

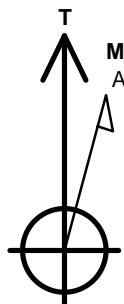
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Rio-LA 6F-314**

Surface Location: Rio-LA 1S67W6E Pad Sec.6-T1S-R67W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 5070.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1242781.62 3156950.15 39.998460 -104.939780
 RKB - 13' WELL @ 5083.0ft (RKB - 13')

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' N/S Hardline (6F-314)	1.0	-250.9	-2817.6	Rectangle (Sides: L4322.3 W100.0)
SHL 684'FNL & 153'FWL, Sec.6	1.0	0.0	0.0	Point
BHL 932'FNL & 500'FWL, Sec.1	7740.0	-250.9	-4978.7	Point



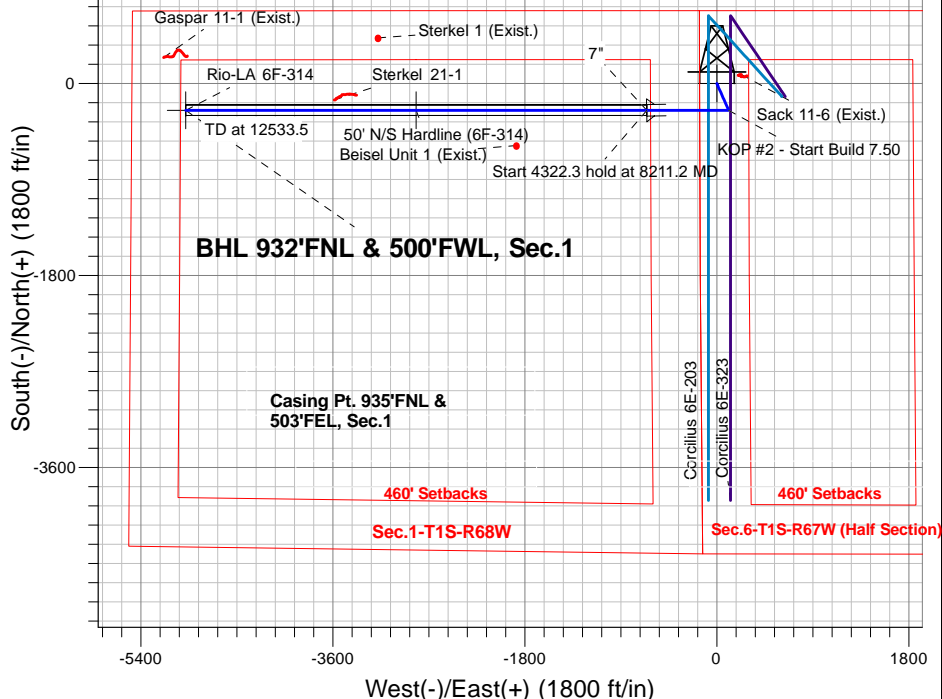
Azimuths to True North
 Magnetic North: 8.37°
 Magnetic Field
 Strength: 52464.3snT
 Dip Angle: 66.56°
 Date: 8/4/2015
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1400.0	1400.0	KOP - Start Build 1.00
4758.0	4768.9	Start Drop -2.00
6996.4	7007.6	KOP #2 - Start Build 7.50
7760.4	8211.2	Start 4322.3 hold at 8211.2 MD
7740.0	12533.5	TD at 12533.5

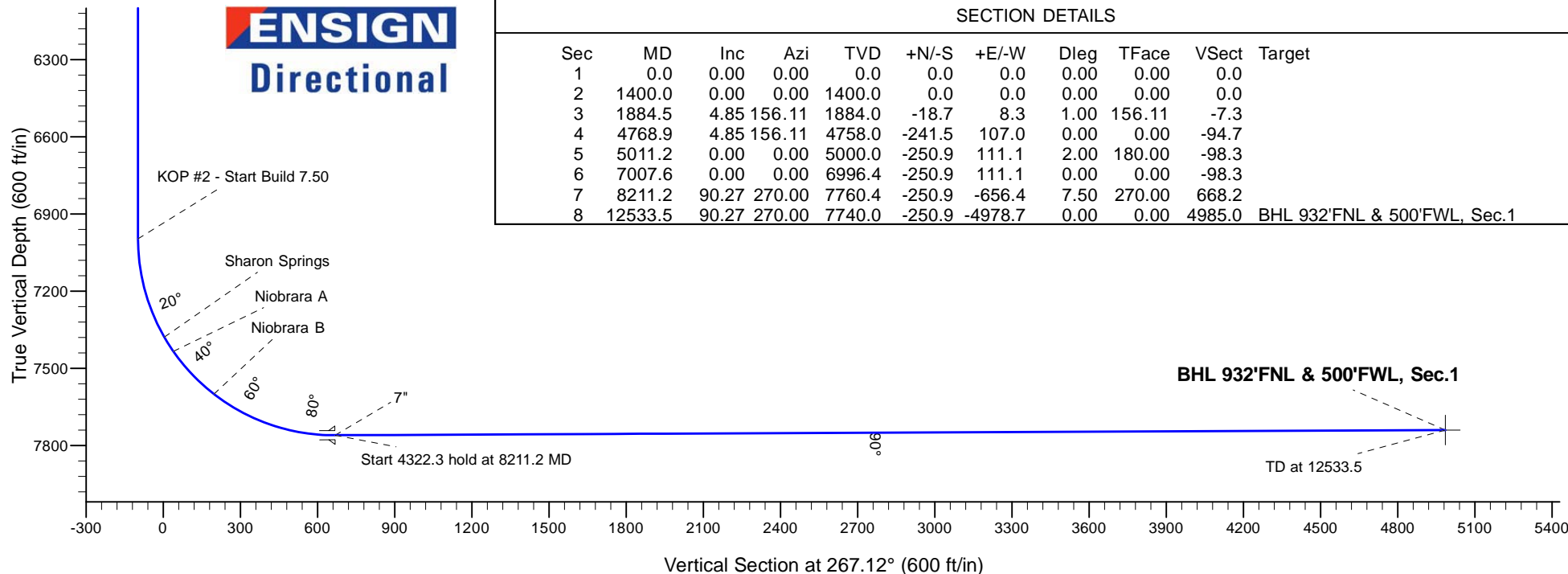
Rio-LA 1S67W6E Pad Sec.6-T1S-R67W
 Rio-LA 6F-314
 Plan #1 (8-4-15)

South(-)/North(+) (1800 ft/in)



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1400.0	0.00	0.00	1400.0	0.0	0.0	0.00	0.00	0.0	
3	1884.5	4.85	156.11	1884.0	-18.7	8.3	1.00	156.11	-7.3	
4	4768.9	4.85	156.11	4758.0	-241.5	107.0	0.00	0.00	-94.7	
5	5011.2	0.00	0.00	5000.0	-250.9	111.1	2.00	180.00	-98.3	
6	7007.6	0.00	0.00	6996.4	-250.9	111.1	0.00	0.00	-98.3	
7	8211.2	90.27	270.00	7760.4	-250.9	-656.4	7.50	270.00	668.2	
8	12533.5	90.27	270.00	7740.0	-250.9	-4978.7	0.00	0.00	4985.0	BHL 932'FNL & 500'FWL, Sec.1





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T1S-R67W

Rio-LA 1S67W6E Pad Sec.6-T1S-R67W

Rio-LA 6F-314

Wellbore #1

Plan: Plan #1 (8-4-15)

Standard Planning Report

11 August, 2015

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Project	SEC.6-T1S-R67W, Adams 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	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W		
Site Position:		Northing:	1,242,767.06 usft
From:	Lat/Long	Easting:	3,156,950.24 usft
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "
		Latitude:	39.998420
		Longitude:	-104.939780
		Grid Convergence:	0.36 °

Well	Rio-LA 6F-314		
Well Position	+N/-S	14.6 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/4/2015	8.37	66.56	52,464

Design	Plan #1 (8-4-15)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	267.12

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,884.5	4.85	156.11	1,884.0	-18.7	8.3	1.00	1.00	0.00	156.11	
4,768.9	4.85	156.11	4,758.0	-241.5	107.0	0.00	0.00	0.00	0.00	
5,011.2	0.00	0.00	5,000.0	-250.9	111.1	2.00	-2.00	0.00	180.00	
7,007.6	0.00	0.00	6,996.4	-250.9	111.1	0.00	0.00	0.00	0.00	
8,211.2	90.27	270.00	7,760.4	-250.9	-656.4	7.50	7.50	0.00	270.00	
12,533.5	90.27	270.00	7,740.0	-250.9	-4,978.7	0.00	0.00	0.00	0.00	BHL 932°FNL & 500'F

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
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
KOP - Start Build 1.00									
1,500.0	1.00	156.11	1,500.0	-0.8	0.4	-0.3	1.00	1.00	0.00
1,600.0	2.00	156.11	1,600.0	-3.2	1.4	-1.3	1.00	1.00	0.00
1,700.0	3.00	156.11	1,699.9	-7.2	3.2	-2.8	1.00	1.00	0.00
1,800.0	4.00	156.11	1,799.7	-12.8	5.7	-5.0	1.00	1.00	0.00
1,884.5	4.85	156.11	1,884.0	-18.7	8.3	-7.3	1.00	1.00	0.00
1,900.0	4.85	156.11	1,899.4	-19.9	8.8	-7.8	0.00	0.00	0.00
2,000.0	4.85	156.11	1,999.0	-27.6	12.2	-10.8	0.00	0.00	0.00
2,100.0	4.85	156.11	2,098.7	-35.4	15.7	-13.9	0.00	0.00	0.00
2,200.0	4.85	156.11	2,198.3	-43.1	19.1	-16.9	0.00	0.00	0.00
2,300.0	4.85	156.11	2,297.9	-50.8	22.5	-19.9	0.00	0.00	0.00
2,400.0	4.85	156.11	2,397.6	-58.5	25.9	-22.9	0.00	0.00	0.00
2,500.0	4.85	156.11	2,497.2	-66.3	29.3	-26.0	0.00	0.00	0.00
2,600.0	4.85	156.11	2,596.9	-74.0	32.8	-29.0	0.00	0.00	0.00
2,700.0	4.85	156.11	2,696.5	-81.7	36.2	-32.0	0.00	0.00	0.00
2,800.0	4.85	156.11	2,796.2	-89.4	39.6	-35.1	0.00	0.00	0.00
2,900.0	4.85	156.11	2,895.8	-97.1	43.0	-38.1	0.00	0.00	0.00
3,000.0	4.85	156.11	2,995.4	-104.9	46.4	-41.1	0.00	0.00	0.00
3,100.0	4.85	156.11	3,095.1	-112.6	49.9	-44.1	0.00	0.00	0.00
3,200.0	4.85	156.11	3,194.7	-120.3	53.3	-47.2	0.00	0.00	0.00
3,300.0	4.85	156.11	3,294.4	-128.0	56.7	-50.2	0.00	0.00	0.00
3,400.0	4.85	156.11	3,394.0	-135.8	60.1	-53.2	0.00	0.00	0.00
3,500.0	4.85	156.11	3,493.6	-143.5	63.6	-56.2	0.00	0.00	0.00
3,600.0	4.85	156.11	3,593.3	-151.2	67.0	-59.3	0.00	0.00	0.00
3,700.0	4.85	156.11	3,692.9	-158.9	70.4	-62.3	0.00	0.00	0.00
3,800.0	4.85	156.11	3,792.6	-166.7	73.8	-65.3	0.00	0.00	0.00
3,900.0	4.85	156.11	3,892.2	-174.4	77.2	-68.4	0.00	0.00	0.00
4,000.0	4.85	156.11	3,991.9	-182.1	80.7	-71.4	0.00	0.00	0.00
4,100.0	4.85	156.11	4,091.5	-189.8	84.1	-74.4	0.00	0.00	0.00
4,200.0	4.85	156.11	4,191.1	-197.6	87.5	-77.4	0.00	0.00	0.00
4,300.0	4.85	156.11	4,290.8	-205.3	90.9	-80.5	0.00	0.00	0.00
4,400.0	4.85	156.11	4,390.4	-213.0	94.3	-83.5	0.00	0.00	0.00
4,500.0	4.85	156.11	4,490.1	-220.7	97.8	-86.5	0.00	0.00	0.00
4,600.0	4.85	156.11	4,589.7	-228.4	101.2	-89.6	0.00	0.00	0.00
4,700.0	4.85	156.11	4,689.4	-236.2	104.6	-92.6	0.00	0.00	0.00
4,768.9	4.85	156.11	4,758.0	-241.5	107.0	-94.7	0.00	0.00	0.00
Start Drop -2.00									
4,800.0	4.22	156.11	4,789.0	-243.7	107.9	-95.5	2.00	-2.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,900.0	2.22	156.11	4,888.9	-248.9	110.2	-97.6	2.00	-2.00	0.00
5,000.0	0.22	156.11	4,988.8	-250.8	111.1	-98.3	2.00	-2.00	0.00
5,011.2	0.00	0.00	5,000.0	-250.9	111.1	-98.3	2.00	-2.00	0.00
5,100.0	0.00	0.00	5,088.8	-250.9	111.1	-98.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,188.8	-250.9	111.1	-98.3	0.00	0.00	0.00
5,300.0	0.00	0.00	5,288.8	-250.9	111.1	-98.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,388.8	-250.9	111.1	-98.3	0.00	0.00	0.00
5,500.0	0.00	0.00	5,488.8	-250.9	111.1	-98.3	0.00	0.00	0.00
5,600.0	0.00	0.00	5,588.8	-250.9	111.1	-98.3	0.00	0.00	0.00
5,700.0	0.00	0.00	5,688.8	-250.9	111.1	-98.3	0.00	0.00	0.00
5,800.0	0.00	0.00	5,788.8	-250.9	111.1	-98.3	0.00	0.00	0.00
5,900.0	0.00	0.00	5,888.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,000.0	0.00	0.00	5,988.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,100.0	0.00	0.00	6,088.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,200.0	0.00	0.00	6,188.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,300.0	0.00	0.00	6,288.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,388.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,500.0	0.00	0.00	6,488.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,588.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,700.0	0.00	0.00	6,688.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,788.8	-250.9	111.1	-98.3	0.00	0.00	0.00
6,900.0	0.00	0.00	6,888.8	-250.9	111.1	-98.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,988.8	-250.9	111.1	-98.3	0.00	0.00	0.00
7,007.6	0.00	0.00	6,996.4	-250.9	111.1	-98.3	0.00	0.00	0.00
KOP #2 - Start Build 7.50									
7,100.0	6.93	270.00	7,088.6	-250.9	105.5	-92.8	7.50	7.50	0.00
7,200.0	14.43	270.00	7,186.8	-250.9	87.0	-74.3	7.50	7.50	0.00
7,300.0	21.93	270.00	7,281.7	-250.9	55.8	-43.1	7.50	7.50	0.00
7,400.0	29.43	270.00	7,371.8	-250.9	12.5	0.1	7.50	7.50	0.00
7,500.0	36.93	270.00	7,455.4	-250.9	-42.2	54.7	7.50	7.50	0.00
7,600.0	44.43	270.00	7,531.2	-250.9	-107.3	119.8	7.50	7.50	0.00
7,700.0	51.93	270.00	7,597.8	-250.9	-181.8	194.2	7.50	7.50	0.00
7,800.0	59.43	270.00	7,654.2	-250.9	-264.3	276.6	7.50	7.50	0.00
7,900.0	66.93	270.00	7,699.3	-250.9	-353.5	365.7	7.50	7.50	0.00
8,000.0	74.43	270.00	7,732.3	-250.9	-447.8	459.8	7.50	7.50	0.00
8,100.0	81.93	270.00	7,752.8	-250.9	-545.6	557.5	7.50	7.50	0.00
8,200.0	89.43	270.00	7,760.3	-250.9	-645.2	657.0	7.50	7.50	0.00
8,211.2	90.27	270.00	7,760.4	-250.9	-656.4	668.2	7.50	7.50	0.00
Start 4322.3 hold at 8211.2 MD - 7"									
8,300.0	90.27	270.00	7,759.9	-250.9	-745.2	756.9	0.00	0.00	0.00
8,400.0	90.27	270.00	7,759.5	-250.9	-845.2	856.8	0.00	0.00	0.00
8,500.0	90.27	270.00	7,759.0	-250.9	-945.2	956.7	0.00	0.00	0.00
8,600.0	90.27	270.00	7,758.5	-250.9	-1,045.2	1,056.5	0.00	0.00	0.00
8,700.0	90.27	270.00	7,758.1	-250.9	-1,145.2	1,156.4	0.00	0.00	0.00
8,800.0	90.27	270.00	7,757.6	-250.9	-1,245.2	1,256.3	0.00	0.00	0.00
8,900.0	90.27	270.00	7,757.1	-250.9	-1,345.2	1,356.1	0.00	0.00	0.00
9,000.0	90.27	270.00	7,756.7	-250.9	-1,445.2	1,456.0	0.00	0.00	0.00
9,100.0	90.27	270.00	7,756.2	-250.9	-1,545.2	1,555.9	0.00	0.00	0.00
9,200.0	90.27	270.00	7,755.7	-250.9	-1,645.2	1,655.8	0.00	0.00	0.00
9,300.0	90.27	270.00	7,755.2	-250.9	-1,745.2	1,755.6	0.00	0.00	0.00
9,400.0	90.27	270.00	7,754.8	-250.9	-1,845.2	1,855.5	0.00	0.00	0.00
9,500.0	90.27	270.00	7,754.3	-250.9	-1,945.2	1,955.4	0.00	0.00	0.00
9,600.0	90.27	270.00	7,753.8	-250.9	-2,045.2	2,055.3	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,700.0	90.27	270.00	7,753.4	-250.9	-2,145.2	2,155.1	0.00	0.00	0.00
9,800.0	90.27	270.00	7,752.9	-250.9	-2,245.2	2,255.0	0.00	0.00	0.00
9,900.0	90.27	270.00	7,752.4	-250.9	-2,345.2	2,354.9	0.00	0.00	0.00
10,000.0	90.27	270.00	7,751.9	-250.9	-2,445.2	2,454.7	0.00	0.00	0.00
10,100.0	90.27	270.00	7,751.5	-250.9	-2,545.2	2,554.6	0.00	0.00	0.00
10,200.0	90.27	270.00	7,751.0	-250.9	-2,645.2	2,654.5	0.00	0.00	0.00
10,300.0	90.27	270.00	7,750.5	-250.9	-2,745.2	2,754.4	0.00	0.00	0.00
10,400.0	90.27	270.00	7,750.1	-250.9	-2,845.2	2,854.2	0.00	0.00	0.00
10,500.0	90.27	270.00	7,749.6	-250.9	-2,945.2	2,954.1	0.00	0.00	0.00
10,600.0	90.27	270.00	7,749.1	-250.9	-3,045.2	3,054.0	0.00	0.00	0.00
10,700.0	90.27	270.00	7,748.6	-250.9	-3,145.2	3,153.8	0.00	0.00	0.00
10,800.0	90.27	270.00	7,748.2	-250.9	-3,245.2	3,253.7	0.00	0.00	0.00
10,900.0	90.27	270.00	7,747.7	-250.9	-3,345.2	3,353.6	0.00	0.00	0.00
11,000.0	90.27	270.00	7,747.2	-250.9	-3,445.2	3,453.5	0.00	0.00	0.00
11,100.0	90.27	270.00	7,746.8	-250.9	-3,545.2	3,553.3	0.00	0.00	0.00
11,200.0	90.27	270.00	7,746.3	-250.9	-3,645.2	3,653.2	0.00	0.00	0.00
11,300.0	90.27	270.00	7,745.8	-250.9	-3,745.2	3,753.1	0.00	0.00	0.00
11,400.0	90.27	270.00	7,745.3	-250.9	-3,845.2	3,853.0	0.00	0.00	0.00
11,500.0	90.27	270.00	7,744.9	-250.9	-3,945.2	3,952.8	0.00	0.00	0.00
11,600.0	90.27	270.00	7,744.4	-250.9	-4,045.2	4,052.7	0.00	0.00	0.00
11,700.0	90.27	270.00	7,743.9	-250.9	-4,145.2	4,152.6	0.00	0.00	0.00
11,800.0	90.27	270.00	7,743.5	-250.9	-4,245.2	4,252.4	0.00	0.00	0.00
11,900.0	90.27	270.00	7,743.0	-250.9	-4,345.2	4,352.3	0.00	0.00	0.00
12,000.0	90.27	270.00	7,742.5	-250.9	-4,445.2	4,452.2	0.00	0.00	0.00
12,100.0	90.27	270.00	7,742.0	-250.9	-4,545.2	4,552.1	0.00	0.00	0.00
12,200.0	90.27	270.00	7,741.6	-250.9	-4,645.2	4,651.9	0.00	0.00	0.00
12,300.0	90.27	270.00	7,741.1	-250.9	-4,745.2	4,751.8	0.00	0.00	0.00
12,400.0	90.27	270.00	7,740.6	-250.9	-4,845.2	4,851.7	0.00	0.00	0.00
12,500.0	90.27	270.00	7,740.2	-250.9	-4,945.2	4,951.5	0.00	0.00	0.00
12,533.5	90.27	270.00	7,740.0	-250.9	-4,978.7	4,985.0	0.00	0.00	0.00
TD at 12533.5									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SHL 684'FNL & 153'FWL - hit/miss target - Shape - Point	0.00	0.00	1.0	0.0	0.0	1,242,781.63	3,156,950.15	39.998460	-104.939780
50' N/S Hardline (6F-314) - plan misses target center by 2828.7ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W100.0 H4,322.3 D0.0)	0.00	0.00	1.0	-250.9	-2,817.5	1,242,512.94	3,154,134.34	39.997771	-104.949837
BHL 932'FNL & 500'FWL - plan hits target center - Point	0.00	0.00	7,740.0	-250.9	-4,978.7	1,242,499.33	3,151,973.34	39.997770	-104.957550

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Project:	SEC.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	North Reference:	True
Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-4-15)		

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
8,211.2	7,760.4	7"	7	8-3/4

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,439.7	4,430.0	Parkman		0.00	
4,811.0	4,800.0	Sussex		0.00	
5,391.2	5,380.0	Shannon		0.00	
7,408.3	7,379.0	Sharon Springs		0.00	
7,473.5	7,434.0	Niobrara A		0.00	
7,703.5	7,600.0	Niobrara B		0.00	
7,967.7	7,723.0	Niobrara C		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,400.0	1,400.0	0.0	0.0	KOP - Start Build 1.00
4,768.9	4,758.0	-18.7	8.3	Start Drop -2.00
7,007.6	6,996.4	-241.5	107.0	KOP #2 - Start Build 7.50
8,211.2	7,760.4	-250.9	111.1	Start 4322.3 hold at 8211.2 MD
12,533.5	7,740.0	-250.9	111.1	TD at 12533.5



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T1S-R67W

Rio-LA 1S67W6E Pad Sec.6-T1S-R67W

Rio-LA 6F-314

Wellbore #1

Plan #1 (8-4-15)

