	700.0	692.3	691.8	1.5	1.5	3.66	3.66	72.4	4.6	72.9	70.0	2.92	24.964	
800.0	800.0	789.0	787.8	1.7	1.7	5.62	5.62	83.3	8.2	84.5	81.1	3.40	24.881	
900.0	900.0	884.9	882.5	1.9	2.0	7.47	7.47	97.2	12.7	99.4	95.5	3.89	25.547	
1,000.0	1,000.0	982.6	978.8	2.1	2.3	9.04	9.04	113.4	18.1	116.6	112.2	4.41	26.467	
1,100.0	1,100.0	1,081.3	1,075.9	2.4	2.7	-33.73	-33.73	129.9	23.4	132.6	127.8	4.76	27.876	
1,200.0	1,199.8	1,180.4	1,173.5	2.6	3.0	-33.75	-33.75	146.5	28.9	145.7	140.5	5.21	27.948	
1,300.0	1,299.5	1,279.9	1,271.4	2.8	3.4	-34.48	-34.48	163.1	34.3	155.9	150.2	5.68	27.447	
1,400.0	1,398.8	1,379.5	1,369.5	3.1	3.8	-35.79	-35.79	179.7	39.8	163.8	157.6	6.17	26.557	
1,500.0	1,498.0	1,479.1	1,467.6	3.3	4.1	-37.07	-37.07	196.3	45.2	171.4	164.8	6.67	25.707	
1,600.0	1,597.3	1,578.7	1,565.7	3.6	4.5	-38.25	-38.25	213.0	50.6	179.2	172.0	7.18	24.953	
1,700.0	1,696.6	1,678.4	1,663.7	3.8	4.9	-39.33	-39.33	229.6	56.1	187.0	179.3	7.70	24.281	
1,800.0	1,795.9	1,778.0	1,761.8	4.1	5.3	-40.32	-40.32	246.2	61.5	194.9	186.7	8.23	23.680	
1,900.0	1,895.2	1,877.6	1,859.9	4.4	5.7	-41.24	-41.24	262.9	67.0	202.8	194.1	8.77	23.139	
2,000.0	1,994.4	1,977.3	1,958.0	4.7	6.0	-42.09	-42.09	279.5	72.4	210.8	201.5	9.31	22.650	
2,100.0	2,093.7	2,076.9	2,056.1	5.0	6.4	-42.87	-42.87	296.1	77.9	218.9	209.0	9.86	22.207	
2,200.0	2,193.0	2,176.5	2,154.2	5.3	6.8	-43.60	-43.60	312.8	83.3	226.9	216.5	10.41	21.803	
2,300.0	2,292.3	2,276.2	2,252.2	5.6	7.2	-44.28	-44.28	329.4	88.8	235.0	224.1	10.96	21.434	
2,400.0	2,391.6	2,375.8	2,350.3	5.9	7.6	-44.91	-44.91	346.1	94.2	243.2	231.6	11.53	21.096	
2,500.0	2,490.8	2,475.5	2,448.4	6.2	8.0	-45.50	-45.50	362.7	99.7	251.3	239.2	12.09	20.785	
2,600.0	2,590.1	2,575.1	2,546.5	6.5	8.4	-46.06	-46.06	379.3	105.1	259.5	246.8	12.66	20.499	
2,700.0	2,689.4	2,674.7	2,644.6	6.8	8.7	-46.58	-46.58	396.0	110.6	267.7	254.5	13.23	20.234	
2,800.0	2,788.7	2,774.4	2,742.7	7.1	9.1	-47.07	-47.07	412.6	116.0	275.9	262.1	13.80	19.988	
2,900.0	2,888.0	2,874.0	2,840.7	7.4	9.5	-47.53	-47.53	429.2	121.4	284.2	269.8	14.38	19.760	
3,000.0	2,987.2	2,973.6	2,938.8	7.7	9.9	-47.97	-47.97	445.9	126.9	292.4	277.5	14.96	19.547	
3,100.0	3,086.5	3,073.3	3,036.9	8.0	10.3	-48.38	-48.38	462.5	132.3	300.7	285.2	15.54	19.349	
3,200.0	3,185.8	3,172.9	3,135.0	8.3	10.7	-48.77	-48.77	479.1	137.8	309.0	292.9	16.13	19.164	
3,300.0	3,285.1	3,272.5	3,233.1	8.6	11.1	-49.14	-49.14	495.8	143.2	317.3	300.6	16.71	18.990	
3,400.0	3,384.4	3,372.2	3,331.2	8.9	11.5	-49.49	-49.49	512.4	148.7	325.6	308.4	17.30	18.827	
3,500.0	3,483.6	3,471.8	3,429.3	9.2	11.9	-49.82	-49.82	529.0	154.1	334.0	316.1	17.88	18.674	
3,600.0	3,582.9	3,571.4	3,527.3	9.5	12.2	-50.14	-50.14	545.7	159.6	342.3	323.8	18.47	18.529	
3,700.0	3,682.2	3,671.1	3,625.4	9.8	12.6	-50.44	-50.44	562.3	165.0	350.7	331.6	19.07	18.393	
3,800.0	3,781.5	3,770.7	3,723.5	10.2	13.0	-50.73	-50.73	579.0	170.5	359.0	339.4	19.66	18.265	
3,900.0	3,880.8	3,870.3	3,821.6	10.5	13.4	-51.00	-51.00	595.6	175.9	367.4	347.2	20.25	18.143	
4,000.0	3,980.0	3,970.0	3,919.7	10.8	13.8	-51.26	-51.26	612.2	181.4	375.8	354.9	20.85	18.028	
4,100.0	4,079.3	4,069.6	4,017.8	11.1	14.2	-51.51	-51.51	628.9	186.8	384.2	362.7	21.44	17.918	
4,200.0	4,178.6	4,169.2	4,115.8	11.4	14.6	-51.75	-51.75	645.5	192.2	392.6	370.5	22.04	17.814	
4,300.0	4,277.9	4,268.9	4,213.9	11.7	15.0	-51.99	-51.99	662.1	197.7	401.0	378.3	22.63	17.715	
4,400.0	4,377.1	4,368.5	4,312.0	12.0	15.4	-52.21	-52.21	678.8	203.1	409.4	386.1	23.23	17.621	
4,500.0	4,476.4	4,468.1	4,410.1	12.3	15.8	-52.42	-52.42	695.4	208.6	417.8	394.0	23.83	17.532	
4,600.0	4,575.7	4,567.8	4,508.2	12.6	16.2	-52.62	-52.62	712.0	214.0	426.2	401.8	24.43	17.446	
4,700.0	4,675.0	4,667.4	4,606.3	12.9	16.5	-52.84	-52.84	728.7	219.5	434.7	409.6	25.02	17.371	
4,800.0	4,774.5	4,766.9	4,704.2	13.2	16.9	-52.93	-52.93	745.3	224.9	444.5	419.0	25.51	17.426	
4,900.0	4,874.3	4,866.1	4,801.9	13.4	17.3	-52.72	-52.72	761.9	230.3	456.5	430.5	25.93	17.604	
5,000.0	4,974.3	4,965.0	4,899.2	13.5	17.7	-52.22	-52.22	778.4	235.7	470.6	444.3	26.29	17.902	

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32W-434 - Wellbore #1 - Plan #1 (4-14-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	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	5,074.3	5,063.4	4,996.1	13.7	18.1	-7.64		794.8	241.1	486.3	456.9	29.47	16.501	
5,200.0	5,174.3	5,161.9	5,093.0	13.9	18.5	-6.78		811.2	246.5	502.2	472.1	30.12	16.672	
5,300.0	5,274.3	5,260.3	5,189.9	14.0	18.9	-5.96		827.7	251.9	518.3	487.5	30.77	16.842	
5,400.0	5,374.3	5,358.7	5,286.9	14.2	19.3	-5.19		844.1	257.3	534.4	503.0	31.42	17.011	
5,500.0	5,474.3	5,457.2	5,383.8	14.4	19.6	-4.47		860.5	262.7	550.6	518.6	32.06	17.177	
5,600.0	5,574.3	5,555.6	5,480.7	14.6	20.0	-3.79		877.0	268.0	566.9	534.2	32.69	17.340	
5,700.0	5,674.3	5,654.1	5,577.6	14.8	20.4	-3.15		893.4	273.4	583.3	550.0	33.33	17.502	
5,800.0	5,774.3	5,752.5	5,674.5	15.0	20.8	-2.54		909.9	278.8	599.7	565.8	33.96	17.661	
5,900.0	5,874.3	5,851.0	5,771.4	15.1	21.2	-1.96		926.3	284.2	616.2	581.6	34.59	17.817	
6,000.0	5,974.3	5,949.4	5,868.3	15.3	21.6	-1.42		942.7	289.6	632.8	597.6	35.21	17.970	
6,100.0	6,074.3	6,066.9	5,984.2	15.5	22.0	-0.84		961.1	295.6	648.4	612.5	35.84	18.092	
6,200.0	6,174.3	6,193.5	6,109.9	15.7	22.3	-0.40		975.9	300.4	660.1	623.7	36.40	18.135	
6,300.0	6,274.3	6,321.3	6,237.3	15.9	22.5	-0.12		985.5	303.6	667.6	630.7	36.88	18.102	
6,400.0	6,374.3	6,449.8	6,365.6	16.1	22.7	-0.01		989.7	304.9	670.8	633.5	37.29	17.992	
6,500.0	6,474.3	6,557.4	6,473.3	16.3	22.9	0.00		989.9	305.0	671.0	633.4	37.63	17.831	
6,523.4	6,497.7	6,580.8	6,496.7	16.3	22.9	90.31		989.9	305.0	671.0	638.9	32.13	20.884	
6,600.0	6,574.2	6,657.4	6,573.3	16.5	23.0	90.30		989.9	303.2	671.0	638.6	32.40	20.713	
6,700.0	6,673.3	6,757.5	6,672.3	16.6	23.1	90.31		989.9	289.9	671.1	638.5	32.61	20.580	
6,800.0	6,769.7	6,857.5	6,768.8	16.6	23.1	90.31		989.9	263.8	671.2	638.5	32.73	20.509	
6,900.0	6,861.9	6,957.5	6,861.1	16.6	23.1	90.30		989.9	225.3	671.4	638.6	32.81	20.466	
7,000.0	6,948.2	7,057.6	6,947.5	16.6	23.1	90.29		989.9	175.0	671.7	638.7	32.93	20.394	
7,100.0	7,027.2	7,157.7	7,026.7	16.6	23.0	90.28		989.9	113.9	672.0	638.7	33.23	20.220	
7,200.0	7,097.6	7,257.8	7,097.2	16.6	23.0	90.26		989.9	42.9	672.3	638.5	33.85	19.861	
7,300.0	7,158.1	7,357.9	7,157.8	17.0	23.0	90.23		989.9	-36.6	672.7	637.8	34.94	19.255	
7,400.0	7,207.7	7,458.0	7,207.5	17.8	23.1	90.21		989.9	-123.4	673.2	636.6	36.61	18.391	
7,500.0	7,245.6	7,558.1	7,245.5	19.1	23.3	90.17		989.9	-216.0	673.7	634.8	38.90	17.319	
7,600.0	7,271.1	7,658.2	7,271.0	20.6	23.9	90.14		989.9	-312.7	674.2	632.4	41.78	16.134	
7,700.0	7,284.4	7,758.3	7,284.4	22.3	24.9	90.12		989.9	-411.9	674.7	629.5	45.18	14.934	
7,800.0	7,293.4	7,858.4	7,293.4	24.2	26.4	90.10		989.9	-511.5	675.2	626.2	48.96	13.791	
7,900.0	7,295.0	7,958.4	7,295.0	26.3	28.3	90.08		989.9	-611.5	675.7	622.7	53.02	12.744	
8,000.0	7,295.0	8,058.4	7,295.0	28.5	30.3	90.08		989.9	-711.5	676.2	618.9	57.34	11.793	
8,100.0	7,295.0	8,158.4	7,295.0	30.8	32.4	90.08		989.9	-811.5	676.7	614.9	61.87	10.938	
8,200.0	7,295.0	8,258.4	7,295.0	33.2	34.6	90.08		989.9	-911.5	677.2	610.7	66.56	10.175	
8,300.0	7,295.0	8,358.4	7,295.0	35.6	37.0	90.08		989.9	-1,011.5	677.7	606.4	71.38	9.495	
8,400.0	7,295.0	8,458.4	7,295.0	38.1	39.4	90.08		989.9	-1,111.5	678.3	601.9	76.32	8.888	
8,500.0	7,295.0	8,558.4	7,295.0	40.6	41.8	90.08		989.9	-1,211.5	678.8	597.4	81.34	8.345	
8,600.0	7,295.0	8,658.4	7,295.0	43.2	44.3	90.08		989.9	-1,311.5	679.3	592.9	86.43	7.859	
8,700.0	7,295.0	8,758.4	7,295.0	45.7	46.8	90.08		989.9	-1,411.5	679.8	588.2	91.59	7.423	
8,800.0	7,295.0	8,858.4	7,295.0	48.4	49.4	90.08		989.9	-1,511.5	680.3	583.5	96.79	7.029	
8,900.0	7,295.0	8,958.4	7,295.0	51.0	51.9	90.08		989.9	-1,611.5	680.8	578.8	102.04	6.672	
9,000.0	7,295.0	9,058.4	7,295.0	53.6	54.5	90.08		989.9	-1,711.5	681.3	574.0	107.33	6.348	
9,100.0	7,295.0	9,158.4	7,295.0	56.3	57.2	90.08		989.9	-1,811.5	681.9	569.2	112.64	6.053	
9,200.0	7,295.0	9,258.4	7,295.0	59.0	59.8	90.08		989.9	-1,911.5	682.4	564.4	117.99	5.783	
9,300.0	7,295.0	9,358.4	7,295.0	61.7	62.4	90.08		989.9	-2,011.5	682.9	559.5	123.36	5.536	
9,400.0	7,295.0	9,458.4	7,295.0	64.4	65.1	90.08		989.9	-2,111.5	683.4	554.7	128.74	5.308	
9,500.0	7,295.0	9,558.4	7,295.0	67.1	67.8	90.08		989.9	-2,211.5	683.9	549.8	134.15	5.098	
9,600.0	7,295.0	9,658.4	7,295.0	69.8	70.5	90.08		989.9	-2,311.5	684.4	544.9	139.58	4.904	
9,700.0	7,295.0	9,758.4	7,295.0	72.5	73.2	90.08		989.9	-2,411.5	684.9	539.9	145.01	4.723	
9,800.0	7,295.0	9,858.4	7,295.0	75.2	75.9	90.08		989.9	-2,511.5	685.5	535.0	150.47	4.556	
9,900.0	7,295.0	9,958.4	7,295.0	78.0	78.6	90.08		989.9	-2,611.5	686.0	530.0	155.93	4.399	
10,000.0	7,295.0	10,058.4	7,295.0	80.7	81.3	90.08		989.9	-2,711.5	686.5	525.1	161.40	4.253	

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	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	Warning
10,100.0	7,295.0	10,158.4	7,295.0	83.5	84.0	90.08	90.08	989.9	-2,811.5	687.0	520.1	166.88	4.117	
10,200.0	7,295.0	10,258.4	7,295.0	86.2	86.8	90.08	90.08	989.9	-2,911.5	687.5	515.1	172.37	3.988	
10,300.0	7,295.0	10,358.4	7,295.0	89.0	89.5	90.08	90.08	989.9	-3,011.5	688.0	510.2	177.87	3.868	
10,400.0	7,295.0	10,458.4	7,295.0	91.7	92.2	90.08	90.08	989.9	-3,111.5	688.5	505.2	183.38	3.755	
10,500.0	7,295.0	10,558.4	7,295.0	94.5	95.0	90.08	90.08	989.9	-3,211.5	689.1	500.2	188.89	3.648	
10,600.0	7,295.0	10,658.4	7,295.0	97.2	97.7	90.08	90.08	989.9	-3,311.5	689.6	495.2	194.41	3.547	
10,700.0	7,295.0	10,758.4	7,295.0	100.0	100.5	90.08	90.08	989.9	-3,411.5	690.1	490.2	199.93	3.452	
10,800.0	7,295.0	10,858.4	7,295.0	102.8	103.2	90.08	90.08	989.9	-3,511.5	690.6	485.1	205.46	3.361	
10,900.0	7,295.0	10,958.4	7,295.0	105.5	106.0	90.08	90.08	989.9	-3,611.5	691.1	480.1	210.99	3.276	
11,000.0	7,295.0	11,058.4	7,295.0	108.3	108.7	90.08	90.08	989.9	-3,711.5	691.6	475.1	216.52	3.194	
11,100.0	7,295.0	11,158.4	7,295.0	111.1	111.5	90.08	90.08	989.9	-3,811.5	692.1	470.1	222.06	3.117	
11,200.0	7,295.0	11,258.4	7,295.0	113.8	114.2	90.08	90.08	989.9	-3,911.5	692.6	465.0	227.61	3.043	
11,300.0	7,295.0	11,358.4	7,295.0	116.6	117.0	90.08	90.08	989.9	-4,011.5	693.2	460.0	233.15	2.973	
11,400.0	7,295.0	11,458.4	7,295.0	119.4	119.8	90.08	90.08	989.9	-4,111.5	693.7	455.0	238.70	2.906	
11,500.0	7,295.0	11,558.4	7,295.0	122.2	122.5	90.08	90.08	989.9	-4,211.5	694.2	449.9	244.26	2.842	
11,600.0	7,295.0	11,658.4	7,295.0	124.9	125.3	90.08	90.08	989.9	-4,311.5	694.7	444.9	249.81	2.781	
11,700.0	7,295.0	11,758.4	7,295.0	127.7	128.1	90.08	90.08	989.9	-4,411.5	695.2	439.8	255.37	2.722	
11,800.0	7,295.0	11,858.4	7,295.0	130.5	130.9	90.08	90.08	989.9	-4,511.5	695.7	434.8	260.93	2.666	
11,900.0	7,295.0	11,958.4	7,295.0	133.3	133.6	90.08	90.08	989.9	-4,611.5	696.2	429.8	266.49	2.613	
12,000.0	7,295.0	12,058.4	7,295.0	136.1	136.4	90.08	90.08	989.9	-4,711.5	696.8	424.7	272.06	2.561	
12,100.0	7,295.0	12,158.4	7,295.0	138.8	139.2	90.08	90.08	989.9	-4,811.5	697.3	419.6	277.62	2.512	
12,200.0	7,295.0	12,258.4	7,295.0	141.6	142.0	90.08	90.08	989.9	-4,911.5	697.8	414.6	283.19	2.464	
12,300.0	7,295.0	12,358.4	7,295.0	144.4	144.7	90.08	90.08	989.9	-5,011.5	698.3	409.5	288.76	2.418	
12,400.0	7,295.0	12,458.4	7,295.0	147.2	147.5	90.08	90.08	989.9	-5,111.5	698.8	404.5	294.33	2.374	
12,500.0	7,295.0	12,558.4	7,295.0	150.0	150.3	90.08	90.08	989.9	-5,211.5	699.3	399.4	299.91	2.332	
12,600.0	7,295.0	12,658.4	7,295.0	152.8	153.1	90.08	90.08	989.9	-5,311.5	699.8	394.4	305.48	2.291	
12,700.0	7,295.0	12,758.4	7,295.0	155.6	155.9	90.08	90.08	989.9	-5,411.5	700.4	389.3	311.06	2.252	
12,800.0	7,295.0	12,858.4	7,295.0	158.3	158.6	90.08	90.08	989.9	-5,511.5	700.9	384.2	316.63	2.213	
12,900.0	7,295.0	12,958.4	7,295.0	161.1	161.4	90.08	90.08	989.9	-5,611.4	701.4	379.2	322.21	2.177	
13,000.0	7,295.0	13,058.4	7,295.0	163.9	164.2	90.08	90.08	989.9	-5,711.4	701.9	374.1	327.79	2.141	
13,100.0	7,295.0	13,158.4	7,295.0	166.7	167.0	90.08	90.08	989.9	-5,811.4	702.4	369.0	333.37	2.107	
13,200.0	7,295.0	13,258.4	7,295.0	169.5	169.8	90.08	90.08	989.9	-5,911.4	702.9	364.0	338.95	2.074	
13,300.0	7,295.0	13,358.4	7,295.0	172.3	172.6	90.08	90.08	989.9	-6,011.4	703.4	358.9	344.54	2.042	
13,400.0	7,295.0	13,458.4	7,295.0	175.1	175.4	90.08	90.08	989.9	-6,111.4	704.0	353.8	350.12	2.011	
