

# PETROLEUM DEVELOPMENT CORP Weld County CO

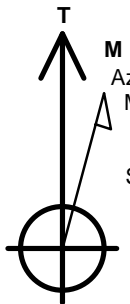
Well Name: **Lajco 17M-323**

Surface Location: Lajco 4N67W17R Pad Sec.17-T4N-R67W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4794.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1359680.29	3163456.07	40.319240	-104.913800	
RKB - 13' WELL @ 4807.0ft (RKB - 13')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E/W Hardline (17M-323)	1.0	-2431.2	106.0	Rectangle (Sides: L3960.9 W100.0)
SHL 370'FNL & 2185'FEL	1.0	0.0	0.0	Point
BHL 500'FSL & 2154'FEL	7013.0	-4411.7	106.0	Point



Azimuths to True North  
Magnetic North: 8.39°

Magnetic Field  
Strength: 52646.1snT  
Dip Angle: 66.82°  
Date: 7/7/2015  
Model: IGRF2010

## ANNOTATIONS

TVD	MD	Annotation
2000.0	2000.0	KOP - Start Build 1.00
6218.7	6232.0	Start DLS 7.50 TFO 164.45
7043.0	7498.4	Start 3961.1 hold at 7498.4 MD
7013.0	11459.4	TD at 11459.4

Lajco 4N67W17R Pad Sec.17-T4N-R67W  
Lajco 17M-323  
Plan #2 (7-2-15)

South(-)/North(+) (1600 ft/in)

SHL 370'FNL & 2185'FEL

Start DLS 7.50 TFO 164.45

Coming 17-1 (Exist.)

Start 3961.1 hold at 7498.4 MD

Lajco 17ND

Coming 17-4 (Exist.)

Casing Pt. 821'FNL  
& 2079'FEL

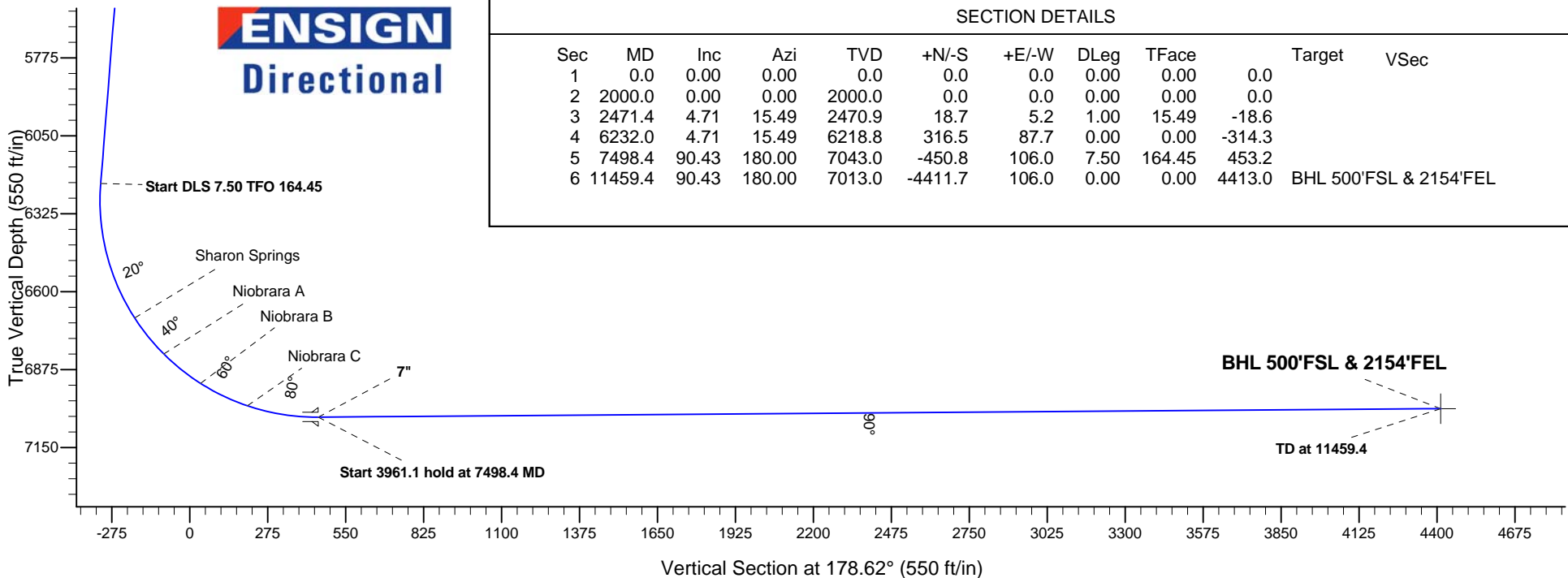
50' E/W Hardline (17M-323)

Lajco 17M-323

TD at 11459.4

BHL 500'FSL & 2154'FEL

West(-)/East(+) (1600 ft/in)



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	Target	VSec
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	2000.0	0.00	0.00	2000.0	0.0	0.0	0.00	0.00	0.0	
3	2471.4	4.71	15.49	2470.9	18.7	5.2	1.00	15.49	-18.6	
4	6232.0	4.71	15.49	6218.8	316.5	87.7	0.00	0.00	-314.3	
5	7498.4	90.43	180.00	7043.0	-450.8	106.0	7.50	164.45	453.2	
6	11459.4	90.43	180.00	7013.0	-4411.7	106.0	0.00	0.00	4413.0	BHL 500'FSL & 2154'FEL



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.17-T4N-R67W**

**Lajco 4N67W17R Pad Sec.17-T4N-R67W**

**Lajco 17M-323**

**Wellbore #1**

**Plan: Plan #2 (7-2-15)**

## **Standard Planning Report**

**09 July, 2015**

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Project:</b>	SEC.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-2-15)		

<b>Project</b>	SEC.17-T4N-R67W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						Lajco 4N67W17R Pad Sec.17-T4N-R67W											
Site Position:						Northing:			1,359,711.77 ft			Latitude:			40.319300		
From:			Lat/Long			Easting:			3,164,903.08 ft			Longitude:			-104.908610		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.38 °		

Well	Lajco 17M-323					
Well Position	+N-S	-21.9 ft	Northing:	1,359,680.29 ft	Latitude:	40.319240
	+E-W	-1,447.3 ft	Easting:	3,163,456.07 ft	Longitude:	-104.913800
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,794.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/7/2015	8.39	66.82	52,646

<b>Design</b>	Plan #2 (7-2-15)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	178.62

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,471.4	4.71	15.49	2,470.9	18.7	5.2	1.00	1.00	0.00	15.49	
6,232.0	4.71	15.49	6,218.8	316.5	87.7	0.00	0.00	0.00	0.00	
7,498.4	90.43	180.00	7,043.0	-450.8	106.0	7.50	6.77	12.99	164.45	
11,459.4	90.43	180.00	7,013.0	-4,411.7	106.0	0.00	0.00	0.00	0.00	BHL 500'FSL & 215

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<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Project:</b>	SEC.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-2-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
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
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP - Start Build 1.00</b>									
2,100.0	1.00	15.49	2,100.0	0.8	0.2	-0.8	1.00	1.00	0.00
2,200.0	2.00	15.49	2,200.0	3.4	0.9	-3.3	1.00	1.00	0.00
2,300.0	3.00	15.49	2,299.9	7.6	2.1	-7.5	1.00	1.00	0.00
2,400.0	4.00	15.49	2,399.7	13.5	3.7	-13.4	1.00	1.00	0.00
2,471.4	4.71	15.49	2,470.9	18.7	5.2	-18.6	1.00	1.00	0.00
2,500.0	4.71	15.49	2,499.4	20.9	5.8	-20.8	0.00	0.00	0.00
2,600.0	4.71	15.49	2,599.0	28.9	8.0	-28.7	0.00	0.00	0.00
2,700.0	4.71	15.49	2,698.7	36.8	10.2	-36.5	0.00	0.00	0.00
2,800.0	4.71	15.49	2,798.4	44.7	12.4	-44.4	0.00	0.00	0.00
2,900.0	4.71	15.49	2,898.0	52.6	14.6	-52.3	0.00	0.00	0.00
3,000.0	4.71	15.49	2,997.7	60.5	16.8	-60.1	0.00	0.00	0.00
3,100.0	4.71	15.49	3,097.3	68.5	19.0	-68.0	0.00	0.00	0.00
3,200.0	4.71	15.49	3,197.0	76.4	21.2	-75.9	0.00	0.00	0.00
3,300.0	4.71	15.49	3,296.7	84.3	23.4	-83.7	0.00	0.00	0.00
3,400.0	4.71	15.49	3,396.3	92.2	25.6	-91.6	0.00	0.00	0.00
3,468.9	4.71	15.49	3,465.0	97.7	27.1	-97.0	0.00	0.00	0.00
<b>Parkman</b>									
3,500.0	4.71	15.49	3,496.0	100.1	27.7	-99.5	0.00	0.00	0.00
3,600.0	4.71	15.49	3,595.7	108.1	29.9	-107.3	0.00	0.00	0.00
3,700.0	4.71	15.49	3,695.3	116.0	32.1	-115.2	0.00	0.00	0.00
3,800.0	4.71	15.49	3,795.0	123.9	34.3	-123.0	0.00	0.00	0.00
3,900.0	4.71	15.49	3,894.6	131.8	36.5	-130.9	0.00	0.00	0.00
3,995.7	4.71	15.49	3,990.0	139.4	38.6	-138.4	0.00	0.00	0.00
<b>Sussex</b>									
4,000.0	4.71	15.49	3,994.3	139.7	38.7	-138.8	0.00	0.00	0.00
4,100.0	4.71	15.49	4,094.0	147.7	40.9	-146.6	0.00	0.00	0.00
4,200.0	4.71	15.49	4,193.6	155.6	43.1	-154.5	0.00	0.00	0.00
4,300.0	4.71	15.49	4,293.3	163.5	45.3	-162.4	0.00	0.00	0.00
4,400.0	4.71	15.49	4,392.9	171.4	47.5	-170.2	0.00	0.00	0.00
4,500.0	4.71	15.49	4,492.6	179.3	49.7	-178.1	0.00	0.00	0.00
4,527.5	4.71	15.49	4,520.0	181.5	50.3	-180.3	0.00	0.00	0.00

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<b>Project:</b>	SEC.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-2-15)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>Shannon</b>									
4,600.0	4.71	15.49	4,592.3	187.3	51.9	-186.0	0.00	0.00	0.00
4,700.0	4.71	15.49	4,691.9	195.2	54.1	-193.8	0.00	0.00	0.00
4,800.0	4.71	15.49	4,791.6	203.1	56.3	-201.7	0.00	0.00	0.00
4,900.0	4.71	15.49	4,891.3	211.0	58.5	-209.6	0.00	0.00	0.00
5,000.0	4.71	15.49	4,990.9	218.9	60.7	-217.4	0.00	0.00	0.00
5,100.0	4.71	15.49	5,090.6	226.9	62.9	-225.3	0.00	0.00	0.00
5,200.0	4.71	15.49	5,190.2	234.8	65.1	-233.2	0.00	0.00	0.00
5,300.0	4.71	15.49	5,289.9	242.7	67.2	-241.0	0.00	0.00	0.00
5,400.0	4.71	15.49	5,389.6	250.6	69.4	-248.9	0.00	0.00	0.00
5,500.0	4.71	15.49	5,489.2	258.6	71.6	-256.8	0.00	0.00	0.00
5,600.0	4.71	15.49	5,588.9	266.5	73.8	-264.6	0.00	0.00	0.00
5,700.0	4.71	15.49	5,688.5	274.4	76.0	-272.5	0.00	0.00	0.00
5,800.0	4.71	15.49	5,788.2	282.3	78.2	-280.4	0.00	0.00	0.00
5,900.0	4.71	15.49	5,887.9	290.2	80.4	-288.2	0.00	0.00	0.00
6,000.0	4.71	15.49	5,987.5	298.2	82.6	-296.1	0.00	0.00	0.00
6,100.0	4.71	15.49	6,087.2	306.1	84.8	-303.9	0.00	0.00	0.00
6,200.0	4.71	15.49	6,186.9	314.0	87.0	-311.8	0.00	0.00	0.00
6,232.0	4.71	15.49	6,218.7	316.5	87.7	-314.3	0.00	0.00	0.00
<b>Start DLS 7.50 TFO 164.45</b>									
6,300.0	1.38	113.75	6,286.7	318.9	89.2	-316.7	7.50	-4.90	144.50
6,400.0	8.15	171.14	6,386.3	311.4	91.4	-309.1	7.50	6.77	57.40
6,500.0	15.61	175.47	6,484.1	290.9	93.5	-288.6	7.50	7.45	4.32
6,600.0	23.09	177.03	6,578.4	257.9	95.6	-255.5	7.50	7.48	1.56
6,700.0	30.58	177.85	6,667.5	212.8	97.6	-210.4	7.50	7.49	0.83
6,729.9	32.82	178.03	6,693.0	197.1	98.2	-194.7	7.50	7.49	0.60
<b>Sharon Springs</b>									
6,800.0	38.07	178.38	6,750.1	156.5	99.4	-154.1	7.50	7.49	0.49
6,893.6	45.09	178.73	6,820.0	94.5	101.0	-92.0	7.50	7.50	0.38
<b>Niobrara A</b>									
6,900.0	45.57	178.75	6,824.5	89.9	101.1	-87.5	7.50	7.50	0.33
7,000.0	53.07	179.04	6,889.7	14.2	102.5	-11.7	7.50	7.50	0.29
7,060.4	57.59	179.19	6,924.0	-35.5	103.3	37.9	7.50	7.50	0.24
<b>Niobrara B</b>									
7,100.0	60.56	179.28	6,944.4	-69.5	103.7	71.9	7.50	7.50	0.22
7,200.0	68.06	179.48	6,987.7	-159.5	104.7	162.0	7.50	7.50	0.20
7,244.2	71.37	179.56	7,003.0	-201.0	105.1	203.4	7.50	7.50	0.19
<b>Niobrara C</b>									
7,300.0	75.56	179.67	7,018.9	-254.4	105.4	256.9	7.50	7.50	0.18
7,400.0	83.06	179.84	7,037.4	-352.6	105.8	355.1	7.50	7.50	0.17
7,498.4	90.43	180.00	7,043.0	-450.8	106.0	453.2	7.50	7.50	0.17
<b>Start 3961.1 hold at 7498.4 MD - 7"</b>									
7,500.0	90.43	180.00	7,043.0	-452.4	106.0	454.8	0.00	0.00	0.00
7,600.0	90.43	180.00	7,042.2	-552.4	106.0	554.8	0.00	0.00	0.00
7,700.0	90.43	180.00	7,041.5	-652.4	106.0	654.8	0.00	0.00	0.00
7,800.0	90.43	180.00	7,040.7	-752.4	106.0	754.7	0.00	0.00	0.00
7,900.0	90.43	180.00	7,040.0	-852.4	106.0	854.7	0.00	0.00	0.00
8,000.0	90.43	180.00	7,039.2	-952.4	106.0	954.7	0.00	0.00	0.00
8,100.0	90.43	180.00	7,038.4	-1,052.4	106.0	1,054.6	0.00	0.00	0.00
8,200.0	90.43	180.00	7,037.7	-1,152.4	106.0	1,154.6	0.00	0.00	0.00
8,300.0	90.43	180.00	7,036.9	-1,252.4	106.0	1,254.6	0.00	0.00	0.00
8,400.0	90.43	180.00	7,036.2	-1,352.4	106.0	1,354.5	0.00	0.00	0.00

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<b>Project:</b>	SEC.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-2-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,500.0	90.43	180.00	7,035.4	-1,452.4	106.0	1,454.5	0.00	0.00	0.00
8,600.0	90.43	180.00	7,034.7	-1,552.4	106.0	1,554.5	0.00	0.00	0.00
8,700.0	90.43	180.00	7,033.9	-1,652.4	106.0	1,654.5	0.00	0.00	0.00
8,800.0	90.43	180.00	7,033.1	-1,752.4	106.0	1,754.4	0.00	0.00	0.00
8,900.0	90.43	180.00	7,032.4	-1,852.4	106.0	1,854.4	0.00	0.00	0.00
9,000.0	90.43	180.00	7,031.6	-1,952.4	106.0	1,954.4	0.00	0.00	0.00
9,100.0	90.43	180.00	7,030.9	-2,052.4	106.0	2,054.3	0.00	0.00	0.00
9,200.0	90.43	180.00	7,030.1	-2,152.4	106.0	2,154.3	0.00	0.00	0.00
9,300.0	90.43	180.00	7,029.4	-2,252.4	106.0	2,254.3	0.00	0.00	0.00
9,400.0	90.43	180.00	7,028.6	-2,352.4	106.0	2,354.2	0.00	0.00	0.00
9,500.0	90.43	180.00	7,027.8	-2,452.4	106.0	2,454.2	0.00	0.00	0.00
9,600.0	90.43	180.00	7,027.1	-2,552.4	106.0	2,554.2	0.00	0.00	0.00
9,700.0	90.43	180.00	7,026.3	-2,652.4	106.0	2,654.1	0.00	0.00	0.00
9,800.0	90.43	180.00	7,025.6	-2,752.4	106.0	2,754.1	0.00	0.00	0.00
9,900.0	90.43	180.00	7,024.8	-2,852.3	106.0	2,854.1	0.00	0.00	0.00
10,000.0	90.43	180.00	7,024.1	-2,952.3	106.0	2,954.0	0.00	0.00	0.00
10,100.0	90.43	180.00	7,023.3	-3,052.3	106.0	3,054.0	0.00	0.00	0.00
10,200.0	90.43	180.00	7,022.5	-3,152.3	106.0	3,154.0	0.00	0.00	0.00
10,300.0	90.43	180.00	7,021.8	-3,252.3	106.0	3,253.9	0.00	0.00	0.00
10,400.0	90.43	180.00	7,021.0	-3,352.3	106.0	3,353.9	0.00	0.00	0.00
10,500.0	90.43	180.00	7,020.3	-3,452.3	106.0	3,453.9	0.00	0.00	0.00
10,600.0	90.43	180.00	7,019.5	-3,552.3	106.0	3,553.8	0.00	0.00	0.00
10,700.0	90.43	180.00	7,018.8	-3,652.3	106.0	3,653.8	0.00	0.00	0.00
10,800.0	90.43	180.00	7,018.0	-3,752.3	106.0	3,753.8	0.00	0.00	0.00
10,900.0	90.43	180.00	7,017.2	-3,852.3	106.0	3,853.8	0.00	0.00	0.00
11,000.0	90.43	180.00	7,016.5	-3,952.3	106.0	3,953.7	0.00	0.00	0.00
11,100.0	90.43	180.00	7,015.7	-4,052.3	106.0	4,053.7	0.00	0.00	0.00
11,200.0	90.43	180.00	7,015.0	-4,152.3	106.0	4,153.7	0.00	0.00	0.00
11,300.0	90.43	180.00	7,014.2	-4,252.3	106.0	4,253.6	0.00	0.00	0.00
11,400.0	90.43	180.00	7,013.5	-4,352.3	106.0	4,353.6	0.00	0.00	0.00
11,459.4	90.43	180.00	7,013.0	-4,411.7	106.0	4,413.0	0.00	0.00	0.00
TD at 11459.4									

