

PETROLEUM DEVELOPMENT CORP Weld County CO

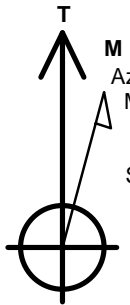
Well Name: **Peschel 20I-402**

Surface Location: Peschel 4N65W20B Pad Sec.20-T4N-R65W
 North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone
 Ground Elevation: 4802.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1350605.00	3225067.65	40.293000	-104.693150	
RKB - 15' WELL @ 4817.0ft (RKB - 15')						

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 860'FSL & 950'FWL	1.0	0.0	0.0	Point
BHL 75'FSL & 500'FEL	7194.0	-772.0	3774.5	Point



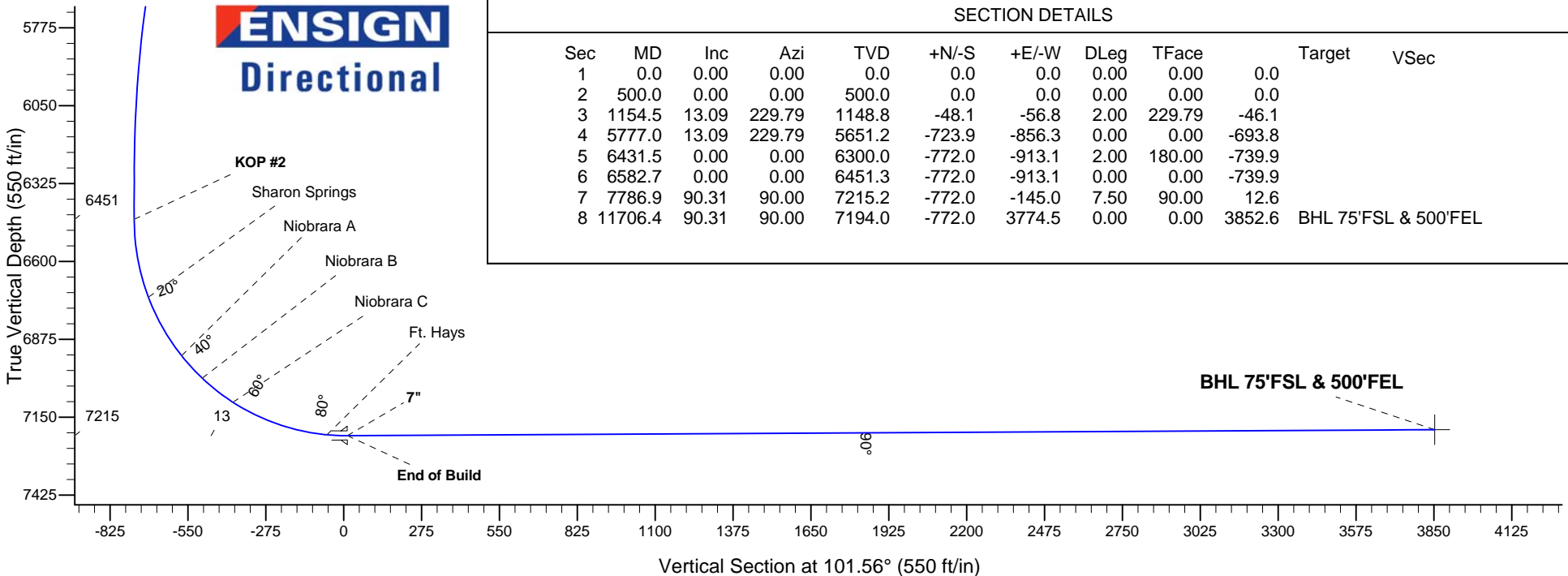
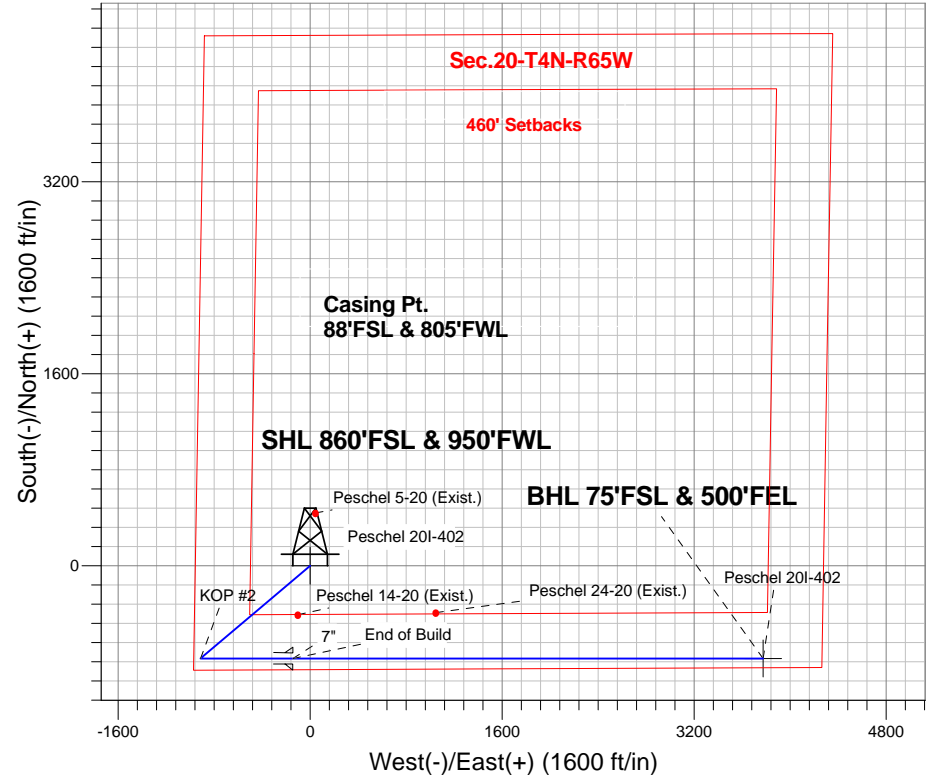
Azimuths to True North
 Magnetic North: 8.39°

Magnetic Field
 Strength: 52745.8snT
 Dip Angle: 66.87°
 Date: 8/27/2014
 Model: IGRF2010

ANNOTATIONS

TVD	MD	Annotation
500.0	500.0	KOP #1
6451.3	6582.7	KOP #2
7215.2	7786.9	End of Build

Peschel 4N65W20B Pad Sec.20-T4N-R65W
 Peschel 20I-402
 Plan #1 (8-25-14)
 7:01, August 29 2014





PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.20-T4N-R65W

Peschel 4N65W20B Pad Sec.20-T4N-R65W

Peschel 20I-402

Wellbore #1

Plan: Plan #1 (8-25-14)

Standard Planning Report

29 August, 2014

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20I-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20I-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

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			Latitude:			40.293650		
From:			Lat/Long			Easting:			3,225,068.28 ft			Longitude:			-104.693140		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.52 °		

Well	Peschel 20I-402					
Well Position	+N/-S	-236.8 ft	Northing:	1,350,605.00 ft	Latitude:	40.293000
	+E/-W	-2.8 ft	Easting:	3,225,067.65 ft	Longitude:	-104.693150
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,802.0 ft

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 (8-25-14)			
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	101.56

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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,154.5	13.09	229.79	1,148.8	-48.1	-56.8	2.00	2.00	0.00	229.79	
5,777.0	13.09	229.79	5,651.2	-723.9	-856.3	0.00	0.00	0.00	0.00	
6,431.5	0.00	0.00	6,300.0	-772.0	-913.1	2.00	-2.00	0.00	180.00	
6,582.7	0.00	0.00	6,451.3	-772.0	-913.1	0.00	0.00	0.00	0.00	
7,786.9	90.31	90.00	7,215.2	-772.0	-145.0	7.50	7.50	0.00	90.00	
11,706.4	90.31	90.00	7,194.0	-772.0	3,774.5	0.00	0.00	0.00	0.00	BHL 75'FSL & 500'I

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20I-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20I-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

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
KOP #1									
600.0	2.00	229.79	600.0	-1.1	-1.3	-1.1	2.00	2.00	0.00
700.0	4.00	229.79	699.8	-4.5	-5.3	-4.3	2.00	2.00	0.00
800.0	6.00	229.79	799.5	-10.1	-12.0	-9.7	2.00	2.00	0.00
900.0	8.00	229.79	898.7	-18.0	-21.3	-17.3	2.00	2.00	0.00
1,000.0	10.00	229.79	997.5	-28.1	-33.2	-26.9	2.00	2.00	0.00
1,100.0	12.00	229.79	1,095.6	-40.4	-47.8	-38.7	2.00	2.00	0.00
1,154.5	13.09	229.79	1,148.8	-48.1	-56.8	-46.1	2.00	2.00	0.00
1,200.0	13.09	229.79	1,193.1	-54.7	-64.7	-52.4	0.00	0.00	0.00
1,300.0	13.09	229.79	1,290.5	-69.3	-82.0	-66.5	0.00	0.00	0.00
1,400.0	13.09	229.79	1,387.9	-84.0	-99.3	-80.5	0.00	0.00	0.00
1,500.0	13.09	229.79	1,485.3	-98.6	-116.6	-94.5	0.00	0.00	0.00
1,600.0	13.09	229.79	1,582.7	-113.2	-133.9	-108.5	0.00	0.00	0.00
1,700.0	13.09	229.79	1,680.1	-127.8	-151.2	-122.5	0.00	0.00	0.00
1,800.0	13.09	229.79	1,777.6	-142.4	-168.5	-136.5	0.00	0.00	0.00
1,900.0	13.09	229.79	1,875.0	-157.1	-185.8	-150.5	0.00	0.00	0.00
2,000.0	13.09	229.79	1,972.4	-171.7	-203.1	-164.5	0.00	0.00	0.00
2,100.0	13.09	229.79	2,069.8	-186.3	-220.4	-178.6	0.00	0.00	0.00
2,200.0	13.09	229.79	2,167.2	-200.9	-237.7	-192.6	0.00	0.00	0.00
2,300.0	13.09	229.79	2,264.6	-215.6	-254.9	-206.6	0.00	0.00	0.00
2,400.0	13.09	229.79	2,362.0	-230.2	-272.2	-220.6	0.00	0.00	0.00
2,500.0	13.09	229.79	2,459.4	-244.8	-289.5	-234.6	0.00	0.00	0.00
2,600.0	13.09	229.79	2,556.8	-259.4	-306.8	-248.6	0.00	0.00	0.00
2,700.0	13.09	229.79	2,654.2	-274.0	-324.1	-262.6	0.00	0.00	0.00
2,800.0	13.09	229.79	2,751.6	-288.7	-341.4	-276.6	0.00	0.00	0.00
2,900.0	13.09	229.79	2,849.0	-303.3	-358.7	-290.7	0.00	0.00	0.00
3,000.0	13.09	229.79	2,946.4	-317.9	-376.0	-304.7	0.00	0.00	0.00
3,100.0	13.09	229.79	3,043.8	-332.5	-393.3	-318.7	0.00	0.00	0.00
3,200.0	13.09	229.79	3,141.2	-347.1	-410.6	-332.7	0.00	0.00	0.00
3,300.0	13.09	229.79	3,238.6	-361.8	-427.9	-346.7	0.00	0.00	0.00
3,400.0	13.09	229.79	3,336.0	-376.4	-445.2	-360.7	0.00	0.00	0.00
3,500.0	13.09	229.79	3,433.4	-391.0	-462.5	-374.7	0.00	0.00	0.00
3,600.0	13.09	229.79	3,530.8	-405.6	-479.8	-388.8	0.00	0.00	0.00
3,700.0	13.09	229.79	3,628.2	-420.3	-497.1	-402.8	0.00	0.00	0.00
3,800.0	13.09	229.79	3,725.6	-434.9	-514.4	-416.8	0.00	0.00	0.00
3,814.8	13.09	229.79	3,740.0	-437.0	-516.9	-418.9	0.00	0.00	0.00
Parkman									
3,900.0	13.09	229.79	3,823.0	-449.5	-531.7	-430.8	0.00	0.00	0.00
4,000.0	13.09	229.79	3,920.4	-464.1	-548.9	-444.8	0.00	0.00	0.00
4,100.0	13.09	229.79	4,017.8	-478.7	-566.2	-458.8	0.00	0.00	0.00
4,200.0	13.09	229.79	4,115.2	-493.4	-583.5	-472.8	0.00	0.00	0.00
4,300.0	13.09	229.79	4,212.6	-508.0	-600.8	-486.8	0.00	0.00	0.00
4,400.0	13.09	229.79	4,310.0	-522.6	-618.1	-500.9	0.00	0.00	0.00
4,466.7	13.09	229.79	4,375.0	-532.4	-629.7	-510.2	0.00	0.00	0.00
Sussex									
4,500.0	13.09	229.79	4,407.4	-537.2	-635.4	-514.9	0.00	0.00	0.00
4,600.0	13.09	229.79	4,504.8	-551.8	-652.7	-528.9	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20I-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20I-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