13,500.0	7,295.0	13,558.4	7,295.0	177.9	178.1	90.08	90.08	989.9	-6,211.4	704.5	348.8	355.71	1.980	
13,600.0	7,295.0	13,658.3	7,295.0	180.7	180.9	90.08	90.08	989.9	-6,311.4	705.0	343.7	361.29	1.951	
13,700.0	7,295.0	13,758.3	7,295.0	183.5	183.7	90.08	90.08	989.9	-6,411.4	705.5	338.6	366.88	1.923	
13,800.0	7,295.0	13,858.3	7,295.0	186.3	186.5	90.08	90.08	989.9	-6,511.4	706.0	333.5	372.46	1.895	
13,900.0	7,295.0	13,958.3	7,295.0	189.1	189.3	90.08	90.08	989.9	-6,611.4	706.5	328.5	378.05	1.869	
14,000.0	7,295.0	14,058.3	7,295.0	191.9	192.1	90.08	90.08	989.9	-6,711.4	707.0	323.4	383.64	1.843	
14,100.0	7,295.0	14,158.3	7,295.0	194.6	194.9	90.08	90.08	989.9	-6,811.4	707.5	318.3	389.23	1.818	
14,200.0	7,295.0	14,258.3	7,295.0	197.4	197.7	90.08	90.08	989.9	-6,911.4	708.1	313.2	394.82	1.793	
14,300.0	7,295.0	14,358.3	7,295.0	200.2	200.5	90.08	90.08	989.9	-7,011.4	708.6	308.2	400.41	1.770	
14,380.0	7,295.0	14,438.3	7,295.0	202.5	202.7	90.08	90.08	989.9	-7,091.4	709.0	304.1	404.88	1.751 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-180.00	-32.8	0.0	32.8				
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-180.00	-32.8	0.0	32.8	32.6	0.22	145.873	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-180.00	-32.8	0.0	32.8	32.1	0.67	48.624	
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-180.00	-32.8	0.0	32.8	31.7	1.12	29.175	
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-180.00	-32.8	0.0	32.8	31.2	1.57	20.839	
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-180.00	-32.8	0.0	32.8	30.8	2.02	16.208	
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-180.00	-32.8	0.0	32.8	30.3	2.47	13.261	
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-180.00	-32.8	0.0	32.8	29.9	2.92	11.221	
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-180.00	-32.8	0.0	32.8	29.4	3.37	9.725	
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-180.00	-32.8	0.0	32.8	29.0	3.82	8.581	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-180.00	-32.8	0.0	32.8	28.5	4.27	7.678 CC, ES	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	138.29	138.29	-32.8	0.0	34.1	29.4	4.72	7.224	
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	143.48	143.48	-32.8	0.0	38.1	33.0	5.16	7.393	
1,300.0	1,299.5	1,299.5	1,299.5	2.8	2.8	149.95	149.95	-32.8	0.0	45.4	39.8	5.60	8.116	
1,400.0	1,398.8	1,398.8	1,398.8	3.1	3.0	155.90	155.90	-32.8	0.0	55.8	49.8	6.04	9.241	
1,500.0	1,498.0	1,498.0	1,498.0	3.3	3.3	160.09	160.09	-32.8	0.0	67.0	60.5	6.49	10.318	
1,600.0	1,597.3	1,599.8	1,599.8	3.6	3.5	162.62	162.62	-31.7	1.3	76.8	69.9	6.94	11.067	
1,700.0	1,696.6	1,702.2	1,702.0	3.8	3.7	163.62	163.62	-28.3	5.5	83.5	76.1	7.39	11.294	
1,800.0	1,795.9	1,804.9	1,804.4	4.1	3.9	163.55	163.55	-22.5	12.5	86.9	79.0	7.85	11.064	
1,900.0	1,895.2	1,904.9	1,903.8	4.4	4.2	163.03	163.03	-15.7	20.7	88.6	80.3	8.31	10.658	
2,000.0	1,994.4	2,004.9	2,003.2	4.7	4.4	162.53	162.53	-9.0	28.9	90.4	81.6	8.78	10.289	
2,100.0	2,093.7	2,104.9	2,102.6	5.0	4.7	162.04	162.04	-2.2	37.1	92.1	82.9	9.25	9.954	
2,200.0	2,193.0	2,204.9	2,202.0	5.3	4.9	161.58	161.58	4.5	45.4	93.9	84.2	9.73	9.648	
2,300.0	2,292.3	2,304.9	2,301.4	5.6	5.2	161.13	161.13	11.3	53.6	95.7	85.4	10.21	9.367	
2,400.0	2,391.6	2,404.8	2,400.9	5.9	5.4	160.70	160.70	18.0	61.8	97.4	86.7	10.70	9.110	
2,500.0	2,490.8	2,504.8	2,500.3	6.2	5.7	160.29	160.29	24.8	70.0	99.2	88.0	11.18	8.872	
2,600.0	2,590.1	2,604.8	2,599.7	6.5	6.0	159.89	159.89	31.5	78.2	101.0	89.3	11.67	8.653	
2,700.0	2,689.4	2,704.8	2,699.1	6.8	6.2	159.50	159.50	38.2	86.4	102.8	90.6	12.16	8.450	
2,800.0	2,788.7	2,804.8	2,798.5	7.1	6.5	159.13	159.13	45.0	94.6	104.6	91.9	12.66	8.262	
2,900.0	2,888.0	2,904.7	2,897.9	7.4	6.8	158.77	158.77	51.7	102.8	106.4	93.2	13.16	8.087	
3,000.0	2,987.2	3,004.7	2,997.4	7.7	7.1	158.42	158.42	58.5	111.0	108.2	94.5	13.66	7.923	
3,100.0	3,086.5	3,104.7	3,096.8	8.0	7.3	158.08	158.08	65.2	119.2	110.0	95.8	14.16	7.771	
3,200.0	3,185.8	3,204.7	3,196.2	8.3	7.6	157.75	157.75	72.0	127.4	111.8	97.2	14.66	7.627	
3,300.0	3,285.1	3,304.7	3,295.6	8.6	7.9	157.44	157.44	78.7	135.6	113.6	98.5	15.16	7.493	
3,400.0	3,384.4	3,404.6	3,395.0	8.9	8.2	157.13	157.13	85.5	143.8	115.4	99.8	15.67	7.367	
3,500.0	3,483.6	3,504.6	3,494.4	9.2	8.5	156.83	156.83	92.2	152.0	117.3	101.1	16.18	7.248	
3,600.0	3,582.9	3,604.6	3,593.8	9.5	8.8	156.55	156.55	99.0	160.2	119.1	102.4	16.69	7.136	
3,700.0	3,682.2	3,704.6	3,693.3	9.8	9.0	156.27	156.27	105.7	168.5	120.9	103.7	17.20	7.030	
3,800.0	3,781.5	3,804.6	3,792.7	10.2	9.3	156.00	156.00	112.5	176.7	122.8	105.0	17.71	6.930	
3,900.0	3,880.8	3,904.6	3,892.1	10.5	9.6	155.73	155.73	119.2	184.9	124.6	106.4	18.23	6.836	
4,000.0	3,980.0	4,004.5	3,991.5	10.8	9.9	155.48	155.48	126.0	193.1	126.4	107.7	18.74	6.746	
4,100.0	4,079.3	4,104.5	4,090.9	11.1	10.2	155.23	155.23	132.7	201.3	128.3	109.0	19.26	6.660	
4,200.0	4,178.6	4,204.5	4,190.3	11.4	10.5	154.99	154.99	139.5	209.5	130.1	110.3	19.78	6.579	
4,300.0	4,277.9	4,304.5	4,289.8	11.7	10.8	154.76	154.76	146.2	217.7	131.9	111.7	20.29	6.502	
4,400.0	4,377.1	4,404.5	4,389.2	12.0	11.1	154.53	154.53	153.0	225.9	133.8	113.0	20.81	6.428	
4,500.0	4,476.4	4,504.4	4,488.6	12.3	11.4	154.31	154.31	159.7	234.1	135.6	114.3	21.33	6.358	
4,600.0	4,575.7	4,604.4	4,588.0	12.6	11.6	154.09	154.09	166.5	242.3	137.5	115.6	21.85	6.291	
4,700.0	4,675.0	4,704.4	4,687.4	12.9	11.9	153.88	153.88	173.2	250.5	139.3	116.9	22.37	6.225	
4,800.0	4,774.5	4,804.4	4,786.8	13.2	12.2	153.23	153.23	180.0	258.7	139.0	116.1	22.86	6.080	
4,900.0	4,874.3	4,904.3	4,886.2	13.4	12.5	151.88	151.88	186.7	266.9	135.6	112.3	23.37	5.804	
5,000.0	4,974.3	5,004.0	4,985.3	13.5	12.8	149.67	149.67	193.4	275.1	129.3	105.4	23.91	5.411	

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside	Offset Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)			
5,100.0	5,074.3	5,103.4	5,084.1	13.7	13.1	-169.63	200.1	283.3	121.1	95.8	25.38	4.773		
5,200.0	5,174.3	5,202.8	5,183.0	13.9	13.4	-173.10	206.9	291.4	113.2	87.6	25.60	4.422		
5,300.0	5,274.3	5,300.0	5,279.8	14.0	13.6	-176.47	212.6	298.5	106.6	80.8	25.79	4.133		
5,400.0	5,374.3	5,397.6	5,377.2	14.2	13.8	-178.86	216.3	303.0	102.6	76.6	26.01	3.946		
5,500.0	5,474.3	5,495.3	5,474.9	14.4	14.0	-179.95	217.9	304.9	101.0	74.7	26.30	3.839		
5,544.9	5,519.2	5,539.6	5,519.2	14.5	14.1	180.00	218.0	305.0	100.9	74.4	26.46	3.813		
5,600.0	5,574.3	5,594.8	5,574.3	14.6	14.2	180.00	218.0	305.0	100.9	74.2	26.67	3.783		
5,700.0	5,674.3	5,694.8	5,674.3	14.8	14.4	180.00	218.0	305.0	100.9	73.8	27.07	3.728		
5,800.0	5,774.3	5,794.8	5,774.3	15.0	14.5	180.00	218.0	305.0	100.9	73.4	27.46	3.673		
5,900.0	5,874.3	5,894.8	5,874.3	15.1	14.7	180.00	218.0	305.0	100.9	73.0	27.86	3.621		
6,000.0	5,974.3	5,994.8	5,974.3	15.3	14.9	180.00	218.0	305.0	100.9	72.6	28.26	3.569		
6,100.0	6,074.3	6,094.8	6,074.3	15.5	15.1	180.00	218.0	305.0	100.9	72.2	28.67	3.519		
6,200.0	6,174.3	6,194.8	6,174.3	15.7	15.3	180.00	218.0	305.0	100.9	71.8	29.07	3.470		
6,300.0	6,274.3	6,294.8	6,274.3	15.9	15.5	180.00	218.0	305.0	100.9	71.4	29.48	3.423		
6,344.7	6,319.0	6,339.4	6,319.0	16.0	15.6	-179.96	218.0	304.9	100.9	71.2	29.66	3.402		
6,400.0	6,374.3	6,394.6	6,374.0	16.1	15.7	-178.40	218.0	302.2	100.9	71.0	29.96	3.369		
6,500.0	6,474.3	6,492.2	6,470.5	16.3	15.8	-170.22	218.0	287.6	102.4	71.7	30.78	3.329		
6,600.0	6,574.2	6,585.3	6,560.0	16.5	15.8	-67.26	218.0	262.4	109.7	80.0	29.72	3.692		
6,700.0	6,673.3	6,675.3	6,643.1	16.6	15.8	-56.23	218.0	227.8	122.1	92.8	29.35	4.161		
6,800.0	6,769.7	6,763.0	6,719.5	16.6	15.8	-47.76	218.0	184.9	137.2	108.2	28.93	4.741		
6,900.0	6,861.9	6,850.0	6,790.0	16.6	15.8	-41.32	218.0	134.0	153.3	125.0	28.33	5.411		
7,000.0	6,948.2	6,932.7	6,851.3	16.6	15.9	-36.62	218.0	78.6	169.3	141.8	27.49	6.157		
7,100.0	7,027.2	7,015.2	6,906.0	16.6	16.1	-33.02	218.0	16.9	184.3	157.9	26.45	6.969		
7,200.0	7,097.6	7,100.0	6,955.1	16.6	16.6	-30.23	218.0	-52.2	198.0	172.7	25.30	7.824		
7,300.0	7,158.1	7,176.8	6,992.7	17.0	17.4	-28.26	218.0	-119.2	209.7	185.5	24.18	8.669		
7,400.0	7,207.7	7,256.4	7,024.3	17.8	18.3	-26.75	218.0	-192.2	219.3	196.0	23.27	9.421		
7,500.0	7,245.6	7,335.3	7,048.0	19.1	19.4	-25.67	218.0	-267.5	226.6	203.8	22.74	9.961		
7,600.0	7,271.1	7,413.9	7,063.7	20.6	20.7	-24.95	218.0	-344.4	231.4	208.7	22.74	10.176		
7,700.0	7,284.4	7,492.1	7,071.5	22.3	22.1	-24.52	218.0	-422.2	234.3	210.8	23.49	9.978		
7,800.0	7,293.4	7,580.9	7,072.2	24.2	23.9	-23.65	218.0	-511.0	241.4	216.9	24.47	9.864		
7,900.0	7,295.0	7,680.9	7,072.0	26.3	26.0	-23.33	218.0	-610.9	242.9	217.0	25.94	9.365		
8,000.0	7,295.0	7,780.9	7,071.7	28.5	28.2	-23.19	218.0	-710.9	242.9	215.2	27.73	8.761		
8,100.0	7,295.0	7,880.9	7,071.4	30.8	30.5	-23.06	218.0	-810.9	243.0	213.4	29.61	8.206		
8,200.0	7,295.0	7,980.9	7,071.2	33.2	32.9	-22.92	218.0	-910.9	243.0	211.4	31.56	7.699		
8,300.0	7,295.0	8,080.9	7,070.9	35.6	35.3	-22.78	218.0	-1,010.9	243.1	209.5	33.57	7.241		
8,400.0	7,295.0	8,180.9	7,070.6	38.1	37.8	-22.65	218.0	-1,110.9	243.1	207.5	35.61	6.826		
8,500.0	7,295.0	8,280.9	7,070.4	40.6	40.4	-22.51	218.0	-1,210.9	243.1	205.5	37.69	6.451		
8,600.0	7,295.0	8,380.9	7,070.1	43.2	42.9	-22.38	218.0	-1,310.9	243.2	203.4	39.79	6.112		
8,700.0	7,295.0	8,480.8	7,069.9	45.7	45.5	-22.24	218.0	-1,410.9	243.2	201.3	41.90	5.805		
8,800.0	7,295.0	8,580.8	7,069.6	48.4	48.2	-22.11	218.0	-1,510.9	243.3	199.3	44.03	5.526		
8,900.0	7,295.0	8,680.8	7,069.3	51.0	50.8	-21.97	218.0	-1,610.9	243.3	197.2	46.16	5.272		
9,000.0	7,295.0	8,780.8	7,069.1	53.6	53.5	-21.84	218.0	-1,710.9	243.4	195.1	48.29	5.040		
9,100.0	7,295.0	8,880.8	7,068.8	56.3	56.1	-21.70	218.0	-1,810.9	243.4	193.0	50.42	4.828		
9,200.0	7,295.0	8,980.8	7,068.6	59.0	58.8	-21.57	218.0	-1,910.9	243.5	190.9	52.55	4.634		
9,300.0	7,295.0	9,080.8	7,068.3	61.7	61.5	-21.43	218.0	-2,010.9	243.5	188.9	54.67	4.455		
9,400.0	7,295.0	9,180.8	7,068.0	64.4	64.2	-21.30	218.0	-2,110.9	243.6	186.8	56.79	4.290		
9,500.0	7,295.0	9,280.8	7,067.8	67.1	67.0	-21.16	218.0	-2,210.9	243.7	184.8	58.90	4.137		
9,600.0	7,295.0	9,380.8	7,067.5	69.8	69.7	-21.03	218.0	-2,310.9	243.7	182.7	61.00	3.995		
9,700.0	7,295.0	9,480.8	7,067.2	72.5	72.4	-20.89	218.0	-2,410.9	243.8	180.7	63.09	3.864		
9,800.0	7,295.0	9,580.8	7,067.0	75.2	75.1	-20.76	218.0	-2,510.9	243.8	178.7	65.17	3.742		
9,900.0	7,295.0	9,680.8	7,066.7	78.0	77.9	-20.62	218.0	-2,610.9	243.9	176.7	67.24	3.627		

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32X-234 - Wellbore #1 - Plan #1 (4-14-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	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	Warning
10,000.0	7,295.0	9,780.8	7,066.5	80.7	80.6	-20.49		218.0	-2,710.9	244.0	174.7	69.29	3.521	
10,100.0	7,295.0	9,880.8	7,066.2	83.5	83.4	-20.35		218.0	-2,810.9	244.0	172.7	71.34	3.421	
10,200.0	7,295.0	9,980.8	7,065.9	86.2	86.1	-20.22		218.0	-2,910.9	244.1	170.7	73.37	3.327	
10,300.0	7,295.0	10,080.8	7,065.7	89.0	88.9	-20.08		218.0	-3,010.9	244.2	168.8	75.38	3.239	
10,400.0	7,295.0	10,180.8	7,065.4	91.7	91.6	-19.95		218.0	-3,110.9	244.2	166.9	77.39	3.156	
10,500.0	7,295.0	10,280.8	7,065.2	94.5	94.4	-19.82		218.0	-3,210.9	244.3	164.9	79.37	3.078	
10,600.0	7,295.0	10,380.8	7,064.9	97.2	97.2	-19.68		218.0	-3,310.9	244.4	163.0	81.35	3.004	
10,700.0	7,295.0	10,480.8	7,064.6	100.0	99.9	-19.55		218.0	-3,410.9	244.5	161.2	83.31	2.934	
10,800.0	7,295.0	10,580.8	7,064.4	102.8	102.7	-19.41		218.0	-3,510.9	244.5	159.3	85.25	2.868	
10,900.0	7,295.0	10,680.8	7,064.1	105.5	105.5	-19.28		218.0	-3,610.9	244.6	157.4	87.18	2.806	
11,000.0	7,295.0	10,780.8	7,063.8	108.3	108.2	-19.15		218.0	-3,710.9	244.7	155.6	89.10	2.746	
11,100.0	7,295.0	10,880.8	7,063.6	111.1	111.0	-19.01		218.0	-3,810.9	244.8	153.8	91.00	2.690	
11,200.0	7,295.0	10,980.8	7,063.3	113.8	113.8	-18.88		218.0	-3,910.9	244.9	152.0	92.88	2.636	
11,300.0	7,295.0	11,080.8	7,063.1	116.6	116.6	-18.75		218.0	-4,010.9	244.9	150.2	94.75	2.585	
11,400.0	7,295.0	11,180.8	7,062.8	119.4	119.3	-18.61		218.0	-4,110.9	245.0	148.4	96.60	2.536	
11,500.0	7,295.0	11,280.8	7,062.5	122.2	122.1	-18.48		218.0	-4,210.9	245.1	146.7	98.44	2.490	
11,600.0	7,295.0	11,380.8	7,062.3	124.9	124.9	-18.35		218.0	-4,310.9	245.2	144.9	100.26	2.445	
11,700.0	7,295.0	11,480.8	7,062.0	127.7	127.7	-18.21		218.0	-4,410.9	245.3	143.2	102.07	2.403	
