

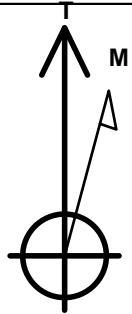
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Stroh 13G-203**

Surface Location: Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4806.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1356827.54 3183166.78 40.311030 -104.843190
 Original Well Elev WELL @ 4821.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 2352'FSL & 1526'FWL, Sec.13	1.0	0.0	0.0	Point
BHL 500'FSL & 75'FWL, Sec.24	7028.0	-7114.8	-1433.9	Point



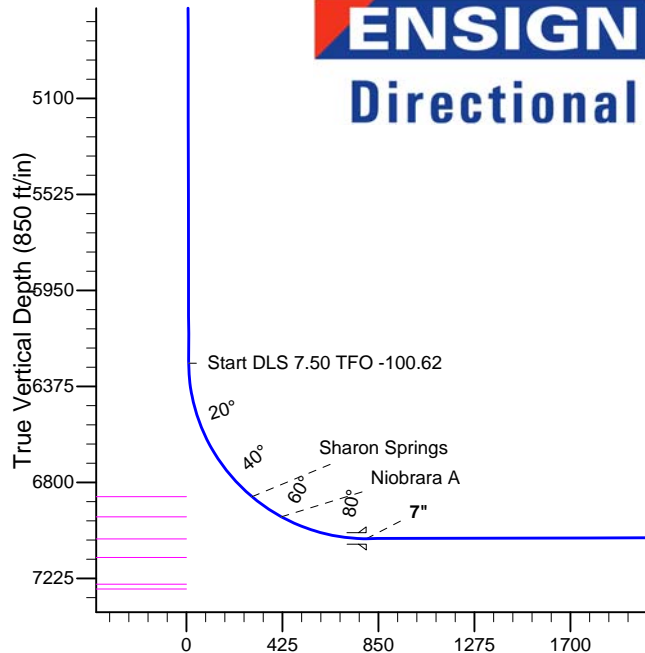
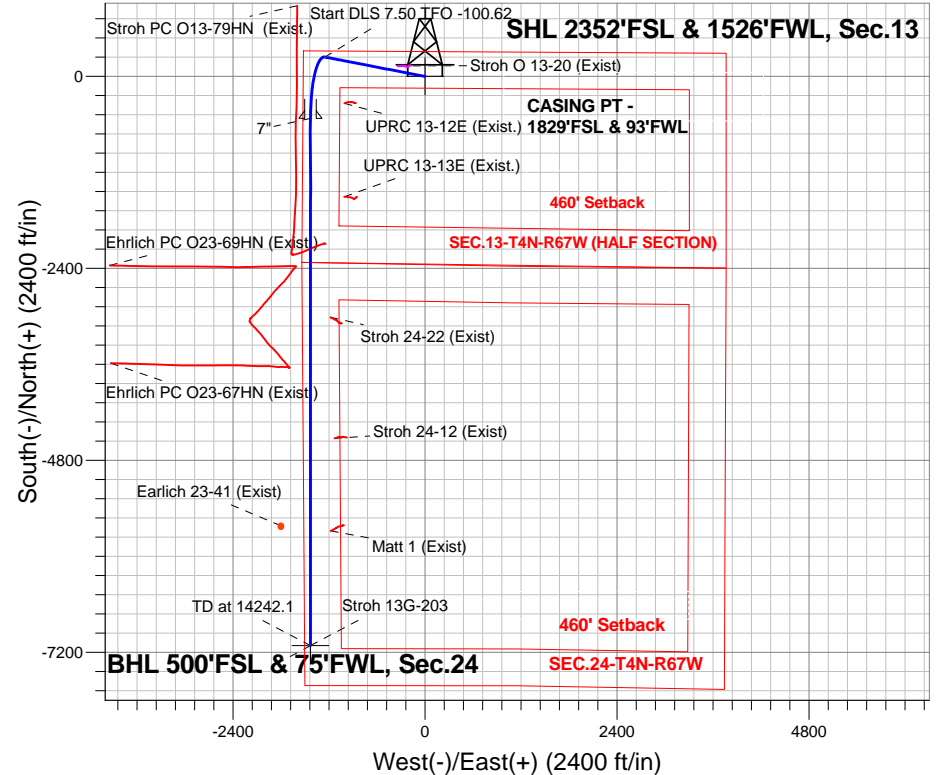
Azimuths to True North
 Magnetic North: 8.42°

Magnetic Field
 Strength: 52703.2nT
 Dip Angle: 66.84°
 Date: 12/31/2014
 Model: IGRF2010

Stroh 13GK-HZ Pad Sec. 13-T4N-R67W
 Stroh 13G-203
 Plan #2 (1-27-15)

ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.00
6272.2	6414.8	Start DLS 7.50 TFO -100.62
7028.0	14242.1	TD at 14242.1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1528.4	13.28	280.94	1516.6	29.1	-150.5	1.00	280.94	1.2	
4	6414.8	13.28	280.94	6272.2	242.3	-1252.9	0.00	0.00	10.0	
5	7650.5	90.18	180.00	7048.7	-523.3	-1433.5	7.50	-100.62	796.1	
6	14242.1	90.18	180.00	7028.0	-7114.9	-1433.5	0.00	0.00	7257.9	BHL 500'FSL & 75'FWL, Sec.24

BHL 500'FSL & 75'FWL, Sec.24

TD at 14242.1

Vertical Section at 191.39° (850 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.13-T4N-R67W

Stroh 13GK-HZ Pad Sec. 13-T4N-R67W

Stroh 13G-203

Wellbore #1

Plan: Plan #2 (1-27-15)

Standard Planning Report

30 January, 2015

Database:	landmark	Local Co-ordinate Reference:	Well Stroh 13G-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Project:	SEC.13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	North Reference:	True
Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-27-15)		

Project	SEC.13-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	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W		
Site Position:		Northing:	1,356,827.56 ft
From:	Lat/Long	Easting:	3,183,166.78 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.311030
		Longitude:	-104.843190
		Grid Convergence:	0.42 °

Well	Stroh 13G-203		
Well Position	+N/-S	0.0 ft	Northing: 1,356,827.54 ft
	+E/-W	0.0 ft	Easting: 3,183,166.78 ft
Position Uncertainty		0.0 ft	Wellhead Elevation: ft
			Latitude: 40.311030
			Longitude: -104.843190
			Ground Level: 4,806.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/31/2014	8.42	66.84	52,703

Design	Plan #2 (1-27-15)			
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	191.39

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,528.4	13.28	280.94	1,516.6	29.1	-150.5	1.00	1.00	0.00	280.94	
6,414.8	13.28	280.94	6,272.2	242.3	-1,252.9	0.00	0.00	0.00	0.00	
7,650.5	90.18	180.00	7,048.7	-523.3	-1,433.5	7.50	6.22	-8.17	-100.62	
14,242.1	90.18	180.00	7,028.0	-7,114.9	-1,433.5	0.00	0.00	0.00	0.00	BHL 500'FSL & 75'I

Database:	landmark	Local Co-ordinate Reference:	Well Stroh 13G-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Project:	SEC.13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	North Reference:	True
Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-27-15)		

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
KOP - Start Build 1.00									
300.0	1.00	280.94	300.0	0.2	-0.9	0.0	1.00	1.00	0.00
400.0	2.00	280.94	400.0	0.7	-3.4	0.0	1.00	1.00	0.00
500.0	3.00	280.94	499.9	1.5	-7.7	0.1	1.00	1.00	0.00
600.0	4.00	280.94	599.7	2.6	-13.7	0.1	1.00	1.00	0.00
700.0	5.00	280.94	699.4	4.1	-21.4	0.2	1.00	1.00	0.00
800.0	6.00	280.94	798.9	6.0	-30.8	0.2	1.00	1.00	0.00
900.0	7.00	280.94	898.3	8.1	-41.9	0.3	1.00	1.00	0.00
1,000.0	8.00	280.94	997.4	10.6	-54.7	0.4	1.00	1.00	0.00
1,100.0	9.00	280.94	1,096.3	13.4	-69.3	0.6	1.00	1.00	0.00
1,200.0	10.00	280.94	1,194.9	16.5	-85.5	0.7	1.00	1.00	0.00
1,300.0	11.00	280.94	1,293.3	20.0	-103.4	0.8	1.00	1.00	0.00
1,400.0	12.00	280.94	1,391.2	23.8	-122.9	1.0	1.00	1.00	0.00
1,500.0	13.00	280.94	1,488.9	27.9	-144.2	1.1	1.00	1.00	0.00
1,528.4	13.28	280.94	1,516.6	29.1	-150.5	1.2	1.00	1.00	0.00
1,600.0	13.28	280.94	1,586.2	32.2	-166.7	1.3	0.00	0.00	0.00
1,700.0	13.28	280.94	1,683.5	36.6	-189.2	1.5	0.00	0.00	0.00
1,800.0	13.28	280.94	1,780.9	41.0	-211.8	1.7	0.00	0.00	0.00
1,900.0	13.28	280.94	1,878.2	45.3	-234.4	1.9	0.00	0.00	0.00
2,000.0	13.28	280.94	1,975.5	49.7	-256.9	2.0	0.00	0.00	0.00
2,100.0	13.28	280.94	2,072.8	54.0	-279.5	2.2	0.00	0.00	0.00
2,200.0	13.28	280.94	2,170.2	58.4	-302.0	2.4	0.00	0.00	0.00
2,300.0	13.28	280.94	2,267.5	62.8	-324.6	2.6	0.00	0.00	0.00
2,400.0	13.28	280.94	2,364.8	67.1	-347.2	2.8	0.00	0.00	0.00
2,500.0	13.28	280.94	2,462.1	71.5	-369.7	2.9	0.00	0.00	0.00
2,600.0	13.28	280.94	2,559.5	75.8	-392.3	3.1	0.00	0.00	0.00
2,700.0	13.28	280.94	2,656.8	80.2	-414.8	3.3	0.00	0.00	0.00
2,800.0	13.28	280.94	2,754.1	84.6	-437.4	3.5	0.00	0.00	0.00
2,900.0	13.28	280.94	2,851.4	88.9	-460.0	3.7	0.00	0.00	0.00
3,000.0	13.28	280.94	2,948.8	93.3	-482.5	3.8	0.00	0.00	0.00
3,100.0	13.28	280.94	3,046.1	97.7	-505.1	4.0	0.00	0.00	0.00
3,200.0	13.28	280.94	3,143.4	102.0	-527.6	4.2	0.00	0.00	0.00
3,300.0	13.28	280.94	3,240.7	106.4	-550.2	4.4	0.00	0.00	0.00
3,400.0	13.28	280.94	3,338.1	110.7	-572.8	4.6	0.00	0.00	0.00
3,500.0	13.28	280.94	3,435.4	115.1	-595.3	4.7	0.00	0.00	0.00
3,600.0	13.28	280.94	3,532.7	119.5	-617.9	4.9	0.00	0.00	0.00
3,700.0	13.28	280.94	3,630.0	123.8	-640.4	5.1	0.00	0.00	0.00
3,800.0	13.28	280.94	3,727.3	128.2	-663.0	5.3	0.00	0.00	0.00
3,900.0	13.28	280.94	3,824.7	132.6	-685.6	5.5	0.00	0.00	0.00
4,000.0	13.28	280.94	3,922.0	136.9	-708.1	5.6	0.00	0.00	0.00
4,100.0	13.28	280.94	4,019.3	141.3	-730.7	5.8	0.00	0.00	0.00
4,200.0	13.28	280.94	4,116.6	145.6	-753.2	6.0	0.00	0.00	0.00
4,300.0	13.28	280.94	4,214.0	150.0	-775.8	6.2	0.00	0.00	0.00
4,400.0	13.28	280.94	4,311.3	154.4	-798.4	6.4	0.00	0.00	0.00
4,500.0	13.28	280.94	4,408.6	158.7	-820.9	6.5	0.00	0.00	0.00
4,600.0	13.28	280.94	4,505.9	163.1	-843.5	6.7	0.00	0.00	0.00
4,700.0	13.28	280.94	4,603.3	167.5	-866.0	6.9	0.00	0.00	0.00
4,800.0	13.28	280.94	4,700.6	171.8	-888.6	7.1	0.00	0.00	0.00
4,900.0	13.28	280.94	4,797.9	176.2	-911.2	7.3	0.00	0.00	0.00
5,000.0	13.28	280.94	4,895.2	180.5	-933.7	7.4	0.00	0.00	0.00

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Project:	SEC.13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	North Reference:	True
Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-27-15)		

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)
5,100.0	13.28	280.94	4,992.6	184.9	-956.3	7.6	0.00	0.00	0.00
5,200.0	13.28	280.94	5,089.9	189.3	-978.8	7.8	0.00	0.00	0.00
5,300.0	13.28	280.94	5,187.2	193.6	-1,001.4	8.0	0.00	0.00	0.00
5,400.0	13.28	280.94	5,284.5	198.0	-1,024.0	8.2	0.00	0.00	0.00
5,500.0	13.28	280.94	5,381.9	202.4	-1,046.5	8.3	0.00	0.00	0.00
5,600.0	13.28	280.94	5,479.2	206.7	-1,069.1	8.5	0.00	0.00	0.00
5,700.0	13.28	280.94	5,576.5	211.1	-1,091.7	8.7	0.00	0.00	0.00
5,800.0	13.28	280.94	5,673.8	215.4	-1,114.2	8.9	0.00	0.00	0.00
5,900.0	13.28	280.94	5,771.2	219.8	-1,136.8	9.1	0.00	0.00	0.00
6,000.0	13.28	280.94	5,868.5	224.2	-1,159.3	9.2	0.00	0.00	0.00
6,100.0	13.28	280.94	5,965.8	228.5	-1,181.9	9.4	0.00	0.00	0.00
6,200.0	13.28	280.94	6,063.1	232.9	-1,204.5	9.6	0.00	0.00	0.00
6,300.0	13.28	280.94	6,160.5	237.2	-1,227.0	9.8	0.00	0.00	0.00
6,400.0	13.28	280.94	6,257.8	241.6	-1,249.6	10.0	0.00	0.00	0.00
6,414.8	13.28	280.94	6,272.2	242.3	-1,252.9	10.0	0.00	0.00	0.00
Start DLS 7.50 TFO -100.62									
6,500.0	13.61	253.24	6,355.1	241.2	-1,272.1	14.8	7.50	0.39	-32.51
6,600.0	17.27	228.28	6,451.6	227.9	-1,294.5	32.2	7.50	3.65	-24.96
6,700.0	22.83	213.45	6,545.6	201.8	-1,316.3	62.1	7.50	5.57	-14.83
6,800.0	29.24	204.50	6,635.4	163.4	-1,337.2	104.0	7.50	6.41	-8.95
6,900.0	36.04	198.62	6,719.6	113.2	-1,356.7	157.0	7.50	6.80	-5.89
7,000.0	43.05	194.41	6,796.7	52.2	-1,374.6	220.4	7.50	7.01	-4.21
7,096.4	49.92	191.29	6,863.0	-16.0	-1,390.1	290.2	7.50	7.13	-3.24
Sharon Springs									
7,100.0	50.18	191.19	6,865.3	-18.7	-1,390.6	293.0	7.50	7.17	-2.88
7,200.0	57.38	188.58	6,924.4	-98.1	-1,404.4	373.5	7.50	7.20	-2.61
7,254.2	61.30	187.33	6,952.0	-144.3	-1,410.8	420.1	7.50	7.24	-2.29
Niobrara A									
7,300.0	64.62	186.36	6,972.8	-184.8	-1,415.7	460.7	7.50	7.25	-2.14
7,400.0	71.90	184.39	7,009.8	-277.2	-1,424.3	553.0	7.50	7.27	-1.97
7,500.0	79.19	182.58	7,034.8	-373.8	-1,430.2	648.9	7.50	7.29	-1.81
7,600.0	86.49	180.86	7,047.2	-472.9	-1,433.1	746.6	7.50	7.30	-1.72
7,650.5	90.18	180.00	7,048.7	-523.3	-1,433.5	796.2	7.49	7.30	-1.69
7"									
7,700.0	90.18	180.00	7,048.5	-572.8	-1,433.5	844.7	0.00	0.00	0.00
7,800.0	90.18	180.00	7,048.2	-672.8	-1,433.5	942.7	0.00	0.00	0.00
7,900.0	90.18	180.00	7,047.9	-772.8	-1,433.5	1,040.8	0.00	0.00	0.00
8,000.0	90.18	180.00	7,047.6	-872.8	-1,433.5	1,138.8	0.00	0.00	0.00
8,100.0	90.18	180.00	7,047.3	-972.8	-1,433.5	1,236.8	0.00	0.00	0.00
8,200.0	90.18	180.00	7,047.0	-1,072.8	-1,433.5	1,334.8	0.00	0.00	0.00
8,300.0	90.18	180.00	7,046.7	-1,172.8	-1,433.5	1,432.9	0.00	0.00	0.00
8,400.0	90.18	180.00	7,046.3	-1,272.8	-1,433.5	1,530.9	0.00	0.00	0.00
8,500.0	90.18	180.00	7,046.0	-1,372.8	-1,433.5	1,628.9	0.00	0.00	0.00
8,600.0	90.18	180.00	7,045.7	-1,472.8	-1,433.5	1,727.0	0.00	0.00	0.00
8,700.0	90.18	180.00	7,045.4	-1,572.8	-1,433.5	1,825.0	0.00	0.00	0.00
8,800.0	90.18	180.00	7,045.1	-1,672.8	-1,433.5	1,923.0	0.00	0.00	0.00
8,900.0	90.18	180.00	7,044.8	-1,772.8	-1,433.5	2,021.0	0.00	0.00	0.00
9,000.0	90.18	180.00	7,044.5	-1,872.8	-1,433.5	2,119.1	0.00	0.00	0.00
9,100.0	90.18	180.00	7,044.1	-1,972.8	-1,433.5	2,217.1	0.00	0.00	0.00
9,200.0	90.18	180.00	7,043.8	-2,072.8	-1,433.5	2,315.1	0.00	0.00	0.00
9,300.0	90.18	180.00	7,043.5	-2,172.8	-1,433.5	2,413.2	0.00	0.00	0.00
9,400.0	90.18	180.00	7,043.2	-2,272.8	-1,433.5	2,511.2	0.00	0.00	0.00

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Project:	SEC.13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	North Reference:	True
Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-27-15)		

