

# PETROLEUM DEVELOPMENT CORP Weld County CO

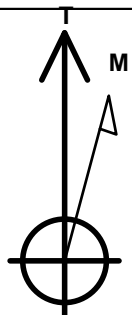
Well Name: **Klein 19M-432**

Surface Location: Klein 19MN-HZ Pad Sec.19-T5N-R64W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4628.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1386208.75	3252925.89	40.389990	-104.591980	
RKB - 15' WELL @ 4643.0ft (RKB - 15')						

## WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 688'FNL & 2402'FEL, SEC.19	1.0	0.0	0.0	Point
BHL 405'FNL & 500'FEL, Sec.20	6826.0	343.5	7189.6	Point



Azimuths to True North  
Magnetic North: 8.40°

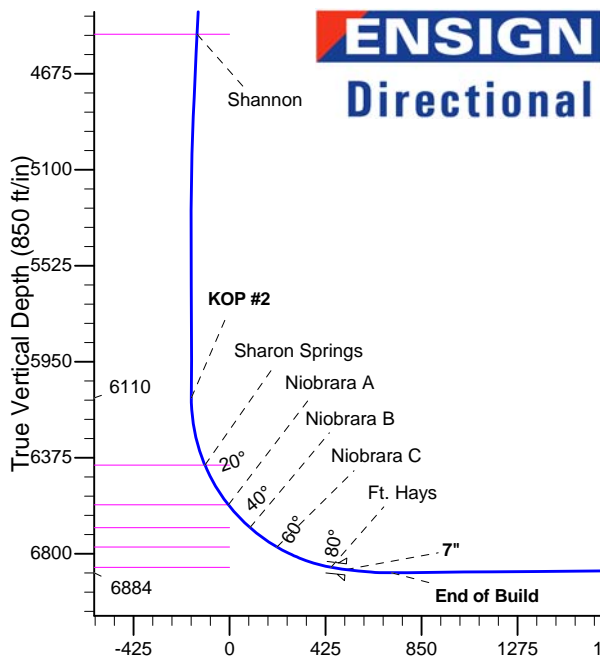
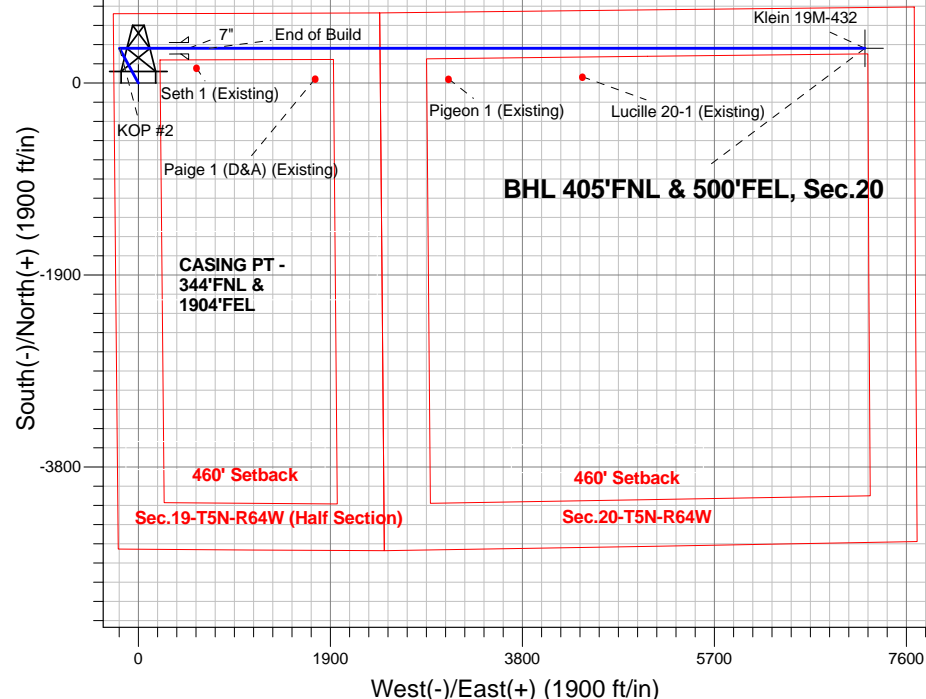
Magnetic Field  
Strength: 52859.4nT  
Dip Angle: 66.98°  
Date: 3/4/2014  
Model: IGRF2010

Klein 19MN-HZ Pad Sec.19-T5N-R64W  
Klein 19M-432  
Plan #1 (2-26-14)  
9:23, March 06 2014

## ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	KOP #1
6110.0	6130.0	KOP #2
6883.8	7454.2	End of Build

## SHL 688'FNL & 2402'FEL, SEC.19



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1501.5	6.03	331.57	1500.9	13.9	-7.5	2.00	331.57	-6.9	
4	4918.5	6.03	331.57	4899.1	329.6	-178.5	0.00	0.00	-162.5	
5	5220.0	0.00	0.00	5200.0	343.5	-186.0	2.00	180.00	-169.4	
6	6130.0	0.00	0.00	6110.0	343.5	-186.0	0.00	0.00	-169.4	
7	7250.0	84.00	90.00	6869.8	343.5	498.1	7.50	90.00	513.9	
8	7324.0	84.00	90.00	6877.5	343.5	571.7	0.00	0.00	587.4	
9	7454.2	90.51	90.00	6883.8	343.5	701.7	5.00	0.00	717.3	
10	13942.5	90.51	90.00	6826.0	343.5	7189.6	0.00	0.00	7197.8	BHL 405'FNL & 500'FEL, Sec.20

## BHL 405'FNL & 500'FEL, Sec.20



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.19-T5N-R64W**

**Klein 19MN-HZ Pad Sec.19-T5N-R64W**

**Klein 19M-432**

**Wellbore #1**

**Plan: Plan #1 (2-26-14)**

## **Standard Planning Report**

**06 March, 2014**

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-26-14)		

<b>Project</b>	SEC.19-T5N-R64W		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,386,208.48 ft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,252,898.04 ft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	"
		<b>Latitude:</b>	40.389990
		<b>Longitude:</b>	-104.592080
		<b>Grid Convergence:</b>	0.59 °

<b>Well</b>	Klein 19M-432		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>
	<b>+E/-W</b>	27.9 ft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	3/4/2014	8.40	66.98	52,859

<b>Design</b>	Plan #1 (2-26-14)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	87.26

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,501.5	6.03	331.57	1,500.9	13.9	-7.5	2.00	2.00	0.00	331.57	
4,918.5	6.03	331.57	4,899.1	329.6	-178.5	0.00	0.00	0.00	0.00	
5,220.0	0.00	0.00	5,200.0	343.5	-186.0	2.00	-2.00	0.00	180.00	
6,130.0	0.00	0.00	6,110.0	343.5	-186.0	0.00	0.00	0.00	0.00	
7,250.0	84.00	90.00	6,869.8	343.5	498.1	7.50	7.50	0.00	90.00	
7,324.0	84.00	90.00	6,877.5	343.5	571.7	0.00	0.00	0.00	0.00	
7,454.2	90.51	90.00	6,883.8	343.5	701.7	5.00	5.00	0.00	0.00	
13,942.5	90.51	90.00	6,826.0	343.5	7,189.6	0.00	0.00	0.00	0.00	BHL 405'FNL & 50C

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-26-14)		

#### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>SHL 688'FNL &amp; 2402'FEL, SEC.19</b>									
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
<b>KOP #1</b>									
1,300.0	2.00	331.57	1,300.0	1.5	-0.8	-0.8	2.00	2.00	0.00
1,400.0	4.00	331.57	1,399.8	6.1	-3.3	-3.0	2.00	2.00	0.00
1,500.0	6.00	331.57	1,499.5	13.8	-7.5	-6.8	2.00	2.00	0.00
1,501.5	6.03	331.57	1,500.9	13.9	-7.5	-6.9	2.00	2.00	0.00
1,600.0	6.03	331.57	1,598.9	23.0	-12.5	-11.4	0.00	0.00	0.00
1,700.0	6.03	331.57	1,698.3	32.3	-17.5	-15.9	0.00	0.00	0.00
1,800.0	6.03	331.57	1,797.8	41.5	-22.5	-20.5	0.00	0.00	0.00
1,900.0	6.03	331.57	1,897.2	50.7	-27.5	-25.0	0.00	0.00	0.00
2,000.0	6.03	331.57	1,996.7	60.0	-32.5	-29.6	0.00	0.00	0.00
2,100.0	6.03	331.57	2,096.1	69.2	-37.5	-34.1	0.00	0.00	0.00
2,200.0	6.03	331.57	2,195.6	78.5	-42.5	-38.7	0.00	0.00	0.00
2,300.0	6.03	331.57	2,295.0	87.7	-47.5	-43.2	0.00	0.00	0.00
2,400.0	6.03	331.57	2,394.5	96.9	-52.5	-47.8	0.00	0.00	0.00
2,500.0	6.03	331.57	2,493.9	106.2	-57.5	-52.4	0.00	0.00	0.00
2,600.0	6.03	331.57	2,593.4	115.4	-62.5	-56.9	0.00	0.00	0.00
2,700.0	6.03	331.57	2,692.8	124.6	-67.5	-61.5	0.00	0.00	0.00
2,800.0	6.03	331.57	2,792.3	133.9	-72.5	-66.0	0.00	0.00	0.00
2,900.0	6.03	331.57	2,891.7	143.1	-77.5	-70.6	0.00	0.00	0.00
3,000.0	6.03	331.57	2,991.2	152.4	-82.5	-75.1	0.00	0.00	0.00
3,100.0	6.03	331.57	3,090.6	161.6	-87.5	-79.7	0.00	0.00	0.00
3,200.0	6.03	331.57	3,190.0	170.8	-92.5	-84.2	0.00	0.00	0.00
3,300.0	6.03	331.57	3,289.5	180.1	-97.5	-88.8	0.00	0.00	0.00
3,400.0	6.03	331.57	3,388.9	189.3	-102.5	-93.4	0.00	0.00	0.00
3,500.0	6.03	331.57	3,488.4	198.5	-107.5	-97.9	0.00	0.00	0.00
3,562.0	6.03	331.57	3,550.0	204.3	-110.6	-100.7	0.00	0.00	0.00
<b>Parkman</b>									
3,600.0	6.03	331.57	3,587.8	207.8	-112.5	-102.5	0.00	0.00	0.00
3,700.0	6.03	331.57	3,687.3	217.0	-117.5	-107.0	0.00	0.00	0.00
3,800.0	6.03	331.57	3,786.7	226.3	-122.5	-111.6	0.00	0.00	0.00
3,900.0	6.03	331.57	3,886.2	235.5	-127.5	-116.1	0.00	0.00	0.00
4,000.0	6.03	331.57	3,985.6	244.7	-132.5	-120.7	0.00	0.00	0.00
4,100.0	6.03	331.57	4,085.1	254.0	-137.5	-125.2	0.00	0.00	0.00
4,200.0	6.03	331.57	4,184.5	263.2	-142.5	-129.8	0.00	0.00	0.00
4,300.0	6.03	331.57	4,284.0	272.4	-147.5	-134.3	0.00	0.00	0.00
4,316.1	6.03	331.57	4,300.0	273.9	-148.3	-135.1	0.00	0.00	0.00
<b>Sussex</b>									
4,400.0	6.03	331.57	4,383.4	281.7	-152.5	-138.9	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-26-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,500.0	6.03	331.57	4,482.9	290.9	-157.5	-143.5	0.00	0.00	0.00
4,517.2	6.03	331.57	4,500.0	292.5	-158.4	-144.2	0.00	0.00	0.00
<b>Shannon</b>									
4,600.0	6.03	331.57	4,582.3	300.1	-162.5	-148.0	0.00	0.00	0.00
4,700.0	6.03	331.57	4,681.7	309.4	-167.5	-152.6	0.00	0.00	0.00
4,800.0	6.03	331.57	4,781.2	318.6	-172.5	-157.1	0.00	0.00	0.00
4,900.0	6.03	331.57	4,880.6	327.9	-177.5	-161.7	0.00	0.00	0.00
4,918.5	6.03	331.57	4,899.1	329.6	-178.5	-162.5	0.00	0.00	0.00
5,000.0	4.40	331.57	4,980.2	336.1	-182.0	-165.7	2.00	-2.00	0.00
5,100.0	2.40	331.57	5,080.0	341.3	-184.8	-168.3	2.00	-2.00	0.00
5,200.0	0.40	331.57	5,180.0	343.4	-186.0	-169.4	2.00	-2.00	0.00
5,220.0	0.00	0.00	5,200.0	343.5	-186.0	-169.4	2.00	-2.00	0.00
5,300.0	0.00	0.00	5,280.0	343.5	-186.0	-169.4	0.00	0.00	0.00
5,400.0	0.00	0.00	5,380.0	343.5	-186.0	-169.4	0.00	0.00	0.00
5,500.0	0.00	0.00	5,480.0	343.5	-186.0	-169.4	0.00	0.00	0.00
5,600.0	0.00	0.00	5,580.0	343.5	-186.0	-169.4	0.00	0.00	0.00
5,700.0	0.00	0.00	5,680.0	343.5	-186.0	-169.4	0.00	0.00	0.00
5,800.0	0.00	0.00	5,780.0	343.5	-186.0	-169.4	0.00	0.00	0.00
5,900.0	0.00	0.00	5,880.0	343.5	-186.0	-169.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,980.0	343.5	-186.0	-169.4	0.00	0.00	0.00
6,100.0	0.00	0.00	6,080.0	343.5	-186.0	-169.4	0.00	0.00	0.00
6,130.0	0.00	0.00	6,110.0	343.5	-186.0	-169.4	0.00	0.00	0.00
<b>KOP #2</b>									
6,200.0	5.25	90.00	6,179.9	343.5	-182.8	-166.2	7.50	7.50	0.00
6,300.0	12.75	90.00	6,278.6	343.5	-167.2	-150.6	7.50	7.50	0.00
6,400.0	20.25	90.00	6,374.4	343.5	-138.8	-122.2	7.50	7.50	0.00
6,435.1	22.88	90.00	6,407.0	343.5	-125.9	-109.4	7.50	7.50	0.00
<b>Sharon Springs</b>									
6,500.0	27.75	90.00	6,465.7	343.5	-98.2	-81.7	7.50	7.50	0.00
6,600.0	35.25	90.00	6,550.9	343.5	-45.9	-29.5	7.50	7.50	0.00
6,640.1	38.25	90.00	6,583.0	343.5	-22.0	-5.6	7.50	7.50	0.00
<b>Niobrara A</b>									
6,700.0	42.75	90.00	6,628.6	343.5	16.9	33.3	7.50	7.50	0.00
6,779.5	48.71	90.00	6,684.0	343.5	73.8	90.1	7.50	7.50	0.00
<b>Niobrara B</b>									
6,800.0	50.25	90.00	6,697.4	343.5	89.4	105.7	7.50	7.50	0.00
6,900.0	57.75	90.00	6,756.1	343.5	170.3	186.5	7.50	7.50	0.00
6,926.8	59.76	90.00	6,770.0	343.5	193.2	209.4	7.50	7.50	0.00
<b>Niobrara C</b>									
7,000.0	65.25	90.00	6,803.8	343.5	258.1	274.2	7.50	7.50	0.00
7,100.0	72.75	90.00	6,839.6	343.5	351.4	367.4	7.50	7.50	0.00
7,183.7	79.03	90.00	6,860.0	343.5	432.5	448.4	7.50	7.50	0.00
<b>Ft. Hays</b>									
7,200.0	80.25	90.00	6,862.9	343.5	448.5	464.4	7.50	7.50	0.00
7,250.0	84.00	90.00	6,869.8	343.5	498.0	513.9	7.50	7.50	0.00
<b>7"</b>									
7,300.0	84.00	90.00	6,875.0	343.5	547.8	563.5	0.01	0.01	0.00
7,324.0	84.00	90.00	6,877.5	343.5	571.7	587.4	0.00	0.00	0.00
7,400.0	87.80	90.00	6,883.0	343.5	647.4	663.1	5.00	5.00	0.00
7,454.2	90.51	90.00	6,883.8	343.5	701.6	717.2	5.00	5.00	0.00
<b>End of Build</b>									
7,500.0	90.51	90.00	6,883.3	343.5	747.4	763.0	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-26-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
7,600.0	90.51	90.00	6,882.5	343.5	847.4	862.8	0.00	0.00	0.00
7,700.0	90.51	90.00	6,881.6	343.5	947.4	962.7	0.00	0.00	0.00
7,800.0	90.51	90.00	6,880.7	343.5	1,047.4	1,062.6	0.00	0.00	0.00
7,900.0	90.51	90.00	6,879.8	343.5	1,147.4	1,162.5	0.00	0.00	0.00
8,000.0	90.51	90.00	6,878.9	343.5	1,247.4	1,262.4	0.00	0.00	0.00
8,100.0	90.51	90.00	6,878.0	343.5	1,347.4	1,362.3	0.00	0.00	0.00
8,200.0	90.51	90.00	6,877.1	343.5	1,447.4	1,462.1	0.00	0.00	0.00
8,300.0	90.51	90.00	6,876.2	343.5	1,547.4	1,562.0	0.00	0.00	0.00
8,400.0	90.51	90.00	6,875.3	343.5	1,647.4	1,661.9	0.00	0.00	0.00
8,500.0	90.51	90.00	6,874.4	343.5	1,747.4	1,761.8	0.00	0.00	0.00
8,600.0	90.51	90.00	6,873.6	343.5	1,847.4	1,861.7	0.00	0.00	0.00
8,700.0	90.51	90.00	6,872.7	343.5	1,947.4	1,961.5	0.00	0.00	0.00
8,800.0	90.51	90.00	6,871.8	343.5	2,047.4	2,061.4	0.00	0.00	0.00
8,900.0	90.51	90.00	6,870.9	343.5	2,147.4	2,161.3	0.00	0.00	0.00
9,000.0	90.51	90.00	6,870.0	343.5	2,247.4	2,261.2	0.00	0.00	0.00
9,100.0	90.51	90.00	6,869.1	343.5	2,347.4	2,361.1	0.00	0.00	0.00
9,200.0	90.51	90.00	6,868.2	343.5	2,447.4	2,461.0	0.00	0.00	0.00
9,300.0	90.51	90.00	6,867.3	343.5	2,547.4	2,560.8	0.00	0.00	0.00
9,400.0	90.51	90.00	6,866.4	343.5	2,647.3	2,660.7	0.00	0.00	0.00
9,500.0	90.51	90.00	6,865.5	343.5	2,747.3	2,760.6	0.00	0.00	0.00
9,600.0	90.51	90.00	6,864.7	343.5	2,847.3	2,860.5	0.00	0.00	0.00
9,700.0	90.51	90.00	6,863.8	343.5	2,947.3	2,960.4	0.00	0.00	0.00
9,800.0	90.51	90.00	6,862.9	343.5	3,047.3	3,060.3	0.00	0.00	0.00
9,900.0	90.51	90.00	6,862.0	343.5	3,147.3	3,160.1	0.00	0.00	0.00
10,000.0	90.51	90.00	6,861.1	343.5	3,247.3	3,260.0	0.00	0.00	0.00
10,100.0	90.51	90.00	6,860.2	343.5	3,347.3	3,359.9	0.00	0.00	0.00
10,200.0	90.51	90.00	6,859.3	343.5	3,447.3	3,459.8	0.00	0.00	0.00
10,300.0	90.51	90.00	6,858.4	343.5	3,547.3	3,559.7	0.00	0.00	0.00
10,400.0	90.51	90.00	6,857.5	343.5	3,647.3	3,659.5	0.00	0.00	0.00
10,500.0	90.51	90.00	6,856.6	343.5	3,747.3	3,759.4	0.00	0.00	0.00
10,600.0	90.51	90.00	6,855.8	343.5	3,847.3	3,859.3	0.00	0.00	0.00
10,700.0	90.51	90.00	6,854.9	343.5	3,947.3	3,959.2	0.00	0.00	0.00
10,800.0	90.51	90.00	6,854.0	343.5	4,047.3	4,059.1	0.00	0.00	0.00
10,900.0	90.51	90.00	6,853.1	343.5	4,147.3	4,159.0	0.00	0.00	0.00
11,000.0	90.51	90.00	6,852.2	343.5	4,247.3	4,258.8	0.00	0.00	0.00
11,100.0	90.51	90.00	6,851.3	343.5	4,347.3	4,358.7	0.00	0.00	0.00
11,200.0	90.51	90.00	6,850.4	343.5	4,447.3	4,458.6	0.00	0.00	0.00
11,300.0	90.51	90.00	6,849.5	343.5	4,547.3	4,558.5	0.00	0.00	0.00
11,400.0	90.51	90.00	6,848.6	343.5	4,647.3	4,658.4	0.00	0.00	0.00
11,500.0	90.51	90.00	6,847.7	343.5	4,747.3	4,758.2	0.00	0.00	0.00
11,600.0	90.51	90.00	6,846.9	343.5	4,847.3	4,858.1	0.00	0.00	0.00
11,700.0	90.51	90.00	6,846.0	343.5	4,947.3	4,958.0	0.00	0.00	0.00
11,800.0	90.51	90.00	6,845.1	343.5	5,047.3	5,057.9	0.00	0.00	0.00
11,900.0	90.51	90.00	6,844.2	343.5	5,147.2	5,157.8	0.00	0.00	0.00
12,000.0	90.51	90.00	6,843.3	343.5	5,247.2	5,257.7	0.00	0.00	0.00
12,100.0	90.51	90.00	6,842.4	343.5	5,347.2	5,357.5	0.00	0.00	0.00
12,200.0	90.51	90.00	6,841.5	343.5	5,447.2	5,457.4	0.00	0.00	0.00
12,300.0	90.51	90.00	6,840.6	343.5	5,547.2	5,557.3	0.00	0.00	0.00
12,400.0	90.51	90.00	6,839.7	343.5	5,647.2	5,657.2	0.00	0.00	0.00
12,500.0	90.51	90.00	6,838.8	343.5	5,747.2	5,757.1	0.00	0.00	0.00
12,600.0	90.51	90.00	6,837.9	343.5	5,847.2	5,857.0	0.00	0.00	0.00
12,700.0	90.51	90.00	6,837.1	343.5	5,947.2	5,956.8	0.00	0.00	0.00
12,800.0	90.51	90.00	6,836.2	343.5	6,047.2	6,056.7	0.00	0.00	0.00