11,800.0	7,295.0	11,580.8	7,061.7	130.5	130.5	-18.08		218.0	-4,510.9	245.4	141.5	103.86	2.362	
11,900.0	7,295.0	11,680.8	7,061.5	133.3	133.3	-17.95		218.0	-4,610.9	245.5	139.8	105.64	2.323	
12,000.0	7,295.0	11,780.8	7,061.2	136.1	136.0	-17.81		218.0	-4,710.8	245.5	138.1	107.40	2.286	
12,100.0	7,295.0	11,880.8	7,061.0	138.8	138.8	-17.68		218.0	-4,810.8	245.6	136.5	109.15	2.250	
12,200.0	7,295.0	11,980.8	7,060.7	141.6	141.6	-17.55		218.0	-4,910.8	245.7	134.9	110.88	2.216	
12,300.0	7,295.0	12,080.8	7,060.4	144.4	144.4	-17.42		218.0	-5,010.8	245.8	133.2	112.60	2.183	
12,400.0	7,295.0	12,180.8	7,060.2	147.2	147.2	-17.28		218.0	-5,110.8	245.9	131.6	114.30	2.152	
12,500.0	7,295.0	12,280.8	7,059.9	150.0	150.0	-17.15		218.0	-5,210.8	246.0	130.0	115.98	2.121	
12,600.0	7,295.0	12,380.8	7,059.7	152.8	152.8	-17.02		218.0	-5,310.8	246.1	128.5	117.65	2.092	
12,700.0	7,295.0	12,480.8	7,059.4	155.6	155.6	-16.89		218.0	-5,410.8	246.2	126.9	119.31	2.064	
12,800.0	7,295.0	12,580.8	7,059.1	158.3	158.4	-16.75		218.0	-5,510.8	246.3	125.4	120.95	2.037	
12,900.0	7,295.0	12,680.8	7,058.9	161.1	161.1	-16.62		218.0	-5,610.8	246.4	123.9	122.58	2.010	
13,000.0	7,295.0	12,780.8	7,058.6	163.9	163.9	-16.49		218.0	-5,710.8	246.5	122.3	124.19	1.985	
13,100.0	7,295.0	12,880.8	7,058.3	166.7	166.7	-16.36		218.0	-5,810.8	246.6	120.9	125.79	1.961	
13,200.0	7,295.0	12,980.8	7,058.1	169.5	169.5	-16.23		218.0	-5,910.8	246.7	119.4	127.37	1.937	
13,300.0	7,295.0	13,080.8	7,057.8	172.3	172.3	-16.10		218.0	-6,010.8	246.9	117.9	128.94	1.915	
13,400.0	7,295.0	13,180.8	7,057.6	175.1	175.1	-15.96		218.0	-6,110.8	247.0	116.5	130.49	1.893	
13,500.0	7,295.0	13,280.8	7,057.3	177.9	177.9	-15.83		218.0	-6,210.8	247.1	115.0	132.03	1.871	
13,600.0	7,295.0	13,380.8	7,057.0	180.7	180.7	-15.70		218.0	-6,310.8	247.2	113.6	133.56	1.851	
13,700.0	7,295.0	13,480.8	7,056.8	183.5	183.5	-15.57		218.0	-6,410.8	247.3	112.2	135.07	1.831	
13,800.0	7,295.0	13,580.8	7,056.5	186.3	186.3	-15.44		218.0	-6,510.8	247.4	110.8	136.57	1.812	
13,900.0	7,295.0	13,680.8	7,056.3	189.1	189.1	-15.31		218.0	-6,610.8	247.5	109.5	138.06	1.793	
14,000.0	7,295.0	13,780.8	7,056.0	191.9	191.9	-15.18		218.0	-6,710.8	247.7	108.1	139.53	1.775	
14,100.0	7,295.0	13,880.8	7,055.7	194.6	194.7	-15.05		218.0	-6,810.8	247.8	106.8	140.98	1.757	
14,200.0	7,295.0	13,980.8	7,055.5	197.4	197.5	-14.92		218.0	-6,910.8	247.9	105.5	142.43	1.740	
14,300.0	7,295.0	14,080.8	7,055.2	200.2	200.3	-14.79		218.0	-7,010.8	248.0	104.1	143.86	1.724	
14,340.0	7,295.0	14,120.7	7,055.1	201.4	201.4	-14.74		218.0	-7,050.8	248.1	103.6	144.43	1.718	
14,380.0	7,295.0	14,158.7	7,055.0	202.5	202.4	-14.69		218.0	-7,088.7	248.1	103.1	144.99	1.711 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32X-314 - Wellbore #1 - Plan #1 (4-14-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	0.00	29.1	0.0	29.1	28.9	0.22	129.665	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	0.00	29.1	0.0	29.1	28.5	0.67	43.222	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	0.00	29.1	0.0	29.1	28.0	1.12	25.933	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	0.00	29.1	0.0	29.1	27.6	1.57	18.524	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	0.00	29.1	0.0	29.1	27.1	2.02	14.407	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	0.00	29.1	0.0	29.1	26.7	2.47	11.788 CC, ES	
700.0	700.0	699.0	699.0	1.5	1.5	1.30	30.7	30.7	0.7	30.7	27.8	2.92	10.530	
800.0	800.0	797.8	797.7	1.7	1.7	4.50	35.4	35.4	2.8	35.6	32.2	3.37	10.563	
900.0	900.0	896.2	895.7	1.9	1.9	8.24	43.1	43.1	6.2	43.8	40.0	3.82	11.449	
1,000.0	1,000.0	993.8	992.6	2.1	2.2	11.58	53.8	53.8	11.0	55.4	51.1	4.29	12.911	
1,100.0	1,100.0	1,092.9	1,090.7	2.4	2.4	-30.25	66.4	66.4	16.7	67.6	62.9	4.73	14.305	
1,200.0	1,199.8	1,192.5	1,189.3	2.6	2.7	-30.20	79.1	79.1	22.3	76.9	71.7	5.17	14.857	
1,300.0	1,299.5	1,292.3	1,288.1	2.8	3.0	-31.38	91.9	91.9	28.0	83.1	77.5	5.63	14.765	
1,400.0	1,398.8	1,392.1	1,387.0	3.1	3.3	-33.48	104.6	104.6	33.7	86.9	80.8	6.10	14.241	
1,500.0	1,498.0	1,492.0	1,485.9	3.3	3.7	-35.54	117.3	117.3	39.4	90.6	84.0	6.60	13.731	
1,600.0	1,597.3	1,591.9	1,584.8	3.6	4.0	-37.43	130.1	130.1	45.1	94.3	87.2	7.10	13.287	
1,700.0	1,696.6	1,691.8	1,683.7	3.8	4.3	-39.19	142.8	142.8	50.8	98.2	90.6	7.61	12.895	
1,800.0	1,795.9	1,791.7	1,782.6	4.1	4.6	-40.80	155.5	155.5	56.5	102.1	94.0	8.14	12.548	
1,900.0	1,895.2	1,891.5	1,881.5	4.4	4.9	-42.30	168.3	168.3	62.2	106.1	97.5	8.67	12.240	
2,000.0	1,994.4	1,991.4	1,980.4	4.7	5.3	-43.69	181.0	181.0	67.9	110.2	101.0	9.21	11.964	
2,100.0	2,093.7	2,091.3	2,079.3	5.0	5.6	-44.98	193.8	193.8	73.6	114.3	104.6	9.76	11.716	
2,200.0	2,193.0	2,191.2	2,178.2	5.3	5.9	-46.17	206.5	206.5	79.3	118.5	108.2	10.31	11.492	
2,300.0	2,292.3	2,291.1	2,277.1	5.6	6.3	-47.29	219.2	219.2	85.0	122.8	111.9	10.87	11.289	
2,400.0	2,391.6	2,391.0	2,376.0	5.9	6.6	-48.33	232.0	232.0	90.7	127.0	115.6	11.44	11.104	
2,500.0	2,490.8	2,490.8	2,474.9	6.2	6.9	-49.30	244.7	244.7	96.4	131.4	119.3	12.01	10.936	
2,600.0	2,590.1	2,590.7	2,573.8	6.5	7.3	-50.21	257.4	257.4	102.1	135.7	123.1	12.59	10.782	
2,700.0	2,689.4	2,690.6	2,672.7	6.8	7.6	-51.06	270.2	270.2	107.8	140.1	126.9	13.17	10.640	
2,800.0	2,788.7	2,790.5	2,771.6	7.1	7.9	-51.87	282.9	282.9	113.4	144.5	130.8	13.75	10.510	
2,900.0	2,888.0	2,890.4	2,870.5	7.4	8.3	-52.62	295.7	295.7	119.1	149.0	134.6	14.34	10.390	
3,000.0	2,987.2	2,990.3	2,969.4	7.7	8.6	-53.33	308.4	308.4	124.8	153.4	138.5	14.93	10.279	
3,100.0	3,086.5	3,090.1	3,068.3	8.0	8.9	-54.00	321.1	321.1	130.5	157.9	142.4	15.52	10.176	
3,200.0	3,185.8	3,190.0	3,167.3	8.3	9.3	-54.63	333.9	333.9	136.2	162.4	146.3	16.11	10.080	
3,300.0	3,285.1	3,289.9	3,266.2	8.6	9.6	-55.23	346.6	346.6	141.9	167.0	150.2	16.71	9.991	
3,400.0	3,384.4	3,389.8	3,365.1	8.9	9.9	-55.80	359.3	359.3	147.6	171.5	154.2	17.31	9.908	
3,500.0	3,483.6	3,489.7	3,464.0	9.2	10.3	-56.33	372.1	372.1	153.3	176.1	158.2	17.91	9.831	
3,600.0	3,582.9	3,589.6	3,562.9	9.5	10.6	-56.84	384.8	384.8	159.0	180.6	162.1	18.51	9.758	
3,700.0	3,682.2	3,689.4	3,661.8	9.8	11.0	-57.33	397.6	397.6	164.7	185.2	166.1	19.12	9.690	
3,800.0	3,781.5	3,789.3	3,760.7	10.2	11.3	-57.79	410.3	410.3	170.4	189.8	170.1	19.72	9.626	
3,900.0	3,880.8	3,889.2	3,859.6	10.5	11.6	-58.23	423.0	423.0	176.1	194.5	174.1	20.33	9.566	
4,000.0	3,980.0	3,989.1	3,958.5	10.8	12.0	-58.65	435.8	435.8	181.8	199.1	178.1	20.93	9.509	
4,100.0	4,079.3	4,089.0	4,057.4	11.1	12.3	-59.05	448.5	448.5	187.5	203.7	182.2	21.54	9.456	
4,200.0	4,178.6	4,188.8	4,156.3	11.4	12.6	-59.43	461.2	461.2	193.2	208.4	186.2	22.15	9.405	
4,300.0	4,277.9	4,288.7	4,255.2	11.7	13.0	-59.80	474.0	474.0	198.9	213.0	190.2	22.76	9.357	
4,400.0	4,377.1	4,388.6	4,354.1	12.0	13.3	-60.15	486.7	486.7	204.5	217.7	194.3	23.38	9.312	
4,500.0	4,476.4	4,488.5	4,453.0	12.3	13.7	-60.48	499.4	499.4	210.2	222.3	198.4	23.99	9.269	
4,600.0	4,575.7	4,588.4	4,551.9	12.6	14.0	-60.80	512.2	512.2	215.9	227.0	202.4	24.60	9.228	
4,700.0	4,675.0	4,688.3	4,650.8	12.9	14.3	-61.12	524.9	524.9	221.6	231.7	206.5	25.21	9.193	
4,800.0	4,774.5	4,788.1	4,749.6	13.2	14.7	-61.01	537.7	537.7	227.3	237.6	211.9	25.69	9.247	
4,900.0	4,874.3	4,887.7	4,848.3	13.4	15.0	-60.23	550.4	550.4	233.0	245.1	219.0	26.09	9.397	
5,000.0	4,974.3	4,987.0	4,946.7	13.5	15.3	-58.86	563.0	563.0	238.7	254.5	228.1	26.39	9.644	

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	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 32X-314 - Wellbore #1 - Plan #1 (4-14-14)													
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
5,100.0	5,074.3	5,086.1	5,044.7	13.7	15.7	-13.30	575.7	244.3	265.5	239.0	26.50	10.016	
5,200.0	5,174.3	5,185.1	5,142.8	13.9	16.0	-11.55	588.3	250.0	276.7	249.6	27.18	10.184	
5,300.0	5,274.3	5,284.1	5,240.8	14.0	16.4	-9.94	600.9	255.6	288.3	260.4	27.84	10.356	
5,400.0	5,374.3	5,383.1	5,338.9	14.2	16.7	-8.45	613.5	261.2	300.0	271.5	28.49	10.530	
5,500.0	5,474.3	5,482.2	5,436.9	14.4	17.0	-7.07	626.2	266.9	311.9	282.7	29.13	10.707	
5,600.0	5,574.3	5,581.2	5,535.0	14.6	17.4	-5.80	638.8	272.5	323.9	294.2	29.76	10.885	
5,700.0	5,674.3	5,680.2	5,633.0	14.8	17.7	-4.61	651.4	278.2	336.1	305.8	30.38	11.063	
5,800.0	5,774.3	5,779.2	5,731.1	15.0	18.0	-3.51	664.0	283.8	348.5	317.5	31.00	11.241	
5,900.0	5,874.3	5,878.2	5,829.1	15.1	18.4	-2.49	676.7	289.5	360.9	329.3	31.61	11.418	
6,000.0	5,974.3	5,980.9	5,930.8	15.3	18.7	-1.51	689.6	295.3	373.4	341.2	32.22	11.588	
6,100.0	6,074.3	6,093.9	6,043.1	15.5	19.0	-0.71	700.9	300.3	383.3	350.5	32.76	11.700	
6,200.0	6,174.3	6,207.6	6,156.5	15.7	19.2	-0.22	708.1	303.5	389.6	356.4	33.23	11.727	
6,300.0	6,274.3	6,321.8	6,270.6	15.9	19.4	-0.01	711.3	304.9	392.4	358.8	33.63	11.669	
6,400.0	6,374.3	6,425.4	6,374.3	16.1	19.5	0.00	711.4	305.0	392.5	358.5	33.98	11.551	
6,448.0	6,422.3	6,473.4	6,422.3	16.2	19.6	0.00	711.4	305.0	392.5	358.4	34.15	11.492	
6,500.0	6,474.3	6,525.3	6,474.1	16.3	19.7	-0.30	711.4	302.9	392.5	358.2	34.31	11.441	
6,600.0	6,574.2	6,623.6	6,571.4	16.5	19.8	88.26	711.4	289.4	392.8	360.8	31.94	12.297	
6,700.0	6,673.3	6,720.2	6,664.5	16.6	19.8	86.37	711.4	264.1	393.5	361.2	32.28	12.191	
6,800.0	6,769.7	6,815.2	6,752.3	16.6	19.8	84.56	711.4	227.8	394.7	362.2	32.51	12.142	
6,900.0	6,861.9	6,908.9	6,833.9	16.6	19.7	82.86	711.4	181.8	396.3	363.6	32.66	12.132	
7,000.0	6,948.2	7,000.0	6,907.1	16.6	19.7	81.31	711.4	127.7	398.1	365.3	32.82	12.128	
7,100.0	7,027.2	7,092.9	6,974.7	16.6	19.7	79.88	711.4	64.0	400.1	366.9	33.12	12.079	
7,200.0	7,097.6	7,183.4	7,032.6	16.6	19.7	78.64	711.4	-5.5	402.1	368.4	33.68	11.936	
7,300.0	7,158.1	7,273.2	7,081.5	17.0	19.7	77.59	711.4	-80.7	404.0	369.3	34.68	11.649	
7,400.0	7,207.7	7,362.4	7,121.1	17.8	19.9	76.73	711.4	-160.6	405.8	369.6	36.19	11.211	
7,500.0	7,245.6	7,450.0	7,150.6	19.1	20.5	76.08	711.4	-243.0	407.3	369.0	38.29	10.637	
7,600.0	7,271.1	7,539.4	7,170.8	20.6	21.7	75.64	711.4	-330.1	408.6	367.6	41.02	9.961	
7,700.0	7,284.4	7,627.5	7,180.6	22.3	23.2	75.34	711.4	-417.6	409.6	365.4	44.17	9.274	
7,800.0	7,293.4	7,720.9	7,181.5	24.2	24.9	74.29	711.4	-511.0	412.2	364.6	47.64	8.653	
7,900.0	7,295.0	7,820.9	7,180.9	26.3	26.9	73.98	711.4	-610.9	413.3	361.7	51.60	8.009	
8,000.0	7,295.0	7,920.9	7,180.4	28.5	29.1	73.93	711.4	-710.9	413.9	358.1	55.78	7.420	
8,100.0	7,295.0	8,020.9	7,179.9	30.8	31.3	73.88	711.4	-810.9	414.6	354.4	60.15	6.892	
8,200.0	7,295.0	8,120.9	7,179.4	33.2	33.7	73.83	711.4	-910.9	415.2	350.5	64.68	6.420	
8,300.0	7,295.0	8,220.9	7,178.9	35.6	36.1	73.78	711.4	-1,010.9	415.8	346.5	69.32	5.998	
8,400.0	7,295.0	8,320.9	7,178.3	38.1	38.5	73.73	711.4	-1,110.9	416.5	342.4	74.07	5.623	
8,500.0	7,295.0	8,420.9	7,177.8	40.6	41.0	73.68	711.4	-1,210.9	417.1	338.2	78.90	5.287	
8,600.0	7,295.0	8,520.9	7,177.3	43.2	43.5	73.63	711.4	-1,310.9	417.8	334.0	83.80	4.985	
8,700.0	7,295.0	8,620.9	7,176.8	45.7	46.1	73.58	711.4	-1,410.9	418.4	329.6	88.75	4.715	
8,800.0	7,295.0	8,720.9	7,176.2	48.4	48.7	73.53	711.4	-1,510.9	419.0	325.3	93.74	4.470	
8,900.0	7,295.0	8,820.9	7,175.7	51.0	51.3	73.49	711.4	-1,610.9	419.7	320.9	98.78	4.249	
9,000.0	7,295.0	8,920.9	7,175.2	53.6	53.9	73.44	711.4	-1,710.9	420.3	316.5	103.84	4.048	
9,100.0	7,295.0	9,020.9	7,174.7	56.3	56.6	73.39	711.4	-1,810.9	421.0	312.0	108.94	3.864	
9,200.0	7,295.0	9,120.9	7,174.1	59.0	59.2	73.34	711.4	-1,910.9	421.6	307.5	114.06	3.696	
9,300.0	7,295.0	9,220.9	7,173.6	61.7	61.9	73.29	711.4	-2,010.9	422.2	303.0	119.19	3.542	
9,400.0	7,295.0	9,320.9	7,173.1	64.4	64.6	73.24	711.4	-2,110.9	422.9	298.5	124.35	3.401	
9,500.0	7,295.0	9,420.9	7,172.6	67.1	67.3	73.20	711.4	-2,210.9	423.5	294.0	129.52	3.270	
9,600.0	7,295.0	9,520.9	7,172.0	69.8	70.0	73.15	711.4	-2,310.8	424.2	289.5	134.70	3.149	
9,700.0	7,295.0	9,620.9	7,171.5	72.5	72.7	73.10	711.4	-2,410.8	424.8	284.9	139.90	3.037	
9,800.0	7,295.0	9,720.8	7,171.0	75.2	75.4	73.05	711.4	-2,510.8	425.5	280.4	145.10	2.932	
9,900.0	7,295.0	9,820.8	7,170.5	78.0	78.2	73.01	711.4	-2,610.8	426.1	275.8	150.32	2.835	
10,000.0	7,295.0	9,920.8	7,170.0	80.7	80.9	72.96	711.4	-2,710.8	426.7	271.2	155.54	2.744	

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32X-314 - Wellbore #1 - Plan #1 (4-14-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,295.0	10,020.8	7,169.4	83.5	83.6	72.91	711.4	-2,810.8	427.4	266.6	160.77	2.658		
10,200.0	7,295.0	10,120.8	7,168.9	86.2	86.4	72.87	711.4	-2,910.8	428.0	262.0	166.00	2.579		
