



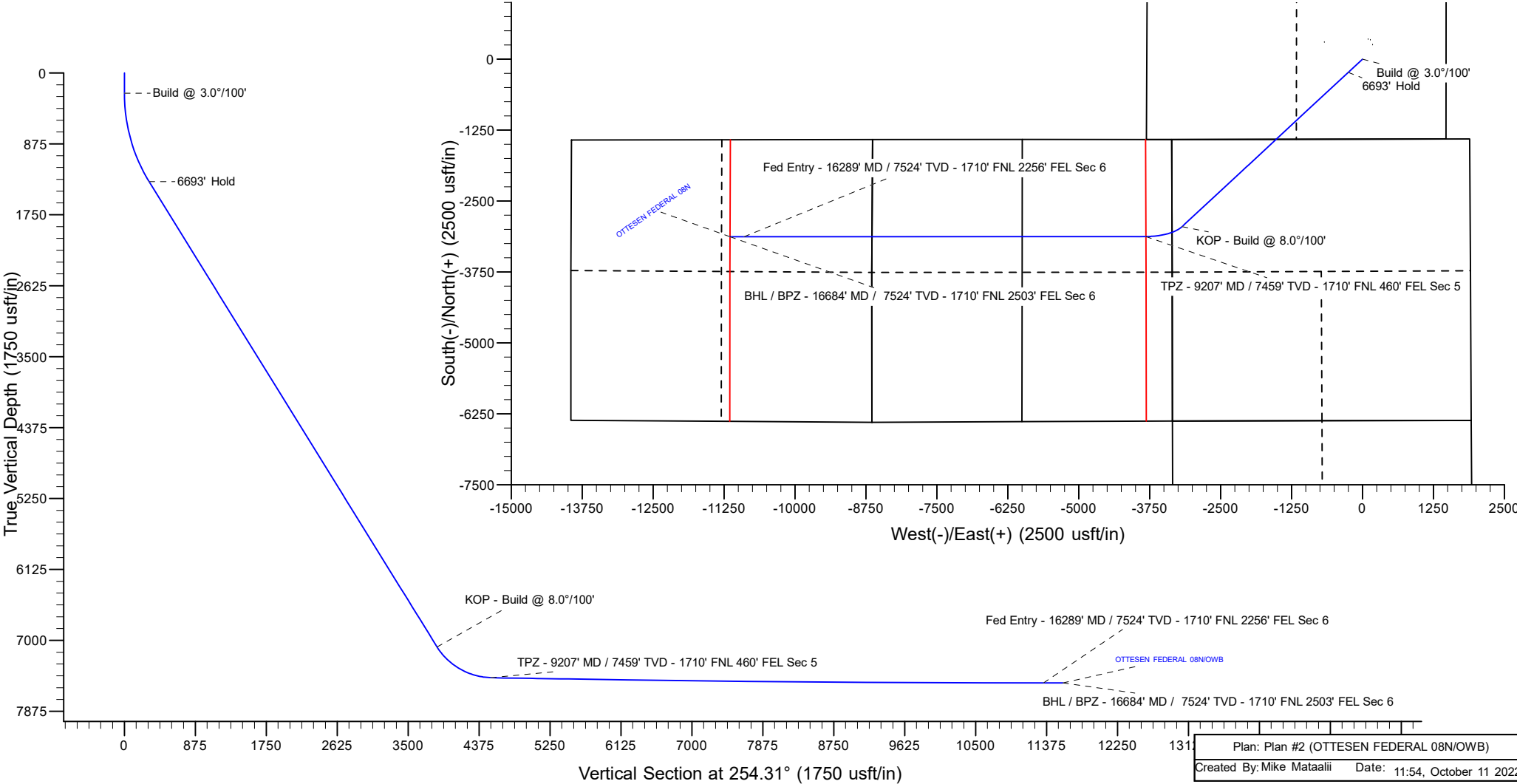
Project: WELD COUNTY  
Site: Ottesen Pad  
Well: OTTESEN FEDERAL 08N  
Wellbore: OWB  
Design: Plan #2  
Lat: 40° 0' 15.569 N  
Long: 104° 46' 40.609 W  
GL: 5076.0  
KB: KB 20' @ 5096.0usft

Azimuths to True North  
Magnetic North: 7.73°

Magnetic Field  
Strength: 51656.6nT  
Dip Angle: 66.30°  
Date: 4/12/2022  
Model: IGRF2000

WELL DETAILS: OTTESEN FEDERAL 08N						
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.0	0.0	1245245.79	3202270.68	40° 0' 15.569 N	104° 46' 40.609 W	

