

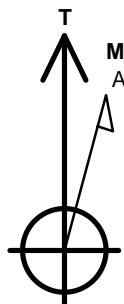
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Rio-LA 6E-234**

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 1242814.39 3156947.14 39.998550 -104.939790
 RKB - 13' WELL @ 5083.0ft (RKB - 13')

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' N Hardline (6E-234)	1.0	269.1	-2814.7	Rectangle (Sides: L4371.1 W0.0)
SHL 654'FNL & 150'FWL, Sec.6	1.0	0.0	0.0	Point
BHL 430'FNL & 500'FWL, Sec.1	7635.0	219.1	-4973.0	Point



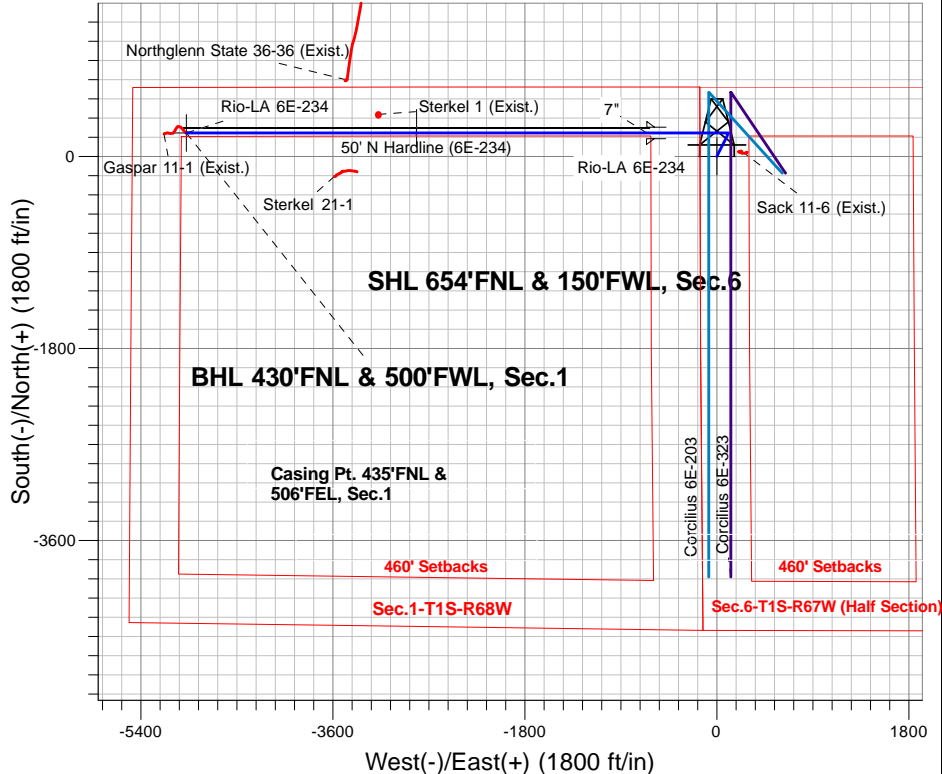
Azimuths to True North
 Magnetic North: 8.37°
 Magnetic Field
 Strength: 52464.4snT
 Dip Angle: 66.56°
 Date: 8/4/2015
 Model: IGRF2010

ANNOTATIONS

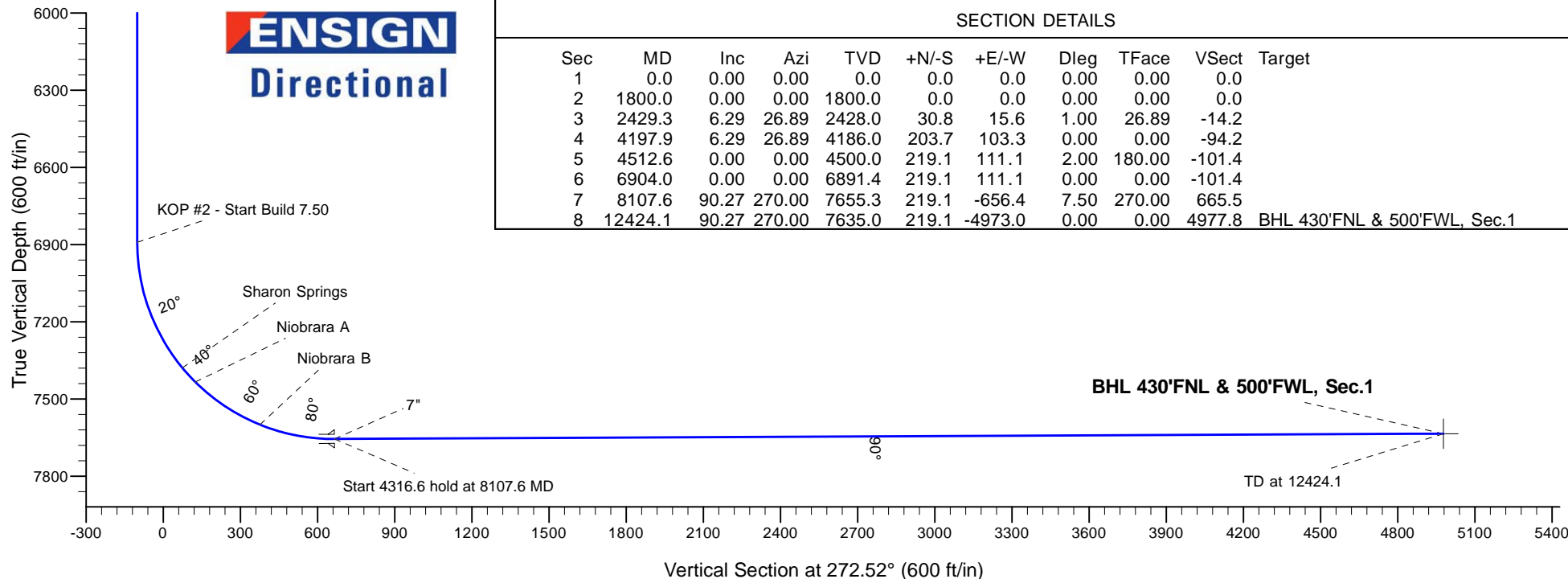
TVD	MD	Annotation
1800.0	1800.0	KOP - Start Build 1.00
4186.0	4197.9	Start Drop -2.00
6891.4	6904.0	KOP #2 - Start Build 7.50
7655.3	8107.6	Start 4316.6 hold at 8107.6 MD
7635.0	12424.1	TD at 12424.1

Rio-LA 1S67W6E Pad Sec.6-T1S-R67W
 Rio-LA 6E-234
 Plan #1 (8-4-15)

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



West(-)/East(+) (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	1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0	
3	2429.3	6.29	26.89	2428.0	30.8	15.6	1.00	26.89	-14.2	
4	4197.9	6.29	26.89	4186.0	203.7	103.3	0.00	0.00	-94.2	
5	4512.6	0.00	0.00	4500.0	219.1	111.1	2.00	180.00	-101.4	
6	6904.0	0.00	0.00	6891.4	219.1	111.1	0.00	0.00	-101.4	
7	8107.6	90.27	270.00	7655.3	219.1	-656.4	7.50	270.00	665.5	
8	12424.1	90.27	270.00	7635.0	219.1	-4973.0	0.00	0.00	4977.8	BHL 430'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 6E-234

Wellbore #1

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

Standard Planning Report

11 August, 2015

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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 6E-234		
Well Position	+N/-S	47.3 ft	Northing:
	+E/-W	-2.8 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	272.52

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	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,429.3	6.29	26.89	2,428.0	30.8	15.6	1.00	1.00	0.00	26.89	
4,197.9	6.29	26.89	4,186.0	203.7	103.3	0.00	0.00	0.00	0.00	
4,512.6	0.00	0.00	4,500.0	219.1	111.1	2.00	-2.00	0.00	180.00	
6,904.0	0.00	0.00	6,891.4	219.1	111.1	0.00	0.00	0.00	0.00	
8,107.6	90.27	270.00	7,655.3	219.1	-656.4	7.50	7.50	0.00	270.00	
12,424.1	90.27	270.00	7,635.0	219.1	-4,973.0	0.00	0.00	0.00	0.00	BHL 430'FNL & 500'F

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.00									
1,900.0	1.00	26.89	1,900.0	0.8	0.4	-0.4	1.00	1.00	0.00
2,000.0	2.00	26.89	2,000.0	3.1	1.6	-1.4	1.00	1.00	0.00
2,100.0	3.00	26.89	2,099.9	7.0	3.6	-3.2	1.00	1.00	0.00
2,200.0	4.00	26.89	2,199.7	12.4	6.3	-5.8	1.00	1.00	0.00
2,300.0	5.00	26.89	2,299.4	19.4	9.9	-9.0	1.00	1.00	0.00
2,400.0	6.00	26.89	2,398.9	28.0	14.2	-13.0	1.00	1.00	0.00
2,429.3	6.29	26.89	2,428.0	30.8	15.6	-14.2	1.00	1.00	0.00
2,500.0	6.29	26.89	2,498.3	37.7	19.1	-17.4	0.00	0.00	0.00
2,600.0	6.29	26.89	2,597.7	47.5	24.1	-22.0	0.00	0.00	0.00
2,700.0	6.29	26.89	2,697.1	57.3	29.0	-26.5	0.00	0.00	0.00
2,800.0	6.29	26.89	2,796.5	67.0	34.0	-31.0	0.00	0.00	0.00
2,900.0	6.29	26.89	2,895.9	76.8	38.9	-35.5	0.00	0.00	0.00
3,000.0	6.29	26.89	2,995.3	86.6	43.9	-40.1	0.00	0.00	0.00
3,100.0	6.29	26.89	3,094.7	96.4	48.9	-44.6	0.00	0.00	0.00
3,200.0	6.29	26.89	3,194.1	106.1	53.8	-49.1	0.00	0.00	0.00
3,300.0	6.29	26.89	3,293.5	115.9	58.8	-53.6	0.00	0.00	0.00
3,400.0	6.29	26.89	3,392.9	125.7	63.7	-58.1	0.00	0.00	0.00
3,500.0	6.29	26.89	3,492.3	135.5	68.7	-62.7	0.00	0.00	0.00
3,600.0	6.29	26.89	3,591.7	145.2	73.7	-67.2	0.00	0.00	0.00
3,700.0	6.29	26.89	3,691.1	155.0	78.6	-71.7	0.00	0.00	0.00
3,800.0	6.29	26.89	3,790.5	164.8	83.6	-76.2	0.00	0.00	0.00
3,900.0	6.29	26.89	3,889.9	174.6	88.5	-80.8	0.00	0.00	0.00
4,000.0	6.29	26.89	3,989.3	184.3	93.5	-85.3	0.00	0.00	0.00
4,100.0	6.29	26.89	4,088.7	194.1	98.4	-89.8	0.00	0.00	0.00
4,197.9	6.29	26.89	4,186.0	203.7	103.3	-94.2	0.00	0.00	0.00
Start Drop -2.00									
4,200.0	6.25	26.89	4,188.1	203.9	103.4	-94.3	1.98	-1.98	0.00
4,300.0	4.25	26.89	4,287.6	212.0	107.5	-98.1	2.00	-2.00	0.00
4,400.0	2.25	26.89	4,387.5	217.1	110.1	-100.4	2.00	-2.00	0.00
4,500.0	0.25	26.89	4,487.4	219.1	111.1	-101.3	2.00	-2.00	0.00
4,512.6	0.00	0.00	4,500.0	219.1	111.1	-101.4	2.00	-2.00	0.00
4,600.0	0.00	0.00	4,587.4	219.1	111.1	-101.4	0.00	0.00	0.00
4,700.0	0.00	0.00	4,687.4	219.1	111.1	-101.4	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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)
4,800.0	0.00	0.00	4,787.4	219.1	111.1	-101.4	0.00	0.00	0.00
4,900.0	0.00	0.00	4,887.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,000.0	0.00	0.00	4,987.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,100.0	0.00	0.00	5,087.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,200.0	0.00	0.00	5,187.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,300.0	0.00	0.00	5,287.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,387.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,500.0	0.00	0.00	5,487.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,587.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,700.0	0.00	0.00	5,687.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,787.4	219.1	111.1	-101.4	0.00	0.00	0.00
5,900.0	0.00	0.00	5,887.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,987.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,100.0	0.00	0.00	6,087.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,200.0	0.00	0.00	6,187.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,300.0	0.00	0.00	6,287.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,400.0	0.00	0.00	6,387.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,500.0	0.00	0.00	6,487.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,600.0	0.00	0.00	6,587.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,700.0	0.00	0.00	6,687.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,800.0	0.00	0.00	6,787.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,900.0	0.00	0.00	6,887.4	219.1	111.1	-101.4	0.00	0.00	0.00
6,904.0	0.00	0.00	6,891.4	219.1	111.1	-101.4	0.00	0.00	0.00
KOP #2 - Start Build 7.50									
7,000.0	7.20	270.00	6,987.2	219.1	105.1	-95.3	7.50	7.50	0.00
7,100.0	14.70	270.00	7,085.3	219.1	86.1	-76.4	7.50	7.50	0.00
7,200.0	22.20	270.00	7,180.1	219.1	54.5	-44.8	7.50	7.50	0.00
7,300.0	29.70	270.00	7,269.9	219.1	10.7	-1.1	7.50	7.50	0.00
7,400.0	37.20	270.00	7,353.3	219.1	-44.4	54.0	7.50	7.50	0.00
7,500.0	44.70	270.00	7,428.8	219.1	-109.9	119.4	7.50	7.50	0.00
7,600.0	52.20	270.00	7,495.1	219.1	-184.7	194.1	7.50	7.50	0.00
7,700.0	59.70	270.00	7,551.0	219.1	-267.4	276.8	7.50	7.50	0.00
7,800.0	67.20	270.00	7,595.7	219.1	-356.8	366.1	7.50	7.50	0.00
7,900.0	74.70	270.00	7,628.3	219.1	-451.3	460.5	7.50	7.50	0.00
8,000.0	82.20	270.00	7,648.3	219.1	-549.2	558.3	7.50	7.50	0.00
8,100.0	89.70	270.00	7,655.3	219.1	-648.9	657.9	7.50	7.50	0.00
8,107.6	90.27	270.00	7,655.3	219.1	-656.5	665.5	7.46	7.46	0.00
Start 4316.6 hold at 8107.6 MD - 7"									
8,200.0	90.27	270.00	7,654.9	219.1	-748.9	757.8	0.00	0.00	0.00
8,300.0	90.27	270.00	7,654.4	219.1	-848.9	857.7	0.00	0.00	0.00
8,400.0	90.27	270.00	7,654.0	219.1	-948.9	957.6	0.00	0.00	0.00
8,500.0	90.27	270.00	7,653.5	219.1	-1,048.9	1,057.5	0.00	0.00	0.00
8,600.0	90.27	270.00	7,653.0	219.1	-1,148.9	1,157.4	0.00	0.00	0.00
8,700.0	90.27	270.00	7,652.5	219.1	-1,248.9	1,257.3	0.00	0.00	0.00
8,800.0	90.27	270.00	7,652.1	219.1	-1,348.9	1,357.2	0.00	0.00	0.00
8,900.0	90.27	270.00	7,651.6	219.1	-1,448.9	1,457.1	0.00	0.00	0.00
9,000.0	90.27	270.00	7,651.1	219.1	-1,548.9	1,557.0	0.00	0.00	0.00
9,100.0	90.27	270.00	7,650.7	219.1	-1,648.9	1,656.9	0.00	0.00	0.00
9,200.0	90.27	270.00	7,650.2	219.1	-1,748.9	1,756.8	0.00	0.00	0.00
9,300.0	90.27	270.00	7,649.7	219.1	-1,848.9	1,856.7	0.00	0.00	0.00
9,400.0	90.27	270.00	7,649.3	219.1	-1,948.9	1,956.6	0.00	0.00	0.00
9,500.0	90.27	270.00	7,648.8	219.1	-2,048.9	2,056.5	0.00	0.00	0.00
9,600.0	90.27	270.00	7,648.3	219.1	-2,148.9	2,156.4	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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	7,647.8	219.1	-2,248.9	2,256.3	0.00	0.00	0.00
9,800.0	90.27	270.00	7,647.4	219.1	-2,348.9	2,356.2	0.00	0.00	0.00
9,900.0	90.27	270.00	7,646.9	219.1	-2,448.9	2,456.1	0.00	0.00	0.00
10,000.0	90.27	270.00	7,646.4	219.1	-2,548.9	2,556.0	0.00	0.00	0.00
10,100.0	90.27	270.00	7,646.0	219.1	-2,648.9	2,655.9	0.00	0.00	0.00
10,200.0	90.27	270.00	7,645.5	219.1	-2,748.9	2,755.8	0.00	0.00	0.00
10,300.0	90.27	270.00	7,645.0	219.1	-2,848.9	2,855.7	0.00	0.00	0.00
10,400.0	90.27	270.00	7,644.5	219.1	-2,948.9	2,955.6	0.00	0.00	0.00
10,500.0	90.27	270.00	7,644.1	219.1	-3,048.9	3,055.5	0.00	0.00	0.00
10,600.0	90.27	270.00	7,643.6	219.1	-3,148.9	3,155.4	0.00	0.00	0.00
10,700.0	90.27	270.00	7,643.1	219.1	-3,248.9	3,255.4	0.00	0.00	0.00
10,800.0	90.27	270.00	7,642.7	219.1	-3,348.9	3,355.3	0.00	0.00	0.00
10,900.0	90.27	270.00	7,642.2	219.1	-3,448.9	3,455.2	0.00	0.00	0.00
11,000.0	90.27	270.00	7,641.7	219.1	-3,548.9	3,555.1	0.00	0.00	0.00
11,100.0	90.27	270.00	7,641.2	219.1	-3,648.9	3,655.0	0.00	0.00	0.00
11,200.0	90.27	270.00	7,640.8	219.1	-3,748.9	3,754.9	0.00	0.00	0.00
11,300.0	90.27	270.00	7,640.3	219.1	-3,848.9	3,854.8	0.00	0.00	0.00
11,400.0	90.27	270.00	7,639.8	219.1	-3,948.8	3,954.7	0.00	0.00	0.00
11,500.0	90.27	270.00	7,639.4	219.1	-4,048.8	4,054.6	0.00	0.00	0.00
11,600.0	90.27	270.00	7,638.9	219.1	-4,148.8	4,154.5	0.00	0.00	0.00
11,700.0	90.27	270.00	7,638.4	219.1	-4,248.8	4,254.4	0.00	0.00	0.00
11,800.0	90.27	270.00	7,637.9	219.1	-4,348.8	4,354.3	0.00	0.00	0.00
11,900.0	90.27	270.00	7,637.5	219.1	-4,448.8	4,454.2	0.00	0.00	0.00
12,000.0	90.27	270.00	7,637.0	219.1	-4,548.8	4,554.1	0.00	0.00	0.00
12,100.0	90.27	270.00	7,636.5	219.1	-4,648.8	4,654.0	0.00	0.00	0.00
12,200.0	90.27	270.00	7,636.1	219.1	-4,748.8	4,753.9	0.00	0.00	0.00
12,300.0	90.27	270.00	7,635.6	219.1	-4,848.8	4,853.8	0.00	0.00	0.00
12,400.0	90.27	270.00	7,635.1	219.1	-4,948.8	4,953.7	0.00	0.00	0.00
12,424.1	90.27	270.00	7,635.0	219.1	-4,972.9	4,977.8	0.00	0.00	0.00
TD at 12424.1									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 654'FNL & 150'FWL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,242,814.40	3,156,947.14	39.998550	-104.939790
50' N Hardline (6E-234) - plan misses target center by 2827.5ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E) - Rectangle (sides W0.0 H4,371.1 D0.0)	0.00	0.00	1.0	269.1	-2,814.7	1,243,065.69	3,154,130.89	39.999288	-104.949837
BHL 430'FNL & 500'FWL - plan hits target center - Point	0.00	0.00	7,635.0	219.1	-4,973.0	1,243,002.04	3,151,973.06	39.999150	-104.957540

Database:	US_EDM	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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 (")
8,107.6	7,655.3	7"	7	8-3/4

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,442.5	4,430.0	Parkman		0.00	
4,812.6	4,800.0	Sussex		0.00	
5,392.6	5,380.0	Shannon		0.00	
7,432.8	7,379.0	Sharon Springs		0.00	
7,507.4	7,434.0	Niobrara A		0.00	
7,811.4	7,600.0	Niobrara B		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,800.0	1,800.0	0.0	0.0	KOP - Start Build 1.00
4,197.9	4,186.0	203.7	103.3	Start Drop -2.00
6,904.0	6,891.4	219.1	111.1	KOP #2 - Start Build 7.50
8,107.6	7,655.3	219.1	-656.5	Start 4316.6 hold at 8107.6 MD
12,424.1	7,635.0	219.1	-4,972.9	TD at 12424.1



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.6-T1S-R67W

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

Rio-LA 6E-234

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 6E-234
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 6E-234	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	8/10/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,424.1	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)	7,500.0	7,699.5	110.0	76.9	3.321	SF
Corcilus 6E-203 - Wellbore #1 - Plan #1 (4-29-15)	7,539.0	7,717.0	103.2	72.5	3.358	CC, ES
Corcilus 6E-323 - Wellbore #1 - Plan #1 (4-29-15)	4,390.7	4,417.7	239.7	214.3	9.443	CC
Corcilus 6E-323 - Wellbore #1 - Plan #1 (4-29-15)	4,400.0	4,426.9	239.7	214.3	9.428	ES
Corcilus 6E-323 - Wellbore #1 - Plan #1 (4-29-15)	7,350.0	7,597.4	300.6	265.6	8.596	SF
Existing Pad Sec.12-T1S-R68W						
Gaspar 11-1 (Exist.) - Wellbore #1 - Wellbore #1	12,424.1	7,637.2	185.6	147.2	4.833	CC, ES, SF
Sterkel 1 (Exist.) - Wellbore #1 - Wellbore #1						Out of range
Sterkel 21-1 - Wellbore #1 - Wellbore #1	11,018.0	7,637.4	398.2	278.1	3.316	CC, ES, SF
Existing Wells Sec.6-T1S-R67W						
Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	3,386.3	3,364.4	196.0	179.7	12.036	CC
Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	6,904.0	6,875.8	199.4	168.7	6.503	ES
Sack 11-6 (Exist.) - Wellbore #1 - Wellbore #1	6,950.0	6,921.8	200.2	169.2	6.455	SF
Northglenn State 19-36 Pad Sec.36-T1N-R68W						
Northglenn State 36-36 (Exist.) - Wellbore #1 - Wellbore	10,936.0	7,781.3	491.5	374.8	4.213	CC, ES
Northglenn State 36-36 (Exist.) - Wellbore #1 - Wellbore	11,000.0	7,781.6	495.6	377.2	4.185	SF
Rio-LA 1S67W6E Pad Sec.6-T1S-R67W						
Rio-LA 6E-304 - Wellbore #1 - Plan #1 (8-4-15)	1,000.0	1,000.0	14.8	10.6	3.475	CC, ES
Rio-LA 6E-304 - Wellbore #1 - Plan #1 (8-4-15)	12,424.1	12,277.5	354.7	92.0	1.350	Level 3, SF
Rio-LA 6F-204 - Wellbore #1 - Plan #1 (8-4-15)	800.0	800.0	47.4	44.1	14.070	CC, ES
Rio-LA 6F-204 - Wellbore #1 - Plan #1 (8-4-15)	12,424.1	12,444.7	768.6	489.2	2.751	SF
Rio-LA 6F-314 - Wellbore #1 - Plan #1 (8-4-15)	1,400.0	1,400.0	32.9	26.8	5.422	CC, ES
Rio-LA 6F-314 - Wellbore #1 - Plan #1 (8-4-15)	12,424.1	12,531.1	513.6	239.5	1.874	SF
Rio-LA 6F-334 - Wellbore #1 - Plan #1 (8-4-15)	400.0	400.0	62.2	60.6	39.524	CC, ES
Rio-LA 6F-334 - Wellbore #1 - Plan #1 (8-4-15)	1,000.0	991.5	93.2	89.0	22.476	SF
Rio-LA 6F-414 - Wellbore #1 - Plan #1 (8-4-15)	1,800.0	1,800.0	14.6	6.7	1.852	CC, ES
Rio-LA 6F-414 - Wellbore #1 - Plan #1 (8-4-15)	1,900.0	1,900.0	15.4	7.0	1.847	SF
Rio-LA 6F-434 - Wellbore #1 - Plan #1 (8-4-15)	200.0	200.0	76.7	76.0	113.768	CC, ES
Rio-LA 6F-434 - Wellbore #1 - Plan #1 (8-4-15)	1,100.0	1,081.1	145.9	141.2	30.897	SF

