

PETROLEUM DEVELOPMENT CORP Weld County CO

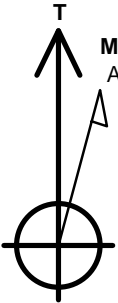
Well Name: **Lajco 17U-343**

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	1359756.78	3163452.78	40.319450	-104.913810	
RKB - 13' WELL @ 4807.0ft (RKB - 13')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50' E/W Hardline (17U-343)	1.0	-2542.8	1815.7	Rectangle (Sides: L3956.3 W100.0)
SHL 295'FNL & 2187'FEL	1.0	0.0	0.0	Point
BHL 500'FSL & 447'FEL	7020.0	-4521.0	1815.7	Point



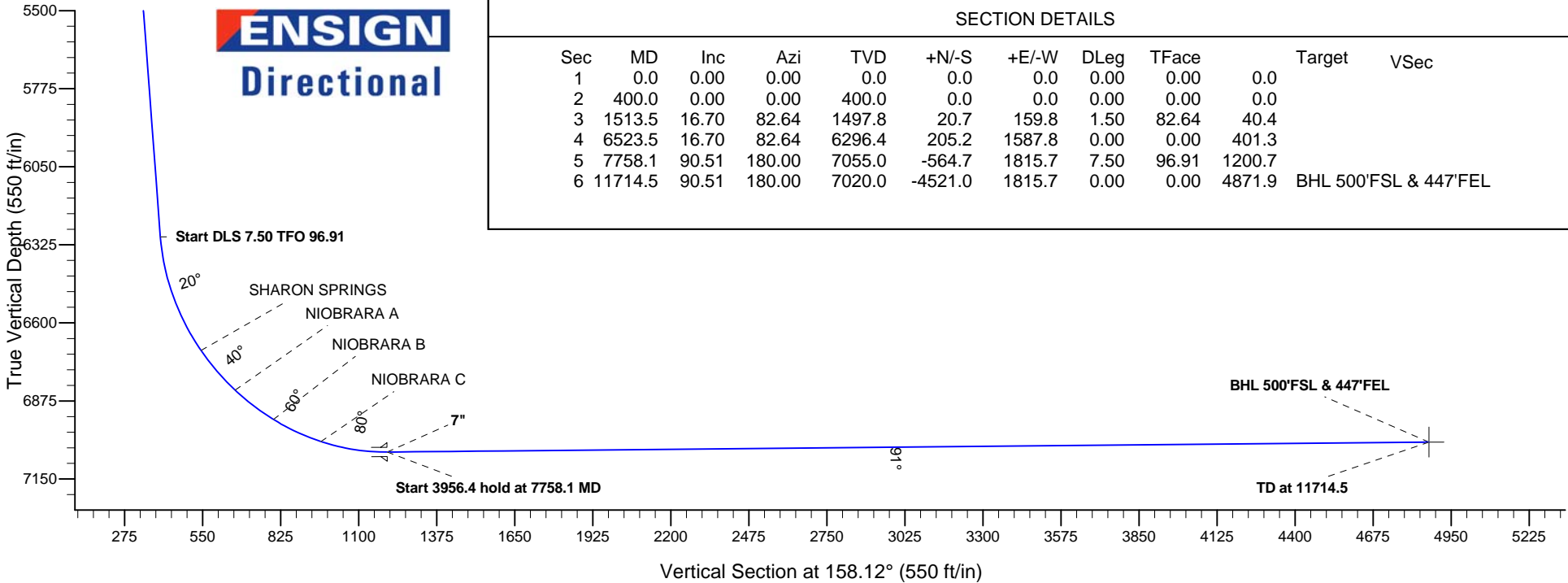
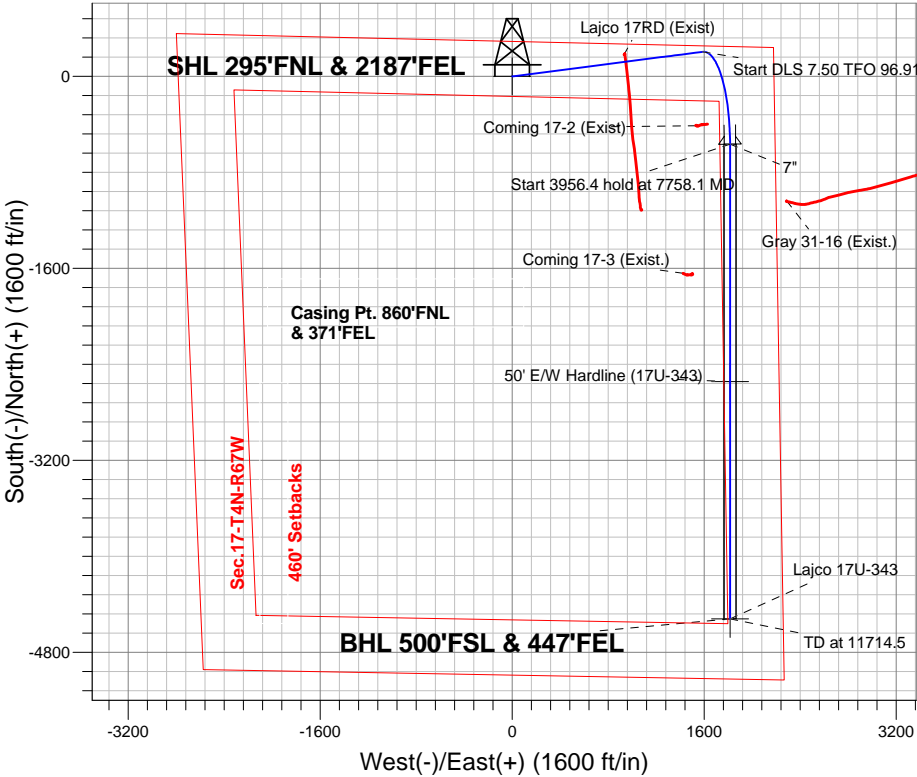
Azimuths to True North
Magnetic North: 8.39°

Magnetic Field
Strength: 52646.2snT
Dip Angle: 66.82°
Date: 7/7/2015
Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
400.0	400.0	KOP - Start Build 1.50
6296.4	6523.5	Start DLS 7.50 TFO 96.91
7055.0	7758.1	Start 3956.4 hold at 7758.1 MD
7020.0	11714.5	TD at 11714.5

Lajco 4N67W17R Pad Sec.17-T4N-R67W
Lajco 17U-343
Plan #2 (7-7-15)





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.17-T4N-R67W

Lajco 4N67W17R Pad Sec.17-T4N-R67W

Lajco 17U-343

Wellbore #1

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

Standard Planning Report

09 July, 2015

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17U-343
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Project:	SEC.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	North Reference:	True
Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

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

Site						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 17U-343					
Well Position	+N-S	54.6 ft	Northing:	1,359,756.78 ft	Latitude:	40.319450
	+E-W	-1,450.0 ft	Easting:	3,163,452.78 ft	Longitude:	-104.913810
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,794.0 ft

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

Design	Plan #2 (7-7-15)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	158.12

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,513.5	16.70	82.64	1,497.8	20.7	159.8	1.50	1.50	0.00	82.64	
6,523.5	16.70	82.64	6,296.4	205.2	1,587.8	0.00	0.00	0.00	0.00	
7,758.1	90.51	180.00	7,055.0	-564.7	1,815.7	7.50	5.98	7.89	96.91	
11,714.5	90.51	180.00	7,020.0	-4,521.0	1,815.7	0.00	0.00	0.00	0.00	BHL 500'FSL & 447

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17U-343
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Project:	SEC.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	North Reference:	True
Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

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
KOP - Start Build 1.50									
500.0	1.50	82.64	500.0	0.2	1.3	0.3	1.50	1.50	0.00
600.0	3.00	82.64	599.9	0.7	5.2	1.3	1.50	1.50	0.00
700.0	4.50	82.64	699.7	1.5	11.7	3.0	1.50	1.50	0.00
800.0	6.00	82.64	799.3	2.7	20.8	5.2	1.50	1.50	0.00
900.0	7.50	82.64	898.6	4.2	32.4	8.2	1.50	1.50	0.00
1,000.0	9.00	82.64	997.5	6.0	46.6	11.8	1.50	1.50	0.00
1,100.0	10.50	82.64	1,096.1	8.2	63.4	16.0	1.50	1.50	0.00
1,200.0	12.00	82.64	1,194.2	10.7	82.8	20.9	1.50	1.50	0.00
1,300.0	13.50	82.64	1,291.7	13.5	104.7	26.5	1.50	1.50	0.00
1,400.0	15.00	82.64	1,388.6	16.7	129.1	32.6	1.50	1.50	0.00
1,500.0	16.50	82.64	1,484.9	20.2	156.0	39.4	1.50	1.50	0.00
1,513.5	16.70	82.64	1,497.8	20.7	159.8	40.4	1.50	1.50	0.00
1,600.0	16.70	82.64	1,580.6	23.8	184.5	46.6	0.00	0.00	0.00
1,700.0	16.70	82.64	1,676.4	27.5	213.0	53.8	0.00	0.00	0.00
1,800.0	16.70	82.64	1,772.2	31.2	241.5	61.0	0.00	0.00	0.00
1,900.0	16.70	82.64	1,868.0	34.9	270.0	68.2	0.00	0.00	0.00
2,000.0	16.70	82.64	1,963.8	38.6	298.5	75.4	0.00	0.00	0.00
2,100.0	16.70	82.64	2,059.6	42.3	327.0	82.6	0.00	0.00	0.00
2,200.0	16.70	82.64	2,155.3	45.9	355.5	89.9	0.00	0.00	0.00
2,300.0	16.70	82.64	2,251.1	49.6	384.0	97.1	0.00	0.00	0.00
2,400.0	16.70	82.64	2,346.9	53.3	412.5	104.3	0.00	0.00	0.00
2,500.0	16.70	82.64	2,442.7	57.0	441.0	111.5	0.00	0.00	0.00
2,600.0	16.70	82.64	2,538.5	60.7	469.5	118.7	0.00	0.00	0.00
2,700.0	16.70	82.64	2,634.2	64.4	498.0	125.9	0.00	0.00	0.00
2,800.0	16.70	82.64	2,730.0	68.0	526.5	133.1	0.00	0.00	0.00
2,900.0	16.70	82.64	2,825.8	71.7	555.0	140.3	0.00	0.00	0.00
3,000.0	16.70	82.64	2,921.6	75.4	583.5	147.5	0.00	0.00	0.00
3,100.0	16.70	82.64	3,017.4	79.1	612.0	154.7	0.00	0.00	0.00
3,200.0	16.70	82.64	3,113.1	82.8	640.5	161.9	0.00	0.00	0.00
3,300.0	16.70	82.64	3,208.9	86.5	669.0	169.1	0.00	0.00	0.00
3,400.0	16.70	82.64	3,304.7	90.1	697.5	176.3	0.00	0.00	0.00
3,500.0	16.70	82.64	3,400.5	93.8	726.0	183.5	0.00	0.00	0.00
3,567.4	16.70	82.64	3,465.0	96.3	745.2	188.4	0.00	0.00	0.00
PARKMAN									
3,600.0	16.70	82.64	3,496.3	97.5	754.5	190.7	0.00	0.00	0.00
3,700.0	16.70	82.64	3,592.0	101.2	783.0	197.9	0.00	0.00	0.00
3,800.0	16.70	82.64	3,687.8	104.9	811.5	205.1	0.00	0.00	0.00
3,900.0	16.70	82.64	3,783.6	108.6	840.0	212.3	0.00	0.00	0.00
4,000.0	16.70	82.64	3,879.4	112.2	868.6	219.5	0.00	0.00	0.00
4,100.0	16.70	82.64	3,975.2	115.9	897.1	226.7	0.00	0.00	0.00
4,115.5	16.70	82.64	3,990.0	116.5	901.5	227.8	0.00	0.00	0.00
SUSSEX									
4,200.0	16.70	82.64	4,071.0	119.6	925.6	233.9	0.00	0.00	0.00
4,300.0	16.70	82.64	4,166.7	123.3	954.1	241.1	0.00	0.00	0.00
4,400.0	16.70	82.64	4,262.5	127.0	982.6	248.3	0.00	0.00	0.00
4,500.0	16.70	82.64	4,358.3	130.7	1,011.1	255.6	0.00	0.00	0.00
4,600.0	16.70	82.64	4,454.1	134.3	1,039.6	262.8	0.00	0.00	0.00

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Project:	SEC.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	North Reference:	True
Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

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)
4,668.8	16.70	82.64	4,520.0	136.9	1,059.2	267.7	0.00	0.00	0.00
SHANNON									
4,700.0	16.70	82.64	4,549.9	138.0	1,068.1	270.0	0.00	0.00	0.00
4,800.0	16.70	82.64	4,645.6	141.7	1,096.6	277.2	0.00	0.00	0.00
4,900.0	16.70	82.64	4,741.4	145.4	1,125.1	284.4	0.00	0.00	0.00
5,000.0	16.70	82.64	4,837.2	149.1	1,153.6	291.6	0.00	0.00	0.00
5,100.0	16.70	82.64	4,933.0	152.8	1,182.1	298.8	0.00	0.00	0.00
5,200.0	16.70	82.64	5,028.8	156.4	1,210.6	306.0	0.00	0.00	0.00
5,300.0	16.70	82.64	5,124.5	160.1	1,239.1	313.2	0.00	0.00	0.00
5,400.0	16.70	82.64	5,220.3	163.8	1,267.6	320.4	0.00	0.00	0.00
5,500.0	16.70	82.64	5,316.1	167.5	1,296.1	327.6	0.00	0.00	0.00
5,600.0	16.70	82.64	5,411.9	171.2	1,324.6	334.8	0.00	0.00	0.00
5,700.0	16.70	82.64	5,507.7	174.9	1,353.1	342.0	0.00	0.00	0.00
5,800.0	16.70	82.64	5,603.5	178.6	1,381.6	349.2	0.00	0.00	0.00
5,900.0	16.70	82.64	5,699.2	182.2	1,410.1	356.4	0.00	0.00	0.00
6,000.0	16.70	82.64	5,795.0	185.9	1,438.6	363.6	0.00	0.00	0.00
6,100.0	16.70	82.64	5,890.8	189.6	1,467.1	370.8	0.00	0.00	0.00
6,200.0	16.70	82.64	5,986.6	193.3	1,495.6	378.0	0.00	0.00	0.00
6,300.0	16.70	82.64	6,082.4	197.0	1,524.1	385.2	0.00	0.00	0.00
6,400.0	16.70	82.64	6,178.1	200.7	1,552.6	392.4	0.00	0.00	0.00
6,500.0	16.70	82.64	6,273.9	204.3	1,581.1	399.6	0.00	0.00	0.00
6,523.5	16.70	82.64	6,296.4	205.2	1,587.8	401.3	0.00	0.00	0.00
Start DLS 7.50 TFO 96.91									
6,600.0	16.97	102.52	6,369.7	204.2	1,609.6	410.4	7.50	0.35	25.99
6,700.0	19.90	124.54	6,464.7	191.4	1,637.9	432.9	7.50	2.93	22.02
6,800.0	24.77	139.67	6,557.2	165.7	1,665.6	467.0	7.50	4.87	15.14
6,900.0	30.66	149.71	6,645.8	127.7	1,692.0	512.1	7.50	5.89	10.04
6,960.8	34.53	154.21	6,697.0	98.7	1,707.4	544.7	7.50	6.36	7.40
SHARON SPRINGS									
7,000.0	37.09	156.66	6,728.8	77.9	1,716.9	567.6	7.50	6.55	6.26
7,100.0	43.82	161.78	6,804.8	17.2	1,739.7	632.4	7.50	6.73	5.12
7,145.8	46.97	163.72	6,837.0	-13.9	1,749.3	664.9	7.50	6.87	4.23
NIORARA A									
7,200.0	50.73	165.76	6,872.7	-53.3	1,760.0	705.4	7.50	6.94	3.78
7,300.0	57.75	169.02	6,931.1	-132.4	1,777.6	785.4	7.50	7.02	3.26
7,317.0	58.95	169.53	6,940.0	-146.7	1,780.3	799.6	7.50	7.07	2.95
NIORARA B									
7,400.0	64.84	171.81	6,979.1	-218.9	1,792.2	871.0	7.50	7.10	2.75
7,500.0	71.98	174.29	7,015.8	-311.1	1,803.3	960.8	7.50	7.14	2.48
7,507.1	72.49	174.46	7,018.0	-317.8	1,804.0	967.2	7.50	7.16	2.36
NIORARA C									
7,600.0	79.15	176.58	7,040.8	-407.6	1,811.0	1,053.1	7.50	7.17	2.28
7,700.0	86.33	178.75	7,053.4	-506.6	1,815.0	1,146.6	7.50	7.18	2.18
7,758.1	90.51	180.00	7,055.0	-564.7	1,815.7	1,200.7	7.50	7.19	2.14
Start 3956.4 hold at 7758.1 MD - 7"									
7,800.0	90.51	180.00	7,054.6	-606.6	1,815.7	1,239.5	0.00	0.00	0.00
7,900.0	90.51	180.00	7,053.7	-706.6	1,815.7	1,332.3	0.00	0.00	0.00
8,000.0	90.51	180.00	7,052.9	-806.6	1,815.7	1,425.1	0.00	0.00	0.00
8,100.0	90.51	180.00	7,052.0	-906.6	1,815.7	1,517.9	0.00	0.00	0.00
8,200.0	90.51	180.00	7,051.1	-1,006.6	1,815.7	1,610.7	0.00	0.00	0.00
8,300.0	90.51	180.00	7,050.2	-1,106.6	1,815.7	1,703.5	0.00	0.00	0.00
8,400.0	90.51	180.00	7,049.3	-1,206.6	1,815.7	1,796.3	0.00	0.00	0.00

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Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