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 370'FNL & 2185'	0.00	0.00	1.0	0.0	0.0	1,359,680.30	3,163,456.07	40.319240	-104.913800
- plan hits target center									
- Point									
50' E/W Hardline (17M	0.00	0.00	1.0	-2,431.2	106.0	1,357,249.90	3,163,578.13	40.312566	-104.913420
- plan misses target center by 2433.6ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)									
- Rectangle (sides W3,960.9 H100.0 D0.0)									
BHL 500'FSL & 2154'	0.00	0.00	7,013.0	-4,411.7	106.0	1,355,269.54	3,163,591.21	40.307130	-104.913420
- plan hits target center									
- Point									

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Project:</b>	SEC.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>North Reference:</b>	True
<b>Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #2 (7-2-15)		

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,498.4	7,043.0	7"	7	7-1/2

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,468.9	3,465.0	Parkman		0.00	
3,995.7	3,990.0	Sussex		0.00	
4,527.5	4,520.0	Shannon		0.00	
6,729.9	6,693.0	Sharon Springs		0.00	
6,893.6	6,820.0	Niobrara A		0.00	
7,060.4	6,924.0	Niobrara B		0.00	
7,244.2	7,003.0	Niobrara C		0.00	
	7,131.0	Fort Hays		0.00	
	7,152.0	Codell		0.00	

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
2,000.0	2,000.0	0.0	0.0	KOP - Start Build 1.00
6,232.0	6,218.7	316.5	87.7	Start DLS 7.50 TFO 164.45
7,498.4	7,043.0	-450.8	106.0	Start 3961.1 hold at 7498.4 MD
11,459.4	7,013.0	-4,411.7	106.0	TD at 11459.4



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.17-T4N-R67W**

**Lajco 4N67W17R Pad Sec.17-T4N-R67W**

**Lajco 17M-323**

**Wellbore #1**

**Plan #2 (7-2-15)**

## **Anticollision Report**

**09 July, 2015**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2 (7-2-15)
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	ISCWSA
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	7/8/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,459.4	Plan #2 (7-2-15) (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						
Lajco 4N67W17R Pad Sec.17-T4N-R67W						
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	1,800.0	1,800.0	105.7	97.8	13.435	CC
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	3,300.0	3,292.6	108.5	93.8	7.403	ES
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	11,460.2	11,558.2	285.6	126.1	1.790	SF
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	800.0	800.0	62.0	58.6	18.388	CC
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	1,000.0	999.7	62.5	58.2	14.731	ES
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	1,400.0	1,397.1	72.4	66.4	11.978	SF
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	1,400.0	1,400.0	14.6	8.5	2.401	CC, ES
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	1,500.0	1,499.8	15.1	8.6	2.317	SF
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	1,000.0	1,000.0	47.4	43.2	11.109	CC
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	1,200.0	1,199.7	48.0	42.8	9.332	ES
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	11,460.2	11,457.7	984.6	809.4	5.620	SF
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	1,200.0	1,200.0	32.8	27.6	6.343	CC
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	1,300.0	1,299.8	33.1	27.5	5.906	ES
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	11,460.2	11,594.7	671.1	499.3	3.906	SF
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	200.0	200.0	91.1	90.4	135.138	CC
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	400.0	399.5	91.6	90.1	58.864	ES
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	1,000.0	987.4	127.2	122.5	27.381	SF
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	400.0	400.0	76.6	75.0	48.660	CC
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	500.0	499.8	76.7	74.7	38.120	ES
Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)	1,100.0	1,091.1	103.9	99.0	21.205	SF
Lajco Pad Sec.17-T4N-R67W						
Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1	7,336.2	7,022.9	213.1	178.7	6.205	CC, ES, SF
Coming 17-4 (Exist.) - Wellbore #1 - Wellbore #1	8,370.2	7,017.0	119.6	73.4	2.589	CC, ES, SF
Lajco 17ND - Wellbore #1 - Wellbore #1	7,993.5	7,211.8	303.4	262.1	7.356	CC
Lajco 17ND - Wellbore #1 - Wellbore #1	8,000.0	7,211.8	303.5	262.1	7.340	ES, SF

<b>Offset Design</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)										<b>Offset Site Error:</b>	0.0 ft
<b>Survey Program:</b>	0-MWD										<b>Offset Well Error:</b>	0.0 ft
<b>Reference</b>	<b>Vertical Depth (ft)</b>	<b>Offset</b>	<b>Vertical Depth (ft)</b>	<b>Semi Major Axis</b>	<b>Reference</b>	<b>Offset</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Distance</b>	<b>Minimum Separation (ft)</b>	<b>Warning</b>
<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Measured Depth (ft)</b>	<b>Vertical Depth (ft)</b>	<b>Reference</b>	<b>Offset</b>	<b>Highside Toolface (°)</b>	<b>Offset Wellbore Centre +N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Distance</b>	<b>Minimum Separation (ft)</b>	<b>Separation Factor</b>	<b>Warning</b>
0.0	0.0	0.0	0.0	0.0	0.0	-1.51	105.7	-2.8	105.7			