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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	104.32	-156.6	613.6	633.3				
100.0	100.0	91.0	91.0	0.1	0.1	104.32	-156.6	613.6	633.3	633.0	0.21	2,949.896	
200.0	200.0	191.0	191.0	0.3	0.3	104.32	-156.6	613.6	633.3	632.6	0.65	968.174	
300.0	300.0	305.6	305.6	0.6	0.6	104.25	-155.6	612.6	632.2	631.1	1.13	557.643	
400.0	400.0	421.4	421.3	0.8	0.8	104.00	-151.9	609.3	628.6	627.0	1.62	387.561	
500.0	500.0	536.8	536.4	1.0	1.1	103.57	-145.6	603.6	622.6	620.5	2.12	293.135	
600.0	600.0	651.7	650.6	1.2	1.4	102.94	-136.9	595.6	614.1	611.4	2.65	231.935	
700.0	700.0	765.7	763.6	1.5	1.8	102.12	-125.7	585.5	603.2	600.0	3.20	188.495	
800.0	800.0	878.7	875.1	1.7	2.2	101.07	-112.1	573.1	590.0	586.2	3.79	155.847	
900.0	900.0	977.2	972.1	1.9	2.5	100.02	-99.2	561.4	575.9	571.5	4.35	132.275	
1,000.0	1,000.0	1,075.6	1,068.9	2.1	2.9	98.93	-86.3	549.7	561.9	557.0	4.93	113.942	
1,100.0	1,100.0	1,174.0	1,165.8	2.4	3.3	97.77	-73.4	538.0	548.1	542.6	5.52	99.322	
1,200.0	1,200.0	1,272.4	1,262.7	2.6	3.6	96.56	-60.6	526.3	534.6	528.5	6.11	87.439	
1,300.0	1,300.0	1,370.9	1,359.5	2.8	4.0	95.29	-47.7	514.6	521.3	514.6	6.72	77.622	
1,400.0	1,400.0	1,469.3	1,456.4	3.0	4.4	93.96	-34.8	502.9	508.3	501.0	7.32	69.400	
1,500.0	1,500.0	1,567.7	1,553.3	3.3	4.8	92.55	-21.9	491.2	495.6	487.7	7.94	62.433	
1,600.0	1,600.0	1,666.1	1,650.1	3.5	5.2	91.07	-9.0	479.5	483.2	474.6	8.56	56.470	
1,700.0	1,700.0	1,764.6	1,747.0	3.7	5.6	89.52	3.9	467.8	471.1	462.0	9.18	51.324	
1,800.0	1,800.0	1,863.0	1,843.9	3.9	6.0	87.89	16.8	456.1	459.4	449.6	9.81	46.851	
1,900.0	1,900.0	1,961.4	1,940.8	4.2	6.4	85.48	29.7	444.4	447.7	437.8	9.84	45.495	
2,000.0	2,000.0	2,060.0	2,037.8	4.4	6.8	83.08	42.6	432.6	435.4	424.9	10.44	41.702	
2,100.0	2,099.9	2,158.6	2,134.8	4.6	7.1	80.78	55.5	420.9	422.5	411.4	11.04	38.260	
2,200.0	2,199.7	2,257.2	2,231.9	4.8	7.5	78.60	68.4	409.2	408.8	397.2	11.64	35.111	
2,300.0	2,299.4	2,355.8	2,329.0	5.1	7.9	76.54	81.3	397.4	394.4	382.1	12.25	32.206	
2,400.0	2,398.9	2,454.4	2,426.0	5.3	8.3	74.61	94.2	385.7	379.1	366.3	12.85	29.507	
2,429.3	2,428.0	2,483.3	2,454.4	5.4	8.4	73.37	98.0	382.3	374.5	361.4	13.02	28.751	
2,500.0	2,498.3	2,552.9	2,523.0	5.5	8.7	72.67	107.1	374.0	363.2	349.7	13.46	26.972	
2,600.0	2,597.7	2,651.5	2,619.9	5.8	9.1	71.61	120.0	362.3	347.3	333.2	14.10	24.638	
2,700.0	2,697.1	2,750.0	2,716.9	6.0	9.5	70.46	132.9	350.6	331.6	316.8	14.74	22.497	
2,800.0	2,796.5	2,848.5	2,813.9	6.3	9.9	69.18	145.9	338.8	316.0	300.6	15.39	20.531	
2,900.0	2,895.9	2,947.0	2,910.8	6.5	10.3	67.78	158.8	327.1	300.6	284.5	16.05	18.724	
3,000.0	2,995.3	3,045.5	3,007.8	6.8	10.7	66.23	171.7	315.4	285.3	268.6	16.72	17.062	
3,100.0	3,094.7	3,144.1	3,104.8	7.1	11.1	64.50	184.6	303.7	270.3	252.9	17.40	15.533	
3,200.0	3,194.1	3,242.6	3,201.7	7.3	11.5	62.58	197.5	292.0	255.6	237.5	18.09	14.127	
3,300.0	3,293.5	3,341.1	3,298.7	7.6	11.9	60.42	210.4	280.2	241.2	222.4	18.79	12.836	
3,400.0	3,392.9	3,439.6	3,395.7	7.9	12.3	58.00	223.3	268.5	227.2	207.7	19.49	11.653	
3,500.0	3,492.3	3,538.1	3,492.6	8.2	12.7	55.27	236.2	256.8	213.6	193.4	20.20	10.574	
3,600.0	3,591.7	3,636.7	3,589.6	8.4	13.0	52.18	249.1	245.1	200.6	179.7	20.90	9.595	
3,700.0	3,691.1	3,735.2	3,686.6	8.7	13.4	48.68	262.0	233.4	188.2	166.6	21.60	8.714	
3,800.0	3,790.5	3,833.7	3,783.5	9.0	13.8	44.71	274.9	221.7	176.6	154.3	22.27	7.930	
3,900.0	3,889.9	3,932.2	3,880.5	9.3	14.2	40.22	287.8	209.9	166.0	143.1	22.91	7.246	
4,000.0	3,989.3	4,030.7	3,977.4	9.5	14.6	35.16	300.7	198.2	156.6	133.1	23.50	6.662	
4,100.0	4,088.7	4,129.3	4,074.4	9.8	15.0	29.52	313.6	186.5	148.5	124.5	24.02	6.183	
4,197.9	4,186.0	4,225.7	4,169.4	10.1	15.4	23.45	326.2	175.0	142.2	117.8	24.43	5.820	
4,200.0	4,188.1	4,227.8	4,171.4	10.1	15.4	17.32	326.5	174.8	142.1	117.6	24.44	5.813	
4,300.0	4,287.6	4,326.4	4,268.4	10.3	15.8	-3.33	339.4	163.1	139.3	114.6	24.74	5.631	
4,301.0	4,288.6	4,327.3	4,269.3	10.3	15.8	-3.39	339.5	162.9	139.3	114.6	24.74	5.630	
4,400.0	4,387.5	4,425.0	4,365.5	10.5	16.2	-9.91	352.3	151.3	141.9	117.0	24.91	5.699	
4,500.0	4,487.4	4,523.5	4,462.4	10.7	16.6	-15.84	365.2	139.6	149.8	124.8	25.00	5.992	
4,512.6	4,500.0	4,535.9	4,474.6	10.7	16.7	-10.37	366.8	138.1	151.1	127.2	23.92	6.318	
4,600.0	4,587.4	4,621.9	4,559.3	10.9	17.0	6.03	378.1	127.9	161.1	136.3	24.74	6.510	

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 6E-234
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 6E-234	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					
4,700.0	4,687.4	4,720.4	4,656.2	11.1	17.4	1.70	391.0	116.2	173.4	147.8	25.66	6.760					
4,800.0	4,787.4	4,818.8	4,753.1	11.3	17.8	-2.05	403.9	104.5	186.7	160.1	26.53	7.036					
4,900.0	4,887.4	4,917.2	4,849.9	11.5	18.2	-5.30	416.8	92.8	200.6	173.2	27.36	7.331					
5,000.0	4,987.4	5,015.6	4,946.8	11.7	18.6	-8.12	429.7	81.1	215.1	186.9	28.16	7.637					
5,100.0	5,087.4	5,114.0	5,043.7	11.9	19.0	-10.58	442.6	69.4	230.0	201.1	28.93	7.950					
5,200.0	5,187.4	5,212.5	5,140.5	12.1	19.4	-12.74	455.4	57.7	245.3	215.6	29.67	8.266					
5,300.0	5,287.4	5,310.9	5,237.4	12.3	19.8	-14.65	468.3	45.9	260.9	230.5	30.40	8.582					
5,400.0	5,387.4	5,409.3	5,334.3	12.5	20.2	-16.34	481.2	34.2	276.7	245.6	31.11	8.895					
5,500.0	5,487.4	5,507.7	5,431.1	12.7	20.5	-17.85	494.1	22.5	292.8	261.0	31.81	9.206					
5,600.0	5,587.4	5,606.2	5,528.0	12.9	20.9	-19.20	507.0	10.8	309.0	276.5	32.49	9.511					
5,700.0	5,687.4	5,704.6	5,624.9	13.2	21.3	-20.42	519.9	-0.9	325.4	292.3	33.17	9.812					
5,800.0	5,787.4	5,803.0	5,721.8	13.4	21.7	-21.52	532.8	-12.6	341.9	308.1	33.83	10.106					
5,900.0	5,887.4	5,901.4	5,818.6	13.6	22.1	-22.52	545.7	-24.3	358.6	324.1	34.50	10.394					
6,000.0	5,987.4	5,999.8	5,915.5	13.8	22.5	-23.43	558.6	-36.0	375.3	340.1	35.15	10.676					
6,100.0	6,087.4	6,101.2	6,015.3	14.0	22.9	-24.28	571.8	-48.0	392.0	356.2	35.81	10.948					
6,200.0	6,187.4	6,215.2	6,128.0	14.2	23.2	-25.03	584.4	-59.5	406.3	369.9	36.39	11.167					
6,300.0	6,287.4	6,330.5	6,242.6	14.4	23.5	-25.54	593.8	-68.0	416.8	379.9	36.90	11.295					
6,400.0	6,387.4	6,446.6	6,358.4	14.6	23.7	-25.86	599.8	-73.4	423.5	386.2	37.36	11.337					
6,500.0	6,487.4	6,563.1	6,474.9	14.9	23.9	-25.99	602.3	-75.7	426.3	388.6	37.75	11.292					
6,600.0	6,587.4	6,666.7	6,578.4	15.1	24.0	-25.99	602.3	-75.8	426.4	388.3	38.11	11.190					
6,700.0	6,687.4	6,766.7	6,678.4	15.3	24.1	-25.99	602.3	-75.8	426.4	387.9	38.46	11.087					
6,800.0	6,787.4	6,866.7	6,778.4	15.5	24.3	-25.99	602.3	-75.8	426.4	387.6	38.81	10.986					
6,904.0	6,891.4	6,971.7	6,883.4	15.7	24.4	-25.99	602.3	-75.8	426.4	387.2	39.18	10.882					
6,950.0	6,937.4	7,063.6	6,975.1	15.8	24.5	64.22	596.6	-75.8	423.2	389.8	33.41	12.668					
7,000.0	6,987.2	7,159.9	7,069.7	15.9	24.4	64.97	578.8	-75.8	412.9	379.1	33.73	12.240					
7,050.0	7,036.6	7,249.7	7,155.2	16.0	24.3	66.36	551.6	-75.8	395.9	361.9	34.08	11.618					
7,100.0	7,085.3	7,331.2	7,229.6	16.0	24.1	68.54	518.4	-75.8	373.2	338.7	34.48	10.822					
7,150.0	7,133.2	7,403.4	7,292.2	16.1	23.9	71.76	482.5	-75.8	345.5	310.5	34.99	9.875					
7,200.0	7,180.1	7,466.6	7,344.0	16.2	23.7	76.34	446.3	-75.8	313.9	278.2	35.63	8.808					
7,250.0	7,225.7	7,521.4	7,386.4	16.2	23.6	82.75	411.6	-75.8	279.1	242.7	36.42	7.663					
7,300.0	7,269.9	7,568.5	7,420.8	16.3	23.4	91.46	379.4	-75.8	242.3	205.1	37.26	6.504					
7,350.0	7,312.5	7,609.1	7,448.7	16.4	23.2	102.79	350.0	-75.8	204.6	166.8	37.80	5.412					
7,400.0	7,353.3	7,643.9	7,471.4	16.5	23.1	116.39	323.6	-75.8	167.6	130.1	37.46	4.473					
7,450.0	7,392.1	7,673.8	7,490.0	16.6	23.0	130.86	300.2	-75.8	134.1	98.3	35.81	3.746					
7,500.0	7,428.8	7,699.5	7,505.2	16.9	22.9	144.39	279.4	-75.8	110.0	76.9	33.11	3.321 SF					
7,539.0	7,455.8	7,717.0	7,515.1	17.1	22.8	153.55	265.0	-75.8	103.2	72.5	30.73	3.358 CC, ES					
7,550.0	7,463.2	7,721.5	7,517.6	17.2	22.8	155.88	261.3	-75.8	103.8	73.7	30.07	3.450					
7,600.0	7,495.1	7,740.4	7,527.9	17.5	22.7	165.22	245.4	-75.8	119.6	92.3	27.24	4.390					
7,650.0	7,524.4	7,756.6	7,536.3	17.9	22.7	172.90	231.7	-75.8	151.4	126.5	24.83	6.095					
7,700.0	7,551.0	7,770.3	7,543.3	18.4	22.6	179.56	219.8	-75.8	191.7	168.7	22.96	8.347					
7,750.0	7,574.8	7,781.9	7,549.0	19.0	22.6	-174.09	209.7	-75.8	236.4	214.6	21.79	10.850					
7,800.0	7,595.7	7,791.5	7,553.6	19.6	22.5	-167.21	201.3	-75.8	283.6	261.9	21.72	13.058					
7,850.0	7,613.5	7,800.0	7,557.6	20.3	22.5	-158.02	193.8	-75.8	332.1	308.4	23.71	14.004					
7,900.0	7,628.3	7,805.8	7,560.3	21.1	22.5	-144.20	188.7	-75.8	381.4	352.2	29.12	13.094					
7,950.0	7,639.9	7,810.6	7,562.5	21.9	22.5	-117.28	184.4	-75.8	431.0	391.6	39.40	10.939					
8,000.0	7,648.3	7,814.1	7,564.0	22.8	22.5	-74.73	181.3	-75.8	480.9	438.8	42.08	11.427					
8,050.0	7,653.4	7,816.1	7,565.0	23.7	22.4	-43.10	179.4	-75.8	530.7	499.2	31.44	16.880					
8,100.0	7,655.3	7,816.9	7,565.3	24.7	22.4	-27.31	178.8	-75.8	580.2	556.8	23.42	24.770					
8,107.6	7,655.3	7,816.9	7,565.3	24.8	22.4	-25.70	178.8	-75.8	587.7	565.1	22.58	26.027					
8,200.0	7,654.9	7,816.7	7,565.2	26.7	22.4	-25.59	178.9	-75.8	679.1	655.6	23.50	28.903					
8,300.0	7,654.4	7,816.5	7,565.1	28.9	22.4	-25.47	179.1	-75.8	778.3	753.8	24.54	31.717					

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 6E-234
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 6E-234	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-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	7,654.0	7,816.3	7,565.1	31.2	22.4	-25.36	179.3	-75.8	877.7	852.1	25.62	34.256		
8,500.0	7,653.5	7,816.1	7,565.0	33.6	22.4	-25.24	179.4	-75.8	977.2	950.4	26.73	36.555		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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-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
0.0	0.0	0.0	0.0	0.0	0.0	103.66	-156.6	644.4	663.2				
100.0	100.0	91.0	91.0	0.1	0.1	103.66	-156.6	644.4	663.2	662.9	0.21	3,089.202	
200.0	200.0	191.0	191.0	0.3	0.3	103.66	-156.6	644.4	663.2	662.5	0.65	1,013.895	
300.0	300.0	291.0	291.0	0.6	0.5	103.66	-156.6	644.4	663.2	662.1	1.10	600.903	
400.0	400.0	391.0	391.0	0.8	0.8	103.66	-156.6	644.4	663.2	661.6	1.55	426.980	
500.0	500.0	504.4	504.4	1.0	1.0	103.58	-155.5	643.6	662.2	660.2	2.03	326.180	
600.0	600.0	618.9	618.8	1.2	1.3	103.30	-151.4	640.9	659.1	656.6	2.51	262.341	
700.0	700.0	733.1	732.6	1.5	1.5	102.81	-144.6	636.3	653.8	650.8	3.01	217.542	
800.0	800.0	846.6	845.6	1.7	1.8	102.10	-135.0	629.8	646.4	642.9	3.52	183.748	
900.0	900.0	959.4	957.4	1.9	2.2	101.17	-122.8	621.5	637.0	632.9	4.06	156.982	
1,000.0	1,000.0	1,071.1	1,067.7	2.1	2.5	100.01	-107.9	611.4	625.6	621.0	4.63	135.084	
1,100.0	1,100.0	1,172.0	1,166.9	2.4	2.9	98.78	-92.9	601.3	613.1	607.9	5.20	117.864	
1,200.0	1,200.0	1,270.3	1,263.6	2.6	3.2	97.54	-78.2	591.3	600.9	595.1	5.78	103.962	
1,300.0	1,300.0	1,368.7	1,360.4	2.8	3.6	96.24	-63.5	581.4	589.0	582.6	6.37	92.474	
1,400.0	1,400.0	1,467.0	1,457.1	3.0	4.0	94.89	-48.9	571.5	577.4	570.4	6.97	82.874	
1,500.0	1,500.0	1,565.4	1,553.9	3.3	4.3	93.48	-34.2	561.5	566.1	558.5	7.57	74.768	
1,600.0	1,600.0	1,663.8	1,650.6	3.5	4.7	92.02	-19.5	551.6	555.2	547.0	8.18	67.860	
1,700.0	1,700.0	1,762.1	1,747.4	3.7	5.1	90.51	-4.8	541.7	544.6	535.8	8.79	61.924	
1,800.0	1,800.0	1,860.5	1,844.1	3.9	5.5	88.93	9.9	531.7	534.5	525.0	9.41	56.786	
1,900.0	1,900.0	1,958.9	1,940.9	4.2	5.9	60.58	24.6	521.8	524.3	514.6	9.66	54.271	
2,000.0	2,000.0	2,057.5	2,037.9	4.4	6.3	59.22	39.3	511.8	513.7	503.4	10.26	50.053	
2,100.0	2,099.9	2,156.1	2,134.9	4.6	6.7	57.97	54.1	501.9	502.5	491.6	10.87	46.239	
2,200.0	2,199.7	2,254.8	2,232.0	4.8	7.1	56.84	68.8	491.9	490.6	479.1	11.47	42.761	
2,300.0	2,299.4	2,353.6	2,329.1	5.1	7.5	55.81	83.5	481.9	477.9	465.9	12.08	39.565	
2,400.0	2,398.9	2,452.3	2,426.2	5.3	7.8	54.91	98.3	471.9	464.5	451.8	12.69	36.607	
2,429.3	2,428.0	2,481.2	2,454.7	5.4	8.0	54.67	102.6	469.0	460.4	447.6	12.87	35.780	
2,500.0	2,498.3	2,551.1	2,523.4	5.5	8.2	54.01	113.0	462.0	450.5	437.2	13.31	33.841	
2,600.0	2,597.7	2,649.8	2,620.5	5.8	8.6	53.01	127.8	452.0	436.5	422.6	13.95	31.301	
2,700.0	2,697.1	2,748.5	2,717.6	6.0	9.0	51.96	142.5	442.0	422.7	408.1	14.59	28.976	
2,800.0	2,796.5	2,847.2	2,814.7	6.3	9.4	50.83	157.3	432.0	409.0	393.8	15.24	26.845	
2,900.0	2,895.9	2,946.0	2,911.8	6.5	9.8	49.63	172.0	422.1	395.5	379.6	15.89	24.889	
3,000.0	2,995.3	3,044.7	3,008.9	6.8	10.2	48.34	186.8	412.1	382.2	365.7	16.55	23.092	
3,100.0	3,094.7	3,143.4	3,106.0	7.1	10.6	46.96	201.5	402.1	369.1	351.9	17.22	21.438	
3,200.0	3,194.1	3,242.1	3,203.1	7.3	11.0	45.48	216.2	392.1	356.2	338.3	17.89	19.916	
3,300.0	3,293.5	3,340.9	3,300.2	7.6	11.4	43.89	231.0	382.2	343.6	325.0	18.56	18.514	
3,400.0	3,392.9	3,439.6	3,397.3	7.9	11.8	42.19	245.7	372.2	331.3	312.0	19.23	17.223	
3,500.0	3,492.3	3,538.3	3,494.5	8.2	12.2	40.35	260.5	362.2	319.2	299.3	19.91	16.036	
3,600.0	3,591.7	3,637.1	3,591.6	8.4	12.6	38.38	275.2	352.2	307.5	287.0	20.58	14.945	
3,700.0	3,691.1	3,735.8	3,688.7	8.7	13.0	36.25	290.0	342.3	296.2	275.0	21.25	13.944	
3,800.0	3,790.5	3,834.5	3,785.8	9.0	13.4	33.96	304.7	332.3	285.4	263.5	21.91	13.028	
3,900.0	3,889.9	3,933.2	3,882.9	9.3	13.8	31.50	319.5	322.3	275.0	252.5	22.56	12.194	
4,000.0	3,989.3	4,032.0	3,980.0	9.5	14.2	28.85	334.2	312.3	265.2	242.0	23.19	11.437	
4,100.0	4,088.7	4,130.7	4,077.1	9.8	14.6	26.01	348.9	302.4	256.0	232.2	23.81	10.754	
4,197.9	4,186.0	4,227.4	4,172.2	10.1	15.0	23.03	363.4	292.6	247.7	223.3	24.39	10.156	
4,200.0	4,188.1	4,229.4	4,174.2	10.1	15.0	22.97	363.7	292.4	247.5	223.1	24.40	10.144	
4,300.0	4,287.6	4,328.2	4,271.3	10.3	15.4	19.54	378.4	282.4	241.5	216.5	24.95	9.679	
4,390.7	4,378.2	4,417.7	4,359.4	10.5	15.8	16.13	391.8	273.4	239.7	214.3	25.38	9.443 CC	
4,400.0	4,387.5	4,426.9	4,368.4	10.5	15.8	15.77	393.2	272.4	239.7	214.3	25.42	9.428 ES	
4,500.0	4,487.4	4,525.4	4,465.3	10.7	16.2	11.83	407.9	262.5	242.4	216.6	25.82	9.389	
4,512.6	4,500.0	4,537.7	4,477.5	10.7	16.2	38.22	409.7	261.2	243.0	220.8	22.23	10.933	
4,600.0	4,587.4	4,623.7	4,562.1	10.9	16.6	34.80	422.6	252.5	248.4	225.5	22.85	10.868	