<b>Database:</b>	landmark	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Project:</b>	SEC.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (2-26-14)		

#### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N-S (ft)	+E-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,900.0	90.51	90.00	6,835.3	343.5	6,147.2	6,156.6	0.00	0.00	0.00
13,000.0	90.51	90.00	6,834.4	343.5	6,247.2	6,256.5	0.00	0.00	0.00
13,100.0	90.51	90.00	6,833.5	343.5	6,347.2	6,356.4	0.00	0.00	0.00
13,200.0	90.51	90.00	6,832.6	343.5	6,447.2	6,456.2	0.00	0.00	0.00
13,300.0	90.51	90.00	6,831.7	343.5	6,547.2	6,556.1	0.00	0.00	0.00
13,400.0	90.51	90.00	6,830.8	343.5	6,647.2	6,656.0	0.00	0.00	0.00
13,500.0	90.51	90.00	6,829.9	343.5	6,747.2	6,755.9	0.00	0.00	0.00
13,600.0	90.51	90.00	6,829.0	343.5	6,847.2	6,855.8	0.00	0.00	0.00
13,700.0	90.51	90.00	6,828.2	343.5	6,947.2	6,955.7	0.00	0.00	0.00
13,800.0	90.51	90.00	6,827.3	343.5	7,047.2	7,055.5	0.00	0.00	0.00
13,900.0	90.51	90.00	6,826.4	343.5	7,147.2	7,155.4	0.00	0.00	0.00
13,942.5	90.51	90.00	6,826.0	343.5	7,189.6	7,197.8	0.00	0.00	0.00

BHL 405'FNL & 500'FEL, Sec.20

#### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,250.0	6,869.8	7"	7	7-1/2

#### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,562.0	3,550.0	Parkman		0.00	
4,316.1	4,300.0	Sussex		0.00	
4,517.2	4,500.0	Shannon		0.00	
6,435.1	6,407.0	Sharon Springs		0.00	
6,640.1	6,583.0	Niobrara A		0.00	
6,779.5	6,684.0	Niobrara B		0.00	
6,926.8	6,770.0	Niobrara C		0.00	
7,183.7	6,860.0	Ft. Hays		0.00	

#### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		
		+N-S (ft)	+E-W (ft)	Comment
1,200.0	1,200.0	0.0	0.0	KOP #1
6,130.0	6,110.0	343.5	-186.0	KOP #2
7,454.2	6,883.8	343.5	701.6	End of Build



# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.19-T5N-R64W**

**Klein 19MN-HZ Pad Sec.19-T5N-R64W**

**Klein 19M-432**

**Wellbore #1**

**Plan #1 (2-26-14)**

## **Anticollision Report**

**06 March, 2014**





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #1 (2-26-14)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 1,000.0ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	3/4/2014		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	13,942.5	Plan #1 (2-26-14) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
Klein (Existing) Sec.19-T5N-R64W						
Lucille 20-1 (Existing) - Wellbore #1 - Wellbore #1	11,148.4	6,827.9	281.2	19.5	1.075	Level 2, CC, ES, SF
Paige 1 (D&A) (Existing) - Wellbore #1 - Wellbore #1	8,503.1	6,846.4	299.7	110.5	1.584	CC, ES, SF
Pigeon 1 (Existing) - Wellbore #1 - Wellbore #1	9,822.4	6,841.7	303.2	78.1	1.347	Level 3, CC, ES, SF
Seth 1 (Existing) - Wellbore #1 - Wellbore #1	7,329.0	6,861.8	194.1	33.7	1.210	Level 2, CC, ES, SF
Klein 19MN-HZ Pad Sec.19-T5N-R64W						
Klein 19M-202 - Wellbore #1 - Plan #1 (2-26-14)	1,000.0	1,000.0	27.9	23.6	6.523	CC
Klein 19M-202 - Wellbore #1 - Plan #1 (2-26-14)	13,942.5	13,815.4	375.8	12.3	1.034	Level 2, ES, SF
Klein 19N-312 - Wellbore #1 - Plan #1 (2-26-14)	1,200.0	1,200.0	61.3	56.1	11.855	CC
Klein 19N-312 - Wellbore #1 - Plan #1 (2-26-14)	13,942.5	13,859.9	418.2	26.3	1.067	Level 2, ES, SF
Klein 19N-412 - Wellbore #1 - Plan #1 (2-26-14)	1,200.0	1,200.0	30.6	25.5	5.927	CC, ES
Klein 19N-412 - Wellbore #1 - Plan #1 (2-26-14)	13,942.5	13,942.9	659.4	253.5	1.624	SF

Offset Design												Klein (Existing) Sec.19-T5N-R64W - Lucille 20-1 (Existing) - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft	
Survey Program:												7055-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	Wellbore Centre	Between Centres	Between Ellipses	Minimum Separation	Separation Factor					
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)	(ft)					
10,200.0	6,859.3	6,836.3	6,836.3	98.8	136.7	91.72	62.3	4,395.7	989.2	753.8	235.38	4.203					
10,300.0	6,858.4	6,835.4	6,835.4	101.6	136.7	91.54	62.3	4,395.7	893.8	655.6	238.15	3.753					
10,400.0	6,857.5	6,834.5	6,834.5	104.3	136.7	91.36	62.3	4,395.7	799.5	558.6	240.92	3.318					
10,500.0	6,856.6	6,833.6	6,833.6	107.1	136.7	91.18	62.3	4,395.7	706.8	463.1	243.69	2.900					
10,600.0	6,855.8	6,832.8	6,832.8	109.9	136.7	90.99	62.3	4,395.7	616.3	369.8	246.46	2.501					
10,700.0	6,854.9	6,831.9	6,831.9	112.7	136.6	90.81	62.3	4,395.7	529.3	280.1	249.23	2.124					
10,800.0	6,854.0	6,831.0	6,831.0	115.4	136.6	90.63	62.3	4,395.7	447.7	195.7	252.00	1.777					
10,900.0	6,853.1	6,830.1	6,830.1	118.2	136.6	90.45	62.3	4,395.7	375.2	120.4	254.77	1.473	Level 3				
11,000.0	6,852.2	6,829.2	6,829.2	121.0	136.6	90.27	62.3	4,395.7	318.0	60.4	257.54	1.235	Level 2				
11,100.0	6,851.3	6,828.3	6,828.3	123.8	136.6	90.09	62.3	4,395.7	285.3	25.0	260.30	1.096	Level 2				
11,148.4	6,850.9	6,827.9	6,827.9	125.1	136.6	90.00	62.3	4,395.7	281.2	19.5	261.64	1.075	Level 2, CC, ES, SF				
11,200.0	6,850.4	6,827.4	6,827.4	126.6	136.5	89.91	62.3	4,395.7	285.9	22.8	263.07	1.087	Level 2				
11,300.0	6,849.5	6,826.5	6,826.5	129.3	136.5	89.73	62.3	4,395.7	319.4	53.6	265.83	1.202	Level 2				
11,400.0	6,848.6	6,825.6	6,825.6	132.1	136.5	89.54	62.3	4,395.7	377.3	108.7	268.59	1.405	Level 3				
11,500.0	6,847.7	6,824.7	6,824.7	134.9	136.5	89.36	62.3	4,395.7	450.2	178.8	271.35	1.659					