Anticollision Report

11 August, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (8-4-15)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	8/11/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,533.5	Plan #1 (8-4-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Corcilus 1S67W6J Pad Sec.6-T1S-R67W						
Corcilus 6E-203 - Wellbore #1 - Plan #1 (4-29-15)	7,650.0	8,292.4	109.0	80.6	3.829	SF
Corcilus 6E-203 - Wellbore #1 - Plan #1 (4-29-15)	7,658.8	8,292.4	108.6	80.4	3.843	CC, ES
Corcilus 6E-323 - Wellbore #1 - Plan #1 (4-29-15)	7,550.0	8,380.1	326.1	295.8	10.761	SF
Corcilus 6E-323 - Wellbore #1 - Plan #1 (4-29-15)	7,593.7	8,379.9	321.9	292.5	10.966	CC, ES
Existing Pad Sec.12-T1S-R68W						
Beisel Unit 1 (Exist.) - Wellbore #1 - Wellbore #1	9,433.4	7,745.6	332.3	122.9	1.587	CC, ES, SF
Gaspar 11-1 (Exist.) - Wellbore #1 - Wellbore #1	12,533.5	7,751.9	534.6	377.0	3.392	CC, ES, SF
Sterkel 1 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Sterkel 21-1 - Wellbore #1 - Wellbore #1	11,125.9	7,758.2	101.5	-18.9	0.843	Level 1, CC, ES, SF
Existing Wells Sec.6-T1S-R67W						
Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	2,707.0	2,692.0	254.4	241.8	20.241	CC
Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	2,900.0	2,884.3	255.0	241.5	18.877	ES
Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	7,007.6	6,978.7	341.3	310.8	11.191	SF
Rio-LA 1S67W6E Pad Sec.6-T1S-R67W						
Rio-LA 6E-234 - Wellbore #1 - Plan #1 (8-4-15)	1,400.0	1,400.0	32.9	26.8	5.422	CC, ES
Rio-LA 6E-234 - Wellbore #1 - Plan #1 (8-4-15)	12,533.5	12,424.1	513.6	239.5	1.874	SF
Rio-LA 6E-304 - Wellbore #1 - Plan #1 (8-4-15)	1,000.0	1,000.0	47.7	43.4	11.167	CC, ES
Rio-LA 6E-304 - Wellbore #1 - Plan #1 (8-4-15)	12,533.5	12,277.5	841.5	566.6	3.061	SF
Rio-LA 6F-204 - Wellbore #1 - Plan #1 (8-4-15)	800.0	800.0	14.6	11.2	4.321	CC, ES
Rio-LA 6F-204 - Wellbore #1 - Plan #1 (8-4-15)	12,533.5	12,447.1	285.9	24.1	1.092	Level 2, SF
Rio-LA 6F-334 - Wellbore #1 - Plan #1 (8-4-15)	400.0	400.0	29.3	27.7	18.611	CC, ES
Rio-LA 6F-334 - Wellbore #1 - Plan #1 (8-4-15)	12,533.5	12,595.6	622.9	344.2	2.235	SF
Rio-LA 6F-414 - Wellbore #1 - Plan #1 (8-4-15)	1,400.0	1,400.0	18.4	12.4	3.037	CC, ES
Rio-LA 6F-414 - Wellbore #1 - Plan #1 (8-4-15)	12,533.5	12,523.2	322.3	83.9	1.352	Level 3, SF
Rio-LA 6F-434 - Wellbore #1 - Plan #1 (8-4-15)	200.0	200.0	43.8	43.1	64.975	CC, ES
Rio-LA 6F-434 - Wellbore #1 - Plan #1 (8-4-15)	12,533.5	12,638.9	864.3	591.6	3.169	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-203 - Wellbore #1 - Plan #1 (4-29-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	101.46	-123.8	610.8	623.3				
100.0	100.0	91.0	91.0	0.1	0.1	101.46	-123.8	610.8	623.2	623.0	0.21	2,903.084	
200.0	200.0	191.0	191.0	0.3	0.3	101.46	-123.8	610.8	623.2	622.5	0.65	952.810	
300.0	300.0	304.8	304.7	0.6	0.6	101.38	-122.8	609.8	622.2	621.1	1.13	549.186	
400.0	400.0	419.7	419.6	0.8	0.8	101.12	-119.2	606.5	618.8	617.2	1.62	382.050	
500.0	500.0	534.2	533.8	1.0	1.1	100.65	-113.0	600.9	613.0	610.9	2.11	290.267	
600.0	600.0	648.1	647.1	1.2	1.4	99.98	-104.4	593.1	604.8	602.2	2.61	232.040	
700.0	700.0	761.3	759.3	1.5	1.8	99.10	-93.4	583.1	594.5	591.4	3.11	191.350	
800.0	800.0	873.4	869.9	1.7	2.1	97.98	-80.0	571.0	581.9	578.3	3.61	161.034	
900.0	900.0	972.5	967.5	1.9	2.5	96.84	-67.0	559.2	568.4	564.3	4.09	138.908	
1,000.0	1,000.0	1,071.0	1,064.4	2.1	2.9	95.65	-54.2	547.5	555.0	550.4	4.57	121.479	
1,100.0	1,100.0	1,169.4	1,161.2	2.4	3.2	94.40	-41.3	535.8	541.9	536.9	5.05	107.239	
1,200.0	1,200.0	1,267.8	1,258.1	2.6	3.6	93.10	-28.4	524.1	529.1	523.6	5.55	95.412	
1,300.0	1,300.0	1,366.2	1,355.0	2.8	4.0	91.73	-15.5	512.3	516.6	510.5	6.05	85.451	
1,400.0	1,400.0	1,464.7	1,451.8	3.0	4.4	90.30	-2.6	500.6	504.3	497.8	6.55	76.961	
1,500.0	1,500.0	1,562.9	1,548.6	3.2	4.8	-67.52	10.3	489.0	492.1	484.6	7.51	65.533	
1,600.0	1,600.0	1,660.9	1,645.0	3.4	5.2	-69.50	23.1	477.3	479.7	471.6	8.05	59.549	
1,700.0	1,699.9	1,758.5	1,741.0	3.6	5.6	-71.76	35.9	465.7	467.2	458.6	8.62	54.184	
1,800.0	1,799.7	1,855.7	1,836.7	3.8	5.9	-74.33	48.6	454.1	455.0	445.8	9.21	49.376	
1,884.5	1,884.0	1,937.6	1,917.3	3.9	6.3	-76.76	59.3	444.4	445.0	435.3	9.74	45.710	
1,900.0	1,899.4	1,952.5	1,932.0	4.0	6.3	-77.21	61.3	442.6	443.3	433.5	9.83	45.080	
2,000.0	1,999.0	2,049.1	2,027.1	4.2	6.7	-80.19	74.0	431.1	432.6	422.1	10.47	41.307	
2,100.0	2,098.7	2,145.8	2,122.2	4.4	7.1	-83.31	86.6	419.6	423.2	412.1	11.13	38.023	
2,200.0	2,198.3	2,242.4	2,217.4	4.6	7.5	-86.55	99.3	408.1	415.2	403.4	11.80	35.181	
2,300.0	2,297.9	2,339.1	2,312.5	4.9	7.9	-89.90	111.9	396.6	408.7	396.2	12.48	32.738	
2,400.0	2,397.6	2,435.8	2,407.6	5.1	8.2	-93.34	124.6	385.1	403.6	390.5	13.17	30.655	
2,500.0	2,497.2	2,532.4	2,502.8	5.3	8.6	-96.85	137.2	373.6	400.2	386.4	13.85	28.896	
2,600.0	2,596.9	2,629.1	2,597.9	5.6	9.0	-100.40	149.9	362.1	398.4	383.9	14.53	27.427	
2,660.1	2,656.8	2,687.2	2,655.1	5.7	9.3	-102.54	157.5	355.2	398.1	383.2	14.93	26.671	
2,700.0	2,696.5	2,725.7	2,693.0	5.8	9.4	-103.97	162.6	350.6	398.2	383.0	15.19	26.219	
2,800.0	2,796.2	2,822.4	2,788.1	6.1	9.8	-107.52	175.2	339.1	399.7	383.9	15.83	25.243	
2,900.0	2,895.8	2,919.0	2,883.3	6.3	10.2	-111.04	187.9	327.7	402.8	386.4	16.46	24.473	
3,000.0	2,995.4	3,015.7	2,978.4	6.6	10.6	-114.50	200.5	316.2	407.5	390.5	17.06	23.885	
3,100.0	3,095.1	3,112.3	3,073.5	6.8	10.9	-117.87	213.2	304.7	413.8	396.1	17.64	23.457	
3,200.0	3,194.7	3,209.0	3,168.6	7.1	11.3	-121.13	225.8	293.2	421.5	403.3	18.19	23.169	
3,300.0	3,294.4	3,305.6	3,263.8	7.4	11.7	-124.28	238.5	281.7	430.6	411.9	18.72	23.001	
3,400.0	3,394.0	3,402.3	3,358.9	7.6	12.1	-127.29	251.2	270.2	441.0	421.8	19.23	22.937	
3,500.0	3,493.6	3,498.9	3,454.0	7.9	12.5	-130.16	263.8	258.7	452.7	433.0	19.71	22.962	
3,600.0	3,593.3	3,595.6	3,549.2	8.1	12.9	-132.89	276.5	247.2	465.4	445.3	20.18	23.063	
3,700.0	3,692.9	3,692.2	3,644.3	8.4	13.3	-135.48	289.1	235.7	479.2	458.6	20.63	23.226	
3,800.0	3,792.6	3,788.9	3,739.4	8.7	13.7	-137.92	301.8	224.2	494.0	472.9	21.07	23.442	
3,900.0	3,892.2	3,885.5	3,834.5	8.9	14.0	-140.23	314.5	212.7	509.6	488.1	21.50	23.702	
4,000.0	3,991.9	3,982.2	3,929.7	9.2	14.4	-142.39	327.1	201.2	526.0	504.1	21.92	23.997	
4,100.0	4,091.5	4,078.8	4,024.8	9.5	14.8	-144.43	339.8	189.7	543.1	520.8	22.33	24.320	
4,200.0	4,191.1	4,175.5	4,119.9	9.7	15.2	-146.35	352.4	178.2	560.9	538.1	22.74	24.665	
4,300.0	4,290.8	4,272.2	4,215.1	10.0	15.6	-148.15	365.1	166.7	579.2	556.1	23.14	25.028	
4,400.0	4,390.4	4,368.8	4,310.2	10.3	16.0	-149.85	377.7	155.2	598.1	574.6	23.55	25.403	
4,500.0	4,490.1	4,465.5	4,405.3	10.5	16.4	-151.44	390.4	143.7	617.5	593.6	23.95	25.788	
4,600.0	4,589.7	4,562.1	4,500.4	10.8	16.8	-152.94	403.1	132.2	637.3	613.0	24.35	26.178	
4,700.0	4,689.4	4,658.8	4,595.6	11.1	17.1	-154.34	415.7	120.7	657.6	632.8	24.75	26.572	
4,768.9	4,758.0	4,725.4	4,661.1	11.3	17.4	-155.26	424.4	112.8	671.7	646.7	25.02	26.844	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-203 - Wellbore #1 - Plan #1 (4-29-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
4,800.0	4,789.0	4,755.5	4,690.7	11.4	17.5	-155.72	428.4	109.2	678.0	652.9	25.16	26.951	
4,900.0	4,888.9	4,852.8	4,786.5	11.6	17.9	-157.02	441.1	97.6	696.4	670.8	25.57	27.233	
5,000.0	4,988.8	4,950.8	4,883.0	11.7	18.3	-158.14	454.0	86.0	711.9	685.9	25.98	27.398	
5,011.2	5,000.0	4,961.8	4,893.8	11.8	18.4	-2.14	455.4	84.7	713.4	685.8	27.56	25.890	
5,100.0	5,088.8	5,049.2	4,979.9	11.9	18.7	-2.94	466.9	74.3	725.6	697.4	28.11	25.807	
5,200.0	5,188.8	5,147.7	5,076.7	12.1	19.1	-3.80	479.7	62.6	739.4	710.7	28.73	25.733	
5,300.0	5,288.8	5,246.1	5,173.6	12.3	19.5	-4.63	492.6	50.9	753.4	724.1	29.35	25.668	
5,400.0	5,388.8	5,344.5	5,270.5	12.5	19.9	-5.43	505.5	39.1	767.6	737.6	29.97	25.610	
5,500.0	5,488.8	5,442.9	5,367.4	12.6	20.3	-6.21	518.4	27.4	781.9	751.3	30.59	25.559	
5,600.0	5,588.8	5,541.3	5,464.2	12.8	20.7	-6.95	531.3	15.7	796.4	765.2	31.21	25.514	
5,700.0	5,688.8	5,639.8	5,561.1	13.0	21.1	-7.67	544.2	4.0	811.0	779.1	31.83	25.475	
5,800.0	5,788.8	5,738.2	5,658.0	13.2	21.5	-8.36	557.1	-7.7	825.7	793.2	32.45	25.441	
5,900.0	5,888.8	5,836.6	5,754.8	13.4	21.9	-9.03	570.0	-19.4	840.5	807.4	33.07	25.411	
6,000.0	5,988.8	5,935.0	5,851.7	13.6	22.3	-9.68	582.9	-31.1	855.4	821.7	33.70	25.386	
6,100.0	6,088.8	6,033.5	5,948.6	13.7	22.7	-10.30	595.7	-42.8	870.4	836.1	34.32	25.365	
6,200.0	6,188.8	6,151.0	6,064.4	13.9	23.1	-10.99	610.5	-56.2	885.0	850.0	34.96	25.315	
6,300.0	6,288.8	6,286.4	6,198.6	14.1	23.4	-11.57	623.4	-67.9	896.0	860.5	35.55	25.203	
6,400.0	6,388.8	6,423.1	6,334.9	14.3	23.7	-11.93	631.6	-75.4	903.1	867.0	36.06	25.045	
6,500.0	6,488.8	6,560.5	6,472.2	14.5	23.9	-12.08	635.0	-78.5	906.0	869.5	36.47	24.839	
6,600.0	6,588.8	6,668.1	6,579.8	14.7	24.0	-12.08	635.1	-78.6	906.1	869.2	36.81	24.611	
6,700.0	6,688.8	6,768.1	6,679.8	14.9	24.1	-12.08	635.1	-78.6	906.1	868.9	37.15	24.390	
6,800.0	6,788.8	8,298.6	7,644.3	15.1	21.1	-92.10	-257.8	-78.5	885.1	849.6	35.47	24.952	
6,900.0	6,888.8	8,297.8	7,644.3	15.3	21.1	-91.86	-257.0	-78.5	887.7	852.0	35.68	22.076	
7,007.6	6,996.4	8,297.0	7,644.3	15.5	21.1	-91.59	-256.1	-78.5	883.7	847.8	35.91	19.042	
7,050.0	7,038.8	8,296.6	7,644.3	15.6	21.1	-1.84	-255.8	-78.5	884.8	847.2	35.56	18.076	
7,100.0	7,088.6	8,296.2	7,644.3	15.7	21.1	-2.27	-255.4	-78.5	884.0	846.4	35.64	16.669	
7,150.0	7,138.0	8,295.8	7,644.3	15.8	21.1	-3.04	-255.0	-78.5	884.7	845.9	35.58	15.309	
7,200.0	7,186.8	8,295.4	7,644.3	15.8	21.1	-4.86	-254.6	-78.5	885.1	845.7	35.40	13.983	
7,250.0	7,234.8	8,295.1	7,644.3	15.9	21.1	-14.13	-254.2	-78.5	885.2	845.0	35.17	12.658	
7,300.0	7,281.7	8,294.7	7,644.3	16.0	21.1	-168.07	-253.8	-78.5	885.2	844.0	34.72	11.383	
7,350.0	7,327.5	8,294.3	7,644.3	16.0	21.1	-176.09	-253.5	-78.5	885.3	843.2	34.10	10.127	
7,400.0	7,371.8	8,294.0	7,644.4	16.1	21.1	-177.80	-253.1	-78.5	885.9	842.5	33.41	8.856	
7,450.0	7,414.5	8,293.6	7,644.4	16.2	21.1	-178.56	-252.8	-78.5	886.6	841.9	32.62	7.589	
7,500.0	7,455.4	8,293.3	7,644.4	16.2	21.1	-178.99	-252.4	-78.5	887.2	841.2	31.73	6.343	
7,550.0	7,494.4	8,293.0	7,644.4	16.3	21.1	-179.27	-252.1	-78.5	887.9	840.5	30.73	5.176	
7,600.0	7,531.2	8,292.7	7,644.4	16.4	21.1	-179.47	-251.8	-78.5	888.5	839.8	29.64	4.233	
7,650.0	7,565.8	8,292.4	7,644.4	16.6	21.1	-179.63	-251.6	-78.5	889.0	839.0	28.48	3.829 SF	
7,658.8	7,571.6	8,292.4	7,644.4	16.7	21.1	-179.65	-251.5	-78.5	889.6	838.4	28.26	3.843 CC, ES	
7,700.0	7,597.8	8,292.1	7,644.4	17.0	21.1	-179.76	-251.3	-78.5	890.2	837.7	27.25	4.302	
7,750.0	7,627.4	8,291.9	7,644.4	17.4	21.1	-179.89	-251.1	-78.5	890.9	837.0	25.96	5.620	
7,800.0	7,654.2	8,291.7	7,644.4	17.8	21.1	-179.99	-250.8	-78.5	891.5	836.1	24.64	7.538	
7,850.0	7,678.2	8,291.5	7,644.4	18.4	21.1	-179.86	-250.6	-78.5	892.1	835.4	23.31	9.909	
7,900.0	7,699.3	8,291.3	7,644.4	19.0	21.1	-179.67	-250.5	-78.5	892.7	834.7	21.98	12.679	
7,950.0	7,717.4	8,291.2	7,644.4	19.7	21.1	-179.35	-250.3	-78.5	893.3	834.0	20.70	15.835	
8,000.0	7,732.3	8,291.1	7,644.4	20.5	21.1	-178.40	-250.2	-78.5	893.9	833.3	19.51	19.356	
8,050.0	7,744.2	8,291.0	7,644.4	21.3	21.1	12.66	-250.1	-78.5	894.5	832.6	20.88	20.479	
8,100.0	7,752.8	8,290.9	7,644.4	22.2	21.1	1.41	-250.0	-78.5	895.1	831.9	17.67	27.026	
8,150.0	7,758.2	8,290.8	7,644.4	23.2	21.1	0.75	-250.0	-78.5	895.7	831.2	16.98	31.051	
8,200.0	7,760.3	8,290.8	7,644.4	24.2	21.1	0.49	-250.0	-78.5	896.3	830.5	16.60	34.745	
8,211.2	7,760.4	8,290.8	7,644.4	24.4	21.1	0.46	-250.0	-78.5	896.9	830.2	16.55	35.506	
8,300.0	7,759.9	8,290.8	7,644.4	26.3	21.1	0.46	-250.0	-78.5	897.5	829.5	17.10	39.489	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-203 - Wellbore #1 - Plan #1 (4-29-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,400.0	7,759.5	8,290.8	7,644.4	28.5	21.1	0.45	-250.0	-78.5	774.0	756.3	17.73	43.646		
8,500.0	7,759.0	8,290.8	7,644.4	30.7	21.1	0.45	-250.0	-78.5	873.1	854.7	18.39	47.483		
8,600.0	7,758.5	8,290.8	7,644.4	33.1	21.1	0.45	-250.0	-78.5	972.4	953.3	19.06	51.029		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design		Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-323 - Wellbore #1 - Plan #1 (4-29-15)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	100.93	-123.8	641.6	653.5						
100.0	100.0	91.0	91.0	0.1	0.1	100.93	-123.8	641.6	653.4	653.2	0.21	3,043.917			
200.0	200.0	191.0	191.0	0.3	0.3	100.93	-123.8	641.6	653.4	652.8	0.65	999.033			
300.0	300.0	291.0	291.0	0.6	0.5	100.93	-123.8	641.6	653.4	652.3	1.10	592.095			
400.0	400.0	391.0	391.0	0.8	0.8	100.93	-123.8	641.6	653.4	651.9	1.55	420.721			
500.0	500.0	503.5	503.5	1.0	1.0	100.84	-122.7	640.8	652.6	650.5	2.03	321.624			
600.0	600.0	617.1	616.9	1.2	1.3	100.54	-118.7	638.1	649.6	647.1	2.51	258.856			
700.0	700.0	730.2	729.8	1.5	1.5	100.03	-112.0	633.6	644.6	641.6	2.99	215.262			
800.0	800.0	842.8	841.8	1.7	1.8	99.29	-102.6	627.2	637.6	634.1	3.48	183.024			
900.0	900.0	954.6	952.7	1.9	2.1	98.32	-90.6	619.1	628.7	624.7	3.98	157.973			
1,000.0	1,000.0	1,065.5	1,062.2	2.1	2.5	97.11	-76.0	609.2	618.0	613.5	4.49	137.778			
1,100.0	1,100.0	1,166.8	1,161.8	2.4	2.9	95.81	-60.9	599.0	606.2	601.3	4.98	121.779			
1,200.0	1,200.0	1,265.1	1,258.5	2.6	3.2	94.49	-46.2	589.1	594.7	589.3	5.47	108.776			
1,300.0	1,300.0	1,363.5	1,355.3	2.8	3.6	93.12	-31.5	579.1	583.5	577.6	5.97	97.796			
1,400.0	1,400.0	1,461.9	1,452.0	3.0	4.0	91.69	-16.8	569.2	572.7	566.2	6.48	88.429			
1,500.0	1,500.0	1,560.1	1,548.6	3.2	4.3	-66.07	-2.2	559.3	561.9	554.6	7.29	77.031			
1,600.0	1,600.0	1,657.9	1,644.9	3.4	4.7	-67.94	12.4	549.4	550.8	543.0	7.83	70.326			
1,700.0	1,699.9	1,755.4	1,740.8	3.6	5.1	-70.05	27.0	539.5	539.8	531.4	8.39	64.335			
1,800.0	1,799.7	1,852.5	1,836.3	3.8	5.5	-72.39	41.5	529.7	528.8	519.9	8.97	58.977			
1,884.5	1,884.0	1,934.3	1,916.7	3.9	5.8	-74.58	53.7	521.5	519.9	510.5	9.47	54.893			
1,900.0	1,899.4	1,949.2	1,931.4	4.0	5.8	-74.98	55.9	520.0	518.4	508.8	9.57	54.190			
2,000.0	1,999.0	2,045.7	2,026.3	4.2	6.2	-77.63	70.4	510.2	508.8	498.6	10.18	49.967			
2,100.0	2,098.7	2,142.2	2,121.2	4.4	6.6	-80.37	84.8	500.5	500.5	489.6	10.82	46.272			
2,200.0	2,198.3	2,238.7	2,216.1	4.6	7.0	-83.18	99.2	490.7	493.3	481.9	11.46	43.048			
2,300.0	2,297.9	2,335.2	2,311.1	4.9	7.4	-86.07	113.6	481.0	487.5	475.4	12.11	40.247			
2,400.0	2,397.6	2,431.7	2,406.0	5.1	7.8	-89.02	128.0	471.2	483.1	470.3	12.77	37.825			
2,500.0	2,497.2	2,528.2	2,500.9	5.3	8.2	-92.01	142.4	461.5	480.0	466.6	13.43	35.740			
2,600.0	2,596.9	2,624.8	2,595.9	5.6	8.5	-95.03	156.8	451.7	478.4	464.3	14.09	33.959			
2,665.1	2,661.7	2,687.6	2,657.7	5.7	8.8	-97.00	166.2	445.4	478.1	463.6	14.51	32.945			
2,700.0	2,696.5	2,721.3	2,690.8	5.8	8.9	-98.05	171.2	442.0	478.2	463.4	14.74	32.447			
2,800.0	2,796.2	2,817.8	2,785.7	6.1	9.3	-101.08	185.7	432.2	479.4	464.0	15.38	31.177			
2,900.0	2,895.8	2,914.3	2,880.6	6.3	9.7	-104.08	200.1	422.4	482.0	466.0	16.00	30.120			
3,000.0	2,995.4	3,010.8	2,975.6	6.6	10.1	-107.04	214.5	412.7	486.0	469.4	16.61	29.254			
3,100.0	3,095.1	3,107.3	3,070.5	6.8	10.5	-109.95	228.9	402.9	491.4	474.2	17.21	28.556			
3,200.0	3,194.7	3,203.8	3,165.4	7.1	10.9	-112.79	243.3	393.2	498.2	480.4	17.79	28.007			
3,300.0	3,294.4	3,300.3	3,260.4	7.4	11.3	-115.55	257.7	383.4	506.2	487.8	18.35	27.588			
3,400.0	3,394.0	3,396.8	3,355.3	7.6	11.6	-118.23	272.1	373.7	515.4	496.5	18.89	27.284			
3,500.0	3,493.6	3,493.4	3,450.2	7.9	12.0	-120.81	286.5	363.9	525.7	506.3	19.41	27.081			
3,600.0	3,593.3	3,589.9	3,545.1	8.1	12.4	-123.30	301.0	354.2	537.1	517.2	19.92	26.964			
3,700.0	3,692.9	3,686.4	3,640.1	8.4	12.8	-125.68	315.4	344.4	549.5	529.1	20.41	26.922			
3,800.0	3,792.6	3,782.9	3,735.0	8.7	13.2	-127.96	329.8	334.7	562.9	542.0	20.89	26.945			
3,900.0	3,892.2	3,879.4	3,829.9	8.9	13.6	-130.13	344.2	324.9	577.2	555.8	21.36	27.024			
4,000.0	3,991.9	3,975.9	3,924.9	9.2	14.0	-132.21	358.6	315.2	592.2	570.4	21.81	27.150			
4,100.0	4,091.5	4,072.4	4,019.8	9.5	14.4	-134.18	373.0	305.4	608.1	585.8	22.26	27.317			
4,200.0	4,191.1	4,168.9	4,114.7	9.7	14.8	-136.05	387.4	295.7	624.6	601.9	22.70	27.516			
4,300.0	4,290.8	4,265.4	4,209.6	10.0	15.1	-137.83	401.8	285.9	641.7	618.6	23.13	27.744			
4,400.0	4,390.4	4,361.9	4,304.6	10.3	15.5	-139.52	416.3	276.2	659.5	635.9	23.56	27.995			
4,500.0	4,490.1	4,458.5	4,399.5	10.5	15.9	-141.13	430.7	266.4	677.8	653.8	23.98	28.265			
4,600.0	4,589.7	4,555.0	4,494.4	10.8	16.3	-142.65	445.1	256.7	696.6	672.2	24.40	28.550			
4,700.0	4,689.4	4,651.5	4,589.4	11.1	16.7	-144.09	459.5	246.9	715.9	691.1	24.82	28.847			
