

PDC Energy Inc. DJ Basin

Well Name: **Ridgway 3N (Nio B)**

Surface Location: Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone

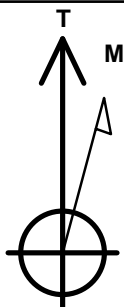
Ground Elevation: 4870.0

+N/-S+E/-W Northing Easting Latitude Longitude Slot
0.0 0.0 1338388.95 3214296.68 40.259730 -104.732140

Original Well Elev WELL @ 4893.0ft (Original Well Elev)

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 520'FNL, 765'FWL, Sec.1	1.0	0.0	0.0	Point
BHL 150'FSL, 845'FWL, Sec.12	7078.0	-9806.1	97.5	Point
LPL 737'FNL, 895'FWL, Sec.1	7113.0	-213.8	130.4	Point



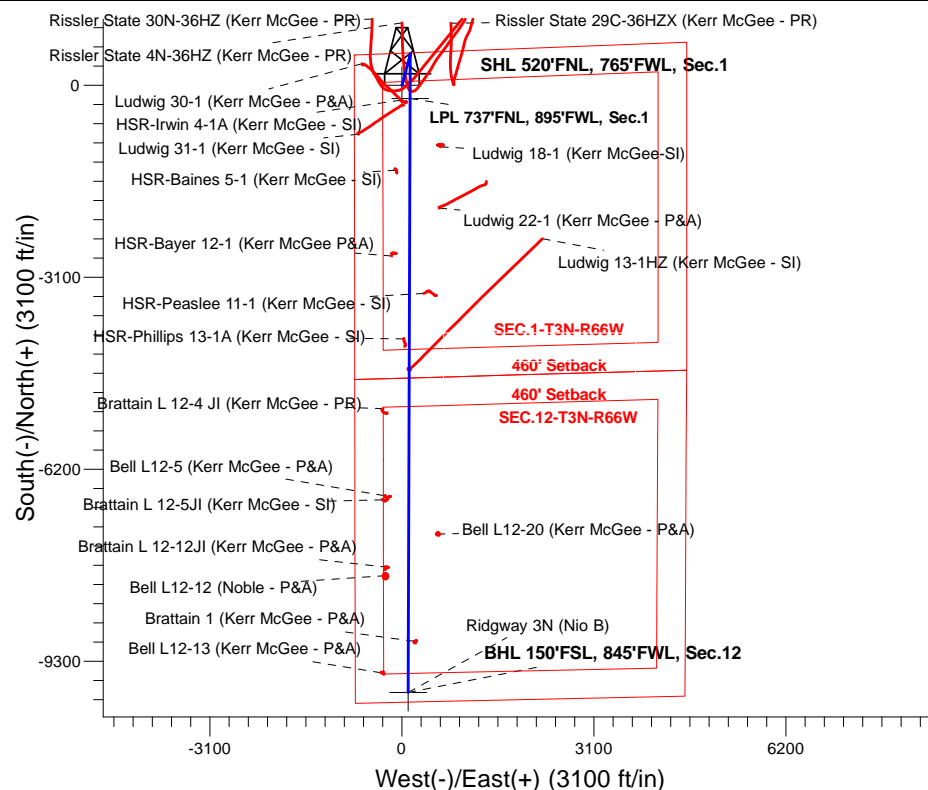
Azimuths to True North
Magnetic North: 8.17°

Magnetic Field
Strength: 52062.8snT
Dip Angle: 66.65°
Date: 8/23/2019
Model: HDGM

Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W
Ridgway 3N (Nio B)
Plan #1 (8-07-19)
10:50, August 23 2019

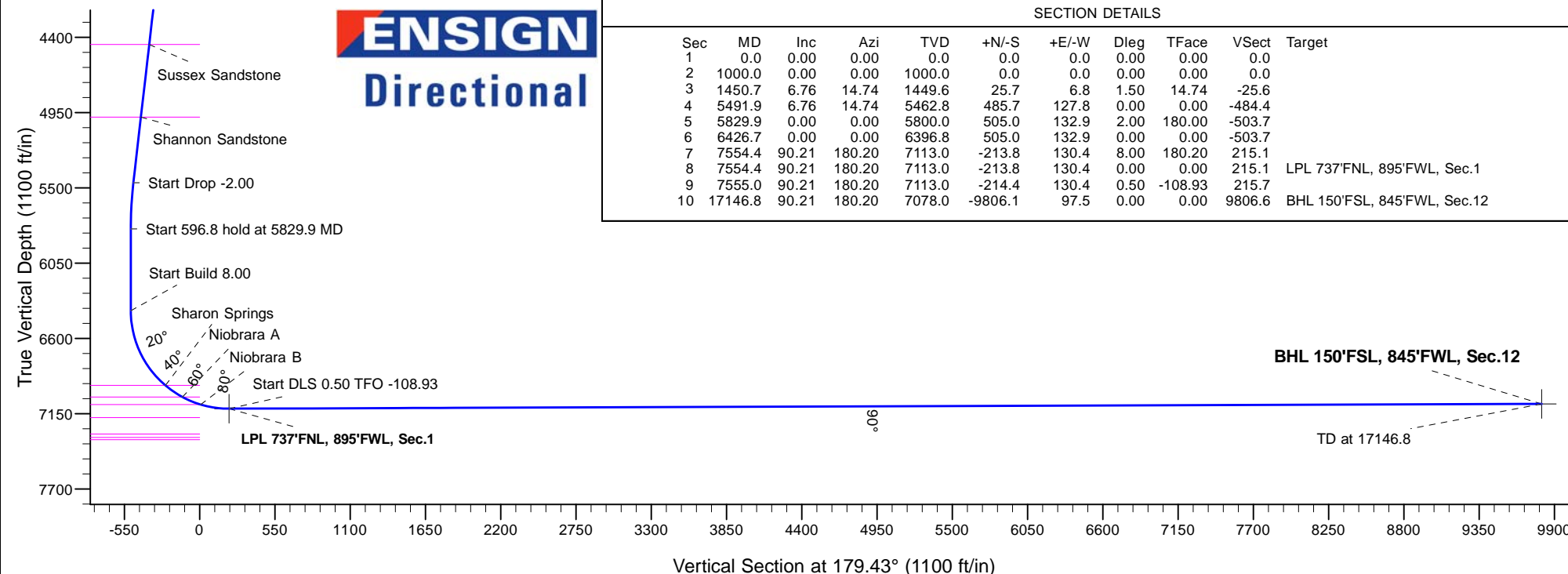
ANNOTATIONS

TVD	MD	Annotation
1000.0	1000.0	KOP - Start Build 1.50
5462.8	5491.9	Start Drop -2.00
5800.0	5829.9	Start 596.8 hold at 5829.9 MD
6396.8	6426.7	Start Build 8.00
7113.0	7554.4	Start DLS 0.50 TFO -108.93
7113.0	7555.0	Start 9591.8 hold at 7555.0 MD
7078.0	17146.8	TD at 17146.8



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1450.7	6.76	14.74	1449.6	25.7	6.8	1.50	14.74	-25.6	
4	5491.9	6.76	14.74	5462.8	485.7	127.8	0.00	0.00	-484.4	
5	5829.9	0.00	0.00	5800.0	505.0	132.9	2.00	180.00	-503.7	
6	6426.7	0.00	0.00	6396.8	505.0	132.9	0.00	0.00	-503.7	
7	7554.4	90.21	180.20	7113.0	-213.8	130.4	8.00	180.20	215.1	LPL 737'FNL, 895'FWL, Sec.1
8	7554.4	90.21	180.20	7113.0	-213.8	130.4	0.00	0.00	215.1	
9	7555.0	90.21	180.20	7113.0	-214.4	130.4	0.50	-108.93	215.7	
10	17146.8	90.21	180.20	7078.0	-9806.1	97.5	0.00	0.00	9806.6	BHL 150'FSL, 845'FWL, Sec.12





PDC Energy Inc. DJ Basin

SEC.1-T3N-R66W

Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W

Ridgway 3N (Nio B)

Wellbore #1

Plan: Plan #1 (8-07-19)

Standard Planning Report

23 August, 2019

Database:	US_EDM	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Project:	SEC.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	North Reference:	True
Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-19)		

Project	SEC.1-T3N-R66W, Weld County, CO		
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	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W			
Site Position:		Northing:	1,338,387.68 usft	Latitude: 40.259727
From:	Lat/Long	Easting:	3,214,266.55 usft	Longitude: -104.732249
Position Uncertainty:	0.0 ft	Slot Radius:	13-3/16 "	Grid Convergence: 0.50 °

Well	Ridgway 3N (Nio B)			
Well Position	+N/-S	1.0 ft	Northing:	1,338,388.95 usft
	+E/-W	30.1 ft	Easting:	3,214,296.69 usft
Position Uncertainty	0.0 ft	Wellhead Elevation:	0.0 ft	Ground Level: 4,870.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	8/23/2019	8.17	66.65	52,063

Design	Plan #1 (8-07-19)			
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	179.43

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,450.7	6.76	14.74	1,449.6	25.7	6.8	1.50	1.50	0.00	14.74	
5,491.9	6.76	14.74	5,462.8	485.7	127.8	0.00	0.00	0.00	0.00	
5,829.9	0.00	0.00	5,800.0	505.0	132.9	2.00	-2.00	0.00	180.00	
6,426.7	0.00	0.00	6,396.8	505.0	132.9	0.00	0.00	0.00	0.00	
7,554.4	90.21	180.20	7,113.0	-213.8	130.4	8.00	8.00	0.00	180.20	
7,554.4	90.21	180.20	7,113.0	-213.8	130.4	0.00	0.00	0.00	0.00	LPL 737'FNL, 895'FW
7,555.0	90.21	180.20	7,113.0	-214.4	130.4	0.50	-0.16	-0.47	-108.93	
17,146.8	90.21	180.20	7,078.0	-9,806.1	97.5	0.00	0.00	0.00	0.00	BHL 150'FSL, 845'FW

Database:	US_EDM	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Project:	SEC.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	North Reference:	True
Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-19)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP - Start Build 1.50									
1,100.0	1.50	14.74	1,100.0	1.3	0.3	-1.3	1.50	1.50	0.00
1,200.0	3.00	14.74	1,199.9	5.1	1.3	-5.0	1.50	1.50	0.00
1,300.0	4.50	14.74	1,299.7	11.4	3.0	-11.4	1.50	1.50	0.00
1,400.0	6.00	14.74	1,399.3	20.2	5.3	-20.2	1.50	1.50	0.00
1,450.7	6.76	14.74	1,449.6	25.7	6.8	-25.6	1.50	1.50	0.00
1,500.0	6.76	14.74	1,498.6	31.3	8.2	-31.2	0.00	0.00	0.00
1,600.0	6.76	14.74	1,597.9	42.7	11.2	-42.6	0.00	0.00	0.00
1,700.0	6.76	14.74	1,697.2	54.1	14.2	-53.9	0.00	0.00	0.00
1,800.0	6.76	14.74	1,796.5	65.4	17.2	-65.3	0.00	0.00	0.00
1,900.0	6.76	14.74	1,895.8	76.8	20.2	-76.6	0.00	0.00	0.00
2,000.0	6.76	14.74	1,995.1	88.2	23.2	-88.0	0.00	0.00	0.00
2,100.0	6.76	14.74	2,094.4	99.6	26.2	-99.3	0.00	0.00	0.00
2,200.0	6.76	14.74	2,193.7	111.0	29.2	-110.7	0.00	0.00	0.00
2,300.0	6.76	14.74	2,293.0	122.4	32.2	-122.0	0.00	0.00	0.00
2,400.0	6.76	14.74	2,392.4	133.8	35.2	-133.4	0.00	0.00	0.00
2,500.0	6.76	14.74	2,491.7	145.1	38.2	-144.8	0.00	0.00	0.00
2,600.0	6.76	14.74	2,591.0	156.5	41.2	-156.1	0.00	0.00	0.00
2,700.0	6.76	14.74	2,690.3	167.9	44.2	-167.5	0.00	0.00	0.00
2,800.0	6.76	14.74	2,789.6	179.3	47.2	-178.8	0.00	0.00	0.00
2,900.0	6.76	14.74	2,888.9	190.7	50.2	-190.2	0.00	0.00	0.00
3,000.0	6.76	14.74	2,988.2	202.1	53.2	-201.5	0.00	0.00	0.00
3,100.0	6.76	14.74	3,087.5	213.4	56.2	-212.9	0.00	0.00	0.00
3,200.0	6.76	14.74	3,186.8	224.8	59.2	-224.2	0.00	0.00	0.00
3,300.0	6.76	14.74	3,286.1	236.2	62.2	-235.6	0.00	0.00	0.00
3,400.0	6.76	14.74	3,385.4	247.6	65.2	-246.9	0.00	0.00	0.00
3,500.0	6.76	14.74	3,484.7	259.0	68.2	-258.3	0.00	0.00	0.00
3,600.0	6.76	14.74	3,584.0	270.4	71.2	-269.6	0.00	0.00	0.00
3,700.0	6.76	14.74	3,683.3	281.7	74.1	-281.0	0.00	0.00	0.00
3,800.0	6.76	14.74	3,782.6	293.1	77.1	-292.3	0.00	0.00	0.00
3,865.8	6.76	14.74	3,848.0	300.6	79.1	-299.8	0.00	0.00	0.00
Parkman Sandstone									
3,900.0	6.76	14.74	3,881.9	304.5	80.1	-303.7	0.00	0.00	0.00
4,000.0	6.76	14.74	3,981.2	315.9	83.1	-315.1	0.00	0.00	0.00
4,100.0	6.76	14.74	4,080.5	327.3	86.1	-326.4	0.00	0.00	0.00
4,200.0	6.76	14.74	4,179.8	338.7	89.1	-337.8	0.00	0.00	0.00
4,300.0	6.76	14.74	4,279.1	350.1	92.1	-349.1	0.00	0.00	0.00
4,400.0	6.76	14.74	4,378.4	361.4	95.1	-360.5	0.00	0.00	0.00
4,475.1	6.76	14.74	4,453.0	370.0	97.4	-369.0	0.00	0.00	0.00
Sussex Sandstone									
4,500.0	6.76	14.74	4,477.8	372.8	98.1	-371.8	0.00	0.00	0.00
4,600.0	6.76	14.74	4,577.1	384.2	101.1	-383.2	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Project:	SEC.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	North Reference:	True
Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-19)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,700.0	6.76	14.74	4,676.4	395.6	104.1	-394.5	0.00	0.00	0.00
4,800.0	6.76	14.74	4,775.7	407.0	107.1	-405.9	0.00	0.00	0.00
4,900.0	6.76	14.74	4,875.0	418.4	110.1	-417.2	0.00	0.00	0.00
5,000.0	6.76	14.74	4,974.3	429.7	113.1	-428.6	0.00	0.00	0.00
5,008.8	6.76	14.74	4,983.0	430.7	113.4	-429.6	0.00	0.00	0.00
Shannon Sandstone									
5,100.0	6.76	14.74	5,073.6	441.1	116.1	-439.9	0.00	0.00	0.00
5,200.0	6.76	14.74	5,172.9	452.5	119.1	-451.3	0.00	0.00	0.00
5,300.0	6.76	14.74	5,272.2	463.9	122.1	-462.7	0.00	0.00	0.00
5,400.0	6.76	14.74	5,371.5	475.3	125.1	-474.0	0.00	0.00	0.00
5,491.9	6.76	14.74	5,462.8	485.7	127.8	-484.4	0.00	0.00	0.00
Start Drop -2.00									
5,500.0	6.60	14.74	5,470.8	486.6	128.1	-485.4	2.00	-2.00	0.00
5,600.0	4.60	14.74	5,570.3	496.1	130.6	-494.8	2.00	-2.00	0.00
5,700.0	2.60	14.74	5,670.1	502.2	132.2	-500.8	2.00	-2.00	0.00
5,800.0	0.60	14.74	5,770.1	504.8	132.9	-503.5	2.00	-2.00	0.00
5,829.9	0.00	14.74	5,800.0	505.0	132.9	-503.7	2.00	-2.00	0.00
Start 596.8 hold at 5829.9 MD									
5,900.0	0.00	0.00	5,870.1	505.0	132.9	-503.7	0.00	0.00	0.00
6,000.0	0.00	0.00	5,970.1	505.0	132.9	-503.7	0.00	0.00	0.00
6,100.0	0.00	0.00	6,070.1	505.0	132.9	-503.7	0.00	0.00	0.00
6,200.0	0.00	0.00	6,170.1	505.0	132.9	-503.7	0.00	0.00	0.00
6,300.0	0.00	0.00	6,270.1	505.0	132.9	-503.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,370.1	505.0	132.9	-503.7	0.00	0.00	0.00
6,426.7	0.00	0.00	6,396.8	505.0	132.9	-503.7	0.00	0.00	0.00
Start Build 8.00									
6,500.0	5.86	180.20	6,469.9	501.3	132.9	-499.9	8.00	8.00	0.00
6,600.0	13.86	180.20	6,568.4	484.1	132.8	-482.8	8.00	8.00	0.00
6,700.0	21.86	180.20	6,663.5	453.5	132.7	-452.2	8.00	8.00	0.00
6,800.0	29.86	180.20	6,753.4	409.9	132.6	-408.6	8.00	8.00	0.00
6,900.0	37.86	180.20	6,836.4	354.2	132.4	-352.9	8.00	8.00	0.00
7,000.0	45.86	180.20	6,910.8	287.6	132.1	-286.2	8.00	8.00	0.00
7,047.9	49.70	180.20	6,943.0	252.1	132.0	-250.7	8.00	8.00	0.00
Sharon Springs									
7,100.0	53.86	180.20	6,975.2	211.2	131.9	-209.9	8.00	8.00	0.00
7,199.2	61.80	180.20	7,028.0	127.2	131.6	-125.9	8.00	8.00	0.00
Niobrara A									
7,200.0	61.86	180.20	7,028.4	126.6	131.6	-125.3	8.00	8.00	0.00
7,300.0	69.86	180.20	7,069.2	35.4	131.3	-34.1	8.00	8.00	0.00
7,343.7	73.36	180.20	7,083.0	-6.1	131.1	7.4	8.00	8.00	0.00
Niobrara B									
7,400.0	77.86	180.20	7,097.0	-60.6	130.9	61.9	8.00	8.00	0.00
7,500.0	85.86	180.20	7,111.1	-159.5	130.6	160.8	8.00	8.00	0.00
7,554.4	90.21	180.20	7,113.0	-213.9	130.4	215.1	7.99	7.99	0.00
Start DLS 0.50 TFO -108.93									
7,555.0	90.21	180.20	7,113.0	-214.5	130.4	215.7	0.48	-0.16	-0.46
Start 9591.8 hold at 7555.0 MD									
7,600.0	90.21	180.20	7,112.8	-259.5	130.2	260.7	0.00	0.00	0.00
7,700.0	90.21	180.20	7,112.5	-359.5	129.9	360.7	0.00	0.00	0.00
7,800.0	90.21	180.20	7,112.1	-459.5	129.6	460.7	0.00	0.00	0.00
7,900.0	90.21	180.20	7,111.7	-559.5	129.2	560.7	0.00	0.00	0.00
8,000.0	90.21	180.20	7,111.4	-659.5	128.9	660.7	0.00	0.00	0.00
8,100.0	90.21	180.20	7,111.0	-759.5	128.5	760.7	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Project:	SEC.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	North Reference:	True
Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-19)		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
8,200.0	90.21	180.20	7,110.6	-859.5	128.2	860.7	0.00	0.00	0.00
8,300.0	90.21	180.20	7,110.3	-959.5	127.8	960.7	0.00	0.00	0.00
8,400.0	90.21	180.20	7,109.9	-1,059.4	127.5	1,060.7	0.00	0.00	0.00
8,500.0	90.21	180.20	7,109.5	-1,159.4	127.2	1,160.7	0.00	0.00	0.00
8,600.0	90.21	180.20	7,109.2	-1,259.4	126.8	1,260.6	0.00	0.00	0.00
8,700.0	90.21	180.20	7,108.8	-1,359.4	126.5	1,360.6	0.00	0.00	0.00
8,800.0	90.21	180.20	7,108.5	-1,459.4	126.1	1,460.6	0.00	0.00	0.00
8,900.0	90.21	180.20	7,108.1	-1,559.4	125.8	1,560.6	0.00	0.00	0.00
9,000.0	90.21	180.20	7,107.7	-1,659.4	125.4	1,660.6	0.00	0.00	0.00
9,100.0	90.21	180.20	7,107.4	-1,759.4	125.1	1,760.6	0.00	0.00	0.00
9,200.0	90.21	180.20	7,107.0	-1,859.4	124.8	1,860.6	0.00	0.00	0.00
9,300.0	90.21	180.20	7,106.6	-1,959.4	124.4	1,960.6	0.00	0.00	0.00
9,400.0	90.21	180.20	7,106.3	-2,059.4	124.1	2,060.6	0.00	0.00	0.00
9,500.0	90.21	180.20	7,105.9	-2,159.4	123.7	2,160.6	0.00	0.00	0.00
9,600.0	90.21	180.20	7,105.5	-2,259.4	123.4	2,260.5	0.00	0.00	0.00
9,700.0	90.21	180.20	7,105.2	-2,359.4	123.0	2,360.5	0.00	0.00	0.00
9,800.0	90.21	180.20	7,104.8	-2,459.4	122.7	2,460.5	0.00	0.00	0.00
9,900.0	90.21	180.20	7,104.4	-2,559.4	122.4	2,560.5	0.00	0.00	0.00
10,000.0	90.21	180.20	7,104.1	-2,659.4	122.0	2,660.5	0.00	0.00	0.00
10,100.0	90.21	180.20	7,103.7	-2,759.4	121.7	2,760.5	0.00	0.00	0.00
10,200.0	90.21	180.20	7,103.3	-2,859.4	121.3	2,860.5	0.00	0.00	0.00
10,300.0	90.21	180.20	7,103.0	-2,959.4	121.0	2,960.5	0.00	0.00	0.00
10,400.0	90.21	180.20	7,102.6	-3,059.4	120.6	3,060.5	0.00	0.00	0.00
10,500.0	90.21	180.20	7,102.3	-3,159.4	120.3	3,160.5	0.00	0.00	0.00
10,600.0	90.21	180.20	7,101.9	-3,259.4	120.0	3,260.5	0.00	0.00	0.00
10,700.0	90.21	180.20	7,101.5	-3,359.4	119.6	3,360.4	0.00	0.00	0.00
10,800.0	90.21	180.20	7,101.2	-3,459.4	119.3	3,460.4	0.00	0.00	0.00
10,900.0	90.21	180.20	7,100.8	-3,559.4	118.9	3,560.4	0.00	0.00	0.00
11,000.0	90.21	180.20	7,100.4	-3,659.4	118.6	3,660.4	0.00	0.00	0.00
11,100.0	90.21	180.20	7,100.1	-3,759.4	118.2	3,760.4	0.00	0.00	0.00
11,200.0	90.21	180.20	7,099.7	-3,859.4	117.9	3,860.4	0.00	0.00	0.00
11,300.0	90.21	180.20	7,099.3	-3,959.4	117.6	3,960.4	0.00	0.00	0.00
11,400.0	90.21	180.20	7,099.0	-4,059.4	117.2	4,060.4	0.00	0.00	0.00
11,500.0	90.21	180.20	7,098.6	-4,159.4	116.9	4,160.4	0.00	0.00	0.00
11,600.0	90.21	180.20	7,098.2	-4,259.4	116.5	4,260.4	0.00	0.00	0.00
11,700.0	90.21	180.20	7,097.9	-4,359.4	116.2	4,360.3	0.00	0.00	0.00
11,800.0	90.21	180.20	7,097.5	-4,459.4	115.8	4,460.3	0.00	0.00	0.00
11,900.0	90.21	180.20	7,097.1	-4,559.4	115.5	4,560.3	0.00	0.00	0.00
12,000.0	90.21	180.20	7,096.8	-4,659.4	115.2	4,660.3	0.00	0.00	0.00
12,100.0	90.21	180.20	7,096.4	-4,759.4	114.8	4,760.3	0.00	0.00	0.00
12,200.0	90.21	180.20	7,096.0	-4,859.4	114.5	4,860.3	0.00	0.00	0.00
12,300.0	90.21	180.20	7,095.7	-4,959.4	114.1	4,960.3	0.00	0.00	0.00
12,400.0	90.21	180.20	7,095.3	-5,059.4	113.8	5,060.3	0.00	0.00	0.00
12,500.0	90.21	180.20	7,095.0	-5,159.4	113.4	5,160.3	0.00	0.00	0.00
12,600.0	90.21	180.20	7,094.6	-5,259.4	113.1	5,260.3	0.00	0.00	0.00
12,700.0	90.21	180.20	7,094.2	-5,359.4	112.8	5,360.3	0.00	0.00	0.00
12,800.0	90.21	180.20	7,093.9	-5,459.4	112.4	5,460.2	0.00	0.00	0.00
12,900.0	90.21	180.20	7,093.5	-5,559.4	112.1	5,560.2	0.00	0.00	0.00
13,000.0	90.21	180.20	7,093.1	-5,659.4	111.7	5,660.2	0.00	0.00	0.00
13,100.0	90.21	180.20	7,092.8	-5,759.4	111.4	5,760.2	0.00	0.00	0.00
13,200.0	90.21	180.20	7,092.4	-5,859.4	111.0	5,860.2	0.00	0.00	0.00
13,300.0	90.21	180.20	7,092.0	-5,959.4	110.7	5,960.2	0.00	0.00	0.00
13,400.0	90.21	180.20	7,091.7	-6,059.4	110.4	6,060.2	0.00	0.00	0.00
13,500.0	90.21	180.20	7,091.3	-6,159.4	110.0	6,160.2	0.00	0.00	0.00

Database:	US_EDM	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Project:	SEC.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	North Reference:	True
Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-19)		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
13,600.0	90.21	180.20	7,090.9	-6,259.4	109.7	6,260.2	0.00	0.00	0.00	
13,700.0	90.21	180.20	7,090.6	-6,359.4	109.3	6,360.2	0.00	0.00	0.00	
13,800.0	90.21	180.20	7,090.2	-6,459.4	109.0	6,460.1	0.00	0.00	0.00	
13,900.0	90.21	180.20	7,089.8	-6,559.4	108.6	6,560.1	0.00	0.00	0.00	
14,000.0	90.21	180.20	7,089.5	-6,659.4	108.3	6,660.1	0.00	0.00	0.00	
14,100.0	90.21	180.20	7,089.1	-6,759.4	107.9	6,760.1	0.00	0.00	0.00	
14,200.0	90.21	180.20	7,088.8	-6,859.4	107.6	6,860.1	0.00	0.00	0.00	
14,300.0	90.21	180.20	7,088.4	-6,959.4	107.3	6,960.1	0.00	0.00	0.00	
14,400.0	90.21	180.20	7,088.0	-7,059.4	106.9	7,060.1	0.00	0.00	0.00	
14,500.0	90.21	180.20	7,087.7	-7,159.4	106.6	7,160.1	0.00	0.00	0.00	
14,600.0	90.21	180.20	7,087.3	-7,259.4	106.2	7,260.1	0.00	0.00	0.00	
14,700.0	90.21	180.20	7,086.9	-7,359.4	105.9	7,360.1	0.00	0.00	0.00	
14,800.0	90.21	180.20	7,086.6	-7,459.4	105.5	7,460.0	0.00	0.00	0.00	
14,900.0	90.21	180.20	7,086.2	-7,559.4	105.2	7,560.0	0.00	0.00	0.00	
15,000.0	90.21	180.20	7,085.8	-7,659.4	104.9	7,660.0	0.00	0.00	0.00	
15,100.0	90.21	180.20	7,085.5	-7,759.4	104.5	7,760.0	0.00	0.00	0.00	
15,200.0	90.21	180.20	7,085.1	-7,859.4	104.2	7,860.0	0.00	0.00	0.00	
15,300.0	90.21	180.20	7,084.7	-7,959.4	103.8	7,960.0	0.00	0.00	0.00	
15,400.0	90.21	180.20	7,084.4	-8,059.4	103.5	8,060.0	0.00	0.00	0.00	
15,500.0	90.21	180.20	7,084.0	-8,159.4	103.1	8,160.0	0.00	0.00	0.00	
15,600.0	90.21	180.20	7,083.6	-8,259.4	102.8	8,260.0	0.00	0.00	0.00	
15,700.0	90.21	180.20	7,083.3	-8,359.4	102.5	8,360.0	0.00	0.00	0.00	
15,800.0	90.21	180.20	7,082.9	-8,459.4	102.1	8,460.0	0.00	0.00	0.00	
15,900.0	90.21	180.20	7,082.5	-8,559.4	101.8	8,559.9	0.00	0.00	0.00	
16,000.0	90.21	180.20	7,082.2	-8,659.4	101.4	8,659.9	0.00	0.00	0.00	
16,100.0	90.21	180.20	7,081.8	-8,759.4	101.1	8,759.9	0.00	0.00	0.00	
16,200.0	90.21	180.20	7,081.5	-8,859.4	100.7	8,859.9	0.00	0.00	0.00	
16,300.0	90.21	180.20	7,081.1	-8,959.3	100.4	8,959.9	0.00	0.00	0.00	
16,400.0	90.21	180.20	7,080.7	-9,059.3	100.1	9,059.9	0.00	0.00	0.00	
16,500.0	90.21	180.20	7,080.4	-9,159.3	99.7	9,159.9	0.00	0.00	0.00	
16,600.0	90.21	180.20	7,080.0	-9,259.3	99.4	9,259.9	0.00	0.00	0.00	
16,700.0	90.21	180.20	7,079.6	-9,359.3	99.0	9,359.9	0.00	0.00	0.00	
16,800.0	90.21	180.20	7,079.3	-9,459.3	98.7	9,459.9	0.00	0.00	0.00	
16,900.0	90.21	180.20	7,078.9	-9,559.3	98.3	9,559.8	0.00	0.00	0.00	
17,000.0	90.21	180.20	7,078.5	-9,659.3	98.0	9,659.8	0.00	0.00	0.00	
17,100.0	90.21	180.20	7,078.2	-9,759.3	97.7	9,759.8	0.00	0.00	0.00	
17,146.8	90.21	180.20	7,078.0	-9,806.1	97.5	9,806.6	0.00	0.00	0.00	
TD at 17146.8										

Database:	US_EDM	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Company:	PDC Energy Inc. DJ Basin	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Project:	SEC.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	North Reference:	True
Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (8-07-19)		

Design Targets										
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)			
- Shape										
SHL 520'FNL, 765'FWL, - plan hits target center - Point	0.00	0.00	1.0	0.0	0.0	1,338,388.96	3,214,296.69	40.259730	-104.732141	
BHL 150'FSL, 845'FWL, - plan hits target center - Point	0.00	0.00	7,078.0	-9,806.1	97.5	1,328,584.47	3,214,479.09	40.232812	-104.731791	
LPL 737'FNL, 895'FWL, - plan hits target center - Point	0.00	0.00	7,113.0	-213.8	130.4	1,338,176.26	3,214,428.93	40.259143	-104.731673	

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
3,865.8	3,848.0	Parkman Sandstone				
4,475.1	4,453.0	Sussex Sandstone				
5,008.8	4,983.0	Shannon Sandstone				
7,047.9	6,943.0	Sharon Springs				
7,199.2	7,028.0	Niobrara A				
7,343.7	7,083.0	Niobrara B				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
1,000.0	1,000.0	0.0	0.0	KOP - Start Build 1.50	
5,491.9	5,462.8	25.7	6.8	Start Drop -2.00	
5,829.9	5,800.0	485.7	127.8	Start 596.8 hold at 5829.9 MD	
6,426.7	6,396.8	505.0	132.9	Start Build 8.00	
7,554.4	7,113.0	505.0	132.9	Start DLS 0.50 TFO -108.93	
7,555.0	7,113.0	-213.8	130.4	Start 9591.8 hold at 7555.0 MD	
17,146.8	7,078.0	-214.4	130.4	TD at 17146.8	



PDC Energy Inc. DJ Basin

SEC.1-T3N-R66W

Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W

Ridgway 3N (Nio B)

Wellbore #1

Plan #1 (8-07-19)