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	13.09	229.79	4,602.2	-566.5	-670.0	-542.9	0.00	0.00	0.00
4,800.0	13.09	229.79	4,699.6	-581.1	-687.3	-556.9	0.00	0.00	0.00
4,900.0	13.09	229.79	4,797.0	-595.7	-704.6	-570.9	0.00	0.00	0.00
5,000.0	13.09	229.79	4,894.4	-610.3	-721.9	-584.9	0.00	0.00	0.00
5,100.0	13.09	229.79	4,991.8	-625.0	-739.2	-599.0	0.00	0.00	0.00
5,200.0	13.09	229.79	5,089.2	-639.6	-756.5	-613.0	0.00	0.00	0.00
5,300.0	13.09	229.79	5,186.6	-654.2	-773.8	-627.0	0.00	0.00	0.00
5,313.7	13.09	229.79	5,200.0	-656.2	-776.1	-628.9	0.00	0.00	0.00
Shannon									
5,400.0	13.09	229.79	5,284.0	-668.8	-791.1	-641.0	0.00	0.00	0.00
5,500.0	13.09	229.79	5,381.4	-683.4	-808.4	-655.0	0.00	0.00	0.00
5,600.0	13.09	229.79	5,478.8	-698.1	-825.7	-669.0	0.00	0.00	0.00
5,700.0	13.09	229.79	5,576.2	-712.7	-842.9	-683.0	0.00	0.00	0.00
5,777.0	13.09	229.79	5,651.2	-723.9	-856.3	-693.8	0.00	0.00	0.00
5,800.0	12.63	229.79	5,673.6	-727.3	-860.2	-697.0	2.00	-2.00	0.00
5,900.0	10.63	229.79	5,771.6	-740.3	-875.6	-709.5	2.00	-2.00	0.00
6,000.0	8.63	229.79	5,870.2	-751.1	-888.3	-719.8	2.00	-2.00	0.00
6,100.0	6.63	229.79	5,969.3	-759.6	-898.5	-728.0	2.00	-2.00	0.00
6,200.0	4.63	229.79	6,068.8	-766.0	-906.0	-734.1	2.00	-2.00	0.00
6,300.0	2.63	229.79	6,168.6	-770.1	-910.8	-738.0	2.00	-2.00	0.00
6,400.0	0.63	229.79	6,268.5	-771.9	-913.0	-739.8	2.00	-2.00	0.00
6,431.5	0.00	0.00	6,300.0	-772.0	-913.1	-739.9	2.00	-2.00	0.00
6,500.0	0.00	0.00	6,368.5	-772.0	-913.1	-739.9	0.00	0.00	0.00
6,582.7	0.00	0.00	6,451.2	-772.0	-913.1	-739.9	0.00	0.00	0.00
KOP #2									
6,600.0	1.30	90.00	6,468.5	-772.0	-912.9	-739.7	7.49	7.49	0.00
6,700.0	8.80	90.00	6,568.1	-772.0	-904.1	-731.1	7.50	7.50	0.00
6,800.0	16.30	90.00	6,665.6	-772.0	-882.4	-709.8	7.50	7.50	0.00
6,863.8	21.08	90.00	6,726.0	-772.0	-862.0	-689.8	7.50	7.50	0.00
Sharon Springs									
6,900.0	23.80	90.00	6,759.5	-772.0	-848.2	-676.3	7.50	7.50	0.00
7,000.0	31.30	90.00	6,848.1	-772.0	-801.9	-631.0	7.50	7.50	0.00
7,100.0	38.80	90.00	6,929.9	-772.0	-744.6	-574.8	7.50	7.50	0.00
7,104.0	39.09	90.00	6,933.0	-772.0	-742.1	-572.3	7.50	7.50	0.00
Niobrara A									
7,200.0	46.30	90.00	7,003.5	-772.0	-677.0	-508.6	7.50	7.50	0.00
7,212.4	47.22	90.00	7,012.0	-772.0	-668.0	-499.7	7.50	7.50	0.00
Niobrara B									
7,300.0	53.80	90.00	7,067.7	-772.0	-600.4	-433.5	7.50	7.50	0.00
7,352.1	57.70	90.00	7,097.0	-772.0	-557.4	-391.4	7.50	7.50	0.00
Niobrara C									
7,400.0	61.30	90.00	7,121.3	-772.0	-516.1	-350.9	7.50	7.50	0.00
7,500.0	68.80	90.00	7,163.5	-772.0	-425.5	-262.1	7.50	7.50	0.00
7,600.0	76.30	90.00	7,193.5	-772.0	-330.1	-168.7	7.50	7.50	0.00
7,700.0	83.80	90.00	7,210.7	-772.0	-231.7	-72.3	7.50	7.50	0.00
7,712.6	84.74	90.00	7,212.0	-772.0	-219.2	-60.1	7.50	7.50	0.00
Ft. Hays									
7,786.9	90.31	90.00	7,215.2	-772.0	-145.0	12.7	7.50	7.50	0.00
End of Build - 7"									
7,800.0	90.31	90.00	7,215.1	-772.0	-131.9	25.5	0.00	0.00	0.00
7,900.0	90.31	90.00	7,214.6	-772.0	-31.9	123.5	0.00	0.00	0.00
8,000.0	90.31	90.00	7,214.1	-772.0	68.1	221.4	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20I-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20I-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

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)
8,100.0	90.31	90.00	7,213.5	-772.0	168.1	319.4	0.00	0.00	0.00
8,200.0	90.31	90.00	7,213.0	-772.0	268.1	417.4	0.00	0.00	0.00
8,300.0	90.31	90.00	7,212.4	-772.0	368.1	515.3	0.00	0.00	0.00
8,400.0	90.31	90.00	7,211.9	-772.0	468.1	613.3	0.00	0.00	0.00
8,500.0	90.31	90.00	7,211.3	-772.0	568.1	711.3	0.00	0.00	0.00
8,600.0	90.31	90.00	7,210.8	-772.0	668.1	809.3	0.00	0.00	0.00
8,700.0	90.31	90.00	7,210.3	-772.0	768.1	907.2	0.00	0.00	0.00
8,800.0	90.31	90.00	7,209.7	-772.0	868.1	1,005.2	0.00	0.00	0.00
8,900.0	90.31	90.00	7,209.2	-772.0	968.1	1,103.2	0.00	0.00	0.00
9,000.0	90.31	90.00	7,208.6	-772.0	1,068.1	1,201.1	0.00	0.00	0.00
9,100.0	90.31	90.00	7,208.1	-772.0	1,168.1	1,299.1	0.00	0.00	0.00
9,200.0	90.31	90.00	7,207.6	-772.0	1,268.1	1,397.1	0.00	0.00	0.00
9,300.0	90.31	90.00	7,207.0	-772.0	1,368.1	1,495.0	0.00	0.00	0.00
9,400.0	90.31	90.00	7,206.5	-772.0	1,468.1	1,593.0	0.00	0.00	0.00
9,500.0	90.31	90.00	7,205.9	-772.0	1,568.1	1,691.0	0.00	0.00	0.00
9,600.0	90.31	90.00	7,205.4	-772.0	1,668.1	1,789.0	0.00	0.00	0.00
9,700.0	90.31	90.00	7,204.9	-772.0	1,768.1	1,886.9	0.00	0.00	0.00
9,800.0	90.31	90.00	7,204.3	-772.0	1,868.1	1,984.9	0.00	0.00	0.00
9,900.0	90.31	90.00	7,203.8	-772.0	1,968.1	2,082.9	0.00	0.00	0.00
10,000.0	90.31	90.00	7,203.2	-772.0	2,068.1	2,180.8	0.00	0.00	0.00
10,100.0	90.31	90.00	7,202.7	-772.0	2,168.1	2,278.8	0.00	0.00	0.00
10,200.0	90.31	90.00	7,202.2	-772.0	2,268.1	2,376.8	0.00	0.00	0.00
10,300.0	90.31	90.00	7,201.6	-772.0	2,368.1	2,474.7	0.00	0.00	0.00
10,400.0	90.31	90.00	7,201.1	-772.0	2,468.1	2,572.7	0.00	0.00	0.00
10,500.0	90.31	90.00	7,200.5	-772.0	2,568.1	2,670.7	0.00	0.00	0.00
10,600.0	90.31	90.00	7,200.0	-772.0	2,668.1	2,768.7	0.00	0.00	0.00
10,700.0	90.31	90.00	7,199.4	-772.0	2,768.1	2,866.6	0.00	0.00	0.00
10,800.0	90.31	90.00	7,198.9	-772.0	2,868.1	2,964.6	0.00	0.00	0.00
10,900.0	90.31	90.00	7,198.4	-772.0	2,968.1	3,062.6	0.00	0.00	0.00
11,000.0	90.31	90.00	7,197.8	-772.0	3,068.1	3,160.5	0.00	0.00	0.00
11,100.0	90.31	90.00	7,197.3	-772.0	3,168.1	3,258.5	0.00	0.00	0.00
11,200.0	90.31	90.00	7,196.7	-772.0	3,268.1	3,356.5	0.00	0.00	0.00
11,300.0	90.31	90.00	7,196.2	-772.0	3,368.1	3,454.5	0.00	0.00	0.00
11,400.0	90.31	90.00	7,195.7	-772.0	3,468.1	3,552.4	0.00	0.00	0.00
11,500.0	90.31	90.00	7,195.1	-772.0	3,568.1	3,650.4	0.00	0.00	0.00
11,600.0	90.31	90.00	7,194.6	-772.0	3,668.1	3,748.4	0.00	0.00	0.00
11,700.0	90.31	90.00	7,194.0	-772.0	3,768.1	3,846.3	0.00	0.00	0.00
11,706.4	90.31	90.00	7,194.0	-772.0	3,774.5	3,852.6	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 860'FSL & 950'F	0.00	0.00	1.0	0.0	0.0	1,350,605.01	3,225,067.65	40.293000	-104.693150
- plan hits target center									
- Point									
BHL 75'FSL & 500'FE	0.00	0.00	7,194.0	-772.0	3,774.5	1,349,867.38	3,228,848.83	40.290880	-104.679620
- plan hits target center									
- Point									

Database:	Landmark	Local Co-ordinate Reference:	Well Peschel 20I-402
Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Project:	SEC.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	North Reference:	True
Well:	Peschel 20I-402	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-25-14)		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,786.9	7,215.2	7"	7	7-1/2

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,814.8	3,740.0	Parkman		0.00	
4,466.7	4,375.0	Sussex		0.00	
5,313.7	5,200.0	Shannon		0.00	
6,863.8	6,726.0	Sharon Springs		0.00	
7,104.0	6,933.0	Niobrara A		0.00	
7,212.4	7,012.0	Niobrara B		0.00	
7,352.1	7,097.0	Niobrara C		0.00	
7,712.6	7,212.0	Ft. Hays		0.00	
	7,229.0	Codell		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.0	500.0	0.0	0.0	KOP #1
6,582.7	6,451.3	-48.1	-56.8	KOP #2
7,786.9	7,215.2	-723.9	-856.3	End of Build



PETROLEUM DEVELOPMENT CORP Weld County CO

SEC.20-T4N-R65W

Peschel 4N65W20B Pad Sec.20-T4N-R65W

Peschel 20I-402

Wellbore #1

Plan #1 (8-25-14)

Anticollision Report

29 August, 2014



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (8-25-14)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date 8/28/2014			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,706.4	Plan #1 (8-25-14) (Wellbore #1)	MWD	MWD - Standard

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Existing wells Sec.20-T4N-R65W						
Peschel 14-20 (Exist.) - Wellbore #1 - Wellbore #1	2,337.1	2,285.7	244.9	190.9	4.533	CC
Peschel 14-20 (Exist.) - Wellbore #1 - Wellbore #1	2,500.0	2,444.4	247.7	189.8	4.276	ES
Peschel 14-20 (Exist.) - Wellbore #1 - Wellbore #1	7,828.7	7,200.0	364.0	194.6	2.149	SF
Peschel 24-20 (Exist.) - Wellbore #1 - Wellbore #1	8,978.0	7,210.8	382.2	188.2	1.970	CC, ES
Peschel 24-20 (Exist.) - Wellbore #1 - Wellbore #1	9,000.0	7,210.6	382.9	188.3	1.968	SF
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	500.0	485.0	443.1	432.4	41.363	CC
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	600.0	585.0	444.3	431.4	34.414	ES
Peschel 5-20 (Exist.) - Wellbore #1 - Wellbore #1	3,600.0	3,515.8	995.7	917.5	12.726	SF
Peschel 4N65W20B Pad Sec.20-T4N-R65W						
Peschel 20H-232 - Wellbore #1 - Plan #1 (8-22-14)	500.0	500.0	58.3	56.3	28.815	CC, ES
Peschel 20H-232 - Wellbore #1 - Plan #1 (8-22-14)	11,706.4	11,474.2	761.2	523.6	3.204	SF
Peschel 20H-332 - Wellbore #1 - Plan #1 (8-22-14)	500.0	500.0	87.4	85.4	43.222	CC, ES
Peschel 20H-332 - Wellbore #1 - Plan #1 (8-22-14)	11,706.4	11,564.5	928.0	683.8	3.800	SF
Peschel 20I-312 - Wellbore #1 - Plan #1 (8-25-14)	500.0	500.0	29.1	27.1	14.407	CC, ES
Peschel 20I-312 - Wellbore #1 - Plan #1 (8-25-14)	11,706.4	11,595.5	276.2	60.0	1.278	Level 3, SF