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
100.0	100.0	100.0	100.0	0.1	0.1	-1.51	-1.51	105.7	-2.8	105.7	105.5	0.22	470.222	
200.0	200.0	200.0	200.0	0.3	0.3	-1.51	-1.51	105.7	-2.8	105.7	105.0	0.67	156.741	
300.0	300.0	300.0	300.0	0.6	0.6	-1.51	-1.51	105.7	-2.8	105.7	104.6	1.12	94.044	
400.0	400.0	400.0	400.0	0.8	0.8	-1.51	-1.51	105.7	-2.8	105.7	104.1	1.57	67.175	
500.0	500.0	500.0	500.0	1.0	1.0	-1.51	-1.51	105.7	-2.8	105.7	103.7	2.02	52.247	
600.0	600.0	600.0	600.0	1.2	1.2	-1.51	-1.51	105.7	-2.8	105.7	103.2	2.47	42.747	
700.0	700.0	700.0	700.0	1.5	1.5	-1.51	-1.51	105.7	-2.8	105.7	102.8	2.92	36.171	
800.0	800.0	800.0	800.0	1.7	1.7	-1.51	-1.51	105.7	-2.8	105.7	102.3	3.37	31.348	
900.0	900.0	900.0	900.0	1.9	1.9	-1.51	-1.51	105.7	-2.8	105.7	101.9	3.82	27.660	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-1.51	-1.51	105.7	-2.8	105.7	101.4	4.27	24.749	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	-1.51	-1.51	105.7	-2.8	105.7	101.0	4.72	22.392	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	-1.51	-1.51	105.7	-2.8	105.7	100.5	5.17	20.444	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	-1.51	-1.51	105.7	-2.8	105.7	100.1	5.62	18.809	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	-1.51	-1.51	105.7	-2.8	105.7	99.6	6.07	17.416	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	-1.51	-1.51	105.7	-2.8	105.7	99.2	6.52	16.215	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-1.51	-1.51	105.7	-2.8	105.7	98.7	6.97	15.168	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-1.51	-1.51	105.7	-2.8	105.7	98.3	7.42	14.249	
1,800.0	1,800.0	1,800.0	1,800.0	3.9	3.9	-1.51	-1.51	105.7	-2.8	105.7	97.8	7.87	13.435 CC	
1,900.0	1,900.0	1,898.4	1,898.4	4.2	4.2	-1.72	-1.72	106.4	-3.2	106.5	98.1	8.31	12.808	
2,000.0	2,000.0	1,996.7	1,996.7	4.4	4.4	-2.34	-2.34	108.6	-4.4	108.7	100.0	8.75	12.422	
2,100.0	2,100.0	2,094.9	2,094.8	4.6	4.6	-18.92	-18.92	112.3	-6.5	111.8	102.6	9.20	12.152	
2,200.0	2,200.0	2,194.3	2,194.0	4.8	4.8	-20.56	-20.56	117.2	-9.2	114.4	104.8	9.64	11.869	
2,300.0	2,299.9	2,294.2	2,293.7	5.1	5.0	-22.47	-22.47	122.2	-12.0	115.6	105.5	10.08	11.469	
2,400.0	2,399.7	2,394.1	2,393.5	5.3	5.3	-24.70	-24.70	127.2	-14.8	115.4	104.9	10.52	10.964	
2,500.0	2,499.4	2,493.9	2,493.1	5.5	5.5	-27.32	-27.32	132.2	-17.6	113.8	102.9	10.97	10.378	
2,600.0	2,599.0	2,593.8	2,592.8	5.7	5.7	-30.12	-30.12	137.2	-20.4	112.1	100.7	11.42	9.819	
2,700.0	2,698.7	2,693.6	2,692.5	6.0	6.0	-33.00	-33.00	142.2	-23.2	110.7	98.8	11.87	9.324	
2,800.0	2,798.4	2,793.4	2,792.1	6.2	6.2	-35.94	-35.94	147.2	-26.0	109.6	97.3	12.33	8.887	
2,900.0	2,898.0	2,893.3	2,891.8	6.4	6.4	-38.94	-38.94	152.2	-28.8	108.7	96.0	12.79	8.503	
3,000.0	2,997.7	2,993.1	2,991.5	6.7	6.7	-41.97	-41.97	157.2	-31.5	108.2	95.0	13.25	8.167	
3,100.0	3,097.3	3,092.9	3,091.1	6.9	6.9	-45.03	-45.03	162.2	-34.3	108.0	94.3	13.71	7.874	
3,124.0	3,121.2	3,116.9	3,115.1	7.0	7.0	-45.76	-45.76	163.4	-35.0	108.0	94.2	13.82	7.810	
3,200.0	3,197.0	3,192.7	3,190.8	7.2	7.1	-48.08	-48.08	167.2	-37.1	108.1	93.9	14.18	7.621	
3,300.0	3,296.7	3,292.6	3,290.5	7.4	7.4	-51.13	-51.13	172.2	-39.9	108.5	93.8	14.65	7.403 ES	
3,400.0	3,396.3	3,392.4	3,390.2	7.7	7.6	-54.15	-54.15	177.2	-42.7	109.1	94.0	15.12	7.218	
3,500.0	3,496.0	3,492.2	3,489.8	7.9	7.8	-57.12	-57.12	182.2	-45.5	110.1	94.5	15.60	7.061	
3,600.0	3,595.7	3,592.1	3,589.5	8.2	8.1	-60.03	-60.03	187.2	-48.3	111.4	95.3	16.08	6.930	
3,700.0	3,695.3	3,691.9	3,689.2	8.4	8.3	-62.86	-62.86	192.2	-51.1	113.0	96.4	16.56	6.823	
3,800.0	3,795.0	3,791.7	3,788.8	8.7	8.6	-65.62	-65.62	197.2	-53.9	114.8	97.8	17.05	6.736	
3,900.0	3,894.6	3,891.6	3,888.5	8.9	8.8	-68.28	-68.28	202.2	-56.7	116.9	99.4	17.53	6.668	
4,000.0	3,994.3	3,991.4	3,988.2	9.2	9.0	-70.84	-70.84	207.2	-59.5	119.2	101.2	18.03	6.616	
4,100.0	4,094.0	4,091.2	4,087.8	9.4	9.3	-73.30	-73.30	212.2	-62.2	121.8	103.3	18.52	6.578	
4,200.0	4,193.6	4,191.1	4,187.5	9.7	9.5	-75.65	-75.65	217.2	-65.0	124.6	105.6	19.01	6.553	
4,300.0	4,293.3	4,290.9	4,287.2	9.9	9.8	-77.90	-77.90	222.2	-67.8	127.6	108.1	19.51	6.539	
4,400.0	4,392.9	4,390.7	4,386.8	10.2	10.0	-80.04	-80.04	227.2	-70.6	130.7	110.7	20.01	6.535	
4,500.0	4,492.6	4,490.6	4,486.5	10.5	10.3	-82.08	-82.08	232.2	-73.4	134.1	113.6	20.51	6.539	
4,600.0	4,592.3	4,590.4	4,586.2	10.7	10.5	-84.02	-84.02	237.2	-76.2	137.6	116.6	21.01	6.550	
4,700.0	4,691.9	4,690.2	4,685.8	11.0	10.7	-85.85	-85.85	242.2	-79.0	141.2	119.7	21.51	6.568	
4,800.0	4,791.6	4,790.1	4,785.5	11.2	11.0	-87.60	-87.60	247.2	-81.8	145.0	123.0	22.01	6.591	
4,900.0	4,891.3	4,889.9	4,885.2	11.5	11.2	-89.25	-89.25	252.2	-84.6	149.0	126.5	22.51	6.618	
5,000.0	4,990.9	4,989.7	4,984.9	11.8	11.5	-90.82	-90.82	257.2	-87.4	153.0	130.0	23.01	6.650	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,090.6	5,089.6	5,084.5	12.0	11.7	-92.31		262.2	-90.2	157.1	133.6	23.51	6.684	
5,200.0	5,190.2	5,189.4	5,184.2	12.3	11.9	-93.72		267.2	-92.9	161.4	137.4	24.01	6.721	
5,300.0	5,289.9	5,289.2	5,283.9	12.5	12.2	-95.06		272.2	-95.7	165.7	141.2	24.51	6.761	
5,400.0	5,389.6	5,389.1	5,383.5	12.8	12.4	-96.32		277.2	-98.5	170.2	145.1	25.01	6.802	
5,500.0	5,489.2	5,488.9	5,483.2	13.1	12.7	-97.53		282.2	-101.3	174.7	149.1	25.52	6.845	
5,600.0	5,588.9	5,588.7	5,582.9	13.3	12.9	-98.67		287.2	-104.1	179.2	153.2	26.02	6.889	
5,700.0	5,688.5	5,688.6	5,682.5	13.6	13.2	-99.75		292.2	-106.9	183.9	157.4	26.52	6.934	
5,800.0	5,788.2	5,788.4	5,782.2	13.8	13.4	-100.79		297.2	-109.7	188.6	161.6	27.02	6.980	
5,900.0	5,887.9	5,888.2	5,881.9	14.1	13.7	-101.77		302.2	-112.5	193.4	165.8	27.52	7.026	
6,000.0	5,987.5	5,988.1	5,981.5	14.4	13.9	-102.70		307.2	-115.3	198.2	170.2	28.02	7.073	
6,100.0	6,087.2	6,087.9	6,081.2	14.6	14.1	-103.59		312.2	-118.1	203.0	174.5	28.52	7.119	
6,200.0	6,186.9	6,187.7	6,180.9	14.9	14.4	-104.44		317.2	-120.9	208.0	178.9	29.02	7.166	
6,300.0	6,286.7	6,287.6	6,280.5	15.1	14.6	-105.11		322.2	-123.6	212.9	183.5	29.47	7.226	
6,400.0	6,386.3	6,387.3	6,380.2	15.2	14.9	-105.40		326.2	-126.4	218.4	188.6	29.80	7.330	
6,500.0	6,484.1	6,489.2	6,481.7	15.3	15.0	-105.23		319.4	-129.3	224.6	194.7	29.95	7.502	
6,600.0	6,578.4	6,593.0	6,583.2	15.3	15.1	-105.58		298.7	-132.1	231.4	201.5	29.95	7.726	
6,700.0	6,667.5	6,698.8	6,683.0	15.2	15.2	-104.37		263.7	-134.9	238.5	208.6	29.86	7.987	
6,800.0	6,750.1	6,806.6	6,778.6	15.2	15.2	-106.16		214.1	-137.6	245.6	215.8	29.73	8.260	
6,900.0	6,824.5	6,916.5	6,867.9	15.2	15.3	-107.77		150.3	-140.1	252.4	222.7	29.65	8.511	
7,000.0	6,889.7	7,028.1	6,948.3	15.3	15.4	-109.14		73.0	-142.3	258.6	228.8	29.73	8.696	
7,100.0	6,944.4	7,141.4	7,017.5	15.6	15.7	-110.24		-16.6	-144.3	263.9	233.8	30.09	8.771	
7,200.0	6,987.7	7,256.1	7,073.3	16.1	16.3	-111.04		-116.6	-145.8	268.2	237.4	30.83	8.701	
7,300.0	7,018.9	7,371.8	7,113.8	16.7	17.1	-111.55		-224.9	-147.0	271.3	239.3	32.00	8.476	
7,400.0	7,037.4	7,488.1	7,137.5	17.6	18.2	-111.76		-338.6	-147.6	272.9	239.3	33.63	8.115	
7,500.0	7,043.0	7,602.2	7,144.0	18.5	19.4	-111.70		-452.4	-147.8	273.2	237.5	35.64	7.665	
7,600.0	7,042.2	7,702.2	7,144.0	19.6	20.6	-111.85		-552.4	-147.8	273.4	235.7	37.76	7.243	
7,700.0	7,041.5	7,802.2	7,144.0	20.8	21.8	-112.00		-652.4	-147.8	273.7	233.7	40.08	6.830	
7,800.0	7,040.7	7,902.2	7,144.0	22.2	23.2	-112.14		-752.4	-147.8	274.0	231.4	42.57	6.437	
7,900.0	7,040.0	8,002.2	7,144.0	23.6	24.7	-112.29		-852.4	-147.8	274.3	229.1	45.20	6.068	
8,000.0	7,039.2	8,102.2	7,144.0	25.0	26.2	-112.44		-952.4	-147.8	274.6	226.6	47.95	5.726	
8,100.0	7,038.4	8,202.2	7,144.0	26.6	27.7	-112.58		-1,052.4	-147.8	274.9	224.1	50.80	5.411	
8,200.0	7,037.7	8,302.2	7,144.0	28.1	29.3	-112.73		-1,152.4	-147.8	275.2	221.4	53.72	5.122	
8,300.0	7,036.9	8,402.2	7,144.0	29.8	31.0	-112.87		-1,252.4	-147.8	275.5	218.7	56.71	4.857	
8,400.0	7,036.2	8,502.2	7,144.0	31.4	32.6	-113.02		-1,352.4	-147.8	275.8	216.0	59.76	4.614	
8,500.0	7,035.4	8,602.2	7,144.0	33.1	34.3	-113.16		-1,452.4	-147.8	276.1	213.2	62.85	4.392	
8,600.0	7,034.7	8,702.2	7,144.0	34.8	36.1	-113.31		-1,552.4	-147.8	276.4	210.4	65.98	4.188	
8,700.0	7,033.9	8,802.1	7,144.0	36.5	37.8	-113.45		-1,652.4	-147.8	276.7	207.5	69.14	4.001	
8,800.0	7,033.1	8,902.1	7,144.0	38.3	39.5	-113.59		-1,752.4	-147.8	277.0	204.6	72.33	3.829	
8,900.0	7,032.4	9,002.1	7,144.0	40.0	41.3	-113.74		-1,852.4	-147.8	277.3	201.7	75.54	3.670	
9,000.0	7,031.6	9,102.1	7,144.0	41.8	43.1	-113.88		-1,952.4	-147.8	277.6	198.8	78.77	3.524	
9,100.0	7,030.9	9,202.1	7,144.0	43.6	44.9	-114.02		-2,052.4	-147.8	277.9	195.9	82.02	3.388	
9,200.0	7,030.1	9,302.1	7,144.0	45.4	46.7	-114.17		-2,152.4	-147.8	278.2	192.9	85.28	3.262	
9,300.0	7,029.4	9,402.1	7,144.0	47.2	48.5	-114.31		-2,252.4	-147.8	278.5	189.9	88.55	3.145	
9,400.0	7,028.6	9,502.1	7,144.0	49.0	50.3	-114.45		-2,352.4	-147.8	278.8	187.0	91.83	3.036	
9,500.0	7,027.8	9,602.1	7,144.0	50.8	52.1	-114.59		-2,452.4	-147.8	279.1	184.0	95.11	2.935	
9,600.0	7,027.1	9,702.1	7,144.0	52.7	54.0	-114.73		-2,552.4	-147.8	279.4	181.0	98.40	2.840	
9,700.0	7,026.3	9,802.1	7,144.0	54.5	55.8	-114.87		-2,652.4	-147.8	279.8	178.1	101.70	2.751	
9,800.0	7,025.6	9,902.1	7,144.0	56.3	57.7	-115.01		-2,752.4	-147.8	280.1	175.1	105.00	2.667	
9,900.0	7,024.8	10,002.1	7,144.0	58.2	59.5	-115.15		-2,852.3	-147.8	280.4	172.1	108.30	2.589	
10,000.0	7,024.1	10,102.1	7,144.0	60.0	61.4	-115.29		-2,952.3	-147.8	280.7	169.1	111.60	2.515	
10,100.0	7,023.3	10,202.1	7,144.0	61.9	63.2	-115.43		-3,052.3	-147.8	281.0	166.1	114.90	2.446	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Reference	Offset	Reference	Offset	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,200.0	7,022.5	10,302.1	7,144.0	63.7	65.1	115.57	-3,152.3	-147.8	281.4	163.2	118.21	2.380	
10,300.0	7,021.8	10,402.1	7,144.0	65.6	66.9	115.71	-3,252.3	-147.8	281.7	160.2	121.51	2.318	
10,400.0	7,021.0	10,502.1	7,144.0	67.5	68.8	115.85	-3,352.3	-147.8	282.0	157.2	124.81	2.260	
10,500.0	7,020.3	10,602.1	7,144.0	69.3	70.7	115.99	-3,452.3	-147.8	282.4	154.2	128.11	2.204	
10,600.0	7,019.5	10,702.1	7,144.0	71.2	72.6	116.13	-3,552.3	-147.8	282.7	151.3	131.41	2.151	
10,700.0	7,018.8	10,802.1	7,144.0	73.1	74.4	116.27	-3,652.3	-147.8	283.0	148.3	134.70	2.101	
10,800.0	7,018.0	10,902.1	7,144.0	75.0	76.3	116.40	-3,752.3	-147.8	283.4	145.4	138.00	2.053	
10,900.0	7,017.2	11,002.1	7,144.0	76.8	78.2	116.54	-3,852.3	-147.8	283.7	142.4	141.29	2.008	
11,000.0	7,016.5	11,102.1	7,144.0	78.7	80.1	116.68	-3,952.3	-147.8	284.0	139.5	144.57	1.965	
11,100.0	7,015.7	11,202.1	7,144.0	80.6	81.9	116.81	-4,052.3	-147.8	284.4	136.5	147.85	1.923	
11,200.0	7,015.0	11,302.1	7,144.0	82.5	83.8	116.95	-4,152.3	-147.8	284.7	133.6	151.13	1.884	
11,300.0	7,014.2	11,402.1	7,144.0	84.4	85.7	117.08	-4,252.3	-147.8	285.1	130.7	154.40	1.846	
11,400.0	7,013.5	11,502.1	7,144.0	86.3	87.6	117.22	-4,352.3	-147.8	285.4	127.7	157.67	1.810	
11,460.2	7,013.0	11,558.2	7,144.0	87.4	88.7	117.30	-4,408.4	-147.8	285.6	126.1	159.57	1.790 SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-2.58		61.9	-2.8	62.0				
100.0	100.0	100.0	100.0	0.1	0.1	-2.58		61.9	-2.8	62.0	61.8	0.22	275.820	
200.0	200.0	200.0	200.0	0.3	0.3	-2.58		61.9	-2.8	62.0	61.3	0.67	91.940	
300.0	300.0	300.0	300.0	0.6	0.6	-2.58		61.9	-2.8	62.0	60.9	1.12	55.164	
400.0	400.0	400.0	400.0	0.8	0.8	-2.58		61.9	-2.8	62.0	60.4	1.57	39.403	
500.0	500.0	500.0	500.0	1.0	1.0	-2.58		61.9	-2.8	62.0	60.0	2.02	30.647	
600.0	600.0	600.0	600.0	1.2	1.2	-2.58		61.9	-2.8	62.0	59.5	2.47	25.075	
700.0	700.0	700.0	700.0	1.5	1.5	-2.58		61.9	-2.8	62.0	59.1	2.92	21.217	
800.0	800.0	800.0	800.0	1.7	1.7	-2.58		61.9	-2.8	62.0	58.6	3.37	18.388 CC	
900.0	900.0	899.9	899.9	1.9	1.9	-1.78		62.1	-1.9	62.1	58.3	3.81	16.300	
1,000.0	1,000.0	999.7	999.6	2.1	2.1	0.60		62.5	0.6	62.5	58.2	4.24	14.731 ES	
1,100.0	1,100.0	1,099.4	1,099.2	2.4	2.3	4.47		63.1	4.9	63.3	58.6	4.68	13.536	
1,200.0	1,200.0	1,198.9	1,198.6	2.6	2.5	9.68		64.1	10.9	65.0	59.9	5.12	12.684	
1,300.0	1,300.0	1,298.2	1,297.5	2.8	2.8	15.91		65.2	18.6	67.9	62.3	5.58	12.167	
1,400.0	1,400.0	1,397.1	1,396.0	3.0	3.0	22.73		66.7	27.9	72.4	66.4	6.05	11.978 SF	
1,500.0	1,500.0	1,495.7	1,494.0	3.3	3.3	29.64		68.4	38.9	78.9	72.4	6.52	12.102	
1,600.0	1,600.0	1,593.9	1,591.4	3.5	3.5	36.21		70.3	51.5	87.6	80.6	7.00	12.511	
1,700.0	1,700.0	1,691.7	1,688.1	3.7	3.8	42.15		72.5	65.6	98.5	91.1	7.49	13.164	
1,800.0	1,800.0	1,788.9	1,784.0	3.9	4.1	47.34		74.9	81.3	111.8	103.8	7.97	14.018	
1,900.0	1,900.0	1,885.5	1,879.1	4.2	4.5	51.78		77.6	98.5	127.2	118.7	8.46	15.030	
2,000.0	2,000.0	1,981.6	1,973.2	4.4	4.8	55.52		80.5	117.2	144.7	135.7	8.95	16.163	
2,100.0	2,100.0	2,077.0	2,066.4	4.6	5.2	43.25		83.6	137.3	163.6	154.3	9.27	17.635	
2,200.0	2,200.0	2,171.9	2,158.8	4.8	5.6	46.30		86.9	158.7	183.2	173.5	9.73	18.837	
2,300.0	2,299.9	2,269.4	2,253.5	5.1	6.0	49.24		90.4	181.6	203.1	192.9	10.18	19.938	
2,400.0	2,399.7	2,366.9	2,348.3	5.3	6.5	51.97		94.0	204.4	222.3	211.6	10.64	20.897	
2,500.0	2,499.4	2,464.5	2,443.1	5.5	6.9	54.61		97.5	227.3	241.0	229.9	11.09	21.733	