Anticollision Report

23 August, 2019

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (8-07-19)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 800.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	8/23/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,146.8	Plan #1 (8-07-19) (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.12-T3N-R66W						
Bell L12-12 (Noble - P&A) - Wellbore #1 - Wellbore #1	15,257.4	7,147.9	372.8	7.8	1.021	Level 2, CC, ES, SF
Bell L12-13 (Kerr McGee - P&A) - Wellbore #1 - Wellbore	16,828.0	7,151.0	437.7	194.9	1.803	CC, ES, SF
Bell L12-5 (Kerr McGee - P&A) - Wellbore #1 - Wellbore	13,967.0	7,143.9	394.4	215.1	2.200	CC, ES
Bell L12-5 (Kerr McGee - P&A) - Wellbore #1 - Wellbore	14,000.0	7,143.8	395.8	215.7	2.198	SF
Brattain 1 (Kerr McGee - P&A) - Wellbore #1 - Wellbore #	16,313.3	7,159.5	87.4	-142.5	0.380	Level 1, CC, ES, SF
Brattain L 12-12JI (Kerr McGee - P&A) - Wellbore #1 - W	15,131.6	7,156.0	332.1	128.9	1.634	CC, ES, SF
Brattain L 12-4 JI (Kerr McGee - PR) - Wellbore #1 - Wel	12,575.9	7,153.2	433.6	289.2	3.003	CC, ES
Brattain L 12-4 JI (Kerr McGee - PR) - Wellbore #1 - Wel	12,600.0	7,152.8	434.2	289.3	2.996	SF
Brattain L 12-5JI (Kerr McGee - SI) - Wellbore #1 - Wellb	14,030.0	7,147.1	423.5	245.6	2.380	CC, ES, SF
Existing Wells Sec.12-T3N-R66W (GRID)						
Bell L12-20 (Kerr McGee - P&A) - Wellbore #1 - Wellbore	14,585.1	7,156.1	461.3	271.4	2.429	CC
Bell L12-20 (Kerr McGee - P&A) - Wellbore #1 - Wellbore	14,600.0	7,156.1	461.5	271.3	2.426	ES, SF
Existing Wells Sec.1-T3N-R66W						
HSR-Baines 5-1 (Kerr McGee - SI) - Wellbore #1 - Wellb	8,700.2	7,105.6	235.9	178.8	4.132	CC, ES, SF
HSR-Bayer 12-1 (Kerr McGee P&A) - Wellbore #1 - Well	10,082.9	7,105.4	288.9	201.4	3.300	CC, ES
HSR-Bayer 12-1 (Kerr McGee P&A) - Wellbore #1 - Well	10,100.0	7,105.8	289.4	201.5	3.291	SF
HSR-Irwin 4-1A (Kerr McGee - SI) - Wellbore #1 - Wellbo	7,579.8	7,094.9	155.6	117.8	4.117	CC, ES, SF
HSR-Peaslee 11-1 (Kerr McGee - SI) - Wellbore #1 - We	10,671.8	7,140.4	280.0	175.3	2.676	CC, ES
HSR-Peaslee 11-1 (Kerr McGee - SI) - Wellbore #1 - We	10,700.0	7,140.8	281.4	176.1	2.673	SF
HSR-Phillips 13-1A (Kerr McGee - SI) - Wellbore #1 - We	11,433.5	7,136.0	87.5	-33.8	0.721	Level 1, CC, ES, SF
Ludwig 13-1HZ (Kerr McGee - SI) - Wellbore #1 - Wellbo	11,700.0	7,120.9	228.8	118.9	2.081	SF
Ludwig 13-1HZ (Kerr McGee - SI) - Wellbore #1 - Wellbo	11,768.4	7,091.0	220.7	116.3	2.114	CC, ES
Ludwig 18-1 (Kerr McGee-SI) - Wellbore #1 - Wellbore #	8,312.7	7,095.0	467.3	418.7	9.613	CC, ES
Ludwig 18-1 (Kerr McGee-SI) - Wellbore #1 - Wellbore #	8,400.0	7,096.8	475.3	425.1	9.459	SF
Ludwig 22-1 (Kerr McGee - P&A) - Wellbore #1 - Wellbor	9,321.7	7,213.1	474.4	400.6	6.428	CC, ES
Ludwig 22-1 (Kerr McGee - P&A) - Wellbore #1 - Wellbor	9,400.0	7,212.7	480.8	405.3	6.368	SF
Ludwig 30-1 (Kerr McGee - P&A) - Wellbore #1 - Wellbor	1,414.5	1,440.6	217.0	208.6	25.838	CC, ES
Ludwig 30-1 (Kerr McGee - P&A) - Wellbore #1 - Wellbor	6,750.0	6,815.2	779.1	735.7	17.929	SF
Ludwig 31-1 (Kerr McGee - SI) - Wellbore #1 - Wellbore	1,010.9	1,001.7	320.4	316.4	79.494	CC, ES
Ludwig 31-1 (Kerr McGee - SI) - Wellbore #1 - Wellbore	2,600.0	2,500.6	565.1	552.7	45.408	SF

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

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.36-T3N-R66W						
Rissler State 29C-36HZX (Kerr McGee - PR) - Wellbore	7,195.1	7,316.2	665.4	614.8	13.148	CC, ES
Rissler State 29C-36HZX (Kerr McGee - PR) - Wellbore	7,250.0	7,307.5	667.8	616.9	13.121	SF
Rissler State 30N-36HZ (Kerr McGee - PR) - Wellbore #1	4,915.0	5,155.7	260.8	212.1	5.354	CC, ES
Rissler State 30N-36HZ (Kerr McGee - PR) - Wellbore #1	5,000.0	5,229.5	264.3	214.8	5.334	SF
Rissler State 4N-36HZ (Kerr McGee - PR) - Wellbore #1	7,112.6	7,382.0	86.6	35.9	1.707	CC, ES, SF
Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W						
Ridgway 1N (Nio B) - Wellbore #1 - Plan #1 (8-07-19)	500.0	500.0	30.2	27.7	12.171	CC, ES
Ridgway 1N (Nio B) - Wellbore #1 - Plan #1 (8-07-19)	16,810.3	16,808.9	656.8	204.6	1.452	Level 3, SF
Ridgway 2N (Nio C) - Wellbore #1 - Plan #1 (8-07-19)	700.0	700.0	15.1	11.5	4.220	CC
Ridgway 2N (Nio C) - Wellbore #1 - Plan #1 (8-07-19)	17,146.8	17,228.8	333.5	-117.9	0.739	Level 1, ES, SF
Ridgway 4N (Nio C) - Wellbore #1 - Plan #1 (8-07-19)	600.0	600.0	15.1	12.0	4.971	CC
Ridgway 4N (Nio C) - Wellbore #1 - Plan #1 (8-07-19)	17,146.8	17,267.3	357.8	-95.4	0.790	Level 1, ES, SF
Ridgway 5N (Nio B) - Wellbore #1 - Plan #1 (8-07-19)	400.0	400.0	29.9	28.0	15.510	CC, ES
Ridgway 5N (Nio B) - Wellbore #1 - Plan #1 (8-07-19)	17,146.8	17,222.4	660.0	192.9	1.413	Level 3, SF
Ridgway 6N (Nio C) - Wellbore #1 - Plan #1 (8-07-19)	200.0	200.0	44.7	43.9	54.150	CC, ES
Ridgway 6N (Nio C) - Wellbore #1 - Plan #1 (8-07-19)	700.0	692.0	75.1	71.5	20.963	SF

Offset Design													Offset Site Error:	0.0 ft
Existing Wells Sec.12-T3N-R66W - Bell L12-12 (Noble - P&A) - Wellbore #1 - Wellbore #1													Offset Well Error:	0.0 ft
Survey Program: 7564-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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
14,600.0	7,087.3	7,150.3	7,150.3	142.4	143.0	90.37	-7,915.5	-268.8	755.7	406.1	349.64	2.161		
14,700.0	7,086.9	7,149.9	7,149.9	144.3	143.0	90.31	-7,915.5	-268.8	670.6	318.6	351.97	1.905		
14,800.0	7,086.6	7,149.6	7,149.6	146.2	143.0	90.26	-7,915.5	-268.8	590.1	235.8	354.30	1.665		
14,900.0	7,086.2	7,149.2	7,149.2	148.2	143.0	90.20	-7,915.5	-268.8	516.4	159.8	356.63	1.448	Level 3	
15,000.0	7,085.8	7,148.8	7,148.8	150.1	143.0	90.14	-7,915.5	-268.8	453.0	94.0	358.96	1.262	Level 3	
15,100.0	7,085.5	7,148.5	7,148.5	152.0	143.0	90.09	-7,915.5	-268.8	404.6	43.3	361.29	1.120	Level 2	
15,200.0	7,085.1	7,148.1	7,148.1	153.9	143.0	90.03	-7,915.5	-268.8	377.2	13.5	363.62	1.037	Level 2	
15,257.4	7,084.9	7,147.9	7,147.9	155.0	143.0	90.00	-7,915.5	-268.8	372.8	7.8	364.95	1.021	Level 2, CC, ES, SF	
15,300.0	7,084.7	7,147.7	7,147.7	155.8	143.0	89.98	-7,915.5	-268.8	375.2	9.2	365.95	1.025	Level 2	
15,400.0	7,084.4	7,147.4	7,147.4	157.7	142.9	89.92	-7,915.5	-268.8	399.1	30.8	368.27	1.084	Level 2	
15,500.0	7,084.0	7,147.0	7,147.0	159.6	142.9	89.86	-7,915.5	-268.8	444.7	74.1	370.60	1.200	Level 2	
15,600.0	7,083.6	7,146.6	7,146.6	161.5	142.9	89.81	-7,915.5	-268.8	506.3	133.3	372.93	1.358	Level 3	
15,700.0	7,083.3	7,146.3	7,146.3	163.4	142.9	89.75	-7,915.5	-268.8	578.6	203.4	375.26	1.542		
15,800.0	7,082.9	7,145.9	7,145.9	165.3	142.9	89.70	-7,915.5	-268.8	658.3	280.7	377.59	1.743		
15,900.0	7,082.5	7,145.5	7,145.5	167.2	142.9	89.64	-7,915.5	-268.8	742.9	363.0	379.92	1.955		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Existing Wells Sec.12-T3N-R66W - Bell L12-13 (Kerr McGee - P&A) - Wellbore #1 - Wellbore #1												Offset Well Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
16,200.0	7,081.5	7,151.5	7,150.1	173.0	13.2	89.99	-9,485.8	-339.1	765.5	537.3	228.11	3.356	
16,300.0	7,081.1	7,151.4	7,150.0	174.9	13.2	89.98	-9,485.8	-339.1	685.8	455.4	230.45	2.976	
16,400.0	7,080.7	7,151.3	7,150.0	176.8	13.2	89.97	-9,485.8	-339.1	612.2	379.4	232.79	2.630	
16,500.0	7,080.4	7,151.2	7,149.9	178.7	13.2	89.96	-9,485.8	-339.1	546.9	311.8	235.13	2.326	
16,600.0	7,080.0	7,151.2	7,149.8	180.6	13.2	89.95	-9,485.8	-339.1	493.5	256.0	237.47	2.078	
16,700.0	7,079.6	7,151.1	7,149.7	182.5	13.2	89.95	-9,485.8	-339.1	456.0	216.2	239.81	1.902	
16,800.0	7,079.3	7,151.0	7,149.7	184.4	13.2	89.94	-9,485.8	-339.1	438.6	196.4	242.16	1.811	
16,828.0	7,079.2	7,151.0	7,149.7	185.0	13.2	89.93	-9,485.8	-339.1	437.7	194.9	242.81	1.803 CC, ES, SF	
16,900.0	7,078.9	7,151.0	7,149.6	186.4	13.2	89.93	-9,485.8	-339.1	443.6	199.1	244.50	1.814	
17,000.0	7,078.5	7,150.9	7,149.5	188.3	13.2	89.92	-9,485.8	-339.1	470.3	223.5	246.84	1.905	
17,100.0	7,078.2	7,150.8	7,149.5	190.2	13.2	89.91	-9,485.8	-339.1	515.4	266.2	249.18	2.068	
17,146.8	7,078.0	7,150.8	7,149.4	191.1	13.2	89.90	-9,485.8	-339.1	541.5	291.2	250.28	2.164	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.12-T3N-R66W - Bell L12-5 (Kerr McGee - P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,300.0	7,092.0	7,145.9	7,144.4	117.7	16.0	89.82	-6,625.0	-286.0	774.9	611.1	163.77	4.732		
13,400.0	7,091.7	7,145.6	7,144.1	119.6	16.0	89.78	-6,625.0	-286.0	690.7	524.6	166.10	4.158		
13,500.0	7,091.3	7,145.3	7,143.8	121.5	16.0	89.73	-6,625.0	-286.0	611.3	442.9	168.43	3.629		
13,600.0	7,090.9	7,145.0	7,143.5	123.4	16.0	89.69	-6,625.0	-286.0	538.8	368.0	170.76	3.155		
13,700.0	7,090.6	7,144.7	7,143.2	125.3	16.0	89.64	-6,625.0	-286.0	476.3	303.2	173.09	2.752		
13,800.0	7,090.2	7,144.4	7,142.8	127.2	16.0	89.60	-6,625.0	-286.0	428.3	252.9	175.42	2.442		
13,900.0	7,089.8	7,144.1	7,142.5	129.1	16.0	89.56	-6,625.0	-286.0	400.1	222.3	177.75	2.251		
13,967.0	7,089.6	7,143.9	7,142.3	130.4	16.0	89.52	-6,625.0	-286.0	394.4	215.1	179.31	2.200 CC, ES		
14,000.0	7,089.5	7,143.8	7,142.2	131.0	16.0	89.51	-6,625.0	-286.0	395.8	215.7	180.08	2.198 SF		
14,100.0	7,089.1	7,143.5	7,141.9	132.9	16.0	89.46	-6,625.0	-286.0	416.3	233.8	182.41	2.282		
14,200.0	7,088.8	7,143.2	7,141.6	134.8	16.0	89.42	-6,625.0	-286.0	458.1	273.4	184.74	2.480		
14,300.0	7,088.4	7,142.8	7,141.3	136.7	16.0	89.37	-6,625.0	-286.0	516.2	329.1	187.07	2.759		
14,400.0	7,088.0	7,142.5	7,141.0	138.6	16.0	89.33	-6,625.0	-286.0	585.7	396.3	189.40	3.092		
14,500.0	7,087.7	7,142.2	7,140.6	140.5	16.0	89.28	-6,625.0	-286.0	663.1	471.3	191.74	3.458		
14,600.0	7,087.3	7,141.9	7,140.3	142.4	16.0	89.23	-6,625.0	-286.0	745.8	551.8	194.07	3.843		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.12-T3N-R66W - Brattain 1 (Kerr McGee - P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
15,600.0	7,083.6	7,161.9	7,160.9	161.5	12.6	-91.23	-8,973.0	187.8	718.7	505.4	213.24	3.370		
15,700.0	7,083.3	7,161.6	7,160.6	163.4	12.6	-91.03	-8,973.0	187.8	619.5	403.9	215.59	2.874		
15,800.0	7,082.9	7,161.3	7,160.3	165.3	12.6	-90.83	-8,973.0	187.8	520.7	302.8	217.95	2.389		
15,900.0	7,082.5	7,161.0	7,160.0	167.2	12.6	-90.62	-8,973.0	187.8	422.5	202.2	220.29	1.918		
16,000.0	7,082.2	7,160.6	7,159.6	169.2	12.6	-90.40	-8,973.0	187.8	325.3	102.7	222.64	1.461	Level 3	
16,100.0	7,081.8	7,160.3	7,159.3	171.1	12.6	-90.18	-8,973.0	187.8	230.6	5.6	224.99	1.025	Level 2	
16,200.0	7,081.5	7,159.9	7,159.0	173.0	12.6	-89.95	-8,973.0	187.8	143.1	-84.2	227.33	0.630	Level 1	
16,300.0	7,081.1	7,159.6	7,158.6	174.9	12.6	-89.71	-8,973.0	187.8	88.5	-141.2	229.67	0.385	Level 1	
16,313.3	7,081.0	7,159.5	7,158.5	175.1	12.6	-89.68	-8,973.0	187.8	87.4	-142.5	229.98	0.380	Level 1, CC, ES, SF	
16,400.0	7,080.7	7,159.2	7,158.2	176.8	12.6	-89.46	-8,973.0	187.8	123.1	-108.9	232.01	0.531	Level 1	
16,500.0	7,080.4	7,158.8	7,157.8	178.7	12.6	-89.21	-8,973.0	187.8	206.1	-28.2	234.34	0.880	Level 1	
16,600.0	7,080.0	7,158.4	7,157.4	180.6	12.6	-88.95	-8,973.0	187.8	299.7	63.0	236.67	1.266	Level 3	
16,700.0	7,079.6	7,158.0	7,157.0	182.5	12.6	-88.68	-8,973.0	187.8	396.4	157.4	238.99	1.659		
16,800.0	7,079.3	7,157.6	7,156.6	184.4	12.6	-88.40	-8,973.0	187.8	494.5	253.2	241.31	2.049		
16,900.0	7,078.9	7,157.2	7,156.2	186.4	12.6	-88.12	-8,973.0	187.8	593.1	349.5	243.62	2.435		
17,000.0	7,078.5	7,156.7	7,155.7	188.3	12.6	-87.82	-8,973.0	187.8	692.2	446.3	245.93	2.815		
17,100.0	7,078.2	7,156.2	7,155.2	190.2	12.6	-87.51	-8,973.0	187.8	791.5	543.3	248.22	3.189		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.12-T3N-R66W - Brattain L 12-12JI (Kerr McGee - P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
14,500.0	7,087.7	7,163.3	7,161.6	140.5	13.3	91.59	-7,789.8	-227.6	713.6	525.2	188.41	3.787		
14,600.0	7,087.3	7,162.2	7,160.4	142.4	13.3	91.39	-7,789.8	-227.7	626.8	436.1	190.75	3.286		
14,700.0	7,086.9	7,161.0	7,159.2	144.3	13.3	91.18	-7,789.8	-227.7	544.6	351.5	193.10	2.820		
14,800.0	7,086.6	7,159.8	7,158.0	146.2	13.3	90.98	-7,789.8	-227.7	469.3	273.9	195.44	2.401		
14,900.0	7,086.2	7,158.6	7,156.9	148.2	13.3	90.78	-7,789.9	-227.7	404.9	207.1	197.78	2.047		
15,000.0	7,085.8	7,157.5	7,155.7	150.1	13.3	90.58	-7,789.9	-227.7	357.2	157.1	200.12	1.785		
15,100.0	7,085.5	7,156.3	7,154.6	152.0	13.3	90.38	-7,789.9	-227.7	333.6	131.2	202.45	1.648		
15,131.6	7,085.4	7,156.0	7,154.2	152.6	13.3	90.32	-7,789.9	-227.7	332.1	128.9	203.19	1.634 CC, ES, SF		
15,200.0	7,085.1	7,155.2	7,153.4	153.9	13.3	90.18	-7,789.9	-227.7	339.1	134.3	204.79	1.656		
15,300.0	7,084.7	7,154.0	7,152.3	155.8	13.3	89.98	-7,789.9	-227.7	372.3	165.2	207.12	1.798		
15,400.0	7,084.4	7,152.9	7,151.1	157.7	13.3	89.79	-7,789.9	-227.7	427.0	217.5	209.45	2.039		
15,500.0	7,084.0	7,151.7	7,150.0	159.6	13.3	89.59	-7,789.9	-227.7	496.0	284.2	211.78	2.342		
15,600.0	7,083.6	7,150.6	7,148.8	161.5	13.3	89.39	-7,789.9	-227.7	574.1	360.0	214.11	2.681		
15,700.0	7,083.3	7,149.5	7,147.7	163.4	13.3	89.20	-7,789.9	-227.7	658.2	441.8	216.44	3.041		
15,800.0	7,082.9	7,148.3	7,146.6	165.3	13.3	89.00	-7,789.9	-227.7	746.3	527.5	218.76	3.411		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.12-T3N-R66W - Brattain L 12-4 JI (Kerr McGee - PR) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
12,000.0	7,096.8	7,162.1	7,160.2	93.0	14.0	92.05	-5,233.7	-320.2	720.8	589.8	130.98	5.503		
12,100.0	7,096.4	7,160.6	7,158.6	94.9	14.0	91.84	-5,233.7	-320.2	643.7	510.4	133.30	4.829		
12,200.0	7,096.0	7,159.0	7,157.1	96.8	14.0	91.64	-5,233.7	-320.2	573.8	438.1	135.63	4.230		
12,300.0	7,095.7	7,157.5	7,155.5	98.7	14.0	91.43	-5,233.8	-320.3	513.9	375.9	137.96	3.725		
12,400.0	7,095.3	7,155.9	7,154.0	100.6	14.0	91.23	-5,233.8	-320.3	467.9	327.6	140.28	3.335		
12,500.0	7,095.0	7,154.4	7,152.4	102.5	14.0	91.02	-5,233.8	-320.3	440.1	297.5	142.61	3.086		
12,575.9	7,094.7	7,153.2	7,151.2	103.9	14.0	90.87	-5,233.8	-320.3	433.6	289.2	144.37	3.003 CC, ES		
12,600.0	7,094.6	7,152.8	7,150.9	104.4	14.0	90.82	-5,233.8	-320.3	434.2	289.3	144.93	2.996 SF		
12,700.0	7,094.2	7,151.3	7,149.3	106.3	14.0	90.61	-5,233.8	-320.4	451.0	303.7	147.26	3.062		
12,800.0	7,093.9	7,149.7	7,147.8	108.2	14.0	90.41	-5,233.9	-320.4	488.0	338.5	149.59	3.263		
12,900.0	7,093.5	7,148.2	7,146.2	110.1	14.0	90.20	-5,233.9	-320.4	541.3	389.4	151.91	3.563		
13,000.0	7,093.1	7,146.7	7,144.7	112.0	14.0	90.00	-5,233.9	-320.4	606.5	452.2	154.23	3.932		
13,100.0	7,092.8	7,145.1	7,143.1	113.9	14.0	89.80	-5,233.9	-320.4	680.2	523.6	156.56	4.344		
13,200.0	7,092.4	7,143.6	7,141.6	115.8	14.0	89.59	-5,233.9	-320.5	759.9	601.0	158.88	4.783		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Existing Wells Sec.12-T3N-R66W - Brattain L 12-5JI (Kerr McGee - SI) - Wellbore #1 - Wellbore #1												Offset Well Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
13,400.0	7,091.7	7,153.1	7,151.2	119.6	13.7	90.38	-6,687.9	-315.4	759.1	595.9	163.27	4.650	
13,500.0	7,091.3	7,152.2	7,150.3	121.5	13.7	90.25	-6,687.9	-315.4	678.5	512.9	165.60	4.097	
13,600.0	7,090.9	7,151.2	7,149.3	123.4	13.7	90.13	-6,687.9	-315.4	603.6	435.6	167.93	3.594	
13,700.0	7,090.6	7,150.3	7,148.4	125.3	13.7	90.00	-6,687.9	-315.4	536.9	366.7	170.26	3.154	
13,800.0	7,090.2	7,149.3	7,147.4	127.2	13.7	89.87	-6,687.9	-315.4	482.0	309.4	172.59	2.793	
13,900.0	7,089.8	7,148.4	7,146.5	129.1	13.7	89.74	-6,687.9	-315.3	443.1	268.1	174.91	2.533	
14,000.0	7,089.5	7,147.4	7,145.5	131.0	13.7	89.61	-6,688.0	-315.3	424.6	247.4	177.24	2.396	
14,030.0	7,089.4	7,147.1	7,145.2	131.6	13.7	89.57	-6,688.0	-315.3	423.5	245.6	177.94	2.380	CC, ES, SF
14,100.0	7,089.1	7,146.4	7,144.5	132.9	13.7	89.48	-6,688.0	-315.3	429.3	249.7	179.57	2.391	
14,200.0	7,088.8	7,145.4	7,143.5	134.8	13.7	89.35	-6,688.0	-315.3	456.4	274.5	181.90	2.509	
14,300.0	7,088.4	7,144.4	7,142.5	136.7	13.7	89.21	-6,688.0	-315.3	502.3	318.0	184.22	2.726	
14,400.0	7,088.0	7,143.4	7,141.5	138.6	13.7	89.07	-6,688.0	-315.3	562.4	375.8	186.55	3.015	
14,500.0	7,087.7	7,142.4	7,140.5	140.5	13.7	88.93	-6,688.0	-315.3	632.6	443.8	188.87	3.350	
14,600.0	7,087.3	7,141.4	7,139.5	142.4	13.7	88.79	-6,688.0	-315.3	710.1	518.9	191.20	3.714	
14,700.0	7,086.9	7,140.3	7,138.4	144.3	13.7	88.65	-6,688.0	-315.3	792.6	599.1	193.52	4.096	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.12-T3N-R66W (GRID) - Bell L12-20 (Kerr McGee - P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.0	7,089.5	7,153.9	7,153.0	131.0	12.9	-89.46	-7,246.0	567.6	745.1	568.9	176.21	4.228		
14,100.0	7,089.1	7,154.3	7,153.4	132.9	12.9	-89.51	-7,246.0	567.6	669.4	490.9	178.54	3.749		
14,200.0	7,088.8	7,154.6	7,153.8	134.8	12.9	-89.56	-7,246.0	567.6	600.9	420.0	180.88	3.322		
14,300.0	7,088.4	7,155.0	7,154.1	136.7	12.9	-89.60	-7,246.0	567.6	542.3	359.1	183.21	2.960		
14,400.0	7,088.0	7,155.4	7,154.5	138.6	12.9	-89.65	-7,246.0	567.6	497.1	311.5	185.55	2.679		
14,500.0	7,087.7	7,155.8	7,154.9	140.5	12.9	-89.70	-7,246.0	567.6	469.1	281.2	187.89	2.497		
14,585.1	7,087.3	7,156.1	7,155.2	142.1	12.9	-89.74	-7,246.0	567.6	461.3	271.4	189.88	2.429 CC		
14,600.0	7,087.3	7,156.1	7,155.3	142.4	12.9	-89.74	-7,246.0	567.6	461.5	271.3	190.22	2.426 ES, SF		
14,700.0	7,086.9	7,156.5	7,155.7	144.3	12.9	-89.79	-7,246.1	567.6	475.4	282.8	192.56	2.469		
14,800.0	7,086.6	7,156.9	7,156.0	146.2	12.9	-89.84	-7,246.1	567.6	508.9	314.0	194.90	2.611		
14,900.0	7,086.2	7,157.3	7,156.4	148.2	12.9	-89.89	-7,246.1	567.6	558.5	361.3	197.24	2.832		
15,000.0	7,085.8	7,157.7	7,156.8	150.1	12.9	-89.93	-7,246.1	567.6	620.4	420.9	199.57	3.109		
15,100.0	7,085.5	7,158.1	7,157.2	152.0	12.9	-89.98	-7,246.1	567.6	691.3	489.4	201.91	3.424		
15,200.0	7,085.1	7,158.5	7,157.6	153.9	12.9	-90.03	-7,246.1	567.6	768.7	564.4	204.25	3.763		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - HSR-Baines 5-1 (Kerr McGee - SI) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)			
8,000.0	7,111.4	7,092.9	7,091.6	22.0	14.0	87.53	-1,358.6	-109.5	738.8	694.8	44.00	16.791		
8,100.0	7,111.0	7,094.7	7,093.4	23.3	14.0	87.96	-1,358.7	-109.5	644.8	599.2	45.66	14.123		
8,200.0	7,110.6	7,096.5	7,095.2	24.7	14.0	88.40	-1,358.7	-109.5	553.0	505.6	47.41	11.665		
8,300.0	7,110.3	7,098.3	7,097.0	26.2	14.0	88.84	-1,358.7	-109.5	464.5	415.3	49.23	9.435		
8,400.0	7,109.9	7,100.1	7,098.8	27.8	14.0	89.27	-1,358.8	-109.5	381.8	330.7	51.13	7.468		
8,500.0	7,109.5	7,102.0	7,100.7	29.3	14.0	89.72	-1,358.8	-109.5	309.4	256.3	53.07	5.830		
8,600.0	7,109.2	7,103.8	7,102.5	30.9	14.0	90.17	-1,358.9	-109.4	256.3	201.3	55.06	4.655		
8,700.0	7,108.8	7,105.6	7,104.3	32.6	14.0	90.61	-1,358.9	-109.4	235.9	178.8	57.08	4.133		
8,700.2	7,108.8	7,105.6	7,104.3	32.6	14.0	90.61	-1,358.9	-109.4	235.9	178.8	57.09	4.132 CC, ES, SF		
8,800.0	7,108.5	7,107.5	7,106.2	34.3	14.0	91.06	-1,358.9	-109.4	256.1	197.0	59.14	4.331		
8,900.0	7,108.1	7,109.3	7,108.0	36.0	14.0	91.50	-1,359.0	-109.4	309.1	247.9	61.22	5.049		
9,000.0	7,107.7	7,111.1	7,109.8	37.7	14.0	91.94	-1,359.0	-109.4	381.4	318.1	63.33	6.023		
9,100.0	7,107.4	7,112.9	7,111.6	39.4	14.0	92.37	-1,359.1	-109.3	464.1	398.7	65.45	7.091		
9,200.0	7,107.0	7,114.7	7,113.4	41.2	14.0	92.81	-1,359.1	-109.3	552.6	485.0	67.58	8.176		
9,300.0	7,106.6	7,116.5	7,115.2	43.0	14.0	93.25	-1,359.1	-109.3	644.4	574.7	69.73	9.241		
9,400.0	7,106.3	7,118.3	7,117.0	44.8	14.0	93.68	-1,359.2	-109.3	738.3	666.4	71.89	10.270		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - HSR-Bayer 12-1 (Kerr McGee P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
9,400.0	7,106.3	7,087.0	7,085.9	44.8	14.3	86.26	-2,740.8	-167.2	741.3	669.1	72.14	10.276		
9,500.0	7,105.9	7,089.7	7,088.6	46.5	14.3	86.79	-2,740.9	-167.2	650.4	576.0	74.38	8.744		
9,600.0	7,105.5	7,092.4	7,091.3	48.3	14.3	87.32	-2,740.9	-167.2	562.6	486.0	76.63	7.342		
9,700.0	7,105.2	7,095.1	7,093.9	50.2	14.3	87.85	-2,741.0	-167.2	479.6	400.7	78.88	6.080		
9,800.0	7,104.8	7,097.8	7,096.6	52.0	14.3	88.38	-2,741.1	-167.2	404.3	323.2	81.14	4.983		
9,900.0	7,104.4	7,100.5	7,099.3	53.8	14.3	88.92	-2,741.2	-167.2	341.9	258.5	83.41	4.099		
10,000.0	7,104.1	7,103.1	7,102.0	55.6	14.3	89.45	-2,741.3	-167.2	300.6	214.9	85.67	3.509		
10,082.9	7,103.8	7,105.4	7,104.2	57.2	14.3	89.89	-2,741.3	-167.2	288.9	201.4	87.55	3.300 CC, ES		
10,100.0	7,103.7	7,105.8	7,104.7	57.5	14.3	89.98	-2,741.3	-167.2	289.4	201.5	87.94	3.291 SF		
10,200.0	7,103.3	7,108.5	7,107.4	59.3	14.4	90.51	-2,741.4	-167.2	311.8	221.5	90.20	3.456		
10,300.0	7,103.0	7,111.2	7,110.0	61.2	14.4	91.04	-2,741.5	-167.2	361.4	268.9	92.47	3.908		
10,400.0	7,102.6	7,113.9	7,112.7	63.0	14.4	91.57	-2,741.6	-167.2	428.9	334.2	94.73	4.528		
10,500.0	7,102.3	7,116.6	7,115.4	64.9	14.4	92.11	-2,741.7	-167.2	507.3	410.3	96.99	5.230		
10,600.0	7,101.9	7,119.2	7,118.1	66.7	14.4	92.64	-2,741.8	-167.2	592.2	492.9	99.24	5.967		
10,700.0	7,101.5	7,121.9	7,120.8	68.6	14.4	93.17	-2,741.8	-167.2	681.2	579.7	101.49	6.712		
10,800.0	7,101.2	7,124.6	7,123.4	70.5	14.4	93.70	-2,741.9	-167.2	772.9	669.1	103.74	7.450		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design		Existing Wells Sec.1-T3N-R66W - HSR-Irwin 4-1A (Kerr McGee - SI) - Wellbore #1 - Wellbore #1											Offset Site Error:		0.0 ft
Survey Program:		100-NS-GYRO-MS											Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	168.58	-276.8	55.9	283.1						
100.0	100.0	80.1	80.1	0.1	0.1	168.57	-276.8	56.0	282.4	282.1	0.27	1,053.480			
151.9	151.9	131.9	131.9	0.2	0.2	168.54	-276.7	56.1	282.3	281.8	0.52	541.560			
200.0	200.0	179.7	179.7	0.3	0.3	168.53	-276.7	56.1	282.4	281.6	0.77	366.377			
300.0	300.0	280.2	280.2	0.6	0.5	168.53	-276.8	56.2	282.4	281.2	1.25	225.320			
400.0	400.0	380.3	380.3	0.8	0.7	168.51	-276.6	56.2	282.3	280.5	1.77	159.163			
500.0	500.0	480.5	480.5	1.0	0.9	168.46	-276.5	56.4	282.2	279.8	2.34	120.342			
600.0	600.0	581.1	581.1	1.2	1.2	168.40	-276.1	56.7	281.9	279.0	2.93	96.251			
700.0	700.0	681.6	681.6	1.5	1.4	168.30	-275.6	57.1	281.4	277.9	3.52	79.971			
800.0	800.0	781.8	781.8	1.7	1.7	168.17	-274.8	57.6	280.8	276.7	4.11	68.311			
900.0	900.0	882.0	882.0	1.9	1.9	168.03	-274.0	58.1	280.1	275.4	4.71	59.539			
1,000.0	1,000.0	981.5	981.5	2.1	2.2	167.86	-273.2	58.8	279.5	274.2	5.30	52.728			
1,020.3	1,020.3	1,001.6	1,001.6	2.2	2.2	153.09	-273.1	58.9	279.4	274.0	5.42	51.545			
1,100.0	1,100.0	1,081.5	1,081.5	2.4	2.5	153.05	-272.6	59.5	280.2	274.3	5.90	47.506			
1,200.0	1,199.9	1,181.3	1,181.3	2.6	2.7	153.15	-271.8	60.6	283.1	276.6	6.49	43.620			
1,300.0	1,299.7	1,281.5	1,281.5	2.8	3.0	153.45	-271.0	61.7	288.4	281.4	7.08	40.718			
1,400.0	1,399.3	1,380.8	1,380.7	3.0	3.2	153.90	-270.1	63.1	296.1	288.4	7.67	38.587			
1,450.7	1,449.6	1,431.3	1,431.2	3.2	3.4	154.21	-269.8	63.7	300.9	292.9	7.97	37.746			
1,500.0	1,498.6	1,480.6	1,480.5	3.3	3.5	154.55	-269.4	64.3	305.9	297.6	8.27	36.986			
1,600.0	1,597.9	1,580.1	1,580.0	3.5	3.8	155.17	-268.4	65.8	315.9	307.0	8.87	35.590			
1,700.0	1,697.2	1,678.5	1,678.5	3.8	4.0	155.77	-267.6	67.2	326.0	316.6	9.48	34.402			
1,800.0	1,796.5	1,776.5	1,776.4	4.1	4.3	156.36	-267.3	68.4	336.6	326.6	10.07	33.436			
1,900.0	1,895.8	1,873.9	1,873.8	4.4	4.5	156.93	-267.4	69.6	347.7	337.1	10.61	32.766			
2,000.0	1,995.1	1,973.2	1,973.1	4.6	4.6	157.55	-267.9	70.4	359.3	348.1	11.12	32.309			
2,100.0	2,094.4	2,071.7	2,071.6	4.9	4.8	158.18	-268.5	70.9	370.8	359.2	11.58	32.008			
2,200.0	2,193.7	2,169.4	2,169.2	5.2	4.9	158.81	-269.4	71.1	382.7	370.7	12.00	31.890			
2,300.0	2,293.0	2,268.3	2,268.1	5.5	5.0	159.45	-270.7	71.0	395.0	382.6	12.39	31.887			
2,400.0	2,392.4	2,367.9	2,367.7	5.8	5.0	160.13	-271.9	70.5	407.2	394.5	12.74	31.953			
2,500.0	2,491.7	2,468.7	2,468.5	6.1	5.1	160.86	-273.0	69.3	419.3	406.2	13.09	32.038			
2,600.0	2,591.0	2,570.1	2,569.9	6.4	5.1	161.61	-273.6	67.6	430.9	417.5	13.43	32.079			
2,700.0	2,690.3	2,670.5	2,670.4	6.7	5.2	162.34	-273.8	65.8	442.2	428.4	13.80	32.054			
2,800.0	2,789.6	2,771.0	2,770.8	7.0	5.2	163.04	-273.7	63.8	453.3	439.2	14.18	31.973			
2,900.0	2,888.9	2,868.7	2,868.5	7.3	5.3	163.71	-273.6	61.8	464.4	449.9	14.57	31.871			
3,000.0	2,988.2	2,968.3	2,968.1	7.6	5.4	164.37	-273.8	59.7	475.9	460.9	14.98	31.772			
3,100.0	3,087.5	3,068.1	3,067.8	7.9	5.5	165.05	-273.8	57.1	487.2	471.8	15.40	31.637			
3,200.0	3,186.8	3,168.6	3,168.3	8.2	5.7	165.70	-273.6	54.5	498.5	482.6	15.84	31.474			
3,300.0	3,286.1	3,269.1	3,268.8	8.5	5.8	166.34	-273.1	51.8	509.5	493.2	16.29	31.274			
3,400.0	3,385.4	3,371.3	3,370.8	8.8	5.9	167.00	-272.3	48.7	520.2	503.4	16.76	31.036			
3,500.0	3,484.7	3,470.4	3,469.9	9.1	6.1	167.65	-271.1	45.3	530.6	513.3	17.24	30.777			
3,600.0	3,584.0	3,570.2	3,569.6	9.4	6.3	168.28	-270.0	42.0	541.1	523.4	17.73	30.525			
3,700.0	3,683.3	3,670.4	3,669.8	9.7	6.4	168.88	-268.7	38.7	551.6	533.3	18.23	30.260			
3,800.0	3,782.6	3,772.0	3,771.3	10.0	6.6	169.48	-267.1	35.2	561.8	543.1	18.74	29.979			
3,900.0	3,881.9	3,871.8	3,871.0	10.3	6.8	170.06	-265.2	31.8	571.8	552.5	19.26	29.690			
4,000.0	3,981.2	3,970.9	3,970.1	10.6	7.0	170.59	-263.3	28.5	581.9	562.1	19.78	29.413			
4,100.0	4,080.5	4,067.0	4,066.1	10.9	7.2	171.12	-261.7	25.1	592.2	571.9	20.30	29.170			
4,200.0	4,179.8	4,164.3	4,163.3	11.2	7.4	171.64	-260.7	21.5	603.1	582.3	20.82	28.966			
4,300.0	4,279.1	4,260.8	4,259.8	11.5	7.6	172.12	-259.9	18.1	614.4	593.1	21.34	28.786			
4,400.0	4,378.4	4,358.9	4,357.8	11.8	7.8	172.62	-259.5	14.3	626.2	604.3	21.87	28.632			
4,500.0	4,477.8	4,457.7	4,456.5	12.1	8.0	173.11	-259.1	10.4	638.0	615.6	22.40	28.480			
4,600.0	4,577.1	4,558.2	4,557.0	12.4	8.2	173.62	-258.7	6.1	649.8	626.9	22.94	28.328			
4,700.0	4,676.4	4,660.6	4,659.2	12.7	8.4	174.11	-257.8	1.9	661.3	637.8	23.49	28.150			
4,800.0	4,775.7	4,766.2	4,764.8	13.1	8.6	174.58	-256.3	-2.2	672.3	648.2	24.06	27.936			