4,768.9	4,758.0	4,718.0	4,654.8	11.3	17.0	-145.04	469.4	240.2	729.4	704.3	25.10	29.057			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design		Corcilus 1S67W6J Pad Sec.6-T1S-R67W - Corcilus 6E-323 - Wellbore #1 - Plan #1 (4-29-15)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
4,800.0	4,789.0	4,748.0	4,684.3	11.4	17.1	-145.52	473.9	237.2	735.4	710.2	25.23	29.145			
4,900.0	4,888.9	4,845.2	4,779.9	11.6	17.5	-146.90	488.4	227.4	753.2	727.6	25.64	29.375			
5,000.0	4,988.8	4,943.2	4,876.3	11.7	17.9	-148.06	503.1	217.5	768.4	742.3	26.05	29.496			
5,011.2	5,000.0	4,954.2	4,887.1	11.8	17.9	7.93	504.7	216.3	769.9	743.0	26.92	28.598			
5,100.0	5,088.8	5,041.5	4,973.0	11.9	18.3	7.15	517.8	207.5	782.0	754.5	27.48	28.455			
5,200.0	5,188.8	5,139.9	5,069.8	12.1	18.7	6.30	532.4	197.6	795.7	767.6	28.10	28.318			
5,300.0	5,288.8	5,238.3	5,166.5	12.3	19.1	5.48	547.1	187.6	809.6	780.9	28.72	28.192			
5,400.0	5,388.8	5,336.6	5,263.3	12.5	19.5	4.69	561.8	177.7	823.7	794.3	29.34	28.075			
5,500.0	5,488.8	5,435.0	5,360.0	12.6	19.9	3.92	576.5	167.8	837.9	807.9	29.96	27.968			
5,600.0	5,588.8	5,533.3	5,456.8	12.8	20.3	3.18	591.2	157.8	852.3	821.7	30.58	27.869			
5,700.0	5,688.8	5,654.7	5,576.4	13.0	20.7	2.36	608.1	146.4	865.8	834.6	31.23	27.725			
5,800.0	5,788.8	5,786.4	5,707.0	13.2	21.0	1.71	621.7	137.2	876.0	844.2	31.81	27.538			
5,900.0	5,888.8	5,919.3	5,839.5	13.4	21.3	1.31	630.4	131.3	882.4	850.1	32.31	27.315			
6,000.0	5,988.8	6,052.9	5,973.0	13.6	21.5	1.15	634.0	128.9	885.1	852.4	32.72	27.051			
6,100.0	6,088.8	6,159.7	6,079.8	13.7	21.6	1.14	634.1	128.8	885.2	852.1	33.06	26.775			
6,200.0	6,188.8	6,259.7	6,179.8	13.9	21.7	1.14	634.1	128.8	885.2	851.8	33.40	26.504			
6,300.0	6,288.8	6,359.7	6,279.8	14.1	21.9	1.14	634.1	128.8	885.2	851.4	33.74	26.237			
6,400.0	6,388.8	6,459.7	6,379.8	14.3	22.0	1.14	634.1	128.8	885.2	851.1	34.08	25.974			
6,500.0	6,488.8	6,559.7	6,479.8	14.5	22.2	1.14	634.1	128.8	885.2	850.7	34.42	25.713			
6,600.0	6,588.8	6,659.7	6,579.8	14.7	22.3	1.14	634.1	128.8	885.2	850.4	34.77	25.457			
6,700.0	6,688.8	6,759.7	6,679.8	14.9	22.4	1.14	634.1	128.8	885.2	850.0	35.12	25.204			
6,800.0	6,788.8	6,859.7	6,779.8	15.1	22.6	1.14	634.1	128.8	885.2	849.7	35.47	24.954			
6,900.0	6,888.8	8,383.2	7,741.1	15.3	19.9	104.29	-255.4	128.8	861.5	827.3	34.19	25.200			
7,007.6	6,996.4	8,382.7	7,741.1	15.5	19.9	102.56	-254.8	128.8	753.9	719.5	34.37	21.935			
7,050.0	7,038.8	8,382.5	7,741.1	15.6	19.9	-176.35	-254.6	128.8	711.6	676.2	35.38	20.114			
7,100.0	7,088.6	8,382.2	7,741.1	15.7	19.9	-178.07	-254.3	128.8	662.0	626.5	35.44	18.681			
7,150.0	7,138.0	8,381.9	7,741.1	15.8	19.9	-178.72	-254.1	128.8	612.9	577.6	35.35	17.339			
7,200.0	7,186.8	8,381.7	7,741.1	15.8	19.9	-179.07	-253.8	128.8	564.9	529.8	35.13	16.079			
7,250.0	7,234.8	8,381.4	7,741.1	15.9	19.9	-179.28	-253.5	128.8	518.4	483.6	34.79	14.900			
7,300.0	7,281.7	8,381.2	7,741.1	16.0	19.9	-179.42	-253.3	128.8	474.1	439.7	34.32	13.812			
7,350.0	7,327.5	8,380.9	7,741.1	16.0	19.9	-179.53	-253.1	128.8	432.8	399.1	33.74	12.829			
7,400.0	7,371.8	8,380.7	7,741.1	16.1	19.9	-179.61	-252.8	128.8	395.8	362.8	33.04	11.982			
7,450.0	7,414.5	8,380.5	7,741.1	16.2	19.9	-179.67	-252.6	128.8	364.5	332.3	32.22	11.313			
7,500.0	7,455.4	8,380.3	7,741.1	16.2	19.9	-179.72	-252.4	128.8	340.7	309.4	31.31	10.882			
7,550.0	7,494.4	8,380.1	7,741.1	16.3	19.9	-179.76	-252.2	128.8	326.1	295.8	30.30	10.761 SF			
7,593.7	7,526.7	8,379.9	7,741.1	16.4	19.9	-179.79	-252.0	128.8	321.9	292.5	29.35	10.966 CC, ES			
7,600.0	7,531.2	8,379.9	7,741.1	16.4	19.9	-179.80	-252.0	128.8	322.0	292.8	29.21	11.023			
7,650.0	7,565.8	8,379.7	7,741.1	16.6	19.9	-179.83	-251.8	128.8	328.8	300.8	28.04	11.725			
7,700.0	7,597.8	8,379.5	7,741.1	17.0	19.9	-179.85	-251.6	128.8	345.9	319.1	26.82	12.899			
7,750.0	7,627.4	8,379.4	7,741.1	17.4	19.9	-179.88	-251.5	128.8	371.8	346.2	25.54	14.555			
7,800.0	7,654.2	8,379.2	7,741.2	17.8	19.9	-179.90	-251.3	128.8	404.7	380.4	24.24	16.692			
7,850.0	7,678.2	8,379.1	7,741.2	18.4	19.9	-179.92	-251.2	128.8	442.8	419.9	22.94	19.308			
7,900.0	7,699.3	8,379.0	7,741.2	19.0	19.9	-179.94	-251.1	128.8	485.0	463.3	21.65	22.400			
7,950.0	7,717.4	8,378.9	7,741.2	19.7	19.9	-179.96	-251.0	128.8	529.9	509.5	20.42	25.954			
8,000.0	7,732.3	8,378.8	7,741.2	20.5	19.9	-179.97	-250.9	128.8	576.9	557.6	19.28	29.925			
8,050.0	7,744.2	8,378.7	7,741.2	21.3	19.9	-179.99	-250.9	128.8	625.2	606.9	18.28	34.210			
8,100.0	7,752.8	8,378.7	7,741.2	22.2	19.9	179.98	-250.8	128.8	674.4	656.9	17.46	38.615			
8,150.0	7,758.2	8,378.7	7,741.2	23.2	19.9	179.93	-250.8	128.8	724.1	707.2	16.90	42.861			
8,200.0	7,760.3	8,378.7	7,741.2	24.2	19.9	1.70	-250.8	128.8	774.1	757.4	16.69	46.392			
8,211.2	7,760.4	8,378.7	7,741.2	24.4	19.9	0.30	-250.8	128.8	785.3	768.7	16.59	47.340			
8,300.0	7,759.9	8,378.7	7,741.2	26.3	19.9	0.30	-250.8	128.8	874.1	857.0	17.13	51.017			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Corcilius 1S67W6J Pad Sec.6-T1S-R67W - Corcilius 6E-323 - Wellbore #1 - Plan #1 (4-29-15)													Offset Well Error:	0.0 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,400.0	7,759.5	8,378.7	7,741.2	28.5	19.9	0.30	-250.8	128.8	974.1	956.3	17.77	54.819		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 8087- Existing Pad Sec.12-T1S-R68W - Beisel Unit 1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,500.0	7,759.0	7,750.0	7,750.0	30.7	155.0	-90.76	-583.2	-1,878.6	990.7	805.1	185.63	5.337		
8,600.0	7,758.5	7,749.5	7,749.5	33.1	155.0	-90.68	-583.2	-1,878.6	897.2	709.2	188.01	4.772		
8,700.0	7,758.1	7,749.1	7,749.1	35.6	155.0	-90.60	-583.2	-1,878.6	805.1	614.7	190.45	4.228		
8,800.0	7,757.6	7,748.6	7,748.6	38.1	155.0	-90.51	-583.2	-1,878.6	715.2	522.3	192.93	3.707		
8,900.0	7,757.1	7,748.1	7,748.1	40.6	155.0	-90.43	-583.2	-1,878.6	628.4	432.9	195.46	3.215		
9,000.0	7,756.7	7,747.7	7,747.7	43.1	155.0	-90.35	-583.2	-1,878.6	546.1	348.1	198.02	2.758		
9,100.0	7,756.2	7,747.2	7,747.2	45.7	154.9	-90.27	-583.2	-1,878.6	470.7	270.1	200.61	2.346		
9,200.0	7,755.7	7,746.7	7,746.7	48.4	154.9	-90.19	-583.2	-1,878.6	406.1	202.8	203.22	1.998		
9,300.0	7,755.2	7,746.2	7,746.2	51.0	154.9	-90.11	-583.2	-1,878.6	358.1	152.2	205.85	1.739		
9,400.0	7,754.8	7,745.8	7,745.8	53.6	154.9	-90.03	-583.2	-1,878.6	334.0	125.5	208.50	1.602		
9,433.4	7,754.6	7,745.6	7,745.6	54.5	154.9	-90.00	-583.2	-1,878.6	332.3	122.9	209.38	1.587	CC, ES, SF	
9,500.0	7,754.3	7,745.3	7,745.3	56.3	154.9	-89.95	-583.2	-1,878.6	338.9	127.8	211.16	1.605		
9,600.0	7,753.8	7,744.8	7,744.8	59.0	154.9	-89.86	-583.2	-1,878.6	371.7	157.9	213.83	1.738		
9,700.0	7,753.4	7,744.4	7,744.4	61.7	154.9	-89.78	-583.2	-1,878.6	426.1	209.5	216.51	1.968		
9,800.0	7,752.9	7,743.9	7,743.9	64.4	154.9	-89.70	-583.2	-1,878.6	494.8	275.6	219.21	2.257		
9,900.0	7,752.4	7,743.4	7,743.4	67.1	154.9	-89.62	-583.2	-1,878.6	572.9	351.0	221.91	2.582		
10,000.0	7,751.9	7,742.9	7,742.9	69.8	154.9	-89.54	-583.2	-1,878.6	656.9	432.3	224.61	2.925		
10,100.0	7,751.5	7,742.5	7,742.5	72.5	154.8	-89.46	-583.2	-1,878.6	744.9	517.5	227.33	3.277		
10,200.0	7,751.0	7,742.0	7,742.0	75.3	154.8	-89.38	-583.2	-1,878.6	835.6	605.5	230.05	3.632		
10,300.0	7,750.5	7,741.5	7,741.5	78.0	154.8	-89.30	-583.2	-1,878.6	928.2	695.4	232.77	3.987		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 100- Existing Pad Sec.12-T1S-R68W - Gaspar 11-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
11,900.0	7,743.0	7,726.1	7,720.8	122.2	17.8	87.10	250.0	-5,165.6	961.6	821.9	139.75	6.881		
12,000.0	7,742.5	7,730.3	7,725.0	125.0	17.8	87.59	250.0	-5,165.8	877.9	735.3	142.59	6.156		
12,100.0	7,742.0	7,734.5	7,729.2	127.7	17.8	88.07	249.9	-5,166.0	797.8	652.4	145.43	5.486		
12,200.0	7,741.6	7,738.6	7,733.3	130.5	17.8	88.54	249.8	-5,166.1	722.7	574.4	148.25	4.875		
12,300.0	7,741.1	7,742.7	7,737.4	133.3	17.8	89.00	249.8	-5,166.3	654.3	503.2	151.07	4.331		
12,400.0	7,740.6	7,746.7	7,741.4	136.1	17.8	89.46	249.7	-5,166.5	594.8	441.0	153.88	3.865		
12,500.0	7,740.2	7,750.6	7,745.3	138.9	17.8	89.91	249.6	-5,166.7	547.3	390.6	156.69	3.493		
12,533.5	7,740.0	7,751.9	7,746.6	139.8	17.8	90.06	249.6	-5,166.7	534.6	377.0	157.62	3.392	CC, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 100-Reference													Offset Well Error:	0.0 ft
Existing Pad Sec.12-T1S-R68W - Sterkel 21-1 - Wellbore #1 - Wellbore #1														
Measured Depth (ft)		Vertical Depth (ft)		Offset		Semi Major Axis		Highside		Distance		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,200.0	7,751.0	7,747.1	7,743.9	75.3	19.7	85.12	-149.2	-3,570.9	931.4	836.8	94.52	9.854		
10,300.0	7,750.5	7,748.3	7,745.1	78.0	19.7	85.75	-149.2	-3,570.9	832.0	734.7	97.33	8.548		
10,400.0	7,750.1	7,749.4	7,746.2	80.7	19.7	86.38	-149.2	-3,570.9	732.9	632.7	100.15	7.318		
10,500.0	7,749.6	7,750.6	7,747.4	83.5	19.7	87.03	-149.2	-3,571.0	634.0	531.0	102.96	6.158		
10,600.0	7,749.1	7,751.8	7,748.5	86.2	19.7	87.69	-149.3	-3,571.0	535.5	429.8	105.77	5.063		
10,700.0	7,748.6	7,752.9	7,749.7	89.0	19.7	88.36	-149.3	-3,571.0	437.8	329.2	108.57	4.032		
10,800.0	7,748.2	7,754.1	7,750.9	91.7	19.7	89.04	-149.3	-3,571.0	341.3	229.9	111.36	3.065		
10,900.0	7,747.7	7,755.4	7,752.2	94.5	19.7	89.73	-149.3	-3,571.0	247.6	133.5	114.14	2.169		
11,000.0	7,747.2	7,756.6	7,753.4	97.2	19.7	90.43	-149.4	-3,571.1	161.7	44.8	116.91	1.383 Level 3		
11,100.0	7,746.8	7,757.9	7,754.7	100.0	19.7	91.14	-149.4	-3,571.1	104.7	-14.9	119.66	0.875 Level 1		
11,125.9	7,746.6	7,758.2	7,755.0	100.7	19.7	91.33	-149.4	-3,571.1	101.5	-18.9	120.37	0.843 Level 1, CC, ES, SF		
11,200.0	7,746.3	7,759.1	7,755.9	102.8	19.7	91.86	-149.4	-3,571.1	125.7	3.3	122.40	1.027 Level 2		
11,300.0	7,745.8	7,760.4	7,757.2	105.5	19.7	92.59	-149.5	-3,571.1	201.5	76.4	125.11	1.611		
11,400.0	7,745.3	7,761.7	7,758.5	108.3	19.7	93.33	-149.5	-3,571.2	292.3	164.5	127.81	2.287		
11,500.0	7,744.9	7,763.1	7,759.9	111.1	19.7	94.08	-149.5	-3,571.2	387.6	257.1	130.48	2.971		
11,600.0	7,744.4	7,764.4	7,761.2	113.9	19.7	94.85	-149.6	-3,571.2	484.8	351.7	133.13	3.642		
11,700.0	7,743.9	7,765.8	7,762.6	116.6	19.7	95.62	-149.6	-3,571.2	583.0	447.2	135.74	4.295		
11,800.0	7,743.5	7,767.2	7,764.0	119.4	19.7	96.40	-149.6	-3,571.3	681.7	543.3	138.33	4.928		
11,900.0	7,743.0	7,768.6	7,765.4	122.2	19.7	97.19	-149.6	-3,571.3	780.7	639.8	140.88	5.541		
12,000.0	7,742.5	7,770.0	7,766.8	125.0	19.7	97.99	-149.7	-3,571.3	879.9	736.5	143.40	6.136		
12,100.0	7,742.0	7,771.5	7,768.3	127.7	19.7	98.80	-149.7	-3,571.3	979.3	833.4	145.87	6.713		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.6-T1S-R67W - Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	75.56	72.9	283.0	292.6					
100.0	100.0	87.0	87.0	0.1	0.1	75.57	72.7	282.5	291.8	291.5	0.23	1,278.721		
200.0	200.0	187.2	187.2	0.3	0.4	75.61	72.2	281.5	290.6	289.9	0.70	415.291		
300.0	300.0	285.9	285.9	0.6	0.6	75.70	71.6	280.7	289.7	288.5	1.18	245.500		
400.0	400.0	385.8	385.8	0.8	0.9	75.78	71.0	280.3	289.1	287.4	1.66	173.666		
500.0	500.0	486.7	486.7	1.0	1.1	75.81	70.7	279.5	288.4	286.2	2.15	134.397		
600.0	600.0	587.9	587.8	1.2	1.4	75.78	70.6	278.4	287.2	284.6	2.62	109.479		
700.0	700.0	688.6	688.5	1.5	1.6	75.80	70.1	277.0	285.7	282.6	3.11	91.905		
800.0	800.0	788.5	788.5	1.7	1.9	75.97	68.9	275.6	284.1	280.6	3.59	79.074		
900.0	900.0	888.3	888.2	1.9	2.2	76.20	67.4	274.4	282.6	278.5	4.08	69.350		
1,000.0	1,000.0	987.8	987.8	2.1	2.4	76.41	66.1	273.3	281.2	276.6	4.56	61.685		
1,100.0	1,100.0	1,088.0	1,087.9	2.4	2.7	76.56	65.0	272.1	279.8	274.8	5.05	55.445		
1,200.0	1,200.0	1,187.9	1,187.7	2.6	3.0	76.64	64.3	270.9	278.4	272.9	5.53	50.309		
1,300.0	1,300.0	1,287.7	1,287.6	2.8	3.2	76.69	63.8	269.7	277.1	271.1	6.02	46.017		
1,400.0	1,400.0	1,387.5	1,387.4	3.0	3.5	76.77	63.1	268.5	275.9	269.4	6.51	42.367		
1,500.0	1,500.0	1,486.9	1,486.7	3.2	3.7	-79.43	62.4	267.6	274.6	267.6	6.97	39.392		
1,600.0	1,600.0	1,587.4	1,587.3	3.4	4.0	-79.92	61.8	266.6	273.1	265.6	7.41	36.851		
1,700.0	1,699.9	1,687.3	1,687.1	3.6	4.3	-80.84	61.5	265.4	271.1	263.3	7.85	34.550		
1,800.0	1,799.7	1,787.3	1,787.2	3.8	4.5	-82.21	61.5	264.1	269.0	260.7	8.28	32.470		
1,884.5	1,884.0	1,872.0	1,871.8	3.9	4.7	-83.71	61.6	262.9	267.0	258.3	8.66	30.848		
1,900.0	1,899.4	1,887.4	1,887.3	4.0	4.8	-84.01	61.6	262.6	266.6	257.9	8.72	30.563		
2,000.0	1,999.0	1,987.2	1,987.0	4.2	5.0	-85.99	61.9	261.0	264.4	255.2	9.17	28.828		
2,100.0	2,098.7	2,087.2	2,087.0	4.4	5.2	-88.02	62.1	259.2	262.4	252.7	9.63	27.245		
2,200.0	2,198.3	2,187.7	2,187.5	4.6	5.5	-90.09	62.3	257.1	260.4	250.3	10.10	25.774		
2,300.0	2,297.9	2,287.6	2,287.3	4.9	5.7	-92.15	62.3	254.9	258.5	247.9	10.59	24.416		
2,400.0	2,397.6	2,387.2	2,386.9	5.1	6.0	-94.26	62.3	252.5	256.9	245.8	11.08	23.193		
2,500.0	2,497.2	2,486.6	2,486.3	5.3	6.2	-96.43	62.5	250.1	255.6	244.0	11.56	22.103		
2,600.0	2,596.9	2,586.0	2,585.7	5.6	6.5	-98.66	62.8	247.6	254.8	242.7	12.05	21.137		
2,700.0	2,696.5	2,685.1	2,684.7	5.8	6.7	-100.95	63.5	245.1	254.4	241.9	12.54	20.295		
2,707.0	2,703.5	2,692.0	2,691.6	5.8	6.7	-101.12	63.5	244.9	254.4	241.8	12.57	20.241 CC		
2,800.0	2,796.2	2,785.0	2,784.5	6.1	7.0	-103.32	64.3	242.4	254.5	241.5	13.02	19.550		
2,900.0	2,895.8	2,884.3	2,883.8	6.3	7.2	-105.65	65.1	239.7	255.0	241.5	13.51	18.877 ES		
3,000.0	2,995.4	2,983.9	2,983.4	6.6	7.5	-107.89	65.5	237.3	255.9	241.8	14.00	18.273		
3,100.0	3,095.1	3,083.3	3,082.8	6.8	7.7	-109.91	65.3	235.4	257.1	242.6	14.51	17.723		
3,200.0	3,194.7	3,182.2	3,181.7	7.1	8.0	-111.76	64.8	234.1	258.8	243.8	15.01	17.240		
3,300.0	3,294.4	3,281.0	3,280.5	7.4	8.2	-113.53	64.3	233.2	261.1	245.6	15.51	16.829		
3,400.0	3,394.0	3,379.9	3,379.4	7.6	8.5	-115.23	63.9	232.6	263.9	247.9	16.01	16.481		
3,500.0	3,493.6	3,479.2	3,478.7	7.9	8.8	-116.90	63.7	232.2	267.2	250.7	16.51	16.179		
3,600.0	3,593.3	3,577.4	3,576.8	8.1	9.0	-118.54	63.8	231.9	271.0	254.0	16.97	15.970		
3,700.0	3,692.9	3,675.9	3,675.4	8.4	9.1	-120.17	64.4	231.6	275.5	258.2	17.34	15.886		
3,800.0	3,792.6	3,775.5	3,775.0	8.7	9.2	-121.76	65.2	231.6	280.4	262.8	17.68	15.862		
3,900.0	3,892.2	3,876.7	3,876.2	8.9	9.4	-123.27	65.6	231.6	285.3	267.3	18.07	15.789		
4,000.0	3,991.9	3,976.7	3,976.2	9.2	9.6	-124.68	65.6	231.5	290.0	271.4	18.54	15.636		
4,100.0	4,091.5	4,076.6	4,076.1	9.5	9.8	-126.10	65.6	231.1	294.7	275.7	19.03	15.484		
4,200.0	4,191.1	4,175.7	4,175.2	9.7	10.1	-127.59	66.0	230.1	299.7	280.1	19.51	15.361		
4,300.0	4,290.8	4,275.2	4,274.7	10.0	10.3	-129.09	66.6	229.0	304.9	285.0	19.97	15.270		
4,400.0	4,390.4	4,374.8	4,374.3	10.3	10.6	-130.58	67.3	227.6	310.4	290.0	20.43	15.191		
4,500.0	4,490.1	4,475.0	4,474.4	10.5	10.8	-132.08	68.1	226.0	316.0	295.1	20.90	15.118		
4,600.0	4,589.7	4,574.6	4,574.0	10.8	11.0	-133.58	68.8	223.9	321.6	300.2	21.37	15.048		
4,700.0	4,689.4	4,673.8	4,673.2	11.1	11.3	-135.10	69.8	221.5	327.5	305.7	21.84	14.996		
4,768.9	4,758.0	4,741.9	4,741.2	11.3	11.5	-136.12	70.5	219.8	331.8	309.6	22.16	14.972		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.6-T1S-R67W - Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor		
4,800.0	4,789.0	4,772.6	4,771.9	11.4	11.5	-136.58	70.9	219.0	333.6	311.3	22.30	14.960		
4,900.0	4,888.9	4,872.0	4,871.3	11.6	11.8	-137.72	72.1	216.8	338.2	315.4	22.73	14.877		
5,000.0	4,988.8	4,972.2	4,971.5	11.7	12.0	-138.42	73.3	214.5	340.2	317.0	23.15	14.696		
5,011.2	5,000.0	4,983.4	4,982.7	11.8	12.1	17.64	73.4	214.2	340.3	316.9	23.34	14.581		
5,100.0	5,088.8	5,073.0	5,072.3	11.9	12.3	17.25	74.3	212.1	340.5	316.8	23.74	14.346		
5,200.0	5,188.8	5,174.3	5,173.5	12.1	12.5	16.81	75.1	209.6	340.5	316.3	24.19	14.080		
5,300.0	5,288.8	5,274.8	5,273.9	12.3	12.8	16.35	75.6	206.9	340.2	315.6	24.64	13.809		
5,400.0	5,388.8	5,375.2	5,374.3	12.5	13.1	16.01	75.8	204.8	339.9	314.8	25.09	13.544		
5,500.0	5,488.8	5,475.5	5,474.6	12.6	13.3	15.84	75.6	203.7	339.4	313.8	25.54	13.286		
5,600.0	5,588.8	5,575.2	5,574.4	12.8	13.6	15.75	75.3	203.1	338.8	312.9	25.98	13.043		
5,700.0	5,688.8	5,674.5	5,673.7	13.0	13.8	15.71	75.0	202.8	338.5	312.1	26.41	12.818		
5,800.0	5,788.8	5,775.6	5,774.7	13.2	14.0	15.68	74.7	202.5	338.2	311.3	26.83	12.605		
5,900.0	5,888.8	5,875.2	5,874.3	13.4	14.3	15.65	74.2	202.2	337.6	310.3	27.24	12.391		
6,000.0	5,988.8	5,974.7	5,973.9	13.6	14.5	15.59	74.0	201.7	337.2	309.5	27.68	12.181		
6,100.0	6,088.8	6,074.8	6,073.9	13.7	14.8	15.51	73.8	201.2	336.9	308.8	28.14	11.973		
6,179.9	6,168.8	6,153.6	6,152.8	13.9	14.9	15.45	73.7	200.8	336.7	308.3	28.46	11.833		
6,200.0	6,188.8	6,173.3	6,172.4	13.9	15.0	15.44	73.7	200.8	336.7	308.2	28.53	11.802		
6,300.0	6,288.8	6,272.3	6,271.4	14.1	15.1	15.44	74.0	200.8	337.1	308.2	28.83	11.690		