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 @ 3.0°/100'
1410.9	34.83	227.13	1340.7	-232.8	-250.7	3.00	227.13	304.3	6693' Hold
8404.0	34.83	227.13	7081.3	-2950.1	-3177.5	0.00	0.00	3856.7	KOP - Build @ 8.0°/100'
9207.7	88.95	269.97	7459.0	-3125.2	-3815.9	8.00	48.98	4518.7	TPZ - 9207' MD / 7459' TVD - 1710' FNL 460' FEL Sec 5
16289.6	90.00	269.97	7524.0	-3129.4	-10897.4	0.01	-0.12	11337.6	Fed Entry - 16289' MD / 7524' TVD - 1710' FNL 2256' FEL Sec 6
16536.5	90.00	269.97	7524.0	-3129.5	-11144.3	0.00	0.00	11575.4	BHL / BPZ - 16684' MD / 7524' TVD - 1710' FNL 2503' FEL Sec 6



**PDC Energy Inc.**  
Anticollision Summary Report

<b>Company:</b>	GWP - PLANNING DB	<b>Local Co-ordinate Reference:</b>	Well OTTESEN FEDERAL 08N
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 20' @ 5096.0usft
<b>Reference Site:</b>	Ottesen Pad	<b>MD Reference:</b>	KB 20' @ 5096.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OTTESEN FEDERAL 08N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2		
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
<b>Interpolation Method:</b>	Stations	<b>Error Model:</b>	ISCWSA
<b>Depth Range:</b>	Unlimited	<b>Scan Method:</b>	Closest Approach 3D
<b>Results Limited by:</b>	Maximum center-center distance of 10,000.0 usft	<b>Error Surface:</b>	Pedal Curve
<b>Warning Levels Evaluated at:</b>	2.00 Sigma	<b>Casing Method:</b>	Not applied

<b>Survey Tool Program</b>	<b>Date</b>	10/11/2022		
<b>From (usft)</b>	<b>To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	16,536.5	Plan #2 (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						
Ottesen Offsets						
Bailey #1 - OWB - OWB	7,332.5	6,180.7	272.9	190.4	3.307	CC, ES, SF
Great Western Sugar 3X - OWB - OWB	16,536.5	7,400.0	682.8	592.5	7.558	CC, ES, SF
Grein #1 - OWB - OWB	10,300.0	7,400.5	462.2	338.7	3.742	ES, SF
Grein #1 - OWB - OWB	10,356.0	7,401.4	458.8	338.9	3.827	CC
OTTESEN LE 06-290HN - OWB - OWB	830.0	822.1	82.2	75.5	12.219	CC, ES
OTTESEN LE 06-290HN - OWB - OWB	16,536.5	17,825.6	1,664.9	1,146.9	3.214	SF
OTTESEN LE 06-290HNN - OWB - OWB	872.3	862.4	92.4	85.5	13.340	CC
OTTESEN LE 06-290HNN - OWB - OWB	3,800.0	3,937.8	114.7	52.6	1.847	Collision Risk Procedures Re
OTTESEN LE 06-290HNN - OWB - OWB	3,900.0	4,034.3	119.6	52.9	1.793	Collision Risk Procedures Re
OTTESEN LE 06-311HC - OWB - OWB	882.4	870.4	100.7	93.7	14.327	CC, ES
OTTESEN LE 06-311HC - OWB - OWB	16,500.0	17,803.2	2,056.6	1,535.1	3.944	SF
OTTESEN LE 06-311HN - OWB - OWB	936.8	922.6	111.8	104.2	14.830	CC, ES
OTTESEN LE 06-311HN - OWB - OWB	16,536.5	17,840.2	2,137.6	1,614.3	4.085	SF
OTTESEN LE 06-351HN - OWB - OWB	1,003.2	986.5	119.6	111.5	14.802	CC, ES
OTTESEN LE 06-351HN - OWB - OWB	16,500.0	17,676.2	2,410.5	1,883.8	4.576	SF
OTTESEN LE 06-351HNN - OWB - OWB	2,335.5	2,336.7	92.0	60.8	2.949	CC, ES
OTTESEN LE 06-351HNN - OWB - OWB	2,400.0	2,396.9	94.2	61.6	2.886	SF
OTTESEN LE 06-370HC - OWB - OWB	1,226.0	1,206.1	129.7	118.3	11.403	CC
OTTESEN LE 06-370HC - OWB - OWB	2,600.0	2,619.5	145.2	109.5	4.070	ES
OTTESEN LE 06-370HC - OWB - OWB	2,700.0	2,711.2	153.2	114.9	4.004	SF
OTTESEN LE 06-370HN - OWB - OWB	1,824.0	1,772.8	37.6	10.8	1.406	Collision Avoidance Req., CC
OTTESEN LE 09-362HC - OWB - OWB	0.0	0.5	180.4			
OTTESEN LE 09-362HC - OWB - OWB	200.0	198.7	181.7	178.6	60.364	ES
OTTESEN LE 09-362HC - OWB - OWB	700.0	692.5	239.4	229.0	23.063	SF
OTTESEN LE 09-363HN - OWB - OWB	233.3	233.8	156.2	153.0	48.727	CC
OTTESEN LE 09-363HN - OWB - OWB	250.0	250.3	156.2	152.9	47.344	ES
OTTESEN LE 09-363HN - OWB - OWB	700.0	693.1	213.9	203.5	20.637	SF
OTTESEN LE 09-365HC - OWB - OWB	0.0	0.5	135.3			
OTTESEN LE 09-365HC - OWB - OWB	200.0	199.6	136.0	133.0	45.399	ES
OTTESEN LE 09-365HC - OWB - OWB	700.0	692.1	196.4	186.0	18.970	SF
OTTESEN LE 09-365HN - OWB - OWB	0.0	0.5	144.0			
OTTESEN LE 09-365HN - OWB - OWB	200.0	198.4	145.4	142.4	48.243	ES
OTTESEN LE 09-365HN - OWB - OWB	700.0	697.2	198.6	188.4	19.528	SF
OTTESEN LE 09-366HN - OWB - OWB	0.0	0.5	118.5			
OTTESEN LE 09-366HN - OWB - OWB	250.0	249.8	119.3	116.0	36.158	ES
OTTESEN LE 09-366HN - OWB - OWB	700.0	692.4	177.5	167.0	16.978	SF
OTTESEN LE 09-366HNN - OWB - OWB	0.0	0.5	126.6			

