

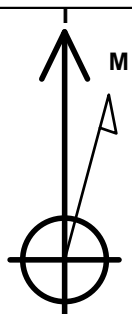
# PETROLEUM DEVELOPMENT CORP DJ Basin

Well Name: **Klein 7Q-321**

Surface Location: Klein 5N64W7 Pad Sec.7-T5N-R64W  
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
 Ground Elevation: 4624.0  
 +N/-S+E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1392729.673253319.19 40.407878 -104.590328  
 Original Well Elev WELL @ 4637.0ft (Original Well Elev)

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 537'FSL & 1893'FEL, Sec.7	1.0	0.0	0.0	Point
BHL 200'FNL & 2075'FEL, Sec.6	6793.0	9744.3	-159.8	Point



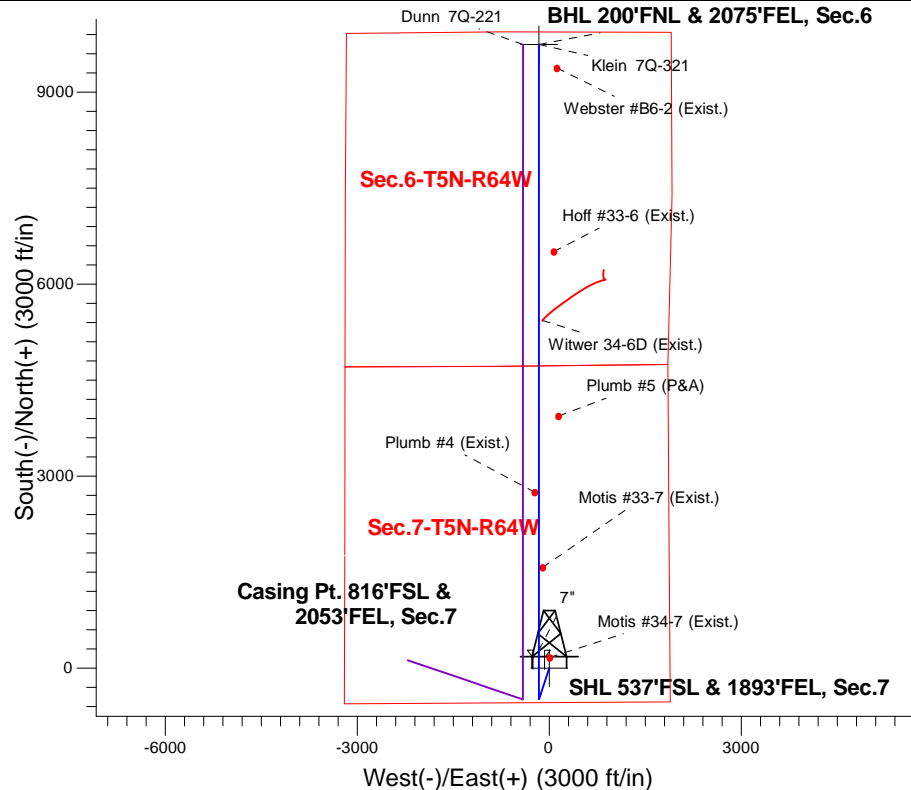
Azimuths to True North  
 Magnetic North: 8.19°

Magnetic Field  
 Strength: 52698.7nT  
 Dip Angle: 66.93°  
 Date: 10/14/2015  
 Model: IGRF2010

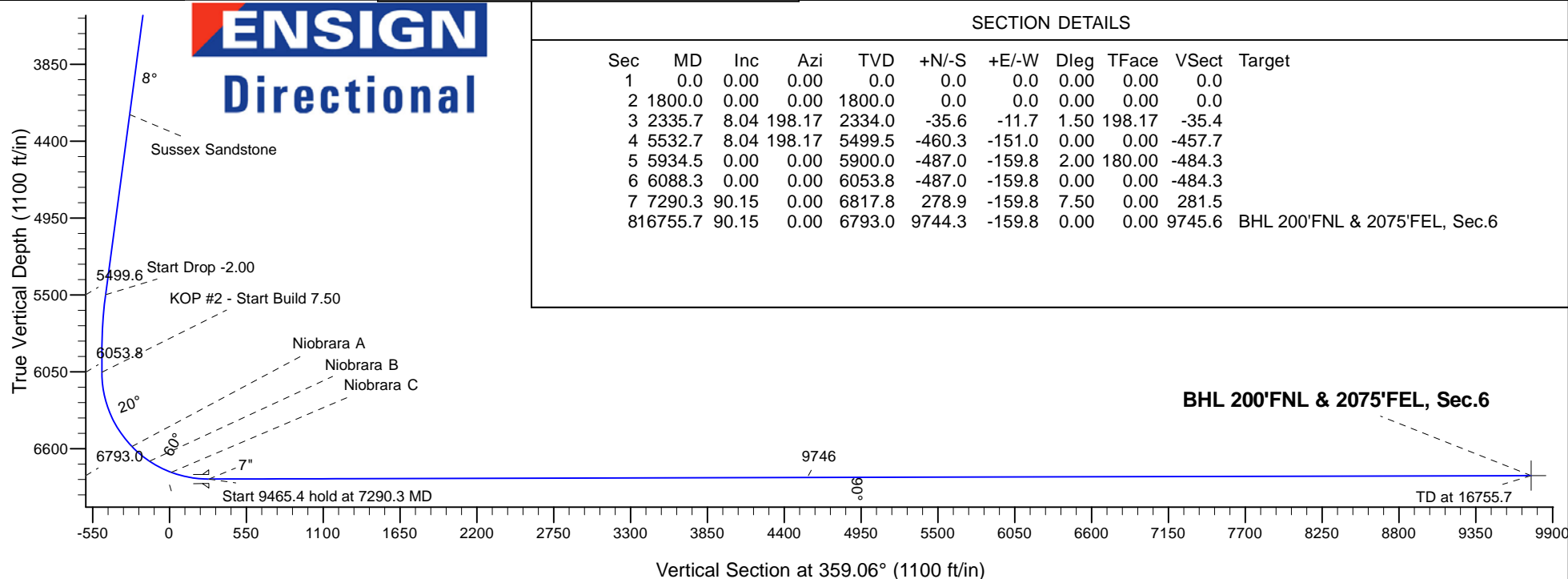
Klein 5N64W7 Pad Sec.7-T5N-R64W  
 Klein 7Q-321  
 Plan #1 (10-14-15)  
 16:19, October 19 2015

## ANNOTATIONS

TVD	MD	Annotation
1800.0	1800.0	KOP - Start Build 1.50
5499.5	5532.7	Start Drop -2.00
6053.8	6088.3	KOP #2 - Start Build 7.50
6817.8	7290.3	Start 9465.4 hold at 7290.3 MD
6793.0	16755.7	TD at 16755.7



## ENSIGN Directional



## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1800.0	0.00	0.00	1800.0	0.0	0.0	0.00	0.00	0.0	
3	2335.7	8.04	198.17	2334.0	-35.6	-11.7	1.50	198.17	-35.4	
4	5532.7	8.04	198.17	5499.5	-460.3	-151.0	0.00	0.00	-457.7	
5	5934.5	0.00	0.00	5900.0	-487.0	-159.8	2.00	180.00	-484.3	
6	6088.3	0.00	0.00	6053.8	-487.0	-159.8	0.00	0.00	-484.3	
7	7290.3	90.15	0.00	6817.8	278.9	-159.8	7.50	0.00	281.5	
	816755.7	90.15	0.00	6793.0	9744.3	-159.8	0.00	0.00	9745.6	BHL 200'FNL & 2075'FEL, Sec.6



## **Directional**

### **PETROLEUM DEVELOPMENT CORP DJ Basin**

**SEC.7-T5N-R64W**

**Klein 5N64W7 Pad Sec.7-T5N-R64W**

**Klein 7Q-321**

**Wellbore #1**

**Plan: Plan #1 (10-14-15)**

### **Standard Planning Report**

**19 October, 2015**

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 7Q-321	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-14-15)		

<b>Project</b>	SEC.7-T5N-R64W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

<b>Site</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W		
<b>Site Position:</b>		<b>Northing:</b>	1,392,729.68 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,253,319.19 usft
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13-3/16 "
		<b>Latitude:</b>	40.407878
		<b>Longitude:</b>	-104.590328
		<b>Grid Convergence:</b>	0.59 °

<b>Well</b>	Klein 7Q-321		
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b> 1,392,729.67 usft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b> 3,253,319.19 usft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	0.0 ft
		<b>Latitude:</b>	40.407878
		<b>Longitude:</b>	-104.590328
		<b>Ground Level:</b>	4,624.0 ft

<b>Wellbore</b>	Wellbore #1		
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>
	IGRF2010	10/14/2015	8.19
			<b>Dip Angle (°)</b>
			66.93
			<b>Field Strength (nT)</b>
			52,699

<b>Design</b>	Plan #1 (10-14-15)		
<b>Audit Notes:</b>			
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b> 0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>
	0.0	0.0	0.0
			<b>Direction (°)</b>
			359.06

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,335.7	8.04	198.17	2,334.0	-35.6	-11.7	1.50	1.50	0.00	198.17	
5,532.7	8.04	198.17	5,499.5	-460.3	-151.0	0.00	0.00	0.00	0.00	
5,934.5	0.00	0.00	5,900.0	-487.0	-159.8	2.00	-2.00	0.00	180.00	
6,088.3	0.00	0.00	6,053.8	-487.0	-159.8	0.00	0.00	0.00	0.00	
7,290.3	90.15	0.00	6,817.8	278.9	-159.8	7.50	7.50	0.00	0.00	
16,755.7	90.15	0.00	6,793.0	9,744.3	-159.8	0.00	0.00	0.00	0.00	BHL 200'FNL & 2075'

Database:	US_EDM	Local Co-ordinate Reference:	Well Klein 7Q-321
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	TVD Reference:	WELL @ 4637.0ft (Original Well Elev)
Project:	SEC.7-T5N-R64W	MD Reference:	WELL @ 4637.0ft (Original Well Elev)
Site:	Klein 5N64W7 Pad Sec.7-T5N-R64W	North Reference:	True
Well:	Klein 7Q-321	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-14-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
1.0	0.00	0.00	1.0	0.0	0.0	0.0	0.00	0.00	0.00
SHL 537'FSL & 1893'FEL, Sec.7									
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.50									
1,900.0	1.50	198.17	1,900.0	-1.2	-0.4	-1.2	1.50	1.50	0.00
2,000.0	3.00	198.17	1,999.9	-5.0	-1.6	-4.9	1.50	1.50	0.00
2,100.0	4.50	198.17	2,099.7	-11.2	-3.7	-11.1	1.50	1.50	0.00
2,200.0	6.00	198.17	2,199.3	-19.9	-6.5	-19.8	1.50	1.50	0.00
2,300.0	7.50	198.17	2,298.6	-31.0	-10.2	-30.9	1.50	1.50	0.00
2,335.7	8.04	198.17	2,334.0	-35.6	-11.7	-35.4	1.50	1.50	0.00
2,400.0	8.04	198.17	2,397.6	-44.2	-14.5	-43.9	0.00	0.00	0.00
2,500.0	8.04	198.17	2,496.6	-57.5	-18.9	-57.1	0.00	0.00	0.00
2,600.0	8.04	198.17	2,595.7	-70.7	-23.2	-70.3	0.00	0.00	0.00
2,700.0	8.04	198.17	2,694.7	-84.0	-27.6	-83.6	0.00	0.00	0.00
2,800.0	8.04	198.17	2,793.7	-97.3	-31.9	-96.8	0.00	0.00	0.00
2,900.0	8.04	198.17	2,892.7	-110.6	-36.3	-110.0	0.00	0.00	0.00
3,000.0	8.04	198.17	2,991.7	-123.9	-40.6	-123.2	0.00	0.00	0.00
3,100.0	8.04	198.17	3,090.7	-137.2	-45.0	-136.4	0.00	0.00	0.00
3,200.0	8.04	198.17	3,189.8	-150.4	-49.4	-149.6	0.00	0.00	0.00
3,300.0	8.04	198.17	3,288.8	-163.7	-53.7	-162.8	0.00	0.00	0.00
3,400.0	8.04	198.17	3,387.8	-177.0	-58.1	-176.0	0.00	0.00	0.00
3,500.0	8.04	198.17	3,486.8	-190.3	-62.4	-189.2	0.00	0.00	0.00
3,503.2	8.04	198.17	3,490.0	-190.7	-62.6	-189.7	0.00	0.00	0.00
Parkman Sandstone									
3,600.0	8.04	198.17	3,585.8	-203.6	-66.8	-202.4	0.00	0.00	0.00
3,700.0	8.04	198.17	3,684.8	-216.8	-71.2	-215.7	0.00	0.00	0.00
3,800.0	8.04	198.17	3,783.9	-230.1	-75.5	-228.9	0.00	0.00	0.00
3,900.0	8.04	198.17	3,882.9	-243.4	-79.9	-242.1	0.00	0.00	0.00
4,000.0	8.04	198.17	3,981.9	-256.7	-84.2	-255.3	0.00	0.00	0.00
4,100.0	8.04	198.17	4,080.9	-270.0	-88.6	-268.5	0.00	0.00	0.00
4,200.0	8.04	198.17	4,179.9	-283.3	-92.9	-281.7	0.00	0.00	0.00
4,230.4	8.04	198.17	4,210.0	-287.3	-94.3	-285.7	0.00	0.00	0.00
Sussex Sandstone									
4,300.0	8.04	198.17	4,279.0	-296.5	-97.3	-294.9	0.00	0.00	0.00
4,400.0	8.04	198.17	4,378.0	-309.8	-101.7	-308.1	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Klein 7Q-321
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Project:	SEC.7-T5N-R64W	MD Reference:	WELL @ 4637.0ft (Original Well Elev)
Site:	Klein 5N64W7 Pad Sec.7-T5N-R64W	North Reference:	True
Well:	Klein 7Q-321	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-14-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,500.0	8.04	198.17	4,477.0	-323.1	-106.0	-321.3	0.00	0.00	0.00
4,600.0	8.04	198.17	4,576.0	-336.4	-110.4	-334.5	0.00	0.00	0.00
4,700.0	8.04	198.17	4,675.0	-349.7	-114.7	-347.7	0.00	0.00	0.00
4,800.0	8.04	198.17	4,774.0	-363.0	-119.1	-361.0	0.00	0.00	0.00
4,900.0	8.04	198.17	4,873.1	-376.2	-123.5	-374.2	0.00	0.00	0.00
5,000.0	8.04	198.17	4,972.1	-389.5	-127.8	-387.4	0.00	0.00	0.00
5,100.0	8.04	198.17	5,071.1	-402.8	-132.2	-400.6	0.00	0.00	0.00
5,200.0	8.04	198.17	5,170.1	-416.1	-136.5	-413.8	0.00	0.00	0.00
5,300.0	8.04	198.17	5,269.1	-429.4	-140.9	-427.0	0.00	0.00	0.00
5,400.0	8.04	198.17	5,368.2	-442.7	-145.2	-440.2	0.00	0.00	0.00
5,500.0	8.04	198.17	5,467.2	-455.9	-149.6	-453.4	0.00	0.00	0.00
5,532.7	8.04	198.17	5,499.6	-460.3	-151.0	-457.7	0.00	0.00	0.00
Start Drop -2.00									
5,600.0	6.69	198.17	5,566.3	-468.5	-153.7	-465.9	2.00	-2.00	0.00
5,700.0	4.69	198.17	5,665.8	-477.9	-156.8	-475.3	2.00	-2.00	0.00
5,800.0	2.69	198.17	5,765.6	-484.0	-158.8	-481.3	2.00	-2.00	0.00
5,900.0	0.69	198.17	5,865.5	-486.8	-159.7	-484.1	2.00	-2.00	0.00
5,934.5	0.00	0.00	5,900.0	-487.0	-159.8	-484.3	2.00	-2.00	0.00
6,000.0	0.00	0.00	5,965.5	-487.0	-159.8	-484.3	0.00	0.00	0.00
6,088.3	0.00	0.00	6,053.8	-487.0	-159.8	-484.3	0.00	0.00	0.00
KOP #2 - Start Build 7.50									
6,100.0	0.88	0.00	6,065.5	-486.9	-159.8	-484.2	7.50	7.50	0.00
6,200.0	8.38	0.00	6,165.1	-478.8	-159.8	-476.2	7.50	7.50	0.00
6,300.0	15.88	0.00	6,262.8	-457.9	-159.8	-455.2	7.50	7.50	0.00
6,400.0	23.38	0.00	6,357.0	-424.3	-159.8	-421.6	7.50	7.50	0.00
6,500.0	30.88	0.00	6,445.9	-378.7	-159.8	-376.1	7.50	7.50	0.00
6,584.7	37.23	0.00	6,516.0	-331.3	-159.8	-328.7	7.50	7.50	0.00
Sharon Springs									
6,600.0	38.38	0.00	6,528.1	-321.9	-159.8	-319.3	7.50	7.50	0.00
6,675.6	44.05	0.00	6,585.0	-272.1	-159.8	-269.5	7.50	7.50	0.00
Niobrara A									
6,700.0	45.88	0.00	6,602.2	-254.9	-159.8	-252.3	7.50	7.50	0.00
6,800.0	53.38	0.00	6,667.0	-178.8	-159.8	-176.1	7.50	7.50	0.00
6,840.0	56.38	0.00	6,690.0	-146.0	-159.8	-143.4	7.50	7.50	0.00
Niobrara B									
6,900.0	60.88	0.00	6,721.2	-94.9	-159.8	-92.2	7.50	7.50	0.00
7,000.0	68.38	0.00	6,764.0	-4.6	-159.8	-1.9	7.50	7.50	0.00
7,016.7	69.63	0.00	6,770.0	11.0	-159.8	13.6	7.50	7.50	0.00
Niobrara C									
7,100.0	75.88	0.00	6,794.7	90.5	-159.8	93.2	7.50	7.50	0.00
7,200.0	83.38	0.00	6,812.7	188.8	-159.8	191.4	7.50	7.50	0.00
7,290.3	90.15	0.00	6,817.8	278.9	-159.8	281.5	7.50	7.50	0.00
Start 9465.4 hold at 7290.3 MD - 7"									
7,300.0	90.15	0.00	6,817.8	288.6	-159.8	291.2	0.00	0.00	0.00
7,400.0	90.15	0.00	6,817.5	388.6	-159.8	391.2	0.00	0.00	0.00
7,500.0	90.15	0.00	6,817.2	488.6	-159.8	491.2	0.00	0.00	0.00
7,600.0	90.15	0.00	6,817.0	588.6	-159.8	591.2	0.00	0.00	0.00
7,700.0	90.15	0.00	6,816.7	688.6	-159.8	691.2	0.00	0.00	0.00
7,800.0	90.15	0.00	6,816.4	788.6	-159.8	791.2	0.00	0.00	0.00
7,900.0	90.15	0.00	6,816.2	888.6	-159.8	891.1	0.00	0.00	0.00
8,000.0	90.15	0.00	6,815.9	988.6	-159.8	991.1	0.00	0.00	0.00
8,100.0	90.15	0.00	6,815.7	1,088.6	-159.8	1,091.1	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Klein 7Q-321
Company:	PETROLEUM DEVELOPMENT CORP DJ Basin	TVD Reference:	WELL @ 4637.0ft (Original Well Elev)
Project:	SEC.7-T5N-R64W	MD Reference:	WELL @ 4637.0ft (Original Well Elev)
Site:	Klein 5N64W7 Pad Sec.7-T5N-R64W	North Reference:	True
Well:	Klein 7Q-321	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (10-14-15)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,200.0	90.15	0.00	6,815.4	1,188.6	-159.8	1,191.1	0.00	0.00	0.00
8,300.0	90.15	0.00	6,815.1	1,288.6	-159.8	1,291.1	0.00	0.00	0.00
8,400.0	90.15	0.00	6,814.9	1,388.6	-159.8	1,391.1	0.00	0.00	0.00
8,500.0	90.15	0.00	6,814.6	1,488.6	-159.8	1,491.1	0.00	0.00	0.00
8,600.0	90.15	0.00	6,814.4	1,588.6	-159.8	1,591.0	0.00	0.00	0.00
8,700.0	90.15	0.00	6,814.1	1,688.6	-159.8	1,691.0	0.00	0.00	0.00
8,800.0	90.15	0.00	6,813.8	1,788.6	-159.8	1,791.0	0.00	0.00	0.00
8,900.0	90.15	0.00	6,813.6	1,888.6	-159.8	1,891.0	0.00	0.00	0.00
9,000.0	90.15	0.00	6,813.3	1,988.6	-159.8	1,991.0	0.00	0.00	0.00
9,100.0	90.15	0.00	6,813.0	2,088.6	-159.8	2,091.0	0.00	0.00	0.00
9,200.0	90.15	0.00	6,812.8	2,188.6	-159.8	2,191.0	0.00	0.00	0.00
9,300.0	90.15	0.00	6,812.5	2,288.6	-159.8	2,290.9	0.00	0.00	0.00
9,400.0	90.15	0.00	6,812.3	2,388.6	-159.8	2,390.9	0.00	0.00	0.00
9,500.0	90.15	0.00	6,812.0	2,488.6	-159.8	2,490.9	0.00	0.00	0.00
9,600.0	90.15	0.00	6,811.7	2,588.6	-159.8	2,590.9	0.00	0.00	0.00
9,700.0	90.15	0.00	6,811.5	2,688.6	-159.8	2,690.9	0.00	0.00	0.00
9,800.0	90.15	0.00	6,811.2	2,788.6	-159.8	2,790.9	0.00	0.00	0.00
9,900.0	90.15	0.00	6,810.9	2,888.6	-159.8	2,890.9	0.00	0.00	0.00
10,000.0	90.15	0.00	6,810.7	2,988.6	-159.8	2,990.9	0.00	0.00	0.00
10,100.0	90.15	0.00	6,810.4	3,088.6	-159.8	3,090.8	0.00	0.00	0.00
10,200.0	90.15	0.00	6,810.2	3,188.6	-159.8	3,190.8	0.00	0.00	0.00
10,300.0	90.15	0.00	6,809.9	3,288.6	-159.8	3,290.8	0.00	0.00	0.00
10,400.0	90.15	0.00	6,809.6	3,388.6	-159.8	3,390.8	0.00	0.00	0.00
10,500.0	90.15	0.00	6,809.4	3,488.6	-159.8	3,490.8	0.00	0.00	0.00
10,600.0	90.15	0.00	6,809.1	3,588.6	-159.8	3,590.8	0.00	0.00	0.00
10,700.0	90.15	0.00	6,808.9	3,688.6	-159.8	3,690.8	0.00	0.00	0.00
10,800.0	90.15	0.00	6,808.6	3,788.6	-159.8	3,790.7	0.00	0.00	0.00
10,900.0	90.15	0.00	6,808.3	3,888.6	-159.8	3,890.7	0.00	0.00	0.00
11,000.0	90.15	0.00	6,808.1	3,988.6	-159.8	3,990.7	0.00	0.00	0.00
11,100.0	90.15	0.00	6,807.8	4,088.6	-159.8	4,090.7	0.00	0.00	0.00
11,200.0	90.15	0.00	6,807.5	4,188.6	-159.8	4,190.7	0.00	0.00	0.00
11,300.0	90.15	0.00	6,807.3	4,288.6	-159.8	4,290.7	0.00	0.00	0.00
11,400.0	90.15	0.00	6,807.0	4,388.6	-159.8	4,390.7	0.00	0.00	0.00
11,500.0	90.15	0.00	6,806.8	4,488.6	-159.8	4,490.6	0.00	0.00	0.00
11,600.0	90.15	0.00	6,806.5	4,588.6	-159.8	4,590.6	0.00	0.00	0.00
11,700.0	90.15	0.00	6,806.2	4,688.6	-159.8	4,690.6	0.00	0.00	0.00
11,800.0	90.15	0.00	6,806.0	4,788.6	-159.8	4,790.6	0.00	0.00	0.00
11,900.0	90.15	0.00	6,805.7	4,888.6	-159.8	4,890.6	0.00	0.00	0.00
12,000.0	90.15	0.00	6,805.5	4,988.6	-159.8	4,990.6	0.00	0.00	0.00
12,100.0	90.15	0.00	6,805.2	5,088.6	-159.8	5,090.6	0.00	0.00	0.00
12,200.0	90.15	0.00	6,804.9	5,188.6	-159.8	5,190.5	0.00	0.00	0.00
12,300.0	90.15	0.00	6,804.7	5,288.6	-159.8	5,290.5	0.00	0.00	0.00
12,400.0	90.15	0.00	6,804.4	5,388.6	-159.8	5,390.5	0.00	0.00	0.00
12,500.0	90.15	0.00	6,804.1	5,488.6	-159.8	5,490.5	0.00	0.00	0.00
12,600.0	90.15	0.00	6,803.9	5,588.6	-159.8	5,590.5	0.00	0.00	0.00
12,700.0	90.15	0.00	6,803.6	5,688.6	-159.8	5,690.5	0.00	0.00	0.00
12,800.0	90.15	0.00	6,803.4	5,788.6	-159.8	5,790.5	0.00	0.00	0.00
12,900.0	90.15	0.00	6,803.1	5,888.6	-159.8	5,890.5	0.00	0.00	0.00
13,000.0	90.15	0.00	6,802.8	5,988.6	-159.8	5,990.4	0.00	0.00	0.00
13,100.0	90.15	0.00	6,802.6	6,088.6	-159.8	6,090.4	0.00	0.00	0.00
13,200.0	90.15	0.00	6,802.3	6,188.6	-159.8	6,190.4	0.00	0.00	0.00
13,300.0	90.15	0.00	6,802.0	6,288.6	-159.8	6,290.4	0.00	0.00	0.00
13,400.0	90.15	0.00	6,801.8	6,388.6	-159.8	6,390.4	0.00	0.00	0.00

