

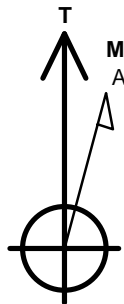
PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Klein 190-212**

Surface Location: Klein 190-HZ Pad Sec.19-T5N-R64W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4626.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1384543.58 3253257.75 40.385410 -104.590850
 RKB - 13' WELL @ 4639.0ft (RKB - 13')

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
50'N/S Hardline (190-212)	1.0	67.7	5296.0	Rectangle (Sides: L10023.1 W100.0)
SHL 2358'FNL & 2101'FEL, Sec.19	1.0	0.0	0.0	Point
BHL 2368'FNL & 2353'FEL, Sec.21	6641.0	67.7	10307.5	Point

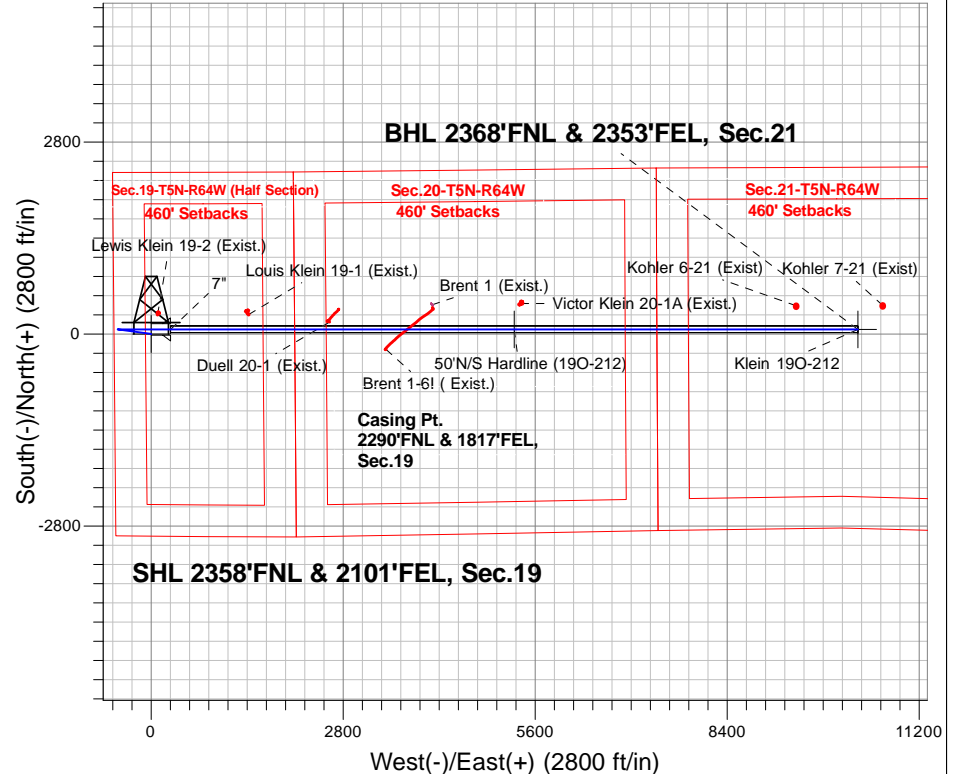


Azimuths to True North
 Magnetic North: 8.22°
 Magnetic Field
 Strength: 52711.2snT
 Dip Angle: 66.92°
 Date: 7/22/2015
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1500.0	1500.0	KOP #1 - Start Build 1.00
5426.2	5455.8	KOP #2 - Start Drop -2.00
5976.8	6007.4	Start Build 7.50
6740.7	7215.0	Start 10023.6 hold at 7215.0 MD
6641.0	17238.6	TD at 17238.6

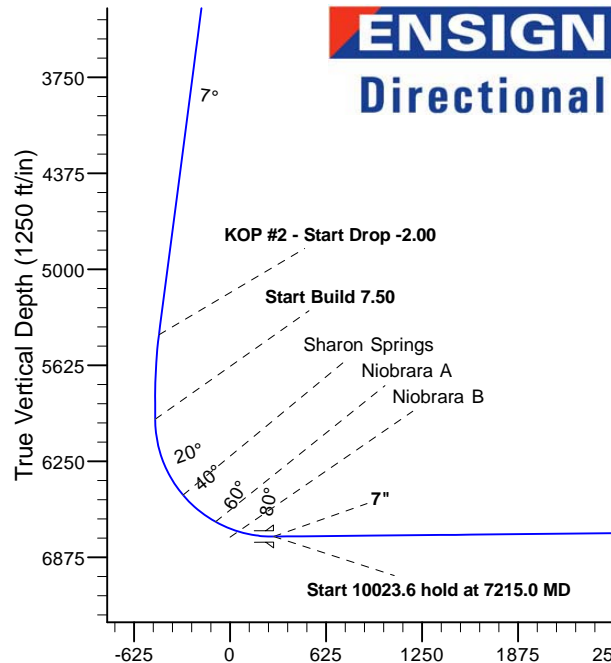
Klein 190-HZ Pad Sec.19-T5N-R64W
 Klein 190-212
 Plan #3 (7-15-15)



SHL 2358'FNL & 2101'FEL, Sec.19

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1500.0	0.00	0.00	1500.0	0.0	0.0	0.00	0.00	0.0	
3	2249.7	7.50	277.92	2247.6	6.7	-48.5	1.00	277.92	-48.5	
4	5455.8	7.50	277.92	5426.2	64.4	-462.8	0.00	0.00	-462.4	
5	5830.6	0.00	0.00	5800.0	67.7	-487.1	2.00	180.00	-486.6	
6	6007.4	0.00	0.00	5976.8	67.7	-487.1	0.00	0.00	-486.6	
7	7215.0	90.57	90.00	6740.7	67.7	284.4	7.50	90.00	284.9	
8	17238.6	90.57	90.00	6641.0	67.7	10307.5	0.00	0.00	10307.7	BHL 2368'FNL & 2353'FEL, Sec.21



BHL 2368'FNL & 2353'FEL, Sec.21

TD at 17238.6

Vertical Section at 89.62° (1250 ft/in)



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W

Klein 19O-HZ Pad Sec.19-T5N-R64W

Klein 19O-212

Wellbore #1

Plan: Plan #3 (7-15-15)

Standard Planning Report

29 July, 2015

Database:	US_EDM	Local Co-ordinate Reference:	Well Klein 190-212
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-15-15)		

Project	SEC.19-T5N-R64W		
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	Klein 190-HZ Pad Sec.19-T5N-R64W		
Site Position:		Northing:	1,384,542.09 usft
From:	Lat/Long	Easting:	3,253,110.12 usft
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "
		Latitude:	40.385410
		Longitude:	-104.591380
		Grid Convergence:	0.59 °

Well	Klein 190-212		
Well Position	+N/-S	0.0 ft	Northing:
	+E/-W	147.6 ft	Easting:
Position Uncertainty	0.0 ft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/22/2015	8.22	66.92	52,711

Design	Plan #3 (7-15-15)			
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	89.62

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,249.7	7.50	277.92	2,247.6	6.7	-48.5	1.00	1.00	0.00	277.92	
5,455.8	7.50	277.92	5,426.2	64.4	-462.8	0.00	0.00	0.00	0.00	
5,830.6	0.00	0.00	5,800.0	67.7	-487.1	2.00	-2.00	0.00	180.00	
6,007.4	0.00	0.00	5,976.8	67.7	-487.1	0.00	0.00	0.00	0.00	
7,215.0	90.57	90.00	6,740.7	67.7	284.4	7.50	7.50	0.00	90.00	
17,238.6	90.57	90.00	6,641.0	67.7	10,307.5	0.00	0.00	0.00	0.00	BHL 2368°FNL & 235°

Database:	US_EDM	Local Co-ordinate Reference:	Well Klein 190-212
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-15-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP #1 - Start Build 1.00									
1,600.0	1.00	277.92	1,600.0	0.1	-0.9	-0.9	1.00	1.00	0.00
1,700.0	2.00	277.92	1,700.0	0.5	-3.5	-3.5	1.00	1.00	0.00
1,800.0	3.00	277.92	1,799.9	1.1	-7.8	-7.8	1.00	1.00	0.00
1,900.0	4.00	277.92	1,899.7	1.9	-13.8	-13.8	1.00	1.00	0.00
2,000.0	5.00	277.92	1,999.4	3.0	-21.6	-21.6	1.00	1.00	0.00
2,100.0	6.00	277.92	2,098.9	4.3	-31.1	-31.1	1.00	1.00	0.00
2,200.0	7.00	277.92	2,198.3	5.9	-42.3	-42.3	1.00	1.00	0.00
2,249.7	7.50	277.92	2,247.6	6.7	-48.5	-48.5	1.00	1.00	0.00
2,300.0	7.50	277.92	2,297.4	7.7	-55.0	-55.0	0.00	0.00	0.00
2,400.0	7.50	277.92	2,396.6	9.4	-67.9	-67.9	0.00	0.00	0.00
2,500.0	7.50	277.92	2,495.7	11.2	-80.9	-80.8	0.00	0.00	0.00
2,600.0	7.50	277.92	2,594.9	13.0	-93.8	-93.7	0.00	0.00	0.00
2,700.0	7.50	277.92	2,694.0	14.8	-106.7	-106.6	0.00	0.00	0.00
2,800.0	7.50	277.92	2,793.2	16.6	-119.6	-119.5	0.00	0.00	0.00
2,900.0	7.50	277.92	2,892.3	18.4	-132.6	-132.4	0.00	0.00	0.00
3,000.0	7.50	277.92	2,991.4	20.2	-145.5	-145.3	0.00	0.00	0.00
3,100.0	7.50	277.92	3,090.6	22.0	-158.4	-158.3	0.00	0.00	0.00
3,200.0	7.50	277.92	3,189.7	23.8	-171.3	-171.2	0.00	0.00	0.00
3,300.0	7.50	277.92	3,288.9	25.6	-184.2	-184.1	0.00	0.00	0.00
3,400.0	7.50	277.92	3,388.0	27.4	-197.2	-197.0	0.00	0.00	0.00
3,500.0	7.50	277.92	3,487.2	29.2	-210.1	-209.9	0.00	0.00	0.00
3,600.0	7.50	277.92	3,586.3	31.0	-223.0	-222.8	0.00	0.00	0.00
3,700.0	7.50	277.92	3,685.5	32.8	-235.9	-235.7	0.00	0.00	0.00
3,800.0	7.50	277.92	3,784.6	34.6	-248.9	-248.6	0.00	0.00	0.00
3,900.0	7.50	277.92	3,883.8	36.4	-261.8	-261.5	0.00	0.00	0.00
4,000.0	7.50	277.92	3,982.9	38.2	-274.7	-274.5	0.00	0.00	0.00
4,100.0	7.50	277.92	4,082.0	40.0	-287.6	-287.4	0.00	0.00	0.00
4,200.0	7.50	277.92	4,181.2	41.8	-300.6	-300.3	0.00	0.00	0.00
4,300.0	7.50	277.92	4,280.3	43.6	-313.5	-313.2	0.00	0.00	0.00
4,400.0	7.50	277.92	4,379.5	45.4	-326.4	-326.1	0.00	0.00	0.00
4,500.0	7.50	277.92	4,478.6	47.2	-339.3	-339.0	0.00	0.00	0.00
4,600.0	7.50	277.92	4,577.8	49.0	-352.3	-351.9	0.00	0.00	0.00
4,700.0	7.50	277.92	4,676.9	50.8	-365.2	-364.8	0.00	0.00	0.00
4,800.0	7.50	277.92	4,776.1	52.6	-378.1	-377.7	0.00	0.00	0.00
4,900.0	7.50	277.92	4,875.2	54.4	-391.0	-390.7	0.00	0.00	0.00
5,000.0	7.50	277.92	4,974.4	56.2	-403.9	-403.6	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Klein 190-212
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-15-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.0	7.50	277.92	5,073.5	58.0	-416.9	-416.5	0.00	0.00	0.00
5,200.0	7.50	277.92	5,172.6	59.8	-429.8	-429.4	0.00	0.00	0.00
5,300.0	7.50	277.92	5,271.8	61.6	-442.7	-442.3	0.00	0.00	0.00
5,400.0	7.50	277.92	5,370.9	63.4	-455.6	-455.2	0.00	0.00	0.00
5,455.8	7.50	277.92	5,426.3	64.4	-462.8	-462.4	0.00	0.00	0.00
KOP #2 - Start Drop -2.00									
5,500.0	6.61	277.92	5,470.1	65.1	-468.2	-467.8	2.00	-2.00	0.00
5,600.0	4.61	277.92	5,569.6	66.5	-477.9	-477.5	2.00	-2.00	0.00
5,700.0	2.61	277.92	5,669.4	67.3	-484.2	-483.7	2.00	-2.00	0.00
5,800.0	0.61	277.92	5,769.4	67.7	-486.9	-486.5	2.00	-2.00	0.00
5,830.6	0.00	0.00	5,800.0	67.7	-487.1	-486.6	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,869.4	67.7	-487.1	-486.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,969.4	67.7	-487.1	-486.6	0.00	0.00	0.00
6,007.4	0.00	0.00	5,976.8	67.7	-487.1	-486.6	0.00	0.00	0.00
Start Build 7.50									
6,100.0	6.94	90.00	6,069.2	67.7	-481.5	-481.0	7.50	7.50	0.00
6,200.0	14.44	90.00	6,167.4	67.7	-463.0	-462.5	7.50	7.50	0.00
6,300.0	21.94	90.00	6,262.3	67.7	-431.8	-431.3	7.50	7.50	0.00
6,400.0	29.44	90.00	6,352.3	67.7	-388.4	-388.0	7.50	7.50	0.00
6,500.0	36.94	90.00	6,436.0	67.7	-333.7	-333.3	7.50	7.50	0.00
6,600.0	44.44	90.00	6,511.7	67.7	-268.6	-268.1	7.50	7.50	0.00
6,700.0	51.94	90.00	6,578.3	67.7	-194.1	-193.6	7.50	7.50	0.00
6,800.0	59.44	90.00	6,634.7	67.7	-111.5	-111.1	7.50	7.50	0.00
6,900.0	66.94	90.00	6,679.7	67.7	-22.3	-21.9	7.50	7.50	0.00
7,000.0	74.44	90.00	6,712.8	67.7	72.0	72.4	7.50	7.50	0.00
7,100.0	81.94	90.00	6,733.2	67.7	169.8	170.2	7.50	7.50	0.00
7,200.0	89.44	90.00	6,740.7	67.7	269.4	269.9	7.50	7.50	0.00
7,215.0	90.57	90.00	6,740.7	67.7	284.4	284.9	7.50	7.50	0.00
Start 10023.6 hold at 7215.0 MD - 7"									
7,300.0	90.57	90.00	6,739.9	67.7	369.4	369.9	0.00	0.00	0.00
7,400.0	90.57	90.00	6,738.9	67.7	469.4	469.8	0.00	0.00	0.00
7,500.0	90.57	90.00	6,737.9	67.7	569.4	569.8	0.00	0.00	0.00
7,600.0	90.57	90.00	6,736.9	67.7	669.4	669.8	0.00	0.00	0.00
7,700.0	90.57	90.00	6,735.9	67.7	769.4	769.8	0.00	0.00	0.00
7,800.0	90.57	90.00	6,734.9	67.7	869.4	869.8	0.00	0.00	0.00
7,900.0	90.57	90.00	6,733.9	67.7	969.4	969.8	0.00	0.00	0.00
8,000.0	90.57	90.00	6,732.9	67.7	1,069.4	1,069.8	0.00	0.00	0.00
8,100.0	90.57	90.00	6,731.9	67.7	1,169.4	1,169.8	0.00	0.00	0.00
8,200.0	90.57	90.00	6,730.9	67.7	1,269.4	1,269.8	0.00	0.00	0.00
8,300.0	90.57	90.00	6,729.9	67.7	1,369.4	1,369.8	0.00	0.00	0.00
8,400.0	90.57	90.00	6,728.9	67.7	1,469.4	1,469.8	0.00	0.00	0.00
8,500.0	90.57	90.00	6,727.9	67.7	1,569.4	1,569.8	0.00	0.00	0.00
8,600.0	90.57	90.00	6,726.9	67.7	1,669.4	1,669.8	0.00	0.00	0.00
8,700.0	90.57	90.00	6,725.9	67.7	1,769.3	1,769.8	0.00	0.00	0.00
8,800.0	90.57	90.00	6,724.9	67.7	1,869.3	1,869.7	0.00	0.00	0.00
8,900.0	90.57	90.00	6,724.0	67.7	1,969.3	1,969.7	0.00	0.00	0.00
9,000.0	90.57	90.00	6,723.0	67.7	2,069.3	2,069.7	0.00	0.00	0.00
9,100.0	90.57	90.00	6,722.0	67.7	2,169.3	2,169.7	0.00	0.00	0.00
9,200.0	90.57	90.00	6,721.0	67.7	2,269.3	2,269.7	0.00	0.00	0.00
9,300.0	90.57	90.00	6,720.0	67.7	2,369.3	2,369.7	0.00	0.00	0.00
9,400.0	90.57	90.00	6,719.0	67.7	2,469.3	2,469.7	0.00	0.00	0.00
9,500.0	90.57	90.00	6,718.0	67.7	2,569.3	2,569.7	0.00	0.00	0.00
9,600.0	90.57	90.00	6,717.0	67.7	2,669.3	2,669.7	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Klein 190-212
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-15-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,700.0	90.57	90.00	6,716.0	67.7	2,769.3	2,769.7	0.00	0.00	0.00
9,800.0	90.57	90.00	6,715.0	67.7	2,869.3	2,869.7	0.00	0.00	0.00
9,900.0	90.57	90.00	6,714.0	67.7	2,969.3	2,969.7	0.00	0.00	0.00
10,000.0	90.57	90.00	6,713.0	67.7	3,069.3	3,069.7	0.00	0.00	0.00
10,100.0	90.57	90.00	6,712.0	67.7	3,169.3	3,169.7	0.00	0.00	0.00
10,200.0	90.57	90.00	6,711.0	67.7	3,269.3	3,269.6	0.00	0.00	0.00
10,300.0	90.57	90.00	6,710.0	67.7	3,369.3	3,369.6	0.00	0.00	0.00
10,400.0	90.57	90.00	6,709.0	67.7	3,469.3	3,469.6	0.00	0.00	0.00
10,500.0	90.57	90.00	6,708.0	67.7	3,569.3	3,569.6	0.00	0.00	0.00
10,600.0	90.57	90.00	6,707.0	67.7	3,669.3	3,669.6	0.00	0.00	0.00
10,700.0	90.57	90.00	6,706.0	67.7	3,769.2	3,769.6	0.00	0.00	0.00
10,800.0	90.57	90.00	6,705.1	67.7	3,869.2	3,869.6	0.00	0.00	0.00
10,900.0	90.57	90.00	6,704.1	67.7	3,969.2	3,969.6	0.00	0.00	0.00
11,000.0	90.57	90.00	6,703.1	67.7	4,069.2	4,069.6	0.00	0.00	0.00
11,100.0	90.57	90.00	6,702.1	67.7	4,169.2	4,169.6	0.00	0.00	0.00
11,200.0	90.57	90.00	6,701.1	67.7	4,269.2	4,269.6	0.00	0.00	0.00
11,300.0	90.57	90.00	6,700.1	67.7	4,369.2	4,369.6	0.00	0.00	0.00
11,400.0	90.57	90.00	6,699.1	67.7	4,469.2	4,469.6	0.00	0.00	0.00
11,500.0	90.57	90.00	6,698.1	67.7	4,569.2	4,569.6	0.00	0.00	0.00
11,600.0	90.57	90.00	6,697.1	67.7	4,669.2	4,669.5	0.00	0.00	0.00
11,700.0	90.57	90.00	6,696.1	67.7	4,769.2	4,769.5	0.00	0.00	0.00
11,800.0	90.57	90.00	6,695.1	67.7	4,869.2	4,869.5	0.00	0.00	0.00
11,900.0	90.57	90.00	6,694.1	67.7	4,969.2	4,969.5	0.00	0.00	0.00
12,000.0	90.57	90.00	6,693.1	67.7	5,069.2	5,069.5	0.00	0.00	0.00
12,100.0	90.57	90.00	6,692.1	67.7	5,169.2	5,169.5	0.00	0.00	0.00
12,200.0	90.57	90.00	6,691.1	67.7	5,269.2	5,269.5	0.00	0.00	0.00
12,300.0	90.57	90.00	6,690.1	67.7	5,369.2	5,369.5	0.00	0.00	0.00
12,400.0	90.57	90.00	6,689.1	67.7	5,469.2	5,469.5	0.00	0.00	0.00
12,500.0	90.57	90.00	6,688.1	67.7	5,569.2	5,569.5	0.00	0.00	0.00
12,600.0	90.57	90.00	6,687.1	67.7	5,669.2	5,669.5	0.00	0.00	0.00
12,700.0	90.57	90.00	6,686.2	67.7	5,769.1	5,769.5	0.00	0.00	0.00
12,800.0	90.57	90.00	6,685.2	67.7	5,869.1	5,869.5	0.00	0.00	0.00
12,900.0	90.57	90.00	6,684.2	67.7	5,969.1	5,969.5	0.00	0.00	0.00
13,000.0	90.57	90.00	6,683.2	67.7	6,069.1	6,069.4	0.00	0.00	0.00
13,100.0	90.57	90.00	6,682.2	67.7	6,169.1	6,169.4	0.00	0.00	0.00
13,200.0	90.57	90.00	6,681.2	67.7	6,269.1	6,269.4	0.00	0.00	0.00
13,300.0	90.57	90.00	6,680.2	67.7	6,369.1	6,369.4	0.00	0.00	0.00
13,400.0	90.57	90.00	6,679.2	67.7	6,469.1	6,469.4	0.00	0.00	0.00
13,500.0	90.57	90.00	6,678.2	67.7	6,569.1	6,569.4	0.00	0.00	0.00
13,600.0	90.57	90.00	6,677.2	67.7	6,669.1	6,669.4	0.00	0.00	0.00
13,700.0	90.57	90.00	6,676.2	67.7	6,769.1	6,769.4	0.00	0.00	0.00
13,800.0	90.57	90.00	6,675.2	67.7	6,869.1	6,869.4	0.00	0.00	0.00
13,900.0	90.57	90.00	6,674.2	67.7	6,969.1	6,969.4	0.00	0.00	0.00
14,000.0	90.57	90.00	6,673.2	67.7	7,069.1	7,069.4	0.00	0.00	0.00
14,100.0	90.57	90.00	6,672.2	67.7	7,169.1	7,169.4	0.00	0.00	0.00
14,200.0	90.57	90.00	6,671.2	67.7	7,269.1	7,269.4	0.00	0.00	0.00
14,300.0	90.57	90.00	6,670.2	67.7	7,369.1	7,369.4	0.00	0.00	0.00
14,400.0	90.57	90.00	6,669.2	67.7	7,469.1	7,469.3	0.00	0.00	0.00
14,500.0	90.57	90.00	6,668.2	67.7	7,569.1	7,569.3	0.00	0.00	0.00
14,600.0	90.57	90.00	6,667.2	67.7	7,669.1	7,669.3	0.00	0.00	0.00
14,700.0	90.57	90.00	6,666.3	67.7	7,769.0	7,769.3	0.00	0.00	0.00
14,800.0	90.57	90.00	6,665.3	67.7	7,869.0	7,869.3	0.00	0.00	0.00
14,900.0	90.57	90.00	6,664.3	67.7	7,969.0	7,969.3	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Klein 19O-212
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-15-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
15,000.0	90.57	90.00	6,663.3	67.7	8,069.0	8,069.3	0.00	0.00	0.00	
15,100.0	90.57	90.00	6,662.3	67.7	8,169.0	8,169.3	0.00	0.00	0.00	
15,200.0	90.57	90.00	6,661.3	67.7	8,269.0	8,269.3	0.00	0.00	0.00	
15,300.0	90.57	90.00	6,660.3	67.7	8,369.0	8,369.3	0.00	0.00	0.00	
15,400.0	90.57	90.00	6,659.3	67.7	8,469.0	8,469.3	0.00	0.00	0.00	
15,500.0	90.57	90.00	6,658.3	67.7	8,569.0	8,569.3	0.00	0.00	0.00	
15,600.0	90.57	90.00	6,657.3	67.7	8,669.0	8,669.3	0.00	0.00	0.00	
15,700.0	90.57	90.00	6,656.3	67.7	8,769.0	8,769.3	0.00	0.00	0.00	
15,800.0	90.57	90.00	6,655.3	67.7	8,869.0	8,869.2	0.00	0.00	0.00	
15,900.0	90.57	90.00	6,654.3	67.7	8,969.0	8,969.2	0.00	0.00	0.00	
16,000.0	90.57	90.00	6,653.3	67.7	9,069.0	9,069.2	0.00	0.00	0.00	
16,100.0	90.57	90.00	6,652.3	67.7	9,169.0	9,169.2	0.00	0.00	0.00	
16,200.0	90.57	90.00	6,651.3	67.7	9,269.0	9,269.2	0.00	0.00	0.00	
16,300.0	90.57	90.00	6,650.3	67.7	9,369.0	9,369.2	0.00	0.00	0.00	
16,400.0	90.57	90.00	6,649.3	67.7	9,469.0	9,469.2	0.00	0.00	0.00	
16,500.0	90.57	90.00	6,648.3	67.7	9,569.0	9,569.2	0.00	0.00	0.00	
16,600.0	90.57	90.00	6,647.4	67.7	9,669.0	9,669.2	0.00	0.00	0.00	
16,700.0	90.57	90.00	6,646.4	67.7	9,768.9	9,769.2	0.00	0.00	0.00	
16,800.0	90.57	90.00	6,645.4	67.7	9,868.9	9,869.2	0.00	0.00	0.00	
16,900.0	90.57	90.00	6,644.4	67.7	9,968.9	9,969.2	0.00	0.00	0.00	
17,000.0	90.57	90.00	6,643.4	67.7	10,068.9	10,069.2	0.00	0.00	0.00	
17,100.0	90.57	90.00	6,642.4	67.7	10,168.9	10,169.2	0.00	0.00	0.00	
17,200.0	90.57	90.00	6,641.4	67.7	10,268.9	10,269.1	0.00	0.00	0.00	
17,238.6	90.57	90.00	6,641.0	67.7	10,307.5	10,307.7	0.00	0.00	0.00	
TD at 17238.6										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
50°N/S Hardline (19O-21)	0.00	0.00	1.0	67.7	5,295.9	1,384,665.57	3,258,552.50	40.385594	-104.571840	
- hit/miss target										
- Shape										
- plan misses target center by 5296.4ft at 1.0ft MD (1.0 TVD, 0.0 N, 0.0 E)										
- Rectangle (sides W100.0 H10,023.1 D0.0)										
SHL 2358°FNL & 2101°F	0.00	0.00	1.0	0.0	0.0	1,384,543.60	3,253,257.75	40.385410	-104.590850	
- plan hits target center										
- Point										
BHL 2368°FNL & 2353°F	0.00	0.00	6,641.0	67.7	10,307.5	1,384,716.99	3,263,563.59	40.385590	-104.553850	
- plan hits target center										
- Point										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
7,215.0	6,740.7	7"	7	7-1/2	

Database:	US_EDM	Local Co-ordinate Reference:	Well Klein 19O-212
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Project:	SEC.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	North Reference:	True
Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #3 (7-15-15)		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,563.4	3,550.0	Parkman		0.00	
4,319.8	4,300.0	Sussex		0.00	
4,521.6	4,500.0	Shannon		0.00	
6,544.9	6,471.0	Sharon Springs		0.00	
6,818.8	6,644.0	Niobrara A		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,500.0	1,500.0	0.0	0.0	KOP #1 - Start Build 1.00	
5,455.8	5,426.2	6.7	-48.5	KOP #2 - Start Drop -2.00	
6,007.4	5,976.8	64.4	-462.8	Start Build 7.50	
7,215.0	6,740.7	67.7	-487.1	Start 10023.6 hold at 7215.0 MD	
17,238.6	6,641.0	67.7	-487.1	TD at 17238.6	



Directional

PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.19-T5N-R64W

Klein 19O-HZ Pad Sec.19-T5N-R64W

Klein 19O-212

Wellbore #1

Plan #3 (7-15-15)