Offset Design												
Existing wells Sec.20-T4N-R65W - Peschel 14-20 (Exist.) - Wellbore #1 - Wellbore #1												
Survey Program: 7341-UNKNOWN												
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
0.0	0.0	0.0	0.0	0.0	0.0	-165.80	-408.0	-103.2	421.1			
100.0	100.0	85.0	85.0	0.1	1.7	-165.80	-408.0	-103.2	420.9	419.1	1.81	232.194
200.0	200.0	185.0	185.0	0.3	3.7	-165.80	-408.0	-103.2	420.9	416.8	4.04	104.244
300.0	300.0	285.0	285.0	0.6	5.7	-165.80	-408.0	-103.2	420.9	414.6	6.26	67.209
400.0	400.0	385.0	385.0	0.8	7.7	-165.80	-408.0	-103.2	420.9	412.4	8.49	49.591
500.0	500.0	485.0	485.0	1.0	9.7	-165.80	-408.0	-103.2	420.9	410.2	10.71	39.291
600.0	600.0	585.0	585.0	1.2	11.7	-35.75	-408.0	-103.2	419.5	406.5	12.91	32.490
700.0	699.8	684.8	684.8	1.4	13.7	-36.22	-408.0	-103.2	415.2	400.1	15.08	27.528
800.0	799.5	784.5	784.5	1.6	15.7	-37.02	-408.0	-103.2	408.2	391.0	17.25	23.663
900.0	898.7	883.7	883.7	1.9	17.7	-38.20	-408.0	-103.2	398.5	379.1	19.41	20.530
1,000.0	997.5	982.5	982.5	2.2	19.6	-39.78	-408.0	-103.2	386.3	364.7	21.57	17.910

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 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 14-20 (Exist.) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 7341-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
1,100.0	1,095.6	1,080.6	1,080.6	2.5	21.6	-41.84		-408.0	-103.2	371.8	348.0	23.74	15.662	
1,200.0	1,193.1	1,178.1	1,178.1	2.9	23.6	-44.32		-408.0	-103.2	355.4	329.4	25.97	13.684	
1,300.0	1,290.5	1,275.5	1,275.5	3.4	25.5	-46.96		-408.0	-103.2	339.3	311.0	28.30	11.991	
1,400.0	1,387.9	1,372.9	1,372.9	3.8	27.5	-49.84		-408.0	-103.2	324.1	293.4	30.67	10.568	
1,500.0	1,485.3	1,470.3	1,470.3	4.3	29.4	-52.99		-408.0	-103.2	309.7	276.7	33.07	9.365	
1,600.0	1,582.7	1,567.7	1,567.7	4.8	31.4	-56.42		-408.0	-103.2	296.4	260.9	35.52	8.346	
1,700.0	1,680.1	1,665.1	1,665.1	5.2	33.3	-60.16		-408.0	-103.2	284.3	246.3	38.00	7.482	
1,800.0	1,777.6	1,762.6	1,762.6	5.7	35.3	-64.19		-408.0	-103.2	273.5	233.0	40.51	6.752	
1,900.0	1,875.0	1,860.0	1,860.0	6.2	37.2	-68.51		-408.0	-103.2	264.2	221.1	43.04	6.138	
2,000.0	1,972.4	1,957.4	1,957.4	6.7	39.1	-73.11		-408.0	-103.2	256.6	211.0	45.58	5.629	
2,100.0	2,069.8	2,054.8	2,054.8	7.2	41.1	-77.95		-408.0	-103.2	250.8	202.6	48.12	5.211	
2,200.0	2,167.2	2,152.2	2,152.2	7.7	43.0	-82.96		-408.0	-103.2	246.9	196.3	50.64	4.875	
2,300.0	2,264.6	2,249.6	2,249.6	8.1	45.0	-88.09		-408.0	-103.2	245.1	192.0	53.13	4.613	
2,337.1	2,300.7	2,285.7	2,285.7	8.3	45.7	-90.00		-408.0	-103.2	244.9	190.9	54.04	4.533 CC	
2,400.0	2,362.0	2,347.0	2,347.0	8.6	46.9	-93.24		-408.0	-103.2	245.4	189.8	55.56	4.416	
2,500.0	2,459.4	2,444.4	2,444.4	9.1	48.9	-98.35		-408.0	-103.2	247.7	189.8	57.93	4.276 ES	
2,600.0	2,556.8	2,541.8	2,541.8	9.6	50.8	-103.32		-408.0	-103.2	252.1	191.8	60.24	4.184	
2,700.0	2,654.2	2,639.2	2,639.2	10.1	52.8	-108.10		-408.0	-103.2	258.4	195.9	62.48	4.135	
2,800.0	2,751.6	2,736.6	2,736.6	10.6	54.7	-112.63		-408.0	-103.2	266.4	201.8	64.67	4.120	
2,900.0	2,849.0	2,834.0	2,834.0	11.1	56.7	-116.88		-408.0	-103.2	276.1	209.3	66.80	4.134	
3,000.0	2,946.4	2,931.4	2,931.4	11.6	58.6	-120.84		-408.0	-103.2	287.3	218.4	68.89	4.170	
3,100.0	3,043.8	3,028.8	3,028.8	12.1	60.6	-124.49		-408.0	-103.2	299.7	228.8	70.95	4.225	
3,200.0	3,141.2	3,126.2	3,126.2	12.6	62.5	-127.85		-408.0	-103.2	313.3	240.4	72.99	4.293	
3,300.0	3,238.6	3,223.6	3,223.6	13.1	64.5	-130.93		-408.0	-103.2	327.9	252.9	75.02	4.372	
3,400.0	3,336.0	3,321.0	3,321.0	13.6	66.4	-133.75		-408.0	-103.2	343.4	266.4	77.04	4.458	
3,500.0	3,433.4	3,418.4	3,418.4	14.0	68.4	-136.32		-408.0	-103.2	359.7	280.6	79.05	4.550	
3,600.0	3,530.8	3,515.8	3,515.8	14.5	70.3	-138.68		-408.0	-103.2	376.6	295.5	81.07	4.645	
3,700.0	3,628.2	3,613.2	3,613.2	15.0	72.3	-140.83		-408.0	-103.2	394.0	310.9	83.09	4.742	
3,800.0	3,725.6	3,710.6	3,710.6	15.5	74.2	-142.80		-408.0	-103.2	412.0	326.9	85.12	4.841	
3,900.0	3,823.0	3,808.0	3,808.0	16.0	76.2	-144.61		-408.0	-103.2	430.4	343.3	87.15	4.939	
4,000.0	3,920.4	3,905.4	3,905.4	16.5	78.1	-146.27		-408.0	-103.2	449.2	360.1	89.19	5.037	
4,100.0	4,017.8	4,002.8	4,002.8	17.0	80.1	-147.79		-408.0	-103.2	468.4	377.2	91.23	5.134	
4,200.0	4,115.2	4,100.2	4,100.2	17.5	82.0	-149.20		-408.0	-103.2	487.8	394.6	93.29	5.230	
4,300.0	4,212.6	4,197.6	4,197.6	18.0	84.0	-150.50		-408.0	-103.2	507.6	412.2	95.34	5.323	
4,400.0	4,310.0	4,295.0	4,295.0	18.5	85.9	-151.71		-408.0	-103.2	527.5	430.1	97.41	5.415	
4,500.0	4,407.4	4,392.4	4,392.4	19.0	87.8	-152.82		-408.0	-103.2	547.7	448.2	99.48	5.505	
4,600.0	4,504.8	4,489.8	4,489.8	19.5	89.8	-153.86		-408.0	-103.2	568.0	466.4	101.56	5.593	
4,700.0	4,602.2	4,587.2	4,587.2	20.0	91.7	-154.83		-408.0	-103.2	588.5	484.9	103.64	5.678	
4,800.0	4,699.6	4,684.6	4,684.6	20.5	93.7	-155.73		-408.0	-103.2	609.2	503.5	105.73	5.761	
4,900.0	4,797.0	4,782.0	4,782.0	21.0	95.6	-156.57		-408.0	-103.2	630.0	522.2	107.83	5.842	
5,000.0	4,894.4	4,879.4	4,879.4	21.5	97.6	-157.36		-408.0	-103.2	650.9	541.0	109.93	5.921	
5,100.0	4,991.8	4,976.8	4,976.8	22.0	99.5	-158.10		-408.0	-103.2	671.9	559.9	112.03	5.998	
5,200.0	5,089.2	5,074.2	5,074.2	22.5	101.5	-158.80		-408.0	-103.2	693.1	578.9	114.14	6.072	
5,300.0	5,186.6	5,171.6	5,171.6	23.0	103.4	-159.46		-408.0	-103.2	714.3	598.1	116.25	6.145	
5,400.0	5,284.0	5,269.0	5,269.0	23.5	105.4	-160.07		-408.0	-103.2	735.6	617.3	118.36	6.215	
5,500.0	5,381.4	5,366.4	5,366.4	24.0	107.3	-160.66		-408.0	-103.2	757.0	636.5	120.48	6.283	
5,600.0	5,478.8	5,463.8	5,463.8	24.5	109.3	-161.21		-408.0	-103.2	778.5	655.9	122.60	6.350	
5,700.0	5,576.2	5,561.2	5,561.2	25.0	111.2	-161.73		-408.0	-103.2	800.0	675.3	124.73	6.414	
5,800.0	5,673.6	5,658.6	5,658.6	25.4	113.2	-162.25		-408.0	-103.2	821.5	694.5	127.02	6.467	
5,900.0	5,771.0	5,756.0	5,756.0	25.8	115.1	-162.78		-408.0	-103.2	840.8	711.0	129.82	6.476	
6,000.0	5,870.2	5,855.2	5,855.2	26.0	117.1	-163.21		-408.0	-103.2	856.8	724.3	132.52	6.465	