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	90.51	180.00	7,048.4	-1,306.6	1,815.7	1,889.1	0.00	0.00	0.00
8,600.0	90.51	180.00	7,047.6	-1,406.5	1,815.7	1,981.9	0.00	0.00	0.00
8,700.0	90.51	180.00	7,046.7	-1,506.5	1,815.7	2,074.7	0.00	0.00	0.00
8,800.0	90.51	180.00	7,045.8	-1,606.5	1,815.7	2,167.5	0.00	0.00	0.00
8,900.0	90.51	180.00	7,044.9	-1,706.5	1,815.7	2,260.3	0.00	0.00	0.00
9,000.0	90.51	180.00	7,044.0	-1,806.5	1,815.7	2,353.1	0.00	0.00	0.00
9,100.0	90.51	180.00	7,043.1	-1,906.5	1,815.7	2,445.8	0.00	0.00	0.00
9,200.0	90.51	180.00	7,042.2	-2,006.5	1,815.7	2,538.6	0.00	0.00	0.00
9,300.0	90.51	180.00	7,041.4	-2,106.5	1,815.7	2,631.4	0.00	0.00	0.00
9,400.0	90.51	180.00	7,040.5	-2,206.5	1,815.7	2,724.2	0.00	0.00	0.00
9,500.0	90.51	180.00	7,039.6	-2,306.5	1,815.7	2,817.0	0.00	0.00	0.00
9,600.0	90.51	180.00	7,038.7	-2,406.5	1,815.7	2,909.8	0.00	0.00	0.00
9,700.0	90.51	180.00	7,037.8	-2,506.5	1,815.7	3,002.6	0.00	0.00	0.00
9,800.0	90.51	180.00	7,036.9	-2,606.5	1,815.7	3,095.4	0.00	0.00	0.00
9,900.0	90.51	180.00	7,036.1	-2,706.5	1,815.7	3,188.2	0.00	0.00	0.00
10,000.0	90.51	180.00	7,035.2	-2,806.5	1,815.7	3,281.0	0.00	0.00	0.00
10,100.0	90.51	180.00	7,034.3	-2,906.5	1,815.7	3,373.8	0.00	0.00	0.00
10,200.0	90.51	180.00	7,033.4	-3,006.5	1,815.7	3,466.6	0.00	0.00	0.00
10,300.0	90.51	180.00	7,032.5	-3,106.5	1,815.7	3,559.4	0.00	0.00	0.00
10,400.0	90.51	180.00	7,031.6	-3,206.5	1,815.7	3,652.1	0.00	0.00	0.00
10,500.0	90.51	180.00	7,030.7	-3,306.5	1,815.7	3,744.9	0.00	0.00	0.00
10,600.0	90.51	180.00	7,029.9	-3,406.5	1,815.7	3,837.7	0.00	0.00	0.00
10,700.0	90.51	180.00	7,029.0	-3,506.5	1,815.7	3,930.5	0.00	0.00	0.00
10,800.0	90.51	180.00	7,028.1	-3,606.5	1,815.7	4,023.3	0.00	0.00	0.00
10,900.0	90.51	180.00	7,027.2	-3,706.5	1,815.7	4,116.1	0.00	0.00	0.00
11,000.0	90.51	180.00	7,026.3	-3,806.5	1,815.7	4,208.9	0.00	0.00	0.00
11,100.0	90.51	180.00	7,025.4	-3,906.5	1,815.7	4,301.7	0.00	0.00	0.00
11,200.0	90.51	180.00	7,024.6	-4,006.4	1,815.7	4,394.5	0.00	0.00	0.00
11,300.0	90.51	180.00	7,023.7	-4,106.4	1,815.7	4,487.3	0.00	0.00	0.00
11,400.0	90.51	180.00	7,022.8	-4,206.4	1,815.7	4,580.1	0.00	0.00	0.00
11,500.0	90.51	180.00	7,021.9	-4,306.4	1,815.7	4,672.9	0.00	0.00	0.00
11,600.0	90.51	180.00	7,021.0	-4,406.4	1,815.7	4,765.7	0.00	0.00	0.00
11,700.0	90.51	180.00	7,020.1	-4,506.4	1,815.7	4,858.4	0.00	0.00	0.00
11,714.5	90.51	180.00	7,020.0	-4,520.9	1,815.7	4,871.9	0.00	0.00	0.00

TD at 11714.5

Targets

Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
50' E/W Hardline (17L	- plan misses target center by 3124.6ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)	0.00	0.00	1.0	-2,542.8	1,815.7	1,357,226.10	3,165,285.16	40.312470	-104.907299
- Rectangle (sides W3,956.3 H100.0 D0.0)										
SHL 295'FNL & 2187'	- plan hits target center	0.00	0.00	1.0	0.0	0.0	1,359,756.79	3,163,452.77	40.319450	-104.913810
- Point										
BHL 500'FSL & 447'F	- plan hits target center	0.00	0.00	7,020.0	-4,521.0	1,815.7	1,355,248.11	3,165,298.21	40.307040	-104.907300
- Point										

Database:	EDM 2003.21 Single User Db	Local Co-ordinate Reference:	Well Lajco 17U-343
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Project:	SEC.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	North Reference:	True
Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (7-7-15)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,758.1	7,055.0	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,567.4	3,465.0	PARKMAN		0.00	
4,115.5	3,990.0	SUSSEX		0.00	
4,668.8	4,520.0	SHANNON		0.00	
6,960.8	6,697.0	SHARON SPRINGS		0.00	
7,145.8	6,837.0	NIOBRARA A		0.00	
7,317.0	6,940.0	NIOBRARA B		0.00	
7,507.1	7,018.0	NIOBRARA C		0.00	
	7,142.0	FORT HAYS		0.00	
	7,163.0	CODELL		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
400.0	400.0	0.0	0.0	KOP - Start Build 1.50
6,523.5	6,296.4	205.2	1,587.8	Start DLS 7.50 TFO 96.91
7,758.1	7,055.0	-564.7	1,815.7	Start 3956.4 hold at 7758.1 MD
11,714.5	7,020.0	-4,520.9	1,815.7	TD at 11714.5



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.17-T4N-R67W

Lajco 4N67W17R Pad Sec.17-T4N-R67W

Lajco 17U-343

Wellbore #1

Plan #2 (7-7-15)

