

Plan #1

WELL DETAILS: Rio 14N

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1243172.03	3156857.19	39° 59' 58.320 N	104° 56' 24.371 W



Project: ADAMS COUNTY
Site: Rio Ivy
Well: Rio 14N
Wellbore: OWB
Design: Plan #1
Lat: 39° 59' 58.320 N
Long: 104° 56' 24.371 W
GL: 5067.0
KB: KB 28' @ 5095.0usft



Azimuths to True North
Magnetic North: 8.00°

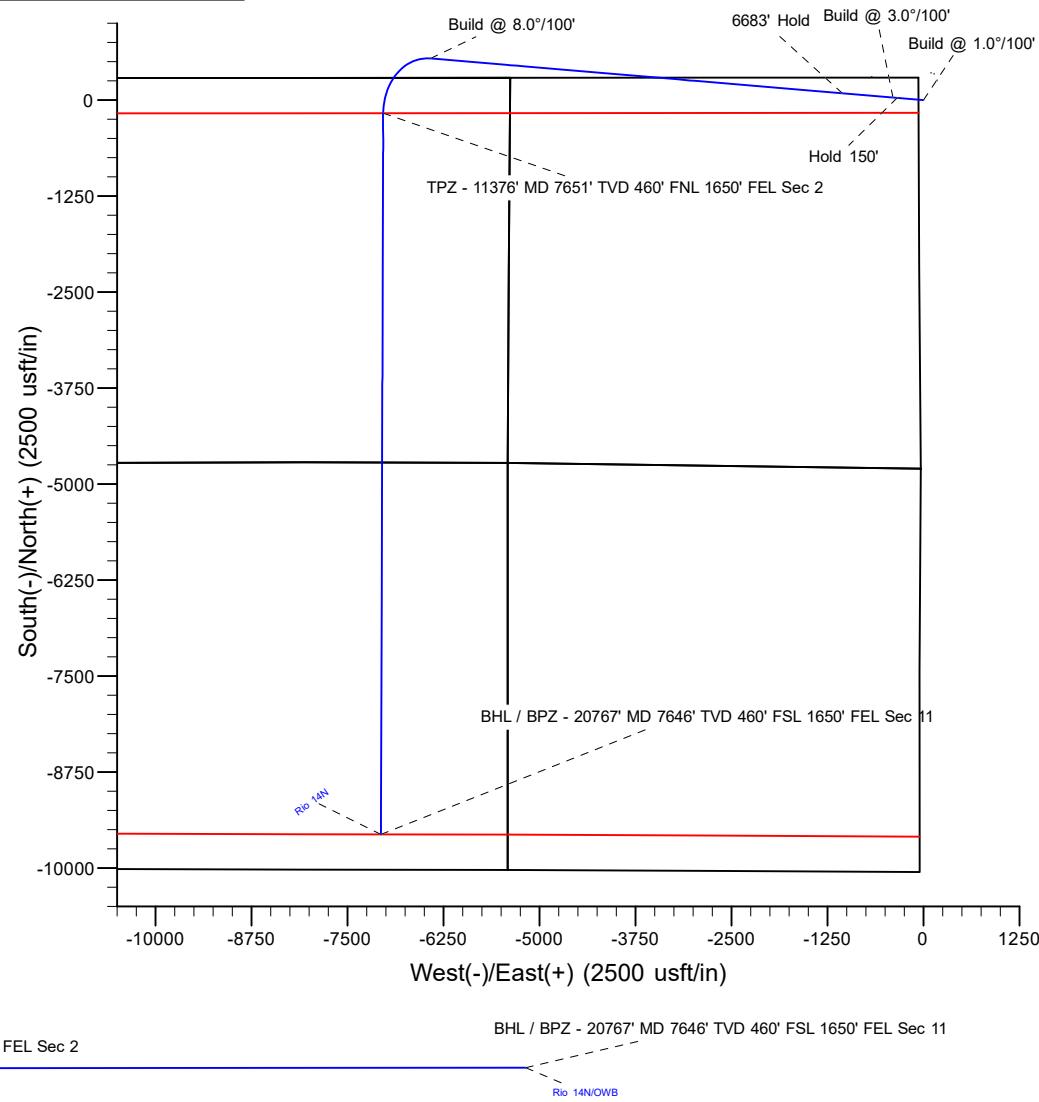
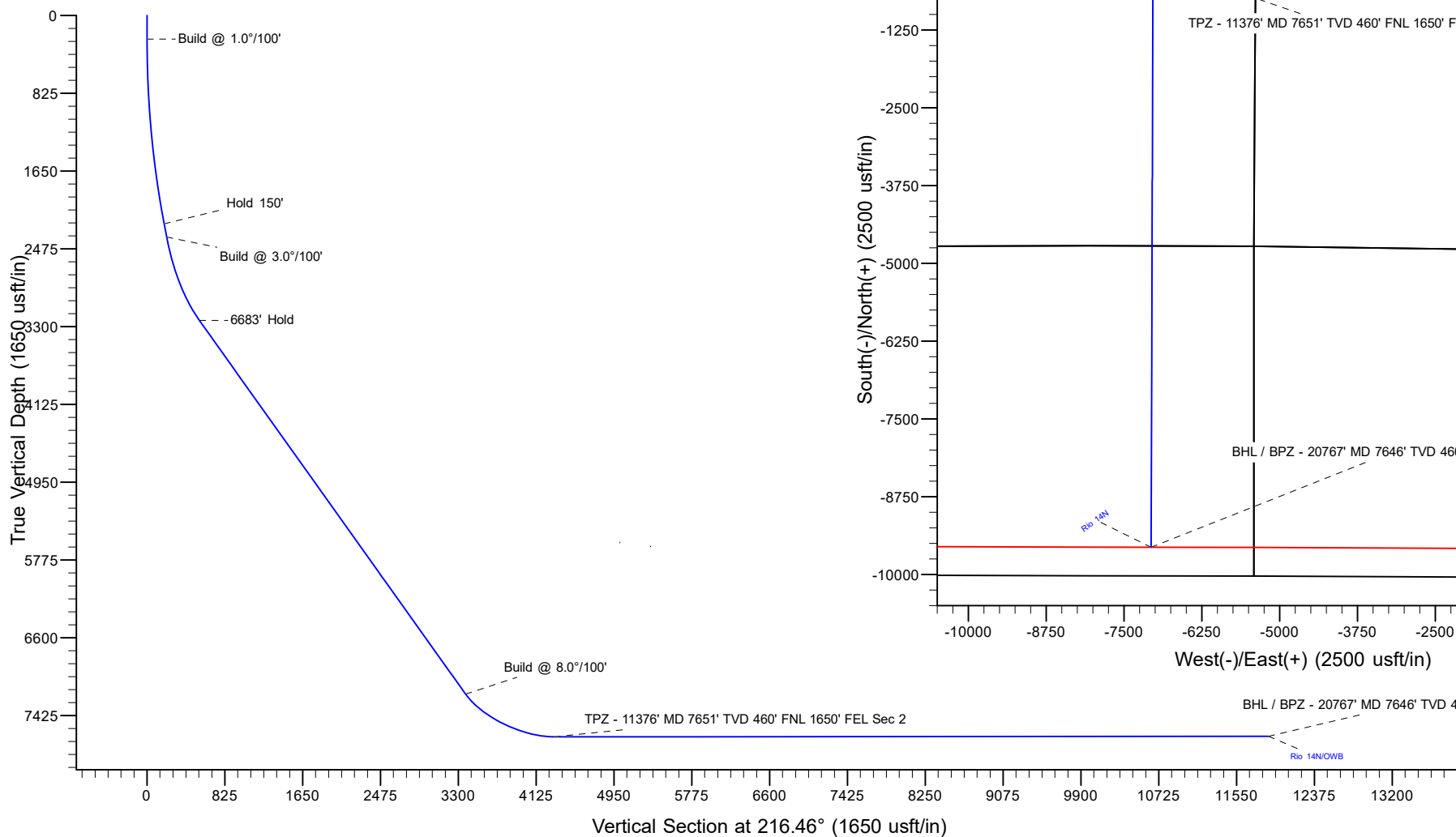
Magnetic Field
Strength: 51874.3nT
Dip Angle: 66.44°
Date: 12/31/2019
Model: IGRF2015

