

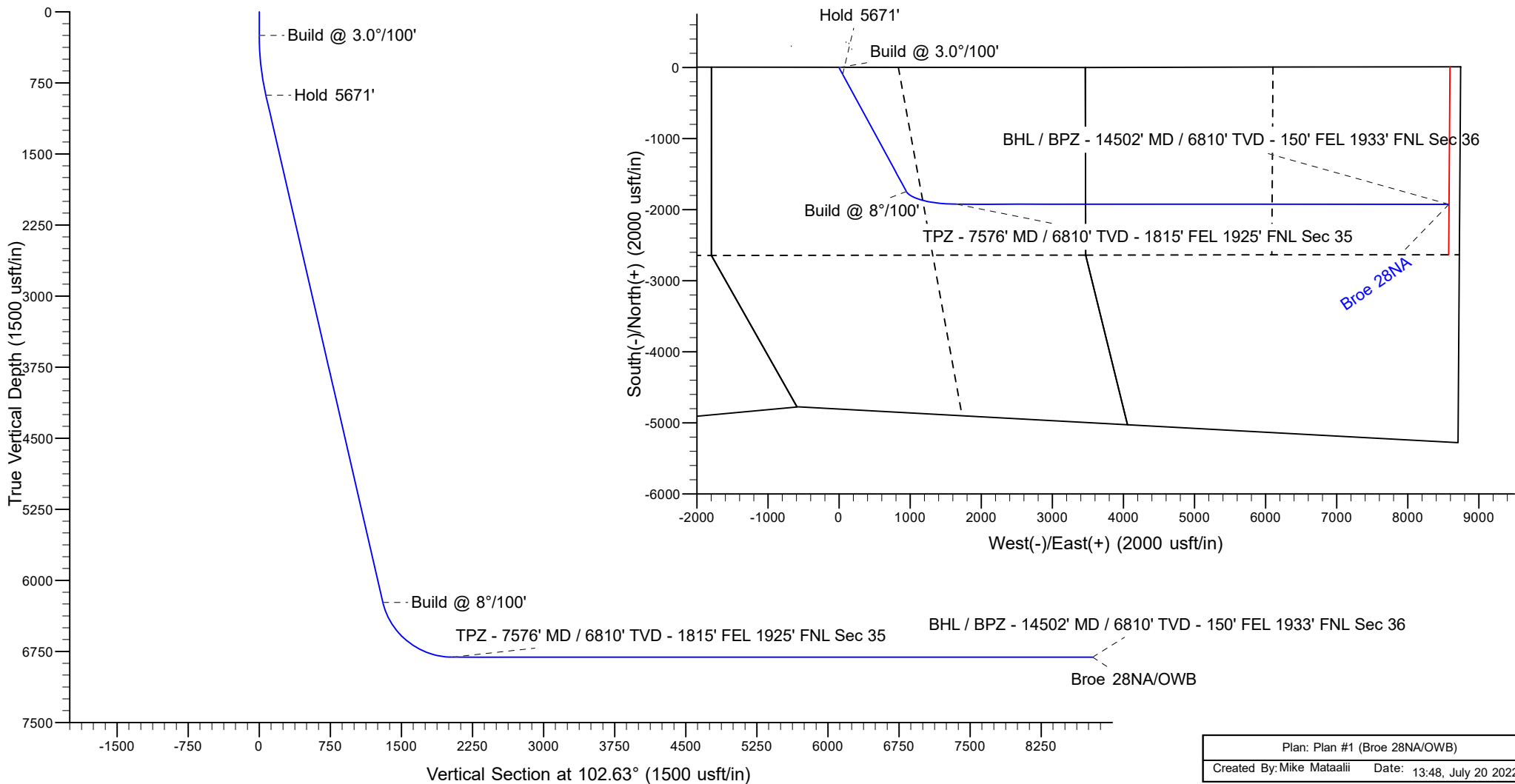


Project: WELD COUNTY
 Site: Broe Pad
 Well: Broe 28NA
 Wellbore: OWB
 Design: Plan #1
 Lat: 40° 27' 2.454 N
 Long: 104° 51' 49.972 W
 GL: 4740.0
 KB: KB @ 4760.0usft

Azimuths to True North
 Magnetic North: 7.80°
 Magnetic Field
 Strength: 51863.2nT
 Dip Angle: 66.64°
 Date: 6/24/2022
 Model: IGRF2000

WELL DETAILS: Broe 28NA						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	1407658.62	3177031.76	40° 27' 2.454 N	104° 51' 49.972 W	

