

# PDC Energy Inc. DJ Basin

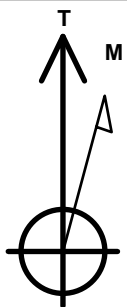
Well Name: **Barr 3N (Nio C)**  
 Surface Location: Barr 5N65W11TY Pad Sec.11-T5N-R65W  
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone  
 Ground Elevation: 4611.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1392431.42	3244256.12	40.407310	-104.622882	

Original Well Elev WELL @ 4634.0ft (Original Well Elev)

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 244'FSL, 499'FEL, SEC.11	1.0	0.0	0.0	Point
BHL 500'FNL, 400'FEL, SEC.11	6834.0	4601.7	107.2	Point
LPL 50'FSL, 400'FEL, SEC.11	6864.0	-194.9	98.3	Point



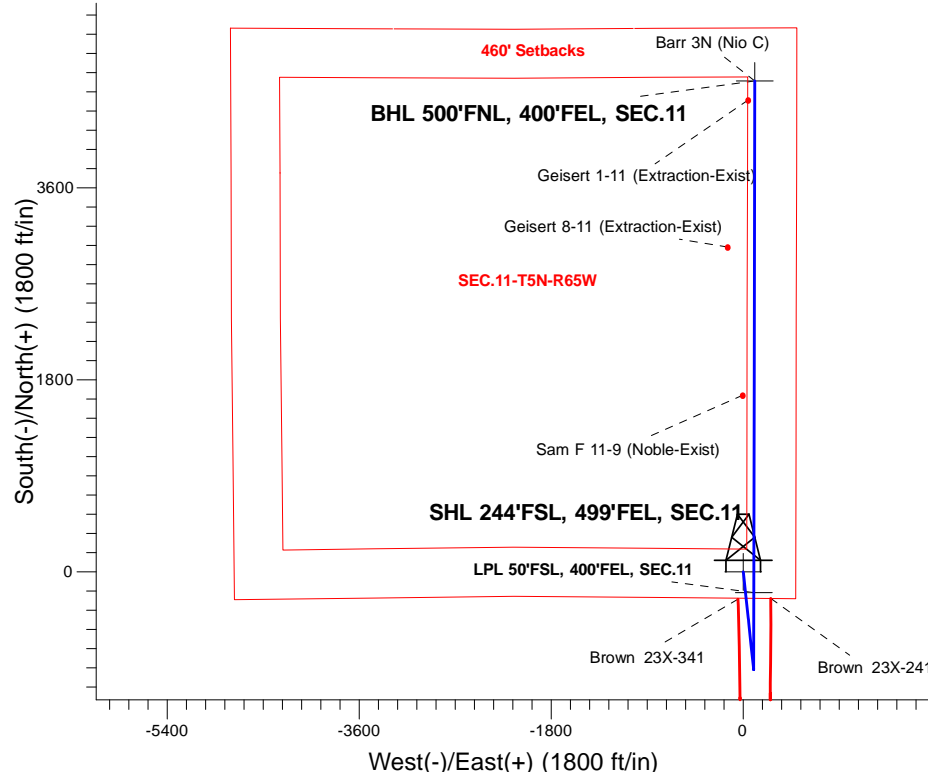
Azimuths to True North  
 Magnetic North: 8.03°

Magnetic Field  
 Strength: 52558.0snT  
 Dip Angle: 66.88°  
 Date: 2/1/2017  
 Model: IGRF2010

Barr 5N65W11TY Pad Sec.11-T5N-R65W  
 Barr 3N (Nio C)  
 Plan #4 (10-11-17)  
 13:48, October 12 2017

