

PETROLEUM DEVELOPMENT CORP Weld County CO

Well Name: **Peschel 20H-202**

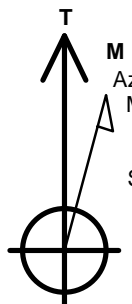
Surface Location: Peschel 4N65W20B Pad Sec.20-T4N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4801.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1350721.58	3225069.38	40.293320	-104.693140	

Original Well Elev WELL @ 4816.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 980'FSL & 950'FWL	1.0	0.0	0.0	Point
BHL 1370'FSL & 500'FEL	6986.0	404.7	3791.0	Point



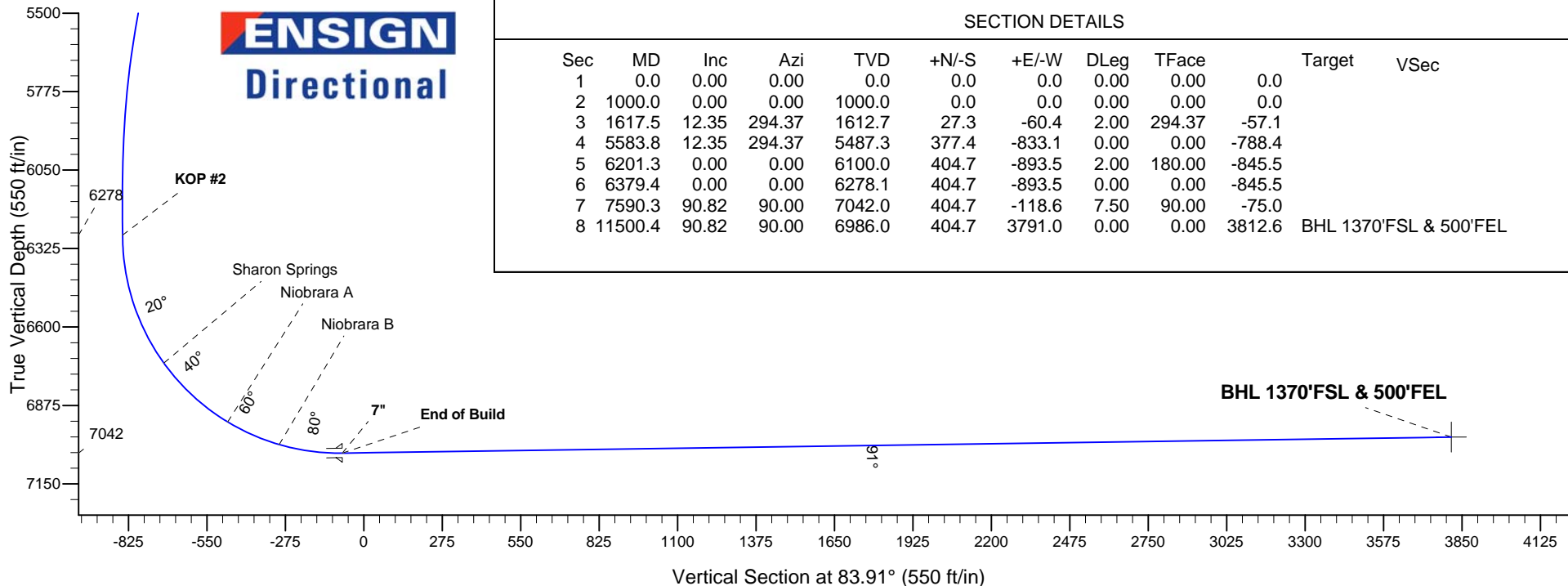
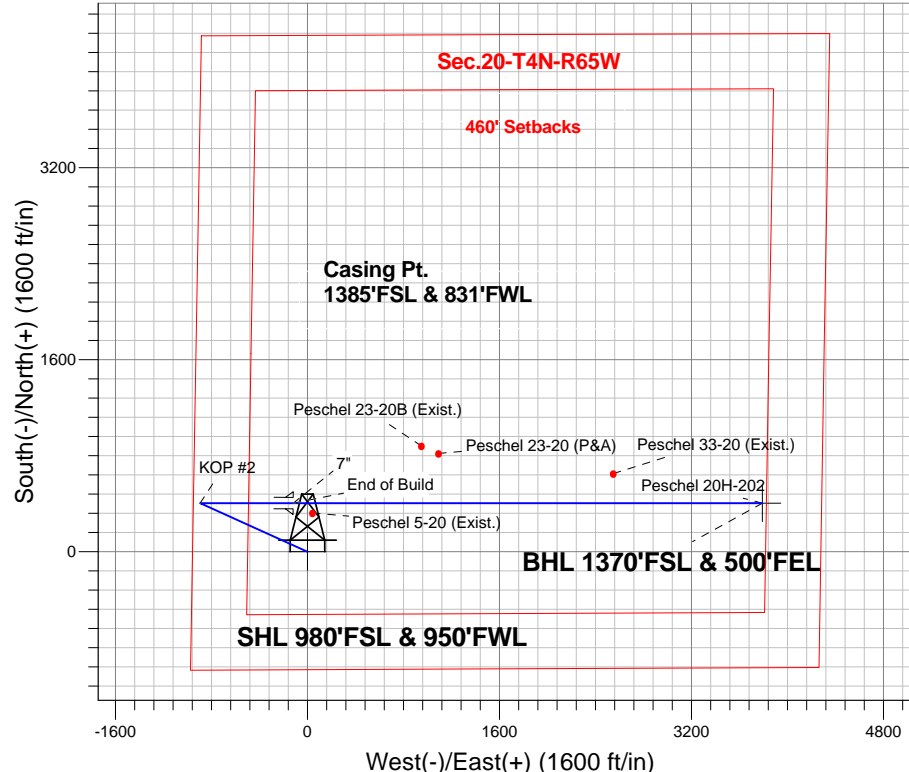
Azimuths to True North
 Magnetic North: 8.39°

Magnetic Field
 Strength: 52746.0snT
 Dip Angle: 66.87°
 Date: 8/27/2014
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP #1
6278.1	6379.4	KOP #2
7042.0	7590.3	End of Build

Peschel 4N65W20B Pad Sec.20-T4N-R65W
 Peschel 20H-202
 Plan #1 (8-22-14)
 14:02, August 28 2014





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.20-T4N-R65W

Peschel 4N65W20B Pad Sec.20-T4N-R65W

Peschel 20H-202

Wellbore #1

Plan: Plan #1 (8-22-14)

Standard Planning Report

28 August, 2014

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20H-202
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-14)		

Project	SEC.20-T4N-R65W, Weld, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	Peschel 4N65W20B Pad Sec.20-T4N-R65W		
Site Position:		Northing:	1,350,841.81 ft
From:	Lat/Long	Easting:	3,225,068.28 ft
Position Uncertainty:	0.0 ft	Slot Radius:	"
		Latitude:	40.293650
		Longitude:	-104.693140
		Grid Convergence:	0.52 °

Well	Peschel 20H-202		
Well Position	+N/-S	-120.2 ft	Northing:
	+E/-W	0.0 ft	Easting:
Position Uncertainty		0.0 ft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/27/2014	8.39	66.87	52,746

Design	Plan #1 (8-22-14)			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	83.91

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,617.5	12.35	294.37	1,612.7	27.3	-60.4	2.00	2.00	0.00	294.37	
5,583.8	12.35	294.37	5,487.3	377.4	-833.1	0.00	0.00	0.00	0.00	
6,201.3	0.00	0.00	6,100.0	404.7	-893.5	2.00	-2.00	0.00	180.00	
6,379.4	0.00	0.00	6,278.1	404.7	-893.5	0.00	0.00	0.00	0.00	
7,590.3	90.82	90.00	7,042.0	404.7	-118.6	7.50	7.50	0.00	90.00	
11,500.4	90.82	90.00	6,986.0	404.7	3,791.0	0.00	0.00	0.00	0.00	BHL 1370'FSL & 5C

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20H-202
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-14)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
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
KOP #1									
1,100.0	2.00	294.37	1,100.0	0.7	-1.6	-1.5	2.00	2.00	0.00
1,200.0	4.00	294.37	1,199.8	2.9	-6.4	-6.0	2.00	2.00	0.00
1,300.0	6.00	294.37	1,299.5	6.5	-14.3	-13.5	2.00	2.00	0.00
1,400.0	8.00	294.37	1,398.7	11.5	-25.4	-24.0	2.00	2.00	0.00
1,500.0	10.00	294.37	1,497.5	18.0	-39.6	-37.5	2.00	2.00	0.00
1,600.0	12.00	294.37	1,595.6	25.8	-57.0	-54.0	2.00	2.00	0.00
1,617.5	12.35	294.37	1,612.7	27.3	-60.4	-57.1	2.00	2.00	0.00
1,700.0	12.35	294.37	1,693.3	34.6	-76.5	-72.4	0.00	0.00	0.00
1,800.0	12.35	294.37	1,791.0	43.5	-95.9	-90.8	0.00	0.00	0.00
1,900.0	12.35	294.37	1,888.7	52.3	-115.4	-109.2	0.00	0.00	0.00
2,000.0	12.35	294.37	1,986.4	61.1	-134.9	-127.7	0.00	0.00	0.00
2,100.0	12.35	294.37	2,084.1	69.9	-154.4	-146.1	0.00	0.00	0.00
2,200.0	12.35	294.37	2,181.8	78.8	-173.9	-164.5	0.00	0.00	0.00
2,300.0	12.35	294.37	2,279.4	87.6	-193.4	-183.0	0.00	0.00	0.00
2,400.0	12.35	294.37	2,377.1	96.4	-212.8	-201.4	0.00	0.00	0.00
2,500.0	12.35	294.37	2,474.8	105.2	-232.3	-219.8	0.00	0.00	0.00
2,600.0	12.35	294.37	2,572.5	114.0	-251.8	-238.3	0.00	0.00	0.00
2,700.0	12.35	294.37	2,670.2	122.9	-271.3	-256.7	0.00	0.00	0.00
2,800.0	12.35	294.37	2,767.9	131.7	-290.8	-275.1	0.00	0.00	0.00
2,900.0	12.35	294.37	2,865.6	140.5	-310.2	-293.6	0.00	0.00	0.00
3,000.0	12.35	294.37	2,963.2	149.3	-329.7	-312.0	0.00	0.00	0.00
3,100.0	12.35	294.37	3,060.9	158.2	-349.2	-330.4	0.00	0.00	0.00
3,200.0	12.35	294.37	3,158.6	167.0	-368.7	-348.9	0.00	0.00	0.00
3,300.0	12.35	294.37	3,256.3	175.8	-388.2	-367.3	0.00	0.00	0.00
3,400.0	12.35	294.37	3,354.0	184.6	-407.7	-385.8	0.00	0.00	0.00
3,500.0	12.35	294.37	3,451.7	193.5	-427.1	-404.2	0.00	0.00	0.00
3,600.0	12.35	294.37	3,549.4	202.3	-446.6	-422.6	0.00	0.00	0.00
3,700.0	12.35	294.37	3,647.0	211.1	-466.1	-441.1	0.00	0.00	0.00
3,795.2	12.35	294.37	3,740.0	219.5	-484.6	-458.6	0.00	0.00	0.00
Parkman									
3,800.0	12.35	294.37	3,744.7	219.9	-485.6	-459.5	0.00	0.00	0.00
3,900.0	12.35	294.37	3,842.4	228.8	-505.1	-477.9	0.00	0.00	0.00
4,000.0	12.35	294.37	3,940.1	237.6	-524.6	-496.4	0.00	0.00	0.00
4,100.0	12.35	294.37	4,037.8	246.4	-544.0	-514.8	0.00	0.00	0.00
4,200.0	12.35	294.37	4,135.5	255.2	-563.5	-533.2	0.00	0.00	0.00
4,300.0	12.35	294.37	4,233.2	264.1	-583.0	-551.7	0.00	0.00	0.00
4,400.0	12.35	294.37	4,330.8	272.9	-602.5	-570.1	0.00	0.00	0.00
4,445.2	12.35	294.37	4,375.0	276.9	-611.3	-578.4	0.00	0.00	0.00
Sussex									
4,500.0	12.35	294.37	4,428.5	281.7	-622.0	-588.5	0.00	0.00	0.00
4,600.0	12.35	294.37	4,526.2	290.5	-641.4	-607.0	0.00	0.00	0.00

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Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
4,700.0	12.35	294.37	4,623.9	299.4	-660.9	-625.4	0.00	0.00	0.00
4,800.0	12.35	294.37	4,721.6	308.2	-680.4	-643.9	0.00	0.00	0.00
4,900.0	12.35	294.37	4,819.3	317.0	-699.9	-662.3	0.00	0.00	0.00
5,000.0	12.35	294.37	4,917.0	325.8	-719.4	-680.7	0.00	0.00	0.00
5,100.0	12.35	294.37	5,014.6	334.7	-738.9	-699.2	0.00	0.00	0.00
5,200.0	12.35	294.37	5,112.3	343.5	-758.3	-717.6	0.00	0.00	0.00
5,289.7	12.35	294.37	5,200.0	351.4	-775.8	-734.1	0.00	0.00	0.00
Shannon									
5,300.0	12.35	294.37	5,210.0	352.3	-777.8	-736.0	0.00	0.00	0.00
5,400.0	12.35	294.37	5,307.7	361.1	-797.3	-754.5	0.00	0.00	0.00
5,500.0	12.35	294.37	5,405.4	370.0	-816.8	-772.9	0.00	0.00	0.00
5,583.8	12.35	294.37	5,487.3	377.4	-833.1	-788.4	0.00	0.00	0.00
5,600.0	12.03	294.37	5,503.1	378.8	-836.2	-791.3	2.00	-2.00	0.00
5,700.0	10.03	294.37	5,601.2	386.6	-853.6	-807.8	2.00	-2.00	0.00
5,800.0	8.03	294.37	5,700.0	393.1	-867.9	-821.3	2.00	-2.00	0.00
5,900.0	6.03	294.37	5,799.2	398.2	-879.1	-831.8	2.00	-2.00	0.00
6,000.0	4.03	294.37	5,898.8	401.8	-887.1	-839.4	2.00	-2.00	0.00
6,100.0	2.03	294.37	5,998.7	404.0	-891.9	-844.0	2.00	-2.00	0.00
6,200.0	0.03	294.37	6,098.7	404.7	-893.5	-845.5	2.00	-2.00	0.00
6,201.3	0.00	0.00	6,100.0	404.7	-893.5	-845.5	2.00	-2.00	0.00
6,300.0	0.00	0.00	6,198.7	404.7	-893.5	-845.5	0.00	0.00	0.00
6,379.4	0.00	0.00	6,278.1	404.7	-893.5	-845.5	0.00	0.00	0.00
KOP #2									
6,400.0	1.54	90.00	6,298.7	404.7	-893.2	-845.2	7.50	7.50	0.00
6,500.0	9.04	90.00	6,398.2	404.7	-884.0	-836.1	7.50	7.50	0.00
6,600.0	16.54	90.00	6,495.6	404.7	-861.9	-814.0	7.50	7.50	0.00
6,700.0	24.04	90.00	6,589.4	404.7	-827.2	-779.6	7.50	7.50	0.00
6,800.0	31.54	90.00	6,677.8	404.7	-780.6	-733.2	7.50	7.50	0.00
6,858.0	35.90	90.00	6,726.0	404.7	-748.4	-701.2	7.50	7.50	0.00
Sharon Springs									
6,900.0	39.04	90.00	6,759.3	404.7	-722.9	-675.8	7.50	7.50	0.00
7,000.0	46.54	90.00	6,832.6	404.7	-655.0	-608.3	7.50	7.50	0.00
7,100.0	54.04	90.00	6,896.5	404.7	-578.1	-531.9	7.50	7.50	0.00
7,166.2	59.01	90.00	6,933.0	404.7	-522.9	-477.0	7.50	7.50	0.00
Niobrara A									
7,200.0	61.54	90.00	6,949.7	404.7	-493.6	-447.8	7.50	7.50	0.00
7,300.0	69.04	90.00	6,991.5	404.7	-402.8	-357.5	7.50	7.50	0.00
7,364.5	73.88	90.00	7,012.0	404.7	-341.7	-296.8	7.50	7.50	0.00
Niobrara B									
7,400.0	76.54	90.00	7,021.1	404.7	-307.3	-262.6	7.50	7.50	0.00
7,500.0	84.04	90.00	7,037.9	404.7	-208.8	-164.7	7.50	7.50	0.00
7,590.3	90.82	90.00	7,042.0	404.7	-118.7	-75.0	7.50	7.50	0.00
End of Build - 7"									
7,600.0	90.82	90.00	7,041.8	404.7	-109.0	-65.4	0.03	0.03	0.00
7,700.0	90.82	90.00	7,040.4	404.7	-9.0	34.0	0.00	0.00	0.00
7,800.0	90.82	90.00	7,039.0	404.7	91.0	133.5	0.00	0.00	0.00
7,900.0	90.82	90.00	7,037.5	404.7	191.0	232.9	0.00	0.00	0.00
8,000.0	90.82	90.00	7,036.1	404.7	291.0	332.3	0.00	0.00	0.00
8,100.0	90.82	90.00	7,034.7	404.7	391.0	431.7	0.00	0.00	0.00
8,200.0	90.82	90.00	7,033.2	404.7	491.0	531.2	0.00	0.00	0.00
8,300.0	90.82	90.00	7,031.8	404.7	591.0	630.6	0.00	0.00	0.00
8,400.0	90.82	90.00	7,030.4	404.7	691.0	730.0	0.00	0.00	0.00