10,300.0	7,295.0	10,220.8	7,168.4	89.0	89.1	72.82	711.4	-3,010.8	428.7	257.4	171.23	2.503		
10,400.0	7,295.0	10,320.8	7,167.9	91.7	91.9	72.77	711.4	-3,110.8	429.3	252.9	176.48	2.433		
10,500.0	7,295.0	10,420.8	7,167.3	94.5	94.6	72.73	711.4	-3,210.8	430.0	248.3	181.72	2.366		
10,600.0	7,295.0	10,520.8	7,166.8	97.2	97.4	72.68	711.4	-3,310.8	430.6	243.7	186.97	2.303		
10,700.0	7,295.0	10,620.8	7,166.3	100.0	100.1	72.63	711.4	-3,410.8	431.3	239.0	192.22	2.244		
10,800.0	7,295.0	10,720.8	7,165.8	102.8	102.9	72.59	711.4	-3,510.8	431.9	234.4	197.47	2.187		
10,900.0	7,295.0	10,820.8	7,165.2	105.5	105.7	72.54	711.4	-3,610.8	432.6	229.8	202.73	2.134		
11,000.0	7,295.0	10,920.8	7,164.7	108.3	108.4	72.50	711.4	-3,710.8	433.2	225.2	207.98	2.083		
11,100.0	7,295.0	11,020.8	7,164.2	111.1	111.2	72.45	711.4	-3,810.8	433.9	220.6	213.24	2.035		
11,200.0	7,295.0	11,120.8	7,163.7	113.8	114.0	72.41	711.4	-3,910.8	434.5	216.0	218.50	1.989		
11,300.0	7,295.0	11,220.8	7,163.1	116.6	116.7	72.36	711.4	-4,010.8	435.2	211.4	223.76	1.945		
11,400.0	7,295.0	11,320.8	7,162.6	119.4	119.5	72.32	711.4	-4,110.8	435.8	206.8	229.02	1.903		
11,500.0	7,295.0	11,420.8	7,162.1	122.2	122.3	72.27	711.4	-4,210.8	436.4	202.2	234.28	1.863		
11,600.0	7,295.0	11,520.8	7,161.6	124.9	125.0	72.23	711.4	-4,310.8	437.1	197.6	239.54	1.825		
11,700.0	7,295.0	11,620.8	7,161.1	127.7	127.8	72.18	711.4	-4,410.8	437.7	192.9	244.80	1.788		
11,800.0	7,295.0	11,720.8	7,160.5	130.5	130.6	72.14	711.4	-4,510.8	438.4	188.3	250.06	1.753		
11,900.0	7,295.0	11,820.8	7,160.0	133.3	133.4	72.09	711.4	-4,610.8	439.0	183.7	255.32	1.720		
12,000.0	7,295.0	11,920.8	7,159.5	136.1	136.2	72.05	711.4	-4,710.8	439.7	179.1	260.58	1.687		
12,100.0	7,295.0	12,020.8	7,159.0	138.8	138.9	72.00	711.4	-4,810.7	440.3	174.5	265.84	1.656		
12,200.0	7,295.0	12,120.8	7,158.4	141.6	141.7	71.96	711.4	-4,910.7	441.0	169.9	271.09	1.627		
12,300.0	7,295.0	12,220.8	7,157.9	144.4	144.5	71.92	711.4	-5,010.7	441.6	165.3	276.35	1.598		
12,400.0	7,295.0	12,320.8	7,157.4	147.2	147.3	71.87	711.4	-5,110.7	442.3	160.7	281.61	1.571		
12,500.0	7,295.0	12,420.8	7,156.9	150.0	150.1	71.83	711.4	-5,210.7	442.9	156.1	286.86	1.544		
12,600.0	7,295.0	12,520.8	7,156.3	152.8	152.9	71.78	711.4	-5,310.7	443.6	151.5	292.12	1.519		
12,700.0	7,295.0	12,620.8	7,155.8	155.6	155.6	71.74	711.4	-5,410.7	444.3	146.9	297.37	1.494 Level 3		
12,800.0	7,295.0	12,720.8	7,155.3	158.3	158.4	71.70	711.4	-5,510.7	444.9	142.3	302.62	1.470 Level 3		
12,900.0	7,295.0	12,820.8	7,154.8	161.1	161.2	71.65	711.4	-5,610.7	445.6	137.7	307.87	1.447 Level 3		
13,000.0	7,295.0	12,920.8	7,154.2	163.9	164.0	71.61	711.4	-5,710.7	446.2	133.1	313.12	1.425 Level 3		
13,100.0	7,295.0	13,020.8	7,153.7	166.7	166.8	71.57	711.4	-5,810.7	446.9	128.5	318.37	1.404 Level 3		
13,200.0	7,295.0	13,120.8	7,153.2	169.5	169.6	71.53	711.4	-5,910.7	447.5	123.9	323.62	1.383 Level 3		
13,300.0	7,295.0	13,220.8	7,152.7	172.3	172.4	71.48	711.4	-6,010.7	448.2	119.3	328.86	1.363 Level 3		
13,400.0	7,295.0	13,320.8	7,152.1	175.1	175.2	71.44	711.4	-6,110.7	448.8	114.7	334.11	1.343 Level 3		
13,500.0	7,295.0	13,420.7	7,151.6	177.9	178.0	71.40	711.4	-6,210.7	449.5	110.1	339.35	1.325 Level 3		
13,600.0	7,295.0	13,520.7	7,151.1	180.7	180.8	71.36	711.4	-6,310.7	450.1	105.5	344.59	1.306 Level 3		
13,700.0	7,295.0	13,620.7	7,150.6	183.5	183.5	71.31	711.4	-6,410.7	450.8	101.0	349.83	1.289 Level 3		
13,800.0	7,295.0	13,720.7	7,150.1	186.3	186.3	71.27	711.4	-6,510.7	451.4	96.4	355.06	1.271 Level 3		
13,900.0	7,295.0	13,820.7	7,149.5	189.1	189.1	71.23	711.4	-6,610.7	452.1	91.8	360.30	1.255 Level 3		
14,000.0	7,295.0	13,920.7	7,149.0	191.9	191.9	71.19	711.4	-6,710.7	452.7	87.2	365.53	1.239 Level 2		
14,100.0	7,295.0	14,020.7	7,148.5	194.6	194.7	71.15	711.4	-6,810.7	453.4	82.6	370.77	1.223 Level 2		
14,200.0	7,295.0	14,120.7	7,148.0	197.4	197.5	71.10	711.4	-6,910.7	454.1	78.1	376.00	1.208 Level 2		
14,300.0	7,295.0	14,220.7	7,147.4	200.2	200.3	71.06	711.4	-7,010.7	454.7	73.5	381.23	1.193 Level 2		
14,380.0	7,295.0	14,300.7	7,147.0	202.5	202.5	71.03	711.4	-7,090.6	455.2	69.8	385.41	1.181 Level 2, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
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	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-61.9	0.0	61.9					
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-61.9	0.0	61.9	61.7	0.22	275.556		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-61.9	0.0	61.9	61.3	0.67	91.852		
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-61.9	0.0	61.9	60.8	1.12	55.111		
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-61.9	0.0	61.9	60.4	1.57	39.365		
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-61.9	0.0	61.9	59.9	2.02	30.617		
600.0	600.0	600.0	600.0	1.2	1.2	-180.00	-61.9	0.0	61.9	59.5	2.47	25.051		
700.0	700.0	700.0	700.0	1.5	1.5	-180.00	-61.9	0.0	61.9	59.0	2.92	21.197		
800.0	800.0	800.0	800.0	1.7	1.7	-180.00	-61.9	0.0	61.9	58.6	3.37	18.370		
900.0	900.0	900.0	900.0	1.9	1.9	-180.00	-61.9	0.0	61.9	58.1	3.82	16.209		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-61.9	0.0	61.9	57.7	4.27	14.503 CC, ES		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	137.35	-61.9	0.0	63.2	58.5	4.72	13.402		
1,200.0	1,199.8	1,199.8	1,199.8	2.6	2.6	140.33	-61.9	0.0	67.2	62.0	5.16	13.017		
1,300.0	1,299.5	1,297.8	1,297.8	2.8	2.8	143.48	-63.2	1.1	75.2	69.6	5.58	13.477		
1,400.0	1,398.8	1,395.2	1,395.1	3.1	3.0	145.37	-66.8	4.5	87.9	81.9	5.99	14.676		
1,500.0	1,498.0	1,492.1	1,491.6	3.3	3.2	145.44	-72.9	10.0	103.0	96.6	6.42	16.048		
1,600.0	1,597.3	1,588.6	1,587.4	3.6	3.4	144.26	-81.3	17.7	120.1	113.3	6.87	17.497		
1,700.0	1,696.6	1,686.9	1,684.8	3.8	3.6	142.95	-90.8	26.4	138.2	130.8	7.33	18.842		
1,800.0	1,795.9	1,785.2	1,782.3	4.1	3.8	141.95	-100.3	35.1	156.2	148.4	7.81	20.004		
1,900.0	1,895.2	1,883.5	1,879.8	4.4	4.1	141.15	-109.8	43.8	174.4	166.1	8.30	21.010		
2,000.0	1,994.4	1,981.8	1,977.3	4.7	4.4	140.51	-119.3	52.5	192.5	183.7	8.80	21.885		
2,100.0	2,093.7	2,080.2	2,074.7	5.0	4.7	139.97	-128.8	61.2	210.7	201.4	9.30	22.650		
2,200.0	2,193.0	2,178.5	2,172.2	5.3	4.9	139.52	-138.3	69.8	228.8	219.0	9.81	23.325		
2,300.0	2,292.3	2,276.8	2,269.7	5.6	5.2	139.14	-147.8	78.5	247.0	236.7	10.33	23.922		
2,400.0	2,391.6	2,375.1	2,367.2	5.9	5.5	138.80	-157.3	87.2	265.2	254.4	10.85	24.452		
2,500.0	2,490.8	2,473.4	2,464.6	6.2	5.8	138.52	-166.8	95.9	283.4	272.0	11.37	24.927		
2,600.0	2,590.1	2,571.8	2,562.1	6.5	6.1	138.26	-176.3	104.6	301.6	289.7	11.90	25.353		
2,700.0	2,689.4	2,670.1	2,659.6	6.8	6.4	138.04	-185.8	113.3	319.8	307.4	12.43	25.737		
2,800.0	2,788.7	2,768.4	2,757.1	7.1	6.7	137.84	-195.3	121.9	338.1	325.1	12.96	26.085		
2,900.0	2,888.0	2,866.7	2,854.5	7.4	7.1	137.66	-204.8	130.6	356.3	342.8	13.49	26.401		
3,000.0	2,987.2	2,965.0	2,952.0	7.7	7.4	137.49	-214.3	139.3	374.5	360.5	14.03	26.690		
3,100.0	3,086.5	3,063.4	3,049.5	8.0	7.7	137.35	-223.8	148.0	392.7	378.2	14.57	26.954		
3,200.0	3,185.8	3,161.7	3,147.0	8.3	8.0	137.21	-233.3	156.7	411.0	395.9	15.11	27.197		
3,300.0	3,285.1	3,260.0	3,244.4	8.6	8.3	137.09	-242.8	165.4	429.2	413.5	15.65	27.421		
3,400.0	3,384.4	3,358.3	3,341.9	8.9	8.6	136.97	-252.3	174.1	447.4	431.2	16.20	27.627		
3,500.0	3,483.6	3,456.6	3,439.4	9.2	9.0	136.87	-261.8	182.7	465.7	448.9	16.74	27.819		
3,600.0	3,582.9	3,555.0	3,536.8	9.5	9.3	136.77	-271.3	191.4	483.9	466.6	17.28	27.996		
3,700.0	3,682.2	3,653.3	3,634.3	9.8	9.6	136.68	-280.8	200.1	502.1	484.3	17.83	28.162		
3,800.0	3,781.5	3,751.6	3,731.8	10.2	9.9	136.60	-290.3	208.8	520.4	502.0	18.38	28.316		
3,900.0	3,880.8	3,849.9	3,829.3	10.5	10.3	136.52	-299.8	217.5	538.6	519.7	18.93	28.460		
4,000.0	3,980.0	3,948.2	3,926.7	10.8	10.6	136.45	-309.3	226.2	556.9	537.4	19.47	28.595		
4,100.0	4,079.3	4,046.6	4,024.2	11.1	10.9	136.38	-318.8	234.8	575.1	555.1	20.02	28.722		
4,200.0	4,178.6	4,144.9	4,121.7	11.4	11.2	136.32	-328.3	243.5	593.3	572.8	20.57	28.841		
4,300.0	4,277.9	4,243.2	4,219.2	11.7	11.6	136.26	-337.8	252.2	611.6	590.5	21.12	28.954		
4,400.0	4,377.1	4,341.5	4,316.6	12.0	11.9	136.20	-347.3	260.9	629.8	608.2	21.67	29.059		
4,500.0	4,476.4	4,439.8	4,414.1	12.3	12.2	136.15	-356.8	269.6	648.1	625.9	22.23	29.159		
4,600.0	4,575.7	4,538.2	4,511.6	12.6	12.5	136.10	-366.3	278.3	666.3	643.5	22.78	29.254		
4,700.0	4,675.0	4,636.5	4,609.1	12.9	12.9	136.10	-375.8	286.9	684.5	661.2	23.33	29.340		
4,800.0	4,774.5	4,735.2	4,725.0	13.2	13.2	136.19	-385.8	296.1	700.0	676.2	23.84	29.358		
4,900.0	4,874.3	4,874.8	4,846.2	13.4	13.4	136.25	-392.5	302.2	710.0	685.7	24.30	29.220		
5,000.0	4,974.3	4,997.1	4,968.5	13.5	13.6	136.28	-395.4	304.9	714.2	689.6	24.70	28.923		

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,074.3	5,102.9	5,074.3	13.7	13.8	-180.00		-395.5	305.0	714.4	689.1	25.30	28.234	
5,200.0	5,174.3	5,202.9	5,174.3	13.9	14.0	-180.00		-395.5	305.0	714.4	688.8	25.66	27.842	
5,300.0	5,274.3	5,302.9	5,274.3	14.0	14.1	-180.00		-395.5	305.0	714.4	688.4	26.02	27.458	
5,400.0	5,374.3	5,402.9	5,374.3	14.2	14.3	-180.00		-395.5	305.0	714.4	688.1	26.38	27.082	
5,500.0	5,474.3	5,502.9	5,474.3	14.4	14.4	-180.00		-395.5	305.0	714.4	687.7	26.74	26.713	
5,600.0	5,574.3	5,602.9	5,574.3	14.6	14.6	-180.00		-395.5	305.0	714.4	687.3	27.11	26.352	
5,700.0	5,674.3	5,702.9	5,674.3	14.8	14.8	-180.00		-395.5	305.0	714.4	687.0	27.48	25.998	
5,800.0	5,774.3	5,802.9	5,774.3	15.0	14.9	-180.00		-395.5	305.0	714.4	686.6	27.85	25.651	
5,900.0	5,874.3	5,902.9	5,874.3	15.1	15.1	-180.00		-395.5	305.0	714.4	686.2	28.23	25.311	
6,000.0	5,974.3	6,002.9	5,974.3	15.3	15.3	-180.00		-395.5	305.0	714.4	685.8	28.60	24.979	
6,100.0	6,074.3	6,102.9	6,074.3	15.5	15.4	-180.00		-395.5	305.0	714.4	685.5	28.98	24.653	
6,200.0	6,174.3	6,202.9	6,174.3	15.7	15.6	-180.00		-395.5	305.0	714.4	685.1	29.36	24.334	
6,300.0	6,274.3	6,302.9	6,274.3	15.9	15.8	-180.00		-395.5	305.0	714.4	684.7	29.74	24.021	
6,400.0	6,374.3	6,402.9	6,374.3	16.1	16.0	-180.00		-395.5	305.0	714.4	684.3	30.13	23.715	
6,500.0	6,474.3	6,502.9	6,474.3	16.3	16.1	-180.00		-395.5	305.0	714.4	683.9	30.51	23.416	
6,600.0	6,574.2	6,602.9	6,574.2	16.5	16.3	-89.67		-395.5	302.7	714.4	683.7	30.76	23.224	
6,700.0	6,673.3	6,702.8	6,673.0	16.6	16.4	-89.61		-395.5	288.4	714.4	683.4	30.98	23.060	
6,800.0	6,769.7	6,802.6	6,769.0	16.6	16.4	-89.55		-395.5	261.5	714.2	683.1	31.10	22.968	
6,900.0	6,861.9	6,902.2	6,860.5	16.6	16.5	-89.50		-395.5	222.3	714.0	682.9	31.18	22.902	
7,000.0	6,948.2	7,001.8	6,946.1	16.6	16.5	-89.46		-395.5	171.6	713.8	682.5	31.32	22.791	
7,100.0	7,027.2	7,101.3	7,024.4	16.6	16.5	-89.43		-395.5	110.2	713.5	681.8	31.65	22.544	
7,200.0	7,097.6	7,200.7	7,093.9	16.6	16.5	-89.41		-395.5	39.3	713.1	680.8	32.32	22.064	
7,300.0	7,158.1	7,300.0	7,153.6	17.0	16.7	-89.40		-395.5	-40.0	712.7	679.2	33.49	21.284	
7,400.0	7,207.7	7,399.3	7,202.5	17.8	17.4	-89.40		-395.5	-126.3	712.3	677.0	35.25	20.204	
7,500.0	7,245.6	7,498.5	7,239.8	19.1	18.6	-89.41		-395.5	-218.2	711.8	674.1	37.66	18.901	
7,600.0	7,271.1	7,597.7	7,264.9	20.6	20.2	-89.43		-395.5	-314.1	711.3	670.6	40.66	17.494	
7,700.0	7,284.4	7,697.1	7,278.1	22.3	21.9	-89.45		-395.5	-412.6	710.8	666.6	44.15	16.099	
7,800.0	7,293.4	7,796.8	7,286.9	24.2	23.9	-89.46		-395.5	-511.9	710.3	662.2	48.03	14.788	
7,900.0	7,295.0	7,896.5	7,288.5	26.3	26.0	-89.48		-395.5	-611.5	709.8	657.6	52.19	13.600	
8,000.0	7,295.0	7,996.4	7,288.5	28.5	28.2	-89.47		-395.5	-711.5	709.2	652.6	56.60	12.532	
8,100.0	7,295.0	8,096.4	7,288.4	30.8	30.6	-89.46		-395.5	-811.5	708.7	647.5	61.20	11.580	
8,200.0	7,295.0	8,196.4	7,288.3	33.2	33.0	-89.46		-395.5	-911.5	708.2	642.3	65.96	10.737	
8,300.0	7,295.0	8,296.4	7,288.2	35.6	35.4	-89.45		-395.5	-1,011.5	707.7	636.9	70.85	9.989	
8,400.0	7,295.0	8,396.4	7,288.2	38.1	37.9	-89.45		-395.5	-1,111.5	707.2	631.4	75.83	9.326	
8,500.0	7,295.0	8,496.4	7,288.1	40.6	40.4	-89.44		-395.5	-1,211.5	706.7	625.8	80.90	8.735	
8,600.0	7,295.0	8,596.4	7,288.0	43.2	43.0	-89.43		-395.5	-1,311.5	706.2	620.1	86.04	8.208	
8,700.0	7,295.0	8,696.4	7,288.0	45.7	45.6	-89.43		-395.5	-1,411.5	705.7	614.4	91.23	7.735	
8,800.0	7,295.0	8,796.4	7,287.9	48.4	48.2	-89.42		-395.5	-1,511.5	705.1	608.7	96.47	7.310	
8,900.0	7,295.0	8,896.4	7,287.8	51.0	50.9	-89.42		-395.5	-1,611.5	704.6	602.9	101.75	6.925	
