

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

HOBBS OCD
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Reference Plan 1	
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria
Interpolation Method:	Stations Interval 100.00ft
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 10,000.00ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	ISCSWA
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic
Casing Method:	Not applied

Risk Settings
Vertical Depth for Analysis: ft (Below TVD Reference Datum)
Level of Acceptable Risk (1 in):
Minimum Separation: 0 ft

Survey Tool Program		Date	8/1/2016		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,659.64	Plan 1 (Wellbore #1)	MWD	MWD - Standard	

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Dzurisin						
Thistle Unit 145H - Wellbore #1 - Plan 1	3,511.25	3,512.95	50.02	34.51	3.225 CC	
Thistle Unit 145H - Wellbore #1 - Plan 1	3,700.00	3,703.12	50.44	34.15	3.097 ES	
Thistle Unit 145H - Wellbore #1 - Plan 1	3,900.00	3,904.53	52.15	35.06	3.052 SF	
Thistle Unit 156H - Wellbore #1 - Plan 1	3,466.33	3,467.33	150.06	134.76	9.804 CC	
Thistle Unit 156H - Wellbore #1 - Plan 1	3,500.00	3,500.00	150.07	134.61	9.709 ES	
Thistle Unit 156H - Wellbore #1 - Plan 1	17,659.64	17,065.30	983.93	554.53	2.291 SF	
Thistle Unit 1H - Wellbore #1 - Plan 1	3,466.40	3,467.20	100.03	84.73	6.535 CC	
Thistle Unit 1H - Wellbore #1 - Plan 1	3,500.00	3,500.00	100.04	84.58	6.472 ES	
Thistle Unit 1H - Wellbore #1 - Plan 1	17,659.64	17,720.49	889.85	416.19	1.879 SF	

Offset Design													Dzurisin - Thistle Unit 145H - Wellbore #1 - Plan 1		Offset Site Error:		0.00 ft	
Survey Program: 0-MWD															Offset Well Error:		0.00 ft	
Reference		Offset		Semi Major Axis		Distance												
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Risked Separation Factor	Probability of Collision	Warning					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)									
0.00	0.00	1.60	1.60	0.00	0.00	-90.33	50.02				0							
100.00	100.00	101.60	101.60	0.09	0.09	-90.33	50.02	49.85	0.18	284.951	0							
200.00	200.00	201.60	201.60	0.31	0.31	-90.33	50.02	49.40	0.63	80.024	0							
300.00	300.00	301.60	301.60	0.54	0.54	-90.33	50.02	48.95	1.07	46.548	0							
400.00	400.00	401.60	401.60	0.76	0.76	-90.33	50.02	48.50	1.52	32.819	0							
500.00	500.00	501.60	501.60	0.99	0.99	-90.33	50.02	48.05	1.97	25.344	0							
600.00	600.00	601.60	601.60	1.21	1.21	-90.33	50.02	47.60	2.42	20.642	0							
700.00	700.00	701.60	701.60	1.43	1.44	-90.33	50.02	47.15	2.87	17.412	0							
800.00	800.00	801.60	801.60	1.66	1.66	-90.33	50.02	46.70	3.32	15.056	0							
900.00	900.00	901.60	901.60	1.88	1.89	-90.33	50.02	46.25	3.77	13.262	0							
1,000.00	1,000.00	1,001.60	1,001.60	2.11	2.11	-90.33	50.02	45.80	4.22	11.850	0							
1,100.00	1,100.00	1,101.60	1,101.60	2.33	2.34	-90.33	50.02	45.35	4.67	10.709	0							
1,200.00	1,200.00	1,201.60	1,201.60	2.56	2.56	-90.33	50.02	44.90	5.12	9.769	0							
1,300.00	1,300.00	1,301.60	1,301.60	2.78	2.79	-90.33	50.02	44.45	5.57	8.981	0							

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

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Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Dzurisin - Thistle Unit 145H - Wellbore #1 - Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD														Offset Well Error: 0.00 ft		
Reference		Offset		Semi Major Axis		Distance							Risked Separation Factor	Probability of Collision	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor						
1,400.00	1,400.00	1,401.60	1,401.60	3.01	3.01	-90.33	50.02	44.00	6.02	8.310	0					
1,500.00	1,500.00	1,501.60	1,501.60	3.23	3.24	-90.33	50.02	43.55	6.47	7.732	0					
1,600.00	1,600.00	1,601.60	1,601.60	3.46	3.46	-90.33	50.02	43.10	6.92	7.230	0					
1,700.00	1,700.00	1,701.60	1,701.60	3.68	3.69	-90.33	50.02	42.65	7.37	6.789	0					
1,800.00	1,800.00	1,801.60	1,801.60	3.91	3.91	-90.33	50.02	42.20	7.82	6.399	0					
1,900.00	1,900.00	1,901.60	1,901.60	4.13	4.14	-90.33	50.02	41.75	8.27	6.051	0					
2,000.00	2,000.00	2,001.60	2,001.60	4.36	4.36	-90.33	50.02	41.30	8.72	5.739	0					
2,100.00	2,100.00	2,101.60	2,101.60	4.58	4.58	-90.33	50.02	40.85	9.17	5.457	0					
2,200.00	2,200.00	2,201.60	2,201.60	4.81	4.81	-90.33	50.02	40.41	9.62	5.202	0					
2,300.00	2,300.00	2,301.60	2,301.60	5.03	5.03	-90.33	50.02	39.96	10.07	4.970	0					
2,400.00	2,400.00	2,401.60	2,401.60	5.26	5.26	-90.33	50.02	39.51	10.51	4.757	0					
2,500.00	2,500.00	2,501.60	2,501.60	5.48	5.48	-90.33	50.02	39.06	10.96	4.562	0					
2,600.00	2,600.00	2,601.60	2,601.60	5.71	5.71	-90.33	50.02	38.61	11.41	4.382	0					
2,700.00	2,700.00	2,701.60	2,701.60	5.93	5.93	-90.33	50.02	38.16	11.86	4.216	0					
2,800.00	2,800.00	2,801.60	2,801.60	6.15	6.16	-90.33	50.02	37.71	12.31	4.062	0					
2,900.00	2,900.00	2,901.60	2,901.60	6.38	6.38	-90.33	50.02	37.26	12.76	3.919	0					
3,000.00	3,000.00	3,001.60	3,001.60	6.60	6.61	-90.33	50.02	36.81	13.21	3.786	0					
3,100.00	3,100.00	3,101.60	3,101.60	6.83	6.83	-90.33	50.02	36.36	13.66	3.661	0					
3,200.00	3,200.00	3,201.60	3,201.60	7.05	7.06	-90.33	50.02	35.91	14.11	3.545	0					
3,300.00	3,300.00	3,301.60	3,301.60	7.28	7.28	-90.33	50.02	35.46	14.56	3.435	0					
3,400.00	3,400.00	3,401.60	3,401.60	7.50	7.51	-90.33	50.02	35.01	15.01	3.332	0					
3,500.00	3,500.00	3,501.61	3,501.61	7.73	7.73	-90.33	50.02	34.56	15.46	3.236	0					
3,511.25	3,511.25	3,512.95	3,512.95	7.75	7.76	-179.68	50.02	34.51	15.51	3.225	0		CC			
3,600.00	3,600.00	3,602.37	3,602.37	7.94	7.95	-179.81	50.11	34.22	15.89	3.154	0					
3,700.00	3,699.96	3,703.12	3,703.08	8.14	8.17	-178.28	50.44	34.15	16.29	3.097	0		ES			
3,800.00	3,799.86	3,803.85	3,803.70	8.35	8.39	-175.80	51.08	34.40	16.69	3.061	0					
3,900.00	3,899.68	3,904.53	3,904.19	8.56	8.61	-172.45	52.15	35.06	17.09	3.052	0		SF			
4,000.00	3,999.37	4,005.13	4,004.47	8.79	8.85	-168.37	53.77	36.29	17.49	3.075	0					
4,100.00	4,098.99	4,105.03	4,103.99	9.03	9.09	-164.24	55.94	38.02	17.92	3.122	0					
4,200.00	4,198.60	4,204.92	4,203.51	9.27	9.34	-160.43	58.37	40.01	18.36	3.179	0					
4,300.00	4,298.22	4,304.82	4,303.03	9.52	9.59	-156.95	61.04	42.22	18.82	3.244	0					
4,400.00	4,397.84	4,404.72	4,402.55	9.77	9.85	-153.76	63.92	44.63	19.29	3.314	0					
4,500.00	4,497.46	4,504.62	4,502.06	10.04	10.11	-150.86	66.98	47.20	19.77	3.387	0					
4,600.00	4,597.08	4,604.52	4,601.58	10.30	10.38	-148.21	70.19	49.92	20.27	3.463	0					
4,700.00	4,696.70	4,704.42	4,701.10	10.57	10.65	-145.80	73.54	52.76	20.78	3.539	0					
4,800.00	4,796.32	4,804.31	4,800.62	10.85	10.93	-143.61	77.01	55.71	21.30	3.615	0					
4,900.00	4,895.94	4,904.21	4,900.14	11.13	11.21	-141.61	80.58	58.75	21.83	3.691	0					
5,000.00	4,995.56	5,004.11	4,999.65	11.41	11.49	-139.78	84.25	61.87	22.38	3.765	0					
5,100.00	5,095.18	5,104.01	5,099.17	11.70	11.78	-138.10	87.99	65.06	22.93	3.838	0					
5,200.00	5,194.80	5,203.91	5,198.69	11.99	12.07	-136.56	91.80	68.31	23.49	3.908	0					
5,300.00	5,294.42	5,303.80	5,298.21	12.28	12.36	-135.14	95.67	71.62	24.05	3.977	0					
5,400.00	5,394.04	5,403.70	5,397.73	12.58	12.65	-133.84	99.60	74.97	24.63	4.044	0					
5,500.00	5,493.66	5,503.60	5,497.24	12.88	12.95	-132.63	103.57	78.36	25.21	4.109	0					
5,600.00	5,593.28	5,603.50	5,596.76	13.18	13.25	-131.52	107.58	81.79	25.79	4.171	0					
5,700.00	5,692.90	5,703.40	5,696.28	13.48	13.55	-130.48	111.64	85.25	26.38	4.231	0					
5,800.00	5,792.52	5,803.30	5,795.80	13.78	13.85	-129.52	115.72	88.74	26.98	4.289	0					
5,900.00	5,892.14	5,903.19	5,895.32	14.09	14.16	-128.62	119.84	92.26	27.58	4.345	0					
6,000.00	5,991.76	6,003.09	5,994.84	14.40	14.46	-127.79	123.98	95.80	28.18	4.399	0					
6,100.00	6,091.37	6,102.99	6,094.35	14.71	14.77	-127.00	128.15	99.36	28.79	4.451	0					
6,200.00	6,190.99	6,202.89	6,193.87	15.02	15.08	-126.27	132.35	102.94	29.40	4.501	0					
6,300.00	6,290.61	6,302.79	6,293.39	15.34	15.39	-125.58	136.56	106.54	30.02	4.549	0					
6,400.00	6,390.23	6,402.69	6,392.91	15.65	15.71	-124.93	140.79	110.15	30.64	4.596	0					
6,500.00	6,489.85	6,502.58	6,492.43	15.97	16.02	-124.33	145.04	113.78	31.26	4.640	0					
6,600.00	6,589.47	6,602.48	6,591.94	16.29	16.33	-123.75	149.30	117.42	31.88	4.683	0					