Anticollision Report

29 July, 2015



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Reference	Plan #3 (7-15-15)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 7/29/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,238.6	Plan #3 (7-15-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing Wells Sec.21-T5N-R64W						
Kohler 6-21 (Exist.) - Wellbore #1 - Wellbore #1	16,338.6	6,624.0	342.1	-61.8	0.847	Level 1, CC, ES, SF
Kohler 7-21 (Exist.) - Wellbore #1 - Wellbore #1	17,238.6	6,613.0	503.5	74.5	1.174	Level 2, CC, ES, SF
Klein (Existing) Sec.19-T5N-R64W						
Brent 1 (Exist.) - Wellbore #1 - Wellbore #1	11,019.2	6,703.4	373.3	238.8	2.776	CC, ES, SF
Brent 1-61 (Exist.) - Wellbore #1 - Wellbore #1	10,350.6	6,829.5	292.8	14.5	1.052	Level 2, CC, ES, SF
Duell 20-1 (Exist.) - Wellbore #1 - Wellbore #1	9,532.9	6,714.1	108.4	13.7	1.145	Level 2, CC, ES, SF
Lewis Klein 19-2 (Exist.) - Wellbore #1 - Wellbore #1	7,032.2	6,716.5	230.7	199.7	7.443	CC, ES
Lewis Klein 19-2 (Exist.) - Wellbore #1 - Wellbore #1	7,050.0	6,720.0	231.4	200.2	7.408	SF
Louis Klein 19-1 (Exist.) - Wellbore #1 - Wellbore #1	8,342.6	6,730.8	226.8	165.4	3.691	CC, ES, SF
Victor Klein 20-1A (Exist.) - Wellbore #1 - Wellbore #1	12,303.2	6,667.0	365.2	194.4	2.139	CC, ES, SF
Klein 190-HZ Pad Sec.19-T5N-R64W						
Klein 19N-302 - Wellbore #1 - Plan #3 (7-15-15)	800.0	800.0	147.6	144.3	43.793	CC, ES
Klein 19N-302 - Wellbore #1 - Plan #3 (7-15-15)	17,238.6	17,353.6	837.1	244.6	1.413	Level 3, SF
Klein 19N-432 - Wellbore #1 - Plan #3 (7-16-15)	1,000.0	1,000.0	151.2	147.0	35.416	CC
Klein 19N-432 - Wellbore #1 - Plan #3 (7-16-15)	17,238.6	17,407.1	571.5	16.2	1.029	Level 2, ES, SF
Klein 19O-232 - Wellbore #1 - Plan #4 (7-15-15)	1,000.0	1,000.0	91.1	86.8	21.337	CC, ES
Klein 19O-232 - Wellbore #1 - Plan #4 (7-15-15)	17,238.6	17,992.0	772.4	164.9	1.271	Level 3, SF
Klein 19O-302 - Wellbore #1 - Plan #4 (7-15-15)	1,500.0	1,500.0	29.3	22.8	4.493	CC
Klein 19O-302 - Wellbore #1 - Plan #4 (7-15-15)	17,238.6	17,289.3	253.4	-320.1	0.442	Level 1, ES, SF
Klein 19O-402 - Wellbore #1 - Plan #3 (7-15-15)	1,500.0	1,500.0	62.0	55.5	9.511	CC
Klein 19O-402 - Wellbore #1 - Plan #3 (7-15-15)	17,238.6	17,804.3	554.6	-5.9	0.989	Level 1, ES, SF
Klein 19P-202 - Wellbore #1 - Plan #3 (7-15-15)	200.0	200.0	173.5	172.8	257.288	CC, ES
Klein 19P-202 - Wellbore #1 - Plan #3 (7-15-15)	1,500.0	1,403.9	376.8	368.8	47.252	SF
Klein 19P-312 - Wellbore #1 - Plan #3 (7-15-15)	400.0	400.0	160.1	158.5	101.763	CC, ES
Klein 19P-312 - Wellbore #1 - Plan #3 (7-15-15)	4,700.0	4,545.6	987.8	963.2	40.171	SF

Offset Design	Existing Wells Sec.21-T5N-R64W - Kohler 6-21 (Exist.) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program:	6989-UNKNOWN											Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
15,400.0	6,659.3	6,633.3	6,633.3	245.1	132.7	-91.56	409.8	9,407.6	998.9	621.3	377.65	2.645	

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.21-T5N-R64W - Kohler 6-21 (Exist) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 6989-UNKNOWN													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
15,500.0	6,658.3	6,632.3	6,632.3	247.9	132.6	-91.40	409.8	9,407.6	905.6	525.2	380.46	2.380		
15,600.0	6,657.3	6,631.3	6,631.3	250.7	132.6	-91.23	409.8	9,407.6	813.9	430.7	383.27	2.124		
15,700.0	6,656.3	6,630.3	6,630.3	253.5	132.6	-91.06	409.8	9,407.6	724.4	338.3	386.08	1.876		
15,800.0	6,655.3	6,629.3	6,629.3	256.3	132.6	-90.90	409.8	9,407.6	638.0	249.1	388.88	1.641		
15,900.0	6,654.3	6,628.3	6,628.3	259.2	132.6	-90.73	409.8	9,407.6	556.2	164.5	391.68	1.420	Level 3	
16,000.0	6,653.3	6,627.3	6,627.3	262.0	132.5	-90.56	409.8	9,407.6	481.3	86.8	394.48	1.220	Level 2	
16,100.0	6,652.3	6,626.3	6,626.3	264.8	132.5	-90.40	409.8	9,407.6	417.1	19.8	397.27	1.050	Level 2	
16,200.0	6,651.3	6,625.3	6,625.3	267.6	132.5	-90.23	409.8	9,407.6	369.1	-31.0	400.06	0.923	Level 1	
16,300.0	6,650.3	6,624.3	6,624.3	270.4	132.5	-90.06	409.8	9,407.6	344.3	-58.6	402.85	0.855	Level 1	
16,338.6	6,650.0	6,624.0	6,624.0	271.4	132.5	-90.00	409.8	9,407.6	342.1	-61.8	403.93	0.847	Level 1, CC, ES, SF	
16,400.0	6,649.3	6,623.3	6,623.3	273.2	132.5	-89.90	409.8	9,407.6	347.6	-58.1	405.64	0.857	Level 1	
16,500.0	6,648.3	6,622.3	6,622.3	276.0	132.4	-89.73	409.8	9,407.6	378.2	-30.2	408.42	0.926	Level 1	
16,600.0	6,647.4	6,621.4	6,621.4	278.8	132.4	-89.56	409.8	9,407.6	430.5	19.3	411.20	1.047	Level 2	
16,700.0	6,646.4	6,620.4	6,620.4	281.6	132.4	-89.40	409.8	9,407.6	497.6	83.6	413.98	1.202	Level 2	
16,800.0	6,645.4	6,619.4	6,619.4	284.4	132.4	-89.23	409.8	9,407.6	574.4	157.6	416.75	1.378	Level 3	
16,900.0	6,644.4	6,618.4	6,618.4	287.2	132.4	-89.06	409.8	9,407.6	657.4	237.9	419.52	1.567		
17,000.0	6,643.4	6,617.4	6,617.4	290.0	132.3	-88.90	409.8	9,407.6	744.6	322.3	422.29	1.763		
17,100.0	6,642.4	6,616.4	6,616.4	292.8	132.3	-88.73	409.8	9,407.6	834.7	409.6	425.05	1.964		
17,200.0	6,641.4	6,615.4	6,615.4	295.6	132.3	-88.57	409.8	9,407.6	926.8	499.0	427.81	2.166		
17,238.6	6,641.0	6,615.0	6,615.0	296.7	132.3	-88.50	409.8	9,407.6	962.8	533.9	428.87	2.245		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.21-T5N-R64W - Kohler 7-21 (Exist) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6950-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
16,700.0	6,646.4	6,618.4	6,618.4	281.6	132.4	-91.47	417.6	10,669.5	966.1	552.3	413.80	2.335	
16,800.0	6,645.4	6,617.4	6,617.4	284.4	132.3	-91.30	417.6	10,669.5	873.7	457.1	416.62	2.097	
16,900.0	6,644.4	6,616.4	6,616.4	287.2	132.3	-91.14	417.6	10,669.5	783.1	363.7	419.43	1.867	
17,000.0	6,643.4	6,615.4	6,615.4	290.0	132.3	-90.98	417.6	10,669.5	695.1	272.8	422.23	1.646	
17,100.0	6,642.4	6,614.4	6,614.4	292.8	132.3	-90.82	417.6	10,669.5	610.7	185.7	425.04	1.437 Level 3	
17,200.0	6,641.4	6,613.4	6,613.4	295.6	132.3	-90.65	417.6	10,669.5	531.9	104.0	427.84	1.243 Level 2	
17,238.6	6,641.0	6,613.0	6,613.0	296.7	132.3	-90.59	417.6	10,669.5	503.5	74.5	428.92	1.174 Level 2, CC, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Brent 1 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	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
10,100.0	6,712.0	6,692.8	6,691.4	97.1	11.9	-90.69	441.1	4,088.4	992.0	883.0	109.04	9.098	
10,200.0	6,711.0	6,693.9	6,692.5	99.9	11.9	-90.86	441.1	4,088.4	900.2	788.4	111.81	8.051	
10,300.0	6,710.0	6,695.0	6,693.5	102.7	11.9	-91.02	441.1	4,088.4	810.3	695.7	114.57	7.072	
10,400.0	6,709.0	6,696.1	6,694.7	105.4	11.9	-91.19	441.0	4,088.4	723.0	605.6	117.34	6.161	
10,500.0	6,708.0	6,697.3	6,695.8	108.2	11.9	-91.37	441.0	4,088.4	639.4	519.3	120.11	5.324	
10,600.0	6,707.0	6,698.4	6,697.0	111.0	11.9	-91.55	440.9	4,088.5	561.3	438.4	122.88	4.568	
10,700.0	6,706.0	6,699.7	6,698.2	113.8	11.9	-91.74	440.9	4,088.5	491.1	365.5	125.64	3.909	
10,800.0	6,705.1	6,700.8	6,699.4	116.5	11.9	-91.92	440.8	4,088.5	432.9	304.5	128.41	3.371	
10,900.0	6,704.1	6,702.0	6,700.5	119.3	12.0	-92.10	440.8	4,088.5	391.8	260.7	131.18	2.987	
11,000.0	6,703.1	6,703.2	6,701.7	122.1	12.0	-92.28	440.7	4,088.6	373.8	239.8	133.94	2.790	
11,019.2	6,702.9	6,703.4	6,701.9	122.6	12.0	-92.31	440.7	4,088.6	373.3	238.8	134.47	2.776 CC, ES, SF	
11,100.0	6,702.1	6,704.3	6,702.9	124.9	12.0	-92.45	440.7	4,088.6	381.9	245.2	136.71	2.794	
11,200.0	6,701.1	6,705.5	6,704.0	127.7	12.0	-92.63	440.6	4,088.6	414.7	275.3	139.48	2.974	
11,300.0	6,700.1	6,706.6	6,705.2	130.5	12.0	-92.81	440.6	4,088.6	467.1	324.8	142.24	3.284	
11,400.0	6,699.1	6,707.8	6,706.3	133.2	12.0	-92.99	440.5	4,088.7	533.2	388.2	145.00	3.677	
11,500.0	6,698.1	6,709.0	6,707.5	136.0	12.0	-93.17	440.5	4,088.7	608.7	460.9	147.76	4.119	
11,600.0	6,697.1	6,710.1	6,708.7	138.8	12.0	-93.34	440.4	4,088.7	690.4	539.9	150.53	4.586	
11,700.0	6,696.1	6,711.3	6,709.8	141.6	12.0	-93.52	440.4	4,088.7	776.4	623.1	153.28	5.065	
11,800.0	6,695.1	6,712.4	6,711.0	144.4	12.0	-93.70	440.4	4,088.8	865.4	709.3	156.04	5.546	
11,900.0	6,694.1	6,713.6	6,712.1	147.2	12.0	-93.88	440.3	4,088.8	956.6	797.8	158.80	6.024	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Brent 1-61 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 647-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,400.0	6,719.0	6,820.5	6,684.8	77.8	189.0	88.29	-225.1	3,419.7	994.7	741.5	253.14	3.929		
9,500.0	6,718.0	6,821.5	6,685.8	80.6	189.0	88.49	-225.1	3,419.7	899.6	643.8	255.78	3.517		
9,600.0	6,717.0	6,822.5	6,686.8	83.3	189.0	88.68	-225.1	3,419.8	805.7	547.3	258.42	3.118		
9,700.0	6,716.0	6,823.5	6,687.8	86.1	189.0	88.87	-225.1	3,419.8	713.5	452.4	261.07	2.733		
9,800.0	6,715.0	6,824.5	6,688.7	88.8	189.0	89.06	-225.1	3,419.8	623.6	359.9	263.72	2.365		
9,900.0	6,714.0	6,825.4	6,689.7	91.6	189.0	89.25	-225.1	3,419.8	537.4	271.0	266.37	2.017		
10,000.0	6,713.0	6,826.4	6,690.6	94.4	188.9	89.43	-225.1	3,419.8	456.8	187.8	269.03	1.698		
10,100.0	6,712.0	6,827.3	6,691.5	97.1	188.9	89.61	-225.1	3,419.9	385.4	113.8	271.69	1.419	Level 3	
10,200.0	6,711.0	6,828.2	6,692.4	99.9	188.9	89.79	-225.1	3,419.9	329.3	55.0	274.35	1.200	Level 2	
10,300.0	6,710.0	6,829.1	6,693.3	102.7	188.9	89.96	-225.1	3,419.9	297.2	20.2	277.01	1.073	Level 2	
10,350.6	6,709.5	6,829.5	6,693.8	104.1	188.9	90.05	-225.1	3,419.9	292.8	14.5	278.36	1.052	Level 2, CC, ES, SF	
10,400.0	6,709.0	6,830.0	6,694.2	105.4	188.9	90.13	-225.1	3,419.9	297.0	17.3	279.67	1.062	Level 2	
10,500.0	6,708.0	6,830.8	6,695.0	108.2	188.9	90.30	-225.1	3,419.9	328.7	46.4	282.33	1.164	Level 2	
10,600.0	6,707.0	6,831.6	6,695.9	111.0	188.9	90.46	-225.1	3,419.9	384.6	99.6	285.00	1.350	Level 3	
10,700.0	6,706.0	6,832.5	6,696.7	113.8	188.9	90.62	-225.1	3,420.0	455.9	168.2	287.67	1.585		
10,800.0	6,705.1	6,833.3	6,697.5	116.5	188.9	90.78	-225.1	3,420.0	536.4	246.0	290.34	1.847		
10,900.0	6,704.1	6,834.1	6,698.3	119.3	188.8	90.94	-225.1	3,420.0	622.5	329.5	293.00	2.125		
11,000.0	6,703.1	6,834.9	6,699.1	122.1	188.8	91.09	-225.1	3,420.0	712.3	416.6	295.67	2.409		
11,100.0	6,702.1	6,835.6	6,699.9	124.9	188.8	91.24	-225.1	3,420.0	804.5	506.2	298.34	2.697		
11,200.0	6,701.1	6,836.4	6,700.6	127.7	188.8	91.39	-225.1	3,420.0	898.4	597.4	301.02	2.985		
11,300.0	6,700.1	6,837.1	6,701.4	130.5	188.8	91.54	-225.1	3,420.0	993.5	689.8	303.69	3.271		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design													Klein (Existing) Sec.19-T5N-R64W - Duell 20-1 (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							Warning				
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor						
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)							
8,600.0	6,726.9	6,712.1	6,699.6	56.1	13.3	-89.99	176.2	2,602.2	939.2	869.8	69.35	13.542						
8,700.0	6,725.9	6,712.4	6,699.9	58.8	13.4	-90.11	176.2	2,602.2	839.9	767.9	72.04	11.659						
8,800.0	6,724.9	6,712.6	6,700.1	61.5	13.4	-90.23	176.2	2,602.2	740.9	666.1	74.74	9.913						
8,900.0	6,724.0	6,712.8	6,700.3	64.2	13.4	-90.35	176.2	2,602.2	642.1	564.7	77.44	8.291						
9,000.0	6,723.0	6,713.0	6,700.5	66.9	13.4	-90.47	176.2	2,602.2	543.8	463.6	80.16	6.784						
9,100.0	6,722.0	6,713.2	6,700.8	69.6	13.4	-90.58	176.2	2,602.2	446.3	363.4	82.88	5.384						
9,200.0	6,721.0	6,713.4	6,701.0	72.4	13.4	-90.69	176.2	2,602.2	350.1	264.5	85.61	4.090						
9,300.0	6,720.0	6,713.6	6,701.2	75.1	13.4	-90.79	176.2	2,602.2	256.9	168.5	88.34	2.908						
9,400.0	6,719.0	6,713.8	6,701.4	77.8	13.4	-90.90	176.2	2,602.2	171.5	80.4	91.08	1.883						
9,500.0	6,718.0	6,714.0	6,701.5	80.6	13.4	-91.00	176.2	2,602.2	113.3	19.5	93.82	1.208	Level 2					
9,532.9	6,717.7	6,714.1	6,701.6	81.5	13.4	-91.03	176.2	2,602.2	108.4	13.7	94.73	1.145	Level 2, CC, ES, SF					
9,600.0	6,717.0	6,714.2	6,701.7	83.3	13.4	-91.09	176.2	2,602.2	127.5	31.0	96.57	1.321	Level 3					
9,700.0	6,716.0	6,714.4	6,701.9	86.1	13.4	-91.19	176.2	2,602.2	199.2	99.9	99.32	2.006						
9,800.0	6,715.0	6,714.6	6,702.1	88.8	13.4	-91.28	176.2	2,602.2	288.3	186.2	102.08	2.824						
9,900.0	6,714.0	6,714.7	6,702.3	91.6	13.4	-91.37	176.2	2,602.2	382.8	278.0	104.83	3.651						
10,000.0	6,713.0	6,714.9	6,702.4	94.4	13.4	-91.46	176.1	2,602.2	479.5	371.9	107.59	4.457						
10,100.0	6,712.0	6,715.1	6,702.6	97.1	13.4	-91.54	176.1	2,602.2	577.4	467.0	110.35	5.232						
10,200.0	6,711.0	6,715.2	6,702.7	99.9	13.4	-91.63	176.1	2,602.2	675.9	562.8	113.12	5.975						
10,300.0	6,710.0	6,715.4	6,702.9	102.7	13.4	-91.71	176.1	2,602.2	774.7	658.9	115.88	6.686						
10,400.0	6,709.0	6,715.5	6,703.0	105.4	13.4	-91.79	176.1	2,602.2	873.9	755.2	118.65	7.365						
10,500.0	6,708.0	6,715.7	6,703.2	108.2	13.4	-91.87	176.1	2,602.2	973.2	851.8	121.42	8.015						

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Lewis Klein 19-2 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	20.69	302.4	114.2	323.5					
100.0	100.0	86.4	86.4	0.1	0.1	20.74	302.2	114.4	323.2	322.9	0.23	1,422.356		
200.0	200.0	188.0	188.0	0.3	0.3	20.83	301.7	114.8	322.8	322.1	0.69	471.179		
300.0	300.0	288.3	288.3	0.6	0.6	20.86	301.0	114.7	322.1	321.0	1.14	281.338		
400.0	400.0	387.5	387.5	0.8	0.8	20.82	300.5	114.3	321.5	319.9	1.57	205.094		
500.0	500.0	486.3	486.3	1.0	0.9	20.70	300.4	113.6	321.2	319.2	1.95	164.455		
600.0	600.0	587.6	587.6	1.2	1.1	20.59	300.4	112.8	320.9	318.6	2.38	135.124		
700.0	700.0	687.9	687.9	1.5	1.4	20.50	300.1	112.2	320.4	317.5	2.85	112.583		
800.0	800.0	786.1	786.1	1.7	1.6	20.42	299.9	111.6	320.0	316.7	3.29	97.294		
900.0	900.0	887.6	887.6	1.9	1.8	20.36	299.8	111.3	319.8	316.1	3.71	86.185		
972.3	972.3	958.3	958.3	2.1	1.9	20.42	299.5	111.5	319.6	315.6	3.97	80.451		
1,000.0	1,000.0	985.2	985.2	2.1	1.9	20.45	299.5	111.7	319.6	315.6	4.07	78.542		
1,100.0	1,100.0	1,085.3	1,085.3	2.4	2.1	20.49	299.7	112.0	319.9	315.5	4.41	72.548		
1,200.0	1,200.0	1,186.7	1,186.7	2.6	2.2	20.48	299.7	112.0	320.0	315.2	4.79	66.816		
1,243.6	1,243.6	1,229.7	1,229.6	2.7	2.3	20.53	299.6	112.2	319.9	314.9	4.94	64.698		
1,300.0	1,300.0	1,284.3	1,284.3	2.8	2.3	20.57	299.6	112.4	320.0	314.9	5.14	62.284		
1,400.0	1,400.0	1,384.8	1,384.8	3.0	2.5	20.55	300.2	112.5	320.6	315.1	5.49	58.434		
1,500.0	1,500.0	1,487.5	1,487.5	3.3	2.6	20.49	300.3	112.2	320.6	314.7	5.90	54.363		
1,600.0	1,600.0	1,587.6	1,587.6	3.5	2.8	102.74	299.7	112.1	320.2	313.9	6.32	50.675		
1,620.4	1,620.4	1,607.9	1,607.9	3.5	2.9	102.82	299.6	112.1	320.2	313.8	6.40	50.013		
1,700.0	1,700.0	1,686.9	1,686.8	3.7	3.0	103.26	299.3	112.3	320.4	313.7	6.72	47.690		
1,800.0	1,799.9	1,784.0	1,784.0	3.9	3.2	103.94	299.4	112.1	321.6	314.5	7.09	45.342		
1,900.0	1,899.7	1,882.0	1,882.0	4.1	3.3	104.74	300.7	111.4	324.0	316.5	7.45	43.495		
2,000.0	1,999.4	1,980.8	1,980.7	4.3	3.5	105.82	302.3	110.8	327.3	319.5	7.81	41.906		
2,100.0	2,098.9	2,078.1	2,078.0	4.6	3.6	107.16	304.3	110.6	331.8	323.6	8.18	40.544		
2,200.0	2,198.3	2,177.4	2,177.3	4.8	3.8	108.79	306.6	110.7	337.5	328.9	8.57	39.357		
2,249.7	2,247.6	2,227.2	2,227.0	4.9	3.9	109.68	307.7	110.8	340.5	331.8	8.78	38.802		
2,300.0	2,297.4	2,277.4	2,277.3	5.1	4.0	110.65	308.7	110.9	343.8	334.8	8.99	38.256		
2,400.0	2,396.6	2,378.9	2,378.7	5.3	4.1	112.59	310.3	111.1	350.1	340.7	9.42	37.181		
2,500.0	2,495.7	2,479.7	2,479.6	5.6	4.3	114.48	311.2	111.2	356.2	346.3	9.86	36.130		
2,600.0	2,594.9	2,579.8	2,579.7	5.9	4.5	116.37	311.6	111.4	362.3	352.0	10.29	35.215		
2,700.0	2,694.0	2,676.4	2,676.3	6.2	4.6	118.19	311.8	112.1	368.9	358.2	10.71	34.458		
2,800.0	2,793.2	2,776.8	2,776.6	6.5	4.8	119.98	312.5	112.8	376.3	365.1	11.15	33.745		
2,900.0	2,892.3	2,878.1	2,878.0	6.8	5.0	121.67	312.9	112.9	383.4	371.8	11.59	33.070		
3,000.0	2,991.4	2,977.5	2,977.3	7.1	5.2	123.37	312.6	113.3	390.4	378.4	12.01	32.516		
3,100.0	3,090.6	3,077.5	3,077.4	7.4	5.3	125.01	312.2	113.6	397.8	385.3	12.42	32.022		
3,200.0	3,189.7	3,175.0	3,174.9	7.7	5.5	126.52	312.0	113.7	405.4	392.5	12.84	31.562		
3,300.0	3,288.9	3,275.7	3,275.5	8.0	5.6	127.99	312.1	113.9	413.5	400.2	13.27	31.149		
3,400.0	3,388.0	3,373.6	3,373.4	8.3	5.8	129.36	312.1	113.7	421.5	407.8	13.70	30.765		
3,500.0	3,487.2	3,471.9	3,471.7	8.6	6.0	130.62	312.6	113.6	430.2	416.1	14.14	30.426		
3,600.0	3,586.3	3,573.3	3,573.1	8.9	6.2	131.78	313.6	113.0	439.0	424.5	14.59	30.090		
3,700.0	3,685.5	3,672.6	3,672.4	9.2	6.4	132.84	314.6	111.8	447.6	432.5	15.04	29.760		
3,800.0	3,784.6	3,774.0	3,773.8	9.5	6.6	133.87	315.5	110.6	456.2	440.7	15.49	29.450		
3,900.0	3,883.8	3,876.9	3,876.7	9.9	6.8	134.97	315.4	109.3	464.3	448.4	15.93	29.145		
4,000.0	3,982.9	3,973.9	3,973.7	10.2	6.9	136.09	314.4	108.3	472.3	455.9	16.34	28.905		
4,100.0	4,082.0	4,072.1	4,071.9	10.5	7.1	137.22	313.5	108.0	481.0	464.2	16.75	28.720		
4,200.0	4,181.2	4,174.4	4,174.2	10.8	7.3	138.27	313.0	107.0	489.6	472.5	17.18	28.505		
4,300.0	4,280.3	4,274.9	4,274.7	11.1	7.5	139.29	312.0	105.7	497.9	480.2	17.60	28.280		
4,400.0	4,379.5	4,372.0	4,371.7	11.5	7.6	140.33	310.4	105.0	506.3	488.3	18.02	28.106		
4,500.0	4,478.6	4,471.8	4,471.5	11.8	7.8	141.34	309.3	104.3	515.3	496.9	18.44	27.947		
4,600.0	4,577.8	4,570.0	4,569.7	12.1	8.0	142.19	308.8	103.1	524.3	505.4	18.88	27.774		