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Lucille 20-1 (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7055-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	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)		
11,600.0	6,846.9	6,823.9	6,823.9	137.7	136.5	89.18	62.3	4,395.7	531.9	257.8	274.11	1.941	
11,700.0	6,846.0	6,823.0	6,823.0	140.5	136.5	89.00	62.3	4,395.7	619.1	342.2	276.86	2.236	
11,800.0	6,845.1	6,822.1	6,822.1	143.3	136.4	88.82	62.3	4,395.7	709.6	430.0	279.61	2.538	
11,900.0	6,844.2	6,821.2	6,821.2	146.1	136.4	88.64	62.3	4,395.7	802.4	520.0	282.36	2.842	
12,000.0	6,843.3	6,820.3	6,820.3	148.9	136.4	88.46	62.3	4,395.7	896.8	611.6	285.11	3.145	
12,100.0	6,842.4	6,819.4	6,819.4	151.7	136.4	88.27	62.3	4,395.7	992.2	704.3	287.86	3.447	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Klein (Existing) Sec.19-T5N-R64W - Paige 1 (D&A) (Existing) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7003-UNKNOWN												<b>Offset Well Error:</b>	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,600.0	6,882.5	6,854.5	6,854.5	29.3	137.1	91.54	43.8	1,750.5	951.5	785.3	166.25	5.723	
7,700.0	6,881.6	6,853.6	6,853.6	31.7	137.1	91.37	43.8	1,750.5	857.2	688.6	168.62	5.083	
7,800.0	6,880.7	6,852.7	6,852.7	34.2	137.1	91.20	43.8	1,750.5	764.3	593.2	171.06	4.468	
7,900.0	6,879.8	6,851.8	6,851.8	36.7	137.0	91.03	43.8	1,750.5	673.5	499.9	173.55	3.880	
8,000.0	6,878.9	6,850.9	6,850.9	39.2	137.0	90.86	43.8	1,750.5	585.6	409.5	176.08	3.326	
8,100.0	6,878.0	6,850.0	6,850.0	41.8	137.0	90.69	43.8	1,750.5	502.3	323.7	178.64	2.812	
8,200.0	6,877.1	6,849.1	6,849.1	44.4	137.0	90.52	43.8	1,750.5	426.3	245.0	181.23	2.352	
8,300.0	6,876.2	6,848.2	6,848.2	47.0	137.0	90.35	43.8	1,750.5	362.1	178.2	183.85	1.969	
8,400.0	6,875.3	6,847.3	6,847.3	49.6	136.9	90.18	43.8	1,750.5	317.0	130.5	186.48	1.700	
8,500.0	6,874.4	6,846.4	6,846.4	52.3	136.9	90.01	43.8	1,750.5	299.7	110.6	189.12	1.585	
8,503.1	6,874.4	6,846.4	6,846.4	52.4	136.9	90.00	43.8	1,750.5	299.7	110.5	189.20	1.584 CC, ES, SF	
8,600.0	6,873.6	6,845.6	6,845.6	55.0	136.9	89.84	43.8	1,750.5	315.0	123.2	191.78	1.643	
8,700.0	6,872.7	6,844.7	6,844.7	57.7	136.9	89.66	43.8	1,750.5	358.6	164.2	194.45	1.844	
8,800.0	6,871.8	6,843.8	6,843.8	60.4	136.9	89.49	43.8	1,750.5	421.9	224.7	197.12	2.140	
8,900.0	6,870.9	6,842.9	6,842.9	63.1	136.9	89.32	43.8	1,750.5	497.3	297.5	199.81	2.489	
9,000.0	6,870.0	6,842.0	6,842.0	65.8	136.8	89.15	43.8	1,750.5	580.3	377.8	202.50	2.866	
9,100.0	6,869.1	6,841.1	6,841.1	68.5	136.8	88.98	43.8	1,750.5	667.9	462.7	205.20	3.255	
9,200.0	6,868.2	6,840.2	6,840.2	71.2	136.8	88.81	43.8	1,750.5	758.6	550.7	207.90	3.649	
9,300.0	6,867.3	6,839.3	6,839.3	74.0	136.8	88.64	43.8	1,750.5	851.4	640.8	210.60	4.043	
9,400.0	6,866.4	6,838.4	6,838.4	76.7	136.8	88.47	43.8	1,750.5	945.6	732.3	213.31	4.433	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> Klein (Existing) Sec.19-T5N-R64W - Pigeon 1 (Existing) - Wellbore #1 - Wellbore #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 7029-UNKNOWN												<b>Offset Well Error:</b>	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
8,900.0	6,870.9	6,849.9	6,849.9	63.1	137.0	91.55	40.3	3,069.8	971.0	771.0	199.93	4.857	
9,000.0	6,870.0	6,849.0	6,849.0	65.8	137.0	91.38	40.3	3,069.8	876.5	673.9	202.64	4.325	
9,100.0	6,869.1	6,848.1	6,848.1	68.5	137.0	91.21	40.3	3,069.8	783.5	578.1	205.36	3.815	
9,200.0	6,868.2	6,847.2	6,847.2	71.2	136.9	91.05	40.3	3,069.8	692.3	484.3	208.09	3.327	
9,300.0	6,867.3	6,846.3	6,846.3	74.0	136.9	90.88	40.3	3,069.8	604.0	393.2	210.81	2.865	
9,400.0	6,866.4	6,845.4	6,845.4	76.7	136.9	90.71	40.3	3,069.8	520.0	306.4	213.55	2.435	
9,500.0	6,865.5	6,844.5	6,844.5	79.5	136.9	90.54	40.3	3,069.8	442.6	226.3	216.28	2.047	
9,600.0	6,864.7	6,843.7	6,843.7	82.2	136.9	90.37	40.3	3,069.8	376.1	157.1	219.02	1.717	
9,700.0	6,863.8	6,842.8	6,842.8	85.0	136.9	90.21	40.3	3,069.8	327.0	105.3	221.76	1.475	Level 3
9,800.0	6,862.9	6,841.9	6,841.9	87.7	136.8	90.04	40.3	3,069.8	304.1	79.6	224.50	1.354	Level 3
9,822.4	6,862.7	6,841.7	6,841.7	88.3	136.8	90.00	40.3	3,069.8	303.2	78.1	225.11	1.347	Level 3, CC, ES, SF
9,900.0	6,862.0	6,841.0	6,841.0	90.5	136.8	89.87	40.3	3,069.8	313.0	85.8	227.24	1.377	Level 3
10,000.0	6,861.1	6,840.1	6,840.1	93.2	136.8	89.70	40.3	3,069.8	351.4	121.4	229.98	1.528	
10,100.0	6,860.2	6,839.2	6,839.2	96.0	136.8	89.53	40.3	3,069.8	411.1	178.4	232.72	1.766	
10,200.0	6,859.3	6,838.3	6,838.3	98.8	136.8	89.37	40.3	3,069.8	484.3	248.8	235.47	2.057	
10,300.0	6,858.4	6,837.4	6,837.4	101.6	136.7	89.20	40.3	3,069.8	565.7	327.5	238.21	2.375	
10,400.0	6,857.5	6,836.5	6,836.5	104.3	136.7	89.03	40.3	3,069.8	652.3	411.4	240.95	2.707	
10,500.0	6,856.6	6,835.6	6,835.6	107.1	136.7	88.86	40.3	3,069.8	742.3	498.6	243.69	3.046	
10,600.0	6,855.8	6,834.8	6,834.8	109.9	136.7	88.69	40.3	3,069.8	834.6	588.1	246.43	3.387	
10,700.0	6,854.9	6,833.9	6,833.9	112.7	136.7	88.52	40.3	3,069.8	928.5	679.3	249.18	3.726	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Klein (Existing) Sec.19-T5N-R64W - Seth 1 (Existing) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program: 6997-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	75.48	149.4	576.6	595.9					
100.0	100.0	84.0	84.0	0.1	1.7	75.48	149.4	576.6	595.7	593.9	1.79	332.289		
200.0	200.0	184.0	184.0	0.3	3.7	75.48	149.4	576.6	595.7	591.6	4.02	148.271		
300.0	300.0	284.0	284.0	0.6	5.7	75.48	149.4	576.6	595.7	589.4	6.24	95.425		
400.0	400.0	384.0	384.0	0.8	7.7	75.48	149.4	576.6	595.7	587.2	8.47	70.351		
500.0	500.0	484.0	484.0	1.0	9.7	75.48	149.4	576.6	595.7	585.0	10.69	55.712		
600.0	600.0	584.0	584.0	1.2	11.7	75.48	149.4	576.6	595.7	582.7	12.92	46.116		
700.0	700.0	684.0	684.0	1.5	13.7	75.48	149.4	576.6	595.7	580.5	15.14	39.340		
800.0	800.0	784.0	784.0	1.7	15.7	75.48	149.4	576.6	595.7	578.3	17.37	34.300		
900.0	900.0	884.0	884.0	1.9	17.7	75.48	149.4	576.6	595.7	576.1	19.59	30.405		
1,000.0	1,000.0	984.0	984.0	2.1	19.7	75.48	149.4	576.6	595.7	573.8	21.82	27.304		
1,100.0	1,100.0	1,084.0	1,084.0	2.4	21.7	75.48	149.4	576.6	595.7	571.6	24.04	24.777		
1,200.0	1,200.0	1,184.0	1,184.0	2.6	23.7	75.48	149.4	576.6	595.7	569.4	26.26	22.679		
1,300.0	1,300.0	1,284.0	1,284.0	2.8	25.7	104.07	149.4	576.6	596.1	567.6	28.49	20.925		
1,400.0	1,399.8	1,383.8	1,383.8	3.0	27.7	104.53	149.4	576.6	597.4	566.7	30.70	19.458		
1,500.0	1,499.5	1,483.5	1,483.5	3.3	29.7	105.29	149.4	576.6	599.6	566.7	32.91	18.218		
1,600.0	1,598.9	1,582.9	1,582.9	3.5	31.7	106.24	149.4	576.6	602.5	567.4	35.14	17.147		
1,700.0	1,698.3	1,682.3	1,682.3	3.7	33.6	107.19	149.4	576.6	605.5	568.2	37.37	16.205		
1,800.0	1,797.8	1,781.8	1,781.8	4.0	35.6	108.13	149.4	576.6	608.7	569.1	39.60	15.372		
1,900.0	1,897.2	1,881.2	1,881.2	4.3	37.6	109.06	149.4	576.6	612.1	570.3	41.84	14.629		
2,000.0	1,996.7	1,980.7	1,980.7	4.5	39.6	109.98	149.4	576.6	615.6	571.5	44.08	13.965		
2,100.0	2,096.1	2,080.1	2,080.1	4.8	41.6	110.89	149.4	576.6	619.3	573.0	46.33	13.368		
2,200.0	2,195.6	2,179.6	2,179.6	5.1	43.6	111.79	149.4	576.6	623.2	574.6	48.57	12.829		
2,300.0	2,295.0	2,279.0	2,279.0	5.3	45.6	112.68	149.4	576.6	627.1	576.3	50.82	12.340		
2,400.0	2,394.5	2,378.5	2,378.5	5.6	47.6	113.55	149.4	576.6	631.3	578.2	53.07	11.895		
2,500.0	2,493.9	2,477.9	2,477.9	5.9	49.6	114.42	149.4	576.6	635.6	580.3	55.32	11.489		
2,600.0	2,593.4	2,577.4	2,577.4	6.2	51.5	115.27	149.4	576.6	640.0	582.4	57.57	11.118		
2,700.0	2,692.8	2,676.8	2,676.8	6.5	53.5	116.11	149.4	576.6	644.6	584.8	59.82	10.776		
2,800.0	2,792.3	2,776.3	2,776.3	6.7	55.5	116.94	149.4	576.6	649.3	587.2	62.06	10.462		
2,900.0	2,891.7	2,875.7	2,875.7	7.0	57.5	117.76	149.4	576.6	654.1	589.8	64.31	10.171		
3,000.0	2,991.2	2,975.2	2,975.2	7.3	59.5	118.56	149.4	576.6	659.1	592.6	66.56	9.903		
3,100.0	3,090.6	3,074.6	3,074.6	7.6	61.5	119.35	149.4	576.6	664.2	595.4	68.81	9.654		
3,200.0	3,190.0	3,174.0	3,174.0	7.9	63.5	120.13	149.4	576.6	669.5	598.4	71.05	9.422		
3,300.0	3,289.5	3,273.5	3,273.5	8.2	65.5	120.90	149.4	576.6	674.8	601.5	73.30	9.207		
3,400.0	3,388.9	3,372.9	3,372.9	8.4	67.5	121.66	149.4	576.6	680.3	604.8	75.54	9.006		
3,500.0	3,488.4	3,472.4	3,472.4	8.7	69.4	122.40	149.4	576.6	685.9	608.1	77.78	8.818		
3,600.0	3,587.8	3,571.8	3,571.8	9.0	71.4	123.13	149.4	576.6	691.6	611.6	80.03	8.642		
3,700.0	3,687.3	3,671.3	3,671.3	9.3	73.4	123.85	149.4	576.6	697.4	615.2	82.27	8.477		
3,800.0	3,786.7	3,770.7	3,770.7	9.6	75.4	124.56	149.4	576.6	703.3	618.8	84.51	8.323		
3,900.0	3,886.2	3,870.2	3,870.2	9.9	77.4	125.26	149.4	576.6	709.4	622.6	86.75	8.178		
4,000.0	3,985.6	3,969.6	3,969.6	10.2	79.4	125.94	149.4	576.6	715.5	626.5	88.99	8.041		
4,100.0	4,085.1	4,069.1	4,069.1	10.5	81.4	126.61	149.4	576.6	721.8	630.5	91.22	7.912		
4,200.0	4,184.5	4,168.5	4,168.5	10.8	83.4	127.28	149.4	576.6	728.1	634.6	93.46	7.791		
4,300.0	4,284.0	4,268.0	4,268.0	11.1	85.4	127.93	149.4	576.6	734.5	638.8	95.69	7.676		
4,400.0	4,383.4	4,367.4	4,367.4	11.3	87.3	128.56	149.4	576.6	741.0	643.1	97.93	7.567		
4,500.0	4,482.9	4,466.9	4,466.9	11.6	89.3	129.19	149.4	576.6	747.7	647.5	100.16	7.465		
4,600.0	4,582.3	4,566.3	4,566.3	11.9	91.3	129.81	149.4	576.6	754.4	652.0	102.39	7.367		
4,700.0	4,681.7	4,665.7	4,665.7	12.2	93.3	130.41	149.4	576.6	761.2	656.5	104.62	7.275		
4,800.0	4,781.2	4,765.2	4,765.2	12.5	95.3	131.01	149.4	576.6	768.0	661.2	106.85	7.188		
4,900.0	4,880.6	4,864.6	4,864.6	12.8	97.3	131.59	149.4	576.6	775.0	665.9	109.08	7.105		
5,000.0	4,980.2	4,964.2	4,964.2	13.1	99.3	132.18	149.4	576.6	781.2	669.8	111.40	7.013		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein (Existing) Sec.19-T5N-R64W - Seth 1 (Existing) - Wellbore #1 - Wellbore #1												Offset Site Error: 0.0 ft	
Survey Program: 6997-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	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)		Separation Factor
5,100.0	5,080.0	5,064.0	5,064.0	13.3	101.3	132.56	149.4	576.6	785.2	671.6	113.67	6.908	
5,200.0	5,180.0	5,164.0	5,164.0	13.4	103.3	132.71	149.4	576.6	786.9	671.0	115.86	6.792	
5,300.0	5,280.0	5,264.0	5,264.0	13.6	105.3	104.28	149.4	576.6	786.9	668.9	118.05	6.666	
5,400.0	5,380.0	5,364.0	5,364.0	13.8	107.3	104.28	149.4	576.6	786.9	666.7	120.25	6.544	
5,500.0	5,480.0	5,464.0	5,464.0	14.0	109.3	104.28	149.4	576.6	786.9	664.5	122.45	6.427	
5,600.0	5,580.0	5,564.0	5,564.0	14.2	111.3	104.28	149.4	576.6	786.9	662.3	124.66	6.313	
5,700.0	5,680.0	5,664.0	5,664.0	14.4	113.3	104.28	149.4	576.6	786.9	660.1	126.86	6.203	
5,800.0	5,780.0	5,764.0	5,764.0	14.5	115.3	104.28	149.4	576.6	786.9	657.9	129.07	6.097	
5,900.0	5,880.0	5,864.0	5,864.0	14.7	117.3	104.28	149.4	576.6	786.9	655.7	131.27	5.995	
6,000.0	5,980.0	5,964.0	5,964.0	14.9	119.3	104.28	149.4	576.6	786.9	653.5	133.48	5.896	
6,100.0	6,080.0	6,064.0	6,064.0	15.1	121.3	104.28	149.4	576.6	786.9	651.3	135.69	5.800	
6,200.0	6,179.9	6,163.9	6,163.9	15.3	123.3	14.40	149.4	576.6	783.8	646.6	137.26	5.711	
6,300.0	6,278.6	6,262.6	6,262.6	15.4	125.3	14.98	149.4	576.6	768.7	632.0	136.72	5.623	
6,400.0	6,374.4	6,358.4	6,358.4	15.5	127.2	16.13	149.4	576.6	741.3	607.3	133.97	5.533	
6,500.0	6,465.7	6,449.7	6,449.7	15.6	129.0	18.01	149.4	576.6	702.2	572.9	129.22	5.434	
6,600.0	6,550.9	6,534.9	6,534.9	15.6	130.7	20.90	149.4	576.6	652.1	529.1	123.08	5.298	
6,700.0	6,628.6	6,612.6	6,612.6	15.7	132.3	25.28	149.4	576.6	592.4	475.5	116.92	5.067	
6,800.0	6,697.4	6,681.4	6,681.4	15.8	133.6	31.93	149.4	576.6	524.5	410.8	113.64	4.615	
6,900.0	6,756.1	6,740.1	6,740.1	16.5	134.8	41.84	149.4	576.6	450.4	332.6	117.80	3.823	
7,000.0	6,803.8	6,787.8	6,787.8	17.7	135.8	55.51	149.4	576.6	373.0	241.4	131.61	2.835	
7,100.0	6,839.6	6,823.6	6,823.6	19.1	136.5	71.01	149.4	576.6	297.4	149.7	147.70	2.013	
7,200.0	6,862.9	6,846.9	6,846.9	20.8	136.9	83.62	149.4	576.6	232.6	76.0	156.61	1.485 Level 3	
7,300.0	6,875.0	6,859.0	6,859.0	22.8	137.2	89.11	149.4	576.6	196.3	36.5	159.75	1.229 Level 2	
7,329.0	6,877.8	6,861.8	6,861.8	23.4	137.2	90.00	149.4	576.6	194.1	33.7	160.44	1.210 Level 2, CC, ES, SF	
7,400.0	6,883.0	6,867.0	6,867.0	24.8	137.3	90.80	149.4	576.6	206.6	44.6	162.02	1.275 Level 3	
7,500.0	6,883.3	6,867.3	6,867.3	27.0	137.3	89.55	149.4	576.6	258.6	94.4	164.22	1.575	
7,600.0	6,882.5	6,866.5	6,866.5	29.3	137.3	89.29	149.4	576.6	333.2	166.7	166.49	2.001	
7,700.0	6,881.6	6,865.6	6,865.6	31.7	137.3	89.03	149.4	576.6	418.5	249.7	168.84	2.479	