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

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Project:	PBNM	TVD Reference:	1 @ 3673.20ft
Reference Site:	Dzurisin	MD Reference:	1 @ 3673.20ft
Site Error:	0.00	North Reference:	Grid
Reference Well:	Thistle Unit 144H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000 US Production
Reference Design:	Plan 1	Offset TVD Reference:	Offset Datum

Offset Design													Dzurisin - Thistle Unit 145H - Wellbore #1 - Plan 1		Offset Site Error:		0.00 ft
Survey Program: 0-MWD													Offset Well Error:		0.00 ft		
Reference		Offset		Semi Major Axis		Distance											
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Risked Separation Factor	Probability of Collision	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)								
6,700.00	6,689.09	6,702.38	6,691.46	16.61	16.65	-123.21	153.58	121.07	32.50	4.725	0						
6,800.00	6,788.71	6,802.28	6,790.98	16.93	16.97	-122.70	157.87	124.73	33.13	4.765	0						
6,900.00	6,888.33	6,902.18	6,890.50	17.25	17.28	-122.21	162.17	128.40	33.76	4.803	0						
7,000.00	6,987.95	7,002.07	6,990.02	17.57	17.60	-121.75	166.48	132.09	34.39	4.840	0						
7,100.00	7,087.61	7,101.98	7,089.54	17.84	17.92	-121.20	170.58	135.58	34.99	4.875	0						
7,200.00	7,187.33	7,201.88	7,189.06	18.04	18.24	-120.44	174.25	138.69	35.56	4.900	0						
7,300.00	7,287.12	7,301.78	7,288.58	18.24	18.56	-119.46	177.52	141.39	36.13	4.913	0						
7,400.00	7,386.96	7,401.67	7,388.09	18.43	18.89	-118.27	180.42	143.72	36.70	4.916	0						
7,500.00	7,486.84	7,501.54	7,487.58	18.63	19.21	-116.87	183.01	145.73	37.28	4.909	0						
7,600.00	7,586.76	7,601.51	7,587.20	18.81	19.47	-115.41	185.30	147.51	37.79	4.903	0						
7,700.00	7,686.72	7,701.53	7,686.95	19.00	19.67	-114.01	187.26	149.03	38.23	4.899	0						
7,800.00	7,786.69	7,801.61	7,786.82	19.18	19.87	-112.65	188.88	150.23	38.65	4.887	0						
7,900.00	7,886.68	7,901.73	7,886.78	19.36	20.06	-111.32	190.16	151.10	39.05	4.869	0						
8,000.00	7,986.68	8,001.91	7,986.84	19.52	20.26	-20.03	191.09	151.64	39.45	4.844	0						
8,100.00	8,086.68	8,102.14	8,087.00	19.70	20.44	-18.88	191.80	151.97	39.83	4.816	0						
8,200.00	8,186.68	8,202.43	8,187.24	19.90	20.62	-17.99	192.41	152.19	40.22	4.784	0						
8,300.00	8,286.68	8,302.77	8,287.55	20.09	20.80	-17.36	192.87	152.28	40.60	4.751	0						
8,400.00	8,386.68	8,403.13	8,387.91	20.29	20.97	-16.99	193.16	152.19	40.97	4.715	0						
8,500.00	8,486.68	8,503.50	8,488.28	20.49	21.13	-16.87	193.25	151.92	41.33	4.676	0						
8,600.00	8,586.68	8,603.50	8,588.28	20.69	21.31	-16.87	193.25	151.55	41.71	4.634	0						
8,700.00	8,686.68	8,703.50	8,688.28	20.88	21.50	-16.87	193.25	151.15	42.10	4.590	0						
8,800.00	8,786.68	8,803.50	8,788.28	21.08	21.70	-16.87	193.25	150.75	42.50	4.547	0						
8,900.00	8,886.68	8,903.50	8,888.28	21.28	21.89	-16.87	193.25	150.36	42.89	4.505	0						
9,000.00	8,986.68	9,003.50	8,988.28	21.48	22.09	-16.87	193.25	149.96	43.29	4.464	0						
9,100.00	9,086.68	9,103.50	9,088.28	21.68	22.28	-16.87	193.25	149.56	43.69	4.423	0						
9,200.00	9,186.68	9,203.50	9,188.28	21.88	22.48	-16.87	193.25	149.16	44.09	4.383	0						
9,300.00	9,286.68	9,281.32	9,265.97	22.08	22.65	-16.59	197.69	153.23	44.47	4.446	0						
9,400.00	9,386.68	9,350.00	9,333.36	22.29	22.86	-15.57	215.97	171.12	44.85	4.815	0						
9,500.00	9,486.68	9,415.04	9,394.84	22.49	23.11	-14.16	247.53	202.29	45.24	5.471	0						
9,590.00	9,576.68	9,467.40	9,441.90	22.67	23.35	-12.88	286.08	240.51	45.58	6.277	0						
9,600.00	9,586.68	9,475.00	9,448.51	22.69	23.38	-12.17	290.82	245.21	45.62	6.375	0						
9,625.00	9,611.65	9,486.63	9,458.51	22.74	23.45	-11.60	302.29	256.66	45.63	6.625	0						
9,650.00	9,636.52	9,500.00	9,469.82	22.79	23.52	-11.06	313.26	267.69	45.57	6.874	0						
9,675.00	9,661.23	9,513.98	9,481.44	22.84	23.60	-10.56	323.71	278.28	45.43	7.125	0						
9,700.00	9,685.71	9,525.00	9,490.43	22.89	23.66	-10.17	333.66	288.46	45.21	7.381	0						
9,725.00	9,709.89	9,541.21	9,503.38	22.94	23.76	-9.75	343.05	298.13	44.92	7.637	0						
9,750.00	9,733.70	9,550.00	9,510.26	22.99	23.82	-9.46	351.96	307.42	44.54	7.902	0						
9,775.00	9,757.09	9,568.34	9,524.29	23.05	23.94	-9.10	360.21	316.10	44.11	8.166	0						
9,800.00	9,779.98	9,581.88	9,534.34	23.10	24.04	-8.83	367.96	324.37	43.60	8.440	0						
9,825.00	9,802.31	9,600.00	9,547.40	23.15	24.18	-8.55	375.20	332.17	43.03	8.719	0						
9,850.00	9,824.02	9,608.89	9,553.62	23.20	24.25	-8.37	381.77	339.39	42.38	9.009	0						
9,875.00	9,845.06	9,625.00	9,564.60	23.26	24.38	-8.16	387.83	346.14	41.69	9.304	0						
9,900.00	9,865.36	9,635.84	9,571.77	23.32	24.47	-8.01	393.28	352.35	40.93	9.609	0						
9,925.00	9,884.86	9,650.00	9,580.84	23.38	24.60	-7.86	398.16	358.03	40.13	9.921	0						
9,950.00	9,903.53	9,662.75	9,588.73	23.45	24.72	-7.73	402.45	363.16	39.29	10.242	0						
9,975.00	9,921.30	9,675.00	9,596.06	23.52	24.84	-7.63	406.16	367.74	38.42	10.571	0						
10,000.00	9,938.12	9,689.62	9,604.47	23.61	24.99	-7.53	409.26	371.73	37.53	10.905	0						
10,025.00	9,953.95	9,700.00	9,610.21	23.70	25.10	-7.46	411.80	375.18	36.61	11.247	0						
10,050.00	9,968.75	9,716.47	9,618.95	23.80	25.28	-7.40	413.69	377.98	35.70	11.586	0						
10,075.00	9,982.48	9,725.00	9,623.28	23.92	25.37	-7.36	415.05	380.27	34.78	11.934	0						
10,100.00	9,995.09	9,743.31	9,632.12	24.06	25.59	-7.32	415.71	381.82	33.90	12.264	0						
10,125.00	10,006.55	9,756.72	9,638.21	24.22	25.76	-7.31	415.82	382.80	33.03	12.590	0						
10,150.00	10,016.84	9,775.00	9,645.96	24.40	25.99	-7.30	415.38	383.17	32.21	12.896	0						
10,175.00	10,025.92	9,783.56	9,649.37	24.61	26.11	-7.32	414.24	382.82	31.42	13.183	0						