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Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-14)		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
8,500.0	90.82	90.00	7,028.9	404.7	790.9	829.4	0.00	0.00	0.00
8,600.0	90.82	90.00	7,027.5	404.7	890.9	928.9	0.00	0.00	0.00
8,700.0	90.82	90.00	7,026.1	404.7	990.9	1,028.3	0.00	0.00	0.00
8,800.0	90.82	90.00	7,024.6	404.7	1,090.9	1,127.7	0.00	0.00	0.00
8,900.0	90.82	90.00	7,023.2	404.7	1,190.9	1,227.1	0.00	0.00	0.00
9,000.0	90.82	90.00	7,021.8	404.7	1,290.9	1,326.6	0.00	0.00	0.00
9,100.0	90.82	90.00	7,020.4	404.7	1,390.9	1,426.0	0.00	0.00	0.00
9,200.0	90.82	90.00	7,018.9	404.7	1,490.9	1,525.4	0.00	0.00	0.00
9,300.0	90.82	90.00	7,017.5	404.7	1,590.9	1,624.8	0.00	0.00	0.00
9,400.0	90.82	90.00	7,016.1	404.7	1,690.8	1,724.3	0.00	0.00	0.00
9,500.0	90.82	90.00	7,014.6	404.7	1,790.8	1,823.7	0.00	0.00	0.00
9,600.0	90.82	90.00	7,013.2	404.7	1,890.8	1,923.1	0.00	0.00	0.00
9,700.0	90.82	90.00	7,011.8	404.7	1,990.8	2,022.5	0.00	0.00	0.00
9,800.0	90.82	90.00	7,010.3	404.7	2,090.8	2,122.0	0.00	0.00	0.00
9,900.0	90.82	90.00	7,008.9	404.7	2,190.8	2,221.4	0.00	0.00	0.00
10,000.0	90.82	90.00	7,007.5	404.7	2,290.8	2,320.8	0.00	0.00	0.00
10,100.0	90.82	90.00	7,006.0	404.7	2,390.8	2,420.2	0.00	0.00	0.00
10,200.0	90.82	90.00	7,004.6	404.7	2,490.8	2,519.7	0.00	0.00	0.00
10,300.0	90.82	90.00	7,003.2	404.7	2,590.8	2,619.1	0.00	0.00	0.00
10,400.0	90.82	90.00	7,001.7	404.7	2,690.7	2,718.5	0.00	0.00	0.00
10,500.0	90.82	90.00	7,000.3	404.7	2,790.7	2,817.9	0.00	0.00	0.00
10,600.0	90.82	90.00	6,998.9	404.7	2,890.7	2,917.4	0.00	0.00	0.00
10,700.0	90.82	90.00	6,997.5	404.7	2,990.7	3,016.8	0.00	0.00	0.00
10,800.0	90.82	90.00	6,996.0	404.7	3,090.7	3,116.2	0.00	0.00	0.00
10,900.0	90.82	90.00	6,994.6	404.7	3,190.7	3,215.6	0.00	0.00	0.00
11,000.0	90.82	90.00	6,993.2	404.7	3,290.7	3,315.1	0.00	0.00	0.00
11,100.0	90.82	90.00	6,991.7	404.7	3,390.7	3,414.5	0.00	0.00	0.00
11,200.0	90.82	90.00	6,990.3	404.7	3,490.7	3,513.9	0.00	0.00	0.00
11,300.0	90.82	90.00	6,988.9	404.7	3,590.7	3,613.3	0.00	0.00	0.00
11,400.0	90.82	90.00	6,987.4	404.7	3,690.6	3,712.8	0.00	0.00	0.00
11,500.0	90.82	90.00	6,986.0	404.7	3,790.6	3,812.2	0.00	0.00	0.00
11,500.4	90.82	90.00	6,986.0	404.7	3,791.0	3,812.6	0.00	0.00	0.00

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
SHL 980'FSL & 950'F	0.00	0.00	1.0	0.0	0.0	1,350,721.60	3,225,069.38	40.293320	-104.693140
- plan hits target center									
- Point									
BHL 1370'FSL & 500'I	0.00	0.00	6,986.0	404.7	3,791.0	1,351,160.73	3,228,856.39	40.294430	-104.679550
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,590.3	7,042.0	7"	7	7-1/2

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20H-202
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-22-14)		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,795.2	3,740.0	Parkman		0.00		
4,445.2	4,375.0	Sussex		0.00		
5,289.7	5,200.0	Shannon		0.00		
6,858.0	6,726.0	Sharon Springs		0.00		
7,166.2	6,933.0	Niobrara A		0.00		
7,364.5	7,012.0	Niobrara B		0.00		
	7,097.0	Niobrara C		0.00		
	7,212.0	Ft. Hays		0.00		
	7,229.0	Codell		0.00		

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,000.0	1,000.0	0.0	0.0	KOP #1	
6,379.4	6,278.1	27.3	-60.4	KOP #2	
7,590.3	7,042.0	377.4	-833.1	End of Build	



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.20-T4N-R65W

Peschel 4N65W20B Pad Sec.20-T4N-R65W

Peschel 20H-202

Wellbore #1

Plan #1 (8-22-14)

