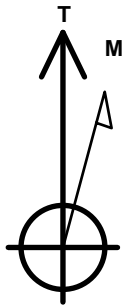


PDC Energy Inc. DJ Basin

Well Name: **J Clark 14N (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 Longitude Slot
 0.0 0.0 1391636.23 3242785.95 40.405167 -104.628189
 Original Well Elev WELL @ 4638.0ft (Original Well Elev)

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
SHL 550'FNL & 1979'FEL, Sec.14	1.0	0.0	0.0	Point
BHL 500'FNL & 1650'FEL, Sec.11	6778.0	5377.3	335.0	Point
LPL 50'FSL & 1650'FEL, Sec.11	6788.0	597.3	326.3	Point



Azimuths to True North
 Magnetic North: 7.91°

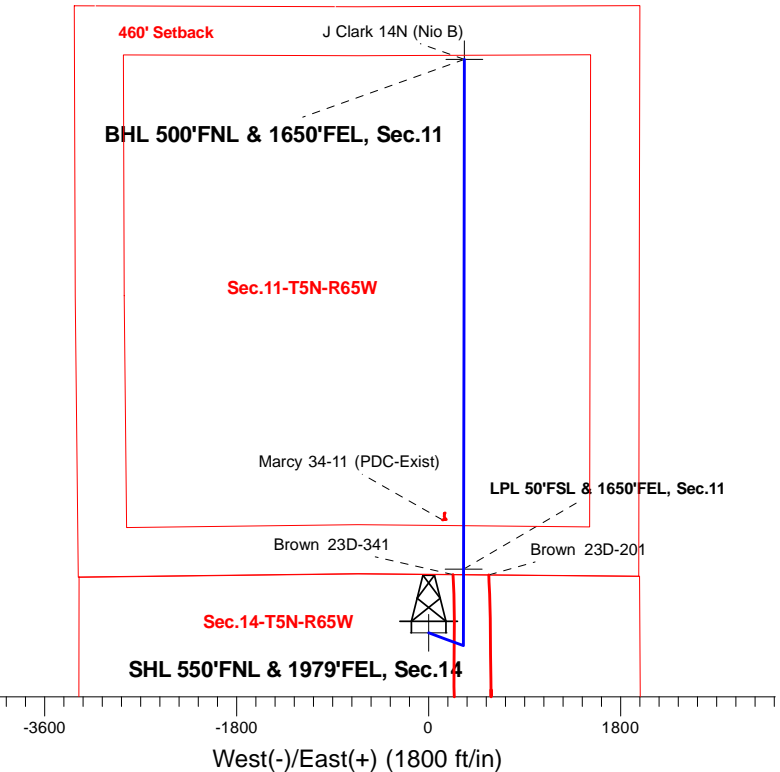
Magnetic Field
 Strength: 52463.7snT
 Dip Angle: 66.85°
 Date: 12/19/2017
 Model: IGRF2010

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

ANNOTATIONS

TVD	MD	Annotation
1200.0	1200.0	KOP - Start Build 1.50
3573.1	3595.6	Start Drop -2.00
6045.2	6069.3	KOP #2 - Start Build 8.00
6788.0	7222.6	Start 4779.6 hold at 7224.6 MD
6778.0	12002.2	TD at 12002.2

South(-)/North(+) (1800 ft/in)



West(-)/East(+) (1800 ft/in)