7,800.0	6,880.7	6,864.7	6,864.7	34.2	137.3	88.76	149.4	576.6	509.2	338.0	171.26	2.974	
7,900.0	6,879.8	6,863.8	6,863.8	36.7	137.3	88.50	149.4	576.6	602.9	429.2	173.72	3.471	
8,000.0	6,878.9	6,862.9	6,862.9	39.2	137.3	88.24	149.4	576.6	698.3	522.1	176.21	3.963	
8,100.0	6,878.0	6,862.0	6,862.0	41.8	137.2	87.98	149.4	576.6	794.8	616.1	178.74	4.447	
8,200.0	6,877.1	6,861.1	6,861.1	44.4	137.2	87.71	149.4	576.6	892.2	710.9	181.29	4.921	
8,300.0	6,876.2	6,860.2	6,860.2	47.0	137.2	87.45	149.4	576.6	990.0	806.1	183.86	5.384	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19M-202 - Wellbore #1 - Plan #1 (2-26-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	-90.00		0.0	-27.9	27.9				
100.0	100.0	100.0	100.0	0.1	0.1	-90.00		0.0	-27.9	27.9	27.6	0.22	123.935	
200.0	200.0	200.0	200.0	0.3	0.3	-90.00		0.0	-27.9	27.9	27.2	0.67	41.312	
300.0	300.0	300.0	300.0	0.6	0.6	-90.00		0.0	-27.9	27.9	26.7	1.12	24.787	
400.0	400.0	400.0	400.0	0.8	0.8	-90.00		0.0	-27.9	27.9	26.3	1.57	17.705	
500.0	500.0	500.0	500.0	1.0	1.0	-90.00		0.0	-27.9	27.9	25.8	2.02	13.771	
600.0	600.0	600.0	600.0	1.2	1.2	-90.00		0.0	-27.9	27.9	25.4	2.47	11.267	
700.0	700.0	700.0	700.0	1.5	1.5	-90.00		0.0	-27.9	27.9	24.9	2.92	9.533	
800.0	800.0	800.0	800.0	1.7	1.7	-90.00		0.0	-27.9	27.9	24.5	3.37	8.262	
900.0	900.0	900.0	900.0	1.9	1.9	-90.00		0.0	-27.9	27.9	24.0	3.82	7.290	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	-90.00		0.0	-27.9	27.9	23.6	4.27	6.523 CC	
1,100.0	1,100.0	1,099.7	1,099.7	2.4	2.4	-86.57		1.7	-28.2	28.3	23.6	4.72	5.997	
1,200.0	1,200.0	1,199.2	1,199.1	2.6	2.6	-77.08		6.7	-29.4	30.2	25.0	5.17	5.842	
1,300.0	1,300.0	1,298.4	1,297.9	2.8	2.8	-37.50		15.1	-31.4	33.5	27.9	5.61	5.965	
1,400.0	1,399.8	1,397.3	1,396.1	3.0	3.1	-27.51		26.8	-34.1	37.2	31.2	6.06	6.144	
1,500.0	1,499.5	1,496.5	1,494.1	3.3	3.3	-18.67		41.5	-37.4	41.2	34.7	6.50	6.330	
1,600.0	1,598.9	1,596.3	1,592.6	3.5	3.6	-11.63		56.8	-41.0	44.6	37.7	6.96	6.411	
1,700.0	1,698.3	1,696.1	1,691.2	3.7	3.9	-5.68		72.1	-44.5	48.7	41.3	7.42	6.559	
1,800.0	1,797.8	1,795.9	1,789.7	4.0	4.2	-0.69		87.4	-48.1	53.2	45.3	7.88	6.743	
1,900.0	1,897.2	1,895.7	1,888.3	4.3	4.5	3.51		102.7	-51.6	58.0	49.6	8.35	6.946	
2,000.0	1,996.7	1,995.5	1,986.9	4.5	4.9	7.04		118.0	-55.1	63.1	54.3	8.82	7.153	
2,100.0	2,096.1	2,095.3	2,085.4	4.8	5.2	10.04		133.3	-58.7	68.4	59.1	9.29	7.358	
2,200.0	2,195.6	2,195.1	2,184.0	5.1	5.5	12.60		148.6	-62.2	73.8	64.1	9.77	7.555	
2,300.0	2,295.0	2,294.9	2,282.5	5.3	5.9	14.80		164.0	-65.7	79.4	69.2	10.26	7.743	
2,400.0	2,394.5	2,394.7	2,381.1	5.6	6.2	16.71		179.3	-69.3	85.1	74.3	10.74	7.919	
2,500.0	2,493.9	2,494.5	2,479.6	5.9	6.5	18.39		194.6	-72.8	90.9	79.6	11.24	8.085	
2,600.0	2,593.4	2,594.3	2,578.2	6.2	6.9	19.86		209.9	-76.4	96.7	84.9	11.73	8.239	
2,700.0	2,692.8	2,694.1	2,676.8	6.5	7.2	21.16		225.2	-79.9	102.6	90.3	12.24	8.383	
2,800.0	2,792.3	2,793.9	2,775.3	6.7	7.6	22.32		240.5	-83.4	108.5	95.8	12.74	8.517	
2,900.0	2,891.7	2,893.7	2,873.9	7.0	7.9	23.37		255.8	-87.0	114.5	101.2	13.25	8.642	
3,000.0	2,991.2	2,993.5	2,972.4	7.3	8.3	24.30		271.1	-90.5	120.5	106.7	13.76	8.759	
3,100.0	3,090.6	3,093.3	3,071.0	7.6	8.7	25.15		286.4	-94.0	126.5	112.3	14.27	8.867	
3,200.0	3,190.0	3,193.1	3,169.5	7.9	9.0	25.92		301.7	-97.6	132.6	117.8	14.78	8.969	
3,300.0	3,289.5	3,292.9	3,268.1	8.2	9.4	26.63		317.0	-101.1	138.7	123.4	15.30	9.064	
3,400.0	3,388.9	3,392.7	3,366.6	8.4	9.7	27.27		332.3	-104.7	144.8	129.0	15.82	9.153	
3,500.0	3,488.4	3,492.5	3,465.2	8.7	10.1	27.86		347.6	-108.2	150.9	134.6	16.34	9.236	
3,600.0	3,587.8	3,592.3	3,563.8	9.0	10.4	28.41		363.0	-111.7	157.0	140.2	16.86	9.314	
3,700.0	3,687.3	3,692.1	3,662.3	9.3	10.8	28.91		378.3	-115.3	163.2	145.8	17.38	9.388	
3,800.0	3,786.7	3,791.9	3,760.9	9.6	11.2	29.38		393.6	-118.8	169.3	151.4	17.91	9.457	
3,900.0	3,886.2	3,891.7	3,859.4	9.9	11.5	29.82		408.9	-122.3	175.5	157.1	18.43	9.522	
4,000.0	3,985.6	3,991.5	3,958.0	10.2	11.9	30.22		424.2	-125.9	181.7	162.7	18.96	9.583	
4,100.0	4,085.1	4,091.3	4,056.5	10.5	12.2	30.60		439.5	-129.4	187.9	168.4	19.49	9.642	
4,200.0	4,184.5	4,191.1	4,155.1	10.8	12.6	30.95		454.8	-133.0	194.1	174.1	20.02	9.697	
4,300.0	4,284.0	4,290.9	4,253.7	11.1	13.0	31.29		470.1	-136.5	200.3	179.7	20.54	9.749	
4,400.0	4,383.4	4,390.7	4,352.2	11.3	13.3	31.60		485.4	-140.0	206.5	185.4	21.07	9.798	
4,500.0	4,482.9	4,490.5	4,450.8	11.6	13.7	31.89		500.7	-143.6	212.7	191.1	21.61	9.845	
4,600.0	4,582.3	4,590.3	4,549.3	11.9	14.0	32.17		516.0	-147.1	218.9	196.8	22.14	9.890	
4,700.0	4,681.7	4,690.1	4,647.9	12.2	14.4	32.43		531.3	-150.6	225.2	202.5	22.67	9.932	
4,800.0	4,781.2	4,789.9	4,746.4	12.5	14.8	32.68		546.6	-154.2	231.4	208.2	23.20	9.973	
4,900.0	4,880.6	4,889.7	4,845.0	12.8	15.1	32.92		562.0	-157.7	237.6	213.9	23.74	10.011	
5,000.0	4,980.2	4,989.5	4,943.5	13.1	15.5	33.06		577.2	-161.3	244.8	220.6	24.22	10.107	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19M-202 - Wellbore #1 - Plan #1 (2-26-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,080.0	5,088.9	5,041.7	13.3	15.8	32.82		592.5	-164.8	254.9	230.3	24.62	10.353	
5,200.0	5,180.0	5,188.0	5,139.6	13.4	16.2	32.23		607.7	-168.3	267.9	243.0	24.96	10.734	
5,300.0	5,280.0	5,286.8	5,237.1	13.6	16.6	2.91		622.9	-171.8	283.0	253.6	29.35	9.643	
5,400.0	5,380.0	5,385.5	5,334.6	13.8	16.9	2.08		638.0	-175.3	298.2	268.2	29.94	9.958	
5,500.0	5,480.0	5,494.3	5,442.2	14.0	17.3	1.33		653.2	-178.8	312.1	281.5	30.52	10.225	
5,600.0	5,580.0	5,605.7	5,553.0	14.2	17.5	0.81		664.6	-181.5	322.3	291.3	31.01	10.394	
5,700.0	5,680.0	5,717.8	5,664.9	14.4	17.8	0.50		671.9	-183.1	328.8	297.3	31.44	10.458	
5,800.0	5,780.0	5,830.4	5,777.4	14.5	17.9	0.37		675.0	-183.8	331.5	299.6	31.82	10.417	
5,900.0	5,880.0	5,933.0	5,880.0	14.7	18.1	0.37		675.0	-183.9	331.5	299.4	32.17	10.307	
5,956.9	5,936.9	5,989.8	5,936.9	14.8	18.2	0.37		675.0	-183.9	331.5	299.2	32.37	10.242	
6,000.0	5,980.0	6,032.9	5,979.9	14.9	18.2	0.44		675.0	-183.5	331.5	299.0	32.52	10.196	
6,100.0	6,080.0	6,131.5	6,078.0	15.1	18.3	2.08		675.0	-173.9	331.8	299.0	32.77	10.125	
6,200.0	6,179.9	6,227.0	6,171.0	15.3	18.4	-84.71		675.0	-152.8	333.0	303.9	29.09	11.447	
6,300.0	6,278.6	6,320.2	6,258.6	15.4	18.5	-81.53		675.0	-121.1	335.3	305.8	29.54	11.350	
6,400.0	6,374.4	6,411.5	6,340.1	15.5	18.6	-78.55		675.0	-79.9	338.5	308.6	29.91	11.318	
6,500.0	6,465.7	6,500.0	6,413.8	15.6	18.6	-75.85		675.0	-31.0	342.2	312.0	30.20	11.331	
6,600.0	6,550.9	6,589.3	6,481.9	15.6	18.7	-73.36		675.0	26.6	346.3	315.8	30.53	11.345	
6,700.0	6,628.6	6,676.2	6,541.3	15.7	18.8	-71.21		675.0	89.9	350.5	319.5	30.96	11.321	
6,800.0	6,697.4	6,762.0	6,592.6	15.8	19.0	-69.36		675.0	158.7	354.5	322.9	31.67	11.194	
6,900.0	6,756.1	6,850.0	6,636.8	16.5	19.4	-67.80		675.0	234.7	358.2	325.4	32.83	10.910	
7,000.0	6,803.8	6,931.2	6,669.6	17.7	20.1	-66.64		675.0	309.0	361.3	326.8	34.50	10.471	
7,100.0	6,839.6	7,015.0	6,695.0	19.1	21.1	-65.77		675.0	388.8	363.6	326.9	36.79	9.885	
7,200.0	6,862.9	7,100.0	6,711.6	20.8	22.4	-65.21		675.0	472.1	365.2	325.5	39.68	9.203	
7,300.0	6,875.0	7,181.5	6,718.8	22.8	23.9	-64.82		675.0	553.3	366.5	323.7	42.86	8.552	
7,400.0	6,883.0	7,273.9	6,718.6	24.8	25.7	-63.66		675.0	645.7	370.0	323.7	46.30	7.992	
7,500.0	6,883.3	7,373.9	6,717.6	27.0	27.9	-63.43		675.0	745.7	370.7	320.4	50.30	7.369	
7,600.0	6,882.5	7,473.9	6,716.5	29.3	30.1	-63.41		675.0	845.7	370.7	316.3	54.42	6.813	
7,700.0	6,881.6	7,573.9	6,715.4	31.7	32.4	-63.39		675.0	945.6	370.8	312.1	58.69	6.319	
7,800.0	6,880.7	7,673.9	6,714.4	34.2	34.8	-63.36		675.0	1,045.6	370.9	307.8	63.07	5.881	
7,900.0	6,879.8	7,773.9	6,713.3	36.7	37.3	-63.34		675.0	1,145.6	371.0	303.4	67.54	5.493	
8,000.0	6,878.9	7,873.9	6,712.3	39.2	39.8	-63.31		675.0	1,245.6	371.1	299.0	72.09	5.147	
8,100.0	6,878.0	7,973.9	6,711.2	41.8	42.4	-63.29		675.0	1,345.6	371.1	294.4	76.71	4.838	
8,200.0	6,877.1	8,073.9	6,710.1	44.4	44.9	-63.26		675.0	1,445.6	371.2	289.8	81.37	4.562	
8,300.0	6,876.2	8,173.9	6,709.1	47.0	47.5	-63.24		675.0	1,545.6	371.3	285.2	86.07	4.314	
8,400.0	6,875.3	8,273.9	6,708.0	49.6	50.2	-63.22		675.0	1,645.6	371.4	280.6	90.81	4.089	
8,500.0	6,874.4	8,373.9	6,706.9	52.3	52.8	-63.19		675.0	1,745.6	371.5	275.9	95.58	3.886	
8,600.0	6,873.6	8,473.9	6,705.9	55.0	55.5	-63.17		675.0	1,845.6	371.5	271.2	100.38	3.701	
8,700.0	6,872.7	8,573.9	6,704.8	57.7	58.1	-63.14		675.0	1,945.6	371.6	266.4	105.20	3.533	
8,800.0	6,871.8	8,673.9	6,703.7	60.4	60.8	-63.12		675.0	2,045.6	371.7	261.7	110.03	3.378	
8,900.0	6,870.9	8,773.9	6,702.7	63.1	63.5	-63.10		675.0	2,145.6	371.8	256.9	114.88	3.236	
9,000.0	6,870.0	8,873.9	6,701.6	65.8	66.2	-63.07		675.0	2,245.6	371.8	252.1	119.75	3.105	
9,100.0	6,869.1	8,973.9	6,700.5	68.5	68.9	-63.05		675.0	2,345.6	371.9	247.3	124.62	2.984	
9,200.0	6,868.2	9,073.9	6,699.5	71.2	71.7	-63.02		675.0	2,445.6	372.0	242.5	129.51	2.872	
9,300.0	6,867.3	9,173.9	6,698.4	74.0	74.4	-63.00		675.0	2,545.6	372.1	237.7	134.40	2.768	
9,400.0	6,866.4	9,273.9	6,697.3	76.7	77.1	-62.98		675.0	2,645.5	372.2	232.9	139.31	2.672	
9,500.0	6,865.5	9,373.9	6,696.3	79.5	79.9	-62.95		675.0	2,745.5	372.2	228.0	144.22	2.581	
9,600.0	6,864.7	9,473.9	6,695.2	82.2	82.6	-62.93		675.0	2,845.5	372.3	223.2	149.13	2.497	
9,700.0	6,863.8	9,573.9	6,694.2	85.0	85.4	-62.91		675.0	2,945.5	372.4	218.3	154.05	2.417	
9,800.0	6,862.9	9,673.9	6,693.1	87.7	88.1	-62.88		675.0	3,045.5	372.5	213.5	158.98	2.343	
9,900.0	6,862.0	9,773.9	6,692.0	90.5	90.9	-62.86		675.0	3,145.5	372.6	208.7	163.91	2.273	
10,000.0	6,861.1	9,873.9	6,691.0	93.2	93.6	-62.83		675.0	3,245.5	372.6	203.8	168.84	2.207	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19M-202 - Wellbore #1 - Plan #1 (2-26-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,860.2	9,973.9	6,689.9	96.0	96.4	-62.81		675.0	3,345.5	372.7	198.9	173.77	2.145	
10,200.0	6,859.3	10,073.9	6,688.8	98.8	99.1	-62.79		675.0	3,445.5	372.8	194.1	178.71	2.086	
10,300.0	6,858.4	10,173.9	6,687.8	101.6	101.9	-62.76		675.0	3,545.5	372.9	189.2	183.65	2.030	
10,400.0	6,857.5	10,273.9	6,686.7	104.3	104.7	-62.74		675.0	3,645.5	373.0	184.4	188.59	1.978	
10,500.0	6,856.6	10,373.9	6,685.6	107.1	107.5	-62.71		675.0	3,745.5	373.0	179.5	193.54	1.927	
10,600.0	6,855.8	10,473.9	6,684.6	109.9	110.2	-62.69		675.0	3,845.5	373.1	174.6	198.48	1.880	
10,700.0	6,854.9	10,573.9	6,683.5	112.7	113.0	-62.67		675.0	3,945.5	373.2	169.8	203.43	1.835	
10,800.0	6,854.0	10,673.9	6,682.4	115.4	115.8	-62.64		675.0	4,045.5	373.3	164.9	208.37	1.791	
10,900.0	6,853.1	10,773.9	6,681.4	118.2	118.6	-62.62		675.0	4,145.5	373.4	160.0	213.32	1.750	
11,000.0	6,852.2	10,873.9	6,680.3	121.0	121.3	-62.60		675.0	4,245.5	373.4	155.2	218.27	1.711	
11,100.0	6,851.3	10,973.9	6,679.3	123.8	124.1	-62.57		675.0	4,345.4	373.5	150.3	223.21	1.673	
11,200.0	6,850.4	11,073.9	6,678.2	126.6	126.9	-62.55		675.0	4,445.4	373.6	145.4	228.16	1.637	
11,300.0	6,849.5	11,173.9	6,677.1	129.3	129.7	-62.52		675.0	4,545.4	373.7	140.6	233.11	1.603	
11,400.0	6,848.6	11,273.9	6,676.1	132.1	132.5	-62.50		675.0	4,645.4	373.8	135.7	238.06	1.570	
11,500.0	6,847.7	11,373.9	6,675.0	134.9	135.2	-62.48		675.0	4,745.4	373.8	130.8	243.00	1.538	
11,600.0	6,846.9	11,473.9	6,673.9	137.7	138.0	-62.45		675.0	4,845.4	373.9	126.0	247.95	1.508	
11,700.0	6,846.0	11,573.9	6,672.9	140.5	140.8	-62.43		675.0	4,945.4	374.0	121.1	252.89	1.479 Level 3	
11,800.0	6,845.1	11,673.9	6,671.8	143.3	143.6	-62.41		675.0	5,045.4	374.1	116.2	257.84	1.451 Level 3	
11,900.0	6,844.2	11,773.9	6,670.7	146.1	146.4	-62.38		675.0	5,145.4	374.2	111.4	262.79	1.424 Level 3	
12,000.0	6,843.3	11,873.9	6,669.7	148.9	149.2	-62.36		675.0	5,245.4	374.2	106.5	267.73	1.398 Level 3	
12,100.0	6,842.4	11,973.9	6,668.6	151.7	152.0	-62.33		675.0	5,345.4	374.3	101.7	272.67	1.373 Level 3	
12,200.0	6,841.5	12,073.9	6,667.5	154.5	154.8	-62.31		675.0	5,445.4	374.4	96.8	277.62	1.349 Level 3	
12,300.0	6,840.6	12,173.9	6,666.5	157.2	157.6	-62.29		675.0	5,545.4	374.5	91.9	282.56	1.325 Level 3	
12,400.0	6,839.7	12,273.9	6,665.4	160.0	160.3	-62.26		675.0	5,645.4	374.6	87.1	287.50	1.303 Level 3	
12,500.0	6,838.8	12,373.9	6,664.3	162.8	163.1	-62.24		675.0	5,745.4	374.7	82.2	292.44	1.281 Level 3	
12,600.0	6,837.9	12,473.9	6,663.3	165.6	165.9	-62.22		675.0	5,845.4	374.7	77.4	297.38	1.260 Level 3	
12,700.0	6,837.1	12,573.9	6,662.2	168.4	168.7	-62.19		675.0	5,945.4	374.8	72.5	302.31	1.240 Level 2	