Anticollision Report

28 August, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design		Existing wells Sec.20-T4N-R65W - Peschel 23-20 (P&A) - Wellbore #1 - Wellbore #1											Offset Site Error:	0.0 ft
Survey Program: 7368-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
8,700.0	7,026.1	6,628.1	6,628.1	48.5	132.6	-90.20	819.7	1,090.7	426.9	245.8	181.06	2.357	2.261 ES, SF	
8,799.8	7,024.6	6,626.6	6,626.6	51.0	132.5	-90.00	819.7	1,090.7	415.0	231.5	183.56	2.261 CC		
8,800.0	7,024.6	6,626.6	6,626.6	51.0	132.5	-90.00	819.7	1,090.7	415.0	231.5	183.56			
8,900.0	7,023.2	6,625.2	6,625.2	53.6	132.5	-89.80	819.7	1,090.7	426.9	240.9	186.09	2.294		
9,000.0	7,021.8	6,623.8	6,623.8	56.2	132.5	-89.60	819.7	1,090.7	460.8	272.1	188.63	2.443		
9,100.0	7,020.4	6,622.4	6,622.4	58.8	132.4	-89.41	819.7	1,090.7	512.2	321.0	191.20	2.679		
9,200.0	7,018.9	6,620.9	6,620.9	61.4	132.4	-89.21	819.7	1,090.7	576.5	382.7	193.78	2.975		
9,300.0	7,017.5	6,619.5	6,619.5	64.0	132.4	-89.01	819.7	1,090.7	649.9	453.5	196.38	3.310		
9,400.0	7,016.1	6,618.1	6,618.1	66.7	132.4	-88.81	819.7	1,090.7	729.7	530.7	198.99	3.667		
9,500.0	7,014.6	6,616.6	6,616.6	69.3	132.3	-88.62	819.7	1,090.7	813.9	612.3	201.61	4.037		
9,600.0	7,013.2	6,615.2	6,615.2	72.0	132.3	-88.42	819.7	1,090.7	901.4	697.1	204.23	4.413		
9,700.0	7,011.8	6,613.8	6,613.8	74.7	132.3	-88.22	819.7	1,090.7	991.2	784.3	206.87	4.791		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design		Existing wells Sec.20-T4N-R65W - Peschel 23-20B (Exist.) - Wellbore #1 - Wellbore #1										Offset Site Error:	0.0 ft	
Survey Program: 7445-UNKNOWN													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
7,800.0	7,039.0	7,046.0	7,046.0	28.4	140.9	-91.47	881.6	948.4	981.1	812.0	169.17	5.800		
7,900.0	7,037.5	7,044.5	7,044.5	30.2	140.9	-91.30	881.6	948.4	895.1	724.1	171.02	5.234		
8,000.0	7,036.1	7,043.1	7,043.1	32.2	140.9	-91.13	881.6	948.4	812.2	639.2	173.01	4.695		
8,100.0	7,034.7	7,041.7	7,041.7	34.3	140.8	-90.96	881.6	948.4	733.6	558.5	175.11	4.190		
8,200.0	7,033.2	7,040.2	7,040.2	36.5	140.8	-90.79	881.6	948.4	660.9	483.6	177.30	3.727		
8,300.0	7,031.8	7,038.8	7,038.8	38.8	140.8	-90.61	881.6	948.4	596.0	416.5	179.57	3.319		
8,400.0	7,030.4	7,037.4	7,037.4	41.2	140.7	-90.44	881.6	948.4	542.0	360.1	181.90	2.980		
8,500.0	7,028.9	7,035.9	7,035.9	43.6	140.7	-90.27	881.6	948.4	502.3	318.0	184.28	2.726		
8,600.0	7,027.5	7,034.5	7,034.5	46.0	140.7	-90.10	881.6	948.4	480.4	293.7	186.71	2.573		
8,657.5	7,026.7	7,033.7	7,033.7	47.5	140.7	-90.00	881.6	948.4	476.9	288.8	188.12	2.535 CC, ES		
8,700.0	7,026.1	7,033.1	7,033.1	48.5	140.7	-89.93	881.6	948.4	478.8	289.7	189.17	2.531 SF		
8,800.0	7,024.6	7,031.6	7,031.6	51.0	140.6	-89.76	881.6	948.4	497.8	306.1	191.67	2.597		
8,900.0	7,023.2	7,030.2	7,030.2	53.6	140.6	-89.58	881.6	948.4	535.0	340.9	194.19	2.755		
9,000.0	7,021.8	7,028.8	7,028.8	56.2	140.6	-89.41	881.6	948.4	587.2	390.4	196.73	2.985		
9,100.0	7,020.4	7,027.4	7,027.4	58.8	140.5	-89.24	881.6	948.4	650.6	451.3	199.30	3.264		
9,200.0	7,018.9	7,025.9	7,025.9	61.4	140.5	-89.07	881.6	948.4	722.3	520.4	201.88	3.578		
9,300.0	7,017.5	7,024.5	7,024.5	64.0	140.5	-88.90	881.6	948.4	800.1	595.6	204.47	3.913		
9,400.0	7,016.1	7,023.1	7,023.1	66.7	140.5	-88.72	881.6	948.4	882.4	675.3	207.08	4.261		
9,500.0	7,014.6	7,021.6	7,021.6	69.3	140.4	-88.55	881.6	948.4	968.1	758.4	209.70	4.616		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 33-20 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7355-UNKNOWN												Offset Well Error:	0.0 ft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
9,300.0	7,017.5	7,043.5	7,043.5	64.0	140.9	-93.16	652.2	2,546.8	987.5	783.0	204.50	4.829	
9,400.0	7,016.1	7,042.1	7,042.1	66.7	140.8	-92.83	652.2	2,546.8	891.1	683.9	207.18	4.301	
9,500.0	7,014.6	7,040.6	7,040.6	69.3	140.8	-92.50	652.2	2,546.8	795.5	585.6	209.87	3.791	
9,600.0	7,013.2	7,039.2	7,039.2	72.0	140.8	-92.17	652.2	2,546.8	701.2	488.6	212.56	3.299	
9,700.0	7,011.8	7,037.8	7,037.8	74.7	140.8	-91.84	652.2	2,546.8	608.6	393.4	215.26	2.828	
9,800.0	7,010.3	7,036.3	7,036.3	77.4	140.7	-91.51	652.2	2,546.8	518.9	300.9	217.96	2.381	
9,900.0	7,008.9	7,034.9	7,034.9	80.1	140.7	-91.18	652.2	2,546.8	433.7	213.0	220.66	1.965	
10,000.0	7,007.5	7,033.5	7,033.5	82.8	140.7	-90.85	652.2	2,546.8	356.2	132.8	223.37	1.594	
10,100.0	7,006.0	7,032.0	7,032.0	85.5	140.6	-90.52	652.2	2,546.8	292.6	66.6	226.07	1.294 Level 3	
10,200.0	7,004.6	7,030.6	7,030.6	88.2	140.6	-90.19	652.2	2,546.8	253.8	25.1	228.77	1.109 Level 2	
10,256.1	7,003.8	7,029.8	7,029.8	89.7	140.6	-90.00	652.2	2,546.8	247.6	17.3	230.29	1.075 Level 2, CC, ES, SF	
10,300.0	7,003.2	7,029.2	7,029.2	90.9	140.6	-89.85	652.2	2,546.8	251.4	19.9	231.48	1.086 Level 2	
10,400.0	7,001.7	7,027.7	7,027.7	93.6	140.6	-89.52	652.2	2,546.8	286.3	52.2	234.17	1.223 Level 2	
10,500.0	7,000.3	7,026.3	7,026.3	96.4	140.5	-89.19	652.2	2,546.8	347.5	110.6	236.87	1.467 Level 3	
10,600.0	6,998.9	7,024.9	7,024.9	99.1	140.5	-88.86	652.2	2,546.8	423.7	184.2	239.56	1.769	
10,700.0	6,997.5	7,023.5	7,023.5	101.8	140.5	-88.53	652.2	2,546.8	508.2	266.0	242.25	2.098	
10,800.0	6,996.0	7,022.0	7,022.0	104.6	140.4	-88.20	652.2	2,546.8	597.5	352.6	244.93	2.440	
10,900.0	6,994.6	7,020.6	7,020.6	107.3	140.4	-87.87	652.2	2,546.8	689.8	442.2	247.61	2.786	
11,000.0	6,993.2	7,019.2	7,019.2	110.1	140.4	-87.54	652.2	2,546.8	784.0	533.7	250.28	3.132	
11,100.0	6,991.7	7,017.7	7,017.7	112.8	140.4	-87.21	652.2	2,546.8	879.4	626.4	252.94	3.477	
11,200.0	6,990.3	7,016.3	7,016.3	115.6	140.3	-86.88	652.2	2,546.8	975.7	720.1	255.60	3.817	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7456-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	7.35	7.35	324.2	41.8	327.2				
100.0	100.0	86.0	86.0	0.1	1.7	7.35	7.35	324.2	41.8	326.9	325.1	1.83	178.398	
200.0	200.0	186.0	186.0	0.3	3.7	7.35	7.35	324.2	41.8	326.9	322.9	4.06	80.577	
300.0	300.0	286.0	286.0	0.6	5.7	7.35	7.35	324.2	41.8	326.9	320.6	6.28	52.041	
400.0	400.0	386.0	386.0	0.8	7.7	7.35	7.35	324.2	41.8	326.9	318.4	8.51	38.431	
500.0	500.0	486.0	486.0	1.0	9.7	7.35	7.35	324.2	41.8	326.9	316.2	10.73	30.464	
600.0	600.0	586.0	586.0	1.2	11.7	7.35	7.35	324.2	41.8	326.9	314.0	12.96	25.233	
700.0	700.0	686.0	686.0	1.5	13.7	7.35	7.35	324.2	41.8	326.9	311.7	15.18	21.535	
800.0	800.0	786.0	786.0	1.7	15.7	7.35	7.35	324.2	41.8	326.9	309.5	17.41	18.783	
900.0	900.0	886.0	886.0	1.9	17.7	7.35	7.35	324.2	41.8	326.9	307.3	19.63	16.654	
1,000.0	1,000.0	986.0	986.0	2.1	19.7	7.35	7.35	324.2	41.8	326.9	305.1	21.86	14.959	
1,100.0	1,100.0	1,086.0	1,086.0	2.4	21.7	73.29	73.29	324.2	41.8	326.4	302.4	24.07	13.561	
1,200.0	1,199.8	1,185.8	1,185.8	2.6	23.7	74.20	74.20	324.2	41.8	325.0	298.7	26.28	12.365	
1,300.0	1,299.5	1,285.5	1,285.5	2.8	25.7	75.73	75.73	324.2	41.8	322.7	294.2	28.50	11.324	
1,400.0	1,398.7	1,384.7	1,384.7	3.0	27.7	77.88	77.88	324.2	41.8	319.9	289.2	30.72	10.411	
1,500.0	1,497.5	1,483.5	1,483.5	3.3	29.7	80.67	80.67	324.2	41.8	316.9	284.0	32.98	9.611	
1,600.0	1,595.6	1,581.6	1,581.6	3.6	31.6	84.09	84.09	324.2	41.8	314.4	279.1	35.26	8.916	
1,700.0	1,693.3	1,679.3	1,679.3	4.0	33.6	87.90	87.90	324.2	41.8	312.8	275.3	37.57	8.326	
1,754.8	1,746.9	1,732.9	1,732.9	4.2	34.7	90.00	90.00	324.2	41.8	312.6	273.8	38.85	8.047	
1,800.0	1,791.0	1,777.0	1,777.0	4.4	35.5	91.73	91.73	324.2	41.8	312.8	272.9	39.90	7.838	
1,900.0	1,888.7	1,874.7	1,874.7	4.8	37.5	95.54	95.54	324.2	41.8	314.2	271.9	42.23	7.439	
2,000.0	1,986.4	1,972.4	1,972.4	5.2	39.4	99.31	99.31	324.2	41.8	317.0	272.4	44.56	7.114	
2,100.0	2,084.1	2,070.1	2,070.1	5.6	41.4	102.99	102.99	324.2	41.8	321.2	274.3	46.87	6.853	
2,200.0	2,181.8	2,167.8	2,167.8	6.0	43.4	106.57	106.57	324.2	41.8	326.8	277.6	49.17	6.647	
2,300.0	2,279.4	2,265.4	2,265.4	6.4	45.3	110.02	110.02	324.2	41.8	333.7	282.2	51.45	6.485	
2,400.0	2,377.1	2,363.1	2,363.1	6.9	47.3	113.32	113.32	324.2	41.8	341.7	288.0	53.71	6.363	
2,500.0	2,474.8	2,460.8	2,460.8	7.3	49.2	116.47	116.47	324.2	41.8	350.9	295.0	55.95	6.272	
2,600.0	2,572.5	2,558.5	2,558.5	7.8	51.2	119.46	119.46	324.2	41.8	361.1	302.9	58.17	6.208	
2,700.0	2,670.2	2,656.2	2,656.2	8.2	53.1	122.28	122.28	324.2	41.8	372.3	311.9	60.38	6.166	
2,800.0	2,767.9	2,753.9	2,753.9	8.7	55.1	124.93	124.93	324.2	41.8	384.3	321.7	62.57	6.142	
2,900.0	2,865.6	2,851.6	2,851.6	9.1	57.0	127.43	127.43	324.2	41.8	397.1	332.4	64.75	6.134	
3,000.0	2,963.2	2,949.2	2,949.2	9.6	59.0	129.77	129.77	324.2	41.8	410.7	343.8	66.92	6.137	
3,100.0	3,060.9	3,046.9	3,046.9	10.0	60.9	131.96	131.96	324.2	41.8	424.9	355.8	69.07	6.151	
3,200.0	3,158.6	3,144.6	3,144.6	10.5	62.9	134.00	134.00	324.2	41.8	439.6	368.4	71.23	6.172	
3,300.0	3,256.3	3,242.3	3,242.3	10.9	64.8	135.92	135.92	324.2	41.8	454.9	381.5	73.37	6.200	
3,400.0	3,354.0	3,340.0	3,340.0	11.4	66.8	137.71	137.71	324.2	41.8	470.7	395.2	75.51	6.233	
3,500.0	3,451.7	3,437.7	3,437.7	11.8	68.8	139.39	139.39	324.2	41.8	486.9	409.2	77.65	6.270	
3,600.0	3,549.4	3,535.4	3,535.4	12.3	70.7	140.96	140.96	324.2	41.8	503.5	423.7	79.78	6.310	
3,700.0	3,647.0	3,633.0	3,633.0	12.8	72.7	142.43	142.43	324.2	41.8	520.4	438.5	81.91	6.353	
3,800.0	3,744.7	3,730.7	3,730.7	13.2	74.6	143.81	143.81	324.2	41.8	537.6	453.6	84.05	6.397	
3,900.0	3,842.4	3,828.4	3,828.4	13.7	76.6	145.10	145.10	324.2	41.8	555.2	469.0	86.18	6.442	
4,000.0	3,940.1	3,926.1	3,926.1	14.1	78.5	146.32	146.32	324.2	41.8	573.0	484.7	88.31	6.489	
4,100.0	4,037.8	4,023.8	4,023.8	14.6	80.5	147.46	147.46	324.2	41.8	591.0	500.6	90.44	6.535	
4,200.0	4,135.5	4,121.5	4,121.5	15.1	82.4	148.54	148.54	324.2	41.8	609.3	516.7	92.57	6.582	
4,300.0	4,233.2	4,219.2	4,219.2	15.5	84.4	149.55	149.55	324.2	41.8	627.7	533.0	94.70	6.629	
4,400.0	4,330.8	4,316.8	4,316.8	16.0	86.3	150.50	150.50	324.2	41.8	646.4	549.5	96.83	6.675	
4,500.0	4,428.5	4,414.5	4,414.5	16.5	88.3	151.41	151.41	324.2	41.8	665.2	566.2	98.97	6.721	
4,600.0	4,526.2	4,512.2	4,512.2	16.9	90.2	152.26	152.26	324.2	41.8	684.1	583.0	101.10	6.767	
4,700.0	4,623.9	4,609.9	4,609.9	17.4	92.2	153.07	153.07	324.2	41.8	703.2	600.0	103.24	6.812	
4,800.0	4,721.6	4,707.6	4,707.6	17.9	94.2	153.83	153.83	324.2	41.8	722.4	617.1	105.37	6.856	
4,900.0	4,819.3	4,805.3	4,805.3	18.3	96.1	154.56	154.56	324.2	41.8	741.8	634.3	107.51	6.899	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7456-UNKNOWN													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
5,000.0	4,917.0	4,903.0	4,903.0	18.8	98.1	155.25	324.2	41.8	761.2	651.6	109.65	6.942		
5,100.0	5,014.6	5,000.6	5,000.6	19.3	100.0	155.90	324.2	41.8	780.8	669.0	111.79	6.984		
5,200.0	5,112.3	5,098.3	5,098.3	19.7	102.0	156.52	324.2	41.8	800.4	686.5	113.93	7.025		
5,300.0	5,210.0	5,196.0	5,196.0	20.2	103.9	157.12	324.2	41.8	820.1	704.1	116.07	7.066		
5,400.0	5,307.7	5,293.7	5,293.7	20.7	105.9	157.68	324.2	41.8	840.0	721.7	118.22	7.105		
5,500.0	5,405.4	5,391.4	5,391.4	21.1	107.8	158.22	324.2	41.8	859.8	739.5	120.36	7.144		
5,600.0	5,503.1	5,489.1	5,489.1	21.6	109.8	158.76	324.2	41.8	879.8	757.1	122.62	7.175		
5,700.0	5,601.2	5,587.2	5,587.2	21.9	111.7	159.33	324.2	41.8	897.7	772.3	125.37	7.160		
5,800.0	5,700.0	5,686.0	5,686.0	22.2	113.7	159.78	324.2	41.8	912.4	784.4	128.03	7.126		
5,900.0	5,799.2	5,785.2	5,785.2	22.4	115.7	160.12	324.2	41.8	923.9	793.3	130.59	7.075		
6,000.0	5,898.8	5,884.8	5,884.8	22.6	117.7	160.36	324.2	41.8	932.1	799.1	133.02	7.007		
6,100.0	5,998.7	5,984.7	5,984.7	22.8	119.7	160.50	324.2	41.8	937.1	801.8	135.33	6.925		
6,200.0	6,098.7	6,084.7	6,084.7	22.9	121.7	160.55	324.2	41.8	938.8	801.3	137.50	6.828		
6,300.0	6,198.7	6,184.7	6,184.7	23.1	123.7	94.92	324.2	41.8	938.8	792.7	146.09	6.426		
6,400.0	6,298.7	6,284.7	6,284.7	23.2	125.7	4.92	324.2	41.8	938.5	796.8	141.73	6.622		
6,500.0	6,398.2	6,384.2	6,384.2	23.2	127.7	5.03	324.2	41.8	929.3	787.4	141.91	6.549		
6,600.0	6,495.6	6,481.6	6,481.6	23.1	129.6	5.31	324.2	41.8	907.3	767.7	139.55	6.502		
6,700.0	6,589.4	6,575.4	6,575.4	22.9	131.5	5.79	324.2	41.8	872.8	738.1	134.64	6.482		
6,800.0	6,677.8	6,663.8	6,663.8	22.7	133.3	6.55	324.2	41.8	826.4	699.1	127.25	6.494		
6,900.0	6,759.3	6,745.3	6,745.3	22.5	134.9	7.71	324.2	41.8	768.9	651.3	117.60	6.539		
7,000.0	6,832.6	6,818.6	6,818.6	22.3	136.4	9.53	324.2	41.8	701.5	595.3	106.18	6.607		
7,100.0	6,896.5	6,882.5	6,882.5	22.2	137.6	12.46	324.2	41.8	625.2	531.0	94.20	6.637		
7,200.0	6,949.7	6,935.7	6,935.7	22.3	138.7	17.50	324.2	41.8	541.4	456.4	85.05	6.366		
7,300.0	6,991.5	6,977.5	6,977.5	22.6	139.6	26.84	324.2	41.8	451.8	363.8	88.07	5.131		
7,400.0	7,021.1	7,007.1	7,007.1	23.2	140.1	44.72	324.2	41.8	358.3	241.2	117.15	3.059		
7,500.0	7,037.9	7,023.9	7,023.9	24.1	140.5	72.09	324.2	41.8	263.3	107.1	156.13	1.686		
7,600.0	7,041.8	7,027.8	7,027.8	25.3	140.6	91.54	324.2	41.8	170.9	5.3	165.67	1.032 Level 2		
7,700.0	7,040.4	7,026.4	7,026.4	26.7	140.5	90.52	324.2	41.8	95.2	-72.0	167.17	0.569 Level 1		
7,750.8	7,039.7	7,025.7	7,025.7	27.6	140.5	90.00	324.2	41.8	80.5	-87.6	168.01	0.479 Level 1, CC, ES, SF		
7,800.0	7,039.0	7,025.0	7,025.0	28.4	140.5	89.50	324.2	41.8	94.3	-74.5	168.82	0.559 Level 1		
7,900.0	7,037.5	7,023.5	7,023.5	30.2	140.5	88.48	324.2	41.8	169.5	-1.1	170.58	0.994 Level 1		
8,000.0	7,036.1	7,022.1	7,022.1	32.2	140.4	87.46	324.2	41.8	261.8	89.4	172.42	1.518		
8,100.0	7,034.7	7,020.7	7,020.7	34.3	140.4	86.45	324.2	41.8	358.3	184.0	174.32	2.055		
8,200.0	7,033.2	7,019.2	7,019.2	36.5	140.4	85.43	324.2	41.8	456.3	280.0	176.26	2.589		
8,300.0	7,031.8	7,017.8	7,017.8	38.8	140.4	84.42	324.2	41.8	555.0	376.8	178.22	3.114		
8,400.0	7,030.4	7,016.4	7,016.4	41.2	140.3	83.41	324.2	41.8	654.1	473.9	180.18	3.630		
8,500.0	7,028.9	7,014.9	7,014.9	43.6	140.3	82.41	324.2	41.8	753.4	571.3	182.13	4.137		
8,600.0	7,027.5	7,013.5	7,013.5	46.0	140.3	81.41	324.2	41.8	852.9	668.8	184.07	4.634		
8,700.0	7,026.1	7,012.1	7,012.1	48.5	140.2	80.42	324.2	41.8	952.5	766.5	185.98	5.121		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14))													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.00	61.9	0.0	61.9					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	61.9	0.0	61.9	61.7	0.22	275.539		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	61.9	0.0	61.9	61.3	0.67	91.846		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	61.9	0.0	61.9	60.8	1.12	55.108		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	61.9	0.0	61.9	60.4	1.57	39.363		
500.0	500.0	500.0	500.0	1.0	1.0	0.00	61.9	0.0	61.9	59.9	2.02	30.615		
600.0	600.0	600.0	600.0	1.2	1.2	0.00	61.9	0.0	61.9	59.5	2.47	25.049 CC, ES		
700.0	700.0	698.4	698.4	1.5	1.5	-1.04	63.2	-1.1	63.2	60.3	2.91	21.685		
800.0	800.0	796.6	796.4	1.7	1.7	-3.89	66.9	-4.6	67.2	63.8	3.36	19.998		
900.0	900.0	894.3	893.7	1.9	1.9	-7.95	73.1	-10.2	74.0	70.2	3.81	19.421		
1,000.0	1,000.0	991.3	990.1	2.1	2.2	-12.46	81.6	-18.0	84.2	79.9	4.29	19.627		
1,100.0	1,100.0	1,087.6	1,085.3	2.4	2.4	49.37	92.5	-28.0	96.6	91.8	4.73	20.425		
1,200.0	1,199.8	1,183.5	1,179.5	2.6	2.8	47.01	105.6	-40.0	110.0	104.8	5.18	21.214		
1,300.0	1,299.5	1,278.9	1,272.6	2.8	3.1	45.66	121.0	-54.1	124.1	118.5	5.66	21.944		
1,400.0	1,398.7	1,373.8	1,364.4	3.0	3.5	45.04	138.5	-70.2	139.0	132.8	6.15	22.580		
1,500.0	1,497.5	1,472.7	1,459.7	3.3	4.0	45.19	158.0	-88.1	152.9	146.2	6.70	22.832		
1,600.0	1,595.6	1,572.0	1,555.4	3.6	4.5	46.18	177.6	-106.0	164.5	157.2	7.29	22.574		
1,700.0	1,693.3	1,671.4	1,651.2	4.0	5.0	47.72	197.2	-124.0	174.5	166.6	7.94	21.975		
1,800.0	1,791.0	1,770.8	1,746.9	4.4	5.5	49.13	216.8	-141.9	184.6	176.0	8.64	21.379		
1,900.0	1,888.7	1,870.1	1,842.7	4.8	6.0	50.39	236.4	-159.9	194.9	185.5	9.36	20.818		
2,000.0	1,986.4	1,969.5	1,938.5	5.2	6.6	51.52	256.0	-177.9	205.2	195.1	10.11	20.295		
2,100.0	2,084.1	2,068.9	2,034.2	5.6	7.1	52.55	275.6	-195.8	215.6	204.7	10.88	19.814		
2,200.0	2,181.8	2,168.3	2,130.0	6.0	7.7	53.48	295.1	-213.8	226.0	214.4	11.67	19.371		
2,300.0	2,279.4	2,267.7	2,225.8	6.4	8.2	54.32	314.7	-231.7	236.6	224.1	12.47	18.966		
2,400.0	2,377.1	2,367.1	2,321.5	6.9	8.7	55.10	334.3	-249.7	247.1	233.8	13.29	18.595		
2,500.0	2,474.8	2,466.5	2,417.3	7.3	9.3	55.81	353.9	-267.7	257.7	243.6	14.12	18.256		
2,600.0	2,572.5	2,565.9	2,513.1	7.8	9.8	56.47	373.5	-285.6	268.3	253.4	14.95	17.945		
2,700.0	2,670.2	2,665.2	2,608.8	8.2	10.4	57.07	393.1	-303.6	279.0	263.2	15.80	17.659		
2,800.0	2,767.9	2,764.6	2,704.6	8.7	10.9	57.63	412.7	-321.5	289.7	273.0	16.65	17.397		
2,900.0	2,865.6	2,864.0	2,800.4	9.1	11.5	58.16	432.3	-339.5	300.4	282.9	17.51	17.156		
3,000.0	2,963.2	2,963.4	2,896.1	9.6	12.0	58.64	451.9	-357.5	311.2	292.8	18.38	16.933		
3,100.0	3,060.9	3,062.8	2,991.9	10.0	12.6	59.09	471.5	-375.4	321.9	302.7	19.25	16.727		
3,200.0	3,158.6	3,162.2	3,087.7	10.5	13.1	59.52	491.1	-393.4	332.7	312.6	20.12	16.536		
3,300.0	3,256.3	3,261.6	3,183.4	10.9	13.7	59.91	510.7	-411.4	343.5	322.5	21.00	16.359		
3,400.0	3,354.0	3,361.0	3,279.2	11.4	14.2	60.29	530.3	-429.3	354.3	332.4	21.88	16.194		
3,500.0	3,451.7	3,460.4	3,375.0	11.8	14.8	60.64	549.9	-447.3	365.1	342.4	22.76	16.041		
3,600.0	3,549.4	3,559.7	3,470.7	12.3	15.3	60.97	569.5	-465.2	376.0	352.3	23.65	15.897		
3,700.0	3,647.0	3,659.1	3,566.5	12.8	15.9	61.28	589.1	-483.2	386.8	362.3	24.54	15.763		
3,800.0	3,744.7	3,758.5	3,662.3	13.2	16.5	61.58	608.7	-501.2	397.7	372.3	25.43	15.638		
3,900.0	3,842.4	3,857.9	3,758.0	13.7	17.0	61.85	628.3	-519.1	408.6	382.2	26.33	15.519		
4,000.0	3,940.1	3,957.3	3,853.8	14.1	17.6	62.12	647.9	-537.1	419.4	392.2	27.22	15.408		
4,100.0	4,037.8	4,056.7	3,949.6	14.6	18.1	62.37	667.5	-555.1	430.3	402.2	28.12	15.304		
4,200.0	4,135.5	4,156.1	4,045.3	15.1	18.7	62.61	687.1	-573.0	441.2	412.2	29.02	15.205		
4,300.0	4,233.2	4,255.5	4,141.1	15.5	19.2	62.84	706.7	-591.0	452.1	422.2	29.92	15.112		
4,400.0	4,330.8	4,354.8	4,236.9	16.0	19.8	63.05	726.2	-608.9	463.0	432.2	30.82	15.024		
4,500.0	4,428.5	4,454.2	4,332.6	16.5	20.3	63.26	745.8	-626.9	474.0	442.2	31.72	14.940		
4,600.0	4,526.2	4,553.6	4,428.4	16.9	20.9	63.46	765.4	-644.9	484.9	452.3	32.63	14.861		
4,700.0	4,623.9	4,653.0	4,524.2	17.4	21.5	63.65	785.0	-662.8	495.8	462.3	33.53	14.786		
4,800.0	4,721.6	4,752.4	4,619.9	17.9	22.0	63.83	804.6	-680.8	506.7	472.3	34.44	14.714		
4,900.0	4,819.3	4,851.8	4,715.7	18.3	22.6	64.00	824.2	-698.8	517.7	482.3	35.35	14.646		
5,000.0	4,917.0	4,951.2	4,811.5	18.8	23.1	64.17	843.8	-716.7	528.6	492.4	36.25	14.581		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14))													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,014.6	5,050.6	4,907.2	19.3	23.7	64.33	64.33	863.4	-734.7	539.6	502.4	37.16	14.519	
5,200.0	5,112.3	5,150.0	5,003.0	19.7	24.2	64.48	64.48	883.0	-752.6	550.5	512.5	38.07	14.460	
5,300.0	5,210.0	5,249.3	5,098.8	20.2	24.8	64.63	64.63	902.6	-770.6	561.5	522.5	38.98	14.403	
5,400.0	5,307.7	5,348.7	5,194.5	20.7	25.3	64.77	64.77	922.2	-788.6	572.4	532.5	39.89	14.349	
5,500.0	5,405.4	5,448.1	5,290.3	21.1	25.9	64.90	64.90	941.8	-806.5	583.4	542.6	40.80	14.298	
5,600.0	5,503.1	5,557.3	5,395.7	21.6	26.4	65.12	65.12	962.8	-825.8	593.9	552.2	41.70	14.244	
5,700.0	5,601.2	5,674.9	5,510.3	21.9	26.9	65.52	65.52	982.4	-843.7	602.7	560.3	42.44	14.202	
5,800.0	5,700.0	5,792.9	5,626.2	22.2	27.3	65.84	65.84	998.6	-858.5	610.0	566.9	43.09	14.157	
5,900.0	5,799.2	5,911.3	5,743.3	22.4	27.6	66.08	66.08	1,011.2	-870.1	615.6	572.0	43.63	14.110	
6,000.0	5,898.8	6,029.8	5,861.2	22.6	27.9	66.26	66.26	1,020.3	-878.5	619.7	575.6	44.07	14.061	
6,100.0	5,998.7	6,148.5	5,979.7	22.8	28.0	66.36	66.36	1,025.8	-883.5	622.2	577.7	44.42	14.007	
6,200.0	6,098.7	6,267.3	6,098.4	22.9	28.2	66.40	66.40	1,027.6	-885.2	623.0	578.3	44.67	13.948	
6,300.0	6,198.7	6,367.6	6,198.7	23.1	28.3	0.76	0.76	1,027.6	-885.2	623.0	583.4	39.62	15.722	
6,400.0	6,298.7	6,467.5	6,298.6	23.2	28.4	-89.26	-89.26	1,027.6	-885.2	623.0	577.8	45.16	13.794	
6,500.0	6,398.2	6,566.5	6,397.3	23.2	28.4	-89.41	-89.41	1,027.6	-877.7	623.0	577.8	45.18	13.788	
6,600.0	6,495.6	6,665.8	6,494.4	23.1	28.4	-89.58	-89.58	1,027.6	-857.5	622.9	578.0	44.96	13.856	
6,700.0	6,589.4	6,765.3	6,588.3	22.9	28.2	-89.75	-89.75	1,027.6	-824.7	622.9	578.4	44.56	13.979	
6,800.0	6,677.8	6,865.1	6,677.4	22.7	28.0	-89.93	-89.93	1,027.6	-780.0	622.9	578.9	44.07	14.135	
6,832.5	6,705.1	6,897.5	6,705.0	22.6	27.9	-89.99	-89.99	1,027.6	-762.9	622.9	579.0	43.91	14.187	
6,900.0	6,759.3	6,965.1	6,760.0	22.5	27.8	-90.11	-90.11	1,027.6	-723.8	622.9	579.3	43.59	14.292	
7,000.0	6,832.6	7,065.3	6,834.9	22.3	27.5	-90.29	-90.29	1,027.6	-657.2	622.9	579.7	43.24	14.406	
7,100.0	6,896.5	7,165.9	6,900.5	22.2	27.3	-90.46	-90.46	1,027.6	-581.1	623.0	579.8	43.19	14.425	
7,200.0	6,949.7	7,266.6	6,955.7	22.3	27.0	-90.62	-90.62	1,027.6	-496.9	623.0	579.4	43.56	14.301	
7,300.0	6,991.5	7,367.6	6,999.4	22.6	26.9	-90.78	-90.78	1,027.6	-405.9	623.0	578.5	44.48	14.005	
7,400.0	7,021.1	7,468.8	7,030.8	23.2	26.8	-90.92	-90.92	1,027.6	-309.8	623.0	577.0	46.00	13.545	
7,500.0	7,037.9	7,570.2	7,049.2	24.1	26.9	-91.05	-91.05	1,027.6	-210.1	623.0	575.0	48.08	12.960	
7,600.0	7,041.8	7,671.8	7,054.3	25.3	27.3	-91.15	-91.15	1,027.6	-108.8	623.1	572.4	50.62	12.308	
7,700.0	7,040.4	7,771.8	7,052.9	26.7	28.0	-91.15	-91.15	1,027.6	-8.8	623.1	569.5	53.60	11.625	
7,800.0	7,039.0	7,871.8	7,051.5	28.4	29.1	-91.15	-91.15	1,027.6	91.2	623.1	566.1	56.95	10.941	
7,900.0	7,037.5	7,971.8	7,050.1	30.2	30.7	-91.15	-91.15	1,027.6	191.2	623.1	562.4	60.63	10.276	
8,000.0	7,036.1	8,071.8	7,048.6	32.2	32.6	-91.15	-91.15	1,027.6	291.2	623.1	558.5	64.60	9.645	
8,100.0	7,034.7	8,171.8	7,047.2	34.3	34.6	-91.16	-91.16	1,027.6	391.2	623.1	554.3	68.80	9.057	
8,200.0	7,033.2	8,271.8	7,045.8	36.5	36.8	-91.16	-91.16	1,027.6	491.1	623.1	549.9	73.18	8.514	
8,300.0	7,031.8	8,371.8	7,044.4	38.8	39.0	-91.16	-91.16	1,027.6	591.1	623.1	545.3	77.72	8.016	
8,400.0	7,030.4	8,471.8	7,043.0	41.2	41.4	-91.16	-91.16	1,027.6	691.1	623.1	540.7	82.40	7.562	
8,500.0	7,028.9	8,571.8	7,041.6	43.6	43.8	-91.16	-91.16	1,027.6	791.1	623.1	535.9	87.19	7.146	
8,600.0	7,027.5	8,671.8	7,040.2	46.0	46.2	-91.16	-91.16	1,027.6	891.1	623.1	531.0	92.07	6.768	
8,700.0	7,026.1	8,771.8	7,038.7	48.5	48.7	-91.16	-91.16	1,027.6	991.1	623.1	526.0	97.03	6.422	
8,800.0	7,024.6	8,871.8	7,037.3	51.0	51.2	-91.17	-91.17	1,027.6	1,091.1	623.1	521.0	102.05	6.105	
8,900.0	7,023.2	8,971.8	7,035.9	53.6	53.7	-91.17	-91.17	1,027.6	1,191.1	623.1	515.9	107.14	5.816	
9,000.0	7,021.8	9,071.8	7,034.5	56.2	56.3	-91.17	-91.17	1,027.6	1,291.1	623.1	510.8	112.27	5.550	
9,100.0	7,020.4	9,171.8	7,033.1	58.8	58.9	-91.17	-91.17	1,027.6	1,391.1	623.1	505.6	117.45	5.305	
9,200.0	7,018.9	9,271.8	7,031.7	61.4	61.5	-91.17	-91.17	1,027.6	1,491.0	623.1	500.4	122.67	5.079	
9,300.0	7,017.5	9,371.8	7,030.3	64.0	64.1	-91.17	-91.17	1,027.6	1,591.0	623.1	495.2	127.92	4.871	
9,400.0	7,016.1	9,471.8	7,028.8	66.7	66.8	-91.18	-91.18	1,027.6	1,691.0	623.1	489.9	133.20	4.678	
9,500.0	7,014.6	9,571.8	7,027.4	69.3	69.4	-91.18	-91.18	1,027.6	1,791.0	623.1	484.6	138.51	4.498	
9,600.0	7,013.2	9,671.8	7,026.0	72.0	72.1	-91.18	-91.18	1,027.6	1,891.0	623.1	479.2	143.84	4.332	
9,700.0	7,011.8	9,771.8	7,024.6	74.7	74.8	-91.18	-91.18	1,027.6	1,991.0	623.1	473.9	149.19	4.176	
9,800.0	7,010.3	9,871.8	7,023.2	77.4	77.5	-91.18	-91.18	1,027.6	2,091.0	623.1	468.5	154.56	4.031	
9,900.0	7,008.9	9,971.8	7,021.8	80.1	80.2	-91.18	-91.18	1,027.6	2,191.0	623.1	463.1	159.95	3.896	
10,000.0	7,007.5	10,071.8	7,020.4	82.8	82.9	-91.19	-91.19	1,027.6	2,291.0	623.1	457.7	165.35	3.768	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design										Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-232 - Wellbore #1 - Plan #1 ((8-22-14)				Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
10,100.0	7,006.0	10,171.8	7,019.0	85.5	85.6	-91.19	1,027.6	2,391.0	623.1	452.3	170.76	3.649			
10,200.0	7,004.6	10,271.8	7,017.5	88.2	88.3	-91.19	1,027.6	2,490.9	623.1	446.9	176.19	3.536			
10,300.0	7,003.2	10,371.8	7,016.1	90.9	91.0	-91.19	1,027.6	2,590.9	623.1	441.5	181.63	3.431			
10,400.0	7,001.7	10,471.8	7,014.7	93.6	93.7	-91.19	1,027.6	2,690.9	623.1	436.0	187.08	3.331			
10,500.0	7,000.3	10,571.8	7,013.3	96.4	96.4	-91.19	1,027.6	2,790.9	623.1	430.6	192.54	3.236			
10,600.0	6,998.9	10,671.8	7,011.9	99.1	99.2	-91.20	1,027.6	2,890.9	623.1	425.1	198.00	3.147			
10,700.0	6,997.5	10,771.8	7,010.5	101.8	101.9	-91.20	1,027.6	2,990.9	623.1	419.6	203.48	3.062			
10,800.0	6,996.0	10,871.8	7,009.1	104.6	104.6	-91.20	1,027.6	3,090.9	623.1	414.1	208.96	2.982			
10,900.0	6,994.6	10,971.8	7,007.6	107.3	107.4	-91.20	1,027.6	3,190.9	623.1	408.6	214.45	2.906			
11,000.0	6,993.2	11,071.8	7,006.2	110.1	110.1	-91.20	1,027.6	3,290.9	623.1	403.2	219.95	2.833			
11,100.0	6,991.7	11,171.8	7,004.8	112.8	112.9	-91.20	1,027.6	3,390.9	623.1	397.7	225.45	2.764			
11,200.0	6,990.3	11,271.8	7,003.4	115.6	115.6	-91.20	1,027.6	3,490.8	623.1	392.1	230.95	2.698			
11,300.0	6,988.9	11,371.8	7,002.0	118.4	118.4	-91.21	1,027.6	3,590.8	623.1	386.6	236.47	2.635			
11,400.0	6,987.4	11,471.8	7,000.6	121.1	121.1	-91.21	1,027.6	3,690.8	623.1	381.1	241.98	2.575			
11,500.0	6,986.0	11,571.8	6,999.2	122.9	123.9	-91.21	1,027.7	3,790.8	623.1	376.6	246.48	2.528			
11,500.4	6,986.0	11,572.2	6,999.2	122.9	123.9	-91.21	1,027.7	3,791.2	623.1	376.6	246.49	2.528 SF			

