PDC Energy Inc. DJ Basin

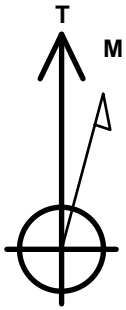
BYPASS STATE 01N
Bypass State 1-12
North American Datum 1983 , US State Plane 1983, Colorado Northern Zone
Ground Elevation: 4890.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1389904.81	3186905.31	40.401749	-104.828887	

RKB 28' Well @ 4918.0ft (RKB 28')

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
01N SHL - 1063' FWL & 1853' FNL	0.0	0.0	0.0	40.401749	-104.828887	Point
01N BHL - 150' FWL & 360' FNL	6944.0	1494.4	-11258.0	40.405844	-104.869311	Point
01N BPZ - 359' FNL & 200' FWL	6944.0	1494.8	-11208.1	40.405845	-104.869132	Point
01N LPL - 150' FEL & 371' FNL	7189.0	1487.5	-1102.3	40.405832	-104.832845	Point



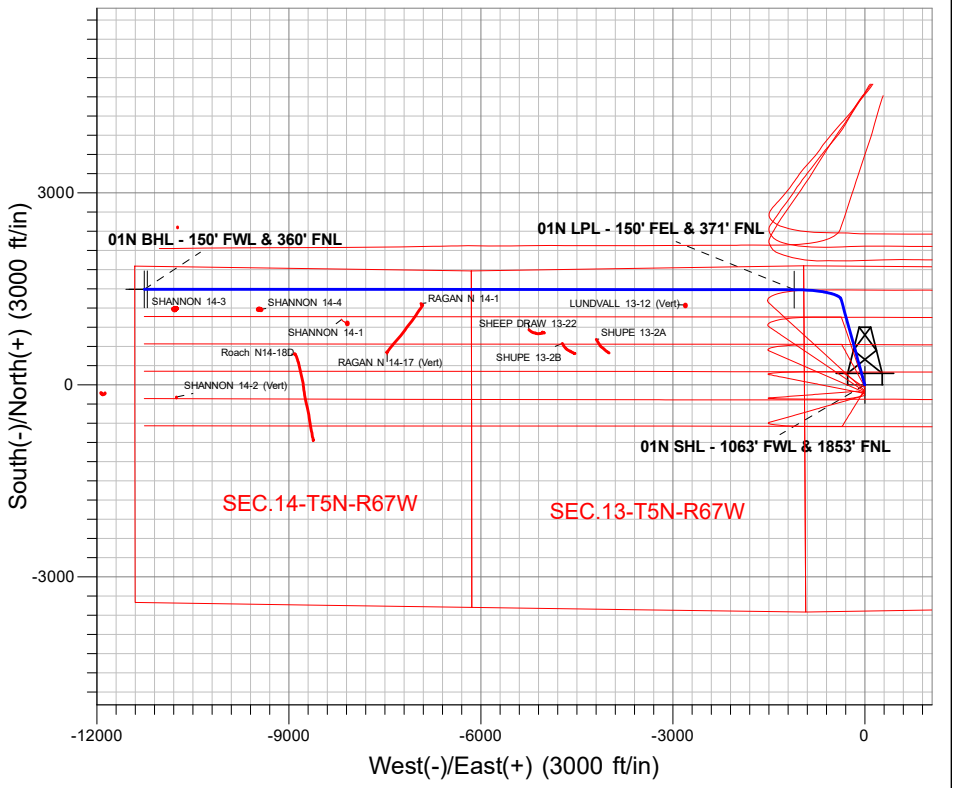
Azimuths to True North
Magnetic North: 7.77°

Magnetic Field
Strength: 51718.4nT
Dip Angle: 66.55°
Date: 12/20/2023
Model: HRGM

Bypass State 1-12
BYPASS STATE 01N
BYPASS STATE 01N Plan #1
14:27, December 28 2023

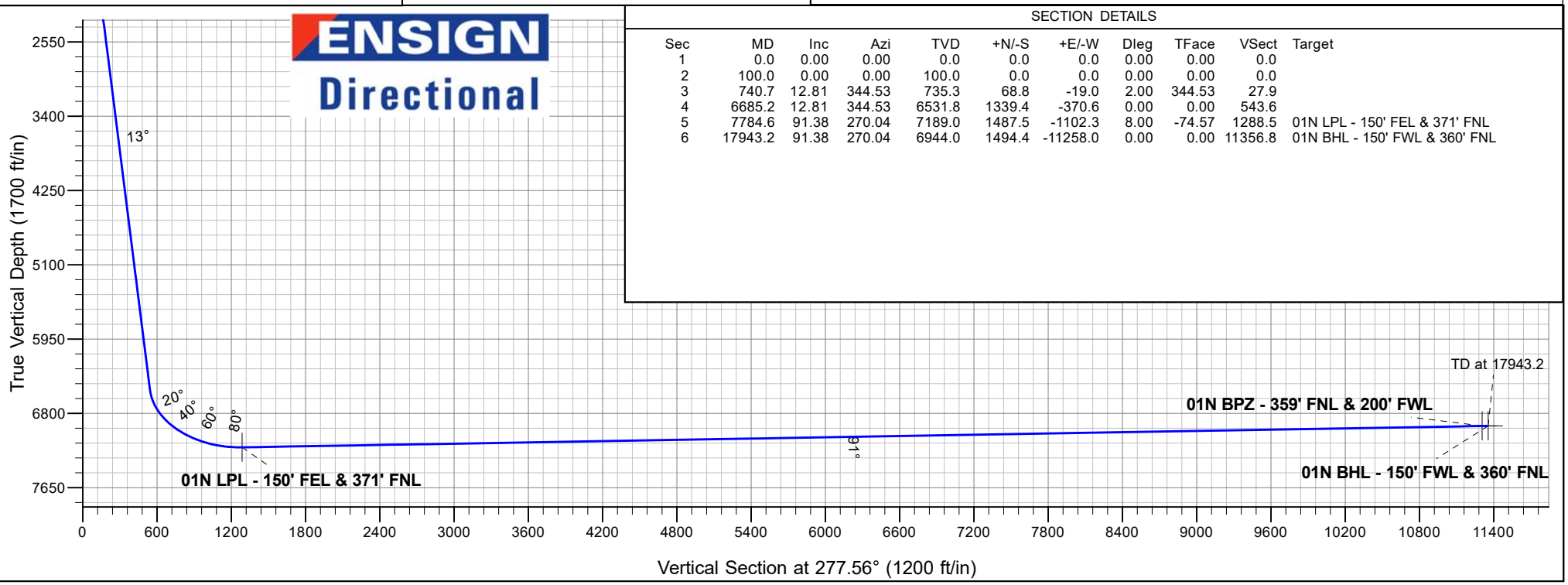
ANNOTATIONS

MD	TVD	Annotation
100.0	100.0	Start Build 2.00
740.7	735.3	Start 5944.5 hold at 740.7 MD
6685.2	6531.8	Start DLS 8.00 TFO -74.57
7784.6	7189.0	Start 10158.7 hold at 7784.6 MD
17943.2	6944.0	TD at 17943.2