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Lewis Klein 19-2 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
4,700.0	4,676.9	4,667.8	4,667.5	12.4	8.2	143.02	308.4	102.2	533.7	514.4	19.32	27.628	
4,800.0	4,776.1	4,770.0	4,769.8	12.8	8.4	143.86	308.0	101.3	543.2	523.4	19.77	27.479	
4,900.0	4,875.2	4,873.1	4,872.9	13.1	8.6	144.68	307.2	99.6	552.0	531.8	20.22	27.299	
5,000.0	4,974.4	4,970.5	4,970.2	13.4	8.9	145.49	305.8	98.0	560.7	540.0	20.66	27.142	
5,100.0	5,073.5	5,068.5	5,068.2	13.7	9.1	146.29	304.5	97.0	570.0	548.9	21.10	27.017	
5,200.0	5,172.6	5,169.3	5,169.0	14.1	9.3	147.01	303.8	95.5	579.3	557.7	21.55	26.881	
5,300.0	5,271.8	5,266.5	5,266.2	14.4	9.5	147.74	302.6	94.2	588.6	566.6	21.99	26.762	
5,400.0	5,370.9	5,359.6	5,359.2	14.7	9.7	148.39	302.0	93.5	598.7	576.3	22.41	26.714	
5,455.8	5,426.2	5,411.4	5,411.0	14.9	9.8	148.71	302.1	93.4	604.9	582.3	22.64	26.719	
5,500.0	5,470.1	5,454.2	5,453.9	15.0	9.8	148.99	302.5	93.4	609.7	586.9	22.82	26.721	
5,600.0	5,569.6	5,553.1	5,552.7	15.2	10.0	149.42	303.9	93.3	618.6	595.4	23.19	26.677	
5,700.0	5,669.4	5,650.2	5,649.8	15.4	10.1	149.65	305.3	93.3	624.6	601.1	23.53	26.546	
5,800.0	5,769.4	5,746.0	5,745.6	15.6	10.3	149.74	306.4	94.2	628.3	604.5	23.83	26.369	
5,830.6	5,800.0	5,776.1	5,775.7	15.7	10.3	67.65	306.9	94.5	629.0	603.6	25.41	24.753	
5,900.0	5,869.4	5,844.8	5,844.4	15.8	10.4	67.56	308.2	95.3	630.2	604.5	25.62	24.595	
6,007.4	5,976.8	5,950.1	5,949.7	16.0	10.6	67.46	310.1	96.6	632.1	606.2	25.96	24.347	
6,050.0	6,019.4	5,991.2	5,990.7	16.0	10.6	-22.62	310.7	97.3	632.0	607.4	24.57	25.719	
6,100.0	6,069.2	6,041.7	6,041.2	16.1	10.7	-22.89	311.4	98.3	629.1	604.5	24.56	25.615	
6,150.0	6,118.6	6,092.4	6,091.9	16.1	10.8	-23.35	311.9	99.2	623.0	598.6	24.46	25.468	
6,200.0	6,167.4	6,145.1	6,144.6	16.1	10.8	-24.05	312.1	100.2	613.9	589.6	24.30	25.266	
6,250.0	6,215.3	6,197.3	6,196.8	16.1	10.9	-24.97	311.7	101.0	601.6	577.5	24.07	24.996	
6,300.0	6,262.3	6,244.9	6,244.4	16.0	11.0	-26.13	311.1	101.6	586.3	562.5	23.78	24.653	
6,350.0	6,308.0	6,291.1	6,290.6	16.0	11.0	-27.60	310.6	102.2	568.2	544.8	23.46	24.218	
6,400.0	6,352.3	6,337.5	6,337.0	16.0	11.1	-29.47	309.9	102.7	547.6	524.5	23.15	23.650	
6,450.0	6,395.0	6,382.6	6,382.0	15.9	11.2	-31.79	309.0	103.2	524.4	501.5	22.89	22.913	
6,500.0	6,436.0	6,425.5	6,425.0	15.9	11.3	-34.63	307.9	103.6	498.9	476.2	22.72	21.962	
6,550.0	6,474.9	6,466.2	6,465.7	15.9	11.3	-38.08	306.7	103.9	471.4	448.7	22.71	20.755	
6,600.0	6,511.7	6,504.8	6,504.2	16.0	11.4	-42.28	305.5	104.1	442.1	419.1	22.94	19.268	
6,650.0	6,546.3	6,541.7	6,541.1	16.1	11.5	-47.38	304.3	104.1	411.4	387.9	23.50	17.508	
6,700.0	6,578.3	6,575.5	6,574.9	16.2	11.5	-53.33	303.2	103.8	379.9	355.5	24.38	15.582	
6,750.0	6,607.9	6,606.1	6,605.4	16.4	11.6	-59.99	302.2	103.5	348.2	322.7	25.53	13.642	
6,800.0	6,634.7	6,633.3	6,632.6	16.7	11.6	-67.07	301.3	103.0	317.4	290.6	26.79	11.846	
6,850.0	6,658.7	6,657.2	6,656.5	17.1	11.7	-74.13	300.5	102.5	288.6	260.6	28.00	10.305	
6,900.0	6,679.7	6,677.8	6,677.1	17.6	11.7	-80.64	299.7	102.1	263.5	234.5	29.03	9.076	
6,950.0	6,697.8	6,695.1	6,694.4	18.2	11.7	-86.14	299.1	101.6	244.2	214.3	29.86	8.178	
7,000.0	6,712.8	6,709.2	6,708.4	18.8	11.8	-90.36	298.6	101.2	232.9	202.3	30.56	7.621	
7,032.2	6,720.7	6,716.5	6,715.8	19.3	11.8	-92.31	298.3	101.0	230.7	199.7	31.00	7.443 CC, ES	
7,050.0	6,724.6	6,720.0	6,719.3	19.5	11.8	-93.11	298.2	100.9	231.4	200.2	31.24	7.408 SF	
7,100.0	6,733.2	6,727.6	6,726.8	20.3	11.8	-94.28	297.9	100.7	240.4	208.4	31.99	7.515	
7,150.0	6,738.6	6,731.7	6,731.0	21.1	11.8	-93.81	297.7	100.6	258.9	226.1	32.85	7.881	
7,200.0	6,740.7	6,732.5	6,731.8	22.0	11.8	-91.67	297.7	100.6	285.3	251.5	33.81	8.438	
7,215.0	6,740.7	6,732.1	6,731.4	22.3	11.8	-90.70	297.7	100.6	294.4	260.3	34.10	8.635	
7,300.0	6,739.9	6,728.9	6,728.1	23.9	11.8	-89.89	297.8	100.7	353.7	318.0	35.73	9.901	
7,400.0	6,738.9	6,725.0	6,724.3	26.0	11.8	-88.93	298.0	100.8	434.6	396.8	37.79	11.500	
7,500.0	6,737.9	6,721.2	6,720.4	28.2	11.8	-87.98	298.1	100.9	522.1	482.1	39.97	13.061	
7,600.0	6,736.9	6,717.3	6,716.6	30.5	11.8	-87.03	298.3	101.0	613.4	571.1	42.24	14.522	
7,700.0	6,735.9	6,713.5	6,712.8	32.9	11.8	-86.08	298.4	101.1	707.0	662.5	44.57	15.863	
7,800.0	6,734.9	6,709.6	6,708.9	35.3	11.8	-85.14	298.6	101.2	802.2	755.2	46.95	17.086	
7,900.0	6,733.9	6,705.8	6,705.1	37.8	11.8	-84.20	298.7	101.3	898.4	849.0	49.36	18.199	
8,000.0	6,732.9	6,702.0	6,701.2	40.3	11.8	-83.26	298.9	101.4	995.3	943.5	51.80	19.215	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Louis Klein 19-1 (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							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
7,400.0	6,738.9	6,700.2	6,698.8	26.0	12.3	-86.31	296.4	1,410.7	969.0	930.8	38.23	25.349		
7,500.0	6,737.9	6,703.8	6,702.3	28.2	12.3	-87.20	296.1	1,410.9	872.1	831.7	40.46	21.558		
7,600.0	6,736.9	6,707.3	6,705.8	30.5	12.3	-88.07	295.8	1,411.1	776.1	733.3	42.78	18.141		
7,700.0	6,735.9	6,710.8	6,709.2	32.9	12.3	-88.93	295.5	1,411.2	681.1	635.9	45.18	15.077		
7,800.0	6,734.9	6,714.1	6,712.6	35.3	12.3	-89.76	295.2	1,411.4	587.8	540.2	47.63	12.342		
7,900.0	6,733.9	6,717.3	6,715.8	37.8	12.3	-90.58	295.0	1,411.5	497.1	447.0	50.12	9.918		
8,000.0	6,732.9	6,720.5	6,719.0	40.3	12.3	-91.38	294.8	1,411.7	410.7	358.1	52.65	7.801		
8,100.0	6,731.9	6,723.6	6,722.0	42.9	12.3	-92.16	294.5	1,411.8	332.0	276.8	55.20	6.015		
8,200.0	6,730.9	6,726.6	6,725.1	45.5	12.3	-92.92	294.3	1,411.9	267.9	210.1	57.77	4.637		
8,300.0	6,729.9	6,729.6	6,728.0	48.1	12.4	-93.66	294.1	1,412.0	230.8	170.4	60.34	3.824		
8,342.6	6,729.5	6,730.8	6,729.2	49.3	12.4	-93.98	294.0	1,412.1	226.8	165.4	61.45	3.691	CC, ES, SF	
8,400.0	6,728.9	6,732.5	6,730.9	50.8	12.4	-94.39	293.9	1,412.2	234.0	171.0	62.93	3.718		
8,500.0	6,727.9	6,735.3	6,733.7	53.4	12.4	-95.10	293.7	1,412.3	276.1	210.5	65.52	4.213		
8,600.0	6,726.9	6,738.0	6,736.4	56.1	12.4	-95.80	293.5	1,412.4	343.0	274.9	68.12	5.036		
8,700.0	6,725.9	6,740.7	6,739.1	58.8	12.4	-96.48	293.4	1,412.5	423.2	352.5	70.71	5.985		
8,800.0	6,724.9	6,743.4	6,741.7	61.5	12.4	-97.14	293.2	1,412.6	510.4	437.1	73.30	6.963		
8,900.0	6,724.0	6,745.9	6,744.3	64.2	12.4	-97.79	293.0	1,412.7	601.6	525.7	75.88	7.928		
9,000.0	6,723.0	6,748.5	6,746.8	66.9	12.4	-98.42	292.9	1,412.8	695.2	616.7	78.46	8.860		
9,100.0	6,722.0	6,750.9	6,749.3	69.6	12.4	-99.04	292.7	1,412.9	790.4	709.3	81.04	9.753		
9,200.0	6,721.0	6,753.3	6,751.7	72.4	12.4	-99.64	292.6	1,413.0	886.6	803.0	83.60	10.605		
9,300.0	6,720.0	6,755.7	6,754.0	75.1	12.4	-100.23	292.4	1,413.1	983.5	897.4	86.16	11.415		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Victor Klein 20-1A (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
11,400.0	6,699.1	6,654.0	6,652.7	133.2	12.3	-87.27	432.7	5,372.0	974.1	828.7	145.37	6.701	
11,500.0	6,698.1	6,655.4	6,654.1	136.0	12.3	-87.50	432.7	5,372.0	882.2	734.0	148.18	5.954	
11,600.0	6,697.1	6,656.8	6,655.6	138.8	12.3	-87.72	432.8	5,372.1	792.3	641.3	150.99	5.247	
11,700.0	6,696.1	6,658.3	6,657.0	141.6	12.3	-87.95	432.8	5,372.1	705.0	551.2	153.80	4.584	
11,800.0	6,695.1	6,659.7	6,658.5	144.4	12.3	-88.18	432.8	5,372.1	621.7	465.1	156.61	3.970	
11,900.0	6,694.1	6,661.2	6,659.9	147.2	12.3	-88.40	432.8	5,372.2	543.9	384.5	159.41	3.412	
12,000.0	6,693.1	6,662.6	6,661.4	150.0	12.3	-88.63	432.8	5,372.2	474.6	312.4	162.22	2.926	
12,100.0	6,692.1	6,664.1	6,662.8	152.8	12.3	-88.86	432.8	5,372.2	417.9	252.8	165.03	2.532	
12,200.0	6,691.1	6,665.5	6,664.3	155.6	12.3	-89.08	432.9	5,372.3	379.4	211.6	167.83	2.261	
12,300.0	6,690.1	6,667.0	6,665.7	158.4	12.3	-89.31	432.9	5,372.3	365.2	194.5	170.63	2.140	
12,303.2	6,690.1	6,667.0	6,665.8	158.4	12.3	-89.32	432.9	5,372.3	365.2	194.4	170.72	2.139	CC, ES, SF
12,400.0	6,689.1	6,668.4	6,667.2	161.2	12.3	-89.54	432.9	5,372.3	377.8	204.3	173.43	2.178	
12,500.0	6,688.1	6,669.9	6,668.6	163.9	12.3	-89.76	432.9	5,372.4	414.8	238.6	176.23	2.354	
12,600.0	6,687.1	6,671.3	6,670.0	166.7	12.3	-89.99	432.9	5,372.4	470.6	291.5	179.03	2.628	
12,700.0	6,686.2	6,672.8	6,671.5	169.5	12.3	-90.22	432.9	5,372.4	539.2	357.4	181.83	2.966	
12,800.0	6,685.2	6,674.2	6,672.9	172.3	12.3	-90.45	433.0	5,372.5	616.5	431.9	184.62	3.340	
12,900.0	6,684.2	6,675.6	6,674.4	175.1	12.3	-90.67	433.0	5,372.5	699.6	512.2	187.41	3.733	
13,000.0	6,683.2	6,677.1	6,675.8	177.9	12.3	-90.90	433.0	5,372.5	786.6	596.4	190.20	4.136	
13,100.0	6,682.2	6,678.5	6,677.3	180.7	12.3	-91.13	433.0	5,372.6	876.4	683.5	192.98	4.542	
13,200.0	6,681.2	6,680.0	6,678.7	183.5	12.3	-91.35	433.0	5,372.6	968.2	772.5	195.76	4.946	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19N-302 - Wellbore #1 - Plan #3 (7-15-15)													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)	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	-90.00	0.0	-147.6	147.6					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-147.6	147.6	147.4	0.22	656.899		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-147.6	147.6	147.0	0.67	218.966		
300.0	300.0	300.0	300.0	0.6	0.6	-90.00	0.0	-147.6	147.6	146.5	1.12	131.380		
400.0	400.0	400.0	400.0	0.8	0.8	-90.00	0.0	-147.6	147.6	146.1	1.57	93.843		
500.0	500.0	500.0	500.0	1.0	1.0	-90.00	0.0	-147.6	147.6	145.6	2.02	72.989		
600.0	600.0	600.0	600.0	1.2	1.2	-90.00	0.0	-147.6	147.6	145.2	2.47	59.718		
700.0	700.0	700.0	700.0	1.5	1.5	-90.00	0.0	-147.6	147.6	144.7	2.92	50.531		
800.0	800.0	800.0	800.0	1.7	1.7	-90.00	0.0	-147.6	147.6	144.3	3.37	43.793 CC, ES		
900.0	900.0	898.6	898.6	1.9	1.9	-89.54	1.2	-148.1	148.1	144.3	3.82	38.799		
1,000.0	1,000.0	997.1	997.0	2.1	2.1	-88.18	4.7	-149.5	149.6	145.3	4.26	35.072		
1,100.0	1,100.0	1,095.3	1,095.0	2.4	2.4	-85.99	10.6	-151.7	152.2	147.5	4.71	32.287		
1,200.0	1,200.0	1,193.1	1,192.4	2.6	2.6	-83.05	18.9	-154.9	156.2	151.1	5.17	30.245		
1,300.0	1,300.0	1,290.5	1,289.1	2.8	2.8	-79.53	29.4	-158.9	162.0	156.3	5.62	28.816		
1,400.0	1,400.0	1,387.1	1,384.8	3.0	3.1	-75.60	42.0	-163.8	169.8	163.7	6.08	27.903		
1,500.0	1,500.0	1,483.1	1,479.4	3.3	3.4	-71.45	56.9	-169.5	179.9	173.4	6.56	27.423		
1,600.0	1,600.0	1,578.2	1,572.8	3.5	3.7	14.86	73.8	-176.0	191.9	184.8	7.05	27.211		
1,700.0	1,700.0	1,674.2	1,666.7	3.7	4.0	19.16	92.8	-183.3	204.8	197.3	7.52	27.239		
1,800.0	1,799.9	1,772.2	1,762.4	3.9	4.4	23.24	112.5	-190.8	217.6	209.6	7.99	27.231		
1,900.0	1,899.7	1,870.3	1,858.1	4.1	4.8	27.04	132.3	-198.4	229.8	221.3	8.46	27.175		
2,000.0	1,999.4	1,968.5	1,954.0	4.3	5.2	30.64	152.1	-206.0	241.4	232.5	8.92	27.074		
2,100.0	2,098.9	2,066.7	2,049.9	4.6	5.6	34.11	171.9	-213.6	252.6	243.2	9.38	26.933		
2,200.0	2,198.3	2,164.9	2,145.7	4.8	6.0	37.50	191.7	-221.2	263.2	253.4	9.84	26.751		
2,249.7	2,247.6	2,213.7	2,193.4	4.9	6.2	39.17	201.5	-225.0	268.3	258.3	10.07	26.647		
2,300.0	2,297.4	2,263.0	2,241.6	5.1	6.5	40.85	211.5	-228.8	273.6	263.3	10.31	26.540		
2,400.0	2,396.6	2,361.2	2,337.4	5.3	6.9	44.00	231.2	-236.4	284.7	273.9	10.79	26.388		
2,500.0	2,495.7	2,459.4	2,433.3	5.6	7.3	46.92	251.0	-244.0	296.7	285.4	11.28	26.299		
2,600.0	2,594.9	2,557.5	2,529.2	5.9	7.7	49.61	270.8	-251.6	309.3	297.5	11.78	26.253		
2,700.0	2,694.0	2,655.7	2,625.0	6.2	8.2	52.08	290.6	-259.2	322.6	310.3	12.29	26.237		
2,800.0	2,793.2	2,753.9	2,720.9	6.5	8.6	54.36	310.4	-266.8	336.4	323.6	12.82	26.242		
2,900.0	2,892.3	2,852.1	2,816.7	6.8	9.1	56.46	330.2	-274.4	350.7	337.4	13.36	26.261		
3,000.0	2,991.4	2,950.2	2,912.6	7.1	9.5	58.40	350.0	-282.0	365.5	351.6	13.90	26.288		
3,100.0	3,090.6	3,048.4	3,008.4	7.4	9.9	60.19	369.8	-289.6	380.6	366.2	14.46	26.321		
3,200.0	3,189.7	3,146.6	3,104.3	7.7	10.4	61.84	389.5	-297.1	396.1	381.1	15.03	26.356		
3,300.0	3,288.9	3,244.7	3,200.1	8.0	10.8	63.36	409.3	-304.7	411.9	396.3	15.60	26.393		
3,400.0	3,388.0	3,342.9	3,296.0	8.3	11.3	64.77	429.1	-312.3	427.9	411.7	16.19	26.431		
3,500.0	3,487.2	3,441.1	3,391.8	8.6	11.7	66.09	448.9	-319.9	444.2	427.4	16.78	26.467		
3,600.0	3,586.3	3,539.2	3,487.7	8.9	12.1	67.31	468.7	-327.5	460.7	443.3	17.38	26.503		
3,700.0	3,685.5	3,637.4	3,583.5	9.2	12.6	68.44	488.5	-335.1	477.3	459.4	17.99	26.538		
3,800.0	3,784.6	3,735.6	3,679.4	9.5	13.0	69.50	508.3	-342.7	494.2	475.6	18.60	26.572		
3,900.0	3,883.8	3,833.7	3,775.2	9.9	13.5	70.49	528.1	-350.3	511.2	492.0	19.21	26.605		
4,000.0	3,982.9	3,931.9	3,871.1	10.2	13.9	71.41	547.8	-357.9	528.3	508.5	19.84	26.636		
4,100.0	4,082.0	4,030.1	3,967.0	10.5	14.4	72.28	567.6	-365.5	545.6	525.2	20.46	26.666		
4,200.0	4,181.2	4,128.2	4,062.8	10.8	14.8	73.10	587.4	-373.1	563.0	541.9	21.09	26.695		
4,300.0	4,280.3	4,226.4	4,158.7	11.1	15.3	73.86	607.2	-380.7	580.5	558.8	21.72	26.722		
4,400.0	4,379.5	4,324.6	4,254.5	11.5	15.7	74.58	627.0	-388.3	598.1	575.7	22.36	26.749		
4,500.0	4,478.6	4,422.8	4,350.4	11.8	16.2	75.26	646.8	-395.9	615.8	592.8	23.00	26.775		
4,600.0	4,577.8	4,520.9	4,446.2	12.1	16.6	75.91	666.6	-403.5	633.5	609.9	23.64	26.799		
4,700.0	4,676.9	4,619.1	4,542.1	12.4	17.1	76.51	686.4	-411.1	651.3	627.1	24.28	26.823		
4,800.0	4,776.1	4,717.3	4,637.9	12.8	17.5	77.09	706.1	-418.6	669.2	644.3	24.93	26.846		
4,900.0	4,875.2	4,815.4	4,733.8	13.1	18.0	77.63	725.9	-426.2	687.2	661.6	25.58	26.868		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 19N-302 - Wellbore #1 - Plan #3 (7-15-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,974.4	4,913.6	4,829.6	13.4	18.4	78.15	745.7	-433.8	705.2	679.0	26.23	26.889	
5,100.0	5,073.5	5,011.8	4,925.5	13.7	18.9	78.64	765.5	-441.4	723.3	696.4	26.88	26.910	
5,200.0	5,172.6	5,109.9	5,021.3	14.1	19.3	79.11	785.3	-449.0	741.4	713.8	27.53	26.930	
5,300.0	5,271.8	5,208.1	5,117.2	14.4	19.8	79.56	805.1	-456.6	759.5	731.4	28.18	26.949	
5,400.0	5,370.9	5,306.3	5,213.0	14.7	20.2	79.98	824.9	-464.2	777.7	748.9	28.84	26.968	
5,455.8	5,426.2	5,361.0	5,266.5	14.9	20.5	80.21	835.9	-468.4	787.9	758.7	29.21	26.978	
5,500.0	5,470.1	5,414.3	5,318.6	15.0	20.7	80.56	846.4	-472.5	795.9	766.4	29.50	26.980	
5,600.0	5,569.6	5,548.3	5,450.4	15.2	21.1	81.20	868.9	-481.1	811.3	781.2	30.06	26.986	
5,700.0	5,669.4	5,683.8	5,584.7	15.4	21.5	81.58	885.8	-487.6	822.9	792.3	30.56	26.930	
5,800.0	5,769.4	5,820.4	5,720.7	15.6	21.8	81.71	896.8	-491.8	830.6	799.6	30.97	26.818	
5,830.6	5,800.0	5,862.4	5,762.7	15.7	21.8	-0.38	899.0	-492.7	832.1	798.2	33.96	24.506	
5,900.0	5,869.4	5,957.7	5,857.9	15.8	22.0	-0.46	901.8	-493.7	834.2	799.9	34.24	24.365	
6,007.4	5,976.8	6,076.6	5,976.8	16.0	22.1	-0.46	902.1	-493.8	834.4	799.8	34.60	24.112	
6,050.0	6,019.4	6,119.1	6,019.4	16.0	22.2	-90.54	902.1	-493.8	834.4	802.5	31.83	26.213	
6,100.0	6,069.2	6,169.7	6,069.8	16.1	22.2	-90.75	902.1	-492.3	834.4	802.5	31.92	26.140	
6,150.0	6,118.6	6,220.4	6,120.3	16.1	22.3	-90.94	902.1	-487.5	834.4	802.5	31.97	26.101	
6,200.0	6,167.4	6,271.3	6,170.6	16.1	22.3	-91.14	902.1	-479.3	834.5	802.5	31.98	26.091	
6,250.0	6,215.3	6,322.5	6,220.4	16.1	22.3	-91.33	902.1	-467.7	834.6	802.6	31.97	26.104	
6,300.0	6,262.3	6,373.8	6,269.4	16.0	22.3	-91.52	902.1	-452.7	834.6	802.7	31.93	26.135	
6,350.0	6,308.0	6,425.3	6,317.6	16.0	22.3	-91.70	902.1	-434.4	834.7	802.8	31.89	26.176	
6,400.0	6,352.3	6,477.0	6,364.5	16.0	22.3	-91.87	902.1	-412.8	834.8	802.9	31.84	26.215	
6,450.0	6,395.0	6,528.9	6,410.1	15.9	22.2	-92.03	902.1	-388.0	834.9	803.0	31.82	26.240	
6,500.0	6,436.0	6,580.9	6,454.0	15.9	22.2	-92.19	902.1	-360.0	834.9	803.1	31.82	26.238	
6,550.0	6,474.9	6,633.1	6,496.0	15.9	22.2	-92.33	902.1	-329.1	835.0	803.1	31.88	26.191	
6,600.0	6,511.7	6,685.5	6,535.9	16.0	22.1	-92.47	902.1	-295.2	835.1	803.1	32.02	26.083	
6,650.0	6,546.3	6,738.0	6,573.5	16.1	22.1	-92.59	902.1	-258.6	835.2	802.9	32.25	25.897	
6,700.0	6,578.3	6,790.6	6,608.6	16.2	22.1	-92.71	902.1	-219.4	835.3	802.7	32.60	25.619	
6,750.0	6,607.9	6,843.4	6,641.0	16.4	22.0	-92.81	902.1	-177.7	835.3	802.2	33.10	25.239	
6,800.0	6,634.7	6,896.2	6,670.5	16.7	22.0	-92.89	902.1	-133.8	835.4	801.7	33.75	24.755	
6,850.0	6,658.7	6,949.2	6,696.9	17.1	22.0	-92.97	902.1	-88.0	835.5	800.9	34.57	24.170	
6,900.0	6,679.7	7,002.2	6,720.1	17.6	22.0	-93.03	902.1	-40.3	835.5	799.9	35.56	23.493	
6,950.0	6,697.8	7,055.3	6,740.0	18.2	22.0	-93.08	902.1	8.9	835.5	798.8	36.74	22.743	
7,000.0	6,712.8	7,108.4	6,756.4	18.8	22.1	-93.11	902.1	59.4	835.6	797.5	38.08	21.941	
7,050.0	6,724.6	7,161.6	6,769.3	19.5	22.3	-93.13	902.1	111.0	835.6	796.0	39.58	21.110	
7,100.0	6,733.2	7,214.8	6,778.5	20.3	22.7	-93.14	902.1	163.4	835.6	794.4	41.22	20.270	
7,150.0	6,738.6	7,268.0	6,784.1	21.1	23.3	-93.13	902.1	216.3	835.6	792.6	42.98	19.440	
7,200.0	6,740.7	7,321.1	6,786.0	22.0	24.1	-93.11	902.1	269.4	835.6	790.7	44.84	18.636	
7,213.4	6,740.7	7,334.9	6,785.9	22.3	24.3	-93.10	902.1	283.1	835.6	790.2	45.34	18.428	
7,215.0	6,740.7	7,336.6	6,785.9	22.3	24.4	-93.10	902.1	284.8	835.6	790.2	45.40	18.403	
7,300.0	6,739.9	7,421.5	6,785.3	23.9	25.9	-93.11	902.1	369.8	835.6	786.8	48.72	17.149	
7,400.0	6,738.9	7,521.5	6,784.5	26.0	28.0	-93.13	902.1	469.8	835.6	782.7	52.90	15.794	
7,500.0	6,737.9	7,621.5	6,783.7	28.2	30.2	-93.15	902.1	569.8	835.6	778.3	57.33	14.575	
7,600.0	6,736.9	7,721.5	6,783.0	30.5	32.5	-93.16	902.1	669.8	835.6	773.7	61.95	13.489	
7,700.0	6,735.9	7,821.5	6,782.2	32.9	34.8	-93.18	902.1	769.8	835.6	768.9	66.72	12.525	
7,800.0	6,734.9	7,921.5	6,781.4	35.3	37.2	-93.19	902.1	869.8	835.6	764.0	71.61	11.669	
7,900.0	6,733.9	8,021.5	6,780.7	37.8	39.7	-93.21	902.1	969.7	835.6	759.0	76.60	10.909	
8,000.0	6,732.9	8,121.5	6,779.9	40.3	42.2	-93.22	902.1	1,069.7	835.6	754.0	81.67	10.232	
8,100.0	6,731.9	8,221.5	6,779.1	42.9	44.8	-93.24	902.1	1,169.7	835.7	748.9	86.81	9.627	
8,200.0	6,730.9	8,321.5	6,778.4	45.5	47.4	-93.25	902.1	1,269.7	835.7	743.7	92.00	9.084	
8,300.0	6,729.9	8,421.5	6,777.6	48.1	50.0	-93.27	902.1	1,369.7	835.7	738.4	97.24	8.594	
8,400.0	6,728.9	8,521.5	6,776.8	50.8	52.6	-93.29	902.1	1,469.7	835.7	733.2	102.51	8.152	

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 19N-302 - Wellbore #1 - Plan #3 (7-15-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
8,500.0	6,727.9	8,621.5	6,776.1	53.4	55.2	-93.30	902.1	1,569.7	835.7	727.9	107.82	7.751	
8,600.0	6,726.9	8,721.5	6,775.3	56.1	57.9	-93.32	902.1	1,669.7	835.7	722.6	113.16	7.385	
8,700.0	6,725.9	8,821.5	6,774.5	58.8	60.6	-93.33	902.1	1,769.7	835.7	717.2	118.53	7.051	
8,800.0	6,724.9	8,921.5	6,773.8	61.5	63.2	-93.35	902.1	1,869.7	835.7	711.8	123.91	6.745	
8,900.0	6,724.0	9,021.5	6,773.0	64.2	65.9	-93.36	902.1	1,969.7	835.8	706.4	129.31	6.463	
9,000.0	6,723.0	9,121.5	6,772.2	66.9	68.6	-93.38	902.1	2,069.7	835.8	701.0	134.73	6.203	
9,100.0	6,722.0	9,221.5	6,771.4	69.6	71.4	-93.39	902.1	2,169.7	835.8	695.6	140.17	5.963	
9,200.0	6,721.0	9,321.5	6,770.7	72.4	74.1	-93.41	902.1	2,269.7	835.8	690.2	145.62	5.740	
9,300.0	6,720.0	9,421.5	6,769.9	75.1	76.8	-93.43	902.1	2,369.7	835.8	684.7	151.08	5.532	
9,400.0	6,719.0	9,521.5	6,769.1	77.8	79.5	-93.44	902.1	2,469.7	835.8	679.3	156.55	5.339	
9,500.0	6,718.0	9,621.5	6,768.4	80.6	82.3	-93.46	902.1	2,569.7	835.8	673.8	162.02	5.159	
9,600.0	6,717.0	9,721.5	6,767.6	83.3	85.0	-93.47	902.1	2,669.7	835.9	668.3	167.51	4.990	
9,700.0	6,716.0	9,821.5	6,766.8	86.1	87.7	-93.49	902.1	2,769.7	835.9	662.9	173.00	4.831	
9,800.0	6,715.0	9,921.5	6,766.1	88.8	90.5	-93.50	902.1	2,869.7	835.9	657.4	178.51	4.683	
9,900.0	6,714.0	10,021.5	6,765.3	91.6	93.2	-93.52	902.1	2,969.7	835.9	651.9	184.01	4.543	
10,000.0	6,713.0	10,121.5	6,764.5	94.4	96.0	-93.53	902.1	3,069.7	835.9	646.4	189.52	4.411	
10,100.0	6,712.0	10,221.5	6,763.8	97.1	98.8	-93.55	902.1	3,169.7	835.9	640.9	195.04	4.286	
10,200.0	6,711.0	10,321.5	6,763.0	99.9	101.5	-93.57	902.1	3,269.7	835.9	635.4	200.56	4.168	
10,300.0	6,710.0	10,421.5	6,762.2	102.7	104.3	-93.58	902.1	3,369.7	835.9	629.9	206.09	4.056	
10,400.0	6,709.0	10,521.5	6,761.5	105.4	107.0	-93.60	902.1	3,469.7	836.0	624.3	211.62	3.950	
10,500.0	6,708.0	10,621.5	6,760.7	108.2	109.8	-93.61	902.1	3,569.7	836.0	618.8	217.16	3.850	
10,600.0	6,707.0	10,721.5	6,759.9	111.0	112.6	-93.63	902.1	3,669.7	836.0	613.3	222.69	3.754	
10,700.0	6,706.0	10,821.5	6,759.2	113.8	115.4	-93.64	902.1	3,769.7	836.0	607.8	228.23	3.663	
10,800.0	6,705.1	10,921.5	6,758.4	116.5	118.1	-93.66	902.1	3,869.7	836.0	602.2	233.78	3.576	
10,900.0	6,704.1	11,021.5	6,757.6	119.3	120.9	-93.67	902.1	3,969.7	836.0	596.7	239.32	3.493	
11,000.0	6,703.1	11,121.5	6,756.9	122.1	123.7	-93.69	902.1	4,069.7	836.0	591.2	244.87	3.414	
11,100.0	6,702.1	11,221.5	6,756.1	124.9	126.5	-93.70	902.1	4,169.6	836.1	585.6	250.42	3.339	
11,200.0	6,701.1	11,321.5	6,755.3	127.7	129.2	-93.72	902.1	4,269.6	836.1	580.1	255.97	3.266	
11,300.0	6,700.1	11,421.5	6,754.6	130.5	132.0	-93.74	902.1	4,369.6	836.1	574.6	261.53	3.197	
11,400.0	6,699.1	11,521.5	6,753.8	133.2	134.8	-93.75	902.1	4,469.6	836.1	569.0	267.08	3.130	
11,500.0	6,698.1	11,621.5	6,753.0	136.0	137.6	-93.77	902.1	4,569.6	836.1	563.5	272.64	3.067	
11,600.0	6,697.1	11,721.5	6,752.3	138.8	140.4	-93.78	902.1	4,669.6	836.1	557.9	278.20	3.005	
11,700.0	6,696.1	11,821.5	6,751.5	141.6	143.1	-93.80	902.1	4,769.6	836.1	552.4	283.76	2.947	
11,800.0	6,695.1	11,921.5	6,750.7	144.4	145.9	-93.81	902.0	4,869.6	836.2	546.8	289.33	2.890	
11,900.0	6,694.1	12,021.5	6,749.9	147.2	148.7	-93.83	902.0	4,969.6	836.2	541.3	294.89	2.836	
12,000.0	6,693.1	12,121.5	6,749.2	150.0	151.5	-93.84	902.0	5,069.6	836.2	535.7	300.45	2.783	
12,100.0	6,692.1	12,221.5	6,748.4	152.8	154.3	-93.86	902.0	5,169.6	836.2	530.2	306.02	2.732	
12,200.0	6,691.1	12,321.5	6,747.6	155.6	157.1	-93.88	902.0	5,269.6	836.2	524.6	311.59	2.684	
12,300.0	6,690.1	12,421.5	6,746.9	158.4	159.9	-93.89	902.0	5,369.6	836.2	519.1	317.15	2.637	
12,400.0	6,689.1	12,521.5	6,746.1	161.2	162.7	-93.91	902.0	5,469.6	836.2	513.5	322.72	2.591	
12,500.0	6,688.1	12,621.5	6,745.3	163.9	165.5	-93.92	902.0	5,569.6	836.3	508.0	328.29	2.547	
12,600.0	6,687.1	12,721.5	6,744.6	166.7	168.2	-93.94	902.0	5,669.6	836.3	502.4	333.86	2.505	
12,700.0	6,686.2	12,821.5	6,743.8	169.5	171.0	-93.95	902.0	5,769.6	836.3	496.9	339.43	2.464	
12,800.0	6,685.2	12,921.5	6,743.0	172.3	173.8	-93.97	902.0	5,869.6	836.3	491.3	345.01	2.424	
12,900.0	6,684.2	13,021.5	6,742.3	175.1	176.6	-93.98	902.0	5,969.6	836.3	485.7	350.58	2.386	
13,000.0	6,683.2	13,121.5	6,741.5	177.9	179.4	-94.00	902.0	6,069.6	836.3	480.2	356.15	2.348	
13,100.0	6,682.2	13,221.5	6,740.7	180.7	182.2	-94.02	902.0	6,169.6	836.3	474.6	361.73	2.312	
13,200.0	6,681.2	13,321.5	6,740.0	183.5	185.0	-94.03	902.0	6,269.6	836.4	469.1	367.30	2.277	
13,300.0	6,680.2	13,421.5	6,739.2	186.3	187.8	-94.05	902.0	6,369.6	836.4	463.5	372.87	2.243	
13,400.0	6,679.2	13,521.5	6,738.4	189.1	190.6	-94.06	902.0	6,469.6	836.4	457.9	378.45	2.210	
13,500.0	6,678.2	13,621.5	6,737.7	191.9	193.4	-94.08	902.0	6,569.6	836.4	452.4	384.03	2.178	