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-332 - Wellbore #1 - Plan #1 (8-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.00	91.1	0.0	91.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	91.1	0.0	91.1	90.9	0.22	405.205		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	91.1	0.0	91.1	90.4	0.67	135.068		
300.0	300.0	300.0	300.0	0.6	0.6	0.00	91.1	0.0	91.1	90.0	1.12	81.041		
400.0	400.0	400.0	400.0	0.8	0.8	0.00	91.1	0.0	91.1	89.5	1.57	57.886 CC, ES		
500.0	500.0	497.5	497.5	1.0	1.0	-0.62	92.4	-1.0	92.4	90.4	2.01	45.884		
600.0	600.0	594.7	594.6	1.2	1.2	-2.35	96.4	-4.0	96.6	94.2	2.46	39.291		
700.0	700.0	691.5	691.0	1.5	1.5	-4.93	102.9	-8.9	103.7	100.8	2.92	35.566		
800.0	800.0	787.7	786.5	1.7	1.7	-7.97	112.1	-15.7	114.0	110.6	3.40	33.538		
900.0	900.0	883.0	880.7	1.9	2.0	-11.13	123.6	-24.3	127.5	123.5	3.91	32.582		
1,000.0	1,000.0	977.2	973.3	2.1	2.3	-14.16	137.5	-34.7	144.3	139.8	4.46	32.321		
1,100.0	1,100.0	1,070.4	1,064.3	2.4	2.7	48.86	153.6	-46.7	163.4	158.6	4.78	34.145		
1,200.0	1,199.8	1,163.0	1,154.0	2.6	3.1	47.20	172.0	-60.5	183.4	178.1	5.25	34.915		
1,300.0	1,299.5	1,257.1	1,244.4	2.8	3.6	46.24	192.9	-76.1	203.9	198.2	5.74	35.507		
1,400.0	1,398.7	1,355.3	1,338.6	3.0	4.1	46.00	215.2	-92.7	222.8	216.5	6.26	35.561		
1,500.0	1,497.5	1,453.9	1,433.1	3.3	4.7	46.41	237.5	-109.5	239.2	232.4	6.82	35.098		
1,600.0	1,595.6	1,552.7	1,527.9	3.6	5.2	47.34	260.0	-126.2	253.4	246.0	7.42	34.128		
1,700.0	1,693.3	1,651.7	1,622.9	4.0	5.8	48.70	282.5	-143.0	266.1	258.0	8.09	32.881		
1,800.0	1,791.0	1,750.7	1,717.8	4.4	6.3	49.98	304.9	-159.8	279.0	270.2	8.80	31.712		
1,900.0	1,888.7	1,849.7	1,812.7	4.8	6.9	51.14	327.4	-176.6	291.9	282.4	9.53	30.641		
2,000.0	1,986.4	1,948.7	1,907.6	5.2	7.5	52.20	349.9	-193.4	305.0	294.7	10.28	29.667		
2,100.0	2,084.1	2,047.7	2,002.6	5.6	8.0	53.18	372.4	-210.2	318.2	307.1	11.05	28.782		
2,200.0	2,181.8	2,146.7	2,097.5	6.0	8.6	54.08	394.9	-227.0	331.4	319.6	11.85	27.979		
2,300.0	2,279.4	2,245.7	2,192.4	6.4	9.2	54.91	417.3	-243.8	344.8	332.1	12.65	27.252		
2,400.0	2,377.1	2,344.6	2,287.4	6.9	9.7	55.68	439.8	-260.6	358.1	344.7	13.47	26.591		
2,500.0	2,474.8	2,443.6	2,382.3	7.3	10.3	56.39	462.3	-277.4	371.6	357.3	14.30	25.989		
2,600.0	2,572.5	2,542.6	2,477.2	7.8	10.9	57.05	484.8	-294.2	385.1	370.0	15.14	25.441		
2,700.0	2,670.2	2,641.6	2,572.1	8.2	11.5	57.67	507.2	-311.0	398.7	382.7	15.98	24.941		
2,800.0	2,767.9	2,740.6	2,667.1	8.7	12.1	58.25	529.7	-327.8	412.2	395.4	16.84	24.482		
2,900.0	2,865.6	2,839.6	2,762.0	9.1	12.6	58.79	552.2	-344.6	425.9	408.2	17.70	24.061		
3,000.0	2,963.2	2,938.6	2,856.9	9.6	13.2	59.29	574.7	-361.4	439.5	421.0	18.57	23.674		
3,100.0	3,060.9	3,037.6	2,951.9	10.0	13.8	59.77	597.1	-378.2	453.2	433.8	19.44	23.317		
3,200.0	3,158.6	3,136.6	3,046.8	10.5	14.4	60.22	619.6	-395.0	467.0	446.7	20.32	22.987		
3,300.0	3,256.3	3,235.5	3,141.7	10.9	14.9	60.64	642.1	-411.8	480.7	459.5	21.20	22.680		
3,400.0	3,354.0	3,334.5	3,236.6	11.4	15.5	61.04	664.6	-428.6	494.5	472.4	22.08	22.396		
3,500.0	3,451.7	3,433.5	3,331.6	11.8	16.1	61.42	687.1	-445.4	508.3	485.3	22.97	22.131		
3,600.0	3,549.4	3,532.5	3,426.5	12.3	16.7	61.78	709.5	-462.2	522.1	498.3	23.86	21.884		
3,700.0	3,647.0	3,631.5	3,521.4	12.8	17.3	62.11	732.0	-479.0	536.0	511.2	24.75	21.654		
3,800.0	3,744.7	3,730.5	3,616.4	13.2	17.9	62.44	754.5	-495.8	549.8	524.2	25.65	21.438		
3,900.0	3,842.4	3,829.5	3,711.3	13.7	18.4	62.74	777.0	-512.6	563.7	537.2	26.55	21.235		
4,000.0	3,940.1	3,928.5	3,806.2	14.1	19.0	63.03	799.4	-529.4	577.6	550.2	27.45	21.044		
4,100.0	4,037.8	4,027.5	3,901.1	14.6	19.6	63.31	821.9	-546.2	591.5	563.2	28.35	20.865		
4,200.0	4,135.5	4,126.4	3,996.1	15.1	20.2	63.58	844.4	-563.0	605.4	576.2	29.25	20.696		
4,300.0	4,233.2	4,225.4	4,091.0	15.5	20.8	63.83	866.9	-579.8	619.3	589.2	30.16	20.537		
4,400.0	4,330.8	4,324.4	4,185.9	16.0	21.3	64.07	889.3	-596.6	633.3	602.2	31.07	20.386		
4,500.0	4,428.5	4,423.4	4,280.9	16.5	21.9	64.30	911.8	-613.4	647.2	615.3	31.97	20.243		
4,600.0	4,526.2	4,522.4	4,375.8	16.9	22.5	64.53	934.3	-630.2	661.2	628.3	32.88	20.108		
4,700.0	4,623.9	4,621.4	4,470.7	17.4	23.1	64.74	956.8	-647.0	675.2	641.4	33.79	19.979		
4,800.0	4,721.6	4,720.4	4,565.6	17.9	23.7	64.94	979.3	-663.8	689.2	654.4	34.71	19.857		
4,900.0	4,819.3	4,819.4	4,660.6	18.3	24.2	65.14	1,001.7	-680.6	703.1	667.5	35.62	19.741		
5,000.0	4,917.0	4,918.3	4,755.5	18.8	24.8	65.33	1,024.2	-697.3	717.1	680.6	36.53	19.631		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-332 - Wellbore #1 - Plan #1 (8-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,014.6	5,017.3	4,850.4	19.3	25.4	65.51	1,046.7	-714.1	731.1	693.7	37.45	19.525		
5,200.0	5,112.3	5,116.3	4,945.4	19.7	26.0	65.68	1,069.2	-730.9	745.1	706.8	38.36	19.424		
5,300.0	5,210.0	5,215.3	5,040.3	20.2	26.6	65.85	1,091.6	-747.7	759.2	719.9	39.28	19.328		
5,400.0	5,307.7	5,314.3	5,135.2	20.7	27.2	66.01	1,114.1	-764.5	773.2	733.0	40.19	19.236		
5,500.0	5,405.4	5,413.3	5,230.1	21.1	27.7	66.17	1,136.6	-781.3	787.2	746.1	41.11	19.148		
5,600.0	5,503.1	5,512.3	5,325.1	21.6	28.3	66.36	1,159.1	-798.1	801.3	759.2	42.03	19.066		
5,700.0	5,601.2	5,620.7	5,429.2	21.9	28.9	66.63	1,183.4	-816.4	816.0	773.2	42.81	19.059		
5,800.0	5,700.0	5,748.6	5,553.1	22.2	29.4	66.79	1,208.8	-835.3	829.4	786.0	43.49	19.072		
5,900.0	5,799.2	5,877.5	5,679.2	22.4	29.9	66.88	1,229.8	-851.0	840.8	796.7	44.06	19.081		
6,000.0	5,898.8	6,007.1	5,807.1	22.6	30.3	66.89	1,246.4	-863.4	849.9	805.4	44.53	19.087		
6,100.0	5,998.7	6,137.4	5,936.6	22.8	30.6	66.82	1,258.4	-872.3	856.9	812.0	44.88	19.092		
6,200.0	6,098.7	6,268.2	6,067.1	22.9	30.8	66.68	1,265.6	-877.8	861.6	816.5	45.13	19.093		
6,300.0	6,198.7	6,399.5	6,198.3	23.1	30.9	0.92	1,268.1	-879.6	863.5	820.7	42.79	20.178		
6,400.0	6,298.7	6,499.9	6,298.7	23.2	31.0	-89.10	1,268.1	-879.6	863.5	817.9	45.61	18.934		
6,500.0	6,398.2	6,599.2	6,398.0	23.2	31.1	-89.67	1,268.1	-879.0	863.4	817.8	45.56	18.952		
6,541.6	6,439.0	6,640.3	6,439.0	23.2	31.1	-90.00	1,268.1	-876.3	863.4	818.0	45.43	19.006		
6,600.0	6,495.6	6,698.6	6,496.8	23.1	31.1	-90.46	1,268.1	-868.8	863.4	818.2	45.21	19.096		
6,700.0	6,589.4	6,799.6	6,595.0	22.9	31.1	-91.25	1,268.1	-845.3	863.6	818.9	44.69	19.325		
6,800.0	6,677.8	6,902.3	6,690.7	22.7	30.9	-92.02	1,268.1	-808.4	863.9	819.9	44.06	19.608		
6,900.0	6,759.3	7,006.6	6,782.0	22.5	30.7	-92.76	1,268.1	-758.1	864.4	821.0	43.43	19.902		
7,000.0	6,832.6	7,112.6	6,866.9	22.3	30.4	-93.46	1,268.1	-694.7	865.0	822.0	42.94	20.142		
7,100.0	6,896.5	7,220.2	6,943.2	22.2	30.2	-94.10	1,268.1	-619.1	865.6	822.9	42.75	20.248		
7,200.0	6,949.7	7,329.3	7,009.0	22.3	29.9	-94.67	1,268.1	-532.1	866.3	823.3	43.01	20.140		
7,300.0	6,991.5	7,439.8	7,062.4	22.6	29.6	-95.15	1,268.1	-435.4	866.9	823.0	43.87	19.762		
7,400.0	7,021.1	7,551.5	7,101.6	23.2	29.4	-95.54	1,268.1	-331.0	867.4	822.1	45.38	19.113		
7,500.0	7,037.9	7,664.1	7,125.2	24.1	29.2	-95.83	1,268.1	-221.0	867.9	820.3	47.56	18.248		
7,600.0	7,041.8	7,777.4	7,132.5	25.3	29.2	-96.00	1,268.1	-108.1	868.1	817.9	50.26	17.274		
7,700.0	7,040.4	7,877.9	7,130.9	26.7	29.4	-95.99	1,268.1	-7.6	868.1	814.9	53.18	16.324		
7,800.0	7,039.0	7,977.9	7,129.4	28.4	29.9	-95.98	1,268.1	92.4	868.1	811.6	56.48	15.369		
7,900.0	7,037.5	8,077.9	7,127.8	30.2	31.1	-95.97	1,268.1	192.4	868.1	808.0	60.12	14.438		
8,000.0	7,036.1	8,177.9	7,126.2	32.2	32.8	-95.96	1,268.1	292.4	868.1	804.0	64.05	13.554		
8,100.0	7,034.7	8,277.9	7,124.7	34.3	34.7	-95.95	1,268.1	392.4	868.1	799.9	68.20	12.728		
8,200.0	7,033.2	8,377.9	7,123.1	36.5	36.9	-95.94	1,268.1	492.4	868.0	795.5	72.55	11.965		
8,300.0	7,031.8	8,477.9	7,121.5	38.8	39.1	-95.93	1,268.1	592.4	868.0	791.0	77.05	11.265		
8,400.0	7,030.4	8,577.9	7,119.9	41.2	41.5	-95.92	1,268.1	692.4	868.0	786.3	81.70	10.625		
8,500.0	7,028.9	8,677.9	7,118.4	43.6	43.9	-95.91	1,268.1	792.3	868.0	781.6	86.45	10.041		
8,600.0	7,027.5	8,777.9	7,116.8	46.0	46.3	-95.91	1,268.1	892.3	868.0	776.7	91.30	9.507		
8,700.0	7,026.1	8,877.9	7,115.2	48.5	48.8	-95.90	1,268.1	992.3	868.0	771.8	96.23	9.020		
8,800.0	7,024.6	8,977.9	7,113.7	51.0	51.3	-95.89	1,268.1	1,092.3	868.0	766.7	101.22	8.575		
8,900.0	7,023.2	9,077.9	7,112.1	53.6	53.8	-95.88	1,268.1	1,192.3	868.0	761.7	106.28	8.167		
9,000.0	7,021.8	9,177.9	7,110.5	56.2	56.4	-95.87	1,268.1	1,292.3	867.9	756.6	111.39	7.792		
9,100.0	7,020.4	9,277.9	7,108.9	58.8	59.0	-95.86	1,268.1	1,392.3	867.9	751.4	116.54	7.448		
9,200.0	7,018.9	9,377.9	7,107.4	61.4	61.6	-95.85	1,268.1	1,492.3	867.9	746.2	121.73	7.130		
9,300.0	7,017.5	9,477.9	7,105.8	64.0	64.2	-95.84	1,268.1	1,592.2	867.9	740.9	126.95	6.836		
9,400.0	7,016.1	9,577.9	7,104.2	66.7	66.8	-95.83	1,268.1	1,692.2	867.9	735.7	132.21	6.565		
9,500.0	7,014.6	9,677.9	7,102.7	69.3	69.5	-95.82	1,268.1	1,792.2	867.9	730.4	137.49	6.312		
9,600.0	7,013.2	9,777.9	7,101.1	72.0	72.2	-95.81	1,268.1	1,892.2	867.9	725.1	142.79	6.078		
9,700.0	7,011.8	9,877.9	7,099.5	74.7	74.8	-95.80	1,268.1	1,992.2	867.8	719.7	148.12	5.859		
9,800.0	7,010.3	9,977.9	7,097.9	77.4	77.5	-95.79	1,268.1	2,092.2	867.8	714.4	153.46	5.655		
9,900.0	7,008.9	10,077.9	7,096.4	80.1	80.2	-95.79	1,268.1	2,192.2	867.8	709.0	158.82	5.464		
10,000.0	7,007.5	10,177.9	7,094.8	82.8	82.9	-95.78	1,268.1	2,292.2	867.8	703.6	164.20	5.285		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20G-332 - Wellbore #1 - Plan #1 (8-22-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,100.0	7,006.0	10,277.9	7,093.2	85.5	85.6	-95.77	1,268.1	2,392.1	867.8	698.2	169.59	5.117	
10,200.0	7,004.6	10,377.9	7,091.7	88.2	88.3	-95.76	1,268.1	2,492.1	867.8	692.8	174.99	4.959	
10,300.0	7,003.2	10,477.9	7,090.1	90.9	91.0	-95.75	1,268.1	2,592.1	867.8	687.4	180.41	4.810	
10,400.0	7,001.7	10,577.9	7,088.5	93.6	93.7	-95.74	1,268.1	2,692.1	867.8	681.9	185.83	4.670	
10,500.0	7,000.3	10,677.9	7,087.0	96.4	96.4	-95.73	1,268.1	2,792.1	867.7	676.5	191.27	4.537	
10,600.0	6,998.9	10,777.9	7,085.4	99.1	99.2	-95.72	1,268.1	2,892.1	867.7	671.0	196.71	4.411	
10,700.0	6,997.5	10,877.9	7,083.8	101.8	101.9	-95.71	1,268.1	2,992.1	867.7	665.5	202.16	4.292	
10,800.0	6,996.0	10,977.9	7,082.2	104.6	104.6	-95.70	1,268.1	3,092.1	867.7	660.1	207.62	4.179	
10,900.0	6,994.6	11,077.9	7,080.7	107.3	107.4	-95.69	1,268.1	3,192.0	867.7	654.6	213.09	4.072	
11,000.0	6,993.2	11,177.9	7,079.1	110.1	110.1	-95.68	1,268.1	3,292.0	867.7	649.1	218.56	3.970	
11,100.0	6,991.7	11,277.9	7,077.5	112.8	112.9	-95.68	1,268.1	3,392.0	867.7	643.6	224.04	3.873	
11,200.0	6,990.3	11,377.9	7,076.0	115.6	115.6	-95.67	1,268.1	3,492.0	867.6	638.1	229.53	3.780	
11,300.0	6,988.9	11,477.9	7,074.4	118.4	118.4	-95.66	1,268.1	3,592.0	867.6	632.6	235.02	3.692	
11,400.0	6,987.4	11,577.9	7,072.8	121.1	121.1	-95.65	1,268.1	3,692.0	867.6	627.1	240.51	3.607	
11,500.0	6,986.0	11,677.9	7,071.2	122.9	123.1	-95.64	1,268.1	3,792.0	867.6	623.4	244.20	3.553	
11,500.4	6,986.0	11,678.3	7,071.2	122.9	123.1	-95.64	1,268.1	3,792.4	867.6	623.4	244.21	3.553 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-232 - Wellbore #1 - Plan #1 (8-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-177.26	-177.26	-58.3	-2.8	58.4	58.4	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-177.26	-177.26	-58.3	-2.8	58.4	58.1	0.23	257.039	
200.0	200.0	201.0	201.0	0.3	0.3	-177.26	-177.26	-58.3	-2.8	58.4	57.7	0.68	86.249	
300.0	300.0	301.0	301.0	0.6	0.6	-177.26	-177.26	-58.3	-2.8	58.4	57.2	1.13	51.818	
400.0	400.0	401.0	401.0	0.8	0.8	-177.26	-177.26	-58.3	-2.8	58.4	56.8	1.58	37.034	
500.0	500.0	501.0	501.0	1.0	1.0	-177.26	-177.26	-58.3	-2.8	58.4	56.3	2.03	28.814	
600.0	600.0	601.0	601.0	1.2	1.2	-177.26	-177.26	-58.3	-2.8	58.4	55.9	2.47	23.579	
700.0	700.0	701.0	701.0	1.5	1.5	-177.26	-177.26	-58.3	-2.8	58.4	55.4	2.92	19.955	
800.0	800.0	801.0	801.0	1.7	1.7	-177.26	-177.26	-58.3	-2.8	58.4	55.0	3.37	17.296	
900.0	900.0	901.0	901.0	1.9	1.9	-177.26	-177.26	-58.3	-2.8	58.4	54.5	3.82	15.262	
966.3	966.3	967.3	967.3	2.1	2.1	-177.26	-177.26	-58.3	-2.8	58.4	54.2	4.12	14.158 CC	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-177.26	-177.26	-58.3	-2.8	58.4	54.1	4.27	13.657 ES	
1,100.0	1,100.0	1,100.7	1,100.7	2.4	2.3	-111.48	-111.48	-58.5	-4.5	59.3	54.6	4.70	12.611	
1,200.0	1,199.8	1,200.3	1,200.1	2.6	2.5	-111.14	-111.14	-59.0	-9.7	62.0	56.9	5.12	12.118	
1,300.0	1,299.5	1,300.0	1,299.5	2.8	2.8	-110.65	-110.65	-60.0	-18.4	66.6	61.0	5.56	11.973	
1,400.0	1,398.7	1,399.2	1,397.9	3.0	3.0	-110.07	-110.07	-61.3	-30.4	73.0	66.9	6.04	12.075	
1,500.0	1,497.5	1,498.4	1,495.9	3.3	3.3	-109.45	-109.45	-63.0	-45.8	81.2	74.6	6.58	12.333	
1,600.0	1,595.6	1,597.5	1,593.2	3.6	3.6	-108.94	-108.94	-65.0	-64.3	91.2	84.0	7.20	12.670	
1,700.0	1,693.3	1,696.9	1,690.7	4.0	3.9	-109.43	-109.43	-67.1	-83.7	102.0	94.2	7.87	12.963	
1,800.0	1,791.0	1,796.3	1,788.1	4.4	4.3	-109.88	-109.88	-69.2	-103.1	113.0	104.4	8.59	13.154	
1,900.0	1,888.7	1,895.7	1,885.6	4.8	4.7	-110.25	-110.25	-71.3	-122.5	123.9	114.5	9.33	13.274	
2,000.0	1,986.4	1,995.1	1,983.1	5.2	5.0	-110.56	-110.56	-73.4	-141.9	134.8	124.7	10.10	13.347	
2,100.0	2,084.1	2,094.5	2,080.5	5.6	5.4	-110.83	-110.83	-75.5	-161.3	145.7	134.8	10.88	13.388	
2,200.0	2,181.8	2,193.9	2,178.0	6.0	5.8	-111.05	-111.05	-77.6	-180.7	156.6	144.9	11.68	13.407	
2,300.0	2,279.4	2,293.3	2,275.5	6.4	6.2	-111.25	-111.25	-79.7	-200.1	167.5	155.0	12.49	13.412	
2,400.0	2,377.1	2,392.7	2,372.9	6.9	6.6	-111.43	-111.43	-81.9	-219.5	178.5	165.1	13.31	13.407	
2,500.0	2,474.8	2,492.1	2,470.4	7.3	7.1	-111.58	-111.58	-84.0	-238.9	189.4	175.2	14.14	13.395	
2,600.0	2,572.5	2,591.5	2,567.9	7.8	7.5	-111.72	-111.72	-86.1	-258.3	200.3	185.3	14.97	13.379	
2,700.0	2,670.2	2,690.9	2,665.3	8.2	7.9	-111.84	-111.84	-88.2	-277.7	211.2	195.4	15.81	13.360	
2,800.0	2,767.9	2,790.3	2,762.8	8.7	8.3	-111.95	-111.95	-90.3	-297.1	222.2	205.5	16.66	13.339	
2,900.0	2,865.6	2,889.7	2,860.3	9.1	8.7	-112.05	-112.05	-92.4	-316.5	233.1	215.6	17.50	13.318	
3,000.0	2,963.2	2,989.1	2,957.7	9.6	9.2	-112.14	-112.14	-94.5	-335.9	244.0	225.7	18.35	13.296	
3,100.0	3,060.9	3,088.5	3,055.2	10.0	9.6	-112.23	-112.23	-96.6	-355.3	255.0	235.7	19.21	13.274	
3,200.0	3,158.6	3,187.9	3,152.7	10.5	10.0	-112.30	-112.30	-98.7	-374.7	265.9	245.8	20.06	13.252	
3,300.0	3,256.3	3,287.3	3,250.1	10.9	10.4	-112.37	-112.37	-100.8	-394.1	276.8	255.9	20.92	13.231	
3,400.0	3,354.0	3,386.7	3,347.6	11.4	10.9	-112.44	-112.44	-103.0	-413.5	287.8	266.0	21.78	13.210	
3,500.0	3,451.7	3,486.1	3,445.1	11.8	11.3	-112.50	-112.50	-105.1	-432.9	298.7	276.0	22.64	13.190	
3,600.0	3,549.4	3,585.5	3,542.5	12.3	11.7	-112.55	-112.55	-107.2	-452.3	309.6	286.1	23.51	13.170	
3,700.0	3,647.0	3,684.9	3,640.0	12.8	12.2	-112.61	-112.61	-109.3	-471.7	320.5	296.2	24.37	13.151	
3,800.0	3,744.7	3,784.3	3,737.5	13.2	12.6	-112.66	-112.66	-111.4	-491.0	331.5	306.2	25.24	13.133	
3,900.0	3,842.4	3,883.7	3,834.9	13.7	13.0	-112.70	-112.70	-113.5	-510.4	342.4	316.3	26.11	13.115	
4,000.0	3,940.1	3,983.1	3,932.4	14.1	13.5	-112.74	-112.74	-115.6	-529.8	353.3	326.4	26.98	13.098	
4,100.0	4,037.8	4,082.5	4,029.9	14.6	13.9	-112.78	-112.78	-117.7	-549.2	364.3	336.4	27.85	13.082	
4,200.0	4,135.5	4,181.9	4,127.3	15.1	14.3	-112.82	-112.82	-119.8	-568.6	375.2	346.5	28.72	13.066	
4,300.0	4,233.2	4,281.3	4,224.8	15.5	14.8	-112.86	-112.86	-121.9	-588.0	386.1	356.6	29.59	13.051	
4,400.0	4,330.8	4,380.7	4,322.3	16.0	15.2	-112.89	-112.89	-124.1	-607.4	397.1	366.6	30.46	13.037	
4,500.0	4,428.5	4,480.1	4,419.7	16.5	15.7	-112.92	-112.92	-126.2	-626.8	408.0	376.7	31.33	13.023	
4,600.0	4,526.2	4,579.5	4,517.2	16.9	16.1	-112.95	-112.95	-128.3	-646.2	419.0	386.7	32.20	13.009	
4,700.0	4,623.9	4,678.9	4,614.7	17.4	16.5	-112.98	-112.98	-130.4	-665.6	429.9	396.8	33.08	12.996	
4,800.0	4,721.6	4,778.3	4,712.1	17.9	17.0	-113.01	-113.01	-132.5	-685.0	440.8	406.9	33.95	12.984	
4,900.0	4,819.3	4,877.7	4,809.6	18.3	17.4	-113.04	-113.04	-134.6	-704.4	451.8	416.9	34.83	12.972	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-232 - Wellbore #1 - Plan #1 (8-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.0	4,917.0	4,977.1	4,907.1	18.8	17.8	-113.06	-136.7	-723.8	462.7	427.0	35.70	12.960		
5,100.0	5,014.6	5,076.5	5,004.5	19.3	18.3	-113.09	-138.8	-743.2	473.6	437.0	36.58	12.949		
5,200.0	5,112.3	5,175.9	5,102.0	19.7	18.7	-113.11	-140.9	-762.6	484.6	447.1	37.45	12.938		
5,300.0	5,210.0	5,275.3	5,199.5	20.2	19.2	-113.13	-143.0	-782.0	495.5	457.2	38.33	12.928		
5,400.0	5,307.7	5,374.7	5,296.9	20.7	19.6	-113.15	-145.1	-801.4	506.4	467.2	39.20	12.918		
5,500.0	5,405.4	5,474.1	5,394.4	21.1	20.0	-113.17	-147.3	-820.8	517.4	477.3	40.08	12.908		
5,600.0	5,503.1	5,573.5	5,491.9	21.6	20.5	-113.22	-149.4	-840.2	528.3	487.3	40.95	12.900		
5,700.0	5,601.2	5,674.2	5,590.7	21.9	20.9	-113.24	-151.5	-859.3	538.3	496.6	41.68	12.913		
5,800.0	5,700.0	5,776.2	5,691.4	22.2	21.2	-113.23	-153.2	-875.6	546.5	504.2	42.28	12.925		
5,900.0	5,799.2	5,878.4	5,792.8	22.4	21.4	-113.23	-154.6	-888.3	552.9	510.1	42.78	12.924		
6,000.0	5,898.8	5,980.8	5,894.8	22.6	21.6	-113.22	-155.6	-897.4	557.5	514.3	43.20	12.906		
6,100.0	5,998.7	6,083.3	5,997.1	22.8	21.8	-113.22	-156.2	-902.9	560.3	516.7	43.53	12.871		
6,200.0	6,098.7	6,185.9	6,099.7	22.9	21.9	-113.23	-156.4	-904.7	561.2	517.4	43.79	12.816		
6,300.0	6,198.7	6,285.9	6,199.7	23.1	22.1	-113.23	-156.4	-904.7	561.2	517.4	43.79	12.816		
6,400.0	6,298.7	6,386.2	6,300.0	23.2	22.2	-113.23	-156.4	-904.4	561.2	516.9	44.29	12.671		
6,500.0	6,398.2	6,487.7	6,400.9	23.2	22.2	-113.23	-156.4	-894.8	561.2	516.9	44.33	12.661		
6,600.0	6,495.6	6,589.1	6,499.7	23.1	22.1	-113.23	-156.4	-871.9	561.2	517.1	44.13	12.717		
6,700.0	6,589.4	6,690.4	6,594.4	22.9	21.9	-113.23	-156.4	-836.1	561.2	517.4	43.75	12.826		
6,800.0	6,677.8	6,791.7	6,683.5	22.7	21.7	-113.23	-156.4	-788.2	561.2	517.9	43.29	12.963		
6,900.0	6,759.3	6,892.8	6,765.5	22.5	21.5	-113.23	-156.4	-729.1	561.1	518.3	42.84	13.098		
7,000.0	6,832.6	6,993.8	6,838.7	22.3	21.3	-113.23	-156.4	-659.7	561.1	518.6	42.54	13.190		
7,100.0	6,896.5	7,094.6	6,902.2	22.2	21.3	-113.23	-156.4	-581.4	561.1	518.6	42.55	13.188		
7,200.0	6,949.7	7,195.3	6,954.7	22.3	21.5	-113.23	-156.4	-495.6	561.1	518.1	42.99	13.051		
7,300.0	6,991.5	7,295.8	6,995.4	22.6	22.0	-113.23	-156.4	-403.8	561.1	517.1	43.98	12.757		
7,400.0	7,021.1	7,396.1	7,023.6	23.2	22.8	-113.23	-156.4	-307.7	561.1	515.5	45.56	12.316		
7,500.0	7,037.9	7,496.2	7,039.0	24.1	23.9	-113.23	-156.4	-208.8	561.1	513.4	47.68	11.768		
7,529.1	7,040.4	7,525.3	7,041.1	24.4	24.2	-113.23	-156.4	-179.8	561.1	512.7	48.41	11.590		
7,600.0	7,041.8	7,596.1	7,041.7	25.3	25.1	-113.23	-156.4	-109.0	561.1	510.8	50.25	11.165		
7,700.0	7,040.4	7,696.1	7,040.3	26.7	26.6	-113.23	-156.4	-9.0	561.1	507.8	53.27	10.533		
7,800.0	7,039.0	7,796.1	7,038.8	28.4	28.3	-113.23	-156.4	91.0	561.1	504.4	56.67	9.900		
7,900.0	7,037.5	7,896.1	7,037.4	30.2	30.2	-113.23	-156.4	191.0	561.1	500.7	60.41	9.288		
8,000.0	7,036.1	7,996.1	7,036.0	32.2	32.2	-113.23	-156.4	291.0	561.1	496.7	64.42	8.709		
8,100.0	7,034.7	8,096.1	7,034.5	34.3	34.3	-113.23	-156.4	391.0	561.1	492.4	68.66	8.172		
8,200.0	7,033.2	8,196.1	7,033.1	36.5	36.6	-113.23	-156.4	491.0	561.1	488.0	73.08	7.678		
8,300.0	7,031.8	8,296.1	7,031.7	38.8	38.8	-113.23	-156.4	591.0	561.1	483.4	77.66	7.225		
8,400.0	7,030.4	8,396.1	7,030.3	41.2	41.2	-113.23	-156.4	690.9	561.1	478.7	82.36	6.812		
8,500.0	7,028.9	8,496.1	7,028.8	43.6	43.6	-113.23	-156.4	790.9	561.1	473.9	87.17	6.436		
8,600.0	7,027.5	8,596.1	7,027.4	46.0	46.1	-113.23	-156.4	890.9	561.1	469.0	92.08	6.093		
8,700.0	7,026.1	8,696.1	7,026.0	48.5	48.6	-113.23	-156.4	990.9	561.1	464.0	97.06	5.781		
8,800.0	7,024.6	8,796.1	7,024.5	51.0	51.1	-113.23	-156.4	1,090.9	561.1	459.0	102.10	5.495		
8,900.0	7,023.2	8,896.1	7,023.1	53.6	53.6	-113.23	-156.4	1,190.9	561.1	453.9	107.21	5.233		
9,000.0	7,021.8	8,996.1	7,021.7	56.2	56.2	-113.23	-156.4	1,290.9	561.1	448.7	112.36	4.993		
9,100.0	7,020.4	9,096.1	7,020.2	58.8	58.8	-113.23	-156.4	1,390.9	561.1	443.5	117.55	4.773		
9,200.0	7,018.9	9,196.1	7,018.8	61.4	61.4	-113.23	-156.4	1,490.9	561.1	438.3	122.78	4.569		
9,300.0	7,017.5	9,296.1	7,017.4	64.0	64.1	-113.23	-156.4	1,590.8	561.1	433.0	128.05	4.382		
9,400.0	7,016.1	9,396.1	7,015.9	66.7	66.7	-113.23	-156.4	1,690.8	561.1	427.7	133.34	4.208		
9,500.0	7,014.6	9,496.1	7,014.5	69.3	69.4	-113.23	-156.4	1,790.8	561.1	422.4	138.66	4.046		
9,600.0	7,013.2	9,596.1	7,013.1	72.0	72.0	-113.23	-156.4	1,890.8	561.1	417.1	144.00	3.896		
9,700.0	7,011.8	9,696.1	7,011.6	74.7	74.7	-113.23	-156.4	1,990.8	561.1	411.7	149.36	3.756		
9,800.0	7,010.3	9,796.1	7,010.2	77.4	77.4	-113.23	-156.4	2,090.8	561.1	406.3	154.74	3.626		
9,900.0	7,008.9	9,896.1	7,008.8	80.1	80.1	-113.23	-156.4	2,190.8	561.1	400.9	160.13	3.504		