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	100.0	0.00	0.00	100.0	0.0	0.0	0.00	0.00	0.0	
3	740.7	12.81	344.53	735.3	68.8	-19.0	2.00	344.53	27.9	
4	6685.2	12.81	344.53	6531.8	1339.4	-370.6	0.00	0.00	543.6	
5	7784.6	91.38	270.04	7189.0	1487.5	-1102.3	8.00	-74.57	1288.5	01N LPL - 150' FEL & 371' FNL
6	17943.2	91.38	270.04	6944.0	1494.4	-11258.0	0.00	0.00	11356.8	01N BHL - 150' FWL & 360' FNL



PDC Energy Inc. DJ Basin

SEC.18-T5N-R66W
Bypass State 1-12
BYPASS STATE 01N

BYPASS STATE 01N

Plan: BYPASS STATE 01N Plan #1

Standard Planning Report

28 December, 2023

Database:	US_EDM	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Company:	PDC Energy Inc. DJ Basin	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site:	Bypass State 1-12	**North Reference:**	True
Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BYPASS STATE 01N		
Design:	BYPASS STATE 01N Plan #1		

Project SEC.18-T5N-R66W

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site Bypass State 1-12

Site Position:		**Northing:**	1,389,904.46 usft	**Latitude:**	40.401748
From:	Lat/Long	**Easting:**	3,186,905.04 usft	**Longitude:**	-104.828888
Position Uncertainty:	0.0 ft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.43 °

Well BYPASS STATE 01N

Well Position	**+N/-S**	0.3 ft	**Northing:**	1,389,904.81 usft	**Latitude:**	40.401749
	+E/-W	0.3 ft	**Easting:**	3,186,905.32 usft	**Longitude:**	-104.828887
Position Uncertainty		0.0 ft	**Wellhead Elevation:**		**Ground Level:**	4,890.0 ft

Wellbore BYPASS STATE 01N

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HRGM	12/20/2023	7.77	66.55	51,718.44818180

Design BYPASS STATE 01N Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	277.56

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.00	0.00	0.00	0.00	
740.7	12.81	344.53	735.3	68.8	-19.0	2.00	2.00	0.00	344.53	
6,685.2	12.81	344.53	6,531.8	1,339.4	-370.6	0.00	0.00	0.00	0.00	
7,784.6	91.38	270.04	7,189.0	1,487.5	-1,102.3	8.00	7.15	-6.78	-74.57	01N LPL - 150' FEL
17,943.2	91.38	270.04	6,944.0	1,494.4	-11,258.0	0.00	0.00	0.00	0.00	01N BHL - 150' FW