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Existing Wells Sec.1-T3N-R66W - HSR-Irwin 4-1A (Kerr McGee - SI) - Wellbore #1 - Wellbore #1														
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
4,900.0	4,875.0	4,870.9	4,869.4	13.4	8.9	174.96	-253.9	-5.1	682.2	657.5	24.64	27.683		
5,000.0	4,974.3	4,966.8	4,965.2	13.7	9.1	175.28	-251.5	-7.6	691.9	666.7	25.20	27.457		
5,100.0	5,073.6	5,063.2	5,061.6	14.0	9.3	175.56	-249.8	-9.9	702.4	676.6	25.76	27.265		
5,200.0	5,172.9	5,162.2	5,160.6	14.3	9.5	175.84	-248.3	-12.1	713.1	686.7	26.33	27.078		
5,300.0	5,272.2	5,261.5	5,259.8	14.6	9.8	176.09	-246.9	-14.2	723.7	696.8	26.91	26.898		
5,400.0	5,371.5	5,358.3	5,356.5	14.9	10.0	176.32	-245.6	-16.2	734.6	707.1	27.47	26.736		
5,491.9	5,462.8	5,448.0	5,446.2	15.2	10.2	176.50	-244.8	-17.7	744.9	716.9	28.00	26.604		
5,500.0	5,470.8	5,456.1	5,454.3	15.2	10.2	176.51	-244.7	-17.8	745.8	717.8	28.05	26.590		
5,600.0	5,570.3	5,557.4	5,555.7	15.4	10.5	176.69	-243.9	-19.2	755.0	726.4	28.60	26.397		
5,700.0	5,670.1	5,658.1	5,656.3	15.6	10.7	176.84	-242.8	-20.5	760.4	731.3	29.12	26.117		
5,800.0	5,770.1	5,757.9	5,756.1	15.8	10.9	176.95	-241.7	-21.7	762.4	732.8	29.59	25.768		
5,829.9	5,800.0	5,787.8	5,786.1	15.8	11.0	-168.28	-241.4	-22.0	762.4	732.6	29.72	25.648		
5,900.0	5,870.1	5,858.3	5,856.5	15.9	11.2	-168.22	-240.7	-22.7	761.8	731.7	30.10	25.313		
6,000.0	5,970.1	5,955.5	5,953.7	16.1	11.4	-168.10	-239.7	-24.0	761.0	730.4	30.64	24.835		
6,100.0	6,070.1	6,053.7	6,051.9	16.3	11.6	-168.01	-239.2	-25.2	760.8	729.6	31.19	24.388		
6,200.0	6,170.1	6,152.2	6,150.4	16.5	11.9	-167.93	-238.8	-26.1	760.6	728.8	31.74	23.959		
6,209.4	6,179.5	6,161.3	6,159.5	16.5	11.9	-167.93	-238.7	-26.2	760.6	728.8	31.79	23.921		
6,300.0	6,270.1	6,250.0	6,248.1	16.7	12.1	-167.86	-238.7	-27.0	760.7	728.4	32.28	23.567		
6,400.0	6,370.1	6,350.8	6,348.9	16.8	12.3	-167.81	-238.8	-27.8	761.0	728.1	32.82	23.187		
6,426.7	6,396.8	6,378.2	6,376.3	16.9	12.4	-167.80	-238.8	-27.9	761.0	728.0	32.97	23.085		
6,450.0	6,420.1	6,402.0	6,400.2	16.9	12.4	12.02	-238.8	-28.0	760.6	727.6	33.02	23.038		
6,500.0	6,469.9	6,453.6	6,451.7	17.0	12.5	12.13	-238.7	-28.0	757.3	724.3	32.98	22.958		
6,550.0	6,519.5	6,504.7	6,502.9	17.0	12.7	12.36	-238.6	-28.0	750.4	717.6	32.79	22.886		
6,600.0	6,568.4	6,554.9	6,553.1	17.0	12.7	12.72	-238.3	-27.8	740.1	707.7	32.41	22.834		
6,650.0	6,616.5	6,603.9	6,602.1	17.0	12.8	13.20	-238.0	-27.6	726.4	694.5	31.88	22.786		
6,700.0	6,663.5	6,648.6	6,646.7	16.9	12.9	13.82	-237.8	-27.3	709.6	678.4	31.18	22.759		
6,750.0	6,709.2	6,692.1	6,690.3	16.8	12.9	14.61	-237.7	-27.0	689.7	659.4	30.34	22.730		
6,800.0	6,753.4	6,735.0	6,733.2	16.7	13.0	15.61	-237.8	-26.7	667.0	637.6	29.39	22.695		
6,850.0	6,795.9	6,776.5	6,774.7	16.6	13.0	16.87	-237.9	-26.5	641.4	613.0	28.35	22.623		
6,900.0	6,836.4	6,817.2	6,815.3	16.5	13.0	18.47	-238.0	-26.2	613.1	585.8	27.29	22.471		
6,950.0	6,874.7	6,856.8	6,855.0	16.4	13.1	20.52	-238.1	-26.0	582.2	556.0	26.26	22.168		
7,000.0	6,910.8	6,894.0	6,892.1	16.3	13.1	23.13	-238.1	-25.8	548.9	523.5	25.38	21.625		
7,050.0	6,944.3	6,926.6	6,924.8	16.3	13.1	26.34	-238.1	-25.6	513.4	488.6	24.77	20.724		
7,100.0	6,975.2	6,956.4	6,954.6	16.2	13.2	30.38	-238.1	-25.5	476.1	451.5	24.63	19.332		
7,150.0	7,003.3	6,983.7	6,981.8	16.2	13.2	35.48	-238.2	-25.4	437.3	412.1	25.16	17.380		
7,200.0	7,028.4	7,008.5	7,006.7	16.1	13.2	41.86	-238.4	-25.4	397.3	370.7	26.53	14.974		
7,250.0	7,050.4	7,031.0	7,029.1	16.2	13.2	49.64	-238.5	-25.4	356.5	327.8	28.71	12.417		
7,300.0	7,069.2	7,050.1	7,048.3	16.3	13.3	58.50	-238.6	-25.3	315.5	284.2	31.30	10.080		
7,350.0	7,084.8	7,066.0	7,064.1	16.4	13.3	67.73	-238.6	-25.3	275.3	241.5	33.72	8.163		
7,400.0	7,097.0	7,078.4	7,076.6	16.6	13.3	76.28	-238.7	-25.3	236.9	201.4	35.50	6.674		
7,450.0	7,105.8	7,087.4	7,085.5	16.8	13.3	83.19	-238.7	-25.3	202.4	165.8	36.55	5.537		
7,500.0	7,111.1	7,092.9	7,091.0	17.1	13.3	87.85	-238.7	-25.3	174.8	137.7	37.15	4.706		
7,554.4	7,113.0	7,094.9	7,093.1	17.4	13.3	90.06	-238.7	-25.3	157.7	120.0	37.63	4.190		
7,554.4	7,113.0	7,094.9	7,093.1	17.4	13.3	90.06	-238.7	-25.3	157.7	120.0	37.63	4.190		
7,555.0	7,113.0	7,094.9	7,093.1	17.4	13.3	90.06	-238.7	-25.3	157.6	119.9	37.63	4.187		
7,579.8	7,112.9	7,094.9	7,093.1	17.6	13.3	90.06	-238.7	-25.3	155.6	117.8	37.79	4.117 CC, ES, SF		
7,600.0	7,112.8	7,094.9	7,093.0	17.7	13.3	90.05	-238.7	-25.3	156.9	119.0	37.93	4.137		
7,700.0	7,112.5	7,094.8	7,093.0	18.6	13.3	90.02	-238.7	-25.3	196.6	157.6	38.98	5.044		
7,800.0	7,112.1	7,094.7	7,092.9	19.6	13.3	90.00	-238.7	-25.3	269.6	229.4	40.22	6.705		
7,900.0	7,111.7	7,094.7	7,092.8	20.7	13.3	89.97	-238.7	-25.3	356.0	314.4	41.61	8.556		
8,000.0	7,111.4	7,094.6	7,092.8	22.0	13.3	89.95	-238.7	-25.3	448.1	405.0	43.14	10.387		
8,100.0	7,111.0	7,094.5	7,092.7	23.3	13.3	89.92	-238.7	-25.3	543.0	498.2	44.78	12.125		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - HSR-Irwin 4-1A (Kerr McGee - SI) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
8,200.0	7,110.6	7,094.5	7,092.6	24.7	13.3	89.90	-238.7	-25.3	639.4	592.9	46.52	13.746	
8,300.0	7,110.3	7,094.4	7,092.6	26.2	13.3	89.88	-238.7	-25.3	736.8	688.5	48.33	15.246	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - HSR-Peaslee 11-1 (Kerr McGee - SI) - Wellbore #1 - Wellbore #1												Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
10,000.0	7,104.1	7,129.6	7,125.8	55.6	17.4	-89.42	-3,332.0	399.9	727.8	638.4	89.38	8.142	
10,100.0	7,103.7	7,131.2	7,127.4	57.5	17.4	-89.75	-3,332.1	399.8	636.6	545.0	91.64	6.947	
10,200.0	7,103.3	7,132.8	7,129.0	59.3	17.4	-90.08	-3,332.1	399.8	548.6	454.7	93.91	5.842	
10,300.0	7,103.0	7,134.4	7,130.6	61.2	17.4	-90.41	-3,332.1	399.7	465.4	369.2	96.18	4.839	
10,400.0	7,102.6	7,136.0	7,132.2	63.0	17.4	-90.74	-3,332.2	399.7	390.2	291.8	98.44	3.964	
10,500.0	7,102.3	7,137.6	7,133.8	64.9	17.4	-91.07	-3,332.2	399.6	328.5	227.8	100.72	3.261	
10,600.0	7,101.9	7,139.2	7,135.5	66.7	17.4	-91.40	-3,332.2	399.6	289.0	186.0	102.99	2.806	
10,671.8	7,101.6	7,140.4	7,136.6	68.1	17.4	-91.64	-3,332.2	399.6	280.0	175.3	104.62	2.676 CC, ES	
10,700.0	7,101.5	7,140.8	7,137.1	68.6	17.4	-91.73	-3,332.3	399.5	281.4	176.1	105.26	2.673 SF	
10,800.0	7,101.2	7,142.5	7,138.7	70.5	17.4	-92.06	-3,332.3	399.5	307.9	200.4	107.53	2.863	
10,900.0	7,100.8	7,144.1	7,140.3	72.3	17.4	-92.40	-3,332.3	399.4	361.1	251.3	109.80	3.289	
11,000.0	7,100.4	7,145.7	7,142.0	74.2	17.4	-92.73	-3,332.3	399.4	431.3	319.3	112.07	3.849	
11,100.0	7,100.1	7,147.4	7,143.6	76.1	17.4	-93.07	-3,332.4	399.4	511.5	397.2	114.34	4.474	
11,200.0	7,099.7	7,149.0	7,145.3	78.0	17.4	-93.40	-3,332.4	399.3	597.7	481.1	116.61	5.126	
11,300.0	7,099.3	7,150.7	7,146.9	79.8	17.5	-93.74	-3,332.4	399.3	687.7	568.8	118.87	5.785	
11,400.0	7,099.0	7,152.3	7,148.6	81.7	17.5	-94.08	-3,332.5	399.2	780.0	658.9	121.13	6.440	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - HSR-Phillips 13-1A (Kerr McGee - SI) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,700.0	7,101.5	7,136.8	7,134.4	68.6	16.7	90.38	-4,092.6	29.6	738.7	634.2	104.44	7.073		
10,800.0	7,101.2	7,136.7	7,134.3	70.5	16.7	90.31	-4,092.6	29.6	639.5	532.8	106.72	5.992		
10,900.0	7,100.8	7,136.6	7,134.2	72.3	16.7	90.24	-4,092.6	29.6	540.6	431.6	109.01	4.959		
11,000.0	7,100.4	7,136.5	7,134.1	74.2	16.7	90.17	-4,092.6	29.6	442.2	330.9	111.31	3.973		
11,100.0	7,100.1	7,136.4	7,134.0	76.1	16.7	90.10	-4,092.6	29.6	344.8	231.2	113.60	3.035		
11,200.0	7,099.7	7,136.3	7,133.9	78.0	16.7	90.03	-4,092.6	29.6	249.3	133.4	115.90	2.151		
11,300.0	7,099.3	7,136.1	7,133.8	79.8	16.7	89.95	-4,092.6	29.6	159.6	41.4	118.20	1.350 Level 3		
11,400.0	7,099.0	7,136.0	7,133.7	81.7	16.7	89.88	-4,092.6	29.6	93.6	-26.9	120.50	0.777 Level 1		
11,433.5	7,098.8	7,136.0	7,133.6	82.3	16.7	89.86	-4,092.6	29.6	87.5	-33.8	121.27	0.721 Level 1, CC, ES, SF		
11,500.0	7,098.6	7,135.9	7,133.6	83.6	16.7	89.81	-4,092.6	29.6	109.9	-12.9	122.81	0.895 Level 1		
11,600.0	7,098.2	7,135.8	7,133.4	85.5	16.7	89.74	-4,092.6	29.6	188.1	63.0	125.11	1.503		
11,700.0	7,097.9	7,135.7	7,133.3	87.4	16.7	89.67	-4,092.6	29.6	280.5	153.1	127.42	2.201		
11,800.0	7,097.5	7,135.6	7,133.2	89.3	16.7	89.60	-4,092.6	29.6	376.8	247.1	129.73	2.905		
11,900.0	7,097.1	7,135.5	7,133.1	91.1	16.7	89.52	-4,092.6	29.6	474.6	342.6	132.04	3.595		
12,000.0	7,096.8	7,135.4	7,133.0	93.0	16.7	89.45	-4,092.6	29.6	573.2	438.9	134.36	4.267		
12,100.0	7,096.4	7,135.3	7,132.9	94.9	16.7	89.38	-4,092.6	29.6	672.2	535.6	136.67	4.919		
12,200.0	7,096.0	7,135.2	7,132.8	96.8	16.7	89.31	-4,092.6	29.6	771.5	632.5	138.98	5.551		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - Ludwig 13-1HZ (Kerr McGee - SI) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 20-MWVD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,900.0	7,100.8	7,625.4	7,154.8	72.3	21.6	-90.20	-4,071.4	642.4	732.2	620.8	111.38	6.574		
11,000.0	7,100.4	7,553.4	7,153.6	74.2	20.5	-90.10	-4,122.7	591.9	662.3	549.4	112.87	5.868		
11,100.0	7,100.1	7,473.6	7,148.5	76.1	19.4	-89.45	-4,179.4	535.8	592.3	477.9	114.37	5.178		
11,200.0	7,099.7	7,403.7	7,140.6	78.0	18.4	-88.18	-4,228.1	486.4	521.5	405.5	115.99	4.496		
11,300.0	7,099.3	7,341.2	7,128.8	79.8	17.6	-85.90	-4,271.6	443.2	451.8	334.3	117.59	3.843		
11,400.0	7,099.0	7,273.0	7,109.4	81.7	16.8	-81.36	-4,318.0	397.2	383.6	265.1	118.53	3.236		
11,500.0	7,098.6	7,219.4	7,088.1	83.6	16.3	-75.47	-4,352.9	362.5	319.3	200.9	118.40	2.697		
11,600.0	7,098.2	7,167.8	7,061.9	85.5	15.9	-67.35	-4,384.6	331.5	264.7	149.0	115.69	2.288		
11,700.0	7,097.9	7,120.9	7,034.0	87.4	15.5	-58.13	-4,411.7	305.2	228.8	118.9	109.94	2.081 SF		
11,768.4	7,097.6	7,091.0	7,014.8	88.7	15.4	-51.68	-4,427.9	289.1	220.7	116.3	104.44	2.114 CC, ES		
11,800.0	7,097.5	7,075.5	7,004.4	89.3	15.3	-48.26	-4,436.0	280.9	222.4	121.4	101.00	2.202		
11,900.0	7,097.1	7,032.7	6,974.9	91.1	15.0	-38.93	-4,457.4	258.5	248.8	158.3	90.53	2.749		
12,000.0	7,096.8	6,993.5	6,946.9	93.0	14.8	-30.96	-4,476.2	238.5	300.6	219.9	80.69	3.725		
12,100.0	7,096.4	6,957.0	6,919.9	94.9	14.7	-24.44	-4,493.4	220.9	367.6	295.0	72.58	5.065		
12,200.0	7,096.0	6,930.7	6,899.7	96.8	14.6	-20.35	-4,505.3	209.0	443.8	375.8	68.03	6.524		
12,300.0	7,095.7	6,912.0	6,884.8	98.7	14.5	-17.76	-4,513.3	201.0	526.0	460.3	65.68	8.009		
12,400.0	7,095.3	6,890.2	6,866.9	100.6	14.5	-15.06	-4,522.0	192.1	612.1	548.8	63.32	9.667		
12,500.0	7,095.0	6,867.0	6,847.2	102.5	14.4	-12.54	-4,530.4	183.2	701.1	639.7	61.40	11.418		
12,600.0	7,094.6	6,867.0	6,847.2	104.4	14.4	-12.54	-4,530.4	183.2	791.9	729.5	62.41	12.688		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - Ludwig 18-1 (Kerr McGee-SI) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 100-NS-GYRO-MS													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
7,700.0	7,112.5	7,083.3	7,081.6	18.6	13.3	-86.86	-973.5	594.5	770.5	731.5	38.98	19.766		
7,800.0	7,112.1	7,085.1	7,083.4	19.6	13.3	-87.08	-973.5	594.6	693.6	653.4	40.22	17.244		
7,900.0	7,111.7	7,086.9	7,085.3	20.7	13.3	-87.31	-973.6	594.6	623.4	581.8	41.63	14.976		
8,000.0	7,111.4	7,088.8	7,087.1	22.0	13.3	-87.54	-973.6	594.7	562.2	519.1	43.16	13.026		
8,100.0	7,111.0	7,090.7	7,089.1	23.3	13.3	-87.77	-973.6	594.7	513.4	468.6	44.81	11.458		
8,200.0	7,110.6	7,092.7	7,091.0	24.7	13.3	-88.01	-973.7	594.8	480.7	434.1	46.55	10.326		
8,300.0	7,110.3	7,094.7	7,093.1	26.2	13.3	-88.26	-973.7	594.9	467.4	419.1	48.37	9.664		
8,312.7	7,110.2	7,095.0	7,093.3	26.4	13.3	-88.30	-973.7	594.9	467.3	418.7	48.61	9.613 CC, ES		
8,400.0	7,109.9	7,096.8	7,095.2	27.8	13.3	-88.52	-973.8	594.9	475.3	425.1	50.25	9.459 SF		
8,500.0	7,109.5	7,098.9	7,097.3	29.3	13.3	-88.78	-973.8	595.0	503.4	451.2	52.19	9.645		
8,600.0	7,109.2	7,101.1	7,099.5	30.9	13.3	-89.05	-973.9	595.0	548.5	494.3	54.18	10.123		
8,700.0	7,108.8	7,103.3	7,101.6	32.6	13.3	-89.31	-974.0	595.1	606.8	550.6	56.20	10.797		
8,800.0	7,108.5	7,105.5	7,103.8	34.3	13.3	-89.58	-974.0	595.2	675.0	616.8	58.26	11.586		
8,900.0	7,108.1	7,107.6	7,106.0	36.0	13.3	-89.85	-974.1	595.2	750.4	690.0	60.35	12.433		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - Ludwig 22-1 (Kerr McGee - P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 821-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,700.0	7,108.8	7,216.3	7,131.0	32.6	21.2	-89.94	-1,982.8	598.7	782.0	721.4	60.63	12.899		
8,800.0	7,108.5	7,215.8	7,130.5	34.3	21.2	-89.88	-1,982.8	598.7	705.1	642.4	62.68	11.249		
8,900.0	7,108.1	7,215.3	7,130.0	36.0	21.2	-89.82	-1,982.8	598.7	634.7	569.9	64.76	9.800		
9,000.0	7,107.7	7,214.8	7,129.5	37.7	21.2	-89.75	-1,982.8	598.7	573.2	506.3	66.87	8.571		
9,100.0	7,107.4	7,214.3	7,129.0	39.4	21.2	-89.69	-1,982.8	598.7	523.6	454.6	69.00	7.588		
9,200.0	7,107.0	7,213.8	7,128.5	41.2	21.2	-89.63	-1,982.8	598.7	489.7	418.6	71.15	6.883		
9,300.0	7,106.6	7,213.3	7,128.0	43.0	21.2	-89.57	-1,982.8	598.7	474.9	401.5	73.32	6.477		
9,321.7	7,106.6	7,213.1	7,127.9	43.4	21.2	-89.56	-1,982.8	598.7	474.4	400.6	73.80	6.428 CC, ES		
9,400.0	7,106.3	7,212.7	7,127.5	44.8	21.2	-89.51	-1,982.8	598.7	480.8	405.3	75.50	6.368 SF		
9,500.0	7,105.9	7,212.2	7,127.0	46.5	21.2	-89.45	-1,982.8	598.7	506.8	429.1	77.70	6.522		
9,600.0	7,105.5	7,211.7	7,126.5	48.3	21.2	-89.38	-1,982.8	598.7	550.0	470.1	79.91	6.883		
9,700.0	7,105.2	7,211.2	7,125.9	50.2	21.2	-89.32	-1,982.8	598.7	606.7	524.6	82.12	7.388		
9,800.0	7,104.8	7,210.7	7,125.4	52.0	21.2	-89.26	-1,982.8	598.7	673.6	589.3	84.35	7.986		
9,900.0	7,104.4	7,210.2	7,124.9	53.8	21.2	-89.20	-1,982.8	598.7	748.0	661.4	86.58	8.639		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - Ludwig 30-1 (Kerr McGee - P&A) - Wellbore #1 - Wellbore #1													Offset Site Error: 0.0 ft	
Survey Program: 15-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	0.0	0.0	0.0	0.0	177.54	-262.2	11.2	262.7					
100.0	100.0	89.2	89.2	0.1	0.2	177.58	-262.3	11.1	262.6	262.2	0.36	723.414		
200.0	200.0	188.7	188.7	0.3	0.4	177.75	-262.8	10.3	263.0	262.1	0.90	291.995		
300.0	300.0	289.2	289.2	0.6	0.6	177.89	-263.3	9.7	263.5	262.0	1.43	184.887		
400.0	400.0	389.0	389.0	0.8	0.8	178.09	-263.6	8.8	263.7	261.8	1.95	135.048		
500.0	500.0	488.9	488.9	1.0	1.0	178.25	-264.1	8.1	264.2	261.7	2.48	106.397		
600.0	600.0	590.0	590.0	1.2	1.2	178.40	-264.4	7.4	264.5	261.5	3.02	87.687		
700.0	700.0	690.8	690.8	1.5	1.4	178.52	-264.2	6.8	264.3	260.7	3.55	74.426		
800.0	800.0	798.4	798.3	1.7	1.7	179.08	-262.7	4.2	262.9	258.7	4.11	63.910		
900.0	900.0	906.8	906.4	1.9	1.9	-179.53	-257.6	-2.1	258.1	253.4	4.69	54.977		
1,000.0	1,000.0	1,017.2	1,016.0	2.1	2.2	-177.21	-248.1	-12.1	249.7	244.4	5.30	47.088		
1,100.0	1,100.0	1,125.8	1,122.9	2.4	2.5	171.18	-233.9	-23.9	238.7	232.8	5.95	40.105		
1,200.0	1,199.9	1,227.7	1,222.3	2.6	2.9	175.57	-217.3	-39.0	228.3	221.6	6.64	34.398		
1,300.0	1,299.7	1,329.2	1,320.4	2.8	3.3	-178.69	-198.8	-57.5	220.8	213.4	7.41	29.796		
1,400.0	1,399.3	1,426.7	1,413.7	3.0	3.8	-172.18	-178.9	-77.6	217.1	208.8	8.27	26.244		
1,414.5	1,413.7	1,440.6	1,426.9	3.1	3.9	-171.18	-176.0	-80.7	217.0	208.6	8.40	25.838	CC, ES	
1,450.7	1,449.6	1,475.2	1,459.9	3.2	4.0	-168.70	-168.7	-88.5	217.4	208.7	8.72	24.946		
1,500.0	1,498.6	1,522.5	1,505.0	3.3	4.3	-165.39	-159.0	-98.9	219.0	209.8	9.16	23.911		
1,600.0	1,597.9	1,619.1	1,597.3	3.5	4.7	-159.06	-139.5	-119.5	224.4	214.4	10.03	22.380		
1,700.0	1,697.2	1,716.6	1,690.9	3.8	5.2	-153.30	-120.4	-139.2	232.4	221.5	10.92	21.286		
1,800.0	1,796.5	1,815.1	1,784.9	4.1	5.7	-147.50	-99.5	-159.9	242.1	230.2	11.87	20.397		
1,900.0	1,895.8	1,910.6	1,875.7	4.4	6.3	-142.08	-78.4	-180.6	254.0	241.2	12.82	19.819		
2,000.0	1,995.1	2,004.9	1,965.6	4.6	6.8	-137.47	-58.7	-200.8	268.6	254.9	13.71	19.589		
2,100.0	2,094.4	2,099.7	2,056.0	4.9	7.3	-133.34	-39.6	-221.9	285.9	271.3	14.58	19.609		
2,200.0	2,193.7	2,199.4	2,152.1	5.2	7.9	-130.06	-21.7	-242.2	303.8	288.3	15.42	19.698		
2,300.0	2,293.0	2,296.0	2,245.5	5.5	8.3	-127.64	-6.3	-260.7	322.1	305.9	16.21	19.865		
2,400.0	2,392.4	2,391.5	2,337.7	5.8	8.8	-125.26	10.0	-280.0	341.5	324.5	17.00	20.083		
2,500.0	2,491.7	2,499.0	2,441.6	6.1	9.4	-122.99	28.0	-300.7	360.8	343.0	17.84	20.224		
2,600.0	2,591.0	2,606.2	2,545.3	6.4	9.9	-120.73	48.6	-318.4	377.1	358.4	18.67	20.199		
2,700.0	2,690.3	2,693.9	2,629.6	6.7	10.4	-118.70	67.5	-333.4	394.0	374.6	19.44	20.265		
2,800.0	2,789.6	2,787.7	2,718.8	7.0	10.9	-116.30	90.0	-351.8	413.3	393.1	20.27	20.387		
2,900.0	2,888.9	2,886.2	2,812.0	7.3	11.5	-113.81	115.0	-371.3	433.4	412.3	21.12	20.525		
3,000.0	2,988.2	2,984.3	2,905.1	7.6	12.1	-111.62	139.4	-390.2	453.7	431.8	21.93	20.687		
3,100.0	3,087.5	3,076.9	2,993.4	7.9	12.6	-109.93	160.8	-408.3	475.0	452.3	22.71	20.914		
3,200.0	3,186.8	3,173.5	3,086.2	8.2	13.1	-108.70	180.0	-427.2	496.7	473.2	23.50	21.142		
3,300.0	3,286.1	3,265.2	3,174.1	8.5	13.6	-107.64	198.0	-445.9	519.6	495.4	24.25	21.427		
3,400.0	3,385.4	3,367.9	3,272.6	8.8	14.2	-106.55	218.1	-466.6	542.4	517.3	25.06	21.645		
3,500.0	3,484.7	3,469.9	3,370.6	9.1	14.8	-105.50	238.8	-486.3	564.5	538.6	25.85	21.838		
3,600.0	3,584.0	3,570.6	3,468.0	9.4	15.3	-104.80	256.7	-504.8	585.8	559.1	26.63	21.994		
3,700.0	3,683.3	3,670.7	3,565.0	9.7	15.8	-104.26	273.4	-522.9	606.8	579.4	27.40	22.150		
3,800.0	3,782.6	3,782.1	3,673.7	10.0	16.3	-104.06	288.1	-541.8	626.8	598.6	28.19	22.232		
3,900.0	3,881.9	3,886.8	3,776.5	10.3	16.7	-104.02	300.5	-557.8	645.0	616.1	28.95	22.281		
4,000.0	3,981.2	3,991.4	3,879.4	10.6	17.1	-104.10	311.7	-572.6	662.2	632.5	29.70	22.293		
4,100.0	4,080.5	4,097.5	3,984.0	10.9	17.5	-104.25	322.0	-587.1	678.8	648.4	30.45	22.293		
4,200.0	4,179.8	4,211.9	4,097.2	11.2	17.8	-104.56	331.4	-600.2	693.2	662.0	31.21	22.210		
4,300.0	4,279.1	4,347.2	4,232.0	11.5	18.1	-105.35	337.1	-611.1	704.3	672.3	32.01	22.006		
4,400.0	4,378.4	4,458.5	4,343.2	11.8	18.3	-106.39	336.8	-615.8	711.8	679.1	32.70	21.767		
4,500.0	4,477.8	4,558.0	4,442.6	12.1	18.4	-107.32	336.3	-619.2	718.6	685.3	33.34	21.555		
4,600.0	4,577.1	4,674.7	4,559.3	12.4	18.6	-108.38	335.9	-622.4	725.1	691.1	34.03	21.312		
4,700.0	4,676.4	4,777.0	4,661.6	12.7	18.7	-109.26	336.1	-622.9	729.5	694.8	34.66	21.045		
4,800.0	4,775.7	4,871.3	4,755.9	13.1	18.8	-110.05	336.4	-623.7	734.3	699.0	35.28	20.814		
4,900.0	4,875.0	4,958.0	4,842.6	13.4	18.9	-110.77	336.6	-625.3	740.3	704.4	35.87	20.636		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - Ludwig 30-1 (Kerr McGee - P&A) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 15-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	4,974.3	5,049.3	4,933.8	13.7	19.1	-111.58	335.7	-628.1	747.8	711.3	36.47	20.503		
5,100.0	5,073.6	5,173.6	5,058.1	14.0	19.2	-112.82	332.6	-630.7	754.7	717.5	37.13	20.326		
5,200.0	5,172.9	5,287.1	5,171.5	14.3	19.3	-113.99	329.6	-629.7	758.8	721.1	37.75	20.103		
5,300.0	5,272.2	5,384.7	5,269.1	14.6	19.4	-114.87	328.5	-628.3	762.6	724.2	38.33	19.896		
5,400.0	5,371.5	5,480.7	5,365.0	14.9	19.5	-115.69	328.0	-627.6	767.0	728.0	38.91	19.712		
5,491.9	5,462.8	5,568.7	5,453.0	15.2	19.6	-116.40	327.7	-627.3	771.5	732.1	39.44	19.560		
5,500.0	5,470.8	5,576.4	5,460.8	15.2	19.6	-116.47	327.8	-627.3	771.9	732.4	39.49	19.547		
5,600.0	5,570.3	5,672.8	5,557.2	15.4	19.7	-117.15	328.1	-627.6	776.5	736.5	40.03	19.401		
5,700.0	5,670.1	5,770.6	5,655.0	15.6	19.9	-117.57	328.5	-628.3	780.0	739.5	40.50	19.259		
5,800.0	5,770.1	5,869.7	5,754.1	15.8	20.0	-117.74	328.9	-629.1	782.0	741.1	40.92	19.112		
5,829.9	5,800.0	5,898.7	5,783.0	15.8	20.0	-103.00	329.0	-629.3	782.3	741.3	41.04	19.061		
5,900.0	5,870.1	5,966.5	5,850.8	15.9	20.1	-102.97	329.3	-630.1	783.0	741.7	41.31	18.957		
6,000.0	5,970.1	6,065.5	5,949.9	16.1	20.3	-102.91	329.7	-631.5	784.3	742.6	41.71	18.805		
6,100.0	6,070.1	6,165.8	6,050.1	16.3	20.4	-102.87	330.0	-632.9	785.6	743.5	42.12	18.653		
6,200.0	6,170.1	6,266.3	6,150.7	16.5	20.6	-102.81	330.6	-634.3	786.9	744.3	42.53	18.502		
6,300.0	6,270.1	6,365.6	6,249.9	16.7	20.7	-102.73	331.4	-635.8	788.1	745.2	42.95	18.351		
6,400.0	6,370.1	6,464.7	6,349.0	16.8	20.9	-102.63	332.4	-637.4	789.5	746.1	43.37	18.204		
6,426.7	6,396.8	6,491.3	6,375.5	16.9	20.9	-102.60	332.7	-637.8	789.8	746.4	43.48	18.166		
6,450.0	6,420.1	6,514.3	6,398.6	16.9	21.0	77.23	333.0	-638.2	790.1	746.5	43.56	18.140		
6,500.0	6,469.9	6,566.1	6,450.4	17.0	21.0	77.54	333.6	-639.1	790.0	746.4	43.69	18.082		
6,550.0	6,519.5	6,619.8	6,504.1	17.0	21.1	78.19	334.2	-639.8	789.1	745.3	43.76	18.031		
6,600.0	6,568.4	6,672.8	6,557.0	17.0	21.2	79.17	334.9	-640.1	787.2	743.5	43.77	17.988		
6,650.0	6,616.5	6,721.7	6,605.9	17.0	21.3	80.37	335.6	-640.3	784.8	741.1	43.71	17.955		
6,700.0	6,663.5	6,769.4	6,653.6	16.9	21.4	81.81	336.2	-640.4	782.0	738.4	43.60	17.935		
6,750.0	6,709.2	6,815.2	6,699.5	16.8	21.4	83.43	336.9	-640.5	779.1	735.7	43.46	17.929 SF		
6,800.0	6,753.4	6,856.7	6,740.9	16.7	21.5	85.09	337.4	-640.6	776.6	733.3	43.28	17.941		
6,850.0	6,795.9	6,896.5	6,780.7	16.6	21.5	86.82	338.0	-640.9	774.7	731.6	43.09	17.978		
6,900.0	6,836.4	6,934.4	6,818.6	16.5	21.6	88.57	338.5	-641.2	773.8	730.9	42.89	18.043		
6,912.9	6,846.5	6,944.0	6,828.2	16.5	21.6	89.02	338.6	-641.3	773.7	730.9	42.83	18.064		
6,950.0	6,874.7	6,972.5	6,856.7	16.4	21.7	90.38	339.0	-641.6	774.1	731.4	42.67	18.141		
7,000.0	6,910.8	7,009.1	6,893.3	16.3	21.7	92.13	339.4	-641.9	775.9	733.4	42.46	18.274		
7,050.0	6,944.3	7,043.2	6,927.4	16.3	21.8	93.73	339.8	-642.2	779.4	737.1	42.26	18.442		
7,100.0	6,975.2	7,074.6	6,958.8	16.2	21.8	95.11	340.0	-642.5	785.0	742.9	42.11	18.644		
7,150.0	7,003.3	7,102.4	6,986.6	16.2	21.9	96.16	340.3	-642.6	793.0	750.9	42.01	18.874		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.1-T3N-R66W - Ludwig 31-1 (Kerr McGee - SI) - Wellbore #1 - Wellbore #1													Offset Site Error:	0.0 ft
Survey Program: 1532-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		
0.0	0.0	0.0	0.0	0.0	0.0	175.01	-320.5	28.0	321.9					
100.0	100.0	90.1	90.1	0.1	0.1	175.01	-320.5	28.0	321.7	321.5	0.26	1,226.196		
200.0	200.0	190.2	190.2	0.3	0.2	175.03	-320.5	27.9	321.7	321.0	0.68	475.863		
300.0	300.0	290.3	290.3	0.6	0.3	175.06	-320.4	27.7	321.6	320.5	1.09	295.163		
400.0	400.0	390.3	390.3	0.8	0.4	175.09	-320.3	27.5	321.5	320.0	1.50	213.885		
500.0	500.0	490.4	490.4	1.0	0.6	175.14	-320.3	27.2	321.4	319.5	1.92	167.670		
600.0	600.0	590.5	590.5	1.2	0.7	175.20	-320.1	26.9	321.3	318.9	2.33	137.848		
700.0	700.0	690.6	690.6	1.5	0.8	175.27	-320.0	26.5	321.1	318.3	2.74	117.007		
800.0	800.0	790.7	790.7	1.7	0.9	175.36	-319.8	26.0	320.9	317.7	3.16	101.617		
900.0	900.0	890.8	890.8	1.9	1.0	175.45	-319.6	25.4	320.7	317.1	3.57	89.784		
1,000.0	1,000.0	990.9	990.9	2.1	1.1	175.56	-319.4	24.8	320.4	316.4	3.99	80.401		
1,010.9	1,010.9	1,001.7	1,001.7	2.2	1.1	160.83	-319.4	24.7	320.4	316.4	4.03	79.494 CC, ES		
1,100.0	1,100.0	1,090.9	1,090.9	2.4	1.2	161.00	-319.2	24.1	321.4	317.0	4.40	73.047		
1,200.0	1,199.9	1,190.9	1,190.9	2.6	1.3	161.34	-319.0	23.4	324.8	320.0	4.81	67.457		
1,300.0	1,299.7	1,290.8	1,290.8	2.8	1.5	161.81	-318.7	22.6	330.7	325.4	5.23	63.201		
1,400.0	1,399.3	1,390.5	1,390.4	3.0	1.6	162.40	-318.4	21.7	339.0	333.4	5.65	59.981		
1,450.7	1,449.6	1,440.9	1,440.9	3.2	1.6	162.73	-318.2	21.3	344.2	338.4	5.87	58.672		
1,500.0	1,498.6	1,489.9	1,489.9	3.3	1.7	163.09	-318.1	20.8	349.6	343.5	6.07	57.554		
1,600.0	1,597.9	1,586.5	1,586.5	3.5	1.8	163.82	-318.0	19.6	360.8	354.2	6.56	54.984		
1,700.0	1,697.2	1,684.2	1,684.0	3.8	2.1	164.98	-318.7	15.3	372.7	365.6	7.12	52.386		
1,800.0	1,796.5	1,779.5	1,779.0	4.1	2.3	166.60	-319.8	7.4	385.4	377.8	7.68	50.180		
1,900.0	1,895.8	1,869.2	1,868.2	4.4	2.5	168.37	-322.1	-2.5	399.9	391.7	8.25	48.498		
2,000.0	1,995.1	1,958.0	1,956.1	4.6	2.8	170.12	-326.6	-13.2	417.4	408.6	8.81	47.358		
2,100.0	2,094.4	2,044.6	2,041.8	4.9	3.0	171.82	-332.5	-24.6	437.2	427.8	9.39	46.565		
2,200.0	2,193.7	2,129.3	2,125.3	5.2	3.3	173.36	-340.6	-36.2	460.0	450.1	9.96	46.203		
2,300.0	2,293.0	2,217.5	2,212.0	5.5	3.6	174.89	-350.7	-49.2	485.3	474.7	10.55	45.999		
2,400.0	2,392.4	2,314.7	2,307.2	5.8	3.9	176.62	-362.2	-65.2	511.5	500.4	11.18	45.760		
2,500.0	2,491.7	2,409.9	2,400.2	6.1	4.3	178.32	-372.7	-82.3	537.9	526.1	11.81	45.549		
2,600.0	2,591.0	2,500.6	2,488.6	6.4	4.7	179.94	-382.8	-100.1	565.1	552.7	12.45	45.408 SF		
2,700.0	2,690.3	2,591.8	2,577.2	6.7	5.0	-178.55	-393.5	-118.4	593.4	580.4	13.06	45.426		
2,800.0	2,789.6	2,674.9	2,657.9	7.0	5.4	-177.29	-404.1	-135.3	623.2	609.6	13.66	45.612		
2,900.0	2,888.9	2,767.7	2,747.8	7.3	5.8	-175.97	-416.9	-154.9	654.5	640.2	14.31	45.740		
3,000.0	2,988.2	2,859.8	2,836.9	7.6	6.2	-174.78	-429.6	-174.3	686.0	671.1	14.92	45.987		
3,100.0	3,087.5	2,960.0	2,933.9	7.9	6.7	-173.61	-443.4	-195.2	717.8	702.2	15.55	46.148		
3,200.0	3,186.8	3,067.2	3,038.1	8.2	7.1	-172.53	-456.9	-216.2	748.2	732.0	16.19	46.220		
3,300.0	3,286.1	3,146.6	3,115.4	8.5	7.5	-171.82	-467.2	-231.7	779.1	762.4	16.76	46.482		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.36-T3N-R66W - Rissler State 29C-36HZX (Kerr McGee - PR) - Wellbore #1 - Wellbo													Offset Site Error:	0.0 ft
Survey Program: 25-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		
5,200.0	5,172.9	5,348.2	5,187.9	14.3	21.6	84.92	322.3	907.0	799.1	755.3	43.78	18.252		
5,300.0	5,272.2	5,436.4	5,270.8	14.6	22.1	87.75	293.3	899.4	795.9	751.0	44.92	17.718		
5,399.3	5,370.8	5,530.7	5,359.2	14.9	22.7	90.86	261.4	890.8	795.0	749.0	46.06	17.261		
5,400.0	5,371.5	5,531.4	5,359.9	14.9	22.7	90.88	261.2	890.8	795.0	749.0	46.07	17.258		
5,491.9	5,462.8	5,613.2	5,436.8	15.2	23.2	93.53	234.5	882.9	795.9	748.9	47.01	16.931		
5,500.0	5,470.8	5,619.6	5,442.9	15.2	23.3	93.74	232.4	882.3	796.1	749.0	47.08	16.910		
6,800.0	6,753.4	7,264.5	7,030.2	16.7	26.8	-81.74	129.5	799.4	779.3	726.6	52.75	14.775		
6,850.0	6,795.9	7,292.2	7,052.6	16.6	26.6	-86.09	145.6	796.2	755.0	702.8	52.12	14.485		
6,900.0	6,836.4	7,309.4	7,066.1	16.5	26.5	-89.51	156.1	794.5	732.5	680.9	51.56	14.205		
6,950.0	6,874.7	7,320.2	7,074.4	16.4	26.4	-92.16	162.8	793.4	712.6	661.5	51.10	13.945		
7,000.0	6,910.8	7,325.9	7,078.8	16.3	26.4	-94.08	166.4	792.9	695.7	645.0	50.75	13.709		
7,050.0	6,944.3	7,327.6	7,080.0	16.3	26.4	-95.33	167.5	792.7	682.3	631.8	50.52	13.505		
7,100.0	6,975.2	7,326.0	7,078.8	16.2	26.4	-95.98	166.5	792.9	672.7	622.3	50.43	13.339		
7,150.0	7,003.3	7,321.8	7,075.7	16.2	26.4	-96.07	163.8	793.3	667.0	616.6	50.47	13.217		
7,195.1	7,026.0	7,316.2	7,071.4	16.1	26.4	-95.73	160.3	793.8	665.4	614.8	50.61	13.148 CC, ES		
7,200.0	7,028.4	7,315.5	7,070.8	16.1	26.4	-95.67	159.9	793.9	665.4	614.8	50.63	13.143		
7,250.0	7,050.4	7,307.5	7,064.6	16.2	26.5	-94.80	154.9	794.7	667.8	616.9	50.89	13.121 SF		
7,300.0	7,069.2	7,298.0	7,057.1	16.3	26.6	-93.52	149.0	795.6	674.0	622.8	51.24	13.153		
7,350.0	7,084.8	7,287.3	7,048.6	16.4	26.6	-91.84	142.6	796.8	683.8	632.2	51.64	13.242		
7,400.0	7,097.0	7,270.0	7,034.7	16.6	26.8	-89.39	132.6	798.7	696.9	644.8	52.11	13.375		
7,450.0	7,105.8	7,270.0	7,034.7	16.8	26.8	-88.04	132.6	798.7	713.0	660.6	52.38	13.612		