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)
9,500.0	90.18	180.00	7,042.9	-2,372.8	-1,433.5	2,609.2	0.00	0.00	0.00
9,600.0	90.18	180.00	7,042.6	-2,472.8	-1,433.5	2,707.3	0.00	0.00	0.00
9,700.0	90.18	180.00	7,042.3	-2,572.8	-1,433.5	2,805.3	0.00	0.00	0.00
9,800.0	90.18	180.00	7,041.9	-2,672.8	-1,433.5	2,903.3	0.00	0.00	0.00
9,900.0	90.18	180.00	7,041.6	-2,772.8	-1,433.5	3,001.3	0.00	0.00	0.00
10,000.0	90.18	180.00	7,041.3	-2,872.8	-1,433.5	3,099.4	0.00	0.00	0.00
10,100.0	90.18	180.00	7,041.0	-2,972.8	-1,433.5	3,197.4	0.00	0.00	0.00
10,200.0	90.18	180.00	7,040.7	-3,072.8	-1,433.5	3,295.4	0.00	0.00	0.00
10,300.0	90.18	180.00	7,040.4	-3,172.8	-1,433.5	3,393.5	0.00	0.00	0.00
10,400.0	90.18	180.00	7,040.1	-3,272.8	-1,433.5	3,491.5	0.00	0.00	0.00
10,500.0	90.18	180.00	7,039.7	-3,372.8	-1,433.5	3,589.5	0.00	0.00	0.00
10,600.0	90.18	180.00	7,039.4	-3,472.8	-1,433.5	3,687.6	0.00	0.00	0.00
10,700.0	90.18	180.00	7,039.1	-3,572.8	-1,433.5	3,785.6	0.00	0.00	0.00
10,800.0	90.18	180.00	7,038.8	-3,672.8	-1,433.5	3,883.6	0.00	0.00	0.00
10,900.0	90.18	180.00	7,038.5	-3,772.8	-1,433.5	3,981.6	0.00	0.00	0.00
11,000.0	90.18	180.00	7,038.2	-3,872.8	-1,433.5	4,079.7	0.00	0.00	0.00
11,100.0	90.18	180.00	7,037.9	-3,972.8	-1,433.5	4,177.7	0.00	0.00	0.00
11,200.0	90.18	180.00	7,037.5	-4,072.8	-1,433.5	4,275.7	0.00	0.00	0.00
11,300.0	90.18	180.00	7,037.2	-4,172.8	-1,433.5	4,373.8	0.00	0.00	0.00
11,400.0	90.18	180.00	7,036.9	-4,272.8	-1,433.5	4,471.8	0.00	0.00	0.00
11,500.0	90.18	180.00	7,036.6	-4,372.8	-1,433.5	4,569.8	0.00	0.00	0.00
11,600.0	90.18	180.00	7,036.3	-4,472.8	-1,433.5	4,667.8	0.00	0.00	0.00
11,700.0	90.18	180.00	7,036.0	-4,572.8	-1,433.5	4,765.9	0.00	0.00	0.00
11,800.0	90.18	180.00	7,035.7	-4,672.8	-1,433.5	4,863.9	0.00	0.00	0.00
11,900.0	90.18	180.00	7,035.3	-4,772.8	-1,433.5	4,961.9	0.00	0.00	0.00
12,000.0	90.18	180.00	7,035.0	-4,872.8	-1,433.5	5,060.0	0.00	0.00	0.00
12,100.0	90.18	180.00	7,034.7	-4,972.8	-1,433.5	5,158.0	0.00	0.00	0.00
12,200.0	90.18	180.00	7,034.4	-5,072.8	-1,433.5	5,256.0	0.00	0.00	0.00
12,300.0	90.18	180.00	7,034.1	-5,172.8	-1,433.5	5,354.1	0.00	0.00	0.00
12,400.0	90.18	180.00	7,033.8	-5,272.8	-1,433.5	5,452.1	0.00	0.00	0.00
12,500.0	90.18	180.00	7,033.5	-5,372.8	-1,433.5	5,550.1	0.00	0.00	0.00
12,600.0	90.18	180.00	7,033.2	-5,472.8	-1,433.5	5,648.1	0.00	0.00	0.00
12,700.0	90.18	180.00	7,032.8	-5,572.8	-1,433.5	5,746.2	0.00	0.00	0.00
12,800.0	90.18	180.00	7,032.5	-5,672.8	-1,433.5	5,844.2	0.00	0.00	0.00
12,900.0	90.18	180.00	7,032.2	-5,772.8	-1,433.5	5,942.2	0.00	0.00	0.00
13,000.0	90.18	180.00	7,031.9	-5,872.8	-1,433.5	6,040.3	0.00	0.00	0.00
13,100.0	90.18	180.00	7,031.6	-5,972.8	-1,433.5	6,138.3	0.00	0.00	0.00
13,200.0	90.18	180.00	7,031.3	-6,072.8	-1,433.5	6,236.3	0.00	0.00	0.00
13,300.0	90.18	180.00	7,031.0	-6,172.8	-1,433.5	6,334.4	0.00	0.00	0.00
13,400.0	90.18	180.00	7,030.6	-6,272.8	-1,433.5	6,432.4	0.00	0.00	0.00
13,500.0	90.18	180.00	7,030.3	-6,372.8	-1,433.5	6,530.4	0.00	0.00	0.00
13,600.0	90.18	180.00	7,030.0	-6,472.8	-1,433.5	6,628.4	0.00	0.00	0.00
13,700.0	90.18	180.00	7,029.7	-6,572.8	-1,433.5	6,726.5	0.00	0.00	0.00
13,800.0	90.18	180.00	7,029.4	-6,672.8	-1,433.5	6,824.5	0.00	0.00	0.00
13,900.0	90.18	180.00	7,029.1	-6,772.8	-1,433.5	6,922.5	0.00	0.00	0.00
14,000.0	90.18	180.00	7,028.8	-6,872.8	-1,433.5	7,020.6	0.00	0.00	0.00
14,100.0	90.18	180.00	7,028.4	-6,972.8	-1,433.5	7,118.6	0.00	0.00	0.00
14,200.0	90.18	180.00	7,028.1	-7,072.8	-1,433.5	7,216.6	0.00	0.00	0.00
14,242.1	90.18	180.00	7,028.0	-7,114.9	-1,433.5	7,257.9	0.00	0.00	0.00

Database:	landmark	Local Co-ordinate Reference:	Well Stroh 13G-203
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Project:	SEC.13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	North Reference:	True
Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #2 (1-27-15)		

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 2352'FSL & 1526'FSL	0.00	0.00	1.0	0.0	0.0	1,356,827.56	3,183,166.78	40.311030	-104.843190
- plan hits target									
- Point									
BHL 500'FSL & 75'FM	0.00	0.00	7,028.0	-7,114.8	-1,433.9	1,349,702.60	3,181,785.68	40.291500	-104.848330
- plan misses by 0.4ft at 14242.0ft MD (7028.0 TVD, -7114.8 N, -1433.5 E)									
- Point									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,650.5	7,048.7	7"	7	7-1/2	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,096.4	6,863.0	Sharon Springs		0.00	
7,254.2	6,952.0	Niobrara A		0.00	
3,822.0	7,050.0	Niobrara B		0.00	
3,822.0	7,132.0	Niobrara C		0.00	
3,822.0	7,250.0	Ft Hays		0.00	
3,822.0	7,272.0	Codell		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
200.0	200.0	0.0	0.0	KOP - Start Build 1.00
6,414.8	6,272.2	242.3	-1,252.9	Start DLS 7.50 TFO -100.62
14,242.1	7,028.0	-7,114.9	-1,433.5	TD at 14242.1



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.13-T4N-R67W

Stroh 13GK-HZ Pad Sec. 13-T4N-R67W

Stroh 13G-203

Wellbore #1

Plan #2 (1-27-15)