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 7Q-321	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-14-15)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,500.0	90.15	0.00	6,801.5	6,488.6	-159.8	6,490.4	0.00	0.00	0.00	
13,600.0	90.15	0.00	6,801.3	6,588.6	-159.8	6,590.4	0.00	0.00	0.00	
13,700.0	90.15	0.00	6,801.0	6,688.6	-159.8	6,690.3	0.00	0.00	0.00	
13,800.0	90.15	0.00	6,800.7	6,788.6	-159.8	6,790.3	0.00	0.00	0.00	
13,900.0	90.15	0.00	6,800.5	6,888.6	-159.8	6,890.3	0.00	0.00	0.00	
14,000.0	90.15	0.00	6,800.2	6,988.6	-159.8	6,990.3	0.00	0.00	0.00	
14,100.0	90.15	0.00	6,800.0	7,088.6	-159.8	7,090.3	0.00	0.00	0.00	
14,200.0	90.15	0.00	6,799.7	7,188.6	-159.8	7,190.3	0.00	0.00	0.00	
14,300.0	90.15	0.00	6,799.4	7,288.6	-159.8	7,290.3	0.00	0.00	0.00	
14,400.0	90.15	0.00	6,799.2	7,388.6	-159.8	7,390.2	0.00	0.00	0.00	
14,500.0	90.15	0.00	6,798.9	7,488.6	-159.8	7,490.2	0.00	0.00	0.00	
14,600.0	90.15	0.00	6,798.6	7,588.6	-159.8	7,590.2	0.00	0.00	0.00	
14,700.0	90.15	0.00	6,798.4	7,688.6	-159.8	7,690.2	0.00	0.00	0.00	
14,800.0	90.15	0.00	6,798.1	7,788.6	-159.8	7,790.2	0.00	0.00	0.00	
14,900.0	90.15	0.00	6,797.9	7,888.6	-159.8	7,890.2	0.00	0.00	0.00	
15,000.0	90.15	0.00	6,797.6	7,988.6	-159.8	7,990.2	0.00	0.00	0.00	
15,100.0	90.15	0.00	6,797.3	8,088.6	-159.8	8,090.1	0.00	0.00	0.00	
15,200.0	90.15	0.00	6,797.1	8,188.6	-159.8	8,190.1	0.00	0.00	0.00	
15,300.0	90.15	0.00	6,796.8	8,288.6	-159.8	8,290.1	0.00	0.00	0.00	
15,400.0	90.15	0.00	6,796.5	8,388.6	-159.8	8,390.1	0.00	0.00	0.00	
15,500.0	90.15	0.00	6,796.3	8,488.6	-159.8	8,490.1	0.00	0.00	0.00	
15,600.0	90.15	0.00	6,796.0	8,588.6	-159.8	8,590.1	0.00	0.00	0.00	
15,700.0	90.15	0.00	6,795.8	8,688.6	-159.8	8,690.1	0.00	0.00	0.00	
15,800.0	90.15	0.00	6,795.5	8,788.6	-159.8	8,790.1	0.00	0.00	0.00	
15,900.0	90.15	0.00	6,795.2	8,888.6	-159.8	8,890.0	0.00	0.00	0.00	
16,000.0	90.15	0.00	6,795.0	8,988.6	-159.8	8,990.0	0.00	0.00	0.00	
16,100.0	90.15	0.00	6,794.7	9,088.6	-159.8	9,090.0	0.00	0.00	0.00	
16,200.0	90.15	0.00	6,794.5	9,188.6	-159.8	9,190.0	0.00	0.00	0.00	
16,300.0	90.15	0.00	6,794.2	9,288.6	-159.8	9,290.0	0.00	0.00	0.00	
16,400.0	90.15	0.00	6,793.9	9,388.6	-159.8	9,390.0	0.00	0.00	0.00	
16,500.0	90.15	0.00	6,793.7	9,488.6	-159.8	9,490.0	0.00	0.00	0.00	
16,600.0	90.15	0.00	6,793.4	9,588.6	-159.8	9,589.9	0.00	0.00	0.00	
16,700.0	90.15	0.00	6,793.1	9,688.6	-159.8	9,689.9	0.00	0.00	0.00	
16,755.7	90.15	0.00	6,793.0	9,744.3	-159.8	9,745.6	0.00	0.00	0.00	
TD at 16755.7 - BHL 200°FNL & 2075°FEL, Sec.6										

Design Targets										
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
SHL 537°FSL & 1893°FEL - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,392,729.68	3,253,319.19	40.407878	-104.590328	
BHL 200°FNL & 2075°FEL - plan hits target center - Point	0.00	0.00	6,793.0	9,744.3	-159.8	1,402,471.42	3,253,059.46	40.434625	-104.590902	

<b>Database:</b>	US_EDM	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Project:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	Klein 7Q-321	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 (10-14-15)		

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,290.3	6,817.8	7"	7	8-3/4

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,503.2	3,490.0	Parkman Sandstone		0.00	
4,230.4	4,210.0	Sussex Sandstone		0.00	
6,584.7	6,516.0	Sharon Springs		0.00	
6,675.6	6,585.0	Niobrara A		0.00	
6,840.0	6,690.0	Niobrara B		0.00	
7,016.7	6,770.0	Niobrara C		0.00	

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,800.0	1,800.0	0.0	0.0	KOP - Start Build 1.50
5,532.7	5,499.5	-35.6	-11.7	Start Drop -2.00
6,088.3	6,053.8	-460.3	-151.0	KOP #2 - Start Build 7.50
7,290.3	6,817.8	-487.0	-159.8	Start 9465.4 hold at 7290.3 MD
16,755.7	6,793.0	-487.0	-159.8	TD at 16755.7





# Directional

## **PETROLEUM DEVELOPMENT CORP DJ Basin**

**SEC.7-T5N-R64W**

**Klein 5N64W7 Pad Sec.7-T5N-R64W**

**Klein 7Q-321**

**Wellbore #1**

**Plan #1 (10-14-15)**

## **Anticollision Report**

**19 October, 2015**



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

<b>Reference</b>	Plan #1 (10-14-15)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<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 1,000.0 ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	10/19/2015		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	16,755.7	Plan #1 (10-14-15) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Dunn 5N64W7 Pad Sec.7-T5N-R64W						
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	6,066.9	6,404.9	252.0	214.8	6.769	CC
Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)	16,755.7	17,010.4	260.9	-104.8	0.713	Level 1, ES, SF
Existing Wells - Sec.7-T5N-R64W						
Hoff #33-6 (Exist.) - Wellbore #1 - Wellbore #1	13,522.4	6,763.5	233.0	-30.8	0.883	Level 1, CC, ES, SF
Motis #33-7 (Exist.) - Wellbore #1 - Wellbore #1	8,586.3	6,798.4	57.9	-114.4	0.336	Level 1, CC, ES, SF
Motis #34-7 (Exist.) - Wellbore #1 - Wellbore #1	7,177.1	6,795.7	165.9	13.5	1.088	Level 2, CC, ES, SF
Plumb #4 (Exist.) - Wellbore #1 - Wellbore #1	9,762.3	6,773.3	68.3	-124.7	0.354	Level 1, CC, ES, SF
Plumb #5 (P&A) - Wellbore #1 - Wellbore #1	10,950.3	6,766.2	304.0	89.0	1.414	Level 3, CC, ES, SF
Webster #B6-2 (Exist.) - Wellbore #1 - Wellbore #1	16,389.5	6,774.0	281.7	-37.1	0.884	Level 1, CC, SF
Webster #B6-2 (Exist.) - Wellbore #1 - Wellbore #1	16,400.0	6,773.9	281.9	-37.1	0.884	Level 1, ES
Witwer 34-6D (Exist.) - Wellbore #1 - Wellbore #1	12,452.0	7,016.0	60.0	-64.6	0.482	Level 1, CC, ES, SF
Klein 5N64W7 Pad Sec.7-T5N-R64W						
Klein 7T-241 - Wellbore #1 - Plan #1 (10-14-15)	1,600.0	1,600.0	14.8	7.8	2.119	CC, ES
Klein 7T-241 - Wellbore #1 - Plan #1 (10-14-15)	16,755.7	16,670.0	448.3	73.4	1.196	Level 2, SF
Klein 7T-301 - Wellbore #1 - Plan #1 (10-14-15)	1,400.0	1,400.0	29.8	23.7	4.911	CC, ES
Klein 7T-301 - Wellbore #1 - Plan #1 (10-14-15)	16,755.7	16,766.1	679.0	298.6	1.785	SF

Offset Design												Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)		Offset Site Error:		0.0 ft	
Survey Program:												0-MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)						
3,500.0	3,486.8	4,130.9	3,871.2	8.2	28.7	68.53	-296.6	-978.7	998.9	975.3	23.53	42.446					
3,600.0	3,585.8	4,220.9	3,953.0	8.5	29.5	68.30	-308.8	-943.0	955.5	931.2	24.31	39.307					
3,700.0	3,684.8	4,310.9	4,034.7	8.8	30.3	68.04	-320.9	-907.4	912.1	887.0	25.10	36.344					
3,800.0	3,783.9	4,401.0	4,116.5	9.1	31.1	67.76	-333.0	-871.8	868.7	842.8	25.90	33.544					
3,900.0	3,882.9	4,491.0	4,198.3	9.4	31.9	67.45	-345.2	-836.2	825.3	798.6	26.72	30.894					
4,000.0	3,981.9	4,581.0	4,280.0	9.7	32.8	67.10	-357.3	-800.6	782.0	754.5	27.55	28.385					
4,100.0	4,080.9	4,671.0	4,361.8	10.1	33.6	66.71	-369.4	-764.9	738.7	710.3	28.41	26.006					
4,200.0	4,179.9	4,761.0	4,443.6	10.4	34.4	66.28	-381.6	-729.3	695.4	666.1	29.28	23.748					
4,300.0	4,279.0	4,851.0	4,525.4	10.7	35.2	65.79	-393.7	-693.7	652.2	622.0	30.19	21.603					
4,400.0	4,378.0	4,935.8	4,602.3	11.0	36.0	65.26	-405.1	-660.2	609.0	577.9	31.09	19.588					