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

**PDC Energy Inc.**  
Anticollision Summary Report

<b>Company:</b>	GWP - PLANNING DB	<b>Local Co-ordinate Reference:</b>	Well OTTESEN FEDERAL 08N
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 20' @ 5096.0usft
<b>Reference Site:</b>	Ottesen Pad	<b>MD Reference:</b>	KB 20' @ 5096.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OTTESEN FEDERAL 08N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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						
Ottesen Offsets						
OTTESEN LE 09-366HNN - OWB - OWB	252.2	252.8	127.2	123.9	38.608	ES
OTTESEN LE 09-366HNN - OWB - OWB	700.0	696.8	179.0	168.9	17.730	SF
OTTESEN LE 09-368HC - OWB - OWB	0.0	0.5	105.4			
OTTESEN LE 09-368HC - OWB - OWB	200.0	199.5	106.2	103.2	35.293	ES
OTTESEN LE 09-368HC - OWB - OWB	700.0	694.2	163.7	153.7	16.235	SF
OTTESEN LE 09-368HN - OWB - OWB	0.0	0.5	110.5			
OTTESEN LE 09-368HN - OWB - OWB	250.0	249.8	111.1	107.7	33.488	ES
OTTESEN LE 09-368HN - OWB - OWB	700.0	699.0	160.8	150.8	16.059	SF