6,400.0	6,388.8	6,372.1	6,371.2	14.3	15.1	15.46	74.5	201.0	337.5	308.4	29.08	11.606		
6,500.0	6,488.8	6,471.7	6,470.8	14.5	15.2	15.49	74.9	201.4	338.0	308.7	29.33	11.527		
6,600.0	6,588.8	6,570.9	6,570.0	14.7	15.2	15.50	75.6	201.6	338.7	309.2	29.59	11.447		
6,700.0	6,688.8	6,671.3	6,670.4	14.9	15.3	15.55	76.3	202.1	339.6	309.7	29.84	11.379		
6,800.0	6,788.8	6,771.9	6,771.0	15.1	15.3	15.68	76.7	203.1	340.2	310.1	30.06	11.317		
6,900.0	6,888.8	6,872.0	6,871.1	15.3	15.3	15.83	76.9	204.0	340.7	310.4	30.27	11.256		
7,007.6	6,996.4	6,978.7	6,977.8	15.5	15.3	15.99	77.3	205.1	341.3	310.8	30.50	11.191 SF		
7,050.0	7,038.8	7,020.7	7,019.8	15.6	15.4	106.20	77.5	205.6	342.0	311.5	30.50	11.214		
7,100.0	7,088.6	7,070.0	7,069.1	15.7	15.4	106.85	77.8	206.2	343.8	313.2	30.60	11.233		
7,150.0	7,138.0	7,119.3	7,118.4	15.8	15.4	107.91	78.2	206.8	346.6	315.9	30.69	11.295		
7,200.0	7,186.8	7,168.6	7,167.7	15.8	15.4	109.37	78.5	207.3	350.7	319.9	30.75	11.405		
7,250.0	7,234.8	7,216.8	7,215.9	15.9	15.4	111.13	78.7	208.0	356.1	325.4	30.77	11.574		
7,300.0	7,281.7	7,263.6	7,262.6	16.0	15.4	113.09	78.8	208.6	363.4	332.6	30.74	11.820		
7,350.0	7,327.5	7,308.9	7,308.0	16.0	15.5	115.15	79.0	209.2	372.7	342.1	30.66	12.157		
7,400.0	7,371.8	7,352.2	7,351.3	16.1	15.5	117.20	79.2	209.8	384.5	354.0	30.52	12.600		
7,450.0	7,414.5	7,393.8	7,392.9	16.2	15.5	119.16	79.4	210.4	399.0	368.7	30.32	13.162		
7,500.0	7,455.4	7,434.2	7,433.2	16.2	15.5	121.02	79.7	211.1	416.4	386.4	30.06	13.852		
7,550.0	7,494.4	7,472.6	7,471.7	16.3	15.5	122.65	79.9	211.7	436.8	407.0	29.77	14.671		
7,600.0	7,531.2	7,508.9	7,507.9	16.4	15.5	123.99	80.1	212.4	460.2	430.7	29.47	15.612		
7,650.0	7,565.8	7,542.9	7,541.9	16.6	15.5	124.99	80.3	212.9	486.5	457.3	29.21	16.659		
7,700.0	7,597.8	7,574.4	7,573.4	17.0	15.6	125.59	80.5	213.5	515.8	486.8	29.01	17.778		
7,750.0	7,627.4	7,603.3	7,602.3	17.4	15.6	125.72	80.6	213.9	547.8	518.9	28.95	18.923		
7,800.0	7,654.2	7,629.5	7,628.5	17.8	15.6	125.33	80.8	214.4	582.4	553.3	29.08	20.027		
7,850.0	7,678.2	7,652.8	7,651.8	18.4	15.6	124.34	80.9	214.8	619.3	589.9	29.47	21.016		
7,900.0	7,699.3	7,673.1	7,672.1	19.0	15.6	122.64	81.0	215.1	658.4	628.2	30.18	21.816		
7,950.0	7,717.4	7,690.4	7,689.5	19.7	15.6	120.10	81.1	215.4	699.4	668.1	31.26	22.369		
8,000.0	7,732.3	7,704.7	7,703.7	20.5	15.6	116.56	81.1	215.6	741.9	709.2	32.74	22.664		
8,050.0	7,744.2	7,715.9	7,715.0	21.3	15.6	111.82	81.2	215.8	785.9	751.3	34.55	22.746		
8,100.0	7,752.8	7,723.9	7,722.9	22.2	15.6	105.67	81.2	216.0	830.9	794.4	36.56	22.730		
8,150.0	7,758.2	7,728.6	7,727.6	23.2	15.6	97.98	81.2	216.0	876.8	838.3	38.43	22.814		
8,200.0	7,760.3	7,729.9	7,728.9	24.2	15.6	88.82	81.2	216.1	923.2	883.5	39.69	23.261		
8,211.2	7,760.4	7,729.8	7,728.8	24.4	15.6	86.60	81.2	216.0	933.7	893.9	39.83	23.441		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference													Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-4.88	32.8	-2.8	32.9					
100.0	100.0	100.0	100.0	0.1	0.1	-4.88	32.8	-2.8	32.9	32.7	0.22	146.398		
200.0	200.0	200.0	200.0	0.3	0.3	-4.88	32.8	-2.8	32.9	32.2	0.67	48.799		
300.0	300.0	300.0	300.0	0.6	0.6	-4.88	32.8	-2.8	32.9	31.8	1.12	29.280		
400.0	400.0	400.0	400.0	0.8	0.8	-4.88	32.8	-2.8	32.9	31.3	1.57	20.914		
500.0	500.0	500.0	500.0	1.0	1.0	-4.88	32.8	-2.8	32.9	30.9	2.02	16.266		
600.0	600.0	600.0	600.0	1.2	1.2	-4.88	32.8	-2.8	32.9	30.4	2.47	13.309		
700.0	700.0	700.0	700.0	1.5	1.5	-4.88	32.8	-2.8	32.9	30.0	2.92	11.261		
800.0	800.0	800.0	800.0	1.7	1.7	-4.88	32.8	-2.8	32.9	29.5	3.37	9.760		
900.0	900.0	900.0	900.0	1.9	1.9	-4.88	32.8	-2.8	32.9	29.1	3.82	8.612		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-4.88	32.8	-2.8	32.9	28.6	4.27	7.705		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-4.88	32.8	-2.8	32.9	28.2	4.72	6.971		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-4.88	32.8	-2.8	32.9	27.7	5.17	6.365		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-4.88	32.8	-2.8	32.9	27.3	5.62	5.856		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-4.88	32.8	-2.8	32.9	26.8	6.07	5.422 CC, ES		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.3	-161.48	32.8	-2.8	33.7	27.2	6.49	5.197		
1,600.0	1,600.0	1,600.0	1,600.0	3.4	3.5	-162.78	32.8	-2.8	36.2	29.3	6.89	5.258		
1,700.0	1,699.9	1,699.9	1,699.9	3.6	3.7	-164.60	32.8	-2.8	40.4	33.1	7.29	5.542		
1,800.0	1,799.7	1,799.7	1,799.7	3.8	3.9	-166.59	32.8	-2.8	46.3	38.6	7.70	6.018		
1,884.5	1,884.0	1,883.4	1,883.4	3.9	4.1	-167.80	33.3	-2.5	53.2	45.1	8.04	6.613		
1,900.0	1,899.4	1,898.6	1,898.6	4.0	4.2	-167.93	33.5	-2.4	54.6	46.5	8.10	6.741		
2,000.0	1,999.0	1,997.3	1,997.3	4.2	4.4	-168.06	35.8	-1.3	64.9	56.4	8.52	7.619		
2,100.0	2,098.7	2,095.7	2,095.6	4.4	4.6	-167.35	39.6	0.6	76.5	67.6	8.94	8.560		
2,200.0	2,198.3	2,193.7	2,193.4	4.6	4.8	-166.17	44.8	3.3	89.5	80.1	9.36	9.558		
2,300.0	2,297.9	2,291.3	2,290.7	4.9	5.0	-164.74	51.6	6.7	103.8	94.0	9.79	10.607		
2,400.0	2,397.6	2,388.4	2,387.4	5.1	5.3	-163.20	59.7	10.9	119.6	109.4	10.22	11.705		
2,500.0	2,497.2	2,486.2	2,484.6	5.3	5.5	-161.69	69.1	15.6	136.7	126.0	10.66	12.822		
2,600.0	2,596.9	2,584.7	2,582.5	5.6	5.7	-160.48	78.8	20.5	153.9	142.8	11.10	13.863		
2,700.0	2,696.5	2,683.1	2,680.3	5.8	6.0	-159.51	88.4	25.4	171.2	159.7	11.55	14.826		
2,800.0	2,796.2	2,781.6	2,778.2	6.1	6.2	-158.72	98.0	30.3	188.5	176.5	12.00	15.716		
2,900.0	2,895.8	2,880.0	2,876.0	6.3	6.5	-158.07	107.6	35.2	205.9	193.4	12.45	16.541		
3,000.0	2,995.4	2,978.5	2,973.9	6.6	6.7	-157.51	117.3	40.0	223.3	210.4	12.90	17.307		
3,100.0	3,095.1	3,076.9	3,071.8	6.8	7.0	-157.04	126.9	44.9	240.7	227.3	13.36	18.018		
3,200.0	3,194.7	3,175.4	3,169.6	7.1	7.3	-156.63	136.5	49.8	258.1	244.3	13.81	18.682		
3,300.0	3,294.4	3,273.9	3,267.5	7.4	7.5	-156.27	146.1	54.7	275.5	261.2	14.27	19.301		
3,400.0	3,394.0	3,372.3	3,365.4	7.6	7.8	-155.95	155.8	59.6	292.9	278.2	14.74	19.880		
3,500.0	3,493.6	3,470.8	3,463.2	7.9	8.1	-155.67	165.4	64.4	310.4	295.2	15.20	20.422		
3,600.0	3,593.3	3,569.2	3,561.1	8.1	8.3	-155.42	175.0	69.3	327.8	312.2	15.66	20.931		
3,700.0	3,692.9	3,667.7	3,659.0	8.4	8.6	-155.20	184.6	74.2	345.3	329.1	16.13	21.410		
3,800.0	3,792.6	3,766.1	3,756.8	8.7	8.9	-154.99	194.3	79.1	362.7	346.1	16.59	21.860		
3,900.0	3,892.2	3,864.6	3,854.7	8.9	9.2	-154.81	203.9	84.0	380.2	363.1	17.06	22.285		
4,000.0	3,991.9	3,963.1	3,952.5	9.2	9.4	-154.64	213.5	88.8	397.6	380.1	17.53	22.686		
4,100.0	4,091.5	4,061.5	4,050.4	9.5	9.7	-154.49	223.1	93.7	415.1	397.1	18.00	23.065		
4,200.0	4,191.1	4,160.0	4,148.3	9.7	10.0	-154.34	232.8	98.6	432.6	414.1	18.47	23.424		
4,300.0	4,290.8	4,268.4	4,256.2	10.0	10.3	-154.25	242.6	103.6	449.4	430.5	18.92	23.753		
4,400.0	4,390.4	4,384.2	4,371.7	10.3	10.5	-154.38	249.3	107.0	462.9	443.5	19.36	23.913		
4,500.0	4,490.1	4,500.9	4,488.3	10.5	10.7	-154.75	251.8	108.3	472.7	452.9	19.79	23.887		
4,600.0	4,589.7	4,602.3	4,589.7	10.8	10.9	-155.18	251.9	108.3	480.4	460.1	20.21	23.765		
4,700.0	4,689.4	4,701.9	4,689.4	11.1	11.1	-155.60	251.9	108.3	488.0	467.4	20.66	23.621		
4,768.9	4,758.0	4,770.6	4,758.0	11.3	11.2	-155.88	251.9	108.3	493.4	472.4	20.97	23.527		
4,800.0	4,789.0	4,801.6	4,789.0	11.4	11.3	-156.01	251.9	108.3	495.6	474.5	21.12	23.467		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.0	4,888.9	4,901.4	4,888.9	11.6	11.5	-156.32	251.9	108.3	500.7	479.2	21.57	23.218		
5,000.0	4,988.8	5,001.4	4,988.8	11.7	11.7	-156.43	251.9	108.3	502.7	480.7	21.99	22.862		
5,011.2	5,000.0	5,012.6	5,000.0	11.8	11.7	-0.32	251.9	108.3	502.7	479.6	23.15	21.716		
5,100.0	5,088.8	5,101.4	5,088.8	11.9	11.9	-0.32	251.9	108.3	502.7	479.2	23.50	21.391		
5,200.0	5,188.8	5,201.4	5,188.8	12.1	12.1	-0.32	251.9	108.3	502.7	478.8	23.89	21.044		
5,300.0	5,288.8	5,301.4	5,288.8	12.3	12.3	-0.32	251.9	108.3	502.7	478.4	24.28	20.706		
5,400.0	5,388.8	5,401.4	5,388.8	12.5	12.5	-0.32	251.9	108.3	502.7	478.1	24.67	20.378		
5,500.0	5,488.8	5,501.4	5,488.8	12.6	12.7	-0.32	251.9	108.3	502.7	477.7	25.06	20.058		
5,600.0	5,588.8	5,601.4	5,588.8	12.8	12.9	-0.32	251.9	108.3	502.7	477.3	25.46	19.747		
5,700.0	5,688.8	5,701.4	5,688.8	13.0	13.2	-0.32	251.9	108.3	502.7	476.9	25.86	19.444		
5,800.0	5,788.8	5,801.4	5,788.8	13.2	13.4	-0.32	251.9	108.3	502.7	476.5	26.25	19.148		
5,900.0	5,888.8	5,901.4	5,888.8	13.4	13.6	-0.32	251.9	108.3	502.7	476.1	26.65	18.861		
6,000.0	5,988.8	6,001.4	5,988.8	13.6	13.8	-0.32	251.9	108.3	502.7	475.7	27.06	18.581		
6,100.0	6,088.8	6,101.4	6,088.8	13.7	14.0	-0.32	251.9	108.3	502.7	475.3	27.46	18.308		
6,200.0	6,188.8	6,201.4	6,188.8	13.9	14.2	-0.32	251.9	108.3	502.7	474.9	27.86	18.042		
6,300.0	6,288.8	6,301.4	6,288.8	14.1	14.4	-0.32	251.9	108.3	502.7	474.5	28.27	17.783		
6,400.0	6,388.8	6,401.4	6,388.8	14.3	14.6	-0.32	251.9	108.3	502.7	474.0	28.68	17.530		
6,500.0	6,488.8	6,501.4	6,488.8	14.5	14.9	-0.32	251.9	108.3	502.7	473.6	29.09	17.284		
6,600.0	6,588.8	6,601.4	6,588.8	14.7	15.1	-0.32	251.9	108.3	502.7	473.2	29.50	17.044		
6,700.0	6,688.8	6,701.4	6,688.8	14.9	15.3	-0.32	251.9	108.3	502.7	472.8	29.91	16.810		
6,800.0	6,788.8	6,801.4	6,788.8	15.1	15.5	-0.32	251.9	108.3	502.7	472.4	30.32	16.582		
6,900.0	6,888.8	6,901.4	6,888.8	15.3	15.7	-0.32	251.9	108.3	502.7	472.0	30.73	16.359		
6,905.6	6,894.4	6,906.9	6,894.4	15.3	15.7	-0.32	251.9	108.3	502.7	472.0	30.75	16.347		
7,007.6	6,996.4	7,008.0	6,995.1	15.5	15.9	-1.12	251.9	101.2	502.8	471.7	31.15	16.140		
7,050.0	7,038.8	7,049.3	7,035.8	15.6	16.0	88.23	251.9	94.5	503.0	472.4	30.55	16.464		
7,100.0	7,088.6	7,097.6	7,083.0	15.7	16.0	87.48	251.9	83.9	503.2	472.5	30.72	16.382		
7,150.0	7,138.0	7,145.6	7,129.0	15.8	16.1	86.74	251.9	70.4	503.5	472.7	30.88	16.308		
7,200.0	7,186.8	7,193.2	7,173.8	15.8	16.2	86.02	251.9	54.2	504.0	472.9	31.03	16.239		
7,250.0	7,234.8	7,240.4	7,217.1	15.9	16.2	85.31	251.9	35.4	504.4	473.2	31.19	16.171		
7,300.0	7,281.7	7,287.3	7,258.9	16.0	16.3	84.63	251.9	14.1	505.0	473.6	31.36	16.100		
7,350.0	7,327.5	7,333.9	7,299.0	16.0	16.4	83.98	251.9	-9.5	505.5	474.0	31.55	16.024		
7,400.0	7,371.8	7,380.2	7,337.4	16.1	16.4	83.35	251.9	-35.4	506.2	474.4	31.77	15.932		
7,450.0	7,414.5	7,426.2	7,373.9	16.2	16.5	82.75	251.9	-63.3	506.8	474.8	32.02	15.826		
7,500.0	7,455.4	7,471.9	7,408.5	16.2	16.7	82.18	251.9	-93.3	507.5	475.2	32.33	15.695		
7,550.0	7,494.4	7,517.4	7,441.0	16.3	17.0	81.64	251.9	-125.0	508.2	475.5	32.71	15.536		
7,600.0	7,531.2	7,562.7	7,471.5	16.4	17.3	81.14	251.9	-158.5	508.8	475.7	33.17	15.342		
7,650.0	7,565.8	7,607.7	7,499.8	16.6	17.6	80.67	251.9	-193.6	509.5	475.8	33.72	15.112		
7,700.0	7,597.8	7,652.6	7,525.8	17.0	18.0	80.24	251.9	-230.1	510.1	475.8	34.37	14.842		
7,750.0	7,627.4	7,697.3	7,549.6	17.4	18.4	79.85	251.9	-267.9	510.7	475.6	35.15	14.531		
7,800.0	7,654.2	7,741.8	7,571.1	17.8	18.9	79.50	251.9	-306.9	511.3	475.3	36.05	14.182		
7,850.0	7,678.2	7,786.2	7,590.2	18.4	19.4	79.19	251.9	-347.0	511.8	474.7	37.09	13.801		
7,900.0	7,699.3	7,830.5	7,606.9	19.0	20.0	78.92	251.9	-388.0	512.3	474.0	38.25	13.393		
7,950.0	7,717.4	7,874.7	7,621.2	19.7	20.7	78.69	251.9	-429.8	512.7	473.1	39.54	12.966		
8,000.0	7,732.3	7,918.8	7,633.0	20.5	21.4	78.50	251.9	-472.3	513.0	472.1	40.95	12.527		
8,050.0	7,744.2	7,962.9	7,642.4	21.3	22.1	78.36	251.9	-515.4	513.3	470.8	42.48	12.083		
8,100.0	7,752.8	8,006.9	7,649.2	22.2	22.9	78.26	251.9	-558.8	513.5	469.3	44.11	11.641		
8,150.0	7,758.2	8,050.0	7,653.4	23.2	23.7	78.21	251.9	-601.7	513.6	467.7	45.81	11.210		
8,200.0	7,760.3	8,094.8	7,655.3	24.2	24.6	78.20	251.9	-646.5	513.6	465.9	47.63	10.783		
8,211.2	7,760.4	8,104.7	7,655.3	24.4	24.8	78.20	251.9	-656.3	513.6	465.5	48.04	10.691		
8,236.4	7,760.2	8,129.4	7,655.2	24.9	25.3	78.20	251.9	-681.1	513.6	464.5	49.05	10.470		
8,300.0	7,759.9	8,193.1	7,654.9	26.3	26.6	78.20	251.9	-744.7	513.6	461.9	51.64	9.945		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference													Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
8,400.0	7,759.5	8,293.1	7,654.5	28.5	28.8	78.20	78.20	251.9	-844.7	513.6	457.6	55.93	9.182	
8,500.0	7,759.0	8,393.1	7,654.0	30.7	31.0	78.20	78.20	251.9	-944.7	513.6	453.1	60.42	8.500	
8,600.0	7,758.5	8,493.1	7,653.5	33.1	33.4	78.20	78.20	251.9	-1,044.7	513.6	448.5	65.06	7.894	
8,700.0	7,758.1	8,593.1	7,653.1	35.6	35.8	78.20	78.20	251.9	-1,144.7	513.6	443.7	69.83	7.355	
8,800.0	7,757.6	8,693.1	7,652.6	38.1	38.3	78.20	78.20	251.9	-1,244.7	513.6	438.9	74.70	6.875	
8,900.0	7,757.1	8,793.1	7,652.1	40.6	40.8	78.20	78.20	251.9	-1,344.7	513.6	433.9	79.65	6.448	
9,000.0	7,756.7	8,893.1	7,651.6	43.1	43.3	78.20	78.20	251.9	-1,444.7	513.6	428.9	84.67	6.066	
9,100.0	7,756.2	8,993.1	7,651.2	45.7	45.9	78.20	78.20	251.9	-1,544.7	513.6	423.8	89.75	5.722	
9,200.0	7,755.7	9,093.1	7,650.7	48.4	48.5	78.20	78.20	251.9	-1,644.7	513.6	418.7	94.87	5.413	
9,300.0	7,755.2	9,193.1	7,650.2	51.0	51.1	78.20	78.20	251.9	-1,744.7	513.6	413.5	100.03	5.134	
9,400.0	7,754.8	9,293.1	7,649.8	53.6	53.8	78.20	78.20	251.9	-1,844.7	513.6	408.3	105.23	4.880	
9,500.0	7,754.3	9,393.1	7,649.3	56.3	56.4	78.20	78.20	251.9	-1,944.7	513.6	403.1	110.46	4.649	
9,600.0	7,753.8	9,493.1	7,648.8	59.0	59.1	78.20	78.20	251.9	-2,044.7	513.6	397.9	115.71	4.438	
9,700.0	7,753.4	9,593.1	7,648.3	61.7	61.8	78.20	78.20	251.9	-2,144.7	513.6	392.6	120.98	4.245	
9,800.0	7,752.9	9,693.1	7,647.9	64.4	64.5	78.20	78.20	251.9	-2,244.7	513.6	387.3	126.28	4.067	
9,900.0	7,752.4	9,793.1	7,647.4	67.1	67.2	78.20	78.20	251.9	-2,344.7	513.6	382.0	131.59	3.903	
10,000.0	7,751.9	9,893.1	7,646.9	69.8	69.9	78.20	78.20	251.9	-2,444.7	513.6	376.6	136.92	3.751	
10,100.0	7,751.5	9,993.1	7,646.5	72.5	72.6	78.20	78.20	251.9	-2,544.7	513.6	371.3	142.26	3.610	
10,200.0	7,751.0	10,093.1	7,646.0	75.3	75.3	78.20	78.20	251.9	-2,644.7	513.6	366.0	147.61	3.479	
10,300.0	7,750.5	10,193.1	7,645.5	78.0	78.1	78.20	78.20	251.9	-2,744.7	513.6	360.6	152.97	3.357	
10,400.0	7,750.1	10,293.1	7,645.0	80.7	80.8	78.20	78.20	251.9	-2,844.7	513.6	355.2	158.34	3.243	
10,500.0	7,749.6	10,393.1	7,644.6	83.5	83.5	78.20	78.20	251.9	-2,944.7	513.6	349.8	163.72	3.137	
10,600.0	7,749.1	10,493.1	7,644.1	86.2	86.3	78.20	78.20	251.9	-3,044.7	513.6	344.5	169.11	3.037	
10,700.0	7,748.6	10,593.1	7,643.6	89.0	89.0	78.20	78.20	251.9	-3,144.7	513.6	339.1	174.50	2.943	
10,800.0	7,748.2	10,693.1	7,643.2	91.7	91.8	78.20	78.20	251.9	-3,244.7	513.6	333.7	179.91	2.855	
10,900.0	7,747.7	10,793.1	7,642.7	94.5	94.5	78.20	78.20	251.9	-3,344.7	513.6	328.3	185.31	2.771	
11,000.0	7,747.2	10,893.1	7,642.2	97.2	97.3	78.20	78.20	251.9	-3,444.7	513.6	322.8	190.73	2.693	
11,100.0	7,746.8	10,993.1	7,641.7	100.0	100.1	78.20	78.20	251.9	-3,544.7	513.6	317.4	196.14	2.618	
11,200.0	7,746.3	11,093.1	7,641.3	102.8	102.8	78.20	78.20	251.9	-3,644.7	513.6	312.0	201.57	2.548	
11,300.0	7,745.8	11,193.1	7,640.8	105.5	105.6	78.20	78.20	251.9	-3,744.7	513.6	306.6	206.99	2.481	
11,400.0	7,745.3	11,293.1	7,640.3	108.3	108.4	78.20	78.20	251.9	-3,844.7	513.6	301.1	212.42	2.418	
11,500.0	7,744.9	11,393.1	7,639.9	111.1	111.1	78.20	78.20	251.9	-3,944.7	513.6	295.7	217.86	2.357	
11,600.0	7,744.4	11,493.1	7,639.4	113.9	113.9	78.20	78.20	251.9	-4,044.7	513.6	290.3	223.29	2.300	
11,700.0	7,743.9	11,593.1	7,638.9	116.6	116.7	78.20	78.20	251.9	-4,144.7	513.6	284.8	228.73	2.245	
11,800.0	7,743.5	11,693.1	7,638.4	119.4	119.4	78.20	78.20	251.9	-4,244.7	513.6	279.4	234.18	2.193	
11,900.0	7,743.0	11,793.1	7,638.0	122.2	122.2	78.20	78.20	251.9	-4,344.7	513.6	273.9	239.62	2.143	
12,000.0	7,742.5	11,893.1	7,637.5	125.0	125.0	78.20	78.20	251.9	-4,444.7	513.6	268.5	245.07	2.096	
12,100.0	7,742.0	11,993.1	7,637.0	127.7	127.8	78.20	78.20	251.9	-4,544.7	513.6	263.0	250.52	2.050	
12,200.0	7,741.6	12,093.1	7,636.6	130.5	130.5	78.20	78.20	251.9	-4,644.7	513.6	257.6	255.97	2.006	
12,300.0	7,741.1	12,193.1	7,636.1	133.3	133.3	78.20	78.20	251.9	-4,744.7	513.6	252.1	261.43	1.964	
12,400.0	7,740.6	12,293.1	7,635.6	136.1	136.1	78.20	78.20	251.9	-4,844.7	513.6	246.7	266.89	1.924	
12,500.0	7,740.2	12,393.1	7,635.1	138.9	138.9	78.20	78.20	251.9	-4,944.7	513.6	241.2	272.34	1.886	
12,515.9	7,740.1	12,409.0	7,635.1	139.3	139.3	78.20	78.20	251.9	-4,960.6	513.6	240.4	273.21	1.880	
12,533.5	7,740.0	12,424.1	7,635.0	139.8	139.8	78.20	78.20	251.9	-4,975.8	513.6	239.5	274.11	1.874 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis		Distance				Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-6.75	47.4	-5.6	47.7				
100.0	100.0	100.0	100.0	0.1	0.1	-6.75	47.4	-5.6	47.7	47.5	0.22	212.166	
200.0	200.0	200.0	200.0	0.3	0.3	-6.75	47.4	-5.6	47.7	47.0	0.67	70.722	