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-232 - Wellbore #1 - Plan #1 (8-22-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	7,007.5	9,996.1	7,007.4	82.8	82.8	89.89	-156.4	2,290.8	561.0	395.5	165.54	3.389	
10,100.0	7,006.0	10,096.1	7,005.9	85.5	85.5	89.89	-156.4	2,390.8	561.0	390.1	170.96	3.282	
10,200.0	7,004.6	10,196.1	7,004.5	88.2	88.2	89.89	-156.4	2,490.8	561.0	384.6	176.40	3.181	
10,300.0	7,003.2	10,296.1	7,003.1	90.9	91.0	89.89	-156.4	2,590.7	561.0	379.2	181.84	3.085	
10,400.0	7,001.7	10,396.1	7,001.6	93.6	93.7	89.89	-156.4	2,690.7	561.0	373.7	187.30	2.995	
10,500.0	7,000.3	10,496.1	7,000.2	96.4	96.4	89.89	-156.4	2,790.7	561.0	368.3	192.76	2.911	
10,600.0	6,998.9	10,596.1	6,998.8	99.1	99.2	89.89	-156.4	2,890.7	561.0	362.8	198.24	2.830	
10,700.0	6,997.5	10,696.1	6,997.3	101.8	101.9	89.89	-156.4	2,990.7	561.0	357.3	203.72	2.754	
10,800.0	6,996.0	10,796.1	6,995.9	104.6	104.6	89.89	-156.4	3,090.7	561.0	351.8	209.20	2.682	
10,900.0	6,994.6	10,896.1	6,994.5	107.3	107.4	89.89	-156.4	3,190.7	561.0	346.3	214.70	2.613	
11,000.0	6,993.2	10,996.1	6,993.0	110.1	110.1	89.89	-156.3	3,290.7	561.0	340.8	220.20	2.548	
11,100.0	6,991.7	11,096.1	6,991.6	112.8	112.9	89.89	-156.3	3,390.7	561.0	335.3	225.70	2.486	
11,200.0	6,990.3	11,196.1	6,990.2	115.6	115.6	89.89	-156.3	3,490.7	561.0	329.8	231.22	2.426	
11,300.0	6,988.9	11,296.1	6,988.7	118.4	118.4	89.89	-156.3	3,590.6	561.0	324.3	236.73	2.370	
11,400.0	6,987.4	11,396.1	6,987.3	121.1	121.2	89.89	-156.3	3,690.6	561.0	318.8	242.25	2.316	
11,468.9	6,986.5	11,465.0	6,986.3	122.3	123.1	89.89	-156.3	3,759.5	561.0	315.7	245.35	2.287	
11,500.0	6,986.0	11,488.2	6,986.0	122.9	123.7	89.89	-156.3	3,782.7	561.1	314.6	246.54	2.276	
11,500.4	6,986.0	11,488.2	6,986.0	122.9	123.7	89.89	-156.3	3,782.7	561.1	314.6	246.54	2.276 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design		Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)											Offset Site Error:		0.0 ft	
Survey Program: 0-MWD														Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth	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)					
0.0	0.0		1.0		1.0		0.0	0.0	32.8	32.8	0.00	N/A				
100.0	100.0	101.0	101.0	0.1	0.1	0.00	32.8	0.0	32.8	32.6	0.23	144.448				
200.0	200.0	201.0	201.0	0.3	0.3	0.00	32.8	0.0	32.8	32.1	0.68	48.469				
300.0	300.0	301.0	301.0	0.6	0.6	0.00	32.8	0.0	32.8	31.7	1.13	29.120				
400.0	400.0	401.0	401.0	0.8	0.8	0.00	32.8	0.0	32.8	31.2	1.58	20.812				
500.0	500.0	501.0	501.0	1.0	1.0	0.00	32.8	0.0	32.8	30.8	2.03	16.192				
600.0	600.0	601.0	601.0	1.2	1.2	0.00	32.8	0.0	32.8	30.3	2.47	13.251				
700.0	700.0	701.0	701.0	1.5	1.5	0.00	32.8	0.0	32.8	29.9	2.92	11.214				
766.3	766.3	767.3	767.3	1.6	1.6	0.00	32.8	0.0	32.8	29.6	3.22	10.176 CC				
800.0	800.0	801.0	801.0	1.7	1.7	0.00	32.8	0.0	32.8	29.4	3.37	9.720				
900.0	900.0	900.4	900.4	1.9	1.9	-2.60	33.7	-1.5	33.7	29.9	3.82	8.833				
1,000.0	1,000.0	999.5	999.4	2.1	2.1	-9.47	36.2	-6.0	36.8	32.5	4.25	8.638				
1,100.0	1,100.0	1,098.4	1,097.8	2.4	2.4	48.84	40.5	-13.5	41.6	36.9	4.70	8.853				
1,200.0	1,199.8	1,197.0	1,195.7	2.6	2.6	43.43	46.3	-23.9	47.1	42.0	5.14	9.169				
1,300.0	1,299.5	1,295.4	1,292.9	2.8	2.9	39.48	53.9	-37.2	53.2	47.6	5.60	9.497				
1,400.0	1,398.7	1,393.5	1,389.3	3.0	3.2	36.62	63.0	-53.3	59.5	53.4	6.07	9.802				
1,500.0	1,497.5	1,493.1	1,486.7	3.3	3.6	35.11	73.3	-71.4	64.9	58.3	6.57	9.884				
1,600.0	1,595.6	1,593.1	1,584.4	3.6	3.9	35.51	83.6	-89.6	67.5	60.4	7.10	9.505				
1,700.0	1,693.3	1,693.1	1,682.2	4.0	4.3	37.03	94.0	-107.9	68.2	60.5	7.70	8.862				
1,800.0	1,791.0	1,793.1	1,780.0	4.4	4.8	38.55	104.3	-126.1	69.0	60.6	8.34	8.274				
1,900.0	1,888.7	1,893.0	1,877.7	4.8	5.2	40.04	114.6	-144.3	69.8	60.8	9.00	7.749				
2,000.0	1,986.4	1,993.0	1,975.5	5.2	5.6	41.49	125.0	-162.5	70.6	60.9	9.70	7.280				
2,100.0	2,084.1	2,093.0	2,073.2	5.6	6.0	42.91	135.3	-180.8	71.5	61.1	10.42	6.861				
2,200.0	2,181.8	2,193.0	2,171.0	6.0	6.5	44.29	145.6	-199.0	72.4	61.2	11.17	6.486				
2,300.0	2,279.4	2,293.0	2,268.8	6.4	6.9	45.64	156.0	-217.2	73.4	61.4	11.93	6.150				
2,400.0	2,377.1	2,392.9	2,366.5	6.9	7.3	46.95	166.3	-235.4	74.4	61.7	12.72	5.848				
2,500.0	2,474.8	2,492.9	2,464.3	7.3	7.8	48.22	176.6	-253.7	75.4	61.9	13.53	5.577				
2,600.0	2,572.5	2,592.9	2,562.0	7.8	8.2	49.46	187.0	-271.9	76.5	62.2	14.35	5.332				
2,700.0	2,670.2	2,692.9	2,659.8	8.2	8.7	50.67	197.3	-290.1	77.6	62.4	15.19	5.111				
2,800.0	2,767.9	2,792.9	2,757.6	8.7	9.1	51.84	207.7	-308.3	78.8	62.7	16.04	4.911				
2,900.0	2,865.6	2,892.8	2,855.3	9.1	9.6	52.97	218.0	-326.6	80.0	63.1	16.91	4.730				
3,000.0	2,963.2	2,992.8	2,953.1	9.6	10.0	54.07	228.3	-344.8	81.2	63.4	17.78	4.565				
3,100.0	3,060.9	3,092.8	3,050.8	10.0	10.5	55.14	238.7	-363.0	82.4	63.7	18.67	4.414				
3,200.0	3,158.6	3,192.8	3,148.6	10.5	10.9	56.18	249.0	-381.2	83.7	64.1	19.57	4.277				
3,300.0	3,256.3	3,292.8	3,246.4	10.9	11.4	57.19	259.3	-399.5	85.0	64.5	20.47	4.151				
3,400.0	3,354.0	3,392.7	3,344.1	11.4	11.8	58.16	269.7	-417.7	86.3	64.9	21.38	4.036				
3,500.0	3,451.7	3,492.7	3,441.9	11.8	12.3	59.11	280.0	-435.9	87.6	65.3	22.30	3.930				
3,600.0	3,549.4	3,592.7	3,539.6	12.3	12.7	60.03	290.3	-454.1	89.0	65.8	23.23	3.832				
3,700.0	3,647.0	3,692.7	3,637.4	12.8	13.2	60.91	300.7	-472.4	90.4	66.2	24.16	3.742				
3,800.0	3,744.7	3,792.7	3,735.2	13.2	13.7	61.78	311.0	-490.6	91.8	66.7	25.09	3.659				
3,900.0	3,842.4	3,892.6	3,832.9	13.7	14.1	62.61	321.3	-508.8	93.2	67.2	26.03	3.582				
4,000.0	3,940.1	3,992.6	3,930.7	14.1	14.6	63.42	331.7	-527.0	94.7	67.7	26.98	3.510				
4,100.0	4,037.8	4,092.6	4,028.5	14.6	15.0	64.21	342.0	-545.3	96.2	68.2	27.92	3.444				
4,200.0	4,135.5	4,192.6	4,126.2	15.1	15.5	64.97	352.3	-563.5	97.6	68.8	28.87	3.382				
4,300.0	4,233.2	4,292.6	4,224.0	15.5	15.9	65.71	362.7	-581.7	99.2	69.3	29.82	3.325				
4,400.0	4,330.8	4,392.6	4,321.7	16.0	16.4	66.43	373.0	-599.9	100.7	69.9	30.78	3.271				
4,500.0	4,428.5	4,492.5	4,419.5	16.5	16.8	67.12	383.3	-618.2	102.2	70.5	31.73	3.221				
4,600.0	4,526.2	4,592.5	4,517.3	16.9	17.3	67.80	393.7	-636.4	103.8	71.1	32.69	3.174				
4,700.0	4,623.9	4,692.5	4,615.0	17.4	17.8	68.45	404.0	-654.6	105.3	71.7	33.65	3.130				
4,800.0	4,721.6	4,792.5	4,712.8	17.9	18.2	69.09	414.4	-672.8	106.9	72.3	34.61	3.089				
4,900.0	4,819.3	4,892.5	4,810.5	18.3	18.7	69.70	424.7	-691.1	108.5	72.9	35.57	3.050				