SECTION DETAILS										
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.0	Build @ 3.0°/100'	
893.9	19.32	151.50	881.8	-94.5	51.3	3.00	151.50	70.7	Hold 5671'	
6565.0	19.32	151.50	6233.6	-1743.2	946.5	0.00	0.00	1304.7	Build @ 8°/100'	
7576.5	90.00	90.01	6810.0	-1920.8	1653.7	8.00	-62.86	2033.6	TPZ - 7576' MD / 6810' TVD - 1815' FEL 1925' FNL Sec 35	
14502.7	90.00	90.01	6810.0	-1922.2	8579.9	0.00	0.00	8792.6	BHL / BPZ - 14502' MD / 6810' TVD - 150' FEL 1933' FNL Sec 36	



PDC

WELD COUNTY

Broe Pad

Broe 28NA

OWB

Plan #1

Anticollision Summary Report

20 July, 2022

PDC Energy Inc.
Anticollision Summary Report

Company:	PDC	Local Co-ordinate Reference:	Well Broe 28NA
Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 28NA	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.0 usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	7/14/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	14,502.7	Plan #1 (OWB)	MWD	OWSG MWD - Standard

Summary						
Site Name	Reference		Distance		Separation Factor	Warning
	Measured Depth (usft)	Offset Measured Depth (usft)	Between Centres (usft)	Between Ellipses (usft)		
Offset Well - Wellbore - Design						
Broe Offsets						
Christainsen 35-13 - OJH - OH	7,451.8	6,782.9	252.3	197.9	4.637	CC, ES
Christainsen 35-13 - OJH - OH	7,500.0	6,787.1	257.4	200.2	4.502	SF
Christiansen 1-35 - OH - OH	8,177.0	6,772.7	239.1	169.7	3.447	CC
Christiansen 1-35 - OH - OH	8,200.0	6,773.6	240.2	168.6	3.355	ES, SF
CHRISTIANSEN 35-15 - OJH - OH	7,522.9	6,783.1	226.1	62.6	1.383	Collision Avoidance Req., CC
CHRISTIANSEN 35-15 - OJH - OH	7,550.0	6,784.5	227.8	62.7	1.380	Collision Avoidance Req., SF
Great Western 25-24-23 - OH - OH	11,825.4	6,000.0	2,620.2	2,471.3	17.591	CC, ES
Great Western 25-24-23 - OH - OH	11,900.0	6,000.0	2,621.3	2,472.2	17.579	SF
Great Western 25-24-24 - MWD Surveys - OH	10,716.2	7,439.5	1,911.0	1,755.9	12.321	CC, ES
Great Western 25-24-24 - MWD Surveys - OH	10,900.0	7,440.9	1,919.8	1,762.8	12.225	SF
Great Western 35-31 - OH - OH	5,163.8	5,226.6	1,107.8	1,055.3	21.107	CC
Great Western 35-31 - OH - OH	5,200.0	5,252.9	1,108.0	1,055.3	21.016	ES
Great Western 35-31 - OH - OH	7,700.0	7,051.8	1,285.3	1,217.2	18.876	SF
Great Western 35-41 - OH - OH	8,772.4	7,122.9	1,292.0	1,188.5	12.476	CC, ES
Great Western 35-41 - OH - OH	8,800.0	7,123.3	1,292.3	1,188.6	12.458	SF
GREAT WESTERN 35-52 - OH - OH	2,973.5	2,824.3	887.6	822.5	13.625	CC
Great Western 35-52 - OH - OH	2,973.5	2,824.3	887.7	822.5	13.624	CC
Great Western 35-52 - OH - OH	3,200.0	3,038.0	890.8	820.6	12.680	ES
GREAT WESTERN 35-52 - OH - OH	3,200.0	3,038.0	890.8	820.6	12.680	ES
Great Western 35-52 - OH - OH	5,300.0	5,019.8	1,174.8	1,058.0	10.058	SF
GREAT WESTERN 35-52 - OH - OH	5,300.0	5,019.8	1,174.8	1,058.0	10.058	SF
J E CHRISTIANSEN 35-1 - OH - OH	0.0	0.0	3,462.2			
J E CHRISTIANSEN 35-1 - OH - OH	1,100.0	22.0	3,463.3	3,453.8	363.497	ES
J E CHRISTIANSEN 35-1 - OH - OH	12,800.0	22.0	7,889.4	7,840.3	160.958	SF
KODAK 2 - OH - OH	5,031.5	4,600.0	4,632.8	4,524.4	42.745	CC, ES
KODAK 2 - OH - OH	5,600.0	4,600.0	4,667.6	4,556.9	42.167	SF
KODAK 34-11 - OH - OH	250.0	235.0	2,553.8	2,548.2	455.990	CC
KODAK 34-11 - OH - OH	500.0	484.3	2,556.4	2,545.5	234.188	ES
KODAK 34-11 - OH - OH	6,800.0	6,430.6	3,564.2	3,414.4	23.789	SF
KODAK 34-12 - OH - OH	250.0	234.0	3,566.3	3,560.7	638.774	CC
KODAK 34-12 - OH - OH	400.0	383.8	3,567.8	3,559.0	405.517	ES
KODAK 34-12 - OH - OH	6,850.0	6,471.1	4,614.7	4,463.6	30.551	SF
KODAK 34-13 - OH - OH	1,382.7	1,327.0	4,108.5	4,078.9	138.580	CC
KODAK 34-13 - OH - OH	2,200.0	2,098.3	4,117.4	4,069.5	85.971	ES
KODAK 34-13 - OH - OH	6,950.0	6,548.4	4,599.8	4,445.6	29.847	SF
KODAK 34-14 - OH - OH	2,763.7	2,630.3	3,288.0	3,227.5	54.336	CC
KODAK 34-14 - OH - OH	3,400.0	3,230.8	3,294.7	3,219.9	44.044	ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