300.0	300.0	300.0	300.0	0.6	0.6	-6.75	47.4	-5.6	47.7	46.6	1.12	42.433	
400.0	400.0	400.0	400.0	0.8	0.8	-6.75	47.4	-5.6	47.7	46.1	1.57	30.309	
500.0	500.0	500.0	500.0	1.0	1.0	-6.75	47.4	-5.6	47.7	45.7	2.02	23.574	
600.0	600.0	600.0	600.0	1.2	1.2	-6.75	47.4	-5.6	47.7	45.2	2.47	19.288	
700.0	700.0	700.0	700.0	1.5	1.5	-6.75	47.4	-5.6	47.7	44.8	2.92	16.320	
800.0	800.0	800.0	800.0	1.7	1.7	-6.75	47.4	-5.6	47.7	44.3	3.37	14.144	
900.0	900.0	900.0	900.0	1.9	1.9	-6.75	47.4	-5.6	47.7	43.9	3.82	12.480	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-6.75	47.4	-5.6	47.7	43.4	4.27	11.167 CC, ES	
1,100.0	1,100.0	1,099.2	1,099.2	2.4	2.4	-6.93	48.2	-5.9	48.5	43.8	4.72	10.289	
1,200.0	1,200.0	1,198.3	1,198.3	2.6	2.6	-7.45	50.6	-6.6	51.1	45.9	5.17	9.892	
1,300.0	1,300.0	1,297.3	1,297.2	2.8	2.8	-8.20	54.7	-7.9	55.4	49.7	5.61	9.862	
1,400.0	1,400.0	1,396.1	1,395.8	3.0	3.0	-9.07	60.4	-9.6	61.3	55.3	6.06	10.117	
1,500.0	1,500.0	1,494.6	1,494.0	3.2	3.3	-166.23	67.7	-11.9	69.9	63.4	6.48	10.778	
1,600.0	1,600.0	1,592.6	1,591.6	3.4	3.5	-167.44	76.6	-14.6	81.8	75.0	6.88	11.891	
1,700.0	1,699.9	1,689.9	1,688.2	3.6	3.7	-168.62	87.0	-17.9	97.2	89.9	7.28	13.343	
1,800.0	1,799.7	1,786.3	1,783.8	3.8	4.0	-169.67	98.8	-21.5	115.9	108.2	7.69	15.080	
1,884.5	1,884.0	1,867.0	1,863.7	3.9	4.2	-170.44	109.9	-24.9	134.4	126.4	8.03	16.737	
1,900.0	1,899.4	1,881.7	1,878.2	4.0	4.3	-170.58	112.0	-25.6	138.0	129.9	8.09	17.052	
2,000.0	1,999.0	1,976.2	1,971.5	4.2	4.5	-171.31	126.6	-30.1	162.3	153.8	8.51	19.080	
2,100.0	2,098.7	2,072.5	2,066.4	4.4	4.9	-171.87	142.4	-35.0	187.7	178.7	8.93	21.020	
2,200.0	2,198.3	2,169.2	2,161.6	4.6	5.2	-172.30	158.3	-39.9	213.1	203.7	9.35	22.783	
2,300.0	2,297.9	2,265.9	2,256.9	4.9	5.5	-172.64	174.2	-44.8	238.5	228.7	9.78	24.383	
2,400.0	2,397.6	2,362.6	2,352.2	5.1	5.8	-172.91	190.1	-49.8	263.9	253.7	10.21	25.839	
2,500.0	2,497.2	2,459.4	2,447.4	5.3	6.2	-173.13	206.0	-54.7	289.3	278.6	10.65	27.169	
2,600.0	2,596.9	2,556.1	2,542.7	5.6	6.5	-173.32	221.9	-59.6	314.7	303.6	11.09	28.387	
2,700.0	2,696.5	2,652.8	2,638.0	5.8	6.8	-173.48	237.8	-64.5	340.1	328.6	11.53	29.505	
2,800.0	2,796.2	2,749.5	2,733.2	6.1	7.2	-173.62	253.7	-69.4	365.5	353.6	11.97	30.535	
2,900.0	2,895.8	2,846.2	2,828.5	6.3	7.5	-173.74	269.6	-74.3	391.0	378.5	12.42	31.487	
3,000.0	2,995.4	2,942.9	2,923.8	6.6	7.9	-173.85	285.6	-79.3	416.4	403.5	12.86	32.367	
3,100.0	3,095.1	3,039.6	3,019.0	6.8	8.2	-173.94	301.5	-84.2	441.8	428.5	13.31	33.185	
3,200.0	3,194.7	3,136.3	3,114.3	7.1	8.6	-174.02	317.4	-89.1	467.2	453.5	13.76	33.945	
3,300.0	3,294.4	3,233.1	3,209.6	7.4	9.0	-174.10	333.3	-94.0	492.6	478.4	14.22	34.653	
3,400.0	3,394.0	3,329.8	3,304.9	7.6	9.3	-174.16	349.2	-98.9	518.1	503.4	14.67	35.315	
3,500.0	3,493.6	3,426.5	3,400.1	7.9	9.7	-174.23	365.1	-103.8	543.5	528.4	15.12	35.935	
3,600.0	3,593.3	3,523.2	3,495.4	8.1	10.0	-174.28	381.0	-108.8	568.9	553.3	15.58	36.515	
3,700.0	3,692.9	3,619.9	3,590.7	8.4	10.4	-174.33	396.9	-113.7	594.4	578.3	16.04	37.061	
3,800.0	3,792.6	3,716.6	3,685.9	8.7	10.8	-174.38	412.8	-118.6	619.8	603.3	16.49	37.574	
3,900.0	3,892.2	3,813.3	3,781.2	8.9	11.1	-174.42	428.7	-123.5	645.2	628.3	16.95	38.058	
4,000.0	3,991.9	3,910.0	3,876.5	9.2	11.5	-174.46	444.6	-128.4	670.6	653.2	17.41	38.515	
4,100.0	4,091.5	4,006.7	3,971.7	9.5	11.9	-174.50	460.5	-133.3	696.1	678.2	17.87	38.946	
4,200.0	4,191.1	4,103.5	4,067.0	9.7	12.2	-174.53	476.4	-138.3	721.5	703.2	18.33	39.355	
4,300.0	4,290.8	4,200.2	4,162.3	10.0	12.6	-174.56	492.3	-143.2	746.9	728.1	18.79	39.742	
4,400.0	4,390.4	4,296.9	4,257.5	10.3	13.0	-174.59	508.2	-148.1	772.4	753.1	19.26	40.110	
4,500.0	4,490.1	4,393.6	4,352.8	10.5	13.3	-174.62	524.1	-153.0	797.8	778.1	19.72	40.459	
4,600.0	4,589.7	4,490.3	4,448.1	10.8	13.7	-174.65	540.0	-157.9	823.2	803.0	20.18	40.792	
4,700.0	4,689.4	4,602.6	4,558.7	11.1	14.1	-174.68	558.0	-163.5	848.3	827.6	20.67	41.049	
4,768.9	4,758.0	4,698.4	4,653.7	11.3	14.4	-174.71	570.6	-167.4	863.5	842.5	21.00	41.119	
4,800.0	4,789.0	4,742.2	4,697.1	11.4	14.5	-174.73	575.3	-168.9	869.4	848.3	21.17	41.069	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design		Rio-LA 1S67W6E Pad Sec.6-T1S-R67W - Rio-LA 6E-304 - Wellbore #1 - Plan #1 (8-4-15)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
4,900.0	4,888.9	4,884.9	4,839.3	11.6	14.8	-174.78	586.3	-172.3	883.1	861.4	21.69	40.720			
5,000.0	4,988.8	5,029.4	4,983.8	11.7	15.0	-174.80	590.6	-173.6	888.3	866.1	22.17	40.070			
5,011.2	5,000.0	5,045.6	5,000.0	11.8	15.0	-18.69	590.6	-173.6	888.4	861.6	26.77	33.179			
5,100.0	5,088.8	5,134.4	5,088.8	11.9	15.2	-18.69	590.6	-173.6	888.4	861.3	27.07	32.814			
5,200.0	5,188.8	5,234.4	5,188.8	12.1	15.3	-18.69	590.6	-173.6	888.4	860.9	27.41	32.411			
5,300.0	5,288.8	5,334.4	5,288.8	12.3	15.5	-18.69	590.6	-173.6	888.4	860.6	27.75	32.014			
5,400.0	5,388.8	5,434.4	5,388.8	12.5	15.6	-18.69	590.6	-173.6	888.4	860.3	28.09	31.624			
5,500.0	5,488.8	5,534.4	5,488.8	12.6	15.8	-18.69	590.6	-173.6	888.4	859.9	28.44	31.239			
5,600.0	5,588.8	5,634.4	5,588.8	12.8	16.0	-18.69	590.6	-173.6	888.4	859.6	28.79	30.861			
5,700.0	5,688.8	5,734.4	5,688.8	13.0	16.1	-18.69	590.6	-173.6	888.4	859.2	29.14	30.489			
5,800.0	5,788.8	5,834.4	5,788.8	13.2	16.3	-18.69	590.6	-173.6	888.4	858.9	29.49	30.123			
5,900.0	5,888.8	5,934.4	5,888.8	13.4	16.5	-18.69	590.6	-173.6	888.4	858.5	29.85	29.764			
6,000.0	5,988.8	6,034.4	5,988.8	13.6	16.7	-18.69	590.6	-173.6	888.4	858.2	30.21	29.410			
6,100.0	6,088.8	6,134.4	6,088.8	13.7	16.8	-18.69	590.6	-173.6	888.4	857.8	30.57	29.062			
6,200.0	6,188.8	6,234.4	6,188.8	13.9	17.0	-18.69	590.6	-173.6	888.4	857.4	30.93	28.721			
6,300.0	6,288.8	6,334.4	6,288.8	14.1	17.2	-18.69	590.6	-173.6	888.4	857.1	31.30	28.385			
6,400.0	6,388.8	6,434.4	6,388.8	14.3	17.4	-18.69	590.6	-173.6	888.4	856.7	31.66	28.055			
6,500.0	6,488.8	6,534.4	6,488.8	14.5	17.5	-18.69	590.6	-173.6	888.4	856.3	32.03	27.731			
6,600.0	6,588.8	6,634.4	6,588.8	14.7	17.7	-18.69	590.6	-173.6	888.4	856.0	32.41	27.413			
6,700.0	6,688.8	6,734.4	6,688.8	14.9	17.9	-18.69	590.6	-173.6	888.4	855.6	32.78	27.100			
6,800.0	6,788.8	6,834.4	6,788.8	15.1	18.1	-18.69	590.6	-173.6	888.4	855.2	33.16	26.793			
6,900.0	6,888.8	6,934.4	6,888.8	15.3	18.3	-18.69	590.6	-173.6	888.4	854.8	33.53	26.491			
6,971.5	6,960.3	7,005.9	6,960.3	15.4	18.4	-18.69	590.6	-173.6	888.4	854.6	33.81	26.279			
7,007.6	6,996.4	7,041.4	6,995.8	15.5	18.4	-18.69	590.6	-173.6	888.4	854.4	33.94	26.174			
7,050.0	7,038.8	7,072.7	7,027.1	15.6	18.5	71.33	590.6	-174.2	888.3	857.6	30.66	28.967			
7,100.0	7,088.6	7,109.2	7,063.5	15.7	18.6	71.41	590.6	-176.6	887.9	857.1	30.83	28.796			
7,150.0	7,138.0	7,150.0	7,104.0	15.8	18.7	71.56	590.6	-181.3	887.3	856.3	31.00	28.620			
7,200.0	7,186.8	7,182.2	7,135.8	15.8	18.7	71.74	590.6	-186.5	886.3	855.2	31.14	28.461			
7,250.0	7,234.8	7,218.8	7,171.6	15.9	18.8	72.00	590.6	-194.1	885.1	853.8	31.29	28.289			
7,300.0	7,281.7	7,250.0	7,201.8	16.0	18.9	72.28	590.6	-201.9	883.7	852.3	31.42	28.123			
7,350.0	7,327.5	7,292.3	7,242.2	16.0	19.0	72.69	590.6	-214.5	882.0	850.4	31.60	27.912			
7,400.0	7,371.8	7,329.3	7,276.9	16.1	19.1	73.12	590.6	-227.2	880.1	848.3	31.79	27.689			
7,450.0	7,414.5	7,366.4	7,311.1	16.2	19.2	73.60	590.6	-241.7	878.0	846.0	32.00	27.434			
7,500.0	7,455.4	7,400.0	7,341.4	16.2	19.4	74.10	590.6	-256.3	875.8	843.5	32.25	27.152			
7,550.0	7,494.4	7,441.2	7,377.6	16.3	19.5	74.74	590.6	-275.9	873.3	840.7	32.60	26.789			
7,600.0	7,531.2	7,478.9	7,409.8	16.4	19.7	75.39	590.6	-295.5	870.8	837.8	33.01	26.382			
7,650.0	7,565.8	7,517.0	7,441.2	16.6	19.8	76.09	590.6	-316.9	868.2	834.7	33.50	25.914			
7,700.0	7,597.8	7,555.3	7,471.8	17.0	20.0	76.83	590.6	-340.0	865.5	831.4	34.10	25.384			
7,750.0	7,627.4	7,593.9	7,501.4	17.4	20.2	77.63	590.6	-364.8	862.8	828.0	34.80	24.789			
7,800.0	7,654.2	7,632.9	7,529.9	17.8	20.5	78.47	590.6	-391.4	860.1	824.4	35.64	24.135			
7,850.0	7,678.2	7,672.2	7,557.3	18.4	20.8	79.36	590.6	-419.6	857.4	820.8	36.59	23.432			
7,900.0	7,699.3	7,712.0	7,583.5	19.0	21.1	80.28	590.6	-449.6	854.8	817.2	37.67	22.693			
7,950.0	7,717.4	7,750.0	7,607.1	19.7	21.4	81.20	590.6	-479.4	852.4	813.5	38.84	21.945			
8,000.0	7,732.3	7,793.1	7,631.9	20.5	21.8	82.24	590.6	-514.6	850.1	809.9	40.20	21.146			
8,050.0	7,744.2	7,834.4	7,653.9	21.3	22.2	83.27	590.6	-549.6	848.0	806.4	41.64	20.363			
8,100.0	7,752.8	7,876.4	7,674.2	22.2	22.7	84.33	590.6	-586.3	846.1	803.0	43.19	19.591			
8,150.0	7,758.2	7,919.0	7,692.7	23.2	23.2	85.41	590.6	-624.7	844.6	799.7	44.83	18.840			
8,200.0	7,760.3	7,962.4	7,709.3	24.2	23.8	86.52	590.6	-664.7	843.3	796.7	46.55	18.117			
8,211.2	7,760.4	7,972.2	7,712.8	24.4	24.0	86.77	590.6	-673.9	843.0	796.1	46.94	17.959			
8,300.0	7,759.9	8,053.0	7,736.6	26.3	25.3	88.41	590.6	-751.1	841.8	791.6	50.21	16.765			
8,400.0	7,759.5	8,149.5	7,754.2	28.5	27.0	89.64	590.6	-845.9	841.5	787.3	54.25	15.512			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference													Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
8,462.5	7,759.2	8,211.5	7,759.1	29.9	28.2	90.00	90.00	590.6	-907.7	841.5	784.6	56.94	14.779	
8,500.0	7,759.0	8,249.0	7,759.7	30.7	28.9	90.05	90.05	590.6	-945.2	841.5	782.9	58.58	14.365	
8,600.0	7,758.5	8,349.0	7,759.2	33.1	31.0	90.04	90.04	590.6	-1,045.2	841.5	778.4	63.13	13.330	
8,700.0	7,758.1	8,449.0	7,758.7	35.6	33.1	90.04	90.04	590.6	-1,145.2	841.5	773.7	67.82	12.408	
8,800.0	7,757.6	8,549.0	7,758.2	38.1	35.4	90.04	90.04	590.6	-1,245.2	841.5	768.9	72.65	11.584	
8,900.0	7,757.1	8,649.0	7,757.7	40.6	37.8	90.04	90.04	590.6	-1,345.2	841.5	763.9	77.58	10.847	
9,000.0	7,756.7	8,749.0	7,757.2	43.1	40.2	90.04	90.04	590.6	-1,445.2	841.5	758.9	82.60	10.188	
9,100.0	7,756.2	8,849.0	7,756.8	45.7	42.6	90.04	90.04	590.6	-1,545.2	841.5	753.8	87.69	9.597	
9,200.0	7,755.7	8,949.0	7,756.3	48.4	45.1	90.04	90.04	590.6	-1,645.2	841.5	748.7	92.84	9.064	
9,300.0	7,755.2	9,049.0	7,755.8	51.0	47.6	90.04	90.04	590.7	-1,745.2	841.5	743.5	98.04	8.583	
9,400.0	7,754.8	9,149.0	7,755.3	53.6	50.2	90.04	90.04	590.7	-1,845.2	841.5	738.2	103.28	8.147	
9,500.0	7,754.3	9,249.0	7,754.8	56.3	52.8	90.03	90.03	590.7	-1,945.2	841.5	732.9	108.57	7.751	
9,600.0	7,753.8	9,349.0	7,754.3	59.0	55.4	90.03	90.03	590.7	-2,045.2	841.5	727.6	113.88	7.389	
9,700.0	7,753.4	9,449.0	7,753.8	61.7	58.0	90.03	90.03	590.7	-2,145.2	841.5	722.3	119.22	7.058	
9,800.0	7,752.9	9,549.0	7,753.3	64.4	60.6	90.03	90.03	590.7	-2,245.2	841.5	716.9	124.59	6.754	
9,900.0	7,752.4	9,649.0	7,752.8	67.1	63.3	90.03	90.03	590.7	-2,345.2	841.5	711.5	129.97	6.475	
10,000.0	7,751.9	9,749.0	7,752.4	69.8	66.0	90.03	90.03	590.7	-2,445.2	841.5	706.1	135.37	6.216	
10,100.0	7,751.5	9,849.0	7,751.9	72.5	68.7	90.03	90.03	590.7	-2,545.2	841.5	700.7	140.79	5.977	
10,200.0	7,751.0	9,949.0	7,751.4	75.3	71.3	90.03	90.03	590.7	-2,645.2	841.5	695.3	146.23	5.755	
10,300.0	7,750.5	10,049.0	7,750.9	78.0	74.0	90.02	90.02	590.7	-2,745.2	841.5	689.8	151.68	5.548	
10,400.0	7,750.1	10,149.0	7,750.4	80.7	76.7	90.02	90.02	590.7	-2,845.2	841.5	684.4	157.13	5.355	
10,500.0	7,749.6	10,249.0	7,749.9	83.5	79.5	90.02	90.02	590.7	-2,945.2	841.5	678.9	162.60	5.175	
10,600.0	7,749.1	10,349.0	7,749.4	86.2	82.2	90.02	90.02	590.7	-3,045.2	841.5	673.4	168.08	5.007	
10,700.0	7,748.6	10,449.0	7,748.9	89.0	84.9	90.02	90.02	590.7	-3,145.2	841.5	667.9	173.57	4.848	
10,800.0	7,748.2	10,549.0	7,748.4	91.7	87.6	90.02	90.02	590.7	-3,245.2	841.5	662.4	179.06	4.699	
10,900.0	7,747.7	10,649.0	7,748.0	94.5	90.4	90.02	90.02	590.7	-3,345.2	841.5	656.9	184.56	4.559	
11,000.0	7,747.2	10,749.0	7,747.5	97.2	93.1	90.02	90.02	590.7	-3,445.2	841.5	651.4	190.07	4.427	
11,100.0	7,746.8	10,849.0	7,747.0	100.0	95.8	90.02	90.02	590.7	-3,545.2	841.5	645.9	195.58	4.302	
11,200.0	7,746.3	10,949.0	7,746.5	102.8	98.6	90.01	90.01	590.7	-3,645.2	841.5	640.4	201.10	4.184	
11,300.0	7,745.8	11,049.0	7,746.0	105.5	101.3	90.01	90.01	590.7	-3,745.2	841.5	634.9	206.63	4.073	
11,400.0	7,745.3	11,149.0	7,745.5	108.3	104.1	90.01	90.01	590.7	-3,845.2	841.5	629.3	212.15	3.966	
11,500.0	7,744.9	11,249.0	7,745.0	111.1	106.8	90.01	90.01	590.7	-3,945.2	841.5	623.8	217.69	3.866	
11,600.0	7,744.4	11,349.0	7,744.5	113.9	109.6	90.01	90.01	590.7	-4,045.2	841.5	618.3	223.22	3.770	
11,700.0	7,743.9	11,449.0	7,744.0	116.6	112.4	90.01	90.01	590.7	-4,145.2	841.5	612.7	228.76	3.678	
11,800.0	7,743.5	11,549.0	7,743.6	119.4	115.1	90.01	90.01	590.7	-4,245.2	841.5	607.2	234.31	3.591	
11,900.0	7,743.0	11,649.0	7,743.1	122.2	117.9	90.01	90.01	590.7	-4,345.2	841.5	601.6	239.85	3.508	
12,000.0	7,742.5	11,749.0	7,742.6	125.0	120.7	90.00	90.00	590.7	-4,445.2	841.5	596.1	245.40	3.429	
12,100.0	7,742.0	11,849.0	7,742.1	127.7	123.4	90.00	90.00	590.7	-4,545.2	841.5	590.5	250.95	3.353	
12,200.0	7,741.6	11,949.0	7,741.6	130.5	126.2	90.00	90.00	590.7	-4,645.2	841.5	585.0	256.51	3.281	
12,300.0	7,741.1	12,049.0	7,741.1	133.3	129.0	90.00	90.00	590.7	-4,745.2	841.5	579.4	262.07	3.211	
12,400.0	7,740.6	12,149.0	7,740.6	136.1	131.7	90.00	90.00	590.7	-4,845.2	841.5	573.9	267.62	3.144	
12,500.0	7,740.2	12,249.0	7,740.1	138.9	134.5	90.00	90.00	590.7	-4,945.2	841.5	568.3	273.18	3.080	
12,514.8	7,740.1	12,263.8	7,740.1	139.3	134.9	90.00	90.00	590.7	-4,960.0	841.5	567.5	274.01	3.071	
12,533.5	7,740.0	12,277.5	7,740.0	139.8	135.3	90.00	90.00	590.7	-4,973.6	841.5	566.6	274.90	3.061 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Offset				Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-14.6	0.0	14.6	14.6	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	180.00	-14.6	0.0	14.6	14.3	0.22	64.811		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-14.6	0.0	14.6	13.9	0.67	21.604		
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-14.6	0.0	14.6	13.4	1.12	12.962		
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-14.6	0.0	14.6	13.0	1.57	9.259		
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-14.6	0.0	14.6	12.5	2.02	7.201		
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-14.6	0.0	14.6	12.1	2.47	5.892		
700.0	700.0	700.0	700.0	1.5	1.5	180.00	-14.6	0.0	14.6	11.6	2.92	4.985		
800.0	800.0	800.0	800.0	1.7	1.7	180.00	-14.6	0.0	14.6	11.2	3.37	4.321 CC, ES		
900.0	900.0	899.7	899.7	1.9	1.9	179.30	-15.4	0.2	15.4	11.6	3.79	4.065		
1,000.0	1,000.0	999.4	999.4	2.1	2.1	177.61	-18.0	0.7	18.0	13.8	4.20	4.286		
1,100.0	1,100.0	1,099.0	1,098.8	2.4	2.2	175.66	-22.2	1.7	22.3	17.7	4.61	4.834		
1,200.0	1,200.0	1,198.4	1,198.0	2.6	2.4	173.92	-28.1	3.0	28.3	23.3	5.03	5.630		
1,300.0	1,300.0	1,297.5	1,296.9	2.8	2.7	172.55	-35.6	4.7	36.1	30.6	5.46	6.614		
1,400.0	1,400.0	1,396.4	1,395.3	3.0	2.9	171.51	-44.8	6.7	45.6	39.7	5.89	7.740		
1,500.0	1,500.0	1,494.9	1,493.2	3.2	3.1	14.81	-55.7	9.1	56.0	49.7	6.28	8.907		
1,600.0	1,600.0	1,594.4	1,591.9	3.4	3.4	14.74	-67.5	11.7	65.7	59.0	6.67	9.844		
1,700.0	1,699.9	1,694.1	1,690.9	3.6	3.7	15.02	-79.4	14.4	73.7	66.6	7.06	10.429		
1,800.0	1,799.7	1,793.9	1,789.9	3.8	3.9	15.58	-91.4	17.0	80.0	72.6	7.47	10.715		
1,884.5	1,884.0	1,878.3	1,873.7	3.9	4.2	16.25	-101.5	19.2	84.1	76.3	7.81	10.759		
1,900.0	1,899.4	1,893.7	1,889.0	4.0	4.2	16.39	-103.3	19.6	84.7	76.8	7.88	10.751		
2,000.0	1,999.0	1,993.6	1,988.2	4.2	4.5	17.24	-115.2	22.3	88.8	80.5	8.30	10.699		
2,100.0	2,098.7	2,093.6	2,087.4	4.4	4.8	18.01	-127.2	24.9	93.0	84.2	8.73	10.646		
2,200.0	2,198.3	2,193.5	2,186.5	4.6	5.1	18.72	-139.1	27.6	97.1	87.9	9.17	10.593		
2,300.0	2,297.9	2,293.4	2,285.7	4.9	5.4	19.37	-151.0	30.2	101.3	91.7	9.61	10.541		
2,400.0	2,397.6	2,393.3	2,384.8	5.1	5.7	19.97	-163.0	32.8	105.5	95.4	10.05	10.490		
2,500.0	2,497.2	2,493.2	2,484.0	5.3	6.1	20.52	-174.9	35.5	109.6	99.1	10.50	10.440		
2,600.0	2,596.9	2,593.1	2,583.1	5.6	6.4	21.03	-186.9	38.1	113.8	102.9	10.95	10.392		
2,700.0	2,696.5	2,693.0	2,682.3	5.8	6.7	21.51	-198.8	40.8	118.0	106.6	11.41	10.345		
2,800.0	2,796.2	2,792.9	2,781.4	6.1	7.0	21.95	-210.7	43.4	122.2	110.4	11.87	10.299		
2,900.0	2,895.8	2,892.8	2,880.6	6.3	7.3	22.36	-222.7	46.0	126.5	114.1	12.33	10.256		
3,000.0	2,995.4	2,992.7	2,979.8	6.6	7.6	22.75	-234.6	48.7	130.7	117.9	12.79	10.214		
3,100.0	3,095.1	3,092.6	3,078.9	6.8	7.9	23.11	-246.5	51.3	134.9	121.7	13.26	10.173		
3,200.0	3,194.7	3,192.5	3,178.1	7.1	8.3	23.45	-258.5	54.0	139.1	125.4	13.73	10.135		
3,300.0	3,294.4	3,292.4	3,277.2	7.4	8.6	23.77	-270.4	56.6	143.4	129.2	14.20	10.097		
3,400.0	3,394.0	3,392.3	3,376.4	7.6	8.9	24.08	-282.3	59.2	147.6	133.0	14.67	10.062		
3,500.0	3,493.6	3,492.3	3,475.5	7.9	9.2	24.36	-294.3	61.9	151.9	136.7	15.15	10.027		
3,600.0	3,593.3	3,592.2	3,574.7	8.1	9.5	24.63	-306.2	64.5	156.1	140.5	15.62	9.994		