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 6E-234
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 6E-234	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	
4,700.0	4,687.4	4,722.1	4,658.8	11.1	17.0	31.08	437.3	242.6	255.5	231.9	23.61	10.820		
4,800.0	4,787.4	4,820.5	4,755.6	11.3	17.4	27.56	451.9	232.7	263.7	239.3	24.40	10.808		
4,900.0	4,887.4	4,918.8	4,852.3	11.5	17.8	24.27	466.6	222.7	272.8	247.6	25.19	10.830		
5,000.0	4,987.4	5,017.2	4,949.1	11.7	18.2	21.19	481.3	212.8	282.8	256.8	25.99	10.881		
5,100.0	5,087.4	5,115.5	5,045.8	11.9	18.6	18.33	496.0	202.8	293.6	266.8	26.79	10.958		
5,200.0	5,187.4	5,213.9	5,142.6	12.1	19.0	15.67	510.7	192.9	305.0	277.4	27.58	11.058		
5,300.0	5,287.4	5,312.3	5,239.3	12.3	19.4	13.20	525.4	183.0	317.1	288.7	28.37	11.177		
5,400.0	5,387.4	5,410.6	5,336.1	12.5	19.8	10.92	540.1	173.0	329.7	300.5	29.14	11.312		
5,500.0	5,487.4	5,509.0	5,432.8	12.7	20.2	8.80	554.8	163.1	342.7	312.8	29.91	11.460		
5,600.0	5,587.4	5,612.2	5,534.5	12.9	20.6	6.80	569.8	152.9	355.9	325.3	30.66	11.610		
5,700.0	5,687.4	5,721.8	5,642.9	13.2	20.9	5.18	582.8	144.1	367.0	335.7	31.31	11.720		
5,800.0	5,787.4	5,832.5	5,753.0	13.4	21.1	4.05	592.5	137.6	375.2	343.4	31.88	11.769		
5,900.0	5,887.4	5,943.9	5,864.1	13.6	21.3	3.36	598.7	133.4	380.5	348.2	32.37	11.754		
6,000.0	5,987.4	6,055.7	5,975.9	13.8	21.5	3.08	601.3	131.6	382.7	350.0	32.78	11.675		
6,100.0	6,087.4	6,158.3	6,078.4	14.0	21.6	3.07	601.4	131.6	382.8	349.7	33.14	11.550		
6,200.0	6,187.4	6,258.3	6,178.4	14.2	21.7	3.07	601.4	131.6	382.8	349.3	33.51	11.426		
6,300.0	6,287.4	6,358.3	6,278.4	14.4	21.9	3.07	601.4	131.6	382.8	349.0	33.87	11.303		
6,400.0	6,387.4	6,458.3	6,378.4	14.6	22.0	3.07	601.4	131.6	382.8	348.6	34.23	11.183		
6,500.0	6,487.4	6,558.3	6,478.4	14.9	22.2	3.07	601.4	131.6	382.8	348.2	34.60	11.064		
6,600.0	6,587.4	6,658.3	6,578.4	15.1	22.3	3.07	601.4	131.6	382.8	347.9	34.97	10.948		
6,700.0	6,687.4	6,758.3	6,678.4	15.3	22.4	3.07	601.4	131.6	382.8	347.5	35.34	10.833		
6,800.0	6,787.4	6,858.3	6,778.4	15.5	22.6	3.07	601.4	131.6	382.8	347.1	35.71	10.720		
6,904.0	6,891.4	6,962.3	6,882.4	15.7	22.7	3.07	601.4	131.6	382.8	346.7	36.10	10.605		
6,950.0	6,937.4	7,008.3	6,928.4	15.8	22.8	93.27	601.4	131.6	382.9	348.3	34.58	11.071		
7,000.0	6,987.2	7,058.4	6,978.6	15.9	22.9	93.94	601.4	131.6	383.2	348.4	34.82	11.005		
7,050.0	7,036.6	7,156.7	7,076.5	16.0	22.9	96.54	594.9	131.6	380.6	345.3	35.26	10.793		
7,100.0	7,085.3	7,250.6	7,168.7	16.0	22.9	100.67	577.1	131.6	372.6	336.8	35.75	10.420		
7,150.0	7,133.2	7,337.5	7,251.4	16.1	22.8	106.30	550.7	131.6	360.2	323.9	36.21	9.945		
7,200.0	7,180.1	7,415.8	7,322.9	16.2	22.6	113.24	519.0	131.6	344.9	308.4	36.50	9.447		
7,250.0	7,225.7	7,484.9	7,383.2	16.2	22.4	121.12	485.0	131.6	328.5	292.0	36.46	9.010		
7,300.0	7,269.9	7,545.2	7,433.0	16.3	22.2	129.36	451.0	131.6	313.0	277.1	35.95	8.706		
7,350.0	7,312.5	7,597.4	7,473.7	16.4	22.0	137.35	418.5	131.6	300.6	265.6	34.97	8.596 SF		
7,400.0	7,353.3	7,642.2	7,506.9	16.5	21.9	144.62	388.5	131.6	293.4	259.8	33.61	8.730		
7,426.5	7,374.1	7,663.3	7,522.0	16.5	21.8	148.09	373.6	131.6	292.4	259.6	32.78	8.917		
7,450.0	7,392.1	7,680.6	7,534.0	16.6	21.7	150.93	361.2	131.6	293.2	261.2	32.01	9.160		
7,500.0	7,428.8	7,713.5	7,556.0	16.9	21.6	156.25	336.7	131.6	301.2	270.9	30.29	9.942		
7,550.0	7,463.2	7,741.6	7,574.0	17.2	21.5	160.68	315.1	131.6	317.4	288.9	28.53	11.125		
7,600.0	7,495.1	7,765.6	7,588.7	17.5	21.4	164.34	296.2	131.6	341.3	314.5	26.77	12.748		
7,650.0	7,524.4	7,786.0	7,600.7	17.9	21.3	167.37	279.7	131.6	371.8	346.7	25.04	14.847		
7,700.0	7,551.0	7,803.3	7,610.6	18.4	21.3	169.90	265.5	131.6	407.5	384.2	23.35	17.452		
7,750.0	7,574.8	7,817.8	7,618.6	19.0	21.2	172.04	253.4	131.6	447.5	425.7	21.72	20.599		
7,800.0	7,595.7	7,829.9	7,625.1	19.6	21.2	173.88	243.2	131.6	490.5	470.4	20.17	24.319		
7,850.0	7,613.5	7,839.8	7,630.3	20.3	21.1	175.49	234.8	131.6	536.0	517.3	18.73	28.617		
7,900.0	7,628.3	7,847.6	7,634.3	21.1	21.1	176.95	228.1	131.6	583.2	565.7	17.44	33.438		
7,950.0	7,639.9	7,853.6	7,637.4	21.9	21.1	178.35	222.9	131.6	631.6	615.2	16.37	38.592		
8,000.0	7,648.3	7,857.9	7,639.5	22.8	21.1	179.91	219.2	131.6	680.8	665.2	15.60	43.644		
8,050.0	7,653.4	7,860.4	7,640.8	23.7	21.1	-177.52	217.0	131.6	730.5	715.1	15.41	47.416		
8,100.0	7,655.3	7,861.4	7,641.3	24.7	21.1	-70.18	216.2	131.6	780.5	739.6	40.89	19.088		
8,107.6	7,655.3	7,861.4	7,641.3	24.8	21.1	-18.14	216.2	131.6	788.1	769.5	18.52	42.563		
8,200.0	7,654.9	7,861.1	7,641.1	26.7	21.1	-16.84	216.4	131.6	880.5	861.7	18.76	46.941		
8,300.0	7,654.4	7,860.9	7,641.0	28.9	21.1	-15.44	216.6	131.6	980.5	961.5	19.03	51.510		

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 6E-234
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 6E-234	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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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	
11,700.0	7,638.4	7,600.0	7,594.9	119.6	17.5	0.76	219.7	-5,156.3	908.8	875.7	33.17	27.397		
11,800.0	7,637.9	7,604.8	7,599.7	122.4	17.5	0.72	219.6	-5,156.6	809.0	775.1	33.90	23.863		
11,900.0	7,637.5	7,610.2	7,605.1	125.2	17.5	0.67	219.5	-5,156.9	709.1	674.5	34.62	20.480		
12,000.0	7,637.0	7,615.6	7,610.4	128.0	17.5	0.60	219.4	-5,157.1	609.2	573.9	35.35	17.236		
12,100.0	7,636.5	7,620.8	7,615.7	130.7	17.5	0.50	219.3	-5,157.4	509.4	473.3	36.07	14.123		
12,200.0	7,636.1	7,626.0	7,620.8	133.5	17.5	0.35	219.2	-5,157.7	409.5	372.7	36.78	11.133		
12,300.0	7,635.6	7,631.0	7,625.9	136.3	17.5	0.10	219.1	-5,158.0	309.6	272.1	37.49	8.258		
12,400.0	7,635.1	7,636.0	7,630.9	139.1	17.5	-0.39	219.0	-5,158.3	209.7	171.5	38.22	5.488		
12,424.1	7,635.0	7,637.2	7,632.1	139.8	17.5	-0.59	219.0	-5,158.3	185.6	147.2	38.41	4.833 CC, ES, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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 - Sterkel 21-1 - 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	
10,200.0	7,645.5	7,636.3	7,633.1	78.3	19.5	-87.92	-178.9	-3,566.8	909.8	812.2	97.60	9.322		
10,300.0	7,645.0	7,636.4	7,633.3	81.0	19.5	-87.93	-178.9	-3,566.8	821.0	720.7	100.34	8.183		
10,400.0	7,644.5	7,636.6	7,633.4	83.7	19.5	-87.95	-178.9	-3,566.8	735.2	632.1	103.08	7.132		
10,500.0	7,644.1	7,636.7	7,633.5	86.5	19.5	-87.97	-178.9	-3,566.8	653.4	547.6	105.82	6.174		
10,600.0	7,643.6	7,636.8	7,633.7	89.2	19.5	-87.99	-178.9	-3,566.8	577.3	468.8	108.57	5.318		
10,700.0	7,643.1	7,637.0	7,633.8	92.0	19.5	-88.01	-178.9	-3,566.8	509.6	398.3	111.32	4.578		
10,800.0	7,642.7	7,637.1	7,633.9	94.7	19.5	-88.03	-178.9	-3,566.8	454.0	339.9	114.08	3.980		
10,900.0	7,642.2	7,637.2	7,634.1	97.5	19.5	-88.05	-178.9	-3,566.8	415.3	298.5	116.84	3.555		
11,000.0	7,641.7	7,637.4	7,634.2	100.3	19.5	-88.07	-178.9	-3,566.8	398.6	279.0	119.60	3.333		
11,018.0	7,641.6	7,637.4	7,634.3	100.8	19.5	-88.08	-178.9	-3,566.8	398.2	278.1	120.10	3.316 CC, ES, SF		
11,100.0	7,641.2	7,637.5	7,634.4	103.0	19.5	-88.10	-178.9	-3,566.8	406.6	284.2	122.36	3.323		
11,200.0	7,640.8	7,637.7	7,634.5	105.8	19.5	-88.12	-178.9	-3,566.8	437.9	312.7	125.13	3.499		
11,300.0	7,640.3	7,637.9	7,634.7	108.5	19.5	-88.14	-178.9	-3,566.8	488.0	360.1	127.90	3.815		
11,400.0	7,639.8	7,638.0	7,634.9	111.3	19.5	-88.17	-179.0	-3,566.8	551.8	421.2	130.67	4.223		
11,500.0	7,639.4	7,638.2	7,635.0	114.1	19.5	-88.19	-179.0	-3,566.8	625.2	491.8	133.44	4.686		
11,600.0	7,638.9	7,638.4	7,635.2	116.9	19.5	-88.21	-179.0	-3,566.8	705.2	569.0	136.21	5.177		
11,700.0	7,638.4	7,638.6	7,635.4	119.6	19.5	-88.24	-179.0	-3,566.8	789.8	650.8	138.99	5.682		
11,800.0	7,637.9	7,638.7	7,635.6	122.4	19.5	-88.27	-179.0	-3,566.8	877.6	735.8	141.76	6.190		
11,900.0	7,637.5	7,638.9	7,635.8	125.2	19.5	-88.29	-179.0	-3,566.8	967.7	823.2	144.54	6.695		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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	82.02	40.1	285.8	289.0					
100.0	100.0	86.9	86.9	0.1	0.1	82.03	39.9	285.3	288.1	287.9	0.23	1,263.243		
200.0	200.0	187.0	187.0	0.3	0.4	82.10	39.4	284.3	287.0	286.3	0.70	410.399		
300.0	300.0	285.8	285.7	0.6	0.6	82.21	38.8	283.5	286.2	285.0	1.18	242.607		
400.0	400.0	385.6	385.6	0.8	0.9	82.31	38.2	283.1	285.6	284.0	1.66	171.629		
500.0	500.0	486.7	486.7	1.0	1.1	82.36	37.9	282.4	284.9	282.7	2.15	132.797		
600.0	600.0	587.9	587.8	1.2	1.4	82.35	37.8	281.2	283.7	281.1	2.62	108.165		
700.0	700.0	688.3	688.3	1.5	1.6	82.41	37.3	279.8	282.3	279.2	3.11	90.821		
800.0	800.0	788.1	788.0	1.7	1.9	82.61	36.1	278.4	280.8	277.2	3.59	78.176		
900.0	900.0	887.9	887.8	1.9	2.2	82.88	34.6	277.2	279.4	275.3	4.07	68.593		
1,000.0	1,000.0	987.5	987.4	2.1	2.4	83.12	33.3	276.1	278.1	273.6	4.56	61.034		
1,100.0	1,100.0	1,087.8	1,087.7	2.4	2.7	83.31	32.2	274.9	276.9	271.8	5.05	54.875		
1,200.0	1,200.0	1,187.7	1,187.6	2.6	3.0	83.43	31.5	273.7	275.5	270.0	5.53	49.796		
1,300.0	1,300.0	1,287.5	1,287.4	2.8	3.2	83.51	31.0	272.5	274.3	268.2	6.02	45.552		
1,400.0	1,400.0	1,387.3	1,387.2	3.0	3.5	83.62	30.3	271.3	273.1	266.5	6.51	41.945		
1,500.0	1,500.0	1,486.7	1,486.5	3.3	3.7	83.74	29.6	270.4	272.0	265.0	7.00	38.868		
1,600.0	1,600.0	1,587.3	1,587.2	3.5	4.0	83.84	29.1	269.4	271.0	263.5	7.49	36.188		
1,700.0	1,700.0	1,687.4	1,687.3	3.7	4.3	83.88	28.8	268.2	269.8	261.8	7.97	33.851		
1,800.0	1,800.0	1,787.8	1,787.7	3.9	4.5	83.86	28.7	266.9	268.5	260.1	8.44	31.805		
1,900.0	1,900.0	1,888.4	1,888.2	4.2	4.8	57.08	28.8	265.4	266.6	257.6	8.91	29.930		
2,000.0	2,000.0	1,988.6	1,988.4	4.4	5.0	57.50	29.1	263.8	263.5	254.1	9.36	28.142		
2,100.0	2,099.9	2,088.9	2,088.7	4.6	5.2	58.25	29.4	262.0	259.4	249.6	9.82	26.410		
2,200.0	2,199.7	2,189.5	2,189.3	4.8	5.5	59.40	29.5	259.9	254.2	243.9	10.29	24.704		
2,300.0	2,299.4	2,289.3	2,289.0	5.1	5.7	60.98	29.5	257.6	248.1	237.3	10.77	23.040		
2,400.0	2,398.9	2,389.1	2,388.8	5.3	6.0	63.01	29.5	255.3	241.2	229.9	11.25	21.444		
2,429.3	2,428.0	2,418.2	2,417.9	5.4	6.1	63.68	29.5	254.6	239.0	227.7	11.39	20.991		
2,500.0	2,498.3	2,488.4	2,488.1	5.5	6.2	65.35	29.7	252.9	234.0	222.2	11.73	19.938		
2,600.0	2,597.7	2,587.9	2,587.6	5.8	6.5	67.79	30.0	250.4	227.0	214.8	12.23	18.570		
2,700.0	2,697.1	2,687.4	2,687.1	6.0	6.7	70.30	30.7	247.8	220.4	207.7	12.72	17.334		
2,800.0	2,796.5	2,787.0	2,786.6	6.3	7.0	72.91	31.6	245.1	214.2	201.0	13.21	16.210		
2,900.0	2,895.9	2,886.1	2,885.6	6.5	7.2	75.70	32.3	242.4	208.4	194.7	13.72	15.191		
3,000.0	2,995.3	2,984.0	2,983.6	6.8	7.5	78.66	32.7	240.1	203.5	189.2	14.23	14.297		
3,100.0	3,094.7	3,081.8	3,081.3	7.1	7.7	81.87	32.5	238.2	199.9	185.1	14.76	13.543		
3,200.0	3,194.1	3,180.3	3,179.8	7.3	8.0	85.23	32.0	236.9	197.6	182.3	15.29	12.920		
3,300.0	3,293.5	3,278.9	3,278.4	7.6	8.2	88.60	31.5	236.0	196.3	180.5	15.82	12.405		
3,386.3	3,379.3	3,364.4	3,363.9	7.8	8.5	91.49	31.2	235.5	196.0	179.7	16.28	12.036 CC		
3,400.0	3,392.9	3,377.9	3,377.4	7.9	8.5	91.95	31.2	235.4	196.0	179.7	16.36	11.983		
3,500.0	3,492.3	3,477.3	3,476.8	8.2	8.7	95.24	30.9	235.0	196.5	179.6	16.89	11.630		
3,600.0	3,591.7	3,577.2	3,576.7	8.4	9.0	98.44	31.0	234.7	197.4	180.0	17.38	11.357		
3,700.0	3,691.1	3,676.7	3,676.2	8.7	9.1	101.44	31.7	234.4	198.8	181.0	17.79	11.171		
3,800.0	3,790.5	3,775.9	3,775.4	9.0	9.2	104.33	32.4	234.4	200.7	182.5	18.16	11.051		
3,900.0	3,889.9	3,874.6	3,874.1	9.3	9.4	107.20	32.8	234.4	203.4	184.8	18.58	10.947		
4,000.0	3,989.3	3,973.9	3,973.4	9.5	9.6	110.11	32.8	234.3	206.9	187.8	19.07	10.846		
4,100.0	4,088.7	4,074.5	4,074.0	9.8	9.8	113.00	32.8	233.9	210.6	191.0	19.59	10.754		
4,197.9	4,186.0	4,172.8	4,172.3	10.1	10.1	115.78	33.2	233.0	214.2	194.1	20.07	10.672		
4,200.0	4,188.1	4,174.9	4,174.4	10.1	10.1	115.84	33.2	232.9	214.3	194.2	20.08	10.670		
4,300.0	4,287.6	4,275.0	4,274.4	10.3	10.3	118.21	33.8	231.8	217.3	196.8	20.51	10.594		
4,400.0	4,387.5	4,375.2	4,374.7	10.5	10.6	119.73	34.6	230.4	218.7	197.7	20.92	10.450		
4,500.0	4,487.4	4,475.5	4,474.9	10.7	10.8	120.48	35.3	228.7	218.2	196.9	21.33	10.230		
4,512.6	4,500.0	4,488.1	4,487.5	10.7	10.8	147.41	35.4	228.5	218.0	197.1	20.95	10.408		
4,600.0	4,587.4	4,576.3	4,575.7	10.9	11.1	147.73	36.1	226.6	216.5	195.1	21.34	10.144		