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Dzurisin - Thistle Unit 145H - Wellbore #1 - Plan 1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning	
10,200.00	10,033.77	9,800.00	9,655.53	24.84	26.33	-7.35	412.56	381.85	30.72	13.431	0			
10,225.00	10,040.36	9,810.40	9,659.15	25.10	26.48	-7.40	410.25	380.17	30.08	13.640	0			
10,250.00	10,045.69	9,825.00	9,663.88	25.39	26.69	-7.46	407.36	377.82	29.54	13.792	0			
10,275.00	10,049.73	9,837.27	9,667.52	25.70	26.88	-7.53	403.87	374.78	29.09	13.882	0			
10,300.00	10,052.47	9,850.00	9,670.97	26.03	27.07	-7.63	399.79	371.03	28.76	13.900	0			
10,325.00	10,053.91	9,864.16	9,674.44	26.39	27.30	-7.74	395.12	366.57	28.55	13.838	0			
10,338.67	10,054.15	9,875.00	9,676.81	26.59	27.47	-7.82	392.35	363.85	28.50	13.768	0			
10,385.10	10,054.27	9,900.00	9,681.37	27.32	27.89	-7.89	383.72	355.08	28.64	13.398	0			
10,400.00	10,054.31	9,900.00	9,681.37	27.56	27.89	-7.89	381.50	352.83	28.67	13.307	0			
10,500.00	10,054.58	9,960.94	9,687.04	29.35	28.97	-7.94	372.89	343.86	29.03	12.845	0			
10,532.45	10,054.67	9,982.06	9,687.24	30.00	29.37	-7.92	372.59	343.43	29.16	12.778	0			
10,600.00	10,054.86	10,049.58	9,687.15	31.35	30.69	-7.84	372.79	343.30	29.49	12.642	0			
10,700.00	10,055.13	10,149.58	9,687.02	33.52	32.79	-7.72	373.09	343.04	30.05	12.418	0			
10,800.00	10,055.40	10,249.58	9,686.89	35.81	35.03	-7.60	373.39	342.72	30.67	12.174	0			
10,900.00	10,055.67	10,349.57	9,686.76	38.21	37.39	-7.48	373.69	342.33	31.36	11.914	0			
11,000.00	10,055.94	10,449.57	9,686.63	40.70	39.84	-7.37	374.00	341.88	32.12	11.644	0			
11,100.00	10,056.21	10,549.57	9,686.50	43.26	42.36	-7.25	374.30	341.37	32.93	11.368	0			
11,200.00	10,056.48	10,649.56	9,686.37	45.88	44.96	-7.13	374.61	340.82	33.78	11.088	0			
11,300.00	10,056.75	10,749.56	9,686.24	48.55	47.60	-7.01	374.92	340.23	34.69	10.808	0			
11,400.00	10,057.02	10,849.56	9,686.11	51.26	50.30	-6.90	375.23	339.60	35.63	10.531	0			
11,500.00	10,057.30	10,949.55	9,685.98	54.00	53.03	-6.78	375.54	338.93	36.61	10.257	0			
11,600.00	10,057.57	11,049.55	9,685.85	56.78	55.79	-6.67	375.85	338.23	37.62	9.990	0			
11,700.00	10,057.84	11,149.55	9,685.72	59.58	58.58	-6.55	376.17	337.50	38.67	9.729	0			
11,800.00	10,058.11	11,249.54	9,685.59	62.40	61.39	-6.43	376.49	336.75	39.73	9.476	0			
11,900.00	10,058.38	11,349.54	9,685.46	65.24	64.23	-6.32	376.80	335.98	40.82	9.230	0			
12,000.00	10,058.65	11,449.54	9,685.34	68.10	67.08	-6.20	377.12	335.19	41.93	8.993	0			
12,100.00	10,058.92	11,549.53	9,685.21	70.98	69.95	-6.09	377.45	334.38	43.06	8.765	0			
12,200.00	10,059.19	11,649.53	9,685.08	73.87	72.83	-5.97	377.77	333.56	44.21	8.545	0			
12,300.00	10,059.47	11,749.53	9,684.95	76.77	75.73	-5.86	378.09	332.72	45.37	8.334	0			
12,400.00	10,059.74	11,849.52	9,684.82	79.68	78.63	-5.74	378.42	331.88	46.54	8.131	0			
12,500.00	10,060.01	11,949.52	9,684.69	82.60	81.55	-5.63	378.75	331.02	47.73	7.936	0			
12,600.00	10,060.28	12,049.52	9,684.56	85.52	84.47	-5.51	379.08	330.15	48.92	7.749	0			
12,700.00	10,060.55	12,149.51	9,684.43	88.46	87.41	-5.40	379.41	329.28	50.13	7.569	0			
12,800.00	10,060.82	12,249.51	9,684.30	91.40	90.34	-5.29	379.74	328.40	51.34	7.397	0			
12,900.00	10,061.09	12,349.50	9,684.17	94.35	93.29	-5.17	380.07	327.51	52.56	7.231	0			
13,000.00	10,061.36	12,449.50	9,684.04	97.31	96.24	-5.06	380.41	326.62	53.79	7.073	0			
13,100.00	10,061.63	12,549.50	9,683.91	100.26	99.20	-4.95	380.74	325.72	55.02	6.920	0			
13,200.00	10,061.91	12,649.49	9,683.78	103.23	102.16	-4.83	381.08	324.82	56.26	6.774	0			
13,300.00	10,062.18	12,749.49	9,683.65	106.20	105.13	-4.72	381.42	323.92	57.50	6.633	0			
13,400.00	10,062.45	12,849.49	9,683.52	109.17	108.10	-4.61	381.76	323.01	58.75	6.498	0			
13,500.00	10,062.72	12,949.48	9,683.39	112.14	111.07	-4.50	382.10	322.10	60.00	6.368	0			
13,600.00	10,062.99	13,049.48	9,683.26	115.12	114.05	-4.38	382.45	321.19	61.26	6.243	0			
13,700.00	10,063.26	13,149.48	9,683.13	118.11	117.03	-4.27	382.79	320.27	62.52	6.123	0			