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Offset														
Semi Major Axis														
Distance														
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
4,500.0	4,477.0	5,016.8	4,676.4	11.4	36.6	64.74	-415.7	-629.1	567.0	535.1	31.92	17.762		
4,600.0	4,576.0	5,100.0	4,753.4	11.7	37.2	64.27	-425.9	-599.2	527.4	494.6	32.72	16.120		
4,700.0	4,675.0	5,175.2	4,823.8	12.0	37.6	63.90	-434.4	-574.1	489.9	456.5	33.42	14.658		
4,800.0	4,774.0	5,256.9	4,901.0	12.4	38.1	63.59	-443.0	-548.8	454.9	420.7	34.13	13.329		
4,900.0	4,873.1	5,340.2	4,980.4	12.7	38.5	63.38	-451.1	-525.2	422.2	387.4	34.78	12.139		
5,000.0	4,972.1	5,424.9	5,061.9	13.1	38.9	63.33	-458.5	-503.3	392.0	356.6	35.37	11.083		
5,100.0	5,071.1	5,511.0	5,145.4	13.4	39.3	63.46	-465.3	-483.5	364.3	328.5	35.88	10.155		
5,200.0	5,170.1	5,600.0	5,232.4	13.7	39.6	63.85	-471.4	-465.6	339.2	302.9	36.29	9.349		
5,300.0	5,269.1	5,686.7	5,317.6	14.1	39.9	64.50	-476.5	-450.5	316.8	280.2	36.57	8.663		
5,400.0	5,368.2	5,776.0	5,405.9	14.4	40.1	65.51	-480.9	-437.6	297.1	260.4	36.72	8.092		
5,500.0	5,467.2	5,866.1	5,495.3	14.7	40.3	66.89	-484.5	-427.2	280.4	243.6	36.72	7.634		
5,532.7	5,499.5	5,895.7	5,524.7	14.9	40.4	67.43	-485.4	-424.4	275.5	238.8	36.70	7.509		
5,600.0	5,566.3	5,956.9	5,585.7	15.1	40.5	68.39	-487.1	-419.4	267.0	230.2	36.73	7.269		
5,700.0	5,665.8	6,048.5	5,677.1	15.3	40.6	69.64	-488.8	-414.3	257.9	221.2	36.76	7.017		
5,800.0	5,765.6	6,140.5	5,769.2	15.5	40.7	70.60	-489.6	-412.0	253.2	216.4	36.83	6.876		
5,900.0	5,865.5	6,237.9	5,866.5	15.7	40.8	71.18	-489.7	-411.8	252.1	215.1	36.99	6.815		
5,934.5	5,900.0	6,272.4	5,901.0	15.7	40.8	-90.61	-489.7	-411.8	252.0	214.9	37.09	6.795		
6,000.0	5,965.5	6,337.9	5,966.5	15.8	40.8	-90.61	-489.7	-411.8	252.0	214.7	37.27	6.762		
6,066.9	6,032.4	6,404.9	6,033.4	15.9	40.9	-89.99	-487.0	-411.8	252.0	214.8	37.23	6.769 CC		
6,088.3	6,053.8	6,426.2	6,054.6	16.0	40.9	-89.52	-484.9	-411.8	252.0	214.9	37.12	6.789		
6,100.0	6,065.5	6,437.8	6,066.1	16.0	40.9	-89.22	-483.5	-411.8	252.0	215.0	37.05	6.803		
6,150.0	6,115.5	6,487.1	6,114.8	16.0	40.9	-87.96	-475.7	-411.8	252.2	215.5	36.72	6.868		
6,200.0	6,165.1	6,536.0	6,162.5	16.1	40.9	-86.72	-464.8	-411.8	252.4	216.1	36.35	6.944		
6,250.0	6,214.3	6,584.6	6,209.1	16.1	40.9	-85.49	-451.0	-411.8	252.8	216.8	35.97	7.028		
6,300.0	6,262.8	6,632.9	6,254.4	16.1	40.8	-84.30	-434.4	-411.8	253.3	217.7	35.57	7.120		
6,350.0	6,310.4	6,680.9	6,298.3	16.0	40.8	-83.13	-415.1	-411.8	253.8	218.7	35.17	7.217		
6,400.0	6,357.0	6,728.5	6,340.7	16.0	40.7	-82.00	-393.2	-411.8	254.5	219.7	34.78	7.318		
6,450.0	6,402.2	6,775.9	6,381.3	15.9	40.7	-80.91	-368.9	-411.8	255.2	220.8	34.39	7.422		
6,500.0	6,445.9	6,823.1	6,420.2	15.9	40.6	-79.86	-342.2	-411.8	256.0	222.0	34.01	7.527		
6,550.0	6,487.9	6,869.9	6,457.1	15.8	40.5	-78.87	-313.4	-411.8	256.9	223.2	33.65	7.633		
6,600.0	6,528.1	6,916.6	6,492.1	15.7	40.4	-77.92	-282.5	-411.8	257.7	224.4	33.31	7.737		
6,650.0	6,566.3	6,963.0	6,524.9	15.6	40.4	-77.03	-249.7	-411.8	258.6	225.6	32.99	7.838		
6,700.0	6,602.2	7,009.2	6,555.6	15.5	40.3	-76.20	-215.1	-411.8	259.5	226.8	32.71	7.934		
6,750.0	6,635.8	7,055.2	6,584.0	15.5	40.2	-75.42	-178.9	-411.8	260.4	227.9	32.46	8.022		
6,800.0	6,667.0	7,100.0	6,609.5	15.5	40.1	-74.72	-142.1	-411.8	261.3	229.0	32.26	8.099		
6,850.0	6,695.5	7,146.8	6,633.7	15.5	40.0	-74.06	-102.2	-411.8	262.1	230.0	32.11	8.161		
6,900.0	6,721.2	7,192.3	6,655.0	15.5	39.9	-73.47	-61.9	-411.8	262.9	230.8	32.04	8.205		
6,950.0	6,744.1	7,237.7	6,673.8	15.5	39.8	-72.95	-20.5	-411.8	263.6	231.5	32.03	8.228		
7,000.0	6,764.0	7,283.0	6,690.0	15.7	39.8	-72.50	21.7	-411.8	264.2	232.1	32.12	8.226		
7,050.0	6,780.9	7,328.2	6,703.7	15.8	39.7	-72.11	64.8	-411.8	264.8	232.5	32.30	8.199		
7,100.0	6,794.7	7,373.3	6,714.7	16.1	39.6	-71.78	108.6	-411.8	265.3	232.7	32.57	8.144		
7,150.0	6,805.3	7,418.4	6,723.2	16.4	39.5	-71.53	152.8	-411.7	265.6	232.7	32.95	8.061		
7,200.0	6,812.7	7,463.4	6,729.0	16.7	39.5	-71.34	197.4	-411.7	265.9	232.5	33.44	7.953		
7,250.0	6,816.8	7,508.4	6,732.2	17.1	39.4	-71.22	242.3	-411.7	266.1	232.1	34.03	7.821		
7,290.3	6,817.8	7,545.0	6,732.9	17.4	39.4	-71.18	278.9	-411.7	266.2	231.6	34.57	7.699		
7,300.0	6,817.8	7,554.7	6,732.9	17.5	39.4	-71.18	288.6	-411.7	266.2	231.5	34.71	7.669		
7,400.0	6,817.5	7,654.7	6,732.8	18.5	39.3	-71.21	388.6	-411.7	266.1	229.9	36.22	7.347		
7,500.0	6,817.2	7,754.7	6,732.7	19.6	39.3	-71.24	488.6	-411.7	266.0	228.0	38.01	6.999		
7,600.0	6,817.0	7,854.7	6,732.6	20.8	39.4	-71.27	588.6	-411.7	266.0	225.9	40.05	6.641		
7,700.0	6,816.7	7,954.7	6,732.5	22.2	39.5	-71.31	688.6	-411.7	265.9	223.6	42.32	6.284		
7,800.0	6,816.4	8,054.7	6,732.4	23.6	39.8	-71.34	788.6	-411.7	265.9	221.1	44.77	5.939		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design												Offset Site Error:	0.0 ft
Dunn 5N64W7 Pad Sec.7-T5N-R64W - Dunn 7Q-221 - Wellbore #1 - Plan #1 (9-11-15)												Offset Well Error:	0.0 ft
Survey Program: 0-MWD													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,900.0	6,816.2	8,154.7	6,732.3	25.0	40.1	-71.37	888.6	-411.7	265.8	218.4	47.38	5.611	
8,000.0	6,815.9	8,254.7	6,732.2	26.6	40.5	-71.40	988.6	-411.7	265.8	215.6	50.12	5.302	
8,100.0	6,815.7	8,354.7	6,732.1	28.2	41.0	-71.43	1,088.6	-411.7	265.7	212.7	52.98	5.015	
8,200.0	6,815.4	8,454.7	6,732.0	29.8	41.6	-71.46	1,188.6	-411.7	265.6	209.7	55.93	4.749	
8,300.0	6,815.1	8,554.7	6,731.9	31.4	42.3	-71.50	1,288.6	-411.6	265.6	206.6	58.97	4.504	
8,400.0	6,814.9	8,654.7	6,731.8	33.1	43.2	-71.53	1,388.6	-411.6	265.5	203.4	62.07	4.277	
8,500.0	6,814.6	8,754.7	6,731.6	34.8	44.1	-71.56	1,488.6	-411.6	265.5	200.2	65.24	4.069	
8,600.0	6,814.4	8,854.7	6,731.5	36.5	45.2	-71.59	1,588.6	-411.6	265.4	196.9	68.46	3.877	
8,700.0	6,814.1	8,954.7	6,731.4	38.3	46.3	-71.62	1,688.6	-411.6	265.3	193.6	71.73	3.699	
8,800.0	6,813.8	9,054.7	6,731.3	40.1	47.6	-71.65	1,788.6	-411.6	265.3	190.3	75.04	3.536	
8,900.0	6,813.6	9,154.7	6,731.2	41.8	48.9	-71.68	1,888.6	-411.6	265.2	186.9	78.38	3.384	
9,000.0	6,813.3	9,254.7	6,731.1	43.6	50.2	-71.72	1,988.6	-411.6	265.2	183.4	81.75	3.244	
9,100.0	6,813.0	9,354.7	6,731.0	45.4	51.7	-71.75	2,088.6	-411.6	265.1	180.0	85.15	3.114	
9,200.0	6,812.8	9,454.7	6,730.9	47.2	53.1	-71.78	2,188.6	-411.6	265.1	176.5	88.57	2.993	
9,300.0	6,812.5	9,554.7	6,730.8	49.0	54.6	-71.81	2,288.6	-411.6	265.0	173.0	92.02	2.880	
9,400.0	6,812.3	9,654.7	6,730.7	50.9	56.2	-71.84	2,388.6	-411.5	264.9	169.5	95.48	2.775	
9,500.0	6,812.0	9,754.7	6,730.6	52.7	57.7	-71.87	2,488.6	-411.5	264.9	165.9	98.96	2.677	
9,600.0	6,811.7	9,854.7	6,730.5	54.5	59.3	-71.91	2,588.6	-411.5	264.8	162.4	102.46	2.585	
9,700.0	6,811.5	9,954.7	6,730.4	56.4	60.9	-71.94	2,688.6	-411.5	264.8	158.8	105.97	2.498	
9,800.0	6,811.2	10,054.7	6,730.3	58.2	62.6	-71.97	2,788.6	-411.5	264.7	155.2	109.50	2.417	
9,900.0	6,810.9	10,154.7	6,730.2	60.1	64.2	-72.00	2,888.6	-411.5	264.7	151.6	113.04	2.341	
10,000.0	6,810.7	10,254.7	6,730.1	61.9	65.9	-72.03	2,988.6	-411.5	264.6	148.0	116.59	2.270	
10,100.0	6,810.4	10,354.7	6,730.0	63.8	67.6	-72.06	3,088.6	-411.5	264.5	144.4	120.15	2.202	
10,200.0	6,810.2	10,454.7	6,729.9	65.7	69.3	-72.10	3,188.6	-411.5	264.5	140.8	123.71	2.138	
10,300.0	6,809.9	10,554.7	6,729.8	67.5	71.0	-72.13	3,288.6	-411.5	264.4	137.1	127.29	2.077	
10,400.0	6,809.6	10,654.7	6,729.7	69.4	72.7	-72.16	3,388.6	-411.5	264.4	133.5	130.88	2.020	
10,500.0	6,809.4	10,754.7	6,729.6	71.3	74.5	-72.19	3,488.6	-411.4	264.3	129.8	134.47	1.966	
10,600.0	6,809.1	10,854.7	6,729.4	73.1	76.2	-72.22	3,588.6	-411.4	264.3	126.2	138.07	1.914	
10,700.0	6,808.9	10,954.7	6,729.3	75.0	78.0	-72.26	3,688.6	-411.4	264.2	122.5	141.67	1.865	
10,800.0	6,808.6	11,054.7	6,729.2	76.9	79.8	-72.29	3,788.6	-411.4	264.1	118.9	145.29	1.818	
10,900.0	6,808.3	11,154.7	6,729.1	78.8	81.5	-72.32	3,888.6	-411.4	264.1	115.2	148.90	1.774	
11,000.0	6,808.1	11,254.7	6,729.0	80.7	83.3	-72.35	3,988.6	-411.4	264.0	111.5	152.53	1.731	
11,100.0	6,807.8	11,354.7	6,728.9	82.6	85.1	-72.38	4,088.6	-411.4	264.0	107.8	156.16	1.690	
11,200.0	6,807.5	11,454.7	6,728.8	84.4	86.9	-72.42	4,188.6	-411.4	263.9	104.1	159.79	1.652	
11,300.0	6,807.3	11,554.7	6,728.7	86.3	88.7	-72.45	4,288.6	-411.4	263.9	100.4	163.43	1.615	
11,400.0	6,807.0	11,654.7	6,728.6	88.2	90.5	-72.48	4,388.6	-411.4	263.8	96.7	167.07	1.579	
11,500.0	6,806.8	11,754.7	6,728.5	90.1	92.3	-72.51	4,488.6	-411.4	263.8	93.0	170.72	1.545	
11,600.0	6,806.5	11,854.7	6,728.4	92.0	94.1	-72.54	4,588.6	-411.4	263.7	89.3	174.37	1.512	
11,700.0	6,806.2	11,954.7	6,728.3	93.9	95.9	-72.58	4,688.6	-411.3	263.6	85.6	178.02	1.481 Level 3	
11,800.0	6,806.0	12,054.7	6,728.2	95.8	97.7	-72.61	4,788.6	-411.3	263.6	81.9	181.68	1.451 Level 3	
11,900.0	6,805.7	12,154.7	6,728.1	97.7	99.6	-72.64	4,888.6	-411.3	263.5	78.2	185.34	1.422 Level 3	
12,000.0	6,805.5	12,254.7	6,728.0	99.6	101.4	-72.67	4,988.6	-411.3	263.5	74.5	189.00	1.394 Level 3	
12,100.0	6,805.2	12,354.7	6,727.9	101.5	103.2	-72.70	5,088.6	-411.3	263.4	70.8	192.67	1.367 Level 3	
12,200.0	6,804.9	12,454.7	6,727.8	103.4	105.0	-72.74	5,188.6	-411.3	263.4	67.0	196.34	1.341 Level 3	
12,300.0	6,804.7	12,554.7	6,727.7	105.3	106.9	-72.77	5,288.6	-411.3	263.3	63.3	200.01	1.316 Level 3	
12,400.0	6,804.4	12,654.7	6,727.6	107.2	108.7	-72.80	5,388.6	-411.3	263.3	59.6	203.69	1.292 Level 3	
12,500.0	6,804.1	12,754.7	6,727.5	109.1	110.6	-72.83	5,488.6	-411.3	263.2	55.8	207.37	1.269 Level 3	
12,600.0	6,803.9	12,854.7	6,727.4	111.0	112.4	-72.86	5,588.6	-411.3	263.1	52.1	211.05	1.247 Level 2	
12,700.0	6,803.6	12,954.7	6,727.2	112.9	114.3	-72.90	5,688.6	-411.3	263.1	48.4	214.74	1.225 Level 2	
12,800.0	6,803.4	13,054.7	6,727.1	114.8	116.1	-72.93	5,788.6	-411.2	263.0	44.6	218.42	1.204 Level 2	
12,900.0	6,803.1	13,154.7	6,727.0	116.7	118.0	-72.96	5,888.6	-411.2	263.0	40.9	222.11	1.184 Level 2	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Offset				Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,000.0	6,802.8	13,254.7	6,726.9	118.6	119.8	-72.99	5,988.6	-411.2	262.9	37.1	225.80	1.164	Level 2	
13,100.0	6,802.6	13,354.7	6,726.8	120.5	121.7	-73.02	6,088.6	-411.2	262.9	33.4	229.50	1.145	Level 2	
13,200.0	6,802.3	13,454.7	6,726.7	122.4	123.5	-73.06	6,188.6	-411.2	262.8	29.6	233.19	1.127	Level 2	
13,300.0	6,802.0	13,554.7	6,726.6	124.3	125.4	-73.09	6,288.6	-411.2	262.8	25.9	236.89	1.109	Level 2	
13,400.0	6,801.8	13,654.7	6,726.5	126.2	127.2	-73.12	6,388.6	-411.2	262.7	22.1	240.59	1.092	Level 2	
13,500.0	6,801.5	13,754.7	6,726.4	128.1	129.1	-73.15	6,488.6	-411.2	262.7	18.4	244.29	1.075	Level 2	
13,600.0	6,801.3	13,854.7	6,726.3	130.0	131.0	-73.19	6,588.6	-411.2	262.6	14.6	248.00	1.059	Level 2	
13,700.0	6,801.0	13,954.7	6,726.2	131.9	132.8	-73.22	6,688.6	-411.2	262.6	10.8	251.71	1.043	Level 2	
13,800.0	6,800.7	14,054.7	6,726.1	133.8	134.7	-73.25	6,788.6	-411.2	262.5	7.1	255.41	1.028	Level 2	
13,900.0	6,800.5	14,154.7	6,726.0	135.7	136.6	-73.28	6,888.6	-411.1	262.4	3.3	259.12	1.013	Level 2	
14,000.0	6,800.2	14,254.7	6,725.9	137.6	138.4	-73.31	6,988.6	-411.1	262.4	-0.4	262.84	0.998	Level 1	
14,100.0	6,800.0	14,354.7	6,725.8	139.6	140.3	-73.35	7,088.6	-411.1	262.3	-4.2	266.55	0.984	Level 1	
14,200.0	6,799.7	14,454.7	6,725.7	141.5	142.2	-73.38	7,188.6	-411.1	262.3	-8.0	270.27	0.970	Level 1	
14,300.0	6,799.4	14,554.7	6,725.6	143.4	144.1	-73.41	7,288.6	-411.1	262.2	-11.8	273.98	0.957	Level 1	
14,400.0	6,799.2	14,654.7	6,725.5	145.3	145.9	-73.44	7,388.6	-411.1	262.2	-15.5	277.70	0.944	Level 1	
14,500.0	6,798.9	14,754.7	6,725.4	147.2	147.8	-73.48	7,488.6	-411.1	262.1	-19.3	281.42	0.931	Level 1	
14,600.0	6,798.6	14,854.7	6,725.3	149.1	149.7	-73.51	7,588.6	-411.1	262.1	-23.1	285.15	0.919	Level 1	
14,700.0	6,798.4	14,954.7	6,725.2	151.0	151.6	-73.54	7,688.6	-411.1	262.0	-26.9	288.87	0.907	Level 1	
14,800.0	6,798.1	15,054.7	6,725.0	152.9	153.5	-73.57	7,788.6	-411.1	262.0	-30.6	292.60	0.895	Level 1	
14,900.0	6,797.9	15,154.7	6,724.9	154.8	155.3	-73.61	7,888.6	-411.1	261.9	-34.4	296.32	0.884	Level 1	
15,000.0	6,797.6	15,254.7	6,724.8	156.7	157.2	-73.64	7,988.6	-411.0	261.9	-38.2	300.05	0.873	Level 1	
15,100.0	6,797.3	15,354.7	6,724.7	158.7	159.1	-73.67	8,088.6	-411.0	261.8	-42.0	303.78	0.862	Level 1	
15,200.0	6,797.1	15,454.7	6,724.6	160.6	161.0	-73.70	8,188.6	-411.0	261.8	-45.8	307.51	0.851	Level 1	
15,300.0	6,796.8	15,554.7	6,724.5	162.5	162.9	-73.74	8,288.6	-411.0	261.7	-49.5	311.25	0.841	Level 1	
15,400.0	6,796.5	15,654.7	6,724.4	164.4	164.8	-73.77	8,388.6	-411.0	261.6	-53.3	314.98	0.831	Level 1	
15,500.0	6,796.3	15,754.7	6,724.3	166.3	166.6	-73.80	8,488.6	-411.0	261.6	-57.1	318.72	0.821	Level 1	
15,600.0	6,796.0	15,854.7	6,724.2	168.2	168.5	-73.83	8,588.6	-411.0	261.5	-60.9	322.45	0.811	Level 1	
15,700.0	6,795.8	15,954.7	6,724.1	170.1	170.4	-73.87	8,688.6	-411.0	261.5	-64.7	326.19	0.802	Level 1	
15,800.0	6,795.5	16,054.7	6,724.0	172.0	172.3	-73.90	8,788.6	-411.0	261.4	-68.5	329.93	0.792	Level 1	
15,900.0	6,795.2	16,154.7	6,723.9	174.0	174.2	-73.93	8,888.6	-411.0	261.4	-72.3	333.68	0.783	Level 1	
16,000.0	6,795.0	16,254.7	6,723.8	175.9	176.1	-73.96	8,988.6	-411.0	261.3	-76.1	337.42	0.775	Level 1	
16,100.0	6,794.7	16,354.7	6,723.7	177.8	178.0	-74.00	9,088.6	-410.9	261.3	-79.9	341.16	0.766	Level 1	
16,200.0	6,794.5	16,454.7	6,723.6	179.7	179.9	-74.03	9,188.6	-410.9	261.2	-83.7	344.91	0.757	Level 1	
16,300.0	6,794.2	16,554.7	6,723.5	181.6	181.8	-74.06	9,288.6	-410.9	261.2	-87.5	348.66	0.749	Level 1	
16,400.0	6,793.9	16,654.7	6,723.4	183.5	183.6	-74.09	9,388.6	-410.9	261.1	-91.3	352.40	0.741	Level 1	
16,500.0	6,793.7	16,754.7	6,723.3	185.4	185.5	-74.13	9,488.6	-410.9	261.1	-95.1	356.15	0.733	Level 1	
16,600.0	6,793.4	16,854.7	6,723.2	187.3	187.4	-74.16	9,588.6	-410.9	261.0	-98.9	359.90	0.725	Level 1	
16,700.0	6,793.1	16,954.7	6,723.1	189.3	189.3	-74.19	9,688.6	-410.9	261.0	-102.7	363.66	0.718	Level 1	
16,755.7	6,793.0	17,010.4	6,723.0	190.3	190.4	-74.21	9,744.3	-410.9	260.9	-104.8	365.75	0.713	Level 1, ES, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design Existing Wells - Sec.7-T5N-R64W - Hoff #33-6 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7275-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,600.0	6,803.9	6,765.9	6,765.9	111.0	135.3	90.59	6,511.0	73.2	951.4	705.1	246.27	3.863		
12,700.0	6,803.6	6,765.6	6,765.6	112.9	135.3	90.53	6,511.0	73.2	854.8	606.6	248.17	3.444		
12,800.0	6,803.4	6,765.4	6,765.4	114.8	135.3	90.47	6,511.0	73.2	759.0	509.0	250.07	3.035		
12,900.0	6,803.1	6,765.1	6,765.1	116.7	135.3	90.40	6,511.0	73.2	664.6	412.6	251.96	2.638		
13,000.0	6,802.8	6,764.8	6,764.8	118.6	135.3	90.34	6,511.0	73.2	572.0	318.1	253.86	2.253		
13,100.0	6,802.6	6,764.6	6,764.6	120.5	135.3	90.27	6,511.0	73.2	482.4	226.6	255.76	1.886		
13,200.0	6,802.3	6,764.3	6,764.3	122.4	135.3	90.21	6,511.0	73.2	397.8	140.1	257.66	1.544		
13,300.0	6,802.0	6,764.0	6,764.0	124.3	135.3	90.14	6,511.0	73.2	322.1	62.5	259.56	1.241	Level 2	
13,400.0	6,801.8	6,763.8	6,763.8	126.2	135.3	90.08	6,511.0	73.2	263.2	1.7	261.47	1.007	Level 2	
13,500.0	6,801.5	6,763.5	6,763.5	128.1	135.3	90.01	6,511.0	73.2	234.1	-29.3	263.37	0.889	Level 1	
13,522.4	6,801.5	6,763.5	6,763.5	128.5	135.3	90.00	6,511.0	73.2	233.0	-30.8	263.79	0.883	Level 1, CC, ES, SF	
13,600.0	6,801.3	6,763.3	6,763.3	130.0	135.3	89.95	6,511.0	73.2	245.6	-19.7	265.27	0.926	Level 1	
13,700.0	6,801.0	6,763.0	6,763.0	131.9	135.3	89.89	6,511.0	73.2	293.0	25.8	267.17	1.097	Level 2	
13,800.0	6,800.7	6,762.7	6,762.7	133.8	135.3	89.82	6,511.0	73.2	362.4	93.4	269.07	1.347	Level 3	
13,900.0	6,800.5	6,762.5	6,762.5	135.7	135.2	89.76	6,511.0	73.2	443.7	172.8	270.97	1.638		
14,000.0	6,800.2	6,762.2	6,762.2	137.6	135.2	89.69	6,511.0	73.2	531.4	258.6	272.87	1.948		
14,100.0	6,800.0	6,762.0	6,762.0	139.6	135.2	89.63	6,511.0	73.2	622.8	348.1	274.77	2.267		
14,200.0	6,799.7	6,761.7	6,761.7	141.5	135.2	89.56	6,511.0	73.2	716.6	439.9	276.67	2.590		
14,300.0	6,799.4	6,761.4	6,761.4	143.4	135.2	89.50	6,511.0	73.2	811.8	533.2	278.57	2.914		
14,400.0	6,799.2	6,761.2	6,761.2	145.3	135.2	89.44	6,511.0	73.2	908.0	627.6	280.48	3.237		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design Existing Wells - Sec.7-T5N-R64W - Motis #33-7 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7121-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,600.0	6,817.0	6,801.0	6,801.0	20.8	136.0	92.55	1,574.9	-101.9	988.0	831.3	156.69	6.305		
7,700.0	6,816.7	6,800.7	6,800.7	22.2	136.0	92.30	1,574.9	-101.9	888.2	730.1	158.03	5.620		
7,800.0	6,816.4	6,800.4	6,800.4	23.6	136.0	92.04	1,574.9	-101.9	788.4	628.9	159.46	4.944		
7,900.0	6,816.2	6,800.2	6,800.2	25.0	136.0	91.78	1,574.9	-101.9	688.7	527.8	160.95	4.279		
8,000.0	6,815.9	6,799.9	6,799.9	26.6	136.0	91.52	1,574.9	-101.9	589.1	426.6	162.49	3.626		
8,100.0	6,815.7	6,799.7	6,799.7	28.2	136.0	91.26	1,574.9	-101.9	489.7	325.6	164.08	2.985		
8,200.0	6,815.4	6,799.4	6,799.4	29.8	136.0	91.00	1,574.9	-101.9	390.6	224.9	165.71	2.357		
8,300.0	6,815.1	6,799.1	6,799.1	31.4	136.0	90.74	1,574.9	-101.9	292.1	124.7	167.36	1.745		
8,400.0	6,814.9	6,798.9	6,798.9	33.1	136.0	90.48	1,574.9	-101.9	195.1	26.0	169.05	1.154 Level 2		
8,500.0	6,814.6	6,798.6	6,798.6	34.8	136.0	90.22	1,574.9	-101.9	103.9	-66.9	170.75	0.608 Level 1		
8,586.3	6,814.4	6,798.4	6,798.4	36.3	136.0	90.00	1,574.9	-101.9	57.9	-114.4	172.24	0.336 Level 1, CC, ES, SF		
8,600.0	6,814.4	6,798.4	6,798.4	36.5	136.0	89.96	1,574.9	-101.9	59.5	-113.0	172.47	0.345 Level 1		
8,700.0	6,814.1	6,798.1	6,798.1	38.3	136.0	89.71	1,574.9	-101.9	127.6	-46.6	174.21	0.732 Level 1		
8,800.0	6,813.8	6,797.8	6,797.8	40.1	136.0	89.45	1,574.9	-101.9	221.4	45.5	175.96	1.258 Level 3		
8,900.0	6,813.6	6,797.6	6,797.6	41.8	136.0	89.19	1,574.9	-101.9	319.0	141.3	177.72	1.795		
9,000.0	6,813.3	6,797.3	6,797.3	43.6	135.9	88.93	1,574.9	-101.9	417.7	238.3	179.49	2.327		
9,100.0	6,813.0	6,797.0	6,797.0	45.4	135.9	88.67	1,574.9	-101.9	517.0	335.7	181.26	2.852		
9,200.0	6,812.8	6,796.8	6,796.8	47.2	135.9	88.41	1,574.9	-101.9	616.4	433.4	183.04	3.368		
9,300.0	6,812.5	6,796.5	6,796.5	49.0	135.9	88.15	1,574.9	-101.9	716.1	531.2	184.83	3.874		
9,400.0	6,812.3	6,796.3	6,796.3	50.9	135.9	87.89	1,574.9	-101.9	815.8	629.2	186.62	4.371		
9,500.0	6,812.0	6,796.0	6,796.0	52.7	135.9	87.63	1,574.9	-101.9	915.6	727.1	188.41	4.859		