7,500.0	7,111.1	7,247.1	7,015.8	17.1	26.9	-84.73	119.9	801.5	731.4	678.7	52.70	13.877		
7,554.4	7,113.0	7,230.3	7,001.8	17.4	27.0	-81.58	111.1	803.5	753.9	701.0	52.88	14.258		
7,554.4	7,113.0	7,230.3	7,001.7	17.4	27.0	-81.58	111.1	803.5	753.9	701.0	52.88	14.258		
7,555.0	7,113.0	7,230.2	7,001.6	17.4	27.0	-81.57	111.0	803.6	754.1	701.3	52.88	14.262		
7,600.0	7,112.8	7,216.7	6,990.0	17.7	27.1	-80.63	104.2	805.2	774.6	721.4	53.15	14.573		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 19-MWD													Offset Well Error:	0.0 ft
Existing Wells Sec.36-T3N-R66W - Rissler State 30N-36HZ (Kerr McGee - PR) - Wellbore #1 - Wellbore														
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		
3,500.0	3,484.7	3,960.6	3,799.1	9.1	17.6	42.46	664.4	644.5	777.0	753.6	23.39	33.217		
3,600.0	3,584.0	4,038.9	3,869.8	9.4	18.2	43.79	639.1	622.4	727.4	703.1	24.30	29.939		
3,700.0	3,683.3	4,118.1	3,941.7	9.7	18.8	45.29	614.1	600.7	679.3	654.0	25.26	26.895		
3,800.0	3,782.6	4,210.7	4,025.9	10.0	19.5	47.38	584.4	575.9	631.9	605.5	26.45	23.891		
3,900.0	3,881.9	4,289.5	4,097.0	10.3	20.1	49.50	558.1	554.4	584.2	556.5	27.65	21.129		
4,000.0	3,981.2	4,355.2	4,157.3	10.6	20.6	51.39	538.1	537.8	540.2	511.5	28.76	18.785		
4,100.0	4,080.5	4,442.0	4,237.8	10.9	21.2	54.04	513.5	516.5	498.9	468.8	30.15	16.546		
4,200.0	4,179.8	4,549.3	4,336.4	11.2	22.0	58.03	481.7	488.4	456.8	424.7	32.12	14.223		
4,300.0	4,279.1	4,636.3	4,415.3	11.5	22.7	62.17	453.8	464.7	414.5	380.4	34.13	12.144		
4,400.0	4,378.4	4,717.0	4,488.3	11.8	23.3	66.90	427.0	448.3	375.1	338.8	36.32	10.328		
4,500.0	4,477.8	4,807.6	4,570.1	12.1	24.0	73.36	396.1	419.7	339.3	300.2	39.07	8.684		
4,600.0	4,577.1	4,892.0	4,646.0	12.4	24.7	80.49	367.0	396.9	307.4	265.6	41.82	7.352		
4,700.0	4,676.4	4,972.3	4,718.6	12.7	25.3	88.19	340.0	375.8	282.8	238.4	44.38	6.372		
4,800.0	4,775.7	5,056.9	4,795.8	13.1	25.9	96.94	312.3	355.0	267.4	220.7	46.72	5.724		
4,900.0	4,875.0	5,143.1	4,874.6	13.4	26.6	106.33	284.7	333.8	260.9	212.4	48.51	5.378		
4,915.0	4,889.9	5,155.7	4,886.2	13.4	26.6	107.72	280.6	330.7	260.8	212.1	48.71	5.354 CC, ES		
5,000.0	4,974.3	5,229.5	4,954.0	13.7	27.2	115.72	257.1	313.1	264.3	214.8	49.55	5.334 SF		
5,100.0	5,073.6	5,319.0	5,035.8	14.0	27.9	125.12	228.7	290.9	276.3	226.4	49.84	5.542		
5,200.0	5,172.9	5,408.6	5,117.3	14.3	28.6	133.98	200.2	266.9	295.5	246.0	49.47	5.973		
5,300.0	5,272.2	5,499.2	5,200.3	14.6	29.2	141.70	172.9	243.1	320.6	271.9	48.70	6.582		
5,400.0	5,371.5	5,587.8	5,282.2	14.9	29.9	147.96	147.3	221.1	350.1	302.3	47.86	7.315		
5,491.9	5,462.8	5,667.7	5,356.3	15.2	30.4	152.77	124.3	201.6	380.6	333.4	47.15	8.071		
5,500.0	5,470.8	5,675.6	5,363.6	15.2	30.5	153.23	122.0	199.7	383.3	336.3	47.08	8.142		
5,600.0	5,570.3	5,774.3	5,455.7	15.4	31.1	158.18	95.0	176.8	416.4	370.0	46.35	8.982		
5,700.0	5,670.1	5,866.5	5,541.5	15.6	31.8	162.20	70.8	153.5	447.1	401.3	45.82	9.757		
5,800.0	5,770.1	5,956.0	5,623.9	15.8	32.4	165.88	47.3	127.5	476.6	431.2	45.38	10.501		
5,829.9	5,800.0	5,982.8	5,648.5	15.8	32.6	-178.36	40.2	119.6	485.2	439.8	45.34	10.700		
5,900.0	5,870.1	6,044.0	5,705.0	15.9	33.1	-176.40	23.8	102.6	505.6	460.4	45.17	11.194		
6,000.0	5,970.1	6,123.6	5,777.9	16.1	33.7	-174.00	1.4	80.0	537.1	492.0	45.04	11.924		
6,100.0	6,070.1	6,230.8	5,875.2	16.3	34.5	-170.78	-28.4	46.3	570.2	525.4	44.79	12.730		
6,200.0	6,170.1	6,324.5	5,960.1	16.5	35.3	-167.98	-51.8	14.3	602.4	557.8	44.63	13.498		
6,300.0	6,270.1	6,488.4	6,107.7	16.7	36.5	-162.64	-80.9	-50.3	631.8	587.7	44.12	14.321		
6,400.0	6,370.1	6,628.1	6,235.3	16.8	37.4	-158.05	-89.1	-106.6	652.0	608.3	43.77	14.898		
6,426.7	6,396.8	6,657.0	6,261.9	16.9	37.5	-157.14	-89.9	-117.9	657.0	613.3	43.73	15.023		
6,450.0	6,420.1	6,682.2	6,285.1	16.9	37.7	23.33	-90.4	-127.8	661.0	617.2	43.80	15.091		
6,500.0	6,469.9	6,735.9	6,334.4	17.0	38.0	24.89	-91.0	-148.8	667.1	623.2	43.90	15.198		
6,550.0	6,519.5	6,788.5	6,382.8	17.0	38.3	26.64	-90.8	-169.5	670.2	626.5	43.77	15.313		
6,600.0	6,568.4	6,852.8	6,441.9	17.0	38.6	29.12	-89.1	-195.0	670.1	626.6	43.42	15.433		
6,650.0	6,616.5	6,923.5	6,506.8	17.0	38.9	32.29	-84.6	-222.6	666.2	623.2	42.93	15.516		
6,700.0	6,663.5	6,999.0	6,575.9	16.9	39.2	36.32	-75.8	-251.5	658.3	615.8	42.49	15.494		
6,750.0	6,709.2	7,068.7	6,639.1	16.8	39.5	40.86	-63.1	-278.2	646.9	604.6	42.31	15.289		
6,800.0	6,753.4	7,204.1	6,760.6	16.7	39.7	50.97	-25.1	-323.7	630.7	587.1	43.60	14.466		
6,850.0	6,795.9	7,262.7	6,812.5	16.6	39.7	56.98	-3.5	-339.9	611.4	566.3	45.06	13.568		
6,900.0	6,836.4	7,296.0	6,841.5	16.5	39.7	61.39	10.2	-348.9	591.9	545.4	46.47	12.737		
6,950.0	6,874.7	7,318.4	6,860.6	16.4	39.6	64.99	20.3	-355.3	573.4	525.6	47.80	11.998		
7,000.0	6,910.8	7,333.9	6,873.4	16.3	39.6	67.86	27.6	-359.8	556.9	508.0	48.96	11.374		
7,050.0	6,944.3	7,343.7	6,881.5	16.3	39.6	70.00	32.4	-362.7	543.0	493.0	49.92	10.877		
7,100.0	6,975.2	7,349.1	6,885.9	16.2	39.6	71.43	35.1	-364.3	532.0	481.4	50.67	10.500		
7,150.0	7,003.3	7,350.9	6,887.3	16.2	39.6	72.20	36.0	-364.9	524.5	473.3	51.24	10.237		
7,200.0	7,028.4	7,349.8	6,886.4	16.1	39.6	72.38	35.4	-364.5	520.6	469.0	51.67	10.077		
7,227.3	7,040.7	7,348.2	6,885.1	16.2	39.6	72.24	34.6	-364.0	520.1	468.2	51.86	10.029		
7,250.0	7,050.4	7,346.3	6,883.6	16.2	39.6	72.00	33.6	-363.5	520.5	468.5	51.99	10.011		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 19-MWD Existing Wells Sec.36-T3N-R66W - Rissler State 30N-36HZ (Kerr McGee - PR) - Wellbore #1 - Wellbore												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
7,300.0	7,069.2	7,340.8	6,879.1	16.3	39.6	71.14	30.9	-361.8	524.0	471.7	52.25	10.029	
7,350.0	7,084.8	7,333.5	6,873.1	16.4	39.6	69.83	27.4	-359.7	530.9	478.5	52.45	10.122	
7,400.0	7,097.0	7,324.9	6,866.0	16.6	39.6	68.14	23.3	-357.1	541.1	488.5	52.63	10.282	
7,450.0	7,105.8	7,315.0	6,857.7	16.8	39.6	66.13	18.7	-354.3	554.1	501.3	52.78	10.499	
7,500.0	7,111.1	7,304.1	6,848.4	17.1	39.6	63.86	13.8	-351.2	569.6	516.7	52.91	10.765	
7,554.4	7,113.0	7,291.1	6,837.4	17.4	39.7	61.18	8.1	-347.6	588.8	535.8	53.07	11.096	
7,554.4	7,113.0	7,291.1	6,837.3	17.4	39.7	61.18	8.1	-347.6	588.8	535.8	53.07	11.096	
7,555.0	7,113.0	7,291.0	6,837.2	17.4	39.7	61.16	8.1	-347.5	589.0	536.0	53.06	11.101	
7,600.0	7,112.8	7,269.0	6,818.1	17.7	39.7	59.12	-1.0	-341.6	607.3	554.7	52.60	11.545	
7,700.0	7,112.5	7,252.0	6,803.1	18.6	39.7	57.56	-7.6	-337.1	655.5	602.6	52.91	12.388	
7,800.0	7,112.1	7,221.1	6,775.8	19.6	39.7	54.74	-19.1	-328.5	712.9	660.2	52.74	13.517	
7,900.0	7,111.7	7,194.1	6,751.6	20.7	39.7	52.31	-28.5	-320.7	777.7	725.0	52.74	14.746	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 19-MWD													Offset Well Error:	0.0 ft
Existing Wells Sec.36-T3N-R66W - Rissler State 4N-36HZ (Kerr McGee - PR) - Wellbore #1 - Wellbore														
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		
3,700.0	3,683.3	4,107.7	3,961.2	9.7	17.6	49.65	616.9	707.2	773.1	747.0	26.12	29.600		
3,800.0	3,782.6	4,189.2	4,035.3	10.0	18.2	51.67	589.1	687.6	728.6	701.2	27.31	26.673		
3,900.0	3,881.9	4,257.5	4,098.0	10.3	18.7	53.47	566.9	672.2	686.9	658.5	28.40	24.186		
4,000.0	3,981.2	4,335.0	4,170.0	10.6	19.2	55.53	544.1	655.2	648.1	618.5	29.57	21.917		
4,100.0	4,080.5	4,421.8	4,251.5	10.9	19.7	57.87	520.7	636.0	611.3	580.4	30.86	19.809		
4,200.0	4,179.8	4,518.0	4,341.5	11.2	20.3	60.75	494.9	614.4	575.2	542.9	32.37	17.768		
4,300.0	4,279.1	4,596.7	4,415.1	11.5	20.8	63.49	472.8	597.2	540.7	506.9	33.80	15.996		
4,400.0	4,378.4	4,674.4	4,488.3	11.8	21.3	66.42	451.8	581.7	509.9	474.6	35.28	14.452		
4,500.0	4,477.8	4,759.7	4,569.2	12.1	21.8	69.90	429.5	566.2	482.9	446.0	36.94	13.073		
4,600.0	4,577.1	4,849.9	4,654.4	12.4	22.4	74.05	404.8	550.0	458.4	419.6	38.78	11.818		
4,700.0	4,676.4	4,935.2	4,734.6	12.7	22.9	78.51	380.0	535.4	437.4	396.7	40.64	10.761		
4,800.0	4,775.7	5,022.7	4,817.2	13.1	23.4	83.39	354.6	521.4	421.1	378.6	42.50	9.907		
4,900.0	4,875.0	5,119.1	4,907.6	13.4	24.1	89.25	325.6	504.7	407.9	363.4	44.48	9.170		
5,000.0	4,974.3	5,208.4	4,991.0	13.7	24.7	95.08	297.9	488.4	398.9	352.7	46.25	8.626		
5,100.0	5,073.6	5,298.3	5,074.6	14.0	25.3	101.16	269.6	471.8	395.2	347.4	47.79	8.269		
5,133.5	5,106.9	5,330.6	5,104.6	14.1	25.5	103.37	259.5	465.6	395.0	346.7	48.26	8.183		
5,200.0	5,172.9	5,393.9	5,163.5	14.3	26.0	107.70	239.8	452.9	395.8	346.8	49.06	8.068		
5,300.0	5,272.2	5,486.7	5,250.3	14.6	26.6	113.78	212.9	434.1	400.6	350.7	49.90	8.027		
5,400.0	5,371.5	5,572.9	5,331.5	14.9	27.1	119.04	189.1	417.9	410.4	359.9	50.41	8.140		
5,491.9	5,462.8	5,657.3	5,411.3	15.2	27.6	123.84	166.3	402.8	423.3	372.6	50.67	8.352		
5,500.0	5,470.8	5,664.8	5,418.5	15.2	27.6	124.28	164.2	401.4	424.5	373.8	50.69	8.376		
5,600.0	5,570.3	5,760.4	5,509.3	15.4	28.1	129.28	139.6	384.7	440.4	389.7	50.72	8.683		
5,700.0	5,670.1	5,849.0	5,593.5	15.6	28.7	133.34	116.5	369.6	457.3	406.6	50.71	9.018		
5,800.0	5,770.1	5,949.6	5,689.3	15.8	29.2	137.20	90.8	353.0	473.8	423.1	50.65	9.354		
5,829.9	5,800.0	5,977.4	5,715.9	15.8	29.4	152.91	83.9	348.3	478.3	427.6	50.70	9.433		
5,900.0	5,870.1	6,041.7	5,776.7	15.9	29.8	155.09	67.3	336.1	489.2	438.5	50.69	9.652		
6,000.0	5,970.1	6,131.0	5,860.8	16.1	30.4	158.16	43.1	318.0	506.9	456.2	50.69	9.999		
6,100.0	6,070.1	6,207.7	5,931.9	16.3	30.9	160.89	20.2	300.9	528.2	477.5	50.70	10.417		
6,200.0	6,170.1	6,294.3	6,010.8	16.5	31.6	164.08	-8.4	279.3	553.5	502.9	50.60	10.940		
6,300.0	6,270.1	6,398.5	6,106.3	16.7	32.3	167.46	-41.8	254.5	580.1	529.6	50.44	11.501		
6,400.0	6,370.1	6,564.6	6,262.0	16.8	33.4	172.03	-83.9	215.3	602.2	552.1	50.11	12.017		
6,426.7	6,396.8	6,697.0	6,386.2	16.9	34.1	176.22	-99.1	172.8	605.5	555.9	49.55	12.218		
6,450.0	6,420.1	6,907.0	6,582.8	16.9	34.5	2.09	-68.3	110.2	599.7	551.2	48.50	12.365		
6,500.0	6,469.9	7,030.5	6,696.6	17.0	34.2	4.51	-24.2	91.8	579.0	530.9	48.04	12.053		
6,550.0	6,519.5	7,271.6	6,892.3	17.0	33.1	12.94	110.5	59.7	549.2	503.3	45.84	11.979		
6,600.0	6,568.4	7,369.9	6,954.3	17.0	32.4	23.51	185.6	47.1	505.6	462.2	43.33	11.667		
6,650.0	6,616.5	7,404.1	6,973.6	17.0	32.2	33.94	213.5	43.5	459.4	417.6	41.71	11.013		
6,700.0	6,663.5	7,425.9	6,985.4	16.9	32.0	48.03	231.7	41.4	412.0	370.1	41.81	9.853		
6,750.0	6,709.2	7,438.1	6,991.9	16.8	31.9	64.67	242.1	40.3	364.0	319.0	44.99	8.091		
6,800.0	6,753.4	7,443.1	6,994.4	16.7	31.9	80.32	246.3	39.9	316.1	266.8	49.27	6.416		
6,850.0	6,795.9	7,442.3	6,994.1	16.6	31.9	91.81	245.6	39.9	268.7	216.7	52.01	5.165		
6,900.0	6,836.4	7,437.1	6,991.3	16.5	31.9	98.43	241.2	40.4	222.4	169.3	53.05	4.192		
6,950.0	6,874.7	7,428.3	6,986.7	16.4	32.0	100.76	233.7	41.2	178.1	125.0	53.14	3.352		
7,000.0	6,910.8	7,416.5	6,980.4	16.3	32.1	99.33	223.9	42.3	137.7	84.9	52.82	2.607		
7,050.0	6,944.3	7,402.4	6,972.7	16.3	32.2	94.35	212.1	43.7	104.8	52.6	52.25	2.006		
7,100.0	6,975.2	7,386.4	6,963.7	16.2	32.3	85.92	198.9	45.3	87.4	36.3	51.16	1.709		
7,112.6	6,982.5	7,382.0	6,961.3	16.2	32.3	83.29	195.4	45.8	86.6	35.9	50.75	1.707 CC, ES, SF		
7,150.0	7,003.3	7,368.7	6,953.6	16.2	32.4	74.55	184.6	47.2	93.3	44.3	48.99	1.904		
7,200.0	7,028.4	7,349.8	6,942.4	16.1	32.6	61.76	169.5	49.4	117.9	72.6	45.34	2.601		
7,250.0	7,050.4	7,330.5	6,930.7	16.2	32.7	49.71	154.4	51.8	151.7	111.0	40.68	3.729		
7,300.0	7,069.2	7,310.8	6,918.2	16.3	32.8	39.48	139.3	54.3	189.1	153.3	35.83	5.278		
7,350.0	7,084.8	7,290.7	6,905.1	16.4	33.0	31.39	124.4	57.0	227.8	196.4	31.39	7.257		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design Existing Wells Sec.36-T3N-R66W - Rissler State 4N-36HZ (Kerr McGee - PR) - Wellbore #1 - Wellbore												Offset Site Error:	0.0 ft
Survey Program: 19-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	
7,400.0	7,097.0	7,262.0	6,885.6	16.6	33.1	23.80	103.7	61.2	266.8	240.0	26.83	9.946	
7,450.0	7,105.8	7,262.0	6,885.6	16.8	33.1	21.91	103.7	61.2	305.5	279.9	25.59	11.936	
7,500.0	7,111.1	7,232.7	6,864.7	17.1	33.3	17.03	83.6	65.5	343.2	320.6	22.65	15.154	
7,554.4	7,113.0	7,212.7	6,849.8	17.4	33.4	14.08	70.6	68.4	383.8	362.6	21.26	18.058	
7,554.4	7,113.0	7,212.7	6,849.8	17.4	33.4	14.08	70.6	68.4	383.8	362.6	21.26	18.059	
7,555.0	7,113.0	7,212.4	6,849.6	17.4	33.4	14.06	70.4	68.4	384.3	363.0	21.25	18.086	
7,600.0	7,112.8	7,196.5	6,837.4	17.7	33.5	12.97	60.5	70.6	418.1	397.2	20.85	20.050	
7,700.0	7,112.5	7,168.0	6,814.7	18.6	33.7	11.22	43.6	74.5	496.6	476.1	20.54	24.180	
7,800.0	7,112.1	7,132.5	6,785.4	19.6	33.8	9.37	24.1	79.2	578.6	558.3	20.27	28.547	
7,900.0	7,111.7	7,104.3	6,761.5	20.7	33.9	8.13	9.6	82.7	663.1	642.7	20.41	32.485	
8,000.0	7,111.4	7,074.0	6,735.2	22.0	34.0	6.97	-5.0	86.4	749.7	729.0	20.65	36.308	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-91.93	-1.0	-30.1	30.2					
100.0	100.0	100.0	100.0	0.1	0.1	-91.93	-1.0	-30.1	30.2	29.9	0.28	109.537		
200.0	200.0	200.0	200.0	0.3	0.3	-91.93	-1.0	-30.1	30.2	29.3	0.83	36.512		
300.0	300.0	300.0	300.0	0.6	0.6	-91.93	-1.0	-30.1	30.2	28.8	1.38	21.907		
400.0	400.0	400.0	400.0	0.8	0.8	-91.93	-1.0	-30.1	30.2	28.2	1.93	15.648		
500.0	500.0	500.0	500.0	1.0	1.0	-91.93	-1.0	-30.1	30.2	27.7	2.48	12.171 CC, ES		
600.0	600.0	599.4	599.4	1.2	1.2	-90.30	-0.2	-31.1	31.1	28.1	3.02	10.299		
700.0	700.0	698.7	698.6	1.5	1.5	-85.96	2.4	-34.0	34.1	30.6	3.56	9.576		
800.0	800.0	797.7	797.4	1.7	1.7	-80.28	6.7	-38.8	39.5	35.4	4.11	9.600		
900.0	900.0	896.3	895.6	1.9	1.9	-74.57	12.6	-45.5	47.5	42.8	4.67	10.162		
1,000.0	1,000.0	994.4	993.0	2.1	2.2	-69.60	20.1	-54.1	58.1	52.9	5.23	11.112		
1,100.0	1,100.0	1,092.2	1,089.8	2.4	2.5	-81.17	29.3	-64.5	71.3	65.5	5.78	12.337		
1,200.0	1,199.9	1,191.2	1,187.7	2.6	2.8	-80.48	39.1	-75.6	85.0	78.7	6.34	13.407		
1,300.0	1,299.7	1,290.3	1,285.7	2.8	3.1	-81.44	48.9	-86.8	98.3	91.4	6.91	14.223		
1,400.0	1,399.3	1,389.4	1,383.7	3.0	3.4	-83.48	58.7	-97.9	111.3	103.8	7.50	14.835		
1,450.7	1,449.6	1,439.6	1,433.3	3.2	3.6	-84.81	63.7	-103.5	117.8	110.0	7.81	15.083		
1,500.0	1,498.6	1,488.4	1,481.5	3.3	3.8	-86.20	68.6	-109.0	124.2	116.1	8.12	15.299		
1,600.0	1,597.9	1,587.4	1,579.4	3.5	4.1	-88.63	78.4	-120.2	137.4	128.6	8.76	15.684		
1,700.0	1,697.2	1,686.3	1,677.2	3.8	4.4	-90.63	88.2	-131.3	150.8	141.4	9.42	16.010		
1,800.0	1,796.5	1,785.3	1,775.1	4.1	4.8	-92.31	98.0	-142.4	164.3	154.2	10.09	16.288		
1,900.0	1,895.8	1,884.3	1,873.0	4.4	5.1	-93.73	107.8	-153.5	178.0	167.2	10.77	16.526		
2,000.0	1,995.1	1,983.3	1,970.8	4.6	5.5	-94.95	117.6	-164.7	191.7	180.3	11.46	16.732		
2,100.0	2,094.4	2,082.2	2,068.7	4.9	5.8	-96.00	127.5	-175.8	205.6	193.4	12.16	16.910		
2,200.0	2,193.7	2,181.2	2,166.5	5.2	6.2	-96.92	137.3	-186.9	219.4	206.6	12.86	17.066		
2,300.0	2,293.0	2,280.2	2,264.4	5.5	6.5	-97.73	147.1	-198.1	233.4	219.8	13.56	17.203		
2,400.0	2,392.4	2,379.1	2,362.2	5.8	6.9	-98.45	156.9	-209.2	247.3	233.1	14.28	17.325		
2,500.0	2,491.7	2,478.1	2,460.1	6.1	7.2	-99.09	166.7	-220.3	261.3	246.3	14.99	17.433		
2,600.0	2,591.0	2,577.1	2,557.9	6.4	7.6	-99.67	176.5	-231.5	275.4	259.7	15.71	17.531		
2,700.0	2,690.3	2,676.1	2,655.8	6.7	7.9	-100.19	186.3	-242.6	289.4	273.0	16.43	17.618		
2,800.0	2,789.6	2,775.0	2,753.7	7.0	8.3	-100.67	196.2	-253.7	303.5	286.4	17.15	17.697		
2,900.0	2,888.9	2,874.0	2,851.5	7.3	8.6	-101.10	206.0	-264.8	317.6	299.7	17.87	17.769		
3,000.0	2,988.2	2,973.0	2,949.4	7.6	9.0	-101.49	215.8	-276.0	331.7	313.1	18.60	17.835		
3,100.0	3,087.5	3,072.0	3,047.2	7.9	9.3	-101.85	225.6	-287.1	345.8	326.5	19.33	17.895		
3,200.0	3,186.8	3,170.9	3,145.1	8.2	9.7	-102.19	235.4	-298.2	360.0	339.9	20.06	17.950		
3,300.0	3,286.1	3,269.9	3,242.9	8.5	10.0	-102.50	245.2	-309.4	374.1	353.4	20.78	18.001		
3,400.0	3,385.4	3,368.9	3,340.8	8.8	10.4	-102.78	255.1	-320.5	388.3	366.8	21.52	18.048		
3,500.0	3,484.7	3,467.9	3,438.6	9.1	10.7	-103.05	264.9	-331.6	402.5	380.2	22.25	18.091		
3,600.0	3,584.0	3,566.8	3,536.5	9.4	11.1	-103.30	274.7	-342.8	416.6	393.7	22.98	18.132		
3,700.0	3,683.3	3,665.8	3,634.4	9.7	11.4	-103.53	284.5	-353.9	430.8	407.1	23.71	18.169		
3,800.0	3,782.6	3,764.8	3,732.2	10.0	11.8	-103.74	294.3	-365.0	445.0	420.6	24.45	18.204		
3,900.0	3,881.9	3,863.8	3,830.1	10.3	12.2	-103.95	304.1	-376.1	459.2	434.0	25.18	18.237		
4,000.0	3,981.2	3,962.7	3,927.9	10.6	12.5	-104.14	314.0	-387.3	473.4	447.5	25.92	18.268		
4,100.0	4,080.5	4,061.7	4,025.8	10.9	12.9	-104.32	323.8	-398.4	487.6	461.0	26.65	18.297		
4,200.0	4,179.8	4,160.7	4,123.6	11.2	13.2	-104.49	333.6	-409.5	501.8	474.5	27.39	18.324		
4,300.0	4,279.1	4,259.7	4,221.5	11.5	13.6	-104.65	343.4	-420.7	516.1	487.9	28.12	18.350		
4,400.0	4,378.4	4,358.6	4,319.3	11.8	13.9	-104.80	353.2	-431.8	530.3	501.4	28.86	18.374		
4,500.0	4,477.8	4,457.6	4,417.2	12.1	14.3	-104.95	363.0	-442.9	544.5	514.9	29.60	18.397		
4,600.0	4,577.1	4,556.6	4,515.1	12.4	14.6	-105.08	372.9	-454.1	558.7	528.4	30.33	18.419		
4,700.0	4,676.4	4,655.6	4,612.9	12.7	15.0	-105.21	382.7	-465.2	573.0	541.9	31.07	18.440		
4,800.0	4,775.7	4,754.5	4,710.8	13.1	15.4	-105.34	392.5	-476.3	587.2	555.4	31.81	18.459		
4,900.0	4,875.0	4,853.5	4,808.6	13.4	15.7	-105.45	402.3	-487.4	601.4	568.9	32.55	18.478		
5,000.0	4,974.3	4,952.5	4,906.5	13.7	16.1	-105.57	412.1	-498.6	615.7	582.4	33.29	18.496		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,073.6	5,051.5	5,004.3	14.0	16.4	-105.67	421.9	-509.7	629.9	595.9	34.03	18.513		
5,200.0	5,172.9	5,150.4	5,102.2	14.3	16.8	-105.78	431.8	-520.8	644.2	609.4	34.77	18.529		
5,300.0	5,272.2	5,249.4	5,200.0	14.6	17.1	-105.87	441.6	-532.0	658.4	622.9	35.50	18.544		
5,400.0	5,371.5	5,348.4	5,297.9	14.9	17.5	-105.97	451.4	-543.1	672.6	636.4	36.24	18.559		
5,491.9	5,462.8	5,443.1	5,391.5	15.2	17.8	-106.06	460.7	-553.7	685.7	648.8	36.93	18.568		
5,500.0	5,470.8	5,452.8	5,401.1	15.2	17.8	-106.09	461.6	-554.7	686.8	649.8	36.99	18.567		
5,600.0	5,570.3	5,573.3	5,520.8	15.4	18.2	-106.44	471.1	-565.4	698.2	660.5	37.66	18.540		
5,700.0	5,670.1	5,694.7	5,641.8	15.6	18.4	-106.66	477.2	-572.4	705.5	667.3	38.22	18.459		
5,800.0	5,770.1	5,816.5	5,763.5	15.8	18.6	-106.75	479.9	-575.5	708.8	670.1	38.69	18.319		
5,829.9	5,800.0	5,852.9	5,800.0	15.8	18.6	-92.01	480.1	-575.6	709.0	670.1	38.83	18.258		
5,900.0	5,870.1	5,923.0	5,870.1	15.9	18.7	-92.01	480.1	-575.6	709.0	669.9	39.11	18.128		
6,000.0	5,970.1	6,023.0	5,970.1	16.1	18.9	-92.01	480.1	-575.6	709.0	669.4	39.54	17.933		
6,100.0	6,070.1	6,123.0	6,070.1	16.3	19.0	-92.01	480.1	-575.6	709.0	669.0	39.97	17.739		
6,200.0	6,170.1	6,223.0	6,170.1	16.5	19.2	-92.01	480.1	-575.6	709.0	668.6	40.40	17.549		
6,300.0	6,270.1	6,323.0	6,270.1	16.7	19.4	-92.01	480.1	-575.6	709.0	668.1	40.84	17.362		
6,400.0	6,370.1	6,423.0	6,370.1	16.8	19.5	-92.01	480.1	-575.6	709.0	667.7	41.27	17.177		
6,426.7	6,396.8	6,449.7	6,396.8	16.9	19.6	-92.01	480.1	-575.6	709.0	667.6	41.39	17.129		
6,450.0	6,420.1	6,472.3	6,419.3	16.9	19.6	87.79	479.7	-575.6	709.0	667.5	41.46	17.101		
6,500.0	6,469.9	6,520.7	6,467.6	17.0	19.6	87.80	476.6	-575.6	709.0	667.4	41.58	17.052		
6,550.0	6,519.5	6,569.1	6,515.6	17.0	19.6	87.82	470.2	-575.6	708.9	667.3	41.62	17.032		
6,600.0	6,568.4	6,617.5	6,563.0	17.0	19.6	87.85	460.5	-575.6	708.8	667.2	41.60	17.039		
6,650.0	6,616.5	6,666.0	6,609.8	17.0	19.6	87.89	447.7	-575.6	708.8	667.2	41.52	17.069		
6,700.0	6,663.5	6,714.5	6,655.5	16.9	19.6	87.94	431.7	-575.6	708.7	667.3	41.39	17.121		
6,750.0	6,709.2	6,763.0	6,700.2	16.8	19.5	88.00	412.7	-575.5	708.5	667.3	41.22	17.190		
6,800.0	6,753.4	6,811.5	6,743.4	16.7	19.5	88.07	390.6	-575.5	708.4	667.4	41.01	17.274		
6,850.0	6,795.9	6,860.2	6,785.1	16.6	19.4	88.15	365.7	-575.4	708.2	667.4	40.78	17.368		
6,900.0	6,836.4	6,908.8	6,825.1	16.5	19.3	88.24	337.9	-575.4	708.0	667.5	40.54	17.465		
6,950.0	6,874.7	6,957.6	6,863.2	16.4	19.2	88.34	307.5	-575.3	707.9	667.5	40.31	17.561		
7,000.0	6,910.8	7,006.4	6,899.1	16.3	19.1	88.44	274.4	-575.3	707.6	667.6	40.09	17.649		
7,050.0	6,944.3	7,055.3	6,932.7	16.3	19.0	88.55	239.0	-575.2	707.4	667.5	39.92	17.722		
7,100.0	6,975.2	7,104.3	6,963.9	16.2	18.9	88.67	201.3	-575.2	707.2	667.4	39.79	17.772		
7,150.0	7,003.3	7,153.3	6,992.5	16.2	18.8	88.80	161.4	-575.1	707.0	667.2	39.73	17.793		
7,200.0	7,028.4	7,202.4	7,018.4	16.1	18.7	88.93	119.6	-575.0	706.7	667.0	39.75	17.778		
7,250.0	7,050.4	7,251.7	7,041.4	16.2	18.6	89.07	76.1	-574.9	706.4	666.6	39.86	17.721		
7,300.0	7,069.2	7,301.0	7,061.3	16.3	18.5	89.21	31.0	-574.9	706.2	666.1	40.08	17.620		
7,350.0	7,084.8	7,350.5	7,078.2	16.4	18.5	89.35	-15.5	-574.8	705.9	665.5	40.40	17.472		
7,400.0	7,097.0	7,400.0	7,091.8	16.6	18.4	89.50	-63.1	-574.7	705.7	664.8	40.84	17.279		
7,450.0	7,105.8	7,449.7	7,102.1	16.8	18.4	89.65	-111.7	-574.6	705.4	664.0	41.39	17.042		
7,500.0	7,111.1	7,499.4	7,109.1	17.1	18.5	89.81	-161.0	-574.5	705.1	663.1	42.06	16.767		
7,554.4	7,113.0	7,553.7	7,112.7	17.4	18.7	89.98	-215.1	-574.4	704.8	661.9	42.90	16.430		
7,554.4	7,113.0	7,553.7	7,112.7	17.4	18.7	89.98	-215.1	-574.4	704.8	661.9	42.90	16.430		
7,555.0	7,113.0	7,554.3	7,112.7	17.4	18.7	89.98	-215.7	-574.4	704.8	661.9	42.91	16.427		
7,600.0	7,112.8	7,599.3	7,112.9	17.7	18.9	90.01	-260.7	-574.4	704.6	661.1	43.54	16.184		
7,700.0	7,112.5	7,699.3	7,112.5	18.6	19.6	90.01	-360.7	-574.2	704.1	658.5	45.60	15.440		
7,800.0	7,112.1	7,799.3	7,112.2	19.6	20.6	90.01	-460.7	-574.0	703.6	655.5	48.04	14.646		
7,900.0	7,111.7	7,899.3	7,111.8	20.7	21.7	90.00	-560.7	-573.8	703.0	652.3	50.79	13.841		
8,000.0	7,111.4	7,999.3	7,111.4	22.0	22.9	90.00	-660.7	-573.7	702.5	648.7	53.82	13.053		
8,100.0	7,111.0	8,099.3	7,111.0	23.3	24.2	90.00	-760.7	-573.5	702.0	644.9	57.07	12.300		
8,200.0	7,110.6	8,199.3	7,110.6	24.7	25.6	90.00	-860.7	-573.3	701.5	641.0	60.52	11.591		
8,300.0	7,110.3	8,299.3	7,110.3	26.2	27.0	90.00	-960.7	-573.1	701.0	636.8	64.13	10.931		
8,400.0	7,109.9	8,399.3	7,109.9	27.8	28.5	90.00	-1,060.7	-572.9	700.5	632.6	67.87	10.321		
8,500.0	7,109.5	8,499.3	7,109.5	29.3	30.1	90.00	-1,160.7	-572.8	699.9	628.2	71.72	9.759		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance								
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	(ft)				
8,600.0	7,109.2	8,599.3	7,109.1	30.9	31.6	90.00	-1,260.7	-572.6	699.4	623.7	75.67	9.243			
8,700.0	7,108.8	8,699.3	7,108.7	32.6	33.2	90.00	-1,360.7	-572.4	698.9	619.2	79.70	8.769			
8,800.0	7,108.5	8,799.3	7,108.4	34.3	34.9	89.99	-1,460.7	-572.2	698.4	614.6	83.81	8.333			
8,900.0	7,108.1	8,899.3	7,108.0	36.0	36.6	89.99	-1,560.7	-572.1	697.9	609.9	87.97	7.933			
9,000.0	7,107.7	8,999.3	7,107.6	37.7	38.3	89.99	-1,660.7	-571.9	697.3	605.2	92.18	7.565			
9,100.0	7,107.4	9,099.3	7,107.2	39.4	40.0	89.99	-1,760.7	-571.7	696.8	600.4	96.44	7.225			
9,200.0	7,107.0	9,199.3	7,106.9	41.2	41.7	89.99	-1,860.7	-571.5	696.3	595.6	100.74	6.912			
9,300.0	7,106.6	9,299.3	7,106.5	43.0	43.4	89.99	-1,960.7	-571.4	695.8	590.7	105.08	6.622			
9,400.0	7,106.3	9,399.3	7,106.1	44.8	45.2	89.99	-2,060.7	-571.2	695.3	585.8	109.44	6.353			
9,500.0	7,105.9	9,499.3	7,105.7	46.5	47.0	89.99	-2,160.7	-571.0	694.7	580.9	113.83	6.103			
9,600.0	7,105.5	9,599.3	7,105.3	48.3	48.8	89.98	-2,260.7	-570.8	694.2	576.0	118.25	5.871			
9,700.0	7,105.2	9,699.3	7,105.0	50.2	50.5	89.98	-2,360.6	-570.7	693.7	571.0	122.69	5.654			
9,800.0	7,104.8	9,799.3	7,104.6	52.0	52.3	89.98	-2,460.6	-570.5	693.2	566.0	127.14	5.452			
9,900.0	7,104.4	9,899.3	7,104.2	53.8	54.2	89.98	-2,560.6	-570.3	692.7	561.1	131.62	5.263			
10,000.0	7,104.1	9,999.3	7,103.8	55.6	56.0	89.98	-2,660.6	-570.1	692.2	556.0	136.11	5.085			
10,100.0	7,103.7	10,099.3	7,103.4	57.5	57.8	89.98	-2,760.6	-570.0	691.6	551.0	140.61	4.919			
10,200.0	7,103.3	10,199.3	7,103.1	59.3	59.6	89.98	-2,860.6	-569.8	691.1	546.0	145.13	4.762			
10,300.0	7,103.0	10,299.3	7,102.7	61.2	61.5	89.98	-2,960.6	-569.6	690.6	540.9	149.66	4.615			
10,400.0	7,102.6	10,399.3	7,102.3	63.0	63.3	89.97	-3,060.6	-569.4	690.1	535.9	154.19	4.475			
10,500.0	7,102.3	10,499.3	7,101.9	64.9	65.1	89.97	-3,160.6	-569.3	689.6	530.8	158.74	4.344			
10,600.0	7,101.9	10,599.3	7,101.5	66.7	67.0	89.97	-3,260.6	-569.1	689.0	525.7	163.30	4.220			
10,700.0	7,101.5	10,699.3	7,101.2	68.6	68.8	89.97	-3,360.6	-568.9	688.5	520.7	167.86	4.102			
10,800.0	7,101.2	10,799.3	7,100.8	70.5	70.7	89.97	-3,460.6	-568.7	688.0	515.6	172.44	3.990			
10,900.0	7,100.8	10,899.3	7,100.4	72.3	72.6	89.97	-3,560.6	-568.6	687.5	510.5	177.02	3.884			
11,000.0	7,100.4	10,999.3	7,100.0	74.2	74.4	89.97	-3,660.6	-568.4	687.0	505.4	181.60	3.783			
11,100.0	7,100.1	11,099.3	7,099.6	76.1	76.3	89.97	-3,760.6	-568.2	686.5	500.3	186.19	3.687			
11,200.0	7,099.7	11,199.3	7,099.3	78.0	78.2	89.97	-3,860.6	-568.0	685.9	495.1	190.79	3.595			
11,300.0	7,099.3	11,299.3	7,098.9	79.8	80.0	89.96	-3,960.6	-567.9	685.4	490.0	195.39	3.508			
11,400.0	7,099.0	11,399.3	7,098.5	81.7	81.9	89.96	-4,060.6	-567.7	684.9	484.9	200.00	3.424			
11,500.0	7,098.6	11,499.3	7,098.1	83.6	83.8	89.96	-4,160.6	-567.5	684.4	479.8	204.61	3.345			
11,600.0	7,098.2	11,599.3	7,097.8	85.5	85.7	89.96	-4,260.6	-567.3	683.9	474.6	209.23	3.268			
11,700.0	7,097.9	11,699.3	7,097.4	87.4	87.5	89.96	-4,360.6	-567.2	683.3	469.5	213.85	3.195			
11,800.0	7,097.5	11,799.3	7,097.0	89.3	89.4	89.96	-4,460.6	-567.0	682.8	464.3	218.47	3.125			
11,900.0	7,097.1	11,899.3	7,096.6	91.1	91.3	89.96	-4,560.6	-566.8	682.3	459.2	223.10	3.058			
12,000.0	7,096.8	11,999.3	7,096.2	93.0	93.2	89.96	-4,660.6	-566.6	681.8	454.1	227.73	2.994			
12,100.0	7,096.4	12,099.3	7,095.9	94.9	95.1	89.95	-4,760.6	-566.5	681.3	448.9	232.36	2.932			
12,200.0	7,096.0	12,199.3	7,095.5	96.8	96.9	89.95	-4,860.6	-566.3	680.7	443.8	237.00	2.872			
12,300.0	7,095.7	12,299.3	7,095.1	98.7	98.8	89.95	-4,960.6	-566.1	680.2	438.6	241.63	2.815			
12,400.0	7,095.3	12,399.3	7,094.7	100.6	100.7	89.95	-5,060.6	-565.9	679.7	433.4	246.28	2.760			
12,500.0	7,095.0	12,499.3	7,094.3	102.5	102.6	89.95	-5,160.6	-565.8	679.2	428.3	250.92	2.707			
12,600.0	7,094.6	12,599.3	7,094.0	104.4	104.5	89.95	-5,260.6	-565.6	678.7	423.1	255.56	2.656			
12,700.0	7,094.2	12,699.3	7,093.6	106.3	106.4	89.95	-5,360.6	-565.4	678.2	417.9	260.21	2.606			
12,800.0	7,093.9	12,799.3	7,093.2	108.2	108.3	89.95	-5,460.6	-565.2	677.6	412.8	264.86	2.558			
12,900.0	7,093.5	12,899.3	7,092.8	110.1	110.2	89.94	-5,560.6	-565.1	677.1	407.6	269.51	2.512			
13,000.0	7,093.1	12,999.3	7,092.4	112.0	112.1	89.94	-5,660.6	-564.9	676.6	402.4	274.17	2.468			
13,100.0	7,092.8	13,099.3	7,092.1	113.9	114.0	89.94	-5,760.6	-564.7	676.1	397.3	278.82	2.425			
13,200.0	7,092.4	13,199.3	7,091.7	115.8	115.9	89.94	-5,860.6	-564.5	675.6	392.1	283.48	2.383			
13,300.0	7,092.0	13,299.3	7,091.3	117.7	117.8	89.94	-5,960.6	-564.3	675.0	386.9	288.14	2.343			
13,400.0	7,091.7	13,399.3	7,090.9	119.6	119.7	89.94	-6,060.6	-564.2	674.5	381.7	292.80	2.304			
13,500.0	7,091.3	13,499.2	7,090.5	121.5	121.6	89.94	-6,160.6	-564.0	674.0	376.6	297.46	2.266			
13,600.0	7,090.9	13,599.2	7,090.2	123.4	123.5	89.94	-6,260.6	-563.8	673.5	371.4	302.12	2.229			
13,700.0	7,090.6	13,699.2	7,089.8	125.3	125.4	89.93	-6,360.6	-563.6	673.0	366.2	306.78	2.194			