13,800.00	10,063.53	13,249.47	9,683.00	121.09	120.02	-4.16	383.14	319.36	63.78	6.007	0			
13,900.00	10,063.80	13,349.47	9,682.87	124.08	123.00	-4.05	383.49	318.44	65.05	5.895	0			
14,000.00	10,064.07	13,449.47	9,682.74	127.07	125.99	-3.94	383.84	317.52	66.32	5.788	0			
14,100.00	10,064.35	13,549.46	9,682.61	130.06	128.98	-3.83	384.19	316.59	67.59	5.684	0			
14,200.00	10,064.62	13,649.46	9,682.48	133.06	131.98	-3.71	384.54	315.67	68.87	5.584	0			
14,300.00	10,064.89	13,749.46	9,682.35	136.05	134.97	-3.60	384.90	314.75	70.15	5.487	0			
14,400.00	10,065.16	13,849.45	9,682.22	139.05	137.97	-3.49	385.25	313.82	71.43	5.393	0			
14,500.00	10,065.43	13,949.45	9,682.09	142.05	140.97	-3.38	385.61	312.89	72.72	5.303	0			
14,600.00	10,065.70	14,049.45	9,681.96	145.05	143.97	-3.27	385.97	311.96	74.00	5.215	0			
14,700.00	10,065.97	14,149.44	9,681.84	148.06	146.97	-3.16	386.33	311.03	75.29	5.131	0			
14,800.00	10,066.24	14,249.44	9,681.71	151.06	149.98	-3.05	386.69	310.10	76.59	5.049	0			

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Dzurisin - Thistle Unit 145H - Wellbore #1 - Plan 1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (")	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning	
14,900.00	10,066.51	14,349.44	9,681.58	154.07	152.98	-2.94	387.05	309.16	77.88	4.970	0			
15,000.00	10,066.79	14,449.43	9,681.45	157.07	155.99	-2.83	387.41	308.23	79.18	4.893	0			
15,100.00	10,067.06	14,549.43	9,681.32	160.08	159.00	-2.72	387.78	307.29	80.49	4.818	0			
15,200.00	10,067.33	14,649.43	9,681.19	163.09	162.01	-2.62	388.15	306.35	81.79	4.745	0			
15,300.00	10,067.60	14,749.42	9,681.06	166.10	165.02	-2.51	388.51	305.41	83.10	4.675	0			
15,400.00	10,067.87	14,849.42	9,680.93	169.12	168.03	-2.40	388.88	304.47	84.41	4.607	0			
15,500.00	10,068.14	14,949.42	9,680.80	172.13	171.04	-2.29	389.25	303.52	85.73	4.540	0			
15,600.00	10,068.41	15,049.41	9,680.67	175.14	174.06	-2.18	389.63	302.58	87.05	4.476	0			
15,700.00	10,068.68	15,149.41	9,680.54	178.16	177.07	-2.07	390.00	301.63	88.37	4.413	0			
15,800.00	10,068.96	15,249.41	9,680.41	181.17	180.09	-1.97	390.38	300.67	89.70	4.352	0			
15,900.00	10,069.23	15,349.40	9,680.28	184.19	183.10	-1.86	390.75	299.72	91.03	4.292	0			
16,000.00	10,069.50	15,449.40	9,680.15	187.21	186.12	-1.75	391.13	298.76	92.37	4.234	0			
16,100.00	10,069.77	15,549.40	9,680.02	190.22	189.14	-1.64	391.51	297.80	93.71	4.178	0			
16,200.00	10,070.04	15,649.39	9,679.89	193.24	192.16	-1.54	391.89	296.84	95.05	4.123	0			
16,300.00	10,070.31	15,749.39	9,679.76	196.26	195.17	-1.43	392.27	295.87	96.40	4.069	0			
16,400.00	10,070.58	15,849.39	9,679.63	199.28	198.19	-1.32	392.66	294.90	97.76	4.017	0			
16,500.00	10,070.85	15,949.38	9,679.50	202.30	201.21	-1.22	393.04	293.92	99.12	3.965	0			
16,600.00	10,071.12	16,049.38	9,679.37	205.32	204.24	-1.11	393.43	292.95	100.48	3.915	0			
16,700.00	10,071.40	16,149.38	9,679.24	208.34	207.26	-1.01	393.81	291.96	101.85	3.867	0			
16,800.00	10,071.67	16,249.37	9,679.11	211.37	210.28	-0.90	394.20	290.98	103.23	3.819	0			
16,900.00	10,071.94	16,349.37	9,678.98	214.39	213.30	-0.79	394.59	289.99	104.61	3.772	0			
17,000.00	10,072.21	16,449.37	9,678.85	217.41	216.32	-0.69	394.98	288.99	105.99	3.727	0			
17,100.00	10,072.48	16,549.36	9,678.72	220.44	219.35	-0.58	395.38	287.99	107.39	3.682	0			
17,200.00	10,072.75	16,649.36	9,678.59	223.46	222.37	-0.48	395.77	286.99	108.78	3.638	0			
17,300.00	10,073.02	16,749.36	9,678.47	226.48	225.39	-0.37	396.17	285.98	110.19	3.595	0			
17,400.00	10,073.29	16,849.35	9,678.34	229.51	228.42	-0.27	396.56	284.96	111.60	3.553	0			
17,500.00	10,073.56	16,949.35	9,678.21	232.53	231.44	-0.17	396.96	283.94	113.02	3.512	0			
17,598.34	10,073.83	17,047.68	9,678.08	235.51	234.42	-0.06	397.35	282.93	114.42	3.473	0			
17,600.00	10,073.84	17,049.35	9,678.08	235.55	234.47	-0.06	397.36	282.92	114.44	3.472	0			
17,659.64	10,074.00	17,109.02	9,678.00	236.40	235.88	0.00	397.60	282.30	115.30	3.448	0			