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 6E-234
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 6E-234	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		
4,700.0	4,687.4	4,676.8	4,676.1	11.1	11.3	148.15	37.0	224.2	214.4	192.6	21.81	9.830		
4,800.0	4,787.4	4,776.9	4,776.2	11.3	11.5	148.56	38.1	221.7	212.1	189.9	22.27	9.525		
4,900.0	4,887.4	4,876.8	4,876.1	11.5	11.8	148.92	39.4	219.4	209.9	187.2	22.74	9.233		
5,000.0	4,987.4	4,976.7	4,975.9	11.7	12.0	149.29	40.5	217.2	207.7	184.5	23.20	8.954		
5,100.0	5,087.4	5,076.3	5,075.5	11.9	12.3	149.70	41.6	214.8	205.6	181.9	23.67	8.688		
5,200.0	5,187.4	5,176.0	5,175.2	12.1	12.5	150.20	42.3	212.3	203.7	179.6	24.14	8.437		
5,300.0	5,287.4	5,275.4	5,274.6	12.3	12.8	150.78	42.8	209.7	202.0	177.3	24.62	8.202		
5,400.0	5,387.4	5,373.7	5,372.8	12.5	13.1	151.26	43.0	207.6	200.8	175.7	25.10	7.998		
5,500.0	5,487.4	5,472.6	5,471.7	12.7	13.3	151.55	42.8	206.6	200.4	174.9	25.58	7.836		
5,544.3	5,531.8	5,516.7	5,515.8	12.8	13.4	151.66	42.7	206.2	200.4	174.6	25.79	7.771		
5,600.0	5,587.4	5,572.2	5,571.3	12.9	13.6	151.77	42.5	205.9	200.4	174.4	26.05	7.695		
5,700.0	5,687.4	5,672.2	5,671.3	13.2	13.8	151.89	42.2	205.6	200.5	174.0	26.51	7.565		
5,800.0	5,787.4	5,771.7	5,770.9	13.4	14.0	151.99	41.9	205.3	200.6	173.7	26.95	7.445		
5,900.0	5,887.4	5,872.0	5,871.2	13.6	14.3	152.15	41.4	205.0	200.9	173.5	27.40	7.334		
6,000.0	5,987.4	5,972.4	5,971.6	13.8	14.5	152.29	41.2	204.5	200.9	173.1	27.86	7.211		
6,100.0	6,087.4	6,072.5	6,071.7	14.0	14.8	152.45	41.0	204.0	200.8	172.5	28.34	7.086		
6,200.0	6,187.4	6,172.7	6,171.9	14.2	15.0	152.57	41.0	203.6	200.7	171.9	28.77	6.977		
6,300.0	6,287.4	6,272.9	6,272.0	14.4	15.1	152.51	41.3	203.6	200.4	171.3	29.09	6.890		
6,400.0	6,387.4	6,372.7	6,371.9	14.6	15.1	152.40	41.7	203.9	200.2	170.8	29.36	6.818		
6,500.0	6,487.4	6,473.1	6,472.2	14.9	15.2	152.25	42.1	204.2	199.9	170.3	29.63	6.748		
6,600.0	6,587.4	6,573.4	6,572.6	15.1	15.2	152.10	42.8	204.4	199.5	169.5	29.92	6.667		
6,700.0	6,687.4	6,672.5	6,671.6	15.3	15.3	151.88	43.5	204.9	199.1	168.9	30.19	6.594		
6,711.6	6,699.0	6,683.9	6,683.0	15.3	15.3	151.84	43.6	205.0	199.1	168.8	30.22	6.587		
6,800.0	6,787.4	6,772.0	6,771.1	15.5	15.3	151.59	43.9	205.9	199.2	168.8	30.42	6.547		
6,904.0	6,891.4	6,875.8	6,874.9	15.7	15.3	151.30	44.2	206.9	199.4	168.7	30.66	6.503 ES		
6,950.0	6,937.4	6,921.8	6,920.9	15.8	15.3	-119.12	44.3	207.3	200.2	169.2	31.02	6.455 SF		
7,000.0	6,987.2	6,971.7	6,970.8	15.9	15.3	-120.27	44.5	207.8	202.6	171.5	31.08	6.519		
7,050.0	7,036.6	7,021.1	7,020.2	16.0	15.4	-122.05	44.7	208.4	206.8	175.7	31.10	6.651		
7,100.0	7,085.3	7,070.1	7,069.2	16.0	15.4	-124.33	45.0	209.0	213.1	182.0	31.05	6.861		
7,150.0	7,133.2	7,117.8	7,116.9	16.1	15.4	-126.93	45.4	209.5	221.7	190.7	30.92	7.169		
7,200.0	7,180.1	7,163.9	7,163.0	16.2	15.4	-129.65	45.7	210.1	233.0	202.3	30.68	7.594		
7,250.0	7,225.7	7,208.9	7,208.0	16.2	15.4	-132.38	45.9	210.7	247.4	217.1	30.33	8.158		
7,300.0	7,269.9	7,252.8	7,251.9	16.3	15.4	-135.02	46.0	211.3	264.9	235.1	29.85	8.875		
7,350.0	7,312.5	7,295.1	7,294.1	16.4	15.4	-137.44	46.2	211.8	285.6	256.3	29.26	9.761		
7,400.0	7,353.3	7,335.4	7,334.4	16.5	15.5	-139.56	46.3	212.4	309.5	280.9	28.58	10.829		
7,450.0	7,392.1	7,373.6	7,372.6	16.6	15.5	-141.35	46.5	212.9	336.5	308.6	27.82	12.092		
7,500.0	7,428.8	7,409.5	7,408.6	16.9	15.5	-142.77	46.7	213.5	366.5	339.4	27.03	13.556		
7,550.0	7,463.2	7,443.1	7,442.2	17.2	15.5	-143.80	46.9	214.0	399.3	373.0	26.25	15.213		
7,600.0	7,495.1	7,474.3	7,473.3	17.5	15.5	-144.39	47.1	214.6	434.7	409.2	25.52	17.037		
7,650.0	7,524.4	7,502.8	7,501.8	17.9	15.5	-144.52	47.3	215.1	472.6	447.7	24.91	18.972		
7,700.0	7,551.0	7,528.8	7,527.8	18.4	15.5	-144.13	47.4	215.5	512.6	488.1	24.51	20.916		
7,750.0	7,574.8	7,551.9	7,550.9	19.0	15.6	-143.12	47.5	215.9	554.6	530.1	24.42	22.706		
7,800.0	7,595.7	7,572.0	7,571.1	19.6	15.6	-141.32	47.7	216.2	598.2	573.4	24.80	24.125		
7,850.0	7,613.5	7,589.2	7,588.2	20.3	15.6	-138.48	47.7	216.5	643.3	617.5	25.80	24.937		
7,900.0	7,628.3	7,603.2	7,602.2	21.1	15.6	-134.20	47.8	216.7	689.7	662.1	27.62	24.967		
7,950.0	7,639.9	7,613.9	7,612.9	21.9	15.6	-127.80	47.9	216.9	737.1	706.6	30.45	24.209		
8,000.0	7,648.3	7,621.5	7,620.5	22.8	15.6	-118.33	47.9	217.0	785.2	751.0	34.21	22.950		
8,050.0	7,653.4	7,625.8	7,624.8	23.7	15.6	-104.73	48.0	217.1	833.9	795.7	38.15	21.858		
8,100.0	7,655.3	7,626.8	7,625.9	24.7	15.6	-86.99	48.0	217.1	882.9	842.8	40.10	22.015		
8,107.6	7,655.3	7,626.7	7,625.7	24.8	15.6	-84.09	48.0	217.1	890.3	850.2	40.06	22.223		
8,200.0	7,654.9	7,624.8	7,623.8	26.7	15.6	-83.44	47.9	217.1	981.1	939.2	41.90	23.419		

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 6E-234
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 6E-234	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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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: 104-Reference Northglenn State 19-36 Pad Sec.36-T1N-R68W - Northglenn State 36-36 (Exist.) - Wellbore #1 - Wellbo													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	
10,100.0	7,646.0	7,777.7	7,663.7	75.5	26.0	88.68	710.5	-3,484.8	969.8	876.1	93.67	10.353		
10,200.0	7,645.5	7,778.2	7,664.2	78.3	26.0	88.74	710.5	-3,484.8	885.0	788.6	96.40	9.180		
10,300.0	7,645.0	7,778.7	7,664.7	81.0	26.0	88.79	710.5	-3,484.8	803.8	704.6	99.14	8.107		
10,400.0	7,644.5	7,779.1	7,665.1	83.7	26.0	88.85	710.5	-3,484.8	727.2	625.3	101.89	7.137		
10,500.0	7,644.1	7,779.6	7,665.6	86.5	26.0	88.90	710.5	-3,484.8	657.0	552.4	104.64	6.279		
10,600.0	7,643.6	7,780.0	7,666.0	89.2	26.0	88.95	710.5	-3,484.8	595.4	488.0	107.39	5.544		
10,700.0	7,643.1	7,780.4	7,666.4	92.0	26.0	89.00	710.5	-3,484.8	545.2	435.1	110.14	4.950		
10,800.0	7,642.7	7,780.8	7,666.8	94.7	26.0	89.04	710.5	-3,484.8	510.0	397.1	112.90	4.517		
10,900.0	7,642.2	7,781.2	7,667.2	97.5	26.0	89.09	710.5	-3,484.8	492.8	377.1	115.67	4.261		
10,936.0	7,642.0	7,781.3	7,667.3	98.5	26.0	89.10	710.5	-3,484.8	491.5	374.8	116.66	4.213 CC, ES		
11,000.0	7,641.7	7,781.6	7,667.6	100.3	26.0	89.13	710.5	-3,484.8	495.6	377.2	118.43	4.185 SF		
11,100.0	7,641.2	7,781.9	7,667.9	103.0	26.0	89.17	710.5	-3,484.8	518.1	396.9	121.20	4.275		
11,200.0	7,640.8	7,782.2	7,668.2	105.8	26.0	89.21	710.5	-3,484.8	557.9	433.9	123.96	4.501		
11,300.0	7,640.3	7,782.6	7,668.6	108.5	26.0	89.25	710.5	-3,484.8	611.6	484.9	126.73	4.826		
11,400.0	7,639.8	7,789.0	7,675.0	111.3	26.0	90.00	710.6	-3,484.9	676.0	546.4	129.55	5.218		
11,500.0	7,639.4	7,789.0	7,675.0	114.1	26.0	90.00	710.6	-3,484.9	748.1	615.8	132.32	5.654		
11,600.0	7,638.9	7,789.0	7,675.0	116.9	26.0	90.00	710.6	-3,484.9	826.1	691.0	135.10	6.115		
11,700.0	7,638.4	7,789.0	7,675.0	119.6	26.0	90.00	710.6	-3,484.9	908.5	770.6	137.87	6.589		
11,800.0	7,637.9	7,789.0	7,675.0	122.4	26.0	90.00	710.6	-3,484.9	994.0	853.4	140.64	7.068		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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
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)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-10.88	-10.88	14.6	-2.8	14.8	14.8	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	-10.88	-10.88	14.6	-2.8	14.8	14.6	0.22	66.017	
200.0	200.0	200.0	200.0	0.3	0.3	-10.88	-10.88	14.6	-2.8	14.8	14.2	0.67	22.006	
300.0	300.0	300.0	300.0	0.6	0.6	-10.88	-10.88	14.6	-2.8	14.8	13.7	1.12	13.203	
400.0	400.0	400.0	400.0	0.8	0.8	-10.88	-10.88	14.6	-2.8	14.8	13.3	1.57	9.431	
500.0	500.0	500.0	500.0	1.0	1.0	-10.88	-10.88	14.6	-2.8	14.8	12.8	2.02	7.335	
600.0	600.0	600.0	600.0	1.2	1.2	-10.88	-10.88	14.6	-2.8	14.8	12.4	2.47	6.002	
700.0	700.0	700.0	700.0	1.5	1.5	-10.88	-10.88	14.6	-2.8	14.8	11.9	2.92	5.078	
800.0	800.0	800.0	800.0	1.7	1.7	-10.88	-10.88	14.6	-2.8	14.8	11.5	3.37	4.401	
900.0	900.0	900.0	900.0	1.9	1.9	-10.88	-10.88	14.6	-2.8	14.8	11.0	3.82	3.883	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-10.88	-10.88	14.6	-2.8	14.8	10.6	4.27	3.475 CC, ES	
1,100.0	1,100.0	1,099.7	1,099.7	2.4	2.4	-11.23	-11.23	15.4	-3.1	15.7	11.0	4.72	3.328	
1,200.0	1,200.0	1,199.4	1,199.4	2.6	2.6	-12.08	-12.08	17.9	-3.8	18.3	13.1	5.17	3.542	
1,300.0	1,300.0	1,299.0	1,298.8	2.8	2.8	-13.05	-13.05	22.0	-5.1	22.6	17.0	5.61	4.031	
1,400.0	1,400.0	1,398.3	1,398.0	3.0	3.0	-13.92	-13.92	27.8	-6.9	28.7	22.6	6.06	4.734	
1,500.0	1,500.0	1,497.5	1,496.8	3.3	3.3	-14.62	-14.62	35.2	-9.2	36.5	30.0	6.51	5.605	
1,600.0	1,600.0	1,596.3	1,595.2	3.5	3.5	-15.14	-15.14	44.2	-12.0	46.0	39.1	6.96	6.609	
1,700.0	1,700.0	1,694.8	1,693.1	3.7	3.8	-15.54	-15.54	54.8	-15.2	57.3	49.8	7.42	7.720	
1,800.0	1,800.0	1,792.8	1,790.3	3.9	4.0	-15.84	-15.84	66.9	-19.0	70.2	62.3	7.87	8.916	
1,900.0	1,900.0	1,890.5	1,887.0	4.2	4.3	-43.27	-43.27	80.6	-23.2	84.2	75.9	8.32	10.123	
2,000.0	2,000.0	1,987.9	1,983.0	4.4	4.6	-44.32	-44.32	95.7	-27.9	98.7	89.9	8.77	11.253	
2,100.0	2,099.9	2,086.8	2,080.5	4.6	4.9	-45.71	-45.71	112.0	-32.9	112.8	103.6	9.22	12.235	
2,200.0	2,199.7	2,185.9	2,178.1	4.8	5.2	-47.37	-47.37	128.3	-38.0	125.9	116.2	9.68	13.005	
2,300.0	2,299.4	2,285.1	2,275.7	5.1	5.6	-49.24	-49.24	144.6	-43.0	137.9	127.8	10.14	13.595	
2,400.0	2,398.9	2,384.3	2,373.5	5.3	5.9	-51.33	-51.33	160.9	-48.1	149.0	138.3	10.61	14.033	
2,429.3	2,428.0	2,413.4	2,402.1	5.4	6.0	-51.98	-51.98	165.7	-49.5	152.0	141.3	10.75	14.136	
2,500.0	2,498.3	2,483.6	2,471.3	5.5	6.2	-53.55	-53.55	177.2	-53.1	159.4	148.3	11.10	14.363	
2,600.0	2,597.7	2,582.8	2,569.1	5.8	6.6	-55.54	-55.54	193.6	-58.1	170.1	158.5	11.60	14.666	
2,700.0	2,697.1	2,682.1	2,666.9	6.0	6.9	-57.29	-57.29	209.9	-63.2	180.9	168.8	12.10	14.949	
2,800.0	2,796.5	2,781.4	2,764.7	6.3	7.3	-58.85	-58.85	226.2	-68.2	191.8	179.2	12.61	15.212	
2,900.0	2,895.9	2,880.7	2,862.4	6.5	7.7	-60.23	-60.23	242.5	-73.3	202.9	189.8	13.13	15.454	
3,000.0	2,995.3	2,979.9	2,960.2	6.8	8.0	-61.48	-61.48	258.9	-78.3	214.1	200.5	13.66	15.678	
3,100.0	3,094.7	3,079.2	3,058.0	7.1	8.4	-62.59	-62.59	275.2	-83.4	225.4	211.2	14.19	15.885	
3,200.0	3,194.1	3,178.5	3,155.8	7.3	8.8	-63.61	-63.61	291.5	-88.4	236.8	222.0	14.73	16.076	
3,300.0	3,293.5	3,277.7	3,253.6	7.6	9.1	-64.53	-64.53	307.8	-93.5	248.2	232.9	15.27	16.252	
3,400.0	3,392.9	3,377.0	3,351.4	7.9	9.5	-65.36	-65.36	324.1	-98.5	259.7	243.9	15.82	16.415	
3,500.0	3,492.3	3,476.3	3,449.2	8.2	9.9	-66.13	-66.13	340.5	-103.6	271.2	254.9	16.37	16.566	
3,600.0	3,591.7	3,575.5	3,547.0	8.4	10.2	-66.84	-66.84	356.8	-108.6	282.8	265.9	16.93	16.706	
3,700.0	3,691.1	3,674.8	3,644.8	8.7	10.6	-67.48	-67.48	373.1	-113.7	294.4	276.9	17.49	16.835	
3,800.0	3,790.5	3,774.1	3,742.5	9.0	11.0	-68.08	-68.08	389.4	-118.7	306.1	288.0	18.05	16.956	
3,900.0	3,889.9	3,873.3	3,840.3	9.3	11.4	-68.64	-68.64	405.8	-123.8	317.8	299.1	18.62	17.068	
4,000.0	3,989.3	3,972.6	3,938.1	9.5	11.7	-69.16	-69.16	422.1	-128.8	329.5	310.3	19.19	17.173	
4,100.0	4,088.7	4,071.9	4,035.9	9.8	12.1	-69.64	-69.64	438.4	-133.9	341.2	321.5	19.76	17.271	
4,197.9	4,186.0	4,169.1	4,131.7	10.1	12.5	-70.08	-70.08	454.4	-138.8	352.7	332.4	20.32	17.361	
4,200.0	4,188.1	4,171.2	4,133.7	10.1	12.5	-70.09	-70.09	454.7	-138.9	353.0	332.6	20.33	17.363	
4,300.0	4,287.6	4,270.4	4,231.4	10.3	12.9	-70.47	-70.47	471.0	-144.0	365.3	344.5	20.82	17.544	
4,400.0	4,387.5	4,369.4	4,329.0	10.5	13.2	-70.37	-70.37	487.3	-149.0	378.9	357.6	21.28	17.808	
4,500.0	4,487.4	4,468.2	4,426.3	10.7	13.6	-69.83	-69.83	503.6	-154.0	393.7	372.0	21.68	18.154	
4,512.6	4,500.0	4,480.5	4,438.5	10.7	13.7	-42.85	-42.85	505.6	-154.6	395.6	372.4	23.19	17.055	
4,600.0	4,587.4	4,569.2	4,525.8	10.9	14.0	-41.91	-41.91	520.1	-159.1	409.2	385.5	23.72	17.251	
4,700.0	4,687.4	4,683.2	4,638.6	11.1	14.3	-40.96	-40.96	536.0	-164.0	422.5	398.2	24.29	17.395	

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 6E-234
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 6E-234	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		
4,800.0	4,787.4	4,798.5	4,753.2	11.3	14.6	-40.31	547.7	-167.7	432.3	407.5	24.80	17.428		
4,900.0	4,887.4	4,914.5	4,868.9	11.5	14.8	-39.91	555.0	-169.9	438.4	413.1	25.26	17.353		
5,000.0	4,987.4	5,031.0	4,985.4	11.7	15.0	-39.77	557.8	-170.8	440.7	415.0	25.67	17.169		
5,100.0	5,087.4	5,133.0	5,087.4	11.9	15.2	-39.76	557.9	-170.8	440.7	414.7	26.04	16.923		
5,200.0	5,187.4	5,233.0	5,187.4	12.1	15.3	-39.76	557.9	-170.8	440.7	414.3	26.43	16.677		
5,300.0	5,287.4	5,333.0	5,287.4	12.3	15.5	-39.76	557.9	-170.8	440.7	413.9	26.81	16.437		
5,400.0	5,387.4	5,433.0	5,387.4	12.5	15.6	-39.76	557.9	-170.8	440.7	413.5	27.20	16.203		
5,500.0	5,487.4	5,533.0	5,487.4	12.7	15.8	-39.76	557.9	-170.8	440.7	413.1	27.59	15.974		
5,600.0	5,587.4	5,633.0	5,587.4	12.9	16.0	-39.76	557.9	-170.8	440.7	412.7	27.98	15.751		
5,700.0	5,687.4	5,733.0	5,687.4	13.2	16.1	-39.76	557.9	-170.8	440.7	412.4	28.37	15.533		
5,800.0	5,787.4	5,833.0	5,787.4	13.4	16.3	-39.76	557.9	-170.8	440.7	412.0	28.77	15.320		
5,900.0	5,887.4	5,933.0	5,887.4	13.6	16.5	-39.76	557.9	-170.8	440.7	411.6	29.16	15.112		
6,000.0	5,987.4	6,033.0	5,987.4	13.8	16.7	-39.76	557.9	-170.8	440.7	411.2	29.56	14.909		
6,100.0	6,087.4	6,133.0	6,087.4	14.0	16.8	-39.76	557.9	-170.8	440.7	410.8	29.96	14.711		
6,200.0	6,187.4	6,233.0	6,187.4	14.2	17.0	-39.76	557.9	-170.8	440.7	410.4	30.36	14.518		
6,300.0	6,287.4	6,333.0	6,287.4	14.4	17.2	-39.76	557.9	-170.8	440.7	410.0	30.76	14.328		
6,400.0	6,387.4	6,433.0	6,387.4	14.6	17.4	-39.76	557.9	-170.8	440.7	409.6	31.16	14.144		
6,500.0	6,487.4	6,533.0	6,487.4	14.9	17.5	-39.76	557.9	-170.8	440.7	409.2	31.56	13.963		
6,600.0	6,587.4	6,633.0	6,587.4	15.1	17.7	-39.76	557.9	-170.8	440.7	408.8	31.97	13.787		
6,700.0	6,687.4	6,733.0	6,687.4	15.3	17.9	-39.76	557.9	-170.8	440.7	408.4	32.37	13.614		
6,800.0	6,787.4	6,833.0	6,787.4	15.5	18.1	-39.76	557.9	-170.8	440.7	408.0	32.78	13.445		
6,904.0	6,891.4	6,937.0	6,891.4	15.7	18.3	-39.76	557.9	-170.8	440.7	407.5	33.20	13.274		
6,950.0	6,937.4	6,983.0	6,937.4	15.8	18.3	50.43	557.9	-170.8	439.8	408.0	31.81	13.829		
7,000.0	6,987.2	7,032.8	6,987.2	15.9	18.4	51.07	557.9	-170.8	436.9	405.0	31.95	13.675		
7,050.0	7,036.6	7,071.5	7,025.9	16.0	18.5	51.89	557.9	-171.4	432.5	400.5	32.00	13.515		
7,100.0	7,085.3	7,108.2	7,062.5	16.0	18.6	52.81	557.9	-173.7	427.5	395.6	31.99	13.364		
7,150.0	7,133.2	7,150.0	7,104.0	16.1	18.7	53.94	557.9	-178.5	422.2	390.3	31.95	13.214		
7,200.0	7,180.1	7,182.1	7,135.7	16.2	18.7	54.99	557.9	-183.7	416.5	384.6	31.88	13.063		
7,250.0	7,225.7	7,219.4	7,172.2	16.2	18.8	56.27	557.9	-191.5	410.5	378.7	31.82	12.900		
7,300.0	7,269.9	7,257.0	7,208.5	16.3	18.9	57.68	557.9	-201.0	404.2	372.4	31.79	12.716		
7,350.0	7,312.5	7,300.0	7,249.5	16.4	19.0	59.38	557.9	-214.2	397.8	366.0	31.82	12.500		
7,400.0	7,353.3	7,333.1	7,280.4	16.5	19.1	60.90	557.9	-225.8	391.2	359.3	31.90	12.262		
7,450.0	7,392.1	7,371.7	7,315.9	16.6	19.3	62.71	557.9	-241.1	384.6	352.5	32.11	11.978		
7,500.0	7,428.8	7,410.7	7,350.8	16.9	19.4	64.67	557.9	-258.3	378.0	345.6	32.44	11.652		
7,550.0	7,463.2	7,450.0	7,385.2	17.2	19.5	66.76	557.9	-277.5	371.6	338.7	32.93	11.287		
7,600.0	7,495.1	7,490.0	7,419.1	17.5	19.7	69.01	557.9	-298.8	365.5	331.9	33.58	10.884		
7,650.0	7,524.4	7,530.5	7,452.2	17.9	19.9	71.38	557.9	-322.1	359.7	325.3	34.40	10.458		
7,700.0	7,551.0	7,571.5	7,484.4	18.4	20.1	73.88	557.9	-347.5	354.4	319.1	35.38	10.019		
7,750.0	7,574.8	7,613.2	7,515.7	19.0	20.4	76.50	557.9	-375.0	349.7	313.2	36.50	9.583		
7,800.0	7,595.7	7,655.6	7,546.0	19.6	20.6	79.24	557.9	-404.7	345.7	308.0	37.74	9.161		
7,850.0	7,613.5	7,700.0	7,575.8	20.3	21.0	82.14	557.9	-437.6	342.6	303.5	39.09	8.764		
7,900.0	7,628.3	7,742.8	7,602.7	21.1	21.3	84.97	557.9	-470.8	340.3	299.8	40.47	8.409		
7,950.0	7,639.9	7,787.7	7,628.9	21.9	21.7	87.94	557.9	-507.3	339.0	297.2	41.89	8.093		
7,984.4	7,646.0	7,819.2	7,646.0	22.5	22.1	90.00	557.9	-533.8	338.8	295.9	42.87	7.902		
8,000.0	7,648.3	7,833.7	7,653.5	22.8	22.2	90.94	557.9	-546.1	338.8	295.5	43.30	7.825		
8,050.0	7,653.4	7,880.7	7,676.1	23.7	22.8	93.96	557.9	-587.3	339.7	295.1	44.68	7.604		
8,100.0	7,655.3	7,928.9	7,696.7	24.7	23.4	96.98	557.9	-631.0	341.8	295.8	45.99	7.431		
8,107.6	7,655.3	7,936.3	7,699.6	24.8	23.5	97.43	557.9	-637.8	342.2	296.0	46.18	7.409		
8,200.0	7,654.9	8,031.4	7,731.0	26.7	24.9	102.65	557.9	-727.4	347.9	299.2	48.67	7.148		
8,300.0	7,654.4	8,142.3	7,753.3	28.9	26.8	106.26	557.9	-836.0	353.2	301.3	51.88	6.807		
8,400.0	7,654.0	8,256.0	7,759.6	31.2	29.0	107.33	557.9	-949.4	354.9	298.9	55.97	6.341		