3,700.0	3,692.9	3,692.1	3,673.9	8.4	9.9	24.89	-318.1	67.2	160.4	144.3	16.10	9.963		
3,800.0	3,792.6	3,792.0	3,773.0	8.7	10.2	25.13	-330.1	69.8	164.6	148.1	16.58	9.932		
3,900.0	3,892.2	3,891.9	3,872.2	8.9	10.5	25.36	-342.0	72.4	168.9	151.8	17.05	9.903		
4,000.0	3,991.9	3,991.8	3,971.3	9.2	10.8	25.58	-353.9	75.1	173.2	155.6	17.54	9.875		
4,100.0	4,091.5	4,091.7	4,070.5	9.5	11.1	25.78	-365.9	77.7	177.4	159.4	18.02	9.848		
4,200.0	4,191.1	4,191.6	4,169.6	9.7	11.5	25.98	-377.8	80.4	181.7	163.2	18.50	9.822		
4,300.0	4,290.8	4,291.5	4,268.8	10.0	11.8	26.17	-389.8	83.0	186.0	167.0	18.98	9.797		
4,400.0	4,390.4	4,391.4	4,368.0	10.3	12.1	26.35	-401.7	85.6	190.2	170.8	19.47	9.773		
4,500.0	4,490.1	4,491.3	4,467.1	10.5	12.4	26.53	-413.6	88.3	194.5	174.5	19.95	9.749		
4,600.0	4,589.7	4,591.2	4,566.3	10.8	12.8	26.69	-425.6	90.9	198.8	178.3	20.44	9.727		
4,700.0	4,689.4	4,691.1	4,665.4	11.1	13.1	26.85	-437.5	93.6	203.0	182.1	20.92	9.705		
4,768.9	4,758.0	4,760.0	4,733.7	11.3	13.3	26.95	-445.7	95.4	206.0	184.7	21.26	9.691		
4,800.0	4,789.0	4,791.0	4,764.6	11.4	13.4	26.99	-449.4	96.2	207.5	186.1	21.40	9.694		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
4,900.0	4,888.9	4,890.8	4,863.6	11.6	13.7	26.85	-461.3	98.8	214.3	192.4	21.82	9.818	
5,000.0	4,988.8	4,990.3	4,962.3	11.7	14.1	26.35	-473.2	101.5	224.2	202.0	22.20	10.097	
5,011.2	5,000.0	5,001.4	4,973.3	11.8	14.1	-177.61	-474.6	101.8	225.5	200.0	25.49	8.848	
5,100.0	5,088.8	5,089.5	5,060.8	11.9	14.4	-178.29	-485.1	104.1	236.0	210.1	25.96	9.092	
5,200.0	5,188.8	5,189.7	5,160.2	12.1	14.7	-178.98	-497.0	106.7	247.9	221.4	26.48	9.362	
5,300.0	5,288.8	5,298.5	5,268.5	12.3	14.9	-179.55	-507.6	109.1	257.6	230.7	26.92	9.570	
5,400.0	5,388.8	5,408.1	5,377.9	12.5	15.1	-179.88	-514.2	110.5	263.6	236.3	27.31	9.652	
5,500.0	5,488.8	5,518.0	5,487.7	12.6	15.3	-180.00	-516.8	111.1	265.9	238.2	27.67	9.608	
5,600.0	5,588.8	5,619.1	5,588.8	12.8	15.5	180.00	-516.8	111.1	265.9	237.9	28.01	9.492	
5,700.0	5,688.8	5,719.1	5,688.8	13.0	15.6	180.00	-516.8	111.1	265.9	237.6	28.34	9.383	
5,800.0	5,788.8	5,819.1	5,788.8	13.2	15.8	180.00	-516.8	111.1	265.9	237.3	28.67	9.275	
5,900.0	5,888.8	5,919.1	5,888.8	13.4	15.9	180.00	-516.8	111.1	265.9	236.9	29.00	9.169	
6,000.0	5,988.8	6,019.1	5,988.8	13.6	16.0	180.00	-516.8	111.1	265.9	236.6	29.34	9.064	
6,100.0	6,088.8	6,119.1	6,088.8	13.7	16.2	180.00	-516.8	111.1	265.9	236.2	29.68	8.960	
6,200.0	6,188.8	6,219.1	6,188.8	13.9	16.3	180.00	-516.8	111.1	265.9	235.9	30.02	8.858	
6,300.0	6,288.8	6,319.1	6,288.8	14.1	16.5	180.00	-516.8	111.1	265.9	235.6	30.36	8.758	
6,400.0	6,388.8	6,419.1	6,388.8	14.3	16.6	180.00	-516.8	111.1	265.9	235.2	30.71	8.659	
6,500.0	6,488.8	6,519.1	6,488.8	14.5	16.8	180.00	-516.8	111.1	265.9	234.9	31.06	8.562	
6,600.0	6,588.8	6,619.1	6,588.8	14.7	17.0	180.00	-516.8	111.1	265.9	234.5	31.41	8.466	
6,700.0	6,688.8	6,719.1	6,688.8	14.9	17.1	180.00	-516.8	111.1	265.9	234.2	31.77	8.371	
6,800.0	6,788.8	6,819.1	6,788.8	15.1	17.3	180.00	-516.8	111.1	265.9	233.8	32.12	8.278	
6,900.0	6,888.8	6,919.1	6,888.8	15.3	17.4	180.00	-516.8	111.1	265.9	233.4	32.48	8.187	
6,931.7	6,920.5	6,950.8	6,920.5	15.4	17.5	-179.88	-516.8	110.5	265.9	233.3	32.59	8.159	
7,007.6	6,996.4	7,026.0	6,995.5	15.5	17.6	-178.47	-516.8	104.0	266.0	233.2	32.83	8.103	
7,050.0	7,038.8	7,067.5	7,036.4	15.6	17.7	-87.24	-516.8	97.2	266.2	236.0	30.26	8.798	
7,100.0	7,088.6	7,116.0	7,083.7	15.7	17.7	-85.82	-516.8	86.5	266.7	236.2	30.47	8.750	
7,150.0	7,138.0	7,164.1	7,129.8	15.8	17.8	-84.42	-516.8	73.0	267.2	236.5	30.67	8.712	
7,200.0	7,186.8	7,211.9	7,174.7	15.8	17.8	-83.05	-516.8	56.7	267.9	237.1	30.86	8.683	
7,250.0	7,234.8	7,259.3	7,218.1	15.9	17.9	-81.73	-516.8	37.7	268.8	237.7	31.03	8.662	
7,300.0	7,281.7	7,306.3	7,260.0	16.0	18.0	-80.44	-516.8	16.3	269.7	238.5	31.19	8.647	
7,350.0	7,327.5	7,353.0	7,300.2	16.0	18.0	-79.21	-516.8	-7.4	270.8	239.4	31.35	8.637	
7,400.0	7,371.8	7,400.0	7,339.1	16.1	18.1	-78.02	-516.8	-33.8	271.9	240.4	31.52	8.627	
7,450.0	7,414.5	7,445.5	7,375.2	16.2	18.1	-76.92	-516.8	-61.6	273.1	241.4	31.70	8.615	
7,500.0	7,455.4	7,491.4	7,409.8	16.2	18.2	-75.86	-516.8	-91.6	274.3	242.4	31.91	8.597	
7,550.0	7,494.4	7,537.0	7,442.3	16.3	18.3	-74.87	-516.8	-123.5	275.6	243.4	32.17	8.567	
7,600.0	7,531.2	7,582.3	7,472.7	16.4	18.4	-73.94	-516.8	-157.2	276.8	244.3	32.48	8.522	
7,650.0	7,565.8	7,627.5	7,501.0	16.6	18.5	-73.09	-516.8	-192.4	278.0	245.2	32.88	8.456	
7,700.0	7,597.8	7,672.4	7,527.0	17.0	18.7	-72.30	-516.8	-229.0	279.2	245.8	33.38	8.366	
7,750.0	7,627.4	7,717.2	7,550.8	17.4	19.0	-71.58	-516.8	-267.0	280.4	246.4	33.99	8.249	
7,800.0	7,654.2	7,761.8	7,572.2	17.8	19.3	-70.94	-516.8	-306.1	281.4	246.7	34.72	8.105	
7,850.0	7,678.2	7,806.3	7,591.2	18.4	19.7	-70.37	-516.8	-346.3	282.4	246.8	35.59	7.934	
7,900.0	7,699.3	7,850.0	7,607.6	19.0	20.2	-69.88	-516.8	-386.8	283.3	246.7	36.61	7.738	
7,950.0	7,717.4	7,894.8	7,621.9	19.7	20.8	-69.45	-516.8	-429.3	284.0	246.2	37.79	7.517	
8,000.0	7,732.3	7,939.0	7,633.6	20.5	21.5	-69.10	-516.8	-471.9	284.7	245.6	39.11	7.280	
8,050.0	7,744.2	7,983.1	7,642.8	21.3	22.2	-68.83	-516.8	-514.9	285.2	244.6	40.57	7.030	
8,100.0	7,752.8	8,027.1	7,649.5	22.2	22.9	-68.63	-516.8	-558.5	285.6	243.4	42.16	6.774	
8,150.0	7,758.2	8,071.1	7,653.7	23.2	23.8	-68.51	-516.8	-602.2	285.8	241.9	43.87	6.515	
8,200.0	7,760.3	8,115.0	7,655.4	24.2	24.6	-68.46	-516.8	-646.2	285.9	240.2	45.68	6.258	
8,211.2	7,760.4	8,125.3	7,655.4	24.4	24.8	-68.46	-516.8	-656.4	285.9	239.8	46.11	6.200	
8,241.0	7,760.2	8,154.6	7,655.2	25.0	25.4	-68.46	-516.8	-685.7	285.9	238.6	47.26	6.050	
8,300.0	7,759.9	8,213.6	7,655.0	26.3	26.6	-68.46	-516.8	-744.7	285.9	236.3	49.57	5.768	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
8,400.0	7,759.5	8,313.6	7,654.5	28.5	28.8	-68.46	-516.8	-844.7	285.9	232.2	53.69	5.325	
8,500.0	7,759.0	8,413.6	7,654.0	30.7	31.0	-68.46	-516.8	-944.7	285.9	227.9	57.98	4.931	
8,600.0	7,758.5	8,513.6	7,653.6	33.1	33.4	-68.46	-516.8	-1,044.7	285.9	223.5	62.43	4.580	
8,700.0	7,758.1	8,613.6	7,653.1	35.6	35.8	-68.46	-516.8	-1,144.7	285.9	218.9	66.98	4.268	
8,800.0	7,757.6	8,713.6	7,652.6	38.1	38.3	-68.46	-516.8	-1,244.7	285.9	214.3	71.64	3.991	
8,900.0	7,757.1	8,813.6	7,652.1	40.6	40.8	-68.46	-516.8	-1,344.7	285.9	209.5	76.36	3.744	
9,000.0	7,756.7	8,913.6	7,651.7	43.1	43.3	-68.46	-516.8	-1,444.7	285.9	204.7	81.16	3.523	
9,100.0	7,756.2	9,013.6	7,651.2	45.7	45.9	-68.46	-516.8	-1,544.7	285.9	199.9	86.00	3.324	
9,200.0	7,755.7	9,113.6	7,650.7	48.4	48.5	-68.46	-516.8	-1,644.7	285.9	195.0	90.89	3.146	
9,300.0	7,755.2	9,213.6	7,650.3	51.0	51.2	-68.46	-516.8	-1,744.7	285.9	190.1	95.81	2.984	
9,400.0	7,754.8	9,313.6	7,649.8	53.6	53.8	-68.46	-516.8	-1,844.7	285.9	185.1	100.77	2.837	
9,500.0	7,754.3	9,413.6	7,649.3	56.3	56.5	-68.46	-516.8	-1,944.7	285.9	180.1	105.75	2.703	
9,600.0	7,753.8	9,513.6	7,648.8	59.0	59.1	-68.46	-516.8	-2,044.7	285.9	175.1	110.76	2.581	
9,700.0	7,753.4	9,613.6	7,648.4	61.7	61.8	-68.46	-516.8	-2,144.7	285.9	170.1	115.79	2.469	
9,800.0	7,752.9	9,713.6	7,647.9	64.4	64.5	-68.46	-516.8	-2,244.7	285.9	165.1	120.84	2.366	
9,900.0	7,752.4	9,813.6	7,647.4	67.1	67.2	-68.46	-516.8	-2,344.7	285.9	160.0	125.90	2.271	
10,000.0	7,751.9	9,913.6	7,647.0	69.8	69.9	-68.46	-516.8	-2,444.7	285.9	154.9	130.98	2.183	
10,100.0	7,751.5	10,013.6	7,646.5	72.5	72.6	-68.46	-516.8	-2,544.7	285.9	149.8	136.07	2.101	
10,200.0	7,751.0	10,113.6	7,646.0	75.3	75.4	-68.46	-516.8	-2,644.7	285.9	144.7	141.17	2.025	
10,300.0	7,750.5	10,213.6	7,645.5	78.0	78.1	-68.46	-516.8	-2,744.7	285.9	139.6	146.28	1.954	
10,400.0	7,750.1	10,313.6	7,645.1	80.7	80.8	-68.46	-516.8	-2,844.7	285.9	134.5	151.40	1.888	
10,500.0	7,749.6	10,413.6	7,644.6	83.5	83.6	-68.46	-516.8	-2,944.7	285.9	129.4	156.53	1.827	
10,600.0	7,749.1	10,513.6	7,644.1	86.2	86.3	-68.46	-516.8	-3,044.7	285.9	124.2	161.66	1.769	
10,700.0	7,748.6	10,613.6	7,643.7	89.0	89.1	-68.46	-516.8	-3,144.7	285.9	119.1	166.80	1.714	
10,800.0	7,748.2	10,713.6	7,643.2	91.7	91.8	-68.46	-516.8	-3,244.7	285.9	114.0	171.95	1.663	
10,900.0	7,747.7	10,813.6	7,642.7	94.5	94.6	-68.46	-516.8	-3,344.7	285.9	108.8	177.10	1.614	
11,000.0	7,747.2	10,913.6	7,642.2	97.2	97.3	-68.46	-516.8	-3,444.7	285.9	103.6	182.26	1.569	
11,100.0	7,746.8	11,013.6	7,641.8	100.0	100.1	-68.46	-516.8	-3,544.7	285.9	98.5	187.42	1.525	
11,200.0	7,746.3	11,113.6	7,641.3	102.8	102.8	-68.46	-516.8	-3,644.7	285.9	93.3	192.59	1.484	Level 3
11,300.0	7,745.8	11,213.6	7,640.8	105.5	105.6	-68.46	-516.8	-3,744.7	285.9	88.1	197.76	1.446	Level 3
11,400.0	7,745.3	11,313.6	7,640.4	108.3	108.4	-68.46	-516.8	-3,844.7	285.9	83.0	202.94	1.409	Level 3
11,500.0	7,744.9	11,413.6	7,639.9	111.1	111.1	-68.46	-516.8	-3,944.7	285.9	77.8	208.12	1.374	Level 3
11,600.0	7,744.4	11,513.6	7,639.4	113.9	113.9	-68.46	-516.8	-4,044.7	285.9	72.6	213.30	1.340	Level 3
11,700.0	7,743.9	11,613.6	7,638.9	116.6	116.7	-68.46	-516.8	-4,144.7	285.9	67.4	218.48	1.309	Level 3
11,800.0	7,743.5	11,713.6	7,638.5	119.4	119.5	-68.46	-516.8	-4,244.7	285.9	62.2	223.67	1.278	Level 3
11,900.0	7,743.0	11,813.6	7,638.0	122.2	122.2	-68.46	-516.8	-4,344.7	285.9	57.0	228.86	1.249	Level 2
12,000.0	7,742.5	11,913.6	7,637.5	125.0	125.0	-68.46	-516.8	-4,444.7	285.9	51.9	234.05	1.222	Level 2
12,100.0	7,742.0	12,013.6	7,637.1	127.7	127.8	-68.46	-516.8	-4,544.7	285.9	46.7	239.24	1.195	Level 2
12,200.0	7,741.6	12,113.6	7,636.6	130.5	130.6	-68.46	-516.8	-4,644.7	285.9	41.5	244.44	1.170	Level 2
12,300.0	7,741.1	12,213.6	7,636.1	133.3	133.3	-68.46	-516.8	-4,744.7	285.9	36.3	249.63	1.145	Level 2
12,400.0	7,740.6	12,313.6	7,635.6	136.1	136.1	-68.46	-516.8	-4,844.7	285.9	31.1	254.83	1.122	Level 2
12,500.0	7,740.2	12,413.6	7,635.2	138.9	138.9	-68.46	-516.8	-4,944.7	285.9	25.9	260.03	1.099	Level 2
12,533.5	7,740.0	12,447.1	7,635.0	139.8	139.8	-68.46	-516.8	-4,978.2	285.9	24.1	261.78	1.092	Level 2, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	174.51	-29.1	2.8	29.3				
100.0	100.0	100.0	100.0	0.1	0.1	174.51	-29.1	2.8	29.3	29.1	0.22	130.275	
200.0	200.0	200.0	200.0	0.3	0.3	174.51	-29.1	2.8	29.3	28.6	0.67	43.425	
300.0	300.0	300.0	300.0	0.6	0.6	174.51	-29.1	2.8	29.3	28.2	1.12	26.055	
400.0	400.0	400.0	400.0	0.8	0.8	174.51	-29.1	2.8	29.3	27.7	1.57	18.611 CC, ES	
500.0	500.0	499.5	499.5	1.0	1.0	174.45	-30.0	2.9	30.1	28.2	2.00	15.107	
600.0	600.0	598.9	598.9	1.2	1.2	174.30	-32.6	3.3	32.8	30.3	2.41	13.609	
700.0	700.0	698.2	698.1	1.5	1.4	174.09	-36.8	3.8	37.1	34.3	2.83	13.101	
800.0	800.0	797.3	797.0	1.7	1.6	173.87	-42.8	4.6	43.2	39.9	3.26	13.219	
900.0	900.0	896.2	895.6	1.9	1.8	173.66	-50.4	5.6	50.9	47.2	3.71	13.748	
1,000.0	1,000.0	994.8	993.7	2.1	2.1	173.48	-59.7	6.8	60.4	56.3	4.15	14.556	
1,100.0	1,100.0	1,093.0	1,091.4	2.4	2.3	173.33	-70.7	8.3	71.7	67.1	4.61	15.558	
1,200.0	1,200.0	1,190.9	1,188.4	2.6	2.6	173.21	-83.2	9.9	84.6	79.5	5.07	16.696	
1,300.0	1,300.0	1,288.2	1,284.7	2.8	2.9	173.11	-97.3	11.8	99.2	93.6	5.53	17.930	
1,400.0	1,400.0	1,385.1	1,380.2	3.0	3.3	173.02	-112.9	13.8	115.4	109.4	6.00	19.232	
1,500.0	1,500.0	1,483.5	1,477.2	3.2	3.6	16.91	-129.8	16.0	131.9	125.5	6.37	20.705	
1,600.0	1,600.0	1,582.4	1,574.6	3.4	4.0	17.10	-146.7	18.3	146.7	140.0	6.78	21.640	
1,700.0	1,699.9	1,681.5	1,672.2	3.6	4.4	17.44	-163.7	20.5	159.9	152.7	7.20	22.210	
1,800.0	1,799.7	1,780.8	1,770.0	3.8	4.7	17.90	-180.8	22.7	171.4	163.8	7.63	22.478	
1,884.5	1,884.0	1,864.9	1,852.9	3.9	5.1	18.39	-195.2	24.6	179.9	171.9	7.99	22.506	
1,900.0	1,899.4	1,880.3	1,868.0	4.0	5.1	18.49	-197.8	25.0	181.4	173.3	8.06	22.496	
2,000.0	1,999.0	1,979.9	1,966.1	4.2	5.5	19.10	-214.9	27.2	190.7	182.2	8.51	22.421	
2,100.0	2,098.7	2,079.4	2,064.1	4.4	5.9	19.65	-232.0	29.5	200.1	191.1	8.96	22.342	
2,200.0	2,198.3	2,179.0	2,162.1	4.6	6.3	20.15	-249.0	31.7	209.5	200.1	9.41	22.261	
2,300.0	2,297.9	2,278.5	2,260.2	4.9	6.7	20.61	-266.1	34.0	218.9	209.0	9.87	22.179	
2,400.0	2,397.6	2,378.0	2,358.2	5.1	7.0	21.03	-283.2	36.2	228.3	218.0	10.33	22.098	
2,500.0	2,497.2	2,477.6	2,456.3	5.3	7.4	21.42	-300.2	38.5	237.7	226.9	10.80	22.017	
2,600.0	2,596.9	2,577.1	2,554.3	5.6	7.8	21.78	-317.3	40.7	247.2	235.9	11.27	21.937	
2,700.0	2,696.5	2,676.7	2,652.4	5.8	8.2	22.11	-334.4	43.0	256.6	244.9	11.74	21.860	
2,800.0	2,796.2	2,776.2	2,750.4	6.1	8.6	22.42	-351.5	45.2	266.0	253.8	12.21	21.784	
2,900.0	2,895.8	2,875.8	2,848.4	6.3	9.0	22.70	-368.5	47.4	275.5	262.8	12.69	21.711	
3,000.0	2,995.4	2,975.3	2,946.5	6.6	9.4	22.97	-385.6	49.7	285.0	271.8	13.17	21.640	
3,100.0	3,095.1	3,074.8	3,044.5	6.8	9.8	23.22	-402.7	51.9	294.4	280.8	13.65	21.572	
3,200.0	3,194.7	3,174.4	3,142.6	7.1	10.2	23.46	-419.7	54.2	303.9	289.8	14.13	21.506	
3,300.0	3,294.4	3,273.9	3,240.6	7.4	10.6	23.68	-436.8	56.4	313.4	298.8	14.62	21.442	
3,400.0	3,394.0	3,373.5	3,338.7	7.6	11.0	23.89	-453.9	58.7	322.9	307.8	15.10	21.381	
3,500.0	3,493.6	3,473.0	3,436.7	7.9	11.4	24.08	-470.9	60.9	332.4	316.8	15.59	21.322	
3,600.0	3,593.3	3,572.6	3,534.7	8.1	11.8	24.27	-488.0	63.2	341.9	325.8	16.08	21.265	
3,700.0	3,692.9	3,672.1	3,632.8	8.4	12.2	24.44	-505.1	65.4	351.4	334.8	16.57	21.210	
3,800.0	3,792.6	3,771.6	3,730.8	8.7	12.6	24.61	-522.2	67.7	360.9	343.8	17.06	21.157	
3,900.0	3,892.2	3,871.2	3,828.9	8.9	13.0	24.77	-539.2	69.9	370.4	352.8	17.55	21.107	
4,000.0	3,991.9	3,970.7	3,926.9	9.2	13.4	24.92	-556.3	72.1	379.9	361.8	18.04	21.058	
4,100.0	4,091.5	4,070.3	4,024.9	9.5	13.8	25.06	-573.4	74.4	389.4	370.9	18.53	21.011	
4,200.0	4,191.1	4,169.8	4,123.0	9.7	14.2	25.19	-590.4	76.6	398.9	379.9	19.03	20.965	
4,300.0	4,290.8	4,269.3	4,221.0	10.0	14.6	25.32	-607.5	78.9	408.4	388.9	19.52	20.921	
4,400.0	4,390.4	4,368.9	4,319.1	10.3	15.0	25.45	-624.6	81.1	417.9	397.9	20.02	20.879	
4,500.0	4,490.1	4,468.4	4,417.1	10.5	15.4	25.56	-641.6	83.4	427.4	406.9	20.51	20.839	
4,600.0	4,589.7	4,568.0	4,515.2	10.8	15.8	25.68	-658.7	85.6	437.0	416.0	21.01	20.799	
4,700.0	4,689.4	4,667.5	4,613.2	11.1	16.2	25.78	-675.8	87.9	446.5	425.0	21.51	20.761	
4,768.9	4,758.0	4,736.1	4,680.8	11.3	16.4	25.86	-687.6	89.4	453.0	431.2	21.85	20.736	
4,800.0	4,789.0	4,767.0	4,711.2	11.4	16.6	25.91	-692.9	90.1	456.2	434.2	21.99	20.742	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.0	4,888.9	4,866.3	4,809.0	11.6	17.0	25.96	-709.9	92.3	468.2	445.8	22.42	20.887		
5,000.0	4,988.8	4,965.1	4,906.3	11.7	17.4	25.86	-726.8	94.6	483.4	460.6	22.80	21.199		
5,011.2	5,000.0	4,976.1	4,917.2	11.8	17.4	-178.05	-728.7	94.8	485.3	456.4	28.85	16.823		
5,100.0	5,088.8	5,063.6	5,003.3	11.9	17.7	-178.34	-743.7	96.8	500.4	471.1	29.37	17.038		
5,200.0	5,188.8	5,162.1	5,100.3	12.1	18.1	-178.64	-760.6	99.0	517.5	487.6	29.95	17.277		
5,300.0	5,288.8	5,260.6	5,197.4	12.3	18.5	-178.93	-777.5	101.2	534.6	504.1	30.54	17.507		
5,400.0	5,388.8	5,359.1	5,294.4	12.5	18.9	-179.19	-794.4	103.5	551.7	520.6	31.12	17.729		
5,500.0	5,488.8	5,457.6	5,391.4	12.6	19.3	-179.45	-811.3	105.7	568.9	537.2	31.71	17.942		
5,600.0	5,588.8	5,556.1	5,488.4	12.8	19.7	-179.68	-828.2	107.9	586.0	553.7	32.29	18.148		
5,700.0	5,688.8	5,676.2	5,607.0	13.0	20.1	-179.93	-846.9	110.4	601.7	568.8	32.83	18.325		
5,800.0	5,788.8	5,802.0	5,731.9	13.2	20.4	179.89	-861.3	112.3	613.1	579.8	33.31	18.408		
5,900.0	5,888.8	5,928.8	5,858.4	13.4	20.6	179.78	-870.3	113.4	620.2	586.5	33.72	18.392		
6,000.0	5,988.8	6,056.2	5,985.8	13.6	20.8	179.74	-873.7	113.9	622.9	588.8	34.10	18.269		
6,100.0	6,088.8	6,159.3	6,088.8	13.7	20.9	179.74	-873.8	113.9	622.9	588.5	34.41	18.105		
6,200.0	6,188.8	6,259.3	6,188.8	13.9	21.0	179.74	-873.8	113.9	622.9	588.2	34.71	17.948		
6,300.0	6,288.8	6,359.3	6,288.8	14.1	21.1	179.74	-873.8	113.9	622.9	587.9	35.01	17.793		
6,400.0	6,388.8	6,459.3	6,388.8	14.3	21.2	179.74	-873.8	113.9	622.9	587.6	35.32	17.639		
6,500.0	6,488.8	6,559.3	6,488.8	14.5	21.3	179.74	-873.8	113.9	622.9	587.3	35.63	17.486		
6,600.0	6,588.8	6,659.3	6,588.8	14.7	21.4	179.74	-873.8	113.9	622.9	587.0	35.94	17.335		
6,700.0	6,688.8	6,759.3	6,688.8	14.9	21.6	179.74	-873.8	113.9	622.9	586.7	36.25	17.184		
6,800.0	6,788.8	6,859.3	6,788.8	15.1	21.7	179.74	-873.8	113.9	622.9	586.4	36.57	17.036		
6,900.0	6,888.8	6,959.3	6,888.8	15.3	21.8	179.74	-873.8	113.9	622.9	586.1	36.89	16.889		
7,007.6	6,996.4	7,066.9	6,996.4	15.5	21.9	179.74	-873.8	113.9	622.9	585.7	37.23	16.732		
7,050.0	7,038.8	7,109.4	7,039.0	15.6	22.0	-90.26	-873.8	112.7	622.9	591.9	31.05	20.063		
7,100.0	7,088.6	7,159.6	7,088.9	15.7	22.1	-90.26	-873.8	108.3	622.9	591.7	31.22	19.952		
7,150.0	7,138.0	7,209.8	7,138.5	15.8	22.1	-90.25	-873.8	100.6	622.9	591.6	31.38	19.850		