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin.
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Dzurisin - Thistle Unit 156H - Wellbore #1 - Plan 1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning	
0.00	0.00	1.00	1.00	0.00	0.00	-90.38	150.06						0	
100.00	100.00	101.00	101.00	0.09	0.09	-90.38	150.06	149.89	0.17	861.474			0	
200.00	200.00	201.00	201.00	0.31	0.31	-90.38	150.06	149.44	0.62	240.592			0	
300.00	300.00	301.00	301.00	0.54	0.54	-90.38	150.06	148.99	1.07	139.821			0	
400.00	400.00	401.00	401.00	0.76	0.76	-90.38	150.06	148.54	1.52	98.545			0	
500.00	500.00	501.00	501.00	0.99	0.99	-90.38	150.06	148.09	1.97	76.085			0	
600.00	600.00	601.00	601.00	1.21	1.21	-90.38	150.06	147.64	2.42	61.962			0	
700.00	700.00	701.00	701.00	1.43	1.44	-90.38	150.06	147.19	2.87	52.262			0	
800.00	800.00	801.00	801.00	1.66	1.66	-90.38	150.06	146.74	3.32	45.187			0	
900.00	900.00	901.00	901.00	1.88	1.89	-90.38	150.06	146.29	3.77	39.800			0	
1,000.00	1,000.00	1,001.00	1,001.00	2.11	2.11	-90.38	150.06	145.84	4.22	35.560			0	
1,100.00	1,100.00	1,101.00	1,101.00	2.33	2.34	-90.38	150.06	145.39	4.67	32.137			0	
1,200.00	1,200.00	1,201.00	1,201.00	2.56	2.56	-90.38	150.06	144.94	5.12	29.315			0	
1,300.00	1,300.00	1,301.00	1,301.00	2.78	2.79	-90.38	150.06	144.49	5.57	26.948			0	
1,400.00	1,400.00	1,401.00	1,401.00	3.01	3.01	-90.38	150.06	144.05	6.02	24.935			0	
1,500.00	1,500.00	1,501.00	1,501.00	3.23	3.23	-90.38	150.06	143.60	6.47	23.202			0	
1,600.00	1,600.00	1,601.00	1,601.00	3.46	3.46	-90.38	150.06	143.15	6.92	21.694			0	
1,700.00	1,700.00	1,701.00	1,701.00	3.68	3.68	-90.38	150.06	142.70	7.37	20.371			0	
1,800.00	1,800.00	1,801.00	1,801.00	3.91	3.91	-90.38	150.06	142.25	7.82	19.199			0	
1,900.00	1,900.00	1,901.00	1,901.00	4.13	4.13	-90.38	150.06	141.80	8.27	18.155			0	
2,000.00	2,000.00	2,001.00	2,001.00	4.36	4.36	-90.38	150.06	141.35	8.72	17.218			0	
2,100.00	2,100.00	2,101.00	2,101.00	4.58	4.58	-90.38	150.06	140.90	9.16	16.374			0	
2,200.00	2,200.00	2,201.00	2,201.00	4.81	4.81	-90.38	150.06	140.45	9.61	15.608			0	
2,300.00	2,300.00	2,301.00	2,301.00	5.03	5.03	-90.38	150.06	140.00	10.06	14.911			0	
2,400.00	2,400.00	2,401.00	2,401.00	5.26	5.26	-90.38	150.06	139.55	10.51	14.274			0	
2,500.00	2,500.00	2,501.00	2,501.00	5.48	5.48	-90.38	150.06	139.10	10.96	13.688			0	
2,600.00	2,600.00	2,601.00	2,601.00	5.71	5.71	-90.38	150.06	138.65	11.41	13.149			0	
2,700.00	2,700.00	2,701.00	2,701.00	5.93	5.93	-90.38	150.06	138.20	11.86	12.651			0	
2,800.00	2,800.00	2,801.00	2,801.00	6.15	6.16	-90.38	150.06	137.75	12.31	12.189			0	
2,900.00	2,900.00	2,901.00	2,901.00	6.38	6.38	-90.38	150.06	137.30	12.76	11.759			0	
3,000.00	3,000.00	3,001.00	3,001.00	6.60	6.61	-90.38	150.06	136.85	13.21	11.359			0	
3,100.00	3,100.00	3,101.00	3,101.00	6.83	6.83	-90.38	150.06	136.40	13.66	10.985			0	
3,200.00	3,200.00	3,201.00	3,201.00	7.05	7.06	-90.38	150.06	135.95	14.11	10.635			0	
3,300.00	3,300.00	3,301.00	3,301.00	7.28	7.28	-90.38	150.06	135.50	14.56	10.307			0	
3,400.00	3,400.00	3,401.00	3,401.00	7.50	7.51	-90.38	150.06	135.05	15.01	9.998			0	
3,466.33	3,466.33	3,467.33	3,467.33	7.65	7.65	-90.38	150.06	134.76	15.31	9.804			0	CC
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	-90.38	150.07	134.61	15.46	9.709			0	ES
3,600.00	3,600.00	3,598.74	3,598.74	7.94	7.94	179.79	151.69	135.81	15.88	9.553			0	
3,700.00	3,699.96	3,696.34	3,696.30	8.14	8.15	-179.75	156.53	140.26	16.27	9.619			0	
3,800.00	3,799.86	3,793.62	3,793.49	8.35	8.37	-179.03	164.62	147.95	16.67	9.877			0	
3,900.00	3,899.68	3,890.41	3,890.11	8.56	8.58	-178.14	175.94	158.89	17.05	10.316			0	
4,000.00	3,999.37	3,986.56	3,985.98	8.79	8.81	-177.15	190.52	173.08	17.44	10.925			0	
4,100.00	4,098.99	4,084.75	4,083.79	9.03	9.04	-176.18	206.94	189.09	17.85	11.594			0	
4,200.00	4,198.60	4,183.33	4,182.00	9.27	9.28	-175.34	223.43	205.17	18.26	12.234			0	
4,300.00	4,298.22	4,281.91	4,280.21	9.52	9.53	-174.62	239.96	221.28	18.68	12.846			0	
4,400.00	4,397.84	4,380.50	4,378.42	9.77	9.79	-173.99	256.52	237.42	19.10	13.431			0	
4,500.00	4,497.46	4,479.08	4,476.62	10.04	10.04	-173.44	273.10	253.58	19.52	13.991			0	
4,600.00	4,497.08	4,577.66	4,574.83	10.30	10.31	-172.95	289.71	269.77	19.94	14.526			0	
4,700.00	4,496.70	4,676.24	4,673.04	10.57	10.57	-172.51	306.34	285.97	20.37	15.039			0	
4,800.00	4,496.32	4,774.83	4,771.24	10.85	10.85	-172.12	322.98	302.19	20.80	15.529			0	
4,900.00	4,495.94	4,873.41	4,869.45	11.13	11.12	-171.76	339.64	318.41	21.23	15.999			0	
5,000.00	4,495.56	4,971.99	4,967.66	11.41	11.40	-171.44	356.31	334.65	21.66	16.450			0	
5,100.00	5,095.18	5,070.58	5,065.87	11.70	11.68	-171.15	372.98	350.89	22.09	16.882			0	
5,200.00	5,194.80	5,169.16	5,164.07	11.99	11.97	-170.89	389.67	367.14	22.53	17.297			0	