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design		Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)											Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor			
5,000.0	4,917.0	4,992.4	4,908.3	18.8	19.1	70.30	435.0	-709.3	110.1	73.6	36.53	3.014			
5,100.0	5,014.6	5,092.4	5,006.1	19.3	19.6	70.88	445.4	-727.5	111.7	74.2	37.49	2.980			
5,200.0	5,112.3	5,192.4	5,103.8	19.7	20.1	71.45	455.7	-745.7	113.3	74.9	38.45	2.947			
5,300.0	5,210.0	5,292.4	5,201.6	20.2	20.5	72.00	466.0	-764.0	115.0	75.5	39.41	2.917			
5,400.0	5,307.7	5,392.4	5,299.3	20.7	21.0	72.53	476.4	-782.2	116.6	76.2	40.37	2.888			
5,500.0	5,405.4	5,492.3	5,397.1	21.1	21.4	73.05	486.7	-800.4	118.3	76.9	41.33	2.861			
5,600.0	5,503.1	5,592.3	5,494.9	21.6	21.9	73.54	497.0	-818.6	119.9	77.6	42.28	2.836			
5,700.0	5,601.2	5,692.3	5,592.6	21.9	22.3	73.03	507.4	-836.9	122.3	79.3	42.97	2.845			
5,800.0	5,700.0	5,793.8	5,692.2	22.2	22.7	71.66	517.1	-854.0	125.1	81.7	43.42	2.881			
5,900.0	5,799.2	5,895.5	5,792.6	22.4	23.0	70.30	525.1	-868.2	127.7	83.9	43.72	2.920			
6,000.0	5,898.8	5,997.4	5,893.7	22.6	23.3	68.96	531.4	-879.2	130.0	86.1	43.92	2.960			
6,100.0	5,998.7	6,099.5	5,995.3	22.8	23.5	67.64	535.9	-887.1	132.1	88.0	44.03	3.000			
6,200.0	6,098.7	6,201.7	6,097.4	22.9	23.7	66.32	538.6	-891.9	133.9	89.9	44.05	3.040			
6,300.0	6,198.7	6,304.0	6,199.7	23.1	23.8	0.00	539.5	-893.5	134.8	100.8	34.03	3.962			
6,377.2	6,275.9	6,381.2	6,276.9	23.1	23.9	-90.34	539.5	-893.5	134.8	90.5	44.29	3.043			
6,400.0	6,298.7	6,404.0	6,299.7	23.2	23.9	-90.12	539.5	-893.5	134.8	90.4	44.40	3.036			
6,500.0	6,398.2	6,503.9	6,399.5	23.2	24.0	-93.74	539.5	-892.9	135.1	91.3	43.78	3.085			
6,600.0	6,495.6	6,605.1	6,500.2	23.1	24.0	-98.60	539.5	-882.1	136.3	93.8	42.57	3.203			
6,700.0	6,589.4	6,708.0	6,600.0	22.9	23.9	-103.23	539.5	-857.6	138.5	97.4	41.13	3.367			
6,800.0	6,677.8	6,812.6	6,697.2	22.7	23.7	-107.52	539.5	-819.2	141.4	101.8	39.59	3.572			
6,900.0	6,759.3	6,918.7	6,789.5	22.5	23.5	-111.36	539.5	-767.1	144.8	106.7	38.09	3.802			
7,000.0	6,832.6	7,026.4	6,874.9	22.3	23.2	-114.71	539.5	-701.6	148.5	111.7	36.79	4.035			
7,100.0	6,896.5	7,135.6	6,951.2	22.2	23.0	-117.53	539.5	-623.7	152.1	116.2	35.88	4.239			
7,200.0	6,949.7	7,246.0	7,016.3	22.3	22.9	-119.81	539.5	-534.6	155.4	119.9	35.55	4.372			
7,300.0	6,991.5	7,357.6	7,068.4	22.6	23.1	-121.54	539.5	-436.0	158.2	122.3	35.96	4.400			
7,400.0	7,021.1	7,470.0	7,105.8	23.2	23.5	-122.75	539.5	-330.1	160.3	123.1	37.19	4.310			
7,500.0	7,037.9	7,583.0	7,127.3	24.1	24.3	-123.42	539.5	-219.3	161.5	122.3	39.21	4.119			
7,600.0	7,041.8	7,694.9	7,132.3	25.3	25.5	-123.58	539.5	-107.6	161.8	119.9	41.85	3.866			
7,700.0	7,040.4	7,794.9	7,130.7	26.7	26.9	-123.54	539.5	-7.6	161.7	117.3	44.38	3.644			
7,800.0	7,039.0	7,894.9	7,129.1	28.4	28.5	-123.49	539.5	92.4	161.6	114.4	47.25	3.421			
7,900.0	7,037.5	7,994.9	7,127.6	30.2	30.3	-123.45	539.5	192.4	161.6	111.1	50.41	3.205			
8,000.0	7,036.1	8,094.9	7,126.0	32.2	32.3	-123.41	539.5	292.4	161.5	107.7	53.81	3.001			
8,100.0	7,034.7	8,194.9	7,124.4	34.3	34.4	-123.37	539.5	392.4	161.4	104.0	57.41	2.812			
8,200.0	7,033.2	8,294.9	7,122.9	36.5	36.6	-123.33	539.5	492.4	161.3	100.2	61.17	2.637			
8,300.0	7,031.8	8,394.9	7,121.3	38.8	38.9	-123.29	539.5	592.4	161.2	96.2	65.06	2.478			
8,400.0	7,030.4	8,494.9	7,119.7	41.2	41.2	-123.25	539.5	692.3	161.2	92.1	69.08	2.333			
8,500.0	7,028.9	8,594.9	7,118.2	43.6	43.6	-123.20	539.5	792.3	161.1	87.9	73.18	2.201			
8,600.0	7,027.5	8,694.9	7,116.6	46.0	46.1	-123.16	539.5	892.3	161.0	83.6	77.37	2.081			
8,700.0	7,026.1	8,794.9	7,115.0	48.5	48.5	-123.12	539.5	992.3	160.9	79.3	81.63	1.972			
8,800.0	7,024.6	8,894.9	7,113.4	51.0	51.1	-123.08	539.5	1,092.3	160.9	74.9	85.95	1.872			
8,900.0	7,023.2	8,994.9	7,111.9	53.6	53.6	-123.04	539.5	1,192.3	160.8	70.5	90.32	1.780			
9,000.0	7,021.8	9,094.9	7,110.3	56.2	56.2	-123.00	539.5	1,292.3	160.7	66.0	94.74	1.696			
9,100.0	7,020.4	9,194.9	7,108.7	58.8	58.8	-122.95	539.5	1,392.3	160.6	61.4	99.19	1.619			
9,200.0	7,018.9	9,294.9	7,107.2	61.4	61.4	-122.91	539.5	1,492.2	160.6	56.9	103.68	1.549			
9,300.0	7,017.5	9,394.9	7,105.6	64.0	64.0	-122.87	539.5	1,592.2	160.5	52.3	108.21	1.483 Level 3			
9,400.0	7,016.1	9,494.9	7,104.0	66.7	66.7	-122.83	539.5	1,692.2	160.4	47.7	112.76	1.423 Level 3			
9,500.0	7,014.6	9,594.9	7,102.4	69.3	69.3	-122.79	539.5	1,792.2	160.3	43.0	117.34	1.366 Level 3			
9,600.0	7,013.2	9,694.9	7,100.9	72.0	72.0	-122.75	539.5	1,892.2	160.3	38.3	121.94	1.314 Level 3			
9,700.0	7,011.8	9,794.9	7,099.3	74.7	74.7	-122.70	539.5	1,992.2	160.2	33.6	126.56	1.266 Level 3			
9,800.0	7,010.3	9,894.9	7,097.7	77.4	77.3	-122.66	539.5	2,092.2	160.1	28.9	131.20	1.220 Level 2			
9,900.0	7,008.9	9,994.9	7,096.2	80.1	80.0	-122.62	539.5	2,192.2	160.0	24.2	135.86	1.178 Level 2			