Database:	US_EDM	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Company:	PDC Energy Inc. DJ Basin	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site:	Bypass State 1-12	**North Reference:**	True
Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BYPASS STATE 01N		
Design:	BYPASS STATE 01N Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
Start Build 2.00									
200.0	2.00	344.53	200.0	1.7	-0.5	0.7	2.00	2.00	0.00
300.0	4.00	344.53	299.8	6.7	-1.9	2.7	2.00	2.00	0.00
400.0	6.00	344.53	399.5	15.1	-4.2	6.1	2.00	2.00	0.00
500.0	8.00	344.53	498.7	26.9	-7.4	10.9	2.00	2.00	0.00
600.0	10.00	344.53	597.5	41.9	-11.6	17.0	2.00	2.00	0.00
700.0	12.00	344.53	695.6	60.3	-16.7	24.5	2.00	2.00	0.00
740.7	12.81	344.53	735.3	68.8	-19.0	27.9	2.00	2.00	0.00
Start 5944.5 hold at 740.7 MD									
800.0	12.81	344.53	793.2	81.4	-22.5	33.1	0.00	0.00	0.00
900.0	12.81	344.53	890.7	102.8	-28.4	41.7	0.00	0.00	0.00
1,000.0	12.81	344.53	988.2	124.2	-34.4	50.4	0.00	0.00	0.00
1,100.0	12.81	344.53	1,085.7	145.6	-40.3	59.1	0.00	0.00	0.00
1,200.0	12.81	344.53	1,183.2	166.9	-46.2	67.8	0.00	0.00	0.00
1,300.0	12.81	344.53	1,280.7	188.3	-52.1	76.4	0.00	0.00	0.00
1,400.0	12.81	344.53	1,378.3	209.7	-58.0	85.1	0.00	0.00	0.00
1,500.0	12.81	344.53	1,475.8	231.1	-63.9	93.8	0.00	0.00	0.00
1,600.0	12.81	344.53	1,573.3	252.4	-69.8	102.5	0.00	0.00	0.00
1,700.0	12.81	344.53	1,670.8	273.8	-75.8	111.1	0.00	0.00	0.00
1,800.0	12.81	344.53	1,768.3	295.2	-81.7	119.8	0.00	0.00	0.00
1,900.0	12.81	344.53	1,865.8	316.6	-87.6	128.5	0.00	0.00	0.00
2,000.0	12.81	344.53	1,963.3	337.9	-93.5	137.2	0.00	0.00	0.00
2,100.0	12.81	344.53	2,060.8	359.3	-99.4	145.8	0.00	0.00	0.00
2,200.0	12.81	344.53	2,158.3	380.7	-105.3	154.5	0.00	0.00	0.00
2,300.0	12.81	344.53	2,255.8	402.1	-111.2	163.2	0.00	0.00	0.00
2,400.0	12.81	344.53	2,353.4	423.4	-117.2	171.9	0.00	0.00	0.00
2,500.0	12.81	344.53	2,450.9	444.8	-123.1	180.5	0.00	0.00	0.00
2,600.0	12.81	344.53	2,548.4	466.2	-129.0	189.2	0.00	0.00	0.00
2,700.0	12.81	344.53	2,645.9	487.5	-134.9	197.9	0.00	0.00	0.00
2,800.0	12.81	344.53	2,743.4	508.9	-140.8	206.6	0.00	0.00	0.00
2,900.0	12.81	344.53	2,840.9	530.3	-146.7	215.2	0.00	0.00	0.00
3,000.0	12.81	344.53	2,938.4	551.7	-152.6	223.9	0.00	0.00	0.00
3,100.0	12.81	344.53	3,035.9	573.0	-158.6	232.6	0.00	0.00	0.00
3,200.0	12.81	344.53	3,133.4	594.4	-164.5	241.3	0.00	0.00	0.00
3,300.0	12.81	344.53	3,230.9	615.8	-170.4	249.9	0.00	0.00	0.00
3,400.0	12.81	344.53	3,328.5	637.2	-176.3	258.6	0.00	0.00	0.00
3,500.0	12.81	344.53	3,426.0	658.5	-182.2	267.3	0.00	0.00	0.00
3,600.0	12.81	344.53	3,523.5	679.9	-188.1	276.0	0.00	0.00	0.00
3,700.0	12.81	344.53	3,621.0	701.3	-194.0	284.6	0.00	0.00	0.00
3,800.0	12.81	344.53	3,718.5	722.7	-200.0	293.3	0.00	0.00	0.00
3,900.0	12.81	344.53	3,816.0	744.0	-205.9	302.0	0.00	0.00	0.00
4,000.0	12.81	344.53	3,913.5	765.4	-211.8	310.7	0.00	0.00	0.00
4,100.0	12.81	344.53	4,011.0	786.8	-217.7	319.3	0.00	0.00	0.00
4,200.0	12.81	344.53	4,108.5	808.2	-223.6	328.0	0.00	0.00	0.00
4,300.0	12.81	344.53	4,206.0	829.5	-229.5	336.7	0.00	0.00	0.00
4,400.0	12.81	344.53	4,303.5	850.9	-235.4	345.4	0.00	0.00	0.00
4,500.0	12.81	344.53	4,401.1	872.3	-241.4	354.0	0.00	0.00	0.00
4,600.0	12.81	344.53	4,498.6	893.7	-247.3	362.7	0.00	0.00	0.00
4,700.0	12.81	344.53	4,596.1	915.0	-253.2	371.4	0.00	0.00	0.00
4,800.0	12.81	344.53	4,693.6	936.4	-259.1	380.1	0.00	0.00	0.00
4,900.0	12.81	344.53	4,791.1	957.8	-265.0	388.7	0.00	0.00	0.00
5,000.0	12.81	344.53	4,888.6	979.2	-270.9	397.4	0.00	0.00	0.00