PDC Energy Inc.
Anticollision Summary Report

Company:	PDC	Local Co-ordinate Reference:	Well Broe 28NA
Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 28NA	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Broe Offsets						
KODAK 34-14 - OH - OH	6,850.0	6,471.1	3,609.3	3,457.2	23.729	SF
KODAK 34-15 - OH - OH	250.0	234.0	3,559.3	3,553.7	637.513	CC
KODAK 34-15 - OH - OH	800.0	776.4	3,564.9	3,547.8	208.875	ES
KODAK 34-15 - OH - OH	6,850.0	6,471.1	4,282.7	4,131.1	28.259	SF
KODAK 34-21 - OH - OH	250.0	234.0	5,257.6	5,252.0	941.713	CC
KODAK 34-21 - OH - OH	400.0	383.8	5,259.6	5,250.7	592.344	ES
KODAK 34-21 - OH - OH	7,000.0	6,584.0	6,417.3	6,263.2	41.662	SF
KODAK 34-22 - OH - OH	250.0	234.0	6,355.7	6,350.1	1,138.395	CC
KODAK 34-22 - OH - OH	400.0	383.8	6,358.1	6,349.2	708.078	ES
KODAK 34-22 - OH - OH	7,050.0	6,617.3	7,650.9	7,496.2	49.453	SF
KODAK 34-23 - OH - OH	250.0	234.0	6,674.6	6,669.0	1,195.513	CC
KODAK 34-23 - OH - OH	500.0	483.3	6,677.9	6,666.9	609.715	ES
KODAK 34-23 - OH - OH	7,100.0	6,648.0	7,596.7	7,440.1	48.533	SF
KODAK 34-24 - OH - OH	250.0	234.0	5,195.0	5,189.5	930.507	CC
KODAK 34-24 - OH - OH	600.0	582.0	5,198.6	5,185.7	401.880	ES
KODAK 34-24 - OH - OH	7,000.0	6,584.0	5,947.6	5,792.8	38.410	SF
KODAK 34-25 - OH - OH	250.0	234.0	6,199.3	6,193.7	1,110.389	CC
KODAK 34-25 - OH - OH	400.0	383.8	6,200.8	6,192.0	704.910	ES
KODAK 34-25 - OH - OH	7,050.0	6,617.3	7,205.1	7,049.7	46.367	SF
KODAK 34-31 - OH - OH	2,825.8	2,689.0	5,811.6	5,749.7	93.876	CC
KODAK 34-31 - OH - OH	4,000.0	3,797.0	5,824.6	5,736.3	65.976	ES
KODAK 34-31 - OH - OH	7,100.0	6,648.0	6,161.7	6,004.0	39.082	SF
KODAK 34-32 - OH - OH	250.0	234.0	6,944.6	6,939.0	1,243.881	CC
KODAK 34-32 - OH - OH	1,800.0	1,720.9	6,959.3	6,920.3	178.663	ES
KODAK 34-32 - OH - OH	7,150.0	6,676.2	7,506.6	7,348.3	47.436	SF
KODAK 34-33 - OH - OH	4,167.2	3,954.8	7,506.3	7,414.3	81.565	CC
KODAK 34-33 - OH - OH	5,700.0	5,401.3	7,523.4	7,396.9	59.477	ES
KODAK 34-33 - OH - OH	7,250.0	6,724.1	7,856.1	7,695.4	48.873	SF
KODAK 34-34 - OH - OH	5,893.0	5,583.4	5,745.7	5,614.9	43.920	CC
KODAK 34-34 - OH - OH	6,565.0	6,217.6	5,750.0	5,604.1	39.400	ES
KODAK 34-34 - OH - OH	7,150.0	6,676.2	5,967.1	5,807.9	37.489	SF
KODAK 34-35 - OH - OH	3,804.5	3,612.5	6,358.1	6,274.2	75.799	CC
KODAK 34-35 - OH - OH	5,100.0	4,835.1	6,372.5	6,259.5	56.391	ES
KODAK 34-35 - OH - OH	7,150.0	6,676.2	6,665.0	6,506.1	41.961	SF
Kodak 34-41 - OH - OH	2,922.8	2,378.7	3,254.0	3,226.1	116.699	CC
Kodak 34-41 - OH - OH	3,000.0	2,421.2	3,254.5	3,226.1	114.706	ES
Kodak 34-41 - OH - OH	7,050.0	6,633.3	3,530.6	3,468.5	56.865	SF
KODAK 34-42 - OH - OH	4,173.1	3,961.4	4,340.1	4,247.9	47.082	CC
KODAK 34-42 - OH - OH	5,100.0	4,836.1	4,350.9	4,237.9	38.496	ES
KODAK 34-42 - OH - OH	7,000.0	6,585.0	4,560.9	4,405.1	29.279	SF
KODAK 34-43 - OH - OH	6,608.7	6,259.6	4,651.5	4,504.7	31.680	CC, ES
KODAK 34-43 - OH - OH	7,200.0	6,702.6	4,849.9	4,689.3	30.200	SF
Kodak 34-44 - OH - OH	6,666.9	6,464.5	3,309.0	3,248.1	54.333	CC, ES
Kodak 34-44 - OH - OH	7,300.0	6,872.3	3,529.0	3,461.3	52.103	SF
Kodak 34-45 - OH - OH	2,437.5	1,835.2	3,327.9	3,302.7	131.747	CC
Kodak 34-45 - OH - OH	2,500.0	1,875.0	3,328.2	3,302.5	129.590	ES
Kodak 34-45 - OH - OH	7,050.0	6,778.0	4,121.7	4,052.4	59.450	SF
KODAK 35-21 - OH - OH	2,861.1	2,723.2	230.9	168.2	3.682	CC
KODAK 35-21 - OH - OH	2,900.0	2,759.9	231.3	167.7	3.636	ES
KODAK 35-21 - OH - OH	3,000.0	2,854.3	235.4	169.5	3.573	SF
KODAK 35-22 - OH - OH	682.3	662.6	1,644.4	1,629.9	112.937	CC
KODAK 35-22 - OH - OH	1,000.0	965.9	1,647.1	1,625.9	77.482	ES
KODAK 35-22 - OH - OH	6,650.0	6,296.9	2,565.2	2,419.0	17.540	SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