12,800.0	6,836.2	12,673.9	6,661.2	171.2	171.5	-62.17		675.0	6,045.3	374.9	67.6	307.25	1.220 Level 2	
12,900.0	6,835.3	12,773.9	6,660.1	174.0	174.3	-62.15		675.0	6,145.3	375.0	62.8	312.19	1.201 Level 2	
13,000.0	6,834.4	12,873.9	6,659.0	176.8	177.1	-62.12		675.0	6,245.3	375.1	57.9	317.12	1.183 Level 2	
13,100.0	6,833.5	12,973.9	6,658.0	179.6	179.9	-62.10		675.0	6,345.3	375.1	53.1	322.05	1.165 Level 2	
13,200.0	6,832.6	13,073.9	6,656.9	182.4	182.7	-62.07		675.0	6,445.3	375.2	48.2	326.98	1.148 Level 2	
13,300.0	6,831.7	13,173.9	6,655.8	185.2	185.5	-62.05		675.0	6,545.3	375.3	43.4	331.91	1.131 Level 2	
13,400.0	6,830.8	13,273.9	6,654.8	188.0	188.3	-62.03		675.0	6,645.3	375.4	38.5	336.84	1.114 Level 2	
13,500.0	6,829.9	13,373.9	6,653.7	190.8	191.1	-62.00		675.0	6,745.3	375.5	33.7	341.77	1.099 Level 2	
13,600.0	6,829.0	13,473.9	6,652.6	193.6	193.9	-61.98		675.0	6,845.3	375.5	28.9	346.69	1.083 Level 2	
13,700.0	6,828.2	13,573.9	6,651.6	196.4	196.7	-61.96		675.0	6,945.3	375.6	24.0	351.62	1.068 Level 2	
13,800.0	6,827.3	13,673.9	6,650.5	199.2	199.5	-61.93		675.0	7,045.3	375.7	19.2	356.54	1.054 Level 2	
13,900.0	6,826.4	13,773.9	6,649.4	202.0	202.3	-61.91		675.0	7,145.3	375.8	14.3	361.46	1.040 Level 2	
13,942.5	6,826.0	13,815.4	6,649.0	203.2	203.4	-61.90		675.0	7,186.7	375.8	12.3	363.53	1.034 Level 2, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-312 - Wellbore #1 - Plan #1 (2-26-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.01	90.01	0.0	61.3	61.3				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	90.01	0.0	61.3	61.3	61.1	0.22	272.656	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	90.01	0.0	61.3	61.3	60.6	0.67	90.885	
300.0	300.0	300.0	300.0	0.6	0.6	90.01	90.01	0.0	61.3	61.3	60.2	1.12	54.531	
400.0	400.0	400.0	400.0	0.8	0.8	90.01	90.01	0.0	61.3	61.3	59.7	1.57	38.951	
500.0	500.0	500.0	500.0	1.0	1.0	90.01	90.01	0.0	61.3	61.3	59.3	2.02	30.295	
600.0	600.0	600.0	600.0	1.2	1.2	90.01	90.01	0.0	61.3	61.3	58.8	2.47	24.787	
700.0	700.0	700.0	700.0	1.5	1.5	90.01	90.01	0.0	61.3	61.3	58.4	2.92	20.974	
800.0	800.0	800.0	800.0	1.7	1.7	90.01	90.01	0.0	61.3	61.3	57.9	3.37	18.177	
900.0	900.0	900.0	900.0	1.9	1.9	90.01	90.01	0.0	61.3	61.3	57.5	3.82	16.039	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.01	90.01	0.0	61.3	61.3	57.0	4.27	14.350	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.01	90.01	0.0	61.3	61.3	56.6	4.72	12.984	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.01	90.01	0.0	61.3	61.3	56.1	5.17	11.855 CC	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	119.84	119.84	0.0	61.3	62.1	56.5	5.62	11.063	
1,400.0	1,399.8	1,399.8	1,399.8	3.0	3.0	123.80	123.80	0.0	61.3	64.9	58.8	6.06	10.710	
1,500.0	1,499.5	1,499.5	1,499.5	3.3	3.3	129.64	129.64	0.0	61.3	70.1	63.6	6.50	10.787	
1,600.0	1,598.9	1,598.9	1,598.9	3.5	3.5	135.63	135.63	0.0	61.3	77.3	70.3	6.95	11.119	
1,700.0	1,698.3	1,698.3	1,698.3	3.7	3.7	140.57	140.57	0.0	61.3	85.1	77.7	7.40	11.501	
1,800.0	1,797.8	1,797.8	1,797.8	4.0	3.9	144.65	144.65	0.0	61.3	93.5	85.6	7.85	11.905	
1,900.0	1,897.2	1,897.2	1,897.2	4.3	4.2	148.05	148.05	0.0	61.3	102.2	93.9	8.31	12.311	
2,000.0	1,996.7	1,996.7	1,996.7	4.5	4.4	150.91	150.91	0.0	61.3	111.3	102.6	8.76	12.710	
2,100.0	2,096.1	2,096.1	2,096.1	4.8	4.6	153.34	153.34	0.0	61.3	120.6	111.4	9.21	13.094	
2,200.0	2,195.6	2,195.6	2,195.6	5.1	4.8	155.41	155.41	0.0	61.3	130.1	120.4	9.66	13.461	
2,300.0	2,295.0	2,295.0	2,295.0	5.3	5.0	157.20	157.20	0.0	61.3	139.7	129.6	10.12	13.809	
2,400.0	2,394.5	2,394.5	2,394.5	5.6	5.3	158.76	158.76	0.0	61.3	149.5	138.9	10.57	14.138	
2,500.0	2,493.9	2,493.9	2,493.9	5.9	5.5	160.13	160.13	0.0	61.3	159.3	148.3	11.03	14.448	
2,600.0	2,593.4	2,593.4	2,593.4	6.2	5.7	161.83	161.83	-0.4	59.7	168.4	156.9	11.47	14.681	
2,700.0	2,692.8	2,692.8	2,692.8	6.5	5.9	164.39	164.39	-1.6	54.6	175.7	163.8	11.89	14.777	
2,800.0	2,792.3	2,792.3	2,792.3	6.7	6.1	167.73	167.73	-3.7	45.9	181.7	169.4	12.32	14.750	
2,900.0	2,891.7	2,891.7	2,891.7	7.0	6.3	171.54	171.54	-6.4	34.8	187.2	174.4	12.76	14.674	
3,000.0	2,991.2	2,991.2	2,991.2	7.3	6.6	175.13	175.13	-9.2	23.6	193.4	180.2	13.21	14.643	
3,100.0	3,090.6	3,090.6	3,090.6	7.6	6.8	178.49	178.49	-11.9	12.4	200.3	186.6	13.67	14.653	
3,200.0	3,190.0	3,190.0	3,190.0	7.9	7.0	-178.38	-178.38	-14.6	1.2	207.8	193.7	14.14	14.694	
3,300.0	3,289.5	3,289.5	3,289.5	8.2	7.3	-175.48	-175.48	-17.3	-9.9	216.0	201.3	14.63	14.762	
3,400.0	3,388.9	3,388.9	3,388.9	8.4	7.5	-172.79	-172.79	-20.0	-21.1	224.6	209.5	15.13	14.849	
3,500.0	3,488.4	3,488.4	3,488.4	8.7	7.8	-170.30	-170.30	-22.7	-32.3	233.7	218.1	15.63	14.952	
3,600.0	3,587.8	3,587.8	3,587.8	9.0	8.0	-168.00	-168.00	-25.4	-43.5	243.2	227.1	16.14	15.067	
3,700.0	3,687.3	3,687.3	3,687.3	9.3	8.3	-165.88	-165.88	-28.1	-54.6	253.1	236.4	16.66	15.190	
3,800.0	3,786.7	3,786.7	3,786.7	9.6	8.5	-163.91	-163.91	-30.9	-65.8	263.3	246.1	17.19	15.319	
3,900.0	3,886.2	3,886.2	3,886.2	9.9	8.8	-162.10	-162.10	-33.6	-77.0	273.8	256.0	17.72	15.453	
4,000.0	3,985.6	3,985.6	3,985.6	10.2	9.1	-160.41	-160.41	-36.3	-88.2	284.5	266.2	18.25	15.590	
4,100.0	4,085.1	4,085.1	4,085.1	10.5	9.3	-158.86	-158.86	-39.0	-99.3	295.5	276.7	18.79	15.728	
4,200.0	4,184.5	4,184.5	4,184.5	10.8	9.6	-157.41	-157.41	-41.7	-110.5	306.6	287.3	19.32	15.867	
4,300.0	4,284.0	4,284.0	4,284.0	11.1	9.9	-156.06	-156.06	-44.4	-121.7	318.0	298.1	19.87	16.005	
4,400.0	4,383.4	4,383.4	4,383.4	11.3	10.2	-154.81	-154.81	-47.1	-132.9	329.5	309.0	20.41	16.142	
4,500.0	4,482.9	4,482.9	4,482.9	11.6	10.5	-153.64	-153.64	-49.8	-144.0	341.1	320.1	20.96	16.278	
4,600.0	4,582.3	4,582.3	4,582.3	11.9	10.7	-152.55	-152.55	-52.5	-155.2	352.9	331.4	21.50	16.411	
4,700.0	4,681.7	4,681.7	4,681.7	12.2	11.0	-151.53	-151.53	-55.3	-166.4	364.8	342.7	22.05	16.544	
4,800.0	4,781.2	4,781.2	4,781.2	12.5	11.3	-150.84	-150.84	-57.6	-176.0	376.3	353.8	22.55	16.691	
4,900.0	4,880.6	4,880.6	4,880.6	12.8	11.5	-150.72	-150.72	-59.1	-182.1	387.0	364.0	23.01	16.816	
5,000.0	4,980.2	4,980.2	4,980.2	13.1	11.7	-151.10	-151.10	-59.7	-184.6	395.8	372.3	23.45	16.879	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-312 - Wellbore #1 - Plan #1 (2-26-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,080.0	5,094.0	5,080.0	13.3	11.9	-151.56		-59.7	-184.7	401.0	377.2	23.82	16.838	
5,200.0	5,180.0	5,194.0	5,180.0	13.4	12.1	-151.74		-59.7	-184.7	403.2	379.0	24.17	16.678	
5,300.0	5,280.0	5,294.0	5,280.0	13.6	12.3	179.82		-59.7	-184.7	403.2	378.7	24.55	16.423	
5,400.0	5,380.0	5,394.0	5,380.0	13.8	12.5	179.82		-59.7	-184.7	403.2	378.3	24.96	16.156	
5,500.0	5,480.0	5,494.0	5,480.0	14.0	12.7	179.82		-59.7	-184.7	403.2	377.9	25.37	15.896	
5,600.0	5,580.0	5,594.0	5,580.0	14.2	12.9	179.82		-59.7	-184.7	403.2	377.4	25.78	15.643	
5,700.0	5,680.0	5,694.0	5,680.0	14.4	13.1	179.82		-59.7	-184.7	403.2	377.0	26.19	15.398	
5,800.0	5,780.0	5,794.0	5,780.0	14.5	13.3	179.82		-59.7	-184.7	403.2	376.6	26.60	15.159	
5,900.0	5,880.0	5,894.0	5,880.0	14.7	13.5	179.82		-59.7	-184.7	403.2	376.2	27.01	14.927	
6,000.0	5,980.0	5,994.0	5,980.0	14.9	13.7	179.82		-59.7	-184.7	403.2	375.8	27.43	14.702	
6,050.3	6,030.3	6,044.3	6,030.3	15.0	13.8	179.82		-59.7	-184.7	403.2	375.6	27.64	14.590	
6,100.0	6,080.0	6,093.9	6,079.8	15.1	13.9	179.64		-59.7	-183.5	403.2	375.4	27.84	14.484	
6,200.0	6,179.9	6,192.6	6,177.8	15.3	14.0	88.38		-59.7	-171.5	403.4	375.2	28.16	14.324	
6,300.0	6,278.6	6,290.1	6,272.2	15.4	14.1	87.06		-59.7	-147.4	403.8	375.4	28.37	14.233	
6,400.0	6,374.4	6,386.5	6,361.8	15.5	14.2	85.81		-59.7	-112.0	404.3	375.8	28.54	14.164	
6,500.0	6,465.7	6,481.9	6,445.3	15.6	14.3	84.63		-59.7	-66.0	405.0	376.2	28.77	14.079	
6,600.0	6,550.9	6,576.4	6,521.8	15.6	14.5	83.55		-59.7	-10.6	405.8	376.7	29.14	13.928	
6,700.0	6,628.6	6,670.1	6,590.4	15.7	14.8	82.57		-59.7	53.2	406.6	376.9	29.77	13.659	
6,800.0	6,697.4	6,763.2	6,650.2	15.8	15.4	81.72		-59.7	124.4	407.5	376.7	30.80	13.228	
6,900.0	6,756.1	6,855.6	6,700.6	16.5	16.2	81.01		-59.7	201.8	408.2	375.9	32.34	12.623	
7,000.0	6,803.8	6,947.6	6,741.1	17.7	17.3	80.44		-59.7	284.3	408.9	374.5	34.45	11.871	
7,100.0	6,839.6	7,039.2	6,771.3	19.1	18.7	80.02		-59.7	370.7	409.4	372.3	37.12	11.029	
7,200.0	6,862.9	7,130.6	6,790.9	20.8	20.3	79.76		-59.7	459.9	409.7	369.5	40.29	10.169	
7,300.0	6,875.0	7,221.7	6,799.8	22.8	22.0	79.45		-59.7	550.6	410.2	366.3	43.85	9.353	
7,400.0	6,883.0	7,317.5	6,799.5	24.8	24.0	78.32		-59.7	646.4	411.8	364.1	47.66	8.640	
7,500.0	6,883.3	7,417.5	6,798.2	27.0	26.2	78.08		-59.7	746.3	412.1	360.2	51.91	7.939	
7,600.0	6,882.5	7,517.5	6,796.9	29.3	28.5	78.02		-59.7	846.3	412.2	355.8	56.41	7.307	
7,700.0	6,881.6	7,617.5	6,795.6	31.7	30.9	77.97		-59.7	946.3	412.3	351.2	61.08	6.750	
7,800.0	6,880.7	7,717.5	6,794.3	34.2	33.4	77.91		-59.7	1,046.3	412.4	346.5	65.87	6.260	
7,900.0	6,879.8	7,817.5	6,793.1	36.7	35.9	77.86		-59.7	1,146.3	412.4	341.7	70.76	5.829	
8,000.0	6,878.9	7,917.5	6,791.8	39.2	38.5	77.81		-59.7	1,246.3	412.5	336.8	75.73	5.448	
8,100.0	6,878.0	8,017.5	6,790.5	41.8	41.0	77.75		-59.7	1,346.3	412.6	331.8	80.76	5.109	
8,200.0	6,877.1	8,117.5	6,789.2	44.4	43.6	77.70		-59.7	1,446.3	412.7	326.8	85.85	4.807	
8,300.0	6,876.2	8,217.5	6,787.9	47.0	46.3	77.64		-59.7	1,546.2	412.8	321.8	90.98	4.537	
8,400.0	6,875.3	8,317.5	6,786.6	49.6	48.9	77.59		-59.7	1,646.2	412.9	316.7	96.15	4.294	
8,500.0	6,874.4	8,417.5	6,785.3	52.3	51.6	77.53		-59.7	1,746.2	413.0	311.6	101.34	4.075	
8,600.0	6,873.6	8,517.5	6,784.0	55.0	54.3	77.48		-59.7	1,846.2	413.0	306.5	106.57	3.876	
8,700.0	6,872.7	8,617.5	6,782.7	57.7	57.0	77.43		-59.7	1,946.2	413.1	301.3	111.81	3.695	
8,800.0	6,871.8	8,717.5	6,781.4	60.4	59.7	77.37		-59.7	2,046.2	413.2	296.1	117.07	3.530	
8,900.0	6,870.9	8,817.5	6,780.1	63.1	62.4	77.32		-59.7	2,146.2	413.3	291.0	122.35	3.378	
9,000.0	6,870.0	8,917.5	6,778.9	65.8	65.1	77.26		-59.7	2,246.2	413.4	285.7	127.64	3.239	
9,100.0	6,869.1	9,017.5	6,777.6	68.5	67.9	77.21		-59.7	2,346.2	413.5	280.5	132.94	3.110	
9,200.0	6,868.2	9,117.5	6,776.3	71.2	70.6	77.15		-59.7	2,446.2	413.6	275.3	138.26	2.991	
9,300.0	6,867.3	9,217.5	6,775.0	74.0	73.3	77.10		-59.7	2,546.2	413.7	270.1	143.58	2.881	
9,400.0	6,866.4	9,317.5	6,773.7	76.7	76.1	77.05		-59.7	2,646.1	413.7	264.8	148.91	2.779	
9,500.0	6,865.5	9,417.5	6,772.4	79.5	78.8	76.99		-59.7	2,746.1	413.8	259.6	154.24	2.683	
9,600.0	6,864.7	9,517.5	6,771.1	82.2	81.6	76.94		-59.7	2,846.1	413.9	254.3	159.58	2.594	
9,700.0	6,863.8	9,617.5	6,769.8	85.0	84.4	76.88		-59.7	2,946.1	414.0	249.1	164.93	2.510	
9,800.0	6,862.9	9,717.4	6,768.5	87.7	87.1	76.83		-59.7	3,046.1	414.1	243.8	170.28	2.432	
9,900.0	6,862.0	9,817.4	6,767.2	90.5	89.9	76.77		-59.7	3,146.1	414.2	238.6	175.63	2.358	
10,000.0	6,861.1	9,917.4	6,765.9	93.2	92.6	76.72		-59.7	3,246.1	414.3	233.3	180.99	2.289	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-312 - Wellbore #1 - Plan #1 (2-26-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	6,860.2	10,017.4	6,764.6	96.0	95.4	76.67	76.67	-59.7	3,346.1	414.4	228.0	186.35	2.224	
10,200.0	6,859.3	10,117.4	6,763.4	98.8	98.2	76.61	76.61	-59.7	3,446.1	414.5	222.8	191.71	2.162	
10,300.0	6,858.4	10,217.4	6,762.1	101.6	101.0	76.56	76.56	-59.7	3,546.1	414.6	217.5	197.07	2.104	
10,400.0	6,857.5	10,317.4	6,760.8	104.3	103.7	76.50	76.50	-59.7	3,646.1	414.7	212.2	202.43	2.048	
10,500.0	6,856.6	10,417.4	6,759.5	107.1	106.5	76.45	76.45	-59.7	3,746.0	414.8	207.0	207.79	1.996	
10,600.0	6,855.8	10,517.4	6,758.2	109.9	109.3	76.40	76.40	-59.7	3,846.0	414.9	201.7	213.16	1.946	
10,700.0	6,854.9	10,617.4	6,756.9	112.7	112.1	76.34	76.34	-59.7	3,946.0	414.9	196.4	218.52	1.899	
10,800.0	6,854.0	10,717.4	6,755.6	115.4	114.9	76.29	76.29	-59.7	4,046.0	415.0	191.2	223.89	1.854	
10,900.0	6,853.1	10,817.4	6,754.3	118.2	117.6	76.24	76.24	-59.7	4,146.0	415.1	185.9	229.25	1.811	
11,000.0	6,852.2	10,917.4	6,753.0	121.0	120.4	76.18	76.18	-59.7	4,246.0	415.2	180.6	234.62	1.770	
11,100.0	6,851.3	11,017.4	6,751.7	123.8	123.2	76.13	76.13	-59.7	4,346.0	415.3	175.3	239.98	1.731	
11,200.0	6,850.4	11,117.4	6,750.4	126.6	126.0	76.07	76.07	-59.7	4,446.0	415.4	170.1	245.35	1.693	
11,300.0	6,849.5	11,217.4	6,749.1	129.3	128.8	76.02	76.02	-59.7	4,546.0	415.5	164.8	250.71	1.657	
11,400.0	6,848.6	11,317.4	6,747.9	132.1	131.6	75.97	75.97	-59.7	4,646.0	415.6	159.5	256.08	1.623	
11,500.0	6,847.7	11,417.4	6,746.6	134.9	134.4	75.91	75.91	-59.7	4,746.0	415.7	154.3	261.44	1.590	