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design Existing Wells - Sec.7-T5N-R64W - Motis #34-7 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7128-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	2.11	166.1	6.1	166.8					
100.0	100.0	86.0	86.0	0.1	1.7	2.11	166.1	6.1	166.2	164.4	1.83	90.711		
200.0	200.0	186.0	186.0	0.3	3.7	2.11	166.1	6.1	166.2	162.2	4.06	40.971		
300.0	300.0	286.0	286.0	0.6	5.7	2.11	166.1	6.1	166.2	160.0	6.28	26.462		
400.0	400.0	386.0	386.0	0.8	7.7	2.11	166.1	6.1	166.2	157.7	8.51	19.541		
500.0	500.0	486.0	486.0	1.0	9.7	2.11	166.1	6.1	166.2	155.5	10.73	15.490		
600.0	600.0	586.0	586.0	1.2	11.7	2.11	166.1	6.1	166.2	153.3	12.96	12.830		
700.0	700.0	686.0	686.0	1.5	13.7	2.11	166.1	6.1	166.2	151.1	15.18	10.950		
800.0	800.0	786.0	786.0	1.7	15.7	2.11	166.1	6.1	166.2	148.8	17.41	9.551		
900.0	900.0	886.0	886.0	1.9	17.7	2.11	166.1	6.1	166.2	146.6	19.63	8.468		
1,000.0	1,000.0	986.0	986.0	2.1	19.7	2.11	166.1	6.1	166.2	144.4	21.86	7.606		
1,100.0	1,100.0	1,086.0	1,086.0	2.4	21.7	2.11	166.1	6.1	166.2	142.2	24.08	6.903		
1,200.0	1,200.0	1,186.0	1,186.0	2.6	23.7	2.11	166.1	6.1	166.2	139.9	26.30	6.320		
1,300.0	1,300.0	1,286.0	1,286.0	2.8	25.7	2.11	166.1	6.1	166.2	137.7	28.53	5.827		
1,400.0	1,400.0	1,386.0	1,386.0	3.0	27.7	2.11	166.1	6.1	166.2	135.5	30.75	5.405		
1,500.0	1,500.0	1,486.0	1,486.0	3.3	29.7	2.11	166.1	6.1	166.2	133.3	32.98	5.041		
1,600.0	1,600.0	1,586.0	1,586.0	3.5	31.7	2.11	166.1	6.1	166.2	131.0	35.20	4.722		
1,700.0	1,700.0	1,686.0	1,686.0	3.7	33.7	2.11	166.1	6.1	166.2	128.8	37.43	4.441		
1,800.0	1,800.0	1,786.0	1,786.0	3.9	35.7	2.11	166.1	6.1	166.2	126.6	39.65	4.192		
1,900.0	1,900.0	1,886.0	1,886.0	4.1	37.7	164.06	166.1	6.1	167.5	125.7	41.84	4.003		
2,000.0	1,999.9	1,985.9	1,985.9	4.3	39.7	164.41	166.1	6.1	171.3	127.3	43.97	3.896		
2,100.0	2,099.7	2,085.7	2,085.7	4.5	41.7	164.95	166.1	6.1	177.6	131.5	46.06	3.855		
2,200.0	2,199.3	2,185.3	2,185.3	4.7	43.7	165.65	166.1	6.1	186.4	138.3	48.13	3.874		
2,300.0	2,298.6	2,284.6	2,284.6	4.9	45.7	166.45	166.1	6.1	197.8	147.7	50.14	3.946		
2,335.7	2,334.0	2,320.0	2,320.0	4.9	46.4	166.76	166.1	6.1	202.5	151.7	50.85	3.983		
2,400.0	2,397.6	2,383.6	2,383.6	5.1	47.7	167.31	166.1	6.1	211.3	159.1	52.24	4.045		
2,500.0	2,496.6	2,482.6	2,482.6	5.3	49.7	168.10	166.1	6.1	225.0	170.6	54.39	4.136		
2,600.0	2,595.7	2,581.7	2,581.7	5.6	51.6	168.79	166.1	6.1	238.7	182.1	56.56	4.220		
2,700.0	2,694.7	2,680.7	2,680.7	5.8	53.6	169.40	166.1	6.1	252.4	193.7	58.72	4.298		
2,800.0	2,793.7	2,779.7	2,779.7	6.1	55.6	169.96	166.1	6.1	266.2	205.3	60.89	4.371		
2,900.0	2,892.7	2,878.7	2,878.7	6.4	57.6	170.46	166.1	6.1	279.9	216.9	63.06	4.439		
3,000.0	2,991.7	2,977.7	2,977.7	6.7	59.6	170.91	166.1	6.1	293.7	228.5	65.23	4.503		
3,100.0	3,090.7	3,076.7	3,076.7	6.9	61.5	171.32	166.1	6.1	307.6	240.1	67.41	4.562		
3,200.0	3,189.8	3,175.8	3,175.8	7.2	63.5	171.70	166.1	6.1	321.4	251.8	69.59	4.618		
3,300.0	3,288.8	3,274.8	3,274.8	7.5	65.5	172.04	166.1	6.1	335.2	263.5	71.77	4.671		
3,400.0	3,387.8	3,373.8	3,373.8	7.8	67.5	172.36	166.1	6.1	349.1	275.1	73.95	4.720		
3,500.0	3,486.8	3,472.8	3,472.8	8.2	69.5	172.65	166.1	6.1	362.9	286.8	76.13	4.767		
3,600.0	3,585.8	3,571.8	3,571.8	8.5	71.4	172.92	166.1	6.1	376.8	298.5	78.32	4.811		
3,700.0	3,684.8	3,670.8	3,670.8	8.8	73.4	173.18	166.1	6.1	390.7	310.2	80.50	4.853		
3,800.0	3,783.9	3,769.9	3,769.9	9.1	75.4	173.41	166.1	6.1	404.6	321.9	82.69	4.893		
3,900.0	3,882.9	3,868.9	3,868.9	9.4	77.4	173.63	166.1	6.1	418.5	333.6	84.88	4.930		
4,000.0	3,981.9	3,967.9	3,967.9	9.7	79.4	173.84	166.1	6.1	432.4	345.3	87.07	4.966		
4,100.0	4,080.9	4,066.9	4,066.9	10.1	81.3	174.03	166.1	6.1	446.3	357.0	89.26	5.000		
4,200.0	4,179.9	4,165.9	4,165.9	10.4	83.3	174.21	166.1	6.1	460.2	368.7	91.45	5.032		
4,300.0	4,279.0	4,265.0	4,265.0	10.7	85.3	174.38	166.1	6.1	474.1	380.4	93.64	5.063		
4,400.0	4,378.0	4,364.0	4,364.0	11.0	87.3	174.54	166.1	6.1	488.0	392.2	95.83	5.092		
4,500.0	4,477.0	4,463.0	4,463.0	11.4	89.3	174.69	166.1	6.1	501.9	403.9	98.03	5.120		
4,600.0	4,576.0	4,562.0	4,562.0	11.7	91.2	174.84	166.1	6.1	515.8	415.6	100.22	5.147		
4,700.0	4,675.0	4,661.0	4,661.0	12.0	93.2	174.97	166.1	6.1	529.8	427.4	102.42	5.173		
4,800.0	4,774.0	4,760.0	4,760.0	12.4	95.2	175.10	166.1	6.1	543.7	439.1	104.61	5.197		
4,900.0	4,873.1	4,859.1	4,859.1	12.7	97.2	175.22	166.1	6.1	557.6	450.8	106.81	5.221		

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Wellbore</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
<b>Reference Design:</b>	Plan #1 (10-14-15)		

