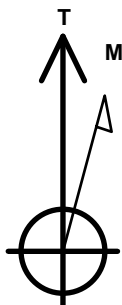


PDC Energy Inc. DJ Basin

Well Name: **Barr 11L-321**
 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 1392431.65 3244391.19 40.407307 -104.622397
 Original Well Elev WELL @ 4634.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 244'FSL, 364'FEL, SEC.11	1.0	0.0	0.0	Point
BHL 500'FNL, 1988'FWL, SEC.12	6824.0	4535.0	2361.1	Point
LPL 431'FSL, 1988'FWL, SEC.12	6849.0	170.0	2352.1	Point



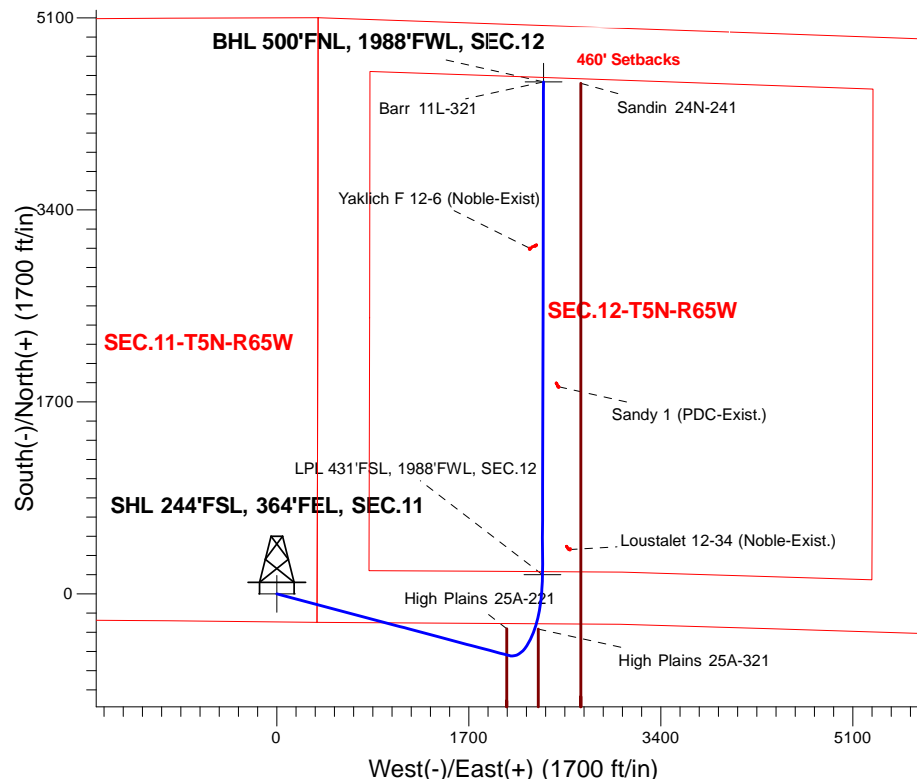
Azimuths to True North
 Magnetic North: 8.03°

Magnetic Field
 Strength: 52557.7snT
 Dip Angle: 66.88°
 Date: 2/2/2017
 Model: IGRF2010

Barr 5N65W11TY Pad Sec.11-T5N-R65W
 Barr 11L-321
 Plan #2 (6-19-17)
 15:02, June 19 2017