Database:	US_EDM	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Company:	PDC Energy Inc. DJ Basin	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site:	Bypass State 1-12	**North Reference:**	True
Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BYPASS STATE 01N		
Design:	BYPASS STATE 01N Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,100.0	12.81	344.53	4,986.1	1,000.5	-276.8	406.1	0.00	0.00	0.00
5,200.0	12.81	344.53	5,083.6	1,021.9	-282.8	414.8	0.00	0.00	0.00
5,300.0	12.81	344.53	5,181.1	1,043.3	-288.7	423.4	0.00	0.00	0.00
5,400.0	12.81	344.53	5,278.6	1,064.7	-294.6	432.1	0.00	0.00	0.00
5,500.0	12.81	344.53	5,376.2	1,086.0	-300.5	440.8	0.00	0.00	0.00
5,600.0	12.81	344.53	5,473.7	1,107.4	-306.4	449.5	0.00	0.00	0.00
5,700.0	12.81	344.53	5,571.2	1,128.8	-312.3	458.1	0.00	0.00	0.00
5,800.0	12.81	344.53	5,668.7	1,150.2	-318.2	466.8	0.00	0.00	0.00
5,900.0	12.81	344.53	5,766.2	1,171.5	-324.2	475.5	0.00	0.00	0.00
6,000.0	12.81	344.53	5,863.7	1,192.9	-330.1	484.2	0.00	0.00	0.00
6,100.0	12.81	344.53	5,961.2	1,214.3	-336.0	492.8	0.00	0.00	0.00
6,200.0	12.81	344.53	6,058.7	1,235.6	-341.9	501.5	0.00	0.00	0.00
6,300.0	12.81	344.53	6,156.2	1,257.0	-347.8	510.2	0.00	0.00	0.00
6,400.0	12.81	344.53	6,253.7	1,278.4	-353.7	518.9	0.00	0.00	0.00
6,500.0	12.81	344.53	6,351.3	1,299.8	-359.6	527.6	0.00	0.00	0.00
6,600.0	12.81	344.53	6,448.8	1,321.1	-365.6	536.2	0.00	0.00	0.00
6,685.2	12.81	344.53	6,531.8	1,339.4	-370.6	543.6	0.00	0.00	0.00
Start DLS 8.00 TFO -74.57									
6,700.0	13.18	339.52	6,546.3	1,342.5	-371.6	545.1	8.00	2.46	-33.87
6,800.0	17.60	313.95	6,642.8	1,363.7	-386.5	562.6	8.00	4.43	-25.57
6,900.0	23.92	299.91	6,736.3	1,384.4	-415.0	593.6	8.00	6.31	-14.04
7,000.0	30.99	291.71	6,825.0	1,404.0	-456.6	637.4	8.00	7.07	-8.20
7,100.0	38.39	286.37	6,907.2	1,422.3	-510.4	693.1	8.00	7.41	-5.34
7,200.0	45.97	282.55	6,981.2	1,438.9	-575.4	759.7	8.00	7.58	-3.82
7,300.0	53.65	279.61	7,045.7	1,453.5	-650.3	835.9	8.00	7.68	-2.94
7,400.0	61.39	277.20	7,099.4	1,465.7	-733.7	920.2	8.00	7.74	-2.41
7,500.0	69.16	275.12	7,141.2	1,475.4	-823.9	1,010.9	8.00	7.77	-2.08
7,600.0	76.96	273.25	7,170.3	1,482.3	-919.2	1,106.3	8.00	7.80	-1.87
7,700.0	84.77	271.49	7,186.2	1,486.4	-1,017.8	1,204.6	8.00	7.81	-1.76
7,784.6	91.38	270.04	7,189.0	1,487.5	-1,102.3	1,288.5	8.00	7.81	-1.71
Start 10158.7 hold at 7784.6 MD									
7,800.0	91.38	270.04	7,188.6	1,487.5	-1,117.7	1,303.7	0.00	0.00	0.00
7,900.0	91.38	270.04	7,186.2	1,487.6	-1,217.7	1,402.8	0.00	0.00	0.00
8,000.0	91.38	270.04	7,183.8	1,487.7	-1,317.6	1,502.0	0.00	0.00	0.00
8,100.0	91.38	270.04	7,181.4	1,487.7	-1,417.6	1,601.1	0.00	0.00	0.00
8,200.0	91.38	270.04	7,179.0	1,487.8	-1,517.6	1,700.2	0.00	0.00	0.00
8,300.0	91.38	270.04	7,176.6	1,487.9	-1,617.6	1,799.3	0.00	0.00	0.00
8,400.0	91.38	270.04	7,174.2	1,487.9	-1,717.5	1,898.4	0.00	0.00	0.00
8,500.0	91.38	270.04	7,171.7	1,488.0	-1,817.5	1,997.5	0.00	0.00	0.00
8,600.0	91.38	270.04	7,169.3	1,488.1	-1,917.5	2,096.6	0.00	0.00	0.00
8,700.0	91.38	270.04	7,166.9	1,488.2	-2,017.4	2,195.7	0.00	0.00	0.00
8,800.0	91.38	270.04	7,164.5	1,488.2	-2,117.4	2,294.8	0.00	0.00	0.00
8,900.0	91.38	270.04	7,162.1	1,488.3	-2,217.4	2,393.9	0.00	0.00	0.00
9,000.0	91.38	270.04	7,159.7	1,488.4	-2,317.4	2,493.1	0.00	0.00	0.00
9,100.0	91.38	270.04	7,157.3	1,488.4	-2,417.3	2,592.2	0.00	0.00	0.00
9,200.0	91.38	270.04	7,154.9	1,488.5	-2,517.3	2,691.3	0.00	0.00	0.00
9,300.0	91.38	270.04	7,152.5	1,488.6	-2,617.3	2,790.4	0.00	0.00	0.00
9,400.0	91.38	270.04	7,150.0	1,488.6	-2,717.2	2,889.5	0.00	0.00	0.00
9,500.0	91.38	270.04	7,147.6	1,488.7	-2,817.2	2,988.6	0.00	0.00	0.00
9,600.0	91.38	270.04	7,145.2	1,488.8	-2,917.2	3,087.7	0.00	0.00	0.00
9,700.0	91.38	270.04	7,142.8	1,488.8	-3,017.2	3,186.8	0.00	0.00	0.00
9,800.0	91.38	270.04	7,140.4	1,488.9	-3,117.1	3,285.9	0.00	0.00	0.00
9,900.0	91.38	270.04	7,138.0	1,489.0	-3,217.1	3,385.1	0.00	0.00	0.00
10,000.0	91.38	270.04	7,135.6	1,489.0	-3,317.1	3,484.2	0.00	0.00	0.00