Anticollision Report

09 July, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

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

Survey Tool Program		Date	7/9/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,714.5	Plan #2 (7-7-15) (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Sec.16-T4N-R67W						
Gray 31-16 (Exist.) - Wellbore #1 - Wellbore #1	8,232.5	7,492.9	469.8	421.6	9.738	CC, ES
Gray 31-16 (Exist.) - Wellbore #1 - Wellbore #1	8,300.0	7,491.8	474.6	425.4	9.649	SF
Lajco 4N67W17R Pad Sec.17-T4N-R67W						
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	400.0	400.0	76.6	75.0	48.660	CC
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	500.0	500.0	76.7	74.7	38.109	ES
Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)	1,000.0	997.5	93.5	89.1	21.487	SF
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	568.9	568.9	28.9	26.6	12.491	CC
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	600.0	599.9	28.9	26.5	11.815	ES
Lajco 17M-423 - Wellbore #1 - Plan #2 (7-2-15)	800.0	799.3	33.6	30.3	10.015	SF
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	400.0	400.0	14.6	13.0	9.264	CC
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	500.0	500.0	14.8	12.8	7.355	ES
Lajco 17R-223 - Wellbore #1 - Plan #2 (7-7-15)	11,714.5	11,452.8	504.4	330.1	2.894	SF
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	400.0	400.0	62.0	60.4	39.405	CC
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	500.0	500.0	62.1	60.1	30.870	ES
Lajco 17R-243 - Wellbore #1 - Plan #2 (7-2-15)	1,000.0	997.5	80.9	76.5	18.650	SF
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	400.0	400.0	29.1	27.6	18.526	CC
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	500.0	500.0	29.3	27.3	14.582	ES
Lajco 17R-303 - Wellbore #1 - Plan #2 (7-7-15)	11,714.5	11,475.1	722.5	544.6	4.061	SF
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	400.0	400.0	43.8	42.2	27.842	CC
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	500.0	500.0	43.9	41.9	21.820	ES
Lajco 17R-403 - Wellbore #1 - Plan #2 (7-7-15)	900.0	898.6	56.3	52.5	14.664	SF
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	200.0	200.0	14.6	13.9	21.611	CC
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	300.0	299.9	14.8	13.6	13.243	ES
Lajco 17U-203 - Wellbore #1 - Plan #2 (7-7-15)	11,714.5	11,697.0	322.1	144.3	1.812	SF
Lajco Pad Sec.17-T4N-R67W						
Coming 17-2 (Exist.) - Wellbore #1 - Wellbore #1	7,583.2	7,014.9	279.6	241.2	7.276	CC, ES
Coming 17-2 (Exist.) - Wellbore #1 - Wellbore #1	7,600.0	7,018.2	280.0	241.5	7.269	SF
Coming 17-3 (Exist.) - Wellbore #1 - Wellbore #1	8,837.1	7,037.3	390.2	337.1	7.347	CC, ES
Coming 17-3 (Exist.) - Wellbore #1 - Wellbore #1	8,900.0	7,036.3	395.2	341.1	7.303	SF
Lajco 17RD (Exist.) - Wellbore #1 - Wellbore #1	4,697.2	4,769.2	165.9	129.7	4.585	CC
Lajco 17RD (Exist.) - Wellbore #1 - Wellbore #1	4,700.0	4,771.7	165.9	129.7	4.584	ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.16-T4N-R67W - Gray 31-16 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 285-NS-GYRO-MS												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,400.0	6,979.1	7,428.0	7,005.4	38.5	26.4	-45.30	-1,039.6	2,285.7	957.7	924.8	32.95	29.065	
7,500.0	7,015.8	7,464.0	7,041.3	38.9	26.4	-60.35	-1,039.3	2,285.6	873.4	837.4	36.00	24.262	
7,600.0	7,040.8	7,488.0	7,065.4	39.3	26.4	-74.91	-1,039.1	2,285.5	790.0	750.0	39.95	19.773	
7,700.0	7,053.4	7,499.8	7,077.2	39.7	26.4	-86.39	-1,039.0	2,285.5	710.5	668.4	42.10	16.877	
7,800.0	7,054.6	7,500.2	7,077.6	40.2	26.4	-91.07	-1,039.0	2,285.5	638.5	595.6	42.95	14.867	
7,900.0	7,053.7	7,498.5	7,075.9	40.7	26.4	-90.86	-1,039.0	2,285.5	575.5	531.5	44.02	13.073	
8,000.0	7,052.9	7,496.8	7,074.2	41.4	26.4	-90.66	-1,039.1	2,285.5	524.2	479.0	45.20	11.598	
8,100.0	7,052.0	7,495.1	7,072.5	42.0	26.4	-90.45	-1,039.1	2,285.5	488.1	441.7	46.46	10.507	
8,200.0	7,051.1	7,493.4	7,070.8	42.8	26.4	-90.24	-1,039.1	2,285.5	470.9	423.1	47.79	9.854	
8,232.5	7,050.8	7,492.9	7,070.2	43.1	26.4	-90.18	-1,039.1	2,285.5	469.8	421.6	48.25	9.738 CC, ES	
8,300.0	7,050.2	7,491.8	7,069.1	43.7	26.4	-90.04	-1,039.1	2,285.5	474.6	425.4	49.19	9.649 SF	
8,400.0	7,049.3	7,490.1	7,067.4	44.6	26.4	-89.83	-1,039.1	2,285.5	498.8	448.1	50.64	9.848	
8,500.0	7,048.4	7,488.4	7,065.7	45.6	26.4	-89.62	-1,039.1	2,285.5	540.6	488.5	52.15	10.367	
8,600.0	7,047.6	7,486.7	7,064.0	46.6	26.4	-89.42	-1,039.1	2,285.5	596.4	542.7	53.69	11.109	
8,700.0	7,046.7	7,485.0	7,062.3	47.7	26.4	-89.21	-1,039.2	2,285.5	662.7	607.5	55.27	11.991	
8,800.0	7,045.8	7,483.3	7,060.7	48.9	26.4	-89.01	-1,039.2	2,285.5	736.7	679.8	56.88	12.952	
8,900.0	7,044.9	7,481.6	7,059.0	50.1	26.4	-88.80	-1,039.2	2,285.5	816.2	757.7	58.51	13.949	
9,000.0	7,044.0	7,479.9	7,057.3	51.4	26.4	-88.60	-1,039.2	2,285.5	899.8	839.6	60.17	14.953	
9,100.0	7,043.1	7,478.3	7,055.6	52.7	26.4	-88.39	-1,039.2	2,285.5	986.4	924.6	61.85	15.948	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco 4N67W17R Pad Sec.17-T4N-R67W - Lajco 17M-323 - Wellbore #1 - Plan #2 (7-2-15)													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)	+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	177.91	177.91	-76.5	2.8	76.6				
100.0	100.0	100.0	100.0	0.1	0.1	177.91	177.91	-76.5	2.8	76.6	76.3	0.22	340.618	
200.0	200.0	200.0	200.0	0.3	0.3	177.91	177.91	-76.5	2.8	76.6	75.9	0.67	113.539	
300.0	300.0	300.0	300.0	0.6	0.6	177.91	177.91	-76.5	2.8	76.6	75.4	1.12	68.124	
400.0	400.0	400.0	400.0	0.8	0.8	177.91	177.91	-76.5	2.8	76.6	75.0	1.57	48.660 CC	
500.0	500.0	500.0	500.0	1.0	1.0	96.25	96.25	-76.5	2.8	76.7	74.7	2.01	38.109 ES	
600.0	599.9	599.9	599.9	1.2	1.2	99.13	99.13	-76.5	2.8	77.2	74.8	2.45	31.516	
700.0	699.7	699.7	699.7	1.4	1.5	103.82	103.82	-76.5	2.8	78.5	75.6	2.90	27.057	
800.0	799.3	799.3	799.3	1.7	1.7	110.04	110.04	-76.5	2.8	81.2	77.8	3.37	24.089	
900.0	898.6	898.6	898.6	2.0	1.9	117.32	117.32	-76.5	2.8	86.0	82.1	3.86	22.295	
1,000.0	997.5	997.5	997.5	2.3	2.1	125.01	125.01	-76.5	2.8	93.5	89.1	4.35	21.487 SF	
1,100.0	1,096.1	1,096.1	1,096.1	2.6	2.4	132.48	132.48	-76.5	2.8	104.2	99.3	4.84	21.503	
1,200.0	1,194.2	1,194.2	1,194.2	3.0	2.6	139.27	139.27	-76.5	2.8	118.3	113.0	5.33	22.187	
1,300.0	1,291.7	1,291.7	1,291.7	3.4	2.8	145.15	145.15	-76.5	2.8	136.0	130.1	5.81	23.387	
1,400.0	1,388.6	1,388.6	1,388.6	3.9	3.0	150.09	150.09	-76.5	2.8	157.0	150.7	6.29	24.972	
1,500.0	1,484.9	1,484.9	1,484.9	4.4	3.2	154.18	154.18	-76.5	2.8	181.2	174.4	6.75	26.836	
1,600.0	1,580.6	1,580.6	1,580.6	4.9	3.4	157.59	157.59	-76.5	2.8	207.6	200.3	7.23	28.721	
1,700.0	1,676.4	1,676.4	1,676.4	5.5	3.7	160.26	160.26	-76.5	2.8	234.5	226.8	7.71	30.436	
1,800.0	1,772.2	1,772.2	1,772.2	6.1	3.9	162.38	162.38	-76.5	2.8	261.9	253.7	8.19	31.989	
1,900.0	1,868.0	1,868.0	1,868.0	6.7	4.1	164.09	164.09	-76.5	2.8	289.5	280.8	8.67	33.393	
2,000.0	1,963.8	1,963.8	1,963.8	7.3	4.3	165.51	165.51	-76.5	2.8	317.3	308.2	9.15	34.662	
2,100.0	2,059.6	2,061.7	2,061.7	7.9	4.5	166.77	166.77	-76.2	2.9	345.1	335.4	9.64	35.787	
2,200.0	2,155.3	2,161.3	2,161.2	8.4	4.7	168.07	168.07	-74.3	3.4	372.1	362.0	10.13	36.744	
2,300.0	2,251.1	2,261.1	2,261.0	9.0	5.0	169.40	169.40	-70.8	4.4	398.4	387.8	10.61	37.555	
2,400.0	2,346.9	2,361.2	2,361.0	9.6	5.2	170.78	170.78	-65.5	5.8	423.9	412.8	11.09	38.236	
2,500.0	2,442.7	2,461.5	2,461.0	10.2	5.4	172.19	172.19	-58.6	7.7	448.8	437.2	11.57	38.803	
2,600.0	2,538.5	2,558.3	2,557.4	10.8	5.6	173.52	173.52	-51.0	9.9	473.4	461.3	12.04	39.302	
2,700.0	2,634.2	2,654.6	2,653.5	11.4	5.9	174.71	174.71	-43.3	12.0	498.2	485.7	12.53	39.757	
2,800.0	2,730.0	2,751.0	2,749.5	12.0	6.1	175.79	175.79	-35.7	14.1	523.2	510.2	13.02	40.175	
2,900.0	2,825.8	2,847.4	2,845.6	12.7	6.3	176.77	176.77	-28.1	16.2	548.3	534.8	13.52	40.551	
3,000.0	2,921.6	2,943.8	2,941.6	13.3	6.5	177.67	177.67	-20.4	18.3	573.6	559.6	14.03	40.895	
3,100.0	3,017.4	3,040.1	3,037.7	13.9	6.8	178.49	178.49	-12.8	20.4	599.0	584.5	14.54	41.208	
3,200.0	3,113.1	3,136.5	3,133.7	14.5	7.0	179.24	179.24	-5.2	22.6	624.5	609.5	15.05	41.493	
3,300.0	3,208.9	3,232.9	3,229.8	15.1	7.3	179.94	179.94	2.5	24.7	650.1	634.6	15.57	41.753	
3,400.0	3,304.7	3,329.3	3,325.8	15.7	7.5	-179.42	-179.42	10.1	26.8	675.8	659.7	16.09	41.991	
3,500.0	3,400.5	3,425.6	3,421.9	16.3	7.7	-178.83	-178.83	17.7	28.9	701.6	685.0	16.62	42.208	
3,600.0	3,496.3	3,522.0	3,517.9	16.9	8.0	-178.27	-178.27	25.4	31.0	727.4	710.3	17.15	42.407	
3,700.0	3,592.0	3,618.4	3,614.0	17.5	8.2	-177.76	-177.76	33.0	33.1	753.3	735.6	17.69	42.589	
3,800.0	3,687.8	3,714.8	3,710.0	18.1	8.5	-177.27	-177.27	40.6	35.2	779.3	761.0	18.23	42.756	
3,900.0	3,783.6	3,811.1	3,806.1	18.7	8.7	-176.82	-176.82	48.3	37.4	805.3	786.5	18.77	42.910	
4,000.0	3,879.4	3,907.5	3,902.1	19.3	8.9	-176.40	-176.40	55.9	39.5	831.3	812.0	19.31	43.052	
4,100.0	3,975.2	4,003.9	3,998.2	19.9	9.2	-176.00	-176.00	63.5	41.6	857.4	837.5	19.85	43.182	
4,200.0	4,071.0	4,100.3	4,094.2	20.5	9.4	-175.63	-175.63	71.2	43.7	883.5	863.1	20.40	43.303	
4,300.0	4,166.7	4,196.6	4,190.3	21.2	9.7	-175.28	-175.28	78.8	45.8	909.6	888.7	20.95	43.415	
4,400.0	4,262.5	4,293.0	4,286.3	21.8	9.9	-174.94	-174.94	86.4	47.9	935.8	914.3	21.50	43.518	
4,500.0	4,358.3	4,389.4	4,382.4	22.4	10.2	-174.63	-174.63	94.1	50.1	962.0	940.0	22.06	43.615	
4,600.0	4,454.1	4,485.8	4,478.4	23.0	10.4	-174.33	-174.33	101.7	52.2	988.2	965.6	22.61	43.704	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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-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 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	29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.666		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.222		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.933		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.524		
500.0	500.0	500.0	500.0	1.0	1.0	-85.20	29.1	0.0	29.0	27.0	2.01	14.414		
568.9	568.9	568.9	568.9	1.1	1.2	-90.00	29.1	0.0	28.9	26.6	2.31	12.491 CC		
600.0	599.9	599.9	599.9	1.2	1.2	-92.97	29.1	0.0	28.9	26.5	2.45	11.815 ES		
700.0	699.7	699.7	699.7	1.4	1.5	-105.50	29.1	0.0	30.0	27.1	2.90	10.347		
800.0	799.3	799.3	799.3	1.7	1.7	-120.60	29.1	0.0	33.6	30.3	3.36	10.015 SF		
900.0	898.6	898.6	898.6	2.0	1.9	-134.79	29.1	0.0	40.9	37.1	3.82	10.720		
1,000.0	997.5	997.5	997.5	2.3	2.1	-145.94	29.1	0.0	52.1	47.8	4.27	12.198		
1,100.0	1,096.1	1,096.1	1,096.1	2.6	2.4	-153.98	29.1	0.0	66.8	62.1	4.72	14.167		
1,200.0	1,194.2	1,194.2	1,194.2	3.0	2.6	-159.67	29.1	0.0	84.8	79.7	5.16	16.431		
1,300.0	1,291.7	1,291.7	1,291.7	3.4	2.8	-163.72	29.1	0.0	105.8	100.2	5.61	18.869		
1,400.0	1,388.6	1,388.6	1,388.6	3.9	3.0	-166.68	29.1	0.0	129.7	123.6	6.06	21.412		
1,500.0	1,484.9	1,484.9	1,484.9	4.4	3.2	-168.89	29.1	0.0	156.3	149.8	6.51	24.017		
1,600.0	1,580.6	1,580.6	1,580.6	4.9	3.4	-170.60	29.1	0.0	184.6	177.6	6.98	26.446		
1,700.0	1,676.4	1,676.4	1,676.4	5.5	3.7	-171.86	29.1	0.0	213.0	205.5	7.46	28.553		
1,800.0	1,772.2	1,772.2	1,772.2	6.1	3.9	-172.83	29.1	0.0	241.5	233.6	7.94	30.399		
1,900.0	1,868.0	1,866.5	1,866.5	6.7	4.1	-173.50	29.5	-0.2	270.2	261.8	8.43	32.060		
2,000.0	1,963.8	1,959.9	1,959.9	7.3	4.3	-173.78	31.1	-1.1	299.7	290.8	8.92	33.611		
2,100.0	2,059.6	2,052.9	2,052.8	7.9	4.5	-173.77	34.0	-2.7	329.9	320.5	9.41	35.067		
2,200.0	2,155.3	2,145.8	2,145.6	8.4	4.7	-173.54	38.2	-5.1	360.8	350.9	9.90	36.431		
2,300.0	2,251.1	2,240.8	2,240.5	9.0	4.9	-173.27	43.0	-7.7	391.9	381.5	10.40	37.668		
2,400.0	2,346.9	2,335.9	2,335.3	9.6	5.1	-173.04	47.7	-10.4	423.1	412.2	10.91	38.784		
2,500.0	2,442.7	2,430.9	2,430.2	10.2	5.4	-172.85	52.5	-13.0	454.2	442.8	11.42	39.793		
2,600.0	2,538.5	2,525.9	2,525.0	10.8	5.6	-172.68	57.3	-15.7	485.4	473.5	11.92	40.706		
2,700.0	2,634.2	2,620.9	2,619.9	11.4	5.8	-172.52	62.0	-18.4	516.6	504.1	12.44	41.540		
2,800.0	2,730.0	2,715.9	2,714.8	12.0	6.0	-172.39	66.8	-21.0	547.7	534.8	12.95	42.302		
2,900.0	2,825.8	2,810.9	2,809.6	12.7	6.2	-172.27	71.5	-23.7	578.9	565.4	13.46	43.001		
3,000.0	2,921.6	2,905.9	2,904.5	13.3	6.5	-172.16	76.3	-26.3	610.1	596.1	13.98	43.644		
3,100.0	3,017.4	3,000.9	2,999.3	13.9	6.7	-172.07	81.1	-29.0	641.3	626.8	14.50	44.238		
3,200.0	3,113.1	3,095.9	3,094.2	14.5	6.9	-171.98	85.8	-31.6	672.4	657.4	15.01	44.787		
3,300.0	3,208.9	3,191.0	3,189.0	15.1	7.1	-171.90	90.6	-34.3	703.6	688.1	15.53	45.297		
3,400.0	3,304.7	3,286.0	3,283.9	15.7	7.4	-171.82	95.3	-36.9	734.8	718.7	16.05	45.771		
3,500.0	3,400.5	3,381.0	3,378.7	16.3	7.6	-171.76	100.1	-39.6	766.0	749.4	16.58	46.212		
3,600.0	3,496.3	3,476.0	3,473.6	16.9	7.8	-171.70	104.8	-42.3	797.2	780.1	17.10	46.625		
3,700.0	3,592.0	3,571.0	3,568.4	17.5	8.0	-171.64	109.6	-44.9	828.3	810.7	17.62	47.011		
3,800.0	3,687.8	3,666.0	3,663.3	18.1	8.3	-171.58	114.4	-47.6	859.5	841.4	18.14	47.374		
3,900.0	3,783.6	3,761.0	3,758.2	18.7	8.5	-171.54	119.1	-50.2	890.7	872.0	18.67	47.714		
4,000.0	3,879.4	3,856.0	3,853.0	19.3	8.7	-171.49	123.9	-52.9	921.9	902.7	19.19	48.034		
4,100.0	3,975.2	3,951.0	3,947.9	19.9	8.9	-171.45	128.6	-55.5	953.1	933.4	19.72	48.336		
4,200.0	4,071.0	4,046.1	4,042.7	20.5	9.2	-171.41	133.4	-58.2	984.3	964.0	20.24	48.621		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	180.00	180.00	-14.6	0.0	14.6	14.6	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	180.00	180.00	-14.6	0.0	14.6	14.4	0.22	64.851	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	180.00	-14.6	0.0	14.6	13.9	0.67	21.617	
300.0	300.0	300.0	300.0	0.6	0.6	180.00	180.00	-14.6	0.0	14.6	13.5	1.12	12.970	
400.0	400.0	400.0	400.0	0.8	0.8	180.00	180.00	-14.6	0.0	14.6	13.0	1.57	9.264 CC	
500.0	500.0	500.0	500.0	1.0	1.0	102.39	102.39	-14.6	0.0	14.8	12.8	2.01	7.355 ES	
600.0	599.9	599.9	599.9	1.2	1.2	116.14	116.14	-14.6	0.0	16.1	13.7	2.45	6.573	
700.0	699.7	699.7	699.7	1.4	1.5	133.25	133.25	-14.6	0.0	19.9	17.0	2.90	6.857	
800.0	799.3	799.3	799.3	1.7	1.7	147.47	147.47	-14.6	0.0	27.0	23.6	3.35	8.059	
900.0	898.6	899.2	899.2	2.0	1.9	156.68	156.68	-14.4	0.8	36.7	32.9	3.79	9.681	
1,000.0	997.5	999.2	999.1	2.3	2.1	162.34	162.34	-14.0	3.4	47.7	43.5	4.21	11.314	
1,100.0	1,096.1	1,099.3	1,099.1	2.6	2.3	166.09	166.09	-13.4	7.7	59.8	55.2	4.65	12.872	
1,200.0	1,194.2	1,199.5	1,199.2	3.0	2.5	168.75	168.75	-12.4	13.8	73.0	67.9	5.09	14.345	
1,300.0	1,291.7	1,299.8	1,299.2	3.4	2.8	170.71	170.71	-11.2	21.5	87.1	81.5	5.53	15.737	
1,400.0	1,388.6	1,400.3	1,399.2	3.9	3.0	172.21	172.21	-9.8	31.1	102.1	96.1	5.99	17.056	
1,500.0	1,484.9	1,500.9	1,499.2	4.4	3.3	173.39	173.39	-8.0	42.3	118.0	111.6	6.45	18.306	
1,600.0	1,580.6	1,601.9	1,599.3	4.9	3.6	174.33	174.33	-6.0	55.4	133.8	126.9	6.94	19.290	
1,700.0	1,676.4	1,703.4	1,699.6	5.5	3.9	175.04	175.04	-3.7	70.2	148.0	140.5	7.44	19.878	
1,800.0	1,772.2	1,805.3	1,800.2	6.1	4.2	175.58	175.58	-1.1	86.9	160.4	152.4	7.96	20.147	
1,900.0	1,868.0	1,907.7	1,900.8	6.7	4.5	176.02	176.02	1.7	105.5	171.0	162.5	8.48	20.154	
2,000.0	1,963.8	2,010.4	2,001.5	7.3	4.9	176.39	176.39	4.9	125.9	179.9	170.8	9.02	19.944	
2,100.0	2,059.6	2,113.5	2,102.0	7.9	5.4	176.70	176.70	8.3	148.1	186.9	177.4	9.56	19.553	
2,200.0	2,155.3	2,215.2	2,200.9	8.4	5.8	176.98	176.98	12.0	171.7	192.4	182.3	10.11	19.037	
2,300.0	2,251.1	2,315.1	2,297.9	9.0	6.2	177.23	177.23	15.6	195.1	197.6	186.9	10.65	18.546	
2,400.0	2,346.9	2,414.9	2,394.9	9.6	6.7	177.47	177.47	19.2	218.5	202.8	191.6	11.21	18.098	
2,500.0	2,442.7	2,514.8	2,492.0	10.2	7.2	177.69	177.69	22.8	241.9	208.0	196.2	11.76	17.688	
2,600.0	2,538.5	2,614.7	2,589.0	10.8	7.6	177.91	177.91	26.4	265.2	213.2	200.9	12.32	17.312	
2,700.0	2,634.2	2,714.5	2,686.0	11.4	8.1	178.11	178.11	30.1	288.6	218.4	205.5	12.87	16.965	
2,800.0	2,730.0	2,814.4	2,783.0	12.0	8.6	178.31	178.31	33.7	312.0	223.6	210.2	13.43	16.645	
2,900.0	2,825.8	2,914.2	2,880.0	12.7	9.1	178.49	178.49	37.3	335.4	228.8	214.8	14.00	16.349	