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 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Existing wells Sec.20-T4N-R65W - Peschel 14-20 (Exist.) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 7341-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)		
6,100.0	5,969.3	5,954.3	5,954.3	26.3	119.1	-163.53	-408.0	-103.2	869.5	734.4	135.11	6.435	
6,200.0	6,068.8	6,053.8	6,053.8	26.5	121.1	-163.77	-408.0	-103.2	878.9	741.4	137.58	6.388	
6,300.0	6,168.6	6,153.6	6,153.6	26.7	123.1	-163.92	-408.0	-103.2	885.0	745.1	139.91	6.325	
6,400.0	6,268.5	6,253.5	6,253.5	26.8	125.1	-163.98	-408.0	-103.2	887.7	745.7	142.10	6.247	
6,500.0	6,368.5	6,353.5	6,353.5	26.9	127.1	65.80	-408.0	-103.2	887.9	734.7	153.23	5.795	
6,600.0	6,468.5	6,453.5	6,453.5	27.0	129.1	-24.21	-408.0	-103.2	887.7	741.4	146.30	6.068	
6,700.0	6,568.1	6,553.1	6,553.1	27.0	131.1	-24.70	-408.0	-103.2	879.7	733.1	146.66	5.998	
6,800.0	6,665.6	6,650.6	6,650.6	26.9	133.0	-25.95	-408.0	-103.2	860.0	715.2	144.86	5.937	
6,900.0	6,759.5	6,744.5	6,744.5	26.7	134.9	-28.10	-408.0	-103.2	829.1	687.9	141.24	5.870	
7,000.0	6,848.1	6,833.1	6,833.1	26.5	136.7	-31.37	-408.0	-103.2	787.8	651.2	136.63	5.767	
7,100.0	6,929.9	6,914.9	6,914.9	26.2	138.3	-36.06	-408.0	-103.2	737.4	604.8	132.64	5.560	
7,200.0	7,003.5	6,988.5	6,988.5	25.9	139.8	-42.56	-408.0	-103.2	679.5	547.7	131.80	5.156	
7,300.0	7,067.7	7,052.7	7,052.7	25.7	141.1	-51.10	-408.0	-103.2	616.2	479.7	136.51	4.514	
7,400.0	7,121.3	7,106.3	7,106.3	25.5	142.1	-61.42	-408.0	-103.2	550.4	404.0	146.40	3.760	
7,500.0	7,163.5	7,148.5	7,148.5	25.3	143.0	-72.24	-408.0	-103.2	486.1	329.0	157.14	3.094	
7,600.0	7,193.5	7,178.5	7,178.5	25.4	143.6	-81.60	-408.0	-103.2	428.9	264.6	164.30	2.611	
7,700.0	7,210.7	7,195.7	7,195.7	25.6	143.9	-87.81	-408.0	-103.2	386.0	218.5	167.52	2.304	
7,800.0	7,215.1	7,200.1	7,200.1	26.1	144.0	-90.02	-408.0	-103.2	365.1	196.1	169.00	2.160	
7,828.7	7,215.0	7,200.0	7,200.0	26.4	144.0	-90.00	-408.0	-103.2	364.0	194.6	169.40	2.149 SF	
7,900.0	7,214.6	7,199.6	7,199.6	27.0	144.0	-89.94	-408.0	-103.2	370.9	200.5	170.40	2.177	
8,000.0	7,214.1	7,199.1	7,199.1	28.3	144.0	-89.85	-408.0	-103.2	402.3	230.3	172.00	2.339	
8,100.0	7,213.5	7,198.5	7,198.5	30.0	144.0	-89.77	-408.0	-103.2	454.0	280.2	173.78	2.612	
8,200.0	7,213.0	7,198.0	7,198.0	31.8	144.0	-89.68	-408.0	-103.2	520.0	344.3	175.71	2.959	
8,300.0	7,212.4	7,197.4	7,197.4	33.8	143.9	-89.60	-408.0	-103.2	595.5	417.8	177.76	3.350	
8,400.0	7,211.9	7,196.9	7,196.9	36.0	143.9	-89.51	-408.0	-103.2	677.4	497.5	179.91	3.765	
8,500.0	7,211.3	7,196.3	7,196.3	38.2	143.9	-89.43	-408.0	-103.2	763.7	581.5	182.14	4.193	
8,600.0	7,210.8	7,195.8	7,195.8	40.6	143.9	-89.34	-408.0	-103.2	852.9	668.4	184.44	4.624	
8,700.0	7,210.3	7,195.3	7,195.3	43.0	143.9	-89.26	-408.0	-103.2	944.3	757.5	186.81	5.055	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 7362-UNKNOWN												Offset Well Error:	0.0 ft
Existing wells Sec.20-T4N-R65W - Peschel 24-20 (Exist.) - Wellbore #1 - Wellbore #1													
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
8,100.0	7,213.5	7,215.5	7,215.5	30.0	144.3	-90.71	-389.8	1,046.1	957.6	783.5	174.15	5.499	
8,200.0	7,213.0	7,215.0	7,215.0	31.8	144.3	-90.63	-389.8	1,046.1	866.8	690.8	176.08	4.923	
8,300.0	7,212.4	7,214.4	7,214.4	33.8	144.3	-90.55	-389.8	1,046.1	778.3	600.2	178.13	4.369	
8,400.0	7,211.9	7,213.9	7,213.9	36.0	144.3	-90.47	-389.8	1,046.1	693.0	512.7	180.28	3.844	
8,500.0	7,211.3	7,213.3	7,213.3	38.2	144.3	-90.39	-389.8	1,046.1	612.0	429.5	182.52	3.353	
8,600.0	7,210.8	7,212.8	7,212.8	40.6	144.3	-90.31	-389.8	1,046.1	537.6	352.8	184.83	2.909	
8,700.0	7,210.3	7,212.3	7,212.3	43.0	144.2	-90.23	-389.8	1,046.1	472.6	285.5	187.19	2.525	
8,800.0	7,209.7	7,211.7	7,211.7	45.4	144.2	-90.14	-389.8	1,046.1	421.7	232.0	189.61	2.224	
8,900.0	7,209.2	7,211.2	7,211.2	47.9	144.2	-90.06	-389.8	1,046.1	390.1	198.1	192.06	2.031	
8,978.0	7,208.8	7,210.8	7,210.8	49.8	144.2	-90.00	-389.8	1,046.1	382.2	188.2	194.00	1.970 CC, ES	
9,000.0	7,208.6	7,210.6	7,210.6	50.4	144.2	-89.98	-389.8	1,046.1	382.9	188.3	194.55	1.968 SF	
9,100.0	7,208.1	7,210.1	7,210.1	52.9	144.2	-89.90	-389.8	1,046.1	401.2	204.1	197.07	2.036	
9,200.0	7,207.6	7,209.6	7,209.6	55.5	144.2	-89.82	-389.8	1,046.1	442.0	242.4	199.62	2.214	
9,300.0	7,207.0	7,209.0	7,209.0	58.1	144.2	-89.74	-389.8	1,046.1	499.8	297.6	202.19	2.472	
9,400.0	7,206.5	7,208.5	7,208.5	60.7	144.2	-89.66	-389.8	1,046.1	569.3	364.6	204.78	2.780	
9,500.0	7,205.9	7,207.9	7,207.9	63.3	144.2	-89.58	-389.8	1,046.1	647.0	439.6	207.38	3.120	
9,600.0	7,205.4	7,207.4	7,207.4	66.0	144.1	-89.50	-389.8	1,046.1	730.0	520.0	210.00	3.476	
9,700.0	7,204.9	7,206.9	7,206.9	68.6	144.1	-89.41	-389.8	1,046.1	816.9	604.3	212.64	3.842	
9,800.0	7,204.3	7,206.3	7,206.3	71.3	144.1	-89.33	-389.8	1,046.1	906.5	691.2	215.28	4.211	
9,900.0	7,203.8	7,205.8	7,205.8	74.0	144.1	-89.25	-389.8	1,046.1	998.1	780.1	217.94	4.580	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	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	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference	Offset		Between Centres (ft)	Between Ellipses (ft)					
				(ft)	(ft)		+N/-S (ft)	+E/-W (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	5.78	440.8	44.6	443.3				
100.0	100.0	85.0	85.0	0.1	1.7	5.78	440.8	44.6	443.1	441.3	1.81 244.440		
200.0	200.0	185.0	185.0	0.3	3.7	5.78	440.8	44.6	443.1	439.0	4.04 109.742		
300.0	300.0	285.0	285.0	0.6	5.7	5.78	440.8	44.6	443.1	436.8	6.26 70.754		
400.0	400.0	385.0	385.0	0.8	7.7	5.78	440.8	44.6	443.1	434.6	8.49 52.206		
500.0	500.0	485.0	485.0	1.0	9.7	5.78	440.8	44.6	443.1	432.4	10.71 41.363 CC		
600.0	600.0	585.0	585.0	1.2	11.7	136.13	440.8	44.6	444.3	431.4	12.91 34.414 ES		
700.0	699.8	684.8	684.8	1.4	13.7	136.55	440.8	44.6	448.1	433.0	15.09 29.699		
800.0	799.5	784.5	784.5	1.6	15.7	137.21	440.8	44.6	454.5	437.2	17.26 26.328		
900.0	898.7	883.7	883.7	1.9	17.7	138.11	440.8	44.6	463.5	444.1	19.43 23.859		
1,000.0	997.5	982.5	982.5	2.2	19.6	139.21	440.8	44.6	475.3	453.8	21.58 22.029		
1,100.0	1,095.6	1,080.6	1,080.6	2.5	21.6	140.47	440.8	44.6	490.0	466.3	23.71 20.671		
1,200.0	1,193.1	1,178.1	1,178.1	2.9	23.6	141.93	440.8	44.6	507.4	481.6	25.86 19.626		
1,300.0	1,290.5	1,275.5	1,275.5	3.4	25.5	143.44	440.8	44.6	525.6	497.6	28.06 18.730		
1,400.0	1,387.9	1,372.9	1,372.9	3.8	27.5	144.84	440.8	44.6	544.2	513.9	30.27 17.976		
1,500.0	1,485.3	1,470.3	1,470.3	4.3	29.4	146.16	440.8	44.6	563.0	530.5	32.48 17.335		
1,600.0	1,582.7	1,567.7	1,567.7	4.8	31.4	147.39	440.8	44.6	582.1	547.4	34.68 16.784		
1,700.0	1,680.1	1,665.1	1,665.1	5.2	33.3	148.55	440.8	44.6	601.4	564.5	36.88 16.307		
1,800.0	1,777.6	1,762.6	1,762.6	5.7	35.3	149.63	440.8	44.6	621.0	581.9	39.08 15.891		
1,900.0	1,875.0	1,860.0	1,860.0	6.2	37.2	150.65	440.8	44.6	640.7	599.5	41.27 15.526		
2,000.0	1,972.4	1,957.4	1,957.4	6.7	39.1	151.61	440.8	44.6	660.7	617.2	43.46 15.202		
2,100.0	2,069.8	2,054.8	2,054.8	7.2	41.1	152.51	440.8	44.6	680.8	635.2	45.65 14.915		
2,200.0	2,167.2	2,152.2	2,152.2	7.7	43.0	153.36	440.8	44.6	701.1	653.3	47.83 14.658		
2,300.0	2,264.6	2,249.6	2,249.6	8.1	45.0	154.16	440.8	44.6	721.5	671.5	50.01 14.426		
2,400.0	2,362.0	2,347.0	2,347.0	8.6	46.9	154.92	440.8	44.6	742.0	689.9	52.19 14.218		
2,500.0	2,459.4	2,444.4	2,444.4	9.1	48.9	155.64	440.8	44.6	762.7	708.3	54.37 14.028		
2,600.0	2,556.8	2,541.8	2,541.8	9.6	50.8	156.32	440.8	44.6	783.5	726.9	56.55 13.856		
2,700.0	2,654.2	2,639.2	2,639.2	10.1	52.8	156.96	440.8	44.6	804.4	745.6	58.72 13.698		
2,800.0	2,751.6	2,736.6	2,736.6	10.6	54.7	157.58	440.8	44.6	825.3	764.4	60.89 13.554		
2,900.0	2,849.0	2,834.0	2,834.0	11.1	56.7	158.16	440.8	44.6	846.4	783.3	63.06 13.421		
3,000.0	2,946.4	2,931.4	2,931.4	11.6	58.6	158.71	440.8	44.6	867.5	802.3	65.24 13.298		
3,100.0	3,043.8	3,028.8	3,028.8	12.1	60.6	159.24	440.8	44.6	888.7	821.3	67.41 13.185		
3,200.0	3,141.2	3,126.2	3,126.2	12.6	62.5	159.74	440.8	44.6	910.0	840.4	69.57 13.080		
3,300.0	3,238.6	3,223.6	3,223.6	13.1	64.5	160.23	440.8	44.6	931.4	859.6	71.74 12.982		
3,400.0	3,336.0	3,321.0	3,321.0	13.6	66.4	160.69	440.8	44.6	952.8	878.8	73.91 12.891		
3,500.0	3,433.4	3,418.4	3,418.4	14.0	68.4	161.12	440.8	44.6	974.2	898.1	76.08 12.805		
3,600.0	3,530.8	3,515.8	3,515.8	14.5	70.3	161.55	440.8	44.6	995.7	917.5	78.25 12.726 SF		