Database:	US_EDM	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Company:	PDC Energy Inc. DJ Basin	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site:	Bypass State 1-12	**North Reference:**	True
Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BYPASS STATE 01N		
Design:	BYPASS STATE 01N Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,100.0	91.38	270.04	7,133.2	1,489.1	-3,417.0	3,583.3	0.00	0.00	0.00
10,200.0	91.38	270.04	7,130.7	1,489.2	-3,517.0	3,682.4	0.00	0.00	0.00
10,300.0	91.38	270.04	7,128.3	1,489.2	-3,617.0	3,781.5	0.00	0.00	0.00
10,400.0	91.38	270.04	7,125.9	1,489.3	-3,716.9	3,880.6	0.00	0.00	0.00
10,500.0	91.38	270.04	7,123.5	1,489.4	-3,816.9	3,979.7	0.00	0.00	0.00
10,600.0	91.38	270.04	7,121.1	1,489.4	-3,916.9	4,078.8	0.00	0.00	0.00
10,700.0	91.38	270.04	7,118.7	1,489.5	-4,016.9	4,177.9	0.00	0.00	0.00
10,800.0	91.38	270.04	7,116.3	1,489.6	-4,116.8	4,277.0	0.00	0.00	0.00
10,900.0	91.38	270.04	7,113.9	1,489.6	-4,216.8	4,376.2	0.00	0.00	0.00
11,000.0	91.38	270.04	7,111.5	1,489.7	-4,316.8	4,475.3	0.00	0.00	0.00
11,100.0	91.38	270.04	7,109.0	1,489.8	-4,416.7	4,574.4	0.00	0.00	0.00
11,200.0	91.38	270.04	7,106.6	1,489.9	-4,516.7	4,673.5	0.00	0.00	0.00
11,300.0	91.38	270.04	7,104.2	1,489.9	-4,616.7	4,772.6	0.00	0.00	0.00
11,400.0	91.38	270.04	7,101.8	1,490.0	-4,716.7	4,871.7	0.00	0.00	0.00
11,500.0	91.38	270.04	7,099.4	1,490.1	-4,816.6	4,970.8	0.00	0.00	0.00
11,600.0	91.38	270.04	7,097.0	1,490.1	-4,916.6	5,069.9	0.00	0.00	0.00
11,700.0	91.38	270.04	7,094.6	1,490.2	-5,016.6	5,169.0	0.00	0.00	0.00
11,800.0	91.38	270.04	7,092.2	1,490.3	-5,116.5	5,268.2	0.00	0.00	0.00
11,900.0	91.38	270.04	7,089.7	1,490.3	-5,216.5	5,367.3	0.00	0.00	0.00
12,000.0	91.38	270.04	7,087.3	1,490.4	-5,316.5	5,466.4	0.00	0.00	0.00
12,100.0	91.38	270.04	7,084.9	1,490.5	-5,416.5	5,565.5	0.00	0.00	0.00
12,200.0	91.38	270.04	7,082.5	1,490.5	-5,516.4	5,664.6	0.00	0.00	0.00
12,300.0	91.38	270.04	7,080.1	1,490.6	-5,616.4	5,763.7	0.00	0.00	0.00
12,400.0	91.38	270.04	7,077.7	1,490.7	-5,716.4	5,862.8	0.00	0.00	0.00
12,500.0	91.38	270.04	7,075.3	1,490.7	-5,816.3	5,961.9	0.00	0.00	0.00
12,600.0	91.38	270.04	7,072.9	1,490.8	-5,916.3	6,061.0	0.00	0.00	0.00
12,700.0	91.38	270.04	7,070.5	1,490.9	-6,016.3	6,160.1	0.00	0.00	0.00
12,800.0	91.38	270.04	7,068.0	1,490.9	-6,116.2	6,259.3	0.00	0.00	0.00
12,900.0	91.38	270.04	7,065.6	1,491.0	-6,216.2	6,358.4	0.00	0.00	0.00
13,000.0	91.38	270.04	7,063.2	1,491.1	-6,316.2	6,457.5	0.00	0.00	0.00
13,100.0	91.38	270.04	7,060.8	1,491.1	-6,416.2	6,556.6	0.00	0.00	0.00
13,200.0	91.38	270.04	7,058.4	1,491.2	-6,516.1	6,655.7	0.00	0.00	0.00
13,300.0	91.38	270.04	7,056.0	1,491.3	-6,616.1	6,754.8	0.00	0.00	0.00
13,400.0	91.38	270.04	7,053.6	1,491.3	-6,716.1	6,853.9	0.00	0.00	0.00
13,500.0	91.38	270.04	7,051.2	1,491.4	-6,816.0	6,953.0	0.00	0.00	0.00
13,600.0	91.38	270.04	7,048.7	1,491.5	-6,916.0	7,052.1	0.00	0.00	0.00
13,700.0	91.38	270.04	7,046.3	1,491.6	-7,016.0	7,151.3	0.00	0.00	0.00
13,800.0	91.38	270.04	7,043.9	1,491.6	-7,116.0	7,250.4	0.00	0.00	0.00
13,900.0	91.38	270.04	7,041.5	1,491.7	-7,215.9	7,349.5	0.00	0.00	0.00
14,000.0	91.38	270.04	7,039.1	1,491.8	-7,315.9	7,448.6	0.00	0.00	0.00
14,100.0	91.38	270.04	7,036.7	1,491.8	-7,415.9	7,547.7	0.00	0.00	0.00
14,200.0	91.38	270.04	7,034.3	1,491.9	-7,515.8	7,646.8	0.00	0.00	0.00
14,300.0	91.38	270.04	7,031.9	1,492.0	-7,615.8	7,745.9	0.00	0.00	0.00
14,400.0	91.38	270.04	7,029.5	1,492.0	-7,715.8	7,845.0	0.00	0.00	0.00
14,500.0	91.38	270.04	7,027.0	1,492.1	-7,815.8	7,944.1	0.00	0.00	0.00
14,600.0	91.38	270.04	7,024.6	1,492.2	-7,915.7	8,043.2	0.00	0.00	0.00
14,700.0	91.38	270.04	7,022.2	1,492.2	-8,015.7	8,142.4	0.00	0.00	0.00
14,800.0	91.38	270.04	7,019.8	1,492.3	-8,115.7	8,241.5	0.00	0.00	0.00
14,900.0	91.38	270.04	7,017.4	1,492.4	-8,215.6	8,340.6	0.00	0.00	0.00
15,000.0	91.38	270.04	7,015.0	1,492.4	-8,315.6	8,439.7	0.00	0.00	0.00
15,100.0	91.38	270.04	7,012.6	1,492.5	-8,415.6	8,538.8	0.00	0.00	0.00
15,200.0	91.38	270.04	7,010.2	1,492.6	-8,515.5	8,637.9	0.00	0.00	0.00
15,300.0	91.38	270.04	7,007.7	1,492.6	-8,615.5	8,737.0	0.00	0.00	0.00
15,400.0	91.38	270.04	7,005.3	1,492.7	-8,715.5	8,836.1	0.00	0.00	0.00

Database:	US_EDM	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Company:	PDC Energy Inc. DJ Basin	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site:	Bypass State 1-12	**North Reference:**	True
Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BYPASS STATE 01N		
Design:	BYPASS STATE 01N Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,500.0	91.38	270.04	7,002.9	1,492.8	-8,815.5	8,935.2	0.00	0.00	0.00
15,600.0	91.38	270.04	7,000.5	1,492.8	-8,915.4	9,034.4	0.00	0.00	0.00
15,700.0	91.38	270.04	6,998.1	1,492.9	-9,015.4	9,133.5	0.00	0.00	0.00
15,800.0	91.38	270.04	6,995.7	1,493.0	-9,115.4	9,232.6	0.00	0.00	0.00
15,900.0	91.38	270.04	6,993.3	1,493.1	-9,215.3	9,331.7	0.00	0.00	0.00
16,000.0	91.38	270.04	6,990.9	1,493.1	-9,315.3	9,430.8	0.00	0.00	0.00
16,100.0	91.38	270.04	6,988.5	1,493.2	-9,415.3	9,529.9	0.00	0.00	0.00
16,200.0	91.38	270.04	6,986.0	1,493.3	-9,515.3	9,629.0	0.00	0.00	0.00
16,300.0	91.38	270.04	6,983.6	1,493.3	-9,615.2	9,728.1	0.00	0.00	0.00
16,400.0	91.38	270.04	6,981.2	1,493.4	-9,715.2	9,827.2	0.00	0.00	0.00
16,500.0	91.38	270.04	6,978.8	1,493.5	-9,815.2	9,926.3	0.00	0.00	0.00
16,600.0	91.38	270.04	6,976.4	1,493.5	-9,915.1	10,025.5	0.00	0.00	0.00
16,700.0	91.38	270.04	6,974.0	1,493.6	-10,015.1	10,124.6	0.00	0.00	0.00
16,800.0	91.38	270.04	6,971.6	1,493.7	-10,115.1	10,223.7	0.00	0.00	0.00
16,900.0	91.38	270.04	6,969.2	1,493.7	-10,215.1	10,322.8	0.00	0.00	0.00
17,000.0	91.38	270.04	6,966.7	1,493.8	-10,315.0	10,421.9	0.00	0.00	0.00
17,100.0	91.38	270.04	6,964.3	1,493.9	-10,415.0	10,521.0	0.00	0.00	0.00
17,200.0	91.38	270.04	6,961.9	1,493.9	-10,515.0	10,620.1	0.00	0.00	0.00
17,300.0	91.38	270.04	6,959.5	1,494.0	-10,614.9	10,719.2	0.00	0.00	0.00
17,400.0	91.38	270.04	6,957.1	1,494.1	-10,714.9	10,818.3	0.00	0.00	0.00
17,500.0	91.38	270.04	6,954.7	1,494.1	-10,814.9	10,917.5	0.00	0.00	0.00
17,600.0	91.38	270.04	6,952.3	1,494.2	-10,914.9	11,016.6	0.00	0.00	0.00
17,700.0	91.38	270.04	6,949.9	1,494.3	-11,014.8	11,115.7	0.00	0.00	0.00
17,800.0	91.38	270.04	6,947.5	1,494.3	-11,114.8	11,214.8	0.00	0.00	0.00
17,900.0	91.38	270.04	6,945.0	1,494.4	-11,214.8	11,313.9	0.00	0.00	0.00
17,943.2	91.38	270.04	6,944.0	1,494.4	-11,258.0	11,356.8	0.00	0.00	0.00
TD at 17943.2									