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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 @ 1.0°/100'
2250.0	20.00	274.80	2209.6	28.9	-344.3	1.00	274.80	181.3	Hold 150'
2400.0	20.00	274.80	2350.6	33.2	-395.4	0.00	0.00	208.3	Build @ 3.0°/100'
3521.2	53.64	274.84	3235.3	89.0	-1055.4	3.00	0.06	555.6	6683' Hold
10204.5	53.64	274.84	7197.9	543.3	-6418.1	0.00	0.00	3376.8	Build @ 8.0°/100'
11376.6	90.03	180.18	7651.0	-169.7	-7034.3	8.00	-92.74	4316.4	TPZ - 11376' MD 7651' TVD 460' FNL 1650' FEL Sec 2
20767.3	90.03	180.18	7646.0	-9560.4	-7063.7	0.00	0.00	11886.8	BHL / BPZ - 20767' MD 7646' TVD 460' FSL 1650' FEL Sec 11

Plan: Plan #1 (Rio 14N/OWB)

Created By: Mike Mataalii Date: 10:41, August 30 2022



PDC Energy Inc.
Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 14N
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 14N	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	8/30/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.0	20,767.3	Plan #1 (OWB)	MWD	OWSG MWD - Standard

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						
Rio Ivy						
Rio 13NA - OWB - Plan #1	3,571.6	3,570.4	5.7	-40.7	0.123	No-Go Zone - Stop Drilling, (
Rio 15NA - OWB - Plan #1	3,656.9	3,658.0	12.3	-36.3	0.253	No-Go Zone - Stop Drilling, (
Rio 15NA - OWB - Plan #1	3,700.0	3,701.1	12.3	-37.0	0.250	No-Go Zone - Stop Drilling, (
Rio 15NA - OWB - Plan #1	3,800.0	3,801.1	12.8	-37.1	0.257	No-Go Zone - Stop Drilling, (
Rio 16N - OWB - Plan #1	3,448.9	3,451.3	10.7	-31.3	0.255	No-Go Zone - Stop Drilling, (
Rio 17N - OWB - OWB	258.4	258.6	99.9	97.4	38.826	CC
Rio 17N - OWB - OWB	300.0	299.6	100.2	97.3	34.993	ES
Rio 17N - OWB - OWB	900.0	894.6	140.1	133.0	19.838	SF
Rio 17N - OWB - Plan #1	258.4	230.6	99.9	97.4	38.826	CC
Rio 17N - OWB - Plan #1	300.0	271.6	100.2	97.3	34.993	ES
Rio 17N - OWB - Plan #1	20,764.3	20,409.2	1,174.1	813.1	3.253	SF
Rio 18C - OWB - OWB	178.9	178.9	44.9	42.9	22.931	CC
Rio 18C - OWB - OWB	600.0	600.3	47.4	42.4	9.582	ES
Rio 18C - OWB - OWB	900.0	899.9	56.8	49.9	8.182	SF
Rio 18C - OWB - Plan #1	178.9	178.9	44.9	42.9	22.931	CC
Rio 18C - OWB - Plan #1	600.0	600.3	47.4	42.4	9.582	ES
Rio 18C - OWB - Plan #1	20,767.3	19,640.2	2,147.9	1,787.0	5.952	SF
Rio 19NA - OWB - OWB	0.0	0.0	30.0			
Rio 19NA - OWB - OWB	400.0	400.0	31.1	27.4	8.424	ES
Rio 19NA - OWB - OWB	700.0	699.3	38.0	32.3	6.640	SF
Rio 19NA - OWB - Plan #1	0.0	0.0	30.0			
Rio 19NA - OWB - Plan #1	400.0	400.0	31.1	27.4	8.424	ES
Rio 19NA - OWB - Plan #1	700.0	699.3	38.0	32.3	6.640	SF
Rio 20N - OWB - OWB	285.6	285.6	73.4	70.6	26.217	CC
Rio 20N - OWB - OWB	500.0	499.5	74.2	69.9	17.208	ES
Rio 20N - OWB - OWB	1,300.0	1,298.6	117.8	107.3	11.224	SF
Rio 20N - OWB - Plan #1	285.6	285.6	73.4	70.6	26.217	CC
Rio 20N - OWB - Plan #1	500.0	499.5	74.2	69.9	17.208	ES
Rio 20N - OWB - Plan #1	20,767.3	19,231.0	2,676.8	2,319.3	7.487	SF
Rio 21N - OWB - OWB	196.6	196.6	89.6	87.2	37.650	CC
Rio 21N - OWB - OWB	400.0	399.6	90.8	86.2	19.633	ES
Rio 21N - OWB - OWB	1,000.0	996.7	112.0	103.9	13.944	SF
Rio 21N - OWB - Plan #1	196.6	196.6	89.6	87.2	37.650	CC
Rio 21N - OWB - Plan #1	400.0	399.6	90.8	86.2	19.633	ES
Rio 21N - OWB - Plan #1	20,768.0	18,989.7	2,944.3	2,590.9	8.331	SF
Rio 22C - OWB - OWB	371.6	371.8	104.8	101.3	29.680	CC
Rio 22C - OWB - OWB	500.0	499.6	105.5	101.0	23.719	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:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 14N
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 14N	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						
Rio Ivy						
Rio 22C - OWB - OWB	1,200.0	1,196.0	129.7	121.2	15.387	SF
Rio 22C - OWB - Plan #1	371.6	371.8	104.8	101.3	29.680	CC
Rio 22C - OWB - Plan #1	500.0	499.6	105.5	101.0	23.719	ES
Rio 22C - OWB - Plan #1	20,768.0	18,963.4	3,222.8	2,864.6	8.997	SF
Rio 23NA - OWB - OWB	0.0	0.0	120.3			
Rio 23NA - OWB - OWB	600.0	600.6	121.1	116.0	23.488	ES
Rio 23NA - OWB - OWB	1,200.0	1,194.1	158.2	149.6	18.590	SF
Rio 23NA - OWB - Plan #1	0.0	0.0	120.3			
Rio 23NA - OWB - Plan #1	600.0	600.6	121.1	116.0	23.488	ES
Rio 23NA - OWB - Plan #1	20,768.0	18,516.1	3,486.5	3,135.5	9.931	SF
Rio 24N - OWB - OWB	275.7	275.7	133.8	131.1	49.137	CC
Rio 24N - OWB - OWB	500.0	499.0	134.4	130.2	31.686	ES
Rio 24N - OWB - OWB	1,500.0	1,495.0	185.6	175.3	18.075	SF
Rio 24N - OWB - Plan #1	275.7	275.7	133.8	131.1	49.137	CC
Rio 24N - OWB - Plan #1	500.0	499.0	134.4	130.2	31.686	ES
Rio 24N - OWB - Plan #1	20,768.0	18,573.1	3,755.5	3,399.9	10.561	SF
Rio 25N - OWB - OWB	305.8	305.9	149.4	146.5	51.232	CC
Rio 25N - OWB - OWB	500.0	500.0	149.9	145.5	34.420	ES
Rio 25N - OWB - OWB	1,400.0	1,389.4	211.4	201.4	21.282	SF
Rio 25N - OWB - Plan #1	305.8	305.9	149.4	146.5	51.232	CC
Rio 25N - OWB - Plan #1	500.0	500.0	149.9	145.5	34.420	ES
Rio 25N - OWB - Plan #1	20,768.0	18,331.0	4,024.0	3,671.6	11.417	SF
Rio 26C - OWB - OWB	337.9	338.1	165.1	161.8	51.041	CC
Rio 26C - OWB - OWB	600.0	600.6	166.0	161.0	33.664	ES
Rio 26C - OWB - OWB	1,700.0	1,688.1	237.7	226.1	20.533	SF
Rio 26C - OWB - Plan #1	337.9	338.1	165.1	161.8	51.041	CC
Rio 26C - OWB - Plan #1	600.0	600.6	166.0	161.0	33.664	ES
Rio 26C - OWB - Plan #1	20,768.0	18,383.2	4,300.1	3,944.3	12.085	SF

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Anticollision Summary Report