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	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 (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	58.3	0.0	58.3				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	58.3	0.0	58.3	58.1	0.22	259.331	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	58.3	0.0	58.3	57.6	0.67	86.444	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	58.3	0.0	58.3	57.2	1.12	51.866	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	58.3	0.0	58.3	56.7	1.57	37.047	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	58.3	0.0	58.3	56.3	2.02	28.815 CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	131.48	58.3	0.0	59.4	57.0	2.45	24.238	
700.0	699.8	699.8	699.8	1.4	1.5	134.99	58.3	0.0	63.0	60.1	2.87	21.938	
800.0	799.5	799.5	799.5	1.6	1.7	139.99	58.3	0.0	69.5	66.2	3.31	21.000	
900.0	898.7	898.7	898.7	1.9	1.9	145.55	58.3	0.0	79.2	75.5	3.75	21.105	
1,000.0	997.5	997.5	997.5	2.2	2.1	150.89	58.3	0.0	92.6	88.4	4.20	22.026	
1,100.0	1,095.6	1,097.6	1,097.5	2.5	2.3	154.92	58.1	-1.7	108.8	104.2	4.64	23.441	
1,200.0	1,193.1	1,198.1	1,198.0	2.9	2.5	157.16	57.5	-6.8	126.4	121.3	5.09	24.858	
1,300.0	1,290.5	1,299.4	1,298.9	3.4	2.8	157.80	56.6	-15.5	142.6	137.1	5.56	25.643	
1,400.0	1,387.9	1,401.4	1,400.1	3.8	3.0	157.22	55.3	-27.9	156.9	150.8	6.08	25.809	
1,500.0	1,485.3	1,503.7	1,501.1	4.3	3.3	155.70	53.5	-43.9	169.3	162.7	6.65	25.455	
1,600.0	1,582.7	1,604.9	1,600.4	4.8	3.6	153.49	51.4	-63.0	180.1	172.8	7.29	24.722	
1,700.0	1,680.1	1,704.0	1,697.7	5.2	4.0	151.40	49.3	-82.3	190.9	182.9	7.96	23.966	
1,800.0	1,777.6	1,803.2	1,794.9	5.7	4.3	149.53	47.2	-101.7	201.8	193.2	8.68	23.264	
1,900.0	1,875.0	1,902.4	1,892.2	6.2	4.7	147.85	45.1	-121.1	213.0	203.6	9.41	22.623	
2,000.0	1,972.4	2,001.6	1,989.5	6.7	5.1	146.35	43.0	-140.4	224.3	214.1	10.18	22.042	
2,100.0	2,069.8	2,100.8	2,086.7	7.2	5.5	144.98	40.9	-159.8	235.8	224.8	10.96	21.518	
2,200.0	2,167.2	2,200.0	2,184.0	7.7	5.9	143.75	38.8	-179.1	247.4	235.6	11.75	21.046	
2,300.0	2,264.6	2,299.2	2,281.3	8.1	6.3	142.62	36.7	-198.5	259.0	246.5	12.56	20.622	
2,400.0	2,362.0	2,398.4	2,378.5	8.6	6.7	141.59	34.6	-217.8	270.8	257.4	13.38	20.239	
2,500.0	2,459.4	2,497.6	2,475.8	9.1	7.1	140.65	32.5	-237.2	282.7	268.5	14.21	19.894	
2,600.0	2,556.8	2,596.8	2,573.0	9.6	7.5	139.79	30.4	-256.5	294.6	279.5	15.04	19.582	
2,700.0	2,654.2	2,696.0	2,670.3	10.1	7.9	138.99	28.3	-275.9	306.6	290.7	15.89	19.299	
2,800.0	2,751.6	2,795.2	2,767.6	10.6	8.3	138.25	26.2	-295.2	318.6	301.9	16.73	19.041	
2,900.0	2,849.0	2,894.3	2,864.8	11.1	8.8	137.56	24.1	-314.6	330.7	313.1	17.58	18.806	
3,000.0	2,946.4	2,993.5	2,962.1	11.6	9.2	136.93	22.0	-334.0	342.8	324.4	18.44	18.592	
3,100.0	3,043.8	3,092.7	3,059.4	12.1	9.6	136.33	19.9	-353.3	355.0	335.7	19.30	18.395	
3,200.0	3,141.2	3,191.9	3,156.6	12.6	10.0	135.78	17.8	-372.7	367.2	347.0	20.16	18.214	
3,300.0	3,238.6	3,291.1	3,253.9	13.1	10.5	135.26	15.6	-392.0	379.4	358.4	21.02	18.047	
3,400.0	3,336.0	3,390.3	3,351.1	13.6	10.9	134.78	13.5	-411.4	391.7	369.8	21.89	17.893	
3,500.0	3,433.4	3,489.5	3,448.4	14.0	11.3	134.32	11.4	-430.7	404.0	381.2	22.76	17.750	
3,600.0	3,530.8	3,588.7	3,545.7	14.5	11.8	133.89	9.3	-450.1	416.3	392.7	23.63	17.618	
3,700.0	3,628.2	3,687.9	3,642.9	15.0	12.2	133.49	7.2	-469.4	428.6	404.1	24.50	17.495	
3,800.0	3,725.6	3,787.1	3,740.2	15.5	12.6	133.10	5.1	-488.8	441.0	415.6	25.37	17.380	
3,900.0	3,823.0	3,886.3	3,837.5	16.0	13.1	132.74	3.0	-508.2	453.4	427.1	26.25	17.272	
4,000.0	3,920.4	3,985.5	3,934.7	16.5	13.5	132.40	0.9	-527.5	465.7	438.6	27.12	17.172	
4,100.0	4,017.8	4,084.7	4,032.0	17.0	13.9	132.08	-1.2	-546.9	478.2	450.2	28.00	17.078	
4,200.0	4,115.2	4,183.8	4,129.2	17.5	14.4	131.77	-3.3	-566.2	490.6	461.7	28.88	16.989	
4,300.0	4,212.6	4,283.0	4,226.5	18.0	14.8	131.48	-5.4	-585.6	503.0	473.3	29.75	16.906	
4,400.0	4,310.0	4,382.2	4,323.8	18.5	15.2	131.20	-7.5	-604.9	515.4	484.8	30.63	16.827	
4,500.0	4,407.4	4,481.4	4,421.0	19.0	15.7	130.93	-9.6	-624.3	527.9	496.4	31.51	16.753	
4,600.0	4,504.8	4,580.6	4,518.3	19.5	16.1	130.68	-11.7	-643.6	540.4	508.0	32.39	16.683	
4,700.0	4,602.2	4,679.8	4,615.6	20.0	16.5	130.44	-13.8	-663.0	552.9	519.6	33.27	16.617	
4,800.0	4,699.6	4,779.0	4,712.8	20.5	17.0	130.21	-15.9	-682.4	565.3	531.2	34.15	16.554	
4,900.0	4,797.0	4,878.2	4,810.1	21.0	17.4	129.98	-18.0	-701.7	577.8	542.8	35.03	16.494	
5,000.0	4,894.4	4,977.4	4,907.3	21.5	17.8	129.77	-20.1	-721.1	590.3	554.4	35.91	16.438	

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 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	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
5,100.0	4,991.8	5,076.6	5,004.6	22.0	18.3	129.57	129.57	-22.2	-740.4	602.8	566.1	36.80	16.384	
5,200.0	5,089.2	5,175.8	5,101.9	22.5	18.7	129.37	129.37	-24.4	-759.8	615.4	577.7	37.68	16.333	
5,300.0	5,186.6	5,275.0	5,199.1	23.0	19.2	129.19	129.19	-26.5	-779.1	627.9	589.3	38.56	16.284	
5,400.0	5,284.0	5,374.2	5,296.4	23.5	19.6	129.01	129.01	-28.6	-798.5	640.4	601.0	39.44	16.237	
5,500.0	5,381.4	5,473.3	5,393.7	24.0	20.0	128.84	128.84	-30.7	-817.8	653.0	612.6	40.33	16.192	
5,600.0	5,478.8	5,572.5	5,490.9	24.5	20.5	128.67	128.67	-32.8	-837.2	665.5	624.3	41.21	16.150	
5,700.0	5,576.2	5,670.6	5,587.2	25.0	20.9	128.55	128.55	-34.8	-855.9	678.1	636.0	42.04	16.128	
5,800.0	5,673.6	5,767.7	5,683.0	25.4	21.2	128.72	128.72	-36.5	-871.6	690.9	648.2	42.73	16.170	
5,900.0	5,771.6	5,864.7	5,779.2	25.8	21.4	129.13	129.13	-37.9	-884.0	702.5	659.3	43.23	16.249	
6,000.0	5,870.2	5,961.8	5,875.8	26.0	21.6	129.56	129.56	-38.9	-893.2	712.2	668.6	43.66	16.315	
6,100.0	5,969.3	6,058.9	5,972.7	26.3	21.8	130.00	130.00	-39.5	-899.1	720.1	676.1	43.99	16.370	
6,200.0	6,068.8	6,155.9	6,069.7	26.5	21.9	130.46	130.46	-39.8	-901.7	726.2	681.9	44.24	16.413	
6,300.0	6,168.6	6,254.8	6,168.6	26.7	22.0	130.88	130.88	-39.8	-901.9	730.3	685.9	44.44	16.432	
6,400.0	6,268.5	6,354.8	6,268.5	26.8	22.2	131.08	131.08	-39.8	-901.9	732.2	687.5	44.65	16.398	
6,500.0	6,368.5	6,453.0	6,366.6	26.9	22.2	1.28	1.28	-39.8	-896.8	732.4	695.6	36.80	19.904	
6,600.0	6,468.5	6,548.4	6,460.4	27.0	22.2	-87.40	-87.40	-39.8	-879.8	733.0	688.5	44.51	16.468	
6,700.0	6,568.1	6,640.7	6,548.5	27.0	22.0	-85.78	-85.78	-39.8	-852.4	734.3	690.2	44.02	16.679	
6,800.0	6,665.6	6,731.0	6,630.8	26.9	21.8	-84.24	-84.24	-39.8	-815.6	736.1	692.7	43.39	16.965	
6,900.0	6,759.5	6,819.4	6,706.7	26.7	21.6	-82.80	-82.80	-39.8	-770.3	738.2	695.5	42.68	17.298	
7,000.0	6,848.1	6,906.2	6,775.7	26.5	21.4	-81.48	-81.48	-39.8	-717.6	740.6	698.6	41.98	17.642	
7,100.0	6,929.9	6,991.8	6,837.4	26.2	21.3	-80.30	-80.30	-39.8	-658.4	743.0	701.6	41.40	17.949	
7,200.0	7,003.5	7,076.1	6,891.3	25.9	21.3	-79.27	-79.27	-39.8	-593.6	745.4	704.4	41.05	18.161	
7,300.0	7,067.7	7,159.6	6,937.3	25.7	21.4	-78.40	-78.40	-39.8	-524.0	747.6	706.6	41.03	18.220	
7,400.0	7,121.3	7,242.3	6,975.2	25.5	21.7	-77.70	-77.70	-39.8	-450.5	749.5	708.0	41.47	18.075	
7,500.0	7,163.5	7,324.5	7,004.7	25.3	22.2	-77.18	-77.18	-39.8	-373.9	751.0	708.6	42.41	17.707	
7,600.0	7,193.5	7,406.2	7,025.8	25.4	22.9	-76.84	-76.84	-39.8	-294.9	752.0	708.1	43.87	17.140	
7,700.0	7,210.7	7,487.8	7,038.2	25.6	23.8	-76.68	-76.68	-39.8	-214.4	752.4	706.6	45.82	16.420	
7,796.9	7,215.9	7,566.8	7,042.1	26.1	24.7	-76.65	-76.65	-39.8	-135.5	752.5	704.5	48.06	15.659	
7,800.0	7,215.1	7,569.3	7,042.1	26.1	24.8	-76.70	-76.70	-39.8	-133.0	752.4	704.2	48.14	15.628	
7,900.0	7,214.6	7,667.9	7,040.7	27.0	26.2	-76.64	-76.64	-39.8	-34.4	752.6	701.7	50.91	14.783	
8,000.0	7,214.1	7,767.9	7,039.2	28.3	27.9	-76.57	-76.57	-39.8	65.6	752.8	698.7	54.08	13.920	
8,100.0	7,213.5	7,867.9	7,037.8	30.0	29.7	-76.51	-76.51	-39.8	165.6	753.0	695.4	57.59	13.075	
8,200.0	7,213.0	7,967.9	7,036.4	31.8	31.7	-76.44	-76.44	-39.8	265.6	753.2	691.8	61.39	12.269	
8,300.0	7,212.4	8,067.9	7,034.9	33.8	33.7	-76.37	-76.37	-39.8	365.6	753.4	688.0	65.42	11.516	
8,400.0	7,211.9	8,167.9	7,033.5	36.0	35.9	-76.31	-76.31	-39.8	465.5	753.6	684.0	69.65	10.821	
8,500.0	7,211.3	8,267.9	7,032.1	38.2	38.2	-76.24	-76.24	-39.8	565.5	753.8	679.8	74.03	10.183	
8,600.0	7,210.8	8,367.9	7,030.7	40.6	40.5	-76.18	-76.18	-39.8	665.5	754.1	675.5	78.54	9.600	
8,700.0	7,210.3	8,467.9	7,029.2	43.0	42.9	-76.11	-76.11	-39.8	765.5	754.3	671.1	83.17	9.069	
8,800.0	7,209.7	8,567.9	7,027.8	45.4	45.4	-76.05	-76.05	-39.8	865.5	754.5	666.6	87.88	8.585	
8,900.0	7,209.2	8,667.9	7,026.4	47.9	47.8	-75.98	-75.98	-39.8	965.5	754.7	662.0	92.68	8.143	
9,000.0	7,208.6	8,767.9	7,024.9	50.4	50.4	-75.91	-75.91	-39.8	1,065.5	754.9	657.4	97.54	7.740	
9,100.0	7,208.1	8,867.9	7,023.5	52.9	52.9	-75.85	-75.85	-39.8	1,165.4	755.1	652.7	102.45	7.371	
9,200.0	7,207.6	8,967.9	7,022.1	55.5	55.5	-75.78	-75.78	-39.8	1,265.4	755.4	647.9	107.41	7.032	
9,300.0	7,207.0	9,067.9	7,020.6	58.1	58.1	-75.72	-75.72	-39.8	1,365.4	755.6	643.2	112.42	6.721	
9,400.0	7,206.5	9,167.9	7,019.2	60.7	60.7	-75.65	-75.65	-39.8	1,465.4	755.8	638.3	117.45	6.435	
9,500.0	7,205.9	9,267.9	7,017.8	63.3	63.3	-75.59	-75.59	-39.8	1,565.4	756.0	633.5	122.52	6.171	
9,600.0	7,205.4	9,367.9	7,016.3	66.0	66.0	-75.52	-75.52	-39.8	1,665.4	756.2	628.6	127.62	5.926	
9,700.0	7,204.9	9,467.9	7,014.9	68.6	68.6	-75.46	-75.46	-39.8	1,765.4	756.5	623.7	132.73	5.699	
9,800.0	7,204.3	9,567.9	7,013.5	71.3	71.3	-75.39	-75.39	-39.8	1,865.3	756.7	618.8	137.87	5.488	
9,900.0	7,203.8	9,667.9	7,012.1	74.0	74.0	-75.33	-75.33	-39.8	1,965.3	756.9	613.9	143.02	5.292	
10,000.0	7,203.2	9,767.8	7,010.6	76.6	76.6	-75.26	-75.26	-39.8	2,065.3	757.1	609.0	148.19	5.109	