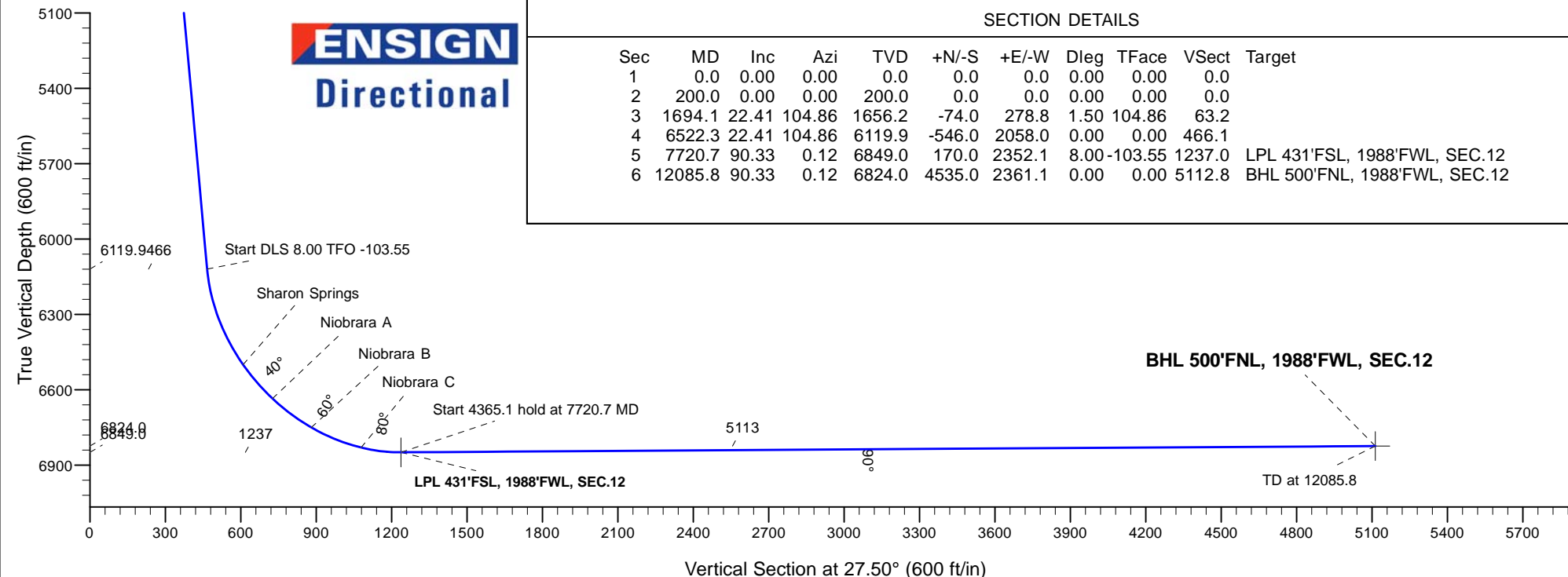
ANNOTATIONS

TVD	MD	Annotation
200.0	200.0	KOP - Start Build 1.50
1656.2	1694.1	Start 4828.3 hold at 1694.1 MD
6119.9	6522.3	Start DLS 8.00 TFO -103.55
6849.0	7720.7	Start 4365.1 hold at 7720.7 MD
6824.0	12085.8	TD at 12085.8



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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1694.1	22.41	104.86	1656.2	-74.0	278.8	1.50	104.86	63.2	
4	6522.3	22.41	104.86	6119.9	-546.0	2058.0	0.00	0.00	466.1	
5	7720.7	90.33	0.12	6849.0	170.0	2352.1	8.00	-103.55	1237.0	LPL 431'FSL, 1988'FWL, SEC.12
6	12085.8	90.33	0.12	6824.0	4535.0	2361.1	0.00	0.00	5112.8	BHL 500'FNL, 1988'FWL, SEC.12



PDC Energy Inc. DJ Basin

SEC.11-T5N-R65W

Barr 5N65W11TY Pad Sec.11-T5N-R65W

Barr 11L-321

Wellbore #1

Plan #2 (6-19-17)

Anticollision Summary Report

19 June, 2017

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Barr 11L-321
Project:	SEC.11-T5N-R65W	TVD Reference:	WELL @ 4634.0ft (Original Well Elev)
Reference Site:	Barr 5N65W11TY Pad Sec.11-T5N-R65W	MD Reference:	WELL @ 4634.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	Barr 11L-321	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #2 (6-19-17)	Offset TVD Reference:	Offset Datum

Reference	Plan #2 (6-19-17)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0 ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.45 Sigma	Casing Method:	Not applied