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 7128-UNKNOWN													Offset Well Error:	0.0 ft
Existing Wells - Sec.7-T5N-R64W - Motis #34-7 (Exist.) - Wellbore #1 - Wellbore #1														
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,972.1	4,958.1	4,958.1	13.1	99.2	175.34	166.1	6.1	571.6	462.6	109.00	5.244		
5,100.0	5,071.1	5,057.1	5,057.1	13.4	101.1	175.45	166.1	6.1	585.5	474.3	111.20	5.265		
5,200.0	5,170.1	5,156.1	5,156.1	13.7	103.1	175.56	166.1	6.1	599.4	486.0	113.40	5.286		
5,300.0	5,269.1	5,255.1	5,255.1	14.1	105.1	175.66	166.1	6.1	613.4	497.8	115.59	5.306		
5,400.0	5,368.2	5,354.2	5,354.2	14.4	107.1	175.76	166.1	6.1	627.3	509.5	117.79	5.326		
5,500.0	5,467.2	5,453.2	5,453.2	14.7	109.1	175.85	166.1	6.1	641.3	521.3	119.99	5.344		
5,532.7	5,499.5	5,485.5	5,485.5	14.9	109.7	175.88	166.1	6.1	645.8	525.1	120.71	5.350		
5,600.0	5,566.3	5,552.3	5,552.3	15.1	111.0	175.94	166.1	6.1	654.4	531.9	122.52	5.341		
5,700.0	5,665.8	5,651.8	5,651.8	15.3	113.0	176.02	166.1	6.1	664.3	539.2	125.10	5.310		
5,800.0	5,765.6	5,751.6	5,751.6	15.5	115.0	176.07	166.1	6.1	670.7	543.2	127.54	5.259		
5,900.0	5,865.5	5,851.5	5,851.5	15.7	117.0	176.09	166.1	6.1	673.7	543.8	129.82	5.189		
5,934.5	5,900.0	5,886.0	5,886.0	15.7	117.7	14.25	166.1	6.1	673.9	543.3	130.57	5.161		
6,000.0	5,965.5	5,951.5	5,951.5	15.8	119.0	14.25	166.1	6.1	673.9	541.9	132.01	5.105		
6,088.3	6,053.8	6,039.8	6,039.8	16.0	120.8	14.25	166.1	6.1	673.9	539.9	133.95	5.031		
6,100.0	6,065.5	6,051.5	6,051.5	16.0	121.0	14.26	166.1	6.1	673.8	539.6	134.17	5.022		
6,150.0	6,115.5	6,101.5	6,101.5	16.0	122.0	14.35	166.1	6.1	671.5	536.7	134.79	4.981		
6,200.0	6,165.1	6,151.1	6,151.1	16.1	123.0	14.58	166.1	6.1	666.0	531.1	134.85	4.939		
6,250.0	6,214.3	6,200.3	6,200.3	16.1	124.0	14.94	166.1	6.1	657.4	523.0	134.35	4.893		
6,300.0	6,262.8	6,248.8	6,248.8	16.1	125.0	15.45	166.1	6.1	645.7	512.4	133.28	4.844		
6,350.0	6,310.4	6,296.4	6,296.4	16.0	125.9	16.14	166.1	6.1	630.9	499.3	131.68	4.791		
6,400.0	6,357.0	6,343.0	6,343.0	16.0	126.9	17.02	166.1	6.1	613.3	483.7	129.58	4.733		
6,450.0	6,402.2	6,388.2	6,388.2	15.9	127.8	18.14	166.1	6.1	592.8	465.8	127.03	4.667		
6,500.0	6,445.9	6,431.9	6,431.9	15.9	128.6	19.54	166.1	6.1	569.6	445.4	124.13	4.588		
6,550.0	6,487.9	6,473.9	6,473.9	15.8	129.5	21.28	166.1	6.1	543.7	422.7	121.03	4.493		
6,600.0	6,528.1	6,514.1	6,514.1	15.7	130.3	23.44	166.1	6.1	515.5	397.5	117.96	4.370		
6,650.0	6,566.3	6,552.3	6,552.3	15.6	131.0	26.15	166.1	6.1	485.0	369.8	115.25	4.209		
6,700.0	6,602.2	6,588.2	6,588.2	15.5	131.8	29.51	166.1	6.1	452.5	339.2	113.38	3.991		
6,750.0	6,635.8	6,621.8	6,621.8	15.5	132.4	33.70	166.1	6.1	418.3	305.3	113.00	3.702		
6,800.0	6,667.0	6,653.0	6,653.0	15.5	133.1	38.88	166.1	6.1	382.7	267.9	114.79	3.334		
6,850.0	6,695.5	6,681.5	6,681.5	15.5	133.6	45.18	166.1	6.1	346.2	227.0	119.23	2.904		
6,900.0	6,721.2	6,707.2	6,707.2	15.5	134.1	52.57	166.1	6.1	309.3	183.1	126.12	2.452		
6,950.0	6,744.1	6,730.1	6,730.1	15.5	134.6	60.79	166.1	6.1	272.8	138.5	134.31	2.031		
7,000.0	6,764.0	6,750.0	6,750.0	15.7	135.0	69.24	166.1	6.1	238.0	96.1	141.97	1.677		
7,050.0	6,780.9	6,766.9	6,766.9	15.8	135.3	77.12	166.1	6.1	206.9	59.3	147.58	1.402 Level 3		
7,100.0	6,794.7	6,780.7	6,780.7	16.1	135.6	83.66	166.1	6.1	182.3	31.6	150.74	1.210 Level 2		
7,150.0	6,805.3	6,791.3	6,791.3	16.4	135.8	88.34	166.1	6.1	168.1	16.0	152.10	1.105 Level 2		
7,177.1	6,809.7	6,795.7	6,795.7	16.5	135.9	90.00	166.1	6.1	165.9	13.5	152.45	1.088 Level 2, CC, ES, SF		
7,200.0	6,812.7	6,798.7	6,798.7	16.7	136.0	90.90	166.1	6.1	167.5	14.8	152.65	1.097 Level 2		
7,250.0	6,816.8	6,802.8	6,802.8	17.1	136.1	91.26	166.1	6.1	181.1	28.0	153.11	1.183 Level 2		
7,290.3	6,817.8	6,803.8	6,803.8	17.4	136.1	89.90	166.1	6.1	200.6	47.2	153.48	1.307 Level 3		
7,300.0	6,817.8	6,803.8	6,803.8	17.5	136.1	89.89	166.1	6.1	206.3	52.7	153.57	1.343 Level 3		
7,400.0	6,817.5	6,803.5	6,803.5	18.5	136.1	89.80	166.1	6.1	277.6	123.0	154.53	1.796		
7,500.0	6,817.2	6,803.2	6,803.2	19.6	136.1	89.71	166.1	6.1	362.7	207.1	155.63	2.331		
7,600.0	6,817.0	6,803.0	6,803.0	20.8	136.1	89.62	166.1	6.1	453.9	297.1	156.84	2.894		
7,700.0	6,816.7	6,802.7	6,802.7	22.2	136.1	89.53	166.1	6.1	548.2	390.1	158.16	3.466		
7,800.0	6,816.4	6,802.4	6,802.4	23.6	136.0	89.44	166.1	6.1	644.3	484.7	159.56	4.038		
7,900.0	6,816.2	6,802.2	6,802.2	25.0	136.0	89.35	166.1	6.1	741.3	580.3	161.03	4.604		
8,000.0	6,815.9	6,801.9	6,801.9	26.6	136.0	89.26	166.1	6.1	839.1	676.5	162.55	5.162		
8,100.0	6,815.7	6,801.7	6,801.7	28.2	136.0	89.17	166.1	6.1	937.3	773.2	164.12	5.711		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 6983-UNKNOWN													Offset Well Error:	0.0 ft
Existing Wells - Sec.7-T5N-R64W - Plumb #4 (Exist.) - Wellbore #1 - Wellbore #1														
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,800.0	6,813.8	6,775.8	6,775.8	40.1	135.5	-92.11	2,750.9	-228.1	964.7	789.3	175.40	5.500		
8,900.0	6,813.6	6,775.6	6,775.6	41.8	135.5	-91.89	2,750.9	-228.1	865.0	687.8	177.19	4.882		
9,000.0	6,813.3	6,775.3	6,775.3	43.6	135.5	-91.67	2,750.9	-228.1	765.3	586.3	179.00	4.276		
9,100.0	6,813.0	6,775.0	6,775.0	45.4	135.5	-91.46	2,750.9	-228.1	665.8	485.0	180.81	3.682		
9,200.0	6,812.8	6,774.8	6,774.8	47.2	135.5	-91.24	2,750.9	-228.1	566.4	383.8	182.64	3.101		
9,300.0	6,812.5	6,774.5	6,774.5	49.0	135.5	-91.02	2,750.9	-228.1	467.3	282.8	184.46	2.533		
9,400.0	6,812.3	6,774.3	6,774.3	50.9	135.5	-90.80	2,750.9	-228.1	368.7	182.4	186.30	1.979		
9,500.0	6,812.0	6,774.0	6,774.0	52.7	135.5	-90.58	2,750.9	-228.1	271.0	82.9	188.13	1.441	Level 3	
9,600.0	6,811.7	6,773.7	6,773.7	54.5	135.5	-90.36	2,750.9	-228.1	176.1	-13.9	189.97	0.927	Level 1	
9,700.0	6,811.5	6,773.5	6,773.5	56.4	135.5	-90.14	2,750.9	-228.1	92.4	-99.4	191.82	0.482	Level 1	
9,762.3	6,811.3	6,773.3	6,773.3	57.5	135.5	-90.00	2,750.9	-228.1	68.3	-124.7	192.97	0.354	Level 1, CC, ES, SF	
9,800.0	6,811.2	6,773.2	6,773.2	58.2	135.5	-89.92	2,750.9	-228.1	78.0	-115.7	193.66	0.403	Level 1	
9,900.0	6,810.9	6,772.9	6,772.9	60.1	135.5	-89.70	2,750.9	-228.1	153.7	-41.8	195.51	0.786	Level 1	
10,000.0	6,810.7	6,772.7	6,772.7	61.9	135.5	-89.48	2,750.9	-228.1	247.3	50.0	197.36	1.253	Level 3	
10,100.0	6,810.4	6,772.4	6,772.4	63.8	135.4	-89.26	2,750.9	-228.1	344.5	145.3	199.21	1.730		
10,200.0	6,810.2	6,772.2	6,772.2	65.7	135.4	-89.04	2,750.9	-228.1	443.0	241.9	201.06	2.203		
10,300.0	6,809.9	6,771.9	6,771.9	67.5	135.4	-88.82	2,750.9	-228.1	542.0	339.1	202.91	2.671		
10,400.0	6,809.6	6,771.6	6,771.6	69.4	135.4	-88.60	2,750.9	-228.1	641.4	436.6	204.76	3.132		
10,500.0	6,809.4	6,771.4	6,771.4	71.3	135.4	-88.38	2,750.9	-228.1	740.9	534.3	206.61	3.586		
10,600.0	6,809.1	6,771.1	6,771.1	73.1	135.4	-88.16	2,750.9	-228.1	840.5	632.0	208.46	4.032		
10,700.0	6,808.9	6,770.9	6,770.9	75.0	135.4	-87.94	2,750.9	-228.1	940.2	729.9	210.31	4.471		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design Existing Wells - Sec.7-T5N-R64W - Plumb #5 (P&A) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 6982-UNKNOWN												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,000.0	6,810.7	6,768.7	6,768.7	61.9	135.4	90.47	3,938.9	144.2	997.8	800.5	197.28	5.058	
10,100.0	6,810.4	6,768.4	6,768.4	63.8	135.4	90.42	3,938.9	144.2	903.0	703.9	199.14	4.535	
10,200.0	6,810.2	6,768.2	6,768.2	65.7	135.4	90.37	3,938.9	144.2	809.6	608.6	201.00	4.028	
10,300.0	6,809.9	6,767.9	6,767.9	67.5	135.4	90.32	3,938.9	144.2	717.9	515.0	202.86	3.539	
10,400.0	6,809.6	6,767.6	6,767.6	69.4	135.4	90.27	3,938.9	144.2	628.7	424.0	204.73	3.071	
10,500.0	6,809.4	6,767.4	6,767.4	71.3	135.3	90.22	3,938.9	144.2	543.3	336.7	206.59	2.630	
10,600.0	6,809.1	6,767.1	6,767.1	73.1	135.3	90.17	3,938.9	144.2	463.8	255.4	208.46	2.225	
10,700.0	6,808.9	6,766.9	6,766.9	75.0	135.3	90.12	3,938.9	144.2	393.8	183.5	210.34	1.872	
10,800.0	6,808.6	6,766.6	6,766.6	76.9	135.3	90.07	3,938.9	144.2	339.2	126.9	212.21	1.598	
10,900.0	6,808.3	6,766.3	6,766.3	78.8	135.3	90.02	3,938.9	144.2	308.2	94.1	214.09	1.439	Level 3
10,950.3	6,808.2	6,766.2	6,766.2	79.7	135.3	90.00	3,938.9	144.2	304.0	89.0	215.03	1.414	Level 3, CC, ES, SF
11,000.0	6,808.1	6,766.1	6,766.1	80.7	135.3	89.98	3,938.9	144.2	308.1	92.1	215.97	1.426	Level 3
11,100.0	6,807.8	6,765.8	6,765.8	82.6	135.3	89.93	3,938.9	144.2	338.9	121.0	217.85	1.556	
11,200.0	6,807.5	6,765.5	6,765.5	84.4	135.3	89.88	3,938.9	144.2	393.4	173.7	219.73	1.790	
11,300.0	6,807.3	6,765.3	6,765.3	86.3	135.3	89.83	3,938.9	144.2	463.4	241.8	221.61	2.091	
11,400.0	6,807.0	6,765.0	6,765.0	88.2	135.3	89.78	3,938.9	144.2	542.8	319.3	223.49	2.429	
11,500.0	6,806.8	6,764.8	6,764.8	90.1	135.3	89.73	3,938.9	144.2	628.2	402.8	225.38	2.787	
11,600.0	6,806.5	6,764.5	6,764.5	92.0	135.3	89.68	3,938.9	144.2	717.3	490.0	227.26	3.156	
11,700.0	6,806.2	6,764.2	6,764.2	93.9	135.3	89.63	3,938.9	144.2	809.0	579.8	229.15	3.530	
11,800.0	6,806.0	6,764.0	6,764.0	95.8	135.3	89.58	3,938.9	144.2	902.4	671.4	231.04	3.906	
11,900.0	6,805.7	6,763.7	6,763.7	97.7	135.3	89.53	3,938.9	144.2	997.2	764.2	232.93	4.281	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

<b>Offset Design</b>													Offset Site Error:	0.0 ft
Survey Program: 7020-UNKNOWN													Offset Well Error:	0.0 ft
Existing Wells - Sec.7-T5N-R64W - Webster #B6-2 (Exist.) - Wellbore #1 - Wellbore #1														
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,500.0	6,796.3	6,776.3	6,776.3	166.3	135.5	90.47	9,378.2	121.9	933.1	631.3	301.81	3.092		
15,600.0	6,796.0	6,776.0	6,776.0	168.2	135.5	90.42	9,378.2	121.9	838.3	534.6	303.72	2.760		
15,700.0	6,795.8	6,775.8	6,775.8	170.1	135.5	90.37	9,378.2	121.9	744.9	439.2	305.63	2.437		
15,800.0	6,795.5	6,775.5	6,775.5	172.0	135.5	90.31	9,378.2	121.9	653.4	345.9	307.53	2.125		
15,900.0	6,795.2	6,775.2	6,775.2	174.0	135.5	90.26	9,378.2	121.9	564.8	255.4	309.44	1.825		
16,000.0	6,795.0	6,775.0	6,775.0	175.9	135.5	90.21	9,378.2	121.9	480.7	169.4	311.35	1.544		
16,100.0	6,794.7	6,774.7	6,774.7	177.8	135.5	90.15	9,378.2	121.9	404.0	90.7	313.26	1.290	Level 3	
16,200.0	6,794.5	6,774.5	6,774.5	179.7	135.5	90.10	9,378.2	121.9	339.5	24.4	315.17	1.077	Level 2	
16,300.0	6,794.2	6,774.2	6,774.2	181.6	135.5	90.05	9,378.2	121.9	295.6	-21.5	317.08	0.932	Level 1	
16,389.5	6,794.0	6,774.0	6,774.0	183.3	135.5	90.00	9,378.2	121.9	281.7	-37.1	318.78	0.884	Level 1, CC, SF	
16,400.0	6,793.9	6,773.9	6,773.9	183.5	135.5	89.99	9,378.2	121.9	281.9	-37.1	318.98	0.884	Level 1, ES	
16,500.0	6,793.7	6,773.7	6,773.7	185.4	135.5	89.94	9,378.2	121.9	302.6	-18.3	320.89	0.943	Level 1	
16,600.0	6,793.4	6,773.4	6,773.4	187.3	135.5	89.89	9,378.2	121.9	351.7	28.9	322.80	1.089	Level 2	
16,700.0	6,793.1	6,773.1	6,773.1	189.3	135.5	89.83	9,378.2	121.9	419.2	94.5	324.71	1.291	Level 3	
16,755.7	6,793.0	6,773.0	6,773.0	190.3	135.5	89.81	9,378.2	121.9	462.0	136.2	325.77	1.418	Level 3	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design Existing Wells - Sec.7-T5N-R64W - Witwer 34-6D (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 498-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
11,500.0	6,806.8	7,086.7	6,851.3	90.1	18.5	142.78	5,434.2	-103.6	949.9	876.1	73.88	12.858		
11,600.0	6,806.5	7,082.3	6,847.0	92.0	18.5	141.01	5,434.5	-103.4	850.5	773.3	77.17	11.021		
11,700.0	6,806.2	7,066.0	6,830.7	93.9	18.5	133.07	5,435.9	-102.7	751.2	664.0	87.18	8.617		
11,800.0	6,806.0	7,066.0	6,830.7	95.8	18.5	133.07	5,435.9	-102.7	651.8	563.2	88.65	7.353		
11,900.0	6,805.7	7,066.0	6,830.7	97.7	18.5	133.07	5,435.9	-102.7	552.7	462.6	90.12	6.133		
12,000.0	6,805.5	7,057.9	6,822.7	99.6	18.5	128.26	5,436.6	-102.3	453.8	357.2	96.63	4.697		
12,100.0	6,805.2	7,049.1	6,813.9	101.5	18.4	122.29	5,437.4	-101.8	355.4	251.5	103.86	3.422		
12,200.0	6,804.9	7,040.1	6,804.9	103.4	18.4	115.31	5,438.3	-101.3	257.8	146.7	111.15	2.320		
12,300.0	6,804.7	7,030.8	6,795.7	105.3	18.4	107.32	5,439.2	-100.8	162.7	44.9	117.80	1.381 Level 3		
12,400.0	6,804.4	7,021.2	6,786.1	107.2	18.4	98.45	5,440.1	-100.2	79.2	-43.7	122.89	0.645 Level 1		
12,452.0	6,804.3	7,016.0	6,781.0	108.2	18.3	93.61	5,440.6	-99.9	60.0	-64.6	124.60	0.482 Level 1, CC, ES, SF		
12,500.0	6,804.1	7,011.2	6,776.3	109.1	18.3	89.06	5,441.1	-99.6	76.7	-48.8	125.51	0.611 Level 1		
12,600.0	6,803.9	7,001.1	6,766.2	111.0	18.3	79.68	5,442.1	-98.9	159.1	33.8	125.25	1.270 Level 3		
12,700.0	6,803.6	6,991.0	6,756.1	112.9	18.3	71.07	5,443.1	-98.2	254.0	131.4	122.58	2.072		
12,800.0	6,803.4	6,980.8	6,746.1	114.8	18.3	63.43	5,444.1	-97.5	351.4	233.0	118.37	2.969		
12,900.0	6,803.1	6,970.7	6,736.0	116.7	18.2	56.83	5,445.1	-96.7	449.7	336.3	113.47	3.963		
13,000.0	6,802.8	6,960.5	6,725.9	118.6	18.2	51.23	5,446.2	-95.9	548.5	440.0	108.53	5.054		
13,100.0	6,802.6	6,950.3	6,715.8	120.5	18.2	46.51	5,447.2	-95.1	647.5	543.6	103.90	6.231		
13,200.0	6,802.3	6,940.0	6,705.6	122.4	18.1	42.48	5,448.2	-94.2	746.6	646.9	99.70	7.488		
13,300.0	6,802.0	6,927.6	6,693.4	124.3	18.1	38.51	5,449.5	-93.0	845.7	750.5	95.20	8.884		
13,400.0	6,801.8	6,914.7	6,680.5	126.2	18.1	35.11	5,450.9	-91.8	944.9	853.7	91.26	10.354		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-15N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design Klein 5N64W7 Pad Sec.7-T5N-R64W - Klein 7T-241 - Wellbore #1 - Plan #1 (10-14-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	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	91.43	91.43	-0.4	14.8	14.8	14.8	0.00	N/A	
100.0	100.0	100.0	100.0	0.1	0.1	91.43	91.43	-0.4	14.8	14.8	14.5	0.22	65.688	
200.0	200.0	200.0	200.0	0.3	0.3	91.43	91.43	-0.4	14.8	14.8	14.1	0.67	21.896	
300.0	300.0	300.0	300.0	0.6	0.6	91.43	91.43	-0.4	14.8	14.8	13.6	1.12	13.138	
400.0	400.0	400.0	400.0	0.8	0.8	91.43	91.43	-0.4	14.8	14.8	13.2	1.57	9.384	
500.0	500.0	500.0	500.0	1.0	1.0	91.43	91.43	-0.4	14.8	14.8	12.7	2.02	7.299	
600.0	600.0	600.0	600.0	1.2	1.2	91.43	91.43	-0.4	14.8	14.8	12.3	2.47	5.972	
700.0	700.0	700.0	700.0	1.5	1.5	91.43	91.43	-0.4	14.8	14.8	11.8	2.92	5.053	
800.0	800.0	800.0	800.0	1.7	1.7	91.43	91.43	-0.4	14.8	14.8	11.4	3.37	4.379	
900.0	900.0	900.0	900.0	1.9	1.9	91.43	91.43	-0.4	14.8	14.8	10.9	3.82	3.864	
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	91.43	91.43	-0.4	14.8	14.8	10.5	4.27	3.457	
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	91.43	91.43	-0.4	14.8	14.8	10.0	4.72	3.128	
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	91.43	91.43	-0.4	14.8	14.8	9.6	5.17	2.856	
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	91.43	91.43	-0.4	14.8	14.8	9.1	5.62	2.628	
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	91.43	91.43	-0.4	14.8	14.8	8.7	6.07	2.433	
1,500.0	1,500.0	1,500.0	1,500.0	3.3	3.3	91.43	91.43	-0.4	14.8	14.8	8.2	6.52	2.265	
1,600.0	1,600.0	1,600.0	1,600.0	3.5	3.5	91.43	91.43	-0.4	14.8	14.8	7.8	6.97	2.119 CC, ES	
1,700.0	1,700.0	1,699.8	1,699.8	3.7	3.7	95.62	95.62	-1.5	15.4	15.5	8.1	7.39	2.092	
1,800.0	1,800.0	1,799.4	1,799.3	3.9	3.9	105.97	105.97	-4.9	17.3	18.0	10.2	7.79	2.306	
1,900.0	1,900.0	1,898.9	1,898.6	4.1	4.0	-83.75	-83.75	-10.6	20.4	22.8	14.7	8.16	2.796	
2,000.0	1,999.9	1,998.1	1,997.3	4.3	4.2	-80.61	-80.61	-18.6	24.7	29.7	21.2	8.52	3.488	
2,100.0	2,099.7	2,097.0	2,095.6	4.5	4.4	-80.37	-80.37	-28.7	30.2	38.4	29.5	8.89	4.315	
2,200.0	2,199.3	2,195.8	2,193.4	4.7	4.7	-81.57	-81.57	-41.0	36.9	48.7	39.4	9.29	5.239	
2,300.0	2,298.6	2,295.2	2,291.7	4.9	4.9	-84.44	-84.44	-53.9	44.0	59.2	49.5	9.71	6.098	
2,335.7	2,334.0	2,330.7	2,326.8	4.9	5.0	-85.79	-85.79	-58.5	46.5	62.9	53.1	9.87	6.379	
2,400.0	2,397.6	2,394.5	2,389.9	5.1	5.2	-88.20	-88.20	-66.8	51.0	69.7	59.6	10.16	6.864	
2,500.0	2,496.6	2,493.9	2,488.2	5.3	5.5	-91.12	-91.12	-79.8	58.1	80.5	69.9	10.64	7.568	
2,600.0	2,595.7	2,593.2	2,586.4	5.6	5.7	-93.35	-93.35	-92.7	65.1	91.5	80.3	11.14	8.209	
2,700.0	2,694.7	2,692.6	2,684.7	5.8	6.0	-95.11	-95.11	-105.6	72.2	102.5	90.9	11.67	8.789	
2,800.0	2,793.7	2,791.9	2,782.9	6.1	6.3	-96.52	-96.52	-118.5	79.2	113.7	101.5	12.20	9.313	
2,900.0	2,892.7	2,891.2	2,881.2	6.4	6.6	-97.68	-97.68	-131.5	86.3	124.8	112.1	12.76	9.786	
3,000.0	2,991.7	2,990.6	2,979.4	6.7	6.9	-98.64	-98.64	-144.4	93.3	136.1	122.8	13.32	10.213	
3,100.0	3,090.7	3,089.9	3,077.7	6.9	7.3	-99.46	-99.46	-157.3	100.4	147.3	133.4	13.90	10.600	
3,200.0	3,189.8	3,189.3	3,175.9	7.2	7.6	-100.17	-100.17	-170.2	107.4	158.6	144.1	14.49	10.949	
3,300.0	3,288.8	3,288.6	3,274.2	7.5	7.9	-100.78	-100.78	-183.2	114.5	169.9	154.8	15.08	11.267	
3,400.0	3,387.8	3,388.0	3,372.4	7.8	8.2	-101.31	-101.31	-196.1	121.5	181.3	165.6	15.68	11.556	
3,500.0	3,486.8	3,487.3	3,470.6	8.2	8.6	-101.78	-101.78	-209.0	128.6	192.6	176.3	16.29	11.820	
3,600.0	3,585.8	3,586.6	3,568.9	8.5	8.9	-102.20	-102.20	-221.9	135.6	203.9	187.0	16.91	12.061	
3,700.0	3,684.8	3,686.0	3,667.1	8.8	9.2	-102.58	-102.58	-234.9	142.7	215.3	197.8	17.53	12.282	
3,800.0	3,783.9	3,785.3	3,765.4	9.1	9.6	-102.91	-102.91	-247.8	149.7	226.7	208.5	18.15	12.485	
3,900.0	3,882.9	3,884.7	3,863.6	9.4	9.9	-103.22	-103.22	-260.7	156.7	238.0	219.2	18.78	12.673	
4,000.0	3,981.9	3,984.0	3,961.9	9.7	10.3	-103.50	-103.50	-273.6	163.8	249.4	230.0	19.42	12.845	
4,100.0	4,080.9	4,083.4	4,060.1	10.1	10.6	-103.75	-103.75	-286.6	170.8	260.8	240.7	20.05	13.005	
4,200.0	4,179.9	4,182.7	4,158.4	10.4	10.9	-103.98	-103.98	-299.5	177.9	272.2	251.5	20.69	13.153	
4,300.0	4,279.0	4,282.1	4,256.6	10.7	11.3	-104.19	-104.19	-312.4	184.9	283.6	262.2	21.34	13.291	
4,400.0	4,378.0	4,381.4	4,354.9	11.0	11.6	-104.39	-104.39	-325.3	192.0	295.0	273.0	21.98	13.419	
4,500.0	4,477.0	4,480.7	4,453.1	11.4	12.0	-104.57	-104.57	-338.3	199.0	306.4	283.7	22.63	13.539	
4,600.0	4,576.0	4,580.1	4,551.4	11.7	12.3	-104.74	-104.74	-351.2	206.1	317.8	294.5	23.28	13.651	
4,700.0	4,675.0	4,679.4	4,649.6	12.0	12.7	-104.90	-104.90	-364.1	213.1	329.2	305.2	23.93	13.755	
4,800.0	4,774.0	4,778.8	4,747.9	12.4	13.0	-105.05	-105.05	-377.0	220.2	340.6	316.0	24.58	13.854	
4,900.0	4,873.1	4,878.1	4,846.1	12.7	13.4	-105.18	-105.18	-390.0	227.2	352.0	326.8	25.24	13.946	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Wellbore</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
<b>Reference Design:</b>	Plan #1 (10-14-15)		