Anticollision Report

30 January, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (1-27-15)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	1/30/2015		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,242.1	Plan #2 (1-27-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
Ehrlich Pad Sec.23-T4N-R67W						
Ehrlich PC O23-67HN (Exist.) - Wellbore #1 - Wellbore #	10,759.6	6,945.2	468.3	386.9	5.755	CC, ES
Ehrlich PC O23-67HN (Exist.) - Wellbore #1 - Wellbore #	10,800.0	6,945.1	470.0	388.0	5.731	SF
Ehrlich PC O23-69HN (Exist.) - Wellbore #1 - Wellbore #	9,501.0	7,000.1	401.2	339.0	6.451	CC, ES, SF
Existing Wells - Sec.13-T4N-R67W						
Earlich 23-41 (Exist) - Wellbore #1 - Wellbore #1	12,744.7	6,987.7	368.5	118.9	1.476	Level 3, CC, ES, SF
Matt 1 (Exist) - Wellbore #1 - Wellbore #1	12,798.6	6,955.4	271.6	143.3	2.116	CC
Matt 1 (Exist) - Wellbore #1 - Wellbore #1	12,800.0	6,955.4	271.6	143.2	2.116	ES, SF
Stroh 24-12 (Exist) - Wellbore #1 - Wellbore #1	11,649.7	7,039.4	310.2	203.7	2.914	CC, ES, SF
Stroh 24-22 (Exist) - Wellbore #1 - Wellbore #1	10,146.9	7,049.3	263.4	184.3	3.329	CC, ES, SF
Existing Wells Sec.13-T4N-R67W (Grid North)						
Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1	1,813.9	1,782.7	99.9	90.2	10.324	CC, ES
Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1	1,900.0	1,866.9	101.6	91.4	9.939	SF
UPRC 13-12E (Exist.) - Wellbore #1 - Wellbore #1	7,430.4	7,047.7	430.5	392.9	11.475	CC, ES
UPRC 13-12E (Exist.) - Wellbore #1 - Wellbore #1	7,500.0	7,064.3	435.1	397.1	11.446	SF
UPRC 13-13E (Exist.) - Wellbore #1 - Wellbore #1	8,631.3	7,077.4	439.3	387.8	8.529	CC, ES
UPRC 13-13E (Exist.) - Wellbore #1 - Wellbore #1	8,700.0	7,077.2	444.6	392.0	8.450	SF
Stroh 13GK-HZ Pad Sec. 13-T4N-R67W						
Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)	1,133.2	1,137.7	24.9	20.1	5.099	CC, ES
Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)	14,242.1	14,199.4	433.0	166.4	1.624	SF
Stroh 13K-223 - Wellbore #1 - Plan #3 (1-28-15)	200.0	199.0	119.9	119.2	178.442	CC, ES
Stroh 13K-223 - Wellbore #1 - Plan #3 (1-28-15)	1,300.0	1,292.3	224.2	218.5	39.847	SF
Stroh 13K-243 - Wellbore #1 - Plan #3 (1-28-15)	200.0	199.0	61.4	60.7	91.296	CC, ES
Stroh 13K-243 - Wellbore #1 - Plan #3 (1-28-15)	14,242.1	13,988.0	820.7	544.8	2.974	SF
Stroh 13K-303 - Wellbore #1 - Plan #2 (1-28-15)	200.0	199.0	89.2	88.6	132.794	CC, ES
Stroh 13K-303 - Wellbore #1 - Plan #2 (1-28-15)	3,700.0	3,678.9	585.8	566.4	30.142	SF
Stroh 13O-343 - Wellbore #1 - Plan #2 (1-28-15)	200.0	198.0	150.6	149.9	224.842	CC, ES
Stroh 13O-343 - Wellbore #1 - Plan #2 (1-28-15)	1,300.0	1,287.8	255.4	249.7	45.508	SF
Stroh PC O13-79HN Pad Sec.14-T4N-R67W						
Stroh PC O13-79HN (Exist.) - Wellbore #1 - Wellbore #1	8,950.8	7,305.8	200.7	146.2	3.685	CC, ES
Stroh PC O13-79HN (Exist.) - Wellbore #1 - Wellbore #1	9,000.0	7,263.6	202.2	146.3	3.617	SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Ehrlich Pad Sec.23-T4N-R67W - Ehrlich PC O23-67HN (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 605-Reference												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
9,900.0	7,041.6	6,950.8	6,839.3	61.2	18.5	59.65	-3,631.7	-1,837.7	978.9	911.0	67.87	14.422	
10,000.0	7,041.3	6,949.7	6,838.4	62.9	18.5	59.52	-3,631.7	-1,837.1	892.4	823.0	69.41	12.857	
10,100.0	7,041.0	6,948.8	6,837.6	64.6	18.5	59.40	-3,631.7	-1,836.6	808.9	738.0	70.95	11.401	
10,200.0	7,040.7	6,948.0	6,836.9	66.3	18.5	59.31	-3,631.7	-1,836.2	729.7	657.2	72.51	10.064	
10,300.0	7,040.4	6,947.3	6,836.3	68.0	18.5	59.23	-3,631.7	-1,835.9	656.2	582.1	74.08	8.858	
10,400.0	7,040.1	6,946.8	6,835.8	69.7	18.5	59.16	-3,631.7	-1,835.6	590.4	514.8	75.65	7.805	
10,500.0	7,039.7	6,946.3	6,835.4	71.5	18.5	59.10	-3,631.7	-1,835.3	535.4	458.2	77.23	6.933	
10,600.0	7,039.4	6,945.8	6,835.0	73.2	18.5	59.04	-3,631.7	-1,835.1	494.7	415.9	78.82	6.277	
10,700.0	7,039.1	6,945.4	6,834.7	75.0	18.5	58.99	-3,631.7	-1,834.9	472.1	391.7	80.42	5.870	
10,759.6	7,038.9	6,945.2	6,834.5	76.0	18.5	58.97	-3,631.7	-1,834.8	468.3	386.9	81.37	5.755 CC, ES	
10,800.0	7,038.8	6,945.1	6,834.4	76.8	18.5	58.95	-3,631.7	-1,834.7	470.0	388.0	82.01	5.731 SF	
10,900.0	7,038.5	6,944.8	6,834.1	78.5	18.5	58.91	-3,631.7	-1,834.5	488.9	405.3	83.62	5.846	
11,000.0	7,038.2	6,944.5	6,833.9	80.3	18.5	58.88	-3,631.7	-1,834.4	526.4	441.1	85.23	6.176	
11,100.0	7,037.9	6,944.2	6,833.7	82.1	18.5	58.85	-3,631.7	-1,834.3	578.9	492.1	86.84	6.667	
11,200.0	7,037.5	6,944.0	6,833.5	83.9	18.5	58.82	-3,631.7	-1,834.1	642.8	554.4	88.45	7.267	
11,300.0	7,037.2	6,943.8	6,833.3	85.7	18.5	58.79	-3,631.7	-1,834.0	715.0	625.0	90.07	7.939	
11,400.0	7,036.9	6,943.6	6,833.1	87.5	18.5	58.77	-3,631.7	-1,833.9	793.3	701.6	91.69	8.652	
11,500.0	7,036.6	6,943.4	6,833.0	89.3	18.5	58.74	-3,631.7	-1,833.8	876.0	782.7	93.31	9.388	
11,600.0	7,036.3	6,943.2	6,832.8	91.1	18.5	58.72	-3,631.7	-1,833.7	962.0	867.1	94.94	10.133	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 572-Reference												Offset Well Error:	0.0 ft
Ehrlich Pad Sec.23-T4N-R67W - Ehrlich PC O23-69HN (Exist.) - Wellbore #1 - Wellbore #1													
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Semi Major Axis Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,600.0	7,045.7	6,998.0	6,872.2	41.4	19.8	58.82	-2,373.2	-1,776.8	986.3	937.7	48.58	20.302	
8,700.0	7,045.4	6,998.2	6,872.4	42.7	19.8	58.85	-2,373.2	-1,776.9	895.9	845.9	50.02	17.911	
8,800.0	7,045.1	6,998.5	6,872.5	44.0	19.8	58.88	-2,373.2	-1,777.0	807.7	756.2	51.48	15.691	
8,900.0	7,044.8	6,998.7	6,872.7	45.5	19.8	58.91	-2,373.2	-1,777.1	722.6	669.7	52.96	13.645	
9,000.0	7,044.5	6,998.9	6,872.9	46.9	19.8	58.95	-2,373.2	-1,777.2	641.9	587.4	54.46	11.787	
9,100.0	7,044.1	6,999.1	6,873.1	48.4	19.8	58.98	-2,373.2	-1,777.3	567.3	511.3	55.97	10.135	
9,200.0	7,043.8	6,999.4	6,873.3	49.9	19.8	59.01	-2,373.2	-1,777.5	501.6	444.1	57.50	8.723	
9,300.0	7,043.5	6,999.6	6,873.5	51.4	19.8	59.05	-2,373.2	-1,777.6	448.8	389.7	59.05	7.600	
9,400.0	7,043.2	6,999.8	6,873.7	53.0	19.8	59.08	-2,373.2	-1,777.7	413.7	353.1	60.61	6.827	
9,500.0	7,042.9	7,000.1	6,874.0	54.6	19.8	59.12	-2,373.2	-1,777.8	401.2	339.0	62.18	6.453	
9,501.0	7,042.9	7,000.1	6,874.0	54.6	19.8	59.12	-2,373.2	-1,777.8	401.2	339.0	62.19	6.451	CC, ES, SF
9,600.0	7,042.6	7,000.4	6,874.2	56.2	19.8	59.15	-2,373.2	-1,778.0	413.2	349.5	63.75	6.482	
9,700.0	7,042.3	7,000.6	6,874.4	57.9	19.8	59.19	-2,373.2	-1,778.1	447.9	382.5	65.34	6.854	
9,800.0	7,041.9	7,000.9	6,874.6	59.5	19.8	59.23	-2,373.2	-1,778.2	500.4	433.4	66.94	7.475	
9,900.0	7,041.6	7,001.2	6,874.9	61.2	19.8	59.27	-2,373.2	-1,778.4	565.8	497.3	68.55	8.254	
10,000.0	7,041.3	7,001.5	6,875.1	62.9	19.8	59.31	-2,373.2	-1,778.5	640.3	570.1	70.16	9.125	
10,100.0	7,041.0	7,001.8	6,875.4	64.6	19.8	59.36	-2,373.2	-1,778.7	720.9	649.2	71.79	10.043	
10,200.0	7,040.7	7,002.1	6,875.6	66.3	19.8	59.40	-2,373.2	-1,778.9	805.9	732.5	73.42	10.978	
10,300.0	7,040.4	7,002.4	6,875.9	68.0	19.8	59.44	-2,373.2	-1,779.0	894.1	819.0	75.05	11.913	
10,400.0	7,040.1	7,002.7	6,876.2	69.7	19.8	59.49	-2,373.2	-1,779.2	984.4	907.8	76.69	12.836	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Earlich 23-41 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7440-UNKNOWN												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
11,900.0	7,035.3	6,990.3	6,990.3	96.6	139.8	90.41	-5,617.5	-1,802.0	921.6	687.9	233.69	3.944	
12,000.0	7,035.0	6,990.0	6,990.0	98.4	139.8	90.36	-5,617.5	-1,802.0	830.9	595.3	235.57	3.527	
12,100.0	7,034.7	6,989.7	6,989.7	100.3	139.8	90.31	-5,617.5	-1,802.0	742.6	505.1	237.45	3.127	
12,200.0	7,034.4	6,989.4	6,989.4	102.1	139.8	90.27	-5,617.5	-1,802.0	657.7	418.3	239.34	2.748	
12,300.0	7,034.1	6,989.1	6,989.1	104.0	139.8	90.22	-5,617.5	-1,802.0	577.6	336.3	241.22	2.394	
12,400.0	7,033.8	6,988.8	6,988.8	105.8	139.8	90.17	-5,617.5	-1,802.0	504.6	261.5	243.11	2.076	
12,500.0	7,033.5	6,988.5	6,988.5	107.6	139.8	90.12	-5,617.5	-1,802.0	442.4	197.4	245.00	1.806	
12,600.0	7,033.2	6,988.2	6,988.2	109.5	139.8	90.07	-5,617.5	-1,802.0	395.9	149.0	246.88	1.604	
12,700.0	7,032.8	6,987.8	6,987.8	111.3	139.8	90.02	-5,617.5	-1,802.0	371.2	122.5	248.77	1.492 Level 3	
12,744.7	7,032.7	6,987.7	6,987.7	112.2	139.8	90.00	-5,617.5	-1,802.0	368.5	118.9	249.62	1.476 Level 3, CC, ES, SF	
12,800.0	7,032.5	6,987.5	6,987.5	113.2	139.8	89.97	-5,617.5	-1,802.0	372.7	122.0	250.66	1.487 Level 3	
12,900.0	7,032.2	6,987.2	6,987.2	115.1	139.7	89.92	-5,617.5	-1,802.0	399.9	147.4	252.55	1.583	
13,000.0	7,031.9	6,986.9	6,986.9	116.9	139.7	89.88	-5,617.5	-1,802.0	448.3	193.9	254.44	1.762	
13,100.0	7,031.6	6,986.6	6,986.6	118.8	139.7	89.83	-5,617.5	-1,802.0	511.9	255.6	256.34	1.997	
13,200.0	7,031.3	6,986.3	6,986.3	120.6	139.7	89.78	-5,617.5	-1,802.0	585.8	327.5	258.23	2.268	
13,300.0	7,031.0	6,986.0	6,986.0	122.5	139.7	89.73	-5,617.5	-1,802.0	666.5	406.3	260.12	2.562	
13,400.0	7,030.6	6,985.6	6,985.6	124.4	139.7	89.68	-5,617.5	-1,802.0	751.8	489.8	262.01	2.869	
13,500.0	7,030.3	6,985.3	6,985.3	126.2	139.7	89.63	-5,617.5	-1,802.0	840.4	576.5	263.91	3.184	
13,600.0	7,030.0	6,985.0	6,985.0	128.1	139.7	89.58	-5,617.5	-1,802.0	931.3	665.5	265.80	3.504	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Matt 1 (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)		
11,900.0	7,035.3	6,936.8	6,934.4	96.6	17.4	-88.72	-5,671.0	-1,161.3	938.6	827.5	111.11	8.447	
12,000.0	7,035.0	6,938.9	6,936.5	98.4	17.4	-89.15	-5,671.1	-1,161.4	843.4	730.3	113.05	7.460	
12,100.0	7,034.7	6,941.0	6,938.6	100.3	17.4	-89.59	-5,671.1	-1,161.5	749.4	634.4	114.99	6.518	
12,200.0	7,034.4	6,943.0	6,940.6	102.1	17.4	-90.02	-5,671.2	-1,161.6	657.3	540.3	116.92	5.622	
12,300.0	7,034.1	6,945.1	6,942.7	104.0	17.4	-90.45	-5,671.2	-1,161.7	567.7	448.9	118.84	4.777	
12,400.0	7,033.8	6,947.2	6,944.7	105.8	17.4	-90.89	-5,671.3	-1,161.8	482.3	361.5	120.76	3.994	
12,500.0	7,033.5	6,949.2	6,946.8	107.6	17.4	-91.33	-5,671.3	-1,161.9	403.6	281.0	122.68	3.290	
12,600.0	7,033.2	6,951.3	6,948.9	109.5	17.4	-91.76	-5,671.4	-1,162.0	336.5	211.9	124.59	2.701	
12,700.0	7,032.8	6,953.4	6,950.9	111.3	17.4	-92.20	-5,671.4	-1,162.1	289.0	162.5	126.49	2.285	
12,798.6	7,032.5	6,955.4	6,953.0	113.2	17.4	-92.63	-5,671.5	-1,162.2	271.6	143.3	128.36	2.116 CC	
12,800.0	7,032.5	6,955.4	6,953.0	113.2	17.4	-92.63	-5,671.5	-1,162.2	271.6	143.2	128.39	2.116 ES, SF	
12,900.0	7,032.2	6,957.5	6,955.1	115.1	17.4	-93.07	-5,671.5	-1,162.2	289.9	159.6	130.28	2.225	
13,000.0	7,031.9	6,959.6	6,957.1	116.9	17.4	-93.50	-5,671.6	-1,162.3	338.1	206.0	132.16	2.558	
13,100.0	7,031.6	6,961.6	6,959.2	118.8	17.4	-93.94	-5,671.6	-1,162.4	405.7	271.6	134.04	3.027	
13,200.0	7,031.3	6,963.7	6,961.3	120.6	17.4	-94.38	-5,671.7	-1,162.5	484.6	348.7	135.91	3.566	
13,300.0	7,031.0	6,965.8	6,963.3	122.5	17.4	-94.81	-5,671.7	-1,162.6	570.1	432.4	137.77	4.138	
13,400.0	7,030.6	6,967.8	6,965.4	124.4	17.4	-95.25	-5,671.8	-1,162.7	659.8	520.1	139.62	4.725	
13,500.0	7,030.3	6,969.9	6,967.5	126.2	17.5	-95.68	-5,671.8	-1,162.8	752.0	610.5	141.46	5.316	
13,600.0	7,030.0	6,972.0	6,969.5	128.1	17.5	-96.12	-5,671.9	-1,162.9	846.0	702.7	143.30	5.904	
13,700.0	7,029.7	6,974.0	6,971.6	130.0	17.5	-96.55	-5,671.9	-1,163.0	941.2	796.1	145.12	6.486	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Stroh 24-12 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,700.0	7,039.1	7,034.0	7,031.8	75.0	17.2	-90.68	-4,522.5	-1,123.3	999.0	910.4	88.67	11.266		
10,800.0	7,038.8	7,034.6	7,032.4	76.8	17.2	-90.78	-4,522.5	-1,123.3	904.5	814.0	90.54	9.990		
10,900.0	7,038.5	7,035.1	7,032.9	78.5	17.2	-90.89	-4,522.5	-1,123.3	811.3	718.9	92.41	8.780		
11,000.0	7,038.2	7,035.7	7,033.5	80.3	17.2	-90.99	-4,522.5	-1,123.3	719.9	625.6	94.28	7.636		
11,100.0	7,037.9	7,036.3	7,034.1	82.1	17.2	-91.10	-4,522.5	-1,123.3	631.2	535.0	96.15	6.564		
11,200.0	7,037.5	7,036.8	7,034.6	83.9	17.2	-91.20	-4,522.5	-1,123.3	546.3	448.3	98.02	5.573		
11,300.0	7,037.2	7,037.4	7,035.2	85.7	17.2	-91.30	-4,522.5	-1,123.4	467.4	367.5	99.90	4.679		
11,400.0	7,036.9	7,038.0	7,035.8	87.5	17.2	-91.41	-4,522.5	-1,123.4	398.2	296.4	101.78	3.912		
11,500.0	7,036.6	7,038.5	7,036.3	89.3	17.2	-91.51	-4,522.5	-1,123.4	344.4	240.8	103.66	3.323		
11,600.0	7,036.3	7,039.1	7,036.9	91.1	17.2	-91.61	-4,522.5	-1,123.4	314.2	208.6	105.54	2.977		
11,649.7	7,036.1	7,039.4	7,037.2	92.0	17.2	-91.67	-4,522.5	-1,123.4	310.2	203.7	106.47	2.914 CC, ES, SF		
11,700.0	7,036.0	7,039.6	7,037.4	93.0	17.2	-91.72	-4,522.5	-1,123.4	314.3	206.8	107.42	2.926		
11,800.0	7,035.7	7,040.2	7,038.0	94.8	17.2	-91.82	-4,522.5	-1,123.4	344.7	235.4	109.30	3.154		
11,900.0	7,035.3	7,040.8	7,038.6	96.6	17.2	-91.93	-4,522.5	-1,123.5	398.6	287.4	111.19	3.585		
12,000.0	7,035.0	7,041.3	7,039.1	98.4	17.2	-92.03	-4,522.5	-1,123.5	467.9	354.9	113.07	4.138		
12,100.0	7,034.7	7,041.9	7,039.7	100.3	17.2	-92.13	-4,522.5	-1,123.5	546.8	431.9	114.96	4.757		
12,200.0	7,034.4	7,042.4	7,040.2	102.1	17.2	-92.23	-4,522.5	-1,123.5	631.7	514.9	116.85	5.407		
12,300.0	7,034.1	7,043.0	7,040.8	104.0	17.2	-92.34	-4,522.6	-1,123.5	720.5	601.8	118.73	6.068		
12,400.0	7,033.8	7,043.5	7,041.3	105.8	17.2	-92.44	-4,522.6	-1,123.5	811.9	691.3	120.62	6.731		
12,500.0	7,033.5	7,044.1	7,041.9	107.6	17.2	-92.54	-4,522.6	-1,123.6	905.1	782.6	122.51	7.388		
12,600.0	7,033.2	7,044.7	7,042.5	109.5	17.2	-92.65	-4,522.6	-1,123.6	999.7	875.3	124.40	8.036		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells - Sec.13-T4N-R67W - Stroh 24-22 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,200.0	7,043.8	7,065.8	7,063.6	49.9	17.8	-95.38	-3,019.5	-1,170.8	982.7	920.3	62.32	15.768		
9,300.0	7,043.5	7,064.0	7,061.9	51.4	17.8	-95.01	-3,019.5	-1,170.7	886.7	822.7	64.05	13.844		
9,400.0	7,043.2	7,062.3	7,060.2	53.0	17.8	-94.64	-3,019.5	-1,170.6	791.8	726.0	65.80	12.033		
9,500.0	7,042.9	7,060.6	7,058.5	54.6	17.8	-94.26	-3,019.6	-1,170.6	698.3	630.8	67.56	10.336		
9,600.0	7,042.6	7,058.9	7,056.7	56.2	17.8	-93.89	-3,019.6	-1,170.5	606.9	537.6	69.33	8.753		
9,700.0	7,042.3	7,057.1	7,055.0	57.9	17.8	-93.51	-3,019.6	-1,170.5	518.6	447.5	71.11	7.293		
9,800.0	7,041.9	7,055.4	7,053.3	59.5	17.8	-93.13	-3,019.6	-1,170.4	435.5	362.6	72.90	5.974		
9,900.0	7,041.6	7,053.6	7,051.5	61.2	17.8	-92.75	-3,019.7	-1,170.4	361.0	286.3	74.69	4.833		
10,000.0	7,041.3	7,051.9	7,049.7	62.9	17.8	-92.37	-3,019.7	-1,170.3	301.6	225.1	76.48	3.943		
10,100.0	7,041.0	7,050.1	7,048.0	64.6	17.8	-91.99	-3,019.7	-1,170.3	267.5	189.2	78.29	3.417		
10,146.9	7,040.9	7,049.3	7,047.2	65.4	17.8	-91.80	-3,019.7	-1,170.2	263.4	184.3	79.13	3.329 CC, ES, SF		
10,200.0	7,040.7	7,048.3	7,046.2	66.3	17.8	-91.60	-3,019.7	-1,170.2	268.7	188.6	80.09	3.355		
10,300.0	7,040.4	7,046.6	7,044.4	68.0	17.7	-91.21	-3,019.8	-1,170.2	304.7	222.8	81.90	3.720		
10,400.0	7,040.1	7,044.8	7,042.7	69.7	17.7	-90.83	-3,019.8	-1,170.1	365.3	281.6	83.71	4.364		
10,500.0	7,039.7	7,043.0	7,040.9	71.5	17.7	-90.44	-3,019.8	-1,170.0	440.5	355.0	85.52	5.151		
10,600.0	7,039.4	7,041.2	7,039.1	73.2	17.7	-90.04	-3,019.8	-1,170.0	524.1	436.7	87.33	6.001		
10,700.0	7,039.1	7,039.4	7,037.3	75.0	17.7	-89.65	-3,019.9	-1,169.9	612.6	523.4	89.14	6.872		
10,800.0	7,038.8	7,037.6	7,035.4	76.8	17.7	-89.26	-3,019.9	-1,169.9	704.2	613.2	90.96	7.742		
10,900.0	7,038.5	7,035.8	7,033.6	78.5	17.7	-88.86	-3,019.9	-1,169.8	797.8	705.0	92.77	8.600		
11,000.0	7,038.2	7,033.9	7,031.8	80.3	17.7	-88.47	-3,019.9	-1,169.8	892.7	798.2	94.58	9.439		
11,100.0	7,037.9	7,032.1	7,030.0	82.1	17.7	-88.07	-3,020.0	-1,169.7	988.7	892.3	96.39	10.258		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - Stroh O 13-20 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-53.95		134.8	-185.2	229.4				
100.0	100.0	88.2	88.2	0.1	0.1	-54.00		134.6	-185.3	229.0	228.8	0.23	998.093	
150.2	150.2	138.2	138.2	0.2	0.2	-54.06		134.4	-185.4	229.0	228.5	0.46	502.345	
200.0	200.0	187.8	187.8	0.3	0.4	-54.11		134.3	-185.5	229.0	228.3	0.69	329.530	
300.0	300.0	288.1	288.1	0.6	0.6	24.92		133.9	-185.9	228.3	227.1	1.17	194.950	
400.0	400.0	388.0	388.0	0.8	0.9	25.00		133.2	-186.3	225.9	224.2	1.65	136.882	
500.0	499.9	487.8	487.8	1.0	1.1	25.32		132.7	-186.7	221.9	219.8	2.14	103.862	
600.0	599.7	586.3	586.3	1.2	1.3	25.96		132.6	-187.1	216.7	214.1	2.54	85.159	
700.0	699.4	685.5	685.5	1.5	1.4	27.02		133.4	-187.5	210.4	207.5	2.89	72.931	
800.0	798.9	785.7	785.7	1.8	1.6	28.42		134.2	-187.8	202.7	199.5	3.26	62.252	
900.0	898.3	885.0	885.0	2.0	1.7	30.11		134.7	-188.1	193.4	189.7	3.68	52.525	
1,000.0	997.4	983.8	983.8	2.4	1.9	32.24		135.3	-188.6	183.0	178.8	4.15	44.137	
1,100.0	1,096.3	1,082.6	1,082.6	2.7	2.2	34.97		136.0	-189.3	171.6	167.0	4.64	36.950	
1,200.0	1,194.9	1,180.8	1,180.8	3.0	2.4	38.36		136.8	-190.1	159.4	154.3	5.19	30.746	
1,300.0	1,293.3	1,279.4	1,279.4	3.4	2.6	42.70		137.6	-191.3	146.8	141.1	5.78	25.417	
1,400.0	1,391.2	1,378.2	1,378.1	3.8	2.9	48.42		138.2	-192.2	133.8	127.4	6.43	20.806	
1,500.0	1,488.9	1,476.3	1,476.2	4.3	3.1	55.95		138.6	-192.9	121.0	113.8	7.16	16.884	
1,600.0	1,586.2	1,573.8	1,573.8	4.7	3.4	65.53		138.9	-193.4	110.0	102.0	7.98	13.783	
1,700.0	1,683.5	1,671.2	1,671.2	5.2	3.6	76.78		139.2	-193.9	102.7	93.9	8.81	11.659	
1,800.0	1,780.9	1,769.1	1,769.1	5.7	3.9	89.08		139.4	-194.5	100.0	90.4	9.58	10.433	
1,813.9	1,794.3	1,782.7	1,782.7	5.8	3.9	90.79		139.4	-194.6	99.9	90.2	9.68	10.324 CC, ES	
1,900.0	1,878.2	1,866.9	1,866.9	6.2	4.1	101.25		139.2	-195.6	101.6	91.4	10.22	9.939 SF	
2,000.0	1,975.5	1,964.6	1,964.5	6.7	4.4	112.57		139.0	-196.8	107.6	96.9	10.71	10.046	
2,100.0	2,072.8	2,062.8	2,062.7	7.1	4.6	122.59		138.3	-197.9	117.3	106.2	11.08	10.588	
2,200.0	2,170.2	2,160.8	2,160.7	7.6	4.8	131.09		137.0	-199.2	129.5	118.1	11.37	11.390	
2,300.0	2,267.5	2,258.5	2,258.4	8.1	5.0	138.06		135.6	-200.5	143.9	132.2	11.65	12.354	
2,400.0	2,364.8	2,357.4	2,357.2	8.6	5.2	143.70		134.1	-202.4	159.6	147.7	11.95	13.359	
2,500.0	2,462.1	2,455.6	2,455.4	9.1	5.4	148.53		131.7	-204.6	175.8	163.6	12.26	14.346	
2,600.0	2,559.5	2,553.2	2,553.0	9.6	5.6	152.57		129.1	-206.7	193.1	180.6	12.58	15.348	
2,700.0	2,656.8	2,651.4	2,651.1	10.1	5.9	155.99		126.5	-209.0	211.1	198.2	12.94	16.315	
2,800.0	2,754.1	2,748.6	2,748.2	10.6	6.1	158.77		124.0	-211.4	229.5	216.2	13.32	17.223	
2,900.0	2,851.4	2,845.6	2,845.2	11.1	6.3	161.11		121.7	-213.4	248.8	235.1	13.73	18.119	
3,000.0	2,948.8	2,943.5	2,943.1	11.6	6.5	163.01		120.0	-215.5	268.4	254.2	14.17	18.940	
3,100.0	3,046.1	3,040.3	3,039.8	12.1	6.8	164.54		118.8	-217.6	288.3	273.7	14.63	19.705	
3,200.0	3,143.4	3,136.7	3,136.1	12.6	7.0	165.83		117.7	-219.1	308.9	293.8	15.10	20.456	
3,300.0	3,240.7	3,233.5	3,233.0	13.1	7.3	166.93		116.9	-220.5	329.9	314.3	15.58	21.171	
3,400.0	3,338.1	3,329.0	3,328.5	13.6	7.5	167.91		116.0	-221.5	351.4	335.3	16.05	21.891	
3,500.0	3,435.4	3,425.2	3,424.6	14.1	7.7	168.67		115.8	-221.9	373.4	356.9	16.52	22.606	
3,600.0	3,532.7	3,523.4	3,522.8	14.6	7.9	169.21		116.6	-222.2	395.7	378.7	16.97	23.319	
3,700.0	3,630.0	3,624.7	3,624.1	15.1	8.1	169.68		117.6	-223.3	417.3	399.8	17.43	23.945	
3,800.0	3,727.3	3,725.3	3,724.8	15.6	8.3	170.10		118.6	-225.1	438.1	420.2	17.92	24.444	
3,900.0	3,824.7	3,825.2	3,824.6	16.1	8.6	170.45		119.8	-227.4	458.5	440.0	18.43	24.880	
4,000.0	3,922.0	3,925.7	3,925.1	16.6	8.8	170.76		121.3	-230.3	478.3	459.4	18.94	25.260	
4,100.0	4,019.3	4,027.2	4,026.5	17.1	9.1	171.03		122.8	-233.7	497.7	478.2	19.45	25.582	
4,200.0	4,116.6	4,130.6	4,129.8	17.6	9.3	171.30		124.3	-238.2	516.1	496.1	19.98	25.830	
4,300.0	4,214.0	4,233.2	4,232.2	18.1	9.6	171.56		125.7	-243.6	533.6	513.1	20.51	26.016	
4,400.0	4,311.3	4,332.7	4,331.6	18.6	9.9	171.80		127.0	-249.3	550.7	529.6	21.04	26.176	
4,500.0	4,408.6	4,430.6	4,429.2	19.1	10.1	172.05		128.1	-254.9	567.8	546.2	21.56	26.336	
4,600.0	4,505.9	4,528.8	4,527.3	19.6	10.4	172.31		128.9	-260.6	584.9	562.8	22.08	26.487	
4,700.0	4,603.3	4,624.9	4,623.3	20.1	10.6	172.56		129.6	-265.9	602.2	579.6	22.60	26.647	
4,800.0	4,700.6	4,719.1	4,717.3	20.6	10.9	172.77		130.5	-270.5	620.2	597.0	23.11	26.831	