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-302 - Wellbore #1 - Plan #1 (8-22-14)												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
10,000.0	7,007.5	10,094.9	7,094.6	82.8	82.7	-122.58	539.5	2,292.1	160.0	19.4	140.53	1.138	Level 2
10,100.0	7,006.0	10,194.9	7,093.0	85.5	85.4	-122.53	539.5	2,392.1	159.9	14.7	145.22	1.101	Level 2
10,200.0	7,004.6	10,294.9	7,091.4	88.2	88.2	-122.49	539.5	2,492.1	159.8	9.9	149.93	1.066	Level 2
10,300.0	7,003.2	10,394.9	7,089.9	90.9	90.9	-122.45	539.5	2,592.1	159.7	5.1	154.64	1.033	Level 2
10,400.0	7,001.7	10,494.9	7,088.3	93.6	93.6	-122.41	539.5	2,692.1	159.7	0.3	159.37	1.002	Level 2
10,500.0	7,000.3	10,594.9	7,086.7	96.4	96.3	-122.37	539.5	2,792.1	159.6	-4.5	164.12	0.972	Level 1
10,600.0	6,998.9	10,694.9	7,085.2	99.1	99.1	-122.32	539.5	2,892.1	159.5	-9.4	168.87	0.945	Level 1
10,700.0	6,997.5	10,794.9	7,083.6	101.8	101.8	-122.28	539.5	2,992.1	159.4	-14.2	173.63	0.918	Level 1
10,800.0	6,996.0	10,894.9	7,082.0	104.6	104.5	-122.24	539.5	3,092.0	159.4	-19.0	178.41	0.893	Level 1
10,900.0	6,994.6	10,994.9	7,080.5	107.3	107.3	-122.20	539.5	3,192.0	159.3	-23.9	183.19	0.870	Level 1
11,000.0	6,993.2	11,094.9	7,078.9	110.1	110.0	-122.15	539.5	3,292.0	159.2	-28.8	187.98	0.847	Level 1
11,100.0	6,991.7	11,194.9	7,077.3	112.8	112.8	-122.11	539.5	3,392.0	159.1	-33.6	192.78	0.825	Level 1
11,200.0	6,990.3	11,294.9	7,075.7	115.6	115.5	-122.07	539.5	3,492.0	159.1	-38.5	197.59	0.805	Level 1
11,300.0	6,988.9	11,394.9	7,074.2	118.4	118.3	-122.03	539.5	3,592.0	159.0	-43.4	202.41	0.785	Level 1
11,400.0	6,987.4	11,494.9	7,072.6	121.1	121.1	-121.98	539.5	3,692.0	158.9	-48.3	207.24	0.767	Level 1
11,500.0	6,986.0	11,594.9	7,071.0	122.9	122.9	-121.94	539.5	3,792.0	158.8	-51.5	210.34	0.755	Level 1
11,500.4	6,986.0	11,595.3	7,071.0	122.9	122.9	-121.94	539.5	3,792.3	158.8	-51.5	210.35	0.755	Level 1, ES, SF

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-332 - Wellbore #1 - Plan #1 (8-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.0	0.0	1.0	1.0	0.0	0.0	-174.53	-174.53	-29.1	-2.8	29.3	29.3	0.00	N/A	
100.0	100.0	101.0	101.0	0.1	0.1	-174.53	-174.53	-29.1	-2.8	29.3	29.0	0.23	128.951	
200.0	200.0	201.0	201.0	0.3	0.3	-174.53	-174.53	-29.1	-2.8	29.3	28.6	0.68	43.269	
300.0	300.0	301.0	301.0	0.6	0.6	-174.53	-174.53	-29.1	-2.8	29.3	28.1	1.13	25.996	
400.0	400.0	401.0	401.0	0.8	0.8	-174.53	-174.53	-29.1	-2.8	29.3	27.7	1.58	18.579	
500.0	500.0	501.0	501.0	1.0	1.0	-174.53	-174.53	-29.1	-2.8	29.3	27.2	2.03	14.455	
600.0	600.0	601.0	601.0	1.2	1.2	-174.53	-174.53	-29.1	-2.8	29.3	26.8	2.47	11.829	
700.0	700.0	701.0	701.0	1.5	1.5	-174.53	-174.53	-29.1	-2.8	29.3	26.3	2.92	10.011	
800.0	800.0	801.0	801.0	1.7	1.7	-174.53	-174.53	-29.1	-2.8	29.3	25.9	3.37	8.677	
900.0	900.0	901.0	901.0	1.9	1.9	-174.53	-174.53	-29.1	-2.8	29.3	25.5	3.82	7.657	
1,000.0	1,000.0	1,001.0	1,001.0	2.1	2.1	-174.53	-174.53	-29.1	-2.8	29.3	25.0	4.27	6.851 CC, ES	
1,100.0	1,100.0	1,101.0	1,101.0	2.4	2.4	-112.05	-112.05	-29.1	-2.8	29.9	25.2	4.72	6.338	
1,200.0	1,199.8	1,200.8	1,200.8	2.6	2.6	-120.66	-120.66	-29.1	-2.8	32.2	27.1	5.15	6.251	
1,300.0	1,299.5	1,300.5	1,300.5	2.8	2.8	-132.11	-132.11	-29.1	-2.8	37.4	31.8	5.60	6.689	
1,400.0	1,398.7	1,399.7	1,399.7	3.0	3.0	-143.18	-143.18	-29.1	-2.8	46.5	40.5	6.03	7.709	
1,500.0	1,497.5	1,498.5	1,498.5	3.3	3.3	-152.05	-152.05	-29.1	-2.8	59.8	53.3	6.46	9.254	
1,600.0	1,595.6	1,598.6	1,598.6	3.6	3.5	-157.81	-157.81	-29.0	-4.5	76.0	69.1	6.88	11.051	
1,700.0	1,693.3	1,699.4	1,699.3	4.0	3.7	-160.68	-160.68	-28.7	-9.7	92.1	84.8	7.31	12.610	
1,800.0	1,791.0	1,801.2	1,800.6	4.4	3.9	-161.52	-161.52	-28.1	-18.6	105.7	98.0	7.77	13.617	
1,900.0	1,888.7	1,903.7	1,902.4	4.8	4.1	-161.05	-161.05	-27.3	-31.1	116.6	108.4	8.25	14.129	
2,000.0	1,986.4	2,006.6	2,004.0	5.2	4.4	-159.57	-159.57	-26.2	-47.4	124.8	116.0	8.78	14.212	
2,100.0	2,084.1	2,109.8	2,105.2	5.6	4.7	-157.19	-157.19	-24.9	-67.3	130.3	121.0	9.36	13.930	
2,200.0	2,181.8	2,209.9	2,203.0	6.0	5.0	-154.39	-154.39	-23.5	-88.9	134.5	124.5	9.99	13.472	
2,300.0	2,279.4	2,309.6	2,300.3	6.4	5.4	-151.77	-151.77	-22.1	-110.3	139.0	128.4	10.66	13.045	
2,400.0	2,377.1	2,409.3	2,397.7	6.9	5.8	-149.32	-149.32	-20.7	-131.8	143.8	132.4	11.36	12.649	
2,500.0	2,474.8	2,509.0	2,495.0	7.3	6.1	-147.02	-147.02	-19.3	-153.3	148.7	136.6	12.11	12.284	
2,600.0	2,572.5	2,608.7	2,592.4	7.8	6.5	-144.88	-144.88	-17.9	-174.8	154.0	141.1	12.88	11.950	
2,700.0	2,670.2	2,708.5	2,689.7	8.2	7.0	-142.88	-142.88	-16.5	-196.3	159.4	145.7	13.69	11.646	
2,800.0	2,767.9	2,808.2	2,787.1	8.7	7.4	-141.01	-141.01	-15.1	-217.8	165.0	150.5	14.51	11.370	
2,900.0	2,865.6	2,907.9	2,884.4	9.1	7.8	-139.27	-139.27	-13.7	-239.2	170.7	155.4	15.36	11.119	
3,000.0	2,963.2	3,007.6	2,981.8	9.6	8.2	-137.64	-137.64	-12.3	-260.7	176.7	160.4	16.22	10.893	
3,100.0	3,060.9	3,107.3	3,079.1	10.0	8.6	-136.12	-136.12	-10.9	-282.2	182.7	165.6	17.09	10.688	
3,200.0	3,158.6	3,207.0	3,176.5	10.5	9.1	-134.70	-134.70	-9.5	-303.7	188.9	170.9	17.98	10.503	
3,300.0	3,256.3	3,306.7	3,273.8	10.9	9.5	-133.37	-133.37	-8.1	-325.2	195.1	176.3	18.88	10.336	
3,400.0	3,354.0	3,406.4	3,371.2	11.4	10.0	-132.12	-132.12	-6.7	-346.7	201.5	181.7	19.79	10.184	
3,500.0	3,451.7	3,506.1	3,468.5	11.8	10.4	-130.95	-130.95	-5.3	-368.2	208.0	187.3	20.70	10.047	
3,600.0	3,549.4	3,605.8	3,565.9	12.3	10.9	-129.85	-129.85	-3.9	-389.6	214.5	192.9	21.62	9.922	
3,700.0	3,647.0	3,705.5	3,663.2	12.8	11.3	-128.81	-128.81	-2.5	-411.1	221.1	198.6	22.54	9.809	
3,800.0	3,744.7	3,805.2	3,760.6	13.2	11.8	-127.83	-127.83	-1.1	-432.6	227.8	204.3	23.47	9.706	
3,900.0	3,842.4	3,904.9	3,858.0	13.7	12.2	-126.91	-126.91	0.3	-454.1	234.6	210.2	24.40	9.612	
4,000.0	3,940.1	4,004.6	3,955.3	14.1	12.7	-126.05	-126.05	1.7	-475.6	241.4	216.0	25.34	9.526	
4,100.0	4,037.8	4,104.3	4,052.7	14.6	13.1	-125.23	-125.23	3.1	-497.1	248.2	221.9	26.27	9.447	
4,200.0	4,135.5	4,204.0	4,150.0	15.1	13.6	-124.45	-124.45	4.5	-518.5	255.1	227.9	27.21	9.375	
4,300.0	4,233.2	4,303.7	4,247.4	15.5	14.1	-123.72	-123.72	5.9	-540.0	262.1	233.9	28.15	9.308	
4,400.0	4,330.8	4,403.4	4,344.7	16.0	14.5	-123.02	-123.02	7.3	-561.5	269.1	240.0	29.10	9.247	
4,500.0	4,428.5	4,503.1	4,442.1	16.5	15.0	-122.36	-122.36	8.7	-583.0	276.1	246.0	30.04	9.191	
4,600.0	4,526.2	4,602.8	4,539.4	16.9	15.5	-121.73	-121.73	10.1	-604.5	283.1	252.2	30.98	9.139	
4,700.0	4,623.9	4,702.5	4,636.8	17.4	15.9	-121.13	-121.13	11.5	-626.0	290.2	258.3	31.93	9.091	
4,800.0	4,721.6	4,802.2	4,734.1	17.9	16.4	-120.56	-120.56	12.9	-647.5	297.4	264.5	32.87	9.046	
4,900.0	4,819.3	4,901.9	4,831.5	18.3	16.9	-120.02	-120.02	14.3	-668.9	304.5	270.7	33.82	9.005	
5,000.0	4,917.0	5,001.6	4,928.8	18.8	17.3	-119.50	-119.50	15.7	-690.4	311.7	276.9	34.76	8.967	