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 6E-234
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 6E-234	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	7,653.5	8,356.0	7,759.2	33.6	31.1	107.32	557.9	-1,049.4	354.9	294.6	60.32	5.884			
8,600.0	7,653.0	8,456.0	7,758.7	36.0	33.3	107.32	557.9	-1,149.4	354.9	290.1	64.81	5.476			
8,700.0	7,652.5	8,556.0	7,758.2	38.4	35.6	107.32	557.9	-1,249.4	354.9	285.4	69.43	5.111			
8,800.0	7,652.1	8,656.0	7,757.7	41.0	37.9	107.31	557.9	-1,349.4	354.9	280.7	74.15	4.786			
8,900.0	7,651.6	8,756.0	7,757.2	43.5	40.3	107.31	557.9	-1,449.4	354.9	275.9	78.95	4.495			
9,000.0	7,651.1	8,856.0	7,756.7	46.1	42.8	107.31	557.9	-1,549.4	354.9	271.0	83.83	4.233			
9,100.0	7,650.7	8,956.0	7,756.2	48.7	45.3	107.31	557.9	-1,649.4	354.9	266.1	88.76	3.998			
9,200.0	7,650.2	9,056.0	7,755.7	51.3	47.8	107.30	557.9	-1,749.4	354.8	261.1	93.74	3.785			
9,300.0	7,649.7	9,156.0	7,755.3	54.0	50.4	107.30	557.9	-1,849.4	354.8	256.1	98.76	3.593			
9,400.0	7,649.3	9,256.0	7,754.8	56.6	53.0	107.30	557.9	-1,949.4	354.8	251.0	103.82	3.418			
9,500.0	7,648.8	9,356.0	7,754.3	59.3	55.6	107.30	557.9	-2,049.4	354.8	245.9	108.91	3.258			
9,600.0	7,648.3	9,456.0	7,753.8	62.0	58.2	107.29	557.9	-2,149.4	354.8	240.8	114.02	3.112			
9,700.0	7,647.8	9,556.0	7,753.3	64.7	60.8	107.29	557.9	-2,249.4	354.8	235.7	119.16	2.978			
9,800.0	7,647.4	9,656.0	7,752.8	67.4	63.5	107.29	557.9	-2,349.4	354.8	230.5	124.32	2.854			
9,900.0	7,646.9	9,756.0	7,752.3	70.1	66.2	107.29	557.9	-2,449.4	354.8	225.3	129.49	2.740			
10,000.0	7,646.4	9,856.0	7,751.8	72.8	68.8	107.28	557.9	-2,549.4	354.8	220.1	134.69	2.634			
10,100.0	7,646.0	9,956.0	7,751.3	75.5	71.5	107.28	557.9	-2,649.4	354.8	214.9	139.89	2.536			
10,200.0	7,645.5	10,056.0	7,750.9	78.3	74.2	107.28	557.9	-2,749.4	354.8	209.7	145.11	2.445			
10,300.0	7,645.0	10,156.0	7,750.4	81.0	76.9	107.27	557.9	-2,849.4	354.8	204.5	150.34	2.360			
10,400.0	7,644.5	10,256.0	7,749.9	83.7	79.6	107.27	557.9	-2,949.4	354.8	199.2	155.57	2.280			
10,500.0	7,644.1	10,356.0	7,749.4	86.5	82.4	107.27	557.9	-3,049.4	354.8	194.0	160.82	2.206			
10,600.0	7,643.6	10,456.0	7,748.9	89.2	85.1	107.27	557.9	-3,149.4	354.8	188.7	166.08	2.136			
10,700.0	7,643.1	10,556.0	7,748.4	92.0	87.8	107.26	557.9	-3,249.4	354.8	183.4	171.34	2.071			
10,800.0	7,642.7	10,656.0	7,747.9	94.7	90.6	107.26	557.9	-3,349.4	354.8	178.2	176.61	2.009			
10,900.0	7,642.2	10,756.0	7,747.4	97.5	93.3	107.26	557.9	-3,449.4	354.8	172.9	181.89	1.950			
11,000.0	7,641.7	10,856.0	7,746.9	100.3	96.0	107.26	557.9	-3,549.4	354.8	167.6	187.17	1.895			
11,100.0	7,641.2	10,956.0	7,746.5	103.0	98.8	107.25	557.9	-3,649.4	354.7	162.3	192.46	1.843			
11,200.0	7,640.8	11,056.0	7,746.0	105.8	101.5	107.25	557.9	-3,749.4	354.7	157.0	197.75	1.794			
11,300.0	7,640.3	11,156.0	7,745.5	108.5	104.3	107.25	557.9	-3,849.4	354.7	151.7	203.05	1.747			
11,400.0	7,639.8	11,256.0	7,745.0	111.3	107.0	107.25	557.9	-3,949.4	354.7	146.4	208.35	1.703			
11,500.0	7,639.4	11,356.0	7,744.5	114.1	109.8	107.24	557.9	-4,049.4	354.7	141.1	213.65	1.660			
11,600.0	7,638.9	11,456.0	7,744.0	116.9	112.6	107.24	557.9	-4,149.4	354.7	135.8	218.96	1.620			
11,700.0	7,638.4	11,556.0	7,743.5	119.6	115.3	107.24	557.9	-4,249.4	354.7	130.4	224.27	1.582			
11,800.0	7,637.9	11,656.0	7,743.0	122.4	118.1	107.23	557.9	-4,349.4	354.7	125.1	229.59	1.545			
11,900.0	7,637.5	11,756.0	7,742.5	125.2	120.8	107.23	557.9	-4,449.4	354.7	119.8	234.90	1.510			
12,000.0	7,637.0	11,856.0	7,742.1	128.0	123.6	107.23	557.9	-4,549.4	354.7	114.5	240.22	1.477 Level 3			
12,100.0	7,636.5	11,956.0	7,741.6	130.7	126.4	107.23	557.9	-4,649.4	354.7	109.2	245.55	1.445 Level 3			
12,200.0	7,636.1	12,056.0	7,741.1	133.5	129.2	107.22	557.9	-4,749.4	354.7	103.8	250.87	1.414 Level 3			
12,300.0	7,635.6	12,156.0	7,740.6	136.3	131.9	107.22	557.9	-4,849.4	354.7	98.5	256.20	1.384 Level 3			
12,400.0	7,635.1	12,256.0	7,740.1	139.1	134.7	107.22	557.9	-4,949.4	354.7	93.2	261.53	1.356 Level 3			
12,420.2	7,635.0	12,276.2	7,740.0	139.6	135.3	107.22	557.9	-4,969.6	354.7	92.1	262.61	1.351 Level 3			
12,424.1	7,635.0	12,277.5	7,740.0	139.8	135.3	107.22	557.9	-4,970.8	354.7	92.0	262.74	1.350 Level 3, SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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 6F-204 - 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 (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	176.61	-47.4	2.8	47.4						
100.0	100.0	100.0	100.0	0.1	0.1	176.61	-47.4	2.8	47.4	47.2	0.22	211.046			
200.0	200.0	200.0	200.0	0.3	0.3	176.61	-47.4	2.8	47.4	46.8	0.67	70.349			
300.0	300.0	300.0	300.0	0.6	0.6	176.61	-47.4	2.8	47.4	46.3	1.12	42.209			
400.0	400.0	400.0	400.0	0.8	0.8	176.61	-47.4	2.8	47.4	45.9	1.57	30.149			
500.0	500.0	500.0	500.0	1.0	1.0	176.61	-47.4	2.8	47.4	45.4	2.02	23.450			
600.0	600.0	600.0	600.0	1.2	1.2	176.61	-47.4	2.8	47.4	45.0	2.47	19.186			
700.0	700.0	700.0	700.0	1.5	1.5	176.61	-47.4	2.8	47.4	44.5	2.92	16.234			
800.0	800.0	800.0	800.0	1.7	1.7	176.61	-47.4	2.8	47.4	44.1	3.37	14.070	CC, ES		
900.0	900.0	899.2	899.2	1.9	1.9	176.45	-48.2	3.0	48.3	44.5	3.79	12.736			
1,000.0	1,000.0	998.3	998.3	2.1	2.1	176.00	-50.7	3.5	50.9	46.7	4.19	12.128			
1,100.0	1,100.0	1,097.3	1,097.2	2.4	2.2	175.35	-54.9	4.5	55.1	50.5	4.60	11.977			
1,200.0	1,200.0	1,196.1	1,195.8	2.6	2.4	174.58	-60.7	5.8	61.1	56.1	5.02	12.175			
1,300.0	1,300.0	1,294.7	1,294.1	2.8	2.7	173.80	-68.2	7.4	68.8	63.4	5.45	12.643			
1,400.0	1,400.0	1,393.0	1,391.9	3.0	2.9	173.05	-77.3	9.4	78.3	72.4	5.88	13.321			
1,500.0	1,500.0	1,491.0	1,489.3	3.3	3.1	172.37	-88.0	11.8	89.4	83.1	6.31	14.162			
1,600.0	1,600.0	1,590.0	1,587.6	3.5	3.4	171.79	-99.8	14.4	101.6	94.8	6.76	15.033			
1,700.0	1,700.0	1,689.3	1,686.1	3.7	3.7	171.33	-111.7	17.0	113.8	106.6	7.21	15.790			
1,800.0	1,800.0	1,788.5	1,784.6	3.9	3.9	170.96	-123.5	19.7	126.0	118.4	7.66	16.450			
1,900.0	1,900.0	1,887.7	1,883.0	4.2	4.2	143.90	-135.4	22.3	138.9	130.9	8.06	17.229			
2,000.0	2,000.0	1,986.6	1,981.2	4.4	4.5	144.13	-147.2	24.9	153.2	144.7	8.50	18.021			
2,100.0	2,099.9	2,085.4	2,079.2	4.6	4.8	144.65	-159.0	27.5	169.0	160.0	8.94	18.894			
2,200.0	2,199.7	2,183.9	2,177.0	4.8	5.1	145.37	-170.8	30.1	186.1	176.7	9.38	19.837			
2,300.0	2,299.4	2,282.1	2,274.5	5.1	5.4	146.22	-182.5	32.7	204.7	194.9	9.82	20.846			
2,400.0	2,398.9	2,380.0	2,371.6	5.3	5.7	147.15	-194.2	35.3	224.8	214.6	10.26	21.912			
2,429.3	2,428.0	2,408.5	2,400.0	5.4	5.8	147.43	-197.6	36.0	231.0	220.6	10.39	22.235			
2,500.0	2,498.3	2,477.6	2,468.5	5.5	6.0	148.15	-205.8	37.9	246.1	235.4	10.71	22.975			
2,600.0	2,597.7	2,575.2	2,565.4	5.8	6.3	149.03	-217.5	40.4	267.4	256.3	11.17	23.948			
2,700.0	2,697.1	2,672.8	2,662.3	6.0	6.6	149.78	-229.2	43.0	288.9	277.2	11.63	24.843			
2,800.0	2,796.5	2,770.4	2,759.1	6.3	6.9	150.42	-240.8	45.6	310.3	298.2	12.09	25.668			
2,900.0	2,895.9	2,868.0	2,856.0	6.5	7.2	150.99	-252.5	48.2	331.8	319.3	12.55	26.431			
3,000.0	2,995.3	2,965.6	2,952.9	6.8	7.5	151.48	-264.1	50.8	353.3	340.3	13.02	27.138			
3,100.0	3,094.7	3,063.3	3,049.8	7.1	7.8	151.92	-275.8	53.3	374.9	361.4	13.49	27.794			
3,200.0	3,194.1	3,160.9	3,146.7	7.3	8.2	152.31	-287.5	55.9	396.5	382.5	13.96	28.405			
3,300.0	3,293.5	3,258.5	3,243.5	7.6	8.5	152.66	-299.1	58.5	418.0	403.6	14.43	28.975			
3,400.0	3,392.9	3,356.1	3,340.4	7.9	8.8	152.97	-310.8	61.1	439.6	424.7	14.90	29.508			
3,500.0	3,492.3	3,453.7	3,437.3	8.2	9.1	153.26	-322.5	63.7	461.2	445.9	15.37	30.007			
3,600.0	3,591.7	3,551.3	3,534.2	8.4	9.4	153.52	-334.1	66.2	482.8	467.0	15.84	30.475			
3,700.0	3,691.1	3,648.9	3,631.1	8.7	9.7	153.76	-345.8	68.8	504.5	488.1	16.32	30.915			
3,800.0	3,790.5	3,746.6	3,727.9	9.0	10.0	153.98	-357.4	71.4	526.1	509.3	16.79	31.329			
3,900.0	3,889.9	3,844.2	3,824.8	9.3	10.3	154.18	-369.1	74.0	547.7	530.5	17.27	31.720			
4,000.0	3,989.3	3,941.8	3,921.7	9.5	10.7	154.36	-380.8	76.6	569.4	551.6	17.74	32.088			
4,100.0	4,088.7	4,039.4	4,018.6	9.8	11.0	154.54	-392.4	79.1	591.0	572.8	18.22	32.437			
4,197.9	4,186.0	4,135.0	4,113.4	10.1	11.3	154.69	-403.8	81.7	612.2	593.5	18.69	32.761			
4,200.0	4,188.1	4,137.0	4,115.5	10.1	11.3	154.70	-404.1	81.7	612.7	594.0	18.70	32.766			
4,300.0	4,287.6	4,235.0	4,212.7	10.3	11.6	154.95	-415.8	84.3	632.7	613.5	19.17	32.998			
4,400.0	4,387.5	4,333.5	4,310.5	10.5	11.9	155.04	-427.6	86.9	649.7	630.0	19.63	33.094			
4,500.0	4,487.4	4,432.5	4,408.8	10.7	12.2	154.97	-439.4	89.5	663.5	643.4	20.06	33.068			
4,512.6	4,500.0	4,445.0	4,421.1	10.7	12.3	-178.16	-440.9	89.9	665.0	642.3	22.72	29.266			
4,600.0	4,587.4	4,531.8	4,507.3	10.9	12.6	-178.38	-451.2	92.2	675.4	652.2	23.16	29.157			
4,700.0	4,687.4	4,631.0	4,605.8	11.1	12.9	-178.63	-463.1	94.8	687.2	663.6	23.69	29.012			

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 6E-234
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 6E-234	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		
4,800.0	4,787.4	4,730.3	4,704.3	11.3	13.2	-178.87	-475.0	97.4	699.1	674.9	24.21	28.873		
4,900.0	4,887.4	4,829.5	4,802.8	11.5	13.5	-179.10	-486.8	100.0	711.0	686.3	24.74	28.739		
5,000.0	4,987.4	4,928.8	4,901.3	11.7	13.9	-179.32	-498.7	102.6	723.0	697.7	25.27	28.610		
5,100.0	5,087.4	5,028.0	4,999.8	11.9	14.2	-179.54	-510.5	105.3	734.9	709.1	25.80	28.485		
5,200.0	5,187.4	5,127.3	5,098.3	12.1	14.5	-179.75	-522.4	107.9	746.8	720.5	26.33	28.365		
5,300.0	5,287.4	5,243.1	5,213.4	12.3	14.8	-179.98	-535.5	110.8	758.2	731.4	26.86	28.232		
5,400.0	5,387.4	5,377.9	5,347.7	12.5	15.1	179.86	-545.6	113.0	765.7	738.4	27.34	28.011		
5,500.0	5,487.4	5,513.2	5,483.0	12.7	15.3	179.79	-549.5	113.9	768.6	740.8	27.77	27.676		
5,600.0	5,587.4	5,617.7	5,587.4	12.9	15.5	179.79	-549.6	113.9	768.6	740.5	28.15	27.310		
5,700.0	5,687.4	5,717.7	5,687.4	13.2	15.6	179.79	-549.6	113.9	768.6	740.1	28.50	26.971		
5,800.0	5,787.4	5,817.7	5,787.4	13.4	15.8	179.79	-549.6	113.9	768.6	739.8	28.85	26.639		
5,900.0	5,887.4	5,917.7	5,887.4	13.6	15.9	179.79	-549.6	113.9	768.6	739.4	29.21	26.313		
6,000.0	5,987.4	6,017.7	5,987.4	13.8	16.0	179.79	-549.6	113.9	768.6	739.1	29.57	25.992		
6,100.0	6,087.4	6,117.7	6,087.4	14.0	16.2	179.79	-549.6	113.9	768.6	738.7	29.93	25.677		
6,200.0	6,187.4	6,217.7	6,187.4	14.2	16.3	179.79	-549.6	113.9	768.6	738.3	30.30	25.369		
6,300.0	6,287.4	6,317.7	6,287.4	14.4	16.5	179.79	-549.6	113.9	768.6	738.0	30.67	25.065		
6,400.0	6,387.4	6,417.7	6,387.4	14.6	16.6	179.79	-549.6	113.9	768.6	737.6	31.03	24.768		
6,500.0	6,487.4	6,517.7	6,487.4	14.9	16.8	179.79	-549.6	113.9	768.6	737.2	31.40	24.476		
6,600.0	6,587.4	6,617.7	6,587.4	15.1	17.0	179.79	-549.6	113.9	768.6	736.9	31.78	24.189		
6,700.0	6,687.4	6,717.7	6,687.4	15.3	17.1	179.79	-549.6	113.9	768.6	736.5	32.15	23.907		
6,800.0	6,787.4	6,817.7	6,787.4	15.5	17.3	179.79	-549.6	113.9	768.6	736.1	32.53	23.631		
6,904.0	6,891.4	6,921.7	6,891.4	15.7	17.4	179.79	-549.6	113.9	768.6	735.7	32.92	23.350		
6,950.0	6,937.4	6,967.9	6,937.6	15.8	17.5	-90.21	-549.6	112.5	768.6	738.1	30.51	25.193		
7,000.0	6,987.2	7,018.1	6,987.5	15.9	17.6	-90.21	-549.6	107.8	768.6	738.0	30.69	25.048		
7,050.0	7,036.6	7,068.2	7,037.1	16.0	17.7	-90.21	-549.6	99.9	768.6	737.8	30.85	24.913		
7,100.0	7,085.3	7,118.4	7,086.0	16.0	17.7	-90.20	-549.6	88.7	768.6	737.6	31.01	24.786		
7,150.0	7,133.2	7,168.6	7,134.1	16.1	17.8	-90.20	-549.6	74.4	768.6	737.5	31.17	24.661		
7,200.0	7,180.1	7,218.8	7,181.1	16.2	17.9	-90.19	-549.6	56.9	768.6	737.3	31.33	24.533		
7,250.0	7,225.7	7,268.9	7,226.8	16.2	17.9	-90.19	-549.6	36.3	768.6	737.1	31.51	24.395		
7,300.0	7,269.9	7,319.1	7,271.2	16.3	18.0	-90.18	-549.6	12.8	768.6	736.9	31.71	24.238		
7,350.0	7,312.5	7,369.3	7,313.8	16.4	18.0	-90.18	-549.6	-13.5	768.6	736.7	31.96	24.054		
7,400.0	7,353.3	7,419.4	7,354.7	16.5	18.1	-90.17	-549.6	-42.6	768.6	736.4	32.25	23.832		
7,450.0	7,392.1	7,469.6	7,393.5	16.6	18.2	-90.16	-549.6	-74.3	768.6	736.0	32.62	23.562		
7,500.0	7,428.8	7,519.7	7,430.2	16.9	18.3	-90.15	-549.6	-108.4	768.6	735.6	33.08	23.235		
7,550.0	7,463.2	7,569.8	7,464.6	17.2	18.4	-90.14	-549.6	-144.9	768.6	735.0	33.65	22.845		
7,600.0	7,495.1	7,619.9	7,496.4	17.5	18.5	-90.13	-549.6	-183.6	768.6	734.3	34.33	22.389		
7,650.0	7,524.4	7,670.1	7,525.7	17.9	18.7	-90.12	-549.6	-224.2	768.6	733.5	35.15	21.866		
7,700.0	7,551.0	7,720.2	7,552.3	18.4	19.0	-90.11	-549.6	-266.7	768.6	732.5	36.12	21.281		
7,750.0	7,574.8	7,770.2	7,576.0	19.0	19.4	-90.10	-549.6	-310.8	768.6	731.4	37.23	20.644		
7,800.0	7,595.7	7,820.3	7,596.7	19.6	19.9	-90.08	-549.6	-356.4	768.6	730.1	38.50	19.965		
7,850.0	7,613.5	7,870.4	7,614.4	20.3	20.5	-90.07	-549.6	-403.2	768.6	728.7	39.91	19.259		
7,900.0	7,628.3	7,920.4	7,629.0	21.1	21.2	-90.06	-549.6	-451.1	768.6	727.2	41.46	18.538		
7,950.0	7,639.9	7,970.5	7,640.5	21.9	22.0	-90.04	-549.6	-499.8	768.6	725.5	43.14	17.816		
8,000.0	7,648.3	8,020.5	7,648.7	22.8	22.8	-90.03	-549.6	-549.2	768.6	723.7	44.94	17.105		
8,050.0	7,653.4	8,070.5	7,653.7	23.7	23.7	-90.02	-549.6	-598.9	768.6	721.8	46.82	16.416		
8,100.0	7,655.3	8,120.6	7,655.4	24.7	24.7	-90.00	-549.6	-648.9	768.6	719.9	48.79	15.755		
8,105.4	7,655.3	8,125.9	7,655.4	24.8	24.8	-90.00	-549.6	-654.3	768.6	719.6	49.00	15.686		
8,107.6	7,655.3	8,128.1	7,655.4	24.8	24.9	-90.00	-549.6	-656.4	768.6	719.6	49.09	15.658		
8,200.0	7,654.9	8,220.6	7,654.9	26.7	26.8	-90.00	-549.6	-748.9	768.6	715.7	52.94	14.520		
8,300.0	7,654.4	8,320.6	7,654.5	28.9	28.9	-90.00	-549.6	-848.9	768.6	711.3	57.33	13.408		
8,400.0	7,654.0	8,420.6	7,654.0	31.2	31.2	-90.00	-549.6	-948.9	768.6	706.7	61.91	12.415		