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 Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - Stroh O 13-20 (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 (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
4,900.0	4,797.9	4,813.7	4,811.9	21.1	11.1	172.94	131.6	-274.5	638.7	615.1	23.63	27.033	
5,000.0	4,895.2	4,910.6	4,908.7	21.6	11.4	173.12	132.6	-278.3	657.6	633.5	24.15	27.234	
5,100.0	4,992.6	5,003.6	5,001.6	22.1	11.6	173.31	133.2	-281.5	677.1	652.4	24.66	27.458	
5,200.0	5,089.9	5,101.7	5,099.6	22.6	11.9	173.49	133.9	-284.5	696.9	671.7	25.18	27.674	
5,300.0	5,187.2	5,198.8	5,196.7	23.1	12.1	173.65	134.7	-287.4	716.7	691.0	25.70	27.886	
5,400.0	5,284.5	5,294.4	5,292.2	23.6	12.4	173.84	135.0	-290.1	736.8	710.6	26.22	28.100	
5,500.0	5,381.9	5,392.4	5,390.3	24.1	12.6	174.04	135.0	-292.8	757.0	730.3	26.75	28.305	
5,600.0	5,479.2	5,485.7	5,483.5	24.6	12.9	174.23	134.9	-295.1	777.5	750.3	27.26	28.525	
5,700.0	5,576.5	5,581.0	5,578.8	25.1	13.1	174.46	134.1	-297.0	798.5	770.8	27.76	28.766	
5,800.0	5,673.8	5,682.8	5,680.6	25.6	13.4	174.78	132.1	-299.2	819.5	791.2	28.26	29.001	
5,900.0	5,771.2	5,788.0	5,785.7	26.1	13.6	175.13	129.7	-302.3	839.8	811.0	28.77	29.189	
6,000.0	5,868.5	5,889.9	5,887.5	26.6	13.9	175.39	128.2	-306.0	859.3	830.0	29.29	29.335	
6,100.0	5,965.8	5,987.2	5,984.7	27.1	14.1	175.58	127.4	-309.5	878.7	848.9	29.82	29.472	
6,200.0	6,063.1	6,083.2	6,080.7	27.6	14.4	175.75	127.0	-312.9	898.3	868.0	30.34	29.610	
6,300.0	6,160.5	6,180.9	6,178.3	28.1	14.6	175.89	126.9	-316.1	918.1	887.2	30.87	29.744	
6,400.0	6,257.8	6,275.1	6,272.4	28.6	14.9	176.00	126.9	-319.0	938.0	906.6	31.38	29.887	
6,500.0	6,355.1	6,370.2	6,367.5	29.0	15.1	-155.92	126.9	-321.6	957.7	925.8	31.91	30.018	
6,600.0	6,451.6	6,470.8	6,468.1	29.4	15.4	-131.42	127.1	-324.2	975.9	943.5	32.44	30.088	
6,700.0	6,545.6	6,565.0	6,562.2	29.7	15.7	-117.78	127.4	-327.0	992.5	959.6	32.93	30.143	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - UPRC 13-12E (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	15.0	15.0	0.0	0.0	-110.98	-110.98	-331.5	-864.6	925.9	925.9	0.02	N/A	
100.0	100.0	114.6	114.6	0.1	0.2	-110.97	-110.97	-331.3	-864.6	925.9	925.7	0.28	3,351.147	
200.0	200.0	210.7	210.7	0.3	0.4	-110.96	-110.96	-331.3	-864.9	926.2	925.5	0.71	1,312.571	
300.0	300.0	309.8	309.8	0.6	0.6	-31.94	-31.94	-331.6	-865.4	926.0	924.9	1.13	822.734	
400.0	400.0	410.3	410.3	0.8	0.8	-32.05	-32.05	-332.0	-865.7	924.2	922.7	1.56	591.865	
500.0	499.9	502.4	502.4	1.0	1.0	-32.17	-32.17	-331.9	-866.7	921.5	919.5	2.00	460.137	
600.0	599.7	601.1	601.1	1.2	1.3	-32.35	-32.35	-331.8	-868.2	917.7	915.3	2.48	369.786	
700.0	699.4	704.7	704.7	1.5	1.5	-32.63	-32.63	-331.9	-869.6	912.4	909.4	2.98	305.740	
800.0	798.9	805.6	805.6	1.8	1.8	-32.96	-32.96	-331.7	-870.7	905.3	901.8	3.48	260.101	
900.0	898.3	900.0	900.0	2.0	2.0	-33.37	-33.37	-332.1	-872.1	897.2	893.3	3.96	226.509	
1,000.0	997.4	997.8	997.7	2.4	2.3	-33.86	-33.86	-332.5	-873.9	888.2	883.7	4.46	198.973	
1,100.0	1,096.3	1,104.8	1,104.7	2.7	2.6	-34.43	-34.43	-332.0	-875.4	877.1	872.1	4.99	175.742	
1,200.0	1,194.9	1,200.0	1,199.9	3.0	2.8	-35.06	-35.06	-332.0	-876.6	864.5	859.0	5.49	157.349	
1,300.0	1,293.3	1,301.4	1,301.3	3.4	3.0	-35.87	-35.87	-332.5	-877.6	850.7	844.6	6.04	140.787	
1,400.0	1,391.2	1,402.1	1,402.0	3.8	3.3	-36.77	-36.77	-332.6	-878.2	835.2	828.6	6.62	126.248	
1,500.0	1,488.9	1,498.7	1,498.6	4.3	3.6	-37.74	-37.74	-332.5	-878.9	818.4	811.2	7.19	113.750	
1,600.0	1,586.2	1,599.7	1,599.6	4.7	3.8	-38.77	-38.77	-332.3	-879.5	800.6	792.8	7.81	102.559	
1,700.0	1,683.5	1,694.8	1,694.7	5.2	4.0	-39.74	-39.74	-331.9	-880.1	783.0	774.6	8.41	93.100	
1,800.0	1,780.9	1,793.2	1,793.1	5.7	4.3	-40.77	-40.77	-331.3	-880.9	765.7	756.6	9.03	84.786	
1,900.0	1,878.2	1,888.9	1,888.8	6.2	4.5	-41.85	-41.85	-331.1	-881.5	748.7	739.0	9.67	77.455	
2,000.0	1,975.5	1,987.0	1,986.9	6.7	4.8	-42.98	-42.98	-330.8	-882.3	732.1	721.8	10.32	70.958	
2,100.0	2,072.8	2,084.0	2,083.9	7.1	5.0	-44.09	-44.09	-329.7	-883.6	715.7	704.7	10.97	65.241	
2,200.0	2,170.2	2,180.6	2,180.4	7.6	5.2	-45.24	-45.24	-328.7	-885.0	699.8	688.1	11.64	60.126	
2,300.0	2,267.5	2,273.5	2,273.3	8.1	5.5	-46.39	-46.39	-327.8	-886.6	684.5	672.2	12.31	55.582	
2,400.0	2,364.8	2,373.9	2,373.7	8.6	5.7	-47.73	-47.73	-327.6	-888.4	669.9	656.9	13.03	51.399	
2,500.0	2,462.1	2,468.3	2,468.1	9.1	6.0	-49.02	-49.02	-327.0	-890.0	655.4	641.6	13.74	47.689	
2,600.0	2,559.5	2,565.5	2,565.3	9.6	6.2	-50.46	-50.46	-327.2	-891.8	641.9	627.4	14.48	44.326	
2,700.0	2,656.8	2,668.4	2,668.2	10.1	6.5	-51.99	-51.99	-326.6	-893.7	628.3	613.1	15.25	41.209	
2,800.0	2,754.1	2,764.9	2,764.7	10.6	6.7	-53.46	-53.46	-325.4	-895.3	614.6	598.6	16.00	38.418	
2,900.0	2,851.4	2,859.0	2,858.7	11.1	7.0	-54.89	-54.89	-324.3	-897.6	602.0	585.2	16.76	35.924	
3,000.0	2,948.8	2,956.7	2,956.3	11.6	7.2	-56.47	-56.47	-323.6	-900.2	590.2	572.6	17.55	33.632	
3,100.0	3,046.1	3,052.3	3,052.0	12.1	7.5	-58.12	-58.12	-323.2	-902.3	578.8	560.4	18.35	31.547	
3,200.0	3,143.4	3,149.4	3,149.0	12.6	7.7	-59.87	-59.87	-323.3	-904.8	568.6	549.4	19.16	29.672	
3,300.0	3,240.7	3,250.5	3,250.1	13.1	8.0	-61.68	-61.68	-322.6	-907.6	558.4	538.4	20.00	27.923	
3,400.0	3,338.1	3,347.1	3,346.6	13.6	8.2	-63.49	-63.49	-321.9	-910.0	548.6	527.7	20.83	26.335	
3,500.0	3,435.4	3,446.5	3,446.0	14.1	8.5	-65.43	-65.43	-321.5	-912.6	539.8	518.1	21.68	24.899	
3,600.0	3,532.7	3,547.4	3,546.9	14.6	8.8	-67.45	-67.45	-320.2	-914.8	530.6	508.0	22.53	23.545	
3,700.0	3,630.0	3,643.5	3,642.9	15.1	9.0	-69.46	-69.46	-319.3	-916.9	522.3	498.9	23.38	22.339	
3,800.0	3,727.3	3,739.9	3,739.3	15.6	9.3	-71.53	-71.53	-318.5	-919.0	514.8	490.6	24.23	21.245	
3,900.0	3,824.7	3,833.4	3,832.8	16.1	9.5	-73.67	-73.67	-318.6	-920.6	508.8	483.7	25.07	20.295	
4,000.0	3,922.0	3,927.5	3,926.9	16.6	9.7	-75.93	-75.93	-319.7	-922.2	504.4	478.5	25.89	19.482	
4,100.0	4,019.3	4,025.1	4,024.4	17.1	9.9	-78.32	-78.32	-321.2	-923.9	501.3	474.6	26.70	18.773	
4,200.0	4,116.6	4,126.1	4,125.5	17.6	10.2	-80.79	-80.79	-322.1	-925.7	498.5	471.0	27.53	18.107	
4,300.0	4,214.0	4,224.9	4,224.3	18.1	10.4	-83.18	-83.18	-322.7	-927.7	496.5	468.2	28.36	17.509	
4,400.0	4,311.3	4,326.7	4,326.0	18.6	10.7	-85.64	-85.64	-322.3	-929.8	494.5	465.3	29.18	16.945	
4,500.0	4,408.6	4,421.4	4,420.7	19.1	10.9	-87.96	-87.96	-322.3	-931.6	493.6	463.7	29.97	16.471	
4,549.9	4,457.2	4,471.3	4,470.6	19.3	11.1	-89.20	-89.20	-322.4	-932.4	493.6	463.2	30.36	16.255	
4,600.0	4,505.9	4,520.5	4,519.8	19.6	11.2	-90.43	-90.43	-322.3	-933.2	493.6	462.9	30.75	16.052	
4,700.0	4,603.3	4,617.9	4,617.1	20.1	11.4	-92.80	-92.80	-322.4	-935.2	494.7	463.2	31.51	15.700	
4,800.0	4,700.6	4,721.1	4,720.3	20.6	11.7	-95.26	-95.26	-321.6	-937.6	495.8	463.6	32.25	15.375	
4,900.0	4,797.9	4,817.8	4,817.0	21.1	12.0	-97.49	-97.49	-320.4	-940.3	497.5	464.5	32.95	15.096	