2,600.0	2,599.0	2,562.2	2,538.0	5.7	7.4	57.05		101.0	250.2	260.0	248.4	11.55	22.512	
2,700.0	2,698.7	2,659.8	2,632.8	6.0	7.8	59.15		104.6	273.0	279.3	267.3	12.01	23.253	
2,800.0	2,798.4	2,757.4	2,727.7	6.2	8.3	60.98		108.1	295.9	299.0	286.5	12.48	23.951	
2,900.0	2,898.0	2,855.0	2,822.5	6.4	8.8	62.59		111.7	318.7	318.9	305.9	12.96	24.605	
3,000.0	2,997.7	2,952.6	2,917.3	6.7	9.3	64.01		115.2	341.6	339.1	325.6	13.44	25.218	
3,100.0	3,097.3	3,050.3	3,012.2	6.9	9.7	65.27		118.7	364.5	359.4	345.4	13.93	25.790	
3,200.0	3,197.0	3,147.9	3,107.0	7.2	10.2	66.39		122.3	387.3	379.8	365.4	14.43	26.324	
3,300.0	3,296.7	3,245.5	3,201.9	7.4	10.7	67.40		125.8	410.2	400.4	385.5	14.93	26.822	
3,400.0	3,396.3	3,343.1	3,296.7	7.7	11.2	68.31		129.3	433.1	421.1	405.7	15.43	27.286	
3,500.0	3,496.0	3,440.8	3,391.5	7.9	11.7	69.14		132.9	455.9	441.9	426.0	15.94	27.720	
3,600.0	3,595.7	3,538.4	3,486.4	8.2	12.1	69.89		136.4	478.8	462.8	446.4	16.46	28.125	
3,700.0	3,695.3	3,636.0	3,581.2	8.4	12.6	70.57		139.9	501.7	483.8	466.8	16.97	28.503	
3,800.0	3,795.0	3,733.6	3,676.1	8.7	13.1	71.20		143.5	524.5	504.8	487.3	17.49	28.858	
3,900.0	3,894.6	3,831.3	3,770.9	8.9	13.6	71.78		147.0	547.4	525.8	507.8	18.01	29.190	
4,000.0	3,994.3	3,928.9	3,865.8	9.2	14.1	72.32		150.5	570.2	547.0	528.4	18.54	29.502	
4,100.0	4,094.0	4,026.5	3,960.6	9.4	14.6	72.81		154.1	593.1	568.1	549.0	19.07	29.795	
4,200.0	4,193.6	4,124.1	4,055.4	9.7	15.1	73.27		157.6	616.0	589.3	569.7	19.60	30.070	
4,300.0	4,293.3	4,221.8	4,150.3	9.9	15.6	73.70		161.2	638.8	610.5	590.4	20.13	30.329	
4,400.0	4,392.9	4,319.4	4,245.1	10.2	16.1	74.10		164.7	661.7	631.8	611.1	20.66	30.574	
4,500.0	4,492.6	4,417.0	4,340.0	10.5	16.6	74.47		168.2	684.6	653.1	631.9	21.20	30.805	
4,600.0	4,592.3	4,514.6	4,434.8	10.7	17.0	74.82		171.8	707.4	674.4	652.6	21.74	31.023	
4,700.0	4,691.9	4,612.2	4,529.7	11.0	17.5	75.15		175.3	730.3	695.7	673.4	22.28	31.230	
4,800.0	4,791.6	4,709.9	4,624.5	11.2	18.0	75.46		178.8	753.2	717.0	694.2	22.82	31.425	
4,900.0	4,891.3	4,807.5	4,719.3	11.5	18.5	75.75		182.4	776.0	738.4	715.1	23.36	31.611	
5,000.0	4,990.9	4,905.1	4,814.2	11.8	19.0	76.03		185.9	798.9	759.8	735.9	23.90	31.787	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
5,100.0	5,090.6	5,002.7	4,909.0	12.0	19.5	76.29	189.4	821.7	781.2	756.8	24.45	31.955	
5,200.0	5,190.2	5,100.4	5,003.9	12.3	20.0	76.53	193.0	844.6	802.6	777.6	24.99	32.114	
5,300.0	5,289.9	5,198.0	5,098.7	12.5	20.5	76.77	196.5	867.5	824.0	798.5	25.54	32.266	
5,400.0	5,389.6	5,295.6	5,193.6	12.8	21.0	76.99	200.0	890.3	845.5	819.4	26.09	32.410	
5,500.0	5,489.2	5,393.2	5,288.4	13.1	21.5	77.20	203.6	913.2	866.9	840.3	26.64	32.548	
5,600.0	5,588.9	5,490.9	5,383.2	13.3	22.0	77.40	207.1	936.1	888.4	861.2	27.19	32.680	
5,700.0	5,688.5	5,588.5	5,478.1	13.6	22.5	77.59	210.6	958.9	909.9	882.1	27.74	32.806	
5,800.0	5,788.2	5,686.1	5,572.9	13.8	23.0	77.77	214.2	981.8	931.4	903.1	28.29	32.926	
5,900.0	5,887.9	5,783.7	5,667.8	14.1	23.5	77.94	217.7	1,004.7	952.9	924.0	28.84	33.042	
6,000.0	5,987.5	5,881.3	5,762.6	14.4	24.0	78.11	221.3	1,027.5	974.4	945.0	29.39	33.152	
6,100.0	6,087.2	5,979.0	5,857.4	14.6	24.5	78.27	224.8	1,050.4	995.9	965.9	29.94	33.258	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	14.6	0.0	14.6	14.6	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	0.00	0.00	14.6	0.0	14.6	14.3	0.22	64.833	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	0.00	14.6	0.0	14.6	13.9	0.67	21.611	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	0.00	14.6	0.0	14.6	13.4	1.12	12.967	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	0.00	14.6	0.0	14.6	13.0	1.57	9.262	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	0.00	14.6	0.0	14.6	12.5	2.02	7.204	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	0.00	14.6	0.0	14.6	12.1	2.47	5.894	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	0.00	14.6	0.0	14.6	11.7	2.92	4.987	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	0.00	14.6	0.0	14.6	11.2	3.37	4.322	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	0.00	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	0.00	0.00	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	0.00	0.00	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	0.00	0.00	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	0.00	0.00	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	0.00	0.00	14.6	0.0	14.6	8.5	6.07	2.401 CC, ES	
1,500.0	1,500.0	1,499.8	1,499.8	3.3	3.3	2.72	2.72	15.1	0.7	15.1	8.6	6.51	2.317 SF	
1,600.0	1,600.0	1,599.6	1,599.6	3.5	3.5	9.79	9.79	16.6	2.9	16.8	9.9	6.95	2.417	
1,700.0	1,700.0	1,699.3	1,699.2	3.7	3.7	18.65	18.65	19.0	6.4	20.1	12.7	7.39	2.718	
1,800.0	1,800.0	1,798.8	1,798.5	3.9	3.9	26.88	26.88	22.5	11.4	25.3	17.4	7.84	3.221	
1,900.0	1,900.0	1,898.0	1,897.4	4.2	4.1	33.45	33.45	26.9	17.8	32.3	24.1	8.29	3.904	
2,000.0	2,000.0	1,997.0	1,995.9	4.4	4.4	38.33	38.33	32.3	25.5	41.4	32.6	8.73	4.736	
2,100.0	2,100.0	2,095.8	2,094.1	4.6	4.6	26.80	26.80	38.6	34.6	51.4	42.2	9.17	5.608	
2,200.0	2,200.0	2,195.3	2,192.9	4.8	4.9	30.35	30.35	45.2	44.2	60.6	51.0	9.61	6.310	
2,300.0	2,299.9	2,294.9	2,291.9	5.1	5.1	33.74	33.74	51.9	53.8	68.6	58.5	10.05	6.824	
2,400.0	2,399.7	2,394.6	2,390.9	5.3	5.4	37.21	37.21	58.6	63.4	75.3	64.8	10.49	7.180	
2,500.0	2,499.4	2,494.3	2,489.9	5.5	5.7	40.87	40.87	65.2	73.0	81.0	70.1	10.93	7.409	
2,600.0	2,599.0	2,594.0	2,588.9	5.7	5.9	44.26	44.26	71.9	82.6	86.7	75.3	11.39	7.612	
2,700.0	2,698.7	2,693.8	2,687.9	6.0	6.2	47.22	47.22	78.5	92.2	92.6	80.8	11.85	7.819	
2,800.0	2,798.4	2,793.5	2,787.0	6.2	6.5	49.83	49.83	85.2	101.8	98.8	86.5	12.31	8.025	
2,900.0	2,898.0	2,893.2	2,886.0	6.4	6.8	52.12	52.12	91.8	111.4	105.1	92.3	12.78	8.226	
3,000.0	2,997.7	2,992.9	2,985.0	6.7	7.1	54.15	54.15	98.5	121.0	111.6	98.4	13.25	8.421	
3,100.0	3,097.3	3,092.6	3,084.1	6.9	7.4	55.96	55.96	105.2	130.6	118.2	104.5	13.73	8.608	
3,200.0	3,197.0	3,192.3	3,183.1	7.2	7.6	57.57	57.57	111.8	140.2	124.9	110.7	14.22	8.788	
3,300.0	3,296.7	3,292.1	3,282.1	7.4	7.9	59.02	59.02	118.5	149.8	131.7	117.0	14.70	8.959	
3,400.0	3,396.3	3,391.8	3,381.1	7.7	8.2	60.33	60.33	125.1	159.4	138.6	123.4	15.20	9.122	
3,500.0	3,496.0	3,491.5	3,480.2	7.9	8.5	61.51	61.51	131.8	168.9	145.6	129.9	15.69	9.277	
3,600.0	3,595.7	3,591.2	3,579.2	8.2	8.8	62.58	62.58	138.4	178.5	152.6	136.4	16.19	9.425	
3,700.0	3,695.3	3,690.9	3,678.2	8.4	9.1	63.56	63.56	145.1	188.1	159.6	142.9	16.69	9.564	
3,800.0	3,795.0	3,790.6	3,777.3	8.7	9.4	64.46	64.46	151.8	197.7	166.7	149.5	17.19	9.697	
3,900.0	3,894.6	3,890.4	3,876.3	8.9	9.7	65.28	65.28	158.4	207.3	173.8	156.1	17.70	9.823	
4,000.0	3,994.3	3,990.1	3,975.3	9.2	10.0	66.04	66.04	165.1	216.9	181.0	162.8	18.21	9.942	
4,100.0	4,094.0	4,089.8	4,074.4	9.4	10.3	66.74	66.74	171.7	226.5	188.2	169.5	18.72	10.055	
4,200.0	4,193.6	4,189.5	4,173.4	9.7	10.6	67.39	67.39	178.4	236.1	195.4	176.2	19.23	10.163	
4,300.0	4,293.3	4,289.2	4,272.4	9.9	10.9	67.99	67.99	185.1	245.7	202.6	182.9	19.74	10.266	
4,400.0	4,392.9	4,388.9	4,371.4	10.2	11.2	68.55	68.55	191.7	255.3	209.9	189.7	20.26	10.363	
4,500.0	4,492.6	4,488.6	4,470.5	10.5	11.5	69.08	69.08	198.4	264.9	217.2	196.4	20.77	10.456	
4,600.0	4,592.3	4,588.4	4,569.5	10.7	11.8	69.57	69.57	205.0	274.5	224.5	203.2	21.29	10.545	
4,700.0	4,691.9	4,688.1	4,668.5	11.0	12.1	70.02	70.02	211.7	284.1	231.8	210.0	21.81	10.629	
4,800.0	4,791.6	4,787.8	4,767.6	11.2	12.4	70.45	70.45	218.3	293.7	239.1	216.8	22.33	10.710	
4,900.0	4,891.3	4,887.5	4,866.6	11.5	12.7	70.86	70.86	225.0	303.3	246.5	223.6	22.85	10.787	
5,000.0	4,990.9	4,987.2	4,965.6	11.8	13.0	71.24	71.24	231.7	312.9	253.8	230.4	23.37	10.860	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
5,100.0	5,090.6	5,086.9	5,064.6	12.0	13.3	71.60	238.3	322.5	261.2	237.3	23.89	10.931	
5,200.0	5,190.2	5,186.7	5,163.7	12.3	13.6	71.94	245.0	332.1	268.5	244.1	24.42	10.998	
5,300.0	5,289.9	5,286.4	5,262.7	12.5	13.9	72.26	251.6	341.7	275.9	251.0	24.94	11.062	
5,400.0	5,389.6	5,386.1	5,361.7	12.8	14.3	72.57	258.3	351.3	283.3	257.8	25.47	11.124	
5,500.0	5,489.2	5,485.8	5,460.8	13.1	14.6	72.86	264.9	360.9	290.7	264.7	25.99	11.184	
5,600.0	5,588.9	5,585.5	5,559.8	13.3	14.9	73.13	271.6	370.5	298.1	271.6	26.52	11.241	
5,700.0	5,688.5	5,685.2	5,658.8	13.6	15.2	73.40	278.3	380.1	305.5	278.5	27.05	11.296	
5,800.0	5,788.2	5,784.9	5,757.9	13.8	15.5	73.64	284.9	389.7	312.9	285.4	27.58	11.348	
5,900.0	5,887.9	5,884.7	5,856.9	14.1	15.8	73.88	291.6	399.3	320.4	292.2	28.10	11.399	
6,000.0	5,987.5	5,984.4	5,955.9	14.4	16.1	74.11	298.2	408.9	327.8	299.1	28.63	11.448	
6,100.0	6,087.2	6,084.1	6,054.9	14.6	16.4	74.33	304.9	418.4	335.2	306.0	29.16	11.495	
6,200.0	6,186.9	6,183.7	6,153.9	14.9	16.7	74.60	311.1	428.0	342.6	313.0	29.69	11.542	
6,300.0	6,286.7	6,282.2	6,251.8	15.1	16.9	-21.93	308.1	437.5	350.2	320.1	30.14	11.619	
6,400.0	6,386.3	6,379.7	6,347.5	15.2	17.0	-77.39	292.7	446.8	358.0	327.6	30.43	11.764	
6,500.0	6,484.1	6,476.1	6,439.6	15.3	17.1	-79.91	265.6	455.8	365.8	335.3	30.57	11.967	
6,600.0	6,578.4	6,571.7	6,526.7	15.3	17.2	-79.81	227.4	464.2	373.5	342.9	30.58	12.214	
6,700.0	6,667.5	6,666.6	6,607.8	15.2	17.2	-79.13	179.0	472.1	380.8	350.3	30.50	12.483	
6,800.0	6,750.1	6,760.7	6,681.8	15.2	17.2	-78.33	121.3	479.4	387.6	357.2	30.42	12.741	
6,900.0	6,824.5	6,854.3	6,747.8	15.2	17.3	-77.54	55.3	485.8	393.8	363.4	30.42	12.945	
7,000.0	6,889.7	6,947.4	6,805.1	15.3	17.4	-76.84	-17.8	491.4	399.3	368.7	30.61	13.045	
7,100.0	6,944.4	7,040.2	6,852.8	15.6	17.5	-76.27	-97.1	496.1	403.8	372.8	31.07	12.999	
7,200.0	6,987.7	7,132.7	6,890.6	16.1	17.9	-75.85	-181.4	499.8	407.4	375.6	31.88	12.780	
7,300.0	7,018.9	7,225.0	6,917.9	16.7	18.4	-75.58	-269.5	502.5	410.0	376.9	33.08	12.393	
7,400.0	7,037.4	7,317.2	6,934.5	17.6	19.1	-75.47	-360.1	504.2	411.5	376.8	34.68	11.867	
7,500.0	7,043.0	7,409.4	6,940.0	18.5	19.9	-75.52	-452.1	504.8	411.9	375.3	36.62	11.249	
7,530.1	7,042.8	7,439.0	6,939.8	18.9	20.2	-75.53	-481.7	504.8	411.9	374.6	37.26	11.055	
7,600.0	7,042.2	7,508.9	6,939.3	19.6	21.0	-75.53	-551.6	504.8	411.9	373.1	38.78	10.622	
7,700.0	7,041.5	7,608.9	6,938.5	20.8	22.1	-75.53	-651.6	504.8	411.9	370.7	41.17	10.005	
7,800.0	7,040.7	7,708.9	6,937.8	22.2	23.4	-75.53	-751.6	504.8	411.9	368.2	43.75	9.416	
7,900.0	7,040.0	7,808.9	6,937.0	23.6	24.7	-75.53	-851.6	504.8	411.9	365.4	46.48	8.861	
8,000.0	7,039.2	7,908.9	6,936.3	25.0	26.2	-75.53	-951.6	504.8	411.9	362.6	49.35	8.347	
8,100.0	7,038.4	8,008.9	6,935.5	26.6	27.7	-75.53	-1,051.6	504.8	411.9	359.6	52.33	7.872	
8,200.0	7,037.7	8,108.9	6,934.7	28.1	29.2	-75.53	-1,151.6	504.8	411.9	356.5	55.40	7.436	
8,300.0	7,036.9	8,208.9	6,934.0	29.8	30.8	-75.53	-1,251.6	504.8	411.9	353.4	58.54	7.036	
8,400.0	7,036.2	8,308.9	6,933.2	31.4	32.4	-75.53	-1,351.6	504.8	411.9	350.1	61.76	6.670	
8,500.0	7,035.4	8,408.9	6,932.5	33.1	34.0	-75.53	-1,451.6	504.8	411.9	346.9	65.02	6.335	
8,600.0	7,034.7	8,508.9	6,931.7	34.8	35.7	-75.53	-1,551.6	504.8	411.9	343.6	68.34	6.027	
8,700.0	7,033.9	8,608.9	6,931.0	36.5	37.4	-75.53	-1,651.6	504.8	411.9	340.2	71.70	5.745	
8,800.0	7,033.1	8,708.9	6,930.2	38.3	39.1	-75.53	-1,751.6	504.8	411.9	336.8	75.09	5.485	
8,900.0	7,032.4	8,808.9	6,929.4	40.0	40.8	-75.53	-1,851.6	504.8	411.9	333.4	78.51	5.246	
9,000.0	7,031.6	8,908.9	6,928.7	41.8	42.6	-75.53	-1,951.6	504.8	411.9	329.9	81.97	5.025	
9,100.0	7,030.9	9,008.9	6,927.9	43.6	44.3	-75.53	-2,051.6	504.8	411.9	326.5	85.44	4.821	
9,200.0	7,030.1	9,108.9	6,927.2	45.4	46.1	-75.53	-2,151.6	504.8	411.9	323.0	88.94	4.631	
9,300.0	7,029.4	9,208.9	6,926.4	47.2	47.9	-75.53	-2,251.6	504.8	411.9	319.5	92.45	4.455	
9,400.0	7,028.6	9,308.9	6,925.7	49.0	49.7	-75.53	-2,351.6	504.8	411.9	315.9	95.98	4.291	
9,500.0	7,027.8	9,408.9	6,924.9	50.8	51.5	-75.53	-2,451.6	504.8	411.9	312.4	99.53	4.138	
9,600.0	7,027.1	9,508.9	6,924.1	52.7	53.3	-75.53	-2,551.6	504.8	411.9	308.8	103.09	3.996	
9,700.0	7,026.3	9,608.9	6,923.4	54.5	55.1	-75.53	-2,651.6	504.8	411.9	305.2	106.66	3.862	
9,800.0	7,025.6	9,708.9	6,922.6	56.3	56.9	-75.53	-2,751.6	504.8	411.9	301.7	110.25	3.736	
9,900.0	7,024.8	9,808.9	6,921.9	58.2	58.8	-75.53	-2,851.6	504.8	411.9	298.1	113.84	3.618	
10,000.0	7,024.1	9,908.9	6,921.1	60.0	60.6	-75.53	-2,951.6	504.8	411.9	294.5	117.44	3.507	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,100.0	7,023.3	10,008.9	6,920.4	61.9	62.4	-75.53	-3,051.6	504.8	411.9	290.9	121.05	3.403		
10,200.0	7,022.5	10,108.9	6,919.6	63.7	64.3	-75.53	-3,151.6	504.8	411.9	287.2	124.67	3.304		
10,300.0	7,021.8	10,208.9	6,918.8	65.6	66.1	-75.53	-3,251.6	504.8	411.9	283.6	128.29	3.211		
10,400.0	7,021.0	10,308.9	6,918.1	67.5	68.0	-75.53	-3,351.6	504.8	411.9	280.0	131.92	3.122		
10,500.0	7,020.3	10,408.9	6,917.3	69.3	69.9	-75.53	-3,451.6	504.8	411.9	276.3	135.56	3.039		
10,600.0	7,019.5	10,508.9	6,916.6	71.2	71.7	-75.53	-3,551.5	504.8	411.9	272.7	139.20	2.959		
10,700.0	7,018.8	10,608.9	6,915.8	73.1	73.6	-75.53	-3,651.5	504.8	411.9	269.1	142.85	2.884		