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Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 14N	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						
Rio Ivy Offsets						
ALBERT SACK #14-31 - OWB\ - OWB	186.6	140.7	1,572.3	1,570.5	869.619	CC
ALBERT SACK #14-31 - OWB\ - OWB	250.0	204.2	1,572.5	1,570.3	723.059	ES
ALBERT SACK #14-31 - OWB\ - OWB	3,500.0	3,177.9	2,486.4	2,463.1	106.652	SF
ALICIA #12-15H-5N - OWB - OWB	17,326.3	11,537.6	4,794.6	4,606.1	25.439	CC, ES
ALICIA #12-15H-5N - OWB - OWB	20,768.0	8,064.2	4,823.0	4,626.3	24.510	SF
ALICIA 12-15H-5N - OWB - OWB	20,768.0	4,798.0	5,721.4	5,555.8	34.548	CC, ES, SF
BEISEL (OWP) #42-1 - OWB - OWB	3,432.2	3,148.8	1,247.9	1,220.0	44.710	CC
BEISEL (OWP) #42-1 - OWB - OWB	3,500.0	3,191.5	1,249.0	1,219.8	42.863	ES
BEISEL (OWP) #42-1 - OWB - OWB	4,400.0	3,725.6	1,468.4	1,425.1	33.898	SF
Beisel Unit #1 - OWB - OWB	4,344.0	3,692.8	1,117.6	1,071.8	24.399	CC
Beisel Unit #1 - OWB - OWB	4,400.0	3,725.8	1,118.5	1,071.5	23.834	ES
Beisel Unit #1 - OWB - OWB	4,800.0	3,963.8	1,176.3	1,122.7	21.952	SF
BELLINGER #12-7 - OWB - OWB	19,247.7	5,162.0	5,738.1	5,596.5	40.537	CC, ES
BELLINGER #12-7 - OWB - OWB	20,200.0	5,162.0	5,816.6	5,671.3	40.034	SF
Bullwash #11-11 - OWB - OWB	19,081.9	5,100.0	3,087.2	2,935.9	20.401	CC
Bullwash #11-11 - OWB - OWB	19,200.0	5,100.0	3,089.5	2,935.2	20.029	ES
Bullwash #11-11 - OWB - OWB	20,300.0	5,100.0	3,318.8	3,138.3	18.383	SF
BYDALAK #1-11 - OWB - OWB	16,672.3	7,689.2	1,668.7	1,545.3	13.528	CC
BYDALAK #1-11 - OWB - OWB	16,800.0	7,689.1	1,673.6	1,543.0	12.814	ES
BYDALAK #1-11 - OWB - OWB	17,600.0	7,688.7	1,909.2	1,736.2	11.034	SF
CROFF (OWP) #12-5 - OWB - OWB	17,965.1	5,139.0	5,717.3	5,596.1	47.167	CC
CROFF (OWP) #12-5 - OWB - OWB	18,000.0	5,139.0	5,717.4	5,596.1	47.120	ES
CROFF (OWP) #12-5 - OWB - OWB	19,600.0	5,139.0	5,946.5	5,816.9	45.887	SF
Cundall #1 - OWB - OWB	16,000.0	7,633.5	3,667.2	3,541.6	29.212	SF
Cundall #1 - OWB - OWB	16,646.5	7,633.2	3,609.7	3,486.8	29.375	CC, ES
CUNDALL #5-12 - OWB - OWB	17,400.0	7,643.8	2,546.6	2,396.8	17.005	SF
CUNDALL #5-12 - OWB - OWB	17,900.0	7,643.5	2,491.9	2,348.1	17.328	ES
CUNDALL #5-12 - OWB - OWB	17,925.5	7,643.5	2,491.8	2,348.2	17.361	CC
CUNDALL #6-12 - OWB - OWB	17,700.0	7,632.6	3,771.1	3,627.4	26.243	SF
CUNDALL #6-12 - OWB - OWB	17,900.0	7,632.5	3,765.1	3,621.8	26.273	ES
CUNDALL #6-12 - OWB - OWB	17,911.9	7,632.5	3,765.1	3,621.8	26.276	CC
CUNDALL 11-12 #2 - OWB - OWB	15,800.0	7,643.6	2,475.8	2,339.6	18.171	SF
CUNDALL 11-12 #2 - OWB - OWB	16,600.0	7,643.2	2,331.0	2,207.9	18.929	ES
CUNDALL 11-12 #2 - OWB - OWB	16,635.0	7,643.2	2,330.8	2,208.0	18.994	CC
EHLER #34-11-1 - OWB - OWB	20,615.6	7,649.1	131.7	-56.8	0.698	No-Go Zone - Stop Drilling, (
EHLER #34-11-1 - OWB - OWB	20,700.0	7,649.0	156.4	-60.8	0.720	No-Go Zone - Stop Drilling, t
GASPAR #11-1 - OWB - OWB	8,393.4	6,119.7	563.3	435.1	4.393	CC
GASPAR #11-1 - OWB - OWB	8,400.0	6,123.7	563.3	435.0	4.390	ES, SF
IVEY #16-11 - OWB - OWB	20,400.0	7,743.6	986.4	774.0	4.643	SF
IVEY #16-11 - OWB - OWB	20,500.0	7,742.6	977.0	769.2	4.702	ES
IVEY #16-11 - OWB - OWB	20,542.2	7,742.2	976.1	770.5	4.748	CC
Ivey LC 02-033HC - OWB - OWB	11,350.0	18,122.3	408.3	240.3	2.430	ES, SF
Ivey LC 02-033HC - OWB - OWB	13,885.9	15,574.5	406.6	258.3	2.742	CC
Ivey LC 02-036HC - OWB - OWB	11,154.3	18,347.0	472.7	253.6	2.158	CC, ES, SF
IVEY LC 26-362HC - OWB - OWB	20,768.0	7,551.0	910.6	723.8	4.874	CC, ES, SF
IVEY LC 26-362HC - ST01 - ST01	20,768.0	7,551.0	910.6	723.8	4.874	CC, ES, SF
Ivey LC 26-362HN - OWB - OWB	20,768.0	7,491.8	1,017.0	825.8	5.320	CC, ES, SF
Ivey LC 26-363HN - OWB - OWB	20,768.0	7,647.3	675.1	478.8	3.439	CC, ES, SF
Ivey LC 26-363HNX - OWB - OWB	20,768.0	7,552.0	841.4	642.1	4.223	CC, ES, SF
Ivey LC 26-365HC - OWB - OWB	20,768.0	7,734.4	362.1	158.9	1.782	Collision Risk Procedures R
Ivey LC 26-366HN - OWB - OWB	20,768.0	7,740.7	359.3	196.9	2.213	CC, ES, SF
Ivey LC 26-366HN - ST01 - ST01	20,768.0	7,717.0	345.5	171.5	1.985	Collision Risk Procedures R
Ivey LC 26-366HNX - OWB - OWB	20,768.0	7,615.1	479.9	309.8	2.821	CC, ES, SF

