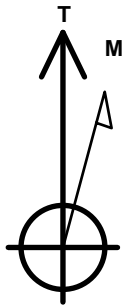


PDC Energy Inc. DJ Basin

Well Name: **J Clark 8N (Nio B)**
 Surface Location: Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W
 North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
 Ground Elevation: 4615.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1391636.25 3242695.93 40.405170 -104.628512
 Original Well Elev WELL @ 4638.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 550'FNL & 2069'FEL, Sec.14	1.0	0.0	0.0	Point
BHL 500'FNL & 2050'FWL, Sec.11	6778.0	5373.7	-1175.4	Point
LPL 50'FSL & 2050'FWL, Sec.11	6798.0	598.4	-1139.7	Point



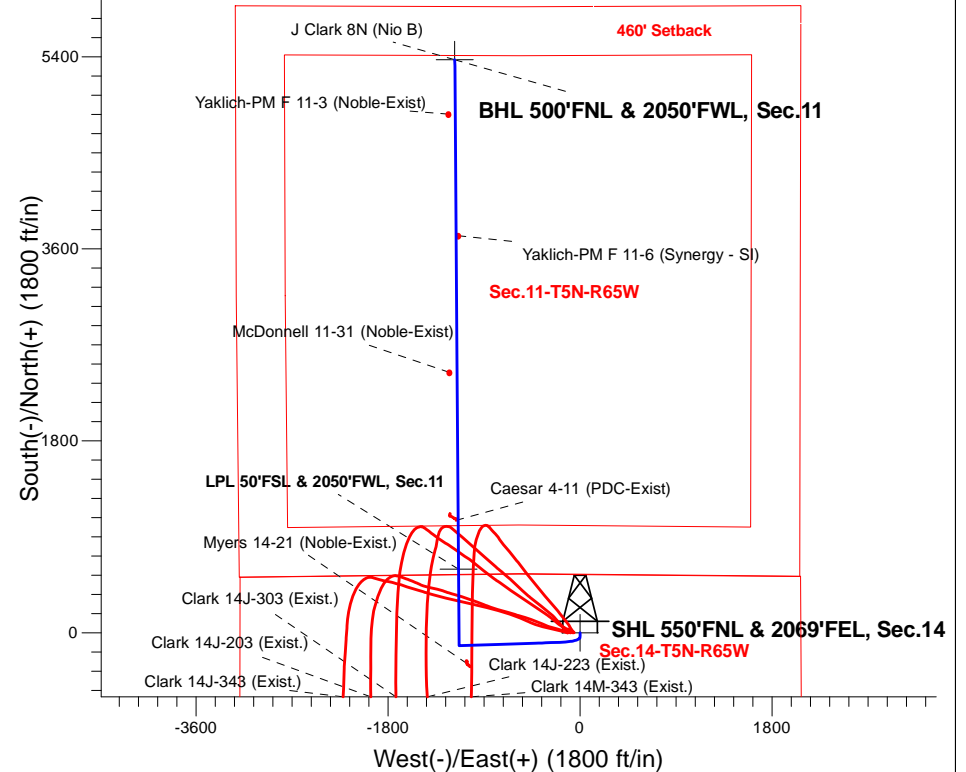
Azimuths to True North
 Magnetic North: 7.91°

Magnetic Field
 Strength: 52463.7snT
 Dip Angle: 66.85°
 Date: 12/19/2017
 Model: IGRF2010

Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W
 J Clark 8N (Nio B)
 Plan #1 (1-10-18)
 12:30, January 12 2018