Offset Design Klein 5N64W7 Pad Sec.7-T5N-R64W - Klein 7T-241 - Wellbore #1 - Plan #1 (10-14-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,972.1	4,977.5	4,944.3	13.1	13.7	-105.31	-402.9	234.3	363.4	337.5	25.90	14.033		
5,100.0	5,071.1	5,076.8	5,042.6	13.4	14.1	-105.43	-415.8	241.3	374.8	348.3	26.56	14.114		
5,200.0	5,170.1	5,176.1	5,140.8	13.7	14.4	-105.55	-428.7	248.4	386.2	359.0	27.22	14.192		
5,300.0	5,269.1	5,275.5	5,239.1	14.1	14.8	-105.65	-441.7	255.4	397.6	369.8	27.88	14.265		
5,400.0	5,368.2	5,374.8	5,337.3	14.4	15.1	-105.75	-454.6	262.5	409.1	380.5	28.54	14.334		
5,500.0	5,467.2	5,479.1	5,440.5	14.7	15.5	-105.94	-467.5	269.5	420.1	390.9	29.19	14.394		
5,532.7	5,499.5	5,514.1	5,475.4	14.9	15.6	-106.09	-471.2	271.5	423.4	394.0	29.39	14.405		
5,600.0	5,566.3	5,586.6	5,547.4	15.1	15.7	-106.56	-477.6	275.0	429.3	399.5	29.77	14.421		
5,700.0	5,665.8	5,694.4	5,655.0	15.3	16.0	-107.18	-484.1	278.6	435.6	405.4	30.24	14.407		
5,800.0	5,765.6	5,802.3	5,762.8	15.5	16.1	-107.72	-487.2	280.2	439.1	408.4	30.65	14.327		
5,900.0	5,865.5	5,905.0	5,865.5	15.7	16.3	-108.09	-487.4	280.4	440.1	409.1	31.00	14.195		
5,934.5	5,900.0	5,939.5	5,900.0	15.7	16.4	90.05	-487.4	280.4	440.2	409.0	31.12	14.145		
6,000.0	5,965.5	6,005.0	5,965.5	15.8	16.5	90.05	-487.4	280.4	440.2	408.8	31.33	14.050		
6,026.9	5,992.4	6,031.9	5,992.4	15.9	16.5	89.98	-486.8	280.4	440.2	408.8	31.41	14.015		
6,088.3	6,053.8	6,093.0	6,053.3	16.0	16.5	89.36	-482.1	280.4	440.2	408.6	31.57	13.943		
6,100.0	6,065.5	6,104.5	6,064.7	16.0	16.6	89.19	-480.7	280.4	440.2	408.6	31.60	13.931		
6,150.0	6,115.5	6,153.6	6,113.1	16.0	16.6	88.44	-472.7	280.4	440.3	408.6	31.68	13.898		
6,200.0	6,165.1	6,202.3	6,160.6	16.1	16.6	87.70	-461.6	280.4	440.5	408.8	31.72	13.889		
6,250.0	6,214.3	6,250.0	6,206.2	16.1	16.5	86.98	-447.9	280.4	440.8	409.1	31.70	13.903		
6,300.0	6,262.8	6,298.7	6,251.9	16.1	16.5	86.25	-431.0	280.4	441.1	409.5	31.65	13.938		
6,350.0	6,310.4	6,346.4	6,295.5	16.0	16.4	85.56	-411.6	280.4	441.5	409.9	31.56	13.991		
6,400.0	6,357.0	6,393.9	6,337.6	16.0	16.4	84.88	-389.7	280.4	441.9	410.5	31.44	14.059		
6,450.0	6,402.2	6,441.0	6,378.0	15.9	16.3	84.23	-365.4	280.4	442.4	411.1	31.29	14.139		
6,500.0	6,445.9	6,487.9	6,416.5	15.9	16.2	83.61	-338.8	280.4	442.9	411.8	31.13	14.228		
6,550.0	6,487.9	6,534.5	6,453.2	15.8	16.1	83.01	-310.1	280.4	443.5	412.5	30.97	14.320		
6,600.0	6,528.1	6,580.9	6,487.9	15.7	16.1	82.44	-279.3	280.4	444.0	413.2	30.81	14.412		
6,650.0	6,566.3	6,627.0	6,520.5	15.6	16.0	81.91	-246.6	280.4	444.6	413.9	30.67	14.497		
6,700.0	6,602.2	6,673.0	6,551.0	15.5	15.9	81.41	-212.2	280.4	445.2	414.6	30.55	14.570		
6,750.0	6,635.8	6,718.7	6,579.2	15.5	15.9	80.94	-176.2	280.4	445.7	415.3	30.48	14.625		
6,800.0	6,667.0	6,764.3	6,605.1	15.5	15.8	80.51	-138.7	280.4	446.3	415.8	30.45	14.656		
6,850.0	6,695.5	6,809.7	6,628.6	15.5	15.8	80.12	-99.9	280.4	446.8	416.3	30.48	14.658		
6,900.0	6,721.2	6,855.0	6,649.8	15.5	15.8	79.77	-59.8	280.4	447.3	416.7	30.58	14.625		
6,950.0	6,744.1	6,900.0	6,668.4	15.5	15.8	79.46	-18.9	280.4	447.7	417.0	30.76	14.555		
7,000.0	6,764.0	6,945.2	6,684.6	15.7	15.9	79.18	23.3	280.4	448.1	417.1	31.03	14.442		
7,050.0	6,780.9	6,990.2	6,698.3	15.8	16.1	78.95	66.2	280.4	448.5	417.1	31.39	14.289		
7,100.0	6,794.7	7,035.1	6,709.4	16.1	16.3	78.77	109.7	280.4	448.8	416.9	31.83	14.097		
7,150.0	6,805.3	7,079.9	6,717.9	16.4	16.5	78.62	153.7	280.4	449.0	416.6	32.37	13.870		
7,200.0	6,812.7	7,124.7	6,723.8	16.7	16.8	78.52	198.0	280.4	449.1	416.1	33.00	13.611		
7,250.0	6,816.8	7,169.4	6,727.1	17.1	17.2	78.46	242.7	280.4	449.2	415.5	33.71	13.326		
7,290.3	6,817.8	7,205.6	6,727.8	17.4	17.5	78.45	278.8	280.4	449.3	414.9	34.34	13.082		
7,300.0	6,817.8	7,215.3	6,727.8	17.5	17.6	78.45	288.5	280.4	449.3	414.7	34.51	13.016		
7,400.0	6,817.5	7,315.3	6,727.6	18.5	18.6	78.46	388.5	280.4	449.2	412.8	36.42	12.335		
7,500.0	6,817.2	7,415.3	6,727.4	19.6	19.7	78.46	488.5	280.4	449.2	410.6	38.60	11.639		
7,600.0	6,817.0	7,515.3	6,727.2	20.8	20.9	78.47	588.5	280.4	449.2	408.2	41.01	10.955		
7,700.0	6,816.7	7,615.3	6,727.0	22.2	22.3	78.48	688.5	280.4	449.2	405.6	43.61	10.300		
7,800.0	6,816.4	7,715.3	6,726.8	23.6	23.7	78.48	788.5	280.4	449.2	402.8	46.38	9.686		
7,900.0	6,816.2	7,815.3	6,726.5	25.0	25.1	78.49	888.5	280.4	449.2	399.9	49.28	9.115		
8,000.0	6,815.9	7,915.3	6,726.3	26.6	26.7	78.50	988.5	280.4	449.2	396.9	52.29	8.590		
8,100.0	6,815.7	8,015.3	6,726.1	28.2	28.3	78.50	1,088.5	280.4	449.2	393.8	55.40	8.108		
8,200.0	6,815.4	8,115.3	6,725.9	29.8	29.9	78.51	1,188.5	280.4	449.2	390.6	58.58	7.667		
8,300.0	6,815.1	8,215.3	6,725.7	31.4	31.5	78.52	1,288.5	280.4	449.1	387.3	61.84	7.263		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Wellbore</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
<b>Reference Design:</b>	Plan #1 (10-14-15)		

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Klein 5N64W7 Pad Sec.7-T5N-R64W - Klein 7T-241 - Wellbore #1 - Plan #1 (10-14-15)													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,814.9	8,315.3	6,725.5	33.1	33.2	78.52	1,388.5	280.4	449.1	384.0	65.15	6.894	
8,500.0	6,814.6	8,415.3	6,725.3	34.8	34.9	78.53	1,488.5	280.4	449.1	380.6	68.50	6.556	
8,600.0	6,814.4	8,515.3	6,725.1	36.5	36.6	78.53	1,588.5	280.4	449.1	377.2	71.90	6.246	
8,700.0	6,814.1	8,615.3	6,724.9	38.3	38.4	78.54	1,688.5	280.4	449.1	373.8	75.34	5.961	
8,800.0	6,813.8	8,715.3	6,724.7	40.1	40.1	78.55	1,788.5	280.4	449.1	370.3	78.81	5.699	
8,900.0	6,813.6	8,815.3	6,724.5	41.8	41.9	78.55	1,888.5	280.4	449.1	366.8	82.30	5.457	
9,000.0	6,813.3	8,915.3	6,724.2	43.6	43.7	78.56	1,988.5	280.4	449.1	363.3	85.82	5.233	
9,100.0	6,813.0	9,015.3	6,724.0	45.4	45.5	78.57	2,088.5	280.4	449.1	359.7	89.36	5.025	
9,200.0	6,812.8	9,115.3	6,723.8	47.2	47.3	78.57	2,188.5	280.4	449.0	356.1	92.92	4.833	
9,300.0	6,812.5	9,215.3	6,723.6	49.0	49.1	78.58	2,288.5	280.4	449.0	352.5	96.49	4.654	
9,400.0	6,812.3	9,315.3	6,723.4	50.9	50.9	78.59	2,388.5	280.4	449.0	348.9	100.09	4.486	
9,500.0	6,812.0	9,415.3	6,723.2	52.7	52.8	78.59	2,488.5	280.4	449.0	345.3	103.69	4.330	
9,600.0	6,811.7	9,515.3	6,723.0	54.5	54.6	78.60	2,588.5	280.4	449.0	341.7	107.31	4.184	
9,700.0	6,811.5	9,615.3	6,722.8	56.4	56.4	78.61	2,688.5	280.4	449.0	338.1	110.93	4.047	
9,800.0	6,811.2	9,715.3	6,722.6	58.2	58.3	78.61	2,788.5	280.4	449.0	334.4	114.57	3.919	
9,900.0	6,810.9	9,815.3	6,722.4	60.1	60.1	78.62	2,888.4	280.3	449.0	330.8	118.22	3.798	
10,000.0	6,810.7	9,915.3	6,722.1	61.9	62.0	78.63	2,988.4	280.3	449.0	327.1	121.87	3.684	
10,100.0	6,810.4	10,015.3	6,721.9	63.8	63.8	78.63	3,088.4	280.3	449.0	323.4	125.53	3.576	
10,200.0	6,810.2	10,115.3	6,721.7	65.7	65.7	78.64	3,188.4	280.3	448.9	319.7	129.20	3.475	
10,300.0	6,809.9	10,215.3	6,721.5	67.5	67.6	78.65	3,288.4	280.3	448.9	316.1	132.88	3.379	
10,400.0	6,809.6	10,315.3	6,721.3	69.4	69.4	78.65	3,388.4	280.3	448.9	312.4	136.56	3.287	
10,500.0	6,809.4	10,415.3	6,721.1	71.3	71.3	78.66	3,488.4	280.3	448.9	308.7	140.25	3.201	
10,600.0	6,809.1	10,515.3	6,720.9	73.1	73.2	78.67	3,588.4	280.3	448.9	305.0	143.94	3.119	
10,700.0	6,808.9	10,615.3	6,720.7	75.0	75.1	78.67	3,688.4	280.3	448.9	301.3	147.63	3.041	
10,800.0	6,808.6	10,715.3	6,720.5	76.9	76.9	78.68	3,788.4	280.3	448.9	297.5	151.33	2.966	
10,900.0	6,808.3	10,815.3	6,720.3	78.8	78.8	78.69	3,888.4	280.3	448.9	293.8	155.04	2.895	
11,000.0	6,808.1	10,915.3	6,720.1	80.7	80.7	78.69	3,988.4	280.3	448.9	290.1	158.75	2.827	
11,100.0	6,807.8	11,015.3	6,719.8	82.6	82.6	78.70	4,088.4	280.3	448.8	286.4	162.46	2.763	
11,200.0	6,807.5	11,115.3	6,719.6	84.4	84.5	78.70	4,188.4	280.3	448.8	282.7	166.17	2.701	
11,300.0	6,807.3	11,215.3	6,719.4	86.3	86.4	78.71	4,288.4	280.3	448.8	278.9	169.89	2.642	
11,400.0	6,807.0	11,315.3	6,719.2	88.2	88.2	78.72	4,388.4	280.3	448.8	275.2	173.61	2.585	
11,500.0	6,806.8	11,415.3	6,719.0	90.1	90.1	78.72	4,488.4	280.3	448.8	271.5	177.34	2.531	
11,600.0	6,806.5	11,515.3	6,718.8	92.0	92.0	78.73	4,588.4	280.3	448.8	267.7	181.06	2.479	
11,700.0	6,806.2	11,615.3	6,718.6	93.9	93.9	78.74	4,688.4	280.3	448.8	264.0	184.79	2.429	
11,800.0	6,806.0	11,715.3	6,718.4	95.8	95.8	78.74	4,788.4	280.3	448.8	260.2	188.52	2.380	
11,900.0	6,805.7	11,815.3	6,718.2	97.7	97.7	78.75	4,888.4	280.3	448.8	256.5	192.26	2.334	
12,000.0	6,805.5	11,915.3	6,718.0	99.6	99.6	78.76	4,988.4	280.3	448.7	252.8	195.99	2.290	
12,100.0	6,805.2	12,015.3	6,717.7	101.5	101.5	78.76	5,088.4	280.3	448.7	249.0	199.73	2.247	
12,200.0	6,804.9	12,115.3	6,717.5	103.4	103.4	78.77	5,188.4	280.3	448.7	245.3	203.47	2.205	
12,300.0	6,804.7	12,215.3	6,717.3	105.3	105.3	78.78	5,288.4	280.3	448.7	241.5	207.21	2.166	
12,400.0	6,804.4	12,315.3	6,717.1	107.2	107.2	78.78	5,388.4	280.3	448.7	237.8	210.95	2.127	
12,500.0	6,804.1	12,415.3	6,716.9	109.1	109.1	78.79	5,488.4	280.3	448.7	234.0	214.69	2.090	
12,600.0	6,803.9	12,515.3	6,716.7	111.0	111.0	78.80	5,588.4	280.3	448.7	230.2	218.44	2.054	
12,700.0	6,803.6	12,615.3	6,716.5	112.9	112.9	78.80	5,688.4	280.3	448.7	226.5	222.18	2.019	
12,800.0	6,803.4	12,715.3	6,716.3	114.8	114.8	78.81	5,788.4	280.3	448.7	222.7	225.93	1.986	
12,900.0	6,803.1	12,815.3	6,716.1	116.7	116.7	78.82	5,888.4	280.3	448.7	219.0	229.68	1.953	
13,000.0	6,802.8	12,915.3	6,715.9	118.6	118.6	78.82	5,988.4	280.3	448.6	215.2	233.43	1.922	
13,100.0	6,802.6	13,015.3	6,715.7	120.5	120.5	78.83	6,088.4	280.3	448.6	211.4	237.18	1.892	
13,200.0	6,802.3	13,115.3	6,715.4	122.4	122.4	78.84	6,188.4	280.3	448.6	207.7	240.94	1.862	
13,300.0	6,802.0	13,215.3	6,715.2	124.3	124.3	78.84	6,288.4	280.3	448.6	203.9	244.69	1.833	
13,400.0	6,801.8	13,315.3	6,715.0	126.2	126.2	78.85	6,388.4	280.3	448.6	200.2	248.45	1.806	