9,000.0	7,295.0	8,996.4	7,287.8	53.6	53.5	-89.41		-395.5	-1,711.5	704.1	597.1	107.06	6.577	
9,100.0	7,295.0	9,096.4	7,287.7	56.3	56.2	-89.40		-395.5	-1,811.5	703.6	591.2	112.40	6.260	
9,200.0	7,295.0	9,196.4	7,287.6	59.0	58.9	-89.40		-395.5	-1,911.5	703.1	585.3	117.77	5.970	
9,300.0	7,295.0	9,296.4	7,287.5	61.7	61.6	-89.39		-395.5	-2,011.5	702.6	579.4	123.16	5.705	
9,400.0	7,295.0	9,396.4	7,287.5	64.4	64.3	-89.39		-395.5	-2,111.5	702.1	573.5	128.57	5.461	
9,500.0	7,295.0	9,496.4	7,287.4	67.1	67.0	-89.38		-395.5	-2,211.5	701.5	567.6	133.99	5.236	
9,600.0	7,295.0	9,596.4	7,287.3	69.8	69.7	-89.37		-395.5	-2,311.5	701.0	561.6	139.43	5.028	
9,700.0	7,295.0	9,696.4	7,287.3	72.5	72.5	-89.37		-395.5	-2,411.5	700.5	555.6	144.88	4.835	
9,800.0	7,295.0	9,796.4	7,287.2	75.2	75.2	-89.36		-395.5	-2,511.5	700.0	549.7	150.35	4.656	
9,900.0	7,295.0	9,896.4	7,287.1	78.0	77.9	-89.35		-395.5	-2,611.5	699.5	543.7	155.82	4.489	
10,000.0	7,295.0	9,996.4	7,287.1	80.7	80.7	-89.35		-395.5	-2,711.5	699.0	537.7	161.31	4.333	
10,100.0	7,295.0	10,096.4	7,287.0	83.5	83.4	-89.34		-395.5	-2,811.5	698.5	531.7	166.80	4.188	

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	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 32X-434 - Wellbore #1 - Plan #1 (4-14-14)													
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
10,200.0	7,295.0	10,196.4	7,286.9	86.2	86.2	-89.34	-395.5	-2,911.5	698.0	525.7	172.30	4.051	
10,300.0	7,295.0	10,296.4	7,286.8	89.0	88.9	-89.33	-395.5	-3,011.5	697.4	519.6	177.81	3.922	
10,400.0	7,295.0	10,396.4	7,286.8	91.7	91.7	-89.32	-395.5	-3,111.5	696.9	513.6	183.32	3.802	
10,500.0	7,295.0	10,496.4	7,286.7	94.5	94.5	-89.32	-395.5	-3,211.5	696.4	507.6	188.84	3.688	
10,600.0	7,295.0	10,596.4	7,286.6	97.2	97.2	-89.31	-395.5	-3,311.5	695.9	501.5	194.36	3.580	
10,700.0	7,295.0	10,696.4	7,286.6	100.0	100.0	-89.31	-395.5	-3,411.5	695.4	495.5	199.89	3.479	
10,800.0	7,295.0	10,796.4	7,286.5	102.8	102.8	-89.30	-395.5	-3,511.5	694.9	489.5	205.43	3.383	
10,900.0	7,295.0	10,896.4	7,286.4	105.5	105.5	-89.29	-395.5	-3,611.5	694.4	483.4	210.97	3.291	
11,000.0	7,295.0	10,996.4	7,286.4	108.3	108.3	-89.29	-395.5	-3,711.5	693.9	477.3	216.51	3.205	
11,100.0	7,295.0	11,096.4	7,286.3	111.1	111.1	-89.28	-395.5	-3,811.5	693.3	471.3	222.05	3.122	
11,200.0	7,295.0	11,196.4	7,286.2	113.8	113.9	-89.27	-395.5	-3,911.5	692.8	465.2	227.60	3.044	
11,300.0	7,295.0	11,296.4	7,286.1	116.6	116.6	-89.27	-395.5	-4,011.5	692.3	459.2	233.15	2.969	
11,400.0	7,295.0	11,396.4	7,286.1	119.4	119.4	-89.26	-395.5	-4,111.5	691.8	453.1	238.71	2.898	
11,500.0	7,295.0	11,496.4	7,286.0	122.2	122.2	-89.25	-395.5	-4,211.5	691.3	447.0	244.26	2.830	
11,600.0	7,295.0	11,596.4	7,285.9	124.9	125.0	-89.25	-395.5	-4,311.5	690.8	441.0	249.82	2.765	
11,700.0	7,295.0	11,696.4	7,285.9	127.7	127.8	-89.24	-395.5	-4,411.5	690.3	434.9	255.39	2.703	
11,800.0	7,295.0	11,796.4	7,285.8	130.5	130.5	-89.24	-395.5	-4,511.5	689.8	428.8	260.95	2.643	
11,900.0	7,295.0	11,896.4	7,285.7	133.3	133.3	-89.23	-395.5	-4,611.5	689.2	422.7	266.52	2.586	
12,000.0	7,295.0	11,996.4	7,285.7	136.1	136.1	-89.22	-395.5	-4,711.5	688.7	416.6	272.08	2.531	
12,100.0	7,295.0	12,096.4	7,285.6	138.8	138.9	-89.22	-395.5	-4,811.5	688.2	410.6	277.65	2.479	
12,200.0	7,295.0	12,196.4	7,285.5	141.6	141.7	-89.21	-395.5	-4,911.5	687.7	404.5	283.22	2.428	
12,300.0	7,295.0	12,296.4	7,285.4	144.4	144.5	-89.20	-395.5	-5,011.5	687.2	398.4	288.80	2.379	
12,400.0	7,295.0	12,396.4	7,285.4	147.2	147.3	-89.20	-395.5	-5,111.4	686.7	392.3	294.37	2.333	
12,500.0	7,295.0	12,496.4	7,285.3	150.0	150.0	-89.19	-395.5	-5,211.4	686.2	386.2	299.95	2.288	
12,600.0	7,295.0	12,596.4	7,285.2	152.8	152.8	-89.18	-395.5	-5,311.4	685.6	380.1	305.52	2.244	
12,700.0	7,295.0	12,696.4	7,285.2	155.6	155.6	-89.18	-395.5	-5,411.4	685.1	374.0	311.10	2.202	
12,800.0	7,295.0	12,796.4	7,285.1	158.3	158.4	-89.17	-395.5	-5,511.4	684.6	367.9	316.68	2.162	
12,900.0	7,295.0	12,896.4	7,285.0	161.1	161.2	-89.16	-395.5	-5,611.4	684.1	361.9	322.26	2.123	
13,000.0	7,295.0	12,996.4	7,285.0	163.9	164.0	-89.16	-395.5	-5,711.4	683.6	355.8	327.84	2.085	
13,100.0	7,295.0	13,096.4	7,284.9	166.7	166.8	-89.15	-395.5	-5,811.4	683.1	349.7	333.42	2.049	
13,200.0	7,295.0	13,196.4	7,284.8	169.5	169.6	-89.15	-395.5	-5,911.4	682.6	343.6	339.01	2.013	
13,300.0	7,295.0	13,296.4	7,284.8	172.3	172.4	-89.14	-395.5	-6,011.4	682.1	337.5	344.59	1.979	
13,400.0	7,295.0	13,396.4	7,284.7	175.1	175.2	-89.13	-395.5	-6,111.4	681.5	331.4	350.18	1.946	
13,500.0	7,295.0	13,496.4	7,284.6	177.9	178.0	-89.13	-395.5	-6,211.4	681.0	325.3	355.76	1.914	
13,600.0	7,295.0	13,596.4	7,284.5	180.7	180.8	-89.12	-395.5	-6,311.4	680.5	319.2	361.35	1.883	
13,700.0	7,295.0	13,696.4	7,284.5	183.5	183.6	-89.11	-395.5	-6,411.4	680.0	313.1	366.93	1.853	
13,800.0	7,295.0	13,796.4	7,284.4	186.3	186.3	-89.11	-395.5	-6,511.4	679.5	307.0	372.52	1.824	
13,900.0	7,295.0	13,896.4	7,284.3	189.1	189.1	-89.10	-395.5	-6,611.4	679.0	300.9	378.11	1.796	
14,000.0	7,295.0	13,996.4	7,284.3	191.9	191.9	-89.09	-395.5	-6,711.4	678.5	294.8	383.70	1.768	
14,100.0	7,295.0	14,096.4	7,284.2	194.6	194.7	-89.09	-395.5	-6,811.4	678.0	288.7	389.29	1.742	
14,200.0	7,295.0	14,196.4	7,284.1	197.4	197.5	-89.08	-395.5	-6,911.4	677.4	282.6	394.88	1.716	
14,300.0	7,295.0	14,296.4	7,284.1	200.2	200.3	-89.07	-395.5	-7,011.4	676.9	276.5	400.47	1.690	
14,376.9	7,295.0	14,370.9	7,284.0	202.4	202.4	-89.07	-395.5	-7,086.0	676.5	271.8	404.71	1.672	
14,380.0	7,295.0	14,370.9	7,284.0	202.5	202.4	-89.07	-395.5	-7,086.0	676.5	271.8	404.79	1.671 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-180.00	-180.00	-91.1	0.0	91.1	91.1	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-180.00	-180.00	-91.1	0.0	91.1	90.9	0.23	401.209	
200.0	200.0	201.0	201.0	0.3	0.3	-180.00	-180.00	-91.1	0.0	91.1	90.4	0.68	134.625	
300.0	300.0	301.0	301.0	0.6	0.6	-180.00	-180.00	-91.1	0.0	91.1	90.0	1.13	80.883	
400.0	400.0	401.0	401.0	0.8	0.8	-180.00	-180.00	-91.1	0.0	91.1	89.5	1.58	57.806	
500.0	500.0	501.0	501.0	1.0	1.0	-180.00	-180.00	-91.1	0.0	91.1	89.1	2.03	44.975	
600.0	600.0	601.0	601.0	1.2	1.2	-180.00	-180.00	-91.1	0.0	91.1	88.6	2.47	36.805	
700.0	700.0	701.0	701.0	1.5	1.5	-180.00	-180.00	-91.1	0.0	91.1	88.2	2.92	31.147	
800.0	800.0	801.0	801.0	1.7	1.7	-180.00	-180.00	-91.1	0.0	91.1	87.7	3.37	26.997	
900.0	900.0	901.0	901.0	1.9	1.9	-180.00	-180.00	-91.1	0.0	91.1	87.3	3.82	23.823	
966.3	966.3	967.3	967.3	2.1	2.1	-180.00	-180.00	-91.1	0.0	91.1	87.0	4.12	22.099 CC	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-180.00	-180.00	-91.1	0.0	91.1	86.8	4.27	21.329 ES	
1,100.0	1,100.0	1,098.2	1,098.2	2.4	2.3	136.43	-92.5	0.9	93.8	89.1	4.69	20.015		
1,200.0	1,199.8	1,195.1	1,194.9	2.6	2.5	136.86	-96.8	3.4	102.0	96.9	5.09	20.054		
1,300.0	1,299.5	1,291.0	1,290.5	2.8	2.7	137.43	-103.8	7.5	115.6	110.1	5.50	21.019		
1,400.0	1,398.8	1,385.8	1,384.6	3.1	2.9	138.00	-113.4	13.2	134.1	128.2	5.93	22.619		
1,500.0	1,498.0	1,483.2	1,481.2	3.3	3.1	138.21	-125.0	20.0	154.6	148.2	6.38	24.224		
1,600.0	1,597.3	1,581.1	1,578.1	3.6	3.4	138.36	-136.6	26.9	175.1	168.2	6.84	25.588		
1,700.0	1,696.6	1,679.0	1,675.0	3.8	3.7	138.49	-148.2	33.8	195.5	188.2	7.31	26.737		
1,800.0	1,795.9	1,776.9	1,772.0	4.1	3.9	138.59	-159.9	40.6	216.0	208.2	7.80	27.712		
1,900.0	1,895.2	1,874.8	1,868.9	4.4	4.2	138.67	-171.5	47.5	236.5	228.2	8.28	28.547		
2,000.0	1,994.4	1,972.7	1,965.9	4.7	4.5	138.74	-183.1	54.4	257.0	248.2	8.78	29.265		
2,100.0	2,093.7	2,070.5	2,062.8	5.0	4.8	138.80	-194.8	61.3	277.4	268.2	9.28	29.890		
2,200.0	2,193.0	2,168.4	2,159.8	5.3	5.2	138.85	-206.4	68.1	297.9	288.1	9.79	30.436		
2,300.0	2,292.3	2,266.3	2,256.7	5.6	5.5	138.89	-218.0	75.0	318.4	308.1	10.30	30.916		
2,400.0	2,391.6	2,364.2	2,353.6	5.9	5.8	138.93	-229.7	81.9	338.9	328.1	10.81	31.340		
2,500.0	2,490.8	2,462.1	2,450.6	6.2	6.1	138.97	-241.3	88.7	359.3	348.0	11.33	31.718		
2,600.0	2,590.1	2,559.9	2,547.5	6.5	6.4	139.00	-252.9	95.6	379.8	368.0	11.85	32.056		
2,700.0	2,689.4	2,657.8	2,644.5	6.8	6.8	139.02	-264.6	102.5	400.3	387.9	12.37	32.359		
2,800.0	2,788.7	2,755.7	2,741.4	7.1	7.1	139.05	-276.2	109.4	420.8	407.9	12.89	32.632		
2,900.0	2,888.0	2,853.6	2,838.4	7.4	7.4	139.07	-287.8	116.2	441.2	427.8	13.42	32.880		
3,000.0	2,987.2	2,951.5	2,935.3	7.7	7.7	139.09	-299.5	123.1	461.7	447.8	13.95	33.106		
3,100.0	3,086.5	3,049.3	3,032.3	8.0	8.1	139.11	-311.1	130.0	482.2	467.7	14.48	33.312		
3,200.0	3,185.8	3,147.2	3,129.2	8.3	8.4	139.13	-322.7	136.8	502.7	487.7	15.01	33.500		
3,300.0	3,285.1	3,245.1	3,226.1	8.6	8.7	139.14	-334.4	143.7	523.1	507.6	15.54	33.673		
3,400.0	3,384.4	3,343.0	3,323.1	8.9	9.1	139.16	-346.0	150.6	543.6	527.6	16.07	33.833		
3,500.0	3,483.6	3,440.9	3,420.0	9.2	9.4	139.17	-357.6	157.5	564.1	547.5	16.60	33.980		
3,600.0	3,582.9	3,538.7	3,517.0	9.5	9.7	139.19	-369.3	164.3	584.6	567.4	17.13	34.116		
3,700.0	3,682.2	3,636.6	3,613.9	9.8	10.1	139.20	-380.9	171.2	605.1	587.4	17.67	34.243		
3,800.0	3,781.5	3,734.5	3,710.9	10.2	10.4	139.21	-392.5	178.1	625.5	607.3	18.20	34.361		
3,900.0	3,880.8	3,832.4	3,807.8	10.5	10.7	139.22	-404.2	185.0	646.0	627.3	18.74	34.471		
4,000.0	3,980.0	3,930.3	3,904.8	10.8	11.1	139.23	-415.8	191.8	666.5	647.2	19.28	34.574		
4,100.0	4,079.3	4,028.2	4,001.7	11.1	11.4	139.24	-427.4	198.7	687.0	667.1	19.81	34.670		
4,200.0	4,178.6	4,126.0	4,098.6	11.4	11.8	139.25	-439.1	205.6	707.4	687.1	20.35	34.761		
4,300.0	4,277.9	4,223.9	4,195.6	11.7	12.1	139.26	-450.7	212.4	727.9	707.0	20.89	34.845		
4,400.0	4,377.1	4,321.8	4,292.5	12.0	12.4	139.26	-462.3	219.3	748.4	727.0	21.43	34.925		
4,500.0	4,476.4	4,419.7	4,389.5	12.3	12.8	139.27	-474.0	226.2	768.9	746.9	21.97	35.001		
4,600.0	4,575.7	4,517.6	4,486.4	12.6	13.1	139.28	-485.6	233.1	789.3	766.8	22.51	35.072		
4,700.0	4,675.0	4,615.5	4,583.4	12.9	13.4	139.33	-497.2	239.9	809.8	786.7	23.05	35.132		
4,800.0	4,774.5	4,713.7	4,680.7	13.2	13.8	139.47	-508.9	246.8	828.5	804.9	23.56	35.165		
4,900.0	4,874.3	4,812.3	4,778.3	13.4	14.1	139.43	-520.6	253.7	844.6	820.5	24.04	35.133		

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	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							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	4,974.3	4,911.2	4,876.3	13.5	14.5	139.21	-532.4	260.7	858.1	833.6	24.49	35.042		
5,100.0	5,074.3	5,010.2	4,974.4	13.7	14.8	-177.52	-544.1	267.6	869.7	843.1	26.59	32.712		
5,200.0	5,174.3	5,109.3	5,072.5	13.9	15.2	-178.01	-555.9	274.6	881.4	854.3	27.10	32.521		
5,300.0	5,274.3	5,208.3	5,170.6	14.0	15.5	-178.49	-567.7	281.6	893.1	865.4	27.62	32.336		
5,400.0	5,374.3	5,307.4	5,268.7	14.2	15.8	-178.95	-579.5	288.5	904.8	876.7	28.14	32.157		
5,500.0	5,474.3	5,430.1	5,390.4	14.4	16.2	-179.46	-592.9	296.5	915.8	887.1	28.67	31.938		
5,600.0	5,574.3	5,567.7	5,527.5	14.6	16.5	-179.84	-602.9	302.4	923.0	893.9	29.15	31.664		
5,700.0	5,674.3	5,706.1	5,665.8	14.8	16.7	-179.99	-607.2	304.9	926.1	896.6	29.58	31.309		
5,800.0	5,774.3	5,815.6	5,775.3	15.0	16.9	-180.00	-607.4	305.0	926.3	896.3	29.95	30.930		
5,900.0	5,874.3	5,915.6	5,875.3	15.1	17.0	-180.00	-607.4	305.0	926.3	896.0	30.29	30.582		
6,000.0	5,974.3	6,015.6	5,975.3	15.3	17.2	-180.00	-607.4	305.0	926.3	895.6	30.63	30.239		
6,100.0	6,074.3	6,115.6	6,075.3	15.5	17.3	-180.00	-607.4	305.0	926.3	895.3	30.98	29.901		
6,200.0	6,174.3	6,215.6	6,175.3	15.7	17.4	-180.00	-607.4	305.0	926.3	894.9	31.33	29.569		
6,300.0	6,274.3	6,315.6	6,275.3	15.9	17.6	-180.00	-607.4	305.0	926.3	894.6	31.68	29.241		
6,400.0	6,374.3	6,415.6	6,375.3	16.1	17.7	-180.00	-607.4	305.0	926.3	894.2	32.03	28.919		
6,444.4	6,418.7	6,460.1	6,419.7	16.2	17.8	-180.00	-607.4	304.9	926.3	894.1	32.19	28.777		
6,500.0	6,474.3	6,515.4	6,475.0	16.3	17.9	-179.82	-607.4	302.1	926.3	893.9	32.38	28.607		
6,600.0	6,574.2	6,613.4	6,571.8	16.5	17.9	-88.72	-607.4	287.4	926.4	895.4	30.97	29.916		
6,700.0	6,673.3	6,709.4	6,664.1	16.6	18.0	-87.85	-607.4	261.1	926.7	895.6	31.13	29.764		
6,800.0	6,769.7	6,803.9	6,750.9	16.6	18.0	-87.02	-607.4	224.1	927.1	895.9	31.23	29.690		
6,900.0	6,861.9	6,896.9	6,831.4	16.6	18.0	-86.25	-607.4	177.4	927.6	896.3	31.31	29.627		
7,000.0	6,948.2	6,988.6	6,904.6	16.6	17.9	-85.53	-607.4	122.2	928.1	896.7	31.48	29.479		
7,100.0	7,027.2	7,079.3	6,969.9	16.6	17.9	-84.90	-607.4	59.5	928.7	896.8	31.87	29.140		