PDC Energy Inc.
Anticollision Summary Report

Company:	PDC	Local Co-ordinate Reference:	Well Broe 28NA
Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 28NA	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Broe Offsets						
State 05-36 - OH - OH	13,958.4	6,759.7	558.3	342.3	2.584	CC
State 05-36 - OH - OH	14,000.0	6,759.3	559.8	341.4	2.563	ES, SF
State 6-36 - OH - OH	12,435.9	6,769.4	1,249.8	1,049.7	6.246	CC, ES
State 6-36 - OH - OH	12,500.0	6,768.6	1,251.5	1,051.0	6.244	SF
STATE 7-36 - OH - OH	11,022.1	6,768.0	329.9	84.3	1.343	Collision Avoidance Req., CC
STATE 8-36 - OH - OH	10,317.4	6,768.0	981.3	754.0	4.317	CC, ES, SF
State M 36-1 - OH - OH	13,902.5	6,769.3	1,181.4	963.6	5.424	CC, ES, SF
State M 36-13 - OH - OH	10,140.7	7,151.8	2,698.2	2,565.3	20.303	CC
State M 36-13 - OH - OH	10,200.0	7,151.5	2,698.8	2,563.9	20.007	ES
State M 36-13 - OH - OH	11,100.0	7,147.1	2,863.6	2,705.0	18.056	SF
State M 36-14 - OH - OH	13,651.7	6,766.8	222.4	12.2	1.058	Collision Avoidance Req., CC
State M 36-3 - OH - OH	11,345.5	6,776.8	1,137.8	979.5	7.189	CC, ES
State M 36-3 - OH - OH	11,400.0	6,776.7	1,139.1	980.6	7.188	SF
STATE M 36-5 - OH - OH	10,008.9	6,772.0	180.9	-38.5	0.824	No-Go Zone - Stop Drilling, CC
State M 36-7 - OH - OH	12,574.4	6,769.2	213.3	30.2	1.165	Collision Avoidance Req., CC
State M 36-7 - OH - OH	12,600.0	6,768.9	214.8	28.5	1.153	Collision Avoidance Req., ES
Windsor 35-2 - OH - OH	6,575.6	6,228.8	2,336.1	2,288.1	48.635	CC, ES
Windsor 35-2 - OH - OH	7,000.0	6,565.2	2,451.6	2,399.4	46.988	SF
Windsor 35-5 - OH - OH	4,292.2	4,076.1	1,964.2	1,932.3	61.513	CC
Windsor 35-5 - OH - OH	4,400.0	4,178.6	1,964.5	1,931.9	60.209	ES
Windsor 35-5 - OH - OH	6,700.0	6,362.4	2,148.6	2,099.7	43.956	SF
Windsor Invsetment Group 35-1 - OH - OH	6,288.1	5,935.0	703.5	657.8	15.366	CC
Windsor Invsetment Group 35-1 - OH - OH	6,300.0	5,946.2	703.5	657.7	15.341	ES
Windsor Invsetment Group 35-1 - OH - OH	6,600.0	6,227.2	711.0	663.2	14.858	SF