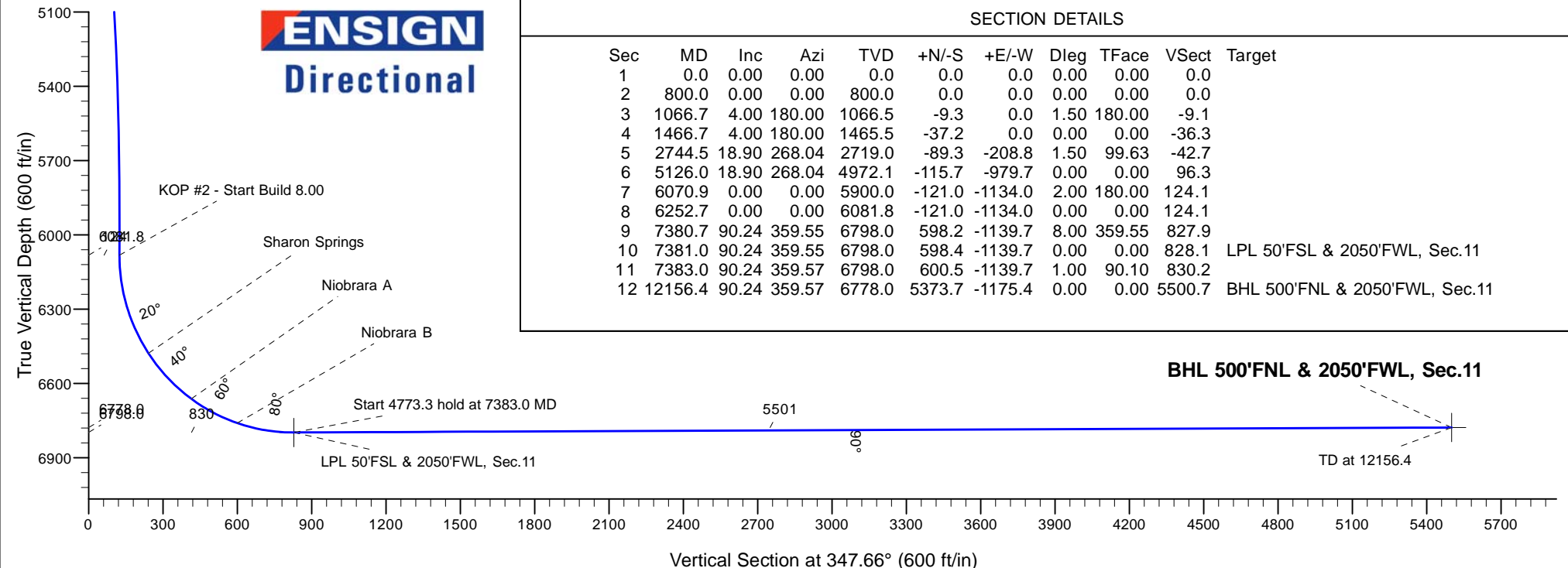
ANNOTATIONS

TVD	MD	Annotation
800.0	800.0	KOP - Start Build 1.50
1066.5	1066.7	Start 400.0 hold at 1066.7 MD
1465.5	1466.7	Start DLS 1.50 TFO 99.63
4972.1	5126.0	Start Drop -2.00
6081.8	6252.7	KOP #2 - Start Build 8.00
6798.0	7383.0	Start 4773.3 hold at 7383.0 MD
6778.0	12156.4	TD at 12156.4



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	1066.7	4.00	180.00	1066.5	-9.3	0.0	1.50	180.00	-9.1	
4	1466.7	4.00	180.00	1465.5	-37.2	0.0	0.00	0.00	-36.3	
5	2744.5	18.90	268.04	2719.0	-89.3	-208.8	1.50	99.63	-42.7	
6	5126.0	18.90	268.04	4972.1	-115.7	-979.7	0.00	0.00	96.3	
7	6070.9	0.00	0.00	5900.0	-121.0	-1134.0	2.00	180.00	124.1	
8	6252.7	0.00	0.00	6081.8	-121.0	-1134.0	0.00	0.00	124.1	
9	7380.7	90.24	359.55	6798.0	598.2	-1139.7	8.00	359.55	827.9	
10	7381.0	90.24	359.55	6798.0	598.4	-1139.7	0.00	0.00	828.1	LPL 50'FSL & 2050'FWL, Sec.11
11	7383.0	90.24	359.57	6798.0	600.5	-1139.7	1.00	90.10	830.2	
12	12156.4	90.24	359.57	6778.0	5373.7	-1175.4	0.00	0.00	5500.7	BHL 500'FNL & 2050'FWL, Sec.11