10,800.0	7,018.0	10,708.9	6,915.1	75.0	75.4	-75.53	-3,751.5	504.8	411.9	265.4	146.50	2.812		
10,900.0	7,017.2	10,808.9	6,914.3	76.8	77.3	-75.53	-3,851.5	504.8	411.9	261.8	150.15	2.743		
11,000.0	7,016.5	10,908.9	6,913.5	78.7	79.2	-75.53	-3,951.5	504.8	411.9	258.1	153.81	2.678		
11,100.0	7,015.7	11,008.9	6,912.8	80.6	81.1	-75.53	-4,051.5	504.8	411.9	254.4	157.47	2.616		
11,200.0	7,015.0	11,108.9	6,912.0	82.5	82.9	-75.53	-4,151.5	504.8	411.9	250.8	161.14	2.556		
11,300.0	7,014.2	11,208.9	6,911.3	84.4	84.8	-75.53	-4,251.5	504.8	411.9	247.1	164.81	2.499		
11,400.0	7,013.5	11,308.9	6,910.5	86.3	86.7	-75.53	-4,351.5	504.8	411.9	243.4	168.48	2.445		
11,460.2	7,013.0	11,369.1	6,910.1	87.4	87.8	-75.53	-4,411.7	504.8	411.9	241.2	170.68	2.413		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-3.37	-3.37	47.4	-2.8	47.4				
100.0	100.0	100.0	100.0	0.1	0.1	-3.37	-3.37	47.4	-2.8	47.4	47.2	0.22	211.073	
200.0	200.0	200.0	200.0	0.3	0.3	-3.37	-3.37	47.4	-2.8	47.4	46.8	0.67	70.358	
300.0	300.0	300.0	300.0	0.6	0.6	-3.37	-3.37	47.4	-2.8	47.4	46.3	1.12	42.215	
400.0	400.0	400.0	400.0	0.8	0.8	-3.37	-3.37	47.4	-2.8	47.4	45.9	1.57	30.153	
500.0	500.0	500.0	500.0	1.0	1.0	-3.37	-3.37	47.4	-2.8	47.4	45.4	2.02	23.453	
600.0	600.0	600.0	600.0	1.2	1.2	-3.37	-3.37	47.4	-2.8	47.4	45.0	2.47	19.188	
700.0	700.0	700.0	700.0	1.5	1.5	-3.37	-3.37	47.4	-2.8	47.4	44.5	2.92	16.236	
800.0	800.0	800.0	800.0	1.7	1.7	-3.37	-3.37	47.4	-2.8	47.4	44.1	3.37	14.072	
900.0	900.0	900.0	900.0	1.9	1.9	-3.37	-3.37	47.4	-2.8	47.4	43.6	3.82	12.416	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-3.37	-3.37	47.4	-2.8	47.4	43.2	4.27	11.109 CC	
1,100.0	1,100.0	1,099.9	1,099.9	2.4	2.3	-2.33	-2.33	47.5	-1.9	47.5	42.8	4.71	10.098	
1,200.0	1,200.0	1,199.7	1,199.7	2.6	2.6	0.77	0.77	48.0	0.6	48.0	42.8	5.14	9.332 ES	
1,300.0	1,300.0	1,299.4	1,299.3	2.8	2.8	5.77	5.77	48.7	4.9	49.0	43.4	5.58	8.780	
1,400.0	1,400.0	1,399.0	1,398.7	3.0	3.0	12.35	12.35	49.7	10.9	50.9	44.9	6.02	8.462	
1,500.0	1,500.0	1,498.3	1,497.6	3.3	3.2	19.96	19.96	51.1	18.5	54.4	47.9	6.47	8.404	
1,600.0	1,600.0	1,597.3	1,596.2	3.5	3.4	27.86	27.86	52.7	27.9	59.7	52.8	6.93	8.617	
1,700.0	1,700.0	1,695.9	1,694.2	3.7	3.7	35.40	35.40	54.6	38.8	67.2	59.8	7.40	9.089	
1,800.0	1,800.0	1,794.1	1,791.6	3.9	4.0	42.12	42.12	56.8	51.3	77.0	69.1	7.87	9.791	
1,900.0	1,900.0	1,891.9	1,888.3	4.2	4.2	47.86	47.86	59.2	65.5	89.1	80.7	8.34	10.681	
2,000.0	2,000.0	1,989.1	1,984.2	4.4	4.5	52.63	52.63	62.0	81.1	103.3	94.5	8.81	11.722	
2,100.0	2,100.0	2,085.8	2,079.4	4.6	4.9	41.23	41.23	64.9	98.3	118.9	109.8	9.19	12.941	
2,200.0	2,200.0	2,183.0	2,174.6	4.8	5.2	45.07	45.07	68.2	117.0	135.3	125.7	9.64	14.036	
2,300.0	2,299.9	2,281.3	2,270.9	5.1	5.6	48.61	48.61	71.5	136.2	151.3	141.2	10.09	15.003	
2,400.0	2,399.7	2,379.6	2,367.3	5.3	6.0	51.91	51.91	74.9	155.4	166.8	156.2	10.53	15.835	
2,500.0	2,499.4	2,478.0	2,463.8	5.5	6.3	55.09	55.09	78.2	174.6	181.7	170.8	10.98	16.553	
2,600.0	2,599.0	2,576.4	2,560.2	5.7	6.7	57.96	57.96	81.6	193.8	197.0	185.5	11.43	17.229	
2,700.0	2,698.7	2,674.7	2,656.6	6.0	7.1	60.42	60.42	84.9	213.0	212.6	200.7	11.89	17.877	
2,800.0	2,798.4	2,773.1	2,753.1	6.2	7.5	62.54	62.54	88.2	232.2	228.6	216.2	12.36	18.494	
2,900.0	2,898.0	2,871.5	2,849.5	6.4	7.9	64.39	64.39	91.6	251.4	244.9	232.0	12.84	19.077	
3,000.0	2,997.7	2,969.9	2,945.9	6.7	8.3	66.00	66.00	94.9	270.6	261.3	248.0	13.32	19.626	
3,100.0	3,097.3	3,068.3	3,042.4	6.9	8.7	67.42	67.42	98.3	289.8	278.0	264.2	13.80	20.141	
3,200.0	3,197.0	3,166.7	3,138.8	7.2	9.1	68.69	68.69	101.6	309.0	294.8	280.5	14.29	20.624	
3,300.0	3,296.7	3,265.0	3,235.2	7.4	9.6	69.81	69.81	105.0	328.2	311.7	296.9	14.79	21.076	
3,400.0	3,396.3	3,363.4	3,331.7	7.7	10.0	70.82	70.82	108.3	347.4	328.7	313.4	15.29	21.500	
3,500.0	3,496.0	3,461.8	3,428.1	7.9	10.4	71.73	71.73	111.6	366.6	345.8	330.0	15.79	21.897	
3,600.0	3,595.7	3,560.2	3,524.5	8.2	10.8	72.56	72.56	115.0	385.9	363.0	346.7	16.30	22.269	
3,700.0	3,695.3	3,658.6	3,620.9	8.4	11.2	73.31	73.31	118.3	405.1	380.3	363.5	16.81	22.618	
3,800.0	3,795.0	3,757.0	3,717.4	8.7	11.6	73.99	73.99	121.7	424.3	397.6	380.3	17.33	22.946	
3,900.0	3,894.6	3,855.3	3,813.8	8.9	12.1	74.62	74.62	125.0	443.5	415.0	397.1	17.84	23.254	
4,000.0	3,994.3	3,953.7	3,910.2	9.2	12.5	75.20	75.20	128.3	462.7	432.4	414.0	18.36	23.544	
4,100.0	4,094.0	4,052.1	4,006.7	9.4	12.9	75.73	75.73	131.7	481.9	449.8	430.9	18.89	23.817	
4,200.0	4,193.6	4,150.5	4,103.1	9.7	13.3	76.22	76.22	135.0	501.1	467.3	447.9	19.41	24.075	
4,300.0	4,293.3	4,248.9	4,199.5	9.9	13.8	76.68	76.68	138.4	520.3	484.8	464.9	19.94	24.318	
4,400.0	4,392.9	4,347.2	4,296.0	10.2	14.2	77.11	77.11	141.7	539.5	502.4	481.9	20.47	24.548	
4,500.0	4,492.6	4,445.6	4,392.4	10.5	14.6	77.50	77.50	145.1	558.7	519.9	499.0	20.99	24.766	
4,600.0	4,592.3	4,544.0	4,488.8	10.7	15.0	77.87	77.87	148.4	577.9	537.5	516.0	21.53	24.972	
4,700.0	4,691.9	4,642.4	4,585.3	11.0	15.5	78.22	78.22	151.7	597.2	555.2	533.1	22.06	25.167	
4,800.0	4,791.6	4,740.8	4,681.7	11.2	15.9	78.55	78.55	155.1	616.4	572.8	550.2	22.59	25.353	
4,900.0	4,891.3	4,839.2	4,778.1	11.5	16.3	78.85	78.85	158.4	635.6	590.4	567.3	23.13	25.529	
5,000.0	4,990.9	4,937.5	4,874.6	11.8	16.7	79.14	79.14	161.8	654.8	608.1	584.4	23.66	25.697	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,090.6	5,035.9	4,971.0	12.0	17.2	79.42	79.42	165.1	674.0	625.8	601.6	24.20	25.857	
5,200.0	5,190.2	5,134.3	5,067.4	12.3	17.6	79.67	79.67	168.4	693.2	643.5	618.7	24.74	26.009	
5,300.0	5,289.9	5,232.7	5,163.8	12.5	18.0	79.92	79.92	171.8	712.4	661.2	635.9	25.28	26.155	
5,400.0	5,389.6	5,331.1	5,260.3	12.8	18.5	80.15	80.15	175.1	731.6	678.9	653.1	25.82	26.294	
5,500.0	5,489.2	5,429.5	5,356.7	13.1	18.9	80.37	80.37	178.5	750.8	696.6	670.3	26.36	26.426	
5,600.0	5,588.9	5,527.8	5,453.1	13.3	19.3	80.58	80.58	181.8	770.0	714.3	687.4	26.90	26.553	
5,700.0	5,688.5	5,626.2	5,549.6	13.6	19.7	80.77	80.77	185.2	789.2	732.1	704.6	27.44	26.675	
5,800.0	5,788.2	5,724.6	5,646.0	13.8	20.2	80.96	80.96	188.5	808.4	749.8	721.9	27.99	26.792	
5,900.0	5,887.9	5,823.0	5,742.4	14.1	20.6	81.14	81.14	191.8	827.7	767.6	739.1	28.53	26.903	
6,000.0	5,987.5	5,921.4	5,838.9	14.4	21.0	81.32	81.32	195.2	846.9	785.4	756.3	29.08	27.011	
6,100.0	6,087.2	6,019.8	5,935.3	14.6	21.5	81.48	81.48	198.5	866.1	803.1	773.5	29.62	27.113	
6,200.0	6,186.9	6,118.1	6,031.7	14.9	21.9	81.64	81.64	201.9	885.3	820.9	790.7	30.17	27.212	
6,300.0	6,286.7	6,216.6	6,128.2	15.1	22.3	-15.74	-15.74	205.2	904.5	838.3	807.6	30.74	27.273	
6,400.0	6,386.3	6,314.4	6,224.1	15.2	22.7	-72.75	-72.75	208.5	923.6	854.1	822.9	31.16	27.407	
6,500.0	6,484.1	6,406.3	6,314.2	15.3	23.1	-77.43	-77.43	210.9	941.6	868.6	837.1	31.40	27.658	
6,600.0	6,578.4	6,493.5	6,399.4	15.3	23.5	-79.45	-79.45	205.0	958.5	882.9	851.4	31.49	28.032	
6,700.0	6,667.5	6,583.3	6,486.0	15.2	23.8	-80.83	-80.83	188.6	975.8	897.1	865.6	31.51	28.472	
6,800.0	6,750.1	6,676.3	6,573.0	15.2	24.0	-81.99	-81.99	160.8	993.2	911.2	879.6	31.51	28.916	
6,900.0	6,824.5	6,773.1	6,659.2	15.2	24.3	-83.09	-83.09	120.7	1,010.5	924.8	893.2	31.58	29.285	
7,000.0	6,889.7	6,874.0	6,743.2	15.3	24.6	-84.18	-84.18	67.4	1,027.3	937.8	906.0	31.80	29.489	
7,100.0	6,944.4	6,979.8	6,823.0	15.6	24.9	-85.29	-85.29	-0.1	1,043.3	949.9	917.6	32.29	29.420	
7,200.0	6,987.7	7,091.0	6,896.1	16.1	25.3	-86.44	-86.44	-82.4	1,058.0	960.8	927.7	33.10	29.028	
7,300.0	7,018.9	7,208.0	6,959.6	16.7	25.8	-87.62	-87.62	-179.7	1,070.8	970.1	935.8	34.30	28.280	
7,400.0	7,037.4	7,331.0	7,009.8	17.6	26.3	-88.81	-88.81	-291.4	1,081.0	977.5	941.6	35.93	27.207	
7,500.0	7,043.0	7,460.0	7,042.9	18.5	27.1	-89.98	-89.98	-415.7	1,087.8	982.5	944.6	37.95	25.894	
7,600.0	7,042.2	7,594.9	7,055.0	19.6	28.0	-90.74	-90.74	-549.9	1,090.5	984.6	944.2	40.40	24.372	
7,700.0	7,041.5	7,697.5	7,054.2	20.8	28.8	-90.74	-90.74	-652.5	1,090.5	984.6	941.8	42.82	22.996	
7,800.0	7,040.7	7,797.5	7,053.3	22.2	29.8	-90.73	-90.73	-752.5	1,090.5	984.6	939.2	45.40	21.687	
7,900.0	7,040.0	7,897.5	7,052.4	23.6	30.8	-90.72	-90.72	-852.5	1,090.5	984.6	936.5	48.15	20.447	
8,000.0	7,039.2	7,997.5	7,051.5	25.0	31.9	-90.72	-90.72	-952.5	1,090.5	984.6	933.6	51.05	19.288	
8,100.0	7,038.4	8,097.5	7,050.6	26.6	33.1	-90.71	-90.71	-1,052.5	1,090.5	984.6	930.6	54.06	18.214	
8,200.0	7,037.7	8,197.5	7,049.8	28.1	34.4	-90.70	-90.70	-1,152.5	1,090.5	984.6	927.4	57.17	17.223	
8,300.0	7,036.9	8,297.5	7,048.9	29.8	35.7	-90.69	-90.69	-1,252.5	1,090.5	984.6	924.2	60.36	16.311	
8,400.0	7,036.2	8,397.5	7,048.0	31.4	37.1	-90.69	-90.69	-1,352.5	1,090.5	984.6	921.0	63.63	15.474	
8,500.0	7,035.4	8,497.5	7,047.1	33.1	38.5	-90.68	-90.68	-1,452.5	1,090.5	984.6	917.6	66.95	14.706	
8,600.0	7,034.7	8,597.5	7,046.2	34.8	40.0	-90.67	-90.67	-1,552.5	1,090.5	984.6	914.3	70.33	13.999	
8,700.0	7,033.9	8,697.5	7,045.3	36.5	41.5	-90.67	-90.67	-1,652.5	1,090.5	984.6	910.8	73.76	13.349	
8,800.0	7,033.1	8,797.5	7,044.4	38.3	43.1	-90.66	-90.66	-1,752.5	1,090.5	984.6	907.4	77.22	12.751	
8,900.0	7,032.4	8,897.5	7,043.6	40.0	44.6	-90.65	-90.65	-1,852.5	1,090.5	984.6	903.9	80.72	12.198	
9,000.0	7,031.6	8,997.5	7,042.7	41.8	46.2	-90.64	-90.64	-1,952.5	1,090.5	984.6	900.4	84.24	11.688	
9,100.0	7,030.9	9,097.5	7,041.8	43.6	47.9	-90.64	-90.64	-2,052.5	1,090.5	984.6	896.8	87.79	11.215	
9,200.0	7,030.1	9,197.5	7,040.9	45.4	49.5	-90.63	-90.63	-2,152.5	1,090.5	984.6	893.2	91.37	10.776	
9,300.0	7,029.4	9,297.5	7,040.0	47.2	51.2	-90.62	-90.62	-2,252.5	1,090.5	984.6	889.6	94.97	10.368	
9,400.0	7,028.6	9,397.5	7,039.1	49.0	52.9	-90.61	-90.61	-2,352.5	1,090.5	984.6	886.0	98.58	9.988	
9,500.0	7,027.8	9,497.5	7,038.3	50.8	54.6	-90.61	-90.61	-2,452.5	1,090.5	984.6	882.4	102.21	9.633	
9,600.0	7,027.1	9,597.5	7,037.4	52.7	56.3	-90.60	-90.60	-2,552.4	1,090.5	984.6	878.7	105.86	9.301	
9,700.0	7,026.3	9,697.5	7,036.5	54.5	58.0	-90.59	-90.59	-2,652.4	1,090.5	984.6	875.1	109.52	8.990	
9,800.0	7,025.6	9,797.5	7,035.6	56.3	59.7	-90.58	-90.58	-2,752.4	1,090.5	984.6	871.4	113.19	8.699	
9,900.0	7,024.8	9,897.5	7,034.7	58.2	61.5	-90.58	-90.58	-2,852.4	1,090.5	984.6	867.7	116.87	8.425	
10,000.0	7,024.1	9,997.5	7,033.8	60.0	63.3	-90.57	-90.57	-2,952.4	1,090.5	984.6	864.0	120.56	8.167	
10,100.0	7,023.3	10,097.5	7,032.9	61.9	65.0	-90.56	-90.56	-3,052.4	1,090.5	984.6	860.3	124.26	7.924	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
10,200.0	7,022.5	10,197.5	7,032.1	63.7	66.8	-90.55	-3,152.4	1,090.5	984.6	856.6	127.97	7.694		
10,300.0	7,021.8	10,297.5	7,031.2	65.6	68.6	-90.55	-3,252.4	1,090.5	984.6	852.9	131.69	7.477		
10,400.0	7,021.0	10,397.5	7,030.3	67.5	70.4	-90.54	-3,352.4	1,090.5	984.6	849.2	135.41	7.271		
10,500.0	7,020.3	10,497.5	7,029.4	69.3	72.2	-90.53	-3,452.4	1,090.5	984.6	845.4	139.14	7.076		
10,600.0	7,019.5	10,597.5	7,028.5	71.2	74.0	-90.52	-3,552.4	1,090.5	984.6	841.7	142.87	6.891		
10,700.0	7,018.8	10,697.5	7,027.6	73.1	75.8	-90.52	-3,652.4	1,090.5	984.6	838.0	146.61	6.715		
10,800.0	7,018.0	10,797.5	7,026.8	75.0	77.6	-90.51	-3,752.4	1,090.5	984.6	834.2	150.36	6.548		
10,900.0	7,017.2	10,897.5	7,025.9	76.8	79.4	-90.50	-3,852.4	1,090.5	984.6	830.5	154.11	6.389		
11,000.0	7,016.5	10,997.5	7,025.0	78.7	81.3	-90.50	-3,952.4	1,090.5	984.6	826.7	157.86	6.237		
11,100.0	7,015.7	11,097.5	7,024.1	80.6	83.1	-90.49	-4,052.4	1,090.5	984.6	822.9	161.62	6.092		
11,200.0	7,015.0	11,197.5	7,023.2	82.5	84.9	-90.48	-4,152.4	1,090.5	984.6	819.2	165.38	5.953		
11,300.0	7,014.2	11,297.5	7,022.3	84.4	86.8	-90.47	-4,252.4	1,090.5	984.6	815.4	169.15	5.821		
11,400.0	7,013.5	11,397.5	7,021.4	86.3	88.6	-90.47	-4,352.4	1,090.5	984.6	811.6	172.92	5.694		
11,460.2	7,013.0	11,457.7	7,020.9	87.4	89.7	-90.46	-4,412.5	1,090.5	984.6	809.4	175.18	5.620 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	0.00	32.8	0.0	32.8				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	0.00	32.8	0.0	32.8	32.6	0.22	145.893	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	0.00	32.8	0.0	32.8	32.1	0.67	48.631	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	0.00	32.8	0.0	32.8	31.7	1.12	29.179	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	0.00	32.8	0.0	32.8	31.2	1.57	20.842	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	0.00	32.8	0.0	32.8	30.8	2.02	16.210	
600.0	600.0	600.0	600.0	1.2	1.2	0.00	0.00	32.8	0.0	32.8	30.3	2.47	13.263	
700.0	700.0	700.0	700.0	1.5	1.5	0.00	0.00	32.8	0.0	32.8	29.9	2.92	11.223	
800.0	800.0	800.0	800.0	1.7	1.7	0.00	0.00	32.8	0.0	32.8	29.4	3.37	9.726	
900.0	900.0	900.0	900.0	1.9	1.9	0.00	0.00	32.8	0.0	32.8	29.0	3.82	8.582	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	0.00	0.00	32.8	0.0	32.8	28.5	4.27	7.679	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	0.00	0.00	32.8	0.0	32.8	28.1	4.72	6.947	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	0.00	0.00	32.8	0.0	32.8	27.6	5.17	6.343 CC	
1,300.0	1,300.0	1,299.8	1,299.8	2.8	2.8	1.39	3.31	33.1	0.8	33.1	27.5	5.61	5.906 ES	
1,400.0	1,400.0	1,399.5	1,399.4	3.0	3.0	5.37	34.1	3.2	34.3	28.2	6.05	5.670		