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Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Broe Pad						
Broe 01N - OWB - Plan #1	1,081.9	1,088.9	68.4	53.1	4.478	CC
Broe 01N - OWB - Plan #1	1,100.0	1,106.4	68.5	52.8	4.371	ES
Broe 01N - OWB - Plan #1	1,200.0	1,203.4	74.1	56.9	4.315	SF
Broe 02NA - OWB - Plan #1	1,163.6	1,166.1	46.2	29.8	2.809	CC
Broe 02NA - OWB - Plan #1	1,200.0	1,201.6	46.9	29.6	2.706	ES, SF
Broe 03C - OWB - Plan #1	1,233.6	1,231.3	32.7	15.8	1.936	Collision Risk Procedures Re
Broe 03C - OWB - Plan #1	1,300.0	1,296.5	35.1	16.5	1.893	Collision Risk Procedures Re
Broe 04N - OWB - Plan #1	1,328.0	1,321.2	8.3	-10.1	0.452	No-Go Zone - Stop Drilling, (
Broe 05N - OWB - Plan #1	1,400.0	1,388.9	11.4	-8.6	0.570	No-Go Zone - Stop Drilling, E
Broe 05N - OWB - Plan #1	1,411.9	1,400.6	11.2	-8.4	0.574	No-Go Zone - Stop Drilling, (
Broe 06NA - OWB - Plan #1	1,434.0	1,418.1	40.1	19.6	1.954	Collision Risk Procedures Re
Broe 07C - OWB - Plan #1	1,464.1	1,444.2	54.8	33.8	2.615	CC
Broe 07C - OWB - Plan #1	1,500.0	1,479.9	54.9	33.8	2.597	ES, SF
Broe 08N - OWB - Plan #1	7,116.5	7,151.0	62.9	-16.6	0.791	No-Go Zone - Stop Drilling, (
Broe 09N - OWB - Plan #1	973.5	945.4	84.0	66.6	4.834	CC
Broe 09N - OWB - Plan #1	7,230.4	7,184.9	98.6	16.2	1.197	Collision Avoidance Req., ES
Broe 10NA - OWB - Plan #1	952.2	921.3	89.7	72.0	5.054	CC, ES
Broe 10NA - OWB - Plan #1	7,250.0	7,178.4	329.9	246.1	3.933	SF
Broe 11C - OWB - Plan #1	1,371.7	1,335.7	201.8	185.2	12.185	CC
Broe 11C - OWB - Plan #1	1,600.0	1,562.5	203.5	183.8	10.313	ES
Broe 11C - OWB - Plan #1	7,500.0	7,203.4	433.0	341.2	4.716	SF
Broe 12N - OWB - Plan #1	1,105.3	1,064.9	203.0	189.6	15.101	CC, ES
Broe 12N - OWB - Plan #1	7,576.5	7,163.7	698.1	604.0	7.421	SF
Broe 13N - OWB - Plan #1	1,054.9	1,011.6	201.5	188.1	15.055	CC
Broe 13N - OWB - Plan #1	1,100.0	1,054.1	201.8	187.8	14.427	ES
Broe 13N - OWB - Plan #1	7,800.0	7,150.0	889.4	787.6	8.736	SF
Broe 14NA - OWB - Plan #1	1,018.5	972.6	199.4	185.8	14.652	CC, ES
Broe 14NA - OWB - Plan #1	7,900.0	7,122.5	1,130.7	1,025.7	10.774	SF
Broe 15C - OWB - Plan #1	989.5	941.1	197.3	183.3	14.124	CC
Broe 15C - OWB - Plan #1	1,000.0	950.9	197.3	183.3	14.017	ES
Broe 15C - OWB - Plan #1	8,100.0	7,226.6	1,252.7	1,138.6	10.980	SF
Broe 16N - OWB - Plan #1	972.3	921.4	195.0	180.5	13.472	CC
Broe 16N - OWB - Plan #1	1,000.0	947.2	195.1	180.4	13.233	ES
Broe 16N - OWB - Plan #1	1,300.0	1,223.4	215.1	196.6	11.676	SF
Broe 17N - OWB - Plan #1	959.6	906.3	193.4	178.4	12.887	CC
Broe 17N - OWB - Plan #1	1,000.0	943.7	193.7	178.3	12.588	ES
Broe 17N - OWB - Plan #1	1,300.0	1,218.8	216.0	197.2	11.471	SF
Broe 18NA - OWB - Plan #1	956.8	900.0	192.2	176.7	12.341	CC, ES
Broe 18NA - OWB - Plan #1	1,300.0	1,214.6	216.8	197.6	11.277	SF
Broe 19C - OWB - Plan #1	947.2	889.1	192.0	176.0	11.955	CC, ES
Broe 19C - OWB - Plan #1	1,200.0	1,120.5	205.4	186.9	11.088	SF
Broe 20N - OWB - Plan #1	946.4	885.9	192.4	175.8	11.626	CC, ES
Broe 20N - OWB - Plan #1	1,200.0	1,117.3	206.4	187.4	10.901	SF
Broe 21C - OWB - Plan #1	639.7	655.2	122.3	111.8	11.641	CC, ES
Broe 21C - OWB - Plan #1	14,502.7	14,789.7	1,682.3	1,243.3	3.832	SF
Broe 22N - OWB - Plan #1	668.6	681.2	92.0	81.7	8.957	CC
Broe 22N - OWB - Plan #1	700.0	712.4	92.2	81.4	8.527	ES
Broe 22N - OWB - Plan #1	14,502.7	14,576.8	1,453.4	1,011.0	3.285	SF
Broe 23N - OWB - Plan #1	697.8	709.0	77.8	67.2	7.336	CC
Broe 23N - OWB - Plan #1	700.0	711.2	77.8	67.1	7.308	ES
Broe 23N - OWB - Plan #1	14,502.7	14,629.6	1,254.4	814.1	2.849	SF
Broe 24C - OWB - Plan #1	723.4	733.0	64.0	53.1	5.828	CC
Broe 24C - OWB - Plan #1	800.0	809.2	65.5	52.9	5.213	ES