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	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)					
13,800.0	7,090.2	13,799.2	7,089.4	127.2	127.3	89.93	-6,460.6	-563.5	672.5	361.0	311.45	2.159	
13,900.0	7,089.8	13,899.2	7,089.0	129.1	129.2	89.93	-6,560.6	-563.3	671.9	355.8	316.11	2.126	
14,000.0	7,089.5	13,999.2	7,088.7	131.0	131.1	89.93	-6,660.6	-563.1	671.4	350.6	320.78	2.093	
14,100.0	7,089.1	14,099.2	7,088.3	132.9	133.0	89.93	-6,760.6	-562.9	670.9	345.4	325.45	2.061	
14,200.0	7,088.8	14,199.2	7,087.9	134.8	134.9	89.93	-6,860.5	-562.8	670.4	340.3	330.12	2.031	
14,300.0	7,088.4	14,299.2	7,087.5	136.7	136.8	89.93	-6,960.5	-562.6	669.9	335.1	334.79	2.001	
14,400.0	7,088.0	14,399.2	7,087.1	138.6	138.7	89.93	-7,060.5	-562.4	669.3	329.9	339.46	1.972	
14,500.0	7,087.7	14,499.2	7,086.8	140.5	140.6	89.92	-7,160.5	-562.2	668.8	324.7	344.13	1.944	
14,600.0	7,087.3	14,599.2	7,086.4	142.4	142.5	89.92	-7,260.5	-562.1	668.3	319.5	348.81	1.916	
14,700.0	7,086.9	14,699.2	7,086.0	144.3	144.4	89.92	-7,360.5	-561.9	667.8	314.3	353.48	1.889	
14,800.0	7,086.6	14,799.2	7,085.6	146.2	146.3	89.92	-7,460.5	-561.7	667.3	309.1	358.15	1.863	
14,900.0	7,086.2	14,899.2	7,085.2	148.2	148.2	89.92	-7,560.5	-561.5	666.7	303.9	362.83	1.838	
15,000.0	7,085.8	14,999.2	7,084.9	150.1	150.1	89.92	-7,660.5	-561.4	666.2	298.7	367.51	1.813	
15,100.0	7,085.5	15,099.2	7,084.5	152.0	152.0	89.92	-7,760.5	-561.2	665.7	293.5	372.18	1.789	
15,200.0	7,085.1	15,199.2	7,084.1	153.9	153.9	89.91	-7,860.5	-561.0	665.2	288.3	376.86	1.765	
15,300.0	7,084.7	15,299.2	7,083.7	155.8	155.8	89.91	-7,960.5	-560.8	664.7	283.1	381.54	1.742	
15,400.0	7,084.4	15,399.2	7,083.3	157.7	157.8	89.91	-8,060.5	-560.7	664.2	277.9	386.22	1.720	
15,500.0	7,084.0	15,499.2	7,083.0	159.6	159.7	89.91	-8,160.5	-560.5	663.6	272.7	390.90	1.698	
15,600.0	7,083.6	15,599.2	7,082.6	161.5	161.6	89.91	-8,260.5	-560.3	663.1	267.5	395.58	1.676	
15,700.0	7,083.3	15,699.2	7,082.2	163.4	163.5	89.91	-8,360.5	-560.1	662.6	262.3	400.26	1.655	
15,800.0	7,082.9	15,799.2	7,081.8	165.3	165.4	89.91	-8,460.5	-560.0	662.1	257.1	404.94	1.635	
15,900.0	7,082.5	15,899.2	7,081.4	167.2	167.3	89.91	-8,560.5	-559.8	661.6	251.9	409.62	1.615	
16,000.0	7,082.2	15,999.2	7,081.1	169.2	169.2	89.90	-8,660.5	-559.6	661.0	246.7	414.30	1.596	
16,100.0	7,081.8	16,099.2	7,080.7	171.1	171.1	89.90	-8,760.5	-559.4	660.5	241.5	418.99	1.576	
16,200.0	7,081.5	16,199.2	7,080.3	173.0	173.0	89.90	-8,860.5	-559.3	660.0	236.3	423.67	1.558	
16,300.0	7,081.1	16,299.2	7,079.9	174.9	174.9	89.90	-8,960.5	-559.1	659.5	231.1	428.35	1.540	
16,400.0	7,080.7	16,399.2	7,079.6	176.8	176.8	89.90	-9,060.5	-558.9	659.0	225.9	433.04	1.522	
16,500.0	7,080.4	16,499.2	7,079.2	178.7	178.8	89.90	-9,160.5	-558.7	658.5	220.7	437.72	1.504	
16,600.0	7,080.0	16,599.2	7,078.8	180.6	180.7	89.90	-9,260.5	-558.6	657.9	215.5	442.41	1.487 Level 3	
16,700.0	7,079.6	16,699.2	7,078.4	182.5	182.6	89.90	-9,360.5	-558.4	657.4	210.3	447.09	1.470 Level 3	
16,800.0	7,079.3	16,799.2	7,078.0	184.4	184.5	89.89	-9,460.5	-558.2	656.9	205.1	451.78	1.454 Level 3	
16,810.3	7,079.2	16,808.9	7,078.0	184.6	184.7	89.89	-9,470.2	-558.2	656.8	204.6	452.24	1.452 Level 3, SF	
16,900.0	7,078.9	16,808.9	7,078.0	186.4	184.7	89.89	-9,470.2	-558.2	662.6	208.2	454.35	1.458 Level 3	
17,000.0	7,078.5	16,808.9	7,078.0	188.3	184.7	89.89	-9,470.2	-558.2	682.9	226.2	456.69	1.495 Level 3	
17,100.0	7,078.2	16,808.9	7,078.0	190.2	184.7	89.89	-9,470.2	-558.2	716.8	257.7	459.03	1.561	
17,146.8	7,078.0	16,808.9	7,078.0	191.1	184.7	89.89	-9,470.2	-558.2	736.7	276.6	460.13	1.601	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-91.52	-0.4	-15.1	15.1	15.1	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	-91.52	-0.4	-15.1	15.1	14.8	0.28	54.858		
200.0	200.0	200.0	200.0	0.3	0.3	-91.52	-0.4	-15.1	15.1	14.3	0.83	18.286		
300.0	300.0	300.0	300.0	0.6	0.6	-91.52	-0.4	-15.1	15.1	13.7	1.38	10.972		
400.0	400.0	400.0	400.0	0.8	0.8	-91.52	-0.4	-15.1	15.1	13.2	1.93	7.837		
500.0	500.0	500.0	500.0	1.0	1.0	-91.52	-0.4	-15.1	15.1	12.6	2.48	6.095		
600.0	600.0	600.0	600.0	1.2	1.2	-91.52	-0.4	-15.1	15.1	12.1	3.03	4.987		
700.0	700.0	700.0	700.0	1.5	1.5	-91.52	-0.4	-15.1	15.1	11.5	3.58	4.220 CC		
800.0	800.0	799.8	799.8	1.7	1.7	-87.13	0.8	-15.6	15.7	11.5	4.13	3.795		
900.0	900.0	899.5	899.4	1.9	1.9	-75.90	4.3	-17.3	17.8	13.1	4.67	3.810		
1,000.0	1,000.0	998.9	998.6	2.1	2.1	-62.86	10.2	-20.0	22.5	17.2	5.23	4.299		
1,100.0	1,100.0	1,098.0	1,097.3	2.4	2.4	-69.09	18.4	-23.7	29.7	23.9	5.78	5.134		
1,200.0	1,199.9	1,197.4	1,196.0	2.6	2.6	-66.10	28.6	-28.4	38.1	31.7	6.34	6.008		
1,300.0	1,299.7	1,297.1	1,295.1	2.8	2.9	-67.03	38.9	-33.1	45.6	38.7	6.90	6.614		
1,400.0	1,399.3	1,396.8	1,394.2	3.0	3.2	-70.33	49.3	-37.8	52.3	44.8	7.48	6.988		
1,450.7	1,449.6	1,447.4	1,444.4	3.2	3.3	-72.67	54.6	-40.2	55.4	47.6	7.79	7.113		
1,500.0	1,498.6	1,496.5	1,493.2	3.3	3.4	-75.06	59.7	-42.6	58.4	50.3	8.09	7.219		
1,600.0	1,597.9	1,596.2	1,592.3	3.5	3.7	-79.20	70.0	-47.3	64.9	56.1	8.73	7.428		
1,700.0	1,697.2	1,695.9	1,691.3	3.8	4.0	-82.58	80.4	-52.0	71.5	62.2	9.39	7.623		
1,800.0	1,796.5	1,795.6	1,790.3	4.1	4.3	-85.38	90.7	-56.8	78.4	68.4	10.05	7.803		
1,900.0	1,895.8	1,895.3	1,889.4	4.4	4.6	-87.72	101.1	-61.5	85.5	74.8	10.73	7.967		
2,000.0	1,995.1	1,995.0	1,988.4	4.6	4.9	-89.70	111.5	-66.3	92.7	81.3	11.42	8.115		
2,100.0	2,094.4	2,094.7	2,087.5	4.9	5.2	-91.39	121.8	-71.0	99.9	87.8	12.12	8.250		
2,200.0	2,193.7	2,194.4	2,186.5	5.2	5.5	-92.85	132.2	-75.7	107.3	94.5	12.82	8.372		
2,300.0	2,293.0	2,294.1	2,285.6	5.5	5.8	-94.13	142.5	-80.5	114.7	101.2	13.52	8.484		
2,400.0	2,392.4	2,393.8	2,384.6	5.8	6.1	-95.25	152.9	-85.2	122.2	107.9	14.23	8.585		
2,500.0	2,491.7	2,493.5	2,483.6	6.1	6.4	-96.24	163.2	-89.9	129.7	114.7	14.94	8.678		
2,600.0	2,591.0	2,593.2	2,582.7	6.4	6.7	-97.12	173.6	-94.7	137.2	121.5	15.65	8.763		
2,700.0	2,690.3	2,692.9	2,681.7	6.7	7.0	-97.91	184.0	-99.4	144.7	128.4	16.37	8.842		
2,800.0	2,789.6	2,792.6	2,780.8	7.0	7.3	-98.63	194.3	-104.1	152.3	135.2	17.09	8.914		
2,900.0	2,888.9	2,892.3	2,879.8	7.3	7.6	-99.27	204.7	-108.9	159.9	142.1	17.81	8.981		
3,000.0	2,988.2	2,991.9	2,978.8	7.6	7.9	-99.86	215.0	-113.6	167.6	149.0	18.53	9.043		
3,100.0	3,087.5	3,091.6	3,077.9	7.9	8.2	-100.39	225.4	-118.4	175.2	155.9	19.25	9.100		
3,200.0	3,186.8	3,191.3	3,176.9	8.2	8.5	-100.88	235.7	-123.1	182.9	162.9	19.98	9.154		
3,300.0	3,286.1	3,291.0	3,276.0	8.5	8.8	-101.33	246.1	-127.8	190.5	169.8	20.70	9.204		
3,400.0	3,385.4	3,390.7	3,375.0	8.8	9.1	-101.75	256.5	-132.6	198.2	176.8	21.43	9.251		
3,500.0	3,484.7	3,490.4	3,474.1	9.1	9.4	-102.13	266.8	-137.3	205.9	183.7	22.15	9.294		
3,600.0	3,584.0	3,590.1	3,573.1	9.4	9.7	-102.49	277.2	-142.0	213.6	190.7	22.88	9.336		
3,700.0	3,683.3	3,689.8	3,672.1	9.7	10.0	-102.82	287.5	-146.8	221.3	197.7	23.61	9.374		
3,800.0	3,782.6	3,789.5	3,771.2	10.0	10.3	-103.13	297.9	-151.5	229.0	204.7	24.33	9.411		
3,900.0	3,881.9	3,889.2	3,870.2	10.3	10.6	-103.42	308.3	-156.3	236.7	211.6	25.06	9.445		
4,000.0	3,981.2	3,988.9	3,969.3	10.6	10.9	-103.69	318.6	-161.0	244.4	218.6	25.79	9.478		
4,100.0	4,080.5	4,088.6	4,068.3	10.9	11.2	-103.95	329.0	-165.7	252.2	225.6	26.52	9.508		
4,200.0	4,179.8	4,188.3	4,167.4	11.2	11.5	-104.19	339.3	-170.5	259.9	232.6	27.25	9.538		
4,300.0	4,279.1	4,288.0	4,266.4	11.5	11.8	-104.41	349.7	-175.2	267.6	239.6	27.98	9.565		
4,400.0	4,378.4	4,387.7	4,365.4	11.8	12.1	-104.63	360.0	-179.9	275.4	246.7	28.71	9.592		
4,500.0	4,477.8	4,487.4	4,464.5	12.1	12.4	-104.83	370.4	-184.7	283.1	253.7	29.44	9.617		
4,600.0	4,577.1	4,587.1	4,563.5	12.4	12.7	-105.02	380.8	-189.4	290.9	260.7	30.17	9.641		
4,700.0	4,676.4	4,686.8	4,662.6	12.7	13.0	-105.20	391.1	-194.2	298.6	267.7	30.90	9.663		
4,800.0	4,775.7	4,786.5	4,761.6	13.1	13.3	-105.37	401.5	-198.9	306.4	274.7	31.63	9.685		
4,900.0	4,875.0	4,886.2	4,860.7	13.4	13.6	-105.53	411.8	-203.6	314.1	281.8	32.36	9.706		
5,000.0	4,974.3	4,985.8	4,959.7	13.7	13.9	-105.69	422.2	-208.4	321.9	288.8	33.10	9.726		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,073.6	5,085.5	5,058.7	14.0	14.3	-105.84	432.5	-213.1	329.6	295.8	33.83	9.745		
5,200.0	5,172.9	5,185.2	5,157.8	14.3	14.6	-105.98	442.9	-217.8	337.4	302.8	34.56	9.763		
5,300.0	5,272.2	5,284.9	5,256.8	14.6	14.9	-106.11	453.3	-222.6	345.2	309.9	35.29	9.780		
5,400.0	5,371.5	5,384.6	5,355.9	14.9	15.2	-106.24	463.6	-227.3	352.9	316.9	36.02	9.797		
5,491.9	5,462.8	5,476.3	5,446.9	15.2	15.5	-106.36	473.1	-231.7	360.1	323.4	36.70	9.812		
5,500.0	5,470.8	5,484.3	5,454.9	15.2	15.5	-106.38	474.0	-232.0	360.7	323.9	36.75	9.814		
5,600.0	5,570.3	5,588.3	5,558.4	15.4	15.8	-106.50	483.6	-236.5	367.4	330.0	37.37	9.831		
5,700.0	5,670.1	5,693.5	5,663.3	15.6	16.0	-106.57	489.9	-239.3	371.8	333.9	37.88	9.814		
5,800.0	5,770.1	5,798.7	5,768.5	15.8	16.1	-106.60	492.7	-240.6	373.7	335.4	38.31	9.755		
5,829.9	5,800.0	5,830.3	5,800.0	15.8	16.2	-91.86	492.9	-240.7	373.8	335.4	38.42	9.729		
5,900.0	5,870.1	5,900.3	5,870.1	15.9	16.3	-91.86	492.9	-240.7	373.8	335.1	38.70	9.659		
6,000.0	5,970.1	6,000.3	5,970.1	16.1	16.5	-91.86	492.9	-240.7	373.8	334.7	39.13	9.551		
6,100.0	6,070.1	6,100.3	6,070.1	16.3	16.6	-91.86	492.9	-240.7	373.8	334.2	39.57	9.445		
6,200.0	6,170.1	6,200.3	6,170.1	16.5	16.8	-91.86	492.9	-240.7	373.8	333.8	40.02	9.341		
6,300.0	6,270.1	6,300.3	6,270.1	16.7	17.0	-91.86	492.9	-240.7	373.8	333.3	40.46	9.238		
6,400.0	6,370.1	6,400.3	6,370.1	16.8	17.2	-91.86	492.9	-240.7	373.8	332.9	40.91	9.137		
6,426.7	6,396.8	6,427.1	6,396.8	16.9	17.2	-91.86	492.9	-240.7	373.8	332.8	41.03	9.110		
6,450.0	6,420.1	6,450.3	6,420.1	16.9	17.3	88.00	492.9	-240.7	373.8	332.7	41.12	9.089		
6,500.0	6,469.9	6,500.2	6,469.9	17.0	17.4	88.53	492.9	-240.7	373.7	332.4	41.29	9.051		
6,550.0	6,519.5	6,549.7	6,519.4	17.0	17.4	89.52	492.5	-240.7	373.6	332.2	41.39	9.025		
6,579.4	6,548.4	6,578.9	6,548.6	17.0	17.5	90.15	491.0	-240.7	373.5	332.1	41.41	9.021		
6,600.0	6,568.4	6,599.3	6,569.0	17.0	17.5	90.59	489.3	-240.7	373.6	332.1	41.42	9.019		
6,650.0	6,616.5	6,649.5	6,618.7	17.0	17.5	91.67	482.5	-240.7	373.7	332.3	41.38	9.030		
6,700.0	6,663.5	6,700.2	6,668.2	16.9	17.5	92.74	472.1	-240.7	373.9	332.6	41.27	9.059		
6,750.0	6,709.2	6,751.3	6,717.5	16.8	17.5	93.80	458.1	-240.6	374.2	333.1	41.11	9.103		
6,800.0	6,753.4	6,803.1	6,766.0	16.7	17.4	94.84	440.4	-240.6	374.6	333.7	40.89	9.161		
6,850.0	6,795.9	6,855.3	6,813.7	16.6	17.4	95.87	419.1	-240.6	375.2	334.5	40.64	9.232		
6,900.0	6,836.4	6,908.1	6,860.1	16.5	17.3	96.87	394.0	-240.5	375.8	335.4	40.35	9.313		
6,950.0	6,874.7	6,961.4	6,905.0	16.4	17.2	97.84	365.3	-240.5	376.5	336.4	40.05	9.400		
7,000.0	6,910.8	7,015.3	6,948.1	16.3	17.1	98.77	332.9	-240.4	377.2	337.4	39.74	9.491		
7,050.0	6,944.3	7,069.7	6,989.0	16.3	17.0	99.65	297.1	-240.4	377.9	338.5	39.45	9.580		
7,100.0	6,975.2	7,124.6	7,027.4	16.2	16.9	100.49	257.9	-240.3	378.7	339.5	39.20	9.662		
7,150.0	7,003.3	7,179.9	7,063.0	16.2	16.8	101.27	215.5	-240.2	379.5	340.5	39.00	9.732		
7,200.0	7,028.4	7,235.8	7,095.4	16.1	16.7	102.00	170.0	-240.2	380.2	341.4	38.87	9.782		
7,250.0	7,050.4	7,292.1	7,124.5	16.2	16.6	102.66	121.8	-240.1	380.9	342.1	38.84	9.808		
7,300.0	7,069.2	7,348.8	7,149.8	16.3	16.6	103.26	71.1	-240.0	381.6	342.7	38.92	9.804		
7,350.0	7,084.8	7,405.9	7,171.1	16.4	16.6	103.78	18.2	-239.9	382.1	343.0	39.14	9.764		
7,400.0	7,097.0	7,463.3	7,188.3	16.6	16.7	104.23	-36.6	-239.8	382.6	343.1	39.49	9.688		
7,450.0	7,105.8	7,520.9	7,201.1	16.8	16.9	104.60	-92.8	-239.7	382.9	342.9	39.99	9.574		
7,500.0	7,111.1	7,578.8	7,209.3	17.1	17.2	104.89	-150.1	-239.6	383.1	342.5	40.64	9.428		
7,554.4	7,113.0	7,641.9	7,212.9	17.4	17.6	105.12	-213.0	-239.5	383.2	341.7	41.50	9.233		
7,554.4	7,113.0	7,641.9	7,212.9	17.4	17.6	105.12	-213.1	-239.5	383.2	341.7	41.50	9.233		
7,555.0	7,113.0	7,642.6	7,212.9	17.4	17.7	105.12	-213.7	-239.5	383.2	341.7	41.51	9.231		
7,600.0	7,112.8	7,691.8	7,212.8	17.7	18.0	105.15	-262.9	-239.3	382.8	340.6	42.18	9.075		
7,700.0	7,112.5	7,791.8	7,212.4	18.6	18.9	105.19	-362.9	-238.4	381.7	337.4	44.22	8.631		
7,800.0	7,112.1	7,891.8	7,212.0	19.6	19.9	105.23	-462.9	-237.6	380.5	333.9	46.61	8.163		
7,900.0	7,111.7	7,991.8	7,211.6	20.7	21.0	105.26	-562.9	-236.8	379.4	330.1	49.32	7.693		
8,000.0	7,111.4	8,091.8	7,211.2	22.0	22.3	105.30	-662.9	-235.9	378.2	326.0	52.28	7.236		
8,100.0	7,111.0	8,191.8	7,210.8	23.3	23.6	105.34	-762.9	-235.1	377.1	321.6	55.45	6.800		
8,200.0	7,110.6	8,291.7	7,210.3	24.7	25.0	105.38	-862.9	-234.3	376.0	317.1	58.81	6.393		
8,300.0	7,110.3	8,391.7	7,209.9	26.2	26.5	105.42	-962.9	-233.5	374.8	312.5	62.32	6.014		
8,400.0	7,109.9	8,491.7	7,209.5	27.8	28.0	105.46	-1,062.8	-232.6	373.7	307.7	65.95	5.666		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,500.0	7,109.5	8,591.7	7,209.1	29.3	29.6	105.50	-1,162.8	-231.8	372.5	302.8	69.70	5.345		
8,600.0	7,109.2	8,691.7	7,208.7	30.9	31.2	105.54	-1,262.8	-231.0	371.4	297.9	73.53	5.051		
8,700.0	7,108.8	8,791.7	7,208.3	32.6	32.8	105.58	-1,362.8	-230.2	370.2	292.8	77.44	4.781		
8,800.0	7,108.5	8,891.7	7,207.8	34.3	34.5	105.62	-1,462.8	-229.3	369.1	287.7	81.42	4.534		
8,900.0	7,108.1	8,991.7	7,207.4	36.0	36.2	105.66	-1,562.8	-228.5	368.0	282.5	85.45	4.306		
9,000.0	7,107.7	9,091.7	7,207.0	37.7	37.9	105.71	-1,662.8	-227.7	366.8	277.3	89.53	4.097		
9,100.0	7,107.4	9,191.7	7,206.6	39.4	39.7	105.75	-1,762.8	-226.9	365.7	272.0	93.65	3.905		
9,200.0	7,107.0	9,291.7	7,206.2	41.2	41.4	105.79	-1,862.8	-226.0	364.5	266.7	97.80	3.727		
9,300.0	7,106.6	9,391.7	7,205.8	43.0	43.2	105.83	-1,962.7	-225.2	363.4	261.4	101.99	3.563		
9,400.0	7,106.3	9,491.7	7,205.3	44.8	45.0	105.87	-2,062.7	-224.4	362.3	256.1	106.20	3.411		
9,500.0	7,105.9	9,591.7	7,204.9	46.5	46.8	105.92	-2,162.7	-223.5	361.1	250.7	110.44	3.270		
9,600.0	7,105.5	9,691.7	7,204.5	48.3	48.6	105.96	-2,262.7	-222.7	360.0	245.3	114.70	3.138		
9,700.0	7,105.2	9,791.6	7,204.1	50.2	50.4	106.00	-2,362.7	-221.9	358.9	239.9	118.98	3.016		
9,800.0	7,104.8	9,891.6	7,203.7	52.0	52.2	106.05	-2,462.7	-221.1	357.7	234.4	123.28	2.902		
9,900.0	7,104.4	9,991.6	7,203.3	53.8	54.0	106.09	-2,562.7	-220.2	356.6	229.0	127.59	2.795		
10,000.0	7,104.1	10,091.6	7,202.8	55.6	55.8	106.14	-2,662.7	-219.4	355.4	223.5	131.91	2.695		
10,100.0	7,103.7	10,191.6	7,202.4	57.5	57.7	106.18	-2,762.7	-218.6	354.3	218.1	136.24	2.601		
10,200.0	7,103.3	10,291.6	7,202.0	59.3	59.5	106.22	-2,862.6	-217.8	353.2	212.6	140.59	2.512		
10,300.0	7,103.0	10,391.6	7,201.6	61.2	61.4	106.27	-2,962.6	-216.9	352.0	207.1	144.94	2.429		
10,400.0	7,102.6	10,491.6	7,201.2	63.0	63.2	106.31	-3,062.6	-216.1	350.9	201.6	149.30	2.350		
10,500.0	7,102.3	10,591.6	7,200.7	64.9	65.1	106.36	-3,162.6	-215.3	349.7	196.1	153.67	2.276		
10,600.0	7,101.9	10,691.6	7,200.3	66.7	66.9	106.41	-3,262.6	-214.5	348.6	190.6	158.04	2.206		
10,700.0	7,101.5	10,791.6	7,199.9	68.6	68.8	106.45	-3,362.6	-213.6	347.5	185.0	162.42	2.139		
10,800.0	7,101.2	10,891.6	7,199.5	70.5	70.7	106.50	-3,462.6	-212.8	346.3	179.5	166.81	2.076		
10,900.0	7,100.8	10,991.6	7,199.1	72.3	72.5	106.55	-3,562.6	-212.0	345.2	174.0	171.20	2.016		
11,000.0	7,100.4	11,091.6	7,198.7	74.2	74.4	106.59	-3,662.6	-211.1	344.1	168.5	175.59	1.959		
11,100.0	7,100.1	11,191.5	7,198.2	76.1	76.3	106.64	-3,762.5	-210.3	342.9	162.9	179.99	1.905		
11,200.0	7,099.7	11,291.5	7,197.8	78.0	78.2	106.69	-3,862.5	-209.5	341.8	157.4	184.39	1.854		
11,300.0	7,099.3	11,391.5	7,197.4	79.8	80.0	106.74	-3,962.5	-208.7	340.7	151.9	188.79	1.804		
11,400.0	7,099.0	11,491.5	7,197.0	81.7	81.9	106.78	-4,062.5	-207.8	339.5	146.3	193.20	1.757		
11,500.0	7,098.6	11,591.5	7,196.6	83.6	83.8	106.83	-4,162.5	-207.0	338.4	140.8	197.61	1.712		
11,600.0	7,098.2	11,691.5	7,196.2	85.5	85.7	106.88	-4,262.5	-206.2	337.3	135.2	202.02	1.669		
11,700.0	7,097.9	11,791.5	7,195.7	87.4	87.6	106.93	-4,362.5	-205.4	336.1	129.7	206.43	1.628		
11,800.0	7,097.5	11,891.5	7,195.3	89.3	89.5	106.98	-4,462.5	-204.5	335.0	124.1	210.84	1.589		
11,900.0	7,097.1	11,991.5	7,194.9	91.1	91.4	107.03	-4,562.5	-203.7	333.8	118.6	215.25	1.551		
12,000.0	7,096.8	12,091.5	7,194.5	93.0	93.3	107.08	-4,662.4	-202.9	332.7	113.1	219.66	1.515		
12,100.0	7,096.4	12,191.5	7,194.1	94.9	95.1	107.13	-4,762.4	-202.1	331.6	107.5	224.07	1.480 Level 3		
12,200.0	7,096.0	12,291.5	7,193.7	96.8	97.0	107.18	-4,862.4	-201.2	330.4	102.0	228.49	1.446 Level 3		
12,300.0	7,095.7	12,391.5	7,193.2	98.7	98.9	107.24	-4,962.4	-200.4	329.3	96.4	232.90	1.414 Level 3		
12,400.0	7,095.3	12,491.5	7,192.8	100.6	100.8	107.29	-5,062.4	-199.6	328.2	90.9	237.31	1.383 Level 3		
12,500.0	7,095.0	12,591.5	7,192.4	102.5	102.7	107.34	-5,162.4	-198.7	327.1	85.3	241.72	1.353 Level 3		
12,600.0	7,094.6	12,691.4	7,192.0	104.4	104.6	107.39	-5,262.4	-197.9	325.9	79.8	246.14	1.324 Level 3		
12,700.0	7,094.2	12,791.4	7,191.6	106.3	106.5	107.44	-5,362.4	-197.1	324.8	74.2	250.55	1.296 Level 3		
12,800.0	7,093.9	12,891.4	7,191.2	108.2	108.4	107.50	-5,462.4	-196.3	323.7	68.7	254.96	1.269 Level 3		
12,900.0	7,093.5	12,991.4	7,190.7	110.1	110.3	107.55	-5,562.3	-195.4	322.5	63.2	259.36	1.244 Level 2		
13,000.0	7,093.1	13,091.4	7,190.3	112.0	112.2	107.61	-5,662.3	-194.6	321.4	57.6	263.77	1.218 Level 2		
13,100.0	7,092.8	13,191.4	7,189.9	113.9	114.1	107.66	-5,762.3	-193.8	320.3	52.1	268.18	1.194 Level 2		
13,200.0	7,092.4	13,291.4	7,189.5	115.8	116.0	107.71	-5,862.3	-193.0	319.1	46.5	272.58	1.171 Level 2		
13,300.0	7,092.0	13,391.4	7,189.1	117.7	117.9	107.77	-5,962.3	-192.1	318.0	41.0	276.99	1.148 Level 2		
13,400.0	7,091.7	13,491.4	7,188.6	119.6	119.8	107.83	-6,062.3	-191.3	316.9	35.5	281.39	1.126 Level 2		
13,500.0	7,091.3	13,591.4	7,188.2	121.5	121.7	107.88	-6,162.3	-190.5	315.7	30.0	285.79	1.105 Level 2		
13,600.0	7,090.9	13,691.4	7,187.8	123.4	123.7	107.94	-6,262.3	-189.6	314.6	24.4	290.19	1.084 Level 2		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,700.0	7,090.6	13,791.4	7,187.4	125.3	125.6	107.99	-6,362.3	-188.8	313.5	18.9	294.58	1.064	Level 2	
13,800.0	7,090.2	13,891.4	7,187.0	127.2	127.5	108.05	-6,462.2	-188.0	312.4	13.4	298.98	1.045	Level 2	
13,900.0	7,089.8	13,991.4	7,186.6	129.1	129.4	108.11	-6,562.2	-187.2	311.2	7.9	303.37	1.026	Level 2	
14,000.0	7,089.5	14,091.4	7,186.1	131.0	131.3	108.17	-6,662.2	-186.3	310.1	2.3	307.76	1.008	Level 2	
14,100.0	7,089.1	14,191.3	7,185.7	132.9	133.2	108.23	-6,762.2	-185.5	309.0	-3.2	312.15	0.990	Level 1	
14,200.0	7,088.8	14,291.3	7,185.3	134.8	135.1	108.28	-6,862.2	-184.7	307.8	-8.7	316.53	0.973	Level 1	
14,300.0	7,088.4	14,391.3	7,184.9	136.7	137.0	108.34	-6,962.2	-183.9	306.7	-14.2	320.91	0.956	Level 1	
14,400.0	7,088.0	14,491.3	7,184.5	138.6	138.9	108.40	-7,062.2	-183.0	305.6	-19.7	325.29	0.939	Level 1	
14,500.0	7,087.7	14,591.3	7,184.1	140.5	140.8	108.46	-7,162.2	-182.2	304.5	-25.2	329.67	0.924	Level 1	
14,600.0	7,087.3	14,691.3	7,183.6	142.4	142.7	108.52	-7,262.2	-181.4	303.3	-30.7	334.05	0.908	Level 1	
14,700.0	7,086.9	14,791.3	7,183.2	144.3	144.6	108.58	-7,362.1	-180.6	302.2	-36.2	338.42	0.893	Level 1	
14,800.0	7,086.6	14,891.3	7,182.8	146.2	146.6	108.65	-7,462.1	-179.7	301.1	-41.7	342.78	0.878	Level 1	
14,900.0	7,086.2	14,991.3	7,182.4	148.2	148.5	108.71	-7,562.1	-178.9	300.0	-47.2	347.15	0.864	Level 1	
15,000.0	7,085.8	15,091.3	7,182.0	150.1	150.4	108.77	-7,662.1	-178.1	298.8	-52.7	351.51	0.850	Level 1	
15,100.0	7,085.5	15,191.3	7,181.6	152.0	152.3	108.83	-7,762.1	-177.2	297.7	-58.2	355.87	0.837	Level 1	
15,166.7	7,085.2	15,254.7	7,181.3	153.2	153.4	108.86	-7,825.5	-176.9	297.2	-61.5	358.67	0.829	Level 1	
15,200.0	7,085.1	15,285.0	7,181.2	153.9	154.0	108.85	-7,855.8	-177.2	297.3	-62.7	360.07	0.826	Level 1	
15,300.0	7,084.7	15,382.4	7,180.8	155.8	155.7	108.73	-7,953.2	-179.3	299.1	-65.4	364.51	0.820	Level 1	
15,400.0	7,084.4	15,482.4	7,180.3	157.7	157.6	108.60	-8,053.2	-181.7	300.9	-68.3	369.18	0.815	Level 1	
15,500.0	7,084.0	15,582.4	7,179.9	159.6	159.5	108.47	-8,153.1	-184.0	302.8	-71.1	373.87	0.810	Level 1	
15,600.0	7,083.6	15,682.4	7,179.5	161.5	161.4	108.34	-8,253.1	-186.3	304.6	-73.9	378.57	0.805	Level 1	
15,700.0	7,083.3	15,782.3	7,179.1	163.4	163.3	108.22	-8,353.0	-188.6	306.5	-76.8	383.27	0.800	Level 1	
15,800.0	7,082.9	15,882.3	7,178.7	165.3	165.2	108.09	-8,453.0	-190.9	308.3	-79.6	387.97	0.795	Level 1	
15,900.0	7,082.5	15,982.3	7,178.3	167.2	167.1	107.97	-8,552.9	-193.2	310.2	-82.5	392.67	0.790	Level 1	
16,000.0	7,082.2	16,082.3	7,177.8	169.2	169.0	107.85	-8,652.9	-195.5	312.1	-85.3	397.37	0.785	Level 1	
16,100.0	7,081.8	16,182.3	7,177.4	171.1	170.9	107.73	-8,752.8	-197.9	313.9	-88.1	402.08	0.781	Level 1	
16,200.0	7,081.5	16,282.2	7,177.0	173.0	172.8	107.61	-8,852.8	-200.2	315.8	-91.0	406.78	0.776	Level 1	
16,300.0	7,081.1	16,382.2	7,176.6	174.9	174.7	107.49	-8,952.7	-202.5	317.7	-93.8	411.49	0.772	Level 1	
16,400.0	7,080.7	16,482.2	7,176.2	176.8	176.6	107.38	-9,052.7	-204.8	319.5	-96.7	416.20	0.768	Level 1	
16,500.0	7,080.4	16,582.2	7,175.8	178.7	178.5	107.27	-9,152.6	-207.1	321.4	-99.5	420.91	0.764	Level 1	
16,600.0	7,080.0	16,682.2	7,175.3	180.6	180.4	107.15	-9,252.6	-209.4	323.3	-102.4	425.62	0.760	Level 1	
16,700.0	7,079.6	16,782.1	7,174.9	182.5	182.3	107.04	-9,352.5	-211.8	325.1	-105.2	430.33	0.756	Level 1	
16,800.0	7,079.3	16,882.1	7,174.5	184.4	184.2	106.93	-9,452.5	-214.1	327.0	-108.0	435.05	0.752	Level 1	
16,900.0	7,078.9	16,982.1	7,174.1	186.4	186.1	106.82	-9,552.4	-216.4	328.9	-110.9	439.76	0.748	Level 1	
17,000.0	7,078.5	17,082.1	7,173.7	188.3	188.0	106.72	-9,652.4	-218.7	330.8	-113.7	444.48	0.744	Level 1	
17,100.0	7,078.2	17,182.1	7,173.3	190.2	189.9	106.61	-9,752.4	-221.0	332.6	-116.6	449.19	0.741	Level 1	
17,146.8	7,078.0	17,228.8	7,173.1	191.1	190.8	106.56	-9,799.1	-222.1	333.5	-117.9	451.40	0.739	Level 1, ES, SF	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	87.64	0.6	15.0	15.1	15.1	0.00	N/A		
100.0	100.0	100.0	100.0	0.1	0.1	87.64	0.6	15.0	15.1	14.8	0.28	54.682		
200.0	200.0	200.0	200.0	0.3	0.3	87.64	0.6	15.0	15.1	14.2	0.83	18.227		
300.0	300.0	300.0	300.0	0.6	0.6	87.64	0.6	15.0	15.1	13.7	1.38	10.936		
400.0	400.0	400.0	400.0	0.8	0.8	87.64	0.6	15.0	15.1	13.1	1.93	7.812		
500.0	500.0	500.0	500.0	1.0	1.0	87.64	0.6	15.0	15.1	12.6	2.48	6.076		
600.0	600.0	600.0	600.0	1.2	1.2	87.64	0.6	15.0	15.1	12.0	3.03	4.971 CC		
700.0	700.0	699.7	699.7	1.5	1.5	84.09	1.6	15.9	15.9	12.4	3.58	4.458		
800.0	800.0	799.3	799.2	1.7	1.7	75.57	4.7	18.3	18.9	14.8	4.12	4.580		
900.0	900.0	898.6	898.3	1.9	1.9	66.31	9.8	22.3	24.4	19.7	4.67	5.219		
1,000.0	1,000.0	997.5	996.8	2.1	2.1	58.85	16.8	27.9	32.7	27.5	5.23	6.259		
1,100.0	1,100.0	1,096.1	1,094.7	2.4	2.4	39.78	25.9	35.0	42.8	37.0	5.77	7.415		
1,200.0	1,199.9	1,195.2	1,192.8	2.6	2.7	38.27	36.5	43.4	53.0	46.6	6.33	8.366		
1,300.0	1,299.7	1,294.8	1,291.5	2.8	3.0	38.69	47.3	51.9	61.2	54.3	6.89	8.884		
1,400.0	1,399.3	1,394.6	1,390.4	3.0	3.3	40.41	58.1	60.4	67.4	60.0	7.46	9.042		
1,450.7	1,449.6	1,445.2	1,440.5	3.2	3.4	41.71	63.6	64.8	69.9	62.1	7.76	9.009		
1,500.0	1,498.6	1,494.4	1,489.3	3.3	3.6	43.09	68.9	69.0	72.0	64.0	8.05	8.949		
1,600.0	1,597.9	1,594.3	1,588.1	3.5	3.9	45.65	79.7	77.5	76.5	67.9	8.66	8.838		
1,700.0	1,697.2	1,694.1	1,687.0	3.8	4.2	47.91	90.5	86.0	81.2	71.9	9.29	8.740		
1,800.0	1,796.5	1,794.0	1,785.9	4.1	4.5	49.93	101.3	94.6	85.9	76.0	9.93	8.654		
1,900.0	1,895.8	1,893.8	1,884.8	4.4	4.9	51.74	112.1	103.1	90.8	80.2	10.58	8.576		
2,000.0	1,995.1	1,993.7	1,983.7	4.6	5.2	53.36	122.9	111.7	95.7	84.4	11.25	8.506		
2,100.0	2,094.4	2,093.5	2,082.6	4.9	5.5	54.82	133.7	120.2	100.7	88.8	11.93	8.442		
2,200.0	2,193.7	2,193.3	2,181.5	5.2	5.8	56.14	144.6	128.7	105.8	93.1	12.61	8.384		
2,300.0	2,293.0	2,293.2	2,280.4	5.5	6.2	57.34	155.4	137.3	110.9	97.6	13.31	8.331		
2,400.0	2,392.4	2,393.0	2,379.3	5.8	6.5	58.44	166.2	145.8	116.0	102.0	14.01	8.282		
2,500.0	2,491.7	2,492.9	2,478.1	6.1	6.8	59.44	177.0	154.4	121.2	106.5	14.71	8.237		
2,600.0	2,591.0	2,592.7	2,577.0	6.4	7.2	60.36	187.8	162.9	126.4	111.0	15.43	8.196		
2,700.0	2,690.3	2,692.6	2,675.9	6.7	7.5	61.21	198.6	171.4	131.7	115.5	16.14	8.158		
2,800.0	2,789.6	2,792.4	2,774.8	7.0	7.8	61.99	209.4	180.0	137.0	120.1	16.86	8.123		
2,900.0	2,888.9	2,892.3	2,873.7	7.3	8.2	62.71	220.2	188.5	142.3	124.7	17.59	8.090		
3,000.0	2,988.2	2,992.1	2,972.6	7.6	8.5	63.38	231.0	197.0	147.6	129.3	18.31	8.060		
3,100.0	3,087.5	3,091.9	3,071.5	7.9	8.8	64.01	241.9	205.6	152.9	133.9	19.04	8.032		
3,200.0	3,186.8	3,191.8	3,170.4	8.2	9.2	64.59	252.7	214.1	158.3	138.5	19.77	8.005		
3,300.0	3,286.1	3,291.6	3,269.3	8.5	9.5	65.13	263.5	222.7	163.7	143.2	20.51	7.981		
3,400.0	3,385.4	3,391.5	3,368.1	8.8	9.8	65.64	274.3	231.2	169.1	147.8	21.24	7.958		
3,500.0	3,484.7	3,491.3	3,467.0	9.1	10.2	66.12	285.1	239.7	174.5	152.5	21.98	7.937		
3,600.0	3,584.0	3,591.2	3,565.9	9.4	10.5	66.57	295.9	248.3	179.9	157.2	22.72	7.917		
3,700.0	3,683.3	3,691.0	3,664.8	9.7	10.8	66.99	306.7	256.8	185.3	161.8	23.46	7.898		
3,800.0	3,782.6	3,790.8	3,763.7	10.0	11.2	67.39	317.5	265.4	190.7	166.5	24.20	7.880		
3,900.0	3,881.9	3,890.7	3,862.6	10.3	11.5	67.77	328.3	273.9	196.2	171.2	24.95	7.863		
4,000.0	3,981.2	3,990.5	3,961.5	10.6	11.9	68.12	339.1	282.4	201.6	175.9	25.69	7.847		
4,100.0	4,080.5	4,090.4	4,060.4	10.9	12.2	68.46	350.0	291.0	207.1	180.6	26.44	7.833		
4,200.0	4,179.8	4,190.2	4,159.3	11.2	12.5	68.78	360.8	299.5	212.5	185.4	27.19	7.818		
4,300.0	4,279.1	4,290.1	4,258.1	11.5	12.9	69.08	371.6	308.1	218.0	190.1	27.93	7.805		
4,400.0	4,378.4	4,389.9	4,357.0	11.8	13.2	69.37	382.4	316.6	223.5	194.8	28.68	7.792		
4,500.0	4,477.8	4,489.8	4,455.9	12.1	13.5	69.65	393.2	325.1	229.0	199.5	29.43	7.780		
4,600.0	4,577.1	4,589.6	4,554.8	12.4	13.9	69.91	404.0	333.7	234.5	204.3	30.18	7.769		
4,700.0	4,676.4	4,689.4	4,653.7	12.7	14.2	70.16	414.8	342.2	240.0	209.0	30.93	7.758		
4,800.0	4,775.7	4,789.3	4,752.6	13.1	14.6	70.40	425.6	350.7	245.4	213.8	31.68	7.748		
4,900.0	4,875.0	4,889.1	4,851.5	13.4	14.9	70.63	436.4	359.3	250.9	218.5	32.43	7.738		
5,000.0	4,974.3	4,989.0	4,950.4	13.7	15.2	70.85	447.2	367.8	256.5	223.3	33.18	7.729		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design		Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W - Ridgway 4N (Nio C) - Wellbore #1 - Plan #1 (8-07-19)											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)				
5,100.0	5,073.6	5,088.8	5,049.3	14.0	15.6	71.06	458.1	376.4	262.0	228.0	33.93	7.720			
5,200.0	5,172.9	5,188.7	5,148.1	14.3	15.9	71.26	468.9	384.9	267.5	232.8	34.69	7.711			
5,300.0	5,272.2	5,288.5	5,247.0	14.6	16.2	71.45	479.7	393.4	273.0	237.5	35.44	7.703			
5,400.0	5,371.5	5,388.3	5,345.9	14.9	16.6	71.64	490.5	402.0	278.5	242.3	36.19	7.695			
5,491.9	5,462.8	5,482.4	5,439.1	15.2	16.9	71.84	500.5	409.9	283.4	246.6	36.88	7.685			
5,500.0	5,470.8	5,491.0	5,447.7	15.2	16.9	71.87	501.4	410.6	283.8	246.9	36.94	7.683			
5,600.0	5,570.3	5,598.0	5,554.0	15.4	17.2	72.26	510.1	417.5	287.7	250.2	37.54	7.665			
5,700.0	5,670.1	5,705.1	5,660.9	15.6	17.4	72.50	515.8	421.9	290.3	252.2	38.04	7.630			
5,800.0	5,770.1	5,812.2	5,767.9	15.8	17.5	72.61	518.3	423.9	291.4	252.9	38.46	7.576			
5,829.9	5,800.0	5,844.3	5,800.0	15.8	17.6	87.36	518.4	424.0	291.5	252.9	38.55	7.561			
5,900.0	5,870.1	5,914.3	5,870.1	15.9	17.7	87.36	518.4	424.0	291.5	252.6	38.83	7.506			
6,000.0	5,970.1	6,014.3	5,970.1	16.1	17.8	87.36	518.4	424.0	291.5	252.2	39.26	7.424			
6,100.0	6,070.1	6,114.3	6,070.1	16.3	18.0	87.36	518.4	424.0	291.5	251.8	39.69	7.343			
6,200.0	6,170.1	6,214.3	6,170.1	16.5	18.2	87.36	518.4	424.0	291.5	251.3	40.13	7.263			
6,300.0	6,270.1	6,314.3	6,270.1	16.7	18.3	87.36	518.4	424.0	291.5	250.9	40.57	7.184			
6,400.0	6,370.1	6,414.3	6,370.1	16.8	18.5	87.36	518.4	424.0	291.5	250.4	41.01	7.106			
6,426.7	6,396.8	6,441.1	6,396.8	16.9	18.5	87.36	518.4	424.0	291.5	250.3	41.13	7.086			
6,450.0	6,420.1	6,464.3	6,420.1	16.9	18.6	-92.91	518.4	424.0	291.5	250.2	41.24	7.068			
6,500.0	6,469.9	6,514.2	6,469.9	17.0	18.7	-93.55	518.4	424.0	291.7	250.3	41.33	7.057			
6,550.0	6,519.5	6,564.5	6,520.2	17.0	18.7	-94.79	518.0	424.0	292.1	250.8	41.30	7.073			
6,600.0	6,568.4	6,615.9	6,571.5	17.0	18.8	-96.12	514.5	424.1	292.8	251.6	41.20	7.108			
6,650.0	6,616.5	6,667.9	6,623.0	17.0	18.8	-97.43	507.3	424.1	293.7	252.6	41.02	7.159			
6,700.0	6,663.5	6,720.4	6,674.3	16.9	18.8	-98.69	496.1	424.1	294.7	253.9	40.78	7.225			
6,750.0	6,709.2	6,773.4	6,725.1	16.8	18.7	-99.91	481.1	424.1	295.8	255.3	40.49	7.305			
6,800.0	6,753.4	6,827.0	6,775.2	16.7	18.7	-101.08	462.1	424.1	297.0	256.9	40.16	7.397			
6,850.0	6,795.9	6,881.1	6,824.2	16.6	18.6	-102.18	439.3	424.2	298.3	258.5	39.79	7.499			
6,900.0	6,836.4	6,935.7	6,871.8	16.5	18.5	-103.22	412.5	424.2	299.7	260.3	39.39	7.608			
6,950.0	6,874.7	6,990.9	6,917.7	16.4	18.4	-104.19	381.8	424.3	301.1	262.1	38.99	7.722			
7,000.0	6,910.8	7,046.5	6,961.3	16.3	18.3	-105.08	347.4	424.3	302.5	263.9	38.60	7.837			
7,050.0	6,944.3	7,102.6	7,002.6	16.3	18.1	-105.89	309.4	424.4	303.9	265.7	38.24	7.947			
7,100.0	6,975.2	7,159.1	7,041.0	16.2	18.0	-106.61	268.0	424.5	305.2	267.3	37.93	8.047			
7,150.0	7,003.3	7,216.0	7,076.2	16.2	17.9	-107.24	223.3	424.6	306.5	268.8	37.69	8.132			
7,200.0	7,028.4	7,273.2	7,108.0	16.1	17.7	-107.77	175.7	424.7	307.6	270.1	37.54	8.196			
7,250.0	7,050.4	7,330.8	7,136.0	16.2	17.6	-108.21	125.5	424.7	308.7	271.2	37.49	8.233			
7,300.0	7,069.2	7,388.5	7,159.9	16.3	17.5	-108.55	72.9	424.8	309.5	272.0	37.57	8.238			
7,350.0	7,084.8	7,446.5	7,179.6	16.4	17.4	-108.78	18.4	424.9	310.3	272.5	37.79	8.209			
7,400.0	7,097.0	7,504.6	7,194.9	16.6	17.3	-108.92	-37.6	425.0	310.8	272.6	38.17	8.143			
7,450.0	7,105.8	7,562.8	7,205.6	16.8	17.2	-108.95	-94.8	425.1	311.2	272.5	38.70	8.042			
7,500.0	7,111.1	7,621.0	7,211.6	17.1	17.6	-108.88	-152.7	425.2	311.4	272.0	39.38	7.907			
7,537.1	7,112.9	7,664.1	7,213.0	17.3	17.9	-108.76	-195.7	425.3	311.4	271.4	39.98	7.790			
7,554.4	7,113.0	7,680.9	7,213.0	17.4	18.0	-108.72	-212.5	425.4	311.4	271.2	40.22	7.743			
7,554.4	7,113.0	7,680.9	7,213.0	17.4	18.0	-108.72	-212.5	425.4	311.4	271.2	40.22	7.743			
7,555.0	7,113.0	7,681.4	7,212.9	17.4	18.0	-108.72	-213.0	425.4	311.5	271.2	40.23	7.742			
7,600.0	7,112.8	7,726.2	7,212.8	17.7	18.4	-108.69	-257.8	425.7	311.9	271.0	40.88	7.629			
7,700.0	7,112.5	7,826.2	7,212.3	18.6	19.3	-108.62	-357.8	426.4	312.9	270.0	42.88	7.296			
7,800.0	7,112.1	7,926.2	7,211.9	19.6	20.3	-108.55	-457.8	427.1	313.8	268.6	45.25	6.936			
7,900.0	7,111.7	8,026.2	7,211.5	20.7	21.5	-108.48	-557.8	427.8	314.8	266.9	47.92	6.569			
8,000.0	7,111.4	8,126.2	7,211.1	22.0	22.7	-108.41	-657.8	428.5	315.8	264.9	50.86	6.209			
8,100.0	7,111.0	8,226.2	7,210.7	23.3	24.1	-108.34	-757.8	429.2	316.7	262.7	54.01	5.864			
8,200.0	7,110.6	8,326.2	7,210.3	24.7	25.4	-108.27	-857.8	429.8	317.7	260.3	57.35	5.539			
8,300.0	7,110.3	8,426.2	7,209.8	26.2	26.9	-108.20	-957.8	430.5	318.7	257.8	60.85	5.237			
8,400.0	7,109.9	8,526.1	7,209.4	27.8	28.4	-108.14	-1,057.8	431.2	319.6	255.2	64.47	4.958			

