PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Jacobucci 32S-343**

Surface Location: Jacobucci 1N67W32S Pad Sec.32-T1N-R67W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
Ground Elevation: 5059.0

+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1245852.67	3164850.06	40.006750	-104.911510	

Original Well Elev WELL @ 5074.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2338'FSL & 1870'FEL, Sec.32	1.0	0.0	0.0	Point
BHL 500'FSL & 2544'FEL, Sec.5	7717.0	-6928.7	-246.6	Point

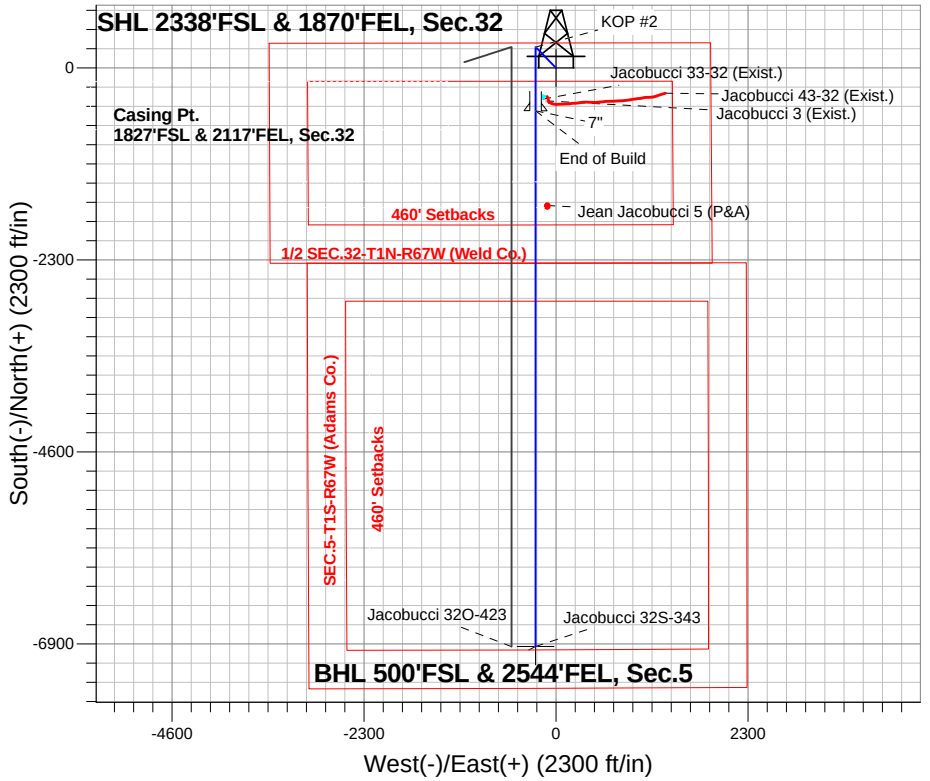
Azimuths to True North
Magnetic North: 8.46°

Magnetic Field
Strength: 52558.0snT
Dip Angle: 66.59°
Date: 10/8/2014
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1600.0	1600.0	KOP
6948.5	6968.0	KOP #2
7712.5	8167.5	End of Build

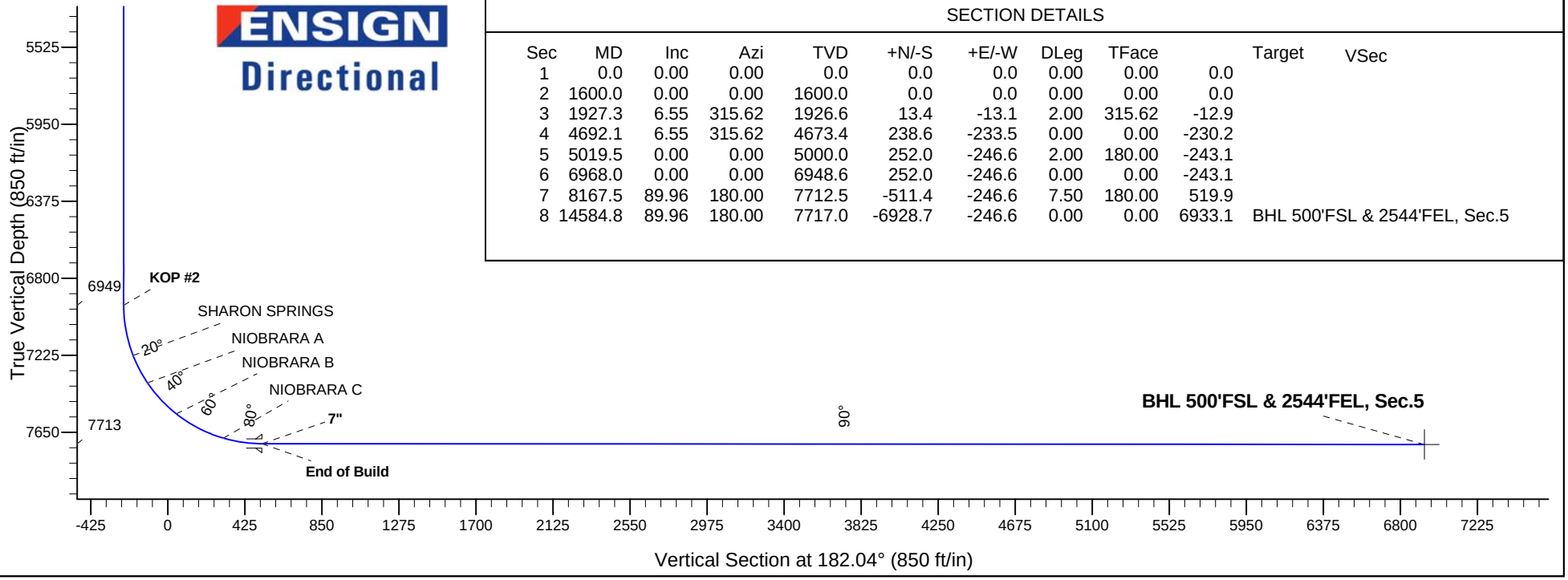
Jacobucci 1N67W32S Pad Sec.32-T1N-R67W
Jacobucci 32S-343
Plan #2 (10-8-14)
10:12, October 16 2014



ENSIGN Directional

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace		Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	1600.0	0.00	0.00	1600.0	0.0	0.0	0.00	0.00	0.0		
3	1927.3	6.55	315.62	1926.6	13.4	-13.1	2.00	315.62	-12.9		
4	4692.1	6.55	315.62	4673.4	238.6	-233.5	0.00	0.00	-230.2		
5	5019.5	0.00	0.00	5000.0	252.0	-246.6	2.00	180.00	-243.1		
6	6968.0	0.00	0.00	6948.6	252.0	-246.6	0.00	0.00	-243.1		
7	8167.5	89.96	180.00	7712.5	-511.4	-246.6	7.50	180.00	519.9		
8	14584.8	89.96	180.00	7717.0	-6928.7	-246.6	0.00	0.00	6933.1	BHL 500'FSL & 2544'FEL, Sec.5	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T1N-R67W
Jacobucci 1N67W32S Pad Sec.32-T1N-R67W
Jacobucci 32S-343

Wellbore #1

Plan: Plan #2 (10-8-14)

Standard Planning Report

16 October, 2014

PDC ENERGY
Growing E&P Value

Database:	Landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-343	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

Project SEC.32-T1N-R67W, Weld County, CO

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 Jacobucci 1N67W32S Pad Sec.32-T1N-R67W

Site Position:		**Northing:**	1,245,853.29 ft	**Latitude:**	40.006750
From:	Lat/Long	**Easting:**	3,164,939.70 ft	**Longitude:**	-104.911190
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.38 °

Well Jacobucci 32S-343

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,245,852.67 ft	**Latitude:**	40.006750
	+E/-W	-89.6 ft	**Easting:**	3,164,850.06 ft	**Longitude:**	-104.911510
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,059.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/8/2014	8.46	66.59	52,558

Design Plan #2 (10-8-14)

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	182.04

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	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,927.3	6.55	315.62	1,926.6	13.4	-13.1	2.00	2.00	0.00	315.62	
4,692.1	6.55	315.62	4,673.4	238.6	-233.5	0.00	0.00	0.00	0.00	
5,019.5	0.00	0.00	5,000.0	252.0	-246.6	2.00	-2.00	0.00	180.00	
6,968.0	0.00	0.00	6,948.6	252.0	-246.6	0.00	0.00	0.00	0.00	
8,167.5	89.96	180.00	7,712.5	-511.4	-246.6	7.50	7.50	0.00	180.00	
14,584.8	89.96	180.00	7,717.0	-6,928.7	-246.6	0.00	0.00	0.00	0.00	BHL 500'FSL & 254

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Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-343	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

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
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP									
1,700.0	2.00	315.62	1,700.0	1.2	-1.2	-1.2	2.00	2.00	0.00
1,800.0	4.00	315.62	1,799.8	5.0	-4.9	-4.8	2.00	2.00	0.00
1,900.0	6.00	315.62	1,899.5	11.2	-11.0	-10.8	2.00	2.00	0.00
1,927.3	6.55	315.62	1,926.6	13.4	-13.1	-12.9	2.00	2.00	0.00
2,000.0	6.55	315.62	1,998.8	19.3	-18.9	-18.6	0.00	0.00	0.00
2,100.0	6.55	315.62	2,098.2	27.4	-26.8	-26.5	0.00	0.00	0.00
2,200.0	6.55	315.62	2,197.5	35.6	-34.8	-34.3	0.00	0.00	0.00
2,300.0	6.55	315.62	2,296.9	43.7	-42.8	-42.2	0.00	0.00	0.00
2,400.0	6.55	315.62	2,396.2	51.9	-50.8	-50.0	0.00	0.00	0.00
2,500.0	6.55	315.62	2,495.6	60.0	-58.7	-57.9	0.00	0.00	0.00
2,600.0	6.55	315.62	2,594.9	68.2	-66.7	-65.8	0.00	0.00	0.00
2,700.0	6.55	315.62	2,694.3	76.3	-74.7	-73.6	0.00	0.00	0.00
2,800.0	6.55	315.62	2,793.6	84.5	-82.6	-81.5	0.00	0.00	0.00
2,900.0	6.55	315.62	2,892.9	92.6	-90.6	-89.3	0.00	0.00	0.00
3,000.0	6.55	315.62	2,992.3	100.8	-98.6	-97.2	0.00	0.00	0.00
3,100.0	6.55	315.62	3,091.6	108.9	-106.6	-105.1	0.00	0.00	0.00
3,200.0	6.55	315.62	3,191.0	117.1	-114.5	-112.9	0.00	0.00	0.00
3,300.0	6.55	315.62	3,290.3	125.2	-122.5	-120.8	0.00	0.00	0.00
3,400.0	6.55	315.62	3,389.7	133.4	-130.5	-128.6	0.00	0.00	0.00
3,500.0	6.55	315.62	3,489.0	141.5	-138.5	-136.5	0.00	0.00	0.00
3,600.0	6.55	315.62	3,588.4	149.7	-146.4	-144.4	0.00	0.00	0.00
3,700.0	6.55	315.62	3,687.7	157.8	-154.4	-152.2	0.00	0.00	0.00
3,800.0	6.55	315.62	3,787.1	166.0	-162.4	-160.1	0.00	0.00	0.00
3,900.0	6.55	315.62	3,886.4	174.1	-170.4	-167.9	0.00	0.00	0.00
4,000.0	6.55	315.62	3,985.8	182.2	-178.3	-175.8	0.00	0.00	0.00
4,100.0	6.55	315.62	4,085.1	190.4	-186.3	-183.7	0.00	0.00	0.00
4,200.0	6.55	315.62	4,184.5	198.5	-194.3	-191.5	0.00	0.00	0.00
4,300.0	6.55	315.62	4,283.8	206.7	-202.3	-199.4	0.00	0.00	0.00
4,400.0	6.55	315.62	4,383.2	214.8	-210.2	-207.2	0.00	0.00	0.00
4,500.0	6.55	315.62	4,482.5	223.0	-218.2	-215.1	0.00	0.00	0.00
4,517.6	6.55	315.62	4,500.0	224.4	-219.6	-216.5	0.00	0.00	0.00
PARKMAN									
4,600.0	6.55	315.62	4,581.9	231.1	-226.2	-223.0	0.00	0.00	0.00
4,692.1	6.55	315.62	4,673.4	238.6	-233.5	-230.2	0.00	0.00	0.00

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Design:	Plan #2 (10-8-14)		

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)
4,700.0	6.39	315.62	4,681.2	239.3	-234.1	-230.8	2.00	-2.00	0.00
4,800.0	4.39	315.62	4,780.8	246.0	-240.7	-237.3	2.00	-2.00	0.00
4,900.0	2.39	315.62	4,880.6	250.2	-244.8	-241.4	2.00	-2.00	0.00
4,919.4	2.00	315.62	4,900.0	250.8	-245.4	-241.9	2.00	-2.00	0.00
SUSSEX									
5,000.0	0.39	315.62	4,980.5	252.0	-246.5	-243.0	2.00	-2.00	0.00
5,019.5	0.00	0.00	5,000.0	252.0	-246.6	-243.1	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,080.5	252.0	-246.6	-243.1	0.00	0.00	0.00
5,200.0	0.00	0.00	5,180.5	252.0	-246.6	-243.1	0.00	0.00	0.00
5,300.0	0.00	0.00	5,280.5	252.0	-246.6	-243.1	0.00	0.00	0.00
5,369.5	0.00	0.00	5,350.0	252.0	-246.6	-243.1	0.00	0.00	0.00
SHANNON									
5,400.0	0.00	0.00	5,380.5	252.0	-246.6	-243.1	0.00	0.00	0.00
5,500.0	0.00	0.00	5,480.5	252.0	-246.6	-243.1	0.00	0.00	0.00
5,600.0	0.00	0.00	5,580.5	252.0	-246.6	-243.1	0.00	0.00	0.00
5,700.0	0.00	0.00	5,680.5	252.0	-246.6	-243.1	0.00	0.00	0.00
5,800.0	0.00	0.00	5,780.5	252.0	-246.6	-243.1	0.00	0.00	0.00
5,900.0	0.00	0.00	5,880.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,000.0	0.00	0.00	5,980.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,100.0	0.00	0.00	6,080.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,200.0	0.00	0.00	6,180.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,300.0	0.00	0.00	6,280.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,400.0	0.00	0.00	6,380.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,500.0	0.00	0.00	6,480.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,600.0	0.00	0.00	6,580.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,700.0	0.00	0.00	6,680.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,800.0	0.00	0.00	6,780.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,900.0	0.00	0.00	6,880.5	252.0	-246.6	-243.1	0.00	0.00	0.00
6,968.0	0.00	0.00	6,948.5	252.0	-246.6	-243.1	0.00	0.00	0.00
KOP #2									
7,000.0	2.40	180.00	6,980.5	251.3	-246.6	-242.4	7.49	7.49	0.00
7,100.0	9.90	180.00	7,079.9	240.6	-246.6	-231.7	7.50	7.50	0.00
7,200.0	17.40	180.00	7,177.0	217.1	-246.6	-208.1	7.50	7.50	0.00
7,251.9	21.29	180.00	7,226.0	199.8	-246.6	-190.9	7.50	7.50	0.00
SHARON SPRINGS									
7,300.0	24.90	180.00	7,270.2	181.0	-246.6	-172.1	7.50	7.50	0.00
7,400.0	32.40	180.00	7,357.9	133.1	-246.6	-124.2	7.50	7.50	0.00
7,422.8	34.11	180.00	7,377.0	120.6	-246.6	-111.7	7.50	7.50	0.00
NIOBRARA A									
7,500.0	39.90	180.00	7,438.6	74.1	-246.6	-65.3	7.50	7.50	0.00
7,600.0	47.40	180.00	7,510.9	5.2	-246.6	3.6	7.50	7.50	0.00
7,657.2	51.69	180.00	7,548.0	-38.3	-246.6	47.1	7.50	7.50	0.00
NIOBRARA B									
7,700.0	54.90	180.00	7,573.6	-72.7	-246.6	81.4	7.50	7.50	0.00
7,800.0	62.40	180.00	7,625.6	-158.0	-246.6	166.7	7.50	7.50	0.00
7,900.0	69.90	180.00	7,666.0	-249.4	-246.6	258.0	7.50	7.50	0.00
7,951.4	73.75	180.00	7,682.0	-298.2	-246.6	306.8	7.50	7.50	0.00
NIOBRARA C									
8,000.0	77.40	180.00	7,694.1	-345.3	-246.6	353.8	7.50	7.50	0.00
8,100.0	84.90	180.00	7,709.5	-444.0	-246.6	452.5	7.50	7.50	0.00
8,167.5	89.96	180.00	7,712.5	-511.4	-246.6	519.9	7.50	7.50	0.00
End of Build - 7"									

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Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-343	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,200.0	89.96	180.00	7,712.5	-543.9	-246.6	552.3	0.00	0.00	0.00
8,300.0	89.96	180.00	7,712.6	-643.9	-246.6	652.3	0.00	0.00	0.00
8,400.0	89.96	180.00	7,712.7	-743.9	-246.6	752.2	0.00	0.00	0.00
8,500.0	89.96	180.00	7,712.8	-843.9	-246.6	852.2	0.00	0.00	0.00
8,600.0	89.96	180.00	7,712.8	-943.9	-246.6	952.1	0.00	0.00	0.00
8,700.0	89.96	180.00	7,712.9	-1,043.9	-246.6	1,052.0	0.00	0.00	0.00
8,800.0	89.96	180.00	7,713.0	-1,143.9	-246.6	1,152.0	0.00	0.00	0.00
8,900.0	89.96	180.00	7,713.0	-1,243.9	-246.6	1,251.9	0.00	0.00	0.00
9,000.0	89.96	180.00	7,713.1	-1,343.9	-246.6	1,351.8	0.00	0.00	0.00
9,100.0	89.96	180.00	7,713.2	-1,443.9	-246.6	1,451.8	0.00	0.00	0.00
9,200.0	89.96	180.00	7,713.2	-1,543.9	-246.6	1,551.7	0.00	0.00	0.00
9,300.0	89.96	180.00	7,713.3	-1,643.9	-246.6	1,651.6	0.00	0.00	0.00
9,400.0	89.96	180.00	7,713.4	-1,743.9	-246.6	1,751.6	0.00	0.00	0.00
9,500.0	89.96	180.00	7,713.5	-1,843.9	-246.6	1,851.5	0.00	0.00	0.00
9,600.0	89.96	180.00	7,713.5	-1,943.9	-246.6	1,951.5	0.00	0.00	0.00
9,700.0	89.96	180.00	7,713.6	-2,043.9	-246.6	2,051.4	0.00	0.00	0.00
9,800.0	89.96	180.00	7,713.7	-2,143.9	-246.6	2,151.3	0.00	0.00	0.00
9,900.0	89.96	180.00	7,713.7	-2,243.9	-246.6	2,251.3	0.00	0.00	0.00
10,000.0	89.96	180.00	7,713.8	-2,343.9	-246.6	2,351.2	0.00	0.00	0.00
10,100.0	89.96	180.00	7,713.9	-2,443.9	-246.6	2,451.1	0.00	0.00	0.00
10,200.0	89.96	180.00	7,713.9	-2,543.9	-246.6	2,551.1	0.00	0.00	0.00
10,300.0	89.96	180.00	7,714.0	-2,643.9	-246.6	2,651.0	0.00	0.00	0.00
10,400.0	89.96	180.00	7,714.1	-2,743.9	-246.6	2,751.0	0.00	0.00	0.00
10,500.0	89.96	180.00	7,714.1	-2,843.9	-246.6	2,850.9	0.00	0.00	0.00
10,600.0	89.96	180.00	7,714.2	-2,943.9	-246.6	2,950.8	0.00	0.00	0.00
10,700.0	89.96	180.00	7,714.3	-3,043.9	-246.6	3,050.8	0.00	0.00	0.00
10,800.0	89.96	180.00	7,714.4	-3,143.9	-246.6	3,150.7	0.00	0.00	0.00
10,900.0	89.96	180.00	7,714.4	-3,243.9	-246.6	3,250.6	0.00	0.00	0.00
11,000.0	89.96	180.00	7,714.5	-3,343.9	-246.6	3,350.6	0.00	0.00	0.00
11,100.0	89.96	180.00	7,714.6	-3,443.9	-246.6	3,450.5	0.00	0.00	0.00
11,200.0	89.96	180.00	7,714.6	-3,543.9	-246.6	3,550.4	0.00	0.00	0.00
11,300.0	89.96	180.00	7,714.7	-3,643.9	-246.6	3,650.4	0.00	0.00	0.00
11,400.0	89.96	180.00	7,714.8	-3,743.9	-246.6	3,750.3	0.00	0.00	0.00
11,500.0	89.96	180.00	7,714.8	-3,843.9	-246.6	3,850.3	0.00	0.00	0.00
11,600.0	89.96	180.00	7,714.9	-3,943.9	-246.6	3,950.2	0.00	0.00	0.00
11,700.0	89.96	180.00	7,715.0	-4,043.9	-246.6	4,050.1	0.00	0.00	0.00
11,800.0	89.96	180.00	7,715.1	-4,143.9	-246.6	4,150.1	0.00	0.00	0.00
11,900.0	89.96	180.00	7,715.1	-4,243.9	-246.6	4,250.0	0.00	0.00	0.00
12,000.0	89.96	180.00	7,715.2	-4,343.9	-246.6	4,349.9	0.00	0.00	0.00
12,100.0	89.96	180.00	7,715.3	-4,443.9	-246.6	4,449.9	0.00	0.00	0.00
12,200.0	89.96	180.00	7,715.3	-4,543.9	-246.6	4,549.8	0.00	0.00	0.00
12,300.0	89.96	180.00	7,715.4	-4,643.9	-246.6	4,649.7	0.00	0.00	0.00
12,400.0	89.96	180.00	7,715.5	-4,743.9	-246.6	4,749.7	0.00	0.00	0.00
12,500.0	89.96	180.00	7,715.5	-4,843.9	-246.6	4,849.6	0.00	0.00	0.00
12,600.0	89.96	180.00	7,715.6	-4,943.9	-246.6	4,949.6	0.00	0.00	0.00
12,700.0	89.96	180.00	7,715.7	-5,043.9	-246.6	5,049.5	0.00	0.00	0.00
12,800.0	89.96	180.00	7,715.8	-5,143.9	-246.6	5,149.4	0.00	0.00	0.00
12,900.0	89.96	180.00	7,715.8	-5,243.9	-246.6	5,249.4	0.00	0.00	0.00
13,000.0	89.96	180.00	7,715.9	-5,343.9	-246.6	5,349.3	0.00	0.00	0.00
13,100.0	89.96	180.00	7,716.0	-5,443.9	-246.6	5,449.2	0.00	0.00	0.00
13,200.0	89.96	180.00	7,716.0	-5,543.9	-246.6	5,549.2	0.00	0.00	0.00
13,300.0	89.96	180.00	7,716.1	-5,643.9	-246.6	5,649.1	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-343	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
13,400.0	89.96	180.00	7,716.2	-5,743.9	-246.6	5,749.1	0.00	0.00	0.00
13,500.0	89.96	180.00	7,716.2	-5,843.9	-246.6	5,849.0	0.00	0.00	0.00
13,600.0	89.96	180.00	7,716.3	-5,943.9	-246.6	5,948.9	0.00	0.00	0.00
13,700.0	89.96	180.00	7,716.4	-6,043.9	-246.6	6,048.9	0.00	0.00	0.00
13,800.0	89.96	180.00	7,716.5	-6,143.9	-246.6	6,148.8	0.00	0.00	0.00
13,900.0	89.96	180.00	7,716.5	-6,243.9	-246.6	6,248.7	0.00	0.00	0.00
14,000.0	89.96	180.00	7,716.6	-6,343.9	-246.6	6,348.7	0.00	0.00	0.00
14,100.0	89.96	180.00	7,716.7	-6,443.9	-246.6	6,448.6	0.00	0.00	0.00
14,200.0	89.96	180.00	7,716.7	-6,543.9	-246.6	6,548.5	0.00	0.00	0.00
14,300.0	89.96	180.00	7,716.8	-6,643.9	-246.6	6,648.5	0.00	0.00	0.00
14,400.0	89.96	180.00	7,716.9	-6,743.9	-246.6	6,748.4	0.00	0.00	0.00
14,500.0	89.96	180.00	7,716.9	-6,843.9	-246.6	6,848.4	0.00	0.00	0.00
14,584.8	89.96	180.00	7,717.0	-6,928.7	-246.6	6,933.1	0.00	0.00	0.00

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
BHL 500'FSL & 2544'I - plan hits target center - Point	0.00	0.00	7,717.0	-6,928.7	-246.6	1,238,922.73	3,164,649.47	39.987730	-104.912390
SHL 2338'FSL & 187(- plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,245,852.69	3,164,850.06	40.006750	-104.911510

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
8,167.5	7,712.5	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,517.6	4,500.0	PARKMAN		0.00	
4,919.4	4,900.0	SUSSEX		0.00	
5,369.5	5,350.0	SHANNON		0.00	
7,251.9	7,226.0	SHARON SPRINGS		0.00	
7,422.8	7,377.0	NIOBRARA A		0.00	
7,657.2	7,548.0	NIOBRARA B		0.00	
7,951.4	7,682.0	NIOBRARA C		0.00	
	7,818.0	FT HAYS		0.00	
	7,839.0	CODELL		0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Project:	SEC.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**North Reference:**	True
Well:	Jacobucci 32S-343	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (10-8-14)		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,600.0	1,600.0	0.0	0.0	KOP
6,968.0	6,948.5	252.0	-246.6	KOP #2
8,167.5	7,712.5	-511.4	-246.6	End of Build

ENSIGN Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.32-T1N-R67W
Jacobucci 1N67W32S Pad Sec.32-T1N-R67W
Jacobucci 32S-343

Wellbore #1
Plan #2 (10-8-14)

Anticollision Report

16 October, 2014

PDC ENERGY
Growing E&P Value

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Reference Plan #2 (10-8-14)

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	ISCWSA
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0ft	**Error Surface:**	Elliptical Conic

Warning Levels Evaluated at: 2.00 **Sigma**

Survey Tool Program **Date** 10/16/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,584.8	Plan #2 (10-8-14) (Wellbore #1)	MWD	MWD - Standard

Summary

Site Name / Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existings Sec.32-T1N-R67W						
Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1	1,600.0	1,595.0	411.4	376.1	11.628	CC
Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1	1,700.0	1,695.0	412.3	374.7	10.965	ES
Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1	5,200.0	5,104.0	661.5	547.4	5.795	SF
Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1	8,011.6	7,694.1	91.9	60.0	2.883	CC, ES, SF
Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1	0.0	0.0	358.6			
Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1	100.0	95.6	358.8	358.5	1,543.816	ES
Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1	9,200.0	7,781.6	1,941.4	1,889.3	37.281	SF
Jean Jacobucci 5 (P&A) - Wellbore #1 - Wellbore #1	1,600.0	1,599.0	1,650.8	1,615.3	46.548	CC
Jean Jacobucci 5 (P&A) - Wellbore #1 - Wellbore #1	1,700.0	1,699.0	1,651.9	1,614.3	43.847	ES
Jean Jacobucci 5 (P&A) - Wellbore #1 - Wellbore #1	5,200.0	5,100.0	1,906.1	1,791.8	16.685	SF
Jacobucci 1N67W32O Pad Sec.32-T1N-R67W						
Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)	7,001.8	7,022.0	288.3	256.5	9.056	CC
Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)	14,584.8	14,716.9	326.8	83.1	1.341	Level 3, ES, SF
Jacobucci 1N67W32S Pad Sec.32-T1N-R67W						
Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)	1,600.0	1,600.0	28.0	21.0	4.020	CC, ES
Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)	14,584.8	14,469.1	357.0	97.9	1.378	Level 3, SF
Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)	1,200.0	1,200.0	86.8	81.7	16.799	CC, ES
Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)	14,584.8	14,603.6	1,008.9	740.1	3.753	SF
Jacobucci 32S-423 - Wellbore #1 - Plan #2 (10-8-14)	1,400.0	1,400.0	56.0	50.0	9.232	CC, ES
Jacobucci 32S-423 - Wellbore #1 - Plan #2 (10-8-14)	14,584.8	14,712.8	828.0	562.9	3.123	SF

