

# PDC Energy Inc. DJ Basin

Well Name: **Ottenhoff 29M-263**

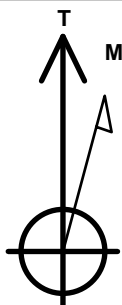
Surface Location: Ottenhoff 5N64W29CR Pad Sec.29-T5N-R64W  
North American Datum 1983 , US State Plane 1983 Colorado Northern Zone  
Ground Elevation: 4664.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1381166.73	3259644.43	40.375959	-104.568052	

RKB - 23' WELL @ 4687.0ft (RKB - 23')

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 557'FNL & 1050'FEL, Sec.29	1.0	0.0	0.0	Point
BHL 2340'FNL & 2157'FEL, Sec.32	6706.0	-7072.3	-1061.3	Point
LPL 500'FNL & 2108'FEL, Sec.29	6736.0	37.6	-1056.3	Point



Azimuths to True North  
Magnetic North: 8.17°

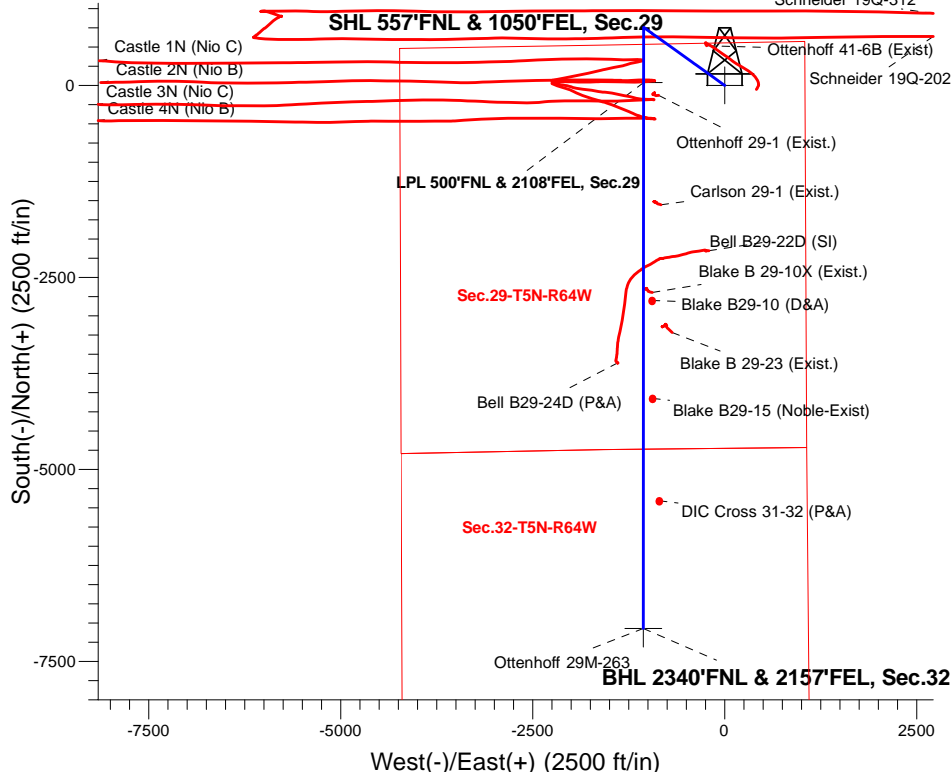
Magnetic Field  
Strength: 52250.6snT  
Dip Angle: 66.90°  
Date: 5/10/2018  
Model: HDGM

Ottenhoff 5N64W29CR Pad Sec.29-T5N-R64W  
Ottenhoff 29M-263  
Plan #5 (5-10-18)  
12:25, May 10 2018