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

Summary						
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Offset Well - Wellbore - Design						
Rio Ivy Offsets						
Ivey LC 26-368HC - OWB - OWB	20,768.0	7,742.1	490.7	319.0	2.858	CC, ES, SF
Ivey LC 26-368HN - OWB - OWB	20,768.0	7,698.7	508.2	343.6	3.087	CC, ES, SF
Ivey Unit #1 - OWB - OWB	19,000.0	7,643.9	1,008.2	831.4	5.701	SF
Ivey Unit #1 - OWB - OWB	19,200.0	7,643.8	982.4	815.7	5.894	ES
Ivey Unit #1 - OWB - OWB	19,228.6	7,643.8	982.0	816.9	5.947	CC
JOHNSON 1 - OWB - OWB	9,400.0	5,200.0	3,586.1	3,451.1	26.565	SF
JOHNSON 1 - OWB - OWB	13,951.7	5,200.0	2,646.6	2,581.7	40.757	CC, ES
LENART (OWP) #S-1 - OWB - OWB	17,263.2	5,137.0	6,263.5	6,149.5	54.940	CC
LENART (OWP) #S-1 - OWB - OWB	17,300.0	5,137.0	6,263.6	6,149.4	54.854	ES
LENART (OWP) #S-1 - OWB - OWB	19,900.0	5,137.0	6,795.9	6,663.5	51.305	SF
MALLO #1 - OWB - OWB	20,568.2	5,175.0	5,751.0	5,588.2	35.321	CC
MALLO #1 - OWB - OWB	20,600.0	5,175.0	5,751.1	5,588.2	35.297	ES
MALLO #1 - OWB - OWB	20,767.3	5,175.0	5,754.5	5,590.9	35.191	SF
Morrison #1 - OWB - OWB	7,375.9	5,100.0	3,223.5	3,117.5	30.403	CC
Morrison #1 - OWB - OWB	7,400.0	5,100.0	3,223.6	3,117.1	30.273	ES
Morrison #1 - OWB - OWB	8,300.0	5,100.0	3,353.3	3,233.9	28.079	SF
MORRISON 11-1 - OWB - OWB	5,754.8	4,799.7	3,222.5	3,141.0	39.527	CC
MORRISON 11-1 - OWB - OWB	5,900.0	4,905.7	3,223.8	3,139.0	38.022	ES
MORRISON 11-1 - OWB - OWB	8,300.0	6,513.0	3,637.7	3,510.1	28.510	SF
MORRISON 15-1 - OWB - OWB	4,350.9	3,703.2	4,101.1	4,054.9	88.750	CC
MORRISON 15-1 - OWB - OWB	4,500.0	3,791.7	4,102.9	4,053.7	83.391	ES
MORRISON 15-1 - OWB - OWB	17,600.0	7,623.7	5,556.7	5,437.6	46.668	SF
MORRISON 24-1 #3 - OWB - OWB	13,700.0	7,638.8	4,028.7	3,913.7	35.015	SF
MORRISON 24-1 #3 - OWB - OWB	15,300.0	7,637.9	3,695.1	3,592.8	36.118	ES
MORRISON 24-1 #3 - OWB - OWB	15,305.4	7,637.9	3,695.1	3,592.8	36.121	CC
MORRISON 33-1 #4 - OWB - OWB	4,454.1	3,760.5	3,098.8	3,050.5	64.187	CC
MORRISON 33-1 #4 - OWB - OWB	4,500.0	3,787.7	3,099.0	3,049.8	62.987	ES
MORRISON 33-1 #4 - OWB - OWB	6,900.0	5,210.6	3,671.8	3,585.4	42.534	SF
Morrison Investment #1 - OWB - OWB	14,100.0	7,650.5	2,577.9	2,451.8	20.443	SF
Morrison Investment #1 - OWB - OWB	15,276.0	7,649.9	2,294.0	2,192.1	22.517	CC, ES
NORTH COLORADO #12-13 - OWB - OWN	20,768.0	7,774.0	3,349.8	3,114.1	14.214	CC, ES, SF
NORTH COLORADO #6 - OWB - OWB	20,768.0	7,680.0	3,699.8	3,487.4	17.418	CC, ES, SF
NORTH COLORADO BOULEVARD #3 - OWB - OWB	20,768.0	5,113.0	3,633.7	3,471.4	22.396	CC, ES, SF
NORTH COLORADO BOULEVARD UNIT #5 - OWB - OW	20,768.0	5,300.0	5,441.9	5,258.3	29.635	CC, ES, SF
North York #1 - OWB - OWB	19,000.0	5,200.0	4,330.8	4,198.0	32.599	SF
North York #1 - OWB - OWB	19,200.0	5,200.0	4,325.9	4,193.3	32.621	ES
North York #1 - OWB - OWB	19,207.0	5,200.0	4,325.9	4,193.3	32.622	CC
NORTH YORK #11-12 - OWB - OWB	19,100.0	7,647.9	3,703.1	3,537.6	22.377	SF
NORTH YORK #11-12 - OWB - OWB	19,232.6	7,647.8	3,700.7	3,535.5	22.401	CC, ES
NORTH YORK #13-12-3 - OWB - OWB	20,300.0	7,638.2	2,287.7	2,095.3	11.892	SF
NORTH YORK #13-12-3 - OWB - OWB	20,600.0	7,638.1	2,266.8	2,078.3	12.023	ES
NORTH YORK #13-12-3 - OWB - OWB	20,608.7	7,638.1	2,266.8	2,078.4	12.031	CC
NORTH YORK #2 - OWB - OWB	20,100.0	5,200.0	3,366.2	3,223.0	23.516	SF
NORTH YORK #2 - OWB - OWB	20,700.0	5,200.0	3,309.6	3,170.4	23.762	ES
NORTH YORK #2 - OWB - OWB	20,714.6	5,200.0	3,309.6	3,170.4	23.775	CC
NORTH YORK 13-12 - OWB - OWB	20,100.0	7,780.8	2,313.1	2,104.5	11.089	SF
NORTH YORK 13-12 - OWB - OWB	20,397.2	7,785.2	2,293.9	2,088.8	11.182	CC, ES
NORTH YORK 14-12 - OWB - OWB	20,300.0	7,651.5	3,642.2	3,427.8	16.988	SF
NORTH YORK 14-12 - OWB - OWB	20,470.7	7,651.8	3,638.2	3,424.3	17.004	CC, ES
REHFELD K UNIT #1 - OWB - OWB	14,300.0	7,685.4	908.7	776.5	6.873	SF
REHFELD K UNIT #1 - OWB - OWB	14,700.0	7,685.2	793.0	695.8	8.160	ES
REHFELD K UNIT #1 - OWB - OWB	14,746.0	7,685.2	791.7	697.4	8.399	CC
REINHOLT (OWP) #12-6 - OWB - OWB	16,875.2	5,110.0	5,633.3	5,529.8	54.433	CC