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5104-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-162.98	-393.4	-120.5	411.5				
100.0	100.0	95.0	95.0	0.1	1.9	-162.98	-393.4	-120.5	411.4	409.4	2.01	204.435	
200.0	200.0	195.0	195.0	0.3	3.9	-162.98	-393.4	-120.5	411.4	407.2	4.24	97.099	
300.0	300.0	295.0	295.0	0.6	5.9	-162.98	-393.4	-120.5	411.4	405.0	6.46	63.670	
400.0	400.0	395.0	395.0	0.8	7.9	-162.98	-393.4	-120.5	411.4	402.8	8.69	47.364	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5104-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
500.0	500.0	495.0	495.0	1.0	9.9	-162.98	-393.4	-120.5	411.4	400.5	10.91	37.707	
600.0	600.0	595.0	595.0	1.2	11.9	-162.98	-393.4	-120.5	411.4	398.3	13.14	31.321	
700.0	700.0	695.0	695.0	1.5	13.9	-162.98	-393.4	-120.5	411.4	396.1	15.36	26.785	
800.0	800.0	795.0	795.0	1.7	15.9	-162.98	-393.4	-120.5	411.4	393.9	17.59	23.396	
900.0	900.0	895.0	895.0	1.9	17.9	-162.98	-393.4	-120.5	411.4	391.6	19.81	20.769	
1,000.0	1,000.0	995.0	995.0	2.1	19.9	-162.98	-393.4	-120.5	411.4	389.4	22.04	18.672	
1,100.0	1,100.0	1,095.0	1,095.0	2.4	21.9	-162.98	-393.4	-120.5	411.4	387.2	24.26	16.960	
1,200.0	1,200.0	1,195.0	1,195.0	2.6	23.9	-162.98	-393.4	-120.5	411.4	385.0	26.48	15.535	
1,300.0	1,300.0	1,295.0	1,295.0	2.8	25.9	-162.98	-393.4	-120.5	411.4	382.7	28.71	14.331	
1,400.0	1,400.0	1,395.0	1,395.0	3.0	27.9	-162.98	-393.4	-120.5	411.4	380.5	30.93	13.300	
1,500.0	1,500.0	1,495.0	1,495.0	3.3	29.9	-162.98	-393.4	-120.5	411.4	378.3	33.16	12.408	
1,600.0	1,600.0	1,595.0	1,595.0	3.5	31.9	-162.98	-393.4	-120.5	411.4	376.1	35.38	11.628	CC
1,700.0	1,700.0	1,695.0	1,695.0	3.7	33.9	-118.80	-393.4	-120.5	412.3	374.7	37.60	10.965	ES
1,800.0	1,799.8	1,794.8	1,794.8	3.9	35.9	-119.38	-393.4	-120.5	414.8	375.0	39.80	10.423	
1,900.0	1,899.5	1,894.5	1,894.5	4.2	37.9	-120.34	-393.4	-120.5	419.2	377.2	41.98	9.984	
2,000.0	1,998.8	1,993.8	1,993.8	4.4	39.9	-121.62	-393.4	-120.5	425.0	380.8	44.19	9.619	
2,100.0	2,098.2	2,093.2	2,093.2	4.6	41.9	-122.91	-393.4	-120.5	431.1	384.7	46.41	9.290	
2,200.0	2,197.5	2,192.5	2,192.5	4.9	43.9	-124.16	-393.4	-120.5	437.5	388.8	48.63	8.996	
2,300.0	2,296.9	2,291.9	2,291.9	5.1	45.8	-125.37	-393.4	-120.5	444.0	393.1	50.85	8.731	
2,400.0	2,396.2	2,391.2	2,391.2	5.4	47.8	-126.55	-393.4	-120.5	450.7	397.6	53.08	8.491	
2,500.0	2,495.6	2,490.6	2,490.6	5.7	49.8	-127.69	-393.4	-120.5	457.6	402.3	55.31	8.273	
2,600.0	2,594.9	2,589.9	2,589.9	5.9	51.8	-128.80	-393.4	-120.5	464.7	407.2	57.54	8.076	
2,700.0	2,694.3	2,689.3	2,689.3	6.2	53.8	-129.87	-393.4	-120.5	472.0	412.2	59.77	7.896	
2,800.0	2,793.6	2,788.6	2,788.6	6.5	55.8	-130.91	-393.4	-120.5	479.4	417.4	62.00	7.731	
2,900.0	2,892.9	2,887.9	2,887.9	6.8	57.8	-131.92	-393.4	-120.5	486.9	422.7	64.24	7.581	
3,000.0	2,992.3	2,987.3	2,987.3	7.1	59.7	-132.90	-393.4	-120.5	494.7	428.2	66.47	7.442	
3,100.0	3,091.6	3,086.6	3,086.6	7.4	61.7	-133.85	-393.4	-120.5	502.5	433.8	68.70	7.315	
3,200.0	3,191.0	3,186.0	3,186.0	7.6	63.7	-134.77	-393.4	-120.5	510.5	439.6	70.93	7.198	
3,300.0	3,290.3	3,285.3	3,285.3	7.9	65.7	-135.66	-393.4	-120.5	518.6	445.5	73.16	7.089	
3,400.0	3,389.7	3,384.7	3,384.7	8.2	67.7	-136.53	-393.4	-120.5	526.9	451.5	75.38	6.989	
3,500.0	3,489.0	3,484.0	3,484.0	8.5	69.7	-137.36	-393.4	-120.5	535.2	457.6	77.61	6.896	
3,600.0	3,588.4	3,583.4	3,583.4	8.8	71.7	-138.17	-393.4	-120.5	543.7	463.8	79.84	6.810	
3,700.0	3,687.7	3,682.7	3,682.7	9.1	73.7	-138.96	-393.4	-120.5	552.3	470.2	82.07	6.730	
3,800.0	3,787.1	3,782.1	3,782.1	9.4	75.6	-139.72	-393.4	-120.5	560.9	476.6	84.29	6.655	
3,900.0	3,886.4	3,881.4	3,881.4	9.7	77.6	-140.46	-393.4	-120.5	569.7	483.2	86.52	6.585	
4,000.0	3,985.8	3,980.8	3,980.8	10.0	79.6	-141.18	-393.4	-120.5	578.6	489.8	88.74	6.520	
4,100.0	4,085.1	4,080.1	4,080.1	10.3	81.6	-141.88	-393.4	-120.5	587.5	496.6	90.96	6.459	
4,200.0	4,184.5	4,179.5	4,179.5	10.6	83.6	-142.55	-393.4	-120.5	596.5	503.4	93.18	6.402	
4,300.0	4,283.8	4,278.8	4,278.8	10.9	85.6	-143.20	-393.4	-120.5	605.7	510.3	95.41	6.348	
4,400.0	4,383.2	4,378.2	4,378.2	11.2	87.6	-143.84	-393.4	-120.5	614.8	517.2	97.63	6.298	
4,500.0	4,482.5	4,477.5	4,477.5	11.5	89.6	-144.46	-393.4	-120.5	624.1	524.3	99.85	6.251	
4,600.0	4,581.9	4,576.9	4,576.9	11.8	91.5	-145.05	-393.4	-120.5	633.4	531.4	102.07	6.206	
4,700.0	4,681.2	4,676.2	4,676.2	12.1	93.5	-145.64	-393.4	-120.5	642.8	538.5	104.30	6.163	
4,800.0	4,780.8	4,775.8	4,775.8	12.3	95.5	-146.20	-393.4	-120.5	650.6	543.9	106.67	6.099	
4,900.0	4,880.6	4,875.6	4,875.6	12.5	97.5	-146.54	-393.4	-120.5	655.5	546.6	108.97	6.016	
5,000.0	4,980.5	4,975.5	4,975.5	12.7	99.5	-146.68	-393.4	-120.5	657.6	546.4	111.18	5.914	
5,100.0	5,080.5	5,075.5	5,075.5	12.8	101.5	168.94	-393.4	-120.5	657.6	544.3	113.36	5.801	
5,200.0	5,180.5	5,104.0	5,104.0	13.0	102.1	168.94	-393.4	-120.5	661.5	547.4	114.14	5.795	SF
5,300.0	5,280.5	5,104.0	5,104.0	13.2	102.1	168.94	-393.4	-120.5	679.6	565.3	114.35	5.943	
5,400.0	5,380.5	5,104.0	5,104.0	13.4	102.1	168.94	-393.4	-120.5	711.5	596.9	114.56	6.211	
5,500.0	5,480.5	5,104.0	5,104.0	13.6	102.1	168.94	-393.4	-120.5	755.3	640.6	114.77	6.581	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5104-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,600.0	5,580.5	5,104.0	5,104.0	13.8	102.1	168.94	-393.4	-120.5	809.2	694.2	114.98	7.038	
5,700.0	5,680.5	5,104.0	5,104.0	14.0	102.1	168.94	-393.4	-120.5	871.3	756.1	115.19	7.564	
5,800.0	5,780.5	5,104.0	5,104.0	14.2	102.1	168.94	-393.4	-120.5	939.9	824.5	115.40	8.145	
5,900.0	5,880.5	5,104.0	5,104.0	14.4	102.1	168.94	-393.4	-120.5	1,013.8	898.2	115.61	8.769	
6,000.0	5,980.5	5,104.0	5,104.0	14.6	102.1	168.94	-393.4	-120.5	1,091.8	976.0	115.82	9.427	
6,100.0	6,080.5	5,104.0	5,104.0	14.8	102.1	168.94	-393.4	-120.5	1,173.2	1,057.2	116.03	10.111	
6,200.0	6,180.5	5,104.0	5,104.0	15.0	102.1	168.94	-393.4	-120.5	1,257.3	1,141.0	116.25	10.815	
6,300.0	6,280.5	5,104.0	5,104.0	15.2	102.1	168.94	-393.4	-120.5	1,343.5	1,227.0	116.46	11.536	
6,400.0	6,380.5	5,104.0	5,104.0	15.4	102.1	168.94	-393.4	-120.5	1,431.5	1,314.9	116.67	12.270	
6,500.0	6,480.5	5,104.0	5,104.0	15.6	102.1	168.94	-393.4	-120.5	1,521.1	1,404.2	116.89	13.013	
6,600.0	6,580.5	5,104.0	5,104.0	15.8	102.1	168.94	-393.4	-120.5	1,611.8	1,494.7	117.10	13.764	
6,700.0	6,680.5	5,104.0	5,104.0	16.0	102.1	168.94	-393.4	-120.5	1,703.6	1,586.3	117.32	14.522	
6,800.0	6,780.5	5,104.0	5,104.0	16.2	102.1	168.94	-393.4	-120.5	1,796.3	1,678.7	117.53	15.283	
6,900.0	6,880.5	5,104.0	5,104.0	16.4	102.1	168.94	-393.4	-120.5	1,889.7	1,771.9	117.74	16.049	
7,000.0	6,980.5	5,104.0	5,104.0	16.6	102.1	-9.90	-393.4	-120.5	1,983.5	1,865.6	117.86	16.830	
7,100.0	7,079.9	5,104.0	5,104.0	16.7	102.1	-7.46	-393.4	-120.5	2,074.2	1,957.8	116.42	17.817	
7,200.0	7,177.0	5,104.0	5,104.0	16.8	102.1	-6.00	-393.4	-120.5	2,159.9	2,046.9	113.03	19.109	
7,300.0	7,270.2	5,104.0	5,104.0	16.8	102.1	-5.04	-393.4	-120.5	2,239.8	2,132.0	107.76	20.785	
7,400.0	7,357.9	5,104.0	5,104.0	16.9	102.1	-4.37	-393.4	-120.5	2,313.1	2,212.4	100.72	22.965	
7,500.0	7,438.6	5,104.0	5,104.0	16.9	102.1	-3.89	-393.4	-120.5	2,379.4	2,287.3	92.07	25.844	
7,600.0	7,510.9	5,104.0	5,104.0	16.9	102.1	-3.54	-393.4	-120.5	2,438.0	2,356.0	81.98	29.738	
7,700.0	7,573.6	5,104.0	5,104.0	17.0	102.1	-3.28	-393.4	-120.5	2,488.6	2,417.9	70.70	35.201	
7,800.0	7,625.6	5,104.0	5,104.0	17.2	102.1	-3.09	-393.4	-120.5	2,530.7	2,472.2	58.48	43.272	
7,900.0	7,666.0	5,104.0	5,104.0	17.7	102.1	-2.95	-393.4	-120.5	2,564.1	2,518.5	45.66	56.159	
8,000.0	7,694.1	5,104.0	5,104.0	18.4	102.1	-2.85	-393.4	-120.5	2,588.6	2,556.0	32.61	79.392	
8,100.0	7,709.5	5,104.0	5,104.0	19.3	102.1	-2.79	-393.4	-120.5	2,604.0	2,584.0	20.04	129.939	
8,200.0	7,712.5	5,104.0	5,104.0	20.3	102.1	-2.77	-393.4	-120.5	2,610.9	2,596.0	14.91	175.164	
8,300.0	7,712.6	5,104.0	5,104.0	21.4	102.1	-2.77	-393.4	-120.5	2,618.7	2,603.4	15.29	171.313	
8,400.0	7,712.7	5,104.0	5,104.0	22.7	102.1	-2.77	-393.4	-120.5	2,630.2	2,614.5	15.70	167.492	
8,500.0	7,712.8	5,104.0	5,104.0	24.0	102.1	-2.77	-393.4	-120.5	2,645.4	2,629.3	16.15	163.763	
8,600.0	7,712.8	5,104.0	5,104.0	25.4	102.1	-2.77	-393.4	-120.5	2,664.4	2,647.7	16.63	160.175	
8,700.0	7,712.9	5,104.0	5,104.0	26.8	102.1	-2.77	-393.4	-120.5	2,686.9	2,669.7	17.14	156.761	
8,800.0	7,713.0	5,104.0	5,104.0	28.3	102.1	-2.77	-393.4	-120.5	2,712.9	2,695.2	17.67	153.543	
8,900.0	7,713.0	5,104.0	5,104.0	29.9	102.1	-2.77	-393.4	-120.5	2,742.3	2,724.1	18.22	150.533	
9,000.0	7,713.1	5,104.0	5,104.0	31.5	102.1	-2.77	-393.4	-120.5	2,775.0	2,756.2	18.78	147.736	
9,100.0	7,713.2	5,104.0	5,104.0	33.1	102.1	-2.77	-393.4	-120.5	2,810.9	2,791.5	19.37	145.150	
9,200.0	7,713.2	5,104.0	5,104.0	34.8	102.1	-2.77	-393.4	-120.5	2,849.8	2,829.9	19.96	142.769	
9,300.0	7,713.3	5,104.0	5,104.0	36.4	102.1	-2.77	-393.4	-120.5	2,891.7	2,871.2	20.57	140.586	
9,400.0	7,713.4	5,104.0	5,104.0	38.1	102.1	-2.77	-393.4	-120.5	2,936.4	2,915.2	21.19	138.590	
9,500.0	7,713.5	5,104.0	5,104.0	39.9	102.1	-2.77	-393.4	-120.5	2,983.8	2,962.0	21.82	136.769	
9,600.0	7,713.5	5,104.0	5,104.0	41.6	102.1	-2.77	-393.4	-120.5	3,033.7	3,011.3	22.45	135.113	
9,700.0	7,713.6	5,104.0	5,104.0	43.4	102.1	-2.77	-393.4	-120.5	3,086.1	3,063.0	23.10	133.609	
9,800.0	7,713.7	5,104.0	5,104.0	45.1	102.1	-2.77	-393.4	-120.5	3,140.8	3,117.0	23.75	132.246	
9,900.0	7,713.7	5,104.0	5,104.0	46.9	102.1	-2.77	-393.4	-120.5	3,197.6	3,173.2	24.41	131.012	
10,000.0	7,713.8	5,104.0	5,104.0	48.7	102.1	-2.77	-393.4	-120.5	3,256.6	3,231.5	25.07	129.896	
10,100.0	7,713.9	5,104.0	5,104.0	50.5	102.1	-2.77	-393.4	-120.5	3,317.5	3,291.8	25.74	128.890	
10,200.0	7,713.9	5,104.0	5,104.0	52.3	102.1	-2.77	-393.4	-120.5	3,380.3	3,353.9	26.41	127.982	
10,300.0	7,714.0	5,104.0	5,104.0	54.1	102.1	-2.77	-393.4	-120.5	3,444.8	3,417.7	27.09	127.165	
10,400.0	7,714.1	5,104.0	5,104.0	55.9	102.1	-2.77	-393.4	-120.5	3,511.0	3,483.2	27.77	126.430	
10,500.0	7,714.1	5,104.0	5,104.0	57.8	102.1	-2.77	-393.4	-120.5	3,578.8	3,550.3	28.45	125.770	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 3 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5104-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,600.0	7,714.2	5,104.0	5,104.0	59.6	102.1	-2.77	-393.4	-120.5	3,648.0	3,618.9	29.14	125.179	
10,700.0	7,714.3	5,104.0	5,104.0	61.4	102.1	-2.77	-393.4	-120.5	3,718.7	3,688.8	29.83	124.649	
10,800.0	7,714.4	5,104.0	5,104.0	63.3	102.1	-2.77	-393.4	-120.5	3,790.7	3,760.1	30.53	124.176	
10,900.0	7,714.4	5,104.0	5,104.0	65.1	102.1	-2.77	-393.4	-120.5	3,863.9	3,832.7	31.22	123.754	
11,000.0	7,714.5	5,104.0	5,104.0	67.0	102.1	-2.77	-393.4	-120.5	3,938.3	3,906.4	31.92	123.379	
11,100.0	7,714.6	5,104.0	5,104.0	68.8	102.1	-2.77	-393.4	-120.5	4,013.8	3,981.2	32.62	123.046	
11,200.0	7,714.6	5,104.0	5,104.0	70.7	102.1	-2.77	-393.4	-120.5	4,090.3	4,057.0	33.32	122.751	
11,300.0	7,714.7	5,104.0	5,104.0	72.5	102.1	-2.77	-393.4	-120.5	4,167.9	4,133.9	34.03	122.491	
11,400.0	7,714.8	5,104.0	5,104.0	74.4	102.1	-2.77	-393.4	-120.5	4,246.4	4,211.7	34.73	122.262	
11,500.0	7,714.8	5,104.0	5,104.0	76.3	102.1	-2.77	-393.4	-120.5	4,325.8	4,290.3	35.44	122.063	
11,600.0	7,714.9	5,104.0	5,104.0	78.1	102.1	-2.77	-393.4	-120.5	4,406.0	4,369.8	36.15	121.889	
11,700.0	7,715.0	5,104.0	5,104.0	80.0	102.1	-2.77	-393.4	-120.5	4,487.0	4,450.2	36.86	121.740	
11,800.0	7,715.1	5,104.0	5,104.0	81.9	102.1	-2.77	-393.4	-120.5	4,568.8	4,531.2	37.57	121.612	
11,900.0	7,715.1	5,104.0	5,104.0	83.8	102.1	-2.77	-393.4	-120.5	4,651.3	4,613.0	38.28	121.503	
12,000.0	7,715.2	5,104.0	5,104.0	85.6	102.1	-2.77	-393.4	-120.5	4,734.4	4,695.4	38.99	121.412	
12,100.0	7,715.3	5,104.0	5,104.0	87.5	102.1	-2.77	-393.4	-120.5	4,818.2	4,778.5	39.71	121.338	
12,200.0	7,715.3	5,104.0	5,104.0	89.4	102.1	-2.77	-393.4	-120.5	4,902.6	4,862.2	40.42	121.278	
12,300.0	7,715.4	5,104.0	5,104.0	91.3	102.1	-2.77	-393.4	-120.5	4,987.6	4,946.4	41.14	121.231	
12,400.0	7,715.5	5,104.0	5,104.0	93.1	102.1	-2.77	-393.4	-120.5	5,073.1	5,031.3	41.86	121.197	
12,500.0	7,715.5	5,104.0	5,104.0	95.0	102.1	-2.77	-393.4	-120.5	5,159.2	5,116.6	42.58	121.174	
12,600.0	7,715.6	5,104.0	5,104.0	96.9	102.1	-2.77	-393.4	-120.5	5,245.7	5,202.4	43.30	121.161	
12,700.0	7,715.7	5,104.0	5,104.0	98.8	102.1	-2.77	-393.4	-120.5	5,332.7	5,288.7	44.02	121.157	
12,800.0	7,715.8	5,104.0	5,104.0	100.7	102.1	-2.77	-393.4	-120.5	5,420.2	5,375.4	44.74	121.161	
12,900.0	7,715.8	5,104.0	5,104.0	102.6	102.1	-2.77	-393.4	-120.5	5,508.1	5,462.6	45.46	121.172	
13,000.0	7,715.9	5,104.0	5,104.0	104.5	102.1	-2.77	-393.4	-120.5	5,596.4	5,550.2	46.18	121.191	
13,100.0	7,716.0	5,104.0	5,104.0	106.4	102.1	-2.77	-393.4	-120.5	5,685.0	5,638.1	46.90	121.216	
13,200.0	7,716.0	5,104.0	5,104.0	108.2	102.1	-2.77	-393.4	-120.5	5,774.1	5,726.5	47.62	121.246	
13,300.0	7,716.1	5,104.0	5,104.0	110.1	102.1	-2.77	-393.4	-120.5	5,863.5	5,815.2	48.35	121.281	
13,400.0	7,716.2	5,104.0	5,104.0	112.0	102.1	-2.77	-393.4	-120.5	5,953.2	5,904.2	49.07	121.321	
13,500.0	7,716.2	5,104.0	5,104.0	113.9	102.1	-2.77	-393.4	-120.5	6,043.3	5,993.5	49.79	121.365	
13,600.0	7,716.3	5,104.0	5,104.0	115.8	102.1	-2.77	-393.4	-120.5	6,133.7	6,083.2	50.52	121.413	
13,700.0	7,716.4	5,104.0	5,104.0	117.7	102.1	-2.77	-393.4	-120.5	6,224.3	6,173.1	51.24	121.464	
13,800.0	7,716.5	5,104.0	5,104.0	119.6	102.1	-2.77	-393.4	-120.5	6,315.3	6,263.3	51.97	121.518	
13,900.0	7,716.5	5,104.0	5,104.0	121.5	102.1	-2.77	-393.4	-120.5	6,406.5	6,353.8	52.70	121.575	
14,000.0	7,716.6	5,104.0	5,104.0	123.4	102.1	-2.77	-393.4	-120.5	6,498.0	6,444.6	53.42	121.634	
14,100.0	7,716.7	5,104.0	5,104.0	125.3	102.1	-2.77	-393.4	-120.5	6,589.7	6,535.6	54.15	121.696	
14,200.0	7,716.7	5,104.0	5,104.0	127.2	102.1	-2.77	-393.4	-120.5	6,681.7	6,626.8	54.88	121.759	
14,300.0	7,716.8	5,104.0	5,104.0	129.1	102.1	-2.77	-393.4	-120.5	6,773.9	6,718.3	55.60	121.824	
14,400.0	7,716.9	5,104.0	5,104.0	131.0	102.1	-2.77	-393.4	-120.5	6,866.3	6,809.9	56.33	121.891	
14,500.0	7,716.9	5,104.0	5,104.0	132.9	102.1	-2.77	-393.4	-120.5	6,958.9	6,901.8	57.06	121.959	
14,584.8	7,717.0	5,104.0	5,104.0	134.5	102.1	-2.77	-393.4	-120.5	7,037.6	6,979.9	57.68	122.017	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-159.38	-342.4	-128.9	365.9				
100.0	100.0	96.4	96.4	0.1	0.1	-159.35	-342.4	-129.1	365.9	365.7	0.24	1,522.395	
200.0	200.0	197.5	197.5	0.3	0.4	-159.30	-342.3	-129.3	366.0	365.3	0.69	529.828	
300.0	300.0	297.1	297.1	0.6	0.6	-159.26	-342.2	-129.6	365.9	364.7	1.16	316.019	
400.0	400.0	398.3	398.3	0.8	0.8	-159.22	-341.9	-129.8	365.7	364.1	1.61	226.617	
500.0	500.0	498.6	498.6	1.0	1.1	-159.18	-341.4	-129.8	365.3	363.2	2.07	176.265	
600.0	600.0	600.0	600.0	1.2	1.3	-159.13	-340.7	-129.9	364.7	362.1	2.55	143.166	
700.0	700.0	698.9	698.9	1.5	1.5	-159.11	-340.1	-129.8	364.0	361.0	3.00	121.227	
800.0	800.0	798.8	798.8	1.7	1.8	-159.08	-339.5	-129.8	363.5	360.0	3.47	104.638	
900.0	900.0	899.5	899.5	1.9	2.0	-159.05	-338.9	-129.7	362.9	359.0	3.95	91.925	
1,000.0	1,000.0	997.6	997.6	2.1	2.3	-159.05	-338.5	-129.6	362.5	358.1	4.41	82.103	
1,100.0	1,100.0	1,098.6	1,098.5	2.4	2.5	-159.01	-338.2	-129.7	362.2	357.3	4.90	73.883	
1,200.0	1,200.0	1,197.6	1,197.6	2.6	2.8	-158.93	-337.7	-130.1	361.9	356.5	5.37	67.353	
1,282.4	1,282.4	1,279.4	1,279.4	2.8	3.0	-158.84	-337.4	-130.6	361.8	356.1	5.74	63.012	
1,300.0	1,300.0	1,296.9	1,296.9	2.8	3.0	-158.81	-337.4	-130.8	361.8	356.0	5.82	62.161	
1,400.0	1,400.0	1,397.7	1,397.7	3.0	3.2	-158.62	-336.9	-131.9	361.8	355.5	6.27	57.670	
1,441.5	1,441.5	1,438.5	1,438.5	3.1	3.3	-158.54	-336.6	-132.4	361.7	355.3	6.46	56.018	
1,500.0	1,500.0	1,496.0	1,496.0	3.3	3.5	-158.41	-336.4	-133.1	361.8	355.1	6.72	53.865	
1,600.0	1,600.0	1,597.2	1,597.2	3.5	3.7	-158.17	-336.0	-134.6	361.9	354.8	7.17	50.488	
1,604.0	1,604.0	1,601.2	1,601.2	3.5	3.7	-113.78	-335.9	-134.7	361.9	354.7	7.19	50.363	
1,700.0	1,700.0	1,695.9	1,695.8	3.7	3.9	-113.77	-335.5	-136.2	362.8	355.1	7.62	47.632	
1,800.0	1,799.8	1,796.7	1,796.7	3.9	4.1	-114.21	-335.0	-137.9	365.1	357.0	8.07	45.253	
1,900.0	1,899.5	1,895.4	1,895.3	4.2	4.4	-115.07	-334.5	-139.6	368.9	360.4	8.52	43.282	
2,000.0	1,998.8	1,995.3	1,995.2	4.4	4.6	-116.30	-334.1	-141.6	374.1	365.1	8.99	41.595	
2,100.0	2,098.2	2,095.6	2,095.4	4.6	4.9	-117.52	-333.4	-143.8	379.3	369.8	9.48	40.009	
2,200.0	2,197.5	2,194.3	2,194.1	4.9	5.1	-118.69	-332.8	-145.8	384.7	374.7	9.97	38.583	
2,300.0	2,296.9	2,294.3	2,294.1	5.1	5.3	-119.81	-332.1	-148.1	390.3	379.9	10.47	37.286	
2,400.0	2,396.2	2,396.0	2,395.8	5.4	5.6	-120.88	-331.1	-150.6	395.8	384.8	10.98	36.038	
2,500.0	2,495.6	2,496.0	2,495.7	5.7	5.9	-121.95	-329.8	-152.6	401.0	389.5	11.50	34.869	
2,600.0	2,594.9	2,595.2	2,594.9	5.9	6.1	-123.02	-328.6	-154.4	406.4	394.4	12.02	33.810	
2,700.0	2,694.3	2,695.9	2,695.6	6.2	6.4	-124.04	-327.3	-156.5	411.8	399.3	12.54	32.830	
2,800.0	2,793.6	2,793.6	2,793.3	6.5	6.7	-125.04	-326.1	-158.3	417.5	404.4	13.06	31.959	
2,900.0	2,892.9	2,889.8	2,889.5	6.8	6.9	-126.05	-325.6	-159.8	423.8	410.3	13.56	31.252	
3,000.0	2,992.3	2,987.5	2,987.2	7.1	7.1	-127.08	-325.7	-161.1	431.0	417.0	14.04	30.697	
3,100.0	3,091.6	3,087.0	3,086.6	7.4	7.3	-128.13	-326.0	-162.2	438.5	424.0	14.50	30.237	
3,200.0	3,191.0	3,184.6	3,184.3	7.6	7.5	-129.17	-326.5	-162.9	446.3	431.3	14.93	29.895	
3,300.0	3,290.3	3,284.0	3,283.7	7.9	7.6	-130.21	-327.3	-163.6	454.4	439.1	15.33	29.635	
3,400.0	3,389.7	3,379.7	3,379.3	8.2	7.7	-131.22	-328.4	-163.9	463.0	447.3	15.69	29.504	
3,500.0	3,489.0	3,475.1	3,474.7	8.5	7.8	-132.27	-330.3	-163.6	472.6	456.6	16.01	29.524	
3,600.0	3,588.4	3,574.3	3,573.9	8.8	7.8	-133.32	-332.8	-163.3	482.9	466.6	16.33	29.577	
3,700.0	3,687.7	3,675.3	3,674.8	9.1	7.9	-134.33	-335.0	-163.1	493.0	476.4	16.65	29.603	
3,800.0	3,787.1	3,777.0	3,776.6	9.4	8.0	-135.31	-336.8	-162.9	502.8	485.9	16.99	29.601	
3,900.0	3,886.4	3,876.7	3,876.2	9.7	8.1	-136.25	-338.2	-162.5	512.4	495.1	17.31	29.597	
4,000.0	3,985.8	3,976.8	3,976.3	10.0	8.1	-137.19	-339.6	-161.8	522.1	504.5	17.63	29.610	
4,100.0	4,085.1	4,075.1	4,074.6	10.3	8.2	-138.08	-340.8	-161.2	531.8	513.9	17.95	29.624	
4,200.0	4,184.5	4,175.0	4,174.5	10.6	8.3	-138.97	-342.1	-160.4	541.8	523.5	18.28	29.642	
4,300.0	4,283.8	4,273.4	4,272.9	10.9	8.4	-139.80	-343.4	-159.7	551.8	533.2	18.61	29.653	
4,400.0	4,383.2	4,368.2	4,367.6	11.2	8.5	-140.59	-345.0	-158.8	562.3	543.4	18.94	29.683	
4,500.0	4,482.5	4,464.4	4,463.8	11.5	8.6	-141.36	-347.4	-158.0	573.8	554.5	19.30	29.734	
4,600.0	4,581.9	4,560.5	4,559.9	11.8	8.7	-142.08	-350.2	-157.2	585.7	566.0	19.66	29.789	
4,700.0	4,681.2	4,663.1	4,662.4	12.1	8.8	-142.86	-353.3	-156.0	597.9	577.9	20.02	29.861	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,800.0	4,780.8	4,771.2	4,770.5	12.3	8.9	-143.78	-355.0	-153.4	607.4	587.1	20.32	29.897	
4,900.0	4,880.6	4,875.5	4,874.7	12.5	9.0	-144.40	-355.4	-151.0	612.9	592.3	20.58	29.779	
5,000.0	4,980.5	4,975.2	4,974.5	12.7	9.1	-144.72	-355.6	-149.2	615.3	594.5	20.83	29.537	
5,100.0	5,080.5	5,076.1	5,075.4	12.8	9.2	170.74	-355.8	-147.5	615.8	594.7	21.11	29.174	
5,200.0	5,180.5	5,177.0	5,176.3	13.0	9.3	170.62	-355.8	-146.2	616.1	594.7	21.42	28.760	
5,300.0	5,280.5	5,276.0	5,275.2	13.2	9.4	170.55	-356.0	-145.4	616.4	594.6	21.75	28.340	
5,400.0	5,380.5	5,375.1	5,374.3	13.4	9.6	170.52	-356.4	-145.0	616.8	594.7	22.09	27.924	
5,500.0	5,480.5	5,475.9	5,475.1	13.6	9.7	170.48	-356.8	-144.5	617.3	594.9	22.43	27.516	
5,600.0	5,580.5	5,577.1	5,576.3	13.8	9.8	170.42	-357.0	-143.9	617.6	594.8	22.78	27.114	
5,700.0	5,680.5	5,677.0	5,676.2	14.0	10.0	170.40	-357.1	-143.5	617.8	594.7	23.14	26.701	
5,800.0	5,780.5	5,776.3	5,775.5	14.2	10.2	170.39	-357.4	-143.4	618.1	594.6	23.52	26.284	
5,900.0	5,880.5	5,876.0	5,875.2	14.4	10.3	170.38	-357.7	-143.2	618.4	594.6	23.89	25.885	
6,000.0	5,980.5	5,978.2	5,977.3	14.6	10.5	170.35	-357.9	-142.9	618.7	594.4	24.26	25.503	
6,100.0	6,080.5	6,078.7	6,077.9	14.8	10.6	170.32	-357.8	-142.6	618.6	594.0	24.62	25.131	
6,200.0	6,180.5	6,178.8	6,178.0	15.0	10.8	170.31	-357.7	-142.5	618.6	593.6	24.97	24.768	
6,300.0	6,280.5	6,278.5	6,277.7	15.2	10.9	170.29	-357.7	-142.3	618.5	593.2	25.34	24.411	
6,400.0	6,380.5	6,382.0	6,381.2	15.4	11.1	170.29	-357.4	-142.3	618.3	592.6	25.72	24.042	
6,500.0	6,480.5	6,486.9	6,486.1	15.6	11.3	170.32	-356.5	-142.8	617.3	591.2	26.11	23.640	
6,600.0	6,580.5	6,588.1	6,587.3	15.8	11.5	170.42	-355.1	-144.1	615.8	589.3	26.51	23.226	
6,700.0	6,680.5	6,685.2	6,684.4	16.0	11.6	170.54	-354.0	-145.6	614.4	587.5	26.91	22.830	
6,800.0	6,780.5	6,782.9	6,782.1	16.2	11.8	170.66	-353.3	-147.0	613.5	586.2	27.32	22.459	
6,900.0	6,880.5	6,881.1	6,880.2	16.4	12.0	170.73	-352.9	-147.9	612.9	585.2	27.72	22.109	
7,000.0	6,980.5	6,982.9	6,982.0	16.6	12.2	-9.15	-352.6	-149.5	611.7	583.6	28.09	21.775	
7,100.0	7,079.9	7,080.3	7,079.4	16.7	12.4	-9.28	-352.3	-151.3	600.5	572.5	28.06	21.403	
7,200.0	7,177.0	7,175.2	7,174.3	16.8	12.6	-9.76	-352.4	-153.1	577.0	549.4	27.62	20.893	
7,300.0	7,270.2	7,267.6	7,266.7	16.8	12.8	-10.71	-352.7	-155.0	541.5	514.7	26.80	20.207	
7,400.0	7,357.9	7,353.6	7,352.7	16.9	13.0	-12.35	-353.2	-156.5	494.5	468.9	25.65	19.282	
7,500.0	7,438.6	7,433.0	7,432.1	16.9	13.1	-15.13	-353.8	-157.2	437.2	413.0	24.29	18.004	
7,600.0	7,510.9	7,505.1	7,504.1	16.9	13.3	-20.03	-354.4	-156.8	370.7	347.6	23.02	16.101	
7,700.0	7,573.6	7,567.5	7,566.5	17.0	13.3	-28.66	-355.0	-156.0	296.5	273.9	22.62	13.112	
7,800.0	7,625.6	7,619.9	7,618.9	17.2	13.4	-43.93	-355.6	-155.3	217.7	193.0	24.62	8.841	
7,900.0	7,666.0	7,661.6	7,660.6	17.7	13.5	-67.00	-356.1	-154.9	140.8	111.7	29.10	4.837	
8,000.0	7,694.1	7,691.5	7,690.5	18.4	13.5	-88.08	-356.6	-154.7	92.6	60.8	31.74	2.917	
8,011.6	7,696.6	7,694.1	7,693.2	18.5	13.5	-89.75	-356.7	-154.7	91.9	60.0	31.87	2.883	CC, ES, SF
8,100.0	7,709.5	7,708.8	7,707.8	19.3	13.6	-95.63	-357.0	-154.6	126.6	94.0	32.61	3.884	
8,200.0	7,712.5	7,713.8	7,712.8	20.3	13.6	-92.11	-357.0	-154.6	208.3	174.6	33.68	6.184	
8,300.0	7,712.6	7,715.8	7,714.8	21.4	13.6	-93.34	-357.1	-154.6	301.3	266.5	34.80	8.658	
8,400.0	7,712.7	7,717.8	7,716.8	22.7	13.6	-94.58	-357.1	-154.6	397.6	361.6	36.00	11.045	
8,500.0	7,712.8	7,719.8	7,718.8	24.0	13.6	-95.82	-357.2	-154.6	495.5	458.2	37.28	13.291	
8,600.0	7,712.8	7,721.8	7,720.8	25.4	13.6	-97.07	-357.2	-154.6	594.0	555.4	38.61	15.383	
8,700.0	7,712.9	7,723.9	7,722.9	26.8	13.6	-98.32	-357.2	-154.6	692.9	652.9	39.99	17.328	
8,800.0	7,713.0	7,725.9	7,724.9	28.3	13.6	-99.58	-357.3	-154.6	792.1	750.7	41.40	19.136	
8,900.0	7,713.0	7,728.0	7,727.0	29.9	13.6	-100.84	-357.3	-154.6	891.5	848.7	42.82	20.820	
9,000.0	7,713.1	7,730.1	7,729.1	31.5	13.6	-102.10	-357.4	-154.6	991.0	946.8	44.26	22.393	
9,100.0	7,713.2	7,732.3	7,731.3	33.1	13.6	-103.36	-357.4	-154.6	1,090.6	1,044.9	45.69	23.868	
9,200.0	7,713.2	7,734.4	7,733.4	34.8	13.6	-104.62	-357.4	-154.6	1,190.3	1,143.1	47.13	25.257	
9,300.0	7,713.3	7,736.6	7,735.6	36.4	13.6	-105.87	-357.5	-154.6	1,290.0	1,241.4	48.55	26.570	
9,400.0	7,713.4	7,738.8	7,737.8	38.1	13.6	-107.12	-357.5	-154.6	1,389.7	1,339.8	49.96	27.818	
9,500.0	7,713.5	7,741.0	7,740.0	39.9	13.6	-108.37	-357.6	-154.6	1,489.5	1,438.1	51.35	29.009	
9,600.0	7,713.5	7,743.2	7,742.2	41.6	13.6	-109.61	-357.6	-154.6	1,589.3	1,536.6	52.71	30.151	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 33-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 100-NS-GYRO-MS