7,200.0	7,097.6	7,168.9	7,026.7	16.6	17.9	-84.34	-607.4	-9.8	929.2	896.6	32.60	28.506		
7,300.0	7,158.1	7,257.8	7,074.6	17.0	17.9	-83.87	-607.4	-84.6	929.6	895.8	33.78	27.519		
7,400.0	7,207.7	7,346.0	7,113.3	17.8	17.9	-83.50	-607.4	-163.8	929.8	894.3	35.51	26.185		
7,500.0	7,245.6	7,433.7	7,142.5	19.1	19.0	-83.22	-607.4	-246.4	929.9	892.1	37.81	24.593		
7,600.0	7,271.1	7,521.0	7,162.0	20.6	20.5	-83.05	-607.4	-331.5	929.8	889.2	40.64	22.882		
7,690.7	7,284.9	7,600.0	7,171.1	22.2	21.9	-82.87	-607.4	-409.9	929.8	886.2	43.57	21.341		
7,700.0	7,284.4	7,608.1	7,171.6	22.3	22.1	-82.93	-607.4	-418.1	929.6	885.7	43.89	21.182		
7,800.0	7,293.4	7,701.0	7,172.4	24.2	23.9	-82.46	-607.4	-510.9	930.1	882.6	47.55	19.561		
7,900.0	7,295.0	7,801.0	7,171.9	26.3	26.0	-82.33	-607.4	-610.9	929.9	878.2	51.67	17.998		
8,000.0	7,295.0	7,901.0	7,171.4	28.5	28.2	-82.29	-607.4	-710.9	929.4	873.4	56.03	16.587		
8,100.0	7,295.0	8,001.0	7,170.8	30.8	30.5	-82.26	-607.4	-810.9	929.0	868.4	60.60	15.331		
8,200.0	7,295.0	8,101.0	7,170.3	33.2	32.9	-82.22	-607.4	-910.9	928.6	863.3	65.31	14.217		
8,300.0	7,295.0	8,201.0	7,169.8	35.6	35.4	-82.18	-607.4	-1,010.9	928.1	858.0	70.15	13.230		
8,400.0	7,295.0	8,301.0	7,169.3	38.1	37.9	-82.15	-607.4	-1,110.8	927.7	852.6	75.09	12.354		
8,500.0	7,295.0	8,401.0	7,168.7	40.6	40.4	-82.11	-607.4	-1,210.8	927.3	847.1	80.11	11.575		
8,600.0	7,295.0	8,501.0	7,168.2	43.2	43.0	-82.08	-607.4	-1,310.8	926.8	841.6	85.19	10.879		
8,700.0	7,295.0	8,600.9	7,167.7	45.7	45.6	-82.04	-607.4	-1,410.8	926.4	836.0	90.33	10.255		
8,800.0	7,295.0	8,700.9	7,167.2	48.4	48.2	-82.00	-607.4	-1,510.8	925.9	830.4	95.52	9.694		
8,900.0	7,295.0	8,800.9	7,166.7	51.0	50.9	-81.97	-607.4	-1,610.8	925.5	824.8	100.74	9.187		
9,000.0	7,295.0	8,900.9	7,166.1	53.6	53.5	-81.93	-607.4	-1,710.8	925.1	819.1	106.00	8.727		
9,100.0	7,295.0	9,000.9	7,165.6	56.3	56.2	-81.89	-607.4	-1,810.8	924.6	813.4	111.28	8.309		
9,200.0	7,295.0	9,100.9	7,165.1	59.0	58.9	-81.86	-607.4	-1,910.8	924.2	807.6	116.59	7.927		
9,300.0	7,295.0	9,200.9	7,164.6	61.7	61.6	-81.82	-607.4	-2,010.8	923.8	801.9	121.91	7.577		
9,400.0	7,295.0	9,300.9	7,164.0	64.4	64.3	-81.78	-607.4	-2,110.8	923.3	796.1	127.26	7.256		
9,500.0	7,295.0	9,400.9	7,163.5	67.1	67.0	-81.75	-607.4	-2,210.8	922.9	790.3	132.62	6.959		
9,600.0	7,295.0	9,500.9	7,163.0	69.8	69.7	-81.71	-607.4	-2,310.8	922.5	784.5	138.00	6.685		
9,700.0	7,295.0	9,600.9	7,162.5	72.5	72.4	-81.67	-607.4	-2,410.8	922.0	778.7	143.38	6.431		
9,800.0	7,295.0	9,700.9	7,161.9	75.2	75.2	-81.64	-607.4	-2,510.8	921.6	772.8	148.78	6.194		

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin 32X-HZ Pad Sec.32-T4N-R66W - Tarin 32Y-314 - Wellbore #1 - Plan #1 (4-14-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
9,900.0	7,295.0	9,800.9	7,161.4	78.0	77.9	-81.60	-607.4	-2,610.8	921.2	767.0	154.19	5.974		
10,000.0	7,295.0	9,900.9	7,160.9	80.7	80.6	-81.56	-607.4	-2,710.8	920.7	761.1	159.60	5.769		
10,100.0	7,295.0	10,000.9	7,160.4	83.5	83.4	-81.53	-607.4	-2,810.8	920.3	755.3	165.02	5.577		
10,200.0	7,295.0	10,100.9	7,159.8	86.2	86.1	-81.49	-607.4	-2,910.8	919.9	749.4	170.45	5.397		
10,300.0	7,295.0	10,200.9	7,159.3	89.0	88.9	-81.45	-607.4	-3,010.8	919.4	743.6	175.89	5.227		
10,400.0	7,295.0	10,300.9	7,158.8	91.7	91.6	-81.41	-607.4	-3,110.8	919.0	737.7	181.33	5.068		
10,500.0	7,295.0	10,400.9	7,158.3	94.5	94.4	-81.38	-607.4	-3,210.8	918.6	731.8	186.77	4.918		
10,600.0	7,295.0	10,500.9	7,157.8	97.2	97.2	-81.34	-607.4	-3,310.8	918.2	725.9	192.22	4.777		
10,700.0	7,295.0	10,600.9	7,157.2	100.0	99.9	-81.30	-607.4	-3,410.8	917.7	720.1	197.67	4.643		
10,800.0	7,295.0	10,700.9	7,156.7	102.8	102.7	-81.27	-607.4	-3,510.7	917.3	714.2	203.13	4.516		
10,900.0	7,295.0	10,800.9	7,156.2	105.5	105.5	-81.23	-607.4	-3,610.7	916.9	708.3	208.59	4.396		
11,000.0	7,295.0	10,900.9	7,155.7	108.3	108.2	-81.19	-607.4	-3,710.7	916.4	702.4	214.05	4.282		
11,100.0	7,295.0	11,000.9	7,155.1	111.1	111.0	-81.15	-607.4	-3,810.7	916.0	696.5	219.51	4.173		
11,200.0	7,295.0	11,100.9	7,154.6	113.8	113.8	-81.12	-607.4	-3,910.7	915.6	690.6	224.98	4.070		
11,300.0	7,295.0	11,200.9	7,154.1	116.6	116.6	-81.08	-607.4	-4,010.7	915.2	684.7	230.44	3.971		
11,400.0	7,295.0	11,300.9	7,153.6	119.4	119.3	-81.04	-607.4	-4,110.7	914.7	678.8	235.91	3.877		
11,500.0	7,295.0	11,400.9	7,153.0	122.2	122.1	-81.00	-607.4	-4,210.7	914.3	672.9	241.38	3.788		
11,600.0	7,295.0	11,500.9	7,152.5	124.9	124.9	-80.97	-607.4	-4,310.7	913.9	667.0	246.85	3.702		
11,700.0	7,295.0	11,600.9	7,152.0	127.7	127.7	-80.93	-607.4	-4,410.7	913.5	661.1	252.32	3.620		
11,800.0	7,295.0	11,700.9	7,151.5	130.5	130.5	-80.89	-607.4	-4,510.7	913.0	655.2	257.80	3.542		
11,900.0	7,295.0	11,800.9	7,150.9	133.3	133.2	-80.85	-607.4	-4,610.7	912.6	649.3	263.27	3.466		
12,000.0	7,295.0	11,900.9	7,150.4	136.1	136.0	-80.82	-607.4	-4,710.7	912.2	643.4	268.75	3.394		
12,100.0	7,295.0	12,000.9	7,149.9	138.8	138.8	-80.78	-607.4	-4,810.7	911.8	637.5	274.22	3.325		
12,200.0	7,295.0	12,100.9	7,149.4	141.6	141.6	-80.74	-607.4	-4,910.7	911.3	631.6	279.70	3.258		
12,300.0	7,295.0	12,200.9	7,148.9	144.4	144.4	-80.70	-607.4	-5,010.7	910.9	625.7	285.17	3.194		
12,400.0	7,295.0	12,300.8	7,148.3	147.2	147.2	-80.67	-607.4	-5,110.7	910.5	619.8	290.65	3.133		
12,500.0	7,295.0	12,400.8	7,147.8	150.0	150.0	-80.63	-607.4	-5,210.7	910.1	613.9	296.13	3.073		
12,600.0	7,295.0	12,500.8	7,147.3	152.8	152.8	-80.59	-607.4	-5,310.7	909.7	608.0	301.60	3.016		
12,700.0	7,295.0	12,600.8	7,146.8	155.6	155.5	-80.55	-607.4	-5,410.7	909.2	602.2	307.08	2.961		
12,800.0	7,295.0	12,700.8	7,146.2	158.3	158.3	-80.51	-607.4	-5,510.7	908.8	596.3	312.55	2.908		
12,900.0	7,295.0	12,800.8	7,145.7	161.1	161.1	-80.48	-607.4	-5,610.7	908.4	590.4	318.03	2.856		
13,000.0	7,295.0	12,900.8	7,145.2	163.9	163.9	-80.44	-607.4	-5,710.7	908.0	584.5	323.51	2.807		
13,100.0	7,295.0	13,000.8	7,144.7	166.7	166.7	-80.40	-607.4	-5,810.7	907.5	578.6	328.98	2.759		
13,200.0	7,295.0	13,100.8	7,144.1	169.5	169.5	-80.36	-607.4	-5,910.7	907.1	572.7	334.46	2.712		
13,300.0	7,295.0	13,200.8	7,143.6	172.3	172.3	-80.32	-607.4	-6,010.6	906.7	566.8	339.93	2.667		
13,400.0	7,295.0	13,300.8	7,143.1	175.1	175.1	-80.29	-607.4	-6,110.6	906.3	560.9	345.40	2.624		
13,500.0	7,295.0	13,400.8	7,142.6	177.9	177.9	-80.25	-607.4	-6,210.6	905.9	555.0	350.88	2.582		
13,600.0	7,295.0	13,500.8	7,142.0	180.7	180.7	-80.21	-607.4	-6,310.6	905.5	549.1	356.35	2.541		
13,700.0	7,295.0	13,600.8	7,141.5	183.5	183.5	-80.17	-607.4	-6,410.6	905.0	543.2	361.82	2.501		
13,800.0	7,295.0	13,700.8	7,141.0	186.3	186.3	-80.13	-607.4	-6,510.6	904.6	537.3	367.29	2.463		
13,900.0	7,295.0	13,800.8	7,140.5	189.1	189.1	-80.10	-607.4	-6,610.6	904.2	531.4	372.77	2.426		
14,000.0	7,295.0	13,900.8	7,140.0	191.9	191.9	-80.06	-607.4	-6,710.6	903.8	525.6	378.24	2.389		
14,100.0	7,295.0	14,000.8	7,139.4	194.6	194.7	-80.02	-607.4	-6,810.6	903.4	519.7	383.70	2.354		
14,200.0	7,295.0	14,100.8	7,138.9	197.4	197.4	-79.98	-607.4	-6,910.6	903.0	513.8	389.17	2.320		
14,300.0	7,295.0	14,200.8	7,138.4	200.2	200.2	-79.94	-607.4	-7,010.6	902.5	507.9	394.64	2.287		
14,373.3	7,295.0	14,273.5	7,138.0	202.3	202.3	-79.91	-607.4	-7,083.3	902.2	503.6	398.63	2.263		
14,380.0	7,295.0	14,273.5	7,138.0	202.5	202.3	-79.91	-607.4	-7,083.3	902.2	503.4	398.82	2.262 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	1.0	1.0	0.0	0.0	-180.00	-120.2	0.0	120.2	120.2	0.00	N/A		
100.0	100.0	101.0	101.0	0.1	0.1	-180.00	-120.2	0.0	120.2	120.0	0.23	529.590		
200.0	200.0	201.0	201.0	0.3	0.3	-180.00	-120.2	0.0	120.2	119.5	0.68	177.703		
300.0	300.0	301.0	301.0	0.6	0.6	-180.00	-120.2	0.0	120.2	119.1	1.13	106.764		
400.0	400.0	401.0	401.0	0.8	0.8	-180.00	-120.2	0.0	120.2	118.6	1.58	76.303		
466.3	466.3	467.3	467.3	0.9	0.9	-180.00	-120.2	0.0	120.2	118.4	1.87	64.161 CC		
500.0	500.0	500.0	500.0	1.0	1.0	-180.00	-120.2	0.0	120.2	118.2	2.02	59.434 ES		
600.0	600.0	597.1	597.1	1.2	1.2	179.73	-121.8	0.6	121.8	119.4	2.44	49.907		
700.0	700.0	693.1	693.0	1.5	1.4	178.97	-126.3	2.3	126.6	123.7	2.85	44.452		
800.0	800.0	788.6	788.1	1.7	1.6	177.83	-133.8	5.1	134.5	131.3	3.27	41.162		
900.0	900.0	883.5	882.4	1.9	1.8	176.45	-144.2	8.9	145.7	142.0	3.70	39.351		
1,000.0	1,000.0	978.7	976.5	2.1	2.1	174.96	-157.5	13.9	160.0	155.9	4.16	38.511		
1,100.0	1,100.0	1,077.3	1,073.9	2.4	2.4	130.05	-172.2	19.4	176.5	171.9	4.59	38.428 SF		
1,200.0	1,199.8	1,175.6	1,170.9	2.6	2.7	129.79	-186.8	24.8	195.2	190.1	5.04	38.732		
1,300.0	1,299.5	1,273.3	1,267.4	2.8	3.1	130.21	-201.3	30.2	216.0	210.6	5.49	39.334		
1,400.0	1,398.8	1,370.6	1,363.4	3.1	3.4	131.22	-215.7	35.6	238.9	232.9	5.96	40.076		
1,500.0	1,498.0	1,467.8	1,459.4	3.3	3.8	132.24	-230.2	41.0	262.0	255.5	6.44	40.673		
1,600.0	1,597.3	1,565.0	1,555.4	3.6	4.1	133.09	-244.6	46.3	285.1	278.2	6.93	41.134		
1,700.0	1,696.6	1,662.2	1,651.3	3.8	4.5	133.82	-259.0	51.7	308.4	300.9	7.43	41.507		
1,800.0	1,795.9	1,759.4	1,747.3	4.1	4.8	134.44	-273.5	57.1	331.6	323.7	7.93	41.808		
1,900.0	1,895.2	1,856.6	1,843.3	4.4	5.2	134.98	-287.9	62.5	354.9	346.5	8.44	42.053		
2,000.0	1,994.4	1,953.8	1,939.2	4.7	5.5	135.46	-302.3	67.8	378.3	369.3	8.95	42.256		
2,100.0	2,093.7	2,051.0	2,035.2	5.0	5.9	135.88	-316.8	73.2	401.6	392.1	9.47	42.424		
2,200.0	2,193.0	2,148.2	2,131.2	5.3	6.3	136.25	-331.2	78.6	425.0	415.0	9.98	42.565		
2,300.0	2,292.3	2,245.4	2,227.1	5.6	6.6	136.59	-345.6	84.0	448.3	437.8	10.50	42.685		
2,400.0	2,391.6	2,342.5	2,323.1	5.9	7.0	136.89	-360.1	89.4	471.7	460.7	11.03	42.787		
2,500.0	2,490.8	2,439.7	2,419.1	6.2	7.4	137.16	-374.5	94.7	495.1	483.6	11.55	42.875		
2,600.0	2,590.1	2,536.9	2,515.0	6.5	7.7	137.41	-388.9	100.1	518.6	506.5	12.07	42.950		
2,700.0	2,689.4	2,634.1	2,611.0	6.8	8.1	137.64	-403.4	105.5	542.0	529.4	12.60	43.016		
2,800.0	2,788.7	2,731.3	2,707.0	7.1	8.4	137.85	-417.8	110.9	565.4	552.3	13.13	43.073		
2,900.0	2,888.0	2,828.5	2,802.9	7.4	8.8	138.04	-432.2	116.2	588.8	575.2	13.65	43.124		
3,000.0	2,987.2	2,925.7	2,898.9	7.7	9.2	138.21	-446.7	121.6	612.3	598.1	14.18	43.168		
3,100.0	3,086.5	3,022.9	2,994.9	8.0	9.6	138.38	-461.1	127.0	635.7	621.0	14.71	43.207		
3,200.0	3,185.8	3,120.1	3,090.9	8.3	9.9	138.53	-475.5	132.4	659.2	643.9	15.24	43.241		
3,300.0	3,285.1	3,217.3	3,186.8	8.6	10.3	138.67	-490.0	137.8	682.6	666.9	15.78	43.272		
3,400.0	3,384.4	3,314.5	3,282.8	8.9	10.7	138.81	-504.4	143.1	706.1	689.8	16.31	43.300		
3,500.0	3,483.6	3,411.7	3,378.8	9.2	11.0	138.93	-518.8	148.5	729.6	712.7	16.84	43.324		
3,600.0	3,582.9	3,508.9	3,474.7	9.5	11.4	139.05	-533.3	153.9	753.0	735.7	17.37	43.346		
3,700.0	3,682.2	3,606.1	3,570.7	9.8	11.8	139.15	-547.7	159.3	776.5	758.6	17.91	43.366		
3,800.0	3,781.5	3,703.3	3,666.7	10.2	12.1	139.26	-562.1	164.6	800.0	781.5	18.44	43.384		
3,900.0	3,880.8	3,800.5	3,762.6	10.5	12.5	139.35	-576.6	170.0	823.4	804.5	18.97	43.400		
4,000.0	3,980.0	3,897.7	3,858.6	10.8	12.9	139.45	-591.0	175.4	846.9	827.4	19.51	43.415		
4,100.0	4,079.3	3,994.9	3,954.6	11.1	13.2	139.53	-605.4	180.8	870.4	850.4	20.04	43.428		
4,200.0	4,178.6	4,092.1	4,050.5	11.4	13.6	139.61	-619.9	186.2	893.9	873.3	20.58	43.440		
4,300.0	4,277.9	4,189.3	4,146.5	11.7	14.0	139.69	-634.3	191.5	917.4	896.2	21.11	43.451		
4,400.0	4,377.1	4,286.5	4,242.5	12.0	14.3	139.77	-648.7	196.9	940.8	919.2	21.65	43.460		
4,500.0	4,476.4	4,383.7	4,338.4	12.3	14.7	139.84	-663.2	202.3	964.3	942.1	22.18	43.469		
4,600.0	4,575.7	4,480.9	4,434.4	12.6	15.1	139.90	-677.6	207.7	987.8	965.1	22.72	43.477		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin Existing Wells Sec.32-T4N-R66W - Benjamin 5 (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 464-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
11,300.0	7,295.0	7,366.4	7,276.8	116.6	19.6	88.82	495.0	-4,939.5	949.0	813.4	135.58	7.000	
11,400.0	7,295.0	7,366.8	7,277.2	119.4	19.6	88.93	495.0	-4,939.5	851.6	713.2	138.35	6.155	
11,500.0	7,295.0	7,367.2	7,277.6	122.2	19.6	89.05	495.0	-4,939.5	754.9	613.7	141.13	5.349	
11,600.0	7,295.0	7,367.6	7,278.0	124.9	19.6	89.16	495.0	-4,939.5	659.1	515.2	143.91	4.580	
11,700.0	7,295.0	7,368.0	7,278.4	127.7	19.6	89.27	495.0	-4,939.5	564.8	418.1	146.69	3.850	
11,800.0	7,295.0	7,368.4	7,278.8	130.5	19.6	89.39	495.0	-4,939.5	472.9	323.4	149.47	3.164	