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 6E-234
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 6E-234	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	7,653.5	8,520.6	7,653.5	33.6	33.6	-90.00	-549.6	-1,048.9	768.6	702.0	66.66	11.531		
8,600.0	7,653.0	8,620.6	7,653.0	36.0	36.0	-90.00	-549.6	-1,148.9	768.6	697.1	71.53	10.746		
8,700.0	7,652.5	8,720.6	7,652.6	38.4	38.5	-90.00	-549.6	-1,248.9	768.6	692.1	76.50	10.048		
8,800.0	7,652.1	8,820.6	7,652.1	41.0	41.0	-90.00	-549.6	-1,348.9	768.6	687.1	81.55	9.425		
8,900.0	7,651.6	8,920.6	7,651.6	43.5	43.5	-90.00	-549.6	-1,448.9	768.6	682.0	86.67	8.868		
9,000.0	7,651.1	9,020.6	7,651.2	46.1	46.1	-90.00	-549.6	-1,548.9	768.6	676.8	91.85	8.368		
9,100.0	7,650.7	9,120.6	7,650.7	48.7	48.7	-90.00	-549.6	-1,648.9	768.6	671.6	97.08	7.918		
9,200.0	7,650.2	9,220.6	7,650.2	51.3	51.3	-90.00	-549.6	-1,748.9	768.6	666.3	102.35	7.510		
9,300.0	7,649.7	9,320.6	7,649.7	54.0	54.0	-90.00	-549.6	-1,848.9	768.6	661.0	107.65	7.140		
9,400.0	7,649.3	9,420.6	7,649.3	56.6	56.6	-90.00	-549.6	-1,948.9	768.6	655.7	112.98	6.803		
9,500.0	7,648.8	9,520.6	7,648.8	59.3	59.3	-90.00	-549.6	-2,048.9	768.6	650.3	118.34	6.495		
9,600.0	7,648.3	9,620.6	7,648.3	62.0	62.0	-90.00	-549.6	-2,148.9	768.6	644.9	123.72	6.213		
9,700.0	7,647.8	9,720.6	7,647.9	64.7	64.7	-90.00	-549.6	-2,248.9	768.6	639.5	129.12	5.953		
9,800.0	7,647.4	9,820.6	7,647.4	67.4	67.4	-90.00	-549.6	-2,348.9	768.6	634.1	134.54	5.713		
9,900.0	7,646.9	9,920.6	7,646.9	70.1	70.1	-90.00	-549.6	-2,448.9	768.6	628.7	139.97	5.492		
10,000.0	7,646.4	10,020.6	7,646.5	72.8	72.8	-90.00	-549.6	-2,548.9	768.6	623.2	145.41	5.286		
10,100.0	7,646.0	10,120.6	7,646.0	75.5	75.5	-90.00	-549.6	-2,648.9	768.6	617.8	150.87	5.095		
10,200.0	7,645.5	10,220.6	7,645.5	78.3	78.3	-90.00	-549.6	-2,748.9	768.6	612.3	156.34	4.917		
10,300.0	7,645.0	10,320.6	7,645.0	81.0	81.0	-90.00	-549.6	-2,848.9	768.6	606.8	161.82	4.750		
10,400.0	7,644.5	10,420.6	7,644.6	83.7	83.8	-90.00	-549.6	-2,948.9	768.6	601.3	167.30	4.594		
10,500.0	7,644.1	10,520.6	7,644.1	86.5	86.5	-90.00	-549.6	-3,048.9	768.6	595.8	172.80	4.448		
10,600.0	7,643.6	10,620.6	7,643.6	89.2	89.2	-90.00	-549.6	-3,148.9	768.6	590.3	178.30	4.311		
10,700.0	7,643.1	10,720.6	7,643.2	92.0	92.0	-90.00	-549.6	-3,248.9	768.6	584.8	183.81	4.182		
10,800.0	7,642.7	10,820.6	7,642.7	94.7	94.8	-90.00	-549.6	-3,348.9	768.6	579.3	189.32	4.060		
10,900.0	7,642.2	10,920.6	7,642.2	97.5	97.5	-90.00	-549.6	-3,448.9	768.6	573.8	194.84	3.945		
11,000.0	7,641.7	11,020.6	7,641.7	100.3	100.3	-90.00	-549.6	-3,548.9	768.6	568.3	200.37	3.836		
11,100.0	7,641.2	11,120.6	7,641.3	103.0	103.0	-90.00	-549.6	-3,648.9	768.6	562.7	205.89	3.733		
11,200.0	7,640.8	11,220.6	7,640.8	105.8	105.8	-90.00	-549.6	-3,748.9	768.6	557.2	211.43	3.635		
11,300.0	7,640.3	11,320.6	7,640.3	108.5	108.6	-90.00	-549.6	-3,848.9	768.6	551.7	216.97	3.543		
11,400.0	7,639.8	11,420.6	7,639.9	111.3	111.3	-90.00	-549.6	-3,948.9	768.6	546.1	222.51	3.454		
11,500.0	7,639.4	11,520.6	7,639.4	114.1	114.1	-90.00	-549.6	-4,048.9	768.6	540.6	228.05	3.370		
11,600.0	7,638.9	11,620.6	7,638.9	116.9	116.9	-90.00	-549.6	-4,148.9	768.6	535.0	233.60	3.290		
11,700.0	7,638.4	11,720.6	7,638.4	119.6	119.7	-90.00	-549.6	-4,248.9	768.6	529.5	239.15	3.214		
11,800.0	7,637.9	11,820.6	7,638.0	122.4	122.4	-90.00	-549.6	-4,348.9	768.6	523.9	244.70	3.141		
11,900.0	7,637.5	11,920.6	7,637.5	125.2	125.2	-90.00	-549.6	-4,448.9	768.6	518.4	250.26	3.071		
12,000.0	7,637.0	12,020.6	7,637.0	128.0	128.0	-90.00	-549.6	-4,548.9	768.6	512.8	255.81	3.005		
12,100.0	7,636.5	12,120.6	7,636.6	130.7	130.8	-90.00	-549.6	-4,648.9	768.6	507.3	261.37	2.941		
12,200.0	7,636.1	12,220.6	7,636.1	133.5	133.5	-90.00	-549.6	-4,748.9	768.6	501.7	266.94	2.879		
12,300.0	7,635.6	12,320.6	7,635.6	136.3	136.3	-90.00	-549.6	-4,848.9	768.6	496.1	272.50	2.821		
12,400.0	7,635.1	12,420.6	7,635.1	139.1	139.1	-90.00	-549.6	-4,948.9	768.6	490.6	278.07	2.764		
12,424.1	7,635.0	12,444.7	7,635.0	139.8	139.8	-90.00	-549.6	-4,973.0	768.6	489.2	279.41	2.751 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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	175.12	-32.8	2.8	32.9					
100.0	100.0	100.0	100.0	0.1	0.1	175.12	-32.8	2.8	32.9	32.7	0.22	146.398		
200.0	200.0	200.0	200.0	0.3	0.3	175.12	-32.8	2.8	32.9	32.2	0.67	48.799		
300.0	300.0	300.0	300.0	0.6	0.6	175.12	-32.8	2.8	32.9	31.8	1.12	29.280		
400.0	400.0	400.0	400.0	0.8	0.8	175.12	-32.8	2.8	32.9	31.3	1.57	20.914		
500.0	500.0	500.0	500.0	1.0	1.0	175.12	-32.8	2.8	32.9	30.9	2.02	16.266		
600.0	600.0	600.0	600.0	1.2	1.2	175.12	-32.8	2.8	32.9	30.4	2.47	13.309		
700.0	700.0	700.0	700.0	1.5	1.5	175.12	-32.8	2.8	32.9	30.0	2.92	11.261		
800.0	800.0	800.0	800.0	1.7	1.7	175.12	-32.8	2.8	32.9	29.5	3.37	9.760		
900.0	900.0	900.0	900.0	1.9	1.9	175.12	-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	175.12	-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	175.12	-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	175.12	-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	175.12	-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	175.12	-32.8	2.8	32.9	26.8	6.07	5.422 CC, ES		
1,500.0	1,500.0	1,499.4	1,499.4	3.3	3.2	174.64	-33.6	3.2	33.7	27.2	6.49	5.197		
1,600.0	1,600.0	1,598.8	1,598.8	3.5	3.4	173.34	-35.9	4.2	36.2	29.3	6.89	5.256		
1,700.0	1,700.0	1,698.1	1,698.0	3.7	3.6	171.53	-39.9	5.9	40.4	33.1	7.29	5.535		
1,800.0	1,800.0	1,797.2	1,796.9	3.9	3.8	169.54	-45.4	8.4	46.2	38.5	7.70	6.004		
1,900.0	1,900.0	1,896.1	1,895.5	4.2	4.0	141.27	-52.4	11.5	54.5	46.4	8.12	6.714		
2,000.0	2,000.0	1,995.6	1,994.6	4.4	4.2	141.09	-60.1	14.9	64.8	56.3	8.53	7.594		
2,100.0	2,099.9	2,094.9	2,093.6	4.6	4.4	141.77	-67.8	18.3	76.5	67.5	8.95	8.542		
2,200.0	2,199.7	2,194.0	2,192.3	4.8	4.6	142.92	-75.4	21.7	89.5	80.1	9.37	9.551		
2,300.0	2,299.4	2,292.9	2,290.9	5.1	4.8	144.33	-83.0	25.1	104.0	94.2	9.79	10.617		
2,400.0	2,398.9	2,391.6	2,389.2	5.3	5.1	145.85	-90.7	28.4	119.9	109.7	10.22	11.738		
2,429.3	2,428.0	2,420.4	2,417.9	5.4	5.1	146.30	-92.9	29.4	124.9	114.5	10.34	12.075		
2,500.0	2,498.3	2,490.1	2,487.3	5.5	5.3	147.35	-98.3	31.8	137.0	126.4	10.65	12.865		
2,600.0	2,597.7	2,588.5	2,585.4	5.8	5.5	148.55	-105.9	35.2	154.2	143.2	11.09	13.908		
2,700.0	2,697.1	2,687.0	2,683.5	6.0	5.8	149.52	-113.5	38.5	171.5	160.0	11.54	14.870		
2,800.0	2,796.5	2,785.4	2,781.6	6.3	6.0	150.30	-121.1	41.9	188.9	176.9	11.98	15.760		
2,900.0	2,895.9	2,883.9	2,879.8	6.5	6.3	150.96	-128.7	45.3	206.2	193.8	12.43	16.585		
3,000.0	2,995.3	2,982.4	2,977.9	6.8	6.5	151.51	-136.3	48.6	223.6	210.7	12.89	17.350		
3,100.0	3,094.7	3,080.8	3,076.0	7.1	6.8	151.98	-143.9	52.0	241.0	227.7	13.34	18.061		
3,200.0	3,194.1	3,179.3	3,174.1	7.3	7.0	152.39	-151.5	55.4	258.4	244.6	13.80	18.724		
3,300.0	3,293.5	3,277.7	3,272.2	7.6	7.3	152.75	-159.1	58.7	275.8	261.6	14.26	19.343		
3,400.0	3,392.9	3,376.2	3,370.3	7.9	7.6	153.07	-166.7	62.1	293.3	278.6	14.72	19.921		
3,500.0	3,492.3	3,474.6	3,468.4	8.2	7.8	153.35	-174.3	65.5	310.7	295.5	15.18	20.463		
3,600.0	3,591.7	3,573.1	3,566.5	8.4	8.1	153.60	-181.9	68.9	328.2	312.5	15.65	20.971		
3,700.0	3,691.1	3,671.6	3,664.6	8.7	8.3	153.82	-189.5	72.2	345.6	329.5	16.11	21.449		
3,800.0	3,790.5	3,770.0	3,762.7	9.0	8.6	154.02	-197.1	75.6	363.1	346.5	16.58	21.899		
3,900.0	3,889.9	3,868.5	3,860.8	9.3	8.9	154.21	-204.7	79.0	380.5	363.5	17.05	22.323		
4,000.0	3,989.3	3,966.9	3,958.9	9.5	9.1	154.38	-212.3	82.3	398.0	380.5	17.51	22.723		
4,100.0	4,088.7	4,065.4	4,057.0	9.8	9.4	154.53	-219.9	85.7	415.5	397.5	17.98	23.102		
4,197.9	4,186.0	4,161.8	4,153.1	10.1	9.6	154.67	-227.4	89.0	432.6	414.1	18.44	23.453		
4,200.0	4,188.1	4,163.8	4,155.1	10.1	9.6	154.68	-227.5	89.1	432.9	414.5	18.45	23.460		
4,300.0	4,287.6	4,262.6	4,253.5	10.3	9.9	154.84	-235.2	92.4	448.8	429.9	18.91	23.735		
4,400.0	4,387.5	4,361.7	4,352.3	10.5	10.2	154.80	-242.8	95.8	461.5	442.2	19.34	23.859		
4,500.0	4,487.4	4,461.2	4,451.5	10.7	10.4	154.55	-250.5	99.2	471.1	451.3	19.76	23.846		
4,512.6	4,500.0	4,473.8	4,463.9	10.7	10.5	-178.61	-251.5	99.7	472.1	451.2	20.87	22.620		
4,600.0	4,587.4	4,560.9	4,550.7	10.9	10.7	-178.98	-258.2	102.6	478.8	457.5	21.26	22.517		
4,700.0	4,687.4	4,660.5	4,650.0	11.1	11.0	-179.40	-265.9	106.0	486.5	464.7	21.73	22.383		

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 6E-234
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 6E-234	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	
4,800.0	4,787.4	4,760.2	4,749.3	11.3	11.3	-179.81	-273.6	109.5	494.2	472.0	22.20	22.255		
4,900.0	4,887.4	4,877.1	4,866.0	11.5	11.5	179.82	-280.8	112.6	500.3	477.6	22.66	22.075		
5,000.0	4,987.4	4,996.2	4,985.0	11.7	11.7	179.68	-283.6	113.9	502.7	479.6	23.10	21.765		
5,100.0	5,087.4	5,098.6	5,087.4	11.9	11.9	179.68	-283.6	113.9	502.7	479.2	23.50	21.396		
5,200.0	5,187.4	5,198.6	5,187.4	12.1	12.1	179.68	-283.6	113.9	502.7	478.8	23.88	21.049		
5,300.0	5,287.4	5,298.6	5,287.4	12.3	12.3	179.68	-283.6	113.9	502.7	478.4	24.27	20.711		
5,400.0	5,387.4	5,398.6	5,387.4	12.5	12.5	179.68	-283.6	113.9	502.7	478.1	24.66	20.382		
5,500.0	5,487.4	5,498.6	5,487.4	12.7	12.6	179.68	-283.6	113.9	502.7	477.7	25.06	20.062		
5,600.0	5,587.4	5,598.6	5,587.4	12.9	12.8	179.68	-283.6	113.9	502.7	477.3	25.45	19.751		
5,700.0	5,687.4	5,698.6	5,687.4	13.2	13.0	179.68	-283.6	113.9	502.7	476.9	25.85	19.448		
5,800.0	5,787.4	5,798.6	5,787.4	13.4	13.2	179.68	-283.6	113.9	502.7	476.5	26.25	19.152		
5,900.0	5,887.4	5,898.6	5,887.4	13.6	13.4	179.68	-283.6	113.9	502.7	476.1	26.65	18.865		
6,000.0	5,987.4	5,998.6	5,987.4	13.8	13.6	179.68	-283.6	113.9	502.7	475.7	27.05	18.585		
6,100.0	6,087.4	6,098.6	6,087.4	14.0	13.7	179.68	-283.6	113.9	502.7	475.3	27.45	18.312		
6,200.0	6,187.4	6,198.6	6,187.4	14.2	13.9	179.68	-283.6	113.9	502.7	474.9	27.86	18.046		
6,300.0	6,287.4	6,298.6	6,287.4	14.4	14.1	179.68	-283.6	113.9	502.7	474.5	28.26	17.787		
6,400.0	6,387.4	6,398.6	6,387.4	14.6	14.3	179.68	-283.6	113.9	502.7	474.1	28.67	17.534		
6,500.0	6,487.4	6,498.6	6,487.4	14.9	14.5	179.68	-283.6	113.9	502.7	473.6	29.08	17.288		
6,600.0	6,587.4	6,598.6	6,587.4	15.1	14.7	179.68	-283.6	113.9	502.7	473.2	29.49	17.048		
6,700.0	6,687.4	6,698.6	6,687.4	15.3	14.9	179.68	-283.6	113.9	502.7	472.8	29.90	16.813		
6,800.0	6,787.4	6,798.6	6,787.4	15.5	15.1	179.68	-283.6	113.9	502.7	472.4	30.31	16.585		
6,904.0	6,891.4	6,902.6	6,891.4	15.7	15.3	179.68	-283.6	113.9	502.7	472.0	30.74	16.353		
6,950.0	6,937.4	6,948.6	6,937.4	15.8	15.4	-90.48	-283.6	113.9	502.7	472.6	30.17	16.661		
7,000.0	6,987.2	6,998.4	6,987.2	15.9	15.5	-91.00	-283.6	113.9	502.8	472.4	30.36	16.558		
7,050.0	7,036.6	7,048.6	7,037.4	16.0	15.6	-91.77	-283.6	112.8	503.0	472.4	30.55	16.465		
7,100.0	7,085.3	7,099.4	7,088.0	16.0	15.7	-92.54	-283.6	108.4	503.2	472.5	30.72	16.382		
7,150.0	7,133.2	7,150.7	7,138.7	16.1	15.8	-93.30	-283.6	100.5	503.6	472.7	30.88	16.306		
7,200.0	7,180.1	7,202.4	7,189.1	16.2	15.8	-94.05	-283.6	89.2	504.0	473.0	31.04	16.235		
7,250.0	7,225.7	7,254.7	7,239.2	16.2	15.9	-94.78	-283.6	74.3	504.5	473.3	31.21	16.165		
7,300.0	7,269.9	7,307.4	7,288.6	16.3	16.0	-95.50	-283.6	55.8	505.1	473.7	31.39	16.092		
7,350.0	7,312.5	7,360.7	7,337.1	16.4	16.0	-96.20	-283.6	33.8	505.7	474.1	31.59	16.008		
7,400.0	7,353.3	7,414.4	7,384.3	16.5	16.1	-96.87	-283.6	8.1	506.4	474.6	31.83	15.908		
7,450.0	7,392.1	7,468.6	7,429.9	16.6	16.2	-97.50	-283.6	-21.0	507.1	475.0	32.13	15.783		
7,500.0	7,428.8	7,523.3	7,473.8	16.9	16.3	-98.11	-283.6	-53.6	507.9	475.4	32.50	15.627		
7,550.0	7,463.2	7,578.4	7,515.6	17.2	16.4	-98.68	-283.6	-89.6	508.6	475.6	32.96	15.429		
7,600.0	7,495.1	7,633.9	7,554.9	17.5	16.6	-99.21	-283.6	-128.8	509.3	475.8	33.54	15.185		
7,650.0	7,524.4	7,689.9	7,591.6	17.9	16.9	-99.70	-283.6	-171.1	510.1	475.8	34.25	14.890		
7,700.0	7,551.0	7,746.3	7,625.3	18.4	17.3	-100.14	-283.6	-216.2	510.7	475.6	35.12	14.544		
7,750.0	7,574.8	7,803.0	7,655.7	19.0	17.9	-100.54	-283.6	-264.1	511.4	475.2	36.14	14.148		
7,800.0	7,595.7	7,860.0	7,682.6	19.6	18.5	-100.88	-283.6	-314.3	512.0	474.6	37.35	13.708		
7,850.0	7,613.5	7,917.3	7,705.9	20.3	19.3	-101.18	-283.6	-366.6	512.5	473.7	38.72	13.233		
7,900.0	7,628.3	7,974.8	7,725.2	21.1	20.1	-101.41	-283.6	-420.8	512.9	472.6	40.27	12.736		
7,950.0	7,639.9	8,032.5	7,740.4	21.9	21.0	-101.60	-283.6	-476.5	513.2	471.2	41.97	12.228		
8,000.0	7,648.3	8,090.4	7,751.4	22.8	22.1	-101.72	-283.6	-533.3	513.4	469.6	43.81	11.719		
8,050.0	7,653.4	8,148.3	7,758.1	23.7	23.2	-101.79	-283.6	-590.8	513.6	467.8	45.78	11.218		
8,100.0	7,655.3	8,206.3	7,760.4	24.7	24.3	-101.80	-283.6	-648.7	513.6	465.7	47.85	10.733		
8,107.6	7,655.3	8,214.5	7,760.4	24.8	24.5	-101.80	-283.6	-656.9	513.6	465.4	48.16	10.663		
8,107.6	7,655.3	8,214.5	7,760.4	24.8	24.5	-101.80	-283.6	-656.9	513.6	465.4	48.16	10.663		
8,200.0	7,654.9	8,306.9	7,759.9	26.7	26.4	-101.80	-283.6	-749.4	513.6	461.6	51.93	9.890		
8,300.0	7,654.4	8,406.9	7,759.4	28.9	28.6	-101.80	-283.6	-849.4	513.6	457.3	56.24	9.132		
8,400.0	7,654.0	8,506.9	7,759.0	31.2	30.9	-101.80	-283.6	-949.4	513.6	452.8	60.74	8.456		