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<b>Reference Site:</b>	Ottesen Pad	<b>MD Reference:</b>	KB 20' @ 5096.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OTTESEN FEDERAL 08N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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						
Ottesen Pad						
OTTESEN 14NA - OWB - Plan #2	250.0	250.0	89.4	86.6	31.990	CC
OTTESEN 14NA - OWB - Plan #2	600.0	610.6	91.9	82.8	10.117	ES
OTTESEN 14NA - OWB - Plan #2	16,536.5	16,941.1	1,065.9	533.5	2.002	SF
OTTESEN 15C - OWB - OWB	0.0	0.0	104.8			
OTTESEN 15C - OWB - OWB	252.1	252.2	105.6	102.7	35.991	ES
OTTESEN 15C - OWB - OWB	700.0	695.6	147.7	138.5	15.968	SF
OTTESEN 15C - OWB - Plan #2	0.0	0.0	104.8			
OTTESEN 15C - OWB - Plan #2	252.1	252.2	105.6	102.7	35.991	ES
OTTESEN 15C - OWB - Plan #2	16,536.5	17,562.6	1,247.0	723.3	2.381	SF
OTTESEN 16N - OWB - OWB	255.8	256.1	118.9	115.9	39.466	CC, ES
OTTESEN 16N - OWB - OWB	800.0	792.1	184.8	174.2	17.376	SF
OTTESEN 16N - OWB - Plan #2	255.8	256.1	118.9	115.9	39.466	CC, ES
OTTESEN 16N - OWB - Plan #2	16,536.5	17,564.8	1,399.6	863.0	2.608	SF
OTTESEN 17N - OWB - OWB	817.9	808.8	216.9	210.6	34.280	CC, ES
OTTESEN 17N - OWB - OWB	1,300.0	1,250.5	292.6	279.6	22.408	SF
OTTESEN 17N - OWB - Plan #2	8,688.3	9,939.2	215.3	98.7	1.847	Collision Risk Procedures Recommended
OTTESEN 17N - OWB - Plan #2	8,750.0	9,956.0	225.7	95.5	1.734	Collision Risk Procedures Recommended
OTTESEN 18C - OWB - Plan #2	250.0	250.0	219.5	216.7	78.558	CC
OTTESEN 18C - OWB - Plan #2	400.0	390.8	220.6	216.1	49.914	ES
OTTESEN 18C - OWB - Plan #2	8,800.0	9,844.5	547.5	417.7	4.220	SF
OTTESEN 19NA - OWB - Plan #2	250.0	250.0	206.2	203.4	73.813	CC
OTTESEN 19NA - OWB - Plan #2	400.0	391.6	207.4	203.1	47.496	ES
OTTESEN 19NA - OWB - Plan #2	8,500.0	9,445.3	425.0	289.9	3.146	SF
OTTESEN 20N - OWB - Plan #2	250.0	250.0	193.3	190.5	69.186	CC
OTTESEN 20N - OWB - Plan #2	400.0	392.8	194.4	190.2	45.627	ES
OTTESEN 20N - OWB - Plan #2	8,550.0	9,592.0	697.2	564.3	5.247	SF
OTTESEN 21N - OWB - OWB	606.8	603.1	176.0	171.0	34.970	CC, ES
OTTESEN 21N - OWB - OWB	1,200.0	1,160.2	258.1	245.4	20.358	SF
OTTESEN 21N - OWB - Plan #2	606.8	603.1	176.0	171.0	34.970	CC, ES
OTTESEN 21N - OWB - Plan #2	8,500.0	9,644.9	830.9	700.5	6.372	SF
OTTESEN 22C - OWB - Plan #2	250.0	250.0	168.4	165.6	60.273	CC
OTTESEN 22C - OWB - Plan #2	400.0	395.5	169.3	165.3	42.067	ES
OTTESEN 22C - OWB - Plan #2	8,600.0	9,675.1	1,130.8	997.5	8.483	SF
OTTESEN 23NA - OWB - Plan #2	250.0	250.0	156.5	153.8	56.041	CC
OTTESEN 23NA - OWB - Plan #2	400.0	396.9	157.3	153.4	40.284	ES
OTTESEN 23NA - OWB - Plan #2	8,300.0	9,159.8	1,116.0	986.7	8.626	SF
OTTESEN 24N - OWB - OWB	0.0	0.0	145.9			
OTTESEN 24N - OWB - OWB	400.0	399.3	147.4	143.5	38.345	ES
OTTESEN 24N - OWB - OWB	1,000.0	968.3	224.9	213.5	19.698	SF
OTTESEN 24N - OWB - Plan #2	0.0	0.0	145.9			
OTTESEN 24N - OWB - Plan #2	400.0	399.3	147.4	143.5	38.345	ES
OTTESEN 24N - OWB - Plan #2	8,450.0	9,508.6	1,381.4	1,253.6	10.814	SF
OTTESEN 25N - OWB - Plan #2	250.0	250.0	134.8	132.0	48.265	CC
OTTESEN 25N - OWB - Plan #2	600.0	599.5	136.0	130.8	26.140	ES
OTTESEN 25N - OWB - Plan #2	1,500.0	1,485.4	188.3	169.4	9.972	SF
OTTESEN 26C - OWB - Plan #2	851.8	855.8	123.8	116.5	16.940	CC
OTTESEN 26C - OWB - Plan #2	1,000.0	1,003.4	125.1	116.0	13.619	ES
OTTESEN 26C - OWB - Plan #2	1,400.0	1,392.4	167.8	149.4	9.102	SF
OTTESEN 27NA - OWB - OWB	255.0	255.1	116.3	113.4	40.476	CC
OTTESEN 27NA - OWB - OWB	300.0	300.0	116.4	113.3	37.252	ES
OTTESEN 27NA - OWB - OWB	900.0	890.4	177.2	166.8	17.046	SF
OTTESEN 27NA - OWB - Plan #2	255.0	255.1	116.3	113.4	40.476	CC
OTTESEN 27NA - OWB - Plan #2	300.0	300.0	116.4	113.3	37.252	ES