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,700.0	7,713.6	7,745.4	7,744.4	43.4	13.6	-110.84	-357.7	-154.6	1,689.1	1,635.1	54.05	31.251	
9,800.0	7,713.7	7,747.7	7,746.7	45.1	13.6	-112.06	-357.7	-154.6	1,788.9	1,733.6	55.36	32.315	
9,900.0	7,713.7	7,750.0	7,749.0	46.9	13.6	-113.28	-357.8	-154.6	1,888.8	1,832.2	56.64	33.348	
10,000.0	7,713.8	7,752.3	7,751.3	48.7	13.6	-114.48	-357.8	-154.6	1,988.7	1,930.8	57.89	34.355	
10,100.0	7,713.9	7,754.6	7,753.6	50.5	13.6	-115.67	-357.8	-154.6	2,088.5	2,029.4	59.10	35.340	
10,200.0	7,713.9	7,757.0	7,756.0	52.3	13.6	-116.85	-357.9	-154.6	2,188.4	2,128.1	60.28	36.306	
10,300.0	7,714.0	7,759.4	7,758.4	54.1	13.7	-118.02	-357.9	-154.6	2,288.3	2,226.9	61.42	37.258	
10,400.0	7,714.1	7,761.8	7,760.8	55.9	13.7	-119.17	-358.0	-154.6	2,388.2	2,325.7	62.52	38.198	
10,500.0	7,714.1	7,764.2	7,763.2	57.8	13.7	-120.31	-358.0	-154.6	2,488.1	2,424.5	63.59	39.128	
10,600.0	7,714.2	7,766.6	7,765.6	59.6	13.7	-121.43	-358.1	-154.6	2,588.0	2,523.4	64.62	40.050	
10,700.0	7,714.3	7,769.1	7,768.1	61.4	13.7	-122.54	-358.1	-154.6	2,687.9	2,622.3	65.61	40.966	
10,800.0	7,714.4	7,771.6	7,770.6	63.3	13.7	-123.63	-358.2	-154.6	2,787.9	2,721.3	66.57	41.878	
10,900.0	7,714.4	7,774.1	7,773.1	65.1	13.7	-124.71	-358.3	-154.6	2,887.8	2,820.3	67.49	42.788	
11,000.0	7,714.5	7,776.7	7,775.7	67.0	13.7	-125.77	-358.3	-154.6	2,987.7	2,919.3	68.38	43.696	
11,100.0	7,714.6	7,779.3	7,778.3	68.8	13.7	-126.81	-358.4	-154.6	3,087.6	3,018.4	69.23	44.603	
11,200.0	7,714.6	7,781.9	7,780.9	70.7	13.7	-127.83	-358.4	-154.6	3,187.6	3,117.5	70.04	45.510	
11,300.0	7,714.7	7,784.5	7,783.5	72.5	13.7	-128.84	-358.5	-154.6	3,287.5	3,216.7	70.82	46.419	
11,400.0	7,714.8	7,787.1	7,786.1	74.4	13.7	-129.83	-358.5	-154.6	3,387.4	3,315.9	71.57	47.329	
11,500.0	7,714.8	7,789.8	7,788.8	76.3	13.7	-130.80	-358.6	-154.6	3,487.4	3,415.1	72.29	48.240	
11,600.0	7,714.9	7,792.5	7,791.5	78.1	13.7	-131.76	-358.7	-154.6	3,587.3	3,514.3	72.98	49.154	
11,700.0	7,715.0	7,795.2	7,794.2	80.0	13.7	-132.69	-358.7	-154.6	3,687.3	3,613.6	73.64	50.071	
11,800.0	7,715.1	7,798.0	7,797.0	81.9	13.7	-133.61	-358.8	-154.6	3,787.2	3,712.9	74.27	50.991	
11,900.0	7,715.1	7,800.7	7,799.7	83.8	13.7	-134.47	-358.8	-154.7	3,887.2	3,812.2	74.92	51.884	
12,000.0	7,715.2	7,803.0	7,802.0	85.6	13.7	-135.19	-358.9	-154.7	3,987.1	3,911.4	75.65	52.704	
12,100.0	7,715.3	7,805.3	7,804.3	87.5	13.7	-135.90	-358.9	-154.7	4,087.0	4,010.7	76.37	53.518	
12,200.0	7,715.3	7,807.6	7,806.6	89.4	13.7	-136.60	-359.0	-154.7	4,187.0	4,109.9	77.07	54.327	
12,300.0	7,715.4	7,809.9	7,808.9	91.3	13.7	-137.27	-359.0	-154.7	4,286.9	4,209.2	77.76	55.130	
12,400.0	7,715.5	7,812.2	7,811.2	93.1	13.7	-137.93	-359.1	-154.7	4,386.9	4,308.5	78.44	55.928	
12,500.0	7,715.5	7,814.5	7,813.5	95.0	13.8	-138.57	-359.1	-154.7	4,486.8	4,407.7	79.10	56.721	
12,600.0	7,715.6	7,816.9	7,815.8	96.9	13.8	-139.20	-359.2	-154.7	4,586.8	4,507.0	79.76	57.508	
12,700.0	7,715.7	7,819.2	7,818.2	98.8	13.8	-139.81	-359.2	-154.7	4,686.8	4,606.3	80.40	58.289	
12,800.0	7,715.8	7,821.5	7,820.5	100.7	13.8	-140.40	-359.3	-154.7	4,786.7	4,705.7	81.04	59.066	
12,900.0	7,715.8	7,823.8	7,822.8	102.6	13.8	-140.99	-359.4	-154.7	4,886.7	4,805.0	81.67	59.836	
13,000.0	7,715.9	7,826.1	7,825.1	104.5	13.8	-141.55	-359.4	-154.7	4,986.6	4,904.3	82.29	60.601	
13,100.0	7,716.0	7,828.4	7,827.4	106.4	13.8	-142.11	-359.5	-154.7	5,086.6	5,003.7	82.90	61.360	
13,200.0	7,716.0	7,830.7	7,829.7	108.2	13.8	-142.65	-359.5	-154.8	5,186.5	5,103.0	83.50	62.114	
13,300.0	7,716.1	7,833.1	7,832.0	110.1	13.8	-143.17	-359.6	-154.8	5,286.5	5,202.4	84.10	62.861	
13,400.0	7,716.2	7,835.4	7,834.4	112.0	13.8	-143.69	-359.6	-154.8	5,386.4	5,301.8	84.69	63.603	
13,500.0	7,716.2	7,837.7	7,836.7	113.9	13.8	-144.19	-359.7	-154.8	5,486.4	5,401.1	85.27	64.338	
13,600.0	7,716.3	7,840.0	7,839.0	115.8	13.8	-144.68	-359.7	-154.8	5,586.4	5,500.5	85.85	65.068	
13,700.0	7,716.4	7,842.3	7,841.3	117.7	13.8	-145.16	-359.8	-154.8	5,686.3	5,599.9	86.43	65.792	
13,800.0	7,716.5	7,844.6	7,843.6	119.6	13.8	-145.63	-359.8	-154.8	5,786.3	5,699.3	87.00	66.509	
13,900.0	7,716.5	7,846.9	7,845.9	121.5	13.8	-146.09	-359.9	-154.8	5,886.2	5,798.7	87.57	67.220	
14,000.0	7,716.6	7,849.3	7,848.2	123.4	13.8	-146.53	-359.9	-154.8	5,986.2	5,898.1	88.13	67.925	
14,100.0	7,716.7	7,851.6	7,850.6	125.3	13.8	-146.97	-360.0	-154.8	6,086.2	5,997.5	88.69	68.623	
14,200.0	7,716.7	7,853.9	7,852.9	127.2	13.8	-147.40	-360.0	-154.8	6,186.1	6,096.9	89.25	69.315	
14,300.0	7,716.8	7,856.2	7,855.2	129.1	13.8	-147.81	-360.1	-154.8	6,286.1	6,196.3	89.80	70.001	
14,400.0	7,716.9	7,858.5	7,857.5	131.0	13.8	-148.22	-360.1	-154.8	6,386.1	6,295.7	90.35	70.680	
14,500.0	7,716.9	7,860.8	7,859.8	132.9	13.8	-148.62	-360.2	-154.9	6,486.0	6,395.1	90.90	71.353	
14,584.8	7,717.0	7,862.8	7,861.8	134.5	13.8	-148.95	-360.2	-154.9	6,570.8	6,479.4	91.36	71.918	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 1105-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-162.73	-342.4	-106.5	358.6				
100.0	100.0	95.6	95.6	0.1	0.1	-162.75	-342.6	-106.4	358.8	358.5	0.23	1,543.816	ES
200.0	200.0	194.2	194.2	0.3	0.2	-162.82	-343.3	-106.1	359.3	358.8	0.58	618.860	
300.0	300.0	292.8	292.8	0.6	0.4	-162.94	-344.4	-105.7	360.3	359.4	0.93	387.903	
400.0	400.0	391.3	391.3	0.8	0.5	-163.11	-346.0	-105.1	361.7	360.4	1.28	283.217	
500.0	500.0	489.9	489.8	1.0	0.6	-163.32	-348.1	-104.3	363.5	361.8	1.63	223.641	
600.0	600.0	588.4	588.3	1.2	0.7	-163.57	-350.6	-103.4	365.6	363.7	1.97	185.297	
700.0	700.0	686.9	686.7	1.5	0.9	-163.87	-353.6	-102.3	368.2	365.9	2.32	158.633	
800.0	800.0	785.3	785.1	1.7	1.0	-164.20	-357.0	-101.0	371.2	368.5	2.67	139.080	
900.0	900.0	883.7	883.4	1.9	1.1	-164.58	-360.9	-99.5	374.6	371.6	3.02	124.180	
1,000.0	1,000.0	982.1	981.7	2.1	1.2	-164.99	-365.2	-97.9	378.4	375.1	3.36	112.489	
1,100.0	1,100.0	1,080.4	1,079.9	2.4	1.4	-165.44	-370.0	-96.1	382.7	379.0	3.71	103.107	
1,200.0	1,200.0	1,180.0	1,179.3	2.6	1.6	-165.90	-375.2	-94.3	387.3	383.1	4.13	93.706	
1,300.0	1,300.0	1,280.0	1,279.2	2.8	1.8	-166.30	-380.3	-92.7	391.8	387.2	4.58	85.580	
1,400.0	1,400.0	1,380.4	1,379.5	3.0	2.0	-166.64	-385.2	-91.5	396.3	391.3	5.02	78.956	
1,500.0	1,500.0	1,482.3	1,481.2	3.3	2.2	-166.95	-389.9	-90.4	400.5	395.1	5.45	73.521	
1,600.0	1,600.0	1,584.1	1,583.0	3.5	2.4	-167.24	-394.0	-89.3	404.2	398.4	5.88	68.796	
1,700.0	1,700.0	1,685.1	1,683.9	3.7	2.6	-123.24	-397.7	-88.3	408.5	402.3	6.18	66.111	
1,800.0	1,799.8	1,785.6	1,784.3	3.9	2.8	-123.94	-401.0	-87.6	414.5	407.9	6.60	62.828	
1,900.0	1,899.5	1,885.4	1,884.1	4.2	3.0	-124.91	-404.0	-87.3	422.4	415.4	7.02	60.180	
2,000.0	1,998.8	1,988.5	1,987.1	4.4	3.2	-126.23	-407.1	-87.2	431.9	424.4	7.46	57.884	
2,100.0	2,098.2	2,085.6	2,084.2	4.6	3.4	-127.60	-409.0	-85.9	440.5	432.6	7.90	55.784	
2,200.0	2,197.5	2,180.7	2,179.0	4.9	3.7	-129.45	-411.9	-80.4	450.1	441.8	8.35	53.927	
2,300.0	2,296.9	2,277.7	2,275.6	5.1	3.9	-131.60	-416.6	-72.1	461.6	452.8	8.81	52.393	
2,400.0	2,396.2	2,375.3	2,372.7	5.4	4.1	-133.72	-421.2	-63.3	473.7	464.4	9.28	51.052	
2,500.0	2,495.6	2,471.7	2,468.2	5.7	4.4	-136.06	-425.6	-51.5	486.3	476.6	9.75	49.856	
2,600.0	2,594.9	2,565.6	2,560.8	5.9	4.7	-138.64	-430.1	-36.4	500.1	489.9	10.24	48.832	
2,700.0	2,694.3	2,670.1	2,663.1	6.2	5.0	-141.81	-434.6	-15.6	515.1	504.3	10.77	47.818	
2,800.0	2,793.6	2,782.5	2,772.6	6.5	5.4	-145.39	-435.6	9.7	528.5	517.2	11.33	46.634	
2,900.0	2,892.9	2,877.1	2,864.4	6.8	5.7	-148.44	-434.7	32.5	542.1	530.2	11.87	45.671	
3,000.0	2,992.3	2,970.6	2,954.8	7.1	6.1	-151.47	-433.4	56.6	557.3	544.9	12.42	44.875	
3,100.0	3,091.6	3,053.3	3,034.2	7.4	6.5	-154.16	-432.9	79.5	575.5	562.5	12.95	44.445	
3,200.0	3,191.0	3,149.6	3,126.0	7.6	6.9	-157.34	-432.0	108.6	595.9	582.3	13.54	44.020	
3,300.0	3,290.3	3,248.4	3,220.2	7.9	7.4	-160.44	-429.8	138.4	617.0	602.9	14.11	43.739	
3,400.0	3,389.7	3,343.0	3,310.6	8.2	7.8	-163.17	-427.5	166.2	639.1	624.4	14.65	43.615	
3,500.0	3,489.0	3,435.4	3,398.8	8.5	8.3	-165.71	-424.8	193.7	662.3	647.1	15.22	43.530	
3,600.0	3,588.4	3,526.0	3,484.9	8.8	8.8	-168.12	-421.9	221.6	687.2	671.4	15.77	43.570	
3,700.0	3,687.7	3,613.7	3,568.2	9.1	9.3	-170.33	-419.3	249.0	713.8	697.4	16.32	43.734	
3,800.0	3,787.1	3,712.9	3,662.2	9.4	9.8	-172.68	-416.2	280.2	741.4	724.4	16.91	43.836	
3,900.0	3,886.4	3,811.0	3,755.6	9.7	10.4	-174.85	-412.0	310.4	768.8	751.3	17.48	43.988	
4,000.0	3,985.8	3,902.0	3,842.4	10.0	10.8	-176.63	-408.9	337.3	796.9	778.9	18.00	44.267	
4,100.0	4,085.1	3,976.4	3,913.9	10.3	11.2	-177.81	-408.8	358.0	826.8	808.4	18.47	44.776	
4,200.0	4,184.5	4,058.4	3,992.2	10.6	11.7	-179.01	-410.4	381.9	859.4	840.5	18.96	45.327	
4,300.0	4,283.8	4,162.5	4,091.7	10.9	12.3	179.50	-411.2	412.7	892.0	872.5	19.52	45.698	
4,400.0	4,383.2	4,257.7	4,183.0	11.2	12.8	178.30	-412.0	439.5	924.1	904.1	20.04	46.115	
4,500.0	4,482.5	4,346.4	4,268.0	11.5	13.3	177.22	-412.7	465.0	956.9	936.3	20.55	46.558	
4,600.0	4,581.9	4,447.9	4,364.7	11.8	13.9	175.88	-410.7	495.8	989.4	968.3	21.12	46.843	
4,700.0	4,681.2	4,526.0	4,438.5	12.1	14.4	174.80	-407.9	521.1	1,023.1	1,001.4	21.63	47.291	
4,800.0	4,780.8	4,624.1	4,531.1	12.3	15.0	173.58	-404.9	553.4	1,056.0	1,033.8	22.22	47.515	
4,900.0	4,880.6	4,721.5	4,623.5	12.5	15.5	172.50	-402.0	583.9	1,084.8	1,062.0	22.78	47.616	
5,000.0	4,980.5	4,829.1	4,725.9	12.7	16.2	171.40	-399.7	616.9	1,110.6	1,087.3	23.34	47.587	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 1105-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,080.5	4,901.0	4,794.7	12.8	16.6	126.37	-399.3	637.8	1,134.2	1,110.4	23.75	47.747	
5,200.0	5,180.5	4,983.2	4,872.8	13.0	17.1	125.57	-398.8	663.5	1,159.6	1,135.4	24.24	47.845	
5,300.0	5,280.5	5,064.0	4,948.9	13.2	17.6	124.70	-397.1	690.9	1,186.7	1,161.9	24.73	47.991	
5,400.0	5,380.5	5,153.2	5,032.4	13.4	18.2	123.74	-395.0	721.9	1,214.8	1,189.5	25.24	48.123	
5,500.0	5,480.5	5,260.0	5,132.9	13.6	18.9	122.71	-393.3	758.1	1,242.8	1,217.0	25.80	48.180	
5,600.0	5,580.5	5,400.0	5,265.9	13.8	19.7	121.55	-391.5	801.7	1,268.9	1,242.5	26.43	48.019	
5,700.0	5,680.5	5,482.7	5,344.8	14.0	20.2	120.91	-390.3	826.4	1,294.0	1,267.1	26.89	48.127	
5,800.0	5,780.5	5,573.7	5,431.0	14.2	20.8	120.12	-387.1	855.3	1,320.1	1,292.7	27.39	48.193	
5,900.0	5,880.5	5,699.8	5,550.1	14.4	21.6	118.92	-379.2	896.0	1,345.7	1,317.7	28.00	48.062	
6,000.0	5,980.5	5,780.0	5,626.5	14.6	22.1	118.26	-375.2	920.1	1,370.4	1,341.9	28.46	48.159	
6,100.0	6,080.5	5,868.6	5,710.5	14.8	22.6	117.55	-371.3	948.1	1,396.6	1,367.6	28.94	48.256	
6,200.0	6,180.5	5,989.2	5,825.4	15.0	23.3	116.66	-366.1	984.4	1,421.8	1,392.3	29.51	48.183	
6,300.0	6,280.5	6,075.7	5,907.9	15.2	23.8	116.07	-362.8	1,010.0	1,446.9	1,417.0	29.97	48.274	
6,400.0	6,380.5	6,202.1	6,028.6	15.4	24.6	115.19	-356.4	1,047.0	1,471.5	1,441.0	30.55	48.165	
6,500.0	6,480.5	6,289.5	6,112.5	15.6	25.1	114.67	-353.3	1,071.3	1,495.5	1,464.5	31.01	48.230	
6,600.0	6,580.5	6,391.5	6,210.5	15.8	25.6	114.16	-351.6	1,099.2	1,519.9	1,488.4	31.50	48.258	
6,700.0	6,680.5	6,528.4	6,342.9	16.0	26.3	113.56	-350.3	1,134.4	1,543.3	1,511.3	32.06	48.132	
6,800.0	6,780.5	6,811.6	6,621.2	16.2	27.4	112.53	-341.8	1,185.2	1,557.9	1,525.0	32.92	47.321	
6,900.0	6,880.5	6,966.8	6,775.4	16.4	27.8	112.13	-337.0	1,201.5	1,566.6	1,533.2	33.44	46.844	
7,000.0	6,980.5	7,089.6	6,897.8	16.6	28.0	-68.03	-333.6	1,210.4	1,572.1	1,538.2	33.91	46.360	
7,100.0	7,079.9	7,188.4	6,996.4	16.7	28.2	-68.47	-331.5	1,216.7	1,573.2	1,539.0	34.18	46.033	
7,200.0	7,177.0	7,284.8	7,092.6	16.8	28.4	-69.62	-329.4	1,222.8	1,569.8	1,535.6	34.20	45.906	
7,300.0	7,270.2	7,377.0	7,184.6	16.8	28.6	-71.42	-327.4	1,228.7	1,562.6	1,528.5	34.06	45.871	
7,400.0	7,357.9	7,463.5	7,270.9	16.9	28.8	-73.73	-325.5	1,234.1	1,552.4	1,518.5	33.90	45.795	
7,500.0	7,438.6	7,542.7	7,349.9	16.9	28.9	-76.37	-323.8	1,239.2	1,540.5	1,506.7	33.81	45.565	
7,600.0	7,510.9	7,613.4	7,420.4	16.9	29.1	-79.13	-322.3	1,243.6	1,528.3	1,494.4	33.87	45.125	
7,700.0	7,573.6	7,674.2	7,481.1	17.0	29.2	-81.78	-320.9	1,247.5	1,517.2	1,483.1	34.10	44.491	
7,800.0	7,625.6	7,724.2	7,531.0	17.2	29.3	-84.05	-319.8	1,250.7	1,508.7	1,474.2	34.51	43.724	
7,900.0	7,666.0	7,762.6	7,569.3	17.7	29.4	-85.73	-319.0	1,253.1	1,504.2	1,469.1	35.08	42.885	
7,942.8	7,679.6	7,775.2	7,581.9	18.0	29.4	-86.23	-318.7	1,253.9	1,503.7	1,468.3	35.39	42.493	
8,000.0	7,694.1	7,788.6	7,595.2	18.4	29.4	-86.66	-318.4	1,254.7	1,504.6	1,468.8	35.80	42.025	
8,100.0	7,709.5	7,801.8	7,608.4	19.3	29.5	-86.70	-318.2	1,255.6	1,510.6	1,473.9	36.68	41.187	
8,200.0	7,712.5	7,802.6	7,609.2	20.3	29.5	-86.19	-318.1	1,255.6	1,522.4	1,484.7	37.67	40.418	
8,300.0	7,712.6	7,800.5	7,607.2	21.4	29.4	-86.11	-318.2	1,255.5	1,540.4	1,501.6	38.78	39.724	
8,400.0	7,712.7	7,798.4	7,605.1	22.7	29.4	-86.03	-318.2	1,255.3	1,564.6	1,524.6	40.00	39.117	
8,500.0	7,712.8	7,796.3	7,603.0	24.0	29.4	-85.95	-318.3	1,255.2	1,594.7	1,553.4	41.31	38.605	
8,600.0	7,712.8	7,794.2	7,600.9	25.4	29.4	-85.87	-318.3	1,255.1	1,630.4	1,587.7	42.70	38.187	
8,700.0	7,712.9	7,792.1	7,598.8	26.8	29.4	-85.79	-318.4	1,254.9	1,671.3	1,627.2	44.15	37.858	
8,800.0	7,713.0	7,790.0	7,596.7	28.3	29.4	-85.71	-318.4	1,254.8	1,717.1	1,671.5	45.65	37.612	
8,900.0	7,713.0	7,787.9	7,594.6	29.9	29.4	-85.63	-318.5	1,254.7	1,767.4	1,720.2	47.21	37.440	
9,000.0	7,713.1	7,785.8	7,592.5	31.5	29.4	-85.55	-318.5	1,254.6	1,821.7	1,772.9	48.80	37.333	
9,100.0	7,713.2	7,783.7	7,590.4	33.1	29.4	-85.47	-318.6	1,254.4	1,879.8	1,829.4	50.42	37.283	
9,200.0	7,713.2	7,781.6	7,588.3	34.8	29.4	-85.39	-318.6	1,254.3	1,941.4	1,889.3	52.07	37.281	SF
9,300.0	7,713.3	7,779.5	7,586.2	36.4	29.4	-85.31	-318.6	1,254.2	2,006.0	1,952.2	53.75	37.320	
9,400.0	7,713.4	7,777.4	7,584.1	38.1	29.4	-85.23	-318.7	1,254.0	2,073.4	2,018.0	55.45	37.393	
9,500.0	7,713.5	7,775.3	7,582.0	39.9	29.4	-85.15	-318.7	1,253.9	2,143.4	2,086.2	57.17	37.494	
9,600.0	7,713.5	7,773.2	7,579.9	41.6	29.4	-85.07	-318.8	1,253.8	2,215.7	2,156.8	58.90	37.619	
9,700.0	7,713.6	7,771.1	7,577.8	43.4	29.4	-84.99	-318.8	1,253.6	2,290.0	2,229.4	60.64	37.761	
9,800.0	7,713.7	7,769.0	7,575.7	45.1	29.4	-84.91	-318.9	1,253.5	2,366.3	2,303.9	62.40	37.919	
9,900.0	7,713.7	7,766.9	7,573.6	46.9	29.4	-84.83	-318.9	1,253.4	2,444.2	2,380.1	64.17	38.088	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jacobucci 43-32 (Exist.) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 1105-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	7,713.8	7,764.8	7,571.5	48.7	29.4	-84.75	-319.0	1,253.2	2,523.7	2,457.8	65.95	38.266	
10,100.0	7,713.9	7,762.7	7,569.4	50.5	29.4	-84.67	-319.0	1,253.1	2,604.7	2,536.9	67.74	38.451	
10,200.0	7,713.9	7,760.6	7,567.3	52.3	29.4	-84.59	-319.1	1,253.0	2,686.9	2,617.3	69.54	38.640	
10,300.0	7,714.0	7,758.5	7,565.2	54.1	29.4	-84.51	-319.1	1,252.8	2,770.2	2,698.9	71.34	38.833	
10,400.0	7,714.1	7,756.4	7,563.1	55.9	29.4	-84.43	-319.1	1,252.7	2,854.7	2,781.5	73.15	39.028	
10,500.0	7,714.1	7,754.3	7,561.0	57.8	29.4	-84.35	-319.2	1,252.6	2,940.1	2,865.1	74.96	39.223	
10,600.0	7,714.2	7,752.2	7,558.9	59.6	29.4	-84.27	-319.2	1,252.4	3,026.4	2,949.6	76.78	39.418	
10,700.0	7,714.3	7,750.1	7,556.8	61.4	29.3	-84.19	-319.3	1,252.3	3,113.5	3,034.9	78.60	39.613	
10,800.0	7,714.4	7,748.0	7,554.7	63.3	29.3	-84.11	-319.3	1,252.2	3,201.4	3,121.0	80.43	39.806	
10,900.0	7,714.4	7,745.9	7,552.6	65.1	29.3	-84.03	-319.4	1,252.0	3,290.0	3,207.7	82.26	39.997	
11,000.0	7,714.5	7,743.8	7,550.5	67.0	29.3	-83.95	-319.4	1,251.9	3,379.2	3,295.1	84.09	40.186	
11,100.0	7,714.6	7,741.6	7,548.4	68.8	29.3	-83.87	-319.5	1,251.8	3,469.0	3,383.1	85.92	40.373	
11,200.0	7,714.6	7,739.5	7,546.3	70.7	29.3	-83.79	-319.5	1,251.6	3,559.3	3,471.6	87.76	40.556	
11,300.0	7,714.7	7,737.4	7,544.2	72.5	29.3	-83.71	-319.6	1,251.5	3,650.2	3,560.6	89.60	40.737	
11,400.0	7,714.8	7,735.3	7,542.1	74.4	29.3	-83.63	-319.6	1,251.4	3,741.5	3,650.0	91.45	40.915	
11,500.0	7,714.8	7,733.2	7,540.0	76.3	29.3	-83.55	-319.6	1,251.2	3,833.2	3,739.9	93.29	41.089	
11,600.0	7,714.9	7,731.1	7,537.9	78.1	29.3	-83.47	-319.7	1,251.1	3,925.3	3,830.2	95.14	41.260	
11,700.0	7,715.0	7,729.0	7,535.8	80.0	29.3	-83.39	-319.7	1,251.0	4,017.9	3,920.9	96.98	41.428	
11,800.0	7,715.1	7,726.9	7,533.7	81.9	29.3	-83.31	-319.8	1,250.8	4,110.7	4,011.9	98.83	41.593	
11,900.0	7,715.1	7,724.8	7,531.6	83.8	29.3	-83.23	-319.8	1,250.7	4,203.9	4,103.2	100.68	41.754	
12,000.0	7,715.2	7,722.7	7,529.5	85.6	29.3	-83.15	-319.9	1,250.6	4,297.4	4,194.9	102.53	41.912	
12,100.0	7,715.3	7,720.6	7,527.4	87.5	29.3	-83.07	-319.9	1,250.4	4,391.2	4,286.8	104.39	42.067	
12,200.0	7,715.3	7,718.5	7,525.3	89.4	29.3	-82.99	-320.0	1,250.3	4,485.2	4,379.0	106.24	42.218	
12,300.0	7,715.4	7,716.4	7,523.2	91.3	29.3	-82.91	-320.0	1,250.2	4,579.5	4,471.4	108.09	42.366	
12,400.0	7,715.5	7,714.3	7,521.1	93.1	29.3	-82.83	-320.1	1,250.0	4,674.1	4,564.1	109.95	42.512	
12,500.0	7,715.5	7,712.2	7,519.0	95.0	29.3	-82.75	-320.1	1,249.9	4,768.8	4,657.0	111.80	42.654	
12,600.0	7,715.6	7,710.1	7,516.9	96.9	29.3	-82.67	-320.1	1,249.8	4,863.8	4,750.1	113.66	42.793	
12,700.0	7,715.7	7,708.0	7,514.8	98.8	29.3	-82.59	-320.2	1,249.6	4,959.0	4,843.5	115.51	42.930	
12,800.0	7,715.8	7,705.9	7,512.7	100.7	29.3	-82.51	-320.2	1,249.5	5,054.3	4,936.9	117.37	43.063	
12,900.0	7,715.8	7,703.8	7,510.6	102.6	29.3	-82.43	-320.3	1,249.4	5,149.8	5,030.6	119.23	43.194	
13,000.0	7,715.9	7,701.7	7,508.5	104.5	29.3	-82.35	-320.3	1,249.2	5,245.5	5,124.4	121.08	43.322	
13,100.0	7,716.0	7,699.6	7,506.4	106.4	29.2	-82.27	-320.4	1,249.1	5,341.4	5,218.4	122.94	43.447	
13,200.0	7,716.0	7,697.5	7,504.3	108.2	29.2	-82.19	-320.4	1,249.0	5,437.4	5,312.6	124.80	43.570	
13,300.0	7,716.1	7,695.4	7,502.2	110.1	29.2	-82.11	-320.5	1,248.8	5,533.5	5,406.9	126.65	43.690	
13,400.0	7,716.2	7,693.3	7,500.1	112.0	29.2	-82.03	-320.5	1,248.7	5,629.8	5,501.3	128.51	43.808	
13,500.0	7,716.2	7,691.2	7,498.0	113.9	29.2	-81.95	-320.6	1,248.6	5,726.2	5,595.8	130.37	43.924	
13,600.0	7,716.3	7,689.1	7,495.9	115.8	29.2	-81.87	-320.6	1,248.4	5,822.7	5,690.5	132.22	44.037	
13,700.0	7,716.4	7,687.0	7,493.8	117.7	29.2	-81.80	-320.7	1,248.3	5,919.3	5,785.3	134.08	44.148	
13,800.0	7,716.5	7,684.9	7,491.7	119.6	29.2	-81.72	-320.7	1,248.2	6,016.1	5,880.2	135.93	44.257	
13,900.0	7,716.5	7,682.8	7,489.7	121.5	29.2	-81.64	-320.7	1,248.0	6,112.9	5,975.1	137.79	44.364	
14,000.0	7,716.6	7,680.7	7,487.6	123.4	29.2	-81.56	-320.8	1,247.9	6,209.9	6,070.2	139.65	44.469	
14,100.0	7,716.7	7,678.6	7,485.5	125.3	29.2	-81.48	-320.8	1,247.8	6,306.9	6,165.4	141.50	44.571	
14,200.0	7,716.7	7,676.5	7,483.4	127.2	29.2	-81.40	-320.9	1,247.6	6,404.1	6,260.7	143.36	44.672	
14,300.0	7,716.8	7,674.4	7,481.3	129.1	29.2	-81.32	-320.9	1,247.5	6,501.3	6,356.1	145.21	44.771	
14,400.0	7,716.9	7,672.3	7,479.2	131.0	29.2	-81.24	-321.0	1,247.4	6,598.6	6,451.5	147.06	44.869	
14,500.0	7,716.9	7,670.1	7,477.1	132.9	29.2	-81.16	-321.0	1,247.2	6,696.0	6,547.0	148.92	44.964	
14,584.8	7,717.0	7,668.4	7,475.3	134.5	29.2	-81.09	-321.1	1,247.1	6,778.6	6,628.1	150.49	45.044	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jean Jacobucci 5 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5100-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-176.27	-1,647.3	-107.3	1,650.8				
100.0	100.0	99.0	99.0	0.1	2.0	-176.27	-1,647.3	-107.3	1,650.8	1,648.7	2.09	788.874	
200.0	200.0	199.0	199.0	0.3	4.0	-176.27	-1,647.3	-107.3	1,650.8	1,646.5	4.32	382.360	
300.0	300.0	299.0	299.0	0.6	6.0	-176.27	-1,647.3	-107.3	1,650.8	1,644.2	6.54	252.332	
400.0	400.0	399.0	399.0	0.8	8.0	-176.27	-1,647.3	-107.3	1,650.8	1,642.0	8.77	188.298	
500.0	500.0	499.0	499.0	1.0	10.0	-176.27	-1,647.3	-107.3	1,650.8	1,639.8	10.99	150.185	
600.0	600.0	599.0	599.0	1.2	12.0	-176.27	-1,647.3	-107.3	1,650.8	1,637.6	13.22	124.904	
700.0	700.0	699.0	699.0	1.5	14.0	-176.27	-1,647.3	-107.3	1,650.8	1,635.3	15.44	106.908	
800.0	800.0	799.0	799.0	1.7	16.0	-176.27	-1,647.3	-107.3	1,650.8	1,633.1	17.67	93.444	
900.0	900.0	899.0	899.0	1.9	18.0	-176.27	-1,647.3	-107.3	1,650.8	1,630.9	19.89	82.993	
1,000.0	1,000.0	999.0	999.0	2.1	20.0	-176.27	-1,647.3	-107.3	1,650.8	1,628.7	22.12	74.644	
1,100.0	1,100.0	1,099.0	1,099.0	2.4	22.0	-176.27	-1,647.3	-107.3	1,650.8	1,626.4	24.34	67.821	
1,200.0	1,200.0	1,199.0	1,199.0	2.6	24.0	-176.27	-1,647.3	-107.3	1,650.8	1,624.2	26.56	62.141	
1,300.0	1,300.0	1,299.0	1,299.0	2.8	26.0	-176.27	-1,647.3	-107.3	1,650.8	1,622.0	28.79	57.339	
1,400.0	1,400.0	1,399.0	1,399.0	3.0	28.0	-176.27	-1,647.3	-107.3	1,650.8	1,619.8	31.01	53.226	
1,500.0	1,500.0	1,499.0	1,499.0	3.3	30.0	-176.27	-1,647.3	-107.3	1,650.8	1,617.5	33.24	49.664	
1,600.0	1,600.0	1,599.0	1,599.0	3.5	32.0	-176.27	-1,647.3	-107.3	1,650.8	1,615.3	35.46	46.548	CC
1,700.0	1,700.0	1,699.0	1,699.0	3.7	34.0	-131.92	-1,647.3	-107.3	1,651.9	1,614.3	37.67	43.847	ES
1,800.0	1,799.8	1,798.8	1,798.8	3.9	36.0	-132.01	-1,647.3	-107.3	1,655.4	1,615.6	39.86	41.532	
1,900.0	1,899.5	1,898.5	1,898.5	4.2	38.0	-132.14	-1,647.3	-107.3	1,661.3	1,619.3	42.02	39.537	
2,000.0	1,998.8	1,997.8	1,997.8	4.4	40.0	-132.40	-1,647.3	-107.3	1,668.9	1,624.7	44.21	37.748	
2,100.0	2,098.2	2,097.2	2,097.2	4.6	41.9	-132.68	-1,647.3	-107.3	1,676.6	1,630.2	46.43	36.111	
2,200.0	2,197.5	2,196.5	2,196.5	4.9	43.9	-132.97	-1,647.3	-107.3	1,684.4	1,635.8	48.65	34.622	
2,300.0	2,296.9	2,295.9	2,295.9	5.1	45.9	-133.25	-1,647.3	-107.3	1,692.2	1,641.4	50.88	33.261	
2,400.0	2,396.2	2,395.2	2,395.2	5.4	47.9	-133.53	-1,647.3	-107.3	1,700.1	1,647.0	53.11	32.014	
2,500.0	2,495.6	2,494.6	2,494.6	5.7	49.9	-133.81	-1,647.3	-107.3	1,708.0	1,652.7	55.34	30.866	
2,600.0	2,594.9	2,593.9	2,593.9	5.9	51.9	-134.08	-1,647.3	-107.3	1,715.9	1,658.4	57.57	29.807	
2,700.0	2,694.3	2,693.3	2,693.3	6.2	53.9	-134.35	-1,647.3	-107.3	1,723.9	1,664.1	59.80	28.826	
2,800.0	2,793.6	2,792.6	2,792.6	6.5	55.9	-134.62	-1,647.3	-107.3	1,731.9	1,669.9	62.04	27.917	
2,900.0	2,892.9	2,891.9	2,891.9	6.8	57.8	-134.89	-1,647.3	-107.3	1,740.0	1,675.7	64.28	27.071	
3,000.0	2,992.3	2,991.3	2,991.3	7.1	59.8	-135.15	-1,647.3	-107.3	1,748.1	1,681.6	66.51	26.281	
3,100.0	3,091.6	3,090.6	3,090.6	7.4	61.8	-135.41	-1,647.3	-107.3	1,756.2	1,687.4	68.75	25.544	
3,200.0	3,191.0	3,190.0	3,190.0	7.6	63.8	-135.67	-1,647.3	-107.3	1,764.4	1,693.4	70.99	24.853	
3,300.0	3,290.3	3,289.3	3,289.3	7.9	65.8	-135.93	-1,647.3	-107.3	1,772.6	1,699.3	73.23	24.205	
3,400.0	3,389.7	3,388.7	3,388.7	8.2	67.8	-136.18	-1,647.3	-107.3	1,780.8	1,705.3	75.47	23.596	
3,500.0	3,489.0	3,488.0	3,488.0	8.5	69.8	-136.43	-1,647.3	-107.3	1,789.1	1,711.4	77.71	23.022	
3,600.0	3,588.4	3,587.4	3,587.4	8.8	71.7	-136.68	-1,647.3	-107.3	1,797.4	1,717.4	79.95	22.481	
3,700.0	3,687.7	3,686.7	3,686.7	9.1	73.7	-136.93	-1,647.3	-107.3	1,805.7	1,723.5	82.19	21.969	
3,800.0	3,787.1	3,786.1	3,786.1	9.4	75.7	-137.18	-1,647.3	-107.3	1,814.1	1,729.6	84.43	21.485	
3,900.0	3,886.4	3,885.4	3,885.4	9.7	77.7	-137.42	-1,647.3	-107.3	1,822.5	1,735.8	86.67	21.027	
4,000.0	3,985.8	3,984.8	3,984.8	10.0	79.7	-137.66	-1,647.3	-107.3	1,830.9	1,742.0	88.91	20.592	
4,100.0	4,085.1	4,084.1	4,084.1	10.3	81.7	-137.90	-1,647.3	-107.3	1,839.4	1,748.2	91.15	20.179	
4,200.0	4,184.5	4,183.5	4,183.5	10.6	83.7	-138.13	-1,647.3	-107.3	1,847.9	1,754.5	93.39	19.786	
4,300.0	4,283.8	4,282.8	4,282.8	10.9	85.7	-138.37	-1,647.3	-107.3	1,856.4	1,760.8	95.63	19.411	
4,400.0	4,383.2	4,382.2	4,382.2	11.2	87.6	-138.60	-1,647.3	-107.3	1,865.0	1,767.1	97.87	19.055	
4,500.0	4,482.5	4,481.5	4,481.5	11.5	89.6	-138.83	-1,647.3	-107.3	1,873.6	1,773.5	100.11	18.714	
4,600.0	4,581.9	4,580.9	4,580.9	11.8	91.6	-139.06	-1,647.3	-107.3	1,882.2	1,779.8	102.35	18.389	
4,700.0	4,681.2	4,680.2	4,680.2	12.1	93.6	-139.29	-1,647.3	-107.3	1,890.8	1,786.2	104.61	18.076	
4,800.0	4,780.8	4,779.8	4,779.8	12.3	95.6	-139.57	-1,647.3	-107.3	1,898.0	1,791.0	106.96	17.745	
4,900.0	4,880.6	4,879.6	4,879.6	12.5	97.6	-139.74	-1,647.3	-107.3	1,902.5	1,793.2	109.24	17.415	
5,000.0	4,980.5	4,979.5	4,979.5	12.7	99.6	-139.81	-1,647.3	-107.3	1,904.3	1,792.9	111.45	17.087	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jean Jacobucci 5 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5100-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,080.5	5,079.5	5,079.5	12.8	101.6	175.81	-1,647.3	-107.3	1,904.4	1,790.8	113.63	16.760	
5,200.0	5,180.5	5,100.0	5,100.0	13.0	102.0	175.81	-1,647.3	-107.3	1,906.1	1,791.8	114.24	16.685	SF
5,300.0	5,280.5	5,100.0	5,100.0	13.2	102.0	175.81	-1,647.3	-107.3	1,912.8	1,798.4	114.44	16.714	
5,400.0	5,380.5	5,100.0	5,100.0	13.4	102.0	175.81	-1,647.3	-107.3	1,924.8	1,810.1	114.65	16.788	
5,500.0	5,480.5	5,100.0	5,100.0	13.6	102.0	175.81	-1,647.3	-107.3	1,941.8	1,827.0	114.86	16.907	
5,600.0	5,580.5	5,100.0	5,100.0	13.8	102.0	175.81	-1,647.3	-107.3	1,963.8	1,848.8	115.07	17.067	
5,700.0	5,680.5	5,100.0	5,100.0	14.0	102.0	175.81	-1,647.3	-107.3	1,990.6	1,875.3	115.27	17.269	
5,800.0	5,780.5	5,100.0	5,100.0	14.2	102.0	175.81	-1,647.3	-107.3	2,022.0	1,906.5	115.48	17.509	
5,900.0	5,880.5	5,100.0	5,100.0	14.4	102.0	175.81	-1,647.3	-107.3	2,057.8	1,942.1	115.69	17.787	
6,000.0	5,980.5	5,100.0	5,100.0	14.6	102.0	175.81	-1,647.3	-107.3	2,097.7	1,981.8	115.90	18.099	
6,100.0	6,080.5	5,100.0	5,100.0	14.8	102.0	175.81	-1,647.3	-107.3	2,141.5	2,025.4	116.11	18.444	
6,200.0	6,180.5	5,100.0	5,100.0	15.0	102.0	175.81	-1,647.3	-107.3	2,189.1	2,072.8	116.32	18.819	
6,300.0	6,280.5	5,100.0	5,100.0	15.2	102.0	175.81	-1,647.3	-107.3	2,240.1	2,123.6	116.53	19.223	
6,400.0	6,380.5	5,100.0	5,100.0	15.4	102.0	175.81	-1,647.3	-107.3	2,294.3	2,177.6	116.74	19.653	
6,500.0	6,480.5	5,100.0	5,100.0	15.6	102.0	175.81	-1,647.3	-107.3	2,351.6	2,234.6	116.96	20.107	
6,600.0	6,580.5	5,100.0	5,100.0	15.8	102.0	175.81	-1,647.3	-107.3	2,411.6	2,294.4	117.17	20.582	
6,700.0	6,680.5	5,100.0	5,100.0	16.0	102.0	175.81	-1,647.3	-107.3	2,474.2	2,356.8	117.38	21.079	
6,800.0	6,780.5	5,100.0	5,100.0	16.2	102.0	175.81	-1,647.3	-107.3	2,539.2	2,421.6	117.59	21.593	
6,900.0	6,880.5	5,100.0	5,100.0	16.4	102.0	175.81	-1,647.3	-107.3	2,606.4	2,488.6	117.81	22.125	
7,000.0	6,980.5	5,100.0	5,100.0	16.6	102.0	-4.03	-1,647.3	-107.3	2,675.2	2,557.3	117.89	22.692	
7,100.0	7,079.9	5,100.0	5,100.0	16.7	102.0	-3.62	-1,647.3	-107.3	2,738.5	2,622.2	116.40	23.527	
7,200.0	7,177.0	5,100.0	5,100.0	16.8	102.0	-3.32	-1,647.3	-107.3	2,793.7	2,680.8	112.97	24.730	
7,300.0	7,270.2	5,100.0	5,100.0	16.8	102.0	-3.10	-1,647.3	-107.3	2,840.3	2,732.7	107.67	26.379	
7,400.0	7,357.9	5,100.0	5,100.0	16.9	102.0	-2.94	-1,647.3	-107.3	2,878.0	2,777.4	100.62	28.603	
7,500.0	7,438.6	5,100.0	5,100.0	16.9	102.0	-2.83	-1,647.3	-107.3	2,906.4	2,814.4	91.96	31.606	
7,600.0	7,510.9	5,100.0	5,100.0	16.9	102.0	-2.76	-1,647.3	-107.3	2,925.3	2,843.5	81.87	35.731	
7,700.0	7,573.6	5,100.0	5,100.0	17.0	102.0	-2.72	-1,647.3	-107.3	2,934.7	2,864.1	70.59	41.574	
7,800.0	7,625.6	5,100.0	5,100.0	17.2	102.0	-2.72	-1,647.3	-107.3	2,934.4	2,876.0	58.39	50.256	
7,900.0	7,666.0	5,100.0	5,100.0	17.7	102.0	-2.76	-1,647.3	-107.3	2,924.5	2,878.9	45.59	64.150	
8,000.0	7,694.1	5,100.0	5,100.0	18.4	102.0	-2.83	-1,647.3	-107.3	2,905.0	2,872.4	32.58	89.160	
8,100.0	7,709.5	5,100.0	5,100.0	19.3	102.0	-2.95	-1,647.3	-107.3	2,876.0	2,855.9	20.17	142.611	
8,200.0	7,712.5	5,100.0	5,100.0	20.3	102.0	-3.05	-1,647.3	-107.3	2,838.5	2,823.1	15.40	184.354	
8,300.0	7,712.6	5,100.0	5,100.0	21.4	102.0	-3.05	-1,647.3	-107.3	2,801.2	2,785.4	15.78	177.544	
8,400.0	7,712.7	5,100.0	5,100.0	22.7	102.0	-3.05	-1,647.3	-107.3	2,767.0	2,750.8	16.20	170.851	
8,500.0	7,712.8	5,100.0	5,100.0	24.0	102.0	-3.05	-1,647.3	-107.3	2,736.1	2,719.4	16.65	164.361	
8,600.0	7,712.8	5,100.0	5,100.0	25.4	102.0	-3.05	-1,647.3	-107.3	2,708.5	2,691.3	17.13	158.137	
8,700.0	7,712.9	5,100.0	5,100.0	26.8	102.0	-3.05	-1,647.3	-107.3	2,684.3	2,666.7	17.63	152.224	
8,800.0	7,713.0	5,100.0	5,100.0	28.3	102.0	-3.05	-1,647.3	-107.3	2,663.7	2,645.5	18.16	146.651	
8,900.0	7,713.0	5,100.0	5,100.0	29.9	102.0	-3.05	-1,647.3	-107.3	2,646.7	2,627.9	18.71	141.436	
9,000.0	7,713.1	5,100.0	5,100.0	31.5	102.0	-3.05	-1,647.3	-107.3	2,633.3	2,614.1	19.28	136.585	
9,100.0	7,713.2	5,100.0	5,100.0	33.1	102.0	-3.05	-1,647.3	-107.3	2,623.8	2,603.9	19.86	132.095	
9,200.0	7,713.2	5,100.0	5,100.0	34.8	102.0	-3.05	-1,647.3	-107.3	2,618.0	2,597.5	20.46	127.960	
9,300.0	7,713.3	5,100.0	5,100.0	36.4	102.0	-3.05	-1,647.3	-107.3	2,616.0	2,595.0	21.07	124.169	
9,301.5	7,713.3	5,100.0	5,100.0	36.5	102.0	-3.05	-1,647.3	-107.3	2,616.0	2,594.9	21.08	124.112	
9,400.0	7,713.4	5,100.0	5,100.0	38.1	102.0	-3.05	-1,647.3	-107.3	2,617.9	2,596.2	21.69	120.706	
9,500.0	7,713.5	5,100.0	5,100.0	39.9	102.0	-3.05	-1,647.3	-107.3	2,623.5	2,601.2	22.32	117.556	
9,600.0	7,713.5	5,100.0	5,100.0	41.6	102.0	-3.05	-1,647.3	-107.3	2,633.0	2,610.0	22.96	114.701	
9,700.0	7,713.6	5,100.0	5,100.0	43.4	102.0	-3.05	-1,647.3	-107.3	2,646.2	2,622.6	23.60	112.122	
9,800.0	7,713.7	5,100.0	5,100.0	45.1	102.0	-3.05	-1,647.3	-107.3	2,663.1	2,638.8	24.25	109.802	
9,900.0	7,713.7	5,100.0	5,100.0	46.9	102.0	-3.05	-1,647.3	-107.3	2,683.6	2,658.7	24.91	107.722	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Existings Sec.32-T1N-R67W - Jean Jacobucci 5 (P&A) - Wellbore #1 - Wellbore #1