11,900.0	7,295.0	7,368.8	7,279.2	133.3	19.6	89.50	495.0	-4,939.5	385.0	232.7	152.25	2.528	
12,000.0	7,295.0	7,369.2	7,279.6	136.1	19.6	89.61	495.0	-4,939.5	304.6	149.6	155.03	1.965	
12,100.0	7,295.0	7,369.6	7,280.0	138.8	19.6	89.73	495.0	-4,939.5	239.5	81.7	157.81	1.518	
12,200.0	7,295.0	7,370.0	7,280.4	141.6	19.6	89.84	495.0	-4,939.5	204.9	44.3	160.59	1.276 Level 3	
12,227.0	7,295.0	7,370.1	7,280.5	142.4	19.6	89.87	495.0	-4,939.5	203.1	41.7	161.34	1.259 Level 3, CC, ES, SF	
12,300.0	7,295.0	7,370.4	7,280.8	144.4	19.6	89.95	495.0	-4,939.5	215.8	52.4	163.37	1.321 Level 3	
12,400.0	7,295.0	7,370.8	7,281.2	147.2	19.6	90.07	495.0	-4,939.5	266.7	100.6	166.15	1.605	
12,500.0	7,295.0	7,371.2	7,281.6	150.0	19.6	90.18	495.0	-4,939.5	340.2	171.3	168.93	2.014	
12,600.0	7,295.0	7,371.6	7,282.1	152.8	19.6	90.30	495.0	-4,939.5	424.7	252.9	171.72	2.473	
12,700.0	7,295.0	7,372.0	7,282.5	155.6	19.6	90.41	495.0	-4,939.5	514.7	340.2	174.50	2.950	
12,800.0	7,295.0	7,372.4	7,282.9	158.3	19.6	90.53	495.0	-4,939.6	607.9	430.6	177.28	3.429	
12,900.0	7,295.0	7,372.8	7,283.3	161.1	19.6	90.64	495.0	-4,939.6	702.9	522.9	180.06	3.904	
13,000.0	7,295.0	7,373.2	7,283.7	163.9	19.6	90.76	495.0	-4,939.6	799.2	616.3	182.84	4.371	
13,100.0	7,295.0	7,373.6	7,284.1	166.7	19.6	90.87	495.0	-4,939.6	896.3	710.6	185.62	4.828	
13,200.0	7,295.0	7,374.0	7,284.5	169.5	19.6	90.99	495.0	-4,939.6	993.9	805.5	188.40	5.275	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Tarin Existing Wells Sec.32-T4N-R66W - Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1		Offset Site Error:	0.0 ft
Survey Program: 7404-UNKNOWN															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	-159.28	-295.1	-111.6	315.8							
100.0	100.0	87.0	87.0	0.1	1.7	-159.28	-295.1	-111.6	315.5	313.7	1.85	170.305				
200.0	200.0	187.0	187.0	0.3	3.7	-159.28	-295.1	-111.6	315.5	311.4	4.08	77.380				
300.0	300.0	287.0	287.0	0.6	5.7	-159.28	-295.1	-111.6	315.5	309.2	6.30	50.063				
400.0	400.0	387.0	387.0	0.8	7.7	-159.28	-295.1	-111.6	315.5	307.0	8.53	37.001				
500.0	500.0	487.0	487.0	1.0	9.7	-159.28	-295.1	-111.6	315.5	304.8	10.75	29.345				
600.0	600.0	587.0	587.0	1.2	11.7	-159.28	-295.1	-111.6	315.5	302.5	12.98	24.314				
700.0	700.0	687.0	687.0	1.5	13.7	-159.28	-295.1	-111.6	315.5	300.3	15.20	20.755				
800.0	800.0	787.0	787.0	1.7	15.7	-159.28	-295.1	-111.6	315.5	298.1	17.43	18.105				
900.0	900.0	887.0	887.0	1.9	17.7	-159.28	-295.1	-111.6	315.5	295.9	19.65	16.056				
1,000.0	1,000.0	987.0	987.0	2.1	19.7	-159.28	-295.1	-111.6	315.5	293.6	21.88	14.423 CC				
1,100.0	1,100.0	1,087.0	1,087.0	2.4	21.7	157.11	-295.1	-111.6	317.1	293.0	24.08	13.167 ES				
1,200.0	1,199.8	1,186.8	1,186.8	2.6	23.7	157.43	-295.1	-111.6	321.9	295.7	26.26	12.259				
1,300.0	1,299.5	1,286.5	1,286.5	2.8	25.7	157.95	-295.1	-111.6	330.0	301.6	28.40	11.620				
1,400.0	1,398.8	1,385.8	1,385.8	3.1	27.7	158.65	-295.1	-111.6	340.8	310.3	30.56	11.154				
1,500.0	1,498.0	1,485.0	1,485.0	3.3	29.7	159.36	-295.1	-111.6	352.0	319.3	32.76	10.746				
1,600.0	1,597.3	1,584.3	1,584.3	3.6	31.7	160.03	-295.1	-111.6	363.3	328.3	34.96	10.390				
1,700.0	1,696.6	1,683.6	1,683.6	3.8	33.7	160.65	-295.1	-111.6	374.6	337.4	37.17	10.077				
1,800.0	1,795.9	1,782.9	1,782.9	4.1	35.7	161.24	-295.1	-111.6	385.9	346.5	39.38	9.800				
1,900.0	1,895.2	1,882.2	1,882.2	4.4	37.6	161.80	-295.1	-111.6	397.3	355.7	41.59	9.554				
2,000.0	1,994.4	1,981.4	1,981.4	4.7	39.6	162.32	-295.1	-111.6	408.7	364.9	43.79	9.332				
2,100.0	2,093.7	2,080.7	2,080.7	5.0	41.6	162.82	-295.1	-111.6	420.1	374.1	46.00	9.133				
2,200.0	2,193.0	2,180.0	2,180.0	5.3	43.6	163.29	-295.1	-111.6	431.6	383.4	48.21	8.952				
2,300.0	2,292.3	2,279.3	2,279.3	5.6	45.6	163.73	-295.1	-111.6	443.1	392.7	50.42	8.788				
2,400.0	2,391.6	2,378.6	2,378.6	5.9	47.6	164.16	-295.1	-111.6	454.6	402.0	52.63	8.638				
2,500.0	2,490.8	2,477.8	2,477.8	6.2	49.6	164.56	-295.1	-111.6	466.2	411.3	54.84	8.500				
2,600.0	2,590.1	2,577.1	2,577.1	6.5	51.5	164.94	-295.1	-111.6	477.8	420.7	57.05	8.374				
2,700.0	2,689.4	2,676.4	2,676.4	6.8	53.5	165.31	-295.1	-111.6	489.3	430.1	59.26	8.257				
2,800.0	2,788.7	2,775.7	2,775.7	7.1	55.5	165.65	-295.1	-111.6	501.0	439.5	61.48	8.149				
2,900.0	2,888.0	2,875.0	2,875.0	7.4	57.5	165.99	-295.1	-111.6	512.6	448.9	63.69	8.049				
3,000.0	2,987.2	2,974.2	2,974.2	7.7	59.5	166.30	-295.1	-111.6	524.2	458.3	65.90	7.955				
3,100.0	3,086.5	3,073.5	3,073.5	8.0	61.5	166.61	-295.1	-111.6	535.9	467.8	68.11	7.868				
3,200.0	3,185.8	3,172.8	3,172.8	8.3	63.5	166.90	-295.1	-111.6	547.5	477.2	70.32	7.787				
3,300.0	3,285.1	3,272.1	3,272.1	8.6	65.4	167.17	-295.1	-111.6	559.2	486.7	72.53	7.711				
3,400.0	3,384.4	3,371.4	3,371.4	8.9	67.4	167.44	-295.1	-111.6	570.9	496.2	74.74	7.639				
3,500.0	3,483.6	3,470.6	3,470.6	9.2	69.4	167.70	-295.1	-111.6	582.6	505.7	76.95	7.572				
3,600.0	3,582.9	3,569.9	3,569.9	9.5	71.4	167.94	-295.1	-111.6	594.4	515.2	79.16	7.508				
3,700.0	3,682.2	3,669.2	3,669.2	9.8	73.4	168.18	-295.1	-111.6	606.1	524.7	81.37	7.448				
3,800.0	3,781.5	3,768.5	3,768.5	10.2	75.4	168.41	-295.1	-111.6	617.8	534.2	83.58	7.392				
3,900.0	3,880.8	3,867.8	3,867.8	10.5	77.4	168.63	-295.1	-111.6	629.6	543.8	85.79	7.338				
4,000.0	3,980.0	3,967.0	3,967.0	10.8	79.3	168.84	-295.1	-111.6	641.3	553.3	88.00	7.288				
4,100.0	4,079.3	4,066.3	4,066.3	11.1	81.3	169.04	-295.1	-111.6	653.1	562.9	90.21	7.239				
4,200.0	4,178.6	4,165.6	4,165.6	11.4	83.3	169.24	-295.1	-111.6	664.9	572.4	92.42	7.194				
4,300.0	4,277.9	4,264.9	4,264.9	11.7	85.3	169.43	-295.1	-111.6	676.6	582.0	94.63	7.150				
4,400.0	4,377.1	4,364.1	4,364.1	12.0	87.3	169.61	-295.1	-111.6	688.4	591.6	96.85	7.109				
4,500.0	4,476.4	4,463.4	4,463.4	12.3	89.3	169.79	-295.1	-111.6	700.2	601.2	99.06	7.069				
4,600.0	4,575.7	4,562.7	4,562.7	12.6	91.3	169.96	-295.1	-111.6	712.0	610.8	101.27	7.031				
4,700.0	4,675.0	4,662.0	4,662.0	12.9	93.2	170.13	-295.1	-111.6	723.8	620.2	103.54	6.990				
4,800.0	4,774.5	4,761.5	4,761.5	13.2	95.2	170.29	-295.1	-111.6	733.2	627.2	106.01	6.917				
4,900.0	4,874.3	4,861.3	4,861.3	13.4	97.2	170.39	-295.1	-111.6	739.3	630.9	108.37	6.822				
5,000.0	4,974.3	4,961.3	4,961.3	13.5	99.2	170.43	-295.1	-111.6	741.9	631.3	110.60	6.708				

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-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Tarin Existing Wells Sec.32-T4N-R66W - Glen 44-32 (Existing) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 7404-UNKNOWN														
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		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
							+N/-S (ft)	+E/-W (ft)						
5,100.0	5,074.3	5,061.3	5,061.3	13.7	101.2	-145.84	-295.1	-111.6	742.0	627.2	114.84	6.461		
5,200.0	5,174.3	5,161.3	5,161.3	13.9	103.2	-145.84	-295.1	-111.6	742.0	625.0	117.02	6.341		
5,300.0	5,274.3	5,261.3	5,261.3	14.0	105.2	-145.84	-295.1	-111.6	742.0	622.8	119.20	6.225		
5,400.0	5,374.3	5,361.3	5,361.3	14.2	107.2	-145.84	-295.1	-111.6	742.0	620.6	121.38	6.113		
5,500.0	5,474.3	5,461.3	5,461.3	14.4	109.2	-145.84	-295.1	-111.6	742.0	618.4	123.56	6.005		
5,600.0	5,574.3	5,561.3	5,561.3	14.6	111.2	-145.84	-295.1	-111.6	742.0	616.3	125.74	5.901		
5,700.0	5,674.3	5,661.3	5,661.3	14.8	113.2	-145.84	-295.1	-111.6	742.0	614.1	127.92	5.800		
5,800.0	5,774.3	5,761.3	5,761.3	15.0	115.2	-145.84	-295.1	-111.6	742.0	611.9	130.11	5.703		
5,900.0	5,874.3	5,861.3	5,861.3	15.1	117.2	-145.84	-295.1	-111.6	742.0	609.7	132.29	5.609		
6,000.0	5,974.3	5,961.3	5,961.3	15.3	119.2	-145.84	-295.1	-111.6	742.0	607.5	134.48	5.518		
6,100.0	6,074.3	6,061.3	6,061.3	15.5	121.2	-145.84	-295.1	-111.6	742.0	605.3	136.67	5.429		
6,200.0	6,174.3	6,161.3	6,161.3	15.7	123.2	-145.84	-295.1	-111.6	742.0	603.1	138.86	5.344		
6,300.0	6,274.3	6,261.3	6,261.3	15.9	125.2	-145.84	-295.1	-111.6	742.0	601.0	141.05	5.261		
6,400.0	6,374.3	6,361.3	6,361.3	16.1	127.2	-145.84	-295.1	-111.6	742.0	598.8	143.24	5.180		
6,500.0	6,474.3	6,461.3	6,461.3	16.3	129.2	-145.84	-295.1	-111.6	742.0	596.6	145.43	5.102		
6,600.0	6,574.2	6,561.2	6,561.2	16.5	131.2	-55.73	-295.1	-111.6	741.0	595.1	145.82	5.081		
6,700.0	6,673.3	6,660.3	6,660.3	16.6	133.2	-57.06	-295.1	-111.6	733.5	586.3	147.19	4.983		
6,800.0	6,769.7	6,756.7	6,756.7	16.6	135.1	-59.69	-295.1	-111.6	719.3	571.2	148.13	4.856		
6,900.0	6,861.9	6,848.9	6,848.9	16.6	137.0	-63.58	-295.1	-111.6	699.8	550.6	149.19	4.691		
7,000.0	6,948.2	6,935.2	6,935.2	16.6	138.7	-68.59	-295.1	-111.6	676.8	525.9	150.95	4.484		
7,100.0	7,027.2	7,014.2	7,014.2	16.6	140.3	-74.39	-295.1	-111.6	653.0	499.4	153.60	4.251		
7,200.0	7,097.6	7,084.6	7,084.6	16.6	141.7	-80.43	-295.1	-111.6	631.7	475.0	156.71	4.031		
7,300.0	7,158.1	7,145.1	7,145.1	17.0	142.9	-85.99	-295.1	-111.6	616.8	457.2	159.55	3.866		
7,389.9	7,203.3	7,190.3	7,190.3	17.8	143.8	-90.00	-295.1	-111.6	611.8	450.3	161.56	3.787		
7,400.0	7,207.7	7,194.7	7,194.7	17.8	143.9	-90.37	-295.1	-111.6	611.9	450.2	161.74	3.783 SF		
7,500.0	7,245.6	7,232.6	7,232.6	19.1	144.7	-93.02	-295.1	-111.6	620.2	456.7	163.51	3.793		
7,600.0	7,271.1	7,258.1	7,258.1	20.6	145.2	-93.54	-295.1	-111.6	643.1	477.7	165.42	3.888		
7,700.0	7,284.4	7,271.4	7,271.4	22.3	145.4	-92.91	-295.1	-111.6	680.2	512.7	167.50	4.061		
7,800.0	7,293.4	7,280.4	7,280.4	24.2	145.6	-91.97	-295.1	-111.6	729.2	559.5	169.70	4.297		
7,900.0	7,295.0	7,282.0	7,282.0	26.3	145.6	-90.00	-295.1	-111.6	788.1	616.2	171.87	4.586		
8,000.0	7,295.0	7,282.0	7,282.0	28.5	145.6	-90.00	-295.1	-111.6	854.7	680.6	174.06	4.910		
8,100.0	7,295.0	7,282.0	7,282.0	30.8	145.6	-90.00	-295.1	-111.6	927.3	750.9	176.35	5.258		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin Existing Wells Sec.32-T4N-R66W - Nicholas 5 (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							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
12,800.0	7,295.0	7,346.0	7,295.9	158.3	16.5	99.63	383.9	-6,451.4	944.8	772.7	172.16	5.488		
12,900.0	7,295.0	7,344.6	7,294.4	161.1	16.5	98.79	383.9	-6,451.4	845.5	670.2	175.32	4.823		
13,000.0	7,295.0	7,343.1	7,292.9	163.9	16.5	97.95	383.9	-6,451.4	746.3	567.8	178.46	4.182		
13,100.0	7,295.0	7,341.6	7,291.4	166.7	16.5	97.11	384.0	-6,451.4	647.3	465.8	181.57	3.565		
13,200.0	7,295.0	7,340.1	7,290.0	169.5	16.5	96.26	384.0	-6,451.5	548.8	364.1	184.66	2.972		
13,300.0	7,295.0	7,338.6	7,288.5	172.3	16.5	95.42	384.1	-6,451.5	450.8	263.1	187.73	2.402		
13,400.0	7,295.0	7,337.1	7,287.0	175.1	16.5	94.57	384.1	-6,451.5	354.0	163.3	190.76	1.856		
13,500.0	7,295.0	7,335.6	7,285.5	177.9	16.5	93.72	384.2	-6,451.5	259.7	65.9	193.76	1.340	Level 3	
13,600.0	7,295.0	7,334.1	7,284.0	180.7	16.5	92.86	384.2	-6,451.5	171.8	-24.9	196.73	0.873	Level 1	
13,700.0	7,295.0	7,332.6	7,282.5	183.5	16.5	92.01	384.2	-6,451.6	107.7	-92.0	199.66	0.539	Level 1	
13,739.6	7,295.0	7,332.1	7,281.9	184.6	16.5	91.68	384.3	-6,451.6	100.1	-100.7	200.81	0.499	Level 1, CC, ES, SF	
13,800.0	7,295.0	7,331.2	7,281.0	186.3	16.5	91.16	384.3	-6,451.6	116.9	-85.6	202.56	0.577	Level 1	
13,900.0	7,295.0	7,329.7	7,279.5	189.1	16.5	90.31	384.3	-6,451.6	189.0	-16.4	205.41	0.920	Level 1	
14,000.0	7,295.0	7,328.2	7,278.1	191.9	16.5	89.46	384.4	-6,451.6	278.9	70.7	208.22	1.340	Level 3	
14,100.0	7,295.0	7,326.7	7,276.6	194.6	16.5	88.61	384.4	-6,451.7	374.0	163.0	210.99	1.772		
14,200.0	7,295.0	7,325.2	7,275.1	197.4	16.5	87.76	384.5	-6,451.7	471.1	257.4	213.72	2.204		
14,300.0	7,295.0	7,323.7	7,273.6	200.2	16.5	86.91	384.5	-6,451.7	569.2	352.8	216.40	2.630		
14,380.0	7,295.0	7,322.5	7,272.4	202.5	16.5	86.24	384.5	-6,451.7	648.1	429.5	218.51	2.966		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin Existing Wells Sec.32-T4N-R66W - UPRR 41 PAN AM "J" 1 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7970-UNKNOWN												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
12,400.0	7,295.0	7,281.0	7,281.0	147.2	145.6	-90.00	117.3	-6,000.3	905.6	612.8	292.79	3.093	
12,500.0	7,295.0	7,281.0	7,281.0	150.0	145.6	-90.00	117.3	-6,000.3	807.6	512.0	295.58	2.732	
12,600.0	7,295.0	7,281.0	7,281.0	152.8	145.6	-90.00	117.3	-6,000.3	710.1	411.8	298.36	2.380	
12,700.0	7,295.0	7,281.0	7,281.0	155.6	145.6	-90.00	117.3	-6,000.3	613.5	312.3	301.15	2.037	
12,800.0	7,295.0	7,281.0	7,281.0	158.3	145.6	-90.00	117.3	-6,000.3	518.1	214.2	303.94	1.705	