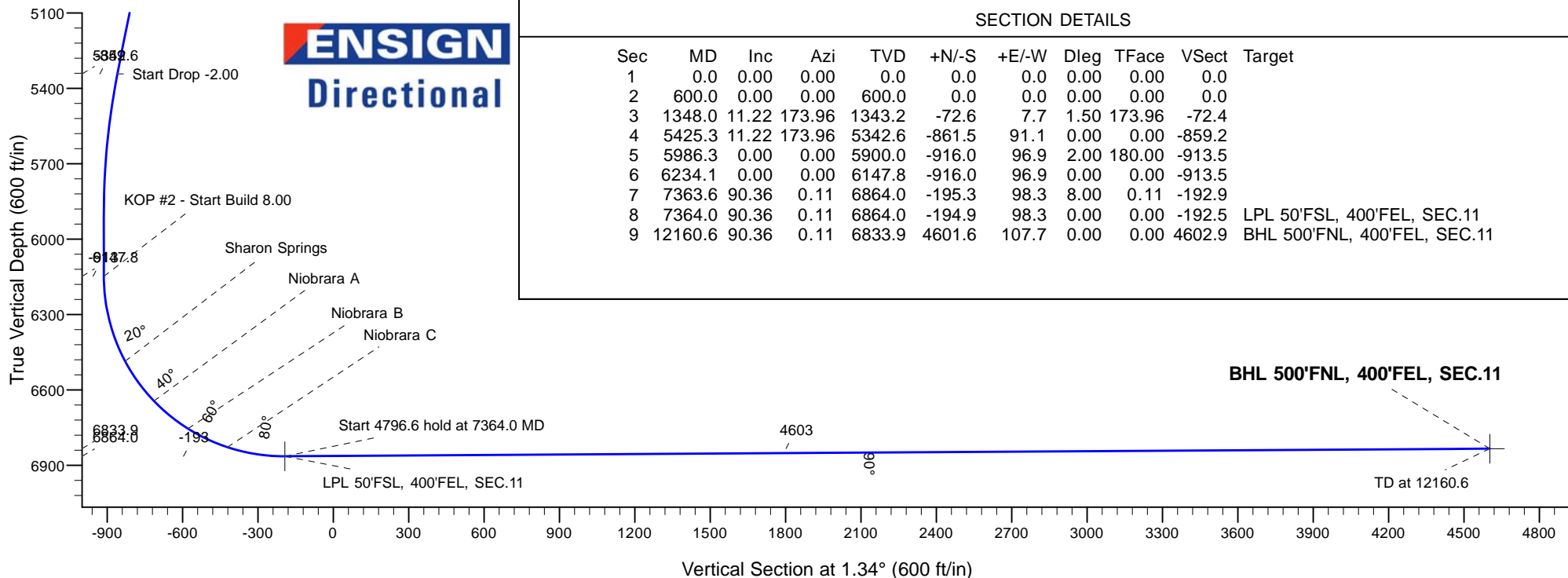
## ANNOTATIONS

TVD	MD	Annotation
600.0	600.0	KOP - Start Build 1.50
5342.6	5425.3	Start Drop -2.00
6147.8	6234.1	KOP #2 - Start Build 8.00
6864.0	7364.0	Start 4796.6 hold at 7364.0 MD
6833.9	12160.6	TD at 12160.6



## 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	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	1348.0	11.22	173.96	1343.2	-72.6	7.7	1.50	173.96	-72.4	
4	5425.3	11.22	173.96	5342.6	-861.5	91.1	0.00	0.00	-859.2	
5	5986.3	0.00	0.00	5900.0	-916.0	96.9	2.00	180.00	-913.5	
6	6234.1	0.00	0.00	6147.8	-916.0	96.9	0.00	0.00	-913.5	
7	7363.6	90.36	0.11	6864.0	-195.3	98.3	8.00	0.11	-192.9	
8	7364.0	90.36	0.11	6864.0	-194.9	98.3	0.00	0.00	-192.5	LPL 50'FSL, 400'FEL, SEC.11
9	12160.6	90.36	0.11	6833.9	4601.6	107.7	0.00	0.00	4602.9	BHL 500'FNL, 400'FEL, SEC.11