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 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	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
10,100.0	7,202.7	9,867.8	7,009.2	79.3	79.3	-75.20	-39.8	2,165.3	757.4	604.0	153.38	4.938	
10,200.0	7,202.2	9,967.8	7,007.8	82.0	82.0	-75.13	-39.8	2,265.3	757.6	599.0	158.57	4.778	
10,300.0	7,201.6	10,067.8	7,006.3	84.7	84.7	-75.07	-39.8	2,365.3	757.8	594.1	163.78	4.627	
10,400.0	7,201.1	10,167.8	7,004.9	87.5	87.5	-75.00	-39.8	2,465.3	758.1	589.1	168.99	4.486	
10,500.0	7,200.5	10,267.8	7,003.5	90.2	90.2	-74.94	-39.8	2,565.2	758.3	584.1	174.21	4.353	
10,600.0	7,200.0	10,367.8	7,002.0	92.9	92.9	-74.87	-39.8	2,665.2	758.5	579.1	179.44	4.227	
10,700.0	7,199.4	10,467.8	7,000.6	95.6	95.6	-74.81	-39.8	2,765.2	758.8	574.1	184.68	4.109	
10,800.0	7,198.9	10,567.8	6,999.2	98.4	98.4	-74.74	-39.8	2,865.2	759.0	569.1	189.92	3.996	
10,900.0	7,198.4	10,667.8	6,997.7	101.1	101.1	-74.68	-39.8	2,965.2	759.2	564.1	195.16	3.890	
11,000.0	7,197.8	10,767.8	6,996.3	103.8	103.9	-74.61	-39.8	3,065.2	759.5	559.1	200.41	3.790	
11,100.0	7,197.3	10,867.8	6,994.9	106.6	106.6	-74.55	-39.8	3,165.2	759.7	554.0	205.66	3.694	
11,200.0	7,196.7	10,967.8	6,993.4	109.3	109.4	-74.48	-39.8	3,265.1	759.9	549.0	210.92	3.603	
11,300.0	7,196.2	11,067.8	6,992.0	112.1	112.1	-74.42	-39.8	3,365.1	760.2	544.0	216.17	3.517	
11,400.0	7,195.7	11,167.8	6,990.6	114.8	114.9	-74.35	-39.8	3,465.1	760.4	539.0	221.43	3.434	
11,500.0	7,195.1	11,267.8	6,989.2	117.6	117.6	-74.29	-39.8	3,565.1	760.7	534.0	226.69	3.355	
11,600.0	7,194.6	11,367.8	6,987.7	120.3	120.4	-74.22	-39.8	3,665.1	760.9	529.0	231.96	3.280	
11,700.0	7,194.0	11,467.8	6,986.3	123.1	123.1	-74.16	-39.8	3,765.1	761.2	523.9	237.22	3.209	
11,706.4	7,194.0	11,474.2	6,986.2	123.3	123.3	-74.16	-39.8	3,771.5	761.2	523.6	237.56	3.204 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	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 (ft)	Offset (ft)	Semi Major Axis (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	0.00	87.4	0.0	87.4				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	0.00	87.4	0.0	87.4	87.2	0.22	388.997	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	0.00	87.4	0.0	87.4	86.8	0.67	129.666	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	0.00	87.4	0.0	87.4	86.3	1.12	77.799	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	0.00	87.4	0.0	87.4	85.9	1.57	55.571	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	0.00	87.4	0.0	87.4	85.4	2.02	43.222 CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	131.06		87.4	0.0	88.6	86.1	2.45	36.122	
700.0	699.8	699.8	699.8	1.4	1.5	133.46		87.4	0.0	92.1	89.2	2.87	32.059	
800.0	799.5	799.5	799.5	1.6	1.7	137.06		87.4	0.0	98.3	95.0	3.31	29.709	
900.0	898.7	898.7	898.7	1.9	1.9	141.36		87.4	0.0	107.6	103.8	3.76	28.624	
1,000.0	997.5	997.5	997.5	2.2	2.1	145.86		87.4	0.0	120.2	116.0	4.22	28.521	
1,100.0	1,095.6	1,095.6	1,095.6	2.5	2.4	150.17		87.4	0.0	136.5	131.8	4.68	29.193	
1,200.0	1,193.1	1,193.1	1,193.1	2.9	2.6	154.10		87.4	0.0	156.2	151.0	5.14	30.387	
1,300.0	1,290.5	1,290.5	1,290.5	3.4	2.8	157.30		87.4	0.0	176.9	171.3	5.61	31.546	
1,400.0	1,387.9	1,387.9	1,387.9	3.8	3.0	159.82		87.4	0.0	198.1	192.0	6.08	32.594	
1,500.0	1,485.3	1,485.3	1,485.3	4.3	3.2	161.85		87.4	0.0	219.5	213.0	6.55	33.534	
1,600.0	1,582.7	1,586.4	1,586.3	4.8	3.4	163.31		87.5	-1.3	240.6	233.6	7.02	34.292	
1,700.0	1,680.1	1,688.9	1,688.8	5.2	3.7	163.84		87.8	-6.2	260.0	252.5	7.49	34.717	
1,800.0	1,777.6	1,792.2	1,791.7	5.7	3.9	163.64		88.4	-14.9	277.6	269.7	7.99	34.770	
1,900.0	1,875.0	1,896.0	1,894.7	6.2	4.1	162.82		89.2	-27.3	293.5	285.0	8.51	34.475	
2,000.0	1,972.4	2,000.0	1,997.4	6.7	4.4	161.46		90.3	-43.4	307.8	298.7	9.09	33.867	
2,100.0	2,069.8	2,103.9	2,099.4	7.2	4.7	159.63		91.6	-63.3	320.6	310.8	9.72	32.978	
2,200.0	2,167.2	2,203.5	2,196.7	7.7	5.0	157.63		93.0	-84.7	332.6	322.2	10.40	31.982	
2,300.0	2,264.6	2,302.1	2,293.0	8.1	5.4	155.78		94.3	-105.9	345.0	333.9	11.11	31.045	
2,400.0	2,362.0	2,400.7	2,389.3	8.6	5.7	154.06		95.7	-127.2	357.8	345.9	11.86	30.171	
2,500.0	2,459.4	2,499.4	2,485.6	9.1	6.1	152.45		97.1	-148.4	370.8	358.2	12.63	29.362	
2,600.0	2,556.8	2,598.0	2,581.9	9.6	6.5	150.96		98.5	-169.7	384.1	370.7	13.42	28.618	
2,700.0	2,654.2	2,696.6	2,678.2	10.1	6.9	149.57		99.9	-190.9	397.7	383.4	14.23	27.936	
2,800.0	2,751.6	2,795.2	2,774.5	10.6	7.3	148.26		101.3	-212.2	411.4	396.4	15.06	27.312	
2,900.0	2,849.0	2,893.9	2,870.8	11.1	7.7	147.04		102.6	-233.4	425.4	409.5	15.91	26.742	
3,000.0	2,946.4	2,992.5	2,967.1	11.6	8.2	145.90		104.0	-254.7	439.5	422.8	16.76	26.222	
3,100.0	3,043.8	3,091.1	3,063.4	12.1	8.6	144.83		105.4	-275.9	453.8	436.2	17.63	25.747	
3,200.0	3,141.2	3,189.7	3,159.7	12.6	9.0	143.83		106.8	-297.2	468.3	449.8	18.50	25.313	
3,300.0	3,238.6	3,288.4	3,256.0	13.1	9.4	142.88		108.2	-318.5	482.8	463.5	19.38	24.916	
3,400.0	3,336.0	3,387.0	3,352.3	13.6	9.9	141.99		109.6	-339.7	497.5	477.3	20.27	24.552	
3,500.0	3,433.4	3,485.6	3,448.6	14.0	10.3	141.16		111.0	-361.0	512.4	491.2	21.16	24.217	
3,600.0	3,530.8	3,584.2	3,544.9	14.5	10.8	140.36		112.3	-382.2	527.3	505.2	22.05	23.909	
3,700.0	3,628.2	3,682.9	3,641.2	15.0	11.2	139.62		113.7	-403.5	542.3	519.3	22.95	23.626	
3,800.0	3,725.6	3,781.5	3,737.5	15.5	11.7	138.91		115.1	-424.7	557.4	533.5	23.86	23.364	
3,900.0	3,823.0	3,880.1	3,833.8	16.0	12.1	138.24		116.5	-446.0	572.5	547.8	24.76	23.122	
4,000.0	3,920.4	3,978.7	3,930.1	16.5	12.6	137.60		117.9	-467.2	587.8	562.1	25.67	22.898	
4,100.0	4,017.8	4,077.4	4,026.4	17.0	13.0	137.00		119.3	-488.5	603.1	576.5	26.58	22.690	
4,200.0	4,115.2	4,176.0	4,122.7	17.5	13.5	136.42		120.7	-509.7	618.5	591.0	27.49	22.496	
4,300.0	4,212.6	4,274.6	4,219.0	18.0	13.9	135.88		122.0	-531.0	633.9	605.5	28.41	22.316	
4,400.0	4,310.0	4,373.2	4,315.2	18.5	14.4	135.36		123.4	-552.2	649.4	620.1	29.32	22.148	
4,500.0	4,407.4	4,471.9	4,411.5	19.0	14.8	134.86		124.8	-573.5	664.9	634.7	30.24	21.991	
4,600.0	4,504.8	4,570.5	4,507.8	19.5	15.3	134.39		126.2	-594.7	680.5	649.4	31.15	21.844	
4,700.0	4,602.2	4,669.1	4,604.1	20.0	15.8	133.94		127.6	-616.0	696.2	664.1	32.07	21.706	
4,800.0	4,699.6	4,767.7	4,700.4	20.5	16.2	133.50		129.0	-637.2	711.8	678.8	32.99	21.576	
4,900.0	4,797.0	4,866.4	4,796.7	21.0	16.7	133.09		130.4	-658.5	727.5	693.6	33.91	21.455	
5,000.0	4,894.4	4,965.0	4,893.0	21.5	17.1	132.69		131.7	-679.7	743.3	708.4	34.83	21.340	