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
01N SHL - 1063' FWL - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	1,389,904.81	3,186,905.32	40.401749	-104.828887
01N BHL - 150' FWL & - plan hits target center - Point	0.00	0.00	6,944.0	1,494.4	-11,258.0	1,391,313.95	3,175,636.80	40.405844	-104.869311
01N BPZ - 359' FNL & - plan misses target center by 1.3ft at 17893.4ft MD (6945.2 TVD, 1494.4 N, -11208.2 E) - Point	0.00	0.00	6,944.0	1,494.8	-11,208.1	1,391,314.66	3,175,686.64	40.405845	-104.869132
01N LPL - 150' FEL & - plan hits target center - Point	0.00	0.00	7,189.0	1,487.5	-1,102.3	1,391,383.89	3,185,791.84	40.405832	-104.832845

Database:	US_EDM	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Company:	PDC Energy Inc. DJ Basin	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Project:	SEC.18-T5N-R66W	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site:	Bypass State 1-12	**North Reference:**	True
Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	BYPASS STATE 01N		
Design:	BYPASS STATE 01N Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
100.0	100.0	0.0	0.0	Start Build 2.00
740.7	735.3	68.8	-19.0	Start 5944.5 hold at 740.7 MD
6,685.2	6,531.8	1,339.4	-370.6	Start DLS 8.00 TFO -74.57
7,784.6	7,189.0	1,487.5	-1,102.3	Start 10158.7 hold at 7784.6 MD
17,943.2	6,944.0	1,494.4	-11,258.0	TD at 17943.2

PDC Energy Inc. DJ Basin

SEC.18-T5N-R66W
Bypass State 1-12
BYPASS STATE 01N

BYPASS STATE 01N
BYPASS STATE 01N Plan #1

Anticollision Summary Report

28 December, 2023

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Project:	SEC.18-T5N-R66W	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Reference Site:	Bypass State 1-12	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	BYPASS STATE 01N	**Database:**	US_EDM
Reference Design:	BYPASS STATE 01N Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	BYPASS STATE 01N Plan #1		
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 ellipse separation of 1,000.0 ft	**Error Surface:**	Pedal Curve
Warning Levels Evaluated at:	2.45 **Sigma**	**Casing Method:**	Not applied

Survey Tool Program **Date** 12/28/2023

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	17,943.2	BYPASS STATE 01N Plan #1 (BYPASS S	MWD	MWD - Standard