# Directional

## **PDC Energy Inc. DJ Basin**

**SEC.11-T5N-R65W**

**Barr 5N65W11TY Pad Sec.11-T5N-R65W**

**Barr 3N (Nio C)**

**Wellbore #1**

**Plan #4 (10-11-17)**

## **Anticollision Summary Report**

**12 October, 2017**



<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Barr 3N (Nio C)
<b>Project:</b>	SEC.11-T5N-R65W	<b>TVD Reference:</b>	WELL @ 4634.0ft (Original Well Elev)
<b>Reference Site:</b>	Barr 5N65W11TY Pad Sec.11-T5N-R65W	<b>MD Reference:</b>	WELL @ 4634.0ft (Original Well Elev)
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Barr 3N (Nio C)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 ft	<b>Output errors are at</b>	2.45 sigma
<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #4 (10-11-17)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #4 (10-11-17)		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	MD Interval 100.0ft	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 500.0 ft	<b>Error Surface:</b>	Elliptical Conic
<b>Warning Levels Evaluated at:</b>	2.45 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	10/12/2017		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	12,160.6	Plan #4 (10-11-17) (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
<b>Offset Well - Wellbore - Design</b>						
Barr 5N65W11TY Pad Sec.11-T5N-R65W						
Barr 11I-221 - Wellbore #1 - Plan #2 (6-19-17)	797.6	797.6	44.8	40.8	11.122	CC
Barr 11I-221 - Wellbore #1 - Plan #2 (6-19-17)	900.0	899.7	45.3	40.8	9.936	ES
Barr 11I-221 - Wellbore #1 - Plan #2 (6-19-17)	1,100.0	1,098.6	52.6	47.0	9.286	SF
Barr 11I-301 - Wellbore #1 - Plan #2 (6-19-17)	764.1	764.1	29.9	26.0	7.731	CC
Barr 11I-301 - Wellbore #1 - Plan #2 (6-19-17)	800.0	799.9	29.9	25.9	7.402	ES
Barr 11I-301 - Wellbore #1 - Plan #2 (6-19-17)	1,000.0	999.3	34.6	29.5	6.775	SF
Barr 11L-201 - Wellbore #1 - Plan #2 (6-19-17)	856.8	856.6	74.7	70.4	17.224	CC
Barr 11L-201 - Wellbore #1 - Plan #2 (6-19-17)	900.0	899.7	74.8	70.2	16.393	ES
Barr 11L-201 - Wellbore #1 - Plan #2 (6-19-17)	1,200.0	1,195.6	86.2	80.0	13.895	SF
Barr 11L-221 - Wellbore #1 - Plan #2 (6-19-17)	400.0	400.0	120.0	118.1	62.279	CC, ES
Barr 11L-221 - Wellbore #1 - Plan #2 (6-19-17)	1,500.0	1,444.9	258.3	249.7	29.868	SF
Barr 11L-301 - Wellbore #1 - Plan #2 (6-19-17)	600.0	600.0	105.3	102.2	34.759	CC, ES
Barr 11L-301 - Wellbore #1 - Plan #2 (6-19-17)	1,500.0	1,469.7	189.6	181.0	22.173	SF
Barr 11L-321 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	135.1	134.2	163.524	CC, ES
Barr 11L-321 - Wellbore #1 - Plan #2 (6-19-17)	2,000.0	1,863.2	497.6	484.1	36.778	SF
Barr 11L-341 - Wellbore #1 - Plan #3 (6-19-17)	826.4	826.3	59.8	55.6	14.305	CC
Barr 11L-341 - Wellbore #1 - Plan #3 (6-19-17)	900.0	899.7	60.0	55.4	13.154	ES
Barr 11L-341 - Wellbore #1 - Plan #3 (6-19-17)	1,100.0	1,098.6	65.2	59.5	11.486	SF
Barr 11L-401 - Wellbore #1 - Plan #2 (6-19-17)	813.1	812.8	89.8	85.7	21.864	CC, ES
Barr 11L-401 - Wellbore #1 - Plan #2 (6-19-17)	1,300.0	1,288.9	119.0	112.1	17.412	SF
Barr 1N (Nio C) - Wellbore #1 - Plan #3 (10-11-17)	200.0	200.0	29.8	29.0	36.078	CC, ES
Barr 1N (Nio C) - Wellbore #1 - Plan #3 (10-11-17)	5,200.0	5,169.6	477.0	430.3	10.208	SF
Barr 2N (Nio B) - Wellbore #1 - Plan #3 (10-11-17)	400.0	400.0	14.8	12.8	7.660	CC
Barr 2N (Nio B) - Wellbore #1 - Plan #3 (10-11-17)	500.0	499.9	15.0	12.5	6.123	ES
Barr 2N (Nio B) - Wellbore #1 - Plan #3 (10-11-17)	12,160.6	12,073.5	262.7	38.6	1.172	Level 2, SF
Barr 4N (Nio B) - Wellbore #1 - Plan #3 (10-11-17)	710.2	710.2	15.0	11.4	4.159	CC
Barr 4N (Nio B) - Wellbore #1 - Plan #3 (10-11-17)	800.0	799.9	15.4	11.3	3.807	ES
Barr 4N (Nio B) - Wellbore #1 - Plan #3 (10-11-17)	12,160.6	11,811.4	262.0	39.4	1.177	Level 2, SF
<b>Brown 5N65W23 Pad Sec.23-T5N-R65W</b>						
Brown 23X-241 - Wellbore #1 - Wellbore #1	6,961.8	15,108.8	160.4	-66.5	0.707	Level 1, CC, ES, SF
Brown 23X-341 - Wellbore #1 - Wellbore #1	7,071.5	15,339.7	141.4	-86.5	0.620	Level 1, CC
Brown 23X-341 - Wellbore #1 - Wellbore #1	7,100.0	15,366.2	141.9	-87.2	0.619	Level 1, ES, SF

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

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<b>Reference Wellbore</b>	Wellbore #1	<b>Database:</b>	US_EDM
<b>Reference Design:</b>	Plan #4 (10-11-17)	<b>Offset TVD Reference:</b>	Offset Datum

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells Sec.11-T5N-R65W						
Geisert 1-11 (Extraction-Exist) - Wellbore #1 - Wellbore #	11,983.1	6,809.0	61.7	-217.9	0.221	Level 1, CC, ES, SF
Geisert 8-11 (Extraction-Exist) - Wellbore #1 - Wellbore #	10,604.5	6,820.6	251.1	2.7	1.011	Level 2, CC, ES, SF
Sam F 11-9 (Noble-Exist) - Wellbore #1 - Wellbore #1	9,215.3	6,829.4	107.8	-110.4	0.494	Level 1, CC, ES, SF