1,500.0	1,500.0	1,498.9	1,498.9	3.3	3.2	11.40	35.8	7.2	36.5	30.0	6.48	5.630		
1,600.0	1,600.0	1,598.5	1,598.2	3.5	3.4	18.58	38.1	12.8	40.2	33.3	6.93	5.805		
1,700.0	1,700.0	1,697.7	1,697.0	3.7	3.7	25.93	41.0	20.0	45.7	38.4	7.38	6.200		
1,800.0	1,800.0	1,796.5	1,795.4	3.9	3.9	32.70	44.7	28.7	53.3	45.4	7.83	6.801		
1,900.0	1,900.0	1,895.0	1,893.3	4.2	4.2	38.52	48.9	38.9	62.8	54.5	8.29	7.582		
2,000.0	2,000.0	1,993.1	1,990.6	4.4	4.4	43.30	53.7	50.6	74.4	65.7	8.75	8.512		
2,100.0	2,100.0	2,091.4	2,087.9	4.6	4.7	31.90	59.2	63.8	87.2	78.0	9.16	9.512		
2,200.0	2,200.0	2,190.5	2,185.9	4.8	5.0	35.58	64.8	77.4	99.1	89.5	9.61	10.315		
2,300.0	2,299.9	2,289.7	2,284.0	5.1	5.3	39.01	70.4	91.0	110.0	100.0	10.05	10.946		
2,400.0	2,399.7	2,389.0	2,382.1	5.3	5.6	42.36	76.0	104.6	120.0	109.5	10.49	11.435		
2,500.0	2,499.4	2,488.3	2,480.3	5.5	5.9	45.72	81.7	118.2	129.1	118.2	10.94	11.806		
2,600.0	2,599.0	2,587.6	2,578.6	5.7	6.2	48.81	87.3	131.7	138.4	127.0	11.39	12.149		
2,700.0	2,698.7	2,686.9	2,676.8	6.0	6.5	51.50	92.9	145.3	148.0	136.1	11.85	12.490		
2,800.0	2,798.4	2,786.2	2,775.0	6.2	6.8	53.87	98.5	158.9	157.9	145.6	12.31	12.823		
2,900.0	2,898.0	2,885.5	2,873.2	6.4	7.2	55.95	104.2	172.5	168.0	155.2	12.78	13.144		
3,000.0	2,997.7	2,984.8	2,971.4	6.7	7.5	57.80	109.8	186.1	178.3	165.1	13.26	13.452		
3,100.0	3,097.3	3,084.2	3,069.6	6.9	7.8	59.44	115.4	199.7	188.8	175.1	13.74	13.745		
3,200.0	3,197.0	3,183.5	3,167.8	7.2	8.2	60.91	121.0	213.3	199.4	185.2	14.22	14.024		
3,300.0	3,296.7	3,282.8	3,266.1	7.4	8.5	62.23	126.7	226.9	210.2	195.4	14.71	14.288		
3,400.0	3,396.3	3,382.1	3,364.3	7.7	8.8	63.42	132.3	240.5	221.0	205.8	15.20	14.537		
3,500.0	3,496.0	3,481.4	3,462.5	7.9	9.2	64.50	137.9	254.1	231.9	216.2	15.70	14.773		
3,600.0	3,595.7	3,580.7	3,560.7	8.2	9.5	65.48	143.5	267.7	242.9	226.7	16.20	14.997		
3,700.0	3,695.3	3,680.0	3,658.9	8.4	9.9	66.38	149.1	281.3	254.0	237.3	16.70	15.207		
3,800.0	3,795.0	3,779.3	3,757.1	8.7	10.2	67.20	154.8	294.9	265.1	247.9	17.21	15.406		
3,900.0	3,894.6	3,878.6	3,855.4	8.9	10.5	67.96	160.4	308.5	276.3	258.5	17.72	15.595		
4,000.0	3,994.3	3,978.0	3,953.6	9.2	10.9	68.65	166.0	322.1	287.5	269.2	18.23	15.773		
4,100.0	4,094.0	4,077.3	4,051.8	9.4	11.2	69.30	171.6	335.7	298.7	280.0	18.74	15.942		
4,200.0	4,193.6	4,176.6	4,150.0	9.7	11.6	69.90	177.3	349.3	310.0	290.8	19.25	16.101		
4,300.0	4,293.3	4,275.9	4,248.2	9.9	11.9	70.45	182.9	362.9	321.3	301.6	19.77	16.253		
4,400.0	4,392.9	4,375.2	4,346.4	10.2	12.3	70.97	188.5	376.5	332.7	312.4	20.29	16.397		
4,500.0	4,492.6	4,474.5	4,444.6	10.5	12.6	71.45	194.1	390.1	344.0	323.2	20.81	16.533		
4,600.0	4,592.3	4,573.8	4,542.9	10.7	13.0	71.91	199.8	403.6	355.4	334.1	21.33	16.663		
4,700.0	4,691.9	4,673.1	4,641.1	11.0	13.3	72.33	205.4	417.2	366.8	345.0	21.85	16.787		
4,800.0	4,791.6	4,772.4	4,739.3	11.2	13.6	72.73	211.0	430.8	378.3	355.9	22.38	16.905		
4,900.0	4,891.3	4,871.8	4,837.5	11.5	14.0	73.11	216.6	444.4	389.7	366.8	22.90	17.017		
5,000.0	4,990.9	4,971.1	4,935.7	11.8	14.3	73.46	222.3	458.0	401.2	377.8	23.43	17.124		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,090.6	5,070.4	5,033.9	12.0	14.7	73.80		227.9	471.6	412.7	388.7	23.96	17.226	
5,200.0	5,190.2	5,169.7	5,132.2	12.3	15.0	74.11		233.5	485.2	424.2	399.7	24.48	17.324	
5,300.0	5,289.9	5,269.0	5,230.4	12.5	15.4	74.41		239.1	498.8	435.7	410.7	25.01	17.418	
5,400.0	5,389.6	5,368.3	5,328.6	12.8	15.7	74.70		244.7	512.4	447.2	421.6	25.54	17.507	
5,500.0	5,489.2	5,467.6	5,426.8	13.1	16.1	74.97		250.4	526.0	458.7	432.6	26.07	17.593	
5,600.0	5,588.9	5,566.9	5,525.0	13.3	16.4	75.22		256.0	539.6	470.2	443.6	26.61	17.675	
5,700.0	5,688.5	5,666.2	5,623.2	13.6	16.8	75.47		261.6	553.2	481.8	454.7	27.14	17.754	
5,800.0	5,788.2	5,765.6	5,721.4	13.8	17.1	75.70		267.2	566.8	493.3	465.7	27.67	17.829	
5,900.0	5,887.9	5,864.9	5,819.7	14.1	17.5	75.92		272.9	580.4	504.9	476.7	28.20	17.902	
6,000.0	5,987.5	5,964.2	5,917.9	14.4	17.8	76.14		278.5	594.0	516.5	487.7	28.74	17.972	
6,100.0	6,087.2	6,063.5	6,016.1	14.6	18.2	76.34		284.1	607.6	528.0	498.8	29.27	18.039	
6,200.0	6,186.9	6,162.8	6,114.3	14.9	18.5	76.54		289.7	621.2	539.6	509.8	29.81	18.104	
6,300.0	6,286.7	6,262.1	6,212.5	15.1	18.9	-21.21		295.4	634.8	551.1	520.8	30.31	18.180	
6,400.0	6,386.3	6,360.5	6,309.8	15.2	19.2	-79.07		300.9	648.2	562.2	531.5	30.65	18.340	
6,500.0	6,484.1	6,457.4	6,405.7	15.3	19.5	-84.80		304.2	661.5	573.5	542.7	30.81	18.611	
6,600.0	6,578.4	6,557.0	6,503.9	15.3	19.8	-87.81		295.6	675.1	585.5	554.6	30.86	18.974	
6,700.0	6,667.5	6,660.1	6,603.6	15.2	20.0	-90.04		273.3	688.9	597.8	567.0	30.83	19.390	
6,800.0	6,750.1	6,767.2	6,703.0	15.2	20.1	-91.90		236.0	702.7	610.3	579.5	30.80	19.815	
6,900.0	6,824.5	6,878.5	6,799.7	15.2	20.3	-93.52		182.8	716.1	622.5	591.6	30.83	20.187	
7,000.0	6,889.7	6,994.3	6,891.1	15.3	20.4	-94.94		113.1	728.7	634.0	602.9	31.02	20.434	
7,100.0	6,944.4	7,114.6	6,973.8	15.6	20.6	-96.18		26.7	740.2	644.3	612.9	31.47	20.474	
7,200.0	6,987.7	7,239.1	7,044.3	16.1	20.8	-97.21		-75.3	749.9	653.1	620.9	32.25	20.251	
7,300.0	7,018.9	7,367.4	7,098.7	16.7	21.3	-98.04		-191.1	757.5	660.0	626.5	33.44	19.736	
7,400.0	7,037.4	7,498.8	7,133.8	17.6	21.9	-98.63		-317.4	762.4	664.5	629.4	35.05	18.960	
7,500.0	7,043.0	7,632.1	7,146.9	18.5	22.9	-98.97		-449.9	764.2	666.4	629.3	37.05	17.985	
7,600.0	7,042.2	7,734.7	7,146.9	19.6	23.8	-99.04		-552.5	764.2	666.5	627.3	39.23	16.990	
7,700.0	7,041.5	7,834.7	7,146.9	20.8	24.8	-99.10		-652.5	764.2	666.6	625.0	41.60	16.024	
7,800.0	7,040.7	7,934.7	7,146.8	22.2	25.9	-99.15		-752.5	764.2	666.7	622.5	44.17	15.094	
7,900.0	7,040.0	8,034.7	7,146.7	23.6	27.1	-99.21		-852.5	764.2	666.8	619.9	46.91	14.216	
8,000.0	7,039.2	8,134.7	7,146.6	25.0	28.4	-99.27		-952.5	764.2	666.9	617.1	49.78	13.398	
8,100.0	7,038.4	8,234.7	7,146.6	26.6	29.8	-99.33		-1,052.5	764.2	667.0	614.3	52.77	12.641	
8,200.0	7,037.7	8,334.7	7,146.5	28.1	31.2	-99.38		-1,152.5	764.2	667.1	611.3	55.85	11.945	
8,300.0	7,036.9	8,434.7	7,146.4	29.8	32.7	-99.44		-1,252.5	764.2	667.3	608.2	59.01	11.307	
8,400.0	7,036.2	8,534.6	7,146.3	31.4	34.2	-99.50		-1,352.5	764.2	667.4	605.1	62.25	10.721	
8,500.0	7,035.4	8,634.6	7,146.2	33.1	35.8	-99.56		-1,452.5	764.2	667.5	601.9	65.54	10.184	
8,600.0	7,034.7	8,734.6	7,146.2	34.8	37.4	-99.62		-1,552.5	764.2	667.6	598.7	68.88	9.692	
8,700.0	7,033.9	8,834.6	7,146.1	36.5	39.0	-99.67		-1,652.5	764.2	667.7	595.4	72.26	9.240	
8,800.0	7,033.1	8,934.6	7,146.0	38.3	40.7	-99.73		-1,752.5	764.2	667.8	592.1	75.68	8.824	
8,900.0	7,032.4	9,034.6	7,145.9	40.0	42.4	-99.79		-1,852.5	764.2	667.9	588.8	79.13	8.441	
9,000.0	7,031.6	9,134.6	7,145.9	41.8	44.1	-99.85		-1,952.5	764.2	668.1	585.4	82.61	8.087	
9,100.0	7,030.9	9,234.6	7,145.8	43.6	45.8	-99.90		-2,052.5	764.2	668.2	582.1	86.12	7.759	
9,200.0	7,030.1	9,334.6	7,145.7	45.4	47.5	-99.96		-2,152.5	764.2	668.3	578.6	89.64	7.455	
9,300.0	7,029.4	9,434.6	7,145.6	47.2	49.2	-100.02		-2,252.5	764.2	668.4	575.2	93.18	7.173	
9,400.0	7,028.6	9,534.6	7,145.6	49.0	51.0	-100.08		-2,352.5	764.2	668.5	571.8	96.74	6.910	
9,500.0	7,027.8	9,634.6	7,145.5	50.8	52.8	-100.13		-2,452.4	764.2	668.6	568.3	100.31	6.665	
9,600.0	7,027.1	9,734.6	7,145.4	52.7	54.5	-100.19		-2,552.4	764.2	668.8	564.9	103.90	6.437	
9,700.0	7,026.3	9,834.6	7,145.3	54.5	56.3	-100.25		-2,652.4	764.2	668.9	561.4	107.50	6.222	
9,800.0	7,025.6	9,934.6	7,145.3	56.3	58.1	-100.31		-2,752.4	764.2	669.0	557.9	111.11	6.021	
9,900.0	7,024.8	10,034.6	7,145.2	58.2	59.9	-100.36		-2,852.4	764.2	669.1	554.4	114.72	5.833	
10,000.0	7,024.1	10,134.6	7,145.1	60.0	61.7	-100.42		-2,952.4	764.2	669.3	550.9	118.35	5.655	
10,100.0	7,023.3	10,234.6	7,145.0	61.9	63.5	-100.48		-3,052.4	764.2	669.4	547.4	121.98	5.488	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Reference	Offset	Reference	Offset	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,200.0	7,022.5	10,334.6	7,145.0	63.7	65.4	-100.54	-3,152.4	764.2	669.5	543.9	125.62	5.330	
10,300.0	7,021.8	10,434.6	7,144.9	65.6	67.2	-100.59	-3,252.4	764.2	669.6	540.4	129.26	5.180	
10,400.0	7,021.0	10,534.6	7,144.8	67.5	69.0	-100.65	-3,352.4	764.2	669.8	536.8	132.91	5.039	
10,500.0	7,020.3	10,634.6	7,144.7	69.3	70.9	-100.71	-3,452.4	764.2	669.9	533.3	136.57	4.905	
10,600.0	7,019.5	10,734.6	7,144.7	71.2	72.7	-100.77	-3,552.4	764.2	670.0	529.8	140.23	4.778	
10,700.0	7,018.8	10,834.6	7,144.6	73.1	74.5	-100.82	-3,652.4	764.2	670.1	526.2	143.89	4.657	
10,800.0	7,018.0	10,934.6	7,144.5	75.0	76.4	-100.88	-3,752.4	764.2	670.3	522.7	147.55	4.543	
10,900.0	7,017.2	11,034.6	7,144.4	76.8	78.2	-100.94	-3,852.4	764.2	670.4	519.2	151.22	4.433	
11,000.0	7,016.5	11,134.6	7,144.4	78.7	80.1	-100.99	-3,952.4	764.2	670.5	515.6	154.89	4.329	
11,100.0	7,015.7	11,234.6	7,144.3	80.6	82.0	-101.05	-4,052.4	764.2	670.7	512.1	158.57	4.229	
11,200.0	7,015.0	11,334.6	7,144.2	82.5	83.8	-101.11	-4,152.4	764.2	670.8	508.5	162.24	4.134	
11,300.0	7,014.2	11,434.6	7,144.1	84.4	85.7	-101.17	-4,252.4	764.2	670.9	505.0	165.92	4.044	
11,400.0	7,013.5	11,534.6	7,144.1	86.3	87.6	-101.22	-4,352.4	764.2	671.0	501.4	169.60	3.957	
11,460.2	7,013.0	11,594.7	7,144.0	87.4	88.7	-101.26	-4,412.6	764.2	671.1	499.3	171.81	3.906 SF	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)													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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-1.75	-1.75	91.1	-2.8	91.1				
100.0	100.0	100.0	100.0	0.1	0.1	-1.75	-1.75	91.1	-2.8	91.1	90.9	0.22	405.415	
200.0	200.0	200.0	200.0	0.3	0.3	-1.75	-1.75	91.1	-2.8	91.1	90.4	0.67	135.138 CC	
300.0	300.0	299.8	299.8	0.6	0.6	-0.94	-0.94	91.2	-1.5	91.2	90.1	1.11	81.904	
400.0	400.0	399.5	399.4	0.8	0.8	1.50	1.50	91.6	2.4	91.6	90.1	1.56	58.864 ES	
500.0	500.0	498.9	498.6	1.0	1.0	5.48	5.48	92.2	8.8	92.7	90.6	2.02	45.951	
600.0	600.0	597.9	597.2	1.2	1.3	10.83	10.83	93.1	17.8	94.8	92.3	2.50	37.967	
700.0	700.0	696.4	695.0	1.5	1.5	17.25	17.25	94.2	29.3	98.8	95.8	3.00	32.883	
800.0	800.0	794.2	791.8	1.7	1.9	24.27	24.27	95.6	43.1	105.2	101.7	3.54	29.750	
900.0	900.0	891.2	887.5	1.9	2.2	31.38	31.38	97.2	59.3	114.5	110.4	4.08	28.038	
1,000.0	1,000.0	987.4	981.8	2.1	2.6	38.12	38.12	99.0	77.7	127.2	122.5	4.64	27.381 SF	
1,100.0	1,100.0	1,082.5	1,074.7	2.4	3.0	44.19	44.19	101.0	98.2	143.2	137.9	5.21	27.503	
1,200.0	1,200.0	1,176.5	1,165.9	2.6	3.4	49.47	49.47	103.2	120.8	162.5	156.7	5.77	28.185	
1,300.0	1,300.0	1,269.4	1,255.5	2.8	3.9	53.96	53.96	105.6	145.2	185.0	178.7	6.32	29.261	
1,400.0	1,400.0	1,361.0	1,343.2	3.0	4.5	57.74	57.74	108.2	171.4	210.6	203.7	6.88	30.609	
1,500.0	1,500.0	1,451.2	1,428.9	3.3	5.0	60.89	60.89	111.0	199.3	239.0	231.5	7.43	32.144	
1,600.0	1,600.0	1,543.7	1,516.3	3.5	5.6	63.60	63.60	113.9	229.6	269.6	261.6	8.00	33.706	
1,700.0	1,700.0	1,638.1	1,605.4	3.7	6.2	65.82	65.82	117.0	260.5	300.9	292.3	8.56	35.135	
1,800.0	1,800.0	1,732.5	1,694.5	3.9	6.9	67.62	67.62	120.0	291.5	332.4	323.3	9.12	36.437	
1,900.0	1,900.0	1,826.9	1,783.7	4.2	7.5	69.11	69.11	123.1	322.5	364.3	354.6	9.68	37.621	
2,000.0	2,000.0	1,921.3	1,872.8	4.4	8.2	70.36	70.36	126.1	353.5	396.3	386.1	10.24	38.698	
2,100.0	2,100.0	2,015.8	1,962.0	4.6	8.8	55.77	55.77	129.2	384.5	428.0	418.0	9.97	42.917	
2,200.0	2,200.0	2,110.5	2,051.4	4.8	9.5	56.69	56.69	132.3	415.6	458.9	448.5	10.47	43.826	
2,300.0	2,299.9	2,205.3	2,140.9	5.1	10.1	57.65	57.65	135.3	446.7	489.1	478.2	10.97	44.604	
2,400.0	2,399.7	2,300.3	2,230.6	5.3	10.8	58.64	58.64	138.4	477.9	518.7	507.2	11.46	45.267	
2,500.0	2,499.4	2,395.3	2,320.3	5.5	11.4	59.72	59.72	141.5	509.1	547.6	535.7	11.94	45.848	
2,600.0	2,599.0	2,490.4	2,410.0	5.7	12.1	60.91	60.91	144.5	540.3	576.6	564.1	12.42	46.409	
2,700.0	2,698.7	2,585.4	2,499.8	6.0	12.7	61.98	61.98	147.6	571.5	605.7	592.8	12.91	46.920	
2,800.0	2,798.4	2,680.5	2,589.5	6.2	13.4	62.95	62.95	150.7	602.7	635.0	621.6	13.40	47.384	
2,900.0	2,898.0	2,775.6	2,679.3	6.4	14.1	63.84	63.84	153.7	633.9	664.5	650.6	13.90	47.806	
3,000.0	2,997.7	2,870.6	2,769.0	6.7	14.7	64.65	64.65	156.8	665.1	694.2	679.7	14.41	48.188	
3,100.0	3,097.3	2,965.7	2,858.7	6.9	15.4	65.40	65.40	159.9	696.3	723.9	709.0	14.91	48.535	
3,200.0	3,197.0	3,060.7	2,948.5	7.2	16.1	66.09	66.09	162.9	727.5	753.7	738.3	15.43	48.851	
3,300.0	3,296.7	3,155.8	3,038.2	7.4	16.7	66.73	66.73	166.0	758.7	783.7	767.7	15.95	49.137	
3,400.0	3,396.3	3,250.9	3,128.0	7.7	17.4	67.32	67.32	169.1	789.9	813.7	797.2	16.47	49.397	
3,500.0	3,496.0	3,345.9	3,217.7	7.9	18.0	67.87	67.87	172.2	821.1	843.8	826.8	17.00	49.635	
3,600.0	3,595.7	3,441.0	3,307.5	8.2	18.7	68.38	68.38	175.2	852.3	874.0	856.4	17.53	49.851	
3,700.0	3,695.3	3,536.1	3,397.2	8.4	19.4	68.86	68.86	178.3	883.5	904.2	886.1	18.07	50.048	
3,800.0	3,795.0	3,631.1	3,486.9	8.7	20.0	69.30	69.30	181.4	914.7	934.4	915.8	18.60	50.228	
3,900.0	3,894.6	3,726.2	3,576.7	8.9	20.7	69.72	69.72	184.4	945.9	964.8	945.6	19.14	50.393	
4,000.0	3,994.3	3,821.2	3,666.4	9.2	21.4	70.11	70.11	187.5	977.1	995.1	975.4	19.69	50.544	