Survey Tool Program	Date 6/19/2017			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,085.8	Plan #2 (6-19-17) (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
Offset Well - Wellbore - Design						
Barr 5N65W11TY Pad Sec.11-T5N-R65W						
Barr 11L-221 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	90.0	89.1	108.903	CC, ES
Barr 11L-221 - Wellbore #1 - Plan #2 (6-19-17)	4,500.0	4,464.0	990.1	956.8	29.778	SF
Barr 11L-301 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	105.0	104.2	127.109	CC, ES
Barr 11L-301 - Wellbore #1 - Plan #2 (6-19-17)	1,000.0	994.2	187.0	181.6	35.021	SF
Barr 11L-201 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	59.9	59.1	72.489	CC, ES
Barr 11L-201 - Wellbore #1 - Plan #2 (6-19-17)	6,200.0	6,215.8	892.0	829.4	14.251	SF
Barr 11L-221 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	15.0	14.2	18.206	CC, ES
Barr 11L-221 - Wellbore #1 - Plan #2 (6-19-17)	12,085.8	11,979.4	282.8	67.7	1.315	Level 3, SF
Barr 11L-301 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	29.8	29.0	36.075	CC, ES
Barr 11L-301 - Wellbore #1 - Plan #2 (6-19-17)	12,085.8	12,380.8	522.9	294.7	2.291	SF
Barr 11L-341 - Wellbore #1 - Plan #3 (6-19-17)	200.0	200.0	74.9	74.1	90.698	CC, ES
Barr 11L-341 - Wellbore #1 - Plan #3 (6-19-17)	5,500.0	5,481.7	999.8	955.8	22.709	SF
Barr 11L-401 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	44.8	44.0	54.283	CC, ES
Barr 11L-401 - Wellbore #1 - Plan #2 (6-19-17)	12,085.8	12,404.7	784.4	555.6	3.428	SF
Barr 11X-334 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	149.8	149.0	181.396	CC, ES
Barr 11X-334 - Wellbore #1 - Plan #2 (6-19-17)	4,000.0	3,927.8	980.7	943.1	26.115	SF
Barr 11X-404 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	164.9	164.0	199.601	CC, ES
Barr 11X-404 - Wellbore #1 - Plan #2 (6-19-17)	3,500.0	3,388.8	995.2	960.2	28.443	SF
Barr 11Y-214 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	135.1	134.2	163.524	CC, ES
Barr 11Y-214 - Wellbore #1 - Plan #2 (6-19-17)	4,900.0	4,876.6	982.3	936.4	21.378	SF
Barr 11Y-314 - Wellbore #1 - Plan #2 (6-19-17)	200.0	200.0	120.0	119.2	145.318	CC, ES
Barr 11Y-314 - Wellbore #1 - Plan #2 (6-19-17)	4,700.0	4,741.7	989.6	956.4	29.824	SF
Existing Wells Sec.12-T5N-R65W						
Loustalet 12-34 (Noble-Exist.) - Wellbore #1 - Wellbore #	7,944.0	6,825.1	239.6	193.8	5.229	CC, ES, SF
Sandy 1 (PDC-Exist.) - Wellbore #1 - Wellbore #1	9,385.2	6,811.3	141.6	72.8	2.058	CC, ES, SF
Existing Wells Sec.12-T5N-R65W (GRID)						
Yaklich F 12-6 (Noble-Exist) - Wellbore #1 - Wellbore #1	10,610.1	6,803.1	119.4	23.7	1.248	Level 2, CC, ES, SF
High Plains 5N65W25AF Pad Sec.25-T5N-R65W						
High Plains 25A-221 - Wellbore #1 - Plan #1 (2-03-17)	7,160.1	17,611.4	257.6	-27.9	0.902	Level 1, CC
High Plains 25A-221 - Wellbore #1 - Plan #1 (2-03-17)	7,200.0	17,638.0	259.1	-31.1	0.893	Level 1, ES, SF
High Plains 25A-321 - Wellbore #1 - Plan #1 (2-03-17)	7,269.0	18,090.0	100.0	-34.1	0.746	Level 1, CC, ES, SF

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well Barr 11L-321
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Reference Site:	Barr 5N65W11TY Pad Sec.11-T5N-R65W	MD Reference:	WELL @ 4634.0ft (Original Well Elev)
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Reference Well:	Barr 11L-321	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 ft	Output errors are at	2.45 sigma
Reference Wellbore	Wellbore #1	Database:	US_EDM
Reference Design:	Plan #2 (6-19-17)	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						
Sandin Farms 5N65W24N Pad Sec.24-T5N-R65W						
Sandin 24N-241 - Wellbore #1 - Plan #2 (6-2-17)	12,060.4	17,418.2	343.2	-32.8	0.913	Level 1, CC
Sandin 24N-241 - Wellbore #1 - Plan #2 (6-2-17)	12,085.8	17,429.3	343.4	-33.4	0.911	Level 1, ES, SF