7,200.0	7,186.8	7,260.0	7,187.5	15.8	22.2	-90.25	-873.8	89.6	622.9	591.4	31.53	19.755		
7,250.0	7,234.8	7,310.2	7,235.6	15.9	22.2	-90.25	-873.8	75.5	622.9	591.3	31.68	19.664		
7,300.0	7,281.7	7,360.3	7,282.7	16.0	22.3	-90.24	-873.8	58.2	622.9	591.1	31.83	19.571		
7,350.0	7,327.5	7,410.5	7,328.6	16.0	22.3	-90.23	-873.8	37.9	622.9	590.9	31.99	19.472		
7,400.0	7,371.8	7,460.7	7,373.0	16.1	22.4	-90.23	-873.8	14.7	622.9	590.8	32.18	19.360		
7,450.0	7,414.5	7,510.8	7,415.8	16.2	22.4	-90.22	-873.8	-11.5	622.9	590.5	32.40	19.227		
7,500.0	7,455.4	7,561.0	7,456.8	16.2	22.5	-90.21	-873.8	-40.4	622.9	590.3	32.67	19.066		
7,550.0	7,494.4	7,611.1	7,495.8	16.3	22.5	-90.20	-873.8	-71.9	622.9	589.9	33.01	18.868		
7,600.0	7,531.2	7,661.3	7,532.6	16.4	22.6	-90.19	-873.8	-105.9	622.9	589.5	33.44	18.626		
7,650.0	7,565.8	7,711.4	7,567.2	16.6	22.7	-90.17	-873.8	-142.2	622.9	589.0	33.98	18.334		
7,700.0	7,597.8	7,761.5	7,599.2	17.0	22.8	-90.16	-873.8	-180.7	622.9	588.3	34.63	17.989		
7,750.0	7,627.4	7,811.6	7,628.7	17.4	22.9	-90.15	-873.8	-221.2	622.9	587.5	35.42	17.589		
7,800.0	7,654.2	7,861.7	7,655.4	17.8	23.1	-90.13	-873.8	-263.6	622.9	586.6	36.35	17.139		
7,850.0	7,678.2	7,911.8	7,679.3	18.4	23.3	-90.12	-873.8	-307.6	622.9	585.5	37.43	16.645		
7,900.0	7,699.3	7,961.9	7,700.3	19.0	23.5	-90.10	-873.8	-353.0	622.9	584.3	38.66	16.114		
7,950.0	7,717.4	8,012.0	7,718.2	19.7	23.8	-90.09	-873.8	-399.8	622.9	582.9	40.04	15.558		
8,000.0	7,732.3	8,062.0	7,733.1	20.5	24.2	-90.07	-873.8	-447.6	622.9	581.4	41.56	14.988		
8,050.0	7,744.2	8,112.1	7,744.8	21.3	24.7	-90.05	-873.8	-496.2	622.9	579.7	43.22	14.415		
8,100.0	7,752.8	8,162.1	7,753.2	22.2	25.3	-90.04	-873.8	-545.5	622.9	577.9	44.99	13.847		
8,150.0	7,758.2	8,212.1	7,758.4	23.2	26.0	-90.02	-873.8	-595.3	622.9	576.1	46.85	13.295		
8,200.0	7,760.3	8,262.1	7,760.4	24.2	26.7	-90.00	-873.8	-645.2	622.9	574.1	48.80	12.764		
8,211.2	7,760.4	8,273.3	7,760.4	24.4	26.9	-90.00	-873.8	-656.4	622.9	573.7	49.25	12.649		
8,300.0	7,759.9	8,362.1	7,760.0	26.3	28.5	-90.00	-873.8	-745.2	622.9	570.0	52.93	11.769		
8,400.0	7,759.5	8,462.1	7,759.5	28.5	30.4	-90.00	-873.8	-845.2	622.9	565.6	57.29	10.872		
8,500.0	7,759.0	8,562.1	7,759.0	30.7	32.6	-90.00	-873.8	-945.2	622.9	561.1	61.86	10.070		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
8,600.0	7,758.5	8,662.1	7,758.5	33.1	34.8	-90.00	-873.8	-1,045.2	622.9	556.3	66.58	9.355	
8,700.0	7,758.1	8,762.1	7,758.1	35.6	37.1	-90.00	-873.8	-1,145.2	622.9	551.5	71.44	8.720	
8,800.0	7,757.6	8,862.1	7,757.6	38.1	39.5	-90.00	-873.8	-1,245.2	622.9	546.5	76.40	8.154	
8,900.0	7,757.1	8,962.1	7,757.1	40.6	41.9	-90.00	-873.8	-1,345.2	622.9	541.5	81.44	7.649	
9,000.0	7,756.7	9,062.1	7,756.7	43.1	44.4	-90.00	-873.8	-1,445.2	622.9	536.4	86.55	7.197	
9,100.0	7,756.2	9,162.1	7,756.2	45.7	46.9	-90.00	-873.8	-1,545.2	622.9	531.2	91.72	6.792	
9,200.0	7,755.7	9,262.1	7,755.7	48.4	49.5	-90.00	-873.8	-1,645.2	622.9	526.0	96.94	6.426	
9,300.0	7,755.2	9,362.1	7,755.3	51.0	52.0	-90.00	-873.8	-1,745.2	622.9	520.7	102.20	6.095	
9,400.0	7,754.8	9,462.1	7,754.8	53.6	54.6	-90.00	-873.8	-1,845.2	622.9	515.4	107.50	5.795	
9,500.0	7,754.3	9,562.1	7,754.3	56.3	57.3	-90.00	-873.8	-1,945.2	622.9	510.1	112.82	5.521	
9,600.0	7,753.8	9,662.1	7,753.8	59.0	59.9	-90.00	-873.8	-2,045.2	622.9	504.8	118.17	5.271	
9,700.0	7,753.4	9,762.1	7,753.4	61.7	62.5	-90.00	-873.8	-2,145.2	622.9	499.4	123.55	5.042	
9,800.0	7,752.9	9,862.1	7,752.9	64.4	65.2	-90.00	-873.8	-2,245.2	622.9	494.0	128.94	4.831	
9,900.0	7,752.4	9,962.1	7,752.4	67.1	67.9	-90.00	-873.8	-2,345.2	622.9	488.6	134.36	4.636	
10,000.0	7,751.9	10,062.1	7,752.0	69.8	70.6	-90.00	-873.8	-2,445.2	622.9	483.1	139.79	4.456	
10,100.0	7,751.5	10,162.1	7,751.5	72.5	73.3	-90.00	-873.8	-2,545.2	622.9	477.7	145.23	4.289	
10,200.0	7,751.0	10,262.1	7,751.0	75.3	76.0	-90.00	-873.8	-2,645.2	622.9	472.2	150.68	4.134	
10,300.0	7,750.5	10,362.1	7,750.5	78.0	78.7	-90.00	-873.8	-2,745.2	622.9	466.8	156.15	3.989	
10,400.0	7,750.1	10,462.1	7,750.1	80.7	81.4	-90.00	-873.8	-2,845.2	622.9	461.3	161.62	3.854	
10,500.0	7,749.6	10,562.1	7,749.6	83.5	84.1	-90.00	-873.8	-2,945.2	622.9	455.8	167.11	3.728	
10,600.0	7,749.1	10,662.1	7,749.1	86.2	86.9	-90.00	-873.8	-3,045.2	622.9	450.3	172.60	3.609	
10,700.0	7,748.6	10,762.1	7,748.7	89.0	89.6	-90.00	-873.8	-3,145.2	622.9	444.8	178.10	3.498	
10,800.0	7,748.2	10,862.1	7,748.2	91.7	92.3	-90.00	-873.8	-3,245.2	622.9	439.3	183.60	3.393	
10,900.0	7,747.7	10,962.1	7,747.7	94.5	95.1	-90.00	-873.8	-3,345.2	622.9	433.8	189.12	3.294	
11,000.0	7,747.2	11,062.1	7,747.2	97.2	97.8	-90.00	-873.8	-3,445.2	622.9	428.3	194.64	3.201	
11,100.0	7,746.8	11,162.1	7,746.8	100.0	100.6	-90.00	-873.8	-3,545.2	622.9	422.8	200.16	3.112	
11,200.0	7,746.3	11,262.1	7,746.3	102.8	103.3	-90.00	-873.8	-3,645.2	622.9	417.2	205.69	3.029	
11,300.0	7,745.8	11,362.1	7,745.8	105.5	106.1	-90.00	-873.8	-3,745.2	622.9	411.7	211.22	2.949	
11,400.0	7,745.3	11,462.1	7,745.4	108.3	108.8	-90.00	-873.8	-3,845.2	622.9	406.2	216.75	2.874	
11,500.0	7,744.9	11,562.1	7,744.9	111.1	111.6	-90.00	-873.8	-3,945.2	622.9	400.6	222.29	2.802	
11,600.0	7,744.4	11,662.1	7,744.4	113.9	114.3	-90.00	-873.8	-4,045.2	622.9	395.1	227.84	2.734	
11,700.0	7,743.9	11,762.1	7,743.9	116.6	117.1	-90.00	-873.8	-4,145.2	622.9	389.5	233.38	2.669	
11,800.0	7,743.5	11,862.1	7,743.5	119.4	119.9	-90.00	-873.8	-4,245.2	622.9	384.0	238.93	2.607	
11,900.0	7,743.0	11,962.1	7,743.0	122.2	122.6	-90.00	-873.8	-4,345.2	622.9	378.4	244.48	2.548	
12,000.0	7,742.5	12,062.1	7,742.5	125.0	125.4	-90.00	-873.8	-4,445.2	622.9	372.9	250.04	2.491	
12,100.0	7,742.0	12,162.1	7,742.1	127.7	128.2	-90.00	-873.8	-4,545.2	622.9	367.3	255.60	2.437	
12,200.0	7,741.6	12,262.1	7,741.6	130.5	131.0	-90.00	-873.8	-4,645.2	622.9	361.8	261.15	2.385	
12,300.0	7,741.1	12,362.1	7,741.1	133.3	133.7	-90.00	-873.8	-4,745.2	622.9	356.2	266.72	2.336	
12,400.0	7,740.6	12,462.1	7,740.6	136.1	136.5	-90.00	-873.8	-4,845.2	622.9	350.7	272.28	2.288	
12,500.0	7,740.2	12,562.1	7,740.2	138.9	138.7	-90.00	-873.8	-4,945.2	622.9	345.7	277.24	2.247	
12,533.5	7,740.0	12,595.6	7,740.0	139.8	139.3	-90.00	-873.8	-4,978.7	622.9	344.2	278.77	2.235 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Offset				Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-8.74	18.2	-2.8	18.4	18.4	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	-8.74	18.2	-2.8	18.4	18.2	0.22	81.990		
200.0	200.0	200.0	200.0	0.3	0.3	-8.74	18.2	-2.8	18.4	17.8	0.67	27.330		
300.0	300.0	300.0	300.0	0.6	0.6	-8.74	18.2	-2.8	18.4	17.3	1.12	16.398		
400.0	400.0	400.0	400.0	0.8	0.8	-8.74	18.2	-2.8	18.4	16.9	1.57	11.713		
500.0	500.0	500.0	500.0	1.0	1.0	-8.74	18.2	-2.8	18.4	16.4	2.02	9.110		
600.0	600.0	600.0	600.0	1.2	1.2	-8.74	18.2	-2.8	18.4	16.0	2.47	7.454		
700.0	700.0	700.0	700.0	1.5	1.5	-8.74	18.2	-2.8	18.4	15.5	2.92	6.307		
800.0	800.0	800.0	800.0	1.7	1.7	-8.74	18.2	-2.8	18.4	15.1	3.37	5.466		
900.0	900.0	900.0	900.0	1.9	1.9	-8.74	18.2	-2.8	18.4	14.6	3.82	4.823		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-8.74	18.2	-2.8	18.4	14.2	4.27	4.315		
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-8.74	18.2	-2.8	18.4	13.7	4.72	3.904		
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-8.74	18.2	-2.8	18.4	13.3	5.17	3.565		
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-8.74	18.2	-2.8	18.4	12.8	5.62	3.280		
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-8.74	18.2	-2.8	18.4	12.4	6.07	3.037 CC, ES		
1,500.0	1,500.0	1,500.0	1,500.0	3.2	3.3	-165.53	18.2	-2.8	19.3	12.8	6.49	2.969		
1,600.0	1,600.0	1,600.0	1,600.0	3.4	3.5	-167.24	18.2	-2.8	21.8	14.9	6.89	3.167		
1,700.0	1,699.9	1,699.9	1,699.9	3.6	3.7	-169.35	18.2	-2.8	26.1	18.8	7.29	3.578		
1,800.0	1,799.7	1,799.7	1,799.7	3.8	3.9	-171.36	18.2	-2.8	32.1	24.4	7.70	4.172		
1,884.5	1,884.0	1,884.0	1,884.0	3.9	4.1	-172.80	18.2	-2.8	38.6	30.5	8.04	4.796		
1,900.0	1,899.4	1,899.4	1,899.4	4.0	4.2	-173.04	18.2	-2.8	39.9	31.8	8.10	4.918		
2,000.0	1,999.0	1,999.0	1,999.0	4.2	4.4	-174.25	18.2	-2.8	48.3	39.7	8.52	5.663		
2,100.0	2,098.7	2,098.7	2,098.7	4.4	4.6	-175.11	18.2	-2.8	56.7	47.7	8.94	6.336		
2,200.0	2,198.3	2,198.3	2,198.3	4.6	4.8	-175.74	18.2	-2.8	65.1	55.7	9.37	6.948		
2,300.0	2,297.9	2,297.9	2,297.9	4.9	5.1	-176.23	18.2	-2.8	73.5	63.7	9.79	7.506		
2,400.0	2,397.6	2,397.6	2,397.6	5.1	5.3	-176.62	18.2	-2.8	81.9	71.7	10.22	8.015		
2,500.0	2,497.2	2,497.2	2,497.2	5.3	5.5	-176.94	18.2	-2.8	90.4	79.7	10.66	8.481		
2,600.0	2,596.9	2,596.9	2,596.9	5.6	5.7	-177.20	18.2	-2.8	98.8	87.7	11.09	8.910		
2,700.0	2,696.5	2,696.5	2,696.5	5.8	5.9	-177.42	18.2	-2.8	107.3	95.7	11.53	9.305		
2,800.0	2,796.2	2,796.2	2,796.2	6.1	6.2	-177.61	18.2	-2.8	115.7	103.7	11.96	9.671		
2,900.0	2,895.8	2,895.8	2,895.8	6.3	6.4	-177.77	18.2	-2.8	124.1	111.7	12.40	10.009		
3,000.0	2,995.4	2,995.4	2,995.4	6.6	6.6	-177.91	18.2	-2.8	132.6	119.7	12.84	10.324		
3,100.0	3,095.1	3,095.1	3,095.1	6.8	6.8	-178.04	18.2	-2.8	141.0	127.7	13.28	10.617		
3,200.0	3,194.7	3,194.7	3,194.7	7.1	7.1	-178.15	18.2	-2.8	149.5	135.7	13.72	10.890		
3,300.0	3,294.4	3,294.4	3,294.4	7.4	7.3	-178.25	18.2	-2.8	157.9	143.7	14.17	11.146		
3,400.0	3,394.0	3,394.0	3,394.0	7.6	7.5	-178.34	18.2	-2.8	166.3	151.7	14.61	11.385		
3,500.0	3,493.6	3,493.6	3,493.6	7.9	7.7	-178.42	18.2	-2.8	174.8	159.7	15.06	11.610		
3,600.0	3,593.3	3,593.3	3,593.3	8.1	8.0	-178.49	18.2	-2.8	183.2	167.7	15.50	11.821		
3,700.0	3,692.9	3,692.9	3,692.9	8.4	8.2	-178.56	18.2	-2.8	191.7	175.7	15.95	12.020		
3,800.0	3,792.6	3,792.6	3,792.6	8.7	8.4	-178.62	18.2	-2.8	200.1	183.7	16.39	12.208		
3,900.0	3,892.2	3,892.2	3,892.2	8.9	8.6	-178.67	18.2	-2.8	208.6	191.7	16.84	12.386		
4,000.0	3,991.9	3,991.9	3,991.9	9.2	8.9	-178.72	18.2	-2.8	217.0	199.7	17.29	12.554		
4,100.0	4,091.5	4,091.5	4,091.5	9.5	9.1	-178.77	18.2	-2.8	225.5	207.7	17.73	12.713		
4,200.0	4,191.1	4,191.1	4,191.1	9.7	9.3	-178.82	18.2	-2.8	233.9	215.7	18.18	12.864		
4,300.0	4,290.8	4,290.8	4,290.8	10.0	9.5	-178.86	18.2	-2.8	242.3	223.7	18.63	13.008		
4,400.0	4,390.4	4,390.4	4,390.4	10.3	9.8	-178.90	18.2	-2.8	250.8	231.7	19.08	13.144		
4,500.0	4,490.1	4,490.1	4,490.1	10.5	10.0	-178.93	18.2	-2.8	259.2	239.7	19.53	13.274		
4,600.0	4,589.7	4,589.7	4,589.7	10.8	10.2	-178.97	18.2	-2.8	267.7	247.7	19.98	13.398		
4,700.0	4,689.4	4,689.4	4,689.4	11.1	10.4	-179.00	18.2	-2.8	276.1	255.7	20.43	13.517		
4,768.9	4,758.0	4,758.0	4,758.0	11.3	10.6	-179.02	18.2	-2.8	281.9	261.2	20.74	13.595		
4,800.0	4,789.0	4,789.0	4,789.0	11.4	10.7	-179.03	18.2	-2.8	284.4	263.5	20.88	13.618		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.0	4,888.9	4,888.9	4,888.9	11.6	10.9	-179.05	18.2	-2.8	290.0	268.7	21.33	13.600		
5,000.0	4,988.8	4,988.8	4,988.8	11.7	11.1	-179.06	18.2	-2.8	292.2	270.4	21.74	13.439		
5,011.2	5,000.0	5,000.0	5,000.0	11.8	11.1	-22.94	18.2	-2.8	292.2	269.3	22.88	12.768		
5,100.0	5,088.8	5,088.8	5,088.8	11.9	11.3	-22.94	18.2	-2.8	292.2	268.9	23.25	12.568		
5,200.0	5,188.8	5,188.8	5,188.8	12.1	11.6	-22.94	18.2	-2.8	292.2	268.5	23.65	12.355		
5,300.0	5,288.8	5,288.8	5,288.8	12.3	11.8	-22.94	18.2	-2.8	292.2	268.1	24.05	12.148		
5,400.0	5,388.8	5,388.8	5,388.8	12.5	12.0	-22.94	18.2	-2.8	292.2	267.7	24.45	11.948		
5,500.0	5,488.8	5,488.8	5,488.8	12.6	12.2	-22.94	18.2	-2.8	292.2	267.3	24.86	11.753		
5,600.0	5,588.8	5,588.8	5,588.8	12.8	12.4	-22.94	18.2	-2.8	292.2	266.9	25.27	11.564		
5,700.0	5,688.8	5,688.8	5,688.8	13.0	12.7	-22.94	18.2	-2.8	292.2	266.5	25.68	11.380		
5,800.0	5,788.8	5,788.8	5,788.8	13.2	12.9	-22.94	18.2	-2.8	292.2	266.1	26.09	11.201		
5,900.0	5,888.8	5,888.8	5,888.8	13.4	13.1	-22.94	18.2	-2.8	292.2	265.7	26.50	11.027		
6,000.0	5,988.8	5,988.8	5,988.8	13.6	13.3	-22.94	18.2	-2.8	292.2	265.3	26.91	10.858		
6,100.0	6,088.8	6,088.8	6,088.8	13.7	13.6	-22.94	18.2	-2.8	292.2	264.9	27.32	10.694		
6,200.0	6,188.8	6,188.8	6,188.8	13.9	13.8	-22.94	18.2	-2.8	292.2	264.4	27.74	10.535		
6,300.0	6,288.8	6,288.8	6,288.8	14.1	14.0	-22.94	18.2	-2.8	292.2	264.0	28.15	10.379		
6,400.0	6,388.8	6,388.8	6,388.8	14.3	14.2	-22.94	18.2	-2.8	292.2	263.6	28.57	10.228		
6,500.0	6,488.8	6,488.8	6,488.8	14.5	14.5	-22.94	18.2	-2.8	292.2	263.2	28.98	10.081		
6,600.0	6,588.8	6,588.8	6,588.8	14.7	14.7	-22.94	18.2	-2.8	292.2	262.8	29.40	9.937		
6,700.0	6,688.8	6,688.8	6,688.8	14.9	14.9	-22.94	18.2	-2.8	292.2	262.4	29.82	9.798		
6,800.0	6,788.8	6,788.8	6,788.8	15.1	15.1	-22.94	18.2	-2.8	292.2	261.9	30.24	9.662		
6,900.0	6,888.8	6,888.8	6,888.8	15.3	15.4	-22.94	18.2	-2.8	292.2	261.5	30.66	9.529		
7,007.6	6,996.4	6,996.4	6,996.4	15.5	15.6	-22.94	18.2	-2.8	292.2	261.1	31.12	9.390		
7,050.0	7,038.8	7,038.8	7,038.8	15.6	15.7	67.30	18.2	-2.8	291.7	261.2	30.49	9.569		
7,100.0	7,088.6	7,088.6	7,088.6	15.7	15.8	68.22	18.2	-2.8	290.1	259.4	30.66	9.460		
7,150.0	7,138.0	7,135.2	7,135.2	15.8	15.9	69.66	18.2	-3.1	287.4	256.6	30.82	9.325		
7,200.0	7,186.8	7,179.0	7,178.9	15.8	16.0	71.20	18.2	-5.6	284.7	253.7	30.96	9.194		
7,250.0	7,234.8	7,223.1	7,222.7	15.9	16.1	72.83	18.2	-10.6	282.0	250.9	31.11	9.064		
7,300.0	7,281.7	7,267.6	7,266.6	16.0	16.2	74.56	18.2	-18.2	279.5	248.2	31.28	8.935		
7,350.0	7,327.5	7,312.6	7,310.4	16.0	16.3	76.38	18.2	-28.5	277.1	245.7	31.47	8.806		
7,400.0	7,371.8	7,358.0	7,353.9	16.1	16.4	78.28	18.2	-41.4	275.0	243.3	31.70	8.676		
7,450.0	7,414.5	7,403.9	7,397.0	16.2	16.5	80.26	18.3	-57.2	273.2	241.2	31.97	8.545		
7,500.0	7,455.4	7,450.0	7,439.3	16.2	16.6	82.30	18.3	-75.5	271.7	239.4	32.29	8.413		
7,550.0	7,494.4	7,497.3	7,481.4	16.3	16.8	84.43	18.3	-97.0	270.5	237.8	32.67	8.280		
7,600.0	7,531.2	7,544.8	7,522.3	16.4	16.9	86.58	18.3	-121.1	269.7	236.6	33.10	8.146		
7,650.0	7,565.8	7,593.0	7,562.2	16.6	17.1	88.77	18.3	-148.1	269.3	235.6	33.61	8.011		
7,674.6	7,581.9	7,616.9	7,581.4	16.8	17.2	89.86	18.3	-162.5	269.2	235.3	33.89	7.943		
7,700.0	7,597.8	7,641.8	7,600.8	17.0	17.4	90.99	18.4	-178.0	269.3	235.1	34.18	7.877		
7,750.0	7,627.4	7,691.3	7,637.9	17.4	17.6	93.21	18.4	-210.7	269.7	234.9	34.83	7.743		
7,800.0	7,654.2	7,741.5	7,673.3	17.8	17.9	95.42	18.4	-246.3	270.5	235.0	35.56	7.608		
7,850.0	7,678.2	7,792.4	7,706.7	18.4	18.3	97.61	18.4	-284.8	271.8	235.4	36.37	7.474		
7,900.0	7,699.3	7,844.1	7,737.9	19.0	18.8	99.76	18.5	-326.0	273.5	236.2	37.26	7.340		
7,950.0	7,717.4	7,896.6	7,766.7	19.7	19.3	101.87	18.5	-369.8	275.5	237.3	38.24	7.205		
8,000.0	7,732.3	7,949.9	7,792.8	20.5	19.9	103.90	18.6	-416.3	277.9	238.6	39.31	7.069		
8,050.0	7,744.2	8,004.1	7,815.9	21.3	20.6	105.87	18.6	-465.3	280.6	240.1	40.48	6.931		
8,100.0	7,752.8	8,059.1	7,835.8	22.2	21.4	107.75	18.6	-516.6	283.5	241.7	41.74	6.791		
8,150.0	7,758.2	8,115.0	7,852.2	23.2	22.3	109.53	18.7	-570.0	286.6	243.5	43.09	6.650		
8,200.0	7,760.3	8,171.8	7,864.7	24.2	23.3	111.20	18.7	-625.4	289.8	245.2	44.52	6.508		
8,211.2	7,760.4	8,184.6	7,867.0	24.4	23.5	111.56	18.7	-638.0	290.5	245.6	44.85	6.477		
8,300.0	7,759.9	8,288.3	7,877.5	26.3	25.5	113.55	18.8	-741.1	294.2	246.4	47.79	6.156		
8,400.0	7,759.5	8,391.3	7,878.5	28.5	27.6	113.81	18.9	-844.1	294.9	243.2	51.68	5.706		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Offset				Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,500.0	7,759.0	8,491.3	7,879.3	30.7	29.8	114.03	19.0	-944.1	295.5	239.8	55.71	5.304		
8,600.0	7,758.5	8,591.3	7,880.1	33.1	32.1	114.25	19.1	-1,044.1	296.1	236.2	59.89	4.943		
8,700.0	7,758.1	8,691.3	7,880.9	35.6	34.4	114.46	19.2	-1,144.0	296.6	232.5	64.19	4.622		
8,800.0	7,757.6	8,791.3	7,881.7	38.1	36.8	114.67	19.3	-1,244.0	297.2	228.7	68.57	4.335		
8,900.0	7,757.1	8,891.3	7,882.5	40.6	39.3	114.89	19.3	-1,344.0	297.8	224.8	73.03	4.079		
9,000.0	7,756.7	8,991.3	7,883.3	43.1	41.8	115.10	19.4	-1,444.0	298.5	220.9	77.54	3.849		
9,100.0	7,756.2	9,091.2	7,884.0	45.7	44.3	115.31	19.5	-1,544.0	299.1	217.0	82.09	3.643		
9,200.0	7,755.7	9,191.2	7,884.8	48.4	46.9	115.52	19.6	-1,644.0	299.7	213.0	86.68	3.457		
9,300.0	7,755.2	9,291.2	7,885.6	51.0	49.5	115.73	19.7	-1,744.0	300.3	209.0	91.29	3.290		
9,400.0	7,754.8	9,391.2	7,886.4	53.6	52.1	115.94	19.8	-1,844.0	300.9	205.0	95.92	3.137		
9,500.0	7,754.3	9,491.2	7,887.2	56.3	54.8	116.15	19.8	-1,944.0	301.5	201.0	100.56	2.999		
9,600.0	7,753.8	9,591.2	7,888.0	59.0	57.4	116.35	19.9	-2,043.9	302.2	197.0	105.22	2.872		
9,700.0	7,753.4	9,691.2	7,888.8	61.7	60.1	116.56	20.0	-2,143.9	302.8	192.9	109.87	2.756		
9,800.0	7,752.9	9,791.2	7,889.5	64.4	62.8	116.77	20.1	-2,243.9	303.5	188.9	114.54	2.649		
9,900.0	7,752.4	9,891.2	7,890.3	67.1	65.4	116.97	20.2	-2,343.9	304.1	184.9	119.20	2.551		
10,000.0	7,751.9	9,991.2	7,891.1	69.8	68.1	117.17	20.3	-2,443.9	304.7	180.9	123.86	2.460		