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17U-343 - Wellbore #1 - Plan #2 (7-7-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-2.09	-2.09	76.5	-2.8	76.6				
100.0	100.0	100.0	100.0	0.1	0.1	-2.09	-2.09	76.5	-2.8	76.6	76.3	0.22	340.618	
200.0	200.0	200.0	200.0	0.3	0.3	-2.09	-2.09	76.5	-2.8	76.6	75.9	0.67	113.539	
300.0	300.0	300.0	300.0	0.6	0.6	-2.09	-2.09	76.5	-2.8	76.6	75.4	1.12	68.124	
400.0	400.0	400.0	400.0	0.8	0.8	-2.09	-2.09	76.5	-2.8	76.6	75.0	1.57	48.660 CC	
500.0	500.0	499.8	499.8	1.0	1.0	-1.12	-1.12	76.7	-1.5	76.7	74.7	2.01	38.120 ES	
600.0	600.0	599.5	599.4	1.2	1.2	1.76	1.76	77.2	2.4	77.2	74.8	2.45	31.534	
700.0	700.0	698.8	698.5	1.5	1.4	6.44	6.44	78.0	8.8	78.5	75.6	2.90	27.079	
800.0	800.0	797.8	797.1	1.7	1.7	12.63	12.63	79.2	17.7	81.2	77.8	3.37	24.094	
900.0	900.0	896.3	894.9	1.9	2.0	19.87	19.87	80.6	29.1	85.9	82.0	3.86	22.248	
1,000.0	1,000.0	994.1	991.7	2.1	2.2	27.52	27.52	82.4	42.9	93.3	88.9	4.37	21.340	
1,100.0	1,100.0	1,091.1	1,087.3	2.4	2.6	34.94	34.94	84.5	59.0	103.9	99.0	4.90	21.205 SF	
1,200.0	1,200.0	1,187.2	1,181.6	2.6	2.9	41.69	41.69	86.9	77.4	117.8	112.3	5.43	21.686	
1,300.0	1,300.0	1,282.3	1,274.5	2.8	3.3	47.54	47.54	89.5	97.8	135.0	129.1	5.97	22.635	
1,400.0	1,400.0	1,376.3	1,365.7	3.0	3.8	52.47	52.47	92.4	120.3	155.5	149.0	6.50	23.923	
1,500.0	1,500.0	1,469.2	1,455.2	3.3	4.2	56.55	56.55	95.6	144.6	179.0	172.0	7.04	25.448	
1,600.0	1,600.0	1,563.1	1,545.3	3.5	4.7	59.96	59.96	99.0	171.2	205.2	197.6	7.58	27.082	
1,700.0	1,700.0	1,658.8	1,637.0	3.7	5.3	62.68	62.68	102.5	198.5	232.1	224.0	8.12	28.598	
1,800.0	1,800.0	1,754.6	1,728.7	3.9	5.8	64.84	64.84	106.0	225.8	259.4	250.8	8.65	29.980	
1,900.0	1,900.0	1,850.4	1,820.5	4.2	6.4	66.59	66.59	109.6	253.1	287.0	277.8	9.19	31.236	
2,000.0	2,000.0	1,946.2	1,912.2	4.4	6.9	68.03	68.03	113.1	280.4	314.8	305.1	9.72	32.378	
2,100.0	2,100.0	2,042.1	2,004.0	4.6	7.5	53.65	53.65	116.6	307.7	342.3	332.6	9.68	35.358	
2,200.0	2,200.0	2,138.1	2,096.0	4.8	8.1	54.78	54.78	120.2	335.1	368.9	358.7	10.16	36.294	
2,300.0	2,299.9	2,234.3	2,188.2	5.1	8.7	55.95	55.95	123.7	362.5	394.8	384.1	10.65	37.084	
2,400.0	2,399.7	2,330.5	2,280.4	5.3	9.2	57.16	57.16	127.3	389.9	419.9	408.8	11.12	37.750	
2,500.0	2,499.4	2,426.9	2,372.7	5.5	9.8	58.46	58.46	130.8	417.4	444.4	432.8	11.60	38.317	
2,600.0	2,599.0	2,523.3	2,465.0	5.7	10.4	59.81	59.81	134.4	444.9	469.0	456.9	12.07	38.845	
2,700.0	2,698.7	2,619.7	2,557.3	6.0	11.0	61.02	61.02	137.9	472.3	493.8	481.2	12.55	39.331	
2,800.0	2,798.4	2,716.0	2,649.6	6.2	11.5	62.12	62.12	141.5	499.8	518.7	505.7	13.04	39.775	
2,900.0	2,898.0	2,812.4	2,741.9	6.4	12.1	63.12	63.12	145.0	527.3	543.8	530.3	13.53	40.183	
3,000.0	2,997.7	2,908.8	2,834.2	6.7	12.7	64.03	64.03	148.6	554.7	569.1	555.1	14.03	40.555	
3,100.0	3,097.3	3,005.2	2,926.5	6.9	13.3	64.86	64.86	152.1	582.2	594.5	579.9	14.54	40.896	
3,200.0	3,197.0	3,101.5	3,018.8	7.2	13.9	65.62	65.62	155.7	609.7	620.0	604.9	15.05	41.207	
3,300.0	3,296.7	3,197.9	3,111.1	7.4	14.5	66.33	66.33	159.2	637.1	645.6	630.0	15.56	41.493	
3,400.0	3,396.3	3,294.3	3,203.4	7.7	15.0	66.98	66.98	162.8	664.6	671.2	655.2	16.08	41.754	
3,500.0	3,496.0	3,390.6	3,295.7	7.9	15.6	67.59	67.59	166.3	692.1	697.0	680.4	16.60	41.995	
3,600.0	3,595.7	3,487.0	3,388.1	8.2	16.2	68.15	68.15	169.9	719.5	722.8	705.7	17.12	42.215	
3,700.0	3,695.3	3,583.4	3,480.4	8.4	16.8	68.67	68.67	173.4	747.0	748.7	731.1	17.65	42.418	
3,800.0	3,795.0	3,679.8	3,572.7	8.7	17.4	69.16	69.16	177.0	774.5	774.6	756.5	18.18	42.605	
3,900.0	3,894.6	3,776.1	3,665.0	8.9	18.0	69.61	69.61	180.5	802.0	800.6	781.9	18.72	42.778	
4,000.0	3,994.3	3,872.5	3,757.3	9.2	18.6	70.04	70.04	184.1	829.4	826.7	807.4	19.25	42.937	
4,100.0	4,094.0	3,968.9	3,849.6	9.4	19.1	70.44	70.44	187.6	856.9	852.7	832.9	19.79	43.085	
4,200.0	4,193.6	4,065.3	3,941.9	9.7	19.7	70.82	70.82	191.2	884.4	878.8	858.5	20.33	43.222	
4,300.0	4,293.3	4,161.6	4,034.2	9.9	20.3	71.18	71.18	194.7	911.8	905.0	884.1	20.88	43.349	
4,400.0	4,392.9	4,258.0	4,126.5	10.2	20.9	71.51	71.51	198.3	939.3	931.1	909.7	21.42	43.467	
4,500.0	4,492.6	4,354.4	4,218.8	10.5	21.5	71.83	71.83	201.8	966.8	957.3	935.4	21.97	43.577	
4,600.0	4,592.3	4,450.8	4,311.1	10.7	22.1	72.13	72.13	205.4	994.2	983.6	961.0	22.52	43.680	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	125.97	125.97	-291.4	401.6	496.2				
100.0	100.0	91.1	91.1	0.1	0.1	125.97	125.97	-291.6	401.7	496.3	496.1	0.23	2,126.972	
200.0	200.0	193.3	193.3	0.3	0.3	125.99	125.99	-291.8	401.7	496.5	495.9	0.66	752.843	
300.0	300.0	294.9	294.9	0.6	0.5	125.99	125.99	-291.7	401.6	496.3	495.3	1.02	486.188	
400.0	400.0	394.4	394.4	0.8	0.6	125.97	125.97	-291.3	401.4	496.0	494.6	1.40	353.868	
500.0	500.0	494.6	494.6	1.0	0.8	126.00	126.00	-291.3	401.0	495.7	493.8	1.85	268.541	
600.0	600.0	593.8	593.8	1.2	1.0	126.01	126.01	-291.3	400.7	495.4	493.1	2.29	216.805	
700.0	700.0	694.6	694.6	1.5	1.3	126.02	126.02	-291.2	400.5	495.2	492.4	2.74	180.905	
800.0	800.0	797.1	797.1	1.7	1.5	126.07	126.07	-291.2	399.8	494.6	491.4	3.22	153.747	
900.0	900.0	898.9	898.9	1.9	1.8	126.13	126.13	-291.0	398.6	493.6	489.9	3.70	133.380	
1,000.0	1,000.0	999.6	999.6	2.1	2.0	126.19	126.19	-290.7	397.3	492.3	488.1	4.18	117.681	
1,100.0	1,100.0	1,097.0	1,096.9	2.4	2.3	126.25	126.25	-290.5	396.1	491.3	486.6	4.66	105.443	
1,200.0	1,200.0	1,197.2	1,197.1	2.6	2.6	126.32	126.32	-290.5	395.1	490.5	485.3	5.14	95.351	
1,300.0	1,300.0	1,297.3	1,297.2	2.8	2.8	126.38	126.38	-290.4	394.2	489.6	484.0	5.63	86.966	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.1	126.38	126.38	-289.7	393.2	488.4	482.3	6.11	79.955	
1,500.0	1,500.0	1,496.4	1,496.4	3.3	3.3	126.36	126.36	-289.0	392.4	487.4	480.8	6.57	74.227	
1,600.0	1,600.0	1,599.3	1,599.2	3.5	3.6	126.40	126.40	-288.6	391.5	486.4	479.3	7.05	68.970	
1,700.0	1,700.0	1,699.0	1,698.9	3.7	3.8	126.43	126.43	-288.1	390.3	485.1	477.6	7.53	64.414	
1,800.0	1,800.0	1,797.9	1,797.8	3.9	4.1	126.43	126.43	-287.4	389.4	484.0	476.0	8.01	60.459	
1,900.0	1,900.0	1,900.0	1,899.9	4.2	4.3	126.44	126.44	-286.7	388.4	482.8	474.3	8.49	56.848	
2,000.0	2,000.0	1,998.1	1,998.0	4.4	4.6	126.45	126.45	-286.1	387.4	481.6	472.6	8.97	53.671	
2,100.0	2,100.0	2,099.8	2,099.7	4.6	4.9	111.08	111.08	-285.5	386.3	480.7	471.2	9.46	50.805	
2,188.3	2,188.3	2,187.1	2,187.0	4.8	5.1	111.37	111.37	-285.0	385.2	480.4	470.5	9.89	48.593	
2,200.0	2,200.0	2,198.7	2,198.6	4.8	5.1	111.42	111.42	-285.0	385.1	480.4	470.4	9.94	48.319	
2,300.0	2,299.9	2,296.0	2,295.9	5.1	5.4	111.96	111.96	-285.0	384.0	481.1	470.7	10.41	46.196	
2,400.0	2,399.7	2,395.2	2,395.1	5.3	5.6	112.67	112.67	-285.1	383.2	482.8	472.0	10.89	44.343	
2,500.0	2,499.4	2,496.0	2,495.8	5.5	5.9	113.54	113.54	-284.9	382.6	485.3	473.9	11.37	42.668	
2,600.0	2,599.0	2,599.0	2,598.9	5.7	6.1	114.49	114.49	-284.5	381.5	487.6	475.7	11.87	41.065	
2,700.0	2,698.7	2,697.3	2,697.2	6.0	6.4	115.39	115.39	-283.9	380.3	489.8	477.4	12.37	39.611	
2,800.0	2,798.4	2,796.4	2,796.3	6.2	6.7	116.28	116.28	-283.5	379.4	492.3	479.5	12.86	38.282	
2,900.0	2,898.0	2,894.3	2,894.2	6.4	6.9	117.16	117.16	-283.2	378.5	495.2	481.9	13.36	37.080	
3,000.0	2,997.7	2,992.9	2,992.8	6.7	7.2	118.07	118.07	-283.3	377.7	498.5	484.7	13.84	36.030	
3,100.0	3,097.3	3,096.2	3,096.1	6.9	7.4	119.07	119.07	-283.7	376.2	501.7	487.4	14.32	35.024	
3,200.0	3,197.0	3,196.6	3,196.4	7.2	7.7	120.00	120.00	-283.6	374.6	504.5	489.7	14.82	34.034	
3,300.0	3,296.7	3,297.0	3,296.8	7.4	7.9	120.88	120.88	-283.1	373.2	507.4	492.0	15.33	33.096	
3,400.0	3,396.3	3,396.0	3,395.8	7.7	8.2	121.71	121.71	-282.4	372.0	510.3	494.5	15.83	32.247	
3,500.0	3,496.0	3,491.7	3,491.5	7.9	8.4	122.50	122.50	-282.0	371.2	513.8	497.5	16.30	31.514	
3,600.0	3,595.7	3,591.5	3,591.3	8.2	8.7	123.37	123.37	-282.3	370.1	517.8	501.0	16.79	30.840	
3,700.0	3,695.3	3,690.9	3,690.7	8.4	8.9	124.26	124.26	-282.8	368.8	521.9	504.6	17.27	30.218	
3,800.0	3,795.0	3,791.3	3,791.1	8.7	9.2	125.15	125.15	-283.2	367.5	526.1	508.3	17.76	29.621	
3,900.0	3,894.6	3,891.5	3,891.2	8.9	9.4	126.05	126.05	-283.7	365.9	530.2	512.0	18.25	29.054	
4,000.0	3,994.3	3,990.8	3,990.6	9.2	9.7	126.98	126.98	-284.5	363.8	534.5	515.7	18.73	28.531	
4,100.0	4,094.0	4,092.4	4,092.1	9.4	9.9	127.90	127.90	-285.1	361.7	538.7	519.5	19.23	28.016	
4,200.0	4,193.6	4,188.7	4,188.4	9.7	10.1	128.79	128.79	-285.8	359.6	543.1	523.4	19.71	27.563	
4,300.0	4,293.3	4,291.4	4,291.0	9.9	10.4	129.72	129.72	-286.7	357.4	547.8	527.6	20.20	27.122	
4,400.0	4,392.9	4,387.3	4,386.9	10.2	10.6	130.53	130.53	-287.2	355.6	552.6	531.9	20.68	26.725	
4,500.0	4,492.6	4,492.1	4,491.7	10.5	10.9	131.41	131.41	-287.9	353.6	557.4	536.3	21.18	26.325	
4,600.0	4,592.3	4,592.4	4,592.0	10.7	11.2	132.22	132.22	-287.8	351.6	561.7	540.1	21.68	25.912	
4,700.0	4,691.9	4,690.4	4,690.0	11.0	11.4	133.03	133.03	-288.0	349.2	566.3	544.1	22.17	25.538	
4,800.0	4,791.6	4,787.2	4,786.8	11.2	11.7	133.85	133.85	-288.7	346.9	571.3	548.6	22.66	25.214	
4,900.0	4,891.3	4,888.7	4,888.2	11.5	11.9	134.62	134.62	-289.2	345.2	576.6	553.4	23.16	24.899	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-1 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,990.9	4,986.7	4,986.2	11.8	12.2	135.29		-289.2	343.9	581.8	558.1	23.65	24.599	
5,100.0	5,090.6	5,091.1	5,090.6	12.0	12.4	136.00		-289.1	342.5	587.0	562.8	24.16	24.293	
5,200.0	5,190.2	5,189.4	5,188.9	12.3	12.7	136.70		-288.9	340.6	591.8	567.1	24.66	23.999	
5,300.0	5,289.9	5,287.2	5,286.7	12.5	13.0	137.41		-289.1	338.6	597.0	571.9	25.15	23.736	
5,400.0	5,389.6	5,387.3	5,386.7	12.8	13.2	138.11		-289.3	336.6	602.5	576.8	25.65	23.488	
5,500.0	5,489.2	5,484.8	5,484.2	13.1	13.5	138.77		-289.6	335.0	608.1	582.0	26.14	23.262	
5,600.0	5,588.9	5,588.8	5,588.2	13.3	13.7	139.42		-289.6	333.5	613.7	587.1	26.65	23.030	
5,700.0	5,688.5	5,689.6	5,689.0	13.6	14.0	140.04		-289.1	331.8	618.8	591.7	27.15	22.796	
5,800.0	5,788.2	5,789.3	5,788.6	13.8	14.3	140.62		-288.4	330.3	624.0	596.3	27.64	22.575	
5,900.0	5,887.9	5,886.0	5,885.4	14.1	14.5	141.18		-288.0	328.9	629.4	601.3	28.13	22.375	
6,000.0	5,987.5	5,985.0	5,984.4	14.4	14.8	141.73		-287.8	327.9	635.2	606.6	28.62	22.195	
6,100.0	6,087.2	6,086.9	6,086.3	14.6	15.0	142.23		-287.2	327.1	640.9	611.8	29.10	22.021	
6,200.0	6,186.9	6,185.2	6,184.5	14.9	15.3	142.73		-286.7	326.2	646.6	617.0	29.59	21.853	
6,300.0	6,286.7	6,280.6	6,279.9	15.1	15.5	44.98		-286.7	325.1	649.9	619.9	30.03	21.643	
6,400.0	6,386.3	6,380.6	6,380.0	15.2	15.8	-12.50		-287.2	323.9	642.1	612.0	30.11	21.326	
6,500.0	6,484.1	6,479.0	6,478.4	15.3	16.0	-17.69		-287.5	322.5	622.1	592.4	29.79	20.883	
6,600.0	6,578.4	6,573.6	6,572.9	15.3	16.3	-21.10		-287.7	321.5	590.5	561.4	29.12	20.277	
6,700.0	6,667.5	6,661.1	6,660.4	15.2	16.5	-25.04		-287.7	321.1	548.2	520.0	28.21	19.432	
6,800.0	6,750.1	6,744.6	6,743.9	15.2	16.7	-30.50		-287.9	320.7	496.5	469.1	27.37	18.144	
6,900.0	6,824.5	6,820.8	6,820.1	15.2	16.8	-38.40		-287.9	320.1	436.7	409.6	27.13	16.096	
7,000.0	6,889.7	6,884.7	6,884.0	15.3	17.0	-49.28		-287.8	319.6	371.9	343.8	28.13	13.221	
7,100.0	6,944.4	6,938.9	6,938.2	15.6	17.1	-63.12		-287.8	319.4	306.9	276.5	30.40	10.094	
7,200.0	6,987.7	6,982.6	6,981.9	16.1	17.3	-77.42		-288.0	319.1	249.9	217.2	32.70	7.643	
7,300.0	7,018.9	7,014.6	7,013.9	16.7	17.3	-88.18		-288.2	318.7	216.0	182.0	34.01	6.351	
7,336.2	7,027.1	7,022.9	7,022.2	17.0	17.4	-90.60		-288.2	318.6	213.1	178.7	34.33	6.205 CC, ES, SF	
7,400.0	7,037.4	7,033.4	7,032.8	17.6	17.4	-92.70		-288.3	318.5	222.2	187.4	34.84	6.378	
7,500.0	7,043.0	7,039.2	7,038.6	18.5	17.4	-90.36		-288.3	318.5	268.5	232.6	35.86	7.488	
7,600.0	7,042.2	7,038.8	7,038.2	19.6	17.4	-90.25		-288.3	318.5	339.0	302.0	36.96	9.172	
7,700.0	7,041.5	7,038.4	7,037.8	20.8	17.4	-90.14		-288.3	318.5	421.6	383.4	38.18	11.042	
7,800.0	7,040.7	7,038.1	7,037.4	22.2	17.4	-90.04		-288.3	318.5	510.4	470.9	39.50	12.922	
7,900.0	7,040.0	7,037.7	7,037.0	23.6	17.4	-89.94		-288.3	318.5	602.8	561.9	40.90	14.737	
8,000.0	7,039.2	7,037.3	7,036.6	25.0	17.4	-89.84		-288.3	318.5	697.3	654.9	42.38	16.455	
8,100.0	7,038.4	7,037.0	7,036.3	26.6	17.4	-89.74		-288.3	318.5	793.1	749.2	43.90	18.065	
8,200.0	7,037.7	7,036.6	7,035.9	28.1	17.4	-89.65		-288.3	318.5	889.9	844.4	45.48	19.566	
8,300.0	7,036.9	7,036.3	7,035.6	29.8	17.4	-89.55		-288.3	318.5	987.3	940.2	47.10	20.962	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-4 (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	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
7,400.0	7,037.4	7,018.8	7,017.9	17.6	15.3	-45.26	-1,322.7	225.5	977.4	952.3	25.09	38.950		
7,500.0	7,043.0	7,024.4	7,023.5	18.5	15.3	-93.86	-1,322.7	225.5	878.4	844.7	33.72	26.051		
7,600.0	7,042.2	7,023.5	7,022.6	19.6	15.3	-93.45	-1,322.7	225.5	779.5	744.6	34.83	22.379		
7,700.0	7,041.5	7,022.7	7,021.8	20.8	15.3	-93.04	-1,322.7	225.5	680.8	644.8	36.06	18.880		
7,800.0	7,040.7	7,021.8	7,020.9	22.2	15.3	-92.64	-1,322.7	225.5	582.7	545.3	37.39	15.583		
7,900.0	7,040.0	7,021.0	7,020.1	23.6	15.3	-92.24	-1,322.7	225.5	485.2	446.4	38.80	12.505		
8,000.0	7,039.2	7,020.1	7,019.2	25.0	15.3	-91.84	-1,322.7	225.5	389.1	348.8	40.28	9.659		
8,100.0	7,038.4	7,019.3	7,018.4	26.6	15.3	-91.44	-1,322.7	225.5	295.5	253.7	41.82	7.068		
8,200.0	7,037.7	7,018.5	7,017.6	28.1	15.3	-91.04	-1,322.7	225.5	208.1	164.7	43.40	4.794		
8,300.0	7,036.9	7,017.6	7,016.7	29.8	15.3	-90.64	-1,322.7	225.5	138.7	93.7	45.02	3.081		
8,370.2	7,036.4	7,017.0	7,016.2	30.9	15.3	-90.36	-1,322.7	225.5	119.6	73.4	46.18	2.589 CC, ES, SF		
8,400.0	7,036.2	7,016.8	7,015.9	31.4	15.3	-90.24	-1,322.7	225.5	123.2	76.5	46.67	2.640		
8,500.0	7,035.4	7,016.0	7,015.1	33.1	15.3	-89.85	-1,322.7	225.6	176.4	128.1	48.35	3.649		
8,600.0	7,034.7	7,015.2	7,014.3	34.8	15.3	-89.46	-1,322.7	225.6	259.0	208.9	50.05	5.174		
8,700.0	7,033.9	7,014.4	7,013.5	36.5	15.3	-89.07	-1,322.7	225.6	350.7	298.9	51.78	6.774		
8,800.0	7,033.1	7,013.5	7,012.6	38.3	15.3	-88.68	-1,322.7	225.6	446.0	392.5	53.51	8.335		
8,900.0	7,032.4	7,012.7	7,011.8	40.0	15.3	-88.29	-1,322.7	225.6	543.0	487.8	55.26	9.826		
9,000.0	7,031.6	7,011.9	7,011.0	41.8	15.3	-87.91	-1,322.7	225.6	640.9	583.9	57.03	11.239		
9,100.0	7,030.9	7,011.1	7,010.2	43.6	15.3	-87.53	-1,322.7	225.6	739.4	680.6	58.80	12.575		
9,200.0	7,030.1	7,010.3	7,009.4	45.4	15.3	-87.14	-1,322.7	225.6	838.3	777.7	60.58	13.838		
9,300.0	7,029.4	7,009.5	7,008.6	47.2	15.3	-86.77	-1,322.7	225.6	937.3	875.0	62.37	15.030		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Lajco 17ND - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 703-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis		Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation		Separation Factor
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
7,100.0	6,944.4	7,113.0	6,935.9	15.6	27.0	35.76	-945.7	-196.9	926.4	897.4	29.00	31.942	
7,200.0	6,987.7	7,157.4	6,980.3	16.1	27.1	46.23	-945.8	-197.2	842.3	812.8	29.49	28.562	
7,300.0	7,018.9	7,190.9	7,013.7	16.7	27.1	60.56	-945.9	-197.3	754.8	723.2	31.61	23.879	
7,400.0	7,037.4	7,210.5	7,033.4	17.6	27.1	76.77	-945.9	-197.4	666.2	632.4	33.83	19.696	
7,500.0	7,043.0	7,216.3	7,039.1	18.5	27.1	90.73	-945.9	-197.4	579.3	544.5	34.79	16.651	
7,600.0	7,042.2	7,215.4	7,038.2	19.6	27.1	90.56	-945.9	-197.4	496.8	460.9	35.90	13.841	
7,700.0	7,041.5	7,214.5	7,037.3	20.8	27.1	90.38	-945.9	-197.4	422.1	385.0	37.13	11.369	
7,800.0	7,040.7	7,213.5	7,036.4	22.2	27.1	90.21	-945.9	-197.4	359.8	321.4	38.45	9.357	
7,900.0	7,040.0	7,212.6	7,035.5	23.6	27.1	90.04	-945.9	-197.4	317.5	277.6	39.86	7.964	
7,993.5	7,039.3	7,211.8	7,034.6	24.9	27.1	89.88	-945.9	-197.4	303.4	262.1	41.24	7.356 CC	
8,000.0	7,039.2	7,211.8	7,034.6	25.0	27.1	89.87	-945.9	-197.4	303.5	262.1	41.34	7.340 ES, SF	
8,100.0	7,038.4	7,210.9	7,033.7	26.6	27.1	89.71	-945.9	-197.4	321.5	278.7	42.88	7.499	
8,200.0	7,037.7	7,210.0	7,032.8	28.1	27.1	89.54	-945.9	-197.4	367.0	322.5	44.46	8.255	
8,300.0	7,036.9	7,209.1	7,032.0	29.8	27.1	89.38	-945.9	-197.4	431.3	385.2	46.08	9.359	
8,400.0	7,036.2	7,208.3	7,031.1	31.4	27.1	89.22	-945.9	-197.4	507.2	459.5	47.74	10.626	
8,500.0	7,035.4	7,207.4	7,030.3	33.1	27.1	89.06	-945.9	-197.4	590.4	541.0	49.42	11.947	
8,600.0	7,034.7	7,206.6	7,029.4	34.8	27.1	88.90	-945.9	-197.4	678.2	627.0	51.13	13.264	
8,700.0	7,033.9	7,205.8	7,028.6	36.5	27.1	88.74	-945.9	-197.4	768.9	716.0	52.86	14.546	
8,800.0	7,033.1	7,205.0	7,027.8	38.3	27.1	88.59	-945.9	-197.4	861.7	807.1	54.60	15.780	
8,900.0	7,032.4	7,204.2	7,027.0	40.0	27.1	88.44	-945.9	-197.4	955.9	899.5	56.37	16.959	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Lajco 17M-323
<b>Project:</b>	SEC.17-T4N-R67W	<b>TVD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Reference Site:</b>	Lajco 4N67W17R Pad Sec.17-T4N-R67W	<b>MD Reference:</b>	WELL @ 4807.0ft (RKB - 13')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Lajco 17M-323	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	EDM 2003.21 Single User Db
<b>Reference Design:</b>	Plan #2 (7-2-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4807.0ft (RKB - 13')