PDC Energy Inc. DJ Basin

SEC.14-T5N-R65W

Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W

J Clark 8N (Nio B)

Wellbore #1

Plan #1 (1-10-18)

Anticollision Summary Report

12 January, 2018



Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well J Clark 8N (Nio B)
Project:	SEC.14-T5N-R65W	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Reference Site:	Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	J Clark 8N (Nio B)	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 #1 (1-10-18)	Offset TVD Reference:	Offset Datum

Reference	Plan #1 (1-10-18)		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 50.0ft	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	1/12/2018		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	12,156.4	Plan #1 (1-10-18) (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
Offset Well - Wellbore - Design						
Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W						
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	847.2	847.2	30.0	25.6	6.859	CC
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	950.0	950.0	30.1	25.2	6.156	ES
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	12,156.4	12,018.6	700.4	444.1	2.733	SF
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	857.8	857.8	45.0	40.6	10.164	CC
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	1,000.0	999.9	45.3	40.1	8.810	ES
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	10,200.0	10,112.0	798.9	633.5	4.830	SF
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	866.7	866.7	60.0	55.5	13.415	CC
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,000.0	999.9	60.2	55.1	11.717	ES
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,500.0	1,498.7	71.7	63.9	9.200	SF
J Clark 1C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	182.6	184.6	180.1	179.4	244.749	CC
J Clark 1C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	180.1	179.3	218.066	ES
J Clark 1C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	2,950.0	2,609.9	790.5	772.9	44.814	SF
J Clark 2N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	382.6	384.6	165.1	163.3	89.863	CC
J Clark 2N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	400.0	400.0	165.1	163.2	85.669	ES
J Clark 2N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	3,400.0	3,093.1	790.3	769.3	37.581	SF
J Clark 3N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	303.8	305.8	150.1	148.7	109.408	CC
J Clark 3N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	500.0	500.0	150.4	147.9	62.127	ES
J Clark 3N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	3,850.0	3,603.4	796.3	771.8	32.493	SF
J Clark 4N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	298.4	300.4	135.1	133.7	100.534	CC
J Clark 4N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	500.0	501.6	135.5	133.0	55.732	ES
J Clark 4N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	4,800.0	4,613.6	795.3	763.3	24.869	SF
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	257.7	257.7	45.0	43.9	39.944	CC
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	400.0	399.8	45.3	43.4	24.204	ES
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	12,156.4	12,406.2	753.2	497.8	2.949	SF
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	447.2	447.2	30.0	27.8	13.813	CC
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	550.0	549.9	30.1	27.4	11.163	ES
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,156.4	12,252.4	500.0	242.5	1.942	SF
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	633.4	633.4	15.0	11.8	4.681	CC
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	750.0	749.9	15.2	11.4	4.018	ES
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	12,156.4	12,265.6	259.6	12.7	1.051	Level 2, SF
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	834.7	834.7	15.0	10.7	3.484	CC
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	950.0	950.0	15.3	10.4	3.121	ES
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	12,156.4	12,258.5	296.8	69.7	1.307	Level 3, SF