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

**PDC Energy Inc.**  
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<b>Company:</b>	GWP - PLANNING DB	<b>Local Co-ordinate Reference:</b>	Well OTTESEN FEDERAL 08N
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 20' @ 5096.0usft
<b>Reference Site:</b>	Ottesen Pad	<b>MD Reference:</b>	KB 20' @ 5096.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OTTESEN FEDERAL 08N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	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						
Ottesen Pad						
OTTESEN 27NA - OWB - Plan #2	8,200.0	9,040.7	1,830.0	1,707.5	14.938	SF
OTTESEN 28N - OWB - Plan #2	868.5	880.4	97.9	87.7	9.613	CC
OTTESEN 28N - OWB - Plan #2	900.0	911.8	98.1	87.3	9.121	ES
OTTESEN 28N - OWB - Plan #2	1,200.0	1,206.5	123.5	105.8	6.988	SF
OTTESEN 29C - OWB - Plan #2	813.1	827.4	90.9	79.7	8.097	CC
OTTESEN 29C - OWB - Plan #2	900.0	913.7	92.6	79.6	7.160	ES
OTTESEN 29C - OWB - Plan #2	1,100.0	1,110.3	112.3	95.2	6.545	SF
OTTESEN 30N - OWB - OWB	0.0	0.0	101.7			
OTTESEN 30N - OWB - OWB	200.0	199.4	102.0	99.5	41.085	ES
OTTESEN 30N - OWB - OWB	800.0	792.4	161.2	149.7	14.020	SF
OTTESEN 30N - OWB - Plan #2	0.0	0.0	101.7			
OTTESEN 30N - OWB - Plan #2	200.0	199.4	102.0	99.5	41.085	ES
OTTESEN 30N - OWB - Plan #2	800.0	792.4	161.2	149.7	14.020	SF
OTTESEN 31N - OWB - Plan #2	718.6	736.6	88.0	75.1	6.808	CC, ES
OTTESEN 31N - OWB - Plan #2	900.0	916.2	98.1	82.4	6.239	SF
OTTESEN 32NA - OWB - OWB	0.0	0.0	101.9			
OTTESEN 32NA - OWB - OWB	250.0	249.6	102.8	100.0	36.482	ES
OTTESEN 32NA - OWB - OWB	700.0	696.3	146.7	137.0	15.125	SF
OTTESEN 32NA - OWB - Plan #2	0.0	0.0	101.9			
OTTESEN 32NA - OWB - Plan #2	250.0	249.6	102.8	100.0	36.482	ES
OTTESEN 32NA - OWB - Plan #2	700.0	696.3	146.7	137.0	15.125	SF
OTTESEN FEDERAL 01N - OWB - Plan #2	250.0	250.0	105.1	102.3	37.606	CC
OTTESEN FEDERAL 01N - OWB - Plan #2	600.0	584.1	108.2	98.3	10.966	ES
OTTESEN FEDERAL 01N - OWB - Plan #2	16,536.5	16,150.7	1,226.7	693.6	2.301	SF
OTTESEN FEDERAL 02NA - OWB - Plan #2	250.0	250.0	90.2	87.4	32.291	CC
OTTESEN FEDERAL 02NA - OWB - Plan #2	600.0	586.5	92.9	83.1	9.477	ES
OTTESEN FEDERAL 02NA - OWB - Plan #2	16,536.5	16,016.3	1,065.9	542.2	2.035	SF
OTTESEN FEDERAL 03C - OWB - Plan #2	250.0	250.0	75.6	72.8	27.076	CC
OTTESEN FEDERAL 03C - OWB - Plan #2	600.0	588.9	77.9	68.1	7.995	ES
OTTESEN FEDERAL 03C - OWB - Plan #2	16,536.5	16,420.5	904.5	382.8	1.734	Collision Risk Procedures Req., SF
OTTESEN FEDERAL 04N - OWB - Plan #2	250.0	250.0	59.9	57.2	21.460	CC
OTTESEN FEDERAL 04N - OWB - Plan #2	700.0	688.9	63.0	52.0	5.703	ES
OTTESEN FEDERAL 04N - OWB - Plan #2	16,536.5	16,258.2	699.8	166.1	1.311	Collision Avoidance Req., SF
OTTESEN FEDERAL 05N - OWB - Plan #2	250.0	250.0	45.1	42.3	16.145	CC
OTTESEN FEDERAL 05N - OWB - Plan #2	16,532.4	16,387.8	529.5	-2.6	0.995	No-Go Zone - Stop Drilling, ES
OTTESEN FEDERAL 06NA - OWB - Plan #2	250.0	250.0	30.5	27.7	10.931	CC
OTTESEN FEDERAL 06NA - OWB - Plan #2	16,536.5	16,270.9	395.8	-75.9	0.839	No-Go Zone - Stop Drilling, ES
OTTESEN FEDERAL 07C - OWB - Plan #2	250.0	250.0	14.8	12.1	5.315	CC
OTTESEN FEDERAL 07C - OWB - Plan #2	16,536.5	16,684.8	278.5	-71.3	0.796	No-Go Zone - Stop Drilling, ES
OTTESEN FEDERAL 09N - OWB - Plan #2	250.0	250.0	14.8	12.1	5.315	CC
OTTESEN FEDERAL 09N - OWB - Plan #2	16,536.5	16,678.2	190.3	-299.1	0.389	No-Go Zone - Stop Drilling, ES
OTTESEN FEDERAL 10NA - OWB - Plan #2	250.0	250.0	29.4	26.6	10.530	CC
OTTESEN FEDERAL 10NA - OWB - Plan #2	16,536.5	16,583.7	395.8	-94.2	0.808	No-Go Zone - Stop Drilling, ES
OTTESEN FEDERAL 11C - OWB - OWB	253.1	253.1	44.8	41.9	15.153	CC, ES
OTTESEN FEDERAL 11C - OWB - OWB	500.0	499.0	58.6	51.9	8.773	SF
OTTESEN FEDERAL 11C - OWB - Plan #2	253.1	253.1	44.8	41.9	15.153	CC, ES
OTTESEN FEDERAL 11C - OWB - Plan #2	16,536.5	17,127.5	575.1	88.1	1.181	Collision Avoidance Req., SF
OTTESEN FEDERAL 12N - OWB - OWB	0.0	0.0	59.7			
OTTESEN FEDERAL 12N - OWB - OWB	250.0	250.0	60.9	58.1	22.156	ES
OTTESEN FEDERAL 12N - OWB - OWB	600.0	598.3	86.3	78.2	10.712	SF
OTTESEN FEDERAL 12N - OWB - Plan #2	0.0	0.0	59.7			
OTTESEN FEDERAL 12N - OWB - Plan #2	250.0	250.0	60.9	58.1	22.156	ES
OTTESEN FEDERAL 12N - OWB - Plan #2	16,536.5	17,152.8	699.8	163.0	1.304	Collision Avoidance Req., SF