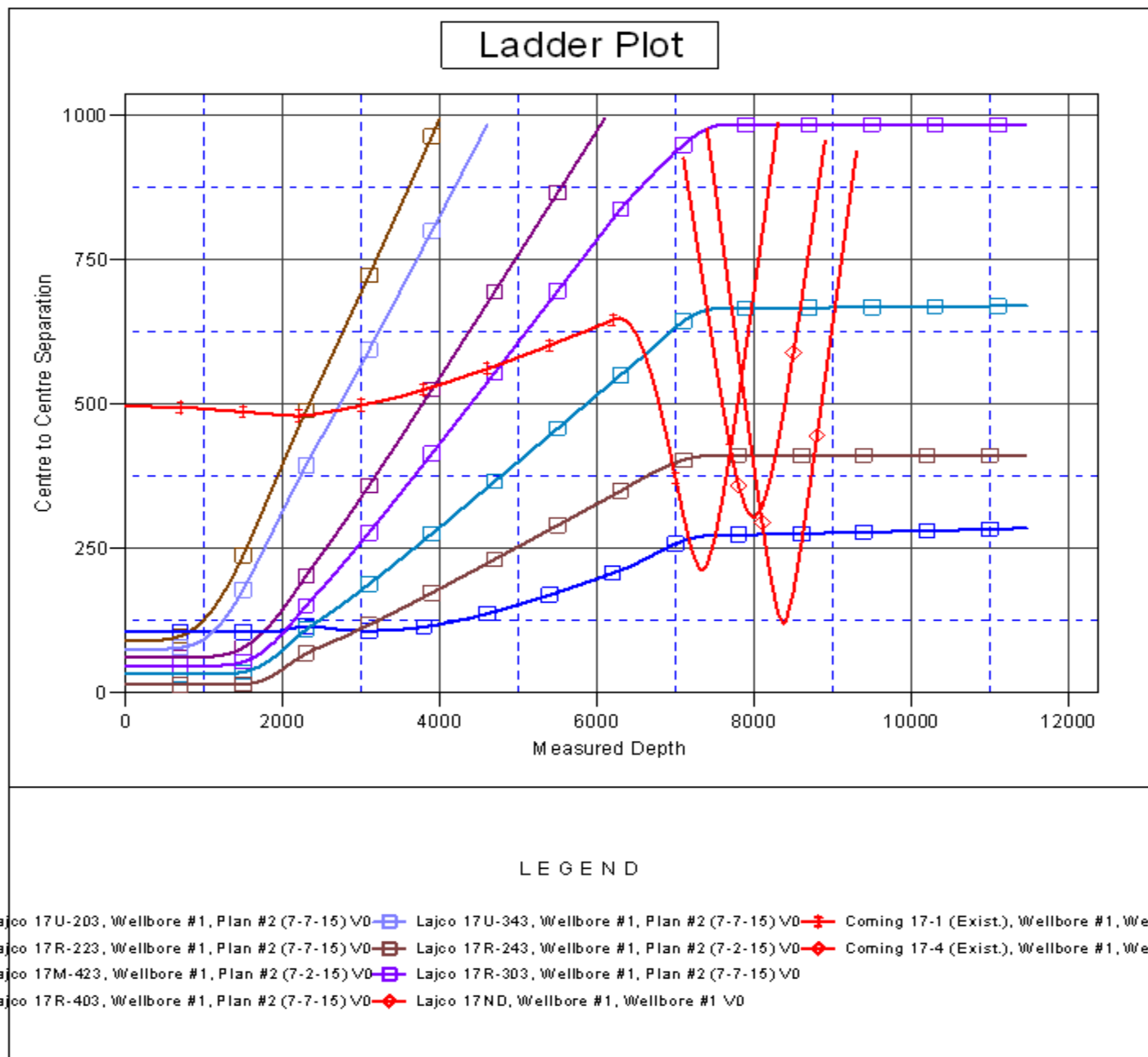
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Lajco 17M-323

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.38°



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