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 19N-302 - Wellbore #1 - Plan #3 (7-15-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,600.0	6,677.2	13,721.5	6,736.9	194.7	196.2	-94.09	902.0	6,669.6	836.4	446.8	389.60	2.147	
13,700.0	6,676.2	13,821.5	6,736.1	197.5	199.0	-94.11	902.0	6,769.6	836.4	441.3	395.18	2.117	
13,800.0	6,675.2	13,921.5	6,735.4	200.3	201.8	-94.12	902.0	6,869.6	836.5	435.7	400.75	2.087	
13,900.0	6,674.2	14,021.5	6,734.6	203.1	204.6	-94.14	902.0	6,969.6	836.5	430.1	406.33	2.059	
14,000.0	6,673.2	14,121.5	6,733.8	205.9	207.4	-94.15	902.0	7,069.6	836.5	424.6	411.91	2.031	
14,100.0	6,672.2	14,221.5	6,733.1	208.7	210.2	-94.17	902.0	7,169.6	836.5	419.0	417.49	2.004	
14,200.0	6,671.2	14,321.5	6,732.3	211.5	213.0	-94.19	902.0	7,269.5	836.5	413.5	423.06	1.977	
14,300.0	6,670.2	14,421.5	6,731.5	214.3	215.8	-94.20	902.0	7,369.5	836.5	407.9	428.64	1.952	
14,400.0	6,669.2	14,521.5	6,730.7	217.1	218.6	-94.22	902.0	7,469.5	836.6	402.3	434.22	1.927	
14,500.0	6,668.2	14,621.5	6,730.0	219.9	221.4	-94.23	902.0	7,569.5	836.6	396.8	439.80	1.902	
14,600.0	6,667.2	14,721.5	6,729.2	222.7	224.2	-94.25	902.0	7,669.5	836.6	391.2	445.38	1.878	
14,700.0	6,666.3	14,821.5	6,728.4	225.5	227.0	-94.26	902.0	7,769.5	836.6	385.6	450.96	1.855	
14,800.0	6,665.3	14,921.5	6,727.7	228.3	229.8	-94.28	902.0	7,869.5	836.6	380.1	456.53	1.833	
14,900.0	6,664.3	15,021.5	6,726.9	231.1	232.6	-94.29	902.0	7,969.5	836.6	374.5	462.11	1.810	
15,000.0	6,663.3	15,121.5	6,726.1	233.9	235.4	-94.31	902.0	8,069.5	836.6	369.0	467.69	1.789	
15,100.0	6,662.3	15,221.5	6,725.4	236.7	238.2	-94.33	902.0	8,169.5	836.7	363.4	473.27	1.768	
15,200.0	6,661.3	15,321.5	6,724.6	239.5	241.0	-94.34	902.0	8,269.5	836.7	357.8	478.85	1.747	
15,300.0	6,660.3	15,421.5	6,723.8	242.3	243.8	-94.36	902.0	8,369.5	836.7	352.3	484.43	1.727	
15,400.0	6,659.3	15,521.5	6,723.1	245.1	246.6	-94.37	902.0	8,469.5	836.7	346.7	490.01	1.708	
15,500.0	6,658.3	15,621.5	6,722.3	247.9	249.4	-94.39	902.0	8,569.5	836.7	341.1	495.59	1.688	
15,600.0	6,657.3	15,721.5	6,721.5	250.7	252.2	-94.40	902.0	8,669.5	836.7	335.6	501.17	1.670	
15,700.0	6,656.3	15,821.5	6,720.8	253.5	255.0	-94.42	902.0	8,769.5	836.8	330.0	506.75	1.651	
15,800.0	6,655.3	15,921.5	6,720.0	256.3	257.8	-94.43	902.0	8,869.5	836.8	324.5	512.33	1.633	
15,900.0	6,654.3	16,021.5	6,719.2	259.2	260.6	-94.45	902.0	8,969.5	836.8	318.9	517.91	1.616	
16,000.0	6,653.3	16,121.5	6,718.5	262.0	263.4	-94.46	902.0	9,069.5	836.8	313.3	523.49	1.599	
16,100.0	6,652.3	16,221.5	6,717.7	264.8	266.2	-94.48	902.0	9,169.5	836.8	307.8	529.07	1.582	
16,200.0	6,651.3	16,321.5	6,716.9	267.6	269.0	-94.50	902.0	9,269.5	836.9	302.2	534.65	1.565	
16,300.0	6,650.3	16,421.5	6,716.2	270.4	271.8	-94.51	902.0	9,369.5	836.9	296.6	540.23	1.549	
16,400.0	6,649.3	16,521.5	6,715.4	273.2	274.6	-94.53	902.0	9,469.5	836.9	291.1	545.81	1.533	
16,500.0	6,648.3	16,621.5	6,714.6	276.0	277.4	-94.54	902.0	9,569.5	836.9	285.5	551.39	1.518	
16,600.0	6,647.4	16,721.5	6,713.9	278.8	280.2	-94.56	902.0	9,669.5	836.9	280.0	556.97	1.503	
16,700.0	6,646.4	16,821.5	6,713.1	281.6	283.0	-94.57	902.0	9,769.5	836.9	274.4	562.55	1.488 Level 3	
16,800.0	6,645.4	16,921.5	6,712.3	284.4	285.8	-94.59	902.0	9,869.5	837.0	268.8	568.12	1.473 Level 3	
16,900.0	6,644.4	17,021.5	6,711.6	287.2	288.6	-94.60	902.0	9,969.5	837.0	263.3	573.70	1.459 Level 3	
17,000.0	6,643.4	17,121.5	6,710.8	290.0	291.4	-94.62	902.0	10,069.5	837.0	257.7	579.28	1.445 Level 3	
17,100.0	6,642.4	17,221.5	6,710.0	292.8	294.2	-94.64	902.0	10,169.5	837.0	252.1	584.86	1.431 Level 3	
17,200.0	6,641.4	17,321.5	6,709.2	295.6	297.0	-94.65	902.0	10,269.5	837.0	246.6	590.44	1.418 Level 3	
17,217.0	6,641.2	17,338.5	6,709.1	296.1	297.5	-94.65	902.0	10,286.4	837.0	245.6	591.39	1.415 Level 3	
17,238.6	6,641.0	17,353.6	6,709.0	296.7	297.9	-94.66	902.0	10,301.6	837.1	244.6	592.41	1.413 Level 3, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19N-432 - Wellbore #1 - Plan #3 (7-16-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	-102.52	-32.8	-147.6	151.2					
100.0	100.0	100.0	100.0	0.1	0.1	-102.52	-32.8	-147.6	151.2	151.0	0.22	672.901		
200.0	200.0	200.0	200.0	0.3	0.3	-102.52	-32.8	-147.6	151.2	150.6	0.67	224.300		
300.0	300.0	300.0	300.0	0.6	0.6	-102.52	-32.8	-147.6	151.2	150.1	1.12	134.580		
400.0	400.0	400.0	400.0	0.8	0.8	-102.52	-32.8	-147.6	151.2	149.7	1.57	96.129		
500.0	500.0	500.0	500.0	1.0	1.0	-102.52	-32.8	-147.6	151.2	149.2	2.02	74.767		
600.0	600.0	600.0	600.0	1.2	1.2	-102.52	-32.8	-147.6	151.2	148.8	2.47	61.173		
700.0	700.0	700.0	700.0	1.5	1.5	-102.52	-32.8	-147.6	151.2	148.3	2.92	51.762		
800.0	800.0	800.0	800.0	1.7	1.7	-102.52	-32.8	-147.6	151.2	147.9	3.37	44.860		
900.0	900.0	900.0	900.0	1.9	1.9	-102.52	-32.8	-147.6	151.2	147.4	3.82	39.582		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-102.52	-32.8	-147.6	151.2	147.0	4.27	35.416 CC		
1,100.0	1,100.0	1,099.3	1,099.3	2.4	2.4	-102.21	-32.0	-148.1	151.5	146.8	4.72	32.115		
1,200.0	1,200.0	1,198.5	1,198.4	2.6	2.6	-101.28	-29.8	-149.3	152.2	147.1	5.16	29.486		
1,300.0	1,300.0	1,297.6	1,297.4	2.8	2.8	-99.75	-26.0	-151.3	153.6	148.0	5.61	27.376		
1,400.0	1,400.0	1,396.5	1,396.2	3.0	3.0	-97.66	-20.7	-154.2	155.6	149.6	6.06	25.690		
1,500.0	1,500.0	1,495.2	1,494.5	3.3	3.3	-95.07	-14.0	-157.8	158.6	152.1	6.51	24.367		
1,600.0	1,600.0	1,593.6	1,592.5	3.5	3.5	-10.01	-5.8	-162.3	161.7	154.8	6.95	23.264		
1,700.0	1,700.0	1,691.8	1,690.1	3.7	3.7	-6.72	3.9	-167.5	164.4	157.0	7.39	22.247		
1,800.0	1,799.9	1,789.7	1,787.2	3.9	4.0	-3.12	15.0	-173.6	166.8	159.0	7.84	21.291		
1,900.0	1,899.7	1,887.3	1,883.8	4.1	4.3	0.81	27.5	-180.3	169.2	160.9	8.29	20.417		
2,000.0	1,999.4	1,984.7	1,979.8	4.3	4.6	5.05	41.4	-187.9	171.8	163.0	8.74	19.650		
2,100.0	2,098.9	2,083.7	2,077.4	4.6	4.9	9.49	56.2	-195.9	174.2	165.0	9.20	18.925		
2,200.0	2,198.3	2,182.8	2,175.0	4.8	5.2	13.91	71.1	-204.0	175.9	166.2	9.66	18.205		
2,249.7	2,247.6	2,232.0	2,223.6	4.9	5.4	16.13	78.4	-208.0	176.5	166.6	9.89	17.850		
2,300.0	2,297.4	2,281.8	2,272.6	5.1	5.6	18.38	85.9	-212.0	177.2	167.1	10.12	17.502		
2,400.0	2,396.6	2,380.8	2,370.2	5.3	5.9	22.79	100.7	-220.1	179.4	168.8	10.59	16.931		
2,500.0	2,495.7	2,479.8	2,467.7	5.6	6.2	27.06	115.5	-228.1	182.6	171.5	11.07	16.496		
2,600.0	2,594.9	2,578.8	2,565.3	5.9	6.6	31.17	130.4	-236.1	186.8	175.3	11.55	16.175		
2,700.0	2,694.0	2,677.8	2,662.9	6.2	6.9	35.08	145.2	-244.2	192.0	180.0	12.04	15.944		
2,800.0	2,793.2	2,776.9	2,760.4	6.5	7.3	38.77	160.0	-252.2	198.0	185.5	12.54	15.786		
2,900.0	2,892.3	2,875.9	2,858.0	6.8	7.7	42.23	174.8	-260.3	204.8	191.8	13.06	15.686		
3,000.0	2,991.4	2,974.9	2,955.6	7.1	8.0	45.47	189.7	-268.3	212.3	198.7	13.58	15.630		
3,100.0	3,090.6	3,073.9	3,053.1	7.4	8.4	48.47	204.5	-276.4	220.5	206.3	14.12	15.608		
3,200.0	3,189.7	3,172.9	3,150.7	7.7	8.7	51.26	219.3	-284.4	229.2	214.5	14.68	15.614		
3,300.0	3,288.9	3,271.9	3,248.3	8.0	9.1	53.84	234.1	-292.4	238.4	223.2	15.24	15.640		
3,400.0	3,388.0	3,370.9	3,345.9	8.3	9.5	56.23	249.0	-300.5	248.1	232.2	15.82	15.682		
3,500.0	3,487.2	3,470.0	3,443.4	8.6	9.9	58.43	263.8	-308.5	258.1	241.7	16.40	15.736		
3,600.0	3,586.3	3,569.0	3,541.0	8.9	10.2	60.47	278.6	-316.6	268.5	251.5	17.00	15.798		
3,700.0	3,685.5	3,668.0	3,638.6	9.2	10.6	62.36	293.4	-324.6	279.3	261.7	17.60	15.867		
3,800.0	3,784.6	3,767.0	3,736.1	9.5	11.0	64.10	308.3	-332.7	290.3	272.1	18.21	15.941		
3,900.0	3,883.8	3,866.0	3,833.7	9.9	11.3	65.72	323.1	-340.7	301.5	282.7	18.82	16.017		
4,000.0	3,982.9	3,965.0	3,931.3	10.2	11.7	67.22	337.9	-348.7	313.0	293.6	19.45	16.096		
4,100.0	4,082.0	4,064.1	4,028.8	10.5	12.1	68.62	352.7	-356.8	324.7	304.6	20.07	16.176		
4,200.0	4,181.2	4,163.1	4,126.4	10.8	12.5	69.91	367.6	-364.8	336.5	315.8	20.70	16.256		
4,300.0	4,280.3	4,262.1	4,224.0	11.1	12.8	71.12	382.4	-372.9	348.5	327.2	21.34	16.336		
4,400.0	4,379.5	4,361.1	4,321.5	11.5	13.2	72.25	397.2	-380.9	360.7	338.7	21.97	16.416		
4,500.0	4,478.6	4,460.1	4,419.1	11.8	13.6	73.31	412.0	-388.9	373.0	350.4	22.61	16.495		
4,600.0	4,577.8	4,559.1	4,516.7	12.1	14.0	74.29	426.9	-397.0	385.4	362.1	23.25	16.573		
4,700.0	4,676.9	4,658.1	4,614.2	12.4	14.4	75.22	441.7	-405.0	397.9	374.0	23.90	16.649		
4,800.0	4,776.1	4,757.2	4,711.8	12.8	14.7	76.09	456.5	-413.1	410.5	386.0	24.54	16.724		
4,900.0	4,875.2	4,856.2	4,809.4	13.1	15.1	76.91	471.3	-421.1	423.2	398.0	25.19	16.798		

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 19N-432 - Wellbore #1 - Plan #3 (7-16-15)												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
5,000.0	4,974.4	4,955.2	4,906.9	13.4	15.5	77.68	486.2	-429.2	436.0	410.1	25.84	16.870	
5,100.0	5,073.5	5,054.2	5,004.5	13.7	15.9	78.40	501.0	-437.2	448.8	422.3	26.49	16.941	
5,200.0	5,172.6	5,153.2	5,102.1	14.1	16.3	79.09	515.8	-445.2	461.7	434.6	27.14	17.009	
5,300.0	5,271.8	5,252.2	5,199.6	14.4	16.6	79.74	530.6	-453.3	474.7	446.9	27.80	17.077	
5,400.0	5,370.9	5,351.2	5,297.2	14.7	17.0	80.35	545.5	-461.3	487.7	459.3	28.45	17.142	
5,455.8	5,426.2	5,406.5	5,351.6	14.9	17.2	80.68	553.7	-465.8	495.0	466.2	28.82	17.178	
5,500.0	5,470.1	5,450.3	5,394.8	15.0	17.4	81.01	560.3	-469.4	500.9	471.8	29.09	17.219	
5,600.0	5,569.6	5,564.6	5,507.7	15.2	17.7	81.56	576.0	-477.9	513.3	483.7	29.61	17.336	
5,700.0	5,669.4	5,683.0	5,625.3	15.4	18.0	81.84	588.1	-484.5	522.6	492.6	30.05	17.393	
5,800.0	5,769.4	5,802.1	5,744.0	15.6	18.3	81.86	596.0	-488.7	528.9	498.4	30.42	17.383	
5,830.6	5,800.0	5,838.6	5,780.5	15.7	18.3	-0.27	597.5	-489.6	530.1	499.8	30.29	17.502	
5,900.0	5,869.4	5,921.5	5,863.4	15.8	18.5	-0.38	599.5	-490.6	531.8	501.2	30.57	17.398	
6,007.4	5,976.8	6,034.9	5,976.8	16.0	18.6	-0.39	599.7	-490.7	532.0	501.0	30.96	17.184	
6,050.0	6,019.4	6,077.5	6,019.4	16.0	18.7	-90.52	599.7	-490.7	532.0	500.7	31.27	17.013	
6,100.0	6,069.2	6,127.3	6,069.2	16.1	18.8	-90.99	599.7	-490.7	532.0	500.7	31.36	16.963	
6,150.0	6,118.6	6,176.7	6,118.6	16.1	18.9	-91.79	599.7	-490.7	532.2	500.8	31.41	16.946	
6,200.0	6,167.4	6,227.3	6,169.1	16.1	18.9	-92.76	599.7	-489.0	532.6	501.2	31.39	16.965	
6,250.0	6,215.3	6,278.5	6,220.1	16.1	19.0	-93.73	599.7	-483.8	533.1	501.8	31.35	17.006	
6,300.0	6,262.3	6,330.4	6,271.2	16.0	19.0	-94.68	599.7	-475.1	533.8	502.5	31.28	17.068	
6,350.0	6,308.0	6,382.9	6,322.3	16.0	19.0	-95.62	599.7	-462.8	534.6	503.4	31.18	17.144	
6,400.0	6,352.3	6,436.2	6,373.0	16.0	19.0	-96.54	599.7	-446.8	535.5	504.5	31.08	17.229	
6,450.0	6,395.0	6,490.1	6,423.2	15.9	19.0	-97.43	599.7	-426.9	536.6	505.6	30.99	17.316	
6,500.0	6,436.0	6,544.8	6,472.5	15.9	19.0	-98.29	599.7	-403.3	537.7	506.8	30.91	17.396	
6,550.0	6,474.9	6,600.1	6,520.5	15.9	18.9	-99.12	599.7	-375.8	538.9	508.1	30.87	17.457	
6,600.0	6,511.7	6,656.2	6,567.0	16.0	18.9	-99.91	599.7	-344.6	540.2	509.3	30.89	17.487	
6,650.0	6,546.3	6,712.9	6,611.6	16.1	18.9	-100.66	599.7	-309.5	541.5	510.5	30.99	17.470	
6,700.0	6,578.3	6,770.3	6,654.0	16.2	18.8	-101.35	599.7	-270.8	542.7	511.5	31.20	17.394	
6,750.0	6,607.9	6,828.4	6,693.7	16.4	18.8	-102.00	599.7	-228.5	544.0	512.5	31.55	17.245	
6,800.0	6,634.7	6,887.0	6,730.5	16.7	18.7	-102.58	599.7	-182.8	545.2	513.2	32.04	17.014	
6,850.0	6,658.7	6,946.2	6,763.9	17.1	18.7	-103.11	599.7	-134.0	546.3	513.6	32.72	16.699	
6,900.0	6,679.7	7,005.9	6,793.8	17.6	18.7	-103.57	599.7	-82.3	547.3	513.7	33.59	16.296	
6,950.0	6,697.8	7,066.1	6,819.6	18.2	18.7	-103.96	599.7	-28.0	548.2	513.6	34.66	15.817	
7,000.0	6,712.8	7,126.6	6,841.3	18.8	18.9	-104.28	599.7	28.5	549.0	513.0	35.93	15.278	
7,050.0	6,724.6	7,187.5	6,858.4	19.5	19.8	-104.53	599.7	86.9	549.6	512.2	37.40	14.696	
7,100.0	6,733.2	7,248.5	6,871.0	20.3	20.8	-104.71	599.7	146.6	550.0	511.0	39.03	14.091	
7,150.0	6,738.6	7,309.8	6,878.7	21.1	21.9	-104.80	599.7	207.4	550.2	509.4	40.83	13.476	
7,200.0	6,740.7	7,371.1	6,881.5	22.0	23.0	-104.82	599.7	268.6	550.3	507.5	42.75	12.871	
7,209.9	6,740.8	7,382.2	6,881.5	22.2	23.2	-104.82	599.7	279.7	550.3	507.1	43.13	12.759	
7,215.0	6,740.7	7,387.4	6,881.5	22.3	23.3	-104.82	599.7	284.9	550.3	506.9	43.31	12.705	
7,300.0	6,739.9	7,472.4	6,881.2	23.9	25.1	-104.88	599.7	369.9	550.4	503.9	46.55	11.825	
7,400.0	6,738.9	7,572.4	6,880.9	26.0	27.2	-104.95	599.7	469.9	550.6	500.0	50.61	10.879	
7,500.0	6,737.9	7,672.4	6,880.6	28.2	29.5	-105.02	599.7	569.9	550.8	495.9	54.91	10.031	
7,600.0	6,736.9	7,772.4	6,880.3	30.5	31.8	-105.08	599.7	669.9	550.9	491.6	59.38	9.277	
7,700.0	6,735.9	7,872.4	6,880.0	32.9	34.2	-105.15	599.7	769.9	551.1	487.1	64.01	8.610	
7,800.0	6,734.9	7,972.3	6,879.6	35.3	36.7	-105.22	599.7	869.8	551.3	482.5	68.74	8.020	
7,900.0	6,733.9	8,072.3	6,879.3	37.8	39.2	-105.29	599.7	969.8	551.5	477.9	73.57	7.496	
8,000.0	6,732.9	8,172.3	6,879.0	40.3	41.7	-105.36	599.7	1,069.8	551.6	473.2	78.47	7.030	
8,100.0	6,731.9	8,272.3	6,878.7	42.9	44.3	-105.43	599.7	1,169.8	551.8	468.4	83.43	6.614	
8,200.0	6,730.9	8,372.3	6,878.4	45.5	46.9	-105.49	599.7	1,269.8	552.0	463.6	88.44	6.242	
8,300.0	6,729.9	8,472.3	6,878.1	48.1	49.5	-105.56	599.7	1,369.8	552.2	458.7	93.49	5.907	
8,400.0	6,728.9	8,572.3	6,877.8	50.8	52.1	-105.63	599.7	1,469.8	552.4	453.8	98.57	5.604	