ENSIGN
 Directional

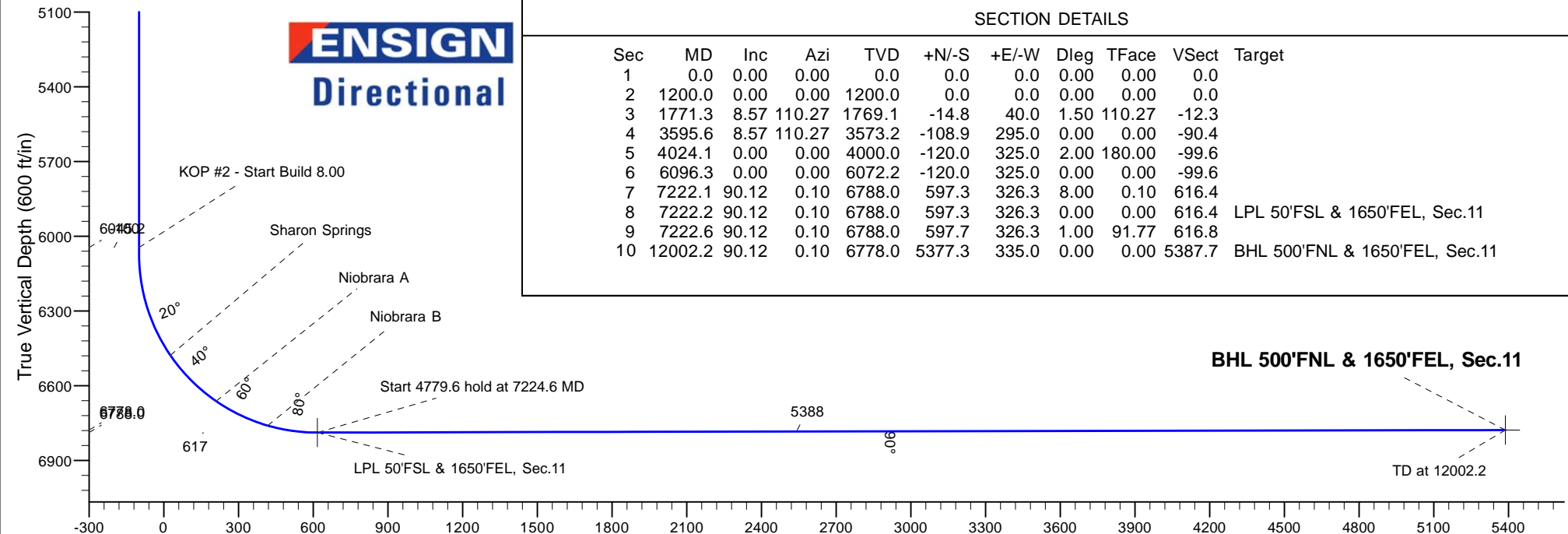
SECTION DETAILS

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	1200.0	0.00	0.00	1200.0	0.0	0.0	0.00	0.00	0.0	
3	1771.3	8.57	110.27	1769.1	-14.8	40.0	1.50	110.27	-12.3	
4	3595.6	8.57	110.27	3573.2	-108.9	295.0	0.00	0.00	-90.4	
5	4024.1	0.00	0.00	4000.0	-120.0	325.0	2.00	180.00	-99.6	
6	6096.3	0.00	0.00	6072.2	-120.0	325.0	0.00	0.00	-99.6	
7	7222.1	90.12	0.10	6788.0	597.3	326.3	8.00	0.10	616.4	
8	7222.2	90.12	0.10	6788.0	597.3	326.3	0.00	0.00	616.4	LPL 50'FSL & 1650'FEL, Sec.11
9	7222.6	90.12	0.10	6788.0	597.7	326.3	1.00	91.77	616.8	
10	12002.2	90.12	0.10	6778.0	5377.3	335.0	0.00	0.00	5387.7	BHL 500'FNL & 1650'FEL, Sec.11

BHL 500'FNL & 1650'FEL, Sec.11

TD at 12002.2

Vertical Section at 3.56° (600 ft/in)





PDC Energy Inc. DJ Basin

SEC.14-T5N-R65W

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

J Clark 14N (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 14N (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 14N (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	12,002.2	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
Brown 5N65W23 Pad Sec.23-T5N-R65W						
Brown 23D-201 - Wellbore #1 - Wellbore #1	7,166.7	15,244.0	238.2	6.3	1.027	Level 2, CC, ES, SF
Brown 23D-341 - Wellbore #1 - Wellbore #1	7,173.7	15,213.0	112.1	-95.8	0.539	Level 1, CC, ES, SF
Clark 5N65W14 1-21 Pad Sec.14-T5N-R65W						
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	1,200.0	1,200.0	60.0	53.7	9.478	CC, ES
J Clark 10N (Nio B) - Wellbore #1 - Plan #1 (12-18-17)	1,350.0	1,349.9	62.8	55.7	8.912	SF
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	1,200.0	1,200.0	45.0	38.7	7.107	CC, ES
J Clark 11N (Nio C) - Wellbore #1 - Plan #1 (12-18-17)	12,002.2	12,084.1	752.9	498.5	2.960	SF
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,200.0	1,200.0	30.0	23.7	4.737	CC, ES
J Clark 12N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,002.2	11,986.5	500.1	244.8	1.959	SF
J Clark 13N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	1,200.0	1,200.0	15.0	8.7	2.371	CC, ES
J Clark 13N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	12,002.2	12,058.2	258.3	9.3	1.037	Level 2, SF
J Clark 15N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	800.0	800.0	15.0	10.9	3.628	CC
J Clark 15N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	12,002.2	12,081.3	258.3	10.8	1.044	Level 2, ES, SF
J Clark 16N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	200.0	200.0	30.0	29.2	36.314	CC, ES
J Clark 16N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	12,002.2	12,056.7	500.1	244.2	1.954	SF
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	301.5	301.5	135.0	133.7	99.533	CC
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	500.0	499.6	135.4	133.0	55.970	ES
J Clark 5N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	1,200.0	1,172.5	192.2	185.7	29.478	SF
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	495.8	495.8	120.0	117.6	49.496	CC
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	700.0	699.6	120.5	117.0	34.616	ES
J Clark 6N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,250.0	1,236.2	146.1	139.6	22.485	SF
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	689.8	689.9	105.0	101.5	30.053	CC
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	850.0	849.7	105.2	100.9	24.465	ES
J Clark 7N (Nio C) - Wellbore #1 - Plan #1 (1-10-18)	1,350.0	1,343.7	118.9	112.0	17.059	SF
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	883.4	883.4	90.0	85.5	19.735	CC
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,050.0	1,049.7	90.3	84.9	16.743	ES
J Clark 8N (Nio B) - Wellbore #1 - Plan #1 (1-10-18)	1,450.0	1,448.7	102.9	95.4	13.813	SF
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	1,075.8	1,075.8	75.0	69.4	13.339	CC
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	1,200.0	1,199.9	75.1	68.9	12.043	ES
J Clark 9C (Codell) - Wellbore #1 - Plan #1 (1-10-18)	1,400.0	1,399.3	81.5	74.3	11.334	SF
Existing Wells Sec.11-T5N-R65W						
Marcy 34-11 (PDC-Exist) - Wellbore #1 - Wellbore #1	7,686.0	6,757.1	187.1	2.8	1.015	Level 2, CC, ES, SF