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Bypass State 1-12						
BYPASS STATE 11C - BYPASS STATE 11C - BYPASS	100.0	91.0	149.8	149.4	368.814	CC, ES
BYPASS STATE 11C - BYPASS STATE 11C - BYPASS	5,300.0	5,077.9	1,471.2	1,431.8	37.345	SF
BYPASS STATE 02N - BYPASS STATE 02N - BYPASS S	100.0	101.0	14.9	14.5	37.413	CC
BYPASS STATE 02N - BYPASS STATE 02N - BYPASS S	17,943.2	17,979.5	431.9	-318.5	0.576	Level 1, ES, SF
BYPASS STATE 03N - BYPASS STATE 03N - BYPASS S	100.0	101.0	29.8	29.4	74.755	CC, ES
BYPASS STATE 03N - BYPASS STATE 03N - BYPASS S	17,943.2	17,881.6	854.0	96.7	1.128	Level 2, SF
BYPASS STATE 04NA - BYPASS STATE 04NA - BYPAS	100.0	103.0	44.8	44.4	110.804	CC, ES
BYPASS STATE 04NA - BYPASS STATE 04NA - BYPAS	17,943.2	17,734.7	1,284.4	529.0	1.700	SF
BYPASS STATE 05C - BYPASS STATE 05C - BYPASS S	100.0	103.0	59.8	59.4	147.827	CC, ES
BYPASS STATE 05C - BYPASS STATE 05C - BYPASS S	600.0	600.5	102.4	99.1	31.368	SF
BYPASS STATE 06N - BYPASS STATE 06N - BYPASS S	100.0	91.0	74.8	74.4	183.084	CC, ES
BYPASS STATE 06N - BYPASS STATE 06N - BYPASS S	600.0	585.6	118.4	115.1	36.456	SF
BYPASS STATE 07N - BYPASS STATE 07N - BYPASS S	7,700.0	7,763.9	9.8	-64.0	0.133	Level 1, CC, ES, SF
BYPASS STATE 08N - BYPASS STATE 08N - BYPASS S	105.8	110.0	104.8	104.4	238.181	CC, ES
BYPASS STATE 08N - BYPASS STATE 08N - BYPASS S	7,702.9	7,748.9	438.4	362.2	5.751	SF
BYPASS STATE 09N - BYPASS STATE 09N - BYPASS S	100.0	104.0	119.8	119.4	294.036	CC, ES
BYPASS STATE 09N - BYPASS STATE 09N - BYPASS S	7,200.0	7,972.0	818.8	748.7	11.687	SF
BYPASS STATE 10N - BYPASS STATE 10N - BYPASS S	100.8	103.8	134.8	134.4	329.850	CC, ES
BYPASS STATE 10N - BYPASS STATE 10N - BYPASS S	8,200.0	7,268.3	1,323.1	1,256.2	19.768	SF
BYPASS STATE 12N - BYPASS STATE 12N - BYPASS S	100.0	91.0	164.8	164.4	408.253	CC, ES
BYPASS STATE 12N - BYPASS STATE 12N - BYPASS S	4,500.0	4,245.6	1,493.3	1,461.2	46.509	SF
Bost Farms 5-7 Pad SEC.7-T5N-R66W						
Bost Farm 16N-8B-L - Bost Farm 16N-8B-L Wellbore #1 -	7,555.2	8,154.6	909.4	836.3	12.441	CC, ES
Bost Farm 16N-8B-L - Bost Farm 16N-8B-L Wellbore #1 -	8,000.0	7,844.0	962.3	881.0	11.828	SF
Bost Farm 38C-8-L - Bost Farm 38C-8-L Wellbore #1 - 38	7,700.0	8,254.7	704.5	629.1	9.350	CC
Bost Farm 38C-8-L - Bost Farm 38C-8-L Wellbore #1 - 38	7,704.0	8,250.2	704.5	629.0	9.337	ES
Bost Farm 38C-8-L - Bost Farm 38C-8-L Wellbore #1 - 38	8,100.0	7,939.0	744.0	658.2	8.671	SF
Bost Farm 38N-8C-L - Bost Farm 38N-8C-L Wellbore #1	7,638.5	8,248.3	475.2	400.2	6.334	CC, ES
Bost Farm 38N-8C-L - Bost Farm 38N-8C-L Wellbore #1	7,800.0	8,120.8	488.3	410.2	6.251	SF
Existing Wells Sec.10-T5N-R67W						
B&B 10-44 (Exist.) - Wellbore #1 - Wellbore #1	17,943.2	7,088.3	1,271.5	974.8	4.286	CC, ES, SF
UPRR 49 PAN AM B1 (Exist.) - Wellbore #1 - Wellbore #1	17,425.1	7,048.5	975.0	441.5	1.827	CC
UPRR 49 PAN AM B1 (Exist.) - Wellbore #1 - Wellbore #1	17,500.0	7,046.7	977.9	441.0	1.821	ES, SF

Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Project:	SEC.18-T5N-R66W	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Reference Site:	Bypass State 1-12	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	BYPASS STATE 01N	**Database:**	US_EDM
Reference Design:	BYPASS STATE 01N Plan #1	**Offset TVD Reference:**	Offset Datum