Offset Site Error: 0.0 ft

Survey Program: 5100-UNKNOWN

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	7,713.8	5,100.0	5,100.0	48.7	102.0	-3.05	-1,647.3	-107.3	2,707.7	2,682.1	25.58	105.864	
10,100.0	7,713.9	5,100.0	5,100.0	50.5	102.0	-3.05	-1,647.3	-107.3	2,735.2	2,708.9	26.25	104.211	
10,200.0	7,713.9	5,100.0	5,100.0	52.3	102.0	-3.05	-1,647.3	-107.3	2,766.0	2,739.1	26.92	102.748	
10,300.0	7,714.0	5,100.0	5,100.0	54.1	102.0	-3.05	-1,647.3	-107.3	2,800.1	2,772.5	27.60	101.457	
10,400.0	7,714.1	5,100.0	5,100.0	55.9	102.0	-3.05	-1,647.3	-107.3	2,837.3	2,809.0	28.28	100.326	
10,500.0	7,714.1	5,100.0	5,100.0	57.8	102.0	-3.05	-1,647.3	-107.3	2,877.5	2,848.5	28.97	99.339	
10,600.0	7,714.2	5,100.0	5,100.0	59.6	102.0	-3.05	-1,647.3	-107.3	2,920.5	2,890.9	29.65	98.484	
10,700.0	7,714.3	5,100.0	5,100.0	61.4	102.0	-3.05	-1,647.3	-107.3	2,966.4	2,936.0	30.35	97.749	
10,800.0	7,714.4	5,100.0	5,100.0	63.3	102.0	-3.05	-1,647.3	-107.3	3,014.8	2,983.7	31.04	97.123	
10,900.0	7,714.4	5,100.0	5,100.0	65.1	102.0	-3.05	-1,647.3	-107.3	3,065.7	3,034.0	31.74	96.595	
11,000.0	7,714.5	5,100.0	5,100.0	67.0	102.0	-3.05	-1,647.3	-107.3	3,119.0	3,086.6	32.44	96.157	
11,100.0	7,714.6	5,100.0	5,100.0	68.8	102.0	-3.05	-1,647.3	-107.3	3,174.6	3,141.4	33.14	95.799	
11,200.0	7,714.6	5,100.0	5,100.0	70.7	102.0	-3.05	-1,647.3	-107.3	3,232.3	3,198.4	33.84	95.514	
11,300.0	7,714.7	5,100.0	5,100.0	72.5	102.0	-3.05	-1,647.3	-107.3	3,292.0	3,257.5	34.55	95.294	
11,400.0	7,714.8	5,100.0	5,100.0	74.4	102.0	-3.05	-1,647.3	-107.3	3,353.7	3,318.4	35.25	95.132	
11,500.0	7,714.8	5,100.0	5,100.0	76.3	102.0	-3.05	-1,647.3	-107.3	3,417.1	3,381.2	35.96	95.024	
11,600.0	7,714.9	5,100.0	5,100.0	78.1	102.0	-3.05	-1,647.3	-107.3	3,482.3	3,445.6	36.67	94.962	
11,700.0	7,715.0	5,100.0	5,100.0	80.0	102.0	-3.05	-1,647.3	-107.3	3,549.1	3,511.7	37.38	94.943	
11,800.0	7,715.1	5,100.0	5,100.0	81.9	102.0	-3.05	-1,647.3	-107.3	3,617.4	3,579.3	38.09	94.961	
11,900.0	7,715.1	5,100.0	5,100.0	83.8	102.0	-3.05	-1,647.3	-107.3	3,687.2	3,648.4	38.81	95.014	
12,000.0	7,715.2	5,100.0	5,100.0	85.6	102.0	-3.05	-1,647.3	-107.3	3,758.4	3,718.8	39.52	95.096	
12,100.0	7,715.3	5,100.0	5,100.0	87.5	102.0	-3.05	-1,647.3	-107.3	3,830.8	3,790.5	40.24	95.205	
12,200.0	7,715.3	5,100.0	5,100.0	89.4	102.0	-3.05	-1,647.3	-107.3	3,904.4	3,863.5	40.95	95.337	
12,300.0	7,715.4	5,100.0	5,100.0	91.3	102.0	-3.05	-1,647.3	-107.3	3,979.2	3,937.6	41.67	95.490	
12,400.0	7,715.5	5,100.0	5,100.0	93.1	102.0	-3.05	-1,647.3	-107.3	4,055.1	4,012.7	42.39	95.662	
12,500.0	7,715.5	5,100.0	5,100.0	95.0	102.0	-3.05	-1,647.3	-107.3	4,132.0	4,088.9	43.11	95.850	
12,600.0	7,715.6	5,100.0	5,100.0	96.9	102.0	-3.05	-1,647.3	-107.3	4,209.9	4,166.1	43.83	96.053	
12,700.0	7,715.7	5,100.0	5,100.0	98.8	102.0	-3.05	-1,647.3	-107.3	4,288.7	4,244.2	44.55	96.268	
12,800.0	7,715.8	5,100.0	5,100.0	100.7	102.0	-3.05	-1,647.3	-107.3	4,368.4	4,323.1	45.27	96.493	
12,900.0	7,715.8	5,100.0	5,100.0	102.6	102.0	-3.05	-1,647.3	-107.3	4,448.9	4,402.9	45.99	96.729	
13,000.0	7,715.9	5,100.0	5,100.0	104.5	102.0	-3.05	-1,647.3	-107.3	4,530.1	4,483.4	46.72	96.972	
13,100.0	7,716.0	5,100.0	5,100.0	106.4	102.0	-3.05	-1,647.3	-107.3	4,612.1	4,564.7	47.44	97.222	
13,200.0	7,716.0	5,100.0	5,100.0	108.2	102.0	-3.05	-1,647.3	-107.3	4,694.8	4,646.7	48.16	97.478	
13,300.0	7,716.1	5,100.0	5,100.0	110.1	102.0	-3.05	-1,647.3	-107.3	4,778.2	4,729.3	48.89	97.739	
13,400.0	7,716.2	5,100.0	5,100.0	112.0	102.0	-3.05	-1,647.3	-107.3	4,862.2	4,812.6	49.61	98.004	
13,500.0	7,716.2	5,100.0	5,100.0	113.9	102.0	-3.05	-1,647.3	-107.3	4,946.8	4,896.4	50.34	98.272	
13,600.0	7,716.3	5,100.0	5,100.0	115.8	102.0	-3.05	-1,647.3	-107.3	5,031.9	4,980.9	51.06	98.542	
13,700.0	7,716.4	5,100.0	5,100.0	117.7	102.0	-3.05	-1,647.3	-107.3	5,117.6	5,065.8	51.79	98.815	
13,800.0	7,716.5	5,100.0	5,100.0	119.6	102.0	-3.05	-1,647.3	-107.3	5,203.8	5,151.3	52.52	99.089	
13,900.0	7,716.5	5,100.0	5,100.0	121.5	102.0	-3.05	-1,647.3	-107.3	5,290.5	5,237.3	53.24	99.364	
14,000.0	7,716.6	5,100.0	5,100.0	123.4	102.0	-3.05	-1,647.3	-107.3	5,377.6	5,323.7	53.97	99.639	
14,100.0	7,716.7	5,100.0	5,100.0	125.3	102.0	-3.05	-1,647.3	-107.3	5,465.2	5,410.5	54.70	99.915	
14,200.0	7,716.7	5,100.0	5,100.0	127.2	102.0	-3.05	-1,647.3	-107.3	5,553.2	5,497.8	55.43	100.190	
14,300.0	7,716.8	5,100.0	5,100.0	129.1	102.0	-3.05	-1,647.3	-107.3	5,641.6	5,585.5	56.16	100.465	
14,400.0	7,716.9	5,100.0	5,100.0	131.0	102.0	-3.05	-1,647.3	-107.3	5,730.4	5,673.5	56.88	100.738	
14,500.0	7,716.9	5,100.0	5,100.0	132.9	102.0	-3.05	-1,647.3	-107.3	5,819.6	5,762.0	57.61	101.011	
14,584.8	7,717.0	5,100.0	5,100.0	134.5	102.0	-3.05	-1,647.3	-107.3	5,895.4	5,837.2	58.23	101.241	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-86.40	69.3	-1,100.9	1,103.1				
100.0	100.0	99.0	99.0	0.1	0.1	-86.40	69.3	-1,100.9	1,103.1	1,102.9	0.22	4,932.421	
200.0	200.0	199.0	199.0	0.3	0.3	-86.40	69.3	-1,100.9	1,103.1	1,102.4	0.67	1,641.406	
300.0	300.0	299.0	299.0	0.6	0.6	-86.40	69.3	-1,100.9	1,103.1	1,102.0	1.12	983.528	
400.0	400.0	399.0	399.0	0.8	0.8	-86.40	69.3	-1,100.9	1,103.1	1,101.5	1.57	702.118	
500.0	500.0	499.0	499.0	1.0	1.0	-86.40	69.3	-1,100.9	1,103.1	1,101.1	2.02	545.918	
600.0	600.0	599.0	599.0	1.2	1.2	-86.40	69.3	-1,100.9	1,103.1	1,100.6	2.47	446.570	
700.0	700.0	699.0	699.0	1.5	1.5	-86.40	69.3	-1,100.9	1,103.1	1,100.2	2.92	377.814	
800.0	800.0	799.0	799.0	1.7	1.7	-86.40	69.3	-1,100.9	1,103.1	1,099.7	3.37	327.405	
900.0	900.0	899.0	899.0	1.9	1.9	-86.40	69.3	-1,100.9	1,103.1	1,099.3	3.82	288.864	
1,000.0	1,000.0	999.0	999.0	2.1	2.1	-86.40	69.3	-1,100.9	1,103.1	1,098.8	4.27	258.441	
1,100.0	1,100.0	1,154.2	1,154.1	2.4	2.5	-86.32	70.5	-1,097.0	1,100.6	1,095.8	4.83	228.093	
1,200.0	1,200.0	1,309.0	1,308.4	2.6	2.8	-86.08	74.3	-1,085.1	1,093.1	1,087.7	5.39	202.817	
1,300.0	1,300.0	1,441.4	1,439.7	2.8	3.1	-85.74	79.6	-1,068.9	1,081.0	1,075.1	5.94	182.080	
1,400.0	1,400.0	1,540.5	1,537.8	3.0	3.4	-85.46	83.8	-1,055.6	1,068.0	1,061.6	6.42	166.339	
1,500.0	1,500.0	1,639.5	1,635.8	3.3	3.7	-85.17	88.1	-1,042.4	1,055.0	1,048.1	6.92	152.563	
1,600.0	1,600.0	1,738.5	1,733.8	3.5	4.0	-84.87	92.3	-1,029.2	1,042.1	1,034.7	7.42	140.455	
1,700.0	1,700.0	1,837.4	1,831.7	3.7	4.3	-40.44	96.6	-1,016.0	1,027.8	1,020.1	7.71	133.366	
1,800.0	1,799.8	1,935.9	1,929.3	3.9	4.6	-40.55	100.8	-1,002.8	1,011.0	1,002.8	8.15	124.057	
1,900.0	1,899.5	2,034.0	2,026.4	4.2	4.9	-40.81	105.0	-989.7	991.5	982.9	8.59	115.469	
2,000.0	1,998.8	2,131.7	2,123.1	4.4	5.2	-41.00	109.2	-976.7	970.2	961.1	9.04	107.352	
2,100.0	2,098.2	2,229.3	2,219.8	4.6	5.5	-41.13	113.4	-963.6	948.7	939.2	9.50	99.878	
2,200.0	2,197.5	2,327.0	2,316.5	4.9	5.8	-41.25	117.6	-950.6	927.2	917.3	9.97	93.047	
2,300.0	2,296.9	2,424.6	2,413.2	5.1	6.1	-41.39	121.8	-937.5	905.8	895.4	10.44	86.788	
2,400.0	2,396.2	2,522.3	2,509.9	5.4	6.5	-41.53	126.0	-924.5	884.3	873.4	10.91	81.041	
2,500.0	2,495.6	2,619.9	2,606.5	5.7	6.8	-41.67	130.2	-911.5	862.9	851.5	11.39	75.751	
2,600.0	2,594.9	2,717.6	2,703.2	5.9	7.1	-41.83	134.4	-898.4	841.5	829.6	11.87	70.869	
2,700.0	2,694.3	2,815.2	2,799.9	6.2	7.4	-41.99	138.6	-885.4	820.1	807.7	12.36	66.355	
2,800.0	2,793.6	2,912.9	2,896.6	6.5	7.8	-42.16	142.8	-872.3	798.6	785.8	12.85	62.170	
2,900.0	2,892.9	3,010.5	2,993.3	6.8	8.1	-42.35	146.9	-859.3	777.2	763.9	13.34	58.283	
3,000.0	2,992.3	3,108.2	3,090.0	7.1	8.4	-42.54	151.1	-846.2	755.8	742.0	13.83	54.663	
3,100.0	3,091.6	3,205.8	3,186.6	7.4	8.7	-42.74	155.3	-833.2	734.4	720.1	14.32	51.287	
3,200.0	3,191.0	3,303.5	3,283.3	7.6	9.1	-42.95	159.5	-820.2	713.0	698.2	14.81	48.131	
3,300.0	3,290.3	3,401.1	3,380.0	7.9	9.4	-43.18	163.7	-807.1	691.7	676.3	15.31	45.176	
3,400.0	3,389.7	3,498.8	3,476.7	8.2	9.7	-43.42	167.9	-794.1	670.3	654.5	15.81	42.403	
3,500.0	3,489.0	3,596.4	3,573.4	8.5	10.1	-43.68	172.1	-781.0	648.9	632.6	16.31	39.798	
3,600.0	3,588.4	3,694.1	3,670.1	8.8	10.4	-43.96	176.3	-768.0	627.6	610.8	16.81	37.345	
3,700.0	3,687.7	3,791.7	3,766.8	9.1	10.7	-44.25	180.5	-755.0	606.3	589.0	17.31	35.033	
3,800.0	3,787.1	3,889.4	3,863.4	9.4	11.1	-44.57	184.7	-741.9	585.0	567.2	17.81	32.850	
3,900.0	3,886.4	3,987.0	3,960.1	9.7	11.4	-44.91	188.9	-728.9	563.7	545.4	18.31	30.786	
4,000.0	3,985.8	4,084.7	4,056.8	10.0	11.7	-45.28	193.1	-715.8	542.4	523.6	18.81	28.832	
4,100.0	4,085.1	4,182.3	4,153.5	10.3	12.1	-45.68	197.3	-702.8	521.2	501.8	19.32	26.980	
4,200.0	4,184.5	4,280.0	4,250.2	10.6	12.4	-46.11	201.5	-689.7	499.9	480.1	19.82	25.222	
4,300.0	4,283.8	4,377.6	4,346.9	10.9	12.7	-46.58	205.7	-676.7	478.7	458.4	20.33	23.552	
4,400.0	4,383.2	4,475.3	4,443.5	11.2	13.1	-47.09	209.9	-663.7	457.6	436.8	20.83	21.963	
4,500.0	4,482.5	4,572.9	4,540.2	11.5	13.4	-47.65	214.0	-650.6	436.5	415.1	21.34	20.451	
4,600.0	4,581.9	4,670.6	4,636.9	11.8	13.7	-48.27	218.2	-637.6	415.4	393.5	21.85	19.009	
4,700.0	4,681.2	4,768.2	4,733.6	12.1	14.1	-48.93	222.4	-624.5	394.4	372.0	22.37	17.634	
4,800.0	4,780.8	4,866.2	4,830.6	12.3	14.4	-49.15	226.6	-611.4	374.7	351.8	22.86	16.394	
4,900.0	4,880.6	4,964.7	4,928.1	12.5	14.7	-49.03	230.9	-598.3	357.3	334.0	23.32	15.319	
5,000.0	4,980.5	5,063.5	5,025.9	12.7	15.1	-48.51	235.1	-585.1	342.1	318.4	23.76	14.397	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,080.5	5,162.5	5,124.0	12.8	15.4	-92.22	239.4	-571.9	328.5	304.4	24.19	13.580	
5,200.0	5,180.5	5,259.2	5,219.7	13.0	15.7	-91.56	243.5	-559.0	315.1	290.5	24.63	12.793	
5,300.0	5,280.5	5,349.2	5,309.1	13.2	16.0	-91.00	246.7	-549.0	303.9	278.9	25.03	12.143	
5,400.0	5,380.5	5,439.7	5,399.3	13.4	16.2	-90.56	249.1	-541.6	295.7	270.3	25.41	11.639	
5,500.0	5,480.5	5,530.7	5,490.2	13.6	16.3	-90.27	250.6	-536.9	290.5	264.7	25.78	11.270	
5,600.0	5,580.5	5,621.9	5,581.3	13.8	16.5	-90.15	251.2	-535.0	288.4	262.2	26.14	11.031	
5,641.9	5,622.5	5,662.0	5,621.5	13.9	16.5	-90.15	251.3	-534.9	288.3	262.0	26.30	10.963	
5,700.0	5,680.5	5,720.1	5,679.5	14.0	16.6	-90.15	251.3	-534.9	288.3	261.8	26.53	10.868	
5,800.0	5,780.5	5,820.1	5,779.5	14.2	16.8	-90.15	251.3	-534.9	288.3	261.4	26.93	10.707	
5,900.0	5,880.5	5,920.1	5,879.5	14.4	16.9	-90.15	251.3	-534.9	288.3	261.0	27.33	10.549	
6,000.0	5,980.5	6,020.1	5,979.5	14.6	17.1	-90.15	251.3	-534.9	288.3	260.6	27.73	10.395	
6,100.0	6,080.5	6,120.1	6,079.5	14.8	17.3	-90.15	251.3	-534.9	288.3	260.2	28.14	10.246	
6,200.0	6,180.5	6,220.1	6,179.5	15.0	17.4	-90.15	251.3	-534.9	288.3	259.8	28.55	10.100	
6,300.0	6,280.5	6,320.1	6,279.5	15.2	17.6	-90.15	251.3	-534.9	288.3	259.4	28.95	9.958	
6,400.0	6,380.5	6,420.1	6,379.5	15.4	17.8	-90.15	251.3	-534.9	288.3	258.9	29.36	9.819	
6,500.0	6,480.5	6,520.1	6,479.5	15.6	18.0	-90.15	251.3	-534.9	288.3	258.5	29.77	9.684	
6,600.0	6,580.5	6,620.1	6,579.5	15.8	18.1	-90.15	251.3	-534.9	288.3	258.1	30.18	9.552	
6,700.0	6,680.5	6,720.1	6,679.5	16.0	18.3	-90.15	251.3	-534.9	288.3	257.7	30.60	9.423	
6,800.0	6,780.5	6,820.1	6,779.5	16.2	18.5	-90.15	251.3	-534.9	288.3	257.3	31.01	9.297	
6,900.0	6,880.5	6,920.1	6,879.5	16.4	18.6	-90.15	251.3	-534.9	288.3	256.9	31.42	9.175	
7,000.0	6,980.5	7,020.1	6,979.5	16.6	18.8	89.98	251.3	-534.9	288.3	256.5	31.83	9.057	
7,001.8	6,982.4	7,022.0	6,981.4	16.6	18.8	90.00	251.3	-534.9	288.3	256.5	31.84	9.056	CC
7,100.0	7,079.9	7,119.7	7,079.1	16.7	19.0	92.05	251.0	-534.9	288.5	256.3	32.18	8.966	
7,200.0	7,177.0	7,221.0	7,179.9	16.8	19.1	94.95	242.0	-534.9	289.4	257.0	32.44	8.921	
7,300.0	7,270.2	7,324.3	7,280.6	16.8	19.2	97.77	219.1	-534.9	291.0	258.4	32.61	8.925	
7,400.0	7,357.9	7,429.8	7,379.2	16.9	19.3	100.45	181.9	-534.9	293.3	260.6	32.69	8.971	
7,500.0	7,438.6	7,537.5	7,473.6	16.9	19.4	102.94	130.4	-534.9	295.9	263.2	32.73	9.043	
7,600.0	7,510.9	7,647.2	7,561.5	16.9	19.5	105.18	64.7	-534.9	298.9	266.1	32.79	9.115	
7,700.0	7,573.6	7,759.0	7,640.3	17.0	19.6	107.13	-14.4	-534.9	301.8	268.8	32.98	9.151	
7,800.0	7,625.6	7,872.5	7,707.7	17.2	19.8	108.76	-105.7	-534.9	304.6	271.2	33.43	9.112	
7,900.0	7,666.0	7,987.6	7,761.5	17.7	20.2	110.02	-207.3	-534.9	306.9	272.7	34.24	8.964	
8,000.0	7,694.1	8,103.9	7,799.7	18.4	20.9	110.91	-317.0	-534.9	308.7	273.2	35.50	8.694	
8,100.0	7,709.5	8,221.0	7,820.9	19.3	21.7	111.41	-432.1	-534.9	309.7	272.4	37.25	8.312	
8,200.0	7,712.5	8,332.2	7,825.4	20.3	22.8	111.55	-543.1	-534.9	310.0	270.6	39.33	7.881	
8,300.0	7,712.6	8,432.2	7,826.1	21.4	23.8	111.66	-643.1	-534.9	310.2	268.8	41.45	7.483	
8,400.0	7,712.7	8,532.2	7,826.8	22.7	25.0	111.76	-743.1	-534.9	310.4	266.7	43.76	7.094	
8,500.0	7,712.8	8,632.2	7,827.5	24.0	26.3	111.87	-843.1	-534.9	310.7	264.4	46.23	6.720	
8,600.0	7,712.8	8,732.2	7,828.2	25.4	27.6	111.98	-943.1	-534.9	310.9	262.1	48.83	6.367	
8,700.0	7,712.9	8,832.2	7,828.9	26.8	29.0	112.09	-1,043.1	-534.9	311.1	259.6	51.55	6.036	
8,800.0	7,713.0	8,932.2	7,829.6	28.3	30.5	112.19	-1,143.1	-534.9	311.4	257.0	54.36	5.728	
8,900.0	7,713.0	9,032.2	7,830.3	29.9	32.0	112.30	-1,243.1	-534.9	311.6	254.4	57.26	5.442	
9,000.0	7,713.1	9,132.2	7,831.0	31.5	33.5	112.41	-1,343.1	-534.9	311.9	251.6	60.22	5.179	
9,100.0	7,713.2	9,232.2	7,831.7	33.1	35.1	112.51	-1,443.1	-534.9	312.1	248.9	63.24	4.935	
9,200.0	7,713.2	9,332.2	7,832.4	34.8	36.7	112.62	-1,543.1	-534.9	312.3	246.0	66.31	4.711	
9,300.0	7,713.3	9,432.2	7,833.1	36.4	38.4	112.73	-1,643.1	-534.9	312.6	243.2	69.42	4.503	
9,400.0	7,713.4	9,532.2	7,833.8	38.1	40.0	112.83	-1,743.1	-534.9	312.8	240.3	72.56	4.311	
9,500.0	7,713.5	9,632.2	7,834.5	39.9	41.7	112.94	-1,843.1	-534.9	313.1	237.3	75.74	4.134	
9,600.0	7,713.5	9,732.2	7,835.2	41.6	43.4	113.05	-1,943.1	-534.9	313.3	234.4	78.94	3.969	
9,700.0	7,713.6	9,832.2	7,835.9	43.4	45.2	113.15	-2,043.1	-534.9	313.6	231.4	82.17	3.816	
9,800.0	7,713.7	9,932.2	7,836.6	45.1	46.9	113.26	-2,143.1	-534.9	313.8	228.4	85.41	3.674	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32O Pad Sec.32-T1N-R67W - Jacobucci 32O-423 - Wellbore #1 - Plan #1 (7-25-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,900.0	7,713.7	10,032.2	7,837.3	46.9	48.6	113.36	-2,243.0	-534.9	314.1	225.4	88.67	3.542	
10,000.0	7,713.8	10,132.2	7,838.0	48.7	50.4	113.47	-2,343.0	-534.9	314.3	222.4	91.94	3.418	
10,100.0	7,713.9	10,232.2	7,838.7	50.5	52.2	113.57	-2,443.0	-534.9	314.6	219.3	95.23	3.303	
10,200.0	7,713.9	10,332.2	7,839.4	52.3	54.0	113.68	-2,543.0	-534.9	314.8	216.3	98.53	3.195	
10,300.0	7,714.0	10,432.2	7,840.1	54.1	55.8	113.78	-2,643.0	-534.9	315.1	213.2	101.84	3.094	
10,400.0	7,714.1	10,532.2	7,840.8	55.9	57.6	113.89	-2,743.0	-534.9	315.3	210.2	105.15	2.999	
10,500.0	7,714.1	10,632.2	7,841.5	57.8	59.4	113.99	-2,843.0	-534.9	315.6	207.1	108.47	2.909	
10,600.0	7,714.2	10,732.2	7,842.1	59.6	61.2	114.09	-2,943.0	-534.9	315.8	204.0	111.80	2.825	
10,700.0	7,714.3	10,832.2	7,842.8	61.4	63.0	114.20	-3,043.0	-534.9	316.1	201.0	115.13	2.746	
10,800.0	7,714.4	10,932.2	7,843.5	63.3	64.8	114.30	-3,143.0	-534.9	316.3	197.9	118.46	2.670	
10,900.0	7,714.4	11,032.2	7,844.2	65.1	66.7	114.41	-3,243.0	-534.9	316.6	194.8	121.80	2.599	
11,000.0	7,714.5	11,132.2	7,844.9	67.0	68.5	114.51	-3,343.0	-534.9	316.9	191.7	125.14	2.532	
11,100.0	7,714.6	11,232.2	7,845.6	68.8	70.3	114.61	-3,443.0	-534.9	317.1	188.6	128.48	2.468	
11,200.0	7,714.6	11,332.2	7,846.3	70.7	72.2	114.72	-3,543.0	-534.9	317.4	185.6	131.82	2.408	
11,300.0	7,714.7	11,432.2	7,847.0	72.5	74.0	114.82	-3,643.0	-534.9	317.6	182.5	135.16	2.350	
11,400.0	7,714.8	11,532.2	7,847.7	74.4	75.9	114.92	-3,743.0	-534.9	317.9	179.4	138.50	2.295	
11,500.0	7,714.8	11,632.2	7,848.4	76.3	77.7	115.02	-3,843.0	-534.9	318.2	176.3	141.85	2.243	
11,600.0	7,714.9	11,732.2	7,849.1	78.1	79.6	115.13	-3,943.0	-534.9	318.4	173.3	145.19	2.193	
11,700.0	7,715.0	11,832.2	7,849.8	80.0	81.4	115.23	-4,043.0	-534.9	318.7	170.2	148.53	2.146	
11,800.0	7,715.1	11,932.2	7,850.5	81.9	83.3	115.33	-4,143.0	-534.9	319.0	167.1	151.87	2.100	
11,900.0	7,715.1	12,032.2	7,851.2	83.8	85.2	115.43	-4,243.0	-534.9	319.2	164.0	155.21	2.057	
12,000.0	7,715.2	12,132.2	7,851.9	85.6	87.0	115.53	-4,343.0	-534.9	319.5	161.0	158.55	2.015	
12,100.0	7,715.3	12,232.2	7,852.6	87.5	88.9	115.64	-4,442.9	-534.9	319.8	157.9	161.88	1.975	
12,200.0	7,715.3	12,332.2	7,853.3	89.4	90.8	115.74	-4,542.9	-534.9	320.1	154.8	165.21	1.937	
12,300.0	7,715.4	12,432.1	7,854.0	91.3	92.7	115.84	-4,642.9	-534.9	320.3	151.8	168.54	1.901	
12,400.0	7,715.5	12,532.1	7,854.7	93.1	94.5	115.94	-4,742.9	-534.9	320.6	148.7	171.87	1.865	
12,500.0	7,715.5	12,632.1	7,855.4	95.0	96.4	116.04	-4,842.9	-534.9	320.9	145.7	175.20	1.832	
12,600.0	7,715.6	12,732.1	7,856.1	96.9	98.3	116.14	-4,942.9	-534.9	321.2	142.6	178.52	1.799	
12,700.0	7,715.7	12,832.1	7,856.8	98.8	100.2	116.24	-5,042.9	-534.9	321.4	139.6	181.84	1.768	