Company:	PDC Energy Inc. DJ Basin	Local Co-ordinate Reference:	Well J Clark 14N (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 14N (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 Depths are relative to WELL @ 4638.0ft (Original Well Elev)

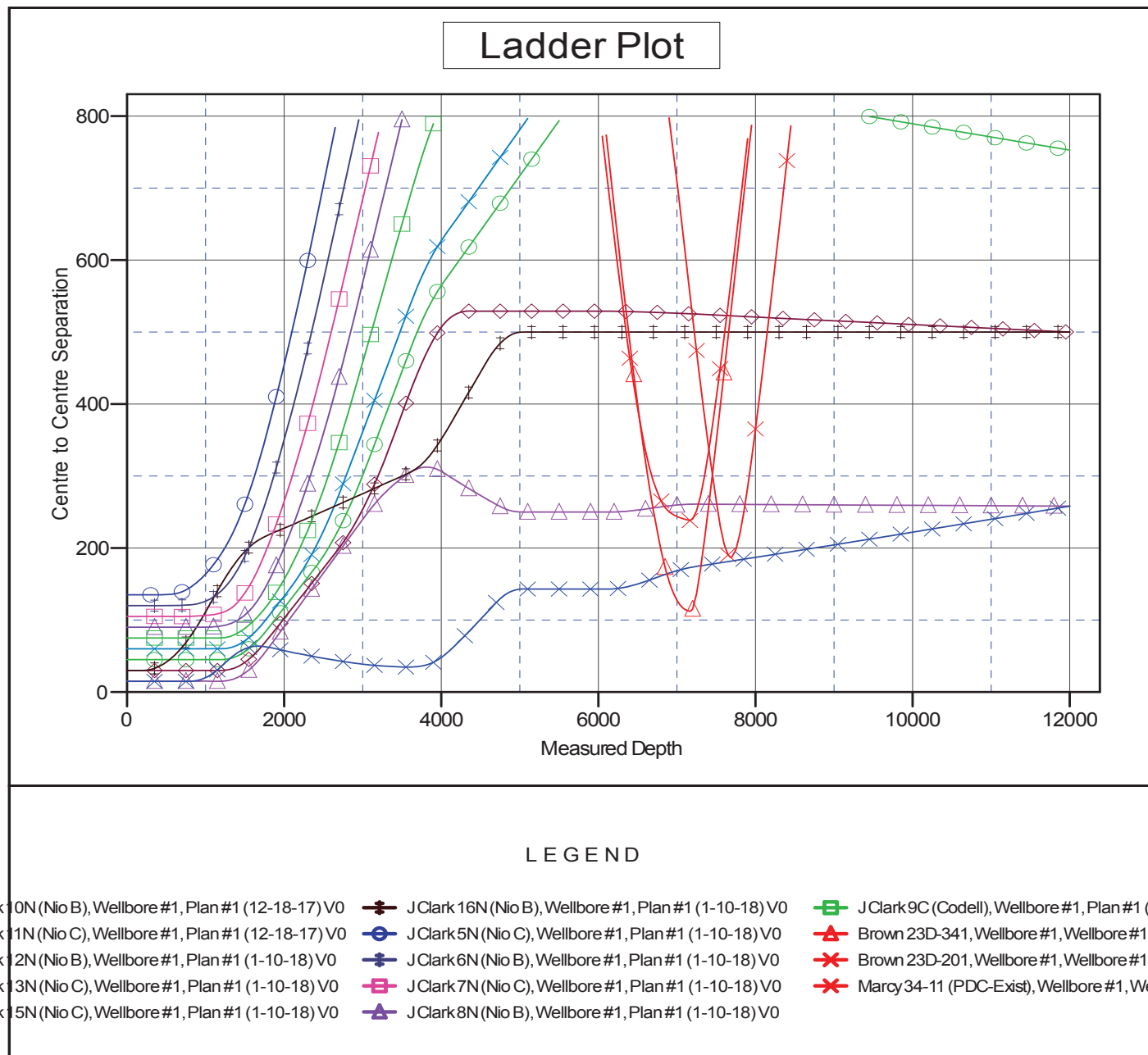
Offset Depths are relative to Offset Datum

Central Meridian is -105.500000

Coordinates are relative to: J Clark 14N (Nio B)

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.56°



Reference Depths are relative to WELL @ 4638.0ft (Original Well Elev)	Coordinates are relative to: J Clark 14N (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°