11,600.0	6,846.9	11,517.4	6,745.3	137.7	137.1	75.86	75.86	-59.7	4,845.9	415.8	149.0	266.80	1.559	
11,700.0	6,846.0	11,617.4	6,744.0	140.5	139.9	75.81	75.81	-59.7	4,945.9	415.9	143.8	272.16	1.528	
11,800.0	6,845.1	11,717.4	6,742.7	143.3	142.7	75.75	75.75	-59.7	5,045.9	416.0	138.5	277.52	1.499 Level 3	
11,900.0	6,844.2	11,817.4	6,741.4	146.1	145.5	75.70	75.70	-59.7	5,145.9	416.1	133.2	282.87	1.471 Level 3	
12,000.0	6,843.3	11,917.4	6,740.1	148.9	148.3	75.64	75.64	-59.7	5,245.9	416.2	128.0	288.23	1.444 Level 3	
12,100.0	6,842.4	12,017.4	6,738.8	151.7	151.1	75.59	75.59	-59.7	5,345.9	416.3	122.7	293.58	1.418 Level 3	
12,200.0	6,841.5	12,117.4	6,737.5	154.5	153.9	75.54	75.54	-59.7	5,445.9	416.4	117.5	298.94	1.393 Level 3	
12,300.0	6,840.6	12,217.4	6,736.2	157.2	156.7	75.48	75.48	-59.7	5,545.9	416.5	112.2	304.29	1.369 Level 3	
12,400.0	6,839.7	12,317.4	6,734.9	160.0	159.5	75.43	75.43	-59.7	5,645.9	416.6	107.0	309.64	1.345 Level 3	
12,500.0	6,838.8	12,417.4	6,733.6	162.8	162.3	75.38	75.38	-59.7	5,745.9	416.7	101.7	314.99	1.323 Level 3	
12,600.0	6,837.9	12,517.4	6,732.4	165.6	165.1	75.32	75.32	-59.7	5,845.9	416.8	96.5	320.33	1.301 Level 3	
12,700.0	6,837.1	12,617.4	6,731.1	168.4	167.9	75.27	75.27	-59.7	5,945.8	416.9	91.2	325.68	1.280 Level 3	
12,800.0	6,836.2	12,717.4	6,729.8	171.2	170.7	75.22	75.22	-59.7	6,045.8	417.0	86.0	331.02	1.260 Level 3	
12,900.0	6,835.3	12,817.4	6,728.5	174.0	173.5	75.16	75.16	-59.7	6,145.8	417.1	80.8	336.36	1.240 Level 2	
13,000.0	6,834.4	12,917.4	6,727.2	176.8	176.3	75.11	75.11	-59.7	6,245.8	417.2	75.5	341.70	1.221 Level 2	
13,100.0	6,833.5	13,017.4	6,725.9	179.6	179.1	75.06	75.06	-59.7	6,345.8	417.3	70.3	347.03	1.203 Level 2	
13,200.0	6,832.6	13,117.4	6,724.6	182.4	181.9	75.00	75.00	-59.7	6,445.8	417.4	65.1	352.37	1.185 Level 2	
13,300.0	6,831.7	13,217.4	6,723.3	185.2	184.7	74.95	74.95	-59.7	6,545.8	417.5	59.8	357.70	1.167 Level 2	
13,400.0	6,830.8	13,317.4	6,722.0	188.0	187.5	74.90	74.90	-59.7	6,645.8	417.6	54.6	363.03	1.150 Level 2	
13,500.0	6,829.9	13,417.4	6,720.7	190.8	190.3	74.84	74.84	-59.7	6,745.8	417.7	49.4	368.36	1.134 Level 2	
13,600.0	6,829.0	13,517.4	6,719.4	193.6	193.1	74.79	74.79	-59.7	6,845.8	417.9	44.2	373.68	1.118 Level 2	
13,700.0	6,828.2	13,617.4	6,718.2	196.4	195.9	74.74	74.74	-59.7	6,945.8	418.0	39.0	379.01	1.103 Level 2	
13,800.0	6,827.3	13,717.4	6,716.9	199.2	198.7	74.69	74.69	-59.7	7,045.7	418.1	33.7	384.33	1.088 Level 2	
13,900.0	6,826.4	13,817.4	6,715.6	202.0	201.5	74.63	74.63	-59.7	7,145.7	418.2	28.5	389.65	1.073 Level 2	
13,942.5	6,826.0	13,859.9	6,715.0	203.2	202.6	74.61	74.61	-59.7	7,188.2	418.2	26.3	391.90	1.067 Level 2, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-412 - Wellbore #1 - Plan #1 (2-26-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	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	90.01	90.01	0.0	30.6	30.6				
100.0	100.0	100.0	100.0	0.1	0.1	90.01	90.01	0.0	30.6	30.6	30.4	0.22	136.328	
200.0	200.0	200.0	200.0	0.3	0.3	90.01	90.01	0.0	30.6	30.6	30.0	0.67	45.443	
300.0	300.0	300.0	300.0	0.6	0.6	90.01	90.01	0.0	30.6	30.6	29.5	1.12	27.266	
400.0	400.0	400.0	400.0	0.8	0.8	90.01	90.01	0.0	30.6	30.6	29.1	1.57	19.475	
500.0	500.0	500.0	500.0	1.0	1.0	90.01	90.01	0.0	30.6	30.6	28.6	2.02	15.148	
600.0	600.0	600.0	600.0	1.2	1.2	90.01	90.01	0.0	30.6	30.6	28.2	2.47	12.393	
700.0	700.0	700.0	700.0	1.5	1.5	90.01	90.01	0.0	30.6	30.6	27.7	2.92	10.487	
800.0	800.0	800.0	800.0	1.7	1.7	90.01	90.01	0.0	30.6	30.6	27.3	3.37	9.089	
900.0	900.0	900.0	900.0	1.9	1.9	90.01	90.01	0.0	30.6	30.6	26.8	3.82	8.019	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.01	90.01	0.0	30.6	30.6	26.4	4.27	7.175	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.01	90.01	0.0	30.6	30.6	25.9	4.72	6.492	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.01	90.01	0.0	30.6	30.6	25.5	5.17	5.927 CC, ES	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	121.22	121.22	0.0	30.6	31.5	25.9	5.62	5.611	
1,400.0	1,399.8	1,399.8	1,399.8	3.0	3.0	128.61	128.61	0.0	30.6	34.5	28.5	6.06	5.697	
1,500.0	1,499.5	1,499.5	1,499.5	3.3	3.3	138.19	138.19	0.0	30.6	40.5	34.0	6.50	6.239	
1,600.0	1,598.9	1,599.0	1,599.0	3.5	3.5	148.42	148.42	-1.4	29.7	48.7	41.8	6.92	7.047	
1,700.0	1,698.3	1,698.1	1,697.9	3.7	3.6	158.91	158.91	-5.7	26.8	58.3	51.0	7.31	7.970	
1,800.0	1,797.8	1,796.3	1,795.8	4.0	3.8	168.94	168.94	-12.6	22.0	70.1	62.4	7.73	9.075	
1,900.0	1,897.2	1,894.1	1,892.9	4.3	4.0	177.79	177.79	-22.0	15.6	84.7	76.5	8.16	10.382	
2,000.0	1,996.7	1,992.2	1,990.3	4.5	4.2	-175.80	-175.80	-31.8	8.9	100.9	92.3	8.60	11.732	
2,100.0	2,096.1	2,090.4	2,087.8	4.8	4.5	-171.19	-171.19	-41.5	2.2	118.0	108.9	9.05	13.038	
2,200.0	2,195.6	2,188.5	2,185.2	5.1	4.7	-167.75	-167.75	-51.3	-4.4	135.6	126.1	9.50	14.270	
2,300.0	2,295.0	2,286.7	2,282.6	5.3	4.9	-165.11	-165.11	-61.1	-11.1	153.6	143.7	9.97	15.417	
2,400.0	2,394.5	2,384.8	2,380.0	5.6	5.2	-163.02	-163.02	-70.8	-17.8	171.9	161.5	10.43	16.479	
2,500.0	2,493.9	2,483.0	2,477.5	5.9	5.5	-161.34	-161.34	-80.6	-24.4	190.4	179.5	10.90	17.461	
2,600.0	2,593.4	2,581.1	2,574.9	6.2	5.7	-159.95	-159.95	-90.3	-31.1	208.9	197.6	11.38	18.367	
2,700.0	2,692.8	2,679.2	2,672.3	6.5	6.0	-158.79	-158.79	-100.1	-37.8	227.6	215.8	11.85	19.204	
2,800.0	2,792.3	2,777.4	2,769.8	6.7	6.3	-157.81	-157.81	-109.9	-44.5	246.4	234.0	12.33	19.979	
2,900.0	2,891.7	2,875.5	2,867.2	7.0	6.6	-156.96	-156.96	-119.6	-51.1	265.2	252.4	12.81	20.696	
3,000.0	2,991.2	2,973.7	2,964.6	7.3	6.9	-156.23	-156.23	-129.4	-57.8	284.0	270.8	13.30	21.362	
3,100.0	3,090.6	3,071.8	3,062.1	7.6	7.1	-155.59	-155.59	-139.1	-64.5	303.0	289.2	13.78	21.980	
3,200.0	3,190.0	3,170.0	3,159.5	7.9	7.4	-155.02	-155.02	-148.9	-71.2	321.9	307.6	14.27	22.556	
3,300.0	3,289.5	3,268.1	3,256.9	8.2	7.7	-154.52	-154.52	-158.7	-77.8	340.9	326.1	14.76	23.093	
3,400.0	3,388.9	3,366.3	3,354.3	8.4	8.0	-154.07	-154.07	-168.4	-84.5	359.8	344.6	15.25	23.595	
3,500.0	3,488.4	3,464.4	3,451.8	8.7	8.3	-153.66	-153.66	-178.2	-91.2	378.8	363.1	15.74	24.065	
3,600.0	3,587.8	3,562.5	3,549.2	9.0	8.6	-153.29	-153.29	-187.9	-97.9	397.9	381.6	16.24	24.505	
3,700.0	3,687.3	3,660.7	3,646.6	9.3	8.9	-152.96	-152.96	-197.7	-104.5	416.9	400.2	16.73	24.919	
3,800.0	3,786.7	3,758.8	3,744.1	9.6	9.2	-152.66	-152.66	-207.5	-111.2	435.9	418.7	17.23	25.308	
3,900.0	3,886.2	3,857.0	3,841.5	9.9	9.5	-152.38	-152.38	-217.2	-117.9	455.0	437.3	17.72	25.675	
4,000.0	3,985.6	3,955.1	3,938.9	10.2	9.8	-152.12	-152.12	-227.0	-124.5	474.1	455.9	18.22	26.020	
4,100.0	4,085.1	4,053.3	4,036.3	10.5	10.1	-151.89	-151.89	-236.7	-131.2	493.1	474.4	18.72	26.347	
4,200.0	4,184.5	4,151.4	4,133.8	10.8	10.4	-151.67	-151.67	-246.5	-137.9	512.2	493.0	19.22	26.657	
4,300.0	4,284.0	4,249.5	4,231.2	11.1	10.7	-151.47	-151.47	-256.3	-144.6	531.3	511.6	19.72	26.950	
4,400.0	4,383.4	4,347.7	4,328.6	11.3	11.0	-151.28	-151.28	-266.0	-151.2	550.4	530.2	20.22	27.228	
4,500.0	4,482.9	4,445.8	4,426.1	11.6	11.4	-151.10	-151.10	-275.8	-157.9	569.5	548.8	20.72	27.492	
4,600.0	4,582.3	4,544.0	4,523.5	11.9	11.7	-150.94	-150.94	-285.5	-164.6	588.6	567.4	21.22	27.743	
4,700.0	4,681.7	4,642.1	4,620.9	12.2	12.0	-150.78	-150.78	-295.3	-171.3	607.7	586.0	21.72	27.982	
4,800.0	4,781.2	4,754.5	4,732.6	12.5	12.3	-150.67	-150.67	-305.6	-178.3	626.1	603.9	22.23	28.169	
4,900.0	4,880.6	4,875.6	4,853.4	12.8	12.5	-150.79	-150.79	-312.8	-183.2	641.3	618.6	22.73	28.219	
5,000.0	4,980.2	4,997.9	4,975.6	13.1	12.7	-151.19	-151.19	-315.8	-185.3	651.9	628.7	23.22	28.079	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-412 - Wellbore #1 - Plan #1 (2-26-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
5,100.0	5,080.0	5,102.3	5,080.0	13.3	12.9	-151.50	-315.9	-185.4	657.2	633.6	23.62	27.823			
5,200.0	5,180.0	5,202.3	5,180.0	13.4	13.1	-151.62	-315.9	-185.4	659.4	635.4	23.98	27.491			
5,300.0	5,280.0	5,302.3	5,280.0	13.6	13.3	179.94	-315.9	-185.4	659.4	633.6	25.84	25.520			
5,400.0	5,380.0	5,402.3	5,380.0	13.8	13.4	179.94	-315.9	-185.4	659.4	633.2	26.21	25.161			
5,500.0	5,480.0	5,502.3	5,480.0	14.0	13.6	179.94	-315.9	-185.4	659.4	632.8	26.58	24.810			
5,600.0	5,580.0	5,602.3	5,580.0	14.2	13.8	179.94	-315.9	-185.4	659.4	632.5	26.95	24.467			
5,700.0	5,680.0	5,702.3	5,680.0	14.4	13.9	179.94	-315.9	-185.4	659.4	632.1	27.33	24.131			
5,800.0	5,780.0	5,802.3	5,780.0	14.5	14.1	179.94	-315.9	-185.4	659.4	631.7	27.70	23.803			
5,900.0	5,880.0	5,902.3	5,880.0	14.7	14.3	179.94	-315.9	-185.4	659.4	631.3	28.08	23.481			
6,000.0	5,980.0	6,002.3	5,980.0	14.9	14.5	179.94	-315.9	-185.4	659.4	631.0	28.47	23.166			
6,100.0	6,080.0	6,102.3	6,080.0	15.1	14.6	179.94	-315.9	-185.4	659.4	630.6	28.85	22.858			
6,200.0	6,179.9	6,202.2	6,179.8	15.3	14.8	89.94	-315.9	-182.1	659.4	631.5	27.94	23.599			
6,300.0	6,278.6	6,302.1	6,278.4	15.4	14.9	89.92	-315.9	-166.3	659.4	631.2	28.20	23.383			
6,400.0	6,374.4	6,402.0	6,374.1	15.5	15.0	89.91	-315.9	-137.9	659.4	631.0	28.40	23.216			
6,500.0	6,465.7	6,501.8	6,465.2	15.6	15.0	89.90	-315.9	-97.2	659.4	630.8	28.62	23.042			
6,600.0	6,550.9	6,601.7	6,550.2	15.6	15.1	89.90	-315.9	-45.0	659.4	630.5	28.95	22.778			
6,700.0	6,628.6	6,701.5	6,627.7	15.7	15.1	89.89	-315.9	17.8	659.4	629.9	29.54	22.324			
6,800.0	6,697.4	6,801.4	6,696.4	15.8	15.2	89.89	-315.9	90.2	659.4	628.9	30.54	21.589			
6,900.0	6,756.1	6,901.2	6,755.0	16.5	15.7	89.89	-315.9	171.0	659.4	627.3	32.11	20.538			
7,000.0	6,803.8	7,001.0	6,802.6	17.7	16.8	89.89	-315.9	258.6	659.4	625.1	34.31	19.218			
7,100.0	6,839.6	7,100.9	6,838.4	19.1	18.3	89.89	-315.9	351.7	659.4	622.3	37.17	17.742			
7,200.0	6,862.9	7,200.7	6,861.7	20.8	20.0	89.89	-315.9	448.7	659.4	618.8	40.59	16.246			
7,300.0	6,875.0	7,300.6	6,873.8	22.8	22.0	89.90	-315.9	547.9	659.4	615.0	44.46	14.833			
7,400.0	6,883.0	7,400.5	6,881.8	24.8	24.1	89.90	-315.9	647.5	659.4	610.8	48.65	13.555			
7,500.0	6,883.3	7,500.5	6,882.2	27.0	26.3	89.90	-315.9	747.4	659.4	606.3	53.08	12.424			
7,600.0	6,882.5	7,600.5	6,881.3	29.3	28.6	89.90	-315.9	847.4	659.4	601.7	57.71	11.427			
7,700.0	6,881.6	7,700.5	6,880.5	31.7	31.0	89.91	-315.9	947.4	659.4	596.9	62.50	10.551			
7,800.0	6,880.7	7,800.5	6,879.6	34.2	33.5	89.91	-315.9	1,047.4	659.4	592.0	67.42	9.781			
7,900.0	6,879.8	7,900.5	6,878.7	36.7	36.0	89.91	-315.9	1,147.4	659.4	587.0	72.44	9.103			
8,000.0	6,878.9	8,000.5	6,877.9	39.2	38.6	89.91	-315.9	1,247.4	659.4	581.9	77.54	8.504			
8,100.0	6,878.0	8,100.5	6,877.0	41.8	41.2	89.91	-315.9	1,347.4	659.4	576.7	82.71	7.973			
8,200.0	6,877.1	8,200.5	6,876.1	44.4	43.8	89.91	-315.9	1,447.4	659.4	571.5	87.93	7.499			
8,300.0	6,876.2	8,300.5	6,875.2	47.0	46.4	89.91	-315.9	1,547.4	659.4	566.2	93.20	7.075			
8,400.0	6,875.3	8,400.5	6,874.4	49.6	49.1	89.92	-315.9	1,647.4	659.4	560.9	98.51	6.694			
8,500.0	6,874.4	8,500.5	6,873.5	52.3	51.7	89.92	-315.9	1,747.4	659.4	555.6	103.85	6.350			
8,600.0	6,873.6	8,600.5	6,872.6	55.0	54.4	89.92	-315.9	1,847.4	659.4	550.2	109.22	6.037			
8,700.0	6,872.7	8,700.5	6,871.8	57.7	57.1	89.92	-315.9	1,947.4	659.4	544.8	114.61	5.753			
8,800.0	6,871.8	8,800.5	6,870.9	60.4	59.8	89.92	-315.9	2,047.4	659.4	539.4	120.03	5.494			
8,900.0	6,870.9	8,900.5	6,870.0	63.1	62.5	89.92	-315.9	2,147.4	659.4	534.0	125.46	5.256			
9,000.0	6,870.0	9,000.5	6,869.1	65.8	65.3	89.93	-315.9	2,247.4	659.4	528.5	130.90	5.037			
9,100.0	6,869.1	9,100.5	6,868.3	68.5	68.0	89.93	-315.9	2,347.4	659.4	523.1	136.37	4.836			
9,200.0	6,868.2	9,200.5	6,867.4	71.2	70.7	89.93	-315.9	2,447.3	659.4	517.6	141.84	4.649			
9,300.0	6,867.3	9,300.5	6,866.5	74.0	73.5	89.93	-315.9	2,547.3	659.4	512.1	147.32	4.476			
9,400.0	6,866.4	9,400.5	6,865.6	76.7	76.2	89.93	-315.9	2,647.3	659.4	506.6	152.82	4.315			
9,500.0	6,865.5	9,500.5	6,864.8	79.5	79.0	89.93	-315.9	2,747.3	659.4	501.1	158.32	4.165			
9,600.0	6,864.7	9,600.5	6,863.9	82.2	81.7	89.93	-315.9	2,847.3	659.4	495.6	163.83	4.025			
9,700.0	6,863.8	9,700.5	6,863.0	85.0	84.5	89.94	-315.9	2,947.3	659.4	490.1	169.34	3.894			
9,800.0	6,862.9	9,800.5	6,862.2	87.7	87.3	89.94	-315.9	3,047.3	659.4	484.6	174.87	3.771			
9,900.0	6,862.0	9,900.5	6,861.3	90.5	90.0	89.94	-315.9	3,147.3	659.4	479.0	180.40	3.655			
10,000.0	6,861.1	10,000.5	6,860.4	93.2	92.8	89.94	-315.9	3,247.3	659.4	473.5	185.93	3.547			
10,100.0	6,860.2	10,100.5	6,859.5	96.0	95.6	89.94	-315.9	3,347.3	659.4	467.9	191.47	3.444			