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,500.0	7,109.5	8,626.1	7,209.0	29.3	30.0	-108.07	-1,157.7	431.9	320.6	252.4	68.21	4.700		
8,600.0	7,109.2	8,726.1	7,208.6	30.9	31.6	-108.00	-1,257.7	432.6	321.6	249.5	72.03	4.464		
8,700.0	7,108.8	8,826.1	7,208.2	32.6	33.2	-107.94	-1,357.7	433.3	322.5	246.6	75.94	4.247		
8,800.0	7,108.5	8,926.1	7,207.7	34.3	34.9	-107.87	-1,457.7	434.0	323.5	243.6	79.91	4.048		
8,900.0	7,108.1	9,026.1	7,207.3	36.0	36.5	-107.81	-1,557.7	434.7	324.5	240.5	83.95	3.865		
9,000.0	7,107.7	9,126.1	7,206.9	37.7	38.3	-107.74	-1,657.7	435.4	325.4	237.4	88.03	3.697		
9,100.0	7,107.4	9,226.1	7,206.5	39.4	40.0	-107.68	-1,757.7	436.1	326.4	234.3	92.16	3.542		
9,200.0	7,107.0	9,326.1	7,206.1	41.2	41.7	-107.61	-1,857.7	436.8	327.4	231.1	96.33	3.399		
9,300.0	7,106.6	9,426.1	7,205.7	43.0	43.5	-107.55	-1,957.7	437.5	328.4	227.8	100.54	3.266		
9,400.0	7,106.3	9,526.1	7,205.2	44.8	45.2	-107.49	-2,057.7	438.2	329.3	224.6	104.77	3.143		
9,500.0	7,105.9	9,626.1	7,204.8	46.5	47.0	-107.42	-2,157.7	438.9	330.3	221.3	109.03	3.029		
9,600.0	7,105.5	9,726.1	7,204.4	48.3	48.8	-107.36	-2,257.7	439.6	331.3	218.0	113.32	2.923		
9,700.0	7,105.2	9,826.1	7,204.0	50.2	50.6	-107.30	-2,357.6	440.3	332.3	214.6	117.63	2.825		
9,800.0	7,104.8	9,926.1	7,203.6	52.0	52.4	-107.24	-2,457.6	441.0	333.2	211.3	121.96	2.732		
9,900.0	7,104.4	10,026.1	7,203.1	53.8	54.3	-107.18	-2,557.6	441.7	334.2	207.9	126.30	2.646		
10,000.0	7,104.1	10,126.1	7,202.7	55.6	56.1	-107.11	-2,657.6	442.3	335.2	204.5	130.67	2.565		
10,100.0	7,103.7	10,226.1	7,202.3	57.5	57.9	-107.05	-2,757.6	443.0	336.2	201.1	135.05	2.489		
10,200.0	7,103.3	10,326.1	7,201.9	59.3	59.7	-106.99	-2,857.6	443.7	337.1	197.7	139.44	2.418		
10,300.0	7,103.0	10,426.0	7,201.5	61.2	61.6	-106.93	-2,957.6	444.4	338.1	194.3	143.84	2.351		
10,400.0	7,102.6	10,526.0	7,201.1	63.0	63.4	-106.87	-3,057.6	445.1	339.1	190.8	148.26	2.287		
10,500.0	7,102.3	10,626.0	7,200.6	64.9	65.3	-106.81	-3,157.6	445.8	340.1	187.4	152.69	2.227		
10,600.0	7,101.9	10,726.0	7,200.2	66.7	67.1	-106.76	-3,257.6	446.5	341.0	183.9	157.13	2.170		
10,700.0	7,101.5	10,826.0	7,199.8	68.6	69.0	-106.70	-3,360.1	447.1	341.9	180.3	161.59	2.116		
10,800.0	7,101.2	10,926.0	7,199.4	70.5	70.8	-106.68	-3,460.1	447.0	342.2	176.3	165.89	2.063		
10,900.0	7,100.8	11,026.0	7,199.0	72.3	72.6	-106.66	-3,560.1	447.0	342.4	172.1	170.33	2.010		
11,000.0	7,100.4	11,126.0	7,198.5	74.2	74.5	-106.64	-3,660.1	446.9	342.7	167.9	174.77	1.961		
11,100.0	7,100.1	11,226.0	7,198.1	76.1	76.4	-106.62	-3,760.1	446.8	342.9	163.7	179.21	1.913		
11,200.0	7,099.7	11,326.0	7,197.7	78.0	78.2	-106.60	-3,860.1	446.7	343.1	159.5	183.67	1.868		
11,300.0	7,099.3	11,426.0	7,197.3	79.8	80.1	-106.57	-3,960.1	446.7	343.4	155.3	188.13	1.825		
11,400.0	7,099.0	11,526.0	7,196.9	81.7	82.0	-106.55	-4,060.1	446.6	343.6	151.0	192.59	1.784		
11,500.0	7,098.6	11,626.0	7,196.5	83.6	83.9	-106.53	-4,160.1	446.5	343.9	146.8	197.06	1.745		
11,600.0	7,098.2	11,726.0	7,196.0	85.5	85.7	-106.51	-4,260.1	446.5	344.1	142.6	201.53	1.708		
11,700.0	7,097.9	11,826.0	7,195.6	87.4	87.6	-106.49	-4,360.1	446.4	344.4	138.4	206.01	1.672		
11,800.0	7,097.5	11,926.0	7,195.2	89.3	89.5	-106.47	-4,460.1	446.3	344.6	134.1	210.49	1.637		
11,900.0	7,097.1	12,026.0	7,194.8	91.1	91.4	-106.45	-4,560.1	446.2	344.9	129.9	214.98	1.604		
12,000.0	7,096.8	12,126.0	7,194.4	93.0	93.3	-106.43	-4,660.1	446.2	345.1	125.6	219.47	1.572		
12,100.0	7,096.4	12,226.0	7,194.0	94.9	95.1	-106.41	-4,760.1	446.1	345.3	121.4	223.96	1.542		
12,200.0	7,096.0	12,326.0	7,193.5	96.8	97.0	-106.39	-4,860.0	446.0	345.6	117.1	228.46	1.513		
12,300.0	7,095.7	12,426.0	7,193.1	98.7	98.9	-106.37	-4,960.0	445.9	345.8	112.9	232.96	1.485 Level 3		
12,400.0	7,095.3	12,526.0	7,192.7	100.6	100.8	-106.35	-5,060.0	445.9	346.1	108.6	237.46	1.457 Level 3		
12,500.0	7,095.0	12,626.0	7,192.3	102.5	102.7	-106.32	-5,160.0	445.8	346.3	104.4	241.96	1.431 Level 3		
12,600.0	7,094.6	12,726.0	7,191.9	104.4	104.6	-106.30	-5,260.0	445.7	346.6	100.1	246.47	1.406 Level 3		
12,700.0	7,094.2	12,826.0	7,191.5	106.3	106.5	-106.28	-5,360.0	445.6	346.8	95.8	250.98	1.382 Level 3		
12,800.0	7,093.9	12,926.0	7,191.1	108.2	108.4	-106.26	-5,460.0	445.6	347.1	91.6	255.50	1.358 Level 3		
12,900.0	7,093.5	13,026.0	7,190.6	110.1	110.3	-106.24	-5,560.0	445.5	347.3	87.3	260.01	1.336 Level 3		
13,000.0	7,093.1	13,126.0	7,190.2	112.0	112.2	-106.22	-5,660.0	445.4	347.5	83.0	264.53	1.314 Level 3		
13,100.0	7,092.8	13,226.0	7,189.8	113.9	114.1	-106.20	-5,760.0	445.4	347.8	78.7	269.05	1.293 Level 3		
13,200.0	7,092.4	13,326.0	7,189.4	115.8	116.0	-106.18	-5,860.0	445.3	348.0	74.5	273.58	1.272 Level 3		
13,300.0	7,092.0	13,426.0	7,189.0	117.7	117.9	-106.16	-5,960.0	445.2	348.3	70.2	278.10	1.252 Level 3		
13,400.0	7,091.7	13,526.0	7,188.6	119.6	119.8	-106.14	-6,060.0	445.1	348.5	65.9	282.63	1.233 Level 2		
13,500.0	7,091.3	13,626.0	7,188.1	121.5	121.7	-106.12	-6,160.0	445.1	348.8	61.6	287.16	1.215 Level 2		
13,600.0	7,090.9	13,726.0	7,187.7	123.4	123.6	-106.10	-6,260.0	445.0	349.0	57.3	291.69	1.197 Level 2		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,700.0	7,090.6	13,828.5	7,187.3	125.3	125.5	-106.08	-6,360.0	444.9	349.3	53.0	296.23	1.179	Level 2	
13,800.0	7,090.2	13,928.5	7,186.9	127.2	127.4	-106.06	-6,460.0	444.8	349.5	48.7	300.76	1.162	Level 2	
13,900.0	7,089.8	14,028.5	7,186.5	129.1	129.3	-106.04	-6,560.0	444.8	349.8	44.5	305.30	1.146	Level 2	
14,000.0	7,089.5	14,128.5	7,186.1	131.0	131.2	-106.02	-6,660.0	444.7	350.0	40.2	309.84	1.130	Level 2	
14,100.0	7,089.1	14,228.5	7,185.6	132.9	133.1	-106.00	-6,760.0	444.6	350.2	35.9	314.38	1.114	Level 2	
14,200.0	7,088.8	14,328.5	7,185.2	134.8	135.0	-105.98	-6,860.0	444.6	350.5	31.6	318.92	1.099	Level 2	
14,300.0	7,088.4	14,428.5	7,184.8	136.7	136.9	-105.96	-6,960.0	444.5	350.7	27.3	323.46	1.084	Level 2	
14,400.0	7,088.0	14,528.5	7,184.4	138.6	138.8	-105.94	-7,060.0	444.4	351.0	23.0	328.01	1.070	Level 2	
14,500.0	7,087.7	14,628.5	7,184.0	140.5	140.7	-105.92	-7,160.0	444.3	351.2	18.7	332.56	1.056	Level 2	
14,600.0	7,087.3	14,728.5	7,183.6	142.4	142.6	-105.90	-7,260.0	444.3	351.5	14.4	337.11	1.043	Level 2	
14,700.0	7,086.9	14,828.5	7,183.1	144.3	144.5	-105.88	-7,360.0	444.2	351.7	10.1	341.66	1.029	Level 2	
14,800.0	7,086.6	14,928.5	7,182.7	146.2	146.4	-105.86	-7,460.0	444.1	352.0	5.8	346.21	1.017	Level 2	
14,900.0	7,086.2	15,028.5	7,182.3	148.2	148.3	-105.84	-7,560.0	444.0	352.2	1.4	350.76	1.004	Level 2	
15,000.0	7,085.8	15,128.5	7,181.9	150.1	150.2	-105.82	-7,660.0	444.0	352.5	-2.9	355.31	0.992	Level 1	
15,100.0	7,085.5	15,228.5	7,181.5	152.0	152.1	-105.80	-7,760.0	443.9	352.7	-7.2	359.87	0.980	Level 1	
15,200.0	7,085.1	15,328.5	7,181.1	153.9	154.0	-105.78	-7,860.0	443.8	352.9	-11.5	364.43	0.968	Level 1	
15,300.0	7,084.7	15,428.5	7,180.6	155.8	155.9	-105.76	-7,960.0	443.8	353.2	-15.8	368.98	0.957	Level 1	
15,400.0	7,084.4	15,528.5	7,180.2	157.7	157.9	-105.74	-8,060.0	443.7	353.4	-20.1	373.54	0.946	Level 1	
15,500.0	7,084.0	15,628.5	7,179.8	159.6	159.8	-105.72	-8,160.0	443.6	353.7	-24.4	378.11	0.935	Level 1	
15,600.0	7,083.6	15,728.5	7,179.4	161.5	161.7	-105.70	-8,260.0	443.5	353.9	-28.7	382.67	0.925	Level 1	
15,700.0	7,083.3	15,828.5	7,179.0	163.4	163.6	-105.68	-8,360.0	443.5	354.2	-33.1	387.23	0.915	Level 1	
15,800.0	7,082.9	15,928.5	7,178.6	165.3	165.5	-105.66	-8,460.0	443.4	354.4	-37.4	391.79	0.905	Level 1	
15,900.0	7,082.5	16,028.5	7,178.2	167.2	167.4	-105.64	-8,560.0	443.3	354.7	-41.7	396.36	0.895	Level 1	
16,000.0	7,082.2	16,128.5	7,177.7	169.2	169.3	-105.62	-8,660.0	443.2	354.9	-46.0	400.93	0.885	Level 1	
16,100.0	7,081.8	16,228.5	7,177.3	171.1	171.2	-105.60	-8,760.0	443.2	355.2	-50.3	405.49	0.876	Level 1	
16,200.0	7,081.5	16,328.5	7,176.9	173.0	173.1	-105.58	-8,860.0	443.1	355.4	-54.7	410.06	0.867	Level 1	
16,300.0	7,081.1	16,428.5	7,176.5	174.9	175.0	-105.56	-8,960.0	443.0	355.7	-59.0	414.63	0.858	Level 1	
16,400.0	7,080.7	16,528.5	7,176.1	176.8	176.9	-105.54	-9,060.0	442.9	355.9	-63.3	419.20	0.849	Level 1	
16,500.0	7,080.4	16,628.5	7,175.7	178.7	178.9	-105.52	-9,160.0	442.9	356.1	-67.6	423.78	0.840	Level 1	
16,600.0	7,080.0	16,728.5	7,175.2	180.6	180.8	-105.50	-9,260.0	442.8	356.4	-72.0	428.35	0.832	Level 1	
16,700.0	7,079.6	16,828.5	7,174.8	182.5	182.7	-105.48	-9,360.0	442.7	356.6	-76.3	432.92	0.824	Level 1	
16,800.0	7,079.3	16,928.5	7,174.4	184.4	184.6	-105.46	-9,460.0	442.7	356.9	-80.6	437.50	0.816	Level 1	
16,900.0	7,078.9	17,028.5	7,174.0	186.4	186.5	-105.44	-9,560.0	442.6	357.1	-84.9	442.07	0.808	Level 1	
17,000.0	7,078.5	17,128.5	7,173.6	188.3	188.4	-105.42	-9,660.0	442.5	357.4	-89.3	446.65	0.800	Level 1	
17,100.0	7,078.2	17,228.5	7,173.2	190.2	190.3	-105.40	-9,760.0	442.4	357.6	-93.6	451.23	0.793	Level 1	
17,118.4	7,078.1	17,246.9	7,173.1	190.5	190.7	-105.40	-9,778.4	442.4	357.7	-94.4	452.07	0.791	Level 1	
17,146.8	7,078.0	17,267.3	7,173.0	191.1	191.1	-105.40	-9,798.8	442.4	357.8	-95.4	453.19	0.790	Level 1, ES, SF	