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

PDC Energy Inc.
Anticollision Summary Report

Company:	PDC	Local Co-ordinate Reference:	Well Broe 28NA
Project:	WELD COUNTY	TVD Reference:	KB @ 4760.0usft
Reference Site:	Broe Pad	MD Reference:	KB @ 4760.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Broe 28NA	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.15 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Broe Pad						
Broe 24C - OWB - Plan #1	14,502.7	14,727.5	1,072.9	641.1	2.485	SF
Broe 25NA - OWB - Plan #1	250.0	250.0	60.1	57.3	21.519	CC
Broe 25NA - OWB - Plan #1	600.0	605.0	62.4	54.0	7.464	ES
Broe 25NA - OWB - Plan #1	14,502.7	14,446.9	828.6	387.1	1.877	Collision Risk Procedures Re
Broe 26N - OWB - Plan #1	800.3	806.7	36.8	25.1	3.141	CC
Broe 26N - OWB - Plan #1	893.9	900.0	38.8	24.8	2.766	ES
Broe 26N - OWB - Plan #1	14,502.7	14,535.9	627.2	187.6	1.427	Collision Avoidance Req., SF
Broe 27N - OWB - Plan #1	825.5	829.8	24.3	12.6	2.080	CC
Broe 27N - OWB - Plan #1	893.9	898.2	25.3	11.7	1.869	Collision Risk Procedures Re
Broe 27N - OWB - Plan #1	14,502.7	14,603.1	438.9	14.9	1.035	Collision Avoidance Req., SF
Broe 29C - OWB - Plan #1	841.9	844.1	12.2	0.6	1.051	Collision Avoidance Req., CC
Broe 29C - OWB - Plan #1	900.0	902.2	12.8	-0.6	0.957	No-Go Zone - Stop Drilling, E
Broe 30N - OWB - Plan #1	925.7	923.4	11.6	-0.7	0.944	No-Go Zone - Stop Drilling, C
Broe 30N - OWB - Plan #1	14,502.7	14,609.5	223.9	-179.8	0.555	No-Go Zone - Stop Drilling, E
Broe FD 36-002HNX - OWB - Plan #1	586.4	599.2	109.6	100.5	12.053	CC
Broe FD 36-002HNX - OWB - Plan #1	600.0	612.6	109.6	100.3	11.787	ES
Broe FD 36-002HNX - OWB - Plan #1	14,400.0	14,273.8	1,931.2	1,498.5	4.463	SF