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



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,500.0	6,801.5	13,415.3	6,714.8	128.1	128.1	78.86	6,488.4	280.3	448.6	196.4	252.20	1.779	
13,600.0	6,801.3	13,515.3	6,714.6	130.0	130.0	78.86	6,588.4	280.3	448.6	192.6	255.96	1.753	
13,700.0	6,801.0	13,615.3	6,714.4	131.9	131.9	78.87	6,688.4	280.3	448.6	188.9	259.72	1.727	
13,800.0	6,800.7	13,715.3	6,714.2	133.8	133.8	78.87	6,788.4	280.3	448.6	185.1	263.48	1.702	
13,900.0	6,800.5	13,815.3	6,714.0	135.7	135.8	78.88	6,888.4	280.3	448.5	181.3	267.24	1.678	
14,000.0	6,800.2	13,915.3	6,713.8	137.6	137.7	78.89	6,988.4	280.3	448.5	177.5	271.00	1.655	
14,100.0	6,800.0	14,015.3	6,713.6	139.6	139.6	78.89	7,088.4	280.3	448.5	173.8	274.76	1.632	
14,200.0	6,799.7	14,115.3	6,713.4	141.5	141.5	78.90	7,188.4	280.3	448.5	170.0	278.52	1.610	
14,300.0	6,799.4	14,215.3	6,713.1	143.4	143.4	78.91	7,288.4	280.3	448.5	166.2	282.28	1.589	
14,400.0	6,799.2	14,315.3	6,712.9	145.3	145.3	78.91	7,388.4	280.3	448.5	162.5	286.05	1.568	
14,500.0	6,798.9	14,415.3	6,712.7	147.2	147.2	78.92	7,488.4	280.3	448.5	158.7	289.81	1.548	
14,600.0	6,798.6	14,515.3	6,712.5	149.1	149.1	78.93	7,588.4	280.3	448.5	154.9	293.58	1.528	
14,700.0	6,798.4	14,615.3	6,712.3	151.0	151.0	78.93	7,688.4	280.3	448.5	151.1	297.34	1.508	
14,800.0	6,798.1	14,715.3	6,712.1	152.9	152.9	78.94	7,788.4	280.3	448.5	147.3	301.11	1.489 Level 3	
14,900.0	6,797.9	14,815.3	6,711.9	154.8	154.8	78.95	7,888.4	280.3	448.4	143.6	304.87	1.471 Level 3	
15,000.0	6,797.6	14,915.3	6,711.7	156.7	156.8	78.95	7,988.4	280.3	448.4	139.8	308.64	1.453 Level 3	
15,100.0	6,797.3	15,015.3	6,711.5	158.7	158.7	78.96	8,088.4	280.3	448.4	136.0	312.41	1.435 Level 3	
15,200.0	6,797.1	15,115.3	6,711.3	160.6	160.6	78.97	8,188.4	280.3	448.4	132.2	316.18	1.418 Level 3	
15,300.0	6,796.8	15,215.3	6,711.0	162.5	162.5	78.97	8,288.4	280.3	448.4	128.5	319.95	1.401 Level 3	
15,400.0	6,796.5	15,315.3	6,710.8	164.4	164.4	78.98	8,388.4	280.3	448.4	124.7	323.72	1.385 Level 3	
15,500.0	6,796.3	15,415.3	6,710.6	166.3	166.3	78.99	8,488.4	280.3	448.4	120.9	327.49	1.369 Level 3	
15,600.0	6,796.0	15,515.3	6,710.4	168.2	168.2	78.99	8,588.4	280.3	448.4	117.1	331.26	1.354 Level 3	
15,700.0	6,795.8	15,615.3	6,710.2	170.1	170.1	79.00	8,688.4	280.3	448.4	113.3	335.03	1.338 Level 3	
15,800.0	6,795.5	15,715.3	6,710.0	172.0	172.0	79.01	8,788.4	280.3	448.4	109.5	338.80	1.323 Level 3	
15,900.0	6,795.2	15,815.3	6,709.8	174.0	174.0	79.01	8,888.4	280.3	448.3	105.8	342.58	1.309 Level 3	
16,000.0	6,795.0	15,915.3	6,709.6	175.9	175.9	79.02	8,988.4	280.3	448.3	102.0	346.35	1.294 Level 3	
16,100.0	6,794.7	16,015.3	6,709.4	177.8	177.8	79.03	9,088.4	280.3	448.3	98.2	350.12	1.280 Level 3	
16,200.0	6,794.5	16,115.3	6,709.2	179.7	179.7	79.03	9,188.4	280.3	448.3	94.4	353.90	1.267 Level 3	
16,300.0	6,794.2	16,215.3	6,709.0	181.6	181.6	79.04	9,288.4	280.3	448.3	90.6	357.67	1.253 Level 3	
16,400.0	6,793.9	16,315.3	6,708.7	183.5	183.5	79.05	9,388.4	280.3	448.3	86.8	361.45	1.240 Level 2	
16,500.0	6,793.7	16,415.3	6,708.5	185.4	185.4	79.05	9,488.4	280.3	448.3	83.1	365.22	1.227 Level 2	
16,600.0	6,793.4	16,515.3	6,708.3	187.3	187.3	79.06	9,588.4	280.3	448.3	79.3	369.00	1.215 Level 2	
16,700.0	6,793.1	16,615.3	6,708.1	189.3	189.3	79.07	9,688.4	280.3	448.3	75.5	372.77	1.202 Level 2	
16,738.2	6,793.0	16,653.5	6,708.0	190.0	190.0	79.07	9,726.6	280.3	448.3	74.0	374.21	1.198 Level 2	
16,755.7	6,793.0	16,670.0	6,708.0	190.3	190.3	79.07	9,743.2	280.3	448.3	73.4	374.86	1.196 Level 2, SF	

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design Klein 5N64W7 Pad Sec.7-T5N-R64W - Klein 7T-301 - Wellbore #1 - Plan #1 (10-14-15)													Offset Site Error: 0.0 ft		
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	Toolface (°)	+N/-S (ft)	+E/-W (ft)	Centres (ft)	Ellipses (ft)	Separation (ft)	Factor			
0.0	0.0	0.0	0.0	0.0	0.0	90.71	-0.4	29.8	29.8						
100.0	100.0	100.0	100.0	0.1	0.1	90.71	-0.4	29.8	29.8	29.6	0.22	132.585			
200.0	200.0	200.0	200.0	0.3	0.3	90.71	-0.4	29.8	29.8	29.1	0.67	44.195			
300.0	300.0	300.0	300.0	0.6	0.6	90.71	-0.4	29.8	29.8	28.7	1.12	26.517			
400.0	400.0	400.0	400.0	0.8	0.8	90.71	-0.4	29.8	29.8	28.2	1.57	18.941			
500.0	500.0	500.0	500.0	1.0	1.0	90.71	-0.4	29.8	29.8	27.8	2.02	14.732			
600.0	600.0	600.0	600.0	1.2	1.2	90.71	-0.4	29.8	29.8	27.3	2.47	12.053			
700.0	700.0	700.0	700.0	1.5	1.5	90.71	-0.4	29.8	29.8	26.9	2.92	10.199			
800.0	800.0	800.0	800.0	1.7	1.7	90.71	-0.4	29.8	29.8	26.4	3.37	8.839			
900.0	900.0	900.0	900.0	1.9	1.9	90.71	-0.4	29.8	29.8	26.0	3.82	7.799			
1,000.0	1,000.0	1,000.0	1,000.0	2.1	2.1	90.71	-0.4	29.8	29.8	25.5	4.27	6.978			
1,100.0	1,100.0	1,100.0	1,100.0	2.4	2.4	90.71	-0.4	29.8	29.8	25.1	4.72	6.314			
1,200.0	1,200.0	1,200.0	1,200.0	2.6	2.6	90.71	-0.4	29.8	29.8	24.6	5.17	5.765			
1,300.0	1,300.0	1,300.0	1,300.0	2.8	2.8	90.71	-0.4	29.8	29.8	24.2	5.62	5.303			
1,400.0	1,400.0	1,400.0	1,400.0	3.0	3.0	90.71	-0.4	29.8	29.8	23.7	6.07	4.911 CC, ES			
1,500.0	1,500.0	1,499.4	1,499.4	3.3	3.2	92.39	-1.3	30.7	30.7	24.3	6.49	4.736			
1,600.0	1,600.0	1,598.7	1,598.6	3.5	3.4	96.83	-4.0	33.5	33.7	26.8	6.90	4.891			
1,700.0	1,700.0	1,697.7	1,697.4	3.7	3.6	102.66	-8.5	38.0	39.1	31.8	7.31	5.345			
1,800.0	1,800.0	1,796.3	1,795.6	3.9	3.8	108.50	-14.8	44.4	47.0	39.3	7.73	6.083			
1,900.0	1,900.0	1,894.5	1,893.1	4.1	4.0	-85.73	-22.9	52.5	57.6	49.4	8.11	7.093			
2,000.0	1,999.9	1,992.1	1,989.8	4.3	4.3	-84.34	-32.6	62.3	70.4	61.9	8.49	8.294			
2,100.0	2,099.7	2,089.7	2,085.9	4.5	4.5	-84.45	-44.1	73.8	85.3	76.4	8.88	9.607			
2,200.0	2,199.3	2,188.4	2,183.2	4.7	4.8	-85.81	-56.1	86.0	100.6	91.3	9.29	10.838			
2,300.0	2,298.6	2,287.1	2,280.4	4.9	5.1	-88.05	-68.2	98.1	115.9	106.2	9.72	11.927			
2,335.7	2,334.0	2,322.4	2,315.1	4.9	5.2	-89.00	-72.5	102.4	121.4	111.5	9.88	12.286			
2,400.0	2,397.6	2,385.8	2,377.5	5.1	5.4	-90.77	-80.3	110.3	131.4	121.2	10.19	12.899			
2,500.0	2,496.6	2,484.4	2,474.7	5.3	5.8	-93.05	-92.3	122.4	147.1	136.5	10.68	13.778			
2,600.0	2,595.7	2,583.0	2,571.8	5.6	6.1	-94.89	-104.4	134.5	163.0	151.8	11.19	14.568			
2,700.0	2,694.7	2,681.6	2,668.9	5.8	6.4	-96.40	-116.4	146.7	179.1	167.4	11.72	15.276			
2,800.0	2,793.7	2,780.2	2,766.0	6.1	6.8	-97.66	-128.5	158.8	195.2	183.0	12.27	15.912			
2,900.0	2,892.7	2,878.8	2,863.1	6.4	7.1	-98.73	-140.5	170.9	211.5	198.6	12.83	16.481			
3,000.0	2,991.7	2,977.4	2,960.2	6.7	7.5	-99.65	-152.6	183.1	227.7	214.3	13.40	16.992			
3,100.0	3,090.7	3,076.0	3,057.3	6.9	7.9	-100.44	-164.6	195.2	244.1	230.1	13.99	17.452			
3,200.0	3,189.8	3,174.6	3,154.4	7.2	8.2	-101.13	-176.7	207.3	260.5	245.9	14.58	17.867			
3,300.0	3,288.8	3,273.2	3,251.5	7.5	8.6	-101.75	-188.7	219.5	276.9	261.7	15.18	18.242			
3,400.0	3,387.8	3,371.8	3,348.6	7.8	9.0	-102.29	-200.8	231.6	293.3	277.5	15.78	18.582			
3,500.0	3,486.8	3,470.4	3,445.7	8.2	9.4	-102.78	-212.8	243.8	309.8	293.4	16.40	18.891			
3,600.0	3,585.8	3,569.0	3,542.9	8.5	9.7	-103.21	-224.9	255.9	326.2	309.2	17.02	19.173			
3,700.0	3,684.8	3,667.6	3,640.0	8.8	10.1	-103.61	-236.9	268.0	342.7	325.1	17.64	19.430			
3,800.0	3,783.9	3,766.2	3,737.1	9.1	10.5	-103.97	-249.0	280.2	359.2	341.0	18.27	19.666			
3,900.0	3,882.9	3,864.8	3,834.2	9.4	10.9	-104.29	-261.0	292.3	375.8	356.9	18.90	19.883			
4,000.0	3,981.9	3,963.4	3,931.3	9.7	11.3	-104.59	-273.1	304.4	392.3	372.8	19.53	20.083			
4,100.0	4,080.9	4,062.0	4,028.4	10.1	11.6	-104.87	-285.2	316.6	408.8	388.7	20.17	20.267			
4,200.0	4,179.9	4,160.6	4,125.5	10.4	12.0	-105.12	-297.2	328.7	425.4	404.6	20.81	20.437			
4,300.0	4,279.0	4,259.2	4,222.6	10.7	12.4	-105.36	-309.3	340.8	441.9	420.5	21.46	20.595			
4,400.0	4,378.0	4,357.8	4,319.7	11.0	12.8	-105.58	-321.3	353.0	458.5	436.4	22.10	20.742			
4,500.0	4,477.0	4,456.4	4,416.8	11.4	13.2	-105.78	-333.4	365.1	475.1	452.3	22.75	20.879			
4,600.0	4,576.0	4,555.0	4,513.9	11.7	13.6	-105.97	-345.4	377.3	491.7	468.3	23.40	21.007			
4,700.0	4,675.0	4,653.7	4,611.1	12.0	14.0	-106.14	-357.5	389.4	508.2	484.2	24.06	21.126			
4,800.0	4,774.0	4,752.3	4,708.2	12.4	14.4	-106.31	-369.5	401.5	524.8	500.1	24.71	21.238			
4,900.0	4,873.1	4,850.9	4,805.3	12.7	14.8	-106.46	-381.6	413.7	541.4	516.0	25.37	21.342			

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design Klein 5N64W7 Pad Sec.7-T5N-R64W - Klein 7T-301 - Wellbore #1 - Plan #1 (10-14-15)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,000.0	4,972.1	4,949.5	4,902.4	13.1	15.1	-106.61	-393.6	425.8	558.0	532.0	26.03	21.441		
5,100.0	5,071.1	5,048.1	4,999.5	13.4	15.5	-106.75	-405.7	437.9	574.6	547.9	26.68	21.533		
5,200.0	5,170.1	5,146.7	5,096.6	13.7	15.9	-106.88	-417.7	450.1	591.2	563.9	27.34	21.620		
5,300.0	5,269.1	5,245.3	5,193.7	14.1	16.3	-107.00	-429.8	462.2	607.8	579.8	28.01	21.703		
5,400.0	5,368.2	5,343.9	5,290.8	14.4	16.7	-107.12	-441.8	474.4	624.4	595.7	28.67	21.781		
5,500.0	5,467.2	5,442.5	5,387.9	14.7	17.1	-107.23	-453.9	486.5	641.0	611.7	29.33	21.854		
5,532.7	5,499.5	5,477.9	5,422.8	14.9	17.2	-107.27	-458.2	490.8	646.4	616.9	29.55	21.874		
5,600.0	5,566.3	5,557.4	5,501.3	15.1	17.5	-107.57	-466.7	499.4	656.4	626.4	29.97	21.898		
5,700.0	5,665.8	5,676.2	5,619.3	15.3	17.8	-107.90	-476.7	509.4	667.8	637.3	30.50	21.895		
5,800.0	5,765.6	5,795.8	5,738.6	15.5	18.0	-108.12	-483.2	516.0	675.3	644.4	30.97	21.808		
5,900.0	5,865.5	5,915.9	5,858.6	15.7	18.2	-108.21	-486.2	519.0	678.8	647.4	31.36	21.642		
5,934.5	5,900.0	5,957.3	5,900.0	15.7	18.3	89.95	-486.4	519.2	679.0	647.5	31.49	21.561		
6,000.0	5,965.5	6,022.9	5,965.5	15.8	18.4	89.95	-486.4	519.2	679.0	647.3	31.70	21.417		
6,055.3	6,020.8	6,078.2	6,020.8	15.9	18.4	89.95	-486.4	519.2	679.0	647.1	31.88	21.301		
6,088.3	6,053.8	6,111.1	6,053.8	16.0	18.5	89.94	-486.3	519.2	679.0	647.0	31.98	21.234		
6,100.0	6,065.5	6,122.8	6,065.5	16.0	18.5	89.93	-486.1	519.2	679.0	647.0	32.01	21.212		
6,150.0	6,115.5	6,172.8	6,115.3	16.0	18.5	89.87	-483.0	519.2	679.0	646.9	32.12	21.136		
6,200.0	6,165.1	6,222.6	6,164.8	16.1	18.6	89.82	-476.7	519.2	679.0	646.8	32.19	21.094		
6,250.0	6,214.3	6,272.5	6,213.7	16.1	18.6	89.77	-467.2	519.2	679.0	646.8	32.20	21.084		
6,300.0	6,262.8	6,322.3	6,261.9	16.1	18.6	89.71	-454.6	519.2	679.0	646.8	32.17	21.104		
6,350.0	6,310.4	6,372.0	6,309.1	16.0	18.5	89.66	-438.8	519.2	679.0	646.9	32.11	21.149		
6,400.0	6,357.0	6,421.7	6,355.1	16.0	18.5	89.61	-420.1	519.2	679.0	647.0	32.00	21.216		
6,450.0	6,402.2	6,471.4	6,399.8	15.9	18.4	89.56	-398.4	519.2	679.0	647.1	31.88	21.301		
6,500.0	6,445.9	6,521.1	6,442.9	15.9	18.3	89.52	-373.8	519.2	679.0	647.3	31.73	21.398		
6,550.0	6,487.9	6,570.7	6,484.3	15.8	18.2	89.47	-346.6	519.2	679.0	647.4	31.58	21.501		
6,600.0	6,528.1	6,620.2	6,523.9	15.7	18.2	89.43	-316.7	519.2	679.0	647.6	31.43	21.602		
6,650.0	6,566.3	6,669.8	6,561.4	15.6	18.1	89.39	-284.3	519.2	679.0	647.7	31.30	21.693		
6,700.0	6,602.2	6,719.3	6,596.7	15.5	18.0	89.35	-249.6	519.2	679.0	647.8	31.20	21.766		
6,750.0	6,635.8	6,768.8	6,629.7	15.5	17.9	89.32	-212.7	519.2	679.0	647.9	31.13	21.812		
6,800.0	6,667.0	6,818.3	6,660.2	15.5	17.8	89.29	-173.8	519.2	679.1	647.9	31.12	21.823		
6,850.0	6,695.5	6,867.7	6,688.1	15.5	17.6	89.26	-133.0	519.2	679.1	647.9	31.16	21.790		
6,900.0	6,721.2	6,917.1	6,713.3	15.5	17.6	89.24	-90.5	519.2	679.1	647.8	31.28	21.707		
6,950.0	6,744.1	6,966.5	6,735.7	15.5	17.5	89.21	-46.5	519.2	679.1	647.6	31.48	21.569		
7,000.0	6,764.0	7,015.9	6,755.1	15.7	17.4	89.19	-1.1	519.2	679.1	647.3	31.77	21.374		
7,050.0	6,780.9	7,065.3	6,771.7	15.8	17.3	89.18	45.4	519.2	679.1	646.9	32.15	21.123		
7,100.0	6,794.7	7,114.7	6,785.1	16.1	17.2	89.17	92.9	519.2	679.1	646.4	32.62	20.817		
7,150.0	6,805.3	7,164.0	6,795.5	16.4	17.1	89.16	141.2	519.2	679.1	645.9	33.19	20.462		
7,200.0	6,812.7	7,213.4	6,802.7	16.7	17.1	89.16	190.0	519.2	679.1	645.2	33.84	20.066		
7,250.0	6,816.8	7,262.7	6,806.8	17.1	17.5	89.15	239.2	519.2	679.1	644.5	34.58	19.635		
7,290.3	6,817.8	7,302.5	6,807.8	17.4	17.9	89.16	278.9	519.2	679.1	643.8	35.24	19.272		
7,300.0	6,817.8	7,312.2	6,807.8	17.5	18.0	89.16	288.6	519.2	679.1	643.7	35.41	19.178		
7,400.0	6,817.5	7,412.2	6,807.5	18.5	19.1	89.16	388.6	519.2	679.1	641.8	37.30	18.206		
7,500.0	6,817.2	7,512.2	6,807.2	19.6	20.2	89.16	488.6	519.2	679.1	639.6	39.47	17.204		
7,600.0	6,817.0	7,612.2	6,807.0	20.8	21.4	89.16	588.6	519.2	679.1	637.2	41.89	16.213		
7,700.0	6,816.7	7,712.2	6,806.7	22.2	22.8	89.16	688.6	519.2	679.1	634.6	44.50	15.260		
7,800.0	6,816.4	7,812.2	6,806.4	23.6	24.2	89.16	788.6	519.2	679.1	631.8	47.28	14.362		
7,900.0	6,816.2	7,912.2	6,806.2	25.0	25.6	89.16	888.6	519.2	679.1	628.9	50.20	13.527		
8,000.0	6,815.9	8,012.2	6,805.9	26.6	27.1	89.16	988.6	519.2	679.1	625.8	53.24	12.755		
8,100.0	6,815.7	8,112.2	6,805.7	28.2	28.7	89.16	1,088.6	519.2	679.1	622.7	56.38	12.045		
8,200.0	6,815.4	8,212.2	6,805.4	29.8	30.3	89.16	1,188.6	519.2	679.1	619.5	59.60	11.394		
8,300.0	6,815.1	8,312.2	6,805.1	31.4	31.9	89.16	1,288.6	519.2	679.1	616.2	62.89	10.798		