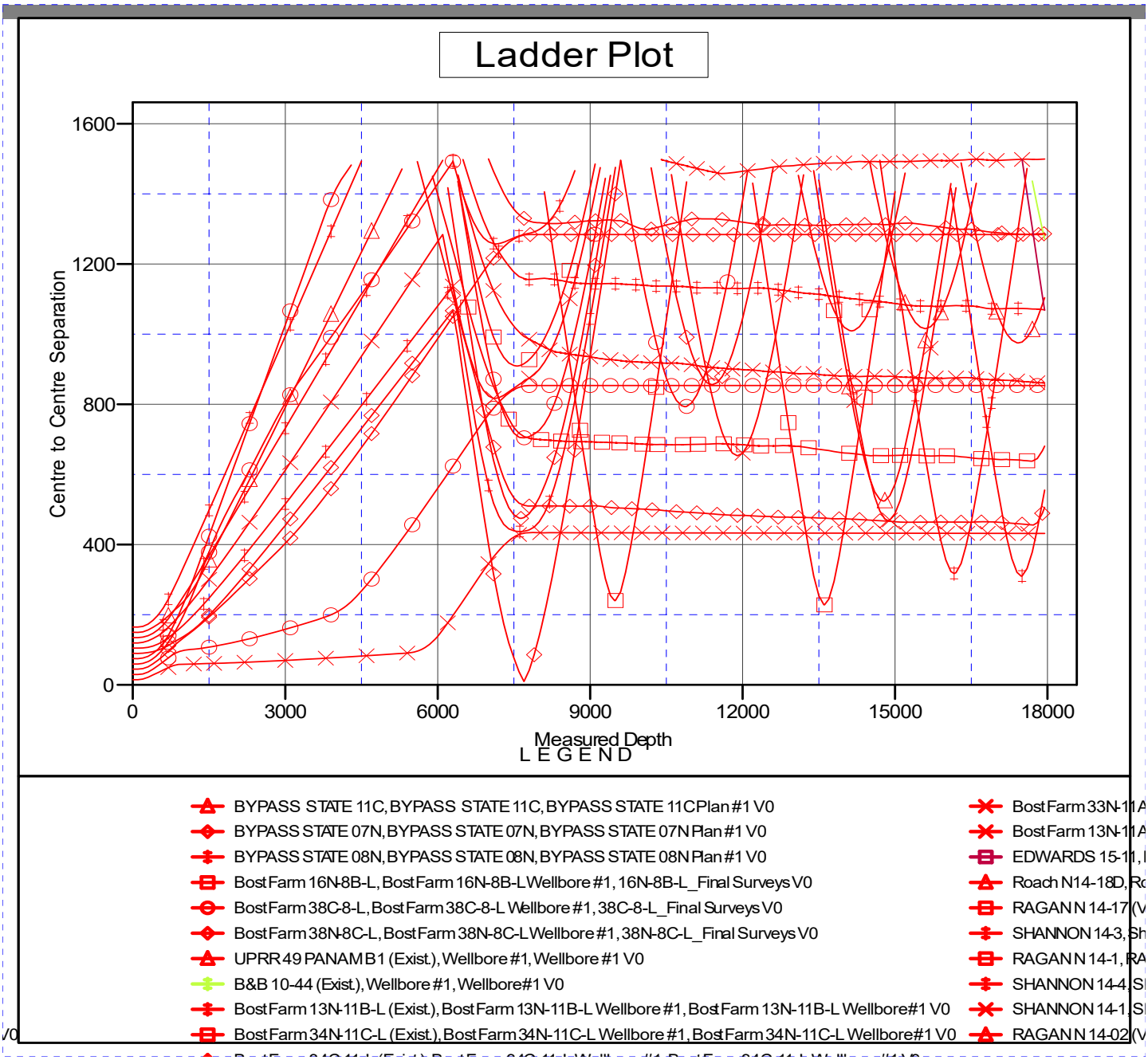
Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Existing Wells SEC.13-T5N-67W(GRID)						
LUNDVALL 13-12 (Vert) - LUNDVALL 13-12 (Vert) - LUN	9,485.7	7,082.0	240.0	-197.2	0.549	Level 1, CC, ES, SF
SHEEP DRAW 13-22 - SHEEP DRAW 13-22 - SHEEP D	11,900.0	7,099.2	653.3	463.0	3.433	ES, SF
SHEEP DRAW 13-22 - SHEEP DRAW 13-22 - SHEEP D	11,900.6	7,099.2	653.3	463.0	3.433	CC
SHUPE 13-2A - SHUPE 13-2A - SHUPE 13-2A	10,868.5	7,117.5	793.4	634.8	5.001	CC, ES, SF
SHUPE 13-2B - SHUPE 13-2B - SHUPE 13-2B	11,400.4	7,126.8	855.9	681.3	4.901	CC, ES, SF
Existing Wells Sec.14-T5N-R67W(GRID)						
RAGAN N 14-02 (Vert) - RAGAN N 14-02 (Vert) - RAGAI	14,769.8	7,049.5	524.1	-91.1	0.852	Level 1, CC, ES, SF
RAGAN N 14-1 - RAGAN N 14-1 - RAGAN N 14-1	13,600.0	7,184.8	228.4	-21.6	0.914	Level 1, ES, SF
RAGAN N 14-1 - RAGAN N 14-1 - RAGAN N 14-1	13,612.2	7,184.8	228.1	-21.5	0.914	Level 1, CC
RAGAN N 14-17 (Vert) - RAGAN N 14-17 (Vert) - RAGAI	14,145.6	7,053.6	1,009.5	415.5	1.700	CC, ES, SF
SHANNON 14-1 - SHANNON 14-1 - SHANNON 14-1	14,861.7	7,089.1	468.9	177.9	1.611	CC, ES, SF
SHANNON 14-2 (Vert) - SHANNON 14-2 (Vert) - SHANN						Out of range
SHANNON 14-3 - Shannon 14-3 - Shannon 14-3	17,482.4	7,051.2	310.3	-69.5	0.817	Level 1, CC, ES, SF
SHANNON 14-4 - SHANNON 14-4 - SHANNON 14-4	16,161.8	7,080.0	317.6	-16.2	0.951	Level 1, CC, ES, SF
Existing Wells Sec.7-T5N-R66W						
Bost Farm 12C-11-L (Exist.) - Bost Farm 12C-11-L Wellbo						Out of range
Bost Farm 13N-11A-L (Exist.) - Bost Farm 13N-11A-L We	17,943.2	17,981.9	861.4	350.0	1.684	CC, ES, SF
Bost Farm 13N-11B-L (Exist.) - Bost Farm 13N-11B-L We	17,943.2	17,946.2	1,069.5	556.2	2.083	CC, ES, SF
Bost Farm 33C-11-L (Exist.) - Bost Farm 33C-11-L Wellbo	17,522.7	17,611.5	1,284.8	795.3	2.625	CC
Bost Farm 33C-11-L (Exist.) - Bost Farm 33C-11-L Wellbo	17,943.2	18,029.8	1,286.2	777.6	2.529	ES, SF
Bost Farm 33N-11A-L (Exist.) - Bost Farm 33N-11A-L We	11,590.9	11,432.6	1,458.0	1,238.6	6.646	CC
Bost Farm 33N-11A-L (Exist.) - Bost Farm 33N-11A-L We	17,943.2	17,765.5	1,499.4	986.4	2.923	ES, SF
Bost Farm 33N-11C-L(Exist.) - Bost Farm 33N-11C-L We						Out of range
Bost Farm 34C-11-L (Exist.) - Bost Farm 34C-11-L Wellbo	17,722.6	18,093.0	455.9	-15.3	0.968	Level 1, CC, ES, SF
Bost Farm 34N-11C-L (Exist.) - Bost Farm 34N-11C-L We	17,673.4	17,848.0	638.4	140.7	1.283	Level 3, CC
Bost Farm 34N-11C-L (Exist.) - Bost Farm 34N-11C-L We	17,700.8	17,874.4	638.4	139.5	1.280	Level 3, ES, SF
Roach Pad Sec.14-T5N-R67W						
Roach N14-18D - Roach N14-18D - Roach N14-18D	15,592.7	7,280.1	1,015.8	696.6	3.182	CC, ES
Roach N14-18D - Roach N14-18D - Roach N14-18D	15,600.0	7,279.9	1,015.9	696.6	3.182	SF
SEC.15-T5N-R67W(EXIST)						
EDWARDS 15-11 - EDWARDS 15-11 - EDWARDS 15-11	17,943.2	7,044.6	1,068.3	916.1	7.021	CC, ES, SF
NIES 15-14 - NIES 15-14 - NIES 15-14						Out of range

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Project:	SEC.18-T5N-R66W	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Reference Site:	Bypass State 1-12	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	BYPASS STATE 01N	**Database:**	US_EDM
Reference Design:	BYPASS STATE 01N Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4918.0ft (RKB 28')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: BYPASS STATE 01N
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.43°



Ensign

Anticollision Summary Report

Company:	PDC Energy Inc. DJ Basin	**Local Co-ordinate Reference:**	Well BYPASS STATE 01N
Project:	SEC.18-T5N-R66W	**TVD Reference:**	Well @ 4918.0ft (RKB 28')
Reference Site:	Bypass State 1-12	**MD Reference:**	Well @ 4918.0ft (RKB 28')
Site Error:	0.0 ft	**North Reference:**	True
Reference Well:	BYPASS STATE 01N	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0 ft	**Output errors are at**	2.00 sigma
Reference Wellbore	BYPASS STATE 01N	**Database:**	US_EDM
Reference Design:	BYPASS STATE 01N Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to Well @ 4918.0ft (RKB 28')
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000

Coordinates are relative to: BYPASS STATE 01N
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.43°