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design Dzurisin - Thistle Unit 156H - Wellbore #1 - Plan 1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risk Separation Factor	Probability of Collision	
5,300.00	5,294.42	5,267.74	5,262.28	12.28	12.25	-170.64	406.36	383.40	22.96	17.695	0		
5,400.00	5,394.04	5,366.32	5,360.49	12.58	12.54	-170.42	423.06	399.66	23.40	18.077	0		
5,500.00	5,493.66	5,464.91	5,458.70	12.88	12.83	-170.21	439.77	415.93	23.84	18.445	0		
5,600.00	5,593.28	5,563.49	5,556.90	13.18	13.13	-170.01	456.48	432.20	24.28	18.799	0		
5,700.00	5,692.90	5,662.07	5,655.11	13.48	13.42	-169.83	473.20	448.47	24.72	19.139	0		
5,800.00	5,792.52	5,760.65	5,753.32	13.78	13.72	-169.67	489.92	464.75	25.17	19.466	0		
5,900.00	5,892.14	5,859.24	5,851.53	14.09	14.02	-169.51	506.64	481.03	25.61	19.782	0		
6,000.00	5,991.76	5,957.82	5,949.73	14.40	14.33	-169.36	523.37	497.31	26.06	20.086	0		
6,100.00	6,091.37	6,056.40	6,047.94	14.71	14.63	-169.23	540.10	513.60	26.50	20.379	0		
6,200.00	6,190.99	6,154.98	6,146.15	15.02	14.93	-169.10	556.83	529.88	26.95	20.662	0		
6,300.00	6,290.61	6,253.57	6,244.36	15.34	15.24	-168.98	573.57	546.17	27.40	20.935	0		
6,400.00	6,390.23	6,352.15	6,342.56	15.65	15.55	-168.86	590.31	562.46	27.85	21.199	0		
6,500.00	6,489.85	6,450.73	6,440.77	15.97	15.86	-168.75	607.05	578.75	28.30	21.454	0		
6,600.00	6,589.47	6,549.31	6,538.98	16.29	16.17	-168.65	623.79	595.04	28.75	21.700	0		
6,700.00	6,689.09	6,647.90	6,637.19	16.61	16.48	-168.56	640.53	611.34	29.20	21.938	0		
6,800.00	6,788.71	6,746.48	6,735.39	16.93	16.79	-168.46	657.28	627.63	29.65	22.169	0		
6,900.00	6,888.33	6,845.06	6,833.60	17.25	17.10	-168.38	674.03	643.93	30.10	22.392	0		
7,000.00	6,987.95	6,943.64	6,931.81	17.57	17.42	-168.29	690.78	660.22	30.55	22.608	0		
7,100.00	7,087.61	7,042.30	7,030.08	17.84	17.73	-168.22	707.10	676.10	31.01	22.803	0		
7,200.00	7,187.33	7,141.08	7,128.49	18.04	18.05	-168.14	722.59	691.14	31.45	22.977	0		
7,300.00	7,287.12	7,239.99	7,227.03	18.24	18.37	-168.05	737.24	705.35	31.89	23.120	0		
7,400.00	7,386.96	7,339.02	7,325.68	18.43	18.69	-167.95	751.04	718.72	32.32	23.234	0		
7,500.00	7,486.84	7,438.17	7,424.45	18.63	19.00	-167.83	764.00	731.24	32.76	23.321	0		
7,600.00	7,586.76	7,537.41	7,523.32	18.81	19.33	-167.71	776.12	742.92	33.19	23.381	0		
7,700.00	7,686.72	7,636.76	7,622.28	19.00	19.65	-167.58	787.40	753.77	33.63	23.416	0		
7,800.00	7,786.69	7,736.19	7,721.33	19.18	19.97	-167.43	797.83	763.77	34.06	23.426	0		
7,900.00	7,886.68	7,835.70	7,820.47	19.36	20.29	-167.28	807.42	772.94	34.49	23.413	0		
8,000.00	7,986.68	7,935.28	7,919.67	19.52	20.62	-77.11	816.18	781.27	34.91	23.382	0		
8,100.00	8,086.68	8,037.48	8,021.49	19.70	20.93	-76.93	824.46	789.12	35.34	23.331	0		
8,200.00	8,186.68	8,144.58	8,128.25	19.90	21.18	-76.76	832.04	796.27	35.77	23.262	0		
8,300.00	8,286.68	8,251.83	8,235.23	20.09	21.40	-76.61	838.74	802.56	36.19	23.179	0		
8,400.00	8,386.68	8,359.20	8,342.41	20.29	21.61	-76.49	844.55	807.95	36.60	23.073	0		
8,500.00	8,486.68	8,466.69	8,449.76	20.49	21.81	-76.38	849.46	812.44	37.02	22.946	0		
8,600.00	8,586.68	8,574.28	8,557.25	20.69	22.01	-76.30	853.47	816.04	37.44	22.798	0		
8,700.00	8,686.68	8,681.94	8,664.86	20.88	22.20	-76.23	856.59	818.74	37.85	22.630	0		
8,800.00	8,786.68	8,789.65	8,772.54	21.08	22.39	-76.18	858.80	820.54	38.27	22.443	0		
8,900.00	8,886.68	8,897.41	8,880.28	21.28	22.57	-76.16	860.12	821.43	38.68	22.236	0		
9,000.00	8,986.68	9,004.81	8,987.68	21.48	22.74	-76.15	860.52	821.43	39.09	22.012	0		
9,100.00	9,086.68	9,104.81	9,087.68	21.68	22.92	-76.15	860.52	821.01	39.51	21.780	0		
9,200.00	9,186.68	9,204.81	9,187.68	21.88	23.11	-76.15	860.52	820.58	39.94	21.544	0		
9,300.00	9,286.68	9,275.00	9,257.72	22.08	23.27	-75.91	862.01	821.68	40.32	21.378	0		
9,400.00	9,386.68	9,342.23	9,323.61	22.29	23.48	-75.07	867.32	826.59	40.73	21.297	0		
9,500.00	9,486.68	9,400.00	9,378.28	22.49	23.70	-73.89	877.01	835.88	41.13	21.324	0		
9,590.00	9,576.68	9,450.00	9,423.50	22.67	23.94	-72.56	890.05	848.54	41.51	21.444	0		
9,600.00	9,586.68	9,458.98	9,431.38	22.69	23.99	-71.71	891.73	850.16	41.57	21.453	0		
9,625.00	9,611.65	9,475.00	9,445.22	22.74	24.08	-70.77	895.93	854.25	41.68	21.496	0		
9,650.00	9,636.52	9,485.37	9,454.03	22.79	24.14	-70.03	900.04	858.27	41.77	21.549	0		
9,675.00	9,661.23	9,500.00	9,466.25	22.84	24.22	-69.21	904.06	862.19	41.86	21.595	0		
9,700.00	9,685.71	9,511.69	9,475.83	22.89	24.30	-68.49	907.96	866.01	41.95	21.645	0		
9,725.00	9,709.89	9,525.00	9,486.55	22.94	24.38	-67.78	911.73	869.70	42.03	21.693	0		
9,750.00	9,733.70	9,537.94	9,496.75	22.99	24.47	-67.11	915.34	873.24	42.10	21.740	0		
9,775.00	9,757.09	9,550.00	9,506.06	23.05	24.55	-66.50	918.78	876.62	42.17	21.790	0		
9,800.00	9,779.98	9,564.15	9,516.73	23.10	24.66	-65.90	922.04	879.80	42.24	21.830	0		
9,825.00	9,802.31	9,575.00	9,524.72	23.15	24.74	-65.40	925.09	882.81	42.28	21.878	0		