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
	Plan #1 (10-14-15)		

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,400.0	6,814.9	8,412.2	6,804.9	33.1	33.6	89.16	1,388.6	519.2	679.1	612.8	66.23	10.252	
8,500.0	6,814.6	8,512.2	6,804.6	34.8	35.3	89.16	1,488.6	519.2	679.1	609.4	69.63	9.752	
8,600.0	6,814.4	8,612.2	6,804.3	36.5	37.0	89.16	1,588.6	519.2	679.1	606.0	73.08	9.293	
8,700.0	6,814.1	8,712.2	6,804.1	38.3	38.7	89.16	1,688.6	519.2	679.1	602.5	76.56	8.870	
8,800.0	6,813.8	8,812.2	6,803.8	40.1	40.4	89.16	1,788.6	519.2	679.1	599.0	80.07	8.481	
8,900.0	6,813.6	8,912.2	6,803.6	41.8	42.2	89.16	1,888.6	519.2	679.1	595.5	83.61	8.121	
9,000.0	6,813.3	9,012.2	6,803.3	43.6	44.0	89.16	1,988.6	519.2	679.1	591.9	87.18	7.789	
9,100.0	6,813.0	9,112.2	6,803.0	45.4	45.8	89.16	2,088.6	519.2	679.1	588.3	90.77	7.481	
9,200.0	6,812.8	9,212.2	6,802.8	47.2	47.5	89.16	2,188.6	519.2	679.1	584.7	94.38	7.195	
9,300.0	6,812.5	9,312.2	6,802.5	49.0	49.3	89.16	2,288.6	519.2	679.1	581.1	98.01	6.929	
9,400.0	6,812.3	9,412.2	6,802.3	50.9	51.2	89.16	2,388.6	519.2	679.1	577.4	101.65	6.680	
9,500.0	6,812.0	9,512.2	6,802.0	52.7	53.0	89.16	2,488.6	519.2	679.1	573.8	105.31	6.448	
9,600.0	6,811.7	9,612.2	6,801.7	54.5	54.8	89.16	2,588.6	519.2	679.1	570.1	108.98	6.231	
9,700.0	6,811.5	9,712.2	6,801.5	56.4	56.6	89.16	2,688.6	519.2	679.1	566.4	112.66	6.027	
9,800.0	6,811.2	9,812.2	6,801.2	58.2	58.5	89.16	2,788.6	519.2	679.1	562.7	116.35	5.836	
9,900.0	6,810.9	9,912.2	6,800.9	60.1	60.3	89.16	2,888.6	519.2	679.1	559.0	120.05	5.656	
10,000.0	6,810.7	10,012.2	6,800.7	61.9	62.1	89.16	2,988.6	519.2	679.1	555.3	123.76	5.487	
10,100.0	6,810.4	10,112.2	6,800.4	63.8	64.0	89.16	3,088.6	519.2	679.1	551.6	127.48	5.327	
10,200.0	6,810.2	10,212.2	6,800.2	65.7	65.9	89.16	3,188.6	519.2	679.1	547.9	131.20	5.176	
10,300.0	6,809.9	10,312.2	6,799.9	67.5	67.7	89.16	3,288.6	519.2	679.1	544.1	134.94	5.032	
10,400.0	6,809.6	10,412.2	6,799.6	69.4	69.6	89.16	3,388.6	519.2	679.1	540.4	138.67	4.897	
10,500.0	6,809.4	10,512.2	6,799.4	71.3	71.4	89.16	3,488.6	519.2	679.1	536.6	142.41	4.768	
10,600.0	6,809.1	10,612.2	6,799.1	73.1	73.3	89.16	3,588.6	519.2	679.1	532.9	146.16	4.646	
10,700.0	6,808.9	10,712.2	6,798.8	75.0	75.2	89.16	3,688.6	519.2	679.1	529.1	149.91	4.530	
10,800.0	6,808.6	10,812.2	6,798.6	76.9	77.0	89.16	3,788.6	519.2	679.1	525.4	153.67	4.419	
10,900.0	6,808.3	10,912.2	6,798.3	78.8	78.9	89.16	3,888.6	519.2	679.1	521.6	157.43	4.313	
11,000.0	6,808.1	11,012.2	6,798.1	80.7	80.8	89.16	3,988.6	519.2	679.1	517.9	161.20	4.213	
11,100.0	6,807.8	11,112.2	6,797.8	82.6	82.7	89.16	4,088.6	519.2	679.1	514.1	164.96	4.116	
11,200.0	6,807.5	11,212.2	6,797.5	84.4	84.6	89.16	4,188.6	519.2	679.1	510.3	168.74	4.024	
11,300.0	6,807.3	11,312.2	6,797.3	86.3	86.4	89.16	4,288.6	519.2	679.1	506.5	172.51	3.936	
11,400.0	6,807.0	11,412.2	6,797.0	88.2	88.3	89.16	4,388.6	519.2	679.1	502.8	176.29	3.852	
11,500.0	6,806.8	11,512.2	6,796.8	90.1	90.2	89.16	4,488.6	519.2	679.1	499.0	180.07	3.771	
11,600.0	6,806.5	11,612.2	6,796.5	92.0	92.1	89.16	4,588.6	519.2	679.1	495.2	183.85	3.694	
11,700.0	6,806.2	11,712.2	6,796.2	93.9	94.0	89.16	4,688.6	519.2	679.1	491.4	187.63	3.619	
11,800.0	6,806.0	11,812.2	6,796.0	95.8	95.9	89.16	4,788.6	519.2	679.1	487.6	191.42	3.547	
11,900.0	6,805.7	11,912.2	6,795.7	97.7	97.8	89.16	4,888.6	519.2	679.1	483.8	195.21	3.479	
12,000.0	6,805.5	12,012.2	6,795.4	99.6	99.6	89.16	4,988.6	519.2	679.1	480.1	199.00	3.412	
12,100.0	6,805.2	12,112.2	6,795.2	101.5	101.5	89.16	5,088.6	519.2	679.1	476.3	202.79	3.348	
12,200.0	6,804.9	12,212.2	6,794.9	103.4	103.4	89.16	5,188.6	519.2	679.1	472.5	206.59	3.287	
12,300.0	6,804.7	12,312.2	6,794.7	105.3	105.3	89.16	5,288.6	519.2	679.1	468.7	210.39	3.228	
12,400.0	6,804.4	12,412.2	6,794.4	107.2	107.2	89.16	5,388.6	519.2	679.1	464.9	214.18	3.170	
12,500.0	6,804.1	12,512.2	6,794.1	109.1	109.1	89.16	5,488.6	519.2	679.1	461.1	217.98	3.115	
12,600.0	6,803.9	12,612.2	6,793.9	111.0	111.0	89.16	5,588.6	519.2	679.1	457.3	221.78	3.062	
12,700.0	6,803.6	12,712.2	6,793.6	112.9	112.9	89.16	5,688.6	519.2	679.1	453.5	225.59	3.010	
12,800.0	6,803.4	12,812.2	6,793.4	114.8	114.8	89.16	5,788.6	519.2	679.1	449.7	229.39	2.960	
12,900.0	6,803.1	12,912.2	6,793.1	116.7	116.7	89.16	5,888.6	519.2	679.1	445.9	233.19	2.912	
13,000.0	6,802.8	13,012.2	6,792.8	118.6	118.6	89.16	5,988.6	519.2	679.1	442.1	237.00	2.865	
13,100.0	6,802.6	13,112.2	6,792.6	120.5	120.5	89.16	6,088.6	519.2	679.1	438.2	240.81	2.820	
13,200.0	6,802.3	13,212.2	6,792.3	122.4	122.4	89.16	6,188.6	519.2	679.1	434.4	244.62	2.776	
13,300.0	6,802.0	13,312.2	6,792.0	124.3	124.3	89.16	6,288.6	519.2	679.1	430.6	248.42	2.733	
13,400.0	6,801.8	13,412.2	6,791.8	126.2	126.2	89.16	6,388.6	519.2	679.1	426.8	252.23	2.692	

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

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	Basin	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	SEC.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>North Reference:</b>	True
<b>Reference Well:</b>	0.0 ft	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	Klein 7Q-321	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	0.0 ft	<b>Database:</b>	US_EDM
<b>Reference Wellbore</b>	Wellbore #1	<b>Offset TVD Reference:</b>	Offset Datum
<b>Reference Design:</b>	Plan #1 (10-14-15)		

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,500.0	6,801.5	13,512.2	6,791.5	128.1	128.1	89.16	6,488.6	519.2	679.1	423.0	256.05	2.652		
13,600.0	6,801.3	13,612.2	6,791.3	130.0	130.0	89.16	6,588.6	519.2	679.1	419.2	259.86	2.613		
13,700.0	6,801.0	13,712.2	6,791.0	131.9	131.9	89.16	6,688.6	519.2	679.1	415.4	263.67	2.575		
13,800.0	6,800.7	13,812.2	6,790.7	133.8	133.8	89.16	6,788.6	519.2	679.1	411.6	267.48	2.539		
13,900.0	6,800.5	13,912.2	6,790.5	135.7	135.7	89.16	6,888.6	519.2	679.1	407.8	271.30	2.503		
14,000.0	6,800.2	14,012.2	6,790.2	137.6	137.6	89.16	6,988.6	519.2	679.1	403.9	275.11	2.468		
14,100.0	6,800.0	14,112.2	6,789.9	139.6	139.5	89.16	7,088.6	519.2	679.0	400.1	278.93	2.434		
14,200.0	6,799.7	14,212.2	6,789.7	141.5	141.5	89.16	7,188.6	519.2	679.0	396.3	282.75	2.402		
14,300.0	6,799.4	14,312.2	6,789.4	143.4	143.4	89.16	7,288.6	519.2	679.0	392.5	286.56	2.370		
14,400.0	6,799.2	14,412.2	6,789.2	145.3	145.3	89.16	7,388.6	519.2	679.0	388.7	290.38	2.338		
14,500.0	6,798.9	14,512.2	6,788.9	147.2	147.2	89.16	7,488.6	519.2	679.0	384.8	294.20	2.308		
14,600.0	6,798.6	14,612.2	6,788.6	149.1	149.1	89.16	7,588.6	519.2	679.0	381.0	298.02	2.279		
14,700.0	6,798.4	14,712.2	6,788.4	151.0	151.0	89.16	7,688.6	519.2	679.0	377.2	301.84	2.250		
14,800.0	6,798.1	14,812.2	6,788.1	152.9	152.9	89.16	7,788.6	519.2	679.0	373.4	305.66	2.222		
14,900.0	6,797.9	14,912.2	6,787.9	154.8	154.8	89.16	7,888.6	519.2	679.0	369.6	309.48	2.194		
15,000.0	6,797.6	15,012.2	6,787.6	156.7	156.7	89.16	7,988.6	519.2	679.0	365.7	313.30	2.167		
15,100.0	6,797.3	15,112.2	6,787.3	158.7	158.6	89.16	8,088.6	519.2	679.0	361.9	317.12	2.141		
15,200.0	6,797.1	15,212.2	6,787.1	160.6	160.5	89.16	8,188.6	519.2	679.0	358.1	320.94	2.116		
15,300.0	6,796.8	15,312.2	6,786.8	162.5	162.4	89.16	8,288.6	519.2	679.0	354.3	324.76	2.091		
15,400.0	6,796.5	15,412.2	6,786.5	164.4	164.4	89.16	8,388.6	519.2	679.0	350.5	328.59	2.067		
15,500.0	6,796.3	15,512.2	6,786.3	166.3	166.3	89.16	8,488.6	519.2	679.0	346.6	332.41	2.043		
15,600.0	6,796.0	15,612.2	6,786.0	168.2	168.2	89.16	8,588.6	519.2	679.0	342.8	336.23	2.020		
15,700.0	6,795.8	15,712.2	6,785.8	170.1	170.1	89.16	8,688.6	519.2	679.0	339.0	340.06	1.997		
15,800.0	6,795.5	15,812.2	6,785.5	172.0	172.0	89.16	8,788.6	519.2	679.0	335.2	343.88	1.975		
15,900.0	6,795.2	15,912.2	6,785.2	174.0	173.9	89.16	8,888.6	519.2	679.0	331.3	347.71	1.953		
16,000.0	6,795.0	16,012.2	6,785.0	175.9	175.8	89.16	8,988.6	519.2	679.0	327.5	351.53	1.932		
16,100.0	6,794.7	16,112.2	6,784.7	177.8	177.7	89.16	9,088.6	519.2	679.0	323.7	355.36	1.911		
16,200.0	6,794.5	16,212.2	6,784.5	179.7	179.6	89.16	9,188.6	519.2	679.0	319.9	359.18	1.891		
16,300.0	6,794.2	16,312.2	6,784.2	181.6	181.6	89.16	9,288.6	519.2	679.0	316.0	363.01	1.871		
16,400.0	6,793.9	16,412.2	6,783.9	183.5	183.5	89.16	9,388.6	519.2	679.0	312.2	366.84	1.851		
16,500.0	6,793.7	16,512.2	6,783.7	185.4	185.4	89.16	9,488.6	519.2	679.0	308.4	370.66	1.832		
16,600.0	6,793.4	16,612.2	6,783.4	187.3	187.3	89.16	9,588.6	519.2	679.0	304.6	374.49	1.813		
16,700.0	6,793.1	16,712.2	6,783.1	189.3	189.2	89.16	9,688.6	519.2	679.0	300.7	378.32	1.795		
16,741.6	6,793.0	16,753.8	6,783.0	190.1	190.0	89.16	9,730.2	519.2	679.0	299.1	379.91	1.787		
16,755.7	6,793.0	16,766.1	6,783.0	190.3	190.2	89.16	9,742.5	519.2	679.0	298.6	380.41	1.785 SF		

<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 7Q-321	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (10-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4637.0ft (Original Well Elev)

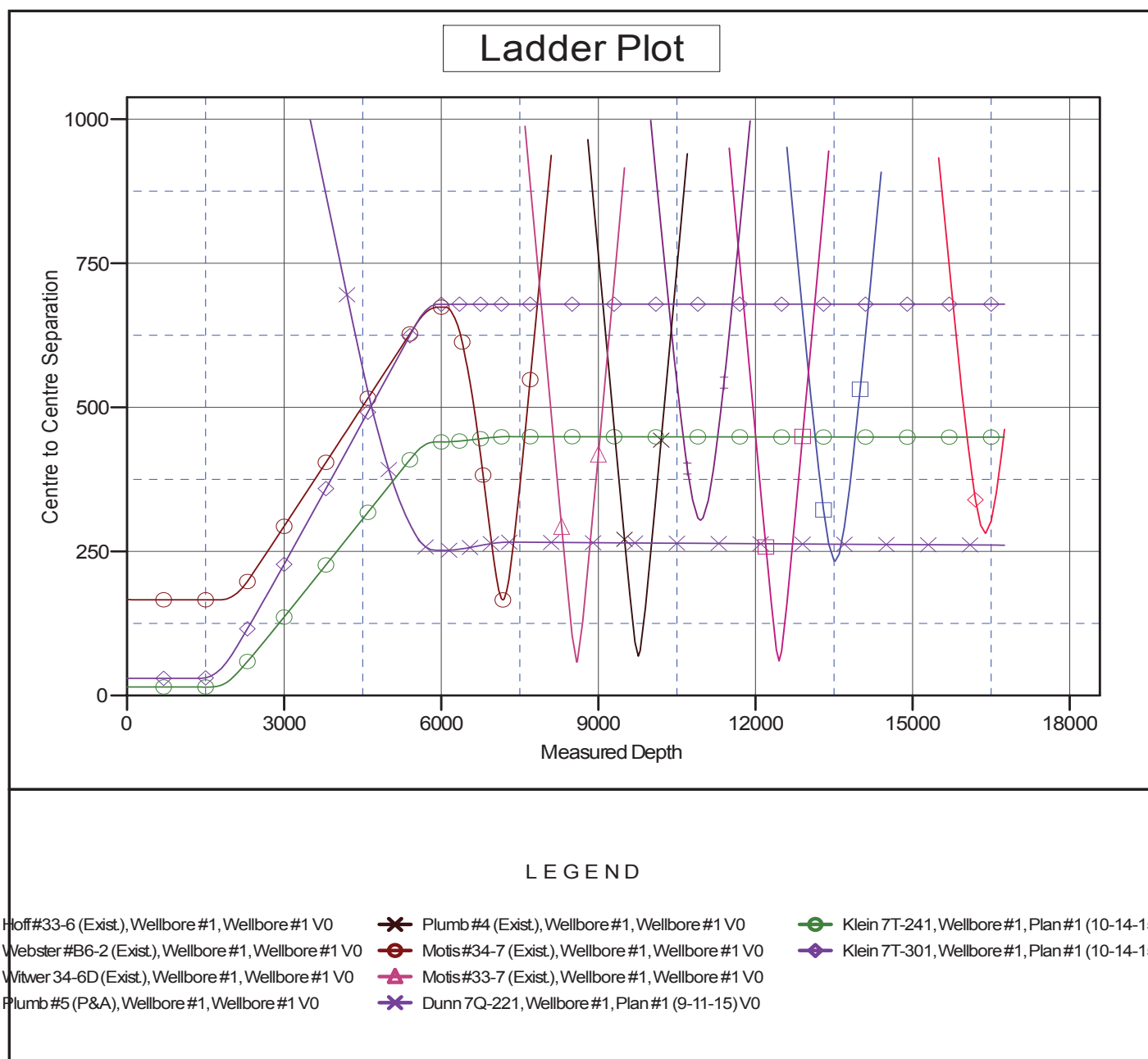
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Klein 7Q-321

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.59°



<b>Company:</b>	PETROLEUM DEVELOPMENT CORP DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Klein 7Q-321
<b>Project:</b>	SEC.7-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Reference Site:</b>	Klein 5N64W7 Pad Sec.7-T5N-R64W	<b>MD Reference:</b>	WELL @ 4637.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Klein 7Q-321	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #1 (10-14-15)	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 4637.0ft (Original Well Elev)

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: Klein 7Q-321

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