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

PDC Energy Inc.
Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 14N
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 14N	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						
Rio Ivy Offsets						
REINHOLT (OWP) #12-6 - OWB - OWB	16,900.0	5,110.0	5,633.3	5,529.7	54.390	ES
REINHOLT (OWP) #12-6 - OWB - OWB	19,500.0	5,110.0	6,214.8	6,093.0	51.045	SF
Rio LC 12-242HC - OWB - OWB	161.0	154.4	149.9	148.1	82.690	CC
Rio LC 12-242HC - OWB - OWB	300.0	292.7	150.3	147.2	48.589	ES
Rio LC 12-242HC - OWB - OWB	1,300.0	1,287.0	234.9	225.0	23.820	SF
Rio LC 12-332HN - OWB - OWB	100.0	93.1	91.3	90.4	110.034	CC
Rio LC 12-332HN - OWB - OWB	250.0	242.9	91.4	88.7	33.918	ES
Rio LC 12-332HN - OWB - OWB	900.0	891.1	133.1	125.8	18.233	SF
Rio LC 12-362HN - OWB - OWB	338.1	333.1	160.6	157.1	46.466	CC
Rio LC 12-362HN - OWB - OWB	400.0	394.5	160.8	156.9	40.886	ES
Rio LC 12-362HN - OWB - OWB	20,768.0	17,660.0	6,419.8	6,062.2	17.949	SF
Rio LC 12-363HN - OWB - OWB	0.0	0.0	138.1			
Rio LC 12-363HN - OWB - OWB	300.0	293.1	138.4	135.4	45.875	ES
Rio LC 12-363HN - OWB - OWB	20,767.3	17,299.9	6,308.6	5,965.2	18.374	SF
Rio LC 12-363HNN - OWB - OWB	0.0	0.0	127.0			
Rio LC 12-363HNN - OWB - OWB	300.0	293.1	127.6	124.6	42.656	ES
Rio LC 12-363HNN - OWB - OWB	20,768.0	17,389.4	6,155.1	5,802.2	17.438	SF
Rio LC 12-365HC - OWB - OWB	226.2	219.7	116.2	113.6	44.640	CC
Rio LC 12-365HC - OWB - OWB	250.0	243.1	116.2	113.5	42.070	ES
Rio LC 12-365HC - OWB - OWB	20,768.0	17,859.3	5,881.2	5,527.1	16.607	SF
Rio LC 12-365HN - OWB - OWB	100.0	93.0	108.2	107.4	130.716	CC
Rio LC 12-365HN - OWB - OWB	200.0	192.4	108.9	106.5	45.050	ES
Rio LC 12-365HN - OWB - OWB	20,767.3	17,502.0	5,784.2	5,435.7	16.594	SF
Rio LC 12-366HN - OWB - OWB	163.9	156.9	99.8	98.0	54.463	CC
Rio LC 12-366HN - OWB - OWB	250.0	242.8	100.0	97.2	35.972	ES
Rio LC 12-366HN - OWB - OWB	20,768.0	17,664.7	5,493.5	5,144.7	15.752	SF
Rio LC 12-366HN - ST01 - ST01	163.9	156.9	99.8	98.0	54.463	CC
Rio LC 12-366HN - ST01 - ST01	250.0	242.8	100.0	97.2	35.972	ES
Rio LC 12-366HN - ST01 - ST01	20,768.0	17,750.6	5,420.0	5,068.4	15.416	SF
Rio LC 12-366HNN - OWB - OWB	297.3	291.4	93.4	90.3	30.244	CC
Rio LC 12-366HNN - OWB - OWB	400.0	394.4	94.1	90.2	24.051	ES
Rio LC 12-366HNN - OWB - OWB	20,768.0	17,497.2	5,393.3	5,043.2	15.408	SF
Rio LC 12-368HC - OWB - OWB	100.0	93.2	91.0	90.2	110.011	CC
Rio LC 12-368HC - OWB - OWB	250.0	242.7	91.7	88.9	32.922	ES
Rio LC 12-368HC - OWB - OWB	20,700.0	17,951.0	5,131.8	4,780.5	14.609	SF
Rio LC 12-368HN - OWB - OWB	302.2	296.4	88.1	84.9	27.564	CC, ES
Rio LC 12-368HN - OWB - OWB	20,768.0	17,730.5	5,010.5	4,659.5	14.276	SF
Rio LC 12-369HNN - OWB - OWB	337.1	331.8	93.9	90.2	25.507	CC
Rio LC 12-369HNN - OWB - OWB	400.0	394.8	94.2	90.1	22.782	ES
Rio LC 12-369HNN - OWB - OWB	20,768.0	17,891.1	4,630.8	4,276.9	13.086	SF
Rio LC 12-376HN - OWB - OWB	175.8	157.0	44.9	43.0	23.241	CC
Rio LC 12-376HN - OWB - OWB	600.0	581.5	47.4	42.4	9.561	ES
Rio LC 12-376HN - OWB - OWB	900.0	881.1	56.8	49.8	8.166	SF
RUBY 2 - OWB - OWB	19,251.8	7,844.0	4,986.0	4,805.8	27.656	CC, ES
RUBY 2 - OWB - OWB	19,500.0	7,844.0	4,992.2	4,811.4	27.614	SF
Sack #1 - OWB - OWB	16,300.0	7,662.4	1,097.6	952.7	7.576	SF
Sack #1 - OWB - OWB	16,600.0	7,662.2	1,030.1	902.0	8.038	ES