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 19N-432 - Wellbore #1 - Plan #3 (7-16-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,500.0	6,727.9	8,672.3	6,877.4	53.4	54.8	-105.70	599.7	1,569.8	552.6	448.9	103.68	5.329		
8,600.0	6,726.9	8,772.3	6,877.1	56.1	57.5	-105.77	599.7	1,669.8	552.7	443.9	108.82	5.080		
8,700.0	6,725.9	8,872.3	6,876.8	58.8	60.2	-105.83	599.7	1,769.8	552.9	439.0	113.97	4.851		
8,800.0	6,724.9	8,972.3	6,876.5	61.5	62.9	-105.90	599.7	1,869.8	553.1	434.0	119.14	4.642		
8,900.0	6,724.0	9,072.3	6,876.2	64.2	65.6	-105.97	599.7	1,969.8	553.3	429.0	124.33	4.450		
9,000.0	6,723.0	9,172.3	6,875.9	66.9	68.3	-106.04	599.7	2,069.8	553.5	424.0	129.53	4.273		
9,100.0	6,722.0	9,272.3	6,875.6	69.6	71.0	-106.11	599.7	2,169.8	553.7	418.9	134.73	4.109		
9,200.0	6,721.0	9,372.3	6,875.2	72.4	73.7	-106.17	599.7	2,269.8	553.9	413.9	139.95	3.958		
9,300.0	6,720.0	9,472.3	6,874.9	75.1	76.4	-106.24	599.7	2,369.8	554.1	408.9	145.18	3.816		
9,400.0	6,719.0	9,572.3	6,874.6	77.8	79.2	-106.31	599.7	2,469.8	554.2	403.8	150.41	3.685		
9,500.0	6,718.0	9,672.3	6,874.3	80.6	81.9	-106.38	599.7	2,569.8	554.4	398.8	155.64	3.562		
9,600.0	6,717.0	9,772.3	6,874.0	83.3	84.7	-106.44	599.7	2,669.8	554.6	393.7	160.88	3.447		
9,700.0	6,716.0	9,872.3	6,873.7	86.1	87.4	-106.51	599.7	2,769.8	554.8	388.7	166.13	3.340		
9,800.0	6,715.0	9,972.3	6,873.4	88.8	90.2	-106.58	599.7	2,869.8	555.0	383.6	171.37	3.239		
9,900.0	6,714.0	10,072.3	6,873.0	91.6	92.9	-106.65	599.7	2,969.8	555.2	378.6	176.62	3.143		
10,000.0	6,713.0	10,172.3	6,872.7	94.4	95.7	-106.71	599.7	3,069.8	555.4	373.5	181.87	3.054		
10,100.0	6,712.0	10,272.3	6,872.4	97.1	98.5	-106.78	599.7	3,169.8	555.6	368.5	187.12	2.969		
10,200.0	6,711.0	10,372.3	6,872.1	99.9	101.2	-106.85	599.7	3,269.8	555.8	363.4	192.38	2.889		
10,300.0	6,710.0	10,472.3	6,871.8	102.7	104.0	-106.91	599.7	3,369.8	556.0	358.4	197.63	2.813		
10,400.0	6,709.0	10,572.3	6,871.5	105.4	106.8	-106.98	599.7	3,469.8	556.2	353.3	202.88	2.741		
10,500.0	6,708.0	10,672.3	6,871.2	108.2	109.5	-107.05	599.7	3,569.8	556.4	348.2	208.13	2.673		
10,600.0	6,707.0	10,772.3	6,870.8	111.0	112.3	-107.12	599.7	3,669.8	556.6	343.2	213.39	2.608		
10,700.0	6,706.0	10,872.3	6,870.5	113.8	115.1	-107.18	599.7	3,769.8	556.8	338.1	218.64	2.547		
10,800.0	6,705.1	10,972.3	6,870.2	116.5	117.9	-107.25	599.7	3,869.8	557.0	333.1	223.89	2.488		
10,900.0	6,704.1	11,072.3	6,869.9	119.3	120.6	-107.32	599.7	3,969.8	557.2	328.0	229.14	2.432		
11,000.0	6,703.1	11,172.3	6,869.6	122.1	123.4	-107.38	599.7	4,069.8	557.4	323.0	234.38	2.378		
11,100.0	6,702.1	11,272.3	6,869.3	124.9	126.2	-107.45	599.7	4,169.8	557.6	318.0	239.63	2.327		
11,200.0	6,701.1	11,372.3	6,869.0	127.7	129.0	-107.52	599.7	4,269.8	557.8	312.9	244.87	2.278		
11,300.0	6,700.1	11,472.3	6,868.6	130.5	131.8	-107.58	599.7	4,369.7	558.0	307.9	250.12	2.231		
11,400.0	6,699.1	11,572.3	6,868.3	133.2	134.6	-107.65	599.7	4,469.7	558.2	302.8	255.36	2.186		
11,500.0	6,698.1	11,672.3	6,868.0	136.0	137.3	-107.72	599.7	4,569.7	558.4	297.8	260.59	2.143		
11,600.0	6,697.1	11,772.3	6,867.7	138.8	140.1	-107.78	599.7	4,669.7	558.6	292.8	265.83	2.101		
11,700.0	6,696.1	11,872.3	6,867.4	141.6	142.9	-107.85	599.7	4,769.7	558.8	287.8	271.06	2.062		
11,800.0	6,695.1	11,972.3	6,867.1	144.4	145.7	-107.92	599.7	4,869.7	559.0	282.7	276.29	2.023		
11,900.0	6,694.1	12,072.3	6,866.8	147.2	148.5	-107.98	599.7	4,969.7	559.2	277.7	281.52	1.986		
12,000.0	6,693.1	12,172.3	6,866.4	150.0	151.3	-108.05	599.7	5,069.7	559.5	272.7	286.75	1.951		
12,100.0	6,692.1	12,272.3	6,866.1	152.8	154.1	-108.11	599.7	5,169.7	559.7	267.7	291.97	1.917		
12,200.0	6,691.1	12,372.2	6,865.8	155.6	156.9	-108.18	599.7	5,269.7	559.9	262.7	297.19	1.884		
12,300.0	6,690.1	12,472.2	6,865.5	158.4	159.7	-108.25	599.7	5,369.7	560.1	257.7	302.41	1.852		
12,400.0	6,689.1	12,572.2	6,865.2	161.2	162.5	-108.31	599.7	5,469.7	560.3	252.7	307.62	1.821		
12,500.0	6,688.1	12,672.2	6,864.9	163.9	165.2	-108.38	599.7	5,569.7	560.5	247.7	312.83	1.792		
12,600.0	6,687.1	12,772.2	6,864.6	166.7	168.0	-108.45	599.7	5,669.7	560.7	242.7	318.04	1.763		
12,700.0	6,686.2	12,872.2	6,864.2	169.5	170.8	-108.51	599.7	5,769.7	560.9	237.7	323.24	1.735		
12,800.0	6,685.2	12,972.2	6,863.9	172.3	173.6	-108.58	599.7	5,869.7	561.2	232.7	328.44	1.709		
12,900.0	6,684.2	13,072.2	6,863.6	175.1	176.4	-108.64	599.7	5,969.7	561.4	227.7	333.64	1.683		
13,000.0	6,683.2	13,172.2	6,863.3	177.9	179.2	-108.71	599.7	6,069.7	561.6	222.8	338.84	1.657		
13,100.0	6,682.2	13,272.2	6,863.0	180.7	182.0	-108.77	599.7	6,169.7	561.8	217.8	344.03	1.633		
13,200.0	6,681.2	13,372.2	6,862.7	183.5	184.8	-108.84	599.7	6,269.7	562.0	212.8	349.21	1.609		
13,300.0	6,680.2	13,472.2	6,862.4	186.3	187.6	-108.91	599.7	6,369.7	562.3	207.9	354.40	1.586		
13,400.0	6,679.2	13,572.2	6,862.0	189.1	190.4	-108.97	599.7	6,469.7	562.5	202.9	359.58	1.564		
13,500.0	6,678.2	13,672.2	6,861.7	191.9	193.2	-109.04	599.7	6,569.7	562.7	197.9	364.76	1.543		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,600.0	6,677.2	13,772.2	6,861.4	194.7	196.0	-109.10	599.7	6,669.7	562.9	193.0	369.93	1.522	
13,700.0	6,676.2	13,872.2	6,861.1	197.5	198.8	-109.17	599.7	6,769.7	563.1	188.0	375.10	1.501	
13,800.0	6,675.2	13,972.2	6,860.8	200.3	201.6	-109.23	599.7	6,869.7	563.4	183.1	380.26	1.481 Level 3	
13,900.0	6,674.2	14,072.2	6,860.5	203.1	204.4	-109.30	599.7	6,969.7	563.6	178.2	385.43	1.462 Level 3	
14,000.0	6,673.2	14,172.2	6,860.2	205.9	207.2	-109.36	599.7	7,069.7	563.8	173.2	390.58	1.444 Level 3	
14,100.0	6,672.2	14,272.2	6,859.8	208.7	210.0	-109.43	599.7	7,169.7	564.0	168.3	395.74	1.425 Level 3	
14,200.0	6,671.2	14,372.2	6,859.5	211.5	212.8	-109.49	599.7	7,269.7	564.3	163.4	400.89	1.408 Level 3	
14,300.0	6,670.2	14,472.2	6,859.2	214.3	215.6	-109.56	599.7	7,369.7	564.5	158.5	406.03	1.390 Level 3	
14,400.0	6,669.2	14,572.2	6,858.9	217.1	218.4	-109.62	599.7	7,469.7	564.7	153.5	411.18	1.373 Level 3	
14,500.0	6,668.2	14,672.2	6,858.6	219.9	221.2	-109.69	599.7	7,569.7	564.9	148.6	416.32	1.357 Level 3	
14,600.0	6,667.2	14,772.2	6,858.3	222.7	224.0	-109.75	599.7	7,669.7	565.2	143.7	421.45	1.341 Level 3	
14,700.0	6,666.3	14,872.2	6,858.0	225.5	226.8	-109.82	599.7	7,769.7	565.4	138.8	426.58	1.325 Level 3	
14,800.0	6,665.3	14,972.2	6,857.6	228.3	229.6	-109.88	599.7	7,869.7	565.6	133.9	431.71	1.310 Level 3	
14,900.0	6,664.3	15,072.2	6,857.3	231.1	232.4	-109.95	599.7	7,969.6	565.9	129.0	436.83	1.295 Level 3	
15,000.0	6,663.3	15,172.2	6,857.0	233.9	235.2	-110.01	599.7	8,069.6	566.1	124.1	441.95	1.281 Level 3	
15,100.0	6,662.3	15,272.2	6,856.7	236.7	238.0	-110.08	599.7	8,169.6	566.3	119.3	447.06	1.267 Level 3	
15,200.0	6,661.3	15,372.2	6,856.4	239.5	240.8	-110.14	599.7	8,269.6	566.6	114.4	452.17	1.253 Level 3	
15,300.0	6,660.3	15,472.2	6,856.1	242.3	243.6	-110.21	599.7	8,369.6	566.8	109.5	457.28	1.239 Level 2	
15,400.0	6,659.3	15,572.2	6,855.8	245.1	246.4	-110.27	599.7	8,469.6	567.0	104.7	462.38	1.226 Level 2	
15,500.0	6,658.3	15,672.2	6,855.5	247.9	249.2	-110.34	599.7	8,569.6	567.3	99.8	467.48	1.213 Level 2	
15,600.0	6,657.3	15,772.2	6,855.1	250.7	252.0	-110.40	599.6	8,669.6	567.5	94.9	472.57	1.201 Level 2	
15,700.0	6,656.3	15,872.2	6,854.8	253.5	254.8	-110.47	599.6	8,769.6	567.7	90.1	477.66	1.189 Level 2	
15,800.0	6,655.3	15,972.2	6,854.5	256.3	257.6	-110.53	599.6	8,869.6	568.0	85.2	482.75	1.177 Level 2	
15,900.0	6,654.3	16,072.2	6,854.2	259.2	260.4	-110.59	599.6	8,969.6	568.2	80.4	487.83	1.165 Level 2	
16,000.0	6,653.3	16,172.2	6,853.9	262.0	263.2	-110.66	599.6	9,069.6	568.5	75.6	492.90	1.153 Level 2	
16,100.0	6,652.3	16,272.2	6,853.6	264.8	266.0	-110.72	599.6	9,169.6	568.7	70.7	497.98	1.142 Level 2	
16,200.0	6,651.3	16,372.2	6,853.3	267.6	268.8	-110.79	599.6	9,269.6	568.9	65.9	503.04	1.131 Level 2	
16,300.0	6,650.3	16,472.2	6,852.9	270.4	271.6	-110.85	599.6	9,369.6	569.2	61.1	508.11	1.120 Level 2	
16,400.0	6,649.3	16,572.2	6,852.6	273.2	274.4	-110.92	599.6	9,469.6	569.4	56.3	513.17	1.110 Level 2	
16,500.0	6,648.3	16,672.2	6,852.3	276.0	277.2	-110.98	599.6	9,569.6	569.7	51.4	518.22	1.099 Level 2	
16,600.0	6,647.4	16,772.2	6,852.0	278.8	280.1	-111.04	599.6	9,669.6	569.9	46.6	523.27	1.089 Level 2	
16,700.0	6,646.4	16,872.2	6,851.7	281.6	282.9	-111.11	599.6	9,769.6	570.2	41.8	528.32	1.079 Level 2	
16,800.0	6,645.4	16,972.2	6,851.4	284.4	285.7	-111.17	599.6	9,869.6	570.4	37.0	533.36	1.069 Level 2	
16,900.0	6,644.4	17,072.2	6,851.1	287.2	288.5	-111.23	599.6	9,969.6	570.6	32.2	538.40	1.060 Level 2	
17,000.0	6,643.4	17,172.2	6,850.7	290.0	291.3	-111.30	599.6	10,069.6	570.9	27.5	543.43	1.051 Level 2	
17,100.0	6,642.4	17,272.2	6,850.4	292.8	294.1	-111.36	599.6	10,169.6	571.1	22.7	548.46	1.041 Level 2	
17,200.0	6,641.4	17,372.2	6,850.1	295.6	296.9	-111.43	599.6	10,269.6	571.4	17.9	553.48	1.032 Level 2	
17,238.6	6,641.0	17,407.1	6,850.0	296.7	297.9	-111.45	599.6	10,304.5	571.5	16.2	555.33	1.029 Level 2, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 190-232 - Wellbore #1 - Plan #4 (7-15-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	178.25	-91.1	2.8	91.1					
100.0	100.0	100.0	100.0	0.1	0.1	178.25	-91.1	2.8	91.1	90.9	0.22	405.401		
200.0	200.0	200.0	200.0	0.3	0.3	178.25	-91.1	2.8	91.1	90.4	0.67	135.134		
300.0	300.0	300.0	300.0	0.6	0.6	178.25	-91.1	2.8	91.1	90.0	1.12	81.080		
400.0	400.0	400.0	400.0	0.8	0.8	178.25	-91.1	2.8	91.1	89.5	1.57	57.914		
500.0	500.0	500.0	500.0	1.0	1.0	178.25	-91.1	2.8	91.1	89.1	2.02	45.045		
600.0	600.0	600.0	600.0	1.2	1.2	178.25	-91.1	2.8	91.1	88.6	2.47	36.855		
700.0	700.0	700.0	700.0	1.5	1.5	178.25	-91.1	2.8	91.1	88.2	2.92	31.185		
800.0	800.0	800.0	800.0	1.7	1.7	178.25	-91.1	2.8	91.1	87.7	3.37	27.027		
900.0	900.0	900.0	900.0	1.9	1.9	178.25	-91.1	2.8	91.1	87.3	3.82	23.847		
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	178.25	-91.1	2.8	91.1	86.8	4.27	21.337 CC, ES		
1,100.0	1,100.0	1,098.9	1,098.9	2.4	2.3	178.96	-91.7	1.7	91.7	87.0	4.70	19.529		
1,200.0	1,200.0	1,197.7	1,197.6	2.6	2.5	-178.97	-93.6	-1.7	93.6	88.5	5.11	18.325		
1,300.0	1,300.0	1,296.1	1,295.9	2.8	2.7	-175.72	-96.7	-7.2	97.0	91.5	5.53	17.554		
1,400.0	1,400.0	1,394.3	1,393.6	3.0	2.9	-171.57	-101.0	-15.0	102.3	96.3	5.95	17.181		
1,500.0	1,500.0	1,491.8	1,490.5	3.3	3.2	-166.87	-106.5	-24.8	109.8	103.4	6.39	17.173		
1,600.0	1,600.0	1,588.9	1,586.5	3.5	3.4	-80.21	-113.1	-36.8	119.6	112.7	6.85	17.455		
1,700.0	1,700.0	1,685.4	1,681.7	3.7	3.7	-76.36	-121.0	-50.8	131.6	124.3	7.29	18.053		
1,800.0	1,799.9	1,781.4	1,775.9	3.9	4.0	-73.21	-129.9	-66.8	145.6	137.9	7.74	18.812		
1,900.0	1,899.7	1,876.8	1,869.1	4.1	4.4	-70.67	-139.9	-84.7	161.5	153.3	8.20	19.681		
2,000.0	1,999.4	1,971.5	1,961.0	4.3	4.8	-68.66	-150.9	-104.5	179.0	170.3	8.68	20.617		
2,100.0	2,098.9	2,065.5	2,051.8	4.6	5.2	-67.07	-163.0	-126.2	198.1	189.0	9.18	21.586		
2,200.0	2,198.3	2,158.9	2,141.2	4.8	5.7	-65.82	-176.1	-149.6	218.8	209.1	9.70	22.564		
2,249.7	2,247.6	2,205.0	2,185.1	4.9	5.9	-65.31	-182.9	-161.8	229.6	219.6	9.96	23.054		
2,300.0	2,297.4	2,252.4	2,230.1	5.1	6.2	-64.91	-190.2	-174.9	240.9	230.7	10.24	23.530		
2,400.0	2,396.6	2,349.7	2,322.4	5.3	6.8	-64.16	-205.2	-201.9	263.7	252.9	10.81	24.396		
2,500.0	2,495.7	2,447.0	2,414.6	5.6	7.3	-63.54	-220.3	-228.9	286.5	275.1	11.39	25.160		
2,600.0	2,594.9	2,544.3	2,506.9	5.9	7.9	-63.00	-235.3	-255.9	309.4	297.4	11.98	25.833		
2,700.0	2,694.0	2,641.7	2,599.2	6.2	8.5	-62.54	-250.4	-282.9	332.2	319.7	12.57	26.428		
2,800.0	2,793.2	2,739.0	2,691.5	6.5	9.1	-62.14	-265.5	-309.9	355.1	341.9	13.17	26.958		
2,900.0	2,892.3	2,836.3	2,783.8	6.8	9.8	-61.79	-280.5	-336.9	378.0	364.2	13.78	27.432		
3,000.0	2,991.4	2,933.6	2,876.0	7.1	10.4	-61.47	-295.6	-363.9	400.9	386.5	14.39	27.857		
3,100.0	3,090.6	3,030.9	2,968.3	7.4	11.0	-61.19	-310.6	-390.8	423.8	408.8	15.01	28.240		
3,200.0	3,189.7	3,128.3	3,060.6	7.7	11.6	-60.94	-325.7	-417.8	446.8	431.1	15.63	28.586		
3,300.0	3,288.9	3,225.6	3,152.9	8.0	12.3	-60.72	-340.7	-444.8	469.7	453.5	16.25	28.901		
3,400.0	3,388.0	3,322.9	3,245.2	8.3	12.9	-60.51	-355.8	-471.8	492.7	475.8	16.88	29.187		
3,500.0	3,487.2	3,420.2	3,337.4	8.6	13.6	-60.33	-370.8	-498.8	515.6	498.1	17.51	29.449		
3,600.0	3,586.3	3,517.5	3,429.7	8.9	14.2	-60.16	-385.9	-525.8	538.6	520.4	18.14	29.690		
3,700.0	3,685.5	3,614.8	3,522.0	9.2	14.8	-60.00	-401.0	-552.8	561.5	542.7	18.77	29.911		
3,800.0	3,784.6	3,712.2	3,614.3	9.5	15.5	-59.86	-416.0	-579.8	584.5	565.1	19.41	30.115		
3,900.0	3,883.8	3,809.5	3,706.6	9.9	16.1	-59.72	-431.1	-606.8	607.4	587.4	20.05	30.303		
4,000.0	3,982.9	3,906.8	3,798.8	10.2	16.8	-59.60	-446.1	-633.8	630.4	609.7	20.68	30.478		
4,100.0	4,082.0	4,004.1	3,891.1	10.5	17.4	-59.48	-461.2	-660.8	653.4	632.0	21.32	30.640		
4,200.0	4,181.2	4,101.4	3,983.4	10.8	18.1	-59.38	-476.2	-687.8	676.3	654.4	21.97	30.792		
4,300.0	4,280.3	4,198.8	4,075.7	11.1	18.7	-59.28	-491.3	-714.8	699.3	676.7	22.61	30.933		
4,400.0	4,379.5	4,296.1	4,167.9	11.5	19.4	-59.18	-506.4	-741.8	722.3	699.0	23.25	31.065		
4,500.0	4,478.6	4,393.4	4,260.2	11.8	20.0	-59.09	-521.4	-768.8	745.3	721.4	23.90	31.189		
4,600.0	4,577.8	4,490.7	4,352.5	12.1	20.7	-59.01	-536.5	-795.8	768.3	743.7	24.54	31.305		
4,700.0	4,676.9	4,588.0	4,444.8	12.4	21.3	-58.93	-551.5	-822.8	791.2	766.0	25.19	31.414		
4,800.0	4,776.1	4,685.3	4,537.1	12.8	22.0	-58.86	-566.6	-849.8	814.2	788.4	25.83	31.517		
4,900.0	4,875.2	4,782.7	4,629.3	13.1	22.6	-58.79	-581.6	-876.8	837.2	810.7	26.48	31.614		

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 190-232 - Wellbore #1 - Plan #4 (7-15-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,974.4	4,880.0	4,721.6	13.4	23.3	-58.72	-596.7	-903.7	860.2	833.1	27.13	31.705	
5,100.0	5,073.5	4,977.3	4,813.9	13.7	23.9	-58.66	-611.7	-930.7	883.2	855.4	27.78	31.792	
5,200.0	5,172.6	5,074.6	4,906.2	14.1	24.6	-58.60	-626.8	-957.7	906.2	877.7	28.43	31.874	
5,300.0	5,271.8	5,198.3	5,023.9	14.4	25.3	-58.56	-645.3	-990.9	928.3	899.1	29.15	31.845	
5,400.0	5,370.9	5,339.5	5,160.0	14.7	25.9	-58.67	-663.5	-1,023.6	946.2	916.4	29.88	31.669	
5,455.8	5,426.2	5,419.0	5,237.5	14.9	26.2	-58.79	-672.3	-1,039.4	954.3	924.0	30.29	31.506	
5,500.0	5,470.1	5,482.5	5,299.6	15.0	26.4	-59.00	-678.6	-1,050.6	959.9	929.3	30.59	31.375	
5,600.0	5,569.6	5,626.9	5,442.0	15.2	26.9	-59.36	-690.4	-1,071.7	970.4	939.2	31.18	31.124	
5,700.0	5,669.4	5,772.3	5,586.3	15.4	27.2	-59.57	-698.7	-1,086.6	978.1	946.4	31.67	30.886	
5,800.0	5,769.4	5,918.3	5,732.0	15.6	27.4	-59.64	-703.4	-1,095.1	982.8	950.7	32.05	30.660	
5,830.6	5,800.0	5,963.1	5,776.8	15.7	27.5	-141.71	-704.1	-1,096.4	983.7	943.8	39.86	24.679	
5,900.0	5,869.4	6,055.7	5,869.4	15.8	27.6	-141.69	-704.6	-1,097.2	984.2	944.2	40.09	24.553	
6,007.4	5,976.8	6,211.7	6,025.3	16.0	27.7	-141.80	-704.6	-1,094.8	983.9	943.5	40.40	24.353	
6,050.0	6,019.4	6,414.3	6,222.8	16.0	27.5	126.75	-704.6	-1,052.2	979.1	946.0	33.06	29.620	
6,100.0	6,069.2	6,620.4	6,405.1	16.1	26.9	123.59	-704.6	-957.4	967.4	934.0	33.40	28.962	
6,150.0	6,118.6	6,785.7	6,528.8	16.1	26.5	119.90	-704.6	-848.2	951.3	917.3	34.00	27.980	
6,200.0	6,167.4	6,916.3	6,608.2	16.1	26.3	116.37	-704.6	-744.8	932.9	898.0	34.85	26.768	
6,250.0	6,215.3	7,020.8	6,688.3	16.1	26.3	113.28	-704.6	-653.2	913.5	877.6	35.84	25.485	
6,300.0	6,262.3	7,106.8	6,689.8	16.0	26.5	110.64	-704.6	-573.2	894.0	857.2	36.87	24.247	
6,350.0	6,308.0	7,179.6	6,709.4	16.0	26.7	108.37	-704.6	-503.1	875.2	837.3	37.90	23.093	
6,400.0	6,352.3	7,242.9	6,720.9	16.0	27.0	106.37	-704.6	-440.9	857.4	818.5	38.88	22.049	
6,450.0	6,395.0	7,299.2	6,726.7	15.9	27.4	104.55	-704.6	-384.9	840.8	801.0	39.84	21.105	
6,500.0	6,436.0	7,350.1	6,728.5	15.9	27.8	102.84	-704.6	-334.0	825.9	785.1	40.78	20.254	
6,550.0	6,474.9	7,384.1	6,728.2	15.9	28.1	101.94	-704.6	-300.0	812.8	771.4	41.40	19.634	
6,600.0	6,511.7	7,417.6	6,727.9	16.0	28.4	100.99	-704.6	-266.6	802.0	759.9	42.09	19.054	
6,650.0	6,546.3	7,453.4	6,727.6	16.1	28.8	99.85	-704.6	-230.7	793.3	750.4	42.92	18.484	
6,700.0	6,578.3	7,491.4	6,727.2	16.2	29.3	98.57	-704.6	-192.7	786.6	742.7	43.85	17.939	
6,750.0	6,607.9	7,531.5	6,726.8	16.4	29.8	97.21	-704.6	-152.6	781.5	736.5	44.93	17.394	
6,800.0	6,634.7	7,573.5	6,726.5	16.7	30.4	95.81	-704.6	-110.7	777.8	731.7	46.11	16.868	
6,850.0	6,658.7	7,617.1	6,726.1	17.1	31.0	94.43	-704.6	-67.1	775.3	727.9	47.40	16.357	
6,900.0	6,679.7	7,662.2	6,725.6	17.6	31.7	93.12	-704.6	-21.9	773.7	724.9	48.80	15.854	
6,950.0	6,697.8	7,708.7	6,725.2	18.2	32.5	91.91	-704.6	24.5	772.8	722.5	50.29	15.368	
7,000.0	6,712.8	7,756.2	6,724.8	18.8	33.4	90.86	-704.6	72.1	772.4	720.5	51.89	14.886	
7,048.7	6,724.3	7,803.4	6,724.3	19.5	34.2	90.00	-704.6	119.3	772.3	718.8	53.52	14.431	
7,050.0	6,724.6	7,804.7	6,724.3	19.5	34.2	89.98	-704.6	120.5	772.3	718.8	53.56	14.419	
7,100.0	6,733.2	7,853.8	6,723.9	20.3	35.2	89.31	-704.6	169.7	772.4	717.0	55.35	13.955	
7,150.0	6,738.6	7,903.5	6,723.4	21.1	36.2	88.88	-704.6	219.3	772.5	715.3	57.19	13.507	
7,200.0	6,740.7	7,953.4	6,722.9	22.0	37.2	88.68	-704.6	269.3	772.5	713.4	59.13	13.065	
7,215.0	6,740.7	7,968.4	6,722.8	22.3	37.5	88.67	-704.6	284.3	772.5	712.8	59.72	12.936	
7,300.0	6,739.9	8,053.4	6,722.0	23.9	39.3	88.68	-704.6	369.3	772.5	709.4	63.19	12.225	
7,400.0	6,738.9	8,153.4	6,721.1	26.0	41.5	88.68	-704.6	469.2	772.5	705.0	67.50	11.446	
7,500.0	6,737.9	8,253.4	6,720.2	28.2	43.8	88.69	-704.6	569.2	772.5	700.5	72.00	10.730	
7,600.0	6,736.9	8,353.4	6,719.2	30.5	46.2	88.69	-704.6	669.2	772.5	695.9	76.65	10.078	
7,700.0	6,735.9	8,453.4	6,718.3	32.9	48.6	88.70	-704.6	769.2	772.5	691.1	81.44	9.486	
7,800.0	6,734.9	8,553.4	6,717.4	35.3	51.0	88.70	-704.6	869.2	772.5	686.2	86.32	8.949	
7,900.0	6,733.9	8,653.4	6,716.5	37.8	53.5	88.71	-704.6	969.2	772.5	681.2	91.30	8.462	
8,000.0	6,732.9	8,753.4	6,715.5	40.3	56.0	88.71	-704.6	1,069.2	772.5	676.2	96.35	8.018	
8,100.0	6,731.9	8,853.4	6,714.6	42.9	58.5	88.72	-704.6	1,169.2	772.5	671.1	101.46	7.614	
8,200.0	6,730.9	8,953.4	6,713.7	45.5	61.1	88.72	-704.6	1,269.2	772.5	665.9	106.62	7.246	
8,300.0	6,729.9	9,053.4	6,712.8	48.1	63.7	88.73	-704.6	1,369.2	772.5	660.7	111.82	6.909	
8,400.0	6,728.9	9,153.4	6,711.8	50.8	66.3	88.73	-704.6	1,469.2	772.5	655.5	117.06	6.599	

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 Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-232 - Wellbore #1 - Plan #4 (7-15-15)													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,500.0	6,727.9	9,253.4	6,710.9	53.4	68.9	88.74	-704.6	1,569.2	772.5	650.2	122.34	6.314		
8,600.0	6,726.9	9,353.4	6,710.0	56.1	71.6	88.74	-704.6	1,669.2	772.5	644.9	127.65	6.052		
8,700.0	6,725.9	9,453.4	6,709.1	58.8	74.2	88.75	-704.6	1,769.2	772.5	639.5	132.98	5.809		
8,800.0	6,724.9	9,553.4	6,708.1	61.5	76.9	88.75	-704.6	1,869.2	772.5	634.2	138.33	5.584		
8,900.0	6,724.0	9,653.4	6,707.2	64.2	79.5	88.76	-704.6	1,969.2	772.5	628.8	143.71	5.376		
9,000.0	6,723.0	9,753.4	6,706.3	66.9	82.2	88.76	-704.6	2,069.2	772.5	623.4	149.10	5.181		
9,100.0	6,722.0	9,853.4	6,705.4	69.6	84.9	88.77	-704.6	2,169.2	772.5	618.0	154.51	5.000		
9,200.0	6,721.0	9,953.4	6,704.4	72.4	87.6	88.77	-704.6	2,269.2	772.5	612.6	159.93	4.830		
9,300.0	6,720.0	10,053.4	6,703.5	75.1	90.3	88.78	-704.6	2,369.2	772.5	607.1	165.37	4.672		
9,400.0	6,719.0	10,153.4	6,702.6	77.8	93.0	88.78	-704.6	2,469.2	772.5	601.7	170.81	4.523		
9,500.0	6,718.0	10,253.4	6,701.7	80.6	95.7	88.79	-704.6	2,569.2	772.5	596.2	176.27	4.382		
9,600.0	6,717.0	10,353.4	6,700.7	83.3	98.5	88.79	-704.6	2,669.2	772.5	590.8	181.74	4.251		
9,700.0	6,716.0	10,453.4	6,699.8	86.1	101.2	88.80	-704.6	2,769.1	772.5	585.3	187.22	4.126		
9,800.0	6,715.0	10,553.4	6,698.9	88.8	103.9	88.80	-704.6	2,869.1	772.5	579.8	192.70	4.009		
9,900.0	6,714.0	10,653.4	6,698.0	91.6	106.6	88.81	-704.6	2,969.1	772.5	574.3	198.19	3.898		
10,000.0	6,713.0	10,753.4	6,697.0	94.4	109.4	88.82	-704.6	3,069.1	772.5	568.8	203.69	3.793		
10,100.0	6,712.0	10,853.4	6,696.1	97.1	112.1	88.82	-704.6	3,169.1	772.5	563.3	209.20	3.693		
10,200.0	6,711.0	10,953.4	6,695.2	99.9	114.9	88.83	-704.6	3,269.1	772.5	557.8	214.71	3.598		
10,300.0	6,710.0	11,053.4	6,694.3	102.7	117.6	88.83	-704.6	3,369.1	772.5	552.3	220.22	3.508		
10,400.0	6,709.0	11,153.4	6,693.3	105.4	120.4	88.84	-704.6	3,469.1	772.5	546.8	225.74	3.422		
10,500.0	6,708.0	11,253.4	6,692.4	108.2	123.1	88.84	-704.6	3,569.1	772.5	541.2	231.27	3.340		
10,600.0	6,707.0	11,353.4	6,691.5	111.0	125.9	88.85	-704.6	3,669.1	772.5	535.7	236.80	3.262		
10,700.0	6,706.0	11,453.4	6,690.6	113.8	128.6	88.85	-704.6	3,769.1	772.5	530.2	242.33	3.188		
10,800.0	6,705.1	11,553.4	6,689.6	116.5	131.4	88.86	-704.6	3,869.1	772.5	524.6	247.87	3.116		
10,900.0	6,704.1	11,653.4	6,688.7	119.3	134.2	88.86	-704.6	3,969.1	772.5	519.1	253.41	3.048		
11,000.0	6,703.1	11,753.4	6,687.8	122.1	136.9	88.87	-704.6	4,069.1	772.5	513.5	258.96	2.983		
11,100.0	6,702.1	11,853.4	6,686.9	124.9	139.7	88.87	-704.6	4,169.1	772.5	508.0	264.51	2.920		
11,200.0	6,701.1	11,953.4	6,685.9	127.7	142.4	88.88	-704.6	4,269.1	772.5	502.4	270.06	2.860		
11,300.0	6,700.1	12,053.4	6,685.0	130.5	145.2	88.88	-704.6	4,369.1	772.5	496.9	275.61	2.803		
11,400.0	6,699.1	12,153.4	6,684.1	133.2	148.0	88.89	-704.6	4,469.1	772.5	491.3	281.17	2.747		
11,500.0	6,698.1	12,253.4	6,683.2	136.0	150.8	88.89	-704.6	4,569.1	772.5	485.8	286.72	2.694		
11,600.0	6,697.1	12,353.4	6,682.2	138.8	153.5	88.90	-704.6	4,669.1	772.5	480.2	292.28	2.643		
11,700.0	6,696.1	12,453.4	6,681.3	141.6	156.3	88.90	-704.6	4,769.1	772.5	474.6	297.85	2.594		
11,800.0	6,695.1	12,553.4	6,680.4	144.4	159.1	88.91	-704.6	4,869.1	772.5	469.1	303.41	2.546		
11,900.0	6,694.1	12,653.4	6,679.5	147.2	161.9	88.91	-704.6	4,969.1	772.5	463.5	308.98	2.500		
12,000.0	6,693.1	12,753.4	6,678.5	150.0	164.6	88.92	-704.6	5,069.0	772.5	457.9	314.55	2.456		
12,100.0	6,692.1	12,853.4	6,677.6	152.8	167.4	88.92	-704.6	5,169.0	772.5	452.4	320.12	2.413		
12,200.0	6,691.1	12,953.4	6,676.7	155.6	170.2	88.93	-704.6	5,269.0	772.5	446.8	325.69	2.372		
12,300.0	6,690.1	13,053.4	6,675.8	158.4	173.0	88.93	-704.6	5,369.0	772.5	441.2	331.26	2.332		
12,400.0	6,689.1	13,153.4	6,674.8	161.2	175.8	88.94	-704.6	5,469.0	772.5	435.6	336.84	2.293		
12,500.0	6,688.1	13,253.4	6,673.9	163.9	178.5	88.94	-704.6	5,569.0	772.5	430.1	342.41	2.256		
12,600.0	6,687.1	13,353.4	6,673.0	166.7	181.3	88.95	-704.6	5,669.0	772.5	424.5	347.99	2.220		
12,700.0	6,686.2	13,453.4	6,672.1	169.5	184.1	88.96	-704.6	5,769.0	772.5	418.9	353.57	2.185		
12,800.0	6,685.2	13,553.4	6,671.1	172.3	186.9	88.96	-704.6	5,869.0	772.5	413.3	359.15	2.151		
12,900.0	6,684.2	13,653.4	6,670.2	175.1	189.7	88.97	-704.6	5,969.0	772.5	407.7	364.73	2.118		
13,000.0	6,683.2	13,753.4	6,669.3	177.9	192.5	88.97	-704.6	6,069.0	772.5	402.1	370.32	2.086		
13,100.0	6,682.2	13,853.4	6,668.4	180.7	195.3	88.98	-704.6	6,169.0	772.5	396.6	375.90	2.055		
13,200.0	6,681.2	13,953.4	6,667.4	183.5	198.0	88.98	-704.6	6,269.0	772.5	391.0	381.48	2.025		
13,300.0	6,680.2	14,053.4	6,666.5	186.3	200.8	88.99	-704.6	6,369.0	772.5	385.4	387.07	1.996		
13,400.0	6,679.2	14,153.4	6,665.6	189.1	203.6	88.99	-704.6	6,469.0	772.5	379.8	392.66	1.967		
13,500.0	6,678.2	14,253.4	6,664.7	191.9	206.4	89.00	-704.6	6,569.0	772.5	374.2	398.24	1.940		