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 Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - UPRC 13-12E (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,895.2	4,911.0	4,910.1	21.6	12.2	-99.58		-320.0	-943.3	500.6	467.0	33.63	14.883	
5,100.0	4,992.6	5,003.6	5,002.7	22.1	12.4	-101.70		-320.4	-945.8	505.5	471.2	34.28	14.745	
5,200.0	5,089.9	5,100.1	5,099.1	22.6	12.7	-103.90		-321.5	-947.8	511.7	476.9	34.89	14.666	
5,300.0	5,187.2	5,206.0	5,205.0	23.1	12.9	-106.23		-322.0	-950.5	518.1	482.6	35.51	14.592	
5,400.0	5,284.5	5,300.0	5,299.0	23.6	13.2	-108.28		-322.1	-952.6	524.9	488.9	36.09	14.546	
5,500.0	5,381.9	5,404.4	5,403.3	24.1	13.5	-110.51		-321.9	-954.8	532.2	495.6	36.65	14.520	
5,600.0	5,479.2	5,495.2	5,494.2	24.6	13.7	-112.42		-321.6	-956.5	540.2	503.0	37.18	14.528	
5,700.0	5,576.5	5,597.9	5,596.9	25.1	14.0	-114.58		-321.5	-957.8	549.1	511.4	37.69	14.569	
5,800.0	5,673.8	5,697.4	5,696.4	25.6	14.2	-116.58		-320.7	-959.4	558.1	519.9	38.18	14.616	
5,900.0	5,771.2	5,787.1	5,786.0	26.1	14.4	-118.32		-320.5	-960.9	568.2	529.6	38.65	14.702	
6,000.0	5,868.5	5,887.4	5,886.3	26.6	14.7	-120.17		-321.0	-962.5	579.6	540.5	39.11	14.821	
6,100.0	5,965.8	5,979.4	5,978.3	27.1	14.9	-121.73		-321.7	-964.8	591.5	551.9	39.56	14.952	
6,200.0	6,063.1	6,083.1	6,082.0	27.6	15.2	-123.37		-323.0	-967.6	604.2	564.2	40.01	15.102	
6,300.0	6,160.5	6,179.9	6,178.7	28.1	15.4	-124.82		-323.7	-970.8	616.6	576.2	40.47	15.239	
6,400.0	6,257.8	6,281.4	6,280.1	28.6	15.7	-126.24		-324.6	-974.5	629.5	588.6	40.92	15.383	
6,500.0	6,355.1	6,374.6	6,373.3	29.0	15.9	-100.48		-325.2	-977.8	638.3	597.0	41.35	15.439	
6,600.0	6,451.6	6,468.5	6,467.1	29.4	16.2	-78.39		-326.2	-980.1	637.2	596.0	41.12	15.494	
6,700.0	6,545.6	6,563.4	6,561.9	29.7	16.4	-67.42		-327.7	-982.7	625.9	585.6	40.32	15.524	
6,800.0	6,635.4	6,652.2	6,650.7	30.1	16.6	-63.33		-329.1	-985.2	605.3	566.3	39.08	15.491	
6,900.0	6,719.6	6,739.2	6,737.7	30.3	16.8	-63.74		-330.5	-987.1	577.5	539.9	37.66	15.336	
7,000.0	6,796.7	6,824.6	6,823.0	30.6	17.0	-67.55		-331.2	-989.5	543.5	507.1	36.47	14.904	
7,100.0	6,865.3	6,897.8	6,896.2	30.9	17.2	-73.42		-331.0	-991.9	506.7	470.8	35.91	14.112	
7,200.0	6,924.4	6,954.8	6,953.1	31.1	17.4	-79.78		-330.8	-993.9	472.1	436.0	36.03	13.103	
7,300.0	6,972.8	7,000.0	6,998.3	31.4	17.5	-85.68		-330.9	-995.4	445.1	408.5	36.57	12.171	
7,400.0	7,009.8	7,038.7	7,037.0	31.7	17.6	-90.67		-331.3	-996.6	431.3	394.0	37.28	11.569	
7,430.4	7,018.7	7,047.7	7,046.0	31.8	17.6	-91.70		-331.4	-996.8	430.5	392.9	37.51	11.475 CC, ES	
7,500.0	7,034.8	7,064.3	7,062.6	32.0	17.6	-93.21		-331.6	-997.3	435.1	397.1	38.01	11.446 SF	
7,600.0	7,047.2	7,078.2	7,076.4	32.4	17.7	-93.07		-331.8	-997.7	457.9	419.2	38.74	11.820	
7,700.0	7,048.5	7,081.2	7,079.5	32.9	17.7	-92.00		-331.9	-997.8	498.2	458.6	39.56	12.594	
7,800.0	7,048.2	7,082.6	7,080.9	33.5	17.7	-92.19		-331.9	-997.8	553.5	512.8	40.65	13.617	
7,900.0	7,047.9	7,084.2	7,082.4	34.2	17.7	-92.38		-332.0	-997.9	620.1	578.3	41.84	14.820	
8,000.0	7,047.6	7,085.7	7,084.0	34.9	17.7	-92.59		-332.0	-997.9	694.8	651.7	43.13	16.110	
8,100.0	7,047.3	7,087.3	7,085.6	35.8	17.7	-92.80		-332.0	-997.9	775.2	730.7	44.49	17.423	
8,200.0	7,047.0	7,088.9	7,087.2	36.8	17.7	-93.01		-332.0	-998.0	859.7	813.8	45.92	18.721	
8,300.0	7,046.7	7,090.6	7,088.9	37.8	17.7	-93.24		-332.1	-998.0	947.2	899.8	47.41	19.981	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.13-T4N-R67W (Grid North) - UPRC 13-13E (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)			
7,800.0	7,048.2	7,080.7	7,078.3	33.5	16.7	-92.30	-1,504.1	-994.5	940.2	900.5	39.69	23.691		
7,900.0	7,047.9	7,080.3	7,077.9	34.2	16.7	-92.25	-1,504.1	-994.5	853.1	812.2	40.86	20.878		
8,000.0	7,047.6	7,079.9	7,077.5	34.9	16.7	-92.20	-1,504.1	-994.5	769.1	726.9	42.12	18.258		
8,100.0	7,047.3	7,079.5	7,077.1	35.8	16.7	-92.14	-1,504.1	-994.5	689.4	645.9	43.46	15.860		
8,200.0	7,047.0	7,079.1	7,076.7	36.8	16.7	-92.09	-1,504.1	-994.5	615.6	570.7	44.87	13.719		
8,300.0	7,046.7	7,078.7	7,076.3	37.8	16.7	-92.04	-1,504.1	-994.5	550.2	503.9	46.34	11.874		
8,400.0	7,046.3	7,078.3	7,075.9	38.9	16.7	-91.99	-1,504.1	-994.5	496.4	448.6	47.85	10.375		
8,500.0	7,046.0	7,077.9	7,075.5	40.1	16.7	-91.94	-1,504.1	-994.5	458.5	409.1	49.41	9.280		
8,600.0	7,045.7	7,077.5	7,075.1	41.4	16.7	-91.89	-1,504.1	-994.4	440.4	389.4	51.00	8.636		
8,631.3	7,045.6	7,077.4	7,075.0	41.8	16.7	-91.88	-1,504.1	-994.4	439.3	387.8	51.51	8.529 CC, ES		
8,700.0	7,045.4	7,077.2	7,074.7	42.7	16.7	-91.84	-1,504.1	-994.4	444.6	392.0	52.62	8.450 SF		
8,800.0	7,045.1	7,076.8	7,074.4	44.0	16.7	-91.79	-1,504.2	-994.4	470.6	416.3	54.27	8.671		
8,900.0	7,044.8	7,076.4	7,074.0	45.5	16.7	-91.74	-1,504.2	-994.4	515.0	459.0	55.95	9.204		
9,000.0	7,044.5	7,076.0	7,073.6	46.9	16.7	-91.70	-1,504.2	-994.4	573.5	515.9	57.65	9.949		
9,100.0	7,044.1	7,075.7	7,073.3	48.4	16.7	-91.65	-1,504.2	-994.4	642.4	583.0	59.36	10.822		
9,200.0	7,043.8	7,075.3	7,072.9	49.9	16.7	-91.60	-1,504.2	-994.4	718.6	657.5	61.09	11.763		
9,300.0	7,043.5	7,075.0	7,072.5	51.4	16.7	-91.55	-1,504.2	-994.4	800.1	737.3	62.84	12.733		
9,400.0	7,043.2	7,074.6	7,072.2	53.0	16.7	-91.51	-1,504.2	-994.4	885.4	820.8	64.60	13.706		
9,500.0	7,042.9	7,074.2	7,071.8	54.6	16.7	-91.46	-1,504.2	-994.3	973.5	907.1	66.37	14.668		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)													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	89.98		0.0	30.7	30.7				
100.0	100.0	99.0	99.0	0.1	0.1	89.98		0.0	30.7	30.7	30.5	0.22	137.172	
200.0	200.0	199.0	199.0	0.3	0.3	89.98		0.0	30.7	30.7	30.0	0.67	45.648	
300.0	300.0	299.0	299.0	0.6	0.6	169.34		0.0	30.7	31.5	30.4	1.11	28.312	
400.0	400.0	399.0	399.0	0.8	0.8	170.15		0.0	30.7	34.1	32.6	1.56	21.934	
500.0	499.9	500.2	500.1	1.0	1.0	170.90		0.3	29.0	36.7	34.7	1.99	18.440	
600.0	599.7	601.5	601.3	1.2	1.2	171.23		1.2	23.7	37.5	35.1	2.42	15.480	
700.0	699.4	702.7	702.2	1.5	1.5	171.21		2.8	14.9	36.6	33.7	2.87	12.749	
800.0	798.9	803.9	802.6	1.8	1.7	170.82		5.0	2.7	33.8	30.5	3.32	10.184	
900.0	898.3	904.5	902.0	2.0	2.1	169.97		7.7	-12.7	29.6	25.8	3.79	7.819	
1,000.0	997.4	1,004.5	1,000.6	2.4	2.4	169.32		10.5	-28.6	26.5	22.2	4.26	6.219	
1,100.0	1,096.3	1,104.5	1,099.3	2.7	2.7	169.29		13.4	-44.5	25.0	20.3	4.73	5.292	
1,133.2	1,129.1	1,137.7	1,132.1	2.8	2.9	169.44		14.3	-49.8	24.9	20.1	4.89	5.099 CC, ES	
1,200.0	1,194.9	1,204.5	1,198.0	3.0	3.1	169.99		16.2	-60.5	25.3	20.1	5.21	4.860	
1,300.0	1,293.3	1,304.5	1,296.6	3.4	3.5	171.26		19.0	-76.4	27.3	21.7	5.70	4.802	
1,400.0	1,391.2	1,404.4	1,395.2	3.8	3.8	172.78		21.8	-92.3	31.1	24.9	6.18	5.034	
1,500.0	1,488.9	1,504.2	1,493.8	4.3	4.2	174.26		24.6	-108.2	36.6	29.9	6.67	5.491	
1,600.0	1,586.2	1,604.0	1,592.2	4.7	4.6	175.49		27.5	-124.1	43.4	36.3	7.17	6.057	
1,700.0	1,683.5	1,703.8	1,690.7	5.2	4.9	176.39		30.3	-140.0	50.3	42.7	7.68	6.554	
1,800.0	1,780.9	1,803.5	1,789.1	5.7	5.3	177.08		33.1	-155.8	57.2	49.1	8.19	6.988	
1,900.0	1,878.2	1,903.3	1,887.6	6.2	5.7	177.62		35.9	-171.7	64.2	55.5	8.71	7.369	
2,000.0	1,975.5	2,003.0	1,986.0	6.7	6.1	178.05		38.7	-187.6	71.1	61.9	9.23	7.706	
2,100.0	2,072.8	2,102.8	2,084.5	7.1	6.4	178.41		41.6	-203.5	78.0	68.3	9.74	8.007	
2,200.0	2,170.2	2,202.5	2,182.9	7.6	6.8	178.71		44.4	-219.4	85.0	74.7	10.26	8.276	
2,300.0	2,267.5	2,302.3	2,281.3	8.1	7.2	178.96		47.2	-235.3	91.9	81.1	10.79	8.519	
2,400.0	2,364.8	2,402.1	2,379.8	8.6	7.6	179.18		50.0	-251.2	98.8	87.5	11.31	8.738	
2,500.0	2,462.1	2,501.8	2,478.2	9.1	8.0	179.37		52.8	-267.0	105.7	93.9	11.83	8.938	
2,600.0	2,559.5	2,601.6	2,576.7	9.6	8.3	179.53		55.6	-282.9	112.7	100.3	12.36	9.120	
2,700.0	2,656.8	2,701.3	2,675.1	10.1	8.7	179.68		58.5	-298.8	119.6	106.7	12.88	9.287	
2,800.0	2,754.1	2,801.1	2,773.6	10.6	9.1	179.81		61.3	-314.7	126.6	113.2	13.41	9.441	
2,900.0	2,851.4	2,900.9	2,872.0	11.1	9.5	179.93		64.1	-330.6	133.5	119.6	13.93	9.583	
3,000.0	2,948.8	3,000.6	2,970.5	11.6	9.8	-179.97		66.9	-346.5	140.4	126.0	14.46	9.714	
3,100.0	3,046.1	3,100.4	3,068.9	12.1	10.2	-179.87		69.7	-362.4	147.4	132.4	14.98	9.836	
3,200.0	3,143.4	3,200.1	3,167.4	12.6	10.6	-179.79		72.5	-378.2	154.3	138.8	15.51	9.949	
3,300.0	3,240.7	3,299.9	3,265.8	13.1	11.0	-179.71		75.4	-394.1	161.3	145.2	16.04	10.055	
3,400.0	3,338.1	3,399.6	3,364.2	13.6	11.4	-179.63		78.2	-410.0	168.2	151.6	16.56	10.154	
3,500.0	3,435.4	3,499.4	3,462.7	14.1	11.8	-179.57		81.0	-425.9	175.1	158.0	17.09	10.247	
3,600.0	3,532.7	3,599.2	3,561.1	14.6	12.1	-179.50		83.8	-441.8	182.1	164.5	17.62	10.334	
3,700.0	3,630.0	3,698.9	3,659.6	15.1	12.5	-179.45		86.6	-457.7	189.0	170.9	18.15	10.415	
3,800.0	3,727.3	3,798.7	3,758.0	15.6	12.9	-179.39		89.5	-473.5	196.0	177.3	18.68	10.492	
3,900.0	3,824.7	3,898.4	3,856.5	16.1	13.3	-179.34		92.3	-489.4	202.9	183.7	19.20	10.565	
4,000.0	3,922.0	3,998.2	3,954.9	16.6	13.7	-179.30		95.1	-505.3	209.8	190.1	19.73	10.634	
4,100.0	4,019.3	4,098.0	4,053.4	17.1	14.0	-179.25		97.9	-521.2	216.8	196.5	20.26	10.699	
4,200.0	4,116.6	4,197.7	4,151.8	17.6	14.4	-179.21		100.7	-537.1	223.7	202.9	20.79	10.761	
4,300.0	4,214.0	4,297.5	4,250.3	18.1	14.8	-179.17		103.5	-553.0	230.7	209.3	21.32	10.819	
4,400.0	4,311.3	4,397.2	4,348.7	18.6	15.2	-179.14		106.4	-568.9	237.6	215.7	21.85	10.875	
4,500.0	4,408.6	4,497.0	4,447.1	19.1	15.6	-179.10		109.2	-584.7	244.5	222.2	22.38	10.928	
4,600.0	4,505.9	4,596.8	4,545.6	19.6	15.9	-179.07		112.0	-600.6	251.5	228.6	22.91	10.979	
4,700.0	4,603.3	4,696.5	4,644.0	20.1	16.3	-179.04		114.8	-616.5	258.4	235.0	23.44	11.027	
4,800.0	4,700.6	4,796.3	4,742.5	20.6	16.7	-179.01		117.6	-632.4	265.4	241.4	23.97	11.073	
4,900.0	4,797.9	4,896.0	4,840.9	21.1	17.1	-178.99		120.5	-648.3	272.3	247.8	24.49	11.117	

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 Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)													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
5,000.0	4,895.2	4,995.8	4,939.4	21.6	17.5	-178.96		123.3	-664.2	279.2	254.2	25.02	11.159	
5,100.0	4,992.6	5,095.5	5,037.8	22.1	17.8	-178.94		126.1	-680.1	286.2	260.6	25.55	11.199	
5,200.0	5,089.9	5,195.3	5,136.3	22.6	18.2	-178.91		128.9	-695.9	293.1	267.0	26.08	11.238	
5,300.0	5,187.2	5,295.1	5,234.7	23.1	18.6	-178.89		131.7	-711.8	300.1	273.5	26.61	11.275	
5,400.0	5,284.5	5,394.8	5,333.2	23.6	19.0	-178.87		134.5	-727.7	307.0	279.9	27.14	11.311	
5,500.0	5,381.9	5,494.6	5,431.6	24.1	19.4	-178.85		137.4	-743.6	314.0	286.3	27.67	11.345	
5,600.0	5,479.2	5,594.3	5,530.0	24.6	19.8	-178.83		140.2	-759.5	320.9	292.7	28.20	11.378	
5,700.0	5,576.5	5,694.1	5,628.5	25.1	20.1	-178.81		143.0	-775.4	327.8	299.1	28.73	11.409	
5,800.0	5,673.8	5,793.9	5,726.9	25.6	20.5	-178.79		145.8	-791.3	334.8	305.5	29.26	11.440	
5,900.0	5,771.2	5,893.6	5,825.4	26.1	20.9	-178.77		148.6	-807.1	341.7	311.9	29.79	11.469	
6,000.0	5,868.5	5,993.4	5,923.8	26.6	21.3	-178.76		151.5	-823.0	348.7	318.3	30.32	11.498	
6,100.0	5,965.8	6,093.1	6,022.3	27.1	21.7	-178.74		154.3	-838.9	355.6	324.8	30.85	11.525	
6,200.0	6,063.1	6,192.9	6,120.7	27.6	22.0	-178.73		157.1	-854.8	362.5	331.2	31.39	11.552	
6,300.0	6,160.5	6,292.7	6,219.2	28.1	22.4	-178.71		159.9	-870.7	369.5	337.6	31.92	11.577	
6,400.0	6,257.8	6,392.4	6,317.6	28.6	22.8	-178.70		162.7	-886.6	376.4	344.0	32.45	11.602	
6,500.0	6,355.1	6,489.3	6,413.3	29.0	23.2	-151.93		165.0	-902.0	382.5	349.6	32.95	11.608	
6,600.0	6,451.6	6,580.2	6,502.7	29.4	23.4	-128.49		158.9	-916.4	387.9	354.5	33.37	11.624	
6,700.0	6,545.6	6,671.8	6,591.5	29.7	23.7	-115.34		141.9	-930.8	393.0	359.3	33.75	11.644	
6,800.0	6,635.4	6,764.2	6,678.5	30.1	23.9	-108.23		114.0	-944.8	397.9	363.8	34.13	11.661	
6,900.0	6,719.6	6,857.7	6,762.3	30.3	24.2	-104.32		75.2	-958.3	402.6	368.1	34.52	11.664	
7,000.0	6,796.7	6,952.3	6,841.8	30.6	24.4	-102.22		25.6	-971.1	407.0	372.0	34.96	11.643	
7,100.0	6,865.3	7,048.2	6,915.6	30.9	24.6	-101.25		-34.4	-983.0	411.1	375.6	35.48	11.586	
7,200.0	6,924.4	7,145.4	6,982.2	31.1	24.9	-101.03		-104.3	-993.8	414.8	378.7	36.15	11.475	
7,300.0	6,972.8	7,244.2	7,040.4	31.4	25.2	-101.33		-183.5	-1,003.2	418.2	381.1	37.01	11.298	
7,400.0	7,009.8	7,344.5	7,088.7	31.7	25.5	-102.02		-271.0	-1,011.0	421.0	382.9	38.12	11.046	
7,500.0	7,034.8	7,446.5	7,125.7	32.0	26.0	-103.01		-365.8	-1,016.9	423.4	383.9	39.52	10.713	
7,600.0	7,047.2	7,550.2	7,150.2	32.4	26.5	-104.24		-466.3	-1,020.9	425.2	383.9	41.26	10.305	
7,700.0	7,048.5	7,655.7	7,161.2	32.9	27.2	-105.46		-571.1	-1,022.6	426.3	383.0	43.30	9.845	
7,800.0	7,048.2	7,757.4	7,161.7	33.5	28.0	-105.57		-672.8	-1,022.7	426.4	380.9	45.49	9.374	
7,900.0	7,047.9	7,857.4	7,161.8	34.2	28.9	-105.62		-772.8	-1,022.7	426.5	378.7	47.84	8.916	
8,000.0	7,047.6	7,957.4	7,161.8	34.9	29.9	-105.66		-872.8	-1,022.7	426.6	376.3	50.35	8.473	
8,100.0	7,047.3	8,057.4	7,161.8	35.8	30.9	-105.71		-972.8	-1,022.7	426.7	373.7	53.00	8.051	
8,200.0	7,047.0	8,157.3	7,161.9	36.8	32.1	-105.76		-1,072.8	-1,022.7	426.8	371.0	55.77	7.653	
8,300.0	7,046.7	8,257.3	7,161.9	37.8	33.4	-105.80		-1,172.8	-1,022.7	426.9	368.3	58.65	7.279	
8,400.0	7,046.3	8,357.3	7,161.9	38.9	34.7	-105.85		-1,272.8	-1,022.7	427.0	365.4	61.61	6.930	
8,500.0	7,046.0	8,457.3	7,162.0	40.1	36.0	-105.89		-1,372.8	-1,022.7	427.1	362.4	64.66	6.606	
8,600.0	7,045.7	8,557.3	7,162.0	41.4	37.5	-105.94		-1,472.8	-1,022.7	427.2	359.4	67.76	6.304	
8,700.0	7,045.4	8,657.3	7,162.0	42.7	38.9	-105.98		-1,572.8	-1,022.7	427.3	356.4	70.92	6.025	
8,800.0	7,045.1	8,757.3	7,162.1	44.0	40.4	-106.03		-1,672.8	-1,022.7	427.4	353.3	74.14	5.765	
8,900.0	7,044.8	8,857.3	7,162.1	45.5	42.0	-106.07		-1,772.8	-1,022.7	427.5	350.1	77.39	5.524	
9,000.0	7,044.5	8,957.3	7,162.1	46.9	43.6	-106.12		-1,872.8	-1,022.7	427.6	346.9	80.68	5.299	
9,100.0	7,044.1	9,057.3	7,162.2	48.4	45.2	-106.16		-1,972.8	-1,022.7	427.7	343.7	84.01	5.091	
9,200.0	7,043.8	9,157.3	7,162.2	49.9	46.8	-106.21		-2,072.8	-1,022.7	427.8	340.4	87.36	4.896	
9,300.0	7,043.5	9,257.3	7,162.2	51.4	48.4	-106.25		-2,172.8	-1,022.7	427.9	337.1	90.74	4.715	
9,400.0	7,043.2	9,357.3	7,162.3	53.0	50.1	-106.29		-2,272.8	-1,022.7	428.0	333.8	94.15	4.546	
9,500.0	7,042.9	9,457.3	7,162.3	54.6	51.8	-106.34		-2,372.8	-1,022.7	428.1	330.5	97.57	4.387	
9,600.0	7,042.6	9,557.3	7,162.4	56.2	53.5	-106.38		-2,472.8	-1,022.7	428.2	327.2	101.01	4.239	
9,700.0	7,042.3	9,657.3	7,162.4	57.9	55.2	-106.43		-2,572.8	-1,022.7	428.3	323.8	104.47	4.100	
9,800.0	7,041.9	9,757.3	7,162.4	59.5	57.0	-106.47		-2,672.8	-1,022.7	428.4	320.4	107.94	3.969	
9,900.0	7,041.6	9,857.3	7,162.5	61.2	58.7	-106.52		-2,772.8	-1,022.7	428.5	317.0	111.42	3.845	
10,000.0	7,041.3	9,957.3	7,162.5	62.9	60.4	-106.56		-2,872.8	-1,022.7	428.6	313.6	114.92	3.729	