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 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	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
5,100.0	4,991.8	5,063.6	4,989.3	22.0	17.6	132.31	133.1	-701.0	759.0	723.3	35.75	21.232	
5,200.0	5,089.2	5,162.2	5,085.6	22.5	18.1	131.95	134.5	-722.2	774.8	738.2	36.67	21.130	
5,300.0	5,186.6	5,260.9	5,181.9	23.0	18.5	131.60	135.9	-743.5	790.7	753.1	37.59	21.034	
5,400.0	5,284.0	5,359.5	5,278.2	23.5	19.0	131.26	137.3	-764.8	806.5	768.0	38.51	20.943	
5,500.0	5,381.4	5,458.1	5,374.5	24.0	19.5	130.94	138.7	-786.0	822.4	783.0	39.43	20.856	
5,600.0	5,478.8	5,556.7	5,470.8	24.5	19.9	130.63	140.0	-807.3	838.4	798.0	40.36	20.774	
5,700.0	5,576.2	5,655.4	5,567.1	25.0	20.4	130.33	141.4	-828.5	854.3	813.0	41.28	20.697	
5,800.0	5,673.6	5,755.4	5,665.0	25.4	20.8	130.17	142.8	-848.8	870.1	828.0	42.09	20.674	
5,900.0	5,771.6	5,856.0	5,764.2	25.8	21.1	130.29	143.9	-865.8	884.2	841.5	42.72	20.696	
6,000.0	5,870.2	5,957.1	5,864.4	26.0	21.3	130.42	144.8	-879.4	895.9	852.6	43.27	20.703	
6,100.0	5,969.3	6,058.4	5,965.2	26.3	21.5	130.57	145.4	-889.5	905.1	861.4	43.73	20.695	
6,200.0	6,068.8	6,159.9	6,066.5	26.5	21.7	130.74	145.8	-896.0	911.9	867.7	44.11	20.674	
6,300.0	6,168.6	6,261.6	6,168.1	26.7	21.9	130.93	146.0	-898.9	916.2	871.8	44.39	20.639	
6,400.0	6,268.5	6,362.0	6,268.5	26.8	22.0	131.08	146.0	-899.1	918.0	873.4	44.62	20.576	
6,500.0	6,368.5	6,461.9	6,368.4	26.9	22.1	0.87	146.0	-899.1	918.1	881.6	36.50	25.157	
6,600.0	6,468.5	6,559.5	6,465.7	27.0	22.2	-88.70	146.0	-892.2	918.3	873.3	44.95	20.429	
6,700.0	6,568.1	6,655.6	6,559.9	27.0	22.1	-88.02	146.0	-873.3	918.6	873.8	44.78	20.515	
6,800.0	6,665.6	6,750.0	6,649.3	26.9	22.0	-87.38	146.0	-843.4	919.0	874.6	44.41	20.692	
6,900.0	6,759.5	6,844.2	6,734.3	26.7	21.8	-86.78	146.0	-802.8	919.5	875.6	43.92	20.936	
7,000.0	6,848.1	6,937.0	6,812.5	26.5	21.6	-86.24	146.0	-753.0	920.0	876.6	43.38	21.207	
7,100.0	6,929.9	7,028.9	6,883.4	26.2	21.4	-85.76	146.0	-694.5	920.6	877.7	42.90	21.457	
7,200.0	7,003.5	7,120.2	6,946.3	25.9	21.4	-85.34	146.0	-628.6	921.1	878.5	42.60	21.621	
7,300.0	7,067.7	7,210.8	7,000.6	25.7	21.5	-85.00	146.0	-556.1	921.5	878.9	42.60	21.633	
7,400.0	7,121.3	7,300.0	7,045.3	25.5	21.7	-84.74	146.0	-478.9	921.9	878.9	43.01	21.437	
7,500.0	7,163.5	7,390.8	7,081.3	25.3	22.2	-84.56	146.0	-395.6	922.2	878.3	43.93	20.991	
7,600.0	7,193.5	7,480.4	7,106.8	25.4	23.0	-84.46	146.0	-309.8	922.3	877.0	45.39	20.322	
7,700.0	7,210.7	7,569.9	7,122.1	25.6	23.9	-84.45	146.0	-221.6	922.4	875.0	47.34	19.485	
7,800.0	7,215.1	7,659.5	7,127.0	26.1	25.1	-84.52	146.0	-132.2	922.3	872.6	49.70	18.557	
7,801.3	7,215.1	7,660.7	7,127.0	26.1	25.1	-84.52	146.0	-131.1	922.3	872.5	49.73	18.545	
7,900.0	7,214.6	7,758.3	7,125.4	27.0	26.5	-84.45	146.0	-33.5	922.4	869.8	52.55	17.552	
8,000.0	7,214.1	7,858.3	7,123.6	28.3	28.2	-84.37	146.0	66.5	922.5	866.7	55.81	16.530	
8,100.0	7,213.5	7,958.3	7,121.9	30.0	30.0	-84.30	146.0	166.5	922.6	863.2	59.41	15.529	
8,200.0	7,213.0	8,058.3	7,120.1	31.8	32.0	-84.22	146.0	266.5	922.7	859.4	63.30	14.577	
8,300.0	7,212.4	8,158.3	7,118.3	33.8	34.1	-84.15	146.0	366.5	922.9	855.4	67.43	13.686	
8,400.0	7,211.9	8,258.3	7,116.6	36.0	36.3	-84.07	146.0	466.4	923.0	851.2	71.75	12.863	
8,500.0	7,211.3	8,358.3	7,114.8	38.2	38.5	-84.00	146.0	566.4	923.1	846.9	76.24	12.108	
8,600.0	7,210.8	8,458.3	7,113.0	40.6	40.9	-83.92	146.0	666.4	923.2	842.4	80.86	11.418	
8,700.0	7,210.3	8,558.3	7,111.3	43.0	43.3	-83.85	146.0	766.4	923.4	837.8	85.59	10.788	
8,800.0	7,209.7	8,658.2	7,109.5	45.4	45.7	-83.77	146.0	866.3	923.5	833.1	90.42	10.213	
8,900.0	7,209.2	8,758.2	7,107.8	47.9	48.2	-83.69	146.0	966.3	923.6	828.3	95.33	9.689	
9,000.0	7,208.6	8,858.2	7,106.0	50.4	50.7	-83.62	146.0	1,066.3	923.8	823.5	100.31	9.209	
9,100.0	7,208.1	8,958.2	7,104.2	52.9	53.2	-83.54	146.0	1,166.3	923.9	818.6	105.34	8.771	
9,200.0	7,207.6	9,058.2	7,102.5	55.5	55.8	-83.47	146.0	1,266.2	924.0	813.6	110.43	8.368	
9,300.0	7,207.0	9,158.2	7,100.7	58.1	58.4	-83.39	146.0	1,366.2	924.2	808.6	115.55	7.998	
9,400.0	7,206.5	9,258.2	7,098.9	60.7	61.0	-83.32	146.0	1,466.2	924.3	803.6	120.72	7.657	
9,500.0	7,205.9	9,358.2	7,097.2	63.3	63.6	-83.24	146.0	1,566.2	924.5	798.5	125.92	7.342	
9,600.0	7,205.4	9,458.2	7,095.4	66.0	66.3	-83.17	146.0	1,666.2	924.6	793.5	131.14	7.050	
9,700.0	7,204.9	9,558.2	7,093.6	68.6	68.9	-83.09	146.0	1,766.1	924.8	788.4	136.39	6.780	
9,800.0	7,204.3	9,658.2	7,091.9	71.3	71.6	-83.02	146.0	1,866.1	924.9	783.2	141.66	6.529	
9,900.0	7,203.8	9,758.2	7,090.1	74.0	74.3	-82.94	146.0	1,966.1	925.1	778.1	146.96	6.295	
10,000.0	7,203.2	9,858.2	7,088.4	76.6	77.0	-82.87	146.0	2,066.1	925.2	772.9	152.26	6.076	

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 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	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
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
10,100.0	7,202.7	9,958.2	7,086.6	79.3	79.7	-82.79	146.0	2,166.0	925.4	767.8	157.59	5.872	
10,200.0	7,202.2	10,058.1	7,084.8	82.0	82.4	-82.72	146.0	2,266.0	925.5	762.6	162.92	5.681	
10,300.0	7,201.6	10,158.1	7,083.1	84.7	85.1	-82.64	146.0	2,366.0	925.7	757.4	168.27	5.501	
10,400.0	7,201.1	10,258.1	7,081.3	87.5	87.8	-82.57	146.0	2,466.0	925.8	752.2	173.63	5.332	
10,500.0	7,200.5	10,358.1	7,079.5	90.2	90.5	-82.49	146.0	2,565.9	926.0	747.0	179.00	5.173	
10,600.0	7,200.0	10,458.1	7,077.8	92.9	93.2	-82.42	146.0	2,665.9	926.1	741.8	184.38	5.023	
10,700.0	7,199.4	10,558.1	7,076.0	95.6	96.0	-82.34	146.0	2,765.9	926.3	736.5	189.76	4.881	
10,800.0	7,198.9	10,658.1	7,074.3	98.4	98.7	-82.27	146.0	2,865.9	926.5	731.3	195.15	4.747	
10,900.0	7,198.4	10,758.1	7,072.5	101.1	101.4	-82.19	146.0	2,965.9	926.6	726.1	200.55	4.620	
11,000.0	7,197.8	10,858.1	7,070.7	103.8	104.2	-82.12	146.0	3,065.8	926.8	720.9	205.95	4.500	
11,100.0	7,197.3	10,958.1	7,069.0	106.6	106.9	-82.04	146.0	3,165.8	927.0	715.6	211.36	4.386	
11,200.0	7,196.7	11,058.1	7,067.2	109.3	109.7	-81.97	146.0	3,265.8	927.1	710.4	216.77	4.277	
11,300.0	7,196.2	11,158.1	7,065.4	112.1	112.4	-81.89	146.0	3,365.8	927.3	705.1	222.19	4.174	
11,400.0	7,195.7	11,258.1	7,063.7	114.8	115.2	-81.82	146.0	3,465.7	927.5	699.9	227.60	4.075	
11,500.0	7,195.1	11,358.0	7,061.9	117.6	117.9	-81.74	146.0	3,565.7	927.7	694.6	233.02	3.981	
11,600.0	7,194.6	11,458.0	7,060.2	120.3	120.7	-81.67	146.0	3,665.7	927.8	689.4	238.45	3.891	
11,700.0	7,194.0	11,558.0	7,058.4	123.1	123.4	-81.60	146.0	3,765.7	928.0	684.1	243.87	3.805	
11,706.4	7,194.0	11,564.5	7,058.3	123.3	123.6	-81.59	146.0	3,772.1	928.0	683.8	244.22	3.800 SF	

Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20I-312 - Wellbore #1 - Plan #1 (8-25-14)												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)	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	0.00	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.1	0.1	0.00	29.1	0.0	29.1	28.9	0.22	129.666	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.67	43.222	
300.0	300.0	300.0	300.0	0.6	0.6	0.00	29.1	0.0	29.1	28.0	1.12	25.933	
400.0	400.0	400.0	400.0	0.8	0.8	0.00	29.1	0.0	29.1	27.6	1.57	18.524	
500.0	500.0	500.0	500.0	1.0	1.0	0.00	29.1	0.0	29.1	27.1	2.02	14.407 CC, ES	
600.0	600.0	600.0	600.0	1.2	1.2	132.72	29.1	0.0	30.3	27.8	2.45	12.357	
700.0	699.8	699.8	699.8	1.4	1.5	139.14	29.1	0.0	34.1	31.2	2.87	11.860	
800.0	799.5	799.5	799.5	1.6	1.7	147.04	29.1	0.0	41.1	37.8	3.31	12.424	
900.0	898.7	900.2	900.1	1.9	1.9	153.28	28.2	-1.5	50.3	46.6	3.72	13.512	
1,000.0	997.5	1,001.2	1,001.1	2.2	2.1	157.08	25.4	-6.0	60.2	56.0	4.13	14.566	
1,100.0	1,095.6	1,102.7	1,102.1	2.5	2.3	159.40	20.8	-13.6	70.4	65.8	4.56	15.449	
1,200.0	1,193.1	1,204.5	1,203.2	2.9	2.5	160.70	14.2	-24.3	80.5	75.5	5.01	16.066	
1,300.0	1,290.5	1,306.9	1,304.3	3.4	2.8	160.77	5.7	-38.1	88.0	82.5	5.51	15.975	
1,400.0	1,387.9	1,409.7	1,405.1	3.8	3.2	159.78	-4.7	-55.0	92.3	86.3	6.05	15.265	
1,500.0	1,485.3	1,510.2	1,503.2	4.3	3.5	158.15	-16.3	-73.7	94.5	87.9	6.63	14.251	
1,600.0	1,582.7	1,610.2	1,600.7	4.8	3.9	156.58	-27.7	-92.3	96.7	89.5	7.25	13.343	
1,700.0	1,680.1	1,710.1	1,698.3	5.2	4.4	155.08	-39.2	-111.0	99.0	91.1	7.90	12.538	
1,800.0	1,777.6	1,810.1	1,795.8	5.7	4.8	153.64	-50.7	-129.6	101.3	92.8	8.57	11.826	
1,900.0	1,875.0	1,910.0	1,893.3	6.2	5.2	152.28	-62.1	-148.2	103.7	94.4	9.27	11.192	
2,000.0	1,972.4	2,009.9	1,990.8	6.7	5.7	150.97	-73.6	-166.8	106.2	96.2	9.99	10.628	
2,100.0	2,069.8	2,109.9	2,088.3	7.2	6.1	149.72	-85.1	-185.5	108.7	97.9	10.73	10.125	
2,200.0	2,167.2	2,209.8	2,185.8	7.7	6.6	148.53	-96.6	-204.1	111.2	99.7	11.49	9.675	
2,300.0	2,264.6	2,309.8	2,283.4	8.1	7.1	147.40	-108.0	-222.7	113.8	101.5	12.27	9.272	
2,400.0	2,362.0	2,409.7	2,380.9	8.6	7.5	146.31	-119.5	-241.4	116.4	103.4	13.07	8.909	
2,500.0	2,459.4	2,509.7	2,478.4	9.1	8.0	145.27	-131.0	-260.0	119.1	105.2	13.88	8.581	
2,600.0	2,556.8	2,609.6	2,575.9	9.6	8.5	144.28	-142.5	-278.6	121.8	107.1	14.70	8.285	
2,700.0	2,654.2	2,709.5	2,673.4	10.1	8.9	143.33	-153.9	-297.2	124.6	109.0	15.54	8.016	
2,800.0	2,751.6	2,809.5	2,770.9	10.6	9.4	142.43	-165.4	-315.9	127.3	111.0	16.38	7.772	
2,900.0	2,849.0	2,909.4	2,868.5	11.1	9.9	141.56	-176.9	-334.5	130.2	112.9	17.24	7.549	
3,000.0	2,946.4	3,009.4	2,966.0	11.6	10.3	140.73	-188.4	-353.1	133.0	114.9	18.11	7.345	
3,100.0	3,043.8	3,109.3	3,063.5	12.1	10.8	139.93	-199.8	-371.8	135.9	116.9	18.98	7.158	
3,200.0	3,141.2	3,209.2	3,161.0	12.6	11.3	139.17	-211.3	-390.4	138.7	118.9	19.86	6.986	
3,300.0	3,238.6	3,309.2	3,258.5	13.1	11.8	138.44	-222.8	-409.0	141.7	120.9	20.75	6.827	
3,400.0	3,336.0	3,409.1	3,356.1	13.6	12.3	137.73	-234.3	-427.7	144.6	123.0	21.64	6.681	
3,500.0	3,433.4	3,509.1	3,453.6	14.0	12.7	137.06	-245.7	-446.3	147.6	125.0	22.54	6.545	
3,600.0	3,530.8	3,609.0	3,551.1	14.5	13.2	136.41	-257.2	-464.9	150.5	127.1	23.45	6.420	
3,700.0	3,628.2	3,709.0	3,648.6	15.0	13.7	135.79	-268.7	-483.5	153.5	129.2	24.36	6.303	
3,800.0	3,725.6	3,808.9	3,746.1	15.5	14.2	135.19	-280.2	-502.2	156.5	131.3	25.27	6.194	
3,900.0	3,823.0	3,908.8	3,843.6	16.0	14.7	134.62	-291.6	-520.8	159.6	133.4	26.19	6.093	
4,000.0	3,920.4	4,008.8	3,941.2	16.5	15.1	134.06	-303.1	-539.4	162.6	135.5	27.11	5.998	
4,100.0	4,017.8	4,108.7	4,038.7	17.0	15.6	133.53	-314.6	-558.1	165.7	137.6	28.04	5.909	
4,200.0	4,115.2	4,208.7	4,136.2	17.5	16.1	133.01	-326.1	-576.7	168.7	139.8	28.96	5.826	
4,300.0	4,212.6	4,308.6	4,233.7	18.0	16.6	132.52	-337.5	-595.3	171.8	141.9	29.89	5.748	
4,400.0	4,310.0	4,408.5	4,331.2	18.5	17.1	132.04	-349.0	-613.9	174.9	144.1	30.83	5.675	
4,500.0	4,407.4	4,508.5	4,428.7	19.0	17.5	131.58	-360.5	-632.6	178.0	146.3	31.76	5.605	
4,600.0	4,504.8	4,608.4	4,526.3	19.5	18.0	131.13	-372.0	-651.2	181.2	148.5	32.70	5.540	
4,700.0	4,602.2	4,708.4	4,623.8	20.0	18.5	130.70	-383.4	-669.8	184.3	150.7	33.64	5.479	
4,800.0	4,699.6	4,808.3	4,721.3	20.5	19.0	130.28	-394.9	-688.5	187.4	152.9	34.58	5.420	
4,900.0	4,797.0	4,908.2	4,818.8	21.0	19.5	129.88	-406.4	-707.1	190.6	155.1	35.52	5.365	
5,000.0	4,894.4	5,008.2	4,916.3	21.5	19.9	129.49	-417.9	-725.7	193.8	157.3	36.47	5.313	