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

**PDC Energy Inc.**  
Anticollision Summary Report

<b>Company:</b>	GWP - PLANNING DB	<b>Local Co-ordinate Reference:</b>	Well OTTESEN FEDERAL 08N
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 20' @ 5096.0usft
<b>Reference Site:</b>	Ottesen Pad	<b>MD Reference:</b>	KB 20' @ 5096.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OTTESEN FEDERAL 08N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

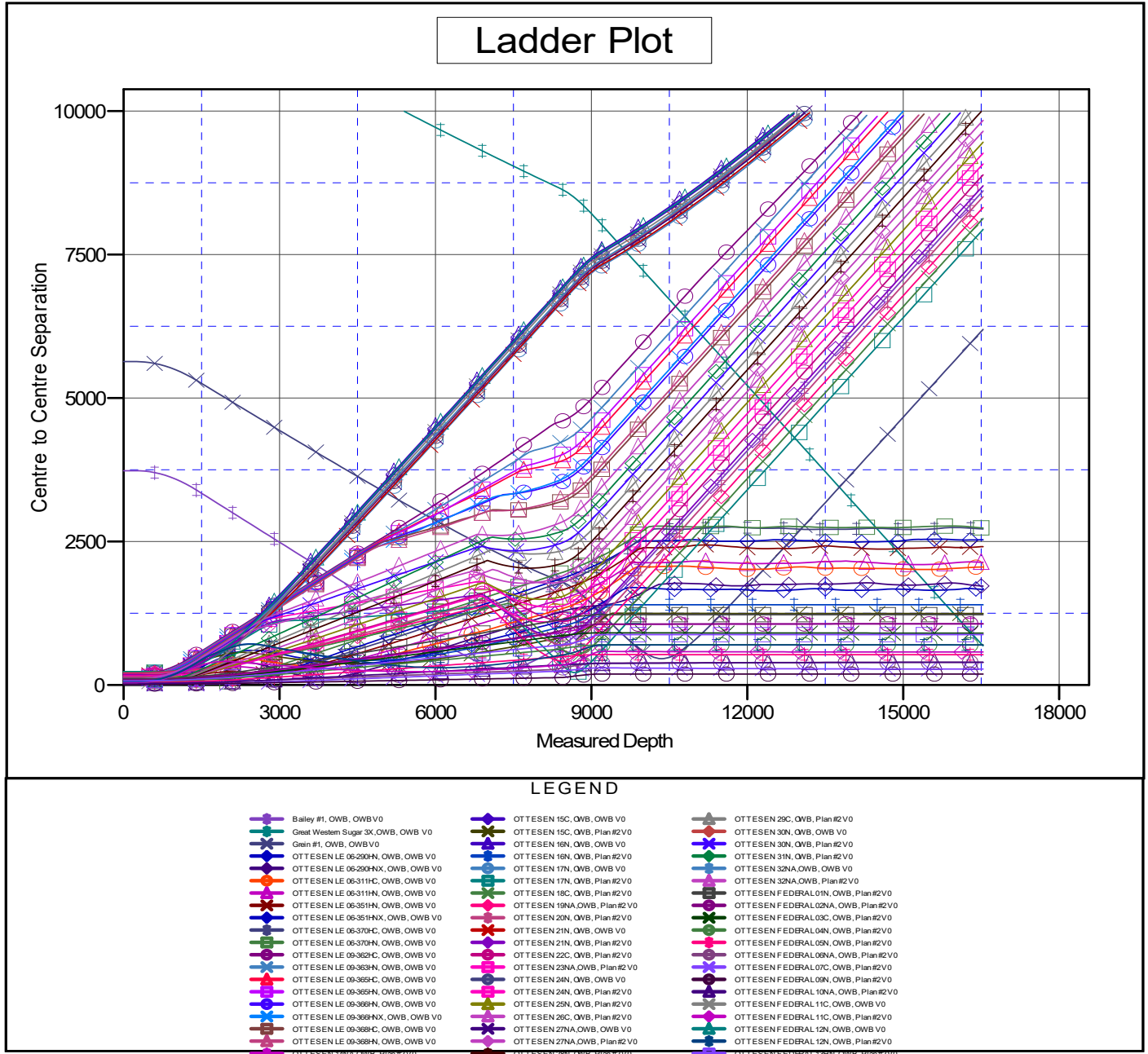
Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Ottesen Pad						
OTTESEN FEDERAL 13HN - OWB - Plan #2	250.0	250.0	74.5	71.7	26.675	CC
OTTESEN FEDERAL 13HN - OWB - Plan #2	600.0	609.0	76.7	67.5	8.391	ES
OTTESEN FEDERAL 13HN - OWB - Plan #2	16,536.5	17,010.7	878.0	345.9	1.650	Collision Risk Procedures R