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

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-332 - Wellbore #1 - Plan #1 (8-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Semi Major Axis	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,100.0	5,014.6	5,101.3	5,026.2	19.3	17.8	-119.00		17.1	-711.9	318.9	283.2	35.71	8.931	
5,200.0	5,112.3	5,201.0	5,123.5	19.7	18.3	-118.53		18.5	-733.4	326.1	289.5	36.65	8.897	
5,300.0	5,210.0	5,300.7	5,220.9	20.2	18.7	-118.08		19.9	-754.9	333.4	295.8	37.60	8.866	
5,400.0	5,307.7	5,400.4	5,318.2	20.7	19.2	-117.65		21.3	-776.4	340.6	302.1	38.55	8.837	
5,500.0	5,405.4	5,500.1	5,415.6	21.1	19.7	-117.23		22.7	-797.8	347.9	308.4	39.49	8.810	
5,600.0	5,503.1	5,599.9	5,512.9	21.6	20.1	-116.85		24.1	-819.3	355.2	314.8	40.43	8.785	
5,700.0	5,601.2	5,699.2	5,609.9	21.9	20.6	-116.28		25.5	-840.6	361.5	320.2	41.26	8.761	
5,800.0	5,700.0	5,797.7	5,706.7	22.2	20.9	-115.63		26.7	-859.2	366.6	324.7	41.93	8.744	
5,900.0	5,799.2	5,896.5	5,804.2	22.4	21.2	-115.02		27.7	-874.5	370.5	328.0	42.51	8.717	
6,000.0	5,898.8	5,995.4	5,902.5	22.6	21.4	-114.44		28.5	-886.4	373.3	330.3	43.01	8.681	
6,100.0	5,998.7	6,094.5	6,001.2	22.8	21.6	-113.88		29.0	-895.0	375.0	331.5	43.42	8.636	
6,200.0	6,098.7	6,193.8	6,100.3	22.9	21.8	-113.35		29.3	-900.2	375.4	331.7	43.75	8.581	
6,300.0	6,198.7	6,293.2	6,199.7	23.1	21.9	-112.72		29.5	-901.9	375.3	331.2	44.19	8.495	
6,358.0	6,256.7	6,351.2	6,257.7	23.1	22.0	91.35		29.5	-901.9	375.3	331.0	44.29	8.474	
6,400.0	6,298.7	6,393.2	6,299.7	23.2	22.1	91.32		29.5	-901.9	375.3	331.1	44.54	8.433	
6,500.0	6,398.2	6,493.5	6,400.0	23.2	22.2	92.58		29.5	-901.0	375.6	331.1	44.54	8.433	
6,600.0	6,495.6	6,595.9	6,501.7	23.1	22.2	94.21		29.5	-889.2	376.3	331.7	44.56	8.444	
6,700.0	6,589.4	6,689.9	6,602.3	22.9	22.1	95.78		29.5	-863.5	377.2	332.8	44.33	8.508	
6,800.0	6,677.8	6,805.4	6,699.9	22.7	21.9	97.25		29.5	-823.6	378.3	334.4	43.92	8.614	
6,900.0	6,759.3	6,912.3	6,792.3	22.5	21.6	98.59		29.5	-769.9	379.5	336.1	43.42	8.742	
7,000.0	6,832.6	7,020.7	6,877.3	22.3	21.4	99.78		29.5	-702.9	380.8	337.8	42.97	8.862	
7,100.0	6,896.5	7,130.2	6,952.8	22.2	21.4	100.79		29.5	-623.7	382.0	339.3	42.76	8.935	
7,200.0	6,949.7	7,240.9	7,016.7	22.3	21.5	101.60		29.5	-533.5	383.1	340.1	42.95	8.919	
7,300.0	6,991.5	7,352.3	7,067.3	22.6	22.0	102.19		29.5	-434.2	383.9	340.2	43.72	8.781	
7,400.0	7,021.1	7,464.4	7,103.0	23.2	22.8	102.55		29.5	-328.1	384.4	339.3	45.16	8.512	
7,500.0	7,037.9	7,576.8	7,122.9	24.1	24.0	102.68		29.5	-217.6	384.6	337.4	47.26	8.138	
7,600.0	7,041.8	7,687.1	7,126.6	25.3	25.4	102.59		29.5	-107.5	384.5	334.6	49.89	7.707	
7,700.0	7,040.4	7,787.1	7,124.9	26.7	27.0	102.54		29.5	-7.5	384.4	331.5	52.87	7.271	
7,800.0	7,039.0	7,887.1	7,123.1	28.4	28.7	102.50		29.5	92.5	384.3	328.1	56.22	6.837	
7,900.0	7,037.5	7,987.1	7,121.3	30.2	30.6	102.45		29.5	192.5	384.3	324.4	59.89	6.416	
8,000.0	7,036.1	8,087.1	7,119.6	32.2	32.6	102.40		29.5	292.4	384.2	320.4	63.82	6.020	
8,100.0	7,034.7	8,187.1	7,117.8	34.3	34.7	102.35		29.5	392.4	384.1	316.2	67.98	5.651	
8,200.0	7,033.2	8,287.1	7,116.1	36.5	36.9	102.30		29.5	492.4	384.1	311.7	72.31	5.311	
8,300.0	7,031.8	8,387.1	7,114.3	38.8	39.2	102.25		29.5	592.4	384.0	307.2	76.80	5.000	
8,400.0	7,030.4	8,487.1	7,112.5	41.2	41.6	102.21		29.5	692.4	383.9	302.5	81.41	4.716	
8,500.0	7,028.9	8,587.1	7,110.8	43.6	44.0	102.16		29.5	792.4	383.8	297.7	86.13	4.456	
8,600.0	7,027.5	8,687.1	7,109.0	46.0	46.4	102.11		29.5	892.4	383.8	292.8	90.94	4.220	
8,700.0	7,026.1	8,787.1	7,107.2	48.5	48.9	102.06		29.5	992.3	383.7	287.9	95.83	4.004	
8,800.0	7,024.6	8,887.1	7,105.5	51.0	51.4	102.01		29.5	1,092.3	383.6	282.9	100.79	3.806	
8,900.0	7,023.2	8,987.1	7,103.7	53.6	54.0	101.96		29.5	1,192.3	383.6	277.8	105.80	3.626	
9,000.0	7,021.8	9,087.1	7,102.0	56.2	56.6	101.92		29.5	1,292.3	383.5	272.6	110.86	3.459	
9,100.0	7,020.4	9,187.1	7,100.2	58.8	59.1	101.87		29.5	1,392.3	383.4	267.5	115.96	3.307	
9,200.0	7,018.9	9,287.1	7,098.4	61.4	61.8	101.82		29.5	1,492.3	383.4	262.3	121.10	3.166	
9,300.0	7,017.5	9,387.1	7,096.7	64.0	64.4	101.77		29.5	1,592.2	383.3	257.0	126.28	3.035	
9,400.0	7,016.1	9,487.1	7,094.9	66.7	67.0	101.72		29.5	1,692.2	383.2	251.7	131.49	2.915	
9,500.0	7,014.6	9,587.1	7,093.1	69.3	69.7	101.67		29.5	1,792.2	383.2	246.4	136.72	2.803	
9,600.0	7,013.2	9,687.1	7,091.4	72.0	72.4	101.62		29.5	1,892.2	383.1	241.1	141.98	2.698	
9,700.0	7,011.8	9,787.1	7,089.6	74.7	75.0	101.58		29.5	1,992.2	383.0	235.8	147.25	2.601	
9,800.0	7,010.3	9,887.1	7,087.9	77.4	77.7	101.53		29.5	2,092.2	383.0	230.4	152.55	2.510	
9,900.0	7,008.9	9,987.1	7,086.1	80.1	80.4	101.48		29.5	2,192.1	382.9	225.0	157.87	2.425	
10,000.0	7,007.5	10,087.1	7,084.3	82.8	83.1	101.43		29.5	2,292.1	382.8	219.6	163.20	2.346	

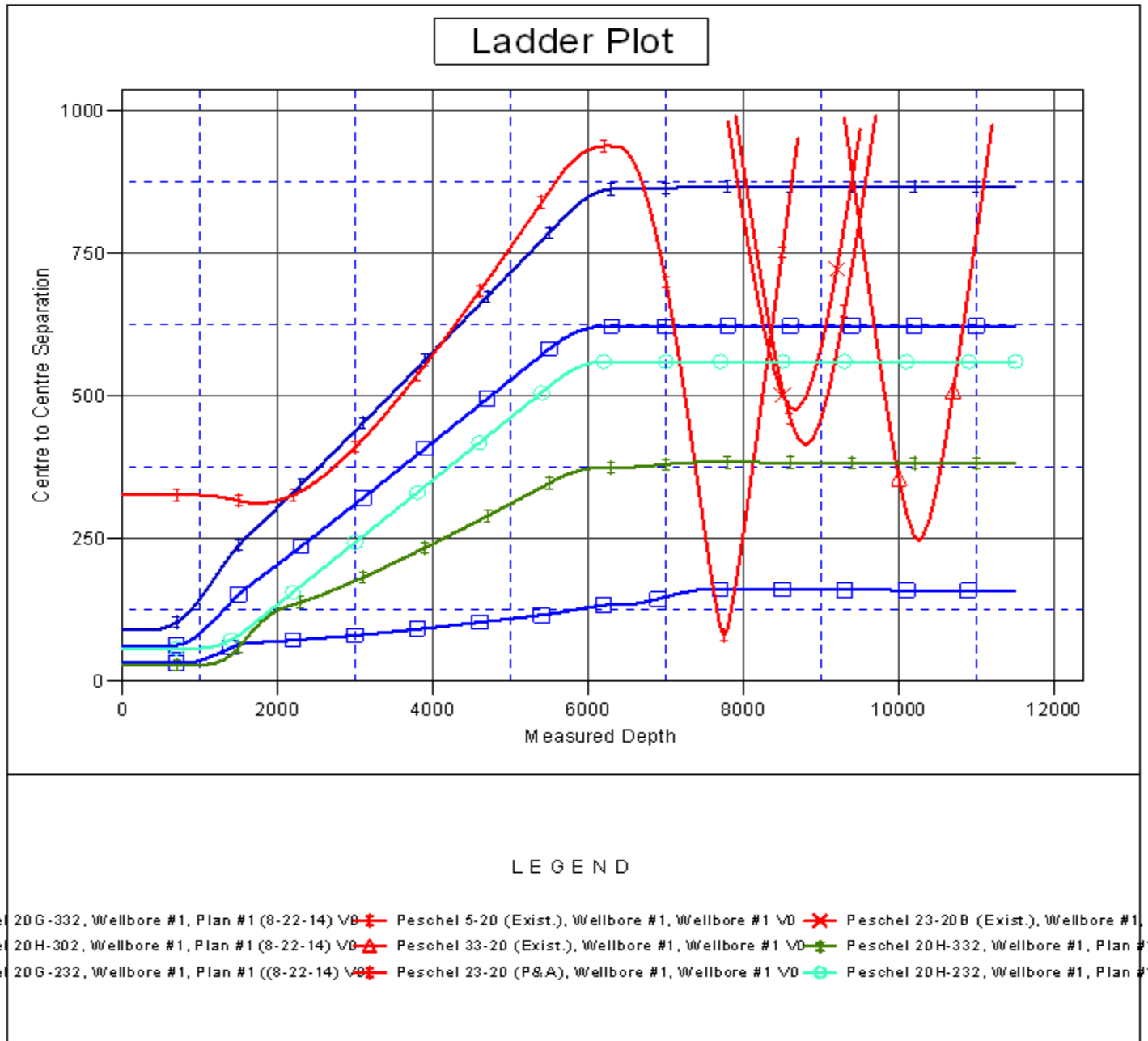
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20H-332 - Wellbore #1 - Plan #1 (8-22-14)													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
10,100.0	7,006.0	10,187.1	7,082.6	85.5	85.8	101.38	29.5	2,392.1	382.8	214.2	168.55	2.271		
10,200.0	7,004.6	10,287.0	7,080.8	88.2	88.6	101.33	29.5	2,492.1	382.7	208.8	173.90	2.201		
10,300.0	7,003.2	10,387.0	7,079.0	90.9	91.3	101.28	29.5	2,592.1	382.6	203.4	179.28	2.134		
10,400.0	7,001.7	10,487.0	7,077.3	93.6	94.0	101.24	29.5	2,692.1	382.6	197.9	184.66	2.072		
10,500.0	7,000.3	10,587.0	7,075.5	96.4	96.7	101.19	29.5	2,792.0	382.5	192.4	190.06	2.013		
10,600.0	6,998.9	10,687.0	7,073.8	99.1	99.5	101.14	29.5	2,892.0	382.4	187.0	195.46	1.957		
10,700.0	6,997.5	10,787.0	7,072.0	101.8	102.2	101.09	29.5	2,992.0	382.4	181.5	200.87	1.904		
10,800.0	6,996.0	10,887.0	7,070.2	104.6	105.0	101.04	29.5	3,092.0	382.3	176.0	206.30	1.853		
10,900.0	6,994.6	10,987.0	7,068.5	107.3	107.7	100.99	29.5	3,192.0	382.2	170.5	211.73	1.805		
11,000.0	6,993.2	11,087.0	7,066.7	110.1	110.5	100.94	29.5	3,292.0	382.2	165.0	217.16	1.760		
11,100.0	6,991.7	11,187.0	7,064.9	112.8	113.2	100.89	29.5	3,391.9	382.1	159.5	222.61	1.717		
11,200.0	6,990.3	11,287.0	7,063.2	115.6	116.0	100.85	29.5	3,491.9	382.1	154.0	228.06	1.675		
11,300.0	6,988.9	11,387.0	7,061.4	118.4	118.7	100.80	29.5	3,591.9	382.0	148.5	233.52	1.636		
11,400.0	6,987.4	11,487.0	7,059.7	121.1	121.5	100.75	29.5	3,691.9	381.9	143.0	238.98	1.598		
11,471.4	6,986.4	11,558.4	7,058.4	122.4	123.5	100.71	29.5	3,763.3	381.9	139.7	242.16	1.577		
11,500.0	6,986.0	11,580.7	7,058.0	122.9	124.1	100.70	29.5	3,785.5	381.9	138.7	243.27	1.570		
11,500.4	6,986.0	11,580.7	7,058.0	122.9	124.1	100.70	29.5	3,785.5	381.9	138.7	243.27	1.570 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
Reference Design:	Plan #1 (8-22-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4816.0ft (Original Well Elev) Coordinates are relative to: Peschel 20H-202
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.52°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20H-202
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4816.0ft (Original Well Elev)
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4816.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20H-202	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	Landmark
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