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	87.42	1.3	29.9	29.9					
100.0	100.0	100.0	100.0	0.1	0.1	87.42	1.3	29.9	29.9	29.6	0.28	108.572		
200.0	200.0	200.0	200.0	0.3	0.3	87.42	1.3	29.9	29.9	29.1	0.83	36.191		
300.0	300.0	300.0	300.0	0.6	0.6	87.42	1.3	29.9	29.9	28.5	1.38	21.714		
400.0	400.0	400.0	400.0	0.8	0.8	87.42	1.3	29.9	29.9	28.0	1.93	15.510 CC, ES		
500.0	500.0	499.3	499.3	1.0	1.0	86.07	2.1	30.9	31.0	28.5	2.47	12.540		
600.0	600.0	598.5	598.4	1.2	1.2	82.57	4.4	34.0	34.3	31.3	3.01	11.386		
700.0	700.0	697.5	697.2	1.5	1.5	78.07	8.3	39.1	40.1	36.5	3.56	11.257		
800.0	800.0	796.0	795.3	1.7	1.7	73.62	13.6	46.3	48.5	44.4	4.12	11.782		
900.0	900.0	894.0	892.6	1.9	2.0	69.77	20.4	55.4	59.5	54.9	4.67	12.743		
1,000.0	1,000.0	991.4	989.0	2.1	2.3	66.67	28.7	66.5	73.2	68.0	5.23	13.996		
1,100.0	1,100.0	1,088.1	1,084.4	2.4	2.6	49.96	38.3	79.4	88.7	82.9	5.79	15.320		
1,200.0	1,199.9	1,184.4	1,178.9	2.6	2.9	49.33	49.3	94.2	105.0	98.6	6.35	16.523		
1,300.0	1,299.7	1,280.6	1,272.8	2.8	3.3	49.53	61.8	110.8	122.0	115.1	6.93	17.603		
1,400.0	1,399.3	1,379.3	1,369.0	3.0	3.7	50.41	75.0	128.6	138.2	130.7	7.53	18.368		
1,450.7	1,449.6	1,429.3	1,417.8	3.2	4.0	51.08	81.7	137.6	145.9	138.0	7.84	18.616		
1,500.0	1,498.6	1,478.1	1,465.3	3.3	4.2	51.84	88.3	146.4	153.1	145.0	8.14	18.802		
1,600.0	1,597.9	1,576.9	1,561.6	3.5	4.6	53.19	101.6	164.2	167.8	159.1	8.78	19.109		
1,700.0	1,697.2	1,675.7	1,657.9	3.8	5.1	54.32	114.8	181.9	182.7	173.2	9.44	19.352		
1,800.0	1,796.5	1,774.6	1,754.2	4.1	5.5	55.28	128.1	199.7	197.5	187.4	10.11	19.544		
1,900.0	1,895.8	1,873.4	1,850.5	4.4	6.0	56.10	141.4	217.5	212.5	201.7	10.79	19.695		
2,000.0	1,995.1	1,972.3	1,946.8	4.6	6.4	56.82	154.6	235.3	227.4	216.0	11.48	19.816		
2,100.0	2,094.4	2,071.1	2,043.1	4.9	6.9	57.44	167.9	253.1	242.4	230.2	12.17	19.912		
2,200.0	2,193.7	2,169.9	2,139.4	5.2	7.4	58.00	181.2	270.9	257.4	244.6	12.88	19.988		
2,300.0	2,293.0	2,268.8	2,235.8	5.5	7.8	58.49	194.4	288.7	272.5	258.9	13.59	20.050		
2,400.0	2,392.4	2,367.6	2,332.1	5.8	8.3	58.93	207.7	306.4	287.5	273.2	14.31	20.099		
2,500.0	2,491.7	2,466.4	2,428.4	6.1	8.8	59.33	221.0	324.2	302.6	287.6	15.03	20.139		
2,600.0	2,591.0	2,565.3	2,524.7	6.4	9.2	59.69	234.3	342.0	317.7	301.9	15.75	20.170		
2,700.0	2,690.3	2,664.1	2,621.0	6.7	9.7	60.02	247.5	359.8	332.8	316.3	16.48	20.196		
2,800.0	2,789.6	2,762.9	2,717.3	7.0	10.2	60.32	260.8	377.6	347.9	330.7	17.21	20.216		
2,900.0	2,888.9	2,861.8	2,813.6	7.3	10.7	60.59	274.1	395.4	363.0	345.1	17.94	20.232		
3,000.0	2,988.2	2,960.6	2,910.0	7.6	11.1	60.84	287.3	413.2	378.1	359.5	18.68	20.244		
3,100.0	3,087.5	3,059.5	3,006.3	7.9	11.6	61.08	300.6	430.9	393.3	373.8	19.42	20.254		
3,200.0	3,186.8	3,158.3	3,102.6	8.2	12.1	61.29	313.9	448.7	408.4	388.2	20.16	20.262		
3,300.0	3,286.1	3,257.1	3,198.9	8.5	12.5	61.49	327.2	466.5	423.5	402.6	20.90	20.267		
3,400.0	3,385.4	3,356.0	3,295.2	8.8	13.0	61.68	340.4	484.3	438.7	417.0	21.64	20.271		
3,500.0	3,484.7	3,454.8	3,391.5	9.1	13.5	61.85	353.7	502.1	453.8	431.4	22.39	20.273		
3,600.0	3,584.0	3,553.6	3,487.8	9.4	14.0	62.02	367.0	519.9	469.0	445.8	23.13	20.275		
3,700.0	3,683.3	3,652.5	3,584.1	9.7	14.4	62.17	380.2	537.7	484.1	460.3	23.88	20.275		
3,800.0	3,782.6	3,751.3	3,680.5	10.0	14.9	62.31	393.5	555.4	499.3	474.7	24.63	20.275		
3,900.0	3,881.9	3,850.2	3,776.8	10.3	15.4	62.45	406.8	573.2	514.4	489.1	25.37	20.274		
4,000.0	3,981.2	3,949.0	3,873.1	10.6	15.9	62.57	420.1	591.0	529.6	503.5	26.12	20.273		
4,100.0	4,080.5	4,047.8	3,969.4	10.9	16.3	62.69	433.3	608.8	544.8	517.9	26.88	20.271		
4,200.0	4,179.8	4,146.7	4,065.7	11.2	16.8	62.81	446.6	626.6	559.9	532.3	27.63	20.269		
4,300.0	4,279.1	4,245.5	4,162.0	11.5	17.3	62.92	459.9	644.4	575.1	546.7	28.38	20.266		
4,400.0	4,378.4	4,344.3	4,258.3	11.8	17.8	63.02	473.1	662.2	590.3	561.2	29.13	20.263		
4,500.0	4,477.8	4,443.2	4,354.7	12.1	18.2	63.11	486.4	679.9	605.5	575.6	29.88	20.260		
4,600.0	4,577.1	4,542.5	4,447.4	12.4	18.7	63.33	501.4	700.0	618.8	588.1	30.67	20.176		
4,700.0	4,676.4	4,641.3	4,546.6	12.7	19.1	63.74	513.4	716.1	628.3	596.8	31.45	19.979		
4,800.0	4,775.7	4,813.7	4,720.0	13.1	19.4	64.36	522.2	728.0	633.9	601.7	32.23	19.671		
4,900.0	4,875.0	4,938.1	4,844.1	13.4	19.6	65.17	527.9	735.6	635.7	602.7	33.00	19.263		
5,000.0	4,974.3	5,062.1	4,968.0	13.7	19.8	66.21	530.3	738.8	633.8	600.0	33.79	18.759		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
5,100.0	5,073.6	5,167.7	5,073.6	14.0	19.9	67.24	530.4	739.0	629.2	594.7	34.53	18.224		
5,200.0	5,172.9	5,267.0	5,172.9	14.3	20.0	68.23	530.4	739.0	624.8	589.5	35.26	17.720		
5,300.0	5,272.2	5,366.3	5,272.2	14.6	20.1	69.23	530.4	739.0	620.5	584.5	35.99	17.239		
5,400.0	5,371.5	5,465.6	5,371.5	14.9	20.3	70.25	530.4	739.0	616.4	579.6	36.73	16.781		
5,491.9	5,462.8	5,556.9	5,462.8	15.2	20.4	71.19	530.4	739.0	612.8	575.4	37.41	16.379		
5,500.0	5,470.8	5,564.9	5,470.8	15.2	20.4	71.27	530.4	739.0	612.5	575.0	37.46	16.348		
5,600.0	5,570.3	5,664.4	5,570.3	15.4	20.5	72.08	530.4	739.0	609.4	571.3	38.05	16.015		
5,700.0	5,670.1	5,764.2	5,670.1	15.6	20.6	72.60	530.4	739.0	607.5	568.9	38.56	15.756		
5,800.0	5,770.1	5,864.2	5,770.1	15.8	20.8	72.84	530.4	739.0	606.6	567.7	38.98	15.565		
5,829.9	5,800.0	5,894.1	5,800.0	15.8	20.8	87.60	530.4	739.0	606.6	567.5	39.05	15.534		
5,900.0	5,870.1	5,964.2	5,870.1	15.9	20.9	87.60	530.4	739.0	606.6	567.3	39.33	15.423		
6,000.0	5,970.1	6,064.2	5,970.1	16.1	21.0	87.60	530.4	739.0	606.6	566.8	39.75	15.259		
6,100.0	6,070.1	6,164.2	6,070.1	16.3	21.2	87.60	530.4	739.0	606.6	566.4	40.18	15.098		
6,200.0	6,170.1	6,264.2	6,170.1	16.5	21.3	87.60	530.4	739.0	606.6	566.0	40.61	14.939		
6,300.0	6,270.1	6,364.2	6,270.1	16.7	21.5	87.60	530.4	739.0	606.6	565.6	41.04	14.782		
6,400.0	6,370.1	6,464.2	6,370.1	16.8	21.6	87.60	530.4	739.0	606.6	565.1	41.47	14.628		
6,426.7	6,396.8	6,490.9	6,396.8	16.9	21.6	87.60	530.4	739.0	606.6	565.0	41.59	14.587		
6,450.0	6,420.1	6,515.0	6,420.9	16.9	21.7	-92.60	530.1	739.0	606.6	564.9	41.70	14.548		
6,500.0	6,469.9	6,566.8	6,472.5	17.0	21.7	-92.59	526.5	739.0	606.6	564.8	41.81	14.510		
6,550.0	6,519.5	6,618.5	6,523.7	17.0	21.7	-92.57	519.1	739.0	606.6	564.8	41.85	14.496		
6,600.0	6,568.4	6,670.2	6,574.3	17.0	21.7	-92.53	508.2	739.0	606.7	564.9	41.82	14.505		
6,650.0	6,616.5	6,721.9	6,623.8	17.0	21.7	-92.48	493.6	739.0	606.7	565.0	41.74	14.535		
6,700.0	6,663.5	6,773.6	6,672.2	16.9	21.6	-92.42	475.5	739.1	606.8	565.2	41.61	14.583		
6,750.0	6,709.2	6,825.2	6,719.1	16.8	21.5	-92.34	453.9	739.1	606.9	565.4	41.43	14.648		
6,800.0	6,753.4	6,876.7	6,764.2	16.7	21.4	-92.25	429.1	739.1	607.0	565.8	41.22	14.725		
6,850.0	6,795.9	6,928.2	6,807.4	16.6	21.3	-92.16	401.1	739.2	607.1	566.1	40.99	14.811		
6,900.0	6,836.4	6,979.6	6,848.5	16.5	21.2	-92.05	370.2	739.2	607.2	566.5	40.75	14.901		
6,950.0	6,874.7	7,030.9	6,887.1	16.4	21.1	-91.93	336.4	739.3	607.3	566.8	40.51	14.991		
7,000.0	6,910.8	7,082.1	6,923.2	16.3	21.0	-91.80	300.1	739.4	607.5	567.2	40.30	15.074		
7,050.0	6,944.3	7,133.3	6,956.5	16.3	20.8	-91.66	261.3	739.4	607.6	567.5	40.12	15.144		
7,100.0	6,975.2	7,184.3	6,986.9	16.2	20.7	-91.51	220.3	739.5	607.8	567.8	40.00	15.196		
7,150.0	7,003.3	7,235.3	7,014.2	16.2	20.6	-91.36	177.3	739.6	608.0	568.1	39.94	15.223		
7,200.0	7,028.4	7,286.1	7,038.4	16.1	20.5	-91.20	132.6	739.7	608.2	568.2	39.96	15.220		
7,250.0	7,050.4	7,336.8	7,059.3	16.2	20.4	-91.03	86.4	739.7	608.4	568.3	40.07	15.183		
7,300.0	7,069.2	7,387.4	7,076.9	16.3	20.3	-90.86	39.0	739.8	608.6	568.3	40.29	15.107		
7,350.0	7,084.8	7,437.9	7,091.0	16.4	20.2	-90.69	-9.5	739.9	608.9	568.2	40.61	14.992		
7,400.0	7,097.0	7,488.3	7,101.7	16.6	20.2	-90.51	-58.7	740.0	609.1	568.0	41.05	14.838		
7,450.0	7,105.8	7,538.5	7,108.8	16.8	20.2	-90.33	-108.4	740.1	609.3	567.7	41.60	14.647		
7,500.0	7,111.1	7,588.6	7,112.5	17.1	20.3	-90.15	-158.4	740.2	609.6	567.3	42.26	14.423		
7,554.4	7,113.0	7,643.0	7,112.9	17.4	20.4	-89.99	-212.7	740.3	609.9	566.8	43.12	14.145		
7,554.4	7,113.0	7,643.0	7,112.9	17.4	20.4	-89.99	-212.8	740.3	609.9	566.8	43.12	14.145		
7,555.0	7,113.0	7,643.6	7,112.9	17.4	20.4	-89.99	-213.3	740.3	609.9	566.8	43.12	14.142		
7,600.0	7,112.8	7,688.6	7,112.7	17.7	20.6	-89.99	-258.4	740.4	610.1	566.3	43.80	13.931		
7,700.0	7,112.5	7,788.6	7,112.3	18.6	21.2	-89.98	-358.4	740.5	610.6	564.8	45.84	13.321		
7,800.0	7,112.1	7,888.6	7,111.9	19.6	21.9	-89.98	-458.4	740.7	611.2	563.2	47.94	12.748		
7,900.0	7,111.7	7,988.6	7,111.5	20.7	22.8	-89.97	-558.4	740.9	611.7	561.3	50.33	12.154		
8,000.0	7,111.4	8,088.6	7,111.0	22.0	23.8	-89.97	-658.4	741.1	612.2	558.9	53.28	11.490		
8,100.0	7,111.0	8,188.6	7,110.6	23.3	25.0	-89.96	-758.4	741.2	612.7	556.2	56.51	10.843		
8,200.0	7,110.6	8,288.6	7,110.2	24.7	26.3	-89.96	-858.4	741.4	613.2	553.3	59.93	10.232		
8,300.0	7,110.3	8,388.6	7,109.8	26.2	27.6	-89.95	-958.4	741.6	613.8	550.2	63.52	9.663		
8,400.0	7,109.9	8,488.6	7,109.4	27.8	29.0	-89.95	-1,058.4	741.8	614.3	547.0	67.24	9.135		
8,500.0	7,109.5	8,588.6	7,108.9	29.3	30.5	-89.94	-1,158.4	741.9	614.8	543.7	71.08	8.649		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
8,600.0	7,109.2	8,688.6	7,108.5	30.9	32.0	-89.94	-1,258.4	742.1	615.3	540.3	75.02	8.202		
8,700.0	7,108.8	8,788.6	7,108.1	32.6	33.6	-89.93	-1,358.4	742.3	615.8	536.8	79.04	7.791		
8,800.0	7,108.5	8,888.6	7,107.7	34.3	35.2	-89.93	-1,458.4	742.5	616.4	533.2	83.14	7.414		
8,900.0	7,108.1	8,988.6	7,107.3	36.0	36.8	-89.92	-1,558.3	742.7	616.9	529.6	87.30	7.066		
9,000.0	7,107.7	9,088.6	7,106.8	37.7	38.5	-89.92	-1,658.3	742.8	617.4	525.9	91.50	6.747		
9,100.0	7,107.4	9,188.6	7,106.4	39.4	40.2	-89.91	-1,758.3	743.0	617.9	522.2	95.76	6.453		
9,200.0	7,107.0	9,288.6	7,106.0	41.2	41.9	-89.91	-1,858.3	743.2	618.4	518.4	100.06	6.181		
9,300.0	7,106.6	9,388.6	7,105.6	43.0	43.6	-89.90	-1,958.3	743.4	619.0	514.6	104.39	5.929		
9,400.0	7,106.3	9,488.6	7,105.2	44.8	45.3	-89.90	-2,058.3	743.5	619.5	510.7	108.75	5.696		
9,500.0	7,105.9	9,588.6	7,104.8	46.5	47.1	-89.89	-2,158.3	743.7	620.0	506.9	113.14	5.480		
9,600.0	7,105.5	9,688.6	7,104.3	48.3	48.8	-89.89	-2,258.3	743.9	620.5	503.0	117.55	5.279		
9,700.0	7,105.2	9,788.6	7,103.9	50.2	50.6	-89.88	-2,358.3	744.1	621.0	499.0	121.99	5.091		
9,800.0	7,104.8	9,888.6	7,103.5	52.0	52.4	-89.88	-2,458.3	744.2	621.6	495.1	126.44	4.916		
9,900.0	7,104.4	9,988.6	7,103.1	53.8	54.2	-89.87	-2,558.3	744.4	622.1	491.2	130.92	4.752		
10,000.0	7,104.1	10,088.6	7,102.7	55.6	56.0	-89.87	-2,658.3	744.6	622.6	487.2	135.41	4.598		
10,100.0	7,103.7	10,188.6	7,102.3	57.5	57.8	-89.86	-2,758.3	744.8	623.1	483.2	139.91	4.454		
10,200.0	7,103.3	10,288.6	7,101.8	59.3	59.6	-89.86	-2,858.3	745.0	623.6	479.2	144.42	4.318		
10,300.0	7,103.0	10,388.6	7,101.4	61.2	61.4	-89.86	-2,958.3	745.1	624.2	475.2	148.95	4.190		
10,400.0	7,102.6	10,488.6	7,101.0	63.0	63.2	-89.85	-3,058.3	745.3	624.7	471.2	153.49	4.070		
10,500.0	7,102.3	10,588.6	7,100.6	64.9	65.1	-89.85	-3,158.3	745.5	625.2	467.2	158.04	3.956		
10,600.0	7,101.9	10,688.6	7,100.2	66.7	66.9	-89.84	-3,258.3	745.7	625.7	463.1	162.59	3.848		
10,700.0	7,101.5	10,788.6	7,099.7	68.6	68.7	-89.84	-3,358.3	745.8	626.2	459.1	167.16	3.746		
10,800.0	7,101.2	10,888.6	7,099.3	70.5	70.6	-89.83	-3,458.3	746.0	626.8	455.0	171.73	3.650		
10,900.0	7,100.8	10,988.6	7,098.9	72.3	72.4	-89.83	-3,558.3	746.2	627.3	451.0	176.31	3.558		
11,000.0	7,100.4	11,088.6	7,098.5	74.2	74.3	-89.82	-3,658.3	746.4	627.8	446.9	180.90	3.470		
11,100.0	7,100.1	11,188.6	7,098.1	76.1	76.1	-89.82	-3,758.3	746.6	628.3	442.8	185.49	3.387		
11,200.0	7,099.7	11,288.6	7,097.7	78.0	78.0	-89.81	-3,858.3	746.7	628.8	438.8	190.08	3.308		
11,300.0	7,099.3	11,388.6	7,097.2	79.8	79.9	-89.81	-3,958.3	746.9	629.4	434.7	194.69	3.233		
11,400.0	7,099.0	11,488.6	7,096.8	81.7	81.7	-89.80	-4,058.3	747.1	629.9	430.6	199.29	3.161		
11,500.0	7,098.6	11,588.6	7,096.4	83.6	83.6	-89.80	-4,158.3	747.3	630.4	426.5	203.91	3.092		
11,600.0	7,098.2	11,688.6	7,096.0	85.5	85.5	-89.80	-4,258.3	747.4	630.9	422.4	208.52	3.026		
11,700.0	7,097.9	11,788.6	7,095.6	87.4	87.3	-89.79	-4,358.3	747.6	631.4	418.3	213.14	2.963		
11,800.0	7,097.5	11,888.6	7,095.2	89.3	89.2	-89.79	-4,458.3	747.8	632.0	414.2	217.76	2.902		
11,900.0	7,097.1	11,988.6	7,094.7	91.1	91.1	-89.78	-4,558.3	748.0	632.5	410.1	222.39	2.844		
12,000.0	7,096.8	12,088.6	7,094.3	93.0	93.0	-89.78	-4,658.3	748.1	633.0	406.0	227.02	2.788		
12,100.0	7,096.4	12,188.6	7,093.9	94.9	94.8	-89.77	-4,758.3	748.3	633.5	401.9	231.65	2.735		
12,200.0	7,096.0	12,288.6	7,093.5	96.8	96.7	-89.77	-4,858.3	748.5	634.0	397.8	236.29	2.683		
12,300.0	7,095.7	12,388.6	7,093.1	98.7	98.6	-89.76	-4,958.3	748.7	634.6	393.6	240.93	2.634		
12,400.0	7,095.3	12,488.6	7,092.7	100.6	100.5	-89.76	-5,058.3	748.9	635.1	389.5	245.57	2.586		
12,500.0	7,095.0	12,588.6	7,092.2	102.5	102.4	-89.75	-5,158.3	749.0	635.6	385.4	250.21	2.540		
12,600.0	7,094.6	12,688.6	7,091.8	104.4	104.3	-89.75	-5,258.3	749.2	636.1	381.3	254.86	2.496		
12,700.0	7,094.2	12,788.6	7,091.4	106.3	106.2	-89.75	-5,358.3	749.4	636.6	377.1	259.51	2.453		
12,800.0	7,093.9	12,888.6	7,091.0	108.2	108.0	-89.74	-5,458.2	749.6	637.2	373.0	264.16	2.412		
12,900.0	7,093.5	12,988.6	7,090.6	110.1	109.9	-89.74	-5,558.2	749.7	637.7	368.9	268.81	2.372		
13,000.0	7,093.1	13,088.6	7,090.2	112.0	111.8	-89.73	-5,658.2	749.9	638.2	364.8	273.46	2.334		
13,100.0	7,092.8	13,188.6	7,089.7	113.9	113.7	-89.73	-5,758.2	750.1	638.7	360.6	278.12	2.297		
13,200.0	7,092.4	13,288.6	7,089.3	115.8	115.6	-89.72	-5,858.2	750.3	639.3	356.5	282.77	2.261		
13,300.0	7,092.0	13,388.6	7,088.9	117.7	117.5	-89.72	-5,958.2	750.5	639.8	352.3	287.43	2.226		
13,400.0	7,091.7	13,488.6	7,088.5	119.6	119.4	-89.71	-6,058.2	750.6	640.3	348.2	292.09	2.192		
13,500.0	7,091.3	13,588.6	7,088.1	121.5	121.3	-89.71	-6,158.2	750.8	640.8	344.1	296.75	2.159		
13,600.0	7,090.9	13,688.6	7,087.7	123.4	123.2	-89.71	-6,258.2	751.0	641.3	339.9	301.41	2.128		
13,700.0	7,090.6	13,788.6	7,087.3	125.3	125.1	-89.70	-6,358.2	751.2	641.9	335.8	306.08	2.097		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
13,800.0	7,090.2	13,888.5	7,086.8	127.2	127.0	-89.70	-6,458.2	751.4	642.4	331.6	310.74	2.067		
13,900.0	7,089.8	13,988.5	7,086.4	129.1	128.9	-89.69	-6,558.2	751.5	642.9	327.5	315.41	2.038		
14,000.0	7,089.5	14,088.5	7,086.0	131.0	130.8	-89.69	-6,658.2	751.7	643.4	323.3	320.08	2.010		
14,100.0	7,089.1	14,188.5	7,085.6	132.9	132.7	-89.68	-6,758.2	751.9	643.9	319.2	324.75	1.983		
14,200.0	7,088.8	14,288.5	7,085.2	134.8	134.6	-89.68	-6,858.2	752.1	644.5	315.1	329.42	1.956		
14,300.0	7,088.4	14,388.5	7,084.8	136.7	136.5	-89.68	-6,958.2	752.2	645.0	310.9	334.09	1.931		
14,400.0	7,088.0	14,488.5	7,084.3	138.6	138.4	-89.67	-7,058.2	752.4	645.5	306.8	338.76	1.906		
14,500.0	7,087.7	14,588.5	7,083.9	140.5	140.3	-89.67	-7,158.2	752.6	646.0	302.6	343.43	1.881		
14,600.0	7,087.3	14,688.5	7,083.5	142.4	142.2	-89.66	-7,258.2	752.8	646.6	298.5	348.10	1.857		
14,700.0	7,086.9	14,788.5	7,083.1	144.3	144.1	-89.66	-7,358.2	753.0	647.1	294.3	352.78	1.834		
14,800.0	7,086.6	14,888.5	7,082.7	146.2	146.0	-89.66	-7,458.2	753.1	647.6	290.1	357.45	1.812		
14,900.0	7,086.2	14,988.5	7,082.3	148.2	147.9	-89.65	-7,558.2	753.3	648.1	286.0	362.13	1.790		
15,000.0	7,085.8	15,088.5	7,081.8	150.1	149.8	-89.65	-7,658.2	753.5	648.6	281.8	366.80	1.768		
15,100.0	7,085.5	15,188.5	7,081.4	152.0	151.7	-89.64	-7,758.2	753.7	649.2	277.7	371.48	1.747		
15,200.0	7,085.1	15,288.5	7,081.0	153.9	153.6	-89.64	-7,858.2	753.8	649.7	273.5	376.16	1.727		
15,300.0	7,084.7	15,388.5	7,080.6	155.8	155.5	-89.63	-7,958.2	754.0	650.2	269.4	380.84	1.707		
15,400.0	7,084.4	15,488.5	7,080.2	157.7	157.4	-89.63	-8,058.2	754.2	650.7	265.2	385.52	1.688		
15,500.0	7,084.0	15,588.5	7,079.8	159.6	159.3	-89.63	-8,158.2	754.4	651.2	261.1	390.19	1.669		
15,600.0	7,083.6	15,688.5	7,079.4	161.5	161.2	-89.62	-8,258.2	754.6	651.8	256.9	394.88	1.651		
15,700.0	7,083.3	15,788.5	7,078.9	163.4	163.2	-89.62	-8,358.2	754.7	652.3	252.7	399.56	1.633		
15,800.0	7,082.9	15,888.5	7,078.5	165.3	165.1	-89.61	-8,458.2	754.9	652.8	248.6	404.24	1.615		
15,900.0	7,082.5	15,988.5	7,078.1	167.2	167.0	-89.61	-8,558.2	755.1	653.3	244.4	408.92	1.598		
16,000.0	7,082.2	16,088.5	7,077.7	169.2	168.9	-89.61	-8,658.2	755.3	653.9	240.3	413.60	1.581		
16,100.0	7,081.8	16,188.5	7,077.3	171.1	170.8	-89.60	-8,758.2	755.5	654.4	236.1	418.28	1.564		
16,200.0	7,081.5	16,288.5	7,076.9	173.0	172.7	-89.60	-8,858.2	755.6	654.9	231.9	422.97	1.548		
16,300.0	7,081.1	16,388.5	7,076.5	174.9	174.6	-89.59	-8,958.2	755.8	655.4	227.8	427.65	1.533		
16,400.0	7,080.7	16,488.5	7,076.0	176.8	176.5	-89.59	-9,058.2	756.0	655.9	223.6	432.34	1.517		
16,500.0	7,080.4	16,588.5	7,075.6	178.7	178.4	-89.59	-9,158.2	756.2	656.5	219.4	437.02	1.502		
16,600.0	7,080.0	16,688.5	7,075.2	180.6	180.3	-89.58	-9,258.2	756.3	657.0	215.3	441.71	1.487 Level 3		
16,700.0	7,079.6	16,788.5	7,074.8	182.5	182.2	-89.58	-9,358.1	756.5	657.5	211.1	446.39	1.473 Level 3		
16,800.0	7,079.3	16,888.5	7,074.4	184.4	184.2	-89.57	-9,458.1	756.7	658.0	207.0	451.08	1.459 Level 3		
16,900.0	7,078.9	16,988.5	7,074.0	186.4	186.1	-89.57	-9,558.1	756.9	658.6	202.8	455.76	1.445 Level 3		
17,000.0	7,078.5	17,088.5	7,073.6	188.3	188.0	-89.57	-9,658.1	757.1	659.1	198.6	460.45	1.431 Level 3		
17,100.0	7,078.2	17,188.5	7,073.1	190.2	189.9	-89.56	-9,758.1	757.2	659.6	194.5	465.14	1.418 Level 3		
17,146.8	7,078.0	17,222.4	7,073.0	191.1	190.5	-89.56	-9,792.0	757.3	660.0	192.9	467.03	1.413 Level 3, SF		