Sack #1 - OWB - OWB	16,689.4	7,662.2	1,026.2	902.6	8.303	CC
SACK #4N-30HZ - OWB - OWB	372.1	345.1	1,145.6	1,141.8	301.809	CC
SACK #4N-30HZ - OWB - OWB	400.0	370.4	1,145.7	1,141.7	287.479	ES
SACK #4N-30HZ - OWB - OWB	3,800.0	3,396.3	1,896.5	1,862.2	55.285	SF
SACK (OWP) #11-6 - OWB - OWB	262.1	240.0	535.4	532.5	181.843	CC
SACK (OWP) #11-6 - OWB - OWB	300.0	277.3	535.5	532.3	167.540	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:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 14N
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 14N	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						
Rio Ivy Offsets						
SACK (OWP) #11-6 - OWB - OWB	2,800.0	2,715.4	1,027.7	1,005.5	46.415	SF
SACK 7-11 - OWB - OWB	18,027.1	7,676.5	385.1	239.9	2.652	CC
SACK 7-11 - OWB - OWB	18,100.0	7,676.4	391.9	232.4	2.457	ES
SACK 7-11 - OWB - OWB	18,200.0	7,676.4	422.1	245.7	2.393	SF
SACK 8-11 - OWB - OWB	17,600.0	7,658.7	873.3	708.4	5.295	SF
SACK 8-11 - OWB - OWB	17,900.0	7,658.5	811.5	666.4	5.593	ES
SACK 8-11 - OWB - OWB	17,923.5	7,658.5	811.2	667.7	5.653	CC
SACK G UNIT #1 - OWB - OWB	16,508.4	7,694.3	374.5	253.8	3.101	CC
SACK G UNIT #1 - OWB - OWB	16,600.0	7,694.2	385.6	245.8	2.759	ES
SACK G UNIT #1 - OWB - OWB	16,700.0	7,694.2	420.7	262.0	2.650	SF
SACK G UNIT #2-X - OWB - OWB	17,942.9	7,673.5	376.4	232.5	2.617	CC
SACK G UNIT #2-X - OWB - OWB	18,000.0	7,673.5	380.7	225.3	2.451	ES
SACK G UNIT #2-X - OWB - OWB	18,100.0	7,673.4	407.8	234.5	2.353	SF
SACK STATE #30C-30HZ - OWB - OWB	100.0	69.1	1,141.8	1,140.7	1,073.551	CC
SACK STATE #30C-30HZ - OWB - OWB	250.0	212.6	1,142.2	1,139.3	385.003	ES
SACK STATE #30C-30HZ - OWB - OWB	4,200.0	3,893.0	1,733.9	1,691.9	41.333	SF
Standley #1 - OWB - OWB	8,740.5	5,251.0	2,541.7	2,423.8	21.565	CC
Standley #1 - OWB - OWB	8,800.0	5,251.0	2,542.4	2,423.6	21.405	ES
Standley #1 - OWB - OWB	9,200.0	5,251.0	2,582.9	2,459.6	20.946	SF
STANDLEY #2 - OWB - OWB	12,605.4	5,192.0	3,002.8	2,913.9	33.791	CC, ES
STANDLEY #2 - OWB - OWB	14,700.0	5,192.0	3,661.1	3,517.3	25.456	SF
STANDLEY 1-2 - OWB - OWB	9,652.8	6,925.2	945.3	780.5	5.736	CC
STANDLEY 1-2 - OWB - OWB	9,700.0	6,954.1	946.0	780.3	5.710	ES
STANDLEY 1-2 - OWB - OWB	9,800.0	7,015.4	952.5	785.7	5.709	SF
STANDLEY 2-2 - OWB - OWB	11,550.7	7,901.5	238.1	160.9	3.085	CC
STANDLEY 2-2 - OWB - OWB	11,700.0	7,900.3	281.0	153.2	2.198	ES, SF
STERKEL #1 - OWB - OWB	6,027.9	4,713.5	223.7	143.5	2.789	CC, ES, SF
STERKEL (OWP) #21-1 - OWB - OWB	6,381.1	4,921.6	784.2	696.7	8.956	CC
STERKEL (OWP) #21-1 - OWB - OWB	6,400.0	4,932.7	784.4	696.4	8.919	ES
STERKEL (OWP) #21-1 - OWB - OWB	6,500.0	4,991.1	790.0	700.5	8.818	SF
TUDEX BRINK (OWP) #S-2 - OWB - OWB	18,338.4	5,178.0	6,300.7	6,171.3	48.706	CC, ES
TUDEX BRINK (OWP) #S-2 - OWB - OWB	20,200.0	5,178.0	6,569.9	6,430.0	46.939	SF
TUDEX REINHOLT NC4 - OWB - OWB	16,744.6	7,636.4	5,062.3	4,937.4	40.525	CC, ES
TUDEX REINHOLT NC4 - OWB - OWB	17,700.0	7,631.8	5,151.6	5,023.5	40.189	SF
Wright #1 - OWB - OWB	20,768.0	7,662.0	1,497.6	1,278.3	6.827	CC, ES, SF
WRIGHT 2-14 - OWB - OWB	20,768.0	7,657.0	997.5	847.8	6.662	CC, ES, SF
YORK G UNIT #1 - OWB - OWB	16,300.0	7,673.4	555.0	408.7	3.795	SF
YORK G UNIT #1 - OWB - OWB	16,400.0	7,673.3	526.2	392.5	3.935	ES
YORK G UNIT #1 - OWB - OWB	16,505.9	7,673.3	515.4	394.7	4.270	CC