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 Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13G-323 - Wellbore #1 - Plan #3 (1-28-15)													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	
10,100.0	7,041.0	10,057.3	7,162.5	64.6	62.2	-106.61	-2,972.8	-1,022.7	428.7	310.2	118.42	3.620		
10,200.0	7,040.7	10,157.3	7,162.6	66.3	64.0	-106.65	-3,072.8	-1,022.7	428.8	306.8	121.94	3.516		
10,300.0	7,040.4	10,257.3	7,162.6	68.0	65.8	-106.70	-3,172.8	-1,022.7	428.9	303.4	125.46	3.418		
10,400.0	7,040.1	10,357.3	7,162.6	69.7	67.6	-106.74	-3,272.8	-1,022.7	429.0	300.0	128.99	3.326		
10,500.0	7,039.7	10,457.3	7,162.7	71.5	69.4	-106.79	-3,372.8	-1,022.7	429.1	296.5	132.53	3.238		
10,600.0	7,039.4	10,557.3	7,162.7	73.2	71.2	-106.83	-3,472.8	-1,022.7	429.2	293.1	136.07	3.154		
10,700.0	7,039.1	10,657.3	7,162.7	75.0	73.0	-106.88	-3,572.8	-1,022.7	429.3	289.6	139.62	3.075		
10,800.0	7,038.8	10,757.3	7,162.8	76.8	74.8	-106.92	-3,672.8	-1,022.7	429.4	286.2	143.17	2.999		
10,900.0	7,038.5	10,857.3	7,162.8	78.5	76.6	-106.97	-3,772.8	-1,022.7	429.5	282.7	146.73	2.927		
11,000.0	7,038.2	10,957.3	7,162.8	80.3	78.4	-107.01	-3,872.8	-1,022.7	429.6	279.3	150.29	2.858		
11,100.0	7,037.9	11,057.3	7,162.9	82.1	80.2	-107.05	-3,972.8	-1,022.7	429.7	275.8	153.86	2.793		
11,200.0	7,037.5	11,157.3	7,162.9	83.9	82.1	-107.10	-4,072.8	-1,022.7	429.8	272.3	157.43	2.730		
11,300.0	7,037.2	11,257.3	7,162.9	85.7	83.9	-107.14	-4,172.8	-1,022.7	429.9	268.9	161.00	2.670		
11,400.0	7,036.9	11,357.3	7,163.0	87.5	85.8	-107.19	-4,272.8	-1,022.7	430.0	265.4	164.58	2.613		
11,500.0	7,036.6	11,457.3	7,163.0	89.3	87.6	-107.23	-4,372.8	-1,022.7	430.1	261.9	168.16	2.558		
11,600.0	7,036.3	11,557.3	7,163.1	91.1	89.4	-107.28	-4,472.8	-1,022.7	430.2	258.5	171.74	2.505		
11,700.0	7,036.0	11,657.3	7,163.1	93.0	91.3	-107.32	-4,572.8	-1,022.7	430.3	255.0	175.32	2.454		
11,800.0	7,035.7	11,757.3	7,163.1	94.8	93.1	-107.37	-4,672.8	-1,022.7	430.4	251.5	178.90	2.406		
11,900.0	7,035.3	11,857.3	7,163.2	96.6	95.0	-107.41	-4,772.8	-1,022.7	430.5	248.0	182.49	2.359		
12,000.0	7,035.0	11,957.3	7,163.2	98.4	96.9	-107.45	-4,872.8	-1,022.7	430.6	244.5	186.07	2.314		
12,100.0	7,034.7	12,057.3	7,163.2	100.3	98.7	-107.50	-4,972.8	-1,022.7	430.7	241.0	189.66	2.271		
12,200.0	7,034.4	12,157.3	7,163.3	102.1	100.6	-107.54	-5,072.8	-1,022.7	430.8	237.6	193.25	2.229		
12,300.0	7,034.1	12,257.3	7,163.3	104.0	102.4	-107.59	-5,172.8	-1,022.7	430.9	234.1	196.84	2.189		
12,400.0	7,033.8	12,357.3	7,163.3	105.8	104.3	-107.63	-5,272.8	-1,022.7	431.0	230.6	200.43	2.151		
12,500.0	7,033.5	12,457.3	7,163.4	107.6	106.2	-107.68	-5,372.8	-1,022.7	431.1	227.1	204.02	2.113		
12,600.0	7,033.2	12,557.3	7,163.4	109.5	108.1	-107.72	-5,472.8	-1,022.7	431.2	223.6	207.61	2.077		
12,700.0	7,032.8	12,657.3	7,163.4	111.3	109.9	-107.76	-5,572.8	-1,022.7	431.3	220.1	211.20	2.042		
12,800.0	7,032.5	12,757.3	7,163.5	113.2	111.8	-107.81	-5,672.8	-1,022.7	431.4	216.7	214.80	2.009		
12,900.0	7,032.2	12,857.3	7,163.5	115.1	113.7	-107.85	-5,772.8	-1,022.7	431.6	213.2	218.39	1.976		
13,000.0	7,031.9	12,957.3	7,163.5	116.9	115.6	-107.90	-5,872.8	-1,022.7	431.7	209.7	221.98	1.945		
13,100.0	7,031.6	13,057.3	7,163.6	118.8	117.4	-107.94	-5,972.8	-1,022.7	431.8	206.2	225.57	1.914		
13,200.0	7,031.3	13,157.3	7,163.6	120.6	119.3	-107.98	-6,072.8	-1,022.7	431.9	202.7	229.16	1.885		
13,300.0	7,031.0	13,257.3	7,163.6	122.5	121.2	-108.03	-6,172.8	-1,022.7	432.0	199.2	232.76	1.856		
13,400.0	7,030.6	13,357.3	7,163.7	124.4	123.1	-108.07	-6,272.8	-1,022.7	432.1	195.7	236.35	1.828		
13,500.0	7,030.3	13,457.3	7,163.7	126.2	125.0	-108.12	-6,372.8	-1,022.7	432.2	192.3	239.94	1.801		
13,600.0	7,030.0	13,557.3	7,163.8	128.1	126.8	-108.16	-6,472.8	-1,022.7	432.3	188.8	243.53	1.775		
13,700.0	7,029.7	13,657.3	7,163.8	130.0	128.7	-108.20	-6,572.8	-1,022.7	432.4	185.3	247.12	1.750		
13,800.0	7,029.4	13,757.3	7,163.8	131.8	130.6	-108.25	-6,672.8	-1,022.7	432.5	181.8	250.71	1.725		
13,900.0	7,029.1	13,857.3	7,163.9	133.7	132.5	-108.29	-6,772.8	-1,022.7	432.6	178.3	254.30	1.701		
14,000.0	7,028.8	13,957.3	7,163.9	135.6	134.4	-108.34	-6,872.8	-1,022.7	432.7	174.9	257.89	1.678		
14,100.0	7,028.4	14,057.3	7,163.9	137.5	136.3	-108.38	-6,972.8	-1,022.7	432.9	171.4	261.48	1.655		
14,200.0	7,028.1	14,157.3	7,164.0	139.3	138.2	-108.42	-7,072.8	-1,022.7	433.0	167.9	265.06	1.633		
14,242.1	7,028.0	14,199.4	7,164.0	140.1	139.0	-108.44	-7,114.8	-1,022.7	433.0	166.4	266.57	1.624 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-223 - Wellbore #1 - Plan #3 (1-28-15)													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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	90.00	0.0	119.9	119.9					
100.0	100.0	99.0	99.0	0.1	0.1	90.00	0.0	119.9	119.9	119.7	0.22	536.218		
200.0	200.0	199.0	199.0	0.3	0.3	90.00	0.0	119.9	119.9	119.2	0.67	178.442 CC, ES		
300.0	300.0	299.0	299.0	0.6	0.6	169.13	0.0	119.9	120.8	119.7	1.11	108.435		
400.0	400.0	399.0	399.0	0.8	0.8	169.36	0.0	119.9	123.4	121.8	1.56	79.317		
500.0	499.9	498.9	498.9	1.0	1.0	169.71	0.0	119.9	127.6	125.6	2.00	63.775		
600.0	599.7	598.7	598.7	1.2	1.2	170.17	0.0	119.9	133.7	131.2	2.45	54.550		
700.0	699.4	698.4	698.4	1.5	1.5	170.70	0.0	119.9	141.4	138.5	2.90	48.749		
800.0	798.9	797.9	797.9	1.8	1.7	171.27	0.0	119.9	150.9	147.5	3.35	45.007		
900.0	898.3	897.3	897.3	2.0	1.9	171.86	0.0	119.9	162.1	158.3	3.80	42.597		
1,000.0	997.4	996.4	996.4	2.4	2.1	172.45	0.0	119.9	175.0	170.7	4.26	41.096		
1,100.0	1,096.3	1,095.3	1,095.3	2.7	2.3	173.02	0.0	119.9	189.7	184.9	4.71	40.242		
1,200.0	1,194.9	1,193.9	1,193.9	3.0	2.6	173.56	0.0	119.9	206.0	200.9	5.17	39.865		
1,300.0	1,293.3	1,292.3	1,292.3	3.4	2.8	174.06	0.0	119.9	224.2	218.5	5.63	39.847 SF		
1,400.0	1,391.2	1,390.2	1,390.2	3.8	3.0	174.53	0.0	119.9	244.0	237.9	6.08	40.107		
1,500.0	1,488.9	1,487.9	1,487.9	4.3	3.2	174.95	0.0	119.9	265.6	259.0	6.54	40.585		
1,600.0	1,586.2	1,585.2	1,585.2	4.7	3.5	175.35	0.0	119.9	288.4	281.4	7.01	41.120		
1,700.0	1,683.5	1,682.5	1,682.5	5.2	3.7	175.69	0.0	119.9	311.3	303.8	7.49	41.566		
1,800.0	1,780.9	1,779.9	1,779.9	5.7	3.9	175.99	0.0	119.9	334.2	326.3	7.97	41.950		
1,900.0	1,878.2	1,877.2	1,877.2	6.2	4.1	176.24	0.0	119.9	357.2	348.7	8.45	42.283		
2,000.0	1,975.5	1,974.5	1,974.5	6.7	4.3	176.47	0.0	119.9	380.1	371.2	8.93	42.575		
2,100.0	2,072.8	2,070.5	2,070.5	7.1	4.5	176.61	0.4	120.1	403.2	393.7	9.41	42.862		
2,200.0	2,170.2	2,165.8	2,165.8	7.6	4.8	176.53	2.2	120.9	426.6	416.7	9.88	43.168		
2,300.0	2,267.5	2,260.9	2,260.8	8.1	5.0	176.25	5.5	122.3	450.6	440.2	10.36	43.485		
2,400.0	2,364.8	2,355.7	2,355.5	8.6	5.2	175.82	10.1	124.3	474.9	464.1	10.84	43.810		
2,500.0	2,462.1	2,450.2	2,449.7	9.1	5.4	175.25	16.2	126.9	499.8	488.5	11.32	44.137		
2,600.0	2,559.5	2,544.2	2,543.4	9.6	5.6	174.57	23.7	130.1	525.2	513.4	11.81	44.462		
2,700.0	2,656.8	2,637.8	2,636.5	10.1	5.8	173.80	32.6	133.9	551.2	538.8	12.31	44.782		
2,800.0	2,754.1	2,730.9	2,728.9	10.6	6.1	172.95	42.8	138.3	577.7	564.9	12.81	45.093		
2,900.0	2,851.4	2,823.4	2,820.6	11.1	6.3	172.04	54.3	143.2	604.9	591.6	13.33	45.392		
3,000.0	2,948.8	2,915.4	2,911.5	11.6	6.5	171.09	67.0	148.7	632.8	619.0	13.85	45.676		
3,100.0	3,046.1	3,008.7	3,003.5	12.1	6.8	170.08	81.2	154.8	661.4	647.0	14.40	45.924		
3,200.0	3,143.4	3,103.9	3,097.3	12.6	7.1	169.13	95.8	161.1	690.2	675.2	14.96	46.124		
3,300.0	3,240.7	3,199.0	3,191.2	13.1	7.3	168.25	110.4	167.3	719.2	703.7	15.54	46.294		
3,400.0	3,338.1	3,294.1	3,285.0	13.6	7.6	167.44	125.0	173.6	748.3	732.2	16.11	46.437		
3,500.0	3,435.4	3,389.3	3,378.8	14.1	7.9	166.69	139.6	179.9	777.6	760.9	16.70	46.559		
3,600.0	3,532.7	3,484.4	3,472.6	14.6	8.2	165.99	154.2	186.1	806.9	789.6	17.29	46.663		
3,700.0	3,630.0	3,579.6	3,566.4	15.1	8.5	165.34	168.8	192.4	836.4	818.5	17.89	46.753		
3,800.0	3,727.3	3,674.7	3,660.2	15.6	8.8	164.74	183.4	198.7	866.0	847.5	18.49	46.830		
3,900.0	3,824.7	3,769.8	3,754.0	16.1	9.1	164.17	198.0	204.9	895.6	876.5	19.10	46.896		
4,000.0	3,922.0	3,865.0	3,847.8	16.6	9.5	163.64	212.6	211.2	925.3	905.6	19.71	46.954		
4,100.0	4,019.3	3,964.0	3,945.4	17.1	9.8	163.13	227.7	217.7	955.1	934.8	20.32	46.993		
4,200.0	4,116.6	4,078.4	4,058.7	17.6	10.1	162.75	242.3	224.0	983.6	962.7	20.92	47.018		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-243 - Wellbore #1 - Plan #3 (1-28-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWDD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.00		0.0	61.4	61.4				
100.0	100.0	99.0	99.0	0.1	0.1	90.00		0.0	61.4	61.4	61.1	0.22	274.344	
200.0	200.0	199.0	199.0	0.3	0.3	90.00		0.0	61.4	61.4	60.7	0.67	91.296 CC, ES	
300.0	300.0	299.0	299.0	0.6	0.6	169.21		0.0	61.4	62.2	61.1	1.11	55.854	
400.0	400.0	399.0	399.0	0.8	0.8	169.64		0.0	61.4	64.8	63.2	1.56	41.658	
500.0	499.9	498.9	498.9	1.0	1.0	170.28		0.0	61.4	69.1	67.1	2.00	34.516	
600.0	599.7	598.7	598.7	1.2	1.2	171.06		0.0	61.4	75.1	72.7	2.45	30.654	
700.0	699.4	698.4	698.4	1.5	1.5	171.89		0.0	61.4	82.9	80.0	2.90	28.572	
800.0	798.9	797.9	797.9	1.8	1.7	172.72		0.0	61.4	92.4	89.0	3.35	27.558	
900.0	898.3	897.3	897.3	2.0	1.9	173.50		0.0	61.4	103.6	99.8	3.80	27.235	
1,000.0	997.4	996.4	996.4	2.4	2.1	174.21		0.0	61.4	116.6	112.3	4.26	27.383	
1,100.0	1,096.3	1,095.3	1,095.3	2.7	2.3	174.85		0.0	61.4	131.3	126.6	4.71	27.865	
1,200.0	1,194.9	1,193.9	1,193.9	3.0	2.6	175.41		0.0	61.4	147.7	142.6	5.17	28.591	
1,300.0	1,293.3	1,292.3	1,292.3	3.4	2.8	175.90		0.0	61.4	165.9	160.3	5.62	29.501	
1,400.0	1,391.2	1,390.2	1,390.2	3.8	3.0	176.33		0.0	61.4	185.8	179.7	6.08	30.550	
1,500.0	1,488.9	1,487.9	1,487.9	4.3	3.2	176.71		0.1	60.6	206.7	200.2	6.54	31.631	
1,600.0	1,586.2	1,585.2	1,585.2	4.7	3.4	177.06		0.4	58.1	227.2	220.2	6.99	32.505	
1,700.0	1,683.5	1,682.5	1,682.5	5.2	3.7	177.37		0.9	53.8	246.0	238.5	7.45	33.001	
1,800.0	1,780.9	1,779.4	1,779.4	5.7	3.9	177.65		1.6	47.6	263.0	255.1	7.93	33.185	
1,900.0	1,878.2	1,876.2	1,876.2	6.2	4.1	177.91		2.6	39.5	278.2	269.8	8.40	33.109	
2,000.0	1,975.5	1,973.5	1,973.5	6.7	4.3	178.16		3.8	29.5	291.7	282.8	8.89	32.815	
2,100.0	2,072.8	2,070.8	2,070.8	7.1	4.6	178.40		5.2	17.6	303.4	294.0	9.38	32.337	
2,200.0	2,170.2	2,167.2	2,167.2	7.6	4.9	178.64		6.8	3.7	313.2	303.3	9.88	31.703	
2,300.0	2,267.5	2,263.5	2,263.5	8.1	5.2	178.88		8.7	-12.1	321.2	310.9	10.38	30.937	
2,400.0	2,364.8	2,360.8	2,360.8	8.6	5.5	179.12		10.7	-28.5	328.0	317.1	10.88	30.142	
2,500.0	2,462.1	2,457.1	2,457.1	9.1	5.8	179.34		12.6	-44.7	334.8	323.4	11.38	29.408	
2,600.0	2,559.5	2,554.5	2,554.5	9.6	6.1	179.55		14.5	-60.9	341.6	329.7	11.89	28.730	
2,700.0	2,656.8	2,651.8	2,651.8	10.1	6.4	179.76		16.4	-77.2	348.3	335.9	12.40	28.101	
2,800.0	2,754.1	2,749.1	2,749.1	10.6	6.8	179.95		18.4	-93.4	355.1	342.2	12.90	27.517	
2,900.0	2,851.4	2,846.4	2,846.4	11.1	7.1	179.86		20.3	-109.6	361.9	348.5	13.42	26.974	
3,000.0	2,948.8	2,943.8	2,943.8	11.6	7.5	179.67		22.2	-125.8	368.6	354.7	13.93	26.466	
3,100.0	3,046.1	3,041.1	3,041.1	12.1	7.8	179.50		24.1	-142.1	375.4	361.0	14.44	25.992	
3,200.0	3,143.4	3,138.4	3,138.4	12.6	8.2	179.33		26.1	-158.3	382.2	367.3	14.96	25.548	
3,300.0	3,240.7	3,235.7	3,235.7	13.1	8.5	179.16		28.0	-174.5	389.0	373.5	15.48	25.131	
3,400.0	3,338.1	3,333.1	3,333.1	13.6	8.9	179.01		29.9	-190.7	395.8	379.8	16.00	24.739	
3,500.0	3,435.4	3,430.4	3,430.4	14.1	9.2	178.85		31.8	-206.9	402.6	386.1	16.52	24.370	
3,600.0	3,532.7	3,527.7	3,527.7	14.6	9.6	178.71		33.8	-223.2	409.4	392.4	17.04	24.022	
3,700.0	3,630.0	3,625.0	3,625.0	15.1	9.9	178.56		35.7	-239.4	416.2	398.6	17.57	23.694	
3,800.0	3,727.3	3,722.3	3,722.3	15.6	10.3	178.42		37.6	-255.6	423.0	404.9	18.09	23.383	
3,900.0	3,824.7	3,819.7	3,819.7	16.1	10.7	178.29		39.5	-271.8	429.8	411.2	18.62	23.088	
4,000.0	3,922.0	3,917.0	3,917.0	16.6	11.0	178.16		41.4	-288.0	436.6	417.5	19.14	22.809	
4,100.0	4,019.3	4,014.3	4,014.3	17.1	11.4	178.03		43.4	-304.3	443.4	423.8	19.67	22.543	
4,200.0	4,116.6	4,111.6	4,111.6	17.6	11.8	177.91		45.3	-320.5	450.2	430.0	20.20	22.291	
4,300.0	4,214.0	4,209.0	4,209.0	18.1	12.2	177.79		47.2	-336.7	457.1	436.3	20.73	22.051	
4,400.0	4,311.3	4,306.3	4,306.3	18.6	12.5	177.68		49.1	-352.9	463.9	442.6	21.26	21.822	
4,500.0	4,408.6	4,403.6	4,403.6	19.1	12.9	177.57		51.1	-369.2	470.7	448.9	21.79	21.603	
4,600.0	4,505.9	4,500.9	4,500.9	19.6	13.3	177.46		53.0	-385.4	477.5	455.2	22.32	21.395	
4,700.0	4,603.3	4,598.3	4,598.3	20.1	13.6	177.35		54.9	-401.6	484.3	461.5	22.85	21.195	
4,800.0	4,700.6	4,695.6	4,695.6	20.6	14.0	177.25		56.8	-417.8	491.2	467.8	23.38	21.004	
4,900.0	4,797.9	4,792.9	4,792.9	21.1	14.4	177.15		58.8	-434.0	498.0	474.1	23.92	20.821	
5,000.0	4,895.2	4,890.2	4,890.2	21.6	14.8	177.05		60.7	-450.3	504.8	480.4	24.45	20.646	