12,800.0	7,715.8	12,932.1	7,857.5	100.7	102.0	116.34	-5,142.9	-534.9	321.7	136.6	185.16	1.738	
12,900.0	7,715.8	13,032.1	7,858.2	102.6	103.9	116.44	-5,242.9	-534.9	322.0	133.5	188.47	1.708	
13,000.0	7,715.9	13,132.1	7,858.9	104.5	105.8	116.54	-5,342.9	-534.9	322.3	130.5	191.78	1.680	
13,100.0	7,716.0	13,232.1	7,859.6	106.4	107.7	116.64	-5,442.9	-534.9	322.6	127.5	195.08	1.653	
13,200.0	7,716.0	13,332.1	7,860.3	108.2	109.6	116.74	-5,542.9	-534.9	322.8	124.5	198.39	1.627	
13,300.0	7,716.1	13,432.1	7,861.0	110.1	111.5	116.84	-5,642.9	-534.9	323.1	121.4	201.69	1.602	
13,400.0	7,716.2	13,532.1	7,861.7	112.0	113.3	116.94	-5,742.9	-534.9	323.4	118.4	204.98	1.578	
13,500.0	7,716.2	13,632.1	7,862.4	113.9	115.2	117.04	-5,842.9	-534.9	323.7	115.4	208.27	1.554	
13,600.0	7,716.3	13,732.1	7,863.1	115.8	117.1	117.14	-5,942.9	-534.9	324.0	112.4	211.56	1.531	
13,700.0	7,716.4	13,832.1	7,863.8	117.7	119.0	117.24	-6,042.9	-534.9	324.3	109.4	214.84	1.509	
13,800.0	7,716.5	13,932.1	7,864.5	119.6	120.9	117.34	-6,142.9	-534.9	324.6	106.4	218.12	1.488	Level 3
13,900.0	7,716.5	14,032.1	7,865.2	121.5	122.8	117.43	-6,242.9	-534.9	324.8	103.4	221.40	1.467	Level 3
14,000.0	7,716.6	14,132.1	7,865.9	123.4	124.7	117.53	-6,342.9	-534.9	325.1	100.5	224.67	1.447	Level 3
14,100.0	7,716.7	14,232.1	7,866.6	125.3	126.6	117.63	-6,442.9	-534.9	325.4	97.5	227.94	1.428	Level 3
14,200.0	7,716.7	14,332.1	7,867.3	127.2	128.5	117.73	-6,542.9	-534.9	325.7	94.5	231.20	1.409	Level 3
14,300.0	7,716.8	14,432.1	7,868.0	129.1	130.4	117.83	-6,642.9	-534.9	326.0	91.5	234.46	1.390	Level 3
14,400.0	7,716.9	14,532.1	7,868.7	131.0	132.3	117.92	-6,742.8	-534.9	326.3	88.6	237.71	1.373	Level 3
14,500.0	7,716.9	14,632.1	7,869.4	132.9	134.2	118.02	-6,842.8	-534.9	326.6	85.6	240.96	1.355	Level 3
14,584.8	7,717.0	14,716.9	7,870.0	134.5	135.8	118.10	-6,927.6	-534.9	326.8	83.1	243.72	1.341	Level 3, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.99	0.0	28.0	28.0				
100.0	100.0	100.0	100.0	0.1	0.1	89.99	0.0	28.0	28.0	27.8	0.22	124.634	
200.0	200.0	200.0	200.0	0.3	0.3	89.99	0.0	28.0	28.0	27.3	0.67	41.545	
300.0	300.0	300.0	300.0	0.6	0.6	89.99	0.0	28.0	28.0	26.9	1.12	24.927	
400.0	400.0	400.0	400.0	0.8	0.8	89.99	0.0	28.0	28.0	26.4	1.57	17.805	
500.0	500.0	500.0	500.0	1.0	1.0	89.99	0.0	28.0	28.0	26.0	2.02	13.848	
600.0	600.0	600.0	600.0	1.2	1.2	89.99	0.0	28.0	28.0	25.5	2.47	11.330	
700.0	700.0	700.0	700.0	1.5	1.5	89.99	0.0	28.0	28.0	25.1	2.92	9.587	
800.0	800.0	800.0	800.0	1.7	1.7	89.99	0.0	28.0	28.0	24.6	3.37	8.309	
900.0	900.0	900.0	900.0	1.9	1.9	89.99	0.0	28.0	28.0	24.2	3.82	7.331	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.99	0.0	28.0	28.0	23.7	4.27	6.560	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	89.99	0.0	28.0	28.0	23.3	4.72	5.935	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	89.99	0.0	28.0	28.0	22.8	5.17	5.419	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	89.99	0.0	28.0	28.0	22.4	5.62	4.985	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	89.99	0.0	28.0	28.0	21.9	6.07	4.616	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	89.99	0.0	28.0	28.0	21.5	6.52	4.298	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	89.99	0.0	28.0	28.0	21.0	6.97	4.020	CC, ES
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	136.80	0.0	28.0	29.3	21.8	7.41	3.948	
1,800.0	1,799.8	1,799.8	1,799.8	3.9	3.9	142.93	0.0	28.0	33.3	25.4	7.85	4.241	
1,900.0	1,899.5	1,899.5	1,899.5	4.2	4.2	150.29	0.0	28.0	40.6	32.3	8.27	4.905	
2,000.0	1,998.8	1,998.8	1,998.8	4.4	4.4	156.59	0.0	28.0	50.7	42.0	8.70	5.822	
2,100.0	2,098.2	2,098.5	2,098.5	4.6	4.6	159.27	1.6	28.5	61.0	51.9	9.15	6.669	
2,200.0	2,197.5	2,198.5	2,198.3	4.9	4.8	158.40	6.6	29.8	70.8	61.2	9.59	7.378	
2,300.0	2,296.9	2,298.3	2,297.7	5.1	5.1	155.28	15.0	32.0	80.1	70.1	10.05	7.975	
2,400.0	2,396.2	2,397.8	2,396.5	5.4	5.3	150.72	26.5	35.1	89.5	79.0	10.52	8.511	
2,500.0	2,495.6	2,497.0	2,495.0	5.7	5.5	146.59	38.7	38.3	99.4	88.4	11.00	9.033	
2,600.0	2,594.9	2,596.3	2,593.5	5.9	5.8	143.22	50.9	41.6	109.7	98.2	11.50	9.536	
2,700.0	2,694.3	2,695.6	2,691.9	6.2	6.0	140.44	63.1	44.8	120.3	108.3	12.01	10.016	
2,800.0	2,793.6	2,794.9	2,790.4	6.5	6.3	138.11	75.3	48.1	131.1	118.6	12.53	10.468	
2,900.0	2,892.9	2,894.2	2,888.9	6.8	6.5	136.14	87.5	51.4	142.1	129.1	13.05	10.891	
3,000.0	2,992.3	2,993.5	2,987.4	7.1	6.8	134.45	99.7	54.6	153.3	139.7	13.58	11.288	
3,100.0	3,091.6	3,092.7	3,085.8	7.4	7.1	132.99	111.9	57.9	164.6	150.4	14.12	11.658	
3,200.0	3,191.0	3,192.0	3,184.3	7.6	7.4	131.72	124.1	61.1	175.9	161.3	14.66	12.004	
3,300.0	3,290.3	3,291.3	3,282.8	7.9	7.6	130.61	136.3	64.4	187.4	172.2	15.20	12.326	
3,400.0	3,389.7	3,390.6	3,381.3	8.2	7.9	129.62	148.5	67.6	198.9	183.1	15.75	12.627	
3,500.0	3,489.0	3,489.9	3,479.7	8.5	8.2	128.74	160.7	70.9	210.4	194.1	16.30	12.909	
3,600.0	3,588.4	3,589.1	3,578.2	8.8	8.5	127.95	172.9	74.1	222.0	205.2	16.86	13.173	
3,700.0	3,687.7	3,688.4	3,676.7	9.1	8.8	127.24	185.1	77.4	233.7	216.3	17.41	13.420	
3,800.0	3,787.1	3,787.7	3,775.2	9.4	9.1	126.60	197.3	80.7	245.3	227.4	17.97	13.652	
3,900.0	3,886.4	3,887.0	3,873.6	9.7	9.4	126.02	209.5	83.9	257.0	238.5	18.53	13.869	
4,000.0	3,985.8	3,986.3	3,972.1	10.0	9.7	125.49	221.7	87.2	268.8	249.7	19.10	14.074	
4,100.0	4,085.1	4,087.0	4,072.1	10.3	10.0	125.04	233.8	90.4	280.4	260.8	19.65	14.269	
4,200.0	4,184.5	4,190.7	4,175.2	10.6	10.2	125.14	243.5	93.0	290.9	270.8	20.15	14.436	
4,300.0	4,283.8	4,294.4	4,278.8	10.9	10.4	125.90	249.5	94.6	300.0	279.4	20.62	14.546	
4,400.0	4,383.2	4,398.1	4,382.5	11.2	10.6	127.26	252.0	95.3	307.7	286.7	21.06	14.609	
4,500.0	4,482.5	4,498.2	4,482.5	11.5	10.8	128.91	252.0	95.3	314.8	293.3	21.49	14.646	
4,600.0	4,581.9	4,597.5	4,581.9	11.8	11.0	130.48	252.0	95.3	322.1	300.2	21.94	14.680	
4,700.0	4,681.2	4,696.9	4,681.2	12.1	11.2	131.99	252.0	95.3	329.7	307.3	22.39	14.724	
4,800.0	4,780.8	4,796.4	4,780.8	12.3	11.4	133.27	252.0	95.3	336.0	313.2	22.80	14.739	
4,900.0	4,880.6	4,896.2	4,880.6	12.5	11.6	134.05	252.0	95.3	340.1	316.9	23.19	14.666	
5,000.0	4,980.5	4,996.2	4,980.5	12.7	11.8	134.37	252.0	95.3	341.8	318.2	23.56	14.505	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,080.5	5,096.2	5,080.5	12.8	12.0	90.00	252.0	95.3	341.9	317.9	23.95	14.275	
5,200.0	5,180.5	5,196.2	5,180.5	13.0	12.2	90.00	252.0	95.3	341.9	317.5	24.36	14.036	
5,300.0	5,280.5	5,296.2	5,280.5	13.2	12.4	90.00	252.0	95.3	341.9	317.1	24.76	13.804	
5,400.0	5,380.5	5,396.2	5,380.5	13.4	12.6	90.00	252.0	95.3	341.9	316.7	25.17	13.579	
5,500.0	5,480.5	5,496.2	5,480.5	13.6	12.8	90.00	252.0	95.3	341.9	316.3	25.59	13.361	
5,600.0	5,580.5	5,596.2	5,580.5	13.8	13.0	90.00	252.0	95.3	341.9	315.9	26.00	13.149	
5,700.0	5,680.5	5,696.2	5,680.5	14.0	13.2	90.00	252.0	95.3	341.9	315.4	26.41	12.942	
5,800.0	5,780.5	5,796.2	5,780.5	14.2	13.4	90.00	252.0	95.3	341.9	315.0	26.83	12.742	
5,900.0	5,880.5	5,896.2	5,880.5	14.4	13.6	90.00	252.0	95.3	341.9	314.6	27.24	12.547	
6,000.0	5,980.5	5,996.2	5,980.5	14.6	13.8	90.00	252.0	95.3	341.9	314.2	27.66	12.358	
6,100.0	6,080.5	6,096.2	6,080.5	14.8	14.1	90.00	252.0	95.3	341.9	313.8	28.08	12.174	
6,200.0	6,180.5	6,196.2	6,180.5	15.0	14.3	90.00	252.0	95.3	341.9	313.4	28.50	11.995	
6,300.0	6,280.5	6,296.2	6,280.5	15.2	14.5	90.00	252.0	95.3	341.9	312.9	28.92	11.821	
6,400.0	6,380.5	6,396.2	6,380.5	15.4	14.7	90.00	252.0	95.3	341.9	312.5	29.34	11.651	
6,500.0	6,480.5	6,496.2	6,480.5	15.6	14.9	90.00	252.0	95.3	341.9	312.1	29.76	11.486	
6,600.0	6,580.5	6,596.2	6,580.5	15.8	15.1	90.00	252.0	95.3	341.9	311.7	30.19	11.325	
6,700.0	6,680.5	6,696.2	6,680.5	16.0	15.3	90.00	252.0	95.3	341.9	311.2	30.61	11.168	
6,800.0	6,780.5	6,796.2	6,780.5	16.2	15.5	90.00	252.0	95.3	341.9	310.8	31.03	11.016	
6,858.6	6,839.2	6,854.8	6,839.2	16.3	15.7	90.00	252.0	95.3	341.9	310.6	31.28	10.928	
6,900.0	6,880.5	6,896.2	6,880.5	16.4	15.7	90.21	250.7	95.3	341.9	310.4	31.44	10.874	
7,000.0	6,980.5	6,994.7	6,978.2	16.6	15.9	-87.88	238.8	95.3	342.1	310.4	31.72	10.785	
7,100.0	7,079.9	7,091.1	7,071.6	16.7	15.9	-85.53	215.0	95.3	342.9	311.1	31.85	10.765	
7,200.0	7,177.0	7,186.0	7,159.8	16.8	15.9	-83.29	180.3	95.3	344.3	312.4	31.90	10.790	
7,300.0	7,270.2	7,279.4	7,241.8	16.8	16.0	-81.18	135.7	95.3	346.0	314.1	31.91	10.844	
7,400.0	7,357.9	7,371.5	7,316.8	16.9	16.0	-79.24	82.2	95.3	348.1	316.1	31.91	10.908	
7,500.0	7,438.6	7,462.5	7,384.0	16.9	16.1	-77.50	21.0	95.3	350.2	318.3	31.97	10.957	
7,600.0	7,510.9	7,550.0	7,441.3	16.9	16.3	-76.00	-45.1	95.3	352.5	320.3	32.13	10.969	
7,700.0	7,573.6	7,641.6	7,492.8	17.0	16.6	-74.66	-120.8	95.3	354.5	322.1	32.49	10.913	
7,800.0	7,625.6	7,730.1	7,533.6	17.2	17.0	-73.60	-199.2	95.3	356.4	323.3	33.08	10.775	
7,900.0	7,666.0	7,818.1	7,564.9	17.7	17.5	-72.79	-281.4	95.3	357.9	324.0	33.94	10.546	
8,000.0	7,694.1	7,905.6	7,586.5	18.4	18.2	-72.23	-366.2	95.3	359.0	323.9	35.10	10.228	
8,100.0	7,709.5	7,992.9	7,598.3	19.3	19.0	-71.93	-452.7	95.3	359.6	323.0	36.56	9.835	
8,200.0	7,712.5	8,084.5	7,600.6	20.3	19.9	-71.87	-544.2	95.3	359.7	321.3	38.36	9.377	
8,300.0	7,712.6	8,184.5	7,600.8	21.4	21.1	-71.89	-644.2	95.3	359.7	319.1	40.52	8.877	
8,400.0	7,712.7	8,284.5	7,601.0	22.7	22.3	-71.92	-744.2	95.3	359.6	316.7	42.88	8.387	
8,500.0	7,712.8	8,384.5	7,601.3	24.0	23.7	-71.94	-844.2	95.3	359.6	314.2	45.41	7.918	
8,600.0	7,712.8	8,484.5	7,601.5	25.4	25.1	-71.96	-944.1	95.3	359.5	311.4	48.10	7.475	
8,700.0	7,712.9	8,584.5	7,601.7	26.8	26.5	-71.98	-1,044.1	95.3	359.5	308.6	50.91	7.062	
8,800.0	7,713.0	8,684.5	7,601.9	28.3	28.1	-72.00	-1,144.1	95.3	359.4	305.6	53.82	6.679	
8,900.0	7,713.0	8,784.5	7,602.1	29.9	29.6	-72.02	-1,244.1	95.3	359.4	302.6	56.82	6.325	
9,000.0	7,713.1	8,884.5	7,602.3	31.5	31.2	-72.04	-1,344.1	95.3	359.4	299.5	59.90	5.999	
9,100.0	7,713.2	8,984.5	7,602.5	33.1	32.9	-72.06	-1,444.1	95.3	359.3	296.3	63.04	5.700	
9,200.0	7,713.2	9,084.5	7,602.7	34.8	34.5	-72.08	-1,544.1	95.3	359.3	293.0	66.24	5.424	
9,300.0	7,713.3	9,184.5	7,602.9	36.4	36.2	-72.11	-1,644.1	95.3	359.2	289.7	69.49	5.170	
9,400.0	7,713.4	9,284.5	7,603.1	38.1	38.0	-72.13	-1,744.1	95.3	359.2	286.4	72.78	4.935	
9,500.0	7,713.5	9,384.5	7,603.4	39.9	39.7	-72.15	-1,844.1	95.3	359.1	283.0	76.10	4.719	
9,600.0	7,713.5	9,484.5	7,603.6	41.6	41.4	-72.17	-1,944.1	95.3	359.1	279.6	79.46	4.519	
9,700.0	7,713.6	9,584.5	7,603.8	43.4	43.2	-72.19	-2,044.1	95.3	359.1	276.2	82.85	4.334	
9,800.0	7,713.7	9,684.5	7,604.0	45.1	45.0	-72.21	-2,144.1	95.3	359.0	272.8	86.26	4.162	
9,900.0	7,713.7	9,784.5	7,604.2	46.9	46.8	-72.23	-2,244.1	95.3	359.0	269.3	89.69	4.002	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-203 - Wellbore #1 - Plan #2 (10-8-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	7,713.8	9,884.5	7,604.4	48.7	48.6	-72.25	-2,344.1	95.3	358.9	265.8	93.14	3.854	
10,100.0	7,713.9	9,984.5	7,604.6	50.5	50.4	-72.28	-2,444.1	95.3	358.9	262.3	96.61	3.715	
10,200.0	7,713.9	10,084.5	7,604.8	52.3	52.2	-72.30	-2,544.1	95.3	358.8	258.7	100.10	3.585	
10,300.0	7,714.0	10,184.5	7,605.0	54.1	54.0	-72.32	-2,644.1	95.3	358.8	255.2	103.60	3.463	
10,400.0	7,714.1	10,284.5	7,605.2	55.9	55.8	-72.34	-2,744.1	95.3	358.8	251.6	107.11	3.349	
10,500.0	7,714.1	10,384.5	7,605.4	57.8	57.7	-72.36	-2,844.1	95.3	358.7	248.1	110.64	3.242	
10,600.0	7,714.2	10,484.5	7,605.7	59.6	59.5	-72.38	-2,944.1	95.3	358.7	244.5	114.18	3.141	
10,700.0	7,714.3	10,584.5	7,605.9	61.4	61.3	-72.40	-3,044.1	95.3	358.6	240.9	117.72	3.046	
10,800.0	7,714.4	10,684.5	7,606.1	63.3	63.2	-72.42	-3,144.1	95.3	358.6	237.3	121.28	2.957	
10,900.0	7,714.4	10,784.5	7,606.3	65.1	65.0	-72.45	-3,244.1	95.3	358.6	233.7	124.85	2.872	
11,000.0	7,714.5	10,884.5	7,606.5	67.0	66.9	-72.47	-3,344.1	95.3	358.5	230.1	128.42	2.792	
11,100.0	7,714.6	10,984.5	7,606.7	68.8	68.7	-72.49	-3,444.1	95.3	358.5	226.5	132.00	2.716	
11,200.0	7,714.6	11,084.5	7,606.9	70.7	70.6	-72.51	-3,544.1	95.3	358.4	222.8	135.58	2.644	
11,300.0	7,714.7	11,184.5	7,607.1	72.5	72.5	-72.53	-3,644.1	95.3	358.4	219.2	139.18	2.575	
11,400.0	7,714.8	11,284.5	7,607.3	74.4	74.3	-72.55	-3,744.1	95.3	358.3	215.6	142.78	2.510	
11,500.0	7,714.8	11,384.5	7,607.5	76.3	76.2	-72.57	-3,844.1	95.3	358.3	211.9	146.38	2.448	
11,600.0	7,714.9	11,484.5	7,607.7	78.1	78.1	-72.59	-3,944.1	95.3	358.3	208.3	149.99	2.389	
11,700.0	7,715.0	11,584.5	7,608.0	80.0	79.9	-72.62	-4,044.1	95.3	358.2	204.6	153.60	2.332	
11,800.0	7,715.1	11,684.5	7,608.2	81.9	81.8	-72.64	-4,144.1	95.3	358.2	201.0	157.22	2.278	
11,900.0	7,715.1	11,784.5	7,608.4	83.8	83.7	-72.66	-4,244.1	95.3	358.1	197.3	160.85	2.227	
12,000.0	7,715.2	11,884.5	7,608.6	85.6	85.6	-72.68	-4,344.1	95.3	358.1	193.6	164.47	2.177	
12,100.0	7,715.3	11,984.5	7,608.8	87.5	87.5	-72.70	-4,444.1	95.3	358.0	189.9	168.10	2.130	
12,200.0	7,715.3	12,084.5	7,609.0	89.4	89.3	-72.72	-4,544.1	95.3	358.0	186.3	171.74	2.085	
12,300.0	7,715.4	12,184.5	7,609.2	91.3	91.2	-72.74	-4,644.1	95.3	358.0	182.6	175.38	2.041	
12,400.0	7,715.5	12,284.5	7,609.4	93.1	93.1	-72.76	-4,744.1	95.3	357.9	178.9	179.02	1.999	
12,500.0	7,715.5	12,384.5	7,609.6	95.0	95.0	-72.79	-4,844.1	95.3	357.9	175.2	182.66	1.959	
12,600.0	7,715.6	12,484.5	7,609.8	96.9	96.9	-72.81	-4,944.1	95.3	357.8	171.5	186.31	1.921	
12,700.0	7,715.7	12,584.5	7,610.1	98.8	98.8	-72.83	-5,044.1	95.3	357.8	167.8	189.96	1.884	
12,800.0	7,715.8	12,684.5	7,610.3	100.7	100.7	-72.85	-5,144.1	95.3	357.8	164.1	193.61	1.848	
12,900.0	7,715.8	12,784.5	7,610.5	102.6	102.5	-72.87	-5,244.1	95.3	357.7	160.5	197.27	1.813	
13,000.0	7,715.9	12,884.5	7,610.7	104.5	104.4	-72.89	-5,344.1	95.3	357.7	156.8	200.92	1.780	
13,100.0	7,716.0	12,984.5	7,610.9	106.4	106.3	-72.91	-5,444.1	95.3	357.6	153.1	204.58	1.748	
13,200.0	7,716.0	13,084.5	7,611.1	108.2	108.2	-72.94	-5,544.1	95.3	357.6	149.3	208.25	1.717	
13,300.0	7,716.1	13,184.5	7,611.3	110.1	110.1	-72.96	-5,644.1	95.3	357.6	145.6	211.91	1.687	
13,400.0	7,716.2	13,284.5	7,611.5	112.0	112.0	-72.98	-5,744.1	95.3	357.5	141.9	215.58	1.658	
13,500.0	7,716.2	13,384.5	7,611.7	113.9	113.9	-73.00	-5,844.1	95.3	357.5	138.2	219.25	1.630	
13,600.0	7,716.3	13,484.5	7,611.9	115.8	115.8	-73.02	-5,944.1	95.3	357.4	134.5	222.92	1.603	
13,700.0	7,716.4	13,584.5	7,612.1	117.7	117.7	-73.04	-6,044.1	95.3	357.4	130.8	226.59	1.577	
13,800.0	7,716.5	13,684.5	7,612.4	119.6	119.6	-73.06	-6,144.1	95.3	357.4	127.1	230.27	1.552	
13,900.0	7,716.5	13,784.5	7,612.6	121.5	121.5	-73.09	-6,244.1	95.3	357.3	123.4	233.94	1.527	
14,000.0	7,716.6	13,884.5	7,612.8	123.4	123.4	-73.11	-6,344.1	95.3	357.3	119.6	237.62	1.504	
14,100.0	7,716.7	13,984.5	7,613.0	125.3	125.3	-73.13	-6,444.1	95.3	357.2	115.9	241.30	1.480	Level 3
14,200.0	7,716.7	14,084.5	7,613.2	127.2	127.2	-73.15	-6,544.1	95.3	357.2	112.2	244.98	1.458	Level 3
14,300.0	7,716.8	14,184.5	7,613.4	129.1	129.1	-73.17	-6,644.1	95.3	357.1	108.5	248.67	1.436	Level 3
14,400.0	7,716.9	14,284.5	7,613.6	131.0	131.0	-73.19	-6,744.1	95.3	357.1	104.8	252.35	1.415	Level 3
14,500.0	7,716.9	14,384.5	7,613.8	132.9	132.9	-73.21	-6,844.1	95.3	357.1	101.0	256.04	1.395	Level 3
14,577.6	7,717.0	14,462.1	7,614.0	134.4	134.4	-73.23	-6,921.8	95.3	357.0	98.1	258.90	1.379	Level 3
14,584.8	7,717.0	14,469.1	7,614.0	134.5	134.5	-73.23	-6,928.7	95.3	357.0	97.9	259.16	1.378	Level 3, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	89.99	0.0	86.8	86.8				
100.0	100.0	100.0	100.0	0.1	0.1	89.99	0.0	86.8	86.8	86.6	0.22	386.367	
200.0	200.0	200.0	200.0	0.3	0.3	89.99	0.0	86.8	86.8	86.2	0.67	128.789	
300.0	300.0	300.0	300.0	0.6	0.6	89.99	0.0	86.8	86.8	85.7	1.12	77.273	
400.0	400.0	400.0	400.0	0.8	0.8	89.99	0.0	86.8	86.8	85.3	1.57	55.195	
500.0	500.0	500.0	500.0	1.0	1.0	89.99	0.0	86.8	86.8	84.8	2.02	42.930	
600.0	600.0	600.0	600.0	1.2	1.2	89.99	0.0	86.8	86.8	84.4	2.47	35.124	
700.0	700.0	700.0	700.0	1.5	1.5	89.99	0.0	86.8	86.8	83.9	2.92	29.721	
800.0	800.0	800.0	800.0	1.7	1.7	89.99	0.0	86.8	86.8	83.5	3.37	25.758	
900.0	900.0	900.0	900.0	1.9	1.9	89.99	0.0	86.8	86.8	83.0	3.82	22.727	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	89.99	0.0	86.8	86.8	82.6	4.27	20.335	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	89.99	0.0	86.8	86.8	82.1	4.72	18.398	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	89.99	0.0	86.8	86.8	81.7	5.17	16.799	CC, ES
1,300.0	1,300.0	1,297.2	1,297.2	2.8	2.8	89.62	0.6	88.4	88.4	82.8	5.60	15.780	
1,400.0	1,400.0	1,394.2	1,394.0	3.0	3.0	88.57	2.3	93.0	93.2	87.2	6.03	15.450	
1,500.0	1,500.0	1,490.7	1,490.2	3.3	3.2	87.06	5.2	100.6	101.3	94.8	6.47	15.651	
1,600.0	1,600.0	1,586.6	1,585.4	3.5	3.4	85.31	9.1	111.2	112.6	105.7	6.92	16.278	
1,700.0	1,700.0	1,681.5	1,679.2	3.7	3.7	128.26	14.1	124.7	128.2	120.9	7.33	17.487	