3,000.0	2,921.6	3,014.1	2,977.0	13.3	9.6	178.67	178.67	40.9	358.8	234.0	219.5	14.56	16.075	
3,100.0	3,017.4	3,114.0	3,074.1	13.9	10.0	178.84	178.84	44.5	382.2	239.2	224.1	15.12	15.819	
3,200.0	3,113.1	3,213.8	3,171.1	14.5	10.5	179.01	179.01	48.1	405.6	244.5	228.8	15.69	15.581	
3,300.0	3,208.9	3,313.7	3,268.1	15.1	11.0	179.16	179.16	51.8	429.0	249.7	233.4	16.26	15.358	
3,400.0	3,304.7	3,413.6	3,365.1	15.7	11.5	179.31	179.31	55.4	452.3	254.9	238.1	16.83	15.150	
3,500.0	3,400.5	3,513.4	3,462.1	16.3	12.0	179.45	179.45	59.0	475.7	260.1	242.7	17.40	14.954	
3,600.0	3,496.3	3,613.3	3,559.1	16.9	12.5	179.59	179.59	62.6	499.1	265.4	247.4	17.97	14.770	
3,700.0	3,592.0	3,713.1	3,656.2	17.5	13.0	179.73	179.73	66.2	522.5	270.6	252.0	18.54	14.597	
3,800.0	3,687.8	3,813.0	3,753.2	18.1	13.5	179.85	179.85	69.8	545.9	275.8	256.7	19.11	14.433	
3,900.0	3,783.6	3,912.9	3,850.2	18.7	14.0	179.98	179.98	73.5	569.3	281.0	261.4	19.68	14.279	
4,000.0	3,879.4	4,012.7	3,947.2	19.3	14.5	-179.90	-179.90	77.1	592.7	286.3	266.0	20.26	14.133	
4,100.0	3,975.2	4,112.6	4,044.2	19.9	15.0	-179.79	-179.79	80.7	616.1	291.5	270.7	20.83	13.995	
4,200.0	4,071.0	4,212.4	4,141.2	20.5	15.5	-179.68	-179.68	84.3	639.4	296.7	275.3	21.40	13.863	
4,300.0	4,166.7	4,312.3	4,238.3	21.2	16.0	-179.57	-179.57	87.9	662.8	302.0	280.0	21.98	13.738	
4,400.0	4,262.5	4,412.2	4,335.3	21.8	16.5	-179.47	-179.47	91.5	686.2	307.2	284.6	22.56	13.620	
4,500.0	4,358.3	4,512.0	4,432.3	22.4	17.0	-179.37	-179.37	95.2	709.6	312.4	289.3	23.13	13.507	
4,600.0	4,454.1	4,611.9	4,529.3	23.0	17.5	-179.28	-179.28	98.8	733.0	317.7	294.0	23.71	13.399	
4,700.0	4,549.9	4,711.8	4,626.3	23.6	18.0	-179.18	-179.18	102.4	756.4	322.9	298.6	24.29	13.296	
4,800.0	4,645.6	4,811.6	4,723.3	24.2	18.5	-179.09	-179.09	106.0	779.8	328.1	303.3	24.86	13.198	
4,900.0	4,741.4	4,911.5	4,820.4	24.8	19.1	-179.01	-179.01	109.6	803.2	333.4	307.9	25.44	13.104	
5,000.0	4,837.2	5,011.3	4,917.4	25.4	19.6	-178.92	-178.92	113.2	826.6	338.6	312.6	26.02	13.014	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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
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	4,933.0	5,111.2	5,014.4	26.0	20.1	-178.84		116.9	849.9	343.9	317.3	26.60	12.928	
5,200.0	5,028.8	5,211.1	5,111.4	26.6	20.6	-178.76		120.5	873.3	349.1	321.9	27.18	12.845	
5,300.0	5,124.5	5,310.9	5,208.4	27.3	21.1	-178.68		124.1	896.7	354.3	326.6	27.76	12.765	
5,400.0	5,220.3	5,410.8	5,305.4	27.9	21.6	-178.61		127.7	920.1	359.6	331.2	28.34	12.689	
5,500.0	5,316.1	5,510.6	5,402.5	28.5	22.1	-178.54		131.3	943.5	364.8	335.9	28.92	12.616	
5,600.0	5,411.9	5,610.5	5,499.5	29.1	22.6	-178.46		134.9	966.9	370.1	340.6	29.50	12.545	
5,700.0	5,507.7	5,710.4	5,596.5	29.7	23.1	-178.40		138.6	990.3	375.3	345.2	30.08	12.477	
5,800.0	5,603.5	5,810.2	5,693.5	30.3	23.6	-178.33		142.2	1,013.7	380.6	349.9	30.66	12.412	
5,900.0	5,699.2	5,910.1	5,790.5	30.9	24.1	-178.26		145.8	1,037.0	385.8	354.6	31.24	12.349	
6,000.0	5,795.0	6,010.0	5,887.5	31.5	24.6	-178.20		149.4	1,060.4	391.0	359.2	31.82	12.288	
6,100.0	5,890.8	6,109.8	5,984.6	32.1	25.1	-178.14		153.0	1,083.8	396.3	363.9	32.41	12.229	
6,200.0	5,986.6	6,209.7	6,081.6	32.7	25.6	-178.08		156.6	1,107.2	401.5	368.5	32.99	12.172	
6,300.0	6,082.4	6,309.5	6,178.6	33.4	26.2	-178.02		160.3	1,130.6	406.8	373.2	33.57	12.117	
6,400.0	6,178.1	6,404.9	6,271.2	34.0	26.6	-178.65		158.8	1,152.9	412.5	378.4	34.10	12.097	
6,500.0	6,273.9	6,497.2	6,360.1	34.6	27.0	179.22		146.1	1,174.4	419.8	385.2	34.65	12.115	
6,600.0	6,369.7	6,585.6	6,443.1	35.1	27.3	156.75		123.7	1,194.4	429.3	393.8	35.50	12.093	
6,700.0	6,464.7	6,671.7	6,521.1	35.6	27.6	132.52		92.5	1,213.3	439.7	403.0	36.63	12.002	
6,800.0	6,557.2	6,756.0	6,593.7	36.1	27.9	115.53		53.4	1,230.8	450.5	412.6	37.89	11.890	
6,900.0	6,645.8	6,838.7	6,660.4	36.6	28.2	104.03		7.3	1,247.0	461.2	422.1	39.09	11.798	
7,000.0	6,728.8	6,920.1	6,720.9	37.0	28.5	96.00		-45.0	1,261.7	471.6	431.5	40.07	11.769	
7,100.0	6,804.8	7,000.0	6,774.7	37.4	28.7	90.24		-102.5	1,274.7	481.0	440.3	40.78	11.797	
7,200.0	6,872.7	7,080.0	6,822.4	37.8	29.0	86.00		-165.6	1,286.3	489.4	448.2	41.18	11.884	
7,300.0	6,931.1	7,158.8	6,863.0	38.1	29.3	82.92		-232.4	1,296.2	496.4	455.1	41.30	12.018	
7,400.0	6,979.1	7,237.1	6,896.4	38.5	29.7	80.75		-302.7	1,304.4	501.8	460.6	41.23	12.170	
7,500.0	7,015.8	7,315.1	6,922.6	38.9	30.0	79.34		-375.9	1,310.8	505.5	464.4	41.07	12.308	
7,600.0	7,040.8	7,393.0	6,941.3	39.3	30.5	78.59		-451.3	1,315.4	507.4	466.4	40.94	12.393	
7,700.0	7,053.4	7,470.9	6,952.5	39.7	30.9	78.47		-528.3	1,318.3	507.4	466.4	40.96	12.387	
7,800.0	7,054.6	7,550.3	6,956.0	40.2	31.4	78.76		-607.6	1,319.2	506.2	464.3	41.86	12.091	
7,843.0	7,054.2	7,591.7	6,955.7	40.4	31.7	78.78		-649.0	1,319.2	506.1	463.4	42.76	11.837	
7,900.0	7,053.7	7,648.7	6,955.4	40.7	32.1	78.79		-706.0	1,319.2	506.1	462.1	44.00	11.501	
8,000.0	7,052.9	7,748.7	6,954.7	41.4	32.9	78.82		-806.0	1,319.2	506.1	459.7	46.36	10.916	
8,100.0	7,052.0	7,848.7	6,954.1	42.0	33.8	78.85		-906.0	1,319.2	506.0	457.1	48.89	10.350	
8,200.0	7,051.1	7,948.7	6,953.5	42.8	34.8	78.88		-1,005.9	1,319.2	506.0	454.4	51.58	9.810	
8,300.0	7,050.2	8,048.7	6,952.9	43.7	35.8	78.90		-1,105.9	1,319.2	505.9	451.5	54.39	9.301	
8,400.0	7,049.3	8,148.7	6,952.2	44.6	37.0	78.93		-1,205.9	1,319.2	505.9	448.5	57.32	8.825	
8,500.0	7,048.4	8,248.6	6,951.6	45.6	38.2	78.96		-1,305.9	1,319.2	505.8	445.5	60.35	8.382	
8,600.0	7,047.6	8,348.6	6,951.0	46.6	39.5	78.99		-1,405.9	1,319.2	505.8	442.3	63.46	7.970	
8,700.0	7,046.7	8,448.6	6,950.3	47.7	40.8	79.02		-1,505.9	1,319.2	505.7	439.1	66.63	7.590	
8,800.0	7,045.8	8,548.6	6,949.7	48.9	42.2	79.05		-1,605.9	1,319.2	505.7	435.8	69.87	7.237	
8,900.0	7,044.9	8,648.6	6,949.1	50.1	43.6	79.07		-1,705.9	1,319.2	505.6	432.5	73.16	6.911	
9,000.0	7,044.0	8,748.6	6,948.4	51.4	45.1	79.10		-1,805.9	1,319.2	505.6	429.1	76.50	6.608	
9,100.0	7,043.1	8,848.6	6,947.8	52.7	46.6	79.13		-1,905.9	1,319.2	505.5	425.6	79.88	6.328	
9,200.0	7,042.2	8,948.6	6,947.2	54.0	48.1	79.16		-2,005.9	1,319.2	505.5	422.2	83.30	6.068	
9,300.0	7,041.4	9,048.6	6,946.5	55.4	49.7	79.19		-2,105.9	1,319.2	505.4	418.7	86.74	5.827	
9,400.0	7,040.5	9,148.6	6,945.9	56.8	51.2	79.21		-2,205.9	1,319.2	505.4	415.2	90.22	5.602	
9,500.0	7,039.6	9,248.6	6,945.3	58.3	52.8	79.24		-2,305.9	1,319.2	505.3	411.6	93.72	5.392	
9,600.0	7,038.7	9,348.6	6,944.6	59.7	54.5	79.27		-2,405.9	1,319.2	505.3	408.0	97.24	5.196	
9,700.0	7,037.8	9,448.6	6,944.0	61.2	56.1	79.30		-2,505.9	1,319.2	505.2	404.5	100.78	5.013	
9,800.0	7,036.9	9,548.6	6,943.4	62.8	57.8	79.33		-2,605.9	1,319.2	505.2	400.8	104.34	4.842	
9,900.0	7,036.1	9,648.6	6,942.7	64.3	59.5	79.36		-2,705.9	1,319.2	505.1	397.2	107.92	4.681	
10,000.0	7,035.2	9,748.6	6,942.1	65.9	61.1	79.38		-2,805.9	1,319.2	505.1	393.6	111.51	4.530	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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)		
10,100.0	7,034.3	9,848.6	6,941.5	67.5	62.9	79.41	-2,905.9	1,319.2	505.0	389.9	115.12	4.387	
10,200.0	7,033.4	9,948.6	6,940.9	69.1	64.6	79.44	-3,005.9	1,319.2	505.0	386.3	118.74	4.253	
10,300.0	7,032.5	10,048.6	6,940.2	70.7	66.3	79.47	-3,105.9	1,319.2	505.0	382.6	122.36	4.127	
10,400.0	7,031.6	10,148.6	6,939.6	72.3	68.0	79.50	-3,205.9	1,319.2	504.9	378.9	126.00	4.007	
10,500.0	7,030.7	10,248.6	6,939.0	74.0	69.8	79.52	-3,305.9	1,319.2	504.9	375.2	129.65	3.894	
10,600.0	7,029.9	10,348.6	6,938.3	75.6	71.5	79.55	-3,405.9	1,319.2	504.8	371.5	133.31	3.787	
10,700.0	7,029.0	10,448.6	6,937.7	77.3	73.3	79.58	-3,505.9	1,319.2	504.8	367.8	136.98	3.685	
10,800.0	7,028.1	10,548.6	6,937.1	79.0	75.1	79.61	-3,605.9	1,319.2	504.7	364.1	140.65	3.589	
10,900.0	7,027.2	10,648.6	6,936.4	80.7	76.9	79.64	-3,705.9	1,319.2	504.7	360.4	144.33	3.497	
11,000.0	7,026.3	10,748.6	6,935.8	82.4	78.7	79.67	-3,805.9	1,319.2	504.6	356.6	148.02	3.409	
11,100.0	7,025.4	10,848.6	6,935.2	84.1	80.5	79.69	-3,905.9	1,319.2	504.6	352.9	151.71	3.326	
11,200.0	7,024.6	10,948.6	6,934.5	85.9	82.3	79.72	-4,005.9	1,319.2	504.5	349.1	155.41	3.247	
11,300.0	7,023.7	11,048.6	6,933.9	87.6	84.1	79.75	-4,105.9	1,319.2	504.5	345.4	159.11	3.171	
11,400.0	7,022.8	11,148.6	6,933.3	89.4	85.9	79.78	-4,205.9	1,319.2	504.5	341.6	162.82	3.098	
11,500.0	7,021.9	11,248.6	6,932.6	91.1	87.7	79.81	-4,305.9	1,319.2	504.4	337.9	166.54	3.029	
11,600.0	7,021.0	11,348.6	6,932.0	92.9	89.5	79.84	-4,405.9	1,319.2	504.4	334.1	170.25	2.962	
11,700.0	7,020.1	11,448.6	6,931.4	94.6	91.3	79.86	-4,505.9	1,319.2	504.3	330.3	173.98	2.899	
11,704.4	7,020.1	11,452.8	6,931.4	94.7	91.4	79.87	-4,510.1	1,319.2	504.3	330.2	174.14	2.896	
11,714.5	7,020.0	11,452.8	6,931.4	94.9	91.4	79.87	-4,510.1	1,319.2	504.4	330.1	174.32	2.894 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	177.42	-61.9	2.8	62.0					
100.0	100.0	100.0	100.0	0.1	0.1	177.42	-61.9	2.8	62.0	61.8	0.22	275.838		
200.0	200.0	200.0	200.0	0.3	0.3	177.42	-61.9	2.8	62.0	61.3	0.67	91.946		
300.0	300.0	300.0	300.0	0.6	0.6	177.42	-61.9	2.8	62.0	60.9	1.12	55.168		
400.0	400.0	400.0	400.0	0.8	0.8	177.42	-61.9	2.8	62.0	60.4	1.57	39.405 CC		
500.0	500.0	500.0	500.0	1.0	1.0	95.99	-61.9	2.8	62.1	60.1	2.01	30.870 ES		
600.0	599.9	599.9	599.9	1.2	1.2	99.55	-61.9	2.8	62.7	60.2	2.45	25.572		
700.0	699.7	699.7	699.7	1.4	1.5	105.29	-61.9	2.8	64.1	61.2	2.90	22.075		
800.0	799.3	799.3	799.3	1.7	1.7	112.79	-61.9	2.8	67.1	63.7	3.37	19.901		
900.0	898.6	898.6	898.6	2.0	1.9	121.27	-61.9	2.8	72.5	68.6	3.85	18.815		
1,000.0	997.5	997.5	997.5	2.3	2.1	129.84	-61.9	2.8	80.9	76.5	4.34	18.650 SF		
1,100.0	1,096.1	1,096.1	1,096.1	2.6	2.4	137.73	-61.9	2.8	92.7	87.9	4.82	19.239		
1,200.0	1,194.2	1,194.2	1,194.2	3.0	2.6	144.53	-61.9	2.8	108.0	102.8	5.29	20.410		
1,300.0	1,291.7	1,291.7	1,291.7	3.4	2.8	150.15	-61.9	2.8	126.8	121.0	5.76	22.007		
1,400.0	1,388.6	1,388.6	1,388.6	3.9	3.0	154.70	-61.9	2.8	148.8	142.5	6.22	23.908		
1,500.0	1,484.9	1,487.5	1,487.5	4.4	3.2	158.49	-61.6	3.3	173.2	166.5	6.68	25.940		
1,600.0	1,580.6	1,587.1	1,587.0	4.9	3.4	161.68	-60.2	5.3	198.0	190.9	7.14	27.741		
1,700.0	1,676.4	1,687.4	1,687.3	5.5	3.7	164.27	-57.8	8.7	221.7	214.0	7.61	29.142		
1,800.0	1,772.2	1,788.5	1,788.2	6.1	3.9	166.47	-54.4	13.6	244.0	235.9	8.08	30.198		
1,900.0	1,868.0	1,890.4	1,889.8	6.7	4.1	168.41	-50.0	20.0	264.9	256.3	8.56	30.959		
2,000.0	1,963.8	1,992.8	1,991.8	7.3	4.4	170.17	-44.5	28.0	284.4	275.3	9.04	31.462		
2,100.0	2,059.6	2,094.7	2,093.0	7.9	4.6	171.80	-38.0	37.3	302.4	292.9	9.52	31.757		
2,200.0	2,155.3	2,192.8	2,190.5	8.4	4.9	173.23	-31.4	46.8	320.2	310.2	10.01	31.983		
2,300.0	2,251.1	2,290.9	2,287.9	9.0	5.1	174.50	-24.9	56.2	338.2	327.7	10.51	32.186		
2,400.0	2,346.9	2,389.0	2,385.3	9.6	5.4	175.65	-18.3	65.6	356.3	345.3	11.01	32.367		
2,500.0	2,442.7	2,487.2	2,482.8	10.2	5.6	176.68	-11.8	75.1	374.5	363.0	11.51	32.526		
2,600.0	2,538.5	2,585.3	2,580.2	10.8	5.9	177.62	-5.2	84.5	392.8	380.8	12.02	32.666		
2,700.0	2,634.2	2,683.4	2,677.6	11.4	6.2	178.48	1.3	94.0	411.2	398.7	12.54	32.789		
2,800.0	2,730.0	2,781.5	2,775.1	12.0	6.5	179.26	7.9	103.4	429.7	416.7	13.06	32.895		
2,900.0	2,825.8	2,879.6	2,872.5	12.7	6.7	179.98	14.4	112.8	448.3	434.7	13.59	32.987		
3,000.0	2,921.6	2,977.7	2,969.9	13.3	7.0	-179.36	21.0	122.3	466.9	452.8	14.12	33.067		
3,100.0	3,017.4	3,075.8	3,067.4	13.9	7.3	-178.75	27.5	131.7	485.6	471.0	14.66	33.136		
3,200.0	3,113.1	3,173.9	3,164.8	14.5	7.6	-178.18	34.1	141.2	504.4	489.2	15.19	33.195		
3,300.0	3,208.9	3,272.0	3,262.2	15.1	7.9	-177.66	40.6	150.6	523.2	507.4	15.74	33.246		
3,400.0	3,304.7	3,370.2	3,359.7	15.7	8.2	-177.17	47.2	160.1	542.0	525.7	16.28	33.289		
3,500.0	3,400.5	3,468.3	3,457.1	16.3	8.5	-176.71	53.7	169.5	560.8	544.0	16.83	33.325		
3,600.0	3,496.3	3,566.4	3,554.5	16.9	8.7	-176.29	60.3	178.9	579.7	562.4	17.38	33.356		
3,700.0	3,592.0	3,664.5	3,652.0	17.5	9.0	-175.89	66.8	188.4	598.7	580.7	17.93	33.381		
3,800.0	3,687.8	3,762.6	3,749.4	18.1	9.3	-175.51	73.4	197.8	617.6	599.1	18.49	33.403		
3,900.0	3,783.6	3,860.7	3,846.9	18.7	9.6	-175.16	79.9	207.3	636.6	617.5	19.05	33.420		
4,000.0	3,879.4	3,958.8	3,944.3	19.3	9.9	-174.83	86.5	216.7	655.6	636.0	19.61	33.434		
4,100.0	3,975.2	4,056.9	4,041.7	19.9	10.2	-174.52	93.0	226.2	674.6	654.4	20.17	33.445		
4,200.0	4,071.0	4,155.0	4,139.2	20.5	10.5	-174.22	99.6	235.6	693.6	672.9	20.73	33.453		
4,300.0	4,166.7	4,253.1	4,236.6	21.2	10.8	-173.94	106.1	245.0	712.7	691.4	21.30	33.460		
4,400.0	4,262.5	4,351.3	4,334.0	21.8	11.1	-173.67	112.7	254.5	731.7	709.9	21.87	33.464		
4,500.0	4,358.3	4,449.4	4,431.5	22.4	11.4	-173.42	119.2	263.9	750.8	728.4	22.44	33.466		
4,600.0	4,454.1	4,547.5	4,528.9	23.0	11.7	-173.18	125.8	273.4	769.9	746.9	23.00	33.467		
4,700.0	4,549.9	4,645.6	4,626.3	23.6	12.0	-172.95	132.3	282.8	789.0	765.4	23.58	33.466		
4,800.0	4,645.6	4,743.7	4,723.8	24.2	12.3	-172.74	138.9	292.2	808.1	784.0	24.15	33.465		
4,900.0	4,741.4	4,841.8	4,821.2	24.8	12.6	-172.53	145.4	301.7	827.3	802.5	24.72	33.462		
5,000.0	4,837.2	4,939.9	4,918.6	25.4	12.9	-172.33	152.0	311.1	846.4	821.1	25.30	33.458		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,933.0	5,038.0	5,016.1	26.0	13.2	-172.14	158.5	320.6	865.5	839.7	25.87	33.454	
5,200.0	5,028.8	5,136.1	5,113.5	26.6	13.5	-171.96	165.1	330.0	884.7	858.2	26.45	33.449	
5,300.0	5,124.5	5,234.3	5,210.9	27.3	13.8	-171.79	171.6	339.5	903.9	876.8	27.03	33.443	
5,400.0	5,220.3	5,332.4	5,308.4	27.9	14.1	-171.62	178.2	348.9	923.0	895.4	27.60	33.437	
5,500.0	5,316.1	5,430.5	5,405.8	28.5	14.4	-171.46	184.7	358.3	942.2	914.0	28.18	33.430	
5,600.0	5,411.9	5,528.6	5,503.3	29.1	14.7	-171.31	191.3	367.8	961.4	932.6	28.76	33.423	
5,700.0	5,507.7	5,626.7	5,600.7	29.7	15.0	-171.16	197.8	377.2	980.6	951.2	29.34	33.416	
5,800.0	5,603.5	5,724.8	5,698.1	30.3	15.3	-171.02	204.4	386.7	999.8	969.8	29.93	33.408	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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-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 Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.1	0.1	-180.00	-29.1	0.0	29.1	28.9	0.22	129.685		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.67	43.228		
300.0	300.0	300.0	300.0	0.6	0.6	-180.00	-29.1	0.0	29.1	28.0	1.12	25.937		
400.0	400.0	400.0	400.0	0.8	0.8	-180.00	-29.1	0.0	29.1	27.6	1.57	18.526 CC		
500.0	500.0	500.0	500.0	1.0	1.0	99.90	-29.1	0.0	29.3	27.3	2.01	14.582 ES		
600.0	599.9	599.9	599.9	1.2	1.2	107.22	-29.1	0.0	30.3	27.8	2.45	12.353		
700.0	699.7	699.7	699.7	1.4	1.5	118.14	-29.1	0.0	32.8	29.9	2.90	11.308		
800.0	799.3	799.3	799.3	1.7	1.7	130.31	-29.1	0.0	38.0	34.6	3.36	11.305		
900.0	898.6	898.6	898.6	2.0	1.9	141.31	-29.1	0.0	46.5	42.7	3.82	12.166		
1,000.0	997.5	997.5	997.5	2.3	2.1	150.03	-29.1	0.0	58.4	54.1	4.28	13.654		
1,100.0	1,096.1	1,097.2	1,097.2	2.6	2.3	156.36	-29.0	0.8	72.8	68.1	4.72	15.430		
1,200.0	1,194.2	1,197.1	1,197.1	3.0	2.5	160.80	-28.6	3.3	88.7	83.5	5.15	17.203		
1,300.0	1,291.7	1,297.2	1,297.0	3.4	2.8	164.06	-27.8	7.6	105.7	100.1	5.59	18.895		
1,400.0	1,388.6	1,397.4	1,397.0	3.9	3.0	166.53	-26.8	13.6	123.7	117.7	6.04	20.496		
1,500.0	1,484.9	1,497.7	1,497.1	4.4	3.2	168.48	-25.4	21.3	142.8	136.3	6.49	22.008		
1,600.0	1,580.6	1,598.5	1,597.4	4.9	3.5	170.03	-23.8	30.8	161.8	154.8	6.97	23.227		
1,700.0	1,676.4	1,699.9	1,698.1	5.5	3.7	171.20	-21.8	42.1	179.2	171.8	7.46	24.029		
1,800.0	1,772.2	1,801.9	1,799.3	6.1	4.0	172.11	-19.5	55.2	195.0	187.0	7.96	24.489		
1,900.0	1,868.0	1,904.5	1,900.7	6.7	4.3	172.85	-16.9	70.2	209.0	200.5	8.47	24.664		
2,000.0	1,963.8	2,007.6	2,002.4	7.3	4.6	173.46	-14.0	87.1	221.3	212.3	8.99	24.601		
2,100.0	2,059.6	2,111.1	2,104.1	7.9	5.0	173.98	-10.7	105.8	231.8	222.3	9.52	24.342		
2,200.0	2,155.3	2,211.9	2,203.0	8.4	5.3	174.42	-7.3	125.4	240.9	230.9	10.05	23.972		