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 190-232 - Wellbore #1 - Plan #4 (7-15-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
13,600.0	6,677.2	14,353.4	6,663.7	194.7	209.2	89.00	-704.6	6,669.0	772.5	368.6	403.83	1.913		
13,700.0	6,676.2	14,453.4	6,662.8	197.5	212.0	89.01	-704.6	6,769.0	772.5	363.0	409.42	1.887		
13,800.0	6,675.2	14,553.4	6,661.9	200.3	214.8	89.01	-704.6	6,869.0	772.5	357.4	415.01	1.861		
13,900.0	6,674.2	14,653.4	6,661.0	203.1	217.6	89.02	-704.6	6,969.0	772.5	351.8	420.60	1.837		
14,000.0	6,673.2	14,753.4	6,660.0	205.9	220.4	89.02	-704.6	7,069.0	772.4	346.3	426.20	1.812		
14,100.0	6,672.2	14,853.4	6,659.1	208.7	223.2	89.03	-704.6	7,169.0	772.4	340.7	431.79	1.789		
14,200.0	6,671.2	14,953.4	6,658.2	211.5	225.9	89.03	-704.6	7,269.0	772.4	335.1	437.38	1.766		
14,300.0	6,670.2	15,053.4	6,657.3	214.3	228.7	89.04	-704.6	7,368.9	772.4	329.5	442.97	1.744		
14,400.0	6,669.2	15,153.4	6,656.3	217.1	231.5	89.04	-704.6	7,468.9	772.4	323.9	448.57	1.722		
14,500.0	6,668.2	15,253.4	6,655.4	219.9	234.3	89.05	-704.6	7,568.9	772.4	318.3	454.16	1.701		
14,600.0	6,667.2	15,353.4	6,654.5	222.7	237.1	89.05	-704.6	7,668.9	772.4	312.7	459.76	1.680		
14,700.0	6,666.3	15,453.4	6,653.6	225.5	239.9	89.06	-704.6	7,768.9	772.4	307.1	465.35	1.660		
14,800.0	6,665.3	15,553.4	6,652.6	228.3	242.7	89.06	-704.6	7,868.9	772.4	301.5	470.95	1.640		
14,900.0	6,664.3	15,653.4	6,651.7	231.1	245.5	89.07	-704.6	7,968.9	772.4	295.9	476.55	1.621		
15,000.0	6,663.3	15,753.4	6,650.8	233.9	248.3	89.07	-704.6	8,068.9	772.4	290.3	482.15	1.602		
15,100.0	6,662.3	15,853.4	6,649.9	236.7	251.1	89.08	-704.6	8,168.9	772.4	284.7	487.74	1.584		
15,200.0	6,661.3	15,953.4	6,648.9	239.5	253.9	89.08	-704.6	8,268.9	772.4	279.1	493.34	1.566		
15,300.0	6,660.3	16,053.4	6,648.0	242.3	256.7	89.09	-704.6	8,368.9	772.4	273.5	498.94	1.548		
15,400.0	6,659.3	16,153.4	6,647.1	245.1	259.5	89.09	-704.6	8,468.9	772.4	267.9	504.54	1.531		
15,500.0	6,658.3	16,253.4	6,646.2	247.9	262.3	89.10	-704.6	8,568.9	772.4	262.3	510.14	1.514		
15,600.0	6,657.3	16,353.4	6,645.2	250.7	265.1	89.11	-704.6	8,668.9	772.4	256.7	515.74	1.498 Level 3		
15,700.0	6,656.3	16,453.4	6,644.3	253.5	267.9	89.11	-704.6	8,768.9	772.4	251.1	521.34	1.482 Level 3		
15,800.0	6,655.3	16,553.4	6,643.4	256.3	270.7	89.12	-704.6	8,868.9	772.4	245.5	526.94	1.466 Level 3		
15,900.0	6,654.3	16,653.4	6,642.5	259.2	273.5	89.12	-704.6	8,968.9	772.4	239.9	532.55	1.450 Level 3		
16,000.0	6,653.3	16,753.4	6,641.5	262.0	276.3	89.13	-704.6	9,068.9	772.4	234.3	538.15	1.435 Level 3		
16,100.0	6,652.3	16,853.4	6,640.6	264.8	279.1	89.13	-704.6	9,168.9	772.4	228.7	543.75	1.421 Level 3		
16,200.0	6,651.3	16,953.4	6,639.7	267.6	281.9	89.14	-704.6	9,268.9	772.4	223.1	549.35	1.406 Level 3		
16,300.0	6,650.3	17,053.4	6,638.8	270.4	284.7	89.14	-704.6	9,368.9	772.4	217.5	554.96	1.392 Level 3		
16,400.0	6,649.3	17,153.4	6,637.8	273.2	287.5	89.15	-704.6	9,468.9	772.4	211.9	560.56	1.378 Level 3		
16,500.0	6,648.3	17,253.4	6,636.9	276.0	290.3	89.15	-704.6	9,568.9	772.4	206.3	566.16	1.364 Level 3		
16,600.0	6,647.4	17,353.4	6,636.0	278.8	293.1	89.16	-704.6	9,668.8	772.4	200.7	571.77	1.351 Level 3		
16,700.0	6,646.4	17,453.4	6,635.1	281.6	295.9	89.16	-704.6	9,768.8	772.4	195.0	577.37	1.338 Level 3		
16,800.0	6,645.4	17,553.4	6,634.1	284.4	298.7	89.17	-704.6	9,868.8	772.4	189.4	582.98	1.325 Level 3		
16,900.0	6,644.4	17,653.4	6,633.2	287.2	301.5	89.17	-704.6	9,968.8	772.4	183.8	588.58	1.312 Level 3		
17,000.0	6,643.4	17,753.4	6,632.3	290.0	304.3	89.18	-704.6	10,068.8	772.4	178.2	594.19	1.300 Level 3		
17,100.0	6,642.4	17,853.4	6,631.4	292.8	307.1	89.18	-704.6	10,168.8	772.4	172.6	599.79	1.288 Level 3		
17,200.0	6,641.4	17,953.4	6,630.4	295.6	309.9	89.19	-704.6	10,268.8	772.4	167.0	605.40	1.276 Level 3		
17,238.6	6,641.0	17,992.0	6,630.1	296.7	310.9	89.19	-704.6	10,307.4	772.4	164.9	607.56	1.271 Level 3, SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-302 - Wellbore #1 - Plan #4 (7-15-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	174.54	-29.2	2.8	29.3				
100.0	100.0	100.0	100.0	0.1	0.1	174.54	-29.2	2.8	29.3	29.1	0.22	130.295	
200.0	200.0	200.0	200.0	0.3	0.3	174.54	-29.2	2.8	29.3	28.6	0.67	43.432	
300.0	300.0	300.0	300.0	0.6	0.6	174.54	-29.2	2.8	29.3	28.2	1.12	26.059	
400.0	400.0	400.0	400.0	0.8	0.8	174.54	-29.2	2.8	29.3	27.7	1.57	18.614	
500.0	500.0	500.0	500.0	1.0	1.0	174.54	-29.2	2.8	29.3	27.3	2.02	14.477	
600.0	600.0	600.0	600.0	1.2	1.2	174.54	-29.2	2.8	29.3	26.8	2.47	11.845	
700.0	700.0	700.0	700.0	1.5	1.5	174.54	-29.2	2.8	29.3	26.4	2.92	10.023	
800.0	800.0	800.0	800.0	1.7	1.7	174.54	-29.2	2.8	29.3	25.9	3.37	8.686	
900.0	900.0	900.0	900.0	1.9	1.9	174.54	-29.2	2.8	29.3	25.5	3.82	7.664	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	174.54	-29.2	2.8	29.3	25.0	4.27	6.858	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	174.54	-29.2	2.8	29.3	24.6	4.72	6.205	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	174.54	-29.2	2.8	29.3	24.1	5.17	5.665	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	174.54	-29.2	2.8	29.3	23.7	5.62	5.212	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	174.54	-29.2	2.8	29.3	23.2	6.07	4.826	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	174.54	-29.2	2.8	29.3	22.8	6.52	4.493 CC	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	-105.02	-29.2	2.8	29.5	22.5	6.96	4.241	
1,700.0	1,700.0	1,700.0	1,700.0	3.7	3.7	-109.80	-29.2	2.8	30.3	22.9	7.38	4.101	
1,800.0	1,799.9	1,799.9	1,799.9	3.9	3.9	-117.14	-29.2	2.8	32.0	24.2	7.82	4.097	
1,900.0	1,899.7	1,899.7	1,899.7	4.1	4.2	-125.98	-29.2	2.8	35.2	27.0	8.25	4.271	
2,000.0	1,999.4	1,999.4	1,999.4	4.3	4.4	-134.98	-29.2	2.8	40.4	31.7	8.68	4.647	
2,100.0	2,098.9	2,099.3	2,099.3	4.6	4.6	-142.22	-29.4	2.0	47.2	38.1	9.10	5.191	
2,200.0	2,198.3	2,199.3	2,199.3	4.8	4.8	-147.00	-30.2	-0.5	55.2	45.7	9.50	5.810	
2,249.7	2,247.6	2,249.1	2,249.0	4.9	4.9	-148.70	-30.7	-2.4	59.4	49.7	9.70	6.129	
2,300.0	2,297.4	2,299.5	2,299.4	5.1	5.0	-149.99	-31.4	-4.7	63.7	53.8	9.91	6.432	
2,400.0	2,396.6	2,399.9	2,399.6	5.3	5.2	-151.24	-33.2	-10.6	71.5	61.2	10.34	6.922	
2,500.0	2,495.7	2,500.4	2,499.8	5.6	5.4	-151.23	-35.5	-18.1	78.3	67.5	10.78	7.268	
2,600.0	2,594.9	2,601.1	2,600.0	5.9	5.6	-150.25	-38.3	-27.4	84.1	72.8	11.24	7.483	
2,700.0	2,694.0	2,701.8	2,700.1	6.2	5.8	-148.45	-41.6	-38.3	88.9	77.1	11.72	7.585	
2,800.0	2,793.2	2,802.5	2,799.9	6.5	6.1	-145.92	-45.4	-50.9	92.8	80.6	12.22	7.592	
2,900.0	2,892.3	2,903.2	2,899.4	6.8	6.4	-142.68	-49.7	-65.2	96.1	83.3	12.76	7.527	
3,000.0	2,991.4	3,003.1	2,998.1	7.1	6.6	-139.00	-54.4	-80.7	99.0	85.7	13.34	7.427	
3,100.0	3,090.6	3,102.9	3,096.5	7.4	6.9	-135.51	-59.0	-96.1	102.4	88.5	13.93	7.349	
3,200.0	3,189.7	3,202.7	3,195.0	7.7	7.2	-132.25	-63.7	-111.6	106.1	91.5	14.55	7.293	
3,300.0	3,288.9	3,302.4	3,293.4	8.0	7.5	-129.22	-68.4	-127.1	110.1	94.9	15.18	7.255	
3,400.0	3,388.0	3,402.2	3,391.8	8.3	7.8	-126.41	-73.1	-142.6	114.4	98.6	15.82	7.232	
3,500.0	3,487.2	3,501.9	3,490.3	8.6	8.2	-123.81	-77.7	-158.0	119.0	102.5	16.48	7.222	
3,600.0	3,586.3	3,601.7	3,588.7	8.9	8.5	-121.40	-82.4	-173.5	123.8	106.6	17.14	7.223	
3,700.0	3,685.5	3,701.4	3,687.2	9.2	8.8	-119.18	-87.1	-189.0	128.8	111.0	17.81	7.233	
3,800.0	3,784.6	3,801.2	3,785.6	9.5	9.1	-117.13	-91.8	-204.5	134.0	115.5	18.48	7.250	
3,900.0	3,883.8	3,900.9	3,884.0	9.9	9.5	-115.23	-96.4	-219.9	139.3	120.1	19.15	7.273	
4,000.0	3,982.9	4,000.7	3,982.5	10.2	9.8	-113.47	-101.1	-235.4	144.8	124.9	19.83	7.302	
4,100.0	4,082.0	4,100.4	4,080.9	10.5	10.2	-111.84	-105.8	-250.9	150.4	129.9	20.50	7.334	
4,200.0	4,181.2	4,200.2	4,179.3	10.8	10.5	-110.33	-110.5	-266.4	156.1	134.9	21.18	7.369	
4,300.0	4,280.3	4,300.0	4,277.8	11.1	10.9	-108.93	-115.1	-281.8	161.9	140.0	21.86	7.406	
4,400.0	4,379.5	4,399.7	4,376.2	11.5	11.2	-107.62	-119.8	-297.3	167.8	145.3	22.54	7.445	
4,500.0	4,478.6	4,499.5	4,474.6	11.8	11.6	-106.41	-124.5	-312.8	173.8	150.6	23.21	7.486	
4,600.0	4,577.8	4,599.2	4,573.1	12.1	11.9	-105.27	-129.2	-328.3	179.8	155.9	23.89	7.527	
4,700.0	4,676.9	4,699.0	4,671.5	12.4	12.3	-104.21	-133.8	-343.7	185.9	161.4	24.57	7.569	
4,800.0	4,776.1	4,798.7	4,770.0	12.8	12.6	-103.22	-138.5	-359.2	192.1	166.9	25.24	7.611	
4,900.0	4,875.2	4,898.5	4,868.4	13.1	13.0	-102.29	-143.2	-374.7	198.4	172.4	25.92	7.653	

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 Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-302 - Wellbore #1 - Plan #4 (7-15-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,974.4	4,998.2	4,966.8	13.4	13.4	-101.41	-147.9	-390.2	204.7	178.1	26.59	7.695	
5,100.0	5,073.5	5,098.0	5,065.3	13.7	13.7	-100.59	-152.5	-405.6	211.0	183.7	27.27	7.737	
5,200.0	5,172.6	5,197.8	5,163.7	14.1	14.1	-99.82	-157.2	-421.1	217.4	189.4	27.94	7.778	
5,300.0	5,271.8	5,297.5	5,262.1	14.4	14.5	-99.09	-161.9	-436.6	223.8	195.1	28.62	7.819	
5,400.0	5,370.9	5,397.8	5,361.2	14.7	14.8	-98.42	-166.6	-452.0	230.2	200.9	29.28	7.861	
5,455.8	5,426.2	5,454.8	5,417.5	14.9	15.0	-98.30	-168.9	-459.9	233.5	203.9	29.61	7.885	
5,500.0	5,470.1	5,500.0	5,462.4	15.0	15.1	-98.36	-170.6	-465.3	235.8	206.0	29.85	7.900	
5,600.0	5,569.6	5,602.3	5,564.1	15.2	15.3	-98.46	-173.5	-475.1	240.1	209.8	30.31	7.920	
5,700.0	5,669.4	5,704.6	5,666.3	15.4	15.5	-98.52	-175.4	-481.4	242.8	212.1	30.71	7.905	
5,800.0	5,769.4	5,807.1	5,768.6	15.6	15.7	-98.55	-176.3	-484.2	244.0	213.0	31.06	7.857	
5,830.6	5,800.0	5,838.4	5,800.0	15.7	15.8	179.37	-176.3	-484.4	244.1	218.1	26.03	9.377	
5,900.0	5,869.4	5,907.8	5,869.4	15.8	15.9	179.37	-176.3	-484.4	244.1	217.8	26.30	9.281	
6,007.4	5,976.8	6,015.2	5,976.8	16.0	16.1	179.37	-176.3	-484.4	244.1	217.4	26.73	9.131	
6,050.0	6,019.4	6,057.8	6,019.4	16.0	16.1	89.65	-176.3	-484.4	244.1	212.2	31.89	7.655	
6,075.4	6,044.7	6,083.1	6,044.7	16.0	16.2	90.00	-176.3	-484.1	244.1	212.2	31.94	7.643	
6,100.0	6,069.2	6,107.7	6,069.2	16.1	16.2	90.34	-176.3	-483.0	244.1	212.1	31.98	7.632	
6,150.0	6,118.6	6,157.8	6,119.1	16.1	16.2	91.04	-176.3	-478.2	244.1	212.1	32.03	7.623	
6,200.0	6,167.4	6,208.1	6,168.8	16.1	16.3	91.73	-176.3	-470.2	244.2	212.2	32.03	7.625	
6,250.0	6,215.3	6,258.6	6,218.0	16.1	16.2	92.41	-176.3	-458.9	244.3	212.3	31.99	7.637	
6,300.0	6,262.3	6,309.3	6,266.5	16.0	16.2	93.09	-176.3	-444.3	244.4	212.5	31.93	7.657	
6,350.0	6,308.0	6,360.2	6,314.1	16.0	16.2	93.75	-176.3	-426.4	244.6	212.8	31.84	7.683	
6,400.0	6,352.3	6,411.3	6,360.7	16.0	16.2	94.40	-176.3	-405.3	244.8	213.1	31.74	7.712	
6,450.0	6,395.0	6,462.6	6,405.8	15.9	16.1	95.02	-176.3	-381.0	245.0	213.4	31.66	7.741	
6,500.0	6,436.0	6,514.0	6,449.4	15.9	16.1	95.63	-176.3	-353.7	245.3	213.7	31.59	7.764	
6,550.0	6,474.9	6,565.7	6,491.2	15.9	16.1	96.21	-176.3	-323.4	245.5	214.0	31.57	7.776	
6,600.0	6,511.7	6,617.5	6,531.0	16.0	16.1	96.76	-176.3	-290.2	245.8	214.2	31.62	7.773	
6,650.0	6,546.3	6,669.5	6,568.6	16.1	16.1	97.29	-176.3	-254.2	246.1	214.3	31.76	7.748	
6,700.0	6,578.3	6,721.7	6,603.7	16.2	16.2	97.78	-176.3	-215.7	246.4	214.3	32.01	7.695	
6,750.0	6,607.9	6,774.0	6,636.3	16.4	16.4	98.23	-176.3	-174.7	246.6	214.2	32.40	7.611	
6,800.0	6,634.7	6,826.4	6,666.0	16.7	16.7	98.65	-176.3	-131.5	246.9	214.0	32.95	7.494	
6,850.0	6,658.7	6,879.0	6,692.7	17.1	17.0	99.03	-176.3	-86.3	247.2	213.5	33.66	7.342	
6,900.0	6,679.7	6,931.7	6,716.4	17.6	17.5	99.37	-176.3	-39.2	247.4	212.8	34.55	7.160	
6,950.0	6,697.8	6,984.6	6,736.7	18.2	18.0	99.67	-176.3	9.6	247.6	212.0	35.62	6.951	
7,000.0	6,712.8	7,037.5	6,753.7	18.8	18.6	99.93	-176.3	59.7	247.8	210.9	36.87	6.721	
7,050.0	6,724.6	7,090.4	6,767.2	19.5	19.4	100.14	-176.3	110.9	248.0	209.7	38.28	6.477	
7,100.0	6,733.2	7,143.5	6,777.1	20.3	20.2	100.30	-176.3	163.0	248.1	208.2	39.84	6.227	
7,150.0	6,738.6	7,196.6	6,783.3	21.1	21.1	100.42	-176.3	215.7	248.2	206.6	41.53	5.975	
7,200.0	6,740.7	7,249.7	6,785.9	22.0	22.0	100.50	-176.3	268.8	248.2	204.9	43.33	5.729	
7,215.0	6,740.7	7,265.7	6,786.0	22.3	22.3	100.51	-176.3	284.8	248.3	204.4	43.89	5.656	
7,300.0	6,739.9	7,350.7	6,785.3	23.9	24.0	100.55	-176.3	369.8	248.3	201.2	47.13	5.269	
7,400.0	6,738.9	7,450.7	6,784.6	26.0	26.0	100.60	-176.3	469.8	248.3	197.1	51.20	4.850	
7,500.0	6,737.9	7,550.7	6,783.8	28.2	28.2	100.66	-176.3	569.8	248.4	192.9	55.52	4.474	
7,600.0	6,736.9	7,650.7	6,783.0	30.5	30.5	100.71	-176.3	669.8	248.4	188.4	60.04	4.138	
7,700.0	6,735.9	7,750.7	6,782.3	32.9	32.9	100.76	-176.3	769.8	248.5	183.7	64.71	3.840	
7,800.0	6,734.9	7,850.7	6,781.5	35.3	35.4	100.81	-176.3	869.7	248.5	179.0	69.51	3.575	
7,900.0	6,733.9	7,950.7	6,780.7	37.8	37.8	100.86	-176.3	969.7	248.5	174.1	74.40	3.341	
8,000.0	6,732.9	8,050.7	6,780.0	40.3	40.4	100.91	-176.3	1,069.7	248.6	169.2	79.38	3.132	
8,100.0	6,731.9	8,150.7	6,779.2	42.9	43.0	100.96	-176.3	1,169.7	248.6	164.2	84.42	2.945	
8,200.0	6,730.9	8,250.7	6,778.4	45.5	45.6	101.01	-176.3	1,269.7	248.7	159.2	89.51	2.778	
8,300.0	6,729.9	8,350.7	6,777.7	48.1	48.2	101.07	-176.3	1,369.7	248.7	154.1	94.65	2.628	
8,400.0	6,728.9	8,450.7	6,776.9	50.8	50.8	101.12	-176.3	1,469.7	248.8	148.9	99.83	2.492	

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 190-302 - Wellbore #1 - Plan #4 (7-15-15)													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 Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
8,500.0	6,727.9	8,550.7	6,776.1	53.4	53.5	101.17	-176.3	1,569.7	248.8	143.8	105.04	2.369		
8,600.0	6,726.9	8,650.7	6,775.4	56.1	56.1	101.22	-176.3	1,669.7	248.8	138.6	110.28	2.257		
8,700.0	6,725.9	8,750.7	6,774.6	58.8	58.8	101.27	-176.3	1,769.7	248.9	133.3	115.54	2.154		
8,800.0	6,724.9	8,850.7	6,773.8	61.5	61.5	101.32	-176.3	1,869.7	248.9	128.1	120.82	2.060		
8,900.0	6,724.0	8,950.7	6,773.1	64.2	64.2	101.37	-176.3	1,969.7	249.0	122.9	126.12	1.974		
9,000.0	6,723.0	9,050.7	6,772.3	66.9	67.0	101.42	-176.3	2,069.7	249.0	117.6	131.43	1.895		
9,100.0	6,722.0	9,150.7	6,771.5	69.6	69.7	101.48	-176.3	2,169.7	249.1	112.3	136.75	1.821		
9,200.0	6,721.0	9,250.7	6,770.7	72.4	72.4	101.53	-176.3	2,269.7	249.1	107.0	142.09	1.753		
9,300.0	6,720.0	9,350.7	6,770.0	75.1	75.1	101.58	-176.3	2,369.7	249.2	101.7	147.43	1.690		
9,400.0	6,719.0	9,450.7	6,769.2	77.8	77.9	101.63	-176.3	2,469.7	249.2	96.4	152.79	1.631		
9,500.0	6,718.0	9,550.7	6,768.4	80.6	80.6	101.68	-176.3	2,569.7	249.2	91.1	158.15	1.576		
9,600.0	6,717.0	9,650.7	6,767.7	83.3	83.4	101.73	-176.3	2,669.7	249.3	85.8	163.52	1.525		
9,700.0	6,716.0	9,750.7	6,766.9	86.1	86.1	101.78	-176.3	2,769.7	249.3	80.5	168.89	1.476 Level 3		
9,800.0	6,715.0	9,850.7	6,766.1	88.8	88.9	101.83	-176.3	2,869.7	249.4	75.1	174.27	1.431 Level 3		
9,900.0	6,714.0	9,950.7	6,765.4	91.6	91.7	101.88	-176.3	2,969.7	249.4	69.8	179.65	1.388 Level 3		
10,000.0	6,713.0	10,050.7	6,764.6	94.4	94.4	101.94	-176.3	3,069.7	249.5	64.4	185.04	1.348 Level 3		
10,100.0	6,712.0	10,150.7	6,763.8	97.1	97.2	101.99	-176.3	3,169.7	249.5	59.1	190.43	1.310 Level 3		
10,200.0	6,711.0	10,250.7	6,763.1	99.9	99.9	102.04	-176.3	3,269.7	249.6	53.8	195.82	1.275 Level 3		
10,300.0	6,710.0	10,350.7	6,762.3	102.7	102.7	102.09	-176.3	3,369.7	249.6	48.4	201.22	1.241 Level 2		
10,400.0	6,709.0	10,450.7	6,761.5	105.4	105.5	102.14	-176.3	3,469.7	249.7	43.1	206.61	1.208 Level 2		
10,500.0	6,708.0	10,550.7	6,760.8	108.2	108.3	102.19	-176.3	3,569.7	249.7	37.7	212.01	1.178 Level 2		
10,600.0	6,707.0	10,650.7	6,760.0	111.0	111.0	102.24	-176.3	3,669.7	249.8	32.4	217.41	1.149 Level 2		
10,700.0	6,706.0	10,750.7	6,759.2	113.8	113.8	102.29	-176.3	3,769.7	249.8	27.0	222.81	1.121 Level 2		
10,800.0	6,705.1	10,850.7	6,758.5	116.5	116.6	102.34	-176.3	3,869.7	249.9	21.6	228.21	1.095 Level 2		
10,900.0	6,704.1	10,950.7	6,757.7	119.3	119.4	102.39	-176.3	3,969.6	249.9	16.3	233.62	1.070 Level 2		
11,000.0	6,703.1	11,050.7	6,756.9	122.1	122.2	102.44	-176.3	4,069.6	250.0	10.9	239.02	1.046 Level 2		
11,100.0	6,702.1	11,150.7	6,756.2	124.9	124.9	102.50	-176.3	4,169.6	250.0	5.6	244.42	1.023 Level 2		
11,200.0	6,701.1	11,250.7	6,755.4	127.7	127.7	102.55	-176.3	4,269.6	250.1	0.2	249.83	1.001 Level 2		
11,300.0	6,700.1	11,350.7	6,754.6	130.5	130.5	102.60	-176.3	4,369.6	250.1	-5.1	255.23	0.980 Level 1		
11,400.0	6,699.1	11,450.7	6,753.9	133.2	133.3	102.65	-176.3	4,469.6	250.2	-10.5	260.63	0.960 Level 1		
11,500.0	6,698.1	11,550.7	6,753.1	136.0	136.1	102.70	-176.3	4,569.6	250.2	-15.8	266.04	0.940 Level 1		
11,600.0	6,697.1	11,650.7	6,752.3	138.8	138.9	102.75	-176.3	4,669.6	250.3	-21.2	271.44	0.922 Level 1		
11,700.0	6,696.1	11,750.7	6,751.6	141.6	141.7	102.80	-176.3	4,769.6	250.3	-26.5	276.84	0.904 Level 1		
11,800.0	6,695.1	11,850.7	6,750.8	144.4	144.5	102.85	-176.3	4,869.6	250.4	-31.9	282.24	0.887 Level 1		
11,900.0	6,694.1	11,950.7	6,750.0	147.2	147.2	102.90	-176.3	4,969.6	250.4	-37.2	287.64	0.871 Level 1		
12,000.0	6,693.1	12,050.7	6,749.2	150.0	150.0	102.95	-176.3	5,069.6	250.5	-42.6	293.04	0.855 Level 1		
12,100.0	6,692.1	12,150.7	6,748.5	152.8	152.8	103.00	-176.3	5,169.6	250.5	-47.9	298.44	0.839 Level 1		
12,200.0	6,691.1	12,250.7	6,747.7	155.6	155.6	103.05	-176.3	5,269.6	250.6	-53.3	303.84	0.825 Level 1		
12,300.0	6,690.1	12,350.7	6,746.9	158.4	158.4	103.10	-176.3	5,369.6	250.6	-58.6	309.24	0.810 Level 1		
12,400.0	6,689.1	12,450.7	6,746.2	161.2	161.2	103.15	-176.3	5,469.6	250.7	-64.0	314.63	0.797 Level 1		
12,500.0	6,688.1	12,550.7	6,745.4	163.9	164.0	103.20	-176.3	5,569.6	250.7	-69.3	320.03	0.783 Level 1		
12,600.0	6,687.1	12,650.7	6,744.6	166.7	166.8	103.25	-176.3	5,669.6	250.8	-74.7	325.42	0.771 Level 1		
12,700.0	6,686.2	12,750.7	6,743.9	169.5	169.6	103.30	-176.3	5,769.6	250.8	-80.0	330.81	0.758 Level 1		
12,800.0	6,685.2	12,850.7	6,743.1	172.3	172.4	103.36	-176.3	5,869.6	250.9	-85.3	336.20	0.746 Level 1		
12,900.0	6,684.2	12,950.7	6,742.3	175.1	175.2	103.41	-176.3	5,969.6	250.9	-90.7	341.59	0.735 Level 1		
13,000.0	6,683.2	13,050.7	6,741.6	177.9	178.0	103.46	-176.3	6,069.6	251.0	-96.0	346.98	0.723 Level 1		
13,100.0	6,682.2	13,150.7	6,740.8	180.7	180.8	103.51	-176.3	6,169.6	251.0	-101.3	352.36	0.712 Level 1		
13,200.0	6,681.2	13,250.7	6,740.0	183.5	183.6	103.56	-176.3	6,269.6	251.1	-106.7	357.75	0.702 Level 1		
13,300.0	6,680.2	13,350.7	6,739.3	186.3	186.4	103.61	-176.3	6,369.6	251.1	-112.0	363.13	0.692 Level 1		
13,400.0	6,679.2	13,450.7	6,738.5	189.1	189.2	103.66	-176.3	6,469.6	251.2	-117.3	368.51	0.682 Level 1		
13,500.0	6,678.2	13,550.7	6,737.7	191.9	192.0	103.71	-176.3	6,569.6	251.2	-122.6	373.89	0.672 Level 1		