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 6E-234
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 6E-234	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	7,653.5	8,606.9	7,758.5	33.6	33.3	-101.80	-283.6	-1,049.4	513.6	448.2	65.39	7.854			
8,600.0	7,653.0	8,706.9	7,758.0	36.0	35.7	-101.80	-283.6	-1,149.4	513.6	443.4	70.16	7.319			
8,700.0	7,652.5	8,806.9	7,757.6	38.4	38.2	-101.80	-283.6	-1,249.4	513.6	438.5	75.04	6.844			
8,800.0	7,652.1	8,906.9	7,757.1	41.0	40.8	-101.80	-283.6	-1,349.4	513.6	433.6	80.00	6.420			
8,900.0	7,651.6	9,006.9	7,756.6	43.5	43.3	-101.80	-283.6	-1,449.4	513.6	428.5	85.02	6.041			
9,000.0	7,651.1	9,106.9	7,756.1	46.1	45.9	-101.80	-283.6	-1,549.4	513.6	423.5	90.10	5.700			
9,100.0	7,650.7	9,206.9	7,755.7	48.7	48.5	-101.80	-283.6	-1,649.4	513.6	418.3	95.23	5.393			
9,200.0	7,650.2	9,306.9	7,755.2	51.3	51.2	-101.80	-283.6	-1,749.4	513.6	413.2	100.39	5.116			
9,300.0	7,649.7	9,406.9	7,754.7	54.0	53.8	-101.80	-283.6	-1,849.4	513.6	408.0	105.59	4.864			
9,400.0	7,649.3	9,506.9	7,754.3	56.6	56.5	-101.80	-283.6	-1,949.4	513.6	402.7	110.82	4.634			
9,500.0	7,648.8	9,606.9	7,753.8	59.3	59.2	-101.80	-283.6	-2,049.4	513.6	397.5	116.08	4.424			
9,600.0	7,648.3	9,706.9	7,753.3	62.0	61.9	-101.80	-283.6	-2,149.4	513.6	392.2	121.35	4.232			
9,700.0	7,647.8	9,806.9	7,752.8	64.7	64.6	-101.80	-283.6	-2,249.4	513.6	386.9	126.65	4.055			
9,800.0	7,647.4	9,906.9	7,752.4	67.4	67.3	-101.80	-283.6	-2,349.4	513.6	381.6	131.96	3.892			
9,900.0	7,646.9	10,006.9	7,751.9	70.1	70.0	-101.80	-283.6	-2,449.4	513.6	376.3	137.29	3.741			
10,000.0	7,646.4	10,106.9	7,751.4	72.8	72.7	-101.80	-283.6	-2,549.4	513.6	370.9	142.63	3.601			
10,100.0	7,646.0	10,206.9	7,751.0	75.5	75.4	-101.80	-283.6	-2,649.4	513.6	365.6	147.98	3.471			
10,200.0	7,645.5	10,306.9	7,750.5	78.3	78.2	-101.80	-283.6	-2,749.4	513.6	360.2	153.34	3.349			
10,300.0	7,645.0	10,406.9	7,750.0	81.0	80.9	-101.80	-283.6	-2,849.4	513.6	354.9	158.71	3.236			
10,400.0	7,644.5	10,506.9	7,749.5	83.7	83.7	-101.80	-283.6	-2,949.4	513.6	349.5	164.10	3.130			
10,500.0	7,644.1	10,606.9	7,749.1	86.5	86.4	-101.80	-283.6	-3,049.4	513.6	344.1	169.48	3.030			
10,600.0	7,643.6	10,706.9	7,748.6	89.2	89.2	-101.80	-283.6	-3,149.4	513.6	338.7	174.88	2.937			
10,700.0	7,643.1	10,806.9	7,748.1	92.0	91.9	-101.80	-283.6	-3,249.4	513.6	333.3	180.28	2.849			
10,800.0	7,642.7	10,906.9	7,747.7	94.7	94.7	-101.80	-283.6	-3,349.4	513.6	327.9	185.69	2.766			
10,900.0	7,642.2	11,006.9	7,747.2	97.5	97.4	-101.80	-283.6	-3,449.3	513.6	322.5	191.10	2.687			
11,000.0	7,641.7	11,106.9	7,746.7	100.3	100.2	-101.80	-283.6	-3,549.3	513.6	317.0	196.52	2.613			
11,100.0	7,641.2	11,206.9	7,746.3	103.0	103.0	-101.80	-283.6	-3,649.3	513.6	311.6	201.94	2.543			
11,200.0	7,640.8	11,306.9	7,745.8	105.8	105.7	-101.80	-283.6	-3,749.3	513.6	306.2	207.37	2.477			
11,300.0	7,640.3	11,406.9	7,745.3	108.5	108.5	-101.80	-283.6	-3,849.3	513.6	300.8	212.80	2.413			
11,400.0	7,639.8	11,506.9	7,744.8	111.3	111.3	-101.80	-283.6	-3,949.3	513.6	295.3	218.23	2.353			
11,500.0	7,639.4	11,606.9	7,744.4	114.1	114.0	-101.80	-283.6	-4,049.3	513.6	289.9	223.67	2.296			
11,600.0	7,638.9	11,706.9	7,743.9	116.9	116.8	-101.80	-283.6	-4,149.3	513.6	284.5	229.11	2.242			
11,700.0	7,638.4	11,806.9	7,743.4	119.6	119.6	-101.80	-283.6	-4,249.3	513.6	279.0	234.56	2.190			
11,800.0	7,637.9	11,906.9	7,743.0	122.4	122.4	-101.80	-283.6	-4,349.3	513.6	273.6	240.00	2.140			
11,900.0	7,637.5	12,006.9	7,742.5	125.2	125.2	-101.80	-283.6	-4,449.3	513.6	268.1	245.45	2.092			
12,000.0	7,637.0	12,106.9	7,742.0	128.0	127.9	-101.80	-283.6	-4,549.3	513.6	262.7	250.90	2.047			
12,100.0	7,636.5	12,206.9	7,741.5	130.7	130.7	-101.80	-283.6	-4,649.3	513.6	257.2	256.35	2.003			
12,200.0	7,636.1	12,306.9	7,741.1	133.5	133.5	-101.80	-283.6	-4,749.3	513.6	251.8	261.81	1.962			
12,300.0	7,635.6	12,406.9	7,740.6	136.3	136.3	-101.80	-283.6	-4,849.3	513.6	246.3	267.27	1.922			
12,400.0	7,635.1	12,506.9	7,740.1	139.1	139.1	-101.80	-283.6	-4,949.3	513.6	240.8	272.72	1.883			
12,424.1	7,635.0	12,531.1	7,740.0	139.8	139.7	-101.80	-283.6	-4,973.5	513.6	239.5	274.04	1.874 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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	174.83	-61.9	5.6	62.2				
100.0	100.0	100.0	100.0	0.1	0.1	174.83	-61.9	5.6	62.2	62.0	0.22	276.670	
200.0	200.0	200.0	200.0	0.3	0.3	174.83	-61.9	5.6	62.2	61.5	0.67	92.223	
300.0	300.0	300.0	300.0	0.6	0.6	174.83	-61.9	5.6	62.2	61.1	1.12	55.334	
400.0	400.0	400.0	400.0	0.8	0.8	174.83	-61.9	5.6	62.2	60.6	1.57	39.524 CC, ES	
500.0	500.0	498.9	498.9	1.0	1.0	174.80	-62.8	5.7	63.0	61.1	1.99	31.613	
600.0	600.0	597.8	597.7	1.2	1.2	174.71	-65.3	6.0	65.6	63.2	2.40	27.301	
700.0	700.0	696.5	696.4	1.5	1.4	174.58	-69.5	6.6	69.9	67.1	2.83	24.744	
800.0	800.0	795.1	794.8	1.7	1.6	174.41	-75.4	7.4	76.0	72.7	3.26	23.313	
900.0	900.0	893.4	892.8	1.9	1.8	174.24	-83.0	8.4	83.7	80.0	3.70	22.635	
1,000.0	1,000.0	991.5	990.4	2.1	2.1	174.07	-92.2	9.6	93.2	89.0	4.15	22.476 SF	
1,100.0	1,100.0	1,089.1	1,087.5	2.4	2.3	173.90	-103.0	11.0	104.3	99.7	4.60	22.684	
1,200.0	1,200.0	1,186.4	1,184.0	2.6	2.6	173.75	-115.4	12.6	117.2	112.1	5.06	23.159	
1,300.0	1,300.0	1,283.3	1,279.8	2.8	2.9	173.62	-129.3	14.5	131.7	126.1	5.53	23.829	
1,400.0	1,400.0	1,379.6	1,374.8	3.0	3.2	173.50	-144.8	16.5	147.9	141.9	6.00	24.644	
1,500.0	1,500.0	1,477.7	1,471.4	3.3	3.6	173.39	-161.6	18.7	165.1	158.6	6.48	25.466	
1,600.0	1,600.0	1,576.2	1,568.5	3.5	4.0	173.31	-178.4	20.9	182.4	175.4	6.97	26.168	
1,700.0	1,700.0	1,674.7	1,665.5	3.7	4.3	173.24	-195.3	23.2	199.7	192.3	7.46	26.765	
1,800.0	1,800.0	1,773.2	1,762.5	3.9	4.7	173.18	-212.2	25.4	217.0	209.1	7.96	27.279	
1,900.0	1,900.0	1,871.5	1,859.3	4.2	5.1	146.26	-229.1	27.6	235.0	226.8	8.22	28.578	
2,000.0	2,000.0	1,969.6	1,956.0	4.4	5.5	146.43	-245.9	29.8	254.5	245.8	8.68	29.321	
2,100.0	2,099.9	2,067.4	2,052.3	4.6	5.8	146.76	-262.7	32.0	275.3	266.2	9.13	30.154	
2,200.0	2,199.7	2,164.8	2,148.2	4.8	6.2	147.21	-279.4	34.2	297.6	288.1	9.58	31.067	
2,300.0	2,299.4	2,261.9	2,243.8	5.1	6.6	147.73	-296.0	36.4	321.4	311.4	10.03	32.049	
2,400.0	2,398.9	2,358.6	2,339.0	5.3	7.0	148.32	-312.6	38.6	346.7	336.2	10.48	33.094	
2,429.3	2,428.0	2,386.8	2,366.8	5.4	7.1	148.50	-317.5	39.2	354.4	343.8	10.61	33.410	
2,500.0	2,498.3	2,454.9	2,433.9	5.5	7.3	149.01	-329.1	40.8	373.1	362.1	10.94	34.116	
2,600.0	2,597.7	2,551.2	2,528.8	5.8	7.7	149.66	-345.7	42.9	399.6	388.2	11.40	35.040	
2,700.0	2,697.1	2,647.6	2,623.7	6.0	8.1	150.22	-362.2	45.1	426.1	414.2	11.87	35.887	
2,800.0	2,796.5	2,743.9	2,718.6	6.3	8.5	150.72	-378.7	47.3	452.7	440.3	12.35	36.666	
2,900.0	2,895.9	2,840.3	2,813.5	6.5	8.9	151.16	-395.2	49.4	479.3	466.5	12.82	37.384	
3,000.0	2,995.3	2,936.6	2,908.4	6.8	9.3	151.56	-411.7	51.6	505.9	492.6	13.30	38.047	
3,100.0	3,094.7	3,032.9	3,003.2	7.1	9.6	151.91	-428.3	53.8	532.6	518.8	13.77	38.663	
3,200.0	3,194.1	3,129.3	3,098.1	7.3	10.0	152.23	-444.8	56.0	559.2	545.0	14.25	39.234	
3,300.0	3,293.5	3,225.6	3,193.0	7.6	10.4	152.53	-461.3	58.1	585.9	571.2	14.73	39.767	
3,400.0	3,392.9	3,321.9	3,287.9	7.9	10.8	152.79	-477.8	60.3	612.6	597.4	15.21	40.264	
3,500.0	3,492.3	3,418.3	3,382.8	8.2	11.2	153.04	-494.3	62.5	639.3	623.6	15.70	40.729	
3,600.0	3,591.7	3,514.6	3,477.7	8.4	11.6	153.26	-510.9	64.7	666.0	649.8	16.18	41.165	
3,700.0	3,691.1	3,610.9	3,572.5	8.7	11.9	153.47	-527.4	66.8	692.7	676.0	16.66	41.574	
3,800.0	3,790.5	3,707.3	3,667.4	9.0	12.3	153.67	-543.9	69.0	719.4	702.3	17.15	41.959	
3,900.0	3,889.9	3,803.6	3,762.3	9.3	12.7	153.84	-560.4	71.2	746.2	728.5	17.63	42.322	
4,000.0	3,989.3	3,899.9	3,857.2	9.5	13.1	154.01	-576.9	73.3	772.9	754.8	18.12	42.664	
4,100.0	4,088.7	3,996.3	3,952.1	9.8	13.5	154.17	-593.5	75.5	799.7	781.1	18.60	42.988	
4,197.9	4,186.0	4,090.6	4,045.0	10.1	13.9	154.31	-609.6	77.6	825.9	806.8	19.08	43.288	
4,200.0	4,188.1	4,092.6	4,047.0	10.1	13.9	154.32	-610.0	77.7	826.4	807.3	19.09	43.291	
4,300.0	4,287.6	4,189.4	4,142.3	10.3	14.2	154.62	-626.6	79.9	851.6	832.0	19.59	43.460	
4,400.0	4,387.5	4,286.9	4,238.3	10.5	14.6	154.79	-643.3	82.1	873.7	853.6	20.08	43.510	
4,500.0	4,487.4	4,385.0	4,335.0	10.7	15.0	154.84	-660.1	84.3	892.7	872.2	20.54	43.454	
4,512.6	4,500.0	4,397.4	4,347.2	10.7	15.1	-178.28	-662.3	84.6	894.9	869.3	25.55	35.029	
4,600.0	4,587.4	4,483.5	4,432.0	10.9	15.4	-178.43	-677.0	86.5	909.8	883.8	26.05	34.922	
4,700.0	4,687.4	4,582.0	4,529.0	11.1	15.8	-178.60	-693.9	88.7	926.9	900.3	26.65	34.779	

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 6E-234
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 6E-234	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 6F-334 - 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 (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	4,787.4	4,680.5	4,626.0	11.3	16.2	-178.76	-710.8	91.0	944.0	916.8	27.25	34.640	
4,900.0	4,887.4	4,779.0	4,723.0	11.5	16.6	-178.92	-727.7	93.2	961.1	933.3	27.85	34.507	
5,000.0	4,987.4	4,877.5	4,820.0	11.7	17.0	-179.07	-744.6	95.4	978.2	949.8	28.45	34.378	
5,100.0	5,087.4	4,976.0	4,917.0	11.9	17.4	-179.21	-761.5	97.6	995.3	966.3	29.06	34.254	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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 6F-414 - 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	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	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	64.830			
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-14.6	0.0	14.6	13.9	0.67	21.610			
300.0	300.0	300.0	300.0	0.6	0.6	180.00	-14.6	0.0	14.6	13.4	1.12	12.966			
400.0	400.0	400.0	400.0	0.8	0.8	180.00	-14.6	0.0	14.6	13.0	1.57	9.261			
500.0	500.0	500.0	500.0	1.0	1.0	180.00	-14.6	0.0	14.6	12.5	2.02	7.203			
600.0	600.0	600.0	600.0	1.2	1.2	180.00	-14.6	0.0	14.6	12.1	2.47	5.894			
700.0	700.0	700.0	700.0	1.5	1.5	180.00	-14.6	0.0	14.6	11.6	2.92	4.987			
800.0	800.0	800.0	800.0	1.7	1.7	180.00	-14.6	0.0	14.6	11.2	3.37	4.322			
900.0	900.0	900.0	900.0	1.9	1.9	180.00	-14.6	0.0	14.6	10.8	3.82	3.814			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	180.00	-14.6	0.0	14.6	10.3	4.27	3.412			
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	180.00	-14.6	0.0	14.6	9.9	4.72	3.087			
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	180.00	-14.6	0.0	14.6	9.4	5.17	2.819			
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	180.00	-14.6	0.0	14.6	9.0	5.62	2.593			
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	180.00	-14.6	0.0	14.6	8.5	6.07	2.401			
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	180.00	-14.6	0.0	14.6	8.1	6.52	2.236			
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	180.00	-14.6	0.0	14.6	7.6	6.97	2.091			
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	180.00	-14.6	0.0	14.6	7.2	7.42	1.965			
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	180.00	-14.6	0.0	14.6	6.7	7.87	1.852 CC, ES			
1,900.0	1,900.0	1,900.0	1,900.0	4.2	4.2	154.58	-14.6	0.0	15.4	7.0	8.31	1.847 SF			
2,000.0	2,000.0	2,000.0	2,000.0	4.4	4.4	158.20	-14.6	0.0	17.8	9.0	8.76	2.027			
2,100.0	2,099.9	2,099.9	2,099.9	4.6	4.6	162.43	-14.6	0.0	21.9	12.7	9.20	2.376			
2,200.0	2,199.7	2,199.7	2,199.7	4.8	4.8	166.23	-14.6	0.0	27.7	18.1	9.64	2.878			
2,300.0	2,299.4	2,299.4	2,299.4	5.1	5.1	169.24	-14.6	0.0	35.4	25.3	10.08	3.514			
2,400.0	2,398.9	2,398.9	2,398.9	5.3	5.3	171.51	-14.6	0.0	44.9	34.4	10.51	4.268			
2,429.3	2,428.0	2,428.0	2,428.0	5.4	5.3	172.06	-14.6	0.0	48.0	37.3	10.64	4.509			
2,500.0	2,498.3	2,498.3	2,498.3	5.5	5.5	173.16	-14.6	0.0	55.7	44.7	10.96	5.081			
2,600.0	2,597.7	2,597.7	2,597.7	5.8	5.7	174.28	-14.6	0.0	66.6	55.2	11.40	5.837			
2,700.0	2,697.1	2,697.1	2,697.1	6.0	5.9	175.09	-14.6	0.0	77.5	65.6	11.85	6.536			
2,800.0	2,796.5	2,796.5	2,796.5	6.3	6.2	175.70	-14.6	0.0	88.4	76.1	12.30	7.186			
2,900.0	2,895.9	2,895.9	2,895.9	6.5	6.4	176.17	-14.6	0.0	99.3	86.6	12.75	7.789			
3,000.0	2,995.3	2,995.3	2,995.3	6.8	6.6	176.55	-14.6	0.0	110.3	97.1	13.20	8.352			
3,100.0	3,094.7	3,094.7	3,094.7	7.1	6.8	176.86	-14.6	0.0	121.2	107.6	13.66	8.877			
3,200.0	3,194.1	3,194.1	3,194.1	7.3	7.1	177.12	-14.6	0.0	132.2	118.1	14.11	9.368			
3,300.0	3,293.5	3,293.5	3,293.5	7.6	7.3	177.34	-14.6	0.0	143.1	128.5	14.56	9.829			
3,400.0	3,392.9	3,392.9	3,392.9	7.9	7.5	177.53	-14.6	0.0	154.1	139.0	15.01	10.261			
3,500.0	3,492.3	3,492.3	3,492.3	8.2	7.7	177.70	-14.6	0.0	165.0	149.5	15.47	10.668			
3,600.0	3,591.7	3,591.7	3,591.7	8.4	8.0	177.84	-14.6	0.0	176.0	160.0	15.92	11.052			
3,700.0	3,691.1	3,691.1	3,691.1	8.7	8.2	177.97	-14.6	0.0	186.9	170.5	16.38	11.414			
3,800.0	3,790.5	3,790.5	3,790.5	9.0	8.4	178.08	-14.6	0.0	197.9	181.0	16.83	11.757			
3,900.0	3,889.9	3,889.9	3,889.9	9.3	8.6	178.18	-14.6	0.0	208.8	191.5	17.29	12.081			
4,000.0	3,989.3	3,989.3	3,989.3	9.5	8.9	178.27	-14.6	0.0	219.8	202.0	17.74	12.389			
4,100.0	4,088.7	4,088.7	4,088.7	9.8	9.1	178.35	-14.6	0.0	230.7	212.5	18.20	12.681			
4,197.9	4,186.0	4,186.0	4,186.0	10.1	9.3	178.43	-14.6	0.0	241.5	222.8	18.64	12.953			
4,200.0	4,188.1	4,188.1	4,188.1	10.1	9.3	178.43	-14.6	0.0	241.7	223.0	18.65	12.958			
4,300.0	4,287.6	4,287.6	4,287.6	10.3	9.5	178.49	-14.6	0.0	250.8	231.7	19.09	13.139			
4,400.0	4,387.5	4,387.5	4,387.5	10.5	9.7	178.53	-14.6	0.0	256.5	237.0	19.51	13.148			
4,500.0	4,487.4	4,487.4	4,487.4	10.7	10.0	178.54	-14.6	0.0	258.7	238.8	19.90	12.999			
4,512.6	4,500.0	4,500.0	4,500.0	10.7	10.0	-154.57	-14.6	0.0	258.7	238.0	20.72	12.487			
4,600.0	4,587.4	4,587.4	4,587.4	10.9	10.2	-154.57	-14.6	0.0	258.7	237.6	21.08	12.276			
4,700.0	4,687.4	4,687.4	4,687.4	11.1	10.4	-154.57	-14.6	0.0	258.7	237.2	21.50	12.032			