1,800.0	1,799.8	1,778.7	1,775.0	3.9	4.0	127.87	20.0	140.4	148.1	140.4	7.77	19.071	
1,900.0	1,899.5	1,876.2	1,871.0	4.2	4.3	128.41	25.9	156.2	170.2	162.0	8.20	20.759	
2,000.0	1,998.8	1,973.3	1,966.6	4.4	4.6	129.59	31.8	171.9	193.9	185.3	8.64	22.435	
2,100.0	2,098.2	2,070.3	2,062.2	4.6	4.9	130.63	37.6	187.7	217.8	208.7	9.10	23.929	
2,200.0	2,197.5	2,167.4	2,157.8	4.9	5.2	131.46	43.5	203.4	241.7	232.1	9.56	25.267	
2,300.0	2,296.9	2,264.4	2,253.4	5.1	5.6	132.14	49.4	219.2	265.6	255.6	10.04	26.465	
2,400.0	2,396.2	2,361.5	2,348.9	5.4	5.9	132.71	55.3	234.9	289.6	279.1	10.51	27.541	
2,500.0	2,495.6	2,458.5	2,444.5	5.7	6.3	133.19	61.1	250.7	313.6	302.6	11.00	28.511	
2,600.0	2,594.9	2,555.6	2,540.1	5.9	6.6	133.61	67.0	266.4	337.6	326.1	11.49	29.389	
2,700.0	2,694.3	2,652.6	2,635.7	6.2	7.0	133.97	72.9	282.1	361.6	349.6	11.98	30.186	
2,800.0	2,793.6	2,749.7	2,731.3	6.5	7.3	134.28	78.8	297.9	385.7	373.2	12.48	30.911	
2,900.0	2,892.9	2,846.7	2,826.9	6.8	7.7	134.56	84.6	313.6	409.7	396.7	12.98	31.574	
3,000.0	2,992.3	2,943.8	2,922.4	7.1	8.0	134.80	90.5	329.4	433.8	420.3	13.48	32.181	
3,100.0	3,091.6	3,040.8	3,018.0	7.4	8.4	135.02	96.4	345.1	457.8	443.8	13.98	32.739	
3,200.0	3,191.0	3,137.8	3,113.6	7.6	8.8	135.22	102.3	360.9	481.9	467.4	14.49	33.253	
3,300.0	3,290.3	3,234.9	3,209.2	7.9	9.1	135.40	108.1	376.6	506.0	491.0	15.00	33.728	
3,400.0	3,389.7	3,331.9	3,304.8	8.2	9.5	135.56	114.0	392.3	530.0	514.5	15.51	34.168	
3,500.0	3,489.0	3,429.0	3,400.3	8.5	9.9	135.71	119.9	408.1	554.1	538.1	16.03	34.576	
3,600.0	3,588.4	3,526.0	3,495.9	8.8	10.3	135.85	125.8	423.8	578.2	561.7	16.54	34.956	
3,700.0	3,687.7	3,623.1	3,591.5	9.1	10.6	135.98	131.6	439.6	602.3	585.2	17.06	35.310	
3,800.0	3,787.1	3,720.1	3,687.1	9.4	11.0	136.09	137.5	455.3	626.4	608.8	17.58	35.641	
3,900.0	3,886.4	3,817.2	3,782.7	9.7	11.4	136.20	143.4	471.1	650.5	632.4	18.09	35.950	
4,000.0	3,985.8	3,914.2	3,878.3	10.0	11.8	136.30	149.3	486.8	674.6	656.0	18.61	36.241	
4,100.0	4,085.1	4,011.3	3,973.8	10.3	12.1	136.39	155.1	502.5	698.7	679.5	19.13	36.514	
4,200.0	4,184.5	4,108.3	4,069.4	10.6	12.5	136.48	161.0	518.3	722.8	703.1	19.66	36.770	
4,300.0	4,283.8	4,205.4	4,165.0	10.9	12.9	136.56	166.9	534.0	746.9	726.7	20.18	37.012	
4,400.0	4,383.2	4,302.4	4,260.6	11.2	13.3	136.64	172.8	549.8	771.0	750.3	20.70	37.240	
4,500.0	4,482.5	4,399.5	4,356.2	11.5	13.6	136.71	178.6	565.5	795.1	773.8	21.23	37.456	
4,600.0	4,581.9	4,496.5	4,451.7	11.8	14.0	136.77	184.5	581.3	819.2	797.4	21.75	37.660	
4,700.0	4,681.2	4,593.6	4,547.3	12.1	14.4	136.86	190.4	597.0	843.3	821.0	22.28	37.848	
4,800.0	4,780.8	4,691.0	4,643.2	12.3	14.8	137.15	196.3	612.8	865.9	843.1	22.81	37.971	
4,900.0	4,880.6	4,788.8	4,739.7	12.5	15.2	137.24	202.2	628.7	886.1	862.8	23.30	38.029	
5,000.0	4,980.5	4,887.1	4,836.5	12.7	15.5	137.15	208.2	644.6	903.8	880.0	23.77	38.029	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,080.5	4,985.6	4,933.5	12.8	15.9	92.39	214.1	660.6	919.8	895.6	24.21	37.998	
5,200.0	5,180.5	5,084.1	5,030.5	13.0	16.3	91.98	220.1	676.6	935.8	911.2	24.66	37.942	
5,300.0	5,280.5	5,182.6	5,127.5	13.2	16.7	91.58	226.0	692.5	951.9	926.8	25.12	37.890	
5,400.0	5,380.5	5,281.1	5,224.5	13.4	17.1	91.20	232.0	708.5	968.0	942.4	25.58	37.842	
5,500.0	5,480.5	5,388.0	5,329.7	13.6	17.5	90.80	238.4	725.8	984.1	958.0	26.05	37.773	
5,600.0	5,580.5	5,534.3	5,474.6	13.8	17.9	90.37	245.5	744.8	997.0	970.5	26.55	37.547	
5,700.0	5,680.5	5,682.3	5,622.1	14.0	18.2	90.11	250.1	757.0	1,005.3	978.2	27.04	37.180	
5,800.0	5,780.5	5,831.3	5,771.0	14.2	18.4	90.00	252.0	762.0	1,008.7	981.2	27.50	36.678	
5,900.0	5,880.5	5,940.9	5,880.5	14.4	18.6	90.00	252.0	762.2	1,008.7	980.8	27.90	36.152	
6,000.0	5,980.5	6,040.9	5,980.5	14.6	18.7	90.00	252.0	762.2	1,008.7	980.4	28.30	35.647	
6,100.0	6,080.5	6,140.9	6,080.5	14.8	18.9	90.00	252.0	762.2	1,008.7	980.1	28.70	35.153	
6,200.0	6,180.5	6,240.9	6,180.5	15.0	19.1	90.00	252.0	762.2	1,008.7	979.7	29.09	34.671	
6,300.0	6,280.5	6,340.9	6,280.5	15.2	19.2	90.00	252.0	762.2	1,008.7	979.3	29.49	34.201	
6,400.0	6,380.5	6,440.9	6,380.5	15.4	19.4	90.00	252.0	762.2	1,008.7	978.9	29.90	33.742	
6,500.0	6,480.5	6,540.9	6,480.5	15.6	19.5	90.00	252.0	762.2	1,008.7	978.4	30.30	33.293	
6,600.0	6,580.5	6,640.9	6,580.5	15.8	19.7	90.00	252.0	762.2	1,008.7	978.0	30.70	32.855	
6,700.0	6,680.5	6,740.9	6,680.5	16.0	19.8	90.00	252.0	762.2	1,008.7	977.6	31.11	32.427	
6,800.0	6,780.5	6,840.9	6,780.5	16.2	20.0	90.00	252.0	762.2	1,008.7	977.2	31.52	32.008	
6,900.0	6,880.5	6,940.9	6,880.5	16.4	20.2	90.00	252.0	762.2	1,008.7	976.8	31.92	31.599	
6,938.4	6,918.9	6,979.3	6,918.9	16.5	20.2	-90.02	252.0	762.2	1,008.7	976.7	32.08	31.449	
7,000.0	6,980.5	7,040.9	6,980.5	16.6	20.3	-89.94	250.4	762.2	1,008.7	976.4	32.30	31.229	
7,100.0	7,079.9	7,140.5	7,079.2	16.7	20.4	-89.81	237.3	762.2	1,008.8	976.2	32.53	31.006	
7,200.0	7,177.0	7,239.9	7,175.2	16.8	20.5	-89.68	211.6	762.2	1,008.8	976.1	32.66	30.883	
7,300.0	7,270.2	7,339.0	7,266.7	16.8	20.5	-89.55	173.9	762.2	1,008.8	976.0	32.73	30.822	
7,400.0	7,357.9	7,437.8	7,352.3	16.9	20.5	-89.43	124.7	762.2	1,008.8	976.0	32.79	30.768	
7,500.0	7,438.6	7,536.4	7,430.7	16.9	20.5	-89.32	65.1	762.2	1,008.8	975.9	32.91	30.655	
7,600.0	7,510.9	7,634.7	7,500.7	16.9	20.5	-89.22	-3.9	762.2	1,008.8	975.7	33.17	30.414	
7,700.0	7,573.6	7,732.9	7,561.0	17.0	20.6	-89.14	-81.2	762.2	1,008.9	975.2	33.65	29.985	
7,800.0	7,625.6	7,830.8	7,610.9	17.2	20.8	-89.07	-165.4	762.2	1,008.9	974.5	34.40	29.332	
7,900.0	7,666.0	7,928.6	7,649.6	17.7	21.1	-89.01	-255.2	762.2	1,008.9	973.4	35.46	28.453	
8,000.0	7,694.1	8,026.4	7,676.5	18.4	21.5	-88.98	-349.1	762.2	1,008.9	972.1	36.85	27.382	
8,100.0	7,709.5	8,124.0	7,691.2	19.3	22.1	-88.95	-445.6	762.2	1,008.9	970.4	38.54	26.180	
8,200.0	7,712.5	8,222.5	7,694.1	20.3	22.9	-88.95	-543.9	762.2	1,008.9	968.4	40.51	24.908	
8,300.0	7,712.6	8,322.5	7,694.2	21.4	23.8	-88.96	-643.9	762.2	1,008.9	966.2	42.72	23.617	
8,400.0	7,712.7	8,422.5	7,694.4	22.7	24.9	-88.96	-743.9	762.2	1,008.9	963.8	45.15	22.345	
8,500.0	7,712.8	8,522.5	7,694.5	24.0	26.1	-88.96	-843.9	762.2	1,008.9	961.1	47.77	21.121	
8,600.0	7,712.8	8,622.5	7,694.6	25.4	27.4	-88.97	-943.9	762.2	1,008.9	958.4	50.54	19.963	
8,700.0	7,712.9	8,722.5	7,694.8	26.8	28.7	-88.97	-1,043.9	762.2	1,008.9	955.5	53.44	18.879	
8,800.0	7,713.0	8,822.5	7,694.9	28.3	30.1	-88.98	-1,143.9	762.2	1,008.9	952.5	56.45	17.872	
8,900.0	7,713.0	8,922.5	7,695.1	29.9	31.6	-88.98	-1,243.9	762.2	1,008.9	949.3	59.56	16.940	
9,000.0	7,713.1	9,022.5	7,695.2	31.5	33.1	-88.98	-1,343.9	762.2	1,008.9	946.2	62.75	16.079	
9,100.0	7,713.2	9,122.5	7,695.3	33.1	34.6	-88.99	-1,443.9	762.2	1,008.9	942.9	66.00	15.286	
9,200.0	7,713.2	9,222.5	7,695.5	34.8	36.2	-88.99	-1,543.9	762.2	1,008.9	939.6	69.31	14.556	
9,300.0	7,713.3	9,322.5	7,695.6	36.4	37.8	-89.00	-1,643.9	762.2	1,008.9	936.2	72.68	13.882	
9,400.0	7,713.4	9,422.5	7,695.8	38.1	39.5	-89.00	-1,743.9	762.2	1,008.9	932.8	76.09	13.260	
9,500.0	7,713.5	9,522.5	7,695.9	39.9	41.1	-89.00	-1,843.9	762.2	1,008.9	929.4	79.53	12.685	
9,600.0	7,713.5	9,622.5	7,696.0	41.6	42.8	-89.01	-1,943.9	762.2	1,008.9	925.9	83.01	12.153	
9,700.0	7,713.6	9,722.5	7,696.2	43.4	44.5	-89.01	-2,043.9	762.2	1,008.9	922.4	86.53	11.660	
9,800.0	7,713.7	9,822.5	7,696.3	45.1	46.2	-89.02	-2,143.9	762.2	1,008.9	918.8	90.06	11.202	
9,900.0	7,713.7	9,922.5	7,696.5	46.9	48.0	-89.02	-2,243.9	762.2	1,008.9	915.3	93.62	10.776	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-303 - Wellbore #1 - Plan #1 (10-8-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	7,713.8	10,022.5	7,696.6	48.7	49.7	-89.02	-2,343.9	762.2	1,008.9	911.7	97.20	10.379	
10,100.0	7,713.9	10,122.5	7,696.7	50.5	51.5	-89.03	-2,443.9	762.2	1,008.9	908.1	100.80	10.009	
10,200.0	7,713.9	10,222.5	7,696.9	52.3	53.2	-89.03	-2,543.9	762.2	1,008.9	904.5	104.41	9.662	
10,300.0	7,714.0	10,322.5	7,697.0	54.1	55.0	-89.04	-2,643.9	762.2	1,008.9	900.8	108.04	9.338	
10,400.0	7,714.1	10,422.5	7,697.2	55.9	56.8	-89.04	-2,743.9	762.2	1,008.9	897.2	111.69	9.033	
10,500.0	7,714.1	10,522.5	7,697.3	57.8	58.6	-89.04	-2,843.9	762.2	1,008.9	893.5	115.34	8.747	
10,600.0	7,714.2	10,622.5	7,697.4	59.6	60.4	-89.05	-2,943.9	762.2	1,008.9	889.9	119.01	8.477	
10,700.0	7,714.3	10,722.5	7,697.6	61.4	62.2	-89.05	-3,043.9	762.2	1,008.9	886.2	122.68	8.223	
10,800.0	7,714.4	10,822.5	7,697.7	63.3	64.0	-89.06	-3,143.9	762.2	1,008.9	882.5	126.37	7.984	
10,900.0	7,714.4	10,922.5	7,697.9	65.1	65.9	-89.06	-3,243.9	762.2	1,008.9	878.8	130.06	7.757	
11,000.0	7,714.5	11,022.5	7,698.0	67.0	67.7	-89.06	-3,343.9	762.2	1,008.9	875.1	133.76	7.542	
11,100.0	7,714.6	11,122.5	7,698.1	68.8	69.5	-89.07	-3,443.9	762.2	1,008.9	871.4	137.47	7.339	
11,200.0	7,714.6	11,222.5	7,698.3	70.7	71.4	-89.07	-3,543.9	762.2	1,008.9	867.7	141.19	7.146	
11,300.0	7,714.7	11,322.5	7,698.4	72.5	73.2	-89.07	-3,643.9	762.2	1,008.9	864.0	144.91	6.962	
11,400.0	7,714.8	11,422.5	7,698.6	74.4	75.0	-89.08	-3,743.9	762.2	1,008.9	860.2	148.64	6.788	
11,500.0	7,714.8	11,522.5	7,698.7	76.3	76.9	-89.08	-3,843.9	762.2	1,008.9	856.5	152.37	6.621	
11,600.0	7,714.9	11,622.5	7,698.8	78.1	78.7	-89.09	-3,943.9	762.2	1,008.9	852.8	156.10	6.463	
11,700.0	7,715.0	11,722.5	7,699.0	80.0	80.6	-89.09	-4,043.9	762.2	1,008.9	849.0	159.84	6.312	
11,800.0	7,715.1	11,822.5	7,699.1	81.9	82.5	-89.09	-4,143.9	762.2	1,008.9	845.3	163.59	6.167	
11,900.0	7,715.1	11,922.5	7,699.3	83.8	84.3	-89.10	-4,243.9	762.2	1,008.9	841.5	167.34	6.029	
12,000.0	7,715.2	12,022.5	7,699.4	85.6	86.2	-89.10	-4,343.9	762.2	1,008.9	837.8	171.09	5.897	
12,100.0	7,715.3	12,122.5	7,699.5	87.5	88.0	-89.11	-4,443.9	762.2	1,008.9	834.0	174.85	5.770	
12,200.0	7,715.3	12,222.5	7,699.7	89.4	89.9	-89.11	-4,543.9	762.2	1,008.9	830.3	178.61	5.649	
12,300.0	7,715.4	12,322.5	7,699.8	91.3	91.8	-89.11	-4,643.9	762.2	1,008.9	826.5	182.37	5.532	
12,400.0	7,715.5	12,422.5	7,700.0	93.1	93.6	-89.12	-4,743.9	762.2	1,008.9	822.7	186.13	5.420	
12,500.0	7,715.5	12,522.5	7,700.1	95.0	95.5	-89.12	-4,843.9	762.2	1,008.9	819.0	189.90	5.313	
12,600.0	7,715.6	12,622.5	7,700.2	96.9	97.4	-89.13	-4,943.9	762.2	1,008.9	815.2	193.67	5.209	
12,700.0	7,715.7	12,722.5	7,700.4	98.8	99.3	-89.13	-5,043.9	762.2	1,008.9	811.4	197.44	5.110	
12,800.0	7,715.8	12,822.5	7,700.5	100.7	101.1	-89.13	-5,143.9	762.2	1,008.9	807.6	201.22	5.014	
12,900.0	7,715.8	12,922.5	7,700.7	102.6	103.0	-89.14	-5,243.9	762.2	1,008.9	803.9	204.99	4.921	
13,000.0	7,715.9	13,022.5	7,700.8	104.5	104.9	-89.14	-5,343.9	762.2	1,008.9	800.1	208.77	4.832	
13,100.0	7,716.0	13,122.5	7,700.9	106.4	106.8	-89.15	-5,443.9	762.2	1,008.9	796.3	212.55	4.746	
13,200.0	7,716.0	13,222.5	7,701.1	108.2	108.7	-89.15	-5,543.9	762.2	1,008.9	792.5	216.33	4.663	
13,300.0	7,716.1	13,322.5	7,701.2	110.1	110.5	-89.15	-5,643.9	762.2	1,008.9	788.7	220.12	4.583	
13,400.0	7,716.2	13,422.5	7,701.4	112.0	112.4	-89.16	-5,743.9	762.2	1,008.9	785.0	223.90	4.506	
13,500.0	7,716.2	13,522.5	7,701.5	113.9	114.3	-89.16	-5,843.9	762.2	1,008.9	781.2	227.69	4.431	
13,600.0	7,716.3	13,622.5	7,701.6	115.8	116.2	-89.17	-5,943.9	762.2	1,008.9	777.4	231.48	4.358	
13,700.0	7,716.4	13,722.5	7,701.8	117.7	118.1	-89.17	-6,043.9	762.2	1,008.9	773.6	235.27	4.288	
13,800.0	7,716.5	13,822.5	7,701.9	119.6	120.0	-89.17	-6,143.9	762.2	1,008.9	769.8	239.06	4.220	
13,900.0	7,716.5	13,922.5	7,702.0	121.5	121.9	-89.18	-6,243.9	762.2	1,008.9	766.0	242.85	4.154	
14,000.0	7,716.6	14,022.5	7,702.2	123.4	123.8	-89.18	-6,343.9	762.2	1,008.8	762.2	246.64	4.090	
14,100.0	7,716.7	14,122.5	7,702.3	125.3	125.6	-89.19	-6,443.9	762.2	1,008.8	758.4	250.44	4.028	
14,200.0	7,716.7	14,222.5	7,702.5	127.2	127.5	-89.19	-6,543.9	762.2	1,008.8	754.6	254.23	3.968	
14,300.0	7,716.8	14,322.5	7,702.6	129.1	129.4	-89.19	-6,643.9	762.2	1,008.8	750.8	258.03	3.910	
14,400.0	7,716.9	14,422.5	7,702.7	131.0	131.3	-89.20	-6,743.9	762.2	1,008.8	747.0	261.83	3.853	
14,500.0	7,716.9	14,522.5	7,702.9	132.9	133.2	-89.20	-6,843.9	762.2	1,008.8	743.2	265.62	3.798	
14,560.4	7,717.0	14,582.8	7,703.0	134.0	134.4	-89.20	-6,904.3	762.2	1,008.8	740.9	267.92	3.765	
14,584.8	7,717.0	14,603.6	7,703.0	134.5	134.7	-89.21	-6,925.1	762.2	1,008.9	740.1	268.78	3.753	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-423 - Wellbore #1 - Plan #2 (10-8-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.02	0.0	56.0	56.0				
100.0	100.0	100.0	100.0	0.1	0.1	90.02	0.0	56.0	56.0	55.8	0.22	249.269	
200.0	200.0	200.0	200.0	0.3	0.3	90.02	0.0	56.0	56.0	55.4	0.67	83.090	
300.0	300.0	300.0	300.0	0.6	0.6	90.02	0.0	56.0	56.0	54.9	1.12	49.854	
400.0	400.0	400.0	400.0	0.8	0.8	90.02	0.0	56.0	56.0	54.5	1.57	35.610	
500.0	500.0	500.0	500.0	1.0	1.0	90.02	0.0	56.0	56.0	54.0	2.02	27.697	
600.0	600.0	600.0	600.0	1.2	1.2	90.02	0.0	56.0	56.0	53.6	2.47	22.661	
700.0	700.0	700.0	700.0	1.5	1.5	90.02	0.0	56.0	56.0	53.1	2.92	19.175	
800.0	800.0	800.0	800.0	1.7	1.7	90.02	0.0	56.0	56.0	52.7	3.37	16.618	
900.0	900.0	900.0	900.0	1.9	1.9	90.02	0.0	56.0	56.0	52.2	3.82	14.663	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.02	0.0	56.0	56.0	51.8	4.27	13.119	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.02	0.0	56.0	56.0	51.3	4.72	11.870	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.02	0.0	56.0	56.0	50.9	5.17	10.838	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.02	0.0	56.0	56.0	50.4	5.62	9.971	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.02	0.0	56.0	56.0	50.0	6.07	9.232	CC, ES
1,500.0	1,500.0	1,498.2	1,498.2	3.3	3.2	89.28	0.7	57.5	57.6	51.1	6.51	8.848	
1,600.0	1,600.0	1,596.2	1,596.1	3.5	3.5	87.28	2.9	62.1	62.3	55.3	6.94	8.970	
1,700.0	1,700.0	1,693.7	1,693.2	3.7	3.7	129.87	6.6	69.5	71.3	63.9	7.37	9.672	
1,800.0	1,799.8	1,790.2	1,789.0	3.9	3.9	129.39	11.7	79.8	85.7	77.9	7.80	10.989	
1,900.0	1,899.5	1,888.3	1,886.2	4.2	4.2	130.06	17.7	92.0	104.0	95.8	8.23	12.643	
2,000.0	1,998.8	1,986.3	1,983.2	4.4	4.4	131.55	23.6	104.1	124.0	115.4	8.66	14.315	
2,100.0	2,098.2	2,084.2	2,080.2	4.6	4.7	132.73	29.6	116.2	144.2	135.1	9.11	15.822	
2,200.0	2,197.5	2,182.1	2,177.1	4.9	5.0	133.62	35.5	128.3	164.4	154.8	9.57	17.176	
2,300.0	2,296.9	2,280.0	2,274.1	5.1	5.2	134.31	41.5	140.5	184.7	174.6	10.04	18.397	
2,400.0	2,396.2	2,377.9	2,371.1	5.4	5.5	134.87	47.4	152.6	204.9	194.4	10.51	19.500	
2,500.0	2,495.6	2,475.8	2,468.0	5.7	5.8	135.32	53.4	164.7	225.2	214.2	10.99	20.500	
2,600.0	2,594.9	2,573.7	2,565.0	5.9	6.1	135.70	59.3	176.8	245.5	234.0	11.47	21.409	
2,700.0	2,694.3	2,671.6	2,662.0	6.2	6.4	136.03	65.3	188.9	265.8	253.9	11.95	22.238	
2,800.0	2,793.6	2,769.5	2,759.0	6.5	6.7	136.30	71.3	201.1	286.1	273.7	12.44	22.996	
2,900.0	2,892.9	2,867.4	2,855.9	6.8	7.0	136.54	77.2	213.2	306.4	293.5	12.93	23.691	
3,000.0	2,992.3	2,965.3	2,952.9	7.1	7.3	136.75	83.2	225.3	326.8	313.3	13.43	24.330	
3,100.0	3,091.6	3,063.2	3,049.9	7.4	7.7	136.94	89.1	237.4	347.1	333.2	13.93	24.920	
3,200.0	3,191.0	3,161.1	3,146.8	7.6	8.0	137.11	95.1	249.5	367.4	353.0	14.43	25.465	
3,300.0	3,290.3	3,259.1	3,243.8	7.9	8.3	137.25	101.0	261.7	387.7	372.8	14.93	25.970	
3,400.0	3,389.7	3,357.0	3,340.8	8.2	8.6	137.39	107.0	273.8	408.1	392.6	15.43	26.439	
3,500.0	3,489.0	3,454.9	3,437.8	8.5	8.9	137.51	112.9	285.9	428.4	412.5	15.94	26.876	
3,600.0	3,588.4	3,552.8	3,534.7	8.8	9.2	137.62	118.9	298.0	448.7	432.3	16.45	27.283	
3,700.0	3,687.7	3,650.7	3,631.7	9.1	9.6	137.72	124.9	310.1	469.1	452.1	16.96	27.664	
3,800.0	3,787.1	3,748.6	3,728.7	9.4	9.9	137.81	130.8	322.3	489.4	471.9	17.47	28.021	
3,900.0	3,886.4	3,846.5	3,825.6	9.7	10.2	137.89	136.8	334.4	509.8	491.8	17.98	28.355	
4,000.0	3,985.8	3,944.4	3,922.6	10.0	10.5	137.97	142.7	346.5	530.1	511.6	18.49	28.670	
4,100.0	4,085.1	4,042.3	4,019.6	10.3	10.9	138.04	148.7	358.6	550.4	531.4	19.00	28.966	
4,200.0	4,184.5	4,140.2	4,116.6	10.6	11.2	138.11	154.6	370.7	570.8	551.3	19.52	29.245	
4,300.0	4,283.8	4,238.1	4,213.5	10.9	11.5	138.17	160.6	382.9	591.1	571.1	20.03	29.509	
4,400.0	4,383.2	4,336.0	4,310.5	11.2	11.8	138.23	166.5	395.0	611.5	590.9	20.55	29.758	
4,500.0	4,482.5	4,433.9	4,407.5	11.5	12.2	138.29	172.5	407.1	631.8	610.7	21.06	29.994	
4,600.0	4,581.9	4,531.8	4,504.4	11.8	12.5	138.34	178.5	419.2	652.1	630.6	21.58	30.218	
4,700.0	4,681.2	4,629.8	4,601.4	12.1	12.8	138.41	184.4	431.3	672.5	650.4	22.10	30.427	
4,800.0	4,780.8	4,727.9	4,698.7	12.3	13.1	138.59	190.4	443.5	691.3	668.7	22.61	30.582	
4,900.0	4,880.6	4,826.6	4,796.3	12.5	13.5	138.56	196.4	455.7	707.6	684.6	23.08	30.654	
5,000.0	4,980.5	4,925.5	4,894.3	12.7	13.8	138.31	202.4	467.9	721.4	697.8	23.53	30.654	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-423 - Wellbore #1 - Plan #2 (10-8-14)