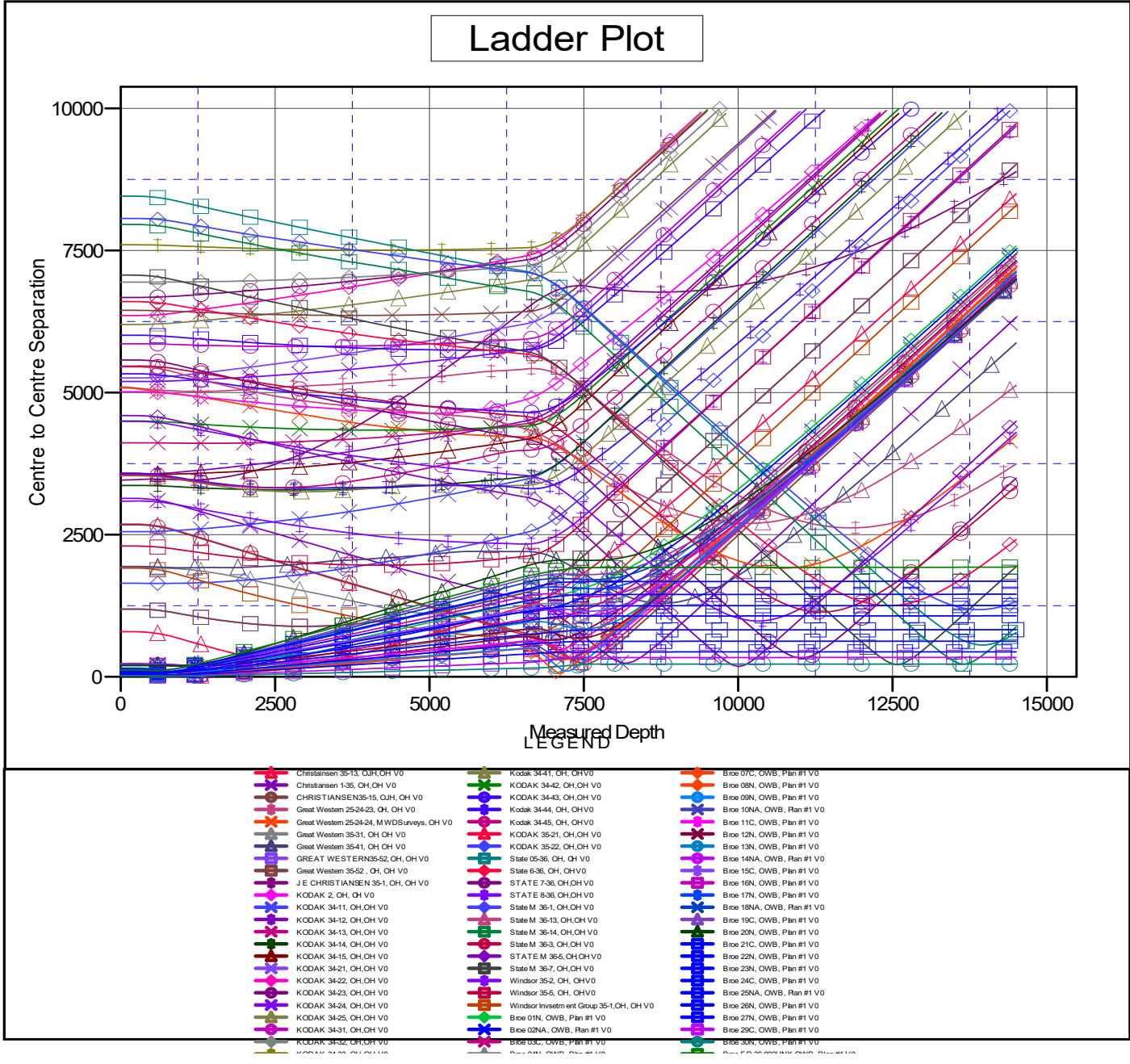
PDC Energy Inc.