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	87.43	2.0	44.7	44.7					
100.0	100.0	100.0	100.0	0.1	0.1	87.43	2.0	44.7	44.7	44.5	0.28	162.450		
200.0	200.0	200.0	200.0	0.3	0.3	87.43	2.0	44.7	44.7	43.9	0.83	54.150 CC, ES		
300.0	300.0	298.9	298.9	0.6	0.6	86.74	2.6	45.8	45.9	44.5	1.37	33.556		
400.0	400.0	397.7	397.6	0.8	0.8	84.87	4.4	49.2	49.5	47.5	1.91	25.829		
500.0	500.0	496.3	496.0	1.0	1.0	82.30	7.4	54.8	55.5	53.0	2.47	22.481		
600.0	600.0	594.4	593.7	1.2	1.3	79.52	11.6	62.6	64.0	61.0	3.02	21.168		
700.0	700.0	692.0	690.7	1.5	1.5	76.89	16.9	72.6	75.1	71.5	3.58	20.963 SF		
800.0	800.0	789.0	786.7	1.7	1.8	74.59	23.3	84.7	88.8	84.7	4.15	21.416		
900.0	900.0	885.2	881.6	1.9	2.2	72.64	30.9	98.8	105.1	100.4	4.72	22.280		
1,000.0	1,000.0	980.6	975.2	2.1	2.5	71.05	39.4	114.8	123.9	118.6	5.29	23.410		
1,100.0	1,100.0	1,077.9	1,070.3	2.4	3.0	55.19	48.9	132.6	143.7	137.9	5.86	24.536		
1,200.0	1,199.9	1,176.2	1,166.5	2.6	3.4	55.06	58.6	150.7	162.2	155.7	6.43	25.206		
1,300.0	1,299.7	1,274.7	1,262.8	2.8	3.8	55.63	68.3	168.8	179.1	172.1	7.02	25.520		
1,400.0	1,399.3	1,373.4	1,359.3	3.0	4.2	56.72	77.9	187.0	194.7	187.1	7.62	25.545		
1,450.7	1,449.6	1,423.4	1,408.3	3.2	4.5	57.45	82.9	196.2	202.1	194.2	7.94	25.464		
1,500.0	1,498.6	1,472.2	1,456.0	3.3	4.7	58.27	87.6	205.1	209.2	200.9	8.25	25.355		
1,600.0	1,597.9	1,570.9	1,552.6	3.5	5.1	59.77	97.3	223.3	223.6	214.7	8.90	25.135		
1,700.0	1,697.2	1,669.7	1,649.2	3.8	5.5	61.08	107.0	241.4	238.2	228.6	9.56	24.917		
1,800.0	1,796.5	1,768.5	1,745.8	4.1	6.0	62.25	116.7	259.6	252.9	242.6	10.23	24.707		
1,900.0	1,895.8	1,867.3	1,842.4	4.4	6.4	63.29	126.4	277.8	267.7	256.7	10.92	24.506		
2,000.0	1,995.1	1,966.1	1,939.1	4.6	6.9	64.22	136.1	295.9	282.5	270.9	11.62	24.314		
2,100.0	2,094.4	2,064.9	2,035.7	4.9	7.3	65.05	145.8	314.1	297.4	285.1	12.32	24.133		
2,200.0	2,193.7	2,163.7	2,132.3	5.2	7.8	65.81	155.5	332.2	312.4	299.4	13.04	23.962		
2,300.0	2,293.0	2,262.5	2,228.9	5.5	8.2	66.50	165.2	350.4	327.4	313.7	13.76	23.801		
2,400.0	2,392.4	2,361.3	2,325.6	5.8	8.7	67.13	174.9	368.6	342.5	328.0	14.48	23.651		
2,500.0	2,491.7	2,460.1	2,422.2	6.1	9.1	67.70	184.6	386.7	357.6	342.4	15.21	23.509		
2,600.0	2,591.0	2,558.9	2,518.8	6.4	9.6	68.23	194.3	404.9	372.7	356.8	15.94	23.377		
2,700.0	2,690.3	2,657.7	2,615.4	6.7	10.0	68.71	204.0	423.1	387.9	371.2	16.68	23.252		
2,800.0	2,789.6	2,756.5	2,712.1	7.0	10.5	69.16	213.6	441.2	403.1	385.6	17.42	23.136		
2,900.0	2,888.9	2,855.2	2,808.7	7.3	10.9	69.58	223.3	459.4	418.3	400.1	18.16	23.026		
3,000.0	2,988.2	2,954.0	2,905.3	7.6	11.4	69.97	233.0	477.5	433.5	414.6	18.91	22.923		
3,100.0	3,087.5	3,052.8	3,001.9	7.9	11.8	70.33	242.7	495.7	448.7	429.1	19.66	22.826		
3,200.0	3,186.8	3,151.6	3,098.6	8.2	12.2	70.67	252.4	513.9	464.0	443.6	20.41	22.734		
3,300.0	3,286.1	3,250.4	3,195.2	8.5	12.7	70.98	262.1	532.0	479.3	458.1	21.16	22.648		
3,400.0	3,385.4	3,349.2	3,291.8	8.8	13.1	71.28	271.8	550.2	494.6	472.7	21.92	22.566		
3,500.0	3,484.7	3,448.0	3,388.4	9.1	13.6	71.56	281.5	568.3	509.9	487.2	22.67	22.489		
3,600.0	3,584.0	3,546.8	3,485.1	9.4	14.0	71.82	291.2	586.5	525.2	501.8	23.43	22.416		
3,700.0	3,683.3	3,645.6	3,581.7	9.7	14.5	72.07	300.9	604.7	540.5	516.3	24.19	22.347		
3,800.0	3,782.6	3,744.4	3,678.3	10.0	14.9	72.31	310.6	622.8	555.8	530.9	24.95	22.281		
3,900.0	3,881.9	3,843.2	3,774.9	10.3	15.4	72.53	320.3	641.0	571.2	545.5	25.71	22.219		
4,000.0	3,981.2	3,942.0	3,871.6	10.6	15.8	72.74	330.0	659.2	586.5	560.1	26.47	22.160		
4,100.0	4,080.5	4,040.8	3,968.2	10.9	16.3	72.94	339.7	677.3	601.9	574.7	27.23	22.103		
4,200.0	4,179.8	4,139.6	4,064.8	11.2	16.7	73.13	349.3	695.5	617.3	589.3	27.99	22.050		
4,300.0	4,279.1	4,238.3	4,161.4	11.5	17.2	73.31	359.0	713.6	632.6	603.9	28.76	21.998		
4,400.0	4,378.4	4,337.1	4,258.0	11.8	17.6	73.48	368.7	731.8	648.0	618.5	29.52	21.949		
4,500.0	4,477.8	4,435.9	4,354.7	12.1	18.1	73.64	378.4	750.0	663.4	633.1	30.29	21.903		
4,600.0	4,577.1	4,534.7	4,451.3	12.4	18.5	73.80	388.1	768.1	678.8	647.7	31.05	21.858		
4,700.0	4,676.4	4,633.5	4,547.9	12.7	19.0	73.95	397.8	786.3	694.2	662.4	31.82	21.815		
4,800.0	4,775.7	4,732.3	4,644.5	13.1	19.4	74.09	407.5	804.4	709.6	677.0	32.59	21.774		
4,900.0	4,875.0	4,831.1	4,741.2	13.4	19.9	74.23	417.2	822.6	725.0	691.6	33.36	21.735		
5,000.0	4,974.3	4,929.9	4,837.8	13.7	20.3	74.36	426.9	840.8	740.4	706.2	34.12	21.697		

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

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Ridgway 3N (Nio B)
Project:	SEC.1-T3N-R66W	TVD Reference:	WELL @ 4893.0ft (Original Well Elev)
Reference Site:	Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W	MD Reference:	WELL @ 4893.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Ridgway 3N (Nio B)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #1 (8-07-19)	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Ridgway 3N66W1 1-6 Pad Sec.1-T3N-R66W - Ridgway 6N (Nio C) - Wellbore #1 - Plan #1 (8-07-19)													
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	
5,100.0	5,073.6	5,028.7	4,934.4	14.0	20.8	74.48	436.6	858.9	755.8	720.9	34.89	21.661	
5,200.0	5,172.9	5,127.5	5,031.0	14.3	21.2	74.60	446.3	877.1	771.2	735.5	35.66	21.626	
5,300.0	5,272.2	5,226.3	5,127.7	14.6	21.7	74.72	456.0	895.3	786.6	750.2	36.43	21.593	

Reference Depths are relative to WELL @ 4893.0ft (Original Well Elev)	Coordinates are relative to: Ridgway 3N (Nio B)
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: 0.50°



Reference Depths are relative to WELL @ 4893.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: Ridgway 3N (Nio B)
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.50°