PDC Energy Inc.
Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 14N
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 14N	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 28' @ 5095.0usft

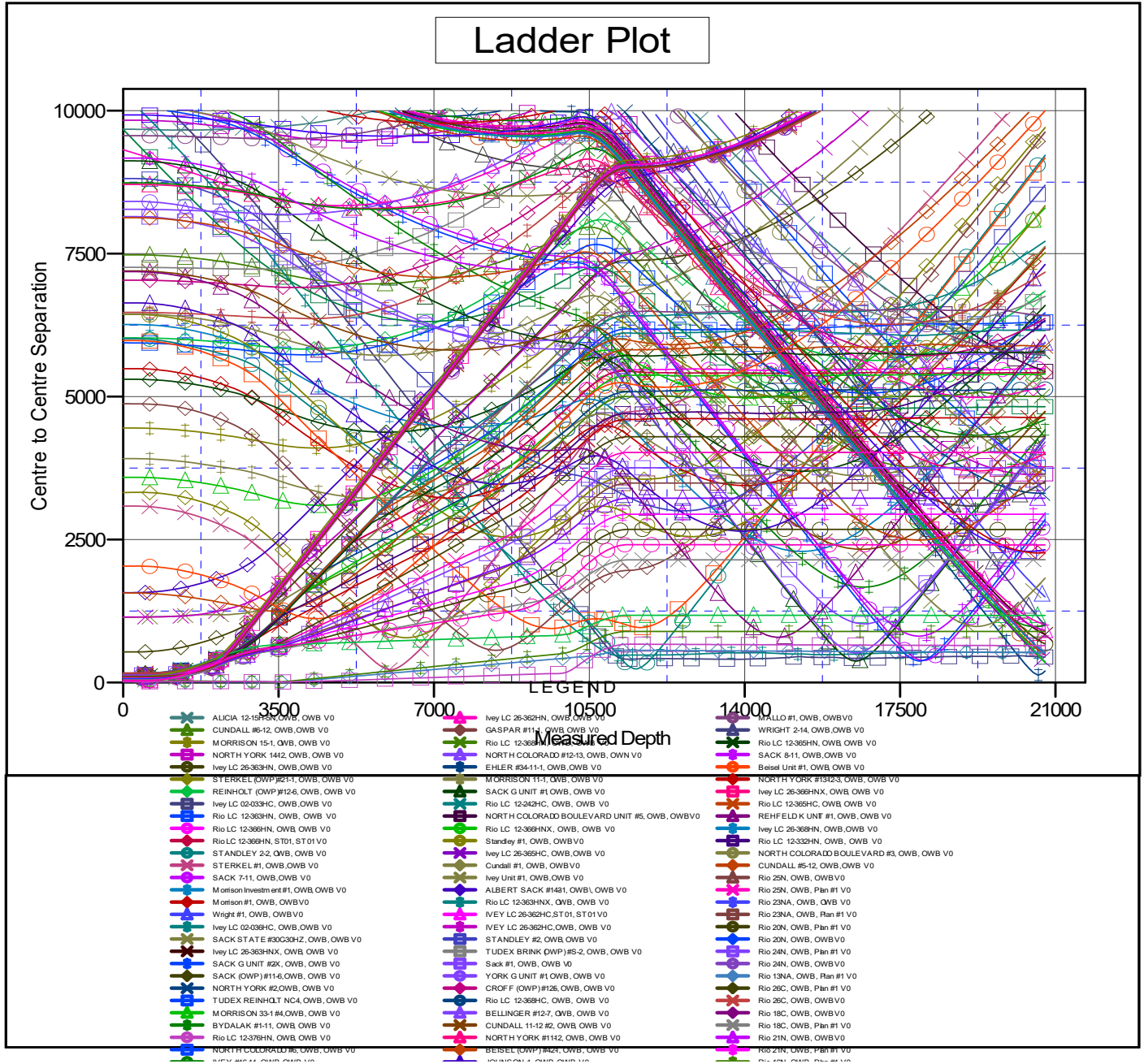
Offset Depths are relative to Offset Datum

Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: Rio 14N

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.36°



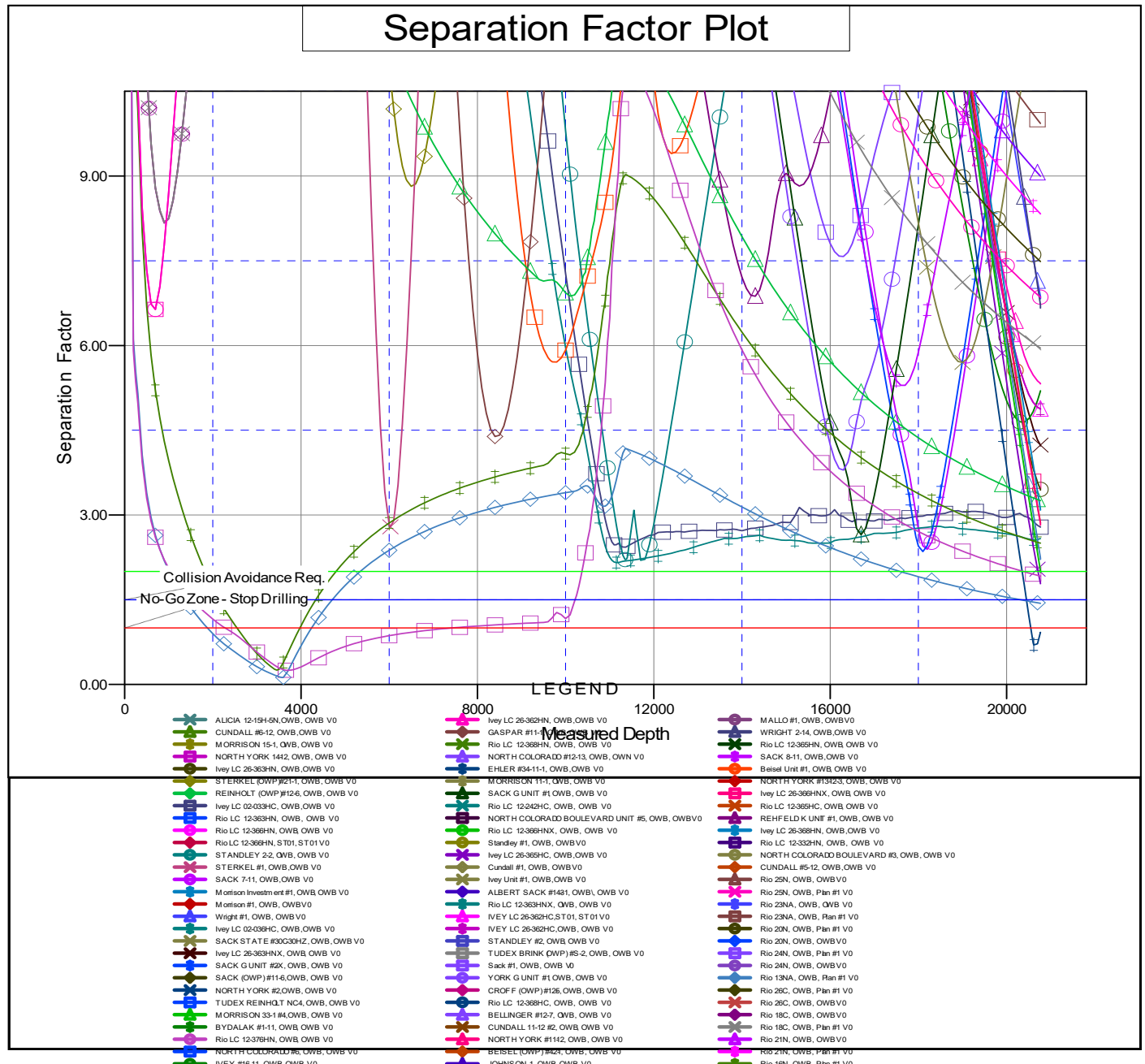
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Summary Report

Company:	GWP - PLANNING DB	Local Co-ordinate Reference:	Well Rio 14N
Project:	ADAMS COUNTY	TVD Reference:	KB 28' @ 5095.0usft
Reference Site:	Rio Ivy	MD Reference:	KB 28' @ 5095.0usft
Site Error:	0.0 usft	North Reference:	True
Reference Well:	Rio 14N	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 28' @ 5095.0usft
Offset Depths are relative to Offset Datum
Central Meridian is 105° 30' 0.000 W

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