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 6E-234
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 6E-234	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 6F-414 - 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 (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	4,787.4	4,787.4	4,787.4	11.3	10.6	-154.57	-14.6	0.0	258.7	236.8	21.93	11.796			
4,900.0	4,887.4	4,887.4	4,887.4	11.5	10.9	-154.57	-14.6	0.0	258.7	236.4	22.36	11.570			
5,000.0	4,987.4	4,987.4	4,987.4	11.7	11.1	-154.57	-14.6	0.0	258.7	235.9	22.79	11.351			
5,100.0	5,087.4	5,087.4	5,087.4	11.9	11.3	-154.57	-14.6	0.0	258.7	235.5	23.22	11.140			
5,200.0	5,187.4	5,187.4	5,187.4	12.1	11.5	-154.57	-14.6	0.0	258.7	235.1	23.66	10.937			
5,300.0	5,287.4	5,287.4	5,287.4	12.3	11.8	-154.57	-14.6	0.0	258.7	234.6	24.09	10.741			
5,400.0	5,387.4	5,387.4	5,387.4	12.5	12.0	-154.57	-14.6	0.0	258.7	234.2	24.52	10.551			
5,500.0	5,487.4	5,487.4	5,487.4	12.7	12.2	-154.57	-14.6	0.0	258.7	233.8	24.95	10.368			
5,600.0	5,587.4	5,587.4	5,587.4	12.9	12.4	-154.57	-14.6	0.0	258.7	233.3	25.39	10.191			
5,700.0	5,687.4	5,687.4	5,687.4	13.2	12.7	-154.57	-14.6	0.0	258.7	232.9	25.82	10.019			
5,800.0	5,787.4	5,787.4	5,787.4	13.4	12.9	-154.57	-14.6	0.0	258.7	232.5	26.26	9.853			
5,900.0	5,887.4	5,887.4	5,887.4	13.6	13.1	-154.57	-14.6	0.0	258.7	232.0	26.69	9.692			
6,000.0	5,987.4	5,987.4	5,987.4	13.8	13.3	-154.57	-14.6	0.0	258.7	231.6	27.13	9.537			
6,100.0	6,087.4	6,087.4	6,087.4	14.0	13.6	-154.57	-14.6	0.0	258.7	231.2	27.57	9.386			
6,200.0	6,187.4	6,187.4	6,187.4	14.2	13.8	-154.57	-14.6	0.0	258.7	230.7	28.00	9.239			
6,300.0	6,287.4	6,287.4	6,287.4	14.4	14.0	-154.57	-14.6	0.0	258.7	230.3	28.44	9.097			
6,400.0	6,387.4	6,387.4	6,387.4	14.6	14.2	-154.57	-14.6	0.0	258.7	229.8	28.88	8.959			
6,500.0	6,487.4	6,487.4	6,487.4	14.9	14.5	-154.57	-14.6	0.0	258.7	229.4	29.32	8.825			
6,600.0	6,587.4	6,587.4	6,587.4	15.1	14.7	-154.57	-14.6	0.0	258.7	229.0	29.75	8.695			
6,700.0	6,687.4	6,687.4	6,687.4	15.3	14.9	-154.57	-14.6	0.0	258.7	228.5	30.19	8.569			
6,800.0	6,787.4	6,787.4	6,787.4	15.5	15.1	-154.57	-14.6	0.0	258.7	228.1	30.63	8.446			
6,904.0	6,891.4	6,891.4	6,891.4	15.7	15.4	-154.57	-14.6	0.0	258.7	227.6	31.09	8.322			
6,950.0	6,937.4	6,937.4	6,937.4	15.8	15.5	-64.89	-14.6	0.0	258.1	227.4	30.78	8.388			
7,000.0	6,987.2	6,987.2	6,987.2	15.9	15.6	-65.96	-14.6	0.0	256.2	225.2	30.94	8.280			
7,050.0	7,036.6	7,036.6	7,036.6	16.0	15.7	-67.79	-14.6	0.0	253.1	222.0	31.10	8.136			
7,100.0	7,085.3	7,085.3	7,085.3	16.0	15.8	-70.39	-14.6	0.0	249.0	217.7	31.28	7.961			
7,150.0	7,133.2	7,131.6	7,131.6	16.1	15.9	-73.58	-14.6	-0.2	244.5	213.0	31.47	7.770			
7,200.0	7,180.1	7,175.6	7,175.5	16.2	16.0	-76.88	-14.6	-2.5	240.5	208.8	31.68	7.593			
7,250.0	7,225.7	7,220.3	7,220.0	16.2	16.1	-80.33	-14.6	-7.4	237.4	205.4	31.92	7.436			
7,300.0	7,269.9	7,265.8	7,264.8	16.3	16.2	-83.91	-14.6	-15.0	235.1	202.9	32.19	7.304			
7,350.0	7,312.5	7,312.1	7,309.9	16.4	16.3	-87.58	-14.6	-25.6	233.9	201.4	32.48	7.201			
7,383.1	7,339.8	7,343.3	7,339.9	16.4	16.4	-90.04	-14.5	-34.2	233.6	201.0	32.67	7.151			
7,400.0	7,353.3	7,359.3	7,355.1	16.5	16.4	-91.31	-14.5	-39.1	233.7	200.9	32.76	7.132			
7,450.0	7,392.1	7,407.5	7,400.4	16.6	16.5	-95.05	-14.5	-55.7	234.6	201.6	33.04	7.101			
7,500.0	7,428.8	7,456.8	7,445.4	16.9	16.7	-98.76	-14.5	-75.6	236.7	203.4	33.28	7.110			
7,550.0	7,463.2	7,507.1	7,490.0	17.2	16.8	-102.41	-14.5	-98.9	239.8	206.3	33.49	7.160			
7,600.0	7,495.1	7,558.6	7,533.9	17.5	17.0	-105.96	-14.5	-125.8	244.0	210.3	33.66	7.249			
7,650.0	7,524.4	7,611.4	7,577.0	17.9	17.2	-109.37	-14.4	-156.3	249.1	215.3	33.78	7.373			
7,700.0	7,551.0	7,665.5	7,618.8	18.4	17.5	-112.63	-14.4	-190.6	255.0	221.1	33.88	7.526			
7,750.0	7,574.8	7,721.1	7,659.2	19.0	17.8	-115.71	-14.4	-228.8	261.6	227.6	33.98	7.700			
7,800.0	7,595.7	7,778.1	7,697.6	19.6	18.2	-118.59	-14.3	-271.0	268.8	234.7	34.09	7.884			
7,850.0	7,613.5	7,836.7	7,733.6	20.3	18.7	-121.27	-14.3	-317.1	276.3	242.1	34.25	8.067			
7,900.0	7,628.3	7,896.9	7,766.9	21.1	19.3	-123.74	-14.3	-367.3	284.1	249.6	34.50	8.236			
7,950.0	7,639.9	7,958.8	7,796.8	21.9	20.0	-125.99	-14.2	-421.4	291.9	257.1	34.86	8.375			
8,000.0	7,648.3	8,022.3	7,822.9	22.8	20.9	-128.04	-14.2	-479.3	299.6	264.3	35.36	8.475			
8,050.0	7,653.4	8,087.5	7,844.6	23.7	21.9	-129.87	-14.1	-540.7	307.1	271.1	36.01	8.527			
8,100.0	7,655.3	8,154.3	7,861.3	24.7	23.0	-131.49	-14.1	-605.4	314.1	277.3	36.84	8.526			
8,107.6	7,655.3	8,164.5	7,863.3	24.8	23.2	-131.71	-14.1	-615.4	315.1	278.1	36.98	8.520			
8,200.0	7,654.9	8,293.0	7,877.6	26.7	25.6	-133.70	-14.0	-743.0	322.4	283.2	39.18	8.228			
8,300.0	7,654.4	8,397.3	7,878.6	28.9	27.8	-133.90	-13.9	-847.3	323.3	281.0	42.29	7.644			
8,400.0	7,654.0	8,497.3	7,879.4	31.2	29.9	-134.07	-13.8	-947.3	324.1	278.6	45.50	7.123			

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 6E-234
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 6E-234	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	
8,500.0	7,653.5	8,597.3	7,880.2	33.6	32.2	-134.24	-13.7	-1,047.3	324.9	276.1	48.82	6.655		
8,600.0	7,653.0	8,697.3	7,881.0	36.0	34.6	-134.41	-13.6	-1,147.3	325.7	273.5	52.23	6.236		
8,700.0	7,652.5	8,797.3	7,881.7	38.4	37.0	-134.57	-13.5	-1,247.3	326.6	270.8	55.71	5.862		
8,800.0	7,652.1	8,897.3	7,882.5	41.0	39.4	-134.74	-13.4	-1,347.3	327.4	268.1	59.23	5.527		
8,900.0	7,651.6	8,997.3	7,883.3	43.5	41.9	-134.91	-13.4	-1,447.3	328.2	265.4	62.80	5.226		
9,000.0	7,651.1	9,097.3	7,884.1	46.1	44.5	-135.07	-13.3	-1,547.2	329.0	262.6	66.39	4.956		
9,100.0	7,650.7	9,197.3	7,884.9	48.7	47.1	-135.24	-13.2	-1,647.2	329.9	259.9	70.01	4.712		
9,200.0	7,650.2	9,297.3	7,885.7	51.3	49.7	-135.40	-13.1	-1,747.2	330.7	257.1	73.64	4.491		
9,300.0	7,649.7	9,397.3	7,886.4	54.0	52.3	-135.56	-13.0	-1,847.2	331.5	254.3	77.28	4.290		
9,400.0	7,649.3	9,497.3	7,887.2	56.6	54.9	-135.73	-12.9	-1,947.2	332.4	251.5	80.92	4.107		
9,500.0	7,648.8	9,597.3	7,888.0	59.3	57.6	-135.89	-12.9	-2,047.2	333.2	248.6	84.57	3.940		
9,600.0	7,648.3	9,697.2	7,888.8	62.0	60.2	-136.05	-12.8	-2,147.2	334.1	245.8	88.22	3.787		
9,700.0	7,647.8	9,797.2	7,889.6	64.7	62.9	-136.21	-12.7	-2,247.2	334.9	243.1	91.86	3.646		
9,800.0	7,647.4	9,897.2	7,890.4	67.4	65.6	-136.36	-12.6	-2,347.2	335.8	240.3	95.50	3.516		
9,900.0	7,646.9	9,997.2	7,891.2	70.1	68.3	-136.52	-12.5	-2,447.1	336.6	237.5	99.13	3.396		
10,000.0	7,646.4	10,097.2	7,891.9	72.8	71.0	-136.68	-12.4	-2,547.1	337.5	234.7	102.76	3.284		
10,100.0	7,646.0	10,197.2	7,892.7	75.5	73.7	-136.84	-12.4	-2,647.1	338.3	232.0	106.37	3.181		
10,200.0	7,645.5	10,297.2	7,893.5	78.3	76.5	-136.99	-12.3	-2,747.1	339.2	229.2	109.98	3.084		
10,300.0	7,645.0	10,397.2	7,894.3	81.0	79.2	-137.15	-12.2	-2,847.1	340.1	226.5	113.57	2.994		
10,400.0	7,644.5	10,497.2	7,895.1	83.7	81.9	-137.30	-12.1	-2,947.1	340.9	223.8	117.15	2.910		
10,500.0	7,644.1	10,597.2	7,895.9	86.5	84.6	-137.45	-12.0	-3,047.1	341.8	221.1	120.72	2.831		
10,600.0	7,643.6	10,697.2	7,896.7	89.2	87.4	-137.61	-11.9	-3,147.1	342.7	218.4	124.28	2.757		
10,700.0	7,643.1	10,797.2	7,897.4	92.0	90.1	-137.76	-11.9	-3,247.1	343.5	215.7	127.83	2.687		
10,800.0	7,642.7	10,897.2	7,898.2	94.7	92.9	-137.91	-11.8	-3,347.0	344.4	213.1	131.36	2.622		
10,900.0	7,642.2	10,997.1	7,899.0	97.5	95.6	-138.06	-11.7	-3,447.0	345.3	210.4	134.88	2.560		
11,000.0	7,641.7	11,097.1	7,899.8	100.3	98.4	-138.21	-11.6	-3,547.0	346.2	207.8	138.38	2.502		
11,100.0	7,641.2	11,197.1	7,900.6	103.0	101.1	-138.36	-11.5	-3,647.0	347.0	205.2	141.87	2.446		
11,200.0	7,640.8	11,297.1	7,901.4	105.8	103.9	-138.50	-11.4	-3,747.0	347.9	202.6	145.34	2.394		
11,300.0	7,640.3	11,397.1	7,902.2	108.5	106.7	-138.65	-11.4	-3,847.0	348.8	200.0	148.80	2.344		
11,400.0	7,639.8	11,497.1	7,902.9	111.3	109.4	-138.80	-11.3	-3,947.0	349.7	197.5	152.24	2.297		
11,500.0	7,639.4	11,597.1	7,903.7	114.1	112.2	-138.94	-11.2	-4,047.0	350.6	194.9	155.67	2.252		
11,600.0	7,638.9	11,697.1	7,904.5	116.9	115.0	-139.09	-11.1	-4,147.0	351.5	192.4	159.08	2.209		
11,700.0	7,638.4	11,797.1	7,905.3	119.6	117.7	-139.23	-11.0	-4,246.9	352.4	189.9	162.48	2.169		
11,800.0	7,637.9	11,897.1	7,906.1	122.4	120.5	-139.37	-10.9	-4,346.9	353.3	187.4	165.87	2.130		
11,900.0	7,637.5	11,997.1	7,906.9	125.2	123.3	-139.52	-10.9	-4,446.9	354.2	185.0	169.23	2.093		
12,000.0	7,637.0	12,097.1	7,907.7	128.0	126.1	-139.66	-10.8	-4,546.9	355.1	182.5	172.59	2.057		
12,100.0	7,636.5	12,197.0	7,908.4	130.7	128.8	-139.80	-10.7	-4,646.9	356.0	180.1	175.92	2.024		
12,200.0	7,636.1	12,297.0	7,909.2	133.5	131.6	-139.94	-10.6	-4,746.9	356.9	177.7	179.24	1.991		
12,300.0	7,635.6	12,397.0	7,910.0	136.3	134.4	-140.08	-10.5	-4,846.9	357.8	175.3	182.55	1.960		
12,400.0	7,635.1	12,497.0	7,910.8	139.1	137.2	-140.22	-10.4	-4,946.9	358.7	172.9	185.84	1.930		
12,424.1	7,635.0	12,521.1	7,911.0	139.8	137.8	-140.25	-10.4	-4,971.0	358.9	172.3	186.63	1.923		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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	175.81	-76.5	5.6	76.7				
100.0	100.0	100.0	100.0	0.1	0.1	175.81	-76.5	5.6	76.7	76.5	0.22	341.304	
200.0	200.0	200.0	200.0	0.3	0.3	175.81	-76.5	5.6	76.7	76.0	0.67	113.768 CC, ES	
300.0	300.0	298.7	298.7	0.6	0.5	175.86	-77.4	5.6	77.6	76.5	1.10	70.684	
400.0	400.0	397.3	397.2	0.8	0.7	176.00	-79.9	5.6	80.1	78.6	1.52	52.760	
500.0	500.0	495.8	495.7	1.0	0.9	176.20	-84.1	5.6	84.4	82.5	1.96	43.188	
600.0	600.0	594.1	593.8	1.2	1.2	176.46	-90.1	5.6	90.4	88.0	2.40	37.683	
700.0	700.0	692.2	691.6	1.5	1.4	176.75	-97.6	5.5	98.2	95.3	2.85	34.416	
800.0	800.0	790.0	789.0	1.7	1.7	177.04	-106.9	5.5	107.6	104.3	3.31	32.495	
900.0	900.0	887.5	885.8	1.9	2.0	177.33	-117.7	5.5	118.7	114.9	3.77	31.439	
1,000.0	1,000.0	984.5	982.1	2.1	2.3	177.60	-130.1	5.5	131.5	127.2	4.25	30.965	
1,100.0	1,100.0	1,081.1	1,077.7	2.4	2.6	177.85	-144.1	5.4	145.9	141.2	4.72	30.897 SF	
1,200.0	1,200.0	1,177.2	1,172.5	2.6	2.9	178.07	-159.6	5.4	162.1	156.9	5.21	31.120	
1,300.0	1,300.0	1,272.8	1,266.5	2.8	3.3	178.28	-176.6	5.3	179.9	174.2	5.70	31.556	
1,400.0	1,400.0	1,367.7	1,359.7	3.0	3.7	178.45	-195.1	5.3	199.3	193.1	6.20	32.149	
1,500.0	1,500.0	1,463.6	1,453.5	3.3	4.1	178.61	-215.1	5.2	220.2	213.5	6.71	32.821	
1,600.0	1,600.0	1,561.4	1,549.0	3.5	4.5	178.75	-235.8	5.2	241.3	234.1	7.22	33.403	
1,700.0	1,700.0	1,659.1	1,644.5	3.7	4.9	178.86	-256.5	5.1	262.4	254.7	7.74	33.897	
1,800.0	1,800.0	1,756.9	1,740.1	3.9	5.4	178.96	-277.1	5.0	283.6	275.3	8.26	34.320	
1,900.0	1,900.0	1,854.4	1,835.4	4.2	5.8	152.13	-297.8	5.0	305.5	297.1	8.38	36.467	
2,000.0	2,000.0	1,951.6	1,930.4	4.4	6.2	152.30	-318.3	4.9	328.9	320.0	8.84	37.210	
2,100.0	2,099.9	2,048.5	2,025.1	4.6	6.7	152.56	-338.8	4.9	353.8	344.5	9.30	38.056	
2,200.0	2,199.7	2,144.9	2,119.3	4.8	7.1	152.89	-359.2	4.8	380.2	370.5	9.75	38.993	
2,300.0	2,299.4	2,240.8	2,213.1	5.1	7.6	153.27	-379.5	4.7	408.2	398.0	10.20	40.010	
2,400.0	2,398.9	2,336.3	2,306.4	5.3	8.0	153.68	-399.6	4.7	437.6	427.0	10.65	41.096	
2,429.3	2,428.0	2,364.2	2,333.6	5.4	8.1	153.81	-405.5	4.7	446.6	435.8	10.78	41.427	
2,500.0	2,498.3	2,431.4	2,399.3	5.5	8.4	154.20	-419.8	4.6	468.3	457.2	11.11	42.145	
2,600.0	2,597.7	2,526.5	2,492.3	5.8	8.9	154.69	-439.9	4.6	499.0	487.4	11.58	43.085	
2,700.0	2,697.1	2,621.6	2,585.2	6.0	9.3	155.12	-460.0	4.5	529.8	517.7	12.06	43.945	
2,800.0	2,796.5	2,716.6	2,678.1	6.3	9.7	155.51	-480.1	4.5	560.5	548.0	12.53	44.735	
2,900.0	2,895.9	2,811.7	2,771.1	6.5	10.2	155.85	-500.2	4.4	591.3	578.3	13.01	45.463	
3,000.0	2,995.3	2,906.8	2,864.0	6.8	10.6	156.16	-520.3	4.3	622.2	608.7	13.49	46.135	
3,100.0	3,094.7	3,001.9	2,956.9	7.1	11.0	156.45	-540.4	4.3	653.0	639.0	13.97	46.759	
3,200.0	3,194.1	3,097.0	3,049.8	7.3	11.5	156.70	-560.5	4.2	683.8	669.4	14.45	47.337	
3,300.0	3,293.5	3,192.0	3,142.8	7.6	11.9	156.94	-580.6	4.2	714.7	699.8	14.93	47.876	
3,400.0	3,392.9	3,287.1	3,235.7	7.9	12.3	157.15	-600.7	4.1	745.6	730.2	15.41	48.379	
3,500.0	3,492.3	3,382.2	3,328.6	8.2	12.8	157.35	-620.8	4.1	776.5	760.6	15.89	48.850	
3,600.0	3,591.7	3,477.3	3,421.6	8.4	13.2	157.53	-640.9	4.0	807.3	791.0	16.38	49.290	
3,700.0	3,691.1	3,572.4	3,514.5	8.7	13.7	157.70	-661.0	3.9	838.2	821.4	16.86	49.704	
3,800.0	3,790.5	3,667.4	3,607.4	9.0	14.1	157.86	-681.1	3.9	869.1	851.8	17.35	50.094	
3,900.0	3,889.9	3,762.5	3,700.4	9.3	14.5	158.01	-701.2	3.8	900.0	882.2	17.84	50.460	
4,000.0	3,989.3	3,857.6	3,793.3	9.5	15.0	158.14	-721.3	3.8	930.9	912.6	18.32	50.806	
4,100.0	4,088.7	3,952.7	3,886.2	9.8	15.4	158.27	-741.4	3.7	961.9	943.1	18.81	51.133	
4,197.9	4,186.0	4,045.8	3,977.2	10.1	15.8	158.39	-761.1	3.7	992.1	972.8	19.29	51.436	
4,200.0	4,188.1	4,047.8	3,979.2	10.1	15.9	158.40	-761.5	3.7	992.8	973.5	19.30	51.439	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	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 Depths are relative to WELL @ 5083.0ft (RKB - 13')

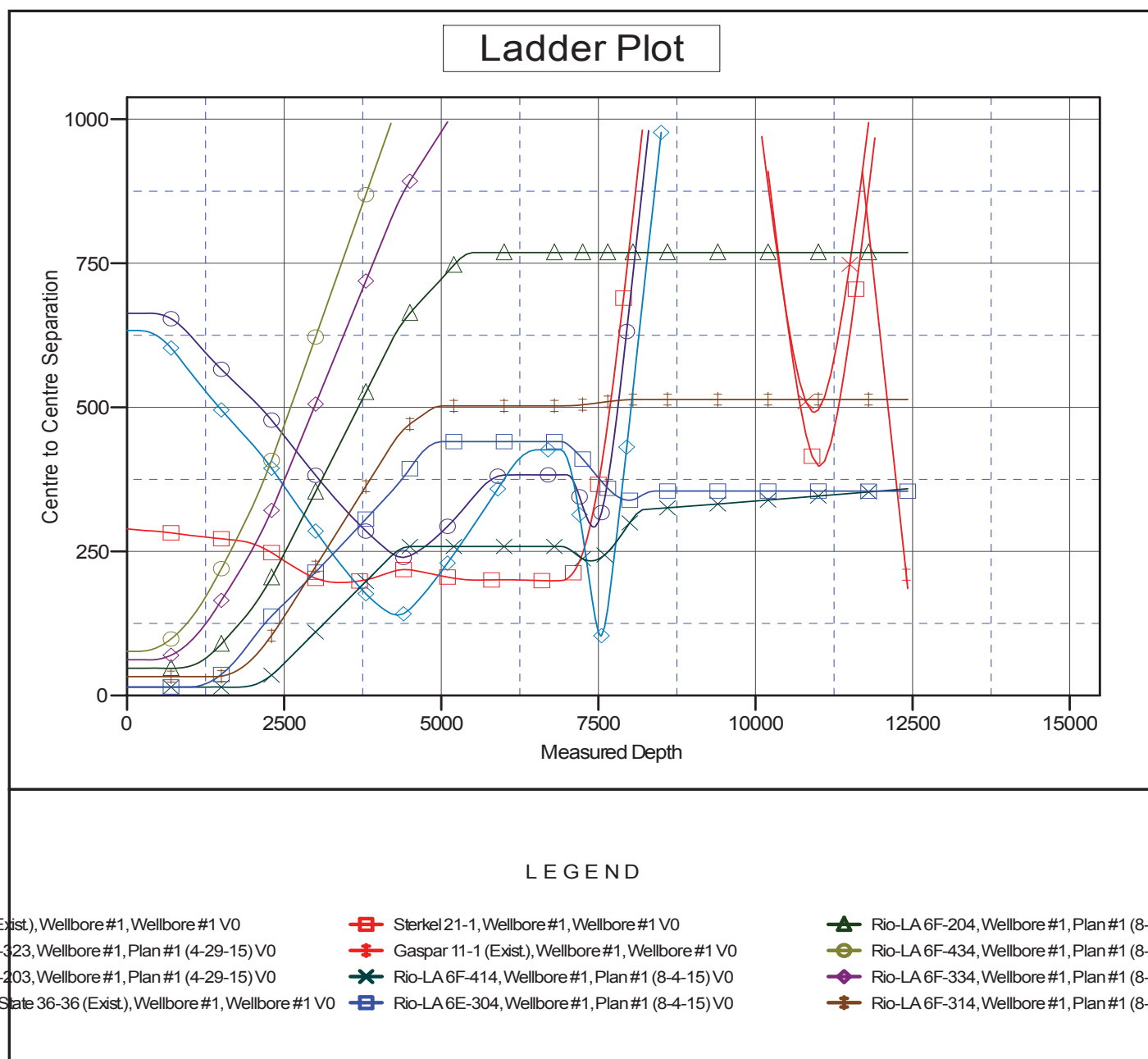
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Rio-LA 6E-234

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.36°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Rio-LA 6E-234
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 6E-234	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
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