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design Klein 19MN-HZ Pad Sec.19-T5N-R64W - Klein 19N-412 - Wellbore #1 - Plan #1 (2-26-14)													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		
10,200.0	6,859.3	10,200.5	6,858.7	98.8	98.3	89.94	-315.9	3,447.3	659.4	462.4	197.01	3.347		
10,300.0	6,858.4	10,300.5	6,857.8	101.6	101.1	89.94	-315.9	3,547.3	659.4	456.9	202.56	3.255		
10,400.0	6,857.5	10,400.5	6,856.9	104.3	103.9	89.95	-315.9	3,647.3	659.4	451.3	208.11	3.169		
10,500.0	6,856.6	10,500.5	6,856.0	107.1	106.7	89.95	-315.9	3,747.3	659.4	445.8	213.67	3.086		
10,600.0	6,855.8	10,600.5	6,855.2	109.9	109.4	89.95	-315.9	3,847.3	659.4	440.2	219.23	3.008		
10,700.0	6,854.9	10,700.5	6,854.3	112.7	112.2	89.95	-315.9	3,947.3	659.4	434.6	224.79	2.934		
10,800.0	6,854.0	10,800.5	6,853.4	115.4	115.0	89.95	-315.9	4,047.3	659.4	429.1	230.35	2.863		
10,900.0	6,853.1	10,900.5	6,852.6	118.2	117.8	89.95	-315.9	4,147.3	659.4	423.5	235.92	2.795		
11,000.0	6,852.2	11,000.5	6,851.7	121.0	120.6	89.96	-315.9	4,247.3	659.4	417.9	241.49	2.731		
11,100.0	6,851.3	11,100.5	6,850.8	123.8	123.4	89.96	-315.9	4,347.3	659.4	412.4	247.06	2.669		
11,200.0	6,850.4	11,200.5	6,849.9	126.6	126.1	89.96	-315.9	4,447.3	659.4	406.8	252.63	2.610		
11,300.0	6,849.5	11,300.5	6,849.1	129.3	128.9	89.96	-315.9	4,547.3	659.4	401.2	258.20	2.554		
11,400.0	6,848.6	11,400.5	6,848.2	132.1	131.7	89.96	-315.9	4,647.3	659.4	395.6	263.78	2.500		
11,500.0	6,847.7	11,500.5	6,847.3	134.9	134.5	89.96	-315.9	4,747.3	659.4	390.1	269.36	2.448		
11,600.0	6,846.9	11,600.5	6,846.4	137.7	137.3	89.96	-315.9	4,847.3	659.4	384.5	274.94	2.398		
11,700.0	6,846.0	11,700.5	6,845.6	140.5	140.1	89.97	-315.9	4,947.3	659.4	378.9	280.52	2.351		
11,800.0	6,845.1	11,800.5	6,844.7	143.3	142.9	89.97	-315.9	5,047.2	659.4	373.3	286.10	2.305		
11,900.0	6,844.2	11,900.5	6,843.8	146.1	145.7	89.97	-315.9	5,147.2	659.4	367.7	291.69	2.261		
12,000.0	6,843.3	12,000.5	6,843.0	148.9	148.5	89.97	-315.9	5,247.2	659.4	362.1	297.27	2.218		
12,100.0	6,842.4	12,100.5	6,842.1	151.7	151.3	89.97	-315.9	5,347.2	659.4	356.6	302.86	2.177		
12,200.0	6,841.5	12,200.5	6,841.2	154.5	154.1	89.97	-315.9	5,447.2	659.4	351.0	308.45	2.138		
12,300.0	6,840.6	12,300.5	6,840.3	157.2	156.9	89.98	-315.9	5,547.2	659.4	345.4	314.04	2.100		
12,400.0	6,839.7	12,400.5	6,839.5	160.0	159.6	89.98	-315.9	5,647.2	659.4	339.8	319.62	2.063		
12,500.0	6,838.8	12,500.5	6,838.6	162.8	162.4	89.98	-315.9	5,747.2	659.4	334.2	325.22	2.028		
12,600.0	6,837.9	12,600.5	6,837.7	165.6	165.2	89.98	-315.9	5,847.2	659.4	328.6	330.81	1.993		
12,700.0	6,837.1	12,700.5	6,836.8	168.4	168.0	89.98	-315.9	5,947.2	659.4	323.0	336.40	1.960		
12,800.0	6,836.2	12,800.5	6,836.0	171.2	170.8	89.98	-315.9	6,047.2	659.4	317.4	341.99	1.928		
12,900.0	6,835.3	12,900.5	6,835.1	174.0	173.6	89.98	-315.9	6,147.2	659.4	311.8	347.59	1.897		
13,000.0	6,834.4	13,000.5	6,834.2	176.8	176.4	89.99	-315.9	6,247.2	659.4	306.2	353.18	1.867		
13,100.0	6,833.5	13,100.5	6,833.4	179.6	179.2	89.99	-315.9	6,347.2	659.4	300.6	358.78	1.838		
13,200.0	6,832.6	13,200.5	6,832.5	182.4	182.0	89.99	-315.9	6,447.2	659.4	295.0	364.37	1.810		
13,300.0	6,831.7	13,300.5	6,831.6	185.2	184.8	89.99	-315.9	6,547.2	659.4	289.4	369.97	1.782		
13,400.0	6,830.8	13,400.5	6,830.7	188.0	187.6	89.99	-315.9	6,647.2	659.4	283.8	375.57	1.756		
13,500.0	6,829.9	13,500.5	6,829.9	190.8	190.4	89.99	-315.9	6,747.2	659.4	278.2	381.17	1.730		
13,600.0	6,829.0	13,600.5	6,829.0	193.6	193.2	89.99	-315.9	6,847.2	659.4	272.6	386.76	1.705		
13,700.0	6,828.2	13,700.5	6,828.1	196.4	196.0	90.00	-315.9	6,947.2	659.4	267.1	392.36	1.681		
13,800.0	6,827.3	13,800.5	6,827.2	199.2	198.8	90.00	-315.9	7,047.2	659.4	261.5	397.96	1.657		
13,900.0	6,826.4	13,900.5	6,826.4	202.0	201.6	90.00	-315.9	7,147.2	659.4	255.9	403.56	1.634		
13,942.5	6,826.0	13,942.9	6,826.0	203.2	202.8	90.00	-315.9	7,189.6	659.4	253.5	405.94	1.624 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4643.0ft (RKB - 15')