## ANNOTATIONS

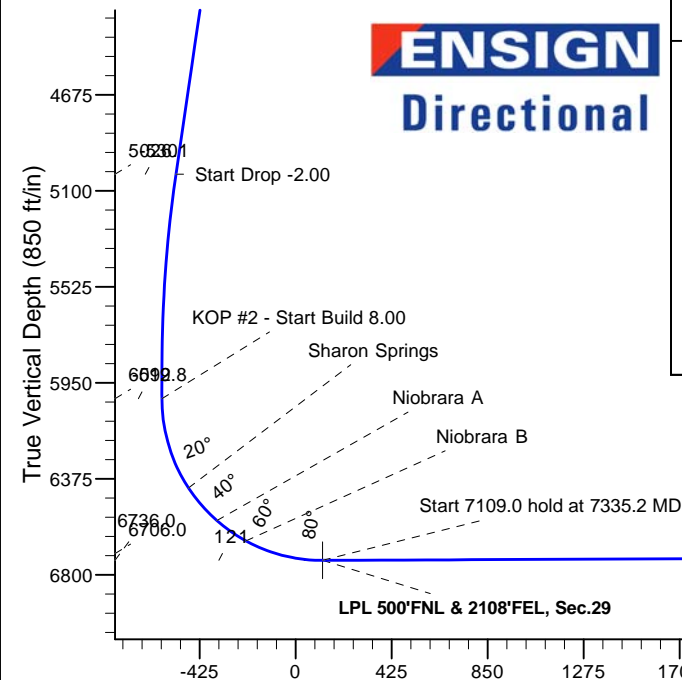
TVD	MD	Annotation
800.0	800.0	KOP - Start Build 1.50
5026.1	5198.2	Start Drop -2.00
6019.8	6206.0	KOP #2 - Start Build 8.00
6736.0	7335.2	Start 7109.0 hold at 7335.2 MD
6706.0	14444.2	TD at 14444.2

South(-)/North(+) (2500 ft/in)



## 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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1984.1	17.76	305.64	1965.2	106.1	-148.0	1.50	305.64	-83.0	
4	5198.2	17.76	305.64	5026.1	677.4	-944.7	0.00	0.00	-529.7	
5	6086.2	0.00	0.00	5900.0	757.0	-1055.7	2.00	180.00	-592.0	
6	6206.0	0.00	0.00	6019.8	757.0	-1055.7	0.00	0.00	-592.0	
7	7334.0	90.24	180.04	6736.0	37.8	-1056.3	8.00	180.04	119.4	
8	7334.2	90.24	180.04	6736.0	37.6	-1056.3	0.00	0.00	119.6	LPL 500'FNL & 2108'FEL, Sec.29
9	7335.2	90.24	180.04	6736.0	36.6	-1056.3	0.50	-68.36	120.5	
10	14444.2	90.24	180.04	6706.0	-7072.3	-1061.3	0.00	0.00	7151.5	BHL 2340'FNL & 2157'FEL, Sec.32



Vertical Section at 188.53° (850 ft/in)