**PDC Energy Inc.**  
**Anticollision Summary Report**

<b>Company:</b>	GWP - PLANNING DB	<b>Local Co-ordinate Reference:</b>	Well OTTESEN FEDERAL 08N
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 20' @ 5096.0usft
<b>Reference Site:</b>	Ottesen Pad	<b>MD Reference:</b>	KB 20' @ 5096.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OTTESEN FEDERAL 08N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB 20' @ 5096.0usft  
Offset Depths are relative to Offset Datum  
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: OTTESEN FEDERAL 08N  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.47°



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



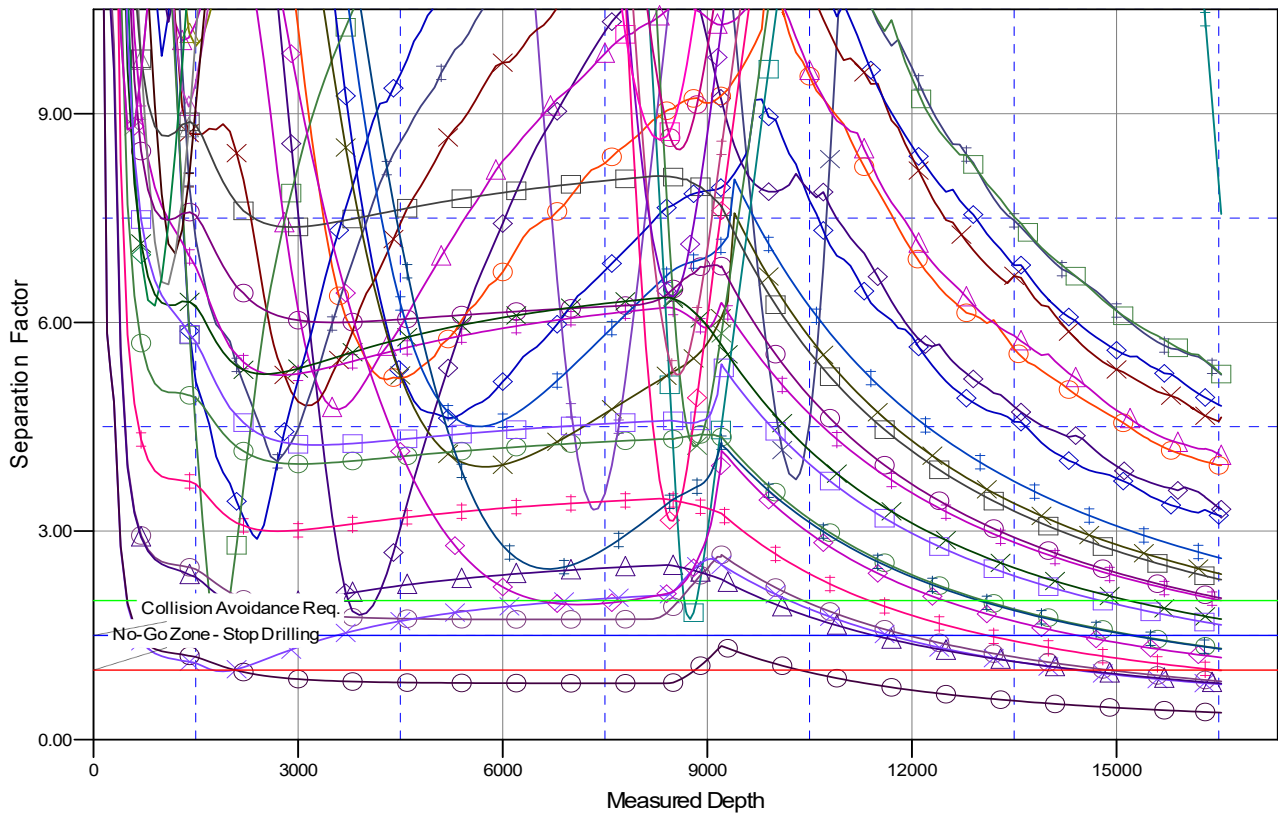
**PDC Energy Inc.**  
Anticollision Summary Report