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well J Clark 8N (Nio B)
Project:	SEC.14-T5N-R65W	TVD Reference:	WELL @ 4638.0ft (Original Well Elev)
Reference Site:	Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W	MD Reference:	WELL @ 4638.0ft (Original Well Elev)
Site Error:	0.0 ft	North Reference:	True
Reference Well:	J Clark 8N (Nio B)	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 #1 (1-10-18)	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						
Clark 5N65W14EJ Pad Sec.14-T5N-R65W						
Clark 14J-203 (Exist.) - Wellbore #1 - Wellbore #1	0.0	1.0	104.9	104.9	10,000.000	CC
Clark 14J-203 (Exist.) - Wellbore #1 - Wellbore #1	150.0	150.6	105.2	104.7	217.920	ES
Clark 14J-203 (Exist.) - Wellbore #1 - Wellbore #1	5,500.0	5,403.7	690.2	637.2	13.013	SF
Clark 14J-223 (Exist.) - Wellbore #1 - Wellbore #1	758.0	759.0	72.6	68.8	19.362	CC
Clark 14J-223 (Exist.) - Wellbore #1 - Wellbore #1	800.0	800.4	72.8	68.8	18.304	ES
Clark 14J-223 (Exist.) - Wellbore #1 - Wellbore #1	7,400.0	7,098.7	274.0	223.3	5.405	SF
Clark 14J-303 (Exist.) - Wellbore #1 - Wellbore #1	583.5	584.5	88.2	85.4	31.810	CC
Clark 14J-303 (Exist.) - Wellbore #1 - Wellbore #1	600.0	600.8	88.2	85.4	30.856	ES
Clark 14J-303 (Exist.) - Wellbore #1 - Wellbore #1	7,650.0	6,962.2	527.1	469.5	9.151	SF
Clark 14J-343 (Exist.) - Wellbore #1 - Wellbore #1	180.4	181.4	119.5	118.8	187.084	CC
Clark 14J-343 (Exist.) - Wellbore #1 - Wellbore #1	200.0	200.6	119.5	118.8	161.509	ES
Clark 14J-343 (Exist.) - Wellbore #1 - Wellbore #1	5,450.0	5,316.7	797.4	747.7	16.050	SF
Clark 14M-343 (Exist.) - Wellbore #1 - Wellbore #1	936.3	936.4	55.8	51.2	12.144	CC
Clark 14M-343 (Exist.) - Wellbore #1 - Wellbore #1	950.0	949.9	55.9	51.2	11.984	ES
Clark 14M-343 (Exist.) - Wellbore #1 - Wellbore #1	7,350.0	7,189.3	137.4	89.0	2.836	SF
Existing Wells Sec.11-T5N-R65W						
Caesar 4-11 (PDC-Exist) - Wellbore #1 - Wellbore #1	7,843.3	6,774.1	18.8	-31.5	0.374	Level 1, CC, ES, SF
McDonnell 11-31 (Noble-Exist) - Wellbore #1 - Wellbore #	9,226.0	6,767.3	72.8	-154.2	0.321	Level 1, CC, ES, SF
Yaklich-PM F 11-3 (Noble-Exist) - Wellbore #1 - Wellbore	11,647.7	6,754.1	64.6	-217.6	0.229	Level 1, CC, SF
Yaklich-PM F 11-3 (Noble-Exist) - Wellbore #1 - Wellbore	11,650.0	6,754.1	64.6	-217.6	0.229	Level 1, ES
Yaklich-PM F 11-6 (Synergy - SI) - Wellbore #1 - Wellbor	10,506.0	6,755.9	19.2	-236.6	0.075	Level 1, CC, ES, SF
Existing Wells Sec.14-T5N-R65W						
Myers 14-21 (Noble-Exist.) - Wellbore #1 - Wellbore #1	5,351.3	5,164.2	184.0	143.3	4.521	CC
Myers 14-21 (Noble-Exist.) - Wellbore #1 - Wellbore #1	5,400.0	5,211.0	184.5	143.3	4.477	ES
Myers 14-21 (Noble-Exist.) - Wellbore #1 - Wellbore #1	5,450.0	5,259.0	186.0	144.4	4.471	SF

Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)	Coordinates are relative to: J Clark 8N (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: 0.56°



Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)	Coordinates are relative to: J Clark 8N (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: 0.56°