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Dzurisin - Thistle Unit 156H - Wellbore #1 - Plan 1		Offset Site Error:		0.00 ft	
Survey Program: 0-MWD													Offset Well Error:		0.00 ft			
Reference		Offset		Semi Major Axis		Distance												
Measured Depth	Vertical	Measured	Vertical	Reference	Offset	Highside	Between	Between	Minimum	Separation	Riskd	Probability	Warning					
Depth	Depth	Depth	Depth			Toolface	Centres	Ellipses	Separation	Factor	Separation	of Collision						
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)		Factor							
9,850.00	9,824.02	9,590.32	9,535.72	23.20	24.86	-64.87	927.92	885.56	42.36	21.908	0							
9,875.00	9,845.06	9,600.00	9,542.49	23.26	24.94	-64.46	930.53	888.14	42.39	21.950	0							
9,900.00	9,865.36	9,616.46	9,553.68	23.32	25.08	-64.02	932.89	890.41	42.48	21.962	0							
9,925.00	9,884.86	9,625.00	9,559.31	23.38	25.16	-63.70	935.02	892.50	42.52	21.991	0							
9,950.00	9,903.53	9,642.58	9,570.55	23.45	25.33	-63.36	936.85	894.22	42.63	21.976	0							
9,975.00	9,921.30	9,650.00	9,575.15	23.52	25.40	-63.13	938.47	895.79	42.69	21.985	0							
10,000.00	9,938.12	9,668.67	9,586.30	23.61	25.59	-62.88	939.76	896.91	42.85	21.932	0							
10,025.00	9,953.95	9,681.72	9,593.74	23.70	25.73	-62.72	940.80	897.80	42.99	21.883	0							
10,050.00	9,968.75	9,700.00	9,603.67	23.80	25.93	-62.59	941.58	898.37	43.21	21.790	0							
10,075.00	9,982.48	9,707.80	9,607.73	23.92	26.02	-62.53	942.02	898.65	43.37	21.720	0							
10,100.00	9,995.09	9,725.00	9,616.28	24.06	26.22	-62.52	942.23	898.57	43.66	21.581	0							
10,125.00	10,006.55	9,733.88	9,620.49	24.22	26.33	-62.54	942.11	898.20	43.90	21.459	0							
10,150.00	10,016.84	9,750.00	9,627.75	24.40	26.54	-62.63	941.73	897.46	44.27	21.272	0							
10,175.00	10,025.92	9,759.97	9,631.99	24.61	26.67	-62.74	941.05	896.43	44.61	21.093	0							
10,200.00	10,033.77	9,775.00	9,638.03	24.84	26.87	-62.93	940.10	895.03	45.07	20.859	0							
10,225.00	10,040.36	9,786.06	9,642.20	25.10	27.03	-63.14	938.86	893.34	45.52	20.625	0							
10,250.00	10,045.69	9,800.00	9,647.11	25.39	27.23	-63.41	937.36	891.30	46.06	20.350	0							
10,275.00	10,049.73	9,812.17	9,651.09	25.70	27.41	-63.72	935.60	888.97	46.63	20.064	0							
10,300.00	10,052.47	9,825.00	9,654.96	26.03	27.60	-64.08	933.58	886.32	47.25	19.756	0							
10,325.00	10,053.91	9,838.31	9,658.63	26.39	27.81	-64.49	931.31	883.37	47.94	19.428	0							
10,338.67	10,054.15	9,850.00	9,661.56	26.59	28.00	-64.79	929.99	881.57	48.41	19.209	0							
10,385.10	10,054.27	9,875.00	9,666.88	27.32	28.41	-65.09	925.87	876.27	49.59	18.670	0							
10,400.00	10,054.31	9,875.00	9,666.88	27.56	28.41	-65.09	924.76	874.94	49.82	18.561	0							
10,500.00	10,054.58	9,932.81	9,674.26	29.35	29.43	-65.51	920.28	867.67	52.62	17.491	0							
10,541.70	10,054.70	9,955.98	9,675.26	30.18	29.85	-65.57	919.86	866.04	53.82	17.091	0							
10,600.00	10,054.86	10,006.00	9,675.23	31.35	30.81	-65.57	920.30	864.47	55.83	16.484	0							
10,700.00	10,055.13	10,106.00	9,674.94	33.52	32.86	-65.56	921.20	861.41	59.79	15.407	0							
10,800.00	10,055.40	10,205.99	9,674.66	35.81	35.07	-65.54	922.10	858.12	63.99	14.411	0							
10,900.00	10,055.67	10,305.99	9,674.37	38.21	37.39	-65.53	923.00	854.63	68.38	13.499	0							
11,000.00	10,055.94	10,405.98	9,674.08	40.70	39.81	-65.52	923.90	850.98	72.93	12.669	0							
11,100.00	10,056.21	10,505.98	9,673.80	43.26	42.32	-65.51	924.80	847.20	77.61	11.916	0							
11,200.00	10,056.48	10,605.97	9,673.51	45.88	44.89	-65.49	925.70	843.31	82.40	11.235	0							
11,300.00	10,056.75	10,705.97	9,673.22	48.55	47.52	-65.48	926.60	839.33	87.28	10.617	0							
11,400.00	10,057.02	10,805.97	9,672.94	51.26	50.20	-65.47	927.50	835.27	92.23	10.056	0							
11,500.00	10,057.30	10,905.96	9,672.65	54.00	52.92	-65.46	928.40	831.15	97.25	9.547	0							
11,600.00	10,057.57	11,005.96	9,672.37	56.78	55.67	-65.44	929.30	826.98	102.32	9.082	0							
11,700.00	10,057.84	11,105.95	9,672.08	59.58	58.45	-65.43	930.20	822.76	107.44	8.658	0							
11,800.00	10,058.11	11,205.95	9,671.79	62.40	61.25	-65.42	931.10	818.50	112.61	8.269	0							
11,900.00	10,058.38	11,305.94	9,671.51	65.24	64.08	-65.41	932.00	814.20	117.80	7.912	0							
12,000.00	10,058.65	11,405.94	9,671.22	68.10	66.92	-65.39	932.90	809.88	123.03	7.583	0							
12,100.00	10,058.92	11,505.94	9,670.93	70.98	69.79	-65.38	933.80	805.53	128.28	7.280	0							
12,200.00	10,059.19	11,605.93	9,670.65	73.87	72.66	-65.37	934.71	801.15	133.55	6.999	0							
12,300.00	10,059.47	11,705.93	9,670.36	76.77	75.55	-65.36	935.61	796.76	138.85	6.738	0							
12,400.00	10,059.74	11,805.92	9,670.08	79.68	78.45	-65.35	936.51	792.34	144.16	6.496	0							
12,500.00	10,060.01	11,905.92	9,669.79	82.60	81.36	-65.33	937.41	787.92	149.49	6.271	0							
12,600.00	10,060.28	12,005.91	9,669.50	85.52	84.28	-65.32	938.31	783.47	154.83	6.060	0							
12,700.00	10,060.55	12,105.91	9,669.22	88.46	87.21	-65.31	939.21	779.02	160.19	5.863	0							
12,800.00	10,060.82	12,205.91	9,668.93	91.40	90.15	-65.30	940.11	774.55	165.56	5.678	0							
12,900.00	10,061.09	12,305.90	9,668.64	94.35	93.09	-65.28	941.01	770.07	170.94	5.505	0							
13,000.00	10,061.36	12,405.90	9,668.36	97.31	96.04	-65.27	941.91	765.59	176.32	5.342	0							
13,100.00	10,061.63	12,505.89	9,668.07	100.26	98.99	-65.26	942.81	761.09	181.72	5.188	0							
13,200.00	10,061.91	12,605.89	9,667.79	103.23	101.95	-65.25	943.71	756.59	187.12	5.043	0							
13,300.00	10,062.18	12,705.88	9,667.50	106.20	104.92	-65.24	944.61	752.08	192.53	4.906	0							
13,400.00	10,062.45	12,805.88	9,667.21	109.17	107.88	-65.22	945.51	747.57	197.95	4.777	0							