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 Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-243 - Wellbore #1 - Plan #3 (1-28-15)													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
5,100.0	4,992.6	5,116.4	5,074.7	22.1	15.1	-176.96		62.6	-466.5	511.6	486.7	24.99	20.478	
5,200.0	5,089.9	5,216.1	5,173.1	22.6	15.5	-176.87		64.5	-482.7	518.5	492.9	25.52	20.316	
5,300.0	5,187.2	5,315.9	5,271.5	23.1	15.9	-176.78		66.5	-498.9	525.3	499.2	26.06	20.161	
5,400.0	5,284.5	5,415.7	5,369.9	23.6	16.3	-176.69		68.4	-515.1	532.1	505.5	26.59	20.011	
5,500.0	5,381.9	5,515.4	5,468.4	24.1	16.7	-176.61		70.3	-531.4	539.0	511.8	27.13	19.868	
5,600.0	5,479.2	5,615.2	5,566.8	24.6	17.0	-176.52		72.2	-547.6	545.8	518.1	27.66	19.729	
5,700.0	5,576.5	5,714.9	5,665.2	25.1	17.4	-176.44		74.2	-563.8	552.6	524.4	28.20	19.596	
5,800.0	5,673.8	5,809.3	5,758.3	25.6	17.7	-176.37		76.0	-579.0	559.6	530.9	28.72	19.489	
5,900.0	5,771.2	5,900.0	5,848.1	26.1	18.0	-176.33		77.4	-591.5	568.9	539.7	29.18	19.497	
6,000.0	5,868.5	5,975.5	5,923.1	26.6	18.2	-176.33		78.4	-599.7	580.9	551.3	29.60	19.624	
6,100.0	5,965.8	6,057.6	6,005.0	27.1	18.3	-176.36		79.2	-606.4	595.9	565.8	30.04	19.839	
6,200.0	6,063.1	6,139.0	6,086.3	27.6	18.5	-176.41		79.7	-610.8	613.6	583.1	30.46	20.145	
6,300.0	6,160.5	6,219.5	6,166.7	28.1	18.6	-176.50		80.0	-612.9	634.0	603.1	30.87	20.537	
6,400.0	6,257.8	6,309.6	6,256.8	28.6	18.7	-176.61		80.0	-613.0	656.7	625.4	31.31	20.976	
6,500.0	6,355.1	6,400.0	6,347.2	29.0	18.9	-148.60		78.8	-613.0	678.9	647.0	31.86	21.310	
6,600.0	6,451.6	6,478.6	6,425.3	29.4	19.0	-123.50		70.3	-613.0	699.9	667.6	32.35	21.634	
6,700.0	6,545.6	6,559.4	6,504.3	29.7	19.1	-108.79		53.3	-613.0	719.9	687.1	32.80	21.945	
6,800.0	6,635.4	6,640.9	6,581.6	30.1	19.2	-100.20		27.9	-613.0	738.6	705.4	33.21	22.238	
6,900.0	6,719.6	6,723.2	6,656.6	30.3	19.3	-94.93		-6.1	-613.0	755.7	722.2	33.57	22.511	
7,000.0	6,796.7	6,806.7	6,728.4	30.6	19.4	-91.60		-48.6	-613.0	771.2	737.2	33.97	22.701	
7,100.0	6,865.3	6,891.6	6,796.3	30.9	19.5	-89.53		-99.5	-613.0	784.7	750.3	34.40	22.811	
7,200.0	6,924.4	6,978.1	6,859.2	31.1	19.7	-88.34		-158.9	-613.0	796.2	761.3	34.93	22.793	
7,300.0	6,972.8	7,066.5	6,916.1	31.4	19.9	-87.85		-226.5	-613.0	805.6	770.0	35.62	22.616	
7,400.0	7,009.8	7,157.1	6,965.9	31.7	20.3	-87.93		-302.0	-613.0	812.8	776.3	36.52	22.254	
7,500.0	7,034.8	7,250.0	7,007.3	32.0	20.7	-88.51		-385.1	-613.0	817.6	779.9	37.68	21.700	
7,600.0	7,047.2	7,345.3	7,039.0	32.4	21.3	-89.54		-474.9	-613.0	820.1	781.0	39.12	20.963	
7,700.0	7,048.5	7,443.7	7,059.8	32.9	22.1	-90.86		-571.0	-613.0	820.5	779.5	41.07	19.982	
7,800.0	7,048.2	7,545.6	7,068.1	33.5	23.1	-91.46		-672.5	-613.0	820.7	777.3	43.40	18.912	
7,900.0	7,047.9	7,646.0	7,067.9	34.2	24.2	-91.47		-772.9	-613.0	820.7	774.9	45.87	17.894	
8,000.0	7,047.6	7,746.0	7,067.6	34.9	25.4	-91.47		-872.9	-613.0	820.7	772.2	48.49	16.924	
8,100.0	7,047.3	7,846.0	7,067.3	35.8	26.7	-91.47		-972.9	-613.0	820.7	769.4	51.28	16.006	
8,200.0	7,047.0	7,946.0	7,067.0	36.8	28.1	-91.47		-1,072.9	-613.0	820.7	766.5	54.19	15.146	
8,300.0	7,046.7	8,046.0	7,066.7	37.8	29.5	-91.47		-1,172.9	-613.0	820.7	763.5	57.21	14.346	
8,400.0	7,046.3	8,146.0	7,066.4	38.9	31.0	-91.47		-1,272.9	-613.0	820.7	760.4	60.32	13.606	
8,500.0	7,046.0	8,246.0	7,066.0	40.1	32.6	-91.47		-1,372.9	-613.0	820.7	757.2	63.51	12.922	
8,600.0	7,045.7	8,346.0	7,065.7	41.4	34.1	-91.47		-1,472.9	-613.0	820.7	754.0	66.77	12.291	
8,700.0	7,045.4	8,446.0	7,065.4	42.7	35.7	-91.47		-1,572.9	-613.0	820.7	750.6	70.09	11.709	
8,800.0	7,045.1	8,546.0	7,065.1	44.0	37.4	-91.47		-1,672.9	-613.0	820.7	747.3	73.46	11.172	
8,900.0	7,044.8	8,646.0	7,064.8	45.5	39.1	-91.47		-1,772.9	-613.0	820.7	743.9	76.87	10.676	
9,000.0	7,044.5	8,746.0	7,064.5	46.9	40.7	-91.47		-1,872.9	-613.0	820.7	740.4	80.33	10.218	
9,100.0	7,044.1	8,846.0	7,064.2	48.4	42.4	-91.47		-1,972.9	-613.0	820.7	736.9	83.81	9.793	
9,200.0	7,043.8	8,946.0	7,063.8	49.9	44.2	-91.47		-2,072.9	-613.0	820.7	733.4	87.32	9.399	
9,300.0	7,043.5	9,046.0	7,063.5	51.4	45.9	-91.47		-2,172.9	-613.0	820.7	729.9	90.86	9.032	
9,400.0	7,043.2	9,146.0	7,063.2	53.0	47.7	-91.47		-2,272.9	-613.0	820.7	726.3	94.43	8.691	
9,500.0	7,042.9	9,246.0	7,062.9	54.6	49.4	-91.47		-2,372.9	-613.0	820.7	722.7	98.01	8.374	
9,600.0	7,042.6	9,346.0	7,062.6	56.2	51.2	-91.47		-2,472.9	-613.0	820.7	719.1	101.62	8.077	
9,700.0	7,042.3	9,446.0	7,062.3	57.9	53.0	-91.47		-2,572.9	-613.0	820.7	715.5	105.24	7.799	
9,800.0	7,041.9	9,546.0	7,062.0	59.5	54.8	-91.47		-2,672.9	-613.0	820.7	711.9	108.87	7.539	
9,900.0	7,041.6	9,646.0	7,061.6	61.2	56.6	-91.47		-2,772.9	-613.0	820.7	708.2	112.52	7.294	
10,000.0	7,041.3	9,746.0	7,061.3	62.9	58.4	-91.47		-2,872.9	-613.0	820.7	704.5	116.18	7.064	
10,100.0	7,041.0	9,846.0	7,061.0	64.6	60.2	-91.47		-2,972.9	-613.0	820.7	700.9	119.85	6.848	

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 Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-243 - Wellbore #1 - Plan #3 (1-28-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance		Between		Minimum	Separation	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)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor		
10,200.0	7,040.7	9,946.0	7,060.7	66.3	62.1	-91.47	-3,072.9	-613.0	820.7	697.2	123.53	6.644		
10,300.0	7,040.4	10,046.0	7,060.4	68.0	63.9	-91.47	-3,172.9	-613.0	820.7	693.5	127.22	6.451		
10,400.0	7,040.1	10,146.0	7,060.1	69.7	65.7	-91.47	-3,272.9	-613.0	820.7	689.8	130.92	6.269		
10,500.0	7,039.7	10,246.0	7,059.8	71.5	67.6	-91.47	-3,372.9	-613.0	820.7	686.1	134.63	6.096		
10,600.0	7,039.4	10,346.0	7,059.4	73.2	69.4	-91.47	-3,472.9	-613.0	820.7	682.4	138.34	5.933		
10,700.0	7,039.1	10,446.0	7,059.1	75.0	71.3	-91.47	-3,572.9	-613.0	820.7	678.7	142.06	5.777		
10,800.0	7,038.8	10,546.0	7,058.8	76.8	73.1	-91.47	-3,672.9	-613.0	820.7	674.9	145.79	5.630		
10,900.0	7,038.5	10,646.0	7,058.5	78.5	75.0	-91.47	-3,772.9	-613.0	820.7	671.2	149.52	5.489		
11,000.0	7,038.2	10,746.0	7,058.2	80.3	76.8	-91.47	-3,872.9	-613.0	820.7	667.5	153.26	5.355		
11,100.0	7,037.9	10,846.0	7,057.9	82.1	78.7	-91.47	-3,972.9	-613.0	820.7	663.7	157.00	5.228		
11,200.0	7,037.5	10,946.0	7,057.6	83.9	80.5	-91.47	-4,072.9	-613.0	820.7	660.0	160.75	5.106		
11,300.0	7,037.2	11,046.0	7,057.2	85.7	82.4	-91.47	-4,172.9	-613.0	820.7	656.2	164.50	4.989		
11,400.0	7,036.9	11,146.0	7,056.9	87.5	84.3	-91.47	-4,272.9	-613.0	820.7	652.5	168.25	4.878		
11,500.0	7,036.6	11,246.0	7,056.6	89.3	86.2	-91.47	-4,372.9	-613.0	820.7	648.7	172.01	4.771		
11,600.0	7,036.3	11,346.0	7,056.3	91.1	88.0	-91.47	-4,472.9	-613.0	820.7	645.0	175.77	4.669		
11,700.0	7,036.0	11,446.0	7,056.0	93.0	89.9	-91.47	-4,572.9	-613.0	820.7	641.2	179.54	4.571		
11,800.0	7,035.7	11,546.0	7,055.7	94.8	91.8	-91.47	-4,672.9	-613.0	820.7	637.4	183.31	4.477		
11,900.0	7,035.3	11,646.0	7,055.4	96.6	93.7	-91.47	-4,772.9	-613.0	820.7	633.6	187.08	4.387		
12,000.0	7,035.0	11,746.0	7,055.0	98.4	95.5	-91.47	-4,872.9	-613.0	820.7	629.9	190.85	4.300		
12,100.0	7,034.7	11,846.0	7,054.7	100.3	97.4	-91.47	-4,972.9	-613.0	820.7	626.1	194.63	4.217		
12,200.0	7,034.4	11,946.0	7,054.4	102.1	99.3	-91.47	-5,072.9	-613.0	820.7	622.3	198.41	4.137		
12,300.0	7,034.1	12,046.0	7,054.1	104.0	101.2	-91.47	-5,172.9	-613.0	820.7	618.5	202.19	4.059		
12,400.0	7,033.8	12,146.0	7,053.8	105.8	103.1	-91.47	-5,272.9	-613.0	820.7	614.8	205.97	3.985		
12,500.0	7,033.5	12,246.0	7,053.5	107.6	105.0	-91.47	-5,372.9	-613.0	820.7	611.0	209.76	3.913		
12,600.0	7,033.2	12,346.0	7,053.2	109.5	106.9	-91.47	-5,472.9	-613.0	820.7	607.2	213.54	3.843		
12,700.0	7,032.8	12,446.0	7,052.8	111.3	108.7	-91.47	-5,572.9	-613.0	820.7	603.4	217.33	3.776		
12,800.0	7,032.5	12,546.0	7,052.5	113.2	110.6	-91.47	-5,672.9	-613.0	820.7	599.6	221.12	3.712		
12,900.0	7,032.2	12,646.0	7,052.2	115.1	112.5	-91.47	-5,772.9	-613.0	820.7	595.8	224.91	3.649		
13,000.0	7,031.9	12,746.0	7,051.9	116.9	114.4	-91.47	-5,872.9	-613.0	820.7	592.0	228.71	3.589		
13,100.0	7,031.6	12,846.0	7,051.6	118.8	116.3	-91.47	-5,972.9	-613.0	820.7	588.2	232.50	3.530		
13,200.0	7,031.3	12,946.0	7,051.3	120.6	118.2	-91.47	-6,072.9	-613.0	820.7	584.4	236.30	3.473		
13,300.0	7,031.0	13,046.0	7,051.0	122.5	120.1	-91.47	-6,172.9	-613.0	820.7	580.6	240.10	3.418		
13,400.0	7,030.6	13,146.0	7,050.6	124.4	122.0	-91.47	-6,272.9	-613.0	820.7	576.8	243.90	3.365		
13,500.0	7,030.3	13,246.0	7,050.3	126.2	123.9	-91.47	-6,372.9	-613.0	820.7	573.0	247.70	3.313		
13,600.0	7,030.0	13,346.0	7,050.0	128.1	125.8	-91.47	-6,472.9	-613.0	820.7	569.2	251.50	3.263		
13,700.0	7,029.7	13,446.0	7,049.7	130.0	127.7	-91.47	-6,572.9	-613.0	820.7	565.4	255.30	3.215		
13,800.0	7,029.4	13,546.0	7,049.4	131.8	129.6	-91.47	-6,672.9	-613.0	820.7	561.6	259.10	3.168		
13,900.0	7,029.1	13,646.0	7,049.1	133.7	131.5	-91.47	-6,772.9	-613.0	820.7	557.8	262.91	3.122		
14,000.0	7,028.8	13,746.0	7,048.8	135.6	133.4	-91.47	-6,872.9	-613.0	820.7	554.0	266.71	3.077		
14,100.0	7,028.4	13,846.0	7,048.4	137.5	135.3	-91.47	-6,972.9	-613.0	820.7	550.2	270.52	3.034		
14,200.0	7,028.1	13,946.0	7,048.1	139.3	137.2	-91.47	-7,072.9	-613.0	820.7	546.4	274.33	2.992		
14,233.0	7,028.0	13,979.0	7,048.0	140.0	137.8	-91.47	-7,105.9	-613.0	820.7	545.1	275.58	2.978		
14,242.1	7,028.0	13,988.0	7,048.0	140.1	138.0	-91.47	-7,114.9	-613.0	820.7	544.8	275.93	2.974 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-303 - Wellbore #1 - Plan #2 (1-28-15)													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
0.0	0.0	0.0	0.0	0.0	0.0	90.00	90.00	0.0	89.2	89.2				
100.0	100.0	99.0	99.0	0.1	0.1	90.00	90.00	0.0	89.2	89.2	89.0	0.22	399.046	
200.0	200.0	199.0	199.0	0.3	0.3	90.00	90.00	0.0	89.2	89.2	88.6	0.67	132.794 CC, ES	
300.0	300.0	299.0	299.0	0.6	0.6	169.16	169.16	0.0	89.2	90.1	89.0	1.11	80.892	
400.0	400.0	399.0	399.0	0.8	0.8	169.46	169.46	0.0	89.2	92.7	91.1	1.56	59.591	
500.0	499.9	498.9	498.9	1.0	1.0	169.92	169.92	0.0	89.2	97.0	95.0	2.00	48.448	
600.0	599.7	598.7	598.7	1.2	1.2	170.51	170.51	0.0	89.2	103.0	100.5	2.45	42.032	
700.0	699.4	698.4	698.4	1.5	1.5	171.16	171.16	0.0	89.2	110.7	107.8	2.90	38.178	
800.0	798.9	797.9	797.9	1.8	1.7	171.85	171.85	0.0	89.2	120.2	116.9	3.35	35.865	
900.0	898.3	897.3	897.3	2.0	1.9	172.54	172.54	0.0	89.2	131.4	127.6	3.80	34.547	
1,000.0	997.4	996.4	996.4	2.4	2.1	173.19	173.19	0.0	89.2	144.4	140.1	4.26	33.910	
1,100.0	1,096.3	1,095.3	1,095.3	2.7	2.3	173.81	173.81	0.0	89.2	159.1	154.4	4.71	33.755	
1,200.0	1,194.9	1,193.9	1,193.9	3.0	2.6	174.37	174.37	0.0	89.2	175.5	170.3	5.17	33.956	
1,300.0	1,293.3	1,292.3	1,292.3	3.4	2.8	174.89	174.89	0.0	89.2	193.6	188.0	5.62	34.424	
1,400.0	1,391.2	1,390.2	1,390.2	3.8	3.0	175.35	175.35	0.0	89.2	213.5	207.4	6.08	35.098	
1,500.0	1,488.9	1,487.9	1,487.9	4.3	3.2	175.76	175.76	0.0	89.2	235.1	228.5	6.54	35.932	
1,600.0	1,586.2	1,585.2	1,585.2	4.7	3.5	176.13	176.13	0.0	89.2	257.9	250.9	7.01	36.783	
1,700.0	1,683.5	1,683.3	1,683.3	5.2	3.7	176.35	176.35	0.5	88.9	280.5	273.0	7.49	37.441	
1,800.0	1,780.9	1,780.3	1,780.3	5.7	3.9	176.29	176.29	2.5	87.6	301.9	293.9	7.97	37.879	
1,900.0	1,878.2	1,877.7	1,877.7	6.2	4.1	175.98	175.98	6.1	85.3	322.2	313.8	8.45	38.117	
2,000.0	1,975.5	1,989.6	1,989.3	6.7	4.4	175.47	175.47	11.1	82.0	341.4	332.5	8.94	38.180	
2,100.0	2,072.8	2,091.8	2,091.2	7.1	4.6	174.79	174.79	17.7	77.7	359.6	350.1	9.44	38.093	
2,200.0	2,170.2	2,194.3	2,193.3	7.6	4.8	173.96	173.96	25.8	72.4	376.7	366.7	9.95	37.872	
2,300.0	2,267.5	2,297.1	2,295.3	8.1	5.1	172.98	172.98	35.5	66.1	392.7	382.3	10.46	37.531	
2,400.0	2,364.8	2,399.9	2,397.3	8.6	5.3	171.87	171.87	46.7	58.8	407.9	396.9	11.00	37.081	
2,500.0	2,462.1	2,502.9	2,499.2	9.1	5.6	170.64	170.64	59.5	50.5	422.1	410.5	11.56	36.528	
2,600.0	2,559.5	2,605.9	2,600.7	9.6	5.9	169.29	169.29	73.8	41.2	435.5	423.4	12.14	35.882	
2,700.0	2,656.8	2,708.8	2,701.9	10.1	6.2	167.82	167.82	89.6	30.9	448.2	435.4	12.75	35.152	
2,800.0	2,754.1	2,807.3	2,798.6	10.6	6.6	166.40	166.40	105.5	20.5	460.7	447.3	13.38	34.437	
2,900.0	2,851.4	2,905.9	2,895.3	11.1	6.9	165.05	165.05	121.4	10.2	473.4	459.4	14.03	33.755	
3,000.0	2,948.8	3,004.5	2,992.1	11.6	7.2	163.78	163.78	137.2	-0.1	486.4	471.7	14.69	33.108	
3,100.0	3,046.1	3,103.1	3,088.8	12.1	7.6	162.57	162.57	153.1	-10.5	499.6	484.3	15.37	32.496	
3,200.0	3,143.4	3,201.7	3,185.6	12.6	7.9	161.42	161.42	169.0	-20.8	513.1	497.0	16.07	31.919	
3,300.0	3,240.7	3,300.2	3,282.3	13.1	8.3	160.33	160.33	184.8	-31.1	526.7	509.9	16.79	31.374	
3,400.0	3,338.1	3,398.8	3,379.1	13.6	8.7	159.30	159.30	200.7	-41.5	540.5	523.0	17.51	30.861	
3,500.0	3,435.4	3,495.5	3,474.0	14.1	9.0	158.35	158.35	216.2	-51.6	554.5	536.3	18.23	30.412	
3,600.0	3,532.7	3,587.3	3,564.4	14.6	9.3	157.69	157.69	229.1	-60.0	569.5	550.7	18.86	30.206	
3,700.0	3,630.0	3,678.9	3,655.2	15.1	9.5	157.33	157.33	239.6	-66.8	585.8	566.4	19.44	30.142 SF	
3,800.0	3,727.3	3,770.4	3,746.1	15.6	9.7	157.26	157.26	247.6	-72.0	603.3	583.3	19.97	30.209	
3,900.0	3,824.7	3,861.4	3,836.9	16.1	9.9	157.44	157.44	253.1	-75.6	621.9	601.4	20.46	30.401	
4,000.0	3,922.0	3,951.7	3,927.2	16.6	10.1	157.85	157.85	256.2	-77.6	641.7	620.8	20.90	30.710	
4,100.0	4,019.3	4,042.9	4,018.3	17.1	10.3	158.48	158.48	257.0	-78.1	662.7	641.4	21.30	31.118	
4,200.0	4,116.6	4,140.2	4,115.6	17.6	10.4	159.18	159.18	257.0	-78.1	684.2	662.5	21.70	31.526	
4,300.0	4,214.0	4,237.5	4,213.0	18.1	10.6	159.84	159.84	257.0	-78.1	705.8	683.7	22.12	31.905	
4,400.0	4,311.3	4,334.8	4,310.3	18.6	10.8	160.46	160.46	257.0	-78.1	727.5	705.0	22.54	32.269	
4,500.0	4,408.6	4,432.2	4,407.6	19.1	11.0	161.05	161.05	257.0	-78.1	749.3	726.3	22.97	32.619	
4,600.0	4,505.9	4,529.5	4,504.9	19.6	11.2	161.60	161.60	257.0	-78.1	771.1	747.7	23.40	32.955	
4,700.0	4,603.3	4,626.8	4,602.3	20.1	11.4	162.12	162.12	257.0	-78.1	793.0	769.2	23.83	33.278	
4,800.0	4,700.6	4,724.1	4,699.6	20.6	11.6	162.62	162.62	257.0	-78.1	814.9	790.7	24.26	33.587	
4,900.0	4,797.9	4,821.5	4,796.9	21.1	11.7	163.09	163.09	257.0	-78.1	836.9	812.2	24.70	33.885	
5,000.0	4,895.2	4,918.8	4,894.2	21.6	11.9	163.53	163.53	257.0	-78.1	859.0	833.9	25.14	34.171	