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 Klein 19O-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 19O-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 19O-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 19O-HZ Pad Sec.19-T5N-R64W - Klein 19O-302 - Wellbore #1 - Plan #4 (7-15-15)													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	
13,600.0	6,677.2	13,650.7	6,737.0	194.7	194.8	103.76	-176.3	6,669.6	251.3	-128.0	379.27	0.663	Level 1	
13,700.0	6,676.2	13,750.7	6,736.2	197.5	197.6	103.81	-176.3	6,769.6	251.4	-133.3	384.64	0.653	Level 1	
13,800.0	6,675.2	13,850.7	6,735.4	200.3	200.4	103.86	-176.3	6,869.6	251.4	-138.6	390.02	0.645	Level 1	
13,900.0	6,674.2	13,950.7	6,734.7	203.1	203.2	103.91	-176.3	6,969.6	251.5	-143.9	395.39	0.636	Level 1	
14,000.0	6,673.2	14,050.7	6,733.9	205.9	206.0	103.96	-176.3	7,069.5	251.5	-149.2	400.76	0.628	Level 1	
14,100.0	6,672.2	14,150.7	6,733.1	208.7	208.8	104.01	-176.3	7,169.5	251.6	-154.6	406.13	0.619	Level 1	
14,200.0	6,671.2	14,250.7	6,732.4	211.5	211.6	104.06	-176.3	7,269.5	251.6	-159.9	411.49	0.611	Level 1	
14,300.0	6,670.2	14,350.7	6,731.6	214.3	214.4	104.11	-176.3	7,369.5	251.7	-165.2	416.86	0.604	Level 1	
14,400.0	6,669.2	14,450.7	6,730.8	217.1	217.2	104.16	-176.3	7,469.5	251.7	-170.5	422.22	0.596	Level 1	
14,500.0	6,668.2	14,550.7	6,730.0	219.9	220.0	104.21	-176.3	7,569.5	251.8	-175.8	427.58	0.589	Level 1	
14,600.0	6,667.2	14,650.7	6,729.3	222.7	222.8	104.26	-176.3	7,669.5	251.8	-181.1	432.94	0.582	Level 1	
14,700.0	6,666.3	14,750.7	6,728.5	225.5	225.6	104.31	-176.3	7,769.5	251.9	-186.4	438.29	0.575	Level 1	
14,800.0	6,665.3	14,850.7	6,727.7	228.3	228.4	104.36	-176.3	7,869.5	252.0	-191.7	443.65	0.568	Level 1	
14,900.0	6,664.3	14,950.7	6,727.0	231.1	231.2	104.41	-176.3	7,969.5	252.0	-197.0	449.00	0.561	Level 1	
15,000.0	6,663.3	15,050.7	6,726.2	233.9	234.0	104.46	-176.3	8,069.5	252.1	-202.3	454.35	0.555	Level 1	
15,100.0	6,662.3	15,150.7	6,725.4	236.7	236.8	104.51	-176.3	8,169.5	252.1	-207.6	459.69	0.548	Level 1	
15,200.0	6,661.3	15,250.7	6,724.7	239.5	239.6	104.56	-176.3	8,269.5	252.2	-212.9	465.04	0.542	Level 1	
15,300.0	6,660.3	15,350.7	6,723.9	242.3	242.4	104.61	-176.3	8,369.5	252.2	-218.1	470.38	0.536	Level 1	
15,400.0	6,659.3	15,450.7	6,723.1	245.1	245.2	104.66	-176.3	8,469.5	252.3	-223.4	475.72	0.530	Level 1	
15,500.0	6,658.3	15,550.7	6,722.4	247.9	248.0	104.71	-176.3	8,569.5	252.4	-228.7	481.06	0.525	Level 1	
15,600.0	6,657.3	15,650.7	6,721.6	250.7	250.8	104.76	-176.3	8,669.5	252.4	-234.0	486.40	0.519	Level 1	
15,700.0	6,656.3	15,750.7	6,720.8	253.5	253.6	104.81	-176.3	8,769.5	252.5	-239.3	491.73	0.513	Level 1	
15,800.0	6,655.3	15,850.7	6,720.1	256.3	256.4	104.86	-176.3	8,869.5	252.5	-244.5	497.06	0.508	Level 1	
15,900.0	6,654.3	15,950.7	6,719.3	259.2	259.2	104.91	-176.3	8,969.5	252.6	-249.8	502.39	0.503	Level 1	
16,000.0	6,653.3	16,050.7	6,718.5	262.0	262.0	104.96	-176.3	9,069.5	252.6	-255.1	507.72	0.498	Level 1	
16,100.0	6,652.3	16,150.7	6,717.8	264.8	264.8	105.01	-176.3	9,169.5	252.7	-260.3	513.04	0.493	Level 1	
16,200.0	6,651.3	16,250.7	6,717.0	267.6	267.6	105.06	-176.3	9,269.5	252.8	-265.6	518.36	0.488	Level 1	
16,300.0	6,650.3	16,350.7	6,716.2	270.4	270.4	105.11	-176.3	9,369.5	252.8	-270.9	523.68	0.483	Level 1	
16,400.0	6,649.3	16,450.7	6,715.5	273.2	273.2	105.16	-176.3	9,469.5	252.9	-276.1	529.00	0.478	Level 1	
16,500.0	6,648.3	16,550.7	6,714.7	276.0	276.0	105.21	-176.3	9,569.5	252.9	-281.4	534.31	0.473	Level 1	
16,600.0	6,647.4	16,650.7	6,713.9	278.8	278.8	105.26	-176.3	9,669.5	253.0	-286.6	539.63	0.469	Level 1	
16,700.0	6,646.4	16,750.7	6,713.2	281.6	281.6	105.31	-176.3	9,769.5	253.1	-291.9	544.94	0.464	Level 1	
16,800.0	6,645.4	16,850.7	6,712.4	284.4	284.5	105.35	-176.3	9,869.5	253.1	-297.1	550.24	0.460	Level 1	
16,900.0	6,644.4	16,950.7	6,711.6	287.2	287.3	105.40	-176.3	9,969.5	253.2	-302.4	555.55	0.456	Level 1	
17,000.0	6,643.4	17,050.7	6,710.9	290.0	290.1	105.45	-176.3	10,069.5	253.2	-307.6	560.85	0.452	Level 1	
17,100.0	6,642.4	17,150.7	6,710.1	292.8	292.9	105.50	-176.3	10,169.5	253.3	-312.8	566.15	0.447	Level 1	
17,200.0	6,641.4	17,250.7	6,709.3	295.6	295.7	105.55	-176.3	10,269.4	253.4	-318.1	571.45	0.443	Level 1	
17,238.6	6,641.0	17,289.3	6,709.0	296.7	296.8	105.57	-176.3	10,308.0	253.4	-320.1	573.49	0.442	Level 1, ES, SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 190-402 - Wellbore #1 - Plan #3 (7-15-15)												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 Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	177.42	-61.9	2.8	62.0				
100.0	100.0	100.0	100.0	0.1	0.1	177.42	-61.9	2.8	62.0	61.8	0.22	275.822	
200.0	200.0	200.0	200.0	0.3	0.3	177.42	-61.9	2.8	62.0	61.3	0.67	91.941	
300.0	300.0	300.0	300.0	0.6	0.6	177.42	-61.9	2.8	62.0	60.9	1.12	55.164	
400.0	400.0	400.0	400.0	0.8	0.8	177.42	-61.9	2.8	62.0	60.4	1.57	39.403	
500.0	500.0	500.0	500.0	1.0	1.0	177.42	-61.9	2.8	62.0	60.0	2.02	30.647	
600.0	600.0	600.0	600.0	1.2	1.2	177.42	-61.9	2.8	62.0	59.5	2.47	25.075	
700.0	700.0	700.0	700.0	1.5	1.5	177.42	-61.9	2.8	62.0	59.1	2.92	21.217	
800.0	800.0	800.0	800.0	1.7	1.7	177.42	-61.9	2.8	62.0	58.6	3.37	18.388	
900.0	900.0	900.0	900.0	1.9	1.9	177.42	-61.9	2.8	62.0	58.2	3.82	16.225	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	177.42	-61.9	2.8	62.0	57.7	4.27	14.517	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	177.42	-61.9	2.8	62.0	57.3	4.72	13.134	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	177.42	-61.9	2.8	62.0	56.8	5.17	11.992	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	177.42	-61.9	2.8	62.0	56.4	5.62	11.033	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	177.42	-61.9	2.8	62.0	55.9	6.07	10.216	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	177.42	-61.9	2.8	62.0	55.5	6.52	9.511 CC	
1,600.0	1,600.0	1,599.4	1,599.4	3.5	3.5	-100.17	-62.5	1.6	62.6	55.7	6.94	9.033	
1,700.0	1,700.0	1,698.7	1,698.6	3.7	3.7	-99.24	-64.1	-1.9	64.6	57.3	7.33	8.814	
1,800.0	1,799.9	1,798.0	1,797.7	3.9	3.8	-97.81	-66.8	-7.8	67.9	60.1	7.74	8.775	
1,900.0	1,899.7	1,897.0	1,896.3	4.1	4.1	-96.03	-70.5	-16.0	72.5	64.4	8.16	8.891	
2,000.0	1,999.4	1,995.9	1,994.5	4.3	4.3	-94.04	-75.3	-26.5	78.6	70.0	8.60	9.139	
2,100.0	2,098.9	2,094.6	2,092.2	4.6	4.5	-92.00	-81.1	-39.2	86.1	77.0	9.07	9.496	
2,200.0	2,198.3	2,192.9	2,189.1	4.8	4.8	-90.00	-88.0	-54.2	95.1	85.5	9.56	9.941	
2,249.7	2,247.6	2,241.7	2,237.0	4.9	4.9	-89.05	-91.8	-62.5	100.1	90.2	9.82	10.186	
2,300.0	2,297.4	2,290.9	2,285.3	5.1	5.1	-88.05	-95.9	-71.4	105.5	95.4	10.09	10.456	
2,400.0	2,396.6	2,388.4	2,380.4	5.3	5.4	-85.61	-104.7	-90.8	117.5	106.9	10.64	11.045	
2,500.0	2,495.7	2,486.3	2,475.4	5.6	5.8	-82.83	-114.5	-112.1	131.1	119.9	11.21	11.701	
2,600.0	2,594.9	2,585.1	2,571.3	5.9	6.2	-80.45	-124.5	-134.1	145.2	133.5	11.79	12.322	
2,700.0	2,694.0	2,683.9	2,667.1	6.2	6.6	-78.49	-134.5	-156.0	159.6	147.2	12.37	12.895	
2,800.0	2,793.2	2,782.8	2,763.0	6.5	7.1	-76.85	-144.5	-177.9	174.0	161.1	12.97	13.421	
2,900.0	2,892.3	2,881.6	2,858.8	6.8	7.5	-75.47	-154.6	-199.8	188.6	175.1	13.57	13.904	
3,000.0	2,991.4	2,980.5	2,954.7	7.1	8.0	-74.28	-164.6	-221.8	203.3	189.1	14.17	14.349	
3,100.0	3,090.6	3,079.3	3,050.5	7.4	8.4	-73.26	-174.6	-243.7	218.1	203.3	14.77	14.759	
3,200.0	3,189.7	3,178.1	3,146.4	7.7	8.9	-72.36	-184.6	-265.6	232.9	217.5	15.38	15.136	
3,300.0	3,288.9	3,277.0	3,242.2	8.0	9.4	-71.57	-194.7	-287.5	247.7	231.7	16.00	15.485	
3,400.0	3,388.0	3,375.8	3,338.1	8.3	9.8	-70.87	-204.7	-309.5	262.6	246.0	16.61	15.808	
3,500.0	3,487.2	3,474.6	3,433.9	8.6	10.3	-70.25	-214.7	-331.4	277.6	260.3	17.23	16.108	
3,600.0	3,586.3	3,573.5	3,529.8	8.9	10.8	-69.69	-224.7	-353.3	292.5	274.7	17.85	16.386	
3,700.0	3,685.5	3,672.3	3,625.6	9.2	11.3	-69.18	-234.7	-375.2	307.5	289.1	18.48	16.646	
3,800.0	3,784.6	3,771.1	3,721.5	9.5	11.8	-68.72	-244.8	-397.2	322.5	303.4	19.10	16.887	
3,900.0	3,883.8	3,870.0	3,817.3	9.9	12.3	-68.31	-254.8	-419.1	337.6	317.8	19.73	17.114	
4,000.0	3,982.9	3,968.8	3,913.2	10.2	12.8	-67.92	-264.8	-441.0	352.6	332.3	20.35	17.325	
4,100.0	4,082.0	4,067.6	4,009.0	10.5	13.3	-67.57	-274.8	-462.9	367.7	346.7	20.98	17.524	
4,200.0	4,181.2	4,166.5	4,104.9	10.8	13.8	-67.25	-284.9	-484.9	382.8	361.1	21.61	17.710	
4,300.0	4,280.3	4,265.3	4,200.7	11.1	14.3	-66.95	-294.9	-506.8	397.8	375.6	22.24	17.886	
4,400.0	4,379.5	4,364.1	4,296.6	11.5	14.8	-66.67	-304.9	-528.7	412.9	390.1	22.88	18.052	
4,500.0	4,478.6	4,463.0	4,392.4	11.8	15.3	-66.41	-314.9	-550.6	428.0	404.5	23.51	18.208	
4,600.0	4,577.8	4,561.8	4,488.3	12.1	15.8	-66.17	-324.9	-572.6	443.1	419.0	24.14	18.355	
4,700.0	4,676.9	4,660.7	4,584.1	12.4	16.4	-65.95	-335.0	-594.5	458.3	433.5	24.78	18.495	
4,800.0	4,776.1	4,759.5	4,680.0	12.8	16.9	-65.74	-345.0	-616.4	473.4	448.0	25.41	18.628	
4,900.0	4,875.2	4,858.3	4,775.8	13.1	17.4	-65.54	-355.0	-638.3	488.5	462.5	26.05	18.753	

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 190-402 - Wellbore #1 - Plan #3 (7-15-15)													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
				(ft)	(ft)	(°)								
5,000.0	4,974.4	4,957.2	4,871.7	13.4	17.9	-65.36	-365.0	-660.3	503.7	477.0	26.69	18.873		
5,100.0	5,073.5	5,056.0	4,967.5	13.7	18.4	-65.18	-375.1	-682.2	518.8	491.5	27.32	18.986		
5,200.0	5,172.6	5,154.8	5,063.4	14.1	18.9	-65.02	-385.1	-704.1	533.9	506.0	27.96	19.095		
5,300.0	5,271.8	5,253.7	5,159.2	14.4	19.4	-64.86	-395.1	-726.0	549.1	520.5	28.60	19.198		
5,400.0	5,370.9	5,352.5	5,255.1	14.7	20.0	-64.72	-405.1	-748.0	564.2	535.0	29.24	19.296		
5,455.8	5,426.2	5,409.1	5,310.0	14.9	20.2	-64.64	-410.9	-760.5	572.7	543.1	29.60	19.348		
5,500.0	5,470.1	5,461.8	5,361.3	15.0	20.5	-64.68	-415.9	-771.6	579.1	549.2	29.88	19.378		
5,600.0	5,569.6	5,581.6	5,478.6	15.2	20.9	-64.67	-426.0	-793.7	592.1	561.7	30.42	19.466		
5,700.0	5,669.4	5,702.3	5,597.6	15.4	21.3	-64.53	-434.1	-811.4	603.1	572.2	30.86	19.542		
5,800.0	5,769.4	5,823.7	5,718.2	15.6	21.6	-64.26	-440.2	-824.6	612.0	580.8	31.22	19.603		
5,830.6	5,800.0	5,861.0	5,755.3	15.7	21.6	-146.23	-441.6	-827.7	614.3	580.9	33.41	18.387		
5,900.0	5,869.4	5,945.8	5,839.9	15.8	21.8	-145.94	-444.1	-833.1	618.5	584.8	33.74	18.333		
6,007.4	5,976.8	6,077.5	5,971.5	16.0	22.0	-145.73	-445.9	-837.1	621.5	587.4	34.18	18.185		
6,050.0	6,019.4	6,125.3	6,019.4	16.0	22.0	124.33	-445.9	-837.2	622.3	590.3	31.98	19.461		
6,100.0	6,069.2	6,175.1	6,069.2	16.1	22.1	124.51	-445.9	-837.2	624.8	592.9	31.97	19.547		
6,150.0	6,118.6	6,226.1	6,120.1	16.1	22.2	124.83	-445.9	-837.2	629.2	597.3	31.89	19.733		
6,200.0	6,167.4	6,321.3	6,215.0	16.1	22.2	125.63	-445.9	-830.9	633.6	602.0	31.68	20.000		
6,250.0	6,215.3	6,418.7	6,310.6	16.1	22.1	126.12	-445.9	-812.3	636.4	604.9	31.41	20.259		
6,300.0	6,262.3	6,517.2	6,404.0	16.0	22.0	126.28	-445.9	-781.2	637.2	606.1	31.10	20.487		
6,350.0	6,308.0	6,615.8	6,492.7	16.0	21.8	126.10	-445.9	-738.4	636.2	605.4	30.80	20.655		
6,400.0	6,352.3	6,713.0	6,574.1	16.0	21.6	125.58	-445.9	-685.3	633.4	602.8	30.56	20.723		
6,450.0	6,395.0	6,808.0	6,646.5	15.9	21.4	124.75	-445.9	-623.8	628.8	598.4	30.46	20.647		
6,500.0	6,436.0	6,899.9	6,708.7	15.9	21.3	123.64	-445.9	-556.3	622.7	592.2	30.54	20.389		
6,550.0	6,474.9	6,988.0	6,760.3	15.9	21.3	122.29	-445.9	-485.0	615.4	584.5	30.89	19.922		
6,600.0	6,511.7	7,072.0	6,801.6	16.0	21.5	120.73	-445.9	-412.0	607.0	575.5	31.52	19.260		
6,650.0	6,546.3	7,151.7	6,833.2	16.1	21.8	119.00	-445.9	-338.8	597.9	565.5	32.42	18.442		
6,700.0	6,578.3	7,227.2	6,855.9	16.2	22.3	117.14	-445.9	-266.8	588.4	554.8	33.61	17.507		
6,750.0	6,607.9	7,298.8	6,870.8	16.4	22.9	115.18	-445.9	-196.8	578.7	543.6	35.01	16.527		
6,800.0	6,634.7	7,366.5	6,878.7	16.7	23.6	113.12	-445.9	-129.6	569.0	532.4	36.62	15.537		
6,850.0	6,658.7	7,429.1	6,880.8	17.1	24.4	111.08	-445.9	-67.0	559.7	521.3	38.33	14.600		
6,900.0	6,679.7	7,474.4	6,880.7	17.6	25.1	109.77	-445.9	-21.8	551.6	511.8	39.77	13.870		
6,950.0	6,697.8	7,520.9	6,880.5	18.2	25.8	108.54	-445.9	24.8	545.2	503.9	41.33	13.192		
7,000.0	6,712.8	7,568.6	6,880.4	18.8	26.6	107.44	-445.9	72.5	540.3	497.3	43.01	12.564		
7,050.0	6,724.6	7,617.1	6,880.2	19.5	27.4	106.51	-445.9	121.0	536.7	492.0	44.76	11.991		
7,100.0	6,733.2	7,666.3	6,880.1	20.3	28.3	105.80	-445.9	170.2	534.3	487.7	46.60	11.465		
7,150.0	6,738.6	7,716.0	6,879.9	21.1	29.2	105.34	-445.9	219.9	532.8	484.3	48.47	10.992		
7,200.0	6,740.7	7,766.0	6,879.8	22.0	30.2	105.15	-445.9	269.8	532.2	481.8	50.38	10.563		
7,209.7	6,740.8	7,775.6	6,879.8	22.2	30.4	105.14	-445.9	279.5	532.2	481.4	50.75	10.486		
7,215.0	6,740.7	7,781.0	6,879.8	22.3	30.5	105.15	-445.9	284.9	532.2	481.2	50.95	10.445		
7,300.0	6,739.9	7,866.0	6,879.5	23.9	32.3	105.21	-445.9	369.8	532.3	478.1	54.25	9.812		
7,400.0	6,738.9	7,966.0	6,879.2	26.0	34.5	105.28	-445.9	469.8	532.5	474.1	58.37	9.123		
7,500.0	6,737.9	8,065.9	6,878.9	28.2	36.8	105.35	-445.9	569.8	532.7	470.0	62.69	8.498		
7,600.0	6,736.9	8,165.9	6,878.6	30.5	39.1	105.42	-445.9	669.8	532.9	465.7	67.17	7.934		
7,700.0	6,735.9	8,265.9	6,878.3	32.9	41.5	105.50	-445.9	769.8	533.1	461.3	71.77	7.427		
7,800.0	6,734.9	8,365.9	6,878.0	35.3	44.0	105.57	-445.9	869.8	533.2	456.8	76.49	6.972		
7,900.0	6,733.9	8,465.9	6,877.7	37.8	46.5	105.64	-445.9	969.8	533.4	452.1	81.28	6.563		
8,000.0	6,732.9	8,565.9	6,877.4	40.3	49.0	105.71	-445.9	1,069.8	533.6	447.5	86.15	6.194		
8,100.0	6,731.9	8,665.9	6,877.1	42.9	51.6	105.79	-445.9	1,169.8	533.8	442.7	91.07	5.861		
8,200.0	6,730.9	8,765.9	6,876.8	45.5	54.2	105.86	-445.9	1,269.8	534.0	438.0	96.05	5.560		
8,300.0	6,729.9	8,865.9	6,876.5	48.1	56.8	105.93	-445.9	1,369.8	534.2	433.1	101.06	5.286		
8,400.0	6,728.9	8,965.9	6,876.2	50.8	59.4	106.00	-445.9	1,469.8	534.4	428.3	106.10	5.036		

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 190-402 - Wellbore #1 - Plan #3 (7-15-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,500.0	6,727.9	9,065.9	6,875.9	53.4	62.0	106.07	-445.9	1,569.8	534.6	423.4	111.18	4.808	
8,600.0	6,726.9	9,165.9	6,875.6	56.1	64.7	106.15	-445.9	1,669.8	534.8	418.5	116.28	4.599	
8,700.0	6,725.9	9,265.9	6,875.3	58.8	67.4	106.22	-445.9	1,769.8	535.0	413.6	121.40	4.407	
8,800.0	6,724.9	9,365.9	6,875.1	61.5	70.0	106.29	-445.9	1,869.8	535.2	408.6	126.54	4.229	
8,900.0	6,724.0	9,465.9	6,874.8	64.2	72.7	106.36	-445.9	1,969.8	535.4	403.7	131.69	4.065	
9,000.0	6,723.0	9,565.9	6,874.5	66.9	75.4	106.43	-445.9	2,069.8	535.6	398.7	136.86	3.913	
9,100.0	6,722.0	9,665.9	6,874.2	69.6	78.1	106.50	-445.9	2,169.8	535.8	393.7	142.03	3.772	
9,200.0	6,721.0	9,765.9	6,873.9	72.4	80.8	106.58	-445.9	2,269.8	535.9	388.7	147.22	3.640	
9,300.0	6,720.0	9,865.9	6,873.6	75.1	83.6	106.65	-445.9	2,369.8	536.1	383.7	152.41	3.518	
9,400.0	6,719.0	9,965.9	6,873.3	77.8	86.3	106.72	-445.9	2,469.8	536.3	378.7	157.62	3.403	
9,500.0	6,718.0	10,065.9	6,873.0	80.6	89.0	106.79	-445.9	2,569.8	536.6	373.7	162.82	3.295	
9,600.0	6,717.0	10,165.9	6,872.7	83.3	91.7	106.86	-445.9	2,669.8	536.8	368.7	168.04	3.194	
9,700.0	6,716.0	10,265.9	6,872.4	86.1	94.5	106.93	-445.9	2,769.8	537.0	363.7	173.25	3.099	
9,800.0	6,715.0	10,365.9	6,872.1	88.8	97.2	107.00	-445.9	2,869.8	537.2	358.7	178.47	3.010	
9,900.0	6,714.0	10,465.9	6,871.8	91.6	100.0	107.07	-445.9	2,969.8	537.4	353.7	183.69	2.925	
10,000.0	6,713.0	10,565.9	6,871.5	94.4	102.7	107.15	-445.9	3,069.8	537.6	348.7	188.92	2.846	
10,100.0	6,712.0	10,665.9	6,871.2	97.1	105.5	107.22	-445.9	3,169.7	537.8	343.6	194.14	2.770	
10,200.0	6,711.0	10,765.9	6,870.9	99.9	108.2	107.29	-445.9	3,269.7	538.0	338.6	199.37	2.698	
10,300.0	6,710.0	10,865.9	6,870.6	102.7	111.0	107.36	-445.9	3,369.7	538.2	333.6	204.60	2.630	
10,400.0	6,709.0	10,965.9	6,870.3	105.4	113.8	107.43	-445.9	3,469.7	538.4	328.6	209.83	2.566	
10,500.0	6,708.0	11,065.9	6,870.0	108.2	116.5	107.50	-445.9	3,569.7	538.6	323.6	215.06	2.504	
10,600.0	6,707.0	11,165.9	6,869.7	111.0	119.3	107.57	-445.9	3,669.7	538.8	318.5	220.28	2.446	
10,700.0	6,706.0	11,265.9	6,869.4	113.8	122.1	107.64	-445.9	3,769.7	539.0	313.5	225.51	2.390	
10,800.0	6,705.1	11,365.9	6,869.1	116.5	124.8	107.71	-445.9	3,869.7	539.2	308.5	230.74	2.337	
10,900.0	6,704.1	11,465.9	6,868.8	119.3	127.6	107.78	-445.9	3,969.7	539.5	303.5	235.96	2.286	
11,000.0	6,703.1	11,565.9	6,868.5	122.1	130.4	107.85	-445.9	4,069.7	539.7	298.5	241.19	2.238	
11,100.0	6,702.1	11,665.9	6,868.2	124.9	133.1	107.92	-445.9	4,169.7	539.9	293.5	246.41	2.191	
11,200.0	6,701.1	11,765.9	6,867.9	127.7	135.9	108.00	-445.9	4,269.7	540.1	288.5	251.63	2.146	
11,300.0	6,700.1	11,865.9	6,867.6	130.5	138.7	108.07	-445.9	4,369.7	540.3	283.5	256.85	2.104	
11,400.0	6,699.1	11,965.9	6,867.3	133.2	141.5	108.14	-445.9	4,469.7	540.5	278.5	262.07	2.063	
11,500.0	6,698.1	12,065.9	6,867.0	136.0	144.3	108.21	-445.9	4,569.7	540.7	273.5	267.28	2.023	
11,600.0	6,697.1	12,165.8	6,866.7	138.8	147.0	108.28	-445.9	4,669.7	541.0	268.5	272.50	1.985	
11,700.0	6,696.1	12,265.8	6,866.4	141.6	149.8	108.35	-445.9	4,769.7	541.2	263.5	277.71	1.949	
11,800.0	6,695.1	12,365.8	6,866.2	144.4	152.6	108.42	-445.9	4,869.7	541.4	258.5	282.91	1.914	
11,900.0	6,694.1	12,465.8	6,865.9	147.2	155.4	108.49	-445.9	4,969.7	541.6	253.5	288.12	1.880	
12,000.0	6,693.1	12,565.8	6,865.6	150.0	158.2	108.56	-445.9	5,069.7	541.8	248.5	293.32	1.847	
12,100.0	6,692.1	12,665.8	6,865.3	152.8	161.0	108.63	-445.9	5,169.7	542.1	243.6	298.52	1.816	
12,200.0	6,691.1	12,765.8	6,865.0	155.6	163.7	108.70	-445.9	5,269.7	542.3	238.6	303.72	1.786	
12,300.0	6,690.1	12,865.8	6,864.7	158.4	166.5	108.77	-445.9	5,369.7	542.5	233.6	308.91	1.756	
12,400.0	6,689.1	12,965.8	6,864.4	161.2	169.3	108.84	-445.9	5,469.7	542.7	228.6	314.10	1.728	
12,500.0	6,688.1	13,065.8	6,864.1	163.9	172.1	108.91	-445.9	5,569.7	543.0	223.7	319.29	1.701	
12,600.0	6,687.1	13,165.8	6,863.8	166.7	174.9	108.98	-445.9	5,669.7	543.2	218.7	324.47	1.674	
12,700.0	6,686.2	13,265.8	6,863.5	169.5	177.7	109.05	-445.9	5,769.7	543.4	213.8	329.65	1.648	
12,800.0	6,685.2	13,365.8	6,863.2	172.3	180.5	109.11	-445.9	5,869.7	543.7	208.8	334.83	1.624	
12,900.0	6,684.2	13,465.8	6,862.9	175.1	183.3	109.18	-445.9	5,969.7	543.9	203.9	340.00	1.600	
13,000.0	6,683.2	13,565.8	6,862.6	177.9	186.1	109.25	-445.9	6,069.7	544.1	198.9	345.17	1.576	
13,100.0	6,682.2	13,665.8	6,862.3	180.7	188.8	109.32	-445.9	6,169.7	544.3	194.0	350.34	1.554	
13,200.0	6,681.2	13,765.8	6,862.0	183.5	191.6	109.39	-445.9	6,269.7	544.6	189.1	355.50	1.532	
13,300.0	6,680.2	13,865.8	6,861.7	186.3	194.4	109.46	-445.9	6,369.7	544.8	184.1	360.66	1.511	
13,400.0	6,679.2	13,965.8	6,861.4	189.1	197.2	109.53	-445.9	6,469.7	545.0	179.2	365.82	1.490 Level 3	
13,500.0	6,678.2	14,065.8	6,861.1	191.9	200.0	109.60	-445.9	6,569.7	545.3	174.3	370.97	1.470 Level 3	