2,300.0	2,251.1	2,311.5	2,300.6	9.0	5.7	174.82	-3.9	144.9	250.0	239.4	10.58	23.627		
2,400.0	2,346.9	2,411.1	2,398.2	9.6	6.1	175.19	-0.6	164.3	259.1	248.0	11.12	23.311		
2,500.0	2,442.7	2,510.7	2,495.8	10.2	6.5	175.54	2.8	183.7	268.2	256.6	11.65	23.019		
2,600.0	2,538.5	2,610.2	2,593.4	10.8	6.9	175.87	6.2	203.2	277.3	265.2	12.19	22.750		
2,700.0	2,634.2	2,709.8	2,691.0	11.4	7.3	176.18	9.6	222.6	286.5	273.7	12.73	22.501		
2,800.0	2,730.0	2,809.4	2,788.6	12.0	7.7	176.46	13.0	242.1	295.6	282.3	13.27	22.270		
2,900.0	2,825.8	2,908.9	2,886.2	12.7	8.1	176.73	16.3	261.5	304.7	290.9	13.82	22.054		
3,000.0	2,921.6	3,008.5	2,983.8	13.3	8.5	176.98	19.7	280.9	313.9	299.5	14.36	21.853		
3,100.0	3,017.4	3,108.1	3,081.4	13.9	8.9	177.22	23.1	300.4	323.0	308.1	14.91	21.666		
3,200.0	3,113.1	3,207.7	3,179.0	14.5	9.3	177.45	26.5	319.8	332.2	316.7	15.46	21.490		
3,300.0	3,208.9	3,307.2	3,276.6	15.1	9.7	177.66	29.9	339.3	341.4	325.4	16.01	21.325		
3,400.0	3,304.7	3,406.8	3,374.2	15.7	10.2	177.87	33.3	358.7	350.5	334.0	16.56	21.170		
3,500.0	3,400.5	3,506.4	3,471.8	16.3	10.6	178.06	36.6	378.1	359.7	342.6	17.11	21.024		
3,600.0	3,496.3	3,605.9	3,569.4	16.9	11.0	178.24	40.0	397.6	368.9	351.2	17.66	20.886		
3,700.0	3,592.0	3,705.5	3,667.0	17.5	11.4	178.42	43.4	417.0	378.1	359.8	18.21	20.756		
3,800.0	3,687.8	3,805.1	3,764.6	18.1	11.8	178.58	46.8	436.5	387.2	368.5	18.77	20.632		
3,900.0	3,783.6	3,904.7	3,862.2	18.7	12.3	178.74	50.2	455.9	396.4	377.1	19.32	20.516		
4,000.0	3,879.4	4,004.2	3,959.8	19.3	12.7	178.89	53.6	475.3	405.6	385.7	19.88	20.405		
4,100.0	3,975.2	4,103.8	4,057.3	19.9	13.1	179.04	56.9	494.8	414.8	394.4	20.43	20.299		
4,200.0	4,071.0	4,203.4	4,154.9	20.5	13.6	179.17	60.3	514.2	424.0	403.0	20.99	20.199		
4,300.0	4,166.7	4,302.9	4,252.5	21.2	14.0	179.31	63.7	533.7	433.2	411.6	21.55	20.103		
4,400.0	4,262.5	4,402.5	4,350.1	21.8	14.4	179.43	67.1	553.1	442.4	420.3	22.11	20.012		
4,500.0	4,358.3	4,502.1	4,447.7	22.4	14.8	179.55	70.5	572.5	451.6	428.9	22.66	19.925		
4,600.0	4,454.1	4,601.7	4,545.3	23.0	15.3	179.67	73.8	592.0	460.8	437.6	23.22	19.842		
4,700.0	4,549.9	4,701.2	4,642.9	23.6	15.7	179.78	77.2	611.4	470.0	446.2	23.78	19.762		
4,800.0	4,645.6	4,800.8	4,740.5	24.2	16.1	179.89	80.6	630.9	479.2	454.8	24.34	19.686		
4,900.0	4,741.4	4,900.4	4,838.1	24.8	16.6	179.99	84.0	650.3	488.4	463.5	24.90	19.613		
5,000.0	4,837.2	4,999.9	4,935.7	25.4	17.0	-179.91	87.4	669.8	497.6	472.1	25.46	19.543		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,933.0	5,099.5	5,033.3	26.0	17.4	-179.81		90.8	689.2	506.8	480.8	26.02	19.475	
5,200.0	5,028.8	5,199.1	5,130.9	26.6	17.9	-179.72		94.1	708.6	516.0	489.4	26.58	19.410	
5,300.0	5,124.5	5,298.7	5,228.5	27.3	18.3	-179.63		97.5	728.1	525.2	498.1	27.15	19.348	
5,400.0	5,220.3	5,398.2	5,326.1	27.9	18.7	-179.54		100.9	747.5	534.4	506.7	27.71	19.288	
5,500.0	5,316.1	5,497.8	5,423.7	28.5	19.2	-179.46		104.3	767.0	543.7	515.4	28.27	19.231	
5,600.0	5,411.9	5,597.4	5,521.3	29.1	19.6	-179.38		107.7	786.4	552.9	524.0	28.83	19.175	
5,700.0	5,507.7	5,696.9	5,618.9	29.7	20.0	-179.30		111.0	805.8	562.1	532.7	29.40	19.121	
5,800.0	5,603.5	5,796.5	5,716.5	30.3	20.5	-179.22		114.4	825.3	571.3	541.3	29.96	19.069	
5,900.0	5,699.2	5,896.1	5,814.1	30.9	20.9	-179.15		117.8	844.7	580.5	550.0	30.52	19.019	
6,000.0	5,795.0	5,995.7	5,911.7	31.5	21.4	-179.08		121.2	864.2	589.7	558.7	31.09	18.971	
6,100.0	5,890.8	6,095.2	6,009.3	32.1	21.8	-179.01		124.6	883.6	599.0	567.3	31.65	18.924	
6,200.0	5,986.6	6,194.8	6,106.9	32.7	22.2	-178.94		128.0	903.0	608.2	576.0	32.21	18.879	
6,300.0	6,082.4	6,294.4	6,204.5	33.4	22.7	-178.88		131.3	922.5	617.4	584.6	32.78	18.835	
6,400.0	6,178.1	6,392.2	6,300.4	34.0	23.1	-178.84		134.4	941.6	626.7	593.3	33.34	18.799	
6,500.0	6,273.9	6,483.2	6,389.4	34.6	23.4	-179.49		129.7	959.3	636.8	603.0	33.84	18.819	
6,600.0	6,369.7	6,571.8	6,475.0	35.1	23.7	159.59		114.7	976.4	648.1	613.7	34.40	18.843	
6,700.0	6,464.7	6,658.9	6,557.0	35.6	24.0	136.75		90.3	992.8	659.5	624.5	35.05	18.815	
6,800.0	6,557.2	6,744.9	6,634.7	36.1	24.3	121.01		57.0	1,008.3	670.6	634.9	35.78	18.742	
6,900.0	6,645.8	6,829.9	6,707.4	36.6	24.5	110.60		15.6	1,022.9	681.2	644.7	36.56	18.635	
7,000.0	6,728.8	6,914.0	6,774.5	37.0	24.7	103.54		-33.3	1,036.3	691.1	653.7	37.31	18.523	
7,100.0	6,804.8	7,000.0	6,837.1	37.4	25.0	98.59		-90.7	1,048.9	699.9	661.8	38.07	18.383	
7,200.0	6,872.7	7,080.8	6,889.9	37.8	25.3	95.08		-150.9	1,059.6	707.5	668.7	38.76	18.251	
7,300.0	6,931.1	7,163.7	6,937.3	38.1	25.6	92.60		-218.2	1,069.1	713.7	674.3	39.44	18.095	
7,400.0	6,979.1	7,250.0	6,978.7	38.5	25.9	90.93		-293.4	1,077.5	718.5	678.4	40.15	17.895	
7,500.0	7,015.8	7,329.3	7,009.2	38.9	26.3	89.91		-366.3	1,083.7	721.8	680.9	40.85	17.668	
7,600.0	7,040.8	7,412.4	7,033.1	39.3	26.8	89.48		-445.7	1,088.6	723.5	681.8	41.66	17.365	
7,700.0	7,053.4	7,495.7	7,048.4	39.7	27.3	89.58		-527.5	1,091.8	723.6	681.0	42.60	16.986	
7,800.0	7,054.6	7,579.7	7,054.8	40.2	27.9	90.02		-611.2	1,093.2	722.5	678.4	44.05	16.402	
7,841.7	7,054.3	7,616.8	7,054.9	40.4	28.2	90.05		-648.3	1,093.3	722.4	677.4	44.92	16.082	
7,900.0	7,053.7	7,675.1	7,054.4	40.7	28.6	90.05		-706.6	1,093.3	722.4	676.1	46.23	15.627	
8,000.0	7,052.9	7,775.1	7,053.5	41.4	29.5	90.05		-806.6	1,093.3	722.4	673.7	48.64	14.850	
8,100.0	7,052.0	7,875.1	7,052.6	42.0	30.6	90.05		-906.6	1,093.3	722.4	671.1	51.23	14.099	
8,200.0	7,051.1	7,975.1	7,051.7	42.8	31.7	90.05		-1,006.6	1,093.3	722.4	668.4	53.97	13.384	
8,300.0	7,050.2	8,075.1	7,050.8	43.7	32.8	90.05		-1,106.6	1,093.3	722.4	665.5	56.84	12.709	
8,400.0	7,049.3	8,175.1	7,050.0	44.6	34.1	90.05		-1,206.6	1,093.3	722.4	662.6	59.81	12.077	
8,500.0	7,048.4	8,275.1	7,049.1	45.6	35.4	90.05		-1,306.6	1,093.3	722.4	659.5	62.88	11.488	
8,600.0	7,047.6	8,375.1	7,048.2	46.6	36.8	90.05		-1,406.6	1,093.3	722.4	656.3	66.03	10.940	
8,700.0	7,046.7	8,475.1	7,047.3	47.7	38.2	90.05		-1,506.6	1,093.3	722.4	653.1	69.25	10.431	
8,800.0	7,045.8	8,575.1	7,046.4	48.9	39.7	90.05		-1,606.5	1,093.3	722.4	649.8	72.53	9.960	
8,900.0	7,044.9	8,675.1	7,045.5	50.1	41.2	90.05		-1,706.5	1,093.3	722.4	646.5	75.86	9.522	
9,000.0	7,044.0	8,775.1	7,044.6	51.4	42.7	90.05		-1,806.5	1,093.3	722.4	643.1	79.24	9.117	
9,100.0	7,043.1	8,875.1	7,043.8	52.7	44.3	90.05		-1,906.5	1,093.3	722.4	639.7	82.65	8.740	
9,200.0	7,042.2	8,975.1	7,042.9	54.0	45.9	90.05		-2,006.5	1,093.3	722.4	636.3	86.11	8.389	
9,300.0	7,041.4	9,075.1	7,042.0	55.4	47.5	90.05		-2,106.5	1,093.3	722.4	632.8	89.59	8.063	
9,400.0	7,040.5	9,175.1	7,041.1	56.8	49.1	90.05		-2,206.5	1,093.3	722.4	629.3	93.10	7.759	
9,500.0	7,039.6	9,275.1	7,040.2	58.3	50.8	90.05		-2,306.5	1,093.3	722.4	625.7	96.64	7.475	
9,600.0	7,038.7	9,375.1	7,039.3	59.7	52.5	90.05		-2,406.5	1,093.3	722.4	622.2	100.20	7.209	
9,700.0	7,037.8	9,475.1	7,038.5	61.2	54.2	90.05		-2,506.5	1,093.3	722.4	618.6	103.78	6.961	
9,800.0	7,036.9	9,575.1	7,037.6	62.8	55.9	90.05		-2,606.5	1,093.3	722.4	615.0	107.37	6.728	
9,900.0	7,036.1	9,675.1	7,036.7	64.3	57.6	90.05		-2,706.5	1,093.3	722.4	611.4	110.99	6.509	
10,000.0	7,035.2	9,775.1	7,035.8	65.9	59.4	90.05		-2,806.5	1,093.3	722.4	607.7	114.61	6.303	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
10,100.0	7,034.3	9,875.1	7,034.9	67.5	61.1	90.05	-2,906.5	1,093.3	722.4	604.1	118.26	6.108	
10,200.0	7,033.4	9,975.1	7,034.0	69.1	62.9	90.05	-3,006.5	1,093.3	722.4	600.5	121.91	5.925	
10,300.0	7,032.5	10,075.1	7,033.1	70.7	64.6	90.05	-3,106.5	1,093.3	722.4	596.8	125.57	5.753	
10,400.0	7,031.6	10,175.1	7,032.3	72.3	66.4	90.05	-3,206.5	1,093.3	722.4	593.1	129.25	5.589	
10,500.0	7,030.7	10,275.1	7,031.4	74.0	68.2	90.05	-3,306.5	1,093.3	722.4	589.4	132.93	5.434	
10,600.0	7,029.9	10,375.1	7,030.5	75.6	70.0	90.05	-3,406.5	1,093.3	722.4	585.7	136.62	5.287	
10,700.0	7,029.0	10,475.1	7,029.6	77.3	71.8	90.05	-3,506.5	1,093.3	722.4	582.0	140.32	5.148	
10,800.0	7,028.1	10,575.1	7,028.7	79.0	73.6	90.05	-3,606.5	1,093.3	722.4	578.3	144.03	5.015	
10,900.0	7,027.2	10,675.1	7,027.8	80.7	75.4	90.05	-3,706.5	1,093.3	722.4	574.6	147.74	4.889	
11,000.0	7,026.3	10,775.1	7,027.0	82.4	77.2	90.05	-3,806.5	1,093.3	722.4	570.9	151.46	4.769	
11,100.0	7,025.4	10,875.1	7,026.1	84.1	79.0	90.05	-3,906.5	1,093.3	722.4	567.2	155.19	4.655	
11,200.0	7,024.6	10,975.1	7,025.2	85.9	80.8	90.05	-4,006.5	1,093.3	722.4	563.4	158.92	4.545	
11,300.0	7,023.7	11,075.1	7,024.3	87.6	82.7	90.05	-4,106.4	1,093.3	722.4	559.7	162.66	4.441	
11,400.0	7,022.8	11,175.1	7,023.4	89.4	84.5	90.05	-4,206.4	1,093.3	722.4	556.0	166.40	4.341	
11,500.0	7,021.9	11,275.1	7,022.5	91.1	86.3	90.05	-4,306.4	1,093.3	722.4	552.2	170.14	4.246	
11,600.0	7,021.0	11,375.1	7,021.6	92.9	88.2	90.05	-4,406.4	1,093.3	722.4	548.5	173.89	4.154	
11,700.0	7,020.1	11,475.1	7,020.8	94.6	90.0	90.05	-4,506.4	1,093.3	722.4	544.7	177.65	4.066	
11,714.5	7,020.0	11,475.1	7,020.8	94.9	90.0	90.05	-4,506.4	1,093.3	722.5	544.6	177.92	4.061 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	176.35	-43.7	2.8	43.8					
100.0	100.0	100.0	100.0	0.1	0.1	176.35	-43.7	2.8	43.8	43.6	0.22	194.895		
200.0	200.0	200.0	200.0	0.3	0.3	176.35	-43.7	2.8	43.8	43.1	0.67	64.965		
300.0	300.0	300.0	300.0	0.6	0.6	176.35	-43.7	2.8	43.8	42.7	1.12	38.979		
400.0	400.0	400.0	400.0	0.8	0.8	176.35	-43.7	2.8	43.8	42.2	1.57	27.842 CC		
500.0	500.0	500.0	500.0	1.0	1.0	95.42	-43.7	2.8	43.9	41.9	2.01	21.820 ES		
600.0	599.9	599.9	599.9	1.2	1.2	100.45	-43.7	2.8	44.5	42.0	2.45	18.143		
700.0	699.7	699.7	699.7	1.4	1.5	108.43	-43.7	2.8	46.1	43.2	2.90	15.882		
800.0	799.3	799.3	799.3	1.7	1.7	118.40	-43.7	2.8	49.8	46.4	3.37	14.774		
900.0	898.6	898.6	898.6	2.0	1.9	128.85	-43.7	2.8	56.3	52.5	3.84	14.664 SF		
1,000.0	997.5	997.5	997.5	2.3	2.1	138.41	-43.7	2.8	66.3	62.0	4.31	15.378		
1,100.0	1,096.1	1,096.1	1,096.1	2.6	2.4	146.35	-43.7	2.8	79.8	75.1	4.78	16.711		
1,200.0	1,194.2	1,194.2	1,194.2	3.0	2.6	152.62	-43.7	2.8	96.7	91.5	5.24	18.477		
1,300.0	1,291.7	1,293.6	1,293.6	3.4	2.8	157.51	-43.4	3.5	116.1	110.4	5.68	20.429		
1,400.0	1,388.6	1,393.3	1,393.2	3.9	3.0	161.30	-42.5	5.8	136.8	130.7	6.12	22.347		
1,500.0	1,484.9	1,493.1	1,493.0	4.4	3.2	164.33	-40.9	9.7	158.7	152.1	6.56	24.182		
1,600.0	1,580.6	1,593.3	1,593.0	4.9	3.4	166.84	-38.6	15.3	180.8	173.8	7.03	25.723		
1,700.0	1,676.4	1,694.4	1,693.7	5.5	3.7	168.85	-35.6	22.5	201.4	193.9	7.50	26.841		
1,800.0	1,772.2	1,796.1	1,795.0	6.1	3.9	170.54	-31.9	31.4	220.5	212.5	7.99	27.607		
1,900.0	1,868.0	1,898.4	1,896.7	6.7	4.2	172.01	-27.5	42.1	238.0	229.5	8.48	28.073		
2,000.0	1,963.8	2,001.4	1,998.8	7.3	4.4	173.34	-22.3	54.5	253.9	244.9	8.98	28.285		
2,100.0	2,059.6	2,102.5	2,098.8	7.9	4.7	174.54	-16.7	68.1	268.4	258.9	9.48	28.316		
2,200.0	2,155.3	2,201.3	2,196.5	8.4	5.0	175.60	-11.1	81.7	282.7	272.8	9.98	28.324		
2,300.0	2,251.1	2,300.1	2,294.2	9.0	5.3	176.56	-5.5	95.2	297.2	286.7	10.49	28.324		
2,400.0	2,346.9	2,399.0	2,392.0	9.6	5.6	177.43	0.1	108.7	311.7	300.7	11.01	28.319		
2,500.0	2,442.7	2,497.8	2,489.7	10.2	5.9	178.22	5.7	122.2	326.3	314.8	11.53	28.308		
2,600.0	2,538.5	2,596.6	2,587.5	10.8	6.2	178.95	11.3	135.8	340.9	328.9	12.05	28.293		
2,700.0	2,634.2	2,695.5	2,685.2	11.4	6.6	179.61	16.9	149.3	355.6	343.0	12.58	28.273		
2,800.0	2,730.0	2,794.3	2,783.0	12.0	6.9	-179.78	22.5	162.8	370.3	357.2	13.11	28.249		
2,900.0	2,825.8	2,893.1	2,880.7	12.7	7.2	-179.21	28.1	176.4	385.1	371.5	13.65	28.222		
3,000.0	2,921.6	2,992.0	2,978.5	13.3	7.5	-178.69	33.7	189.9	399.9	385.7	14.18	28.193		
3,100.0	3,017.4	3,090.8	3,076.2	13.9	7.9	-178.20	39.3	203.4	414.7	400.0	14.73	28.162		
3,200.0	3,113.1	3,189.6	3,173.9	14.5	8.2	-177.75	44.9	217.0	429.6	414.3	15.27	28.129		
3,300.0	3,208.9	3,288.5	3,271.7	15.1	8.5	-177.33	50.5	230.5	444.5	428.7	15.82	28.096		
3,400.0	3,304.7	3,387.3	3,369.4	15.7	8.9	-176.93	56.1	244.0	459.4	443.0	16.37	28.061		
3,500.0	3,400.5	3,486.1	3,467.2	16.3	9.2	-176.56	61.7	257.5	474.3	457.4	16.92	28.025		
3,600.0	3,496.3	3,585.0	3,564.9	16.9	9.5	-176.21	67.3	271.1	489.3	471.8	17.48	27.990		
3,700.0	3,592.0	3,683.8	3,662.7	17.5	9.9	-175.88	72.9	284.6	504.2	486.2	18.04	27.954		
3,800.0	3,687.8	3,782.6	3,760.4	18.1	10.2	-175.58	78.5	298.1	519.2	500.6	18.60	27.918		
3,900.0	3,783.6	3,881.5	3,858.2	18.7	10.5	-175.29	84.0	311.7	534.2	515.0	19.16	27.882		
4,000.0	3,879.4	3,980.3	3,955.9	19.3	10.9	-175.01	89.6	325.2	549.2	529.5	19.72	27.846		
4,100.0	3,975.2	4,079.1	4,053.6	19.9	11.2	-174.75	95.2	338.7	564.2	543.9	20.29	27.811		
4,200.0	4,071.0	4,178.0	4,151.4	20.5	11.6	-174.50	100.8	352.2	579.2	558.4	20.85	27.776		
4,300.0	4,166.7	4,276.8	4,249.1	21.2	11.9	-174.27	106.4	365.8	594.3	572.8	21.42	27.741		
4,400.0	4,262.5	4,375.7	4,346.9	21.8	12.3	-174.05	112.0	379.3	609.3	587.3	21.99	27.707		
4,500.0	4,358.3	4,474.5	4,444.6	22.4	12.6	-173.83	117.6	392.8	624.4	601.8	22.56	27.674		
4,600.0	4,454.1	4,573.3	4,542.4	23.0	13.0	-173.63	123.2	406.4	639.4	616.3	23.13	27.641		
4,700.0	4,549.9	4,672.2	4,640.1	23.6	13.3	-173.44	128.8	419.9	654.5	630.8	23.71	27.609		
4,800.0	4,645.6	4,771.0	4,737.9	24.2	13.6	-173.25	134.4	433.4	669.6	645.3	24.28	27.577		
4,900.0	4,741.4	4,869.8	4,835.6	24.8	14.0	-173.08	140.0	447.0	684.7	659.8	24.85	27.546		
5,000.0	4,837.2	4,968.7	4,933.3	25.4	14.3	-172.91	145.6	460.5	699.7	674.3	25.43	27.516		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	4,933.0	5,067.5	5,031.1	26.0	14.7	-172.75	151.2	474.0	714.8	688.8	26.01	27.486	
5,200.0	5,028.8	5,166.3	5,128.8	26.6	15.0	-172.59	156.8	487.5	729.9	703.3	26.59	27.456	
5,300.0	5,124.5	5,265.2	5,226.6	27.3	15.4	-172.44	162.4	501.1	745.0	717.9	27.16	27.428	
5,400.0	5,220.3	5,364.0	5,324.3	27.9	15.7	-172.30	168.0	514.6	760.1	732.4	27.74	27.400	
5,500.0	5,316.1	5,462.8	5,422.1	28.5	16.1	-172.17	173.6	528.1	775.3	746.9	28.32	27.373	
5,600.0	5,411.9	5,561.7	5,519.8	29.1	16.4	-172.03	179.2	541.7	790.4	761.5	28.90	27.346	
5,700.0	5,507.7	5,660.5	5,617.5	29.7	16.8	-171.91	184.8	555.2	805.5	776.0	29.48	27.320	
5,800.0	5,603.5	5,759.3	5,715.3	30.3	17.1	-171.78	190.4	568.7	820.6	790.6	30.07	27.294	
5,900.0	5,699.2	5,858.2	5,813.0	30.9	17.5	-171.67	196.0	582.3	835.8	805.1	30.65	27.269	
6,000.0	5,795.0	5,957.0	5,910.8	31.5	17.8	-171.55	201.6	595.8	850.9	819.7	31.23	27.244	
6,100.0	5,890.8	6,055.8	6,008.5	32.1	18.2	-171.44	207.2	609.3	866.0	834.2	31.82	27.220	
6,200.0	5,986.6	6,154.7	6,106.3	32.7	18.5	-171.34	212.8	622.8	881.2	848.8	32.40	27.197	
6,300.0	6,082.4	6,253.5	6,204.0	33.4	18.9	-171.24	218.4	636.4	896.3	863.3	32.98	27.174	
6,400.0	6,178.1	6,352.3	6,301.8	34.0	19.2	-171.14	224.0	649.9	911.4	877.9	33.57	27.151	
6,500.0	6,273.9	6,452.9	6,401.3	34.6	19.5	-171.16	227.7	663.7	926.5	892.4	34.11	27.164	
6,600.0	6,369.7	6,554.0	6,501.1	35.1	19.8	168.41	219.6	677.5	941.5	907.2	34.33	27.424	
6,700.0	6,464.7	6,654.1	6,597.9	35.6	20.0	145.84	198.5	690.9	956.4	921.9	34.48	27.740	
6,800.0	6,557.2	6,753.2	6,690.2	36.1	20.1	130.23	165.2	703.7	971.0	936.4	34.67	28.004	
6,900.0	6,645.8	6,851.3	6,776.8	36.6	20.3	119.82	120.6	715.7	985.1	950.2	34.98	28.165	
7,000.0	6,728.8	6,948.7	6,856.3	37.0	20.4	112.62	65.7	726.7	998.4	963.0	35.42	28.190	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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)	+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 CC	
300.0	300.0	299.9	299.9	0.6	0.6	5.06	5.06	14.7	1.3	14.8	13.6	1.11	13.243 ES	
400.0	400.0	399.7	399.7	0.8	0.8	19.01	19.01	15.1	5.2	16.0	14.4	1.56	10.248	
500.0	500.0	499.4	499.1	1.0	1.0	-48.89	-48.89	15.7	11.7	18.7	16.7	2.00	9.340	
600.0	599.9	598.9	598.1	1.2	1.3	-38.30	-38.30	16.6	20.7	22.3	19.9	2.45	9.098	
700.0	699.7	698.2	696.8	1.4	1.5	-30.70	-30.70	17.7	32.3	26.4	23.5	2.91	9.066	
800.0	799.3	797.4	795.0	1.7	1.9	-25.09	-25.09	19.1	46.4	30.8	27.4	3.38	9.105	