<b>Company:</b>	GWP - PLANNING DB	<b>Local Co-ordinate Reference:</b>	Well OTTESSEN FEDERAL 08N
<b>Project:</b>	WELD COUNTY	<b>TVD Reference:</b>	KB 20' @ 5096.0usft
<b>Reference Site:</b>	Ottesen Pad	<b>MD Reference:</b>	KB 20' @ 5096.0usft
<b>Site Error:</b>	0.0 usft	<b>North Reference:</b>	True
<b>Reference Well:</b>	OTTESSEN FEDERAL 08N	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0 usft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OWB	<b>Database:</b>	EDM 5000.15 Single User Db
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB 20' @ 5096.0usft  
Offset Depths are relative to Offset Datum  
Central Meridian is 105° 30' 0.000 W

Coordinates are relative to: OTTESSEN FEDERAL 08N  
Coordinate System is US State Plane 1983, Colorado Northern Zone  
Grid Convergence at Surface is: 0.47°

## Separation Factor Plot



### LEGEND

● Bailey #1, OWB, OWB V0	● OTTESSEN 15C, OWB, OWB V0	● OTTESSEN 29C, OWB, Plan#2 V0
● Great Western Sugar 3X, OWB, OWB V0	● OTTESSEN 15C, OWB, Plan#2 V0	● OTTESSEN 30N, OWB, OWB V0
● Grain #1, OWB, OWB V0	● OTTESSEN 16N, OWB, OWB V0	● OTTESSEN 30N, OWB, Plan#2 V0
● OTTESSEN LE 06-290HN, OWB, OWB V0	● OTTESSEN 16N, OWB, Plan#2 V0	● OTTESSEN 31N, OWB, Plan#2 V0
● OTTESSEN LE 06-290HN, OWB, OWB V0	● OTTESSEN 17N, OWB, OWB V0	● OTTESSEN 32NA, OWB, OWB V0
● OTTESSEN LE 06-311HC, OWB, OWB V0	● OTTESSEN 17N, OWB, Plan#2 V0	● OTTESSEN 32NA, OWB, Plan#2 V0
● OTTESSEN LE 06-311HN, OWB, OWB V0	● OTTESSEN 18C, OWB, Plan#2 V0	● OTTESSEN FEDERAL 01N, OWB, Plan#2 V0
● OTTESSEN LE 06-351HN, OWB, OWB V0	● OTTESSEN 18NA, OWB, Plan#2 V0	● OTTESSEN FEDERAL 02NA, OWB, Plan#2 V0
● OTTESSEN LE 06-351HN, OWB, OWB V0	● OTTESSEN 20N, OWB, Plan#2 V0	● OTTESSEN FEDERAL 03C, OWB, Plan#2 V0
● OTTESSEN LE 06-370HC, OWB, OWB V0	● OTTESSEN 21N, OWB, OWB V0	● OTTESSEN FEDERAL 04N, OWB, Plan#2 V0
● OTTESSEN LE 06-370HN, OWB, OWB V0	● OTTESSEN 21N, OWB, Plan#2 V0	● OTTESSEN FEDERAL 05N, OWB, Plan#2 V0
● OTTESSEN LE 09-362HC, OWB, OWB V0	● OTTESSEN 22C, OWB, Plan#2 V0	● OTTESSEN FEDERAL 06NA, OWB, Plan#2 V0
● OTTESSEN LE 09-363HN, OWB, OWB V0	● OTTESSEN 23NA, OWB, Plan#2 V0	● OTTESSEN FEDERAL 07C, OWB, Plan#2 V0
● OTTESSEN LE 09-365HC, OWB, OWB V0	● OTTESSEN 24N, OWB, OWB V0	● OTTESSEN FEDERAL 08N, OWB, Plan#2 V0
● OTTESSEN LE 09-365HN, OWB, OWB V0	● OTTESSEN 24N, OWB, Plan#2 V0	● OTTESSEN FEDERAL 10NA, OWB, Plan#2 V0
● OTTESSEN LE 09-366HN, OWB, OWB V0	● OTTESSEN 25N, OWB, Plan#2 V0	● OTTESSEN FEDERAL 11C, OWB, OWB V0
● OTTESSEN LE 09-366HN, OWB, OWB V0	● OTTESSEN 26C, OWB, Plan#2 V0	● OTTESSEN FEDERAL 11C, OWB, Plan#2 V0
● OTTESSEN LE 09-368HC, OWB, OWB V0	● OTTESSEN 27NA, OWB, OWB V0	● OTTESSEN FEDERAL 12N, OWB, OWB V0
● OTTESSEN LE 09-368HN, OWB, OWB V0	● OTTESSEN 27NA, OWB, Plan#2 V0	● OTTESSEN FEDERAL 12N, OWB, Plan#2 V0
● OTTESSEN 18NA, OWB, Plan#2 V0	● OTTESSEN 28N, OWB, Plan#2 V0	● OTTESSEN FEDERAL 13N, OWB, Plan#2 V0

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