BHL 2340'FNL & 2157'FEL, Sec.32

TD at 14444.2



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

**SEC.29-T5N-R64W**

**Ottenhoff 5N64W29CR Pad Sec.29-T5N-R64W**

**Ottenhoff 29M-263**

**Wellbore #1**

**Plan #5 (5-10-18)**

## **Anticollision Report**

**10 May, 2018**



<b>Company:</b>	PDC Energy Inc. DJ Basin	<b>Local Co-ordinate Reference:</b>	Well Ottenhoff 29M-263
<b>Project:</b>	SEC.29-T5N-R64W	<b>TVD Reference:</b>	WELL @ 4687.0ft (RKB - 23')
<b>Reference Site:</b>	Ottenhoff 5N64W29CR Pad Sec.29-T5N-R64W	<b>MD Reference:</b>	WELL @ 4687.0ft (RKB - 23')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Ottenhoff 29M-263	<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 #5 (5-10-18)	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #5 (5-10-18)		
<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>	5/10/2018		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	14,444.2	Plan #5 (5-10-18) (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>						
Bell (Exist.) Pad SEC.29-T5N-R64W						
Bell B29-22D (SI) - Bell B29-22D - Bell B29-22D						Out of range
Bell B29-24D (P&A) - Bell B29-24D - Bell B29-24D	10,976.2	7,043.6	345.7	220.5	2.760	CC, ES
Bell B29-24D (P&A) - Bell B29-24D - Bell B29-24D	11,000.0	7,043.8	346.6	220.8	2.755	SF
Castle 5N64W29 1-4 Pad Sec.29-T5N-R64W						
Castle 1N (Nio C) - Wellbore #1 - Wellbore #1	6,995.8	6,777.2	119.9	80.4	3.036	CC, ES, SF
Castle 2N (Nio B) - Wellbore #1 - Wellbore #1	7,297.2	6,865.0	202.5	174.3	7.186	CC, ES, SF
Castle 3N (Nio C) - Wellbore #1 - Wellbore #1	7,563.5	6,906.7	131.9	101.1	4.283	CC, ES, SF
Castle 4N (Nio B) - Wellbore #1 - Wellbore #1	7,798.3	6,889.9	174.2	140.8	5.212	CC
Castle 4N (Nio B) - Wellbore #1 - Wellbore #1	7,800.0	6,890.0	174.2	140.8	5.210	ES, SF
Existing Wells Sec.29-T5N-R64W						
Blake B29-10 (D&A) - Wellbore #1 - Wellbore #1	10,170.7	6,726.0	112.8	-125.4	0.474	Level 1, CC, ES, SF
Blake B29-15 (Noble-Exist) - Wellbore #1 - Wellbore #1	11,444.4	6,735.7	117.8	-149.5	0.441	Level 1, CC, ES, SF
Carlson 29-1 (Exist.) - Wellbore #1 - Wellbore #1	8,920.7	6,713.9	210.6	148.6	3.399	CC, ES, SF
DIC Cross 31-32 (P&A) - Wellbore #1 - Wellbore #1	12,781.0	6,738.0	207.6	-90.6	0.696	Level 1, CC, ES, SF
Ottenhoff 29-1 (Exist.) - Wellbore #1 - Wellbore #1	7,501.8	6,723.3	184.3	144.9	4.677	CC, ES, SF
Ottenhoff 41-6B (Exist) - Wellbore #1 - Wellbore #1	633.5	620.5	414.6	411.9	155.410	CC
Ottenhoff 41-6B (Exist) - Wellbore #1 - Wellbore #1	700.0	685.0	414.7	411.8	140.503	ES
Ottenhoff 41-6B (Exist) - Wellbore #1 - Wellbore #1	1,500.0	1,464.4	487.0	480.0	69.139	SF
Existing Wells Sec.29-T5N-R64W (GRID)						
Blake B 29-10X (Exist.) - Wellbore #1 - Wellbore #1	10,061.6	6,721.3	87.6	2.1	1.024	Level 2, CC, ES, SF
Blake B 29-23 (Exist.) - Wellbore #1 - Wellbore #1	10,544.3	6,717.8	326.2	229.2	3.363	CC, ES, SF