900.0	898.6	896.5	892.7	2.0	2.2	-20.80	-20.80	20.8	63.0	35.3	31.5	3.85	9.161	
1,000.0	997.5	995.5	989.7	2.3	2.6	-17.40	-17.40	22.7	82.1	40.0	35.6	4.34	9.213	
1,100.0	1,096.1	1,094.3	1,086.1	2.6	3.0	-14.64	-14.64	24.8	103.7	44.7	39.8	4.83	9.251	
1,200.0	1,194.2	1,193.0	1,181.8	3.0	3.5	-12.34	-12.34	27.1	127.7	49.4	44.1	5.33	9.274	
1,300.0	1,291.7	1,291.6	1,276.8	3.4	4.0	-10.37	-10.37	29.7	154.2	54.2	48.3	5.84	9.279	
1,400.0	1,388.6	1,390.0	1,370.8	3.9	4.6	-8.65	-8.65	32.6	183.0	58.9	52.6	6.36	9.267	
1,500.0	1,484.9	1,488.4	1,464.1	4.4	5.2	-7.13	-7.13	35.7	214.2	63.7	56.8	6.89	9.243	
1,600.0	1,580.6	1,588.3	1,558.4	4.9	5.9	-5.83	-5.83	38.9	247.0	68.0	60.6	7.46	9.120	
1,700.0	1,676.4	1,688.2	1,652.7	5.5	6.6	-4.68	-4.68	42.1	279.8	72.4	64.3	8.03	9.006	
1,800.0	1,772.2	1,788.1	1,747.0	6.1	7.3	-3.66	-3.66	45.3	312.6	76.7	68.1	8.61	8.906	
1,900.0	1,868.0	1,888.0	1,841.3	6.7	7.9	-2.76	-2.76	48.6	345.3	81.1	71.9	9.20	8.817	
2,000.0	1,963.8	1,987.9	1,935.6	7.3	8.6	-1.94	-1.94	51.8	378.1	85.5	75.7	9.79	8.736	
2,100.0	2,059.6	2,087.8	2,029.9	7.9	9.3	-1.21	-1.21	55.0	410.9	89.9	79.5	10.38	8.662	
2,200.0	2,155.3	2,187.7	2,124.2	8.4	10.0	-0.54	-0.54	58.2	443.7	94.3	83.4	10.97	8.595	
2,300.0	2,251.1	2,287.6	2,218.6	9.0	10.7	0.07	0.07	61.5	476.5	98.8	87.2	11.57	8.533	
2,400.0	2,346.9	2,387.5	2,312.9	9.6	11.4	0.62	0.62	64.7	509.3	103.2	91.0	12.18	8.475	
2,500.0	2,442.7	2,487.3	2,407.2	10.2	12.1	1.13	1.13	67.9	542.1	107.7	94.9	12.79	8.421	
2,600.0	2,538.5	2,587.2	2,501.5	10.8	12.8	1.60	1.60	71.1	574.9	112.1	98.7	13.40	8.371	
2,700.0	2,634.2	2,687.1	2,595.8	11.4	13.5	2.03	2.03	74.4	607.6	116.6	102.6	14.01	8.323	
2,800.0	2,730.0	2,787.0	2,690.1	12.0	14.1	2.43	2.43	77.6	640.4	121.1	106.5	14.63	8.279	
2,900.0	2,825.8	2,886.9	2,784.4	12.7	14.8	2.80	2.80	80.8	673.2	125.6	110.3	15.24	8.237	
3,000.0	2,921.6	2,986.8	2,878.7	13.3	15.5	3.15	3.15	84.0	706.0	130.1	114.2	15.87	8.197	
3,100.0	3,017.4	3,086.7	2,973.0	13.9	16.2	3.47	3.47	87.3	738.8	134.5	118.1	16.49	8.160	
3,200.0	3,113.1	3,186.6	3,067.3	14.5	16.9	3.77	3.77	90.5	771.6	139.0	121.9	17.11	8.125	
3,300.0	3,208.9	3,286.5	3,161.6	15.1	17.6	4.05	4.05	93.7	804.4	143.5	125.8	17.74	8.091	
3,400.0	3,304.7	3,386.4	3,255.9	15.7	18.3	4.32	4.32	97.0	837.1	148.0	129.7	18.37	8.059	
3,500.0	3,400.5	3,486.3	3,350.2	16.3	19.0	4.57	4.57	100.2	869.9	152.5	133.5	19.00	8.029	
3,600.0	3,496.3	3,586.2	3,444.5	16.9	19.7	4.81	4.81	103.4	902.7	157.1	137.4	19.63	8.000	
3,700.0	3,592.0	3,686.1	3,538.9	17.5	20.4	5.03	5.03	106.6	935.5	161.6	141.3	20.27	7.972	
3,800.0	3,687.8	3,786.0	3,633.2	18.1	21.1	5.24	5.24	109.9	968.3	166.1	145.2	20.90	7.946	
3,900.0	3,783.6	3,885.9	3,727.5	18.7	21.8	5.44	5.44	113.1	1,001.1	170.6	149.1	21.54	7.920	
4,000.0	3,879.4	3,985.8	3,821.8	19.3	22.5	5.63	5.63	116.3	1,033.9	175.1	152.9	22.18	7.896	
4,100.0	3,975.2	4,085.7	3,916.1	19.9	23.2	5.81	5.81	119.5	1,066.7	179.6	156.8	22.82	7.873	
4,200.0	4,071.0	4,185.6	4,010.4	20.5	23.9	5.98	5.98	122.8	1,099.4	184.2	160.7	23.46	7.851	
4,300.0	4,166.7	4,285.5	4,104.7	21.2	24.6	6.14	6.14	126.0	1,132.2	188.7	164.6	24.10	7.830	
4,400.0	4,262.5	4,385.4	4,199.0	21.8	25.3	6.30	6.30	129.2	1,165.0	193.2	168.5	24.74	7.810	
4,500.0	4,358.3	4,485.3	4,293.3	22.4	26.0	6.44	6.44	132.4	1,197.8	197.7	172.3	25.38	7.790	
4,600.0	4,454.1	4,585.2	4,387.6	23.0	26.7	6.58	6.58	135.7	1,230.6	202.3	176.2	26.02	7.772	
4,700.0	4,549.9	4,685.1	4,481.9	23.6	27.4	6.72	6.72	138.9	1,263.4	206.8	180.1	26.67	7.754	
4,800.0	4,645.6	4,785.0	4,576.2	24.2	28.1	6.85	6.85	142.1	1,296.2	211.3	184.0	27.31	7.736	
4,900.0	4,741.4	4,884.9	4,670.5	24.8	28.8	6.97	6.97	145.4	1,328.9	215.8	187.9	27.96	7.719	
5,000.0	4,837.2	4,984.8	4,764.9	25.4	29.5	7.09	7.09	148.6	1,361.7	220.4	191.8	28.61	7.703	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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	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
5,100.0	4,933.0	5,084.7	4,859.2	26.0	30.2	7.21	7.21	151.8	1,394.5	224.9	195.6	29.25	7.688	
5,200.0	5,028.8	5,184.5	4,953.5	26.6	30.9	7.32	7.32	155.0	1,427.3	229.4	199.5	29.90	7.673	
5,300.0	5,124.5	5,284.4	5,047.8	27.3	31.6	7.42	7.42	158.3	1,460.1	234.0	203.4	30.55	7.658	
5,400.0	5,220.3	5,384.3	5,142.1	27.9	32.3	7.52	7.52	161.5	1,492.9	238.5	207.3	31.20	7.644	
5,500.0	5,316.1	5,484.2	5,236.4	28.5	33.0	7.62	7.62	164.7	1,525.7	243.0	211.2	31.85	7.631	
5,600.0	5,411.9	5,584.1	5,330.7	29.1	33.7	7.71	7.71	167.9	1,558.5	247.6	215.1	32.50	7.618	
5,700.0	5,507.7	5,684.0	5,425.0	29.7	34.4	7.80	7.80	171.2	1,591.2	252.1	219.0	33.15	7.605	
5,800.0	5,603.5	5,783.9	5,519.3	30.3	35.1	7.89	7.89	174.4	1,624.0	256.6	222.8	33.80	7.593	
5,900.0	5,699.2	5,883.8	5,613.6	30.9	35.8	7.98	7.98	177.6	1,656.8	261.2	226.7	34.45	7.581	
6,000.0	5,795.0	5,983.7	5,707.9	31.5	36.5	8.06	8.06	180.8	1,689.6	265.7	230.6	35.10	7.570	
6,100.0	5,890.8	6,083.6	5,802.2	32.1	37.2	8.14	8.14	184.1	1,722.4	270.3	234.5	35.75	7.559	
6,200.0	5,986.6	6,183.5	5,896.5	32.7	37.9	8.21	8.21	187.3	1,755.2	274.8	238.4	36.41	7.548	
6,300.0	6,082.4	6,283.4	5,990.8	33.4	38.6	8.28	8.28	190.5	1,788.0	279.3	242.3	37.06	7.537	
6,400.0	6,178.1	6,383.3	6,085.2	34.0	39.3	8.36	8.36	193.7	1,820.8	283.9	246.2	37.71	7.527	
6,500.0	6,273.9	6,483.2	6,179.5	34.6	40.0	8.43	8.43	197.0	1,853.5	288.4	250.1	38.37	7.517	
6,600.0	6,369.7	6,582.4	6,273.2	35.1	40.7	-10.50	-10.50	197.4	1,886.1	292.9	254.0	38.98	7.516	
6,700.0	6,464.7	6,681.4	6,365.9	35.6	41.2	-31.31	-31.31	185.8	1,918.4	297.4	257.9	39.46	7.536	
6,800.0	6,557.2	6,780.6	6,456.7	36.1	41.8	-45.26	-45.26	161.5	1,950.0	301.7	261.9	39.86	7.570	
6,900.0	6,645.8	6,879.9	6,543.8	36.6	42.3	-54.12	-54.12	124.9	1,980.4	305.9	265.7	40.20	7.609	
7,000.0	6,728.8	6,979.5	6,625.9	37.0	42.9	-59.88	-59.88	76.6	2,009.0	309.8	269.2	40.55	7.639	
7,100.0	6,804.8	7,079.2	6,701.4	37.4	43.3	-63.79	-63.79	17.3	2,035.4	313.3	272.3	40.98	7.646	
7,200.0	6,872.7	7,179.1	6,769.2	37.8	43.8	-66.54	-66.54	-52.2	2,059.2	316.5	275.0	41.55	7.618	
7,300.0	6,931.1	7,279.3	6,827.9	38.1	44.2	-68.51	-68.51	-130.5	2,079.8	319.2	276.9	42.34	7.540	
7,400.0	6,979.1	7,379.6	6,876.6	38.5	44.6	-69.94	-69.94	-216.5	2,096.9	321.5	278.1	43.39	7.408	
7,500.0	7,015.8	7,480.2	6,914.2	38.9	45.0	-70.98	-70.98	-308.7	2,110.2	323.2	278.5	44.73	7.225	
7,600.0	7,040.8	7,580.9	6,940.1	39.3	45.4	-71.69	-71.69	-405.6	2,119.4	324.4	278.0	46.35	6.998	
7,700.0	7,053.4	7,681.8	6,953.8	39.7	45.8	-72.13	-72.13	-505.4	2,124.4	325.0	276.7	48.21	6.740	
7,800.0	7,054.6	7,782.5	6,955.8	40.2	46.3	-72.29	-72.29	-606.0	2,125.3	325.0	274.8	50.22	6.471	
7,900.0	7,053.7	7,882.5	6,955.1	40.7	46.7	-72.33	-72.33	-706.0	2,125.3	324.9	272.6	52.34	6.207	
8,000.0	7,052.9	7,982.5	6,954.5	41.4	47.3	-72.38	-72.38	-806.0	2,125.3	324.8	270.2	54.62	5.947	
8,100.0	7,052.0	8,082.5	6,953.9	42.0	47.9	-72.42	-72.42	-905.9	2,125.3	324.8	267.7	57.05	5.692	
8,200.0	7,051.1	8,182.5	6,953.2	42.8	48.5	-72.46	-72.46	-1,005.9	2,125.3	324.7	265.1	59.61	5.446	
8,300.0	7,050.2	8,282.5	6,952.6	43.7	49.3	-72.50	-72.50	-1,105.9	2,125.3	324.6	262.3	62.29	5.211	
8,400.0	7,049.3	8,382.5	6,952.0	44.6	50.1	-72.55	-72.55	-1,205.9	2,125.3	324.5	259.5	65.06	4.988	
8,500.0	7,048.4	8,482.5	6,951.3	45.6	50.9	-72.59	-72.59	-1,305.9	2,125.3	324.5	256.5	67.93	4.777	
8,600.0	7,047.6	8,582.5	6,950.7	46.6	51.8	-72.63	-72.63	-1,405.9	2,125.3	324.4	253.5	70.87	4.577	
8,700.0	7,046.7	8,682.5	6,950.1	47.7	52.8	-72.67	-72.67	-1,505.9	2,125.3	324.3	250.4	73.87	4.390	
8,800.0	7,045.8	8,782.5	6,949.5	48.9	53.9	-72.72	-72.72	-1,605.9	2,125.3	324.2	247.3	76.94	4.214	
8,900.0	7,044.9	8,882.5	6,948.8	50.1	54.9	-72.76	-72.76	-1,705.9	2,125.3	324.2	244.1	80.07	4.048	
9,000.0	7,044.0	8,982.5	6,948.2	51.4	56.1	-72.80	-72.80	-1,805.9	2,125.3	324.1	240.8	83.24	3.893	
9,100.0	7,043.1	9,082.5	6,947.6	52.7	57.2	-72.84	-72.84	-1,905.9	2,125.3	324.0	237.5	86.45	3.748	
9,200.0	7,042.2	9,182.5	6,946.9	54.0	58.5	-72.89	-72.89	-2,005.9	2,125.3	323.9	234.2	89.71	3.611	
9,300.0	7,041.4	9,282.5	6,946.3	55.4	59.7	-72.93	-72.93	-2,105.9	2,125.3	323.9	230.9	92.99	3.483	
9,400.0	7,040.5	9,382.5	6,945.7	56.8	61.0	-72.97	-72.97	-2,205.9	2,125.3	323.8	227.5	96.31	3.362	
9,500.0	7,039.6	9,482.5	6,945.0	58.3	62.4	-73.01	-73.01	-2,305.9	2,125.3	323.7	224.0	99.66	3.248	
9,600.0	7,038.7	9,582.5	6,944.4	59.7	63.7	-73.06	-73.06	-2,405.9	2,125.3	323.6	220.6	103.03	3.141	
9,700.0	7,037.8	9,682.5	6,943.8	61.2	65.1	-73.10	-73.10	-2,505.9	2,125.3	323.6	217.1	106.43	3.040	
9,800.0	7,036.9	9,782.5	6,943.1	62.8	66.6	-73.14	-73.14	-2,605.9	2,125.3	323.5	213.6	109.85	2.945	
9,900.0	7,036.1	9,882.5	6,942.5	64.3	68.0	-73.19	-73.19	-2,705.9	2,125.3	323.4	210.1	113.28	2.855	
10,000.0	7,035.2	9,982.5	6,941.9	65.9	69.5	-73.23	-73.23	-2,805.9	2,125.3	323.3	206.6	116.74	2.770	
10,100.0	7,034.3	10,082.5	6,941.2	67.5	71.0	-73.27	-73.27	-2,905.9	2,125.3	323.3	203.1	120.21	2.689	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)					
10,200.0	7,033.4	10,182.5	6,940.6	69.1	72.5	-73.31	-3,005.9	2,125.3	323.2	199.5	123.70	2.613	
10,300.0	7,032.5	10,282.5	6,940.0	70.7	74.0	-73.36	-3,105.9	2,125.3	323.1	195.9	127.20	2.540	
10,400.0	7,031.6	10,382.5	6,939.3	72.3	75.6	-73.40	-3,205.9	2,125.3	323.0	192.3	130.71	2.471	
10,500.0	7,030.7	10,482.5	6,938.7	74.0	77.2	-73.44	-3,305.9	2,125.3	323.0	188.7	134.24	2.406	
10,600.0	7,029.9	10,582.5	6,938.1	75.6	78.8	-73.49	-3,405.9	2,125.3	322.9	185.1	137.77	2.344	
10,700.0	7,029.0	10,682.5	6,937.4	77.3	80.4	-73.53	-3,505.9	2,125.3	322.8	181.5	141.32	2.284	
10,800.0	7,028.1	10,782.5	6,936.8	79.0	82.0	-73.57	-3,605.9	2,125.3	322.8	177.9	144.88	2.228	
10,900.0	7,027.2	10,882.5	6,936.2	80.7	83.6	-73.61	-3,705.9	2,125.3	322.7	174.2	148.45	2.174	
11,000.0	7,026.3	10,982.5	6,935.5	82.4	85.3	-73.66	-3,805.9	2,125.3	322.6	170.6	152.02	2.122	
11,100.0	7,025.4	11,082.5	6,934.9	84.1	87.0	-73.70	-3,905.9	2,125.3	322.5	166.9	155.61	2.073	
11,200.0	7,024.6	11,182.5	6,934.3	85.9	88.6	-73.74	-4,005.9	2,125.3	322.5	163.3	159.20	2.026	
11,300.0	7,023.7	11,282.5	6,933.6	87.6	90.3	-73.79	-4,105.9	2,125.3	322.4	159.6	162.80	1.980	
11,400.0	7,022.8	11,382.5	6,933.0	89.4	92.0	-73.83	-4,205.9	2,125.3	322.3	155.9	166.40	1.937	
11,500.0	7,021.9	11,482.5	6,932.4	91.1	93.7	-73.87	-4,305.9	2,125.3	322.3	152.3	170.02	1.896	
11,600.0	7,021.0	11,582.5	6,931.8	92.9	95.4	-73.92	-4,405.9	2,125.3	322.2	148.6	173.63	1.856	
11,700.0	7,020.1	11,682.5	6,931.1	94.6	97.1	-73.96	-4,505.9	2,125.3	322.1	144.9	177.26	1.817	
11,714.5	7,020.0	11,697.0	6,931.0	94.9	97.4	-73.97	-4,520.4	2,125.3	322.1	144.3	177.79	1.812 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-2 (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		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
3,500.0	3,400.5	3,393.9	3,393.3	16.3	8.8	39.50	-406.2	1,566.1	977.7	956.8	20.90	46.791		
3,600.0	3,496.3	3,485.1	3,484.4	16.9	9.0	40.65	-407.2	1,564.0	954.0	932.2	21.73	43.908		
3,700.0	3,592.0	3,585.2	3,584.5	17.5	9.3	41.96	-408.2	1,561.8	930.6	908.0	22.62	41.148		
3,800.0	3,687.8	3,677.9	3,677.2	18.1	9.5	43.25	-409.1	1,559.4	907.5	884.0	23.50	38.618		
3,900.0	3,783.6	3,769.4	3,768.6	18.7	9.7	44.57	-410.1	1,557.4	885.2	860.8	24.39	36.291		
4,000.0	3,879.4	3,866.3	3,865.5	19.3	10.0	46.07	-411.7	1,555.2	863.7	838.4	25.34	34.089		
4,100.0	3,975.2	3,961.8	3,961.0	19.9	10.2	47.60	-412.7	1,553.0	842.5	816.2	26.30	32.034		
4,200.0	4,071.0	4,052.9	4,052.1	20.5	10.5	49.07	-413.4	1,551.4	822.1	794.8	27.25	30.164		
4,300.0	4,166.7	4,149.6	4,148.7	21.2	10.7	50.72	-414.5	1,550.1	802.8	774.5	28.26	28.411		
4,400.0	4,262.5	4,247.6	4,246.7	21.8	11.0	52.44	-414.8	1,548.5	783.5	754.2	29.29	26.750		
4,500.0	4,358.3	4,341.3	4,340.4	22.4	11.2	54.12	-414.8	1,547.5	765.1	734.7	30.32	25.234		
4,600.0	4,454.1	4,438.9	4,438.1	23.0	11.5	55.98	-415.2	1,546.1	747.4	716.0	31.40	23.804		
4,700.0	4,549.9	4,539.9	4,539.0	23.6	11.7	58.01	-415.2	1,544.1	730.0	697.4	32.51	22.454		
4,800.0	4,645.6	4,636.2	4,635.3	24.2	11.9	59.99	-414.3	1,542.3	712.7	679.1	33.59	21.219		
4,900.0	4,741.4	4,727.2	4,726.3	24.8	12.2	61.91	-413.7	1,541.1	696.9	662.3	34.64	20.118		
5,000.0	4,837.2	4,823.5	4,822.6	25.4	12.4	64.04	-413.1	1,539.9	682.2	646.5	35.74	19.090		
5,100.0	4,933.0	4,919.0	4,918.1	26.0	12.6	66.19	-412.2	1,539.1	668.4	631.6	36.80	18.161		
5,200.0	5,028.8	5,013.3	5,012.3	26.6	12.8	68.41	-411.6	1,538.2	655.8	617.9	37.87	17.315		
5,300.0	5,124.5	5,111.6	5,110.6	27.3	13.0	70.81	-410.8	1,537.1	644.1	605.1	38.99	16.521		
5,400.0	5,220.3	5,201.6	5,200.6	27.9	13.2	73.08	-410.3	1,536.2	633.8	593.8	40.05	15.826		
5,500.0	5,316.1	5,300.0	5,299.0	28.5	13.5	75.62	-409.8	1,535.2	624.9	583.8	41.15	15.186		
5,600.0	5,411.9	5,391.8	5,390.8	29.1	13.7	78.04	-409.3	1,534.6	617.3	575.1	42.19	14.633		
5,700.0	5,507.7	5,489.5	5,488.5	29.7	13.9	80.65	-409.0	1,534.1	611.3	568.1	43.22	14.144		
5,800.0	5,603.5	5,585.9	5,584.9	30.3	14.1	83.24	-408.4	1,533.9	606.4	562.3	44.15	13.736		
5,900.0	5,699.2	5,678.2	5,677.2	30.9	14.1	85.73	-407.9	1,533.9	603.0	558.1	44.94	13.419		
6,000.0	5,795.0	5,772.9	5,771.9	31.5	14.1	88.30	-407.9	1,534.1	601.5	555.8	45.64	13.178		
6,062.7	5,855.1	5,832.8	5,831.8	31.9	14.2	89.92	-407.9	1,534.3	601.2	555.1	46.09	13.045		
6,100.0	5,890.8	5,868.3	5,867.3	32.1	14.2	90.89	-407.9	1,534.4	601.3	554.9	46.36	12.970		
6,200.0	5,986.6	5,962.8	5,961.8	32.7	14.3	93.47	-408.1	1,534.4	602.6	555.5	47.07	12.802		
6,300.0	6,082.4	6,060.8	6,059.8	33.4	14.5	96.13	-408.3	1,534.5	605.3	557.6	47.75	12.678		
6,400.0	6,178.1	6,155.5	6,154.5	34.0	14.7	98.72	-408.1	1,534.0	609.1	560.7	48.40	12.584		
6,500.0	6,273.9	6,251.2	6,250.2	34.6	14.8	101.27	-408.4	1,533.9	614.5	565.6	48.97	12.550		
6,600.0	6,369.7	6,348.4	6,347.4	35.1	14.9	84.78	-408.3	1,533.9	617.1	567.9	49.28	12.523		
6,700.0	6,464.7	6,443.2	6,442.2	35.6	15.1	66.69	-408.2	1,533.3	608.6	559.7	48.89	12.449		
6,800.0	6,557.2	6,535.2	6,534.2	36.1	15.3	55.97	-407.9	1,532.8	588.8	541.0	47.79	12.321		
6,900.0	6,645.8	6,620.9	6,619.9	36.6	15.5	51.01	-408.1	1,532.5	559.0	513.0	46.00	12.152		
7,000.0	6,728.8	6,703.4	6,702.4	37.0	15.7	50.37	-408.5	1,532.2	520.3	476.6	43.70	11.905		
7,100.0	6,804.8	6,780.5	6,779.5	37.4	15.8	53.24	-408.9	1,532.0	474.0	432.9	41.18	11.511		
7,200.0	6,872.7	6,847.4	6,846.4	37.8	16.0	59.01	-409.3	1,531.9	422.8	383.9	38.96	10.853		
7,300.0	6,931.1	6,905.0	6,904.0	38.1	16.1	67.21	-409.7	1,531.5	370.8	333.2	37.62	9.857		
7,400.0	6,979.1	6,955.6	6,954.6	38.5	16.2	76.99	-409.9	1,531.2	323.4	286.0	37.42	8.643		
7,500.0	7,015.8	6,993.5	6,992.5	38.9	16.2	85.45	-409.9	1,531.1	289.7	251.8	37.90	7.642		
7,583.2	7,037.4	7,014.9	7,013.9	39.2	16.3	89.89	-409.8	1,531.0	279.6	241.2	38.43	7.276 CC, ES		
7,600.0	7,040.8	7,018.2	7,017.2	39.3	16.3	90.44	-409.8	1,531.0	280.0	241.5	38.52	7.269 SF		
7,700.0	7,053.4	7,030.5	7,029.5	39.7	16.3	91.16	-409.8	1,531.0	300.1	261.1	39.05	7.685		
7,800.0	7,054.6	7,031.5	7,030.5	40.2	16.3	89.42	-409.8	1,531.0	346.1	306.5	39.58	8.744		
7,900.0	7,053.7	7,030.3	7,029.3	40.7	16.3	89.18	-409.8	1,531.0	411.3	370.7	40.63	10.124		
8,000.0	7,052.9	7,029.1	7,028.1	41.4	16.3	88.94	-409.8	1,531.0	488.4	446.6	41.77	11.693		
8,100.0	7,052.0	7,027.9	7,026.9	42.0	16.3	88.70	-409.8	1,531.0	572.6	529.6	42.99	13.319		
8,200.0	7,051.1	7,026.7	7,025.7	42.8	16.3	88.45	-409.8	1,531.0	661.2	616.9	44.29	14.930		
8,300.0	7,050.2	7,025.5	7,024.5	43.7	16.3	88.21	-409.8	1,531.0	752.7	707.1	45.65	16.489		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design												Lajco Pad Sec.17-T4N-R67W - Coming 17-2 (Exist) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft	
Survey Program: 100-NS-GYRO-MS														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
8,400.0	7,049.3	7,024.2	7,023.2	44.6	16.3	87.95	-409.8	1,531.0	846.1	799.0	47.07	17.977					
8,500.0	7,048.4	7,022.9	7,021.9	45.6	16.3	87.70	-409.8	1,531.0	940.9	892.3	48.53	19.388					