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,080.5	5,024.5	4,992.4	12.8	14.1	93.43	208.4	480.2	733.4	709.4	23.97	30.598	
5,200.0	5,180.5	5,123.6	5,090.5	13.0	14.5	92.91	214.5	492.5	745.5	721.0	24.42	30.520	
5,300.0	5,280.5	5,222.6	5,188.6	13.2	14.8	92.40	220.5	504.7	757.6	732.7	24.88	30.449	
5,400.0	5,380.5	5,321.6	5,286.7	13.4	15.1	91.91	226.5	517.0	769.7	744.4	25.33	30.383	
5,500.0	5,480.5	5,420.7	5,384.8	13.6	15.5	91.44	232.5	529.2	782.0	756.2	25.79	30.322	
5,600.0	5,580.5	5,519.7	5,482.9	13.8	15.8	90.98	238.6	541.5	794.2	768.0	26.24	30.265	
5,700.0	5,680.5	5,644.6	5,606.8	14.0	16.1	90.48	245.3	555.3	805.3	778.6	26.72	30.139	
5,800.0	5,780.5	5,778.1	5,739.8	14.2	16.4	90.14	250.0	564.8	812.4	785.2	27.18	29.893	
5,900.0	5,880.5	5,912.2	5,873.9	14.4	16.6	90.00	251.9	568.7	815.3	787.7	27.62	29.522	
6,000.0	5,980.5	6,018.9	5,980.5	14.6	16.8	90.00	252.0	568.8	815.4	787.4	28.02	29.103	
6,100.0	6,080.5	6,118.9	6,080.5	14.8	17.0	90.00	252.0	568.8	815.4	787.0	28.42	28.690	
6,200.0	6,180.5	6,218.9	6,180.5	15.0	17.2	90.00	252.0	568.8	815.4	786.6	28.83	28.287	
6,300.0	6,280.5	6,318.9	6,280.5	15.2	17.3	90.00	252.0	568.8	815.4	786.2	29.23	27.894	
6,400.0	6,380.5	6,418.9	6,380.5	15.4	17.5	90.00	252.0	568.8	815.4	785.8	29.64	27.510	
6,500.0	6,480.5	6,518.9	6,480.5	15.6	17.7	90.00	252.0	568.8	815.4	785.4	30.05	27.136	
6,600.0	6,580.5	6,618.9	6,580.5	15.8	17.8	90.00	252.0	568.8	815.4	784.9	30.46	26.771	
6,700.0	6,680.5	6,718.9	6,680.5	16.0	18.0	90.00	252.0	568.8	815.4	784.5	30.87	26.415	
6,800.0	6,780.5	6,818.9	6,780.5	16.2	18.2	90.00	252.0	568.8	815.4	784.1	31.28	26.067	
6,900.0	6,880.5	6,918.9	6,880.5	16.4	18.4	90.00	252.0	568.8	815.4	783.7	31.69	25.727	
6,955.0	6,935.5	6,973.8	6,935.5	16.5	18.5	-90.04	252.0	568.8	815.4	783.5	31.92	25.549	
7,000.0	6,980.5	7,018.9	6,980.5	16.6	18.6	-90.05	252.0	568.8	815.4	783.3	32.10	25.404	
7,100.0	7,079.9	7,118.5	7,080.2	16.7	18.7	-90.77	251.7	568.8	815.5	783.1	32.40	25.172	
7,200.0	7,177.0	7,219.9	7,181.0	16.8	18.9	-91.79	242.5	568.8	815.8	783.2	32.58	25.043	
7,300.0	7,270.2	7,323.3	7,281.8	16.8	18.9	-92.79	219.4	568.8	816.4	783.7	32.67	24.993	
7,400.0	7,357.9	7,428.9	7,380.4	16.9	19.0	-93.75	182.1	568.8	817.2	784.5	32.71	24.980	
7,500.0	7,438.6	7,536.6	7,474.8	16.9	19.0	-94.65	130.4	568.8	818.1	785.4	32.79	24.954	
7,600.0	7,510.9	7,646.3	7,562.5	16.9	19.0	-95.48	64.5	568.8	819.2	786.2	32.96	24.851	
7,700.0	7,573.6	7,758.1	7,641.2	17.0	19.1	-96.20	-14.7	568.8	820.3	786.9	33.34	24.602	
7,800.0	7,625.6	7,871.6	7,708.4	17.2	19.2	-96.82	-106.0	568.8	821.2	787.3	33.99	24.160	
7,900.0	7,666.0	7,986.6	7,762.0	17.7	19.5	-97.30	-207.7	568.8	822.1	787.1	34.99	23.495	
8,000.0	7,694.1	8,102.8	7,800.0	18.4	20.0	-97.64	-317.4	568.8	822.7	786.4	36.37	22.624	
8,100.0	7,709.5	8,219.8	7,821.0	19.3	20.8	-97.83	-432.3	568.8	823.1	785.0	38.12	21.594	
8,200.0	7,712.5	8,330.9	7,825.4	20.3	21.8	-97.88	-543.3	568.8	823.2	783.0	40.15	20.505	
8,300.0	7,712.6	8,430.9	7,825.9	21.4	22.8	-97.91	-643.3	568.8	823.2	780.9	42.33	19.446	
8,400.0	7,712.7	8,530.9	7,826.5	22.7	23.9	-97.94	-743.3	568.8	823.3	778.6	44.74	18.403	
8,500.0	7,712.8	8,630.9	7,827.0	24.0	25.2	-97.98	-843.3	568.8	823.4	776.1	47.32	17.399	
8,600.0	7,712.8	8,730.9	7,827.6	25.4	26.5	-98.01	-943.3	568.8	823.4	773.4	50.06	16.448	
8,700.0	7,712.9	8,830.9	7,828.1	26.8	27.9	-98.05	-1,043.3	568.8	823.5	770.6	52.94	15.557	
8,800.0	7,713.0	8,930.9	7,828.7	28.3	29.3	-98.08	-1,143.3	568.8	823.6	767.7	55.92	14.729	
8,900.0	7,713.0	9,030.9	7,829.3	29.9	30.8	-98.11	-1,243.3	568.8	823.7	764.7	58.99	13.963	
9,000.0	7,713.1	9,130.9	7,829.8	31.5	32.4	-98.15	-1,343.3	568.8	823.7	761.6	62.14	13.255	
9,100.0	7,713.2	9,230.9	7,830.4	33.1	34.0	-98.18	-1,443.3	568.8	823.8	758.4	65.36	12.603	
9,200.0	7,713.2	9,330.9	7,830.9	34.8	35.6	-98.21	-1,543.3	568.8	823.9	755.2	68.64	12.002	
9,300.0	7,713.3	9,430.9	7,831.5	36.4	37.2	-98.25	-1,643.3	568.8	823.9	752.0	71.97	11.448	
9,400.0	7,713.4	9,530.9	7,832.1	38.1	38.9	-98.28	-1,743.3	568.8	824.0	748.7	75.34	10.937	
9,500.0	7,713.5	9,630.9	7,832.6	39.9	40.6	-98.31	-1,843.3	568.8	824.1	745.3	78.75	10.464	
9,600.0	7,713.5	9,730.9	7,833.2	41.6	42.3	-98.35	-1,943.2	568.8	824.1	741.9	82.19	10.027	
9,700.0	7,713.6	9,830.9	7,833.7	43.4	44.0	-98.38	-2,043.2	568.8	824.2	738.5	85.66	9.621	
9,800.0	7,713.7	9,930.9	7,834.3	45.1	45.8	-98.42	-2,143.2	568.8	824.3	735.1	89.16	9.245	
9,900.0	7,713.7	10,030.9	7,834.9	46.9	47.5	-98.45	-2,243.2	568.8	824.4	731.7	92.68	8.895	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Offset Design Jacobucci 1N67W32S Pad Sec.32-T1N-R67W - Jacobucci 32S-423 - Wellbore #1 - Plan #2 (10-8-14)