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<b>Reference Site:</b>	Ottenhoff 5N64W29CR Pad Sec.29-T5N-R64W	<b>MD Reference:</b>	WELL @ 4687.0ft (RKB - 23')
<b>Site Error:</b>	0.0 ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Ottenhoff 29M-263	<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 #5 (5-10-18)	<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
Ottenhoff 5N64W29CR Pad Sec.29-T5N-R64W						
Ottenhoff 29M-353 - Wellbore #1 - Plan #5 (5-10-18)	400.0	399.0	15.0	13.1	7.817	CC
Ottenhoff 29M-353 - Wellbore #1 - Plan #5 (5-10-18)	14,444.2	14,589.8	241.8	-78.2	0.756	Level 1, ES, SF
Ottenhoff 29R-203 - Wellbore #1 - Plan #3 (6-27-17)	800.0	799.0	59.9	55.8	14.515	CC, ES
Ottenhoff 29R-203 - Wellbore #1 - Plan #3 (6-27-17)	1,100.0	1,098.7	69.9	64.1	12.145	SF
Ottenhoff 29R-253 - Wellbore #1 - Plan #5 (5-10-18)	800.0	799.0	30.1	26.0	7.291	CC, ES
Ottenhoff 29R-253 - Wellbore #1 - Plan #5 (5-10-18)	14,444.2	14,013.2	493.0	151.8	1.445	Level 3, SF
Ottenhoff 29R-303 - Wellbore #1 - Plan #3 (6-27-17)	800.0	799.0	45.1	41.0	10.936	CC, ES
Ottenhoff 29R-303 - Wellbore #1 - Plan #3 (6-27-17)	1,000.0	998.9	49.5	44.3	9.499	SF
Ottenhoff 29R-323 - Wellbore #1 - Plan #3 (6-27-17)	800.0	799.0	90.0	85.9	21.806	CC, ES
Ottenhoff 29R-323 - Wellbore #1 - Plan #3 (6-27-17)	1,100.0	1,096.5	102.9	97.2	17.897	SF
Ottenhoff 29R-353 - Wellbore #1 - Plan #4 (3-28-18)	800.0	799.0	15.0	10.9	3.646	CC
Ottenhoff 29R-353 - Wellbore #1 - Plan #4 (3-28-18)	14,444.2	14,108.5	264.7	-68.1	0.795	Level 1, ES, SF
Ottenhoff 29R-423 - Wellbore #1 - Plan #3 (6-27-17)	800.0	798.0	75.0	70.8	18.172	CC, ES
Ottenhoff 29R-423 - Wellbore #1 - Plan #3 (6-27-17)	1,200.0	1,197.3	92.9	86.6	14.750	SF
Ottenhoff 29U-243 - Wellbore #1 - Plan #3 (6-27-17)	400.0	399.0	105.0	103.1	54.580	CC, ES
Ottenhoff 29U-243 - Wellbore #1 - Plan #3 (6-27-17)	1,000.0	987.0	135.5	130.3	25.648	SF
Ottenhoff 29U-343 - Wellbore #1 - Plan #3 (6-27-17)	200.0	198.0	120.1	119.3	146.366	CC, ES
Ottenhoff 29U-343 - Wellbore #1 - Plan #3 (6-27-17)	1,000.0	971.7	185.2	179.8	34.497	SF
Schneider 19Q-HZ Pad Sec.19-T5N-R64W						
Schneider 19Q-202 - Wellbore #1 - Wellbore #1	6,800.0	11,607.9	194.6	55.8	1.402	Level 3, ES, SF
Schneider 19Q-202 - Wellbore #1 - Wellbore #1	6,824.8	11,607.3	192.6	58.5	1.436	Level 3, CC
Schneider 19Q-312 - Wellbore #1 - Wellbore #1	6,700.0	11,485.2	493.1	339.3	3.207	ES, SF
Schneider 19Q-312 - Wellbore #1 - Wellbore #1	6,700.1	11,485.2	493.1	339.3	3.207	CC

Offset Design													Offset Site Error:	0.0 ft
Bell (Exist.) Pad SEC.29-T5N-R64W - Bell B29-24D (P&A) - Bell B29-24D - Bell B29-24D													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (ft)	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
10,700.0	6,721.8	7,042.4	6,736.1	87.0	35.7	90.75	-3,604.1	-1,404.6	442.5	323.5	119.01	3.718		
10,800.0	6,721.4	7,042.9	6,736.6	89.3	35.7	90.82	-3,604.1	-1,404.5	388.0	266.8	121.27	3.200		
10,900.0	6,721.0	7,043.3	6,737.0	91.5	35.7	90.89	-3,604.1	-1,404.5	354.0	230.5	123.54	2.866		
10,976.2	6,720.6	7,043.6	6,737.4	93.2	35.7	90.95	-3,604.1	-1,404.5	345.7	220.5	125.27	2.760	CC, ES	
11,000.0	6,720.5	7,043.8	6,737.5	93.7	35.7	90.97	-3,604.1	-1,404.5	346.6	220.8	125.81	2.755	SF	
11,100.0	6,720.1	7,044.2	6,737.9	96.0	35.7	91.04	-3,604.1	-1,404.5	367.3	239.2	128.08	2.867		
11,200.0	6,719.7	7,044.7	6,738.4	98.2	35.7	91.12	-3,604.1	-1,404.5	411.9	281.5	130.35	3.160		
11,300.0	6,719.3	7,045.2	6,738.9	100.5	35.7	91.21	-3,604.1	-1,404.5	473.7	341.1	132.63	3.572		