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 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20I-312 - Wellbore #1 - Plan #1 (8-25-14)												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
5,100.0	4,991.8	5,108.1	5,013.8	22.0	20.4	129.11	-429.3	-744.3	196.9	159.5	37.41	5.263	
5,200.0	5,089.2	5,208.1	5,111.4	22.5	20.9	128.75	-440.8	-763.0	200.1	161.7	38.36	5.216	
5,300.0	5,186.6	5,308.0	5,208.9	23.0	21.4	128.39	-452.3	-781.6	203.3	164.0	39.31	5.172	
5,400.0	5,284.0	5,408.0	5,306.4	23.5	21.9	128.05	-463.8	-800.2	206.5	166.2	40.26	5.129	
5,500.0	5,381.4	5,507.9	5,403.9	24.0	22.4	127.72	-475.2	-818.9	209.7	168.5	41.21	5.088	
5,600.0	5,478.8	5,607.8	5,501.4	24.5	22.8	127.40	-486.7	-837.5	212.9	170.7	42.16	5.050	
5,700.0	5,576.2	5,706.8	5,598.1	25.0	23.3	127.11	-498.0	-855.8	216.2	173.1	43.08	5.018	
5,800.0	5,673.6	5,803.2	5,692.6	25.4	23.6	127.39	-507.8	-871.7	220.6	176.9	43.71	5.046	
5,900.0	5,771.6	5,900.0	5,788.1	25.8	23.9	127.95	-515.9	-885.0	225.1	181.0	44.13	5.102	
6,000.0	5,870.2	5,995.5	5,882.9	26.0	24.1	128.53	-522.3	-895.3	229.2	184.7	44.46	5.156	
6,100.0	5,969.3	6,091.5	5,978.4	26.3	24.3	129.11	-527.1	-903.0	232.8	188.1	44.70	5.208	
6,200.0	6,068.8	6,187.4	6,074.2	26.5	24.5	129.72	-530.1	-907.9	235.9	191.1	44.86	5.259	
6,300.0	6,168.6	6,283.2	6,169.9	26.7	24.6	130.35	-531.5	-910.2	238.6	193.6	44.94	5.309	
6,400.0	6,268.5	6,381.9	6,268.5	26.8	24.7	130.85	-531.6	-910.3	240.3	195.3	45.00	5.341	
6,500.0	6,368.5	6,481.8	6,368.5	26.9	24.8	0.67	-531.6	-910.3	240.5	200.3	40.21	5.980	
6,600.0	6,468.5	6,580.8	6,467.2	27.0	24.8	-87.68	-531.6	-903.2	240.6	195.8	44.84	5.366	
6,700.0	6,568.1	6,678.2	6,562.6	27.0	24.8	-85.03	-531.6	-883.8	241.4	197.4	43.92	5.496	
6,800.0	6,665.6	6,774.3	6,653.5	26.9	24.6	-82.50	-531.6	-852.9	242.5	199.7	42.82	5.664	
6,900.0	6,759.5	6,869.2	6,738.8	26.7	24.4	-80.12	-531.6	-811.5	244.1	202.4	41.66	5.859	
7,000.0	6,848.1	6,963.0	6,817.5	26.5	24.1	-77.95	-531.6	-760.5	245.9	205.4	40.55	6.064	
7,100.0	6,929.9	7,055.8	6,888.5	26.2	23.9	-76.00	-531.6	-700.9	247.9	208.3	39.60	6.259	
7,200.0	7,003.5	7,147.8	6,951.4	25.9	23.7	-74.30	-531.6	-633.8	249.8	210.9	38.94	6.415	
7,300.0	7,067.7	7,239.1	7,005.3	25.7	23.6	-72.86	-531.6	-560.2	251.7	212.9	38.72	6.500	
7,400.0	7,121.3	7,329.8	7,049.8	25.5	23.5	-71.70	-531.6	-481.2	253.3	214.2	39.03	6.489	
7,500.0	7,163.5	7,420.1	7,084.4	25.3	23.7	-70.81	-531.6	-397.9	254.6	214.6	39.96	6.371	
7,600.0	7,193.5	7,510.0	7,109.0	25.4	24.0	-70.22	-531.6	-311.4	255.5	214.0	41.51	6.156	
7,700.0	7,210.7	7,600.0	7,123.2	25.6	24.6	-69.90	-531.6	-222.6	256.0	212.4	43.62	5.869	
7,800.0	7,215.1	7,689.9	7,126.9	26.1	25.4	-69.85	-531.6	-132.9	256.1	210.0	46.14	5.551	
7,900.0	7,214.6	7,789.3	7,125.2	27.0	26.6	-69.60	-531.6	-33.5	256.5	207.8	48.72	5.266	
8,000.0	7,214.1	7,889.3	7,123.4	28.3	28.1	-69.34	-531.6	66.5	257.0	205.3	51.69	4.971	
8,100.0	7,213.5	7,989.3	7,121.7	30.0	29.8	-69.09	-531.6	166.5	257.4	202.4	54.99	4.681	
8,200.0	7,213.0	8,089.3	7,119.9	31.8	31.7	-68.84	-531.6	266.5	257.8	199.3	58.55	4.403	
8,300.0	7,212.4	8,189.3	7,118.1	33.8	33.8	-68.58	-531.6	366.4	258.3	195.9	62.34	4.143	
8,400.0	7,211.9	8,289.3	7,116.4	36.0	35.9	-68.33	-531.6	466.4	258.7	192.4	66.30	3.902	
8,500.0	7,211.3	8,389.3	7,114.6	38.2	38.2	-68.08	-531.6	566.4	259.2	188.8	70.41	3.681	
8,600.0	7,210.8	8,489.3	7,112.8	40.6	40.5	-67.83	-531.6	666.4	259.6	185.0	74.62	3.479	
8,700.0	7,210.3	8,589.3	7,111.1	43.0	42.9	-67.58	-531.6	766.4	260.1	181.2	78.94	3.295	
8,800.0	7,209.7	8,689.3	7,109.3	45.4	45.4	-67.33	-531.6	866.3	260.6	177.2	83.33	3.127	
8,900.0	7,209.2	8,789.3	7,107.6	47.9	47.8	-67.09	-531.6	966.3	261.0	173.3	87.77	2.974	
9,000.0	7,208.6	8,889.2	7,105.8	50.4	50.4	-66.84	-531.6	1,066.3	261.5	169.3	92.27	2.834	
9,100.0	7,208.1	8,989.2	7,104.0	52.9	52.9	-66.59	-531.6	1,166.3	262.0	165.2	96.81	2.706	
9,200.0	7,207.6	9,089.2	7,102.3	55.5	55.5	-66.35	-531.6	1,266.2	262.5	161.1	101.38	2.589	
9,300.0	7,207.0	9,189.2	7,100.5	58.1	58.1	-66.11	-531.6	1,366.2	263.0	157.0	105.97	2.482	
9,400.0	7,206.5	9,289.2	7,098.7	60.7	60.7	-65.86	-531.6	1,466.2	263.5	152.9	110.58	2.383	
9,500.0	7,205.9	9,389.2	7,097.0	63.3	63.3	-65.62	-531.6	1,566.2	264.0	148.8	115.21	2.291	
9,600.0	7,205.4	9,489.2	7,095.2	66.0	65.9	-65.38	-531.6	1,666.1	264.5	144.6	119.84	2.207	
9,700.0	7,204.9	9,589.2	7,093.5	68.6	68.6	-65.14	-531.6	1,766.1	265.0	140.5	124.48	2.129	
9,800.0	7,204.3	9,689.2	7,091.7	71.3	71.3	-64.90	-531.6	1,866.1	265.5	136.4	129.13	2.056	
9,900.0	7,203.8	9,789.2	7,089.9	74.0	73.9	-64.66	-531.6	1,966.1	266.0	132.3	133.77	1.989	
10,000.0	7,203.2	9,889.2	7,088.2	76.6	76.6	-64.42	-531.6	2,066.1	266.6	128.1	138.42	1.926	
10,100.0	7,202.7	9,989.2	7,086.4	79.3	79.3	-64.19	-531.6	2,166.0	267.1	124.0	143.06	1.867	

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 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Offset Design Peschel 4N65W20B Pad Sec.20-T4N-R65W - Peschel 20I-312 - Wellbore #1 - Plan #1 (8-25-14)													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	
10,200.0	7,202.2	10,089.2	7,084.6	82.0	82.0	-63.95	-531.6	2,266.0	267.6	119.9	147.69	1.812		
10,300.0	7,201.6	10,189.1	7,082.9	84.7	84.7	-63.72	-531.6	2,366.0	268.2	115.8	152.32	1.761		
10,400.0	7,201.1	10,289.1	7,081.1	87.5	87.4	-63.48	-531.6	2,466.0	268.7	111.8	156.94	1.712		
10,500.0	7,200.5	10,389.1	7,079.4	90.2	90.2	-63.25	-531.6	2,565.9	269.3	107.7	161.56	1.667		
10,600.0	7,200.0	10,489.1	7,077.6	92.9	92.9	-63.02	-531.6	2,665.9	269.8	103.7	166.16	1.624		
10,700.0	7,199.4	10,589.1	7,075.8	95.6	95.6	-62.79	-531.6	2,765.9	270.4	99.6	170.75	1.583		
10,800.0	7,198.9	10,689.1	7,074.1	98.4	98.3	-62.56	-531.6	2,865.9	270.9	95.6	175.33	1.545		
10,900.0	7,198.4	10,789.1	7,072.3	101.1	101.1	-62.33	-531.6	2,965.8	271.5	91.6	179.90	1.509		
11,000.0	7,197.8	10,889.1	7,070.5	103.8	103.8	-62.10	-531.6	3,065.8	272.1	87.6	184.45	1.475 Level 3		
11,100.0	7,197.3	10,989.1	7,068.8	106.6	106.6	-61.88	-531.6	3,165.8	272.6	83.6	188.99	1.443 Level 3		
11,200.0	7,196.7	11,089.1	7,067.0	109.3	109.3	-61.65	-531.6	3,265.8	273.2	79.7	193.52	1.412 Level 3		
11,300.0	7,196.2	11,189.1	7,065.3	112.1	112.1	-61.43	-531.6	3,365.8	273.8	75.8	198.03	1.383 Level 3		
11,400.0	7,195.7	11,289.1	7,063.5	114.8	114.8	-61.20	-531.6	3,465.7	274.4	71.9	202.53	1.355 Level 3		
11,500.0	7,195.1	11,389.1	7,061.7	117.6	117.6	-60.98	-531.6	3,565.7	275.0	68.0	207.01	1.328 Level 3		
11,600.0	7,194.6	11,489.0	7,060.0	120.3	120.3	-60.76	-531.6	3,665.7	275.6	64.1	211.47	1.303 Level 3		
11,700.0	7,194.0	11,589.0	7,058.2	123.1	123.1	-60.53	-531.6	3,765.7	276.2	60.2	215.92	1.279 Level 3		
11,706.4	7,194.0	11,595.5	7,058.1	123.3	123.3	-60.52	-531.6	3,772.1	276.2	60.0	216.20	1.278 Level 3, SF		

Reference Depths are relative to WELL @ 4817.0ft (RKB - 15')	Coordinates are relative to: Peschel 201-402
Offset Depths are relative to Offset Datum	Coordinate System is US State Plane 1983, Colorado Northern Zone
Central Meridian is -105.500000 °	Grid Convergence at Surface is: 0.52°



Company:	PETROLEUM DEVELOPMENT CORP Weld County CO	Local Co-ordinate Reference:	Well Peschel 20I-402
Project:	SEC.20-T4N-R65W	TVD Reference:	WELL @ 4817.0ft (RKB - 15')
Reference Site:	Peschel 4N65W20B Pad Sec.20-T4N-R65W	MD Reference:	WELL @ 4817.0ft (RKB - 15')
Site Error:	0.0ft	North Reference:	True
Reference Well:	Peschel 20I-402	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 (8-25-14)	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 4817.0ft (RKB - 15')

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Peschel 20I-402

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.52°