10,100.0	7,751.5	10,091.2	7,891.9	72.5	70.9	117.38	20.3	-2,543.9	305.4	176.9	128.52	2.376		
10,200.0	7,751.0	10,191.2	7,892.7	75.3	73.6	117.58	20.4	-2,643.9	306.0	172.9	133.17	2.298		
10,300.0	7,750.5	10,291.2	7,893.5	78.0	76.3	117.78	20.5	-2,743.9	306.7	168.9	137.81	2.226		
10,400.0	7,750.1	10,391.1	7,894.3	80.7	79.0	117.98	20.6	-2,843.9	307.4	164.9	142.45	2.158		
10,500.0	7,749.6	10,491.1	7,895.0	83.5	81.7	118.18	20.7	-2,943.8	308.0	161.0	147.08	2.094		
10,600.0	7,749.1	10,591.1	7,895.8	86.2	84.5	118.38	20.8	-3,043.8	308.7	157.0	151.70	2.035		
10,700.0	7,748.6	10,691.1	7,896.6	89.0	87.2	118.57	20.8	-3,143.8	309.4	153.1	156.31	1.979		
10,800.0	7,748.2	10,791.1	7,897.4	91.7	90.0	118.77	20.9	-3,243.8	310.0	149.1	160.91	1.927		
10,900.0	7,747.7	10,891.1	7,898.2	94.5	92.7	118.97	21.0	-3,343.8	310.7	145.2	165.49	1.878		
11,000.0	7,747.2	10,991.1	7,899.0	97.2	95.5	119.16	21.1	-3,443.8	311.4	141.3	170.07	1.831		
11,100.0	7,746.8	11,091.1	7,899.8	100.0	98.2	119.35	21.2	-3,543.8	312.1	137.5	174.63	1.787		
11,200.0	7,746.3	11,191.1	7,900.5	102.8	101.0	119.55	21.3	-3,643.8	312.8	133.6	179.18	1.746		
11,300.0	7,745.8	11,291.1	7,901.3	105.5	103.7	119.74	21.3	-3,743.8	313.5	129.8	183.72	1.706		
11,400.0	7,745.3	11,391.1	7,902.1	108.3	106.5	119.93	21.4	-3,843.7	314.2	125.9	188.24	1.669		
11,500.0	7,744.9	11,491.1	7,902.9	111.1	109.3	120.12	21.5	-3,943.7	314.9	122.1	192.75	1.634		
11,600.0	7,744.4	11,591.1	7,903.7	113.9	112.0	120.31	21.6	-4,043.7	315.6	118.3	197.24	1.600		
11,700.0	7,743.9	11,691.0	7,904.5	116.6	114.8	120.50	21.7	-4,143.7	316.3	114.6	201.72	1.568		
11,800.0	7,743.5	11,791.0	7,905.2	119.4	117.6	120.69	21.8	-4,243.7	317.0	110.8	206.19	1.537		
11,900.0	7,743.0	11,891.0	7,906.0	122.2	120.3	120.88	21.8	-4,343.7	317.7	107.1	210.64	1.508		
12,000.0	7,742.5	11,991.0	7,906.8	125.0	123.1	121.06	21.9	-4,443.7	318.4	103.4	215.07	1.481 Level 3		
12,100.0	7,742.0	12,091.0	7,907.6	127.7	125.9	121.25	22.0	-4,543.7	319.2	99.7	219.49	1.454 Level 3		
12,200.0	7,741.6	12,191.0	7,908.4	130.5	128.7	121.43	22.1	-4,643.7	319.9	96.0	223.89	1.429 Level 3		
12,300.0	7,741.1	12,291.0	7,909.2	133.3	131.4	121.62	22.2	-4,743.6	320.6	92.3	228.28	1.404 Level 3		
12,400.0	7,740.6	12,391.0	7,910.0	136.1	134.2	121.80	22.3	-4,843.6	321.3	88.7	232.66	1.381 Level 3		
12,500.0	7,740.2	12,491.0	7,910.7	138.9	137.0	121.98	22.3	-4,943.6	322.1	85.1	237.01	1.359 Level 3		
12,533.5	7,740.0	12,523.2	7,911.0	139.8	137.9	122.04	22.4	-4,975.8	322.3	83.9	238.44	1.352 Level 3, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	176.33	-43.7	2.8	43.8				
100.0	100.0	100.0	100.0	0.1	0.1	176.33	-43.7	2.8	43.8	43.6	0.22	194.925	
200.0	200.0	200.0	200.0	0.3	0.3	176.33	-43.7	2.8	43.8	43.1	0.67	64.975 CC, ES	
300.0	300.0	299.2	299.2	0.6	0.5	176.41	-44.6	2.8	44.7	43.6	1.10	40.661	
400.0	400.0	398.4	398.4	0.8	0.7	176.61	-47.2	2.8	47.3	45.7	1.52	31.065	
500.0	500.0	497.5	497.3	1.0	0.9	176.91	-51.4	2.8	51.6	49.6	1.96	26.344	
600.0	600.0	596.3	596.0	1.2	1.2	177.25	-57.4	2.8	57.6	55.2	2.40	23.987	
700.0	700.0	695.0	694.4	1.5	1.4	177.59	-65.1	2.7	65.4	62.5	2.85	22.923	
800.0	800.0	793.3	792.3	1.7	1.7	177.91	-74.4	2.7	74.9	71.6	3.31	22.634	
900.0	900.0	891.3	889.6	1.9	2.0	178.20	-85.4	2.7	86.0	82.3	3.77	22.836	
1,000.0	1,000.0	988.9	986.4	2.1	2.3	178.45	-98.0	2.6	98.9	94.7	4.23	23.366	
1,100.0	1,100.0	1,086.1	1,082.5	2.4	2.6	178.67	-112.1	2.6	113.5	108.8	4.70	24.121	
1,200.0	1,200.0	1,182.7	1,177.9	2.6	2.9	178.85	-127.8	2.6	129.7	124.5	5.18	25.032	
1,300.0	1,300.0	1,278.7	1,272.4	2.8	3.3	179.01	-145.0	2.5	147.6	141.9	5.67	26.055	
1,400.0	1,400.0	1,374.2	1,366.0	3.0	3.7	179.14	-163.6	2.5	167.1	161.0	6.15	27.156	
1,500.0	1,500.0	1,470.7	1,460.4	3.2	4.1	23.16	-183.8	2.4	187.3	180.8	6.49	28.873	
1,600.0	1,600.0	1,569.0	1,556.4	3.4	4.5	23.46	-204.6	2.3	206.1	199.2	6.91	29.825	
1,700.0	1,699.9	1,667.4	1,652.6	3.6	5.0	23.89	-225.4	2.3	223.3	216.0	7.34	30.415	
1,800.0	1,799.7	1,766.2	1,749.1	3.8	5.4	24.42	-246.3	2.2	239.0	231.2	7.78	30.706	
1,884.5	1,884.0	1,849.8	1,830.9	3.9	5.8	24.95	-264.0	2.2	251.0	242.9	8.16	30.755	
1,900.0	1,899.4	1,865.1	1,845.9	4.0	5.9	25.06	-267.2	2.2	253.1	244.9	8.23	30.748	
2,000.0	1,999.0	1,964.1	1,942.6	4.2	6.3	25.74	-288.2	2.1	266.8	258.1	8.69	30.698	
2,100.0	2,098.7	2,063.2	2,039.4	4.4	6.7	26.35	-309.1	2.0	280.4	271.3	9.15	30.636	
2,200.0	2,198.3	2,162.2	2,136.2	4.6	7.2	26.91	-330.0	2.0	294.1	284.5	9.62	30.566	
2,300.0	2,297.9	2,261.2	2,233.0	4.9	7.6	27.41	-351.0	1.9	307.8	297.7	10.10	30.489	
2,400.0	2,397.6	2,360.2	2,329.8	5.1	8.1	27.87	-371.9	1.9	321.5	311.0	10.57	30.409	
2,500.0	2,497.2	2,459.2	2,426.6	5.3	8.5	28.30	-392.9	1.8	335.3	324.2	11.06	30.327	
2,600.0	2,596.9	2,558.3	2,523.3	5.6	9.0	28.69	-413.8	1.8	349.1	337.5	11.54	30.245	
2,700.0	2,696.5	2,657.3	2,620.1	5.8	9.5	29.05	-434.7	1.7	362.8	350.8	12.03	30.162	
2,800.0	2,796.2	2,756.3	2,716.9	6.1	9.9	29.38	-455.7	1.6	376.6	364.1	12.52	30.079	
2,900.0	2,895.8	2,855.3	2,813.7	6.3	10.4	29.69	-476.6	1.6	390.4	377.4	13.02	29.998	
3,000.0	2,995.4	2,954.3	2,910.5	6.6	10.8	29.98	-497.5	1.5	404.3	390.8	13.51	29.919	
3,100.0	3,095.1	3,053.4	3,007.2	6.8	11.3	30.26	-518.5	1.5	418.1	404.1	14.01	29.841	
3,200.0	3,194.7	3,152.4	3,104.0	7.1	11.7	30.51	-539.4	1.4	431.9	417.4	14.51	29.765	
3,300.0	3,294.4	3,251.4	3,200.8	7.4	12.2	30.75	-560.4	1.3	445.8	430.8	15.01	29.691	
3,400.0	3,394.0	3,350.4	3,297.6	7.6	12.6	30.97	-581.3	1.3	459.6	444.1	15.52	29.620	
3,500.0	3,493.6	3,449.5	3,394.4	7.9	13.1	31.18	-602.2	1.2	473.5	457.5	16.02	29.550	
3,600.0	3,593.3	3,548.5	3,491.2	8.1	13.6	31.38	-623.2	1.2	487.3	470.8	16.53	29.483	
3,700.0	3,692.9	3,647.5	3,587.9	8.4	14.0	31.56	-644.1	1.1	501.2	484.2	17.04	29.417	
3,800.0	3,792.6	3,746.5	3,684.7	8.7	14.5	31.74	-665.0	1.0	515.1	497.5	17.55	29.354	
3,900.0	3,892.2	3,845.5	3,781.5	8.9	14.9	31.91	-686.0	1.0	529.0	510.9	18.06	29.293	
4,000.0	3,991.9	3,944.6	3,878.3	9.2	15.4	32.07	-706.9	0.9	542.9	524.3	18.57	29.234	
4,100.0	4,091.5	4,043.6	3,975.1	9.5	15.8	32.22	-727.9	0.9	556.7	537.7	19.08	29.177	
4,200.0	4,191.1	4,142.6	4,071.8	9.7	16.3	32.36	-748.8	0.8	570.6	551.0	19.59	29.122	
4,300.0	4,290.8	4,241.6	4,168.6	10.0	16.7	32.50	-769.7	0.7	584.5	564.4	20.11	29.068	
4,400.0	4,390.4	4,340.6	4,265.4	10.3	17.2	32.63	-790.7	0.7	598.4	577.8	20.62	29.017	
4,500.0	4,490.1	4,439.7	4,362.2	10.5	17.7	32.76	-811.6	0.6	612.3	591.2	21.14	28.967	
4,600.0	4,589.7	4,538.7	4,459.0	10.8	18.1	32.88	-832.5	0.6	626.2	604.6	21.65	28.918	
4,700.0	4,689.4	4,637.7	4,555.8	11.1	18.6	32.99	-853.5	0.5	640.1	618.0	22.17	28.871	
4,768.9	4,758.0	4,705.9	4,622.4	11.3	18.9	33.07	-867.9	0.5	649.7	627.2	22.53	28.840	
4,800.0	4,789.0	4,736.7	4,652.5	11.4	19.0	33.14	-874.4	0.4	654.2	631.5	22.67	28.850	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference													
Offset				Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
4,900.0	4,888.9	4,835.4	4,748.9	11.6	19.5	33.29	-895.3	0.4	670.4	647.3	23.11	29.014	
5,000.0	4,988.8	4,933.5	4,844.9	11.7	19.9	33.32	-916.0	0.3	689.5	666.0	23.50	29.342	
5,011.2	5,000.0	4,944.4	4,855.5	11.8	20.0	-170.58	-918.3	0.3	691.9	660.6	31.28	22.116	
5,100.0	5,088.8	5,031.2	4,940.4	11.9	20.4	-170.82	-936.7	0.3	710.4	678.6	31.86	22.296	
5,200.0	5,188.8	5,129.0	5,035.9	12.1	20.8	-171.08	-957.4	0.2	731.3	698.8	32.50	22.499	
5,300.0	5,288.8	5,226.7	5,131.4	12.3	21.3	-171.32	-978.0	0.1	752.2	719.1	33.15	22.695	
5,400.0	5,388.8	5,324.5	5,227.0	12.5	21.7	-171.56	-998.7	0.1	773.2	739.4	33.79	22.882	
5,500.0	5,488.8	5,422.2	5,322.5	12.6	22.2	-171.78	-1,019.4	0.0	794.1	759.7	34.43	23.062	
5,600.0	5,588.8	5,529.5	5,427.4	12.8	22.6	-172.00	-1,041.8	0.0	814.9	779.8	35.07	23.236	
5,700.0	5,688.8	5,667.2	5,562.9	13.0	23.0	-172.23	-1,066.1	-0.1	832.4	796.7	35.65	23.346	
5,800.0	5,788.8	5,806.9	5,701.5	13.2	23.4	-172.39	-1,084.1	-0.2	845.1	808.9	36.17	23.362	
5,900.0	5,888.8	5,948.1	5,842.2	13.4	23.6	-172.49	-1,095.3	-0.2	853.0	816.4	36.62	23.296	
6,000.0	5,988.8	6,090.1	5,984.1	13.6	23.8	-172.53	-1,099.6	-0.2	856.0	819.0	37.01	23.133	
6,100.0	6,088.8	6,194.8	6,088.8	13.7	23.9	-172.53	-1,099.6	-0.2	856.1	818.7	37.32	22.941	
6,200.0	6,188.8	6,294.8	6,188.8	13.9	24.0	-172.53	-1,099.6	-0.2	856.1	818.5	37.60	22.766	
6,300.0	6,288.8	6,394.8	6,288.8	14.1	24.1	-172.53	-1,099.6	-0.2	856.1	818.2	37.89	22.593	
6,400.0	6,388.8	6,494.8	6,388.8	14.3	24.2	-172.53	-1,099.6	-0.2	856.1	817.9	38.18	22.420	
6,500.0	6,488.8	6,594.8	6,488.8	14.5	24.3	-172.53	-1,099.6	-0.2	856.1	817.6	38.48	22.249	
6,600.0	6,588.8	6,694.8	6,588.8	14.7	24.4	-172.53	-1,099.6	-0.2	856.1	817.3	38.77	22.079	
6,700.0	6,688.8	6,794.8	6,688.8	14.9	24.5	-172.53	-1,099.6	-0.2	856.1	817.0	39.07	21.910	
6,800.0	6,788.8	6,894.8	6,788.8	15.1	24.6	-172.53	-1,099.6	-0.2	856.1	816.7	39.37	21.743	
6,900.0	6,888.8	6,994.8	6,888.8	15.3	24.7	-172.53	-1,099.6	-0.2	856.1	816.4	39.68	21.576	
7,007.6	6,996.4	7,102.4	6,996.4	15.5	24.8	-172.53	-1,099.6	-0.2	856.1	816.1	40.01	21.399	
7,050.0	7,038.8	7,144.8	7,038.8	15.6	24.9	-82.62	-1,099.6	-0.2	855.9	824.1	31.80	26.915	
7,100.0	7,088.6	7,194.6	7,088.6	15.7	24.9	-82.95	-1,099.6	-0.2	855.4	823.4	31.97	26.753	
7,150.0	7,138.0	7,241.8	7,135.9	15.8	25.0	-83.48	-1,099.6	-0.4	854.5	822.3	32.12	26.603	
7,200.0	7,186.8	7,285.7	7,179.7	15.8	25.0	-84.04	-1,099.6	-2.6	853.5	821.3	32.25	26.465	
7,250.0	7,234.8	7,330.0	7,223.7	15.9	25.1	-84.63	-1,099.6	-7.4	852.7	820.3	32.38	26.334	
7,300.0	7,281.7	7,374.6	7,267.7	16.0	25.2	-85.24	-1,099.6	-14.8	851.8	819.3	32.51	26.205	
7,350.0	7,327.5	7,419.8	7,311.7	16.0	25.2	-85.86	-1,099.6	-24.9	851.1	818.5	32.64	26.072	
7,400.0	7,371.8	7,465.4	7,355.5	16.1	25.3	-86.51	-1,099.6	-37.7	850.4	817.6	32.80	25.928	
7,450.0	7,414.5	7,511.5	7,398.9	16.2	25.3	-87.18	-1,099.6	-53.2	849.9	816.9	32.98	25.766	
7,500.0	7,455.4	7,558.1	7,441.7	16.2	25.4	-87.85	-1,099.6	-71.6	849.4	816.2	33.21	25.577	
7,550.0	7,494.4	7,605.3	7,483.9	16.3	25.5	-88.54	-1,099.6	-92.9	849.1	815.6	33.49	25.354	
7,600.0	7,531.2	7,653.1	7,525.1	16.4	25.6	-89.25	-1,099.6	-117.0	848.9	815.0	33.84	25.088	
7,650.0	7,565.8	7,701.6	7,565.3	16.6	25.6	-89.95	-1,099.6	-144.0	848.8	814.5	34.26	24.773	
7,653.3	7,568.0	7,704.8	7,568.0	16.7	25.7	-90.00	-1,099.6	-145.9	848.8	814.5	34.30	24.748	
7,700.0	7,597.8	7,750.7	7,604.3	17.0	25.7	-90.66	-1,099.6	-174.0	848.9	814.1	34.78	24.404	
7,750.0	7,627.4	7,800.5	7,641.7	17.4	25.8	-91.38	-1,099.6	-206.8	849.1	813.6	35.41	23.977	
7,800.0	7,654.2	7,851.1	7,677.4	17.8	26.0	-92.09	-1,099.6	-242.6	849.4	813.2	36.16	23.492	
7,850.0	7,678.2	7,902.4	7,711.1	18.4	26.1	-92.80	-1,099.6	-281.3	849.9	812.8	37.03	22.951	
7,900.0	7,699.3	7,954.5	7,742.7	19.0	26.3	-93.50	-1,099.6	-322.8	850.5	812.4	38.03	22.360	
7,950.0	7,717.4	8,007.5	7,771.8	19.7	26.5	-94.20	-1,099.6	-367.0	851.2	812.0	39.18	21.726	
8,000.0	7,732.3	8,061.2	7,798.1	20.5	26.7	-94.88	-1,099.6	-413.9	852.0	811.6	40.46	21.058	
8,050.0	7,744.2	8,115.9	7,821.4	21.3	27.0	-95.54	-1,099.6	-463.3	852.9	811.1	41.88	20.368	
8,100.0	7,752.8	8,171.4	7,841.4	22.2	27.4	-96.18	-1,099.6	-515.1	853.9	810.5	43.42	19.666	
8,150.0	7,758.2	8,227.8	7,857.8	23.2	27.8	-96.80	-1,099.6	-569.0	855.0	809.9	45.09	18.963	
8,200.0	7,760.3	8,285.0	7,870.3	24.2	28.4	-97.39	-1,099.6	-624.8	856.1	809.3	46.86	18.269	
8,211.2	7,760.4	8,298.0	7,872.6	24.4	28.5	-97.52	-1,099.6	-637.6	856.4	809.1	47.27	18.117	
8,300.0	7,759.9	8,402.6	7,882.8	26.3	29.8	-98.23	-1,099.6	-741.6	857.6	806.7	50.93	16.840	
8,400.0	7,759.5	8,505.6	7,883.5	28.5	31.3	-98.31	-1,099.6	-844.7	857.8	802.6	55.17	15.547	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
Project:	SEC.6-T1S-R67W	TVD Reference:	WELL @ 5083.0ft (RKB - 13')
Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,500.0	7,759.0	8,605.6	7,884.0	30.7	33.1	-98.37	-1,099.6	-944.6	857.9	798.4	59.58	14.399		
8,600.0	7,758.5	8,705.6	7,884.4	33.1	35.0	-98.44	-1,099.6	-1,044.6	858.1	793.9	64.16	13.373		
8,700.0	7,758.1	8,805.6	7,884.9	35.6	37.0	-98.50	-1,099.6	-1,144.6	858.2	789.3	68.89	12.458		
8,800.0	7,757.6	8,905.6	7,885.4	38.1	39.2	-98.56	-1,099.6	-1,244.6	858.4	784.6	73.72	11.643		
8,900.0	7,757.1	9,005.6	7,885.8	40.6	41.5	-98.62	-1,099.6	-1,344.6	858.5	779.8	78.65	10.915		
9,000.0	7,756.7	9,105.6	7,886.3	43.1	43.8	-98.69	-1,099.6	-1,444.6	858.6	775.0	83.65	10.264		
9,100.0	7,756.2	9,205.6	7,886.8	45.7	46.2	-98.75	-1,099.6	-1,544.6	858.8	770.1	88.72	9.680		
9,200.0	7,755.7	9,305.6	7,887.3	48.4	48.7	-98.81	-1,099.6	-1,644.6	858.9	765.1	93.84	9.153		
9,300.0	7,755.2	9,405.6	7,887.7	51.0	51.2	-98.87	-1,099.6	-1,744.6	859.1	760.1	99.00	8.678		
9,400.0	7,754.8	9,505.6	7,888.2	53.6	53.7	-98.93	-1,099.6	-1,844.6	859.2	755.0	104.19	8.246		
9,500.0	7,754.3	9,605.6	7,888.7	56.3	56.2	-99.00	-1,099.6	-1,944.6	859.4	749.9	109.42	7.854		
9,600.0	7,753.8	9,705.6	7,889.1	59.0	58.8	-99.06	-1,099.6	-2,044.6	859.5	744.8	114.67	7.495		
9,700.0	7,753.4	9,805.6	7,889.6	61.7	61.4	-99.12	-1,099.6	-2,144.6	859.7	739.7	119.95	7.167		
9,800.0	7,752.9	9,905.6	7,890.1	64.4	64.0	-99.18	-1,099.6	-2,244.6	859.8	734.6	125.25	6.865		
9,900.0	7,752.4	10,005.6	7,890.6	67.1	66.7	-99.24	-1,099.6	-2,344.6	860.0	729.4	130.56	6.587		
10,000.0	7,751.9	10,105.6	7,891.0	69.8	69.3	-99.31	-1,099.6	-2,444.6	860.1	724.2	135.89	6.330		
10,100.0	7,751.5	10,205.6	7,891.5	72.5	72.0	-99.37	-1,099.6	-2,544.6	860.3	719.0	141.23	6.091		
10,200.0	7,751.0	10,305.6	7,892.0	75.3	74.6	-99.43	-1,099.6	-2,644.6	860.4	713.8	146.58	5.870		
10,300.0	7,750.5	10,405.6	7,892.4	78.0	77.3	-99.49	-1,099.6	-2,744.5	860.6	708.6	151.94	5.664		
10,400.0	7,750.1	10,505.6	7,892.9	80.7	80.0	-99.55	-1,099.6	-2,844.5	860.7	703.4	157.31	5.471		
10,500.0	7,749.6	10,605.6	7,893.4	83.5	82.7	-99.62	-1,099.6	-2,944.5	860.9	698.2	162.69	5.292		
10,600.0	7,749.1	10,705.6	7,893.9	86.2	85.4	-99.68	-1,099.6	-3,044.5	861.0	693.0	168.08	5.123		
10,700.0	7,748.6	10,805.6	7,894.3	89.0	88.1	-99.74	-1,099.6	-3,144.5	861.2	687.7	173.47	4.965		
10,800.0	7,748.2	10,905.6	7,894.8	91.7	90.8	-99.80	-1,099.6	-3,244.5	861.4	682.5	178.86	4.816		
10,900.0	7,747.7	11,005.6	7,895.3	94.5	93.6	-99.86	-1,099.6	-3,344.5	861.5	677.3	184.26	4.676		
11,000.0	7,747.2	11,105.6	7,895.7	97.2	96.3	-99.92	-1,099.6	-3,444.5	861.7	672.0	189.66	4.543		
11,100.0	7,746.8	11,205.6	7,896.2	100.0	99.0	-99.99	-1,099.6	-3,544.5	861.9	666.8	195.07	4.418		
11,200.0	7,746.3	11,305.6	7,896.7	102.8	101.8	-100.05	-1,099.6	-3,644.5	862.0	661.5	200.48	4.300		
11,300.0	7,745.8	11,405.6	7,897.2	105.5	104.5	-100.11	-1,099.6	-3,744.5	862.2	656.3	205.89	4.188		
11,400.0	7,745.3	11,505.6	7,897.6	108.3	107.2	-100.17	-1,099.6	-3,844.5	862.3	651.0	211.31	4.081		
11,500.0	7,744.9	11,605.6	7,898.1	111.1	110.0	-100.23	-1,099.6	-3,944.5	862.5	645.8	216.72	3.980		
11,600.0	7,744.4	11,705.6	7,898.6	113.9	112.7	-100.29	-1,099.6	-4,044.5	862.7	640.5	222.14	3.884		
11,700.0	7,743.9	11,805.6	7,899.0	116.6	115.5	-100.36	-1,099.6	-4,144.5	862.9	635.3	227.56	3.792		
11,800.0	7,743.5	11,905.6	7,899.5	119.4	118.2	-100.42	-1,099.6	-4,244.5	863.0	630.0	232.98	3.704		
11,900.0	7,743.0	12,005.6	7,900.0	122.2	121.0	-100.48	-1,099.6	-4,344.5	863.2	624.8	238.40	3.621		
12,000.0	7,742.5	12,105.6	7,900.5	125.0	123.8	-100.54	-1,099.6	-4,444.5	863.4	619.5	243.82	3.541		
12,100.0	7,742.0	12,205.6	7,900.9	127.7	126.5	-100.60	-1,099.6	-4,544.4	863.5	614.3	249.24	3.465		
12,200.0	7,741.6	12,305.6	7,901.4	130.5	129.3	-100.66	-1,099.6	-4,644.4	863.7	609.1	254.66	3.392		
12,300.0	7,741.1	12,405.4	7,901.9	133.3	132.1	-100.72	-1,099.6	-4,744.4	863.9	603.8	260.08	3.322		
12,400.0	7,740.6	12,505.4	7,902.3	136.1	134.8	-100.79	-1,099.6	-4,844.4	864.1	598.6	265.50	3.254		
12,500.0	7,740.2	12,605.4	7,902.8	138.9	137.6	-100.85	-1,099.6	-4,944.4	864.2	593.3	270.92	3.190		
12,533.5	7,740.0	12,638.9	7,903.0	139.8	138.5	-100.87	-1,099.6	-4,977.9	864.3	591.6	272.73	3.169 SF		

Reference Depths are relative to WELL @ 5083.0ft (RKB - 13')	Coordinates are relative to: Rio-LA 6F-314
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: 0.36°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6F-314
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Reference Site:	Rio-LA 1S67W6E Pad Sec.6-T1S-R67W	MD Reference:	WELL @ 5083.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Rio-LA 6F-314	Survey Calculation Method:	Minimum Curvature
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Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-4-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5083.0ft (RKB - 13')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Rio-LA 6F-314

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.36°