12,900.0	7,295.0	7,281.0	7,281.0	161.1	145.6	-90.00	117.3	-6,000.3	424.8	118.1	306.73	1.385	Level 3
13,000.0	7,295.0	7,281.0	7,281.0	163.9	145.6	-90.00	117.3	-6,000.3	335.5	26.0	309.52	1.084	Level 2
13,100.0	7,295.0	7,281.0	7,281.0	166.7	145.6	-90.00	117.3	-6,000.3	254.2	-58.1	312.31	0.814	Level 1
13,200.0	7,295.0	7,281.0	7,281.0	169.5	145.6	-90.00	117.3	-6,000.3	191.5	-123.6	315.10	0.608	Level 1
13,289.7	7,295.0	7,281.0	7,281.0	172.0	145.6	-90.00	117.3	-6,000.3	169.2	-148.4	317.61	0.533	Level 1, CC, ES, SF
13,300.0	7,295.0	7,281.0	7,281.0	172.3	145.6	-90.00	117.3	-6,000.3	169.5	-148.4	317.90	0.533	Level 1
13,400.0	7,295.0	7,281.0	7,281.0	175.1	145.6	-90.00	117.3	-6,000.3	202.0	-118.7	320.69	0.630	Level 1
13,500.0	7,295.0	7,281.0	7,281.0	177.9	145.6	-90.00	117.3	-6,000.3	269.9	-53.6	323.48	0.834	Level 1
13,600.0	7,295.0	7,281.0	7,281.0	180.7	145.6	-90.00	117.3	-6,000.3	353.4	27.2	326.27	1.083	Level 2
13,700.0	7,295.0	7,281.0	7,281.0	183.5	145.6	-90.00	117.3	-6,000.3	443.8	114.8	329.07	1.349	Level 3
13,800.0	7,295.0	7,281.0	7,281.0	186.3	145.6	-90.00	117.3	-6,000.3	537.6	205.8	331.86	1.620	
13,900.0	7,295.0	7,281.0	7,281.0	189.1	145.6	-90.00	117.3	-6,000.3	633.3	298.7	334.65	1.892	
14,000.0	7,295.0	7,281.0	7,281.0	191.9	145.6	-90.00	117.3	-6,000.3	730.2	392.7	337.45	2.164	
14,100.0	7,295.0	7,281.0	7,281.0	194.6	145.6	-90.00	117.3	-6,000.3	827.8	487.5	340.24	2.433	
14,200.0	7,295.0	7,281.0	7,281.0	197.4	145.6	-90.00	117.3	-6,000.3	925.9	582.9	343.04	2.699	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin Existing Wells Sec.32-T4N-R66W - Wolf 44-31 (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							
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	
12,100.0	7,295.0	7,275.3	7,274.1	138.8	14.6	-88.94	-30.2	-5,746.8	989.5	836.2	153.32	6.454		
12,200.0	7,295.0	7,275.8	7,274.6	141.6	14.6	-89.03	-30.2	-5,746.8	895.4	739.2	156.11	5.735		
12,300.0	7,295.0	7,276.3	7,275.1	144.4	14.6	-89.12	-30.2	-5,746.8	802.7	643.8	158.90	5.051		
12,400.0	7,295.0	7,276.8	7,275.6	147.2	14.6	-89.21	-30.2	-5,746.8	712.0	550.3	161.69	4.403		
12,500.0	7,295.0	7,277.3	7,276.1	150.0	14.6	-89.30	-30.2	-5,746.8	624.1	459.6	164.49	3.794		
12,600.0	7,295.0	7,277.8	7,276.6	152.8	14.6	-89.39	-30.2	-5,746.8	540.5	373.2	167.28	3.231		
12,700.0	7,295.0	7,278.3	7,277.1	155.6	14.6	-89.48	-30.2	-5,746.8	463.4	293.3	170.07	2.724		
12,800.0	7,295.0	7,278.8	7,277.6	158.3	14.6	-89.57	-30.2	-5,746.8	396.6	223.7	172.87	2.294		
12,900.0	7,295.0	7,279.3	7,278.1	161.1	14.6	-89.66	-30.2	-5,746.8	346.3	170.6	175.66	1.971		
13,000.0	7,295.0	7,279.8	7,278.6	163.9	14.6	-89.75	-30.2	-5,746.8	320.2	141.7	178.46	1.794		
13,037.0	7,295.0	7,280.0	7,278.8	165.0	14.6	-89.78	-30.2	-5,746.8	318.0	138.5	179.49	1.772 CC, ES, SF		
13,100.0	7,295.0	7,280.3	7,279.1	166.7	14.6	-89.84	-30.2	-5,746.8	324.2	143.0	181.25	1.789		
13,200.0	7,295.0	7,280.8	7,279.6	169.5	14.6	-89.93	-30.2	-5,746.8	357.4	173.3	184.04	1.942		
13,300.0	7,295.0	7,281.3	7,280.1	172.3	14.6	-90.02	-30.2	-5,746.8	412.7	225.9	186.84	2.209		
13,400.0	7,295.0	7,281.8	7,280.6	175.1	14.6	-90.11	-30.2	-5,746.8	482.6	293.0	189.63	2.545		
13,500.0	7,295.0	7,282.3	7,281.1	177.9	14.6	-90.20	-30.2	-5,746.8	561.7	369.3	192.43	2.919		
13,600.0	7,295.0	7,282.8	7,281.6	180.7	14.6	-90.29	-30.2	-5,746.8	646.6	451.4	195.22	3.312		
13,700.0	7,295.0	7,283.3	7,282.1	183.5	14.6	-90.38	-30.2	-5,746.8	735.3	537.3	198.02	3.714		
13,800.0	7,295.0	7,283.8	7,282.6	186.3	14.6	-90.47	-30.2	-5,746.8	826.6	625.8	200.81	4.116		
13,900.0	7,295.0	7,284.3	7,283.1	189.1	14.6	-90.56	-30.2	-5,746.8	919.7	716.1	203.61	4.517		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin Existing Wells Sec.32-T4N-R66W - Wolfe 1 (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,300.0	7,295.0	7,278.6	7,277.4	61.7	14.2	-90.17	-150.1	-2,892.6	992.6	916.8	75.76	13.101	
9,400.0	7,295.0	7,278.0	7,276.7	64.4	14.2	-90.09	-150.1	-2,892.6	904.7	826.3	78.46	11.531	
9,500.0	7,295.0	7,277.4	7,276.1	67.1	14.2	-90.02	-150.1	-2,892.6	819.7	738.5	81.17	10.098	
9,600.0	7,295.0	7,276.7	7,275.5	69.8	14.2	-89.94	-150.1	-2,892.6	738.4	654.5	83.88	8.802	
9,700.0	7,295.0	7,276.1	7,274.9	72.5	14.2	-89.86	-150.1	-2,892.6	662.2	575.6	86.61	7.646	
9,800.0	7,295.0	7,275.5	7,274.3	75.2	14.2	-89.78	-150.1	-2,892.6	593.1	503.8	89.33	6.640	
9,900.0	7,295.0	7,274.9	7,273.7	78.0	14.2	-89.70	-150.1	-2,892.6	534.0	441.9	92.06	5.800	
10,000.0	7,295.0	7,274.3	7,273.0	80.7	14.2	-89.63	-150.1	-2,892.6	488.3	393.5	94.80	5.151	
10,100.0	7,295.0	7,273.7	7,272.4	83.5	14.2	-89.55	-150.0	-2,892.6	460.2	362.6	97.54	4.717	
10,183.5	7,295.0	7,273.2	7,271.9	85.7	14.1	-89.49	-150.0	-2,892.6	452.5	352.7	99.83	4.533 CC	
10,200.0	7,295.0	7,273.1	7,271.8	86.2	14.1	-89.47	-150.0	-2,892.6	452.8	352.5	100.29	4.515 ES, SF	
10,300.0	7,295.0	7,272.5	7,271.2	89.0	14.1	-89.40	-150.0	-2,892.6	467.3	364.3	103.04	4.535	
10,400.0	7,295.0	7,271.9	7,270.6	91.7	14.1	-89.32	-150.0	-2,892.6	501.7	395.9	105.79	4.742	
10,500.0	7,295.0	7,271.3	7,270.1	94.5	14.1	-89.25	-150.0	-2,892.6	552.3	443.7	108.54	5.088	
10,600.0	7,295.0	7,270.7	7,269.5	97.2	14.1	-89.17	-150.0	-2,892.6	615.1	503.8	111.30	5.526	
10,700.0	7,295.0	7,270.1	7,268.9	100.0	14.1	-89.10	-150.0	-2,892.6	686.7	572.7	114.06	6.021	
10,800.0	7,295.0	7,269.5	7,268.3	102.8	14.1	-89.02	-150.0	-2,892.6	764.8	648.0	116.82	6.547	
10,900.0	7,295.0	7,269.0	7,267.7	105.5	14.1	-88.95	-150.0	-2,892.6	847.5	727.9	119.58	7.087	
11,000.0	7,295.0	7,268.4	7,267.1	108.3	14.1	-88.88	-150.0	-2,892.6	933.5	811.2	122.34	7.631	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin Existing Wells Sec.32-T4N-R66W - Wolfe 14-32 (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	
10,600.0	7,295.0	7,263.1	7,262.3	97.2	15.1	-87.83	-90.8	-4,157.4	932.1	820.0	112.16	8.311	
10,700.0	7,295.0	7,264.5	7,263.7	100.0	15.1	-88.03	-90.8	-4,157.4	842.2	727.2	114.94	7.327	
10,800.0	7,295.0	7,265.8	7,265.0	102.8	15.1	-88.23	-90.8	-4,157.5	754.7	637.0	117.72	6.411	
10,900.0	7,295.0	7,267.2	7,266.4	105.5	15.1	-88.42	-90.9	-4,157.5	670.9	550.4	120.50	5.567	
11,000.0	7,295.0	7,268.5	7,267.7	108.3	15.1	-88.62	-90.9	-4,157.5	592.0	468.7	123.29	4.802	
11,100.0	7,295.0	7,269.9	7,269.0	111.1	15.1	-88.82	-90.9	-4,157.5	520.4	394.3	126.08	4.128	
11,200.0	7,295.0	7,271.2	7,270.4	113.8	15.1	-89.02	-90.9	-4,157.5	459.6	330.7	128.86	3.567	
11,300.0	7,295.0	7,272.5	7,271.7	116.6	15.1	-89.22	-90.9	-4,157.6	414.3	282.6	131.65	3.147	
11,400.0	7,295.0	7,273.9	7,273.1	119.4	15.1	-89.42	-90.9	-4,157.6	389.9	255.4	134.44	2.900	
11,448.1	7,295.0	7,274.5	7,273.7	120.7	15.1	-89.52	-90.9	-4,157.6	386.9	251.1	135.78	2.849 CC, ES	
11,500.0	7,295.0	7,275.2	7,274.4	122.2	15.1	-89.62	-90.9	-4,157.6	390.4	253.1	137.22	2.845 SF	
11,600.0	7,295.0	7,276.6	7,275.8	124.9	15.1	-89.82	-90.9	-4,157.6	415.6	275.6	140.01	2.969	
11,700.0	7,295.0	7,277.9	7,277.1	127.7	15.1	-90.02	-90.9	-4,157.6	461.7	318.9	142.80	3.233	
11,800.0	7,295.0	7,279.3	7,278.5	130.5	15.1	-90.22	-91.0	-4,157.6	523.0	377.4	145.59	3.592	
11,900.0	7,295.0	7,280.6	7,279.8	133.3	15.1	-90.41	-91.0	-4,157.7	594.9	446.5	148.37	4.009	
12,000.0	7,295.0	7,282.0	7,281.1	136.1	15.1	-90.61	-91.0	-4,157.7	674.0	522.8	151.16	4.459	
12,100.0	7,295.0	7,283.3	7,282.5	138.8	15.1	-90.81	-91.0	-4,157.7	758.0	604.1	153.94	4.924	
12,200.0	7,295.0	7,284.6	7,283.8	141.6	15.1	-91.01	-91.0	-4,157.7	845.5	688.8	156.72	5.395	
12,300.0	7,295.0	7,286.0	7,285.2	144.4	15.1	-91.21	-91.0	-4,157.7	935.6	776.1	159.51	5.865	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin Existing Wells Sec.32-T4N-R66W - Wolfe 5 (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		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
9,700.0	7,295.0	7,531.6	7,269.9	72.5	21.9	88.58	588.9	-3,356.3	986.6	894.0	92.57	10.658	
9,800.0	7,295.0	7,532.4	7,270.7	75.2	21.9	88.75	588.9	-3,356.3	891.5	796.2	95.29	9.355	
9,900.0	7,295.0	7,533.2	7,271.5	78.0	21.9	88.92	588.9	-3,356.3	797.5	699.5	98.03	8.136	
10,000.0	7,295.0	7,534.1	7,272.4	80.7	21.9	89.09	588.9	-3,356.3	705.2	604.5	100.76	6.999	
10,100.0	7,295.0	7,534.9	7,273.2	83.5	21.9	89.25	588.9	-3,356.3	615.4	511.9	103.50	5.945	
10,200.0	7,295.0	7,535.8	7,274.1	86.2	21.9	89.42	588.9	-3,356.4	529.1	422.9	106.25	4.980	
10,300.0	7,295.0	7,536.6	7,274.9	89.0	21.9	89.59	588.9	-3,356.4	448.7	339.7	109.00	4.117	
10,400.0	7,295.0	7,537.5	7,275.8	91.7	21.9	89.76	588.9	-3,356.4	377.7	265.9	111.75	3.380	
10,500.0	7,295.0	7,538.3	7,276.6	94.5	21.9	89.92	588.9	-3,356.4	322.4	207.9	114.50	2.816	
10,600.0	7,295.0	7,539.1	7,277.5	97.2	22.0	90.09	588.9	-3,356.4	292.0	174.8	117.25	2.490	
10,643.4	7,295.0	7,539.5	7,277.8	98.4	22.0	90.16	588.9	-3,356.4	288.8	170.3	118.45	2.438 CC, ES, SF	
10,700.0	7,295.0	7,540.0	7,278.3	100.0	22.0	90.26	588.9	-3,356.4	294.3	174.3	120.01	2.452	
10,800.0	7,295.0	7,540.8	7,279.1	102.8	22.0	90.42	588.9	-3,356.4	328.5	205.7	122.76	2.676	
10,900.0	7,295.0	7,541.7	7,280.0	105.5	22.0	90.59	588.9	-3,356.4	386.3	260.8	125.52	3.077	
11,000.0	7,295.0	7,542.5	7,280.8	108.3	22.0	90.76	588.8	-3,356.4	458.8	330.6	128.28	3.577	
11,100.0	7,295.0	7,543.4	7,281.7	111.1	22.0	90.93	588.8	-3,356.4	540.2	409.2	131.04	4.123	
11,200.0	7,295.0	7,544.2	7,282.5	113.8	22.0	91.09	588.8	-3,356.4	627.0	493.2	133.80	4.686	
11,300.0	7,295.0	7,545.1	7,283.4	116.6	22.0	91.26	588.8	-3,356.4	717.3	580.7	136.55	5.253	
11,400.0	7,295.0	7,545.9	7,284.2	119.4	22.0	91.43	588.8	-3,356.4	809.8	670.5	139.31	5.813	
11,500.0	7,295.0	7,546.7	7,285.0	122.2	22.0	91.60	588.8	-3,356.4	903.9	761.8	142.07	6.362	
11,600.0	7,295.0	7,547.6	7,285.9	124.9	22.0	91.76	588.8	-3,356.5	999.2	854.4	144.83	6.899	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Offset Design Tarin Existing Wells Sec.32-T4N-R66W - Wolfe 6I (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 668-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,700.0	7,295.0	7,324.5	7,256.3	45.7	18.9	77.74	400.5	-2,378.2	971.2	908.5	62.69	15.492	
8,800.0	7,295.0	7,326.7	7,258.5	48.4	18.9	79.01	400.5	-2,378.3	871.7	806.3	65.45	13.319	
8,900.0	7,295.0	7,328.9	7,260.7	51.0	18.9	80.28	400.5	-2,378.3	772.4	704.2	68.22	11.322	
9,000.0	7,295.0	7,331.1	7,262.8	53.6	18.9	81.56	400.5	-2,378.4	673.3	602.3	71.00	9.483	
9,100.0	7,295.0	7,333.3	7,265.0	56.3	19.0	82.83	400.5	-2,378.4	574.6	500.8	73.78	7.787	
9,200.0	7,295.0	7,335.4	7,267.1	59.0	19.0	84.10	400.5	-2,378.5	476.3	399.7	76.56	6.221	
9,300.0	7,295.0	7,337.5	7,269.3	61.7	19.0	85.36	400.5	-2,378.5	378.8	299.5	79.32	4.776	
9,400.0	7,295.0	7,339.7	7,271.4	64.4	19.0	86.63	400.5	-2,378.6	283.2	201.1	82.06	3.451	
9,500.0	7,295.0	7,341.8	7,273.5	67.1	19.0	87.89	400.5	-2,378.6	192.0	107.3	84.78	2.265	
9,600.0	7,295.0	7,343.8	7,275.6	69.8	19.0	89.14	400.5	-2,378.7	116.4	28.9	87.48	1.331 Level 3	
9,666.7	7,295.0	7,345.2	7,276.9	71.6	19.0	89.97	400.5	-2,378.7	95.4	6.2	89.26	1.069 Level 2, CC, ES, SF	
9,700.0	7,295.0	7,345.9	7,277.6	72.5	19.0	90.38	400.5	-2,378.7	101.1	10.9	90.15	1.121 Level 2	
9,800.0	7,295.0	7,348.0	7,279.7	75.2	19.0	91.62	400.5	-2,378.7	163.9	71.1	92.78	1.767	
9,900.0	7,295.0	7,350.0	7,281.7	78.0	19.0	92.84	400.5	-2,378.8	252.0	156.6	95.38	2.642	
10,000.0	7,295.0	7,352.0	7,283.8	80.7	19.0	94.05	400.5	-2,378.8	346.6	248.7	97.94	3.539	
10,100.0	7,295.0	7,354.1	7,285.8	83.5	19.0	95.26	400.5	-2,378.9	443.6	343.1	100.45	4.416	
10,200.0	7,295.0	7,356.1	7,287.8	86.2	19.0	96.45	400.5	-2,378.9	541.7	438.7	102.93	5.263	
10,300.0	7,295.0	7,358.1	7,289.8	89.0	19.0	97.62	400.5	-2,378.9	640.3	535.0	105.35	6.078	
10,400.0	7,295.0	7,360.0	7,291.8	91.7	19.0	98.79	400.5	-2,379.0	739.3	631.6	107.73	6.863	
10,500.0	7,295.0	7,362.0	7,293.7	94.5	19.0	99.94	400.5	-2,379.0	838.6	728.5	110.06	7.619	
10,600.0	7,295.0	7,363.9	7,295.7	97.2	19.0	101.07	400.5	-2,379.1	938.0	825.6	112.35	8.349	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4790.0ft (RKB - 15')

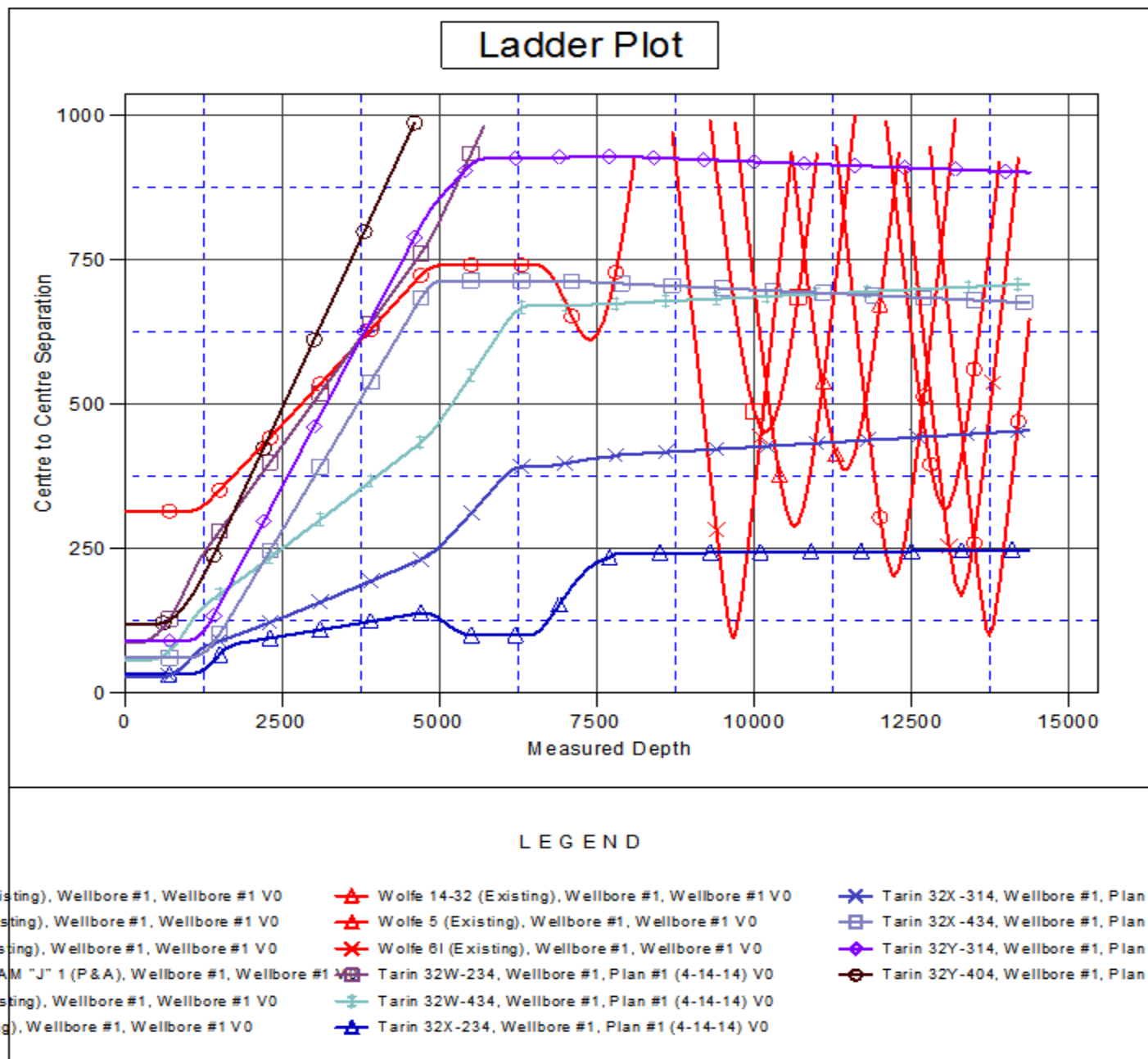
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Tarin 32X-404

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.46°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Tarin 32X-404
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-404	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #1 (4-14-14)	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-404

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.46°