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 Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13K-303 - Wellbore #1 - Plan #2 (1-28-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
5,100.0	4,992.6	5,016.1	4,991.6	22.1	12.1	163.95	257.0	-78.1	881.1	855.5	25.58	34.446	
5,200.0	5,089.9	5,113.4	5,088.9	22.6	12.3	164.36	257.0	-78.1	903.3	877.2	26.02	34.710	
5,300.0	5,187.2	5,210.8	5,186.2	23.1	12.5	164.74	257.0	-78.1	925.4	899.0	26.47	34.964	
5,400.0	5,284.5	5,308.1	5,283.5	23.6	12.7	165.10	257.0	-78.1	947.7	920.8	26.92	35.209	
5,500.0	5,381.9	5,405.4	5,380.9	24.1	12.9	165.45	257.0	-78.1	969.9	942.6	27.36	35.444	
5,600.0	5,479.2	5,502.7	5,478.2	24.6	13.1	165.79	257.0	-78.1	992.2	964.4	27.82	35.671	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

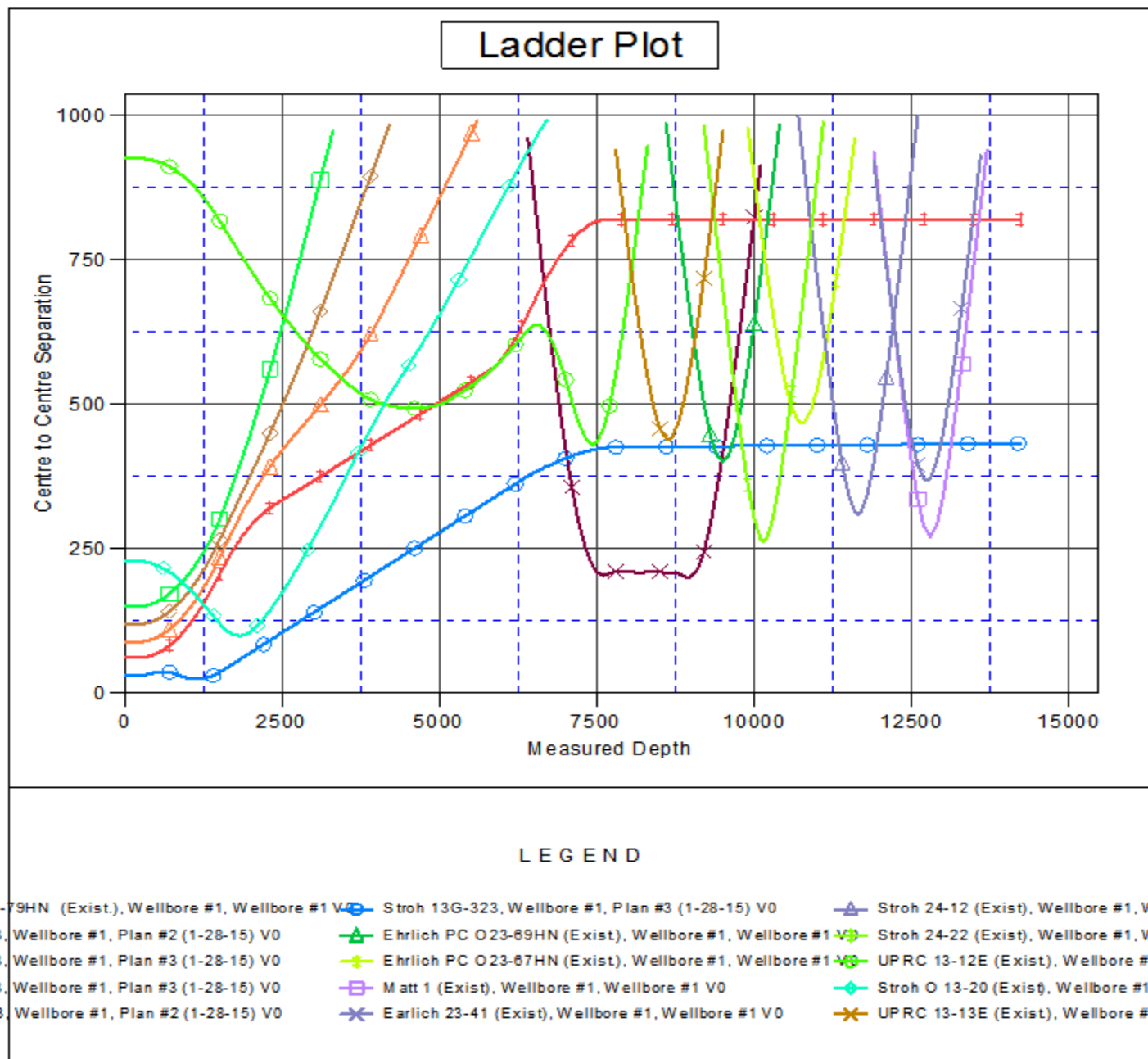
Offset Design Stroh 13GK-HZ Pad Sec. 13-T4N-R67W - Stroh 13O-343 - Wellbore #1 - Plan #2 (1-28-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	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	90.00	0.0	150.6	150.6					
100.0	100.0	98.0	98.0	0.1	0.1	90.00	0.0	150.6	150.6	150.4	0.22	676.784		
200.0	200.0	198.0	198.0	0.3	0.3	90.00	0.0	150.6	150.6	149.9	0.67	224.842 CC, ES		
300.0	300.0	298.0	298.0	0.6	0.6	169.11	0.0	150.6	151.5	150.3	1.11	136.251		
400.0	400.0	398.0	398.0	0.8	0.8	169.29	0.0	150.6	154.0	152.5	1.55	99.186		
500.0	499.9	497.9	497.9	1.0	1.0	169.58	0.0	150.6	158.3	156.3	2.00	79.191		
600.0	599.7	597.7	597.7	1.2	1.2	169.95	0.0	150.6	164.3	161.9	2.45	67.130		
700.0	699.4	697.4	697.4	1.5	1.5	170.40	0.0	150.6	172.1	169.2	2.90	59.368		
800.0	798.9	796.9	796.9	1.8	1.7	170.89	0.0	150.6	181.5	178.2	3.35	54.189		
900.0	898.3	896.3	896.3	2.0	1.9	171.40	0.0	150.6	192.7	188.9	3.80	50.679		
1,000.0	997.4	995.4	995.4	2.4	2.1	171.93	0.0	150.6	205.6	201.4	4.26	48.311		
1,100.0	1,096.3	1,094.3	1,094.3	2.7	2.3	172.45	0.0	150.6	220.3	215.6	4.71	46.755		
1,200.0	1,194.9	1,192.9	1,192.9	3.0	2.6	172.95	0.0	150.6	236.6	231.5	5.17	45.797		
1,300.0	1,293.3	1,287.8	1,287.8	3.4	2.8	173.35	0.3	151.2	255.4	249.7	5.61	45.508 SF		
1,400.0	1,391.2	1,381.5	1,381.4	3.8	3.0	173.57	1.1	153.3	277.2	271.2	6.05	45.805		
1,500.0	1,488.9	1,474.1	1,474.0	4.3	3.2	173.65	2.5	156.7	302.2	295.7	6.49	46.528		
1,600.0	1,586.2	1,565.8	1,565.5	4.7	3.4	173.64	4.5	161.4	329.7	322.8	6.95	47.469		
1,700.0	1,683.5	1,656.6	1,656.2	5.2	3.6	173.52	7.0	167.4	358.7	351.3	7.40	48.450		
1,800.0	1,780.9	1,746.7	1,745.9	5.7	3.8	173.33	10.0	174.7	389.1	381.2	7.86	49.473		
1,900.0	1,878.2	1,835.9	1,834.6	6.2	4.0	173.07	13.6	183.1	420.8	412.4	8.33	50.529		
2,000.0	1,975.5	1,924.2	1,922.3	6.7	4.2	172.76	17.6	192.8	453.8	445.0	8.79	51.609		
2,100.0	2,072.8	2,011.7	2,009.0	7.1	4.5	172.42	22.1	203.6	488.1	478.8	9.26	52.708		
2,200.0	2,170.2	2,100.0	2,096.3	7.6	4.7	172.05	27.1	215.7	523.7	513.9	9.73	53.797		
2,300.0	2,267.5	2,183.8	2,179.0	8.1	5.0	171.68	32.4	228.4	560.5	550.3	10.20	54.939		
2,400.0	2,364.8	2,268.4	2,262.2	8.6	5.2	171.30	38.2	242.3	598.7	588.0	10.68	56.051		
2,500.0	2,462.1	2,352.0	2,344.3	9.1	5.5	170.91	44.4	257.2	638.1	626.9	11.16	57.183		
2,600.0	2,559.5	2,434.7	2,425.1	9.6	5.8	170.52	50.9	272.9	678.7	667.1	11.64	58.309		
2,700.0	2,656.8	2,518.9	2,507.3	10.1	6.1	170.13	58.0	290.1	720.5	708.4	12.13	59.392		
2,800.0	2,754.1	2,609.4	2,595.5	10.6	6.5	169.73	65.8	308.8	762.7	750.0	12.64	60.352		
2,900.0	2,851.4	2,700.0	2,683.8	11.1	6.9	169.38	73.6	327.5	804.8	791.7	13.15	61.224		
3,000.0	2,948.8	2,790.6	2,772.1	11.6	7.3	169.07	81.4	346.2	847.0	833.4	13.66	62.016		
3,100.0	3,046.1	2,881.1	2,860.3	12.1	7.6	168.78	89.2	364.9	889.3	875.1	14.17	62.741		
3,200.0	3,143.4	2,971.7	2,948.6	12.6	8.0	168.52	97.0	383.7	931.5	916.8	14.69	63.405		
3,300.0	3,240.7	3,062.3	3,036.9	13.1	8.4	168.28	104.8	402.4	973.7	958.5	15.21	64.016		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 777-Reference													Offset Well Error:	0.0 ft
Stroh PC O13-79HN Pad Sec.14-T4N-R67W - Stroh PC O13-79HN (Exist.) - Wellbore #1 - Wellbore #1														
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)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
6,400.0	6,257.8	9,407.0	7,199.0	28.6	45.3	-18.70		263.0	-1,602.9	961.7	898.9	62.80	15.313	
6,500.0	6,355.1	9,404.5	7,199.0	29.0	45.2	44.78		260.6	-1,602.9	863.0	807.4	55.64	15.510	
6,600.0	6,451.6	9,390.5	7,199.4	29.4	45.0	90.01		246.6	-1,602.9	765.9	715.5	50.33	15.218	
6,700.0	6,545.6	9,363.0	7,200.1	29.7	44.5	112.57		219.1	-1,603.0	672.0	624.2	47.79	14.063	
6,800.0	6,635.4	9,307.8	7,200.9	30.1	43.6	123.01		163.9	-1,603.2	582.8	536.0	46.78	12.458	
6,900.0	6,719.6	9,249.2	7,200.2	30.3	42.6	128.77		105.3	-1,603.1	498.8	452.8	46.01	10.841	
7,000.0	6,796.7	9,193.8	7,199.4	30.6	41.7	132.12		49.9	-1,603.2	422.9	377.7	45.24	9.347	
7,100.0	6,865.3	9,121.0	7,198.6	30.9	40.5	132.48		-22.9	-1,603.8	356.9	312.1	44.83	7.962	
7,200.0	6,924.4	9,041.7	7,197.0	31.1	39.3	131.18		-102.2	-1,603.6	301.1	256.4	44.62	6.747	
7,300.0	6,972.8	8,958.7	7,196.0	31.4	37.9	128.75		-185.2	-1,603.9	257.8	213.2	44.65	5.775	
7,400.0	7,009.8	8,867.6	7,195.0	31.7	36.4	125.26		-276.2	-1,604.8	227.3	182.3	45.00	5.051	
7,500.0	7,034.8	8,775.1	7,193.0	32.0	35.0	121.49		-368.7	-1,607.6	209.5	163.9	45.60	4.594	
7,594.6	7,046.9	8,686.0	7,193.4	32.4	33.6	119.22		-457.8	-1,611.3	204.4	158.7	45.65	4.476	
7,600.0	7,047.2	8,680.6	7,193.5	32.4	33.5	119.15		-463.1	-1,611.5	204.4	158.8	45.63	4.479	
7,700.0	7,048.5	8,579.9	7,195.1	32.9	32.0	118.58		-563.7	-1,616.3	208.3	163.3	45.06	4.624	
7,800.0	7,048.2	8,473.1	7,196.1	33.5	30.4	118.53		-670.4	-1,619.0	211.2	166.6	44.55	4.740	
7,900.0	7,047.9	8,370.1	7,196.8	34.2	28.8	118.81		-773.4	-1,618.7	211.4	167.3	44.06	4.798	
8,000.0	7,047.6	8,268.5	7,197.3	34.9	27.3	119.10		-875.0	-1,618.0	211.2	167.5	43.69	4.834	
8,100.0	7,047.3	8,167.6	7,196.6	35.8	25.9	119.22		-975.9	-1,616.6	209.7	166.2	43.60	4.811	
8,174.6	7,047.1	8,095.8	7,196.5	36.5	25.0	119.33		-1,047.7	-1,615.8	209.1	165.5	43.65	4.791	
8,200.0	7,047.0	8,071.9	7,196.8	36.8	24.7	119.45		-1,071.6	-1,615.7	209.2	165.6	43.63	4.795	
8,300.0	7,046.7	7,970.7	7,199.6	37.8	23.3	120.23		-1,172.7	-1,615.3	210.4	167.0	43.45	4.842	
8,400.0	7,046.3	7,869.7	7,200.0	38.9	22.1	120.54		-1,273.8	-1,614.4	210.0	166.4	43.58	4.819	
8,500.0	7,046.0	7,769.6	7,200.4	40.1	20.8	120.78		-1,373.9	-1,613.7	209.8	166.0	43.72	4.797	
8,600.0	7,045.7	7,670.0	7,198.6	41.4	19.6	120.36		-1,473.5	-1,614.2	209.5	165.2	44.26	4.733	
8,700.0	7,045.4	7,567.6	7,190.7	42.7	18.5	118.07		-1,575.4	-1,617.8	208.9	163.2	45.72	4.569	
8,800.0	7,045.1	7,461.2	7,169.3	44.0	17.5	111.88		-1,679.2	-1,625.9	207.4	158.6	48.75	4.254	
8,900.0	7,044.8	7,351.1	7,133.0	45.5	16.7	101.81		-1,782.9	-1,631.0	202.0	149.4	52.67	3.836	
8,950.8	7,044.6	7,305.8	7,113.4	46.2	16.4	96.23		-1,823.7	-1,633.0	200.7	146.2	54.46	3.685 CC, ES	
9,000.0	7,044.5	7,263.6	7,092.8	46.9	16.2	90.36		-1,860.4	-1,635.3	202.2	146.3	55.90	3.617 SF	
9,100.0	7,044.1	7,183.7	7,049.7	48.4	15.9	78.60		-1,927.5	-1,639.9	215.3	157.8	57.52	3.744	
9,200.0	7,043.8	7,117.3	7,009.0	49.9	15.8	68.79		-1,979.8	-1,645.0	245.2	187.5	57.68	4.251	
9,300.0	7,043.5	7,061.6	6,970.6	51.4	15.7	60.84		-2,019.8	-1,649.3	290.5	233.4	57.07	5.090	
9,400.0	7,043.2	7,014.7	6,935.1	53.0	15.6	54.61		-2,050.3	-1,652.9	348.9	292.7	56.24	6.204	
9,500.0	7,042.9	6,973.1	6,901.7	54.6	15.6	49.59		-2,074.8	-1,655.7	416.7	361.3	55.39	7.522	
9,600.0	7,042.6	6,936.7	6,871.3	56.2	15.6	45.64		-2,094.7	-1,657.9	490.9	436.2	54.71	8.973	
9,700.0	7,042.3	6,910.0	6,848.3	57.9	15.5	43.00		-2,108.3	-1,659.5	570.0	515.5	54.54	10.451	
9,800.0	7,041.9	6,877.0	6,819.4	59.5	15.5	40.03		-2,124.0	-1,661.4	652.5	598.5	54.01	12.082	
9,900.0	7,041.6	6,852.7	6,797.7	61.2	15.5	38.03		-2,134.8	-1,662.6	737.7	683.7	53.95	13.674	
10,000.0	7,041.3	6,831.7	6,778.6	62.9	15.5	36.40		-2,143.6	-1,663.6	825.0	771.0	54.05	15.263	
10,100.0	7,041.0	6,815.0	6,763.2	64.6	15.5	35.17		-2,150.1	-1,664.2	914.1	859.7	54.37	16.812	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
Reference Site:	Stroh 13GK-HZ Pad Sec. 13-T4N-R67W	MD Reference:	WELL @ 4821.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stroh 13G-203	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	landmark
Reference Design:	Plan #2 (1-27-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4821.0ft (Original Well Elev) Coordinates are relative to: Stroh 13G-203
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.42°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Stroh 13G-203
Project:	SEC.13-T4N-R67W	TVD Reference:	WELL @ 4821.0ft (Original Well Elev)
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