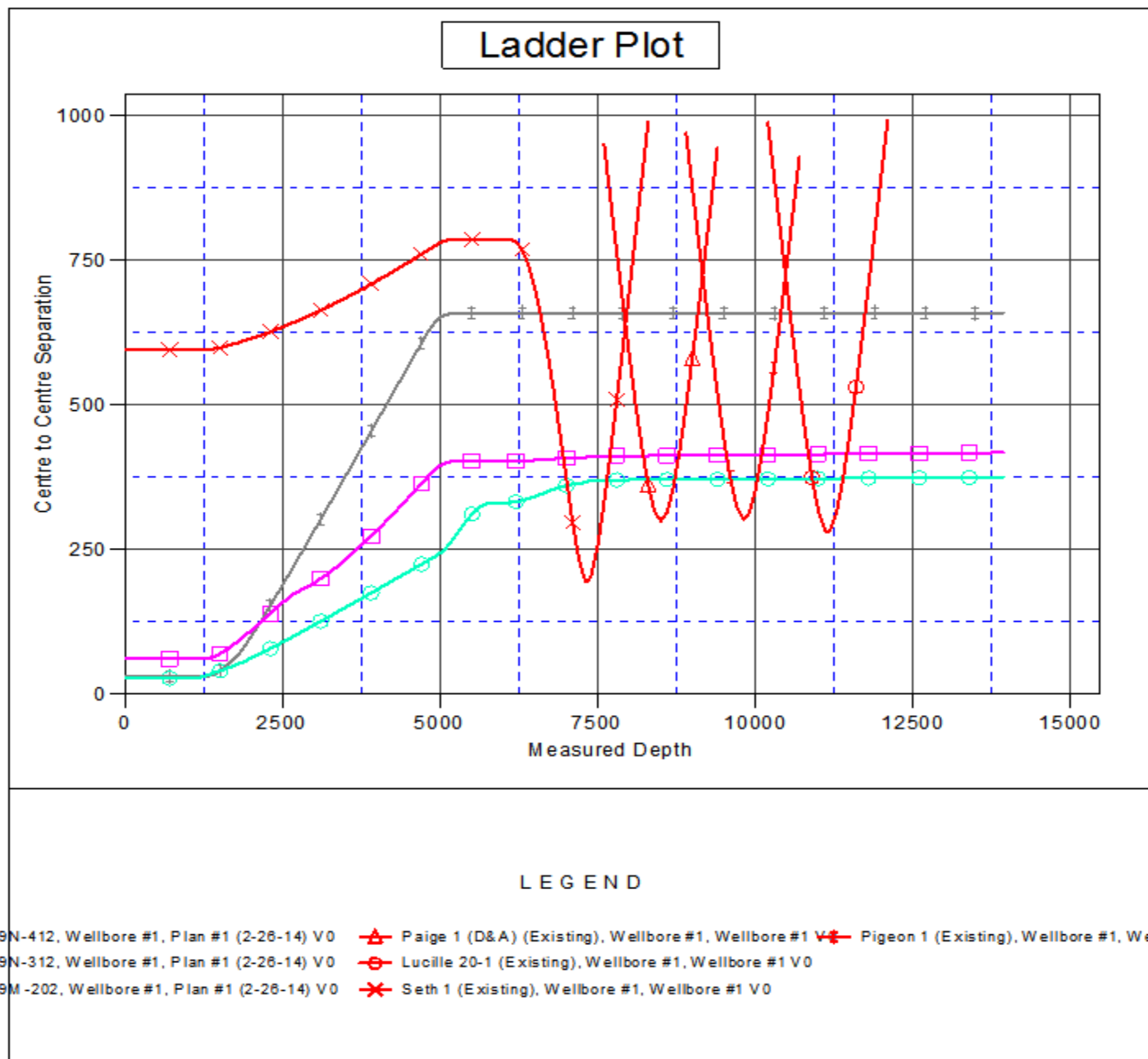
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Klein 19M-432

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°





<b>Company:</b>	PETROLEUM DEVELOPMENT CORP Weld County CO	<b>Local Co-ordinate Reference:</b>	Well Klein 19M-432
<b>Project:</b>	SEC.19-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Reference Site:</b>	Klein 19MN-HZ Pad Sec.19-T5N-R64W	<b>MD Reference:</b>	WELL @ 4643.0ft (RKB - 15')
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 19M-432	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	landmark
<b>Reference Design:</b>	Plan #1 (2-26-14)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4643.0ft (RKB - 15')

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