Anticollision Summary Report

Company: PDC	Local Co-ordinate Reference: Well Broe 28NA
Project: WELD COUNTY	TVD Reference: KB @ 4760.0usft
Reference Site: Broe Pad	MD Reference: KB @ 4760.0usft
Site Error: 0.0 usft	North Reference: True
Reference Well: Broe 28NA	Survey Calculation Method: Minimum Curvature
Well Error: 0.0 usft	Output errors are at 2.00 sigma
Reference Wellbore OWB	Database: EDM 5000.15 Single User Db
Reference Design: Plan #1	Offset TVD Reference: Offset Datum

Reference Depths are relative to KB @ 4760.0usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Broe 28NA
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.41°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

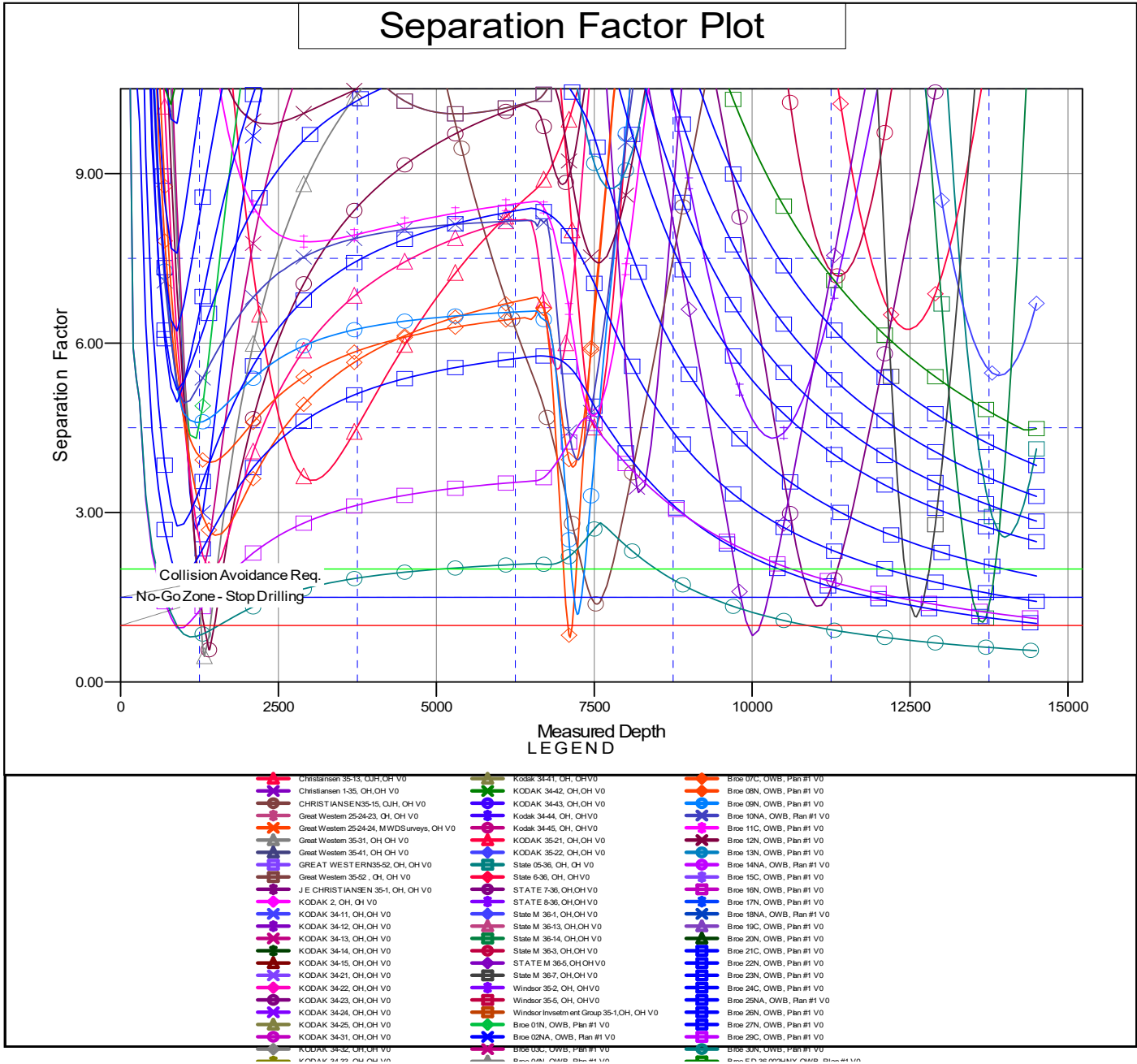
PDC Energy Inc.

Anticollision Summary Report

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