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Coming 17-3 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 100-NS-GYRO-MS												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
8,000.0	7,052.9	7,051.4	7,050.6	41.4	15.4	91.34	-1,643.5	1,425.4	923.4	882.4	41.07	22.483	
8,100.0	7,052.0	7,049.7	7,048.8	42.0	15.4	91.08	-1,643.5	1,425.4	833.9	791.6	42.30	19.712	
8,200.0	7,051.1	7,047.9	7,047.1	42.8	15.3	90.83	-1,643.5	1,425.4	747.0	703.4	43.61	17.130	
8,300.0	7,050.2	7,046.2	7,045.4	43.7	15.3	90.58	-1,643.5	1,425.4	663.8	618.8	44.97	14.759	
8,400.0	7,049.3	7,044.5	7,043.7	44.6	15.3	90.33	-1,643.5	1,425.4	585.8	539.4	46.40	12.627	
8,500.0	7,048.4	7,042.8	7,042.0	45.6	15.3	90.08	-1,643.5	1,425.5	515.6	467.7	47.87	10.771	
8,600.0	7,047.6	7,041.2	7,040.4	46.6	15.3	89.84	-1,643.5	1,425.5	456.5	407.1	49.38	9.245	
8,700.0	7,046.7	7,039.5	7,038.7	47.7	15.3	89.60	-1,643.5	1,425.5	413.5	362.6	50.93	8.120	
8,800.0	7,045.8	7,037.9	7,037.1	48.9	15.3	89.36	-1,643.6	1,425.5	391.9	339.4	52.51	7.464	
8,837.1	7,045.5	7,037.3	7,036.5	49.3	15.3	89.27	-1,643.6	1,425.5	390.2	337.1	53.10	7.347 CC, ES	
8,900.0	7,044.9	7,036.3	7,035.5	50.1	15.3	89.12	-1,643.6	1,425.5	395.2	341.1	54.12	7.303 SF	
9,000.0	7,044.0	7,034.7	7,033.9	51.4	15.3	88.88	-1,643.6	1,425.6	422.8	367.1	55.75	7.584	
9,100.0	7,043.1	7,033.1	7,032.3	52.7	15.3	88.65	-1,643.6	1,425.6	470.5	413.1	57.40	8.196	
9,200.0	7,042.2	7,031.5	7,030.7	54.0	15.3	88.42	-1,643.6	1,425.6	532.8	473.8	59.07	9.020	
9,300.0	7,041.4	7,030.0	7,029.2	55.4	15.3	88.19	-1,643.6	1,425.6	605.4	544.6	60.76	9.963	
9,400.0	7,040.5	7,028.4	7,027.6	56.8	15.3	87.97	-1,643.6	1,425.7	684.9	622.4	62.46	10.964	
9,500.0	7,039.6	7,026.9	7,026.1	58.3	15.3	87.75	-1,643.6	1,425.7	769.2	705.0	64.18	11.985	
9,600.0	7,038.7	7,025.4	7,024.6	59.7	15.3	87.52	-1,643.6	1,425.7	856.8	790.9	65.91	13.001	
9,700.0	7,037.8	7,023.9	7,023.1	61.2	15.3	87.31	-1,643.6	1,425.7	947.0	879.3	67.64	13.999	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Lajco 17RD (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 735-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
2,500.0	2,442.7	2,796.4	2,726.3	10.2	9.6	63.70	-653.3	1,025.4	963.7	947.5	16.14	59.723	
2,600.0	2,538.5	2,898.1	2,821.3	10.8	10.3	64.27	-617.4	1,021.0	919.9	902.8	17.06	53.908	
2,700.0	2,634.2	2,984.1	2,901.8	11.4	10.8	64.89	-587.5	1,016.2	875.9	857.9	17.92	48.883	
2,800.0	2,730.0	3,078.1	2,989.9	12.0	11.4	65.65	-554.8	1,010.6	831.8	813.0	18.80	44.256	
2,900.0	2,825.8	3,160.4	3,066.8	12.7	12.0	66.34	-525.9	1,006.4	788.0	768.4	19.64	40.126	
3,000.0	2,921.6	3,237.3	3,138.9	13.3	12.4	66.99	-499.3	1,003.7	745.5	725.1	20.47	36.428	
3,100.0	3,017.4	3,327.5	3,223.6	13.9	13.0	67.77	-468.5	1,001.6	704.2	682.8	21.34	32.995	
3,200.0	3,113.1	3,416.8	3,307.7	14.5	13.5	68.75	-438.5	998.4	662.7	640.5	22.21	29.841	
3,300.0	3,208.9	3,500.7	3,386.9	15.1	14.0	69.83	-410.9	995.3	622.0	599.0	23.05	26.986	
3,400.0	3,304.7	3,589.2	3,470.6	15.7	14.6	71.05	-382.3	993.0	582.5	558.6	23.91	24.363	
3,500.0	3,400.5	3,685.6	3,561.4	16.3	15.2	72.44	-350.2	991.4	542.9	518.1	24.81	21.885	
3,600.0	3,496.3	3,781.6	3,651.5	16.9	15.8	73.93	-316.8	990.0	502.5	476.8	25.71	19.543	
3,700.0	3,592.0	3,873.9	3,737.8	17.5	16.4	75.67	-284.5	988.1	461.8	435.2	26.59	17.363	
3,800.0	3,687.8	3,961.5	3,819.9	18.1	17.0	77.66	-253.7	986.2	421.5	394.0	27.45	15.353	
3,900.0	3,783.6	4,047.2	3,900.5	18.7	17.5	80.16	-225.0	983.5	382.8	354.5	28.28	13.533	
4,000.0	3,879.4	4,136.2	3,984.8	19.3	18.0	83.43	-196.4	980.4	346.0	316.9	29.13	11.878	
4,100.0	3,975.2	4,230.2	4,073.5	19.9	18.6	87.43	-165.3	978.0	310.0	280.0	30.01	10.329	
4,200.0	4,071.0	4,323.9	4,161.5	20.5	19.2	92.54	-133.6	974.9	274.8	243.8	30.95	8.877	
4,300.0	4,166.7	4,416.6	4,248.4	21.2	19.8	99.08	-101.2	971.2	240.9	208.9	32.00	7.528	
4,400.0	4,262.5	4,505.6	4,331.5	21.8	20.4	107.04	-69.6	967.7	210.2	177.1	33.18	6.336	
4,500.0	4,358.3	4,592.3	4,413.0	22.4	20.9	116.50	-40.2	965.1	186.5	152.0	34.42	5.417	
4,600.0	4,454.1	4,681.9	4,497.5	23.0	21.5	128.15	-10.6	962.0	171.1	135.6	35.54	4.814	
4,697.2	4,547.2	4,769.2	4,580.0	23.6	22.0	140.59	17.7	959.0	165.9	129.7	36.18	4.585 CC	
4,700.0	4,549.9	4,771.7	4,582.4	23.6	22.0	140.95	18.5	958.9	165.9	129.7	36.19	4.584 ES, SF	
4,800.0	4,645.6	4,860.6	4,666.7	24.2	22.5	153.47	46.6	955.6	171.9	135.6	36.31	4.733	
4,900.0	4,741.4	4,950.2	4,752.4	24.8	23.0	164.22	72.6	952.5	187.9	151.6	36.29	5.178	
5,000.0	4,837.2	5,041.2	4,840.4	25.4	23.5	172.41	95.6	949.8	210.8	174.3	36.49	5.776	
5,100.0	4,933.0	5,134.4	4,931.2	26.0	23.9	178.48	116.4	947.5	237.4	200.5	36.95	6.425	
5,200.0	5,028.8	5,228.0	5,022.8	26.6	24.2	-177.02	135.5	945.3	266.1	228.6	37.57	7.083	
5,300.0	5,124.5	5,323.5	5,116.9	27.3	24.6	-173.93	152.0	943.4	295.8	257.6	38.24	7.736	
5,400.0	5,220.3	5,419.5	5,211.9	27.9	24.9	-172.05	165.1	942.0	325.6	286.7	38.87	8.376	
5,500.0	5,316.1	5,515.1	5,306.9	28.5	25.1	-170.97	175.3	940.8	355.4	315.9	39.45	9.008	
5,600.0	5,411.9	5,611.4	5,403.0	29.1	25.3	-170.40	183.3	939.7	385.2	345.2	39.99	9.631	
5,700.0	5,507.7	5,711.3	5,502.7	29.7	25.5	-170.40	188.1	939.1	414.2	373.8	40.46	10.238	
5,800.0	5,603.5	5,809.8	5,601.1	30.3	25.6	-170.94	188.8	939.3	442.4	401.6	40.85	10.831	
5,900.0	5,699.2	5,903.7	5,695.1	30.9	25.7	-171.57	188.1	939.4	470.7	429.5	41.20	11.424	
6,000.0	5,795.0	5,999.3	5,790.7	31.5	25.7	-172.17	187.1	939.4	499.2	457.7	41.56	12.011	
6,100.0	5,890.8	6,094.4	5,885.7	32.1	25.8	-172.67	186.4	939.3	527.9	485.9	41.93	12.590	
6,200.0	5,986.6	6,189.6	5,981.0	32.7	25.9	-173.10	185.9	939.0	556.6	514.3	42.30	13.160	
6,300.0	6,082.4	6,284.5	6,075.8	33.4	26.0	-173.49	185.4	938.7	585.5	542.8	42.67	13.721	
6,400.0	6,178.1	6,378.6	6,170.0	34.0	26.1	-173.82	185.1	938.2	614.7	571.6	43.05	14.276	
6,500.0	6,273.9	6,473.7	6,265.1	34.6	26.2	-174.11	184.9	937.5	643.9	600.5	43.44	14.823	
6,600.0	6,369.7	6,569.1	6,360.5	35.1	26.3	-165.14	184.4	936.8	673.2	629.4	43.80	15.371	
6,700.0	6,464.7	6,664.7	6,456.1	35.6	26.3	143.09	183.8	936.1	701.9	657.7	44.20	15.880	
6,800.0	6,557.2	6,756.6	6,548.0	36.1	26.4	128.81	182.9	935.5	730.3	685.7	44.59	16.379	
6,900.0	6,645.8	6,846.5	6,637.9	36.6	26.5	120.36	182.1	934.9	759.1	714.2	44.93	16.896	
7,000.0	6,728.8	6,932.0	6,723.4	37.0	26.6	115.44	181.5	934.5	789.2	743.9	45.23	17.449	
7,100.0	6,804.8	7,008.8	6,800.1	37.4	26.7	112.35	181.1	934.4	821.8	776.3	45.52	18.052	
7,200.0	6,872.7	7,074.4	6,865.7	37.8	26.7	109.97	181.0	934.2	858.4	812.5	45.91	18.700	
7,300.0	6,931.1	7,132.2	6,923.6	38.1	26.8	107.81	180.9	933.9	900.0	853.6	46.44	19.379	
7,400.0	6,979.1	7,180.4	6,971.8	38.5	26.8	105.32	180.9	933.7	946.9	899.7	47.21	20.059	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