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 Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,600.0	6,677.2	14,165.8	6,860.8	194.7	202.8	109.67	-445.9	6,669.6	545.5	169.4	376.12	1.450	Level 3
13,700.0	6,676.2	14,265.8	6,860.5	197.5	205.6	109.74	-445.9	6,769.6	545.7	164.5	381.26	1.431	Level 3
13,800.0	6,675.2	14,365.8	6,860.2	200.3	208.4	109.81	-445.9	6,869.6	546.0	159.6	386.40	1.413	Level 3
13,900.0	6,674.2	14,465.8	6,859.9	203.1	211.2	109.88	-445.9	6,969.6	546.2	154.7	391.54	1.395	Level 3
14,000.0	6,673.2	14,565.8	6,859.6	205.9	214.0	109.94	-445.9	7,069.6	546.5	149.8	396.67	1.378	Level 3
14,100.0	6,672.2	14,665.8	6,859.3	208.7	216.8	110.01	-445.9	7,169.6	546.7	144.9	401.80	1.361	Level 3
14,200.0	6,671.2	14,765.8	6,859.0	211.5	219.6	110.08	-445.9	7,269.6	546.9	140.0	406.92	1.344	Level 3
14,300.0	6,670.2	14,865.8	6,858.7	214.3	222.4	110.15	-445.9	7,369.6	547.2	135.1	412.04	1.328	Level 3
14,400.0	6,669.2	14,965.8	6,858.4	217.1	225.2	110.22	-445.9	7,469.6	547.4	130.3	417.15	1.312	Level 3
14,500.0	6,668.2	15,065.8	6,858.1	219.9	228.0	110.29	-445.9	7,569.6	547.7	125.4	422.27	1.297	Level 3
14,600.0	6,667.2	15,165.8	6,857.8	222.7	230.8	110.36	-445.9	7,669.6	547.9	120.5	427.37	1.282	Level 3
14,700.0	6,666.3	15,265.8	6,857.5	225.5	233.6	110.42	-445.9	7,769.6	548.1	115.7	432.48	1.267	Level 3
14,800.0	6,665.3	15,365.8	6,857.3	228.3	236.4	110.49	-445.9	7,869.6	548.4	110.8	437.57	1.253	Level 3
14,900.0	6,664.3	15,465.8	6,857.0	231.1	239.2	110.56	-445.9	7,969.6	548.6	106.0	442.67	1.239	Level 2
15,000.0	6,663.3	15,565.8	6,856.7	233.9	242.0	110.63	-445.9	8,069.6	548.9	101.1	447.76	1.226	Level 2
15,100.0	6,662.3	15,665.8	6,856.4	236.7	244.8	110.70	-445.9	8,169.6	549.1	96.3	452.84	1.213	Level 2
15,200.0	6,661.3	15,765.8	6,856.1	239.5	247.6	110.77	-445.9	8,269.6	549.4	91.4	457.93	1.200	Level 2
15,300.0	6,660.3	15,865.8	6,855.8	242.3	250.4	110.83	-445.9	8,369.6	549.6	86.6	463.00	1.187	Level 2
15,400.0	6,659.3	15,965.8	6,855.5	245.1	253.2	110.90	-445.9	8,469.6	549.9	81.8	468.07	1.175	Level 2
15,500.0	6,658.3	16,065.8	6,855.2	247.9	256.0	110.97	-445.9	8,569.6	550.1	77.0	473.14	1.163	Level 2
15,600.0	6,657.3	16,165.8	6,854.9	250.7	258.8	111.04	-445.9	8,669.6	550.4	72.2	478.21	1.151	Level 2
15,700.0	6,656.3	16,265.7	6,854.6	253.5	261.6	111.11	-445.9	8,769.6	550.6	67.4	483.26	1.139	Level 2
15,800.0	6,655.3	16,365.7	6,854.3	256.3	264.4	111.17	-445.9	8,869.6	550.9	62.5	488.32	1.128	Level 2
15,900.0	6,654.3	16,465.7	6,854.0	259.2	267.2	111.24	-445.9	8,969.6	551.1	57.8	493.37	1.117	Level 2
16,000.0	6,653.3	16,565.7	6,853.7	262.0	270.0	111.31	-445.9	9,069.6	551.4	53.0	498.41	1.106	Level 2
16,100.0	6,652.3	16,665.7	6,853.4	264.8	272.8	111.38	-445.9	9,169.6	551.6	48.2	503.45	1.096	Level 2
16,200.0	6,651.3	16,765.7	6,853.1	267.6	275.6	111.44	-445.9	9,269.6	551.9	43.4	508.49	1.085	Level 2
16,300.0	6,650.3	16,865.7	6,852.8	270.4	278.4	111.51	-445.9	9,369.6	552.1	38.6	513.52	1.075	Level 2
16,400.0	6,649.3	16,965.7	6,852.5	273.2	281.2	111.58	-445.9	9,469.6	552.4	33.8	518.55	1.065	Level 2
16,500.0	6,648.3	17,065.7	6,852.2	276.0	284.0	111.65	-445.9	9,569.6	552.7	29.1	523.57	1.056	Level 2
16,600.0	6,647.4	17,165.7	6,851.9	278.8	286.8	111.71	-445.9	9,669.6	552.9	24.3	528.59	1.046	Level 2
16,700.0	6,646.4	17,265.7	6,851.6	281.6	289.6	111.78	-445.9	9,769.6	553.2	19.6	533.60	1.037	Level 2
16,800.0	6,645.4	17,365.7	6,851.3	284.4	292.4	111.85	-445.9	9,869.6	553.4	14.8	538.61	1.028	Level 2
16,900.0	6,644.4	17,465.7	6,851.0	287.2	295.2	111.91	-445.9	9,969.6	553.7	10.1	543.61	1.019	Level 2
17,000.0	6,643.4	17,565.7	6,850.7	290.0	298.0	111.98	-445.9	10,069.6	553.9	5.3	548.61	1.010	Level 2
17,100.0	6,642.4	17,665.7	6,850.4	292.8	300.8	112.05	-445.9	10,169.5	554.2	0.6	553.61	1.001	Level 2
17,200.0	6,641.4	17,765.7	6,850.1	295.6	303.6	112.12	-445.9	10,269.5	554.5	-4.1	558.59	0.993	Level 1
17,238.6	6,641.0	17,804.3	6,850.0	296.7	304.7	112.14	-445.9	10,308.1	554.6	-5.9	560.52	0.989	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis 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	-121.67	-91.1	-147.6	173.5				
100.0	100.0	100.0	100.0	0.1	0.1	-121.67	-91.1	-147.6	173.5	173.3	0.22	771.863	
200.0	200.0	200.0	200.0	0.3	0.3	-121.67	-91.1	-147.6	173.5	172.8	0.67	257.288 CC, ES	
300.0	300.0	295.8	295.8	0.6	0.5	-121.78	-92.0	-148.5	174.7	173.6	1.09	159.545	
400.0	400.0	391.4	391.4	0.8	0.7	-122.08	-94.6	-150.9	178.3	176.8	1.52	117.480	
500.0	500.0	486.9	486.6	1.0	1.0	-122.55	-98.9	-155.0	184.4	182.4	1.96	94.000	
600.0	600.0	581.9	581.3	1.2	1.2	-123.16	-105.0	-160.7	192.9	190.4	2.43	79.398	
700.0	700.0	676.5	675.3	1.5	1.5	-123.87	-112.7	-168.0	203.8	200.9	2.92	69.739	
800.0	800.0	770.5	768.4	1.7	1.8	-124.64	-122.1	-176.7	217.1	213.7	3.44	63.053	
900.0	900.0	863.8	860.5	1.9	2.1	-125.43	-133.1	-187.0	232.9	228.9	4.00	58.285	
1,000.0	1,000.0	956.4	951.4	2.1	2.4	-126.22	-145.5	-198.7	251.1	246.5	4.58	54.817	
1,100.0	1,100.0	1,048.0	1,041.0	2.4	2.8	-126.98	-159.5	-211.8	271.6	266.4	5.20	52.264	
1,200.0	1,200.0	1,138.6	1,129.2	2.6	3.3	-127.70	-174.8	-226.2	294.5	288.6	5.85	50.378	
1,300.0	1,300.0	1,228.2	1,215.9	2.8	3.7	-128.37	-191.4	-241.8	319.6	313.1	6.53	48.987	
1,400.0	1,400.0	1,316.7	1,300.8	3.0	4.2	-128.99	-209.3	-258.5	347.1	339.9	7.24	47.972	
1,500.0	1,500.0	1,403.9	1,384.1	3.3	4.7	-129.56	-228.3	-276.4	376.8	368.8	7.97	47.252 SF	
1,600.0	1,600.0	1,497.2	1,472.6	3.5	5.3	-47.88	-249.7	-296.4	407.4	400.4	7.03	57.932	
1,700.0	1,700.0	1,592.6	1,563.2	3.7	5.9	-48.39	-271.5	-317.0	437.0	429.5	7.51	58.226	
1,800.0	1,799.9	1,688.2	1,654.0	3.9	6.5	-48.98	-293.5	-337.5	465.6	457.6	7.99	58.307	
1,900.0	1,899.7	1,784.1	1,744.9	4.1	7.1	-49.65	-315.5	-358.2	493.2	484.7	8.47	58.216	
2,000.0	1,999.4	1,880.1	1,836.1	4.3	7.7	-50.38	-337.5	-378.8	519.8	510.8	8.97	57.979	
2,100.0	2,098.9	1,976.3	1,927.5	4.6	8.4	-51.17	-359.6	-399.5	545.5	536.0	9.47	57.616	
2,200.0	2,198.3	2,072.7	2,019.0	4.8	9.0	-52.01	-381.7	-420.3	570.3	560.3	9.98	57.138	
2,249.7	2,247.6	2,120.7	2,064.5	4.9	9.3	-52.45	-392.7	-430.6	582.3	572.0	10.24	56.861	
2,300.0	2,297.4	2,169.2	2,110.5	5.1	9.6	-52.99	-403.8	-441.0	594.3	583.8	10.50	56.580	
2,400.0	2,396.6	2,265.7	2,202.1	5.3	10.2	-54.00	-425.9	-461.8	618.4	607.4	11.04	56.032	
2,500.0	2,495.7	2,362.1	2,293.7	5.6	10.9	-54.94	-448.0	-482.5	642.7	631.2	11.58	55.499	
2,600.0	2,594.9	2,458.6	2,385.3	5.9	11.5	-55.81	-470.2	-503.3	667.2	655.0	12.13	54.980	
2,700.0	2,694.0	2,555.1	2,476.9	6.2	12.1	-56.61	-492.3	-524.1	691.8	679.1	12.70	54.478	
2,800.0	2,793.2	2,651.6	2,568.5	6.5	12.8	-57.37	-514.4	-544.8	716.4	703.2	13.27	53.993	
2,900.0	2,892.3	2,748.1	2,660.1	6.8	13.4	-58.07	-536.5	-565.6	741.3	727.4	13.85	53.525	
3,000.0	2,991.4	2,844.6	2,751.7	7.1	14.0	-58.73	-558.7	-586.4	766.2	751.7	14.44	53.075	
3,100.0	3,090.6	2,941.1	2,843.2	7.4	14.6	-59.34	-580.8	-607.1	791.2	776.1	15.03	52.642	
3,200.0	3,189.7	3,037.5	2,934.8	7.7	15.3	-59.92	-602.9	-627.9	816.2	800.6	15.63	52.226	
3,300.0	3,288.9	3,134.0	3,026.4	8.0	15.9	-60.46	-625.1	-648.6	841.4	825.1	16.23	51.828	
3,400.0	3,388.0	3,230.5	3,118.0	8.3	16.5	-60.98	-647.2	-669.4	866.6	849.8	16.85	51.445	
3,500.0	3,487.2	3,327.0	3,209.6	8.6	17.2	-61.46	-669.3	-690.2	891.9	874.4	17.46	51.079	
3,600.0	3,586.3	3,423.5	3,301.2	8.9	17.8	-61.92	-691.4	-710.9	917.2	899.1	18.08	50.728	
3,700.0	3,685.5	3,520.0	3,392.8	9.2	18.4	-62.35	-713.6	-731.7	942.6	923.9	18.71	50.392	
3,800.0	3,784.6	3,616.4	3,484.4	9.5	19.1	-62.76	-735.7	-752.4	968.0	948.7	19.33	50.070	
3,900.0	3,883.8	3,712.9	3,576.0	9.9	19.7	-63.15	-757.8	-773.2	993.5	973.6	19.97	49.762	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

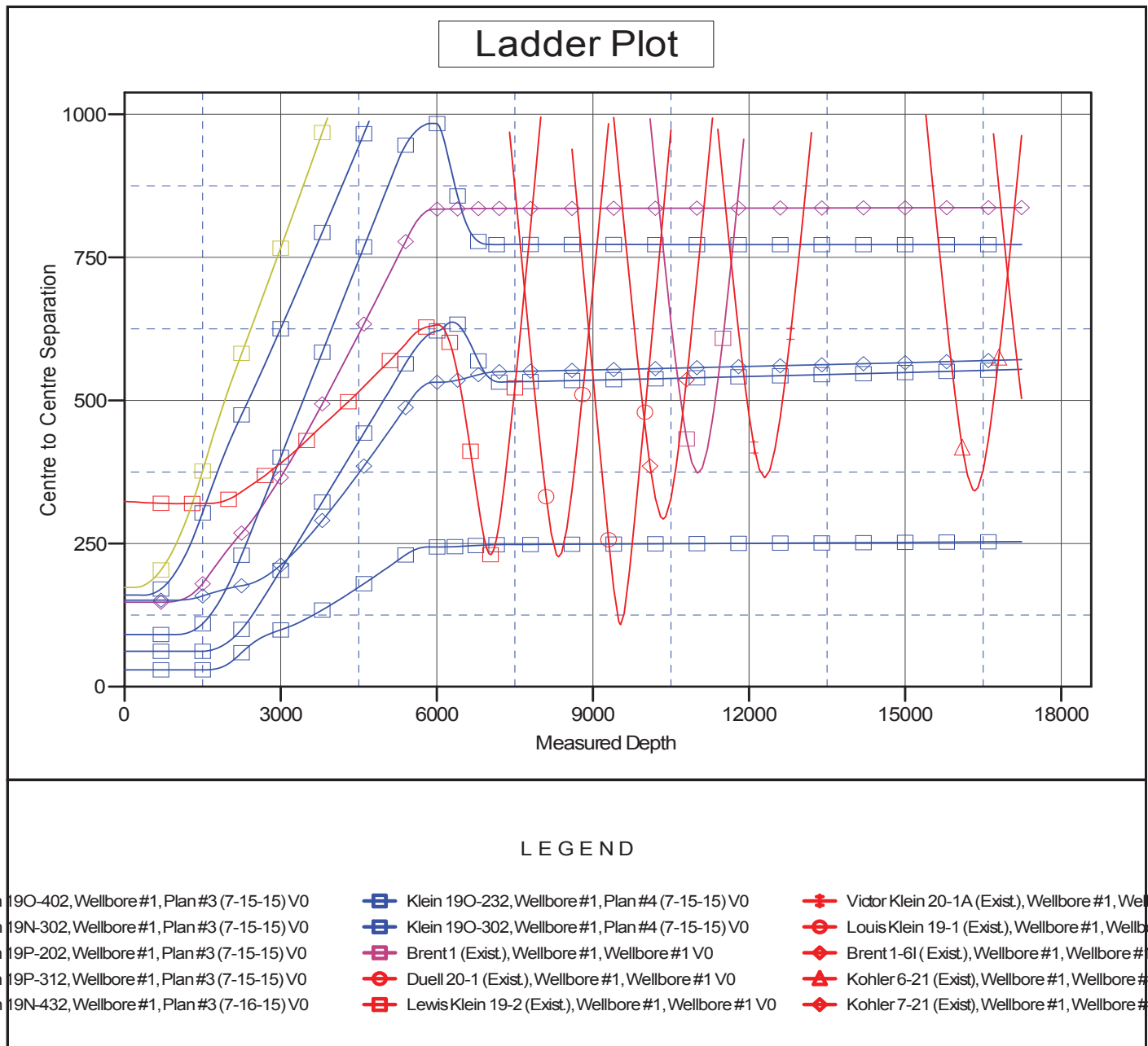
Offset Design Klein 190-HZ Pad Sec.19-T5N-R64W - Klein 19P-312 - Wellbore #1 - Plan #3 (7-15-15)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-112.75	-61.9	-147.6	160.1				
100.0	100.0	100.0	100.0	0.1	0.1	-112.75	-61.9	-147.6	160.1	159.9	0.22	712.342	
200.0	200.0	200.0	200.0	0.3	0.3	-112.75	-61.9	-147.6	160.1	159.4	0.67	237.447	
300.0	300.0	300.0	300.0	0.6	0.6	-112.75	-61.9	-147.6	160.1	159.0	1.12	142.468	
400.0	400.0	400.0	400.0	0.8	0.8	-112.75	-61.9	-147.6	160.1	158.5	1.57	101.763 CC, ES	
500.0	500.0	496.3	496.3	1.0	1.0	-112.92	-62.8	-148.5	161.3	159.3	1.99	80.920	
600.0	600.0	592.4	592.3	1.2	1.2	-113.41	-65.4	-151.0	164.8	162.4	2.41	68.483	
700.0	700.0	688.3	688.0	1.5	1.4	-114.19	-69.7	-155.2	170.6	167.8	2.84	60.162	
800.0	800.0	783.8	783.2	1.7	1.6	-115.18	-75.7	-161.1	178.8	175.5	3.29	54.403	
900.0	900.0	878.9	877.7	1.9	1.9	-116.33	-83.4	-168.6	189.4	185.6	3.76	50.351	
1,000.0	1,000.0	973.4	971.2	2.1	2.1	-117.57	-92.7	-177.6	202.4	198.1	4.26	47.464	
1,100.0	1,100.0	1,067.1	1,063.7	2.4	2.4	-118.83	-103.6	-188.2	217.8	213.0	4.80	45.398	
1,200.0	1,200.0	1,160.1	1,155.1	2.6	2.8	-120.08	-116.0	-200.2	235.7	230.3	5.37	43.928	
1,300.0	1,300.0	1,252.2	1,245.1	2.8	3.2	-121.28	-129.8	-213.6	255.9	250.0	5.97	42.899	
1,400.0	1,400.0	1,343.2	1,333.7	3.0	3.6	-122.41	-145.0	-228.4	278.6	272.0	6.60	42.200	
1,500.0	1,500.0	1,433.2	1,420.6	3.3	4.0	-123.45	-161.5	-244.5	303.6	296.3	7.27	41.771	
1,600.0	1,600.0	1,527.2	1,511.1	3.5	4.5	-42.28	-179.9	-262.4	329.7	322.8	6.92	47.673	
1,700.0	1,700.0	1,623.7	1,603.9	3.7	5.0	-43.26	-198.9	-280.9	354.9	347.5	7.38	48.120	
1,800.0	1,799.9	1,720.5	1,696.9	3.9	5.6	-44.28	-218.0	-299.4	379.0	371.1	7.84	48.341	
1,900.0	1,899.7	1,817.5	1,790.2	4.1	6.1	-45.34	-237.1	-318.0	402.0	393.7	8.31	48.380	
2,000.0	1,999.4	1,914.6	1,883.6	4.3	6.6	-46.45	-256.2	-336.6	424.0	415.2	8.79	48.267	
2,100.0	2,098.9	2,011.9	1,977.1	4.6	7.2	-47.60	-275.3	-355.2	445.1	435.8	9.27	48.024	
2,200.0	2,198.3	2,109.3	2,070.7	4.8	7.8	-48.81	-294.5	-373.8	465.2	455.4	9.76	47.665	
2,249.7	2,247.6	2,157.7	2,117.3	4.9	8.0	-49.42	-304.1	-383.1	474.9	464.9	10.01	47.445	
2,300.0	2,297.4	2,206.7	2,164.4	5.1	8.3	-50.11	-313.7	-392.5	484.6	474.3	10.26	47.216	
2,400.0	2,396.6	2,304.2	2,258.1	5.3	8.9	-51.41	-332.9	-411.1	504.1	493.4	10.78	46.774	
2,500.0	2,495.7	2,401.6	2,351.9	5.6	9.4	-52.61	-352.1	-429.8	523.9	512.6	11.30	46.348	
2,600.0	2,594.9	2,499.1	2,445.6	5.9	10.0	-53.72	-371.3	-448.5	543.9	532.0	11.84	45.936	
2,700.0	2,694.0	2,596.5	2,539.3	6.2	10.5	-54.75	-390.4	-467.1	564.0	551.6	12.39	45.540	
2,800.0	2,793.2	2,694.0	2,633.0	6.5	11.1	-55.71	-409.6	-485.8	584.3	571.4	12.94	45.157	
2,900.0	2,892.3	2,791.4	2,726.7	6.8	11.7	-56.61	-428.8	-504.4	604.8	591.3	13.50	44.788	
3,000.0	2,991.4	2,888.9	2,820.4	7.1	12.2	-57.45	-448.0	-523.1	625.4	611.3	14.07	44.433	
3,100.0	3,090.6	2,986.3	2,914.1	7.4	12.8	-58.24	-467.2	-541.8	646.1	631.5	14.65	44.091	
3,200.0	3,189.7	3,083.8	3,007.8	7.7	13.4	-58.98	-486.4	-560.4	666.9	651.7	15.24	43.763	
3,300.0	3,288.9	3,181.2	3,101.5	8.0	13.9	-59.67	-505.6	-579.1	687.9	672.0	15.83	43.447	
3,400.0	3,388.0	3,278.7	3,195.2	8.3	14.5	-60.32	-524.8	-597.7	708.9	692.5	16.43	43.145	
3,500.0	3,487.2	3,376.1	3,288.9	8.6	15.0	-60.94	-543.9	-616.4	730.0	713.0	17.03	42.854	
3,600.0	3,586.3	3,473.6	3,382.6	8.9	15.6	-61.52	-563.1	-635.0	751.2	733.5	17.64	42.575	
3,700.0	3,685.5	3,571.1	3,476.3	9.2	16.2	-62.07	-582.3	-653.7	772.4	754.2	18.26	42.308	
3,800.0	3,784.6	3,668.5	3,570.0	9.5	16.7	-62.59	-601.5	-672.4	793.7	774.9	18.88	42.052	
3,900.0	3,883.8	3,766.0	3,663.7	9.9	17.3	-63.08	-620.7	-691.0	815.1	795.6	19.50	41.807	
4,000.0	3,982.9	3,863.4	3,757.5	10.2	17.9	-63.55	-639.9	-709.7	836.6	816.4	20.12	41.571	
4,100.0	4,082.0	3,960.9	3,851.2	10.5	18.4	-63.99	-659.1	-728.3	858.0	837.3	20.75	41.346	
4,200.0	4,181.2	4,058.3	3,944.9	10.8	19.0	-64.42	-678.2	-747.0	879.6	858.2	21.39	41.129	
4,300.0	4,280.3	4,155.8	4,038.6	11.1	19.6	-64.82	-697.4	-765.7	901.1	879.1	22.02	40.921	
4,400.0	4,379.5	4,253.2	4,132.3	11.5	20.1	-65.20	-716.6	-784.3	922.7	900.1	22.66	40.722	
4,500.0	4,478.6	4,350.7	4,226.0	11.8	20.7	-65.57	-735.8	-803.0	944.4	921.1	23.30	40.531	
4,600.0	4,577.8	4,448.1	4,319.7	12.1	21.3	-65.92	-755.0	-821.6	966.1	942.1	23.94	40.347	
4,700.0	4,676.9	4,545.6	4,413.4	12.4	21.8	-66.25	-774.2	-840.3	987.8	963.2	24.59	40.171 SF	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4639.0ft (RKB - 13')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Klein 190-212
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.59°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Klein 190-212
Project:	SEC.19-T5N-R64W	TVD Reference:	WELL @ 4639.0ft (RKB - 13')
Reference Site:	Klein 190-HZ Pad Sec.19-T5N-R64W	MD Reference:	WELL @ 4639.0ft (RKB - 13')
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Klein 190-212	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #3 (7-15-15)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4639.0ft (RKB - 13')

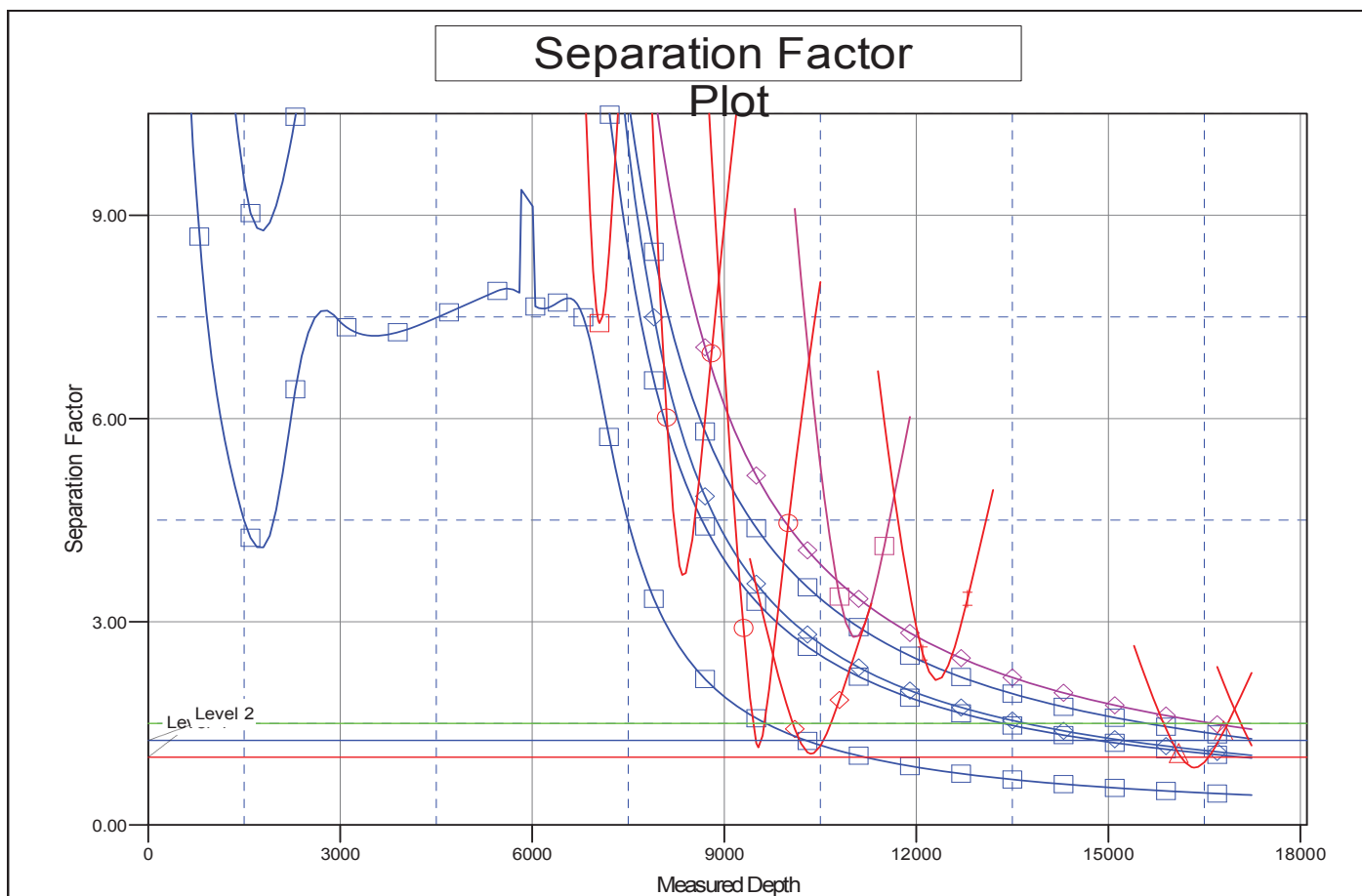
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Klein 190-212

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°



LEGEND

in 190-402, Wellbore #1, Plan #3 (7-15-15) V0	Klein 190-232, Wellbore #1, Plan #4 (7-15-15) V0	Victor Klein 20-1A (Exist), Wellbore #1, Wellbore #1 V0
in 19N-302, Wellbore #1, Plan #3 (7-15-15) V0	Klein 190-302, Wellbore #1, Plan #4 (7-15-15) V0	Louis Klein 19-1 (Exist), Wellbore #1, Wellbore #1 V0
in 19P-202, Wellbore #1, Plan #3 (7-15-15) V0	Brent 1 (Exist), Wellbore #1, Wellbore #1 V0	Brent 1-6I (Exist), Wellbore #1, Wellbore #1 V0
in 19P-312, Wellbore #1, Plan #3 (7-15-15) V0	Duell 20-1 (Exist), Wellbore #1, Wellbore #1 V0	Kohler 6-21 (Exist), Wellbore #1, Wellbore #1 V0
in 19N-432, Wellbore #1, Plan #3 (7-16-15) V0	Lewis Klein 19-2 (Exist), Wellbore #1, Wellbore #1 V0	Kohler 7-21 (Exist), Wellbore #1, Wellbore #1 V0