Offset Site Error: 0.0 ft

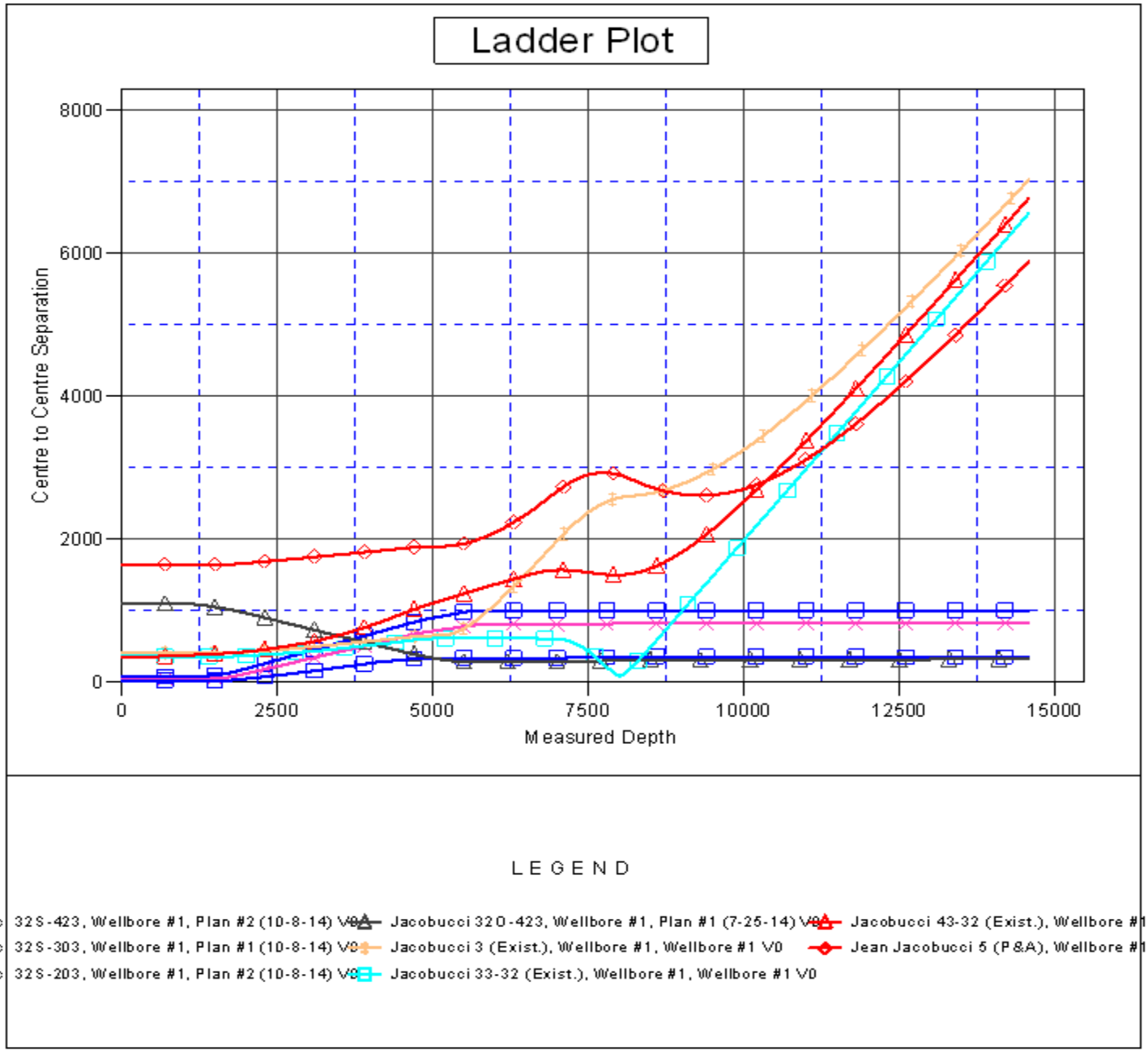
Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset 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)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	7,713.8	10,130.9	7,835.4	48.7	49.3	-98.48	-2,343.2	568.8	824.4	728.2	96.22	8.568	
10,100.0	7,713.9	10,230.9	7,836.0	50.5	51.1	-98.52	-2,443.2	568.8	824.5	724.7	99.78	8.264	
10,200.0	7,713.9	10,330.9	7,836.5	52.3	52.8	-98.55	-2,543.2	568.8	824.6	721.2	103.35	7.979	
10,300.0	7,714.0	10,430.9	7,837.1	54.1	54.6	-98.58	-2,643.2	568.8	824.6	717.7	106.93	7.712	
10,400.0	7,714.1	10,530.9	7,837.6	55.9	56.4	-98.62	-2,743.2	568.8	824.7	714.2	110.53	7.461	
10,500.0	7,714.1	10,630.8	7,838.2	57.8	58.2	-98.65	-2,843.2	568.8	824.8	710.6	114.14	7.226	
10,600.0	7,714.2	10,730.8	7,838.8	59.6	60.1	-98.68	-2,943.2	568.8	824.9	707.1	117.77	7.004	
10,700.0	7,714.3	10,830.8	7,839.3	61.4	61.9	-98.72	-3,043.2	568.8	824.9	703.5	121.40	6.795	
10,800.0	7,714.4	10,930.8	7,839.9	63.3	63.7	-98.75	-3,143.2	568.8	825.0	700.0	125.03	6.598	
10,900.0	7,714.4	11,030.8	7,840.4	65.1	65.5	-98.78	-3,243.2	568.8	825.1	696.4	128.68	6.412	
11,000.0	7,714.5	11,130.8	7,841.0	67.0	67.4	-98.82	-3,343.2	568.8	825.2	692.8	132.33	6.235	
11,100.0	7,714.6	11,230.8	7,841.6	68.8	69.2	-98.85	-3,443.2	568.8	825.2	689.2	135.99	6.068	
11,200.0	7,714.6	11,330.8	7,842.1	70.7	71.1	-98.89	-3,543.2	568.8	825.3	685.7	139.66	5.909	
11,300.0	7,714.7	11,430.8	7,842.7	72.5	72.9	-98.92	-3,643.2	568.8	825.4	682.1	143.33	5.759	
11,400.0	7,714.8	11,530.8	7,843.2	74.4	74.8	-98.95	-3,743.2	568.8	825.5	678.5	147.01	5.615	
11,500.0	7,714.8	11,630.8	7,843.8	76.3	76.6	-98.99	-3,843.2	568.8	825.5	674.9	150.69	5.478	
11,600.0	7,714.9	11,730.8	7,844.3	78.1	78.5	-99.02	-3,943.2	568.8	825.6	671.2	154.37	5.348	
11,700.0	7,715.0	11,830.8	7,844.9	80.0	80.3	-99.05	-4,043.2	568.8	825.7	667.6	158.06	5.224	
11,800.0	7,715.1	11,930.8	7,845.5	81.9	82.2	-99.09	-4,143.2	568.8	825.8	664.0	161.75	5.105	
11,900.0	7,715.1	12,030.8	7,846.0	83.8	84.1	-99.12	-4,243.2	568.8	825.8	660.4	165.45	4.992	
12,000.0	7,715.2	12,130.8	7,846.6	85.6	85.9	-99.15	-4,343.2	568.8	825.9	656.8	169.15	4.883	
12,100.0	7,715.3	12,230.8	7,847.1	87.5	87.8	-99.19	-4,443.2	568.8	826.0	653.2	172.85	4.779	
12,200.0	7,715.3	12,330.8	7,847.7	89.4	89.7	-99.22	-4,543.2	568.8	826.1	649.5	176.55	4.679	
12,300.0	7,715.4	12,430.8	7,848.3	91.3	91.5	-99.25	-4,643.2	568.8	826.2	645.9	180.26	4.583	
12,400.0	7,715.5	12,530.8	7,848.8	93.1	93.4	-99.29	-4,743.2	568.8	826.2	642.3	183.96	4.491	
12,500.0	7,715.5	12,630.8	7,849.4	95.0	95.3	-99.32	-4,843.2	568.8	826.3	638.6	187.67	4.403	
12,600.0	7,715.6	12,730.8	7,849.9	96.9	97.2	-99.35	-4,943.2	568.8	826.4	635.0	191.38	4.318	
12,700.0	7,715.7	12,830.8	7,850.5	98.8	99.1	-99.39	-5,043.2	568.8	826.5	631.4	195.10	4.236	
12,800.0	7,715.8	12,930.8	7,851.0	100.7	100.9	-99.42	-5,143.2	568.8	826.6	627.7	198.81	4.158	
12,900.0	7,715.8	13,030.8	7,851.6	102.6	102.8	-99.45	-5,243.2	568.8	826.6	624.1	202.53	4.082	
13,000.0	7,715.9	13,130.8	7,852.2	104.5	104.7	-99.49	-5,343.2	568.8	826.7	620.5	206.24	4.008	
13,100.0	7,716.0	13,230.8	7,852.7	106.4	106.6	-99.52	-5,443.2	568.8	826.8	616.8	209.96	3.938	
13,200.0	7,716.0	13,330.8	7,853.3	108.2	108.5	-99.55	-5,543.1	568.8	826.9	613.2	213.68	3.870	
13,300.0	7,716.1	13,430.8	7,853.8	110.1	110.4	-99.59	-5,643.1	568.8	827.0	609.6	217.40	3.804	
13,400.0	7,716.2	13,530.8	7,854.4	112.0	112.2	-99.62	-5,743.1	568.8	827.0	605.9	221.12	3.740	
13,500.0	7,716.2	13,630.8	7,855.0	113.9	114.1	-99.65	-5,843.1	568.8	827.1	602.3	224.84	3.679	
13,600.0	7,716.3	13,730.8	7,855.5	115.8	116.0	-99.69	-5,943.1	568.8	827.2	598.6	228.57	3.619	
13,700.0	7,716.4	13,830.8	7,856.1	117.7	117.9	-99.72	-6,043.1	568.8	827.3	595.0	232.29	3.561	
13,800.0	7,716.5	13,930.8	7,856.6	119.6	119.8	-99.75	-6,143.1	568.8	827.4	591.4	236.01	3.506	
13,900.0	7,716.5	14,030.8	7,857.2	121.5	121.7	-99.79	-6,243.1	568.8	827.5	587.7	239.74	3.451	
14,000.0	7,716.6	14,130.8	7,857.7	123.4	123.6	-99.82	-6,343.1	568.8	827.5	584.1	243.46	3.399	
14,100.0	7,716.7	14,230.8	7,858.3	125.3	125.5	-99.85	-6,443.1	568.8	827.6	580.4	247.19	3.348	
14,200.0	7,716.7	14,330.8	7,858.9	127.2	127.4	-99.89	-6,543.1	568.8	827.7	576.8	250.91	3.299	
14,300.0	7,716.8	14,430.8	7,859.4	129.1	129.3	-99.92	-6,643.1	568.8	827.8	573.1	254.64	3.251	
14,400.0	7,716.9	14,530.8	7,860.0	131.0	131.2	-99.95	-6,743.1	568.8	827.9	569.5	258.36	3.204	
14,500.0	7,716.9	14,630.8	7,860.5	132.9	133.1	-99.99	-6,843.1	568.8	828.0	565.9	262.09	3.159	
14,584.8	7,717.0	14,712.8	7,861.0	134.5	134.6	-100.02	-6,925.1	568.8	828.0	562.9	265.15	3.123	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5074.0ft (Original Well Elev)
Coordinates are relative to: Jacobucci 32S-343
Offset Depths are relative to Offset Datum
Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °
Grid Convergence at Surface is: 0.38°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	**Local Co-ordinate Reference:**	Well Jacobucci 32S-343
Project:	SEC.32-T1N-R67W	**TVD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Reference Site:	Jacobucci 1N67W32S Pad Sec.32-T1N-R67W	**MD Reference:**	WELL @ 5074.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Jacobucci 32S-343	**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 #2 (10-8-14)	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5074.0ft (Original Well Elev) Coordinates are relative to: Jacobucci 32S-343
Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 ° Grid Convergence at Surface is: 0.38°