Offset Design Lajco Pad Sec.17-T4N-R67W - Lajco 17RD (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 735-MWD												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,500.0	7,015.8	7,218.1	7,009.5	38.9	26.9	102.16	180.9	933.6	999.3	951.1	48.17	20.746	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	Offset Datum

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

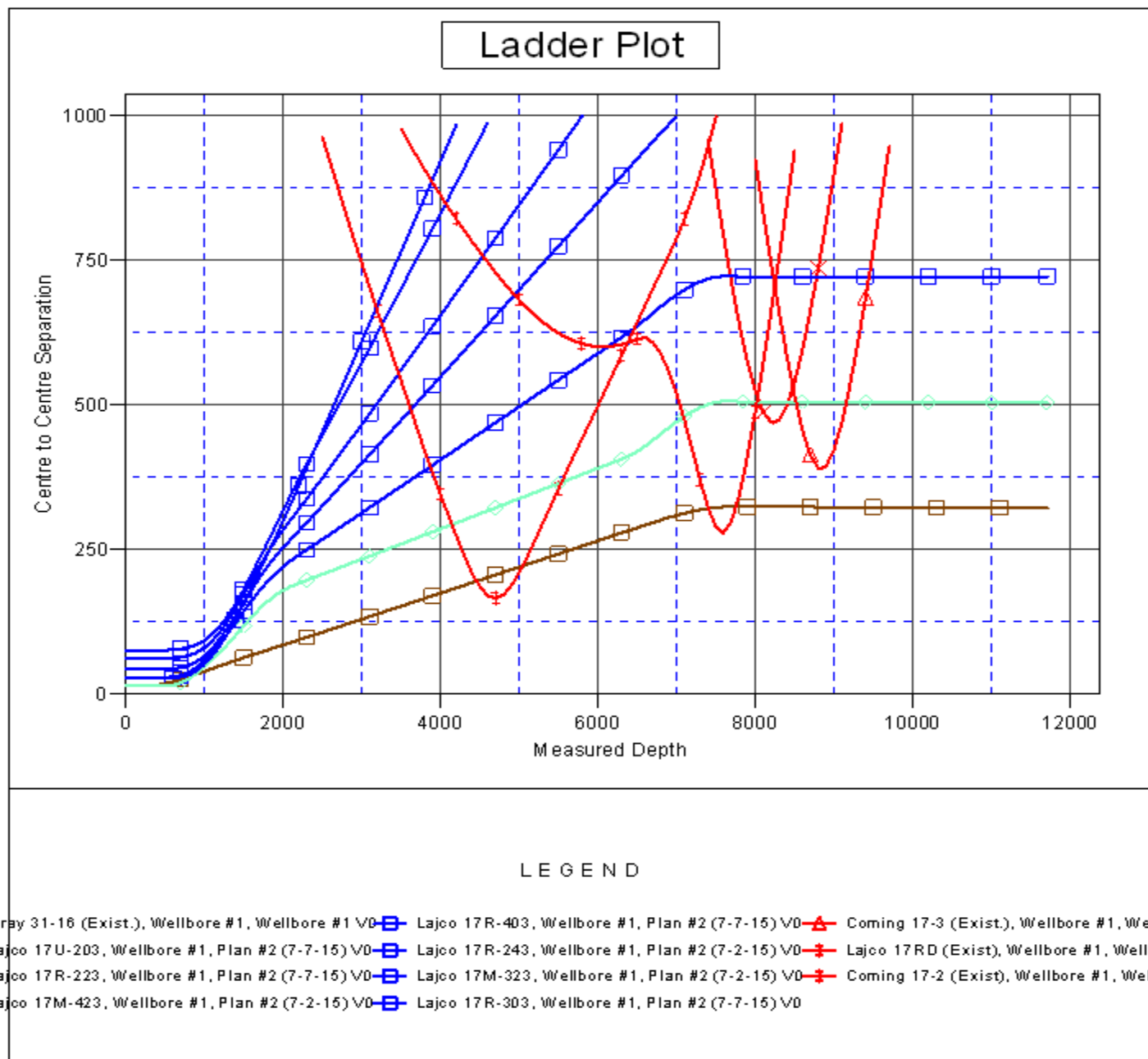
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Lajco 17U-343

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.38°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Lajco 17U-343
Project:	SEC.17-T4N-R67W	TVD Reference:	WELL @ 4807.0ft (RKB - 13')
Reference Site:	Lajco 4N67W17R Pad Sec.17-T4N-R67W	MD Reference:	WELL @ 4807.0ft (RKB - 13')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lajco 17U-343	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM 2003.21 Single User Db
Reference Design:	Plan #2 (7-7-15)	Offset TVD Reference:	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 17U-343
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.38°