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Dzurisin - Thistle Unit 156H - Wellbore #1 - Plan 1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (")	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision		
13,500.00	10,062.72	12,905.88	9,666.93	112.14	110.86	-65.21	946.41	743.05	203.37	4.654	0			
13,600.00	10,062.99	13,005.87	9,666.64	115.12	113.83	-65.20	947.32	738.52	208.79	4.537	0			
13,700.00	10,063.26	13,105.87	9,666.36	118.11	116.81	-65.19	948.22	733.99	214.23	4.426	0			
13,800.00	10,063.53	13,205.86	9,666.07	121.09	119.79	-65.18	949.12	729.46	219.66	4.321	0			
13,900.00	10,063.80	13,305.86	9,665.78	124.08	122.78	-65.16	950.02	724.92	225.10	4.220	0			
14,000.00	10,064.07	13,405.85	9,665.50	127.07	125.77	-65.15	950.92	720.38	230.54	4.125	0			
14,100.00	10,064.35	13,505.85	9,665.21	130.06	128.76	-65.14	951.82	715.83	235.99	4.033	0			
14,200.00	10,064.62	13,605.85	9,664.92	133.06	131.75	-65.13	952.72	711.29	241.44	3.946	0			
14,300.00	10,064.89	13,705.84	9,664.64	136.05	134.74	-65.12	953.62	706.74	246.89	3.863	0			
14,400.00	10,065.16	13,805.84	9,664.35	139.05	137.74	-65.11	954.52	702.18	252.34	3.783	0			
14,500.00	10,065.43	13,905.83	9,664.07	142.05	140.74	-65.09	955.43	697.63	257.80	3.706	0			
14,600.00	10,065.70	14,005.83	9,663.78	145.05	143.74	-65.08	956.33	693.07	263.25	3.633	0			
14,700.00	10,065.97	14,105.82	9,663.49	148.06	146.74	-65.07	957.23	688.51	268.71	3.562	0			
14,800.00	10,066.24	14,205.82	9,663.21	151.06	149.74	-65.06	958.13	683.96	274.17	3.495	0			
14,900.00	10,066.51	14,305.82	9,662.92	154.07	152.75	-65.05	959.03	679.39	279.64	3.430	0			
15,000.00	10,066.79	14,405.81	9,662.63	157.07	155.75	-65.04	959.93	674.83	285.10	3.367	0			
15,100.00	10,067.06	14,505.81	9,662.35	160.08	158.76	-65.02	960.83	670.27	290.57	3.307	0			
15,200.00	10,067.33	14,605.80	9,662.06	163.09	161.77	-65.01	961.74	665.70	296.03	3.249	0			
15,300.00	10,067.60	14,705.80	9,661.78	166.10	164.78	-65.00	962.64	661.14	301.50	3.193	0			
15,400.00	10,067.87	14,805.80	9,661.49	169.12	167.79	-64.99	963.54	656.57	306.97	3.139	0			
15,500.00	10,068.14	14,905.79	9,661.20	172.13	170.80	-64.98	964.44	652.00	312.44	3.087	0			
15,600.00	10,068.41	15,005.79	9,660.92	175.14	173.81	-64.97	965.34	647.44	317.91	3.037	0			
15,700.00	10,068.68	15,105.78	9,660.63	178.16	176.83	-64.95	966.25	642.87	323.38	2.988	0			
15,800.00	10,068.96	15,205.78	9,660.35	181.17	179.84	-64.94	967.15	638.30	328.85	2.941	0			
15,900.00	10,069.23	15,305.77	9,660.06	184.19	182.86	-64.93	968.05	633.73	334.32	2.896	0			
16,000.00	10,069.50	15,405.77	9,659.77	187.21	185.87	-64.92	968.95	629.16	339.79	2.852	0			
16,100.00	10,069.77	15,505.77	9,659.49	190.22	188.89	-64.91	969.85	624.59	345.26	2.809	0			
16,200.00	10,070.04	15,605.76	9,659.20	193.24	191.91	-64.90	970.75	620.02	350.74	2.768	0			
16,300.00	10,070.31	15,705.76	9,658.91	196.26	194.92	-64.89	971.66	615.45	356.21	2.728	0			
16,400.00	10,070.58	15,805.75	9,658.63	199.28	197.94	-64.87	972.56	610.88	361.68	2.689	0			
16,500.00	10,070.85	15,905.75	9,658.34	202.30	200.96	-64.86	973.46	606.30	367.16	2.651	0			
16,600.00	10,071.12	16,005.74	9,658.06	205.32	203.98	-64.85	974.36	601.73	372.63	2.615	0			
16,700.00	10,071.40	16,105.74	9,657.77	208.34	207.00	-64.84	975.27	597.16	378.10	2.579	0			
16,800.00	10,071.67	16,205.74	9,657.48	211.37	210.03	-64.83	976.17	592.59	383.58	2.545	0			
16,900.00	10,071.94	16,305.73	9,657.20	214.39	213.05	-64.82	977.07	588.02	389.05	2.511	0			
17,000.00	10,072.21	16,405.73	9,656.91	217.41	216.07	-64.81	977.97	583.45	394.52	2.479	0			
17,100.00	10,072.48	16,505.72	9,656.62	220.44	219.09	-64.80	978.87	578.88	400.00	2.447	0			
17,200.00	10,072.75	16,605.72	9,656.34	223.46	222.12	-64.78	979.78	574.31	405.47	2.416	0			
17,300.00	10,073.02	16,705.71	9,656.05	226.48	225.14	-64.77	980.68	569.74	410.94	2.386	0			
17,400.00	10,073.29	16,805.71	9,655.77	229.51	228.16	-64.76	981.58	565.17	416.42	2.357	0			
17,500.00	10,073.56	16,905.71	9,655.48	232.53	231.19	-64.75	982.48	560.60	421.89	2.329	0			
17,598.34	10,073.83	17,004.04	9,655.20	235.51	234.16	-64.74	983.37	556.10	427.27	2.302	0			
17,600.00	10,073.84	17,005.70	9,655.19	235.55	234.21	-64.74	983.39	556.04	427.35	2.301	0			
17,659.64	10,074.00	17,065.30	9,655.02	236.40	235.62	-64.73	983.93	554.53	429.40	2.291	0	SF		

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision		
0.00	0.00	0.80	0.80	0.00	0.00	-90.37	100.03						0	
100.00	100.00	100.80	100.80	0.09	0.09	-90.37	100.03	99.86	0.17	575.744	0		0	
200.00	200.00	200.80	200.80	0.31	0.31	-90.37	100.03	99.41	0.62	160.494	0		0	
300.00	300.00	300.80	300.80	0.54	0.54	-90.37	100.03	98.96	1.07	93.243	0		0	
400.00	400.00	400.80	400.80	0.76	0.76	-90.37	100.03	98.51	1.52	65.710	0		0	
500.00	500.00	500.80	500.80	0.99	0.99	-90.37	100.03	98.06	1.97	50.730	0		0	
600.00	600.00	600.80	600.80	1.21	1.21	-90.37	100.03	97.61	2.42	41.312	0		0	
700.00	700.00	700.80	700.80	1.43	1.44	-90.37	100.03	97.16	2.87	34.843	0		0	
800.00	800.00	800.80	800.80	1.66	1.66	-90.37	100.03	96.71	3.32	30.126	0		0	
900.00	900.00	900.80	900.80	1.88	1.89	-90.37	100.03	96.26	3.77	26.534	0		0	
1,000.00	1,000.00	1,000.80	1,000.80	2.11	2.11	-90.37	100.03	95.81	4.22	23.707	0		0	
1,100.00	1,100.00	1,100.80	1,100.80	2.33	2.34	-90.37	100.03	95.36	4.67	21.424	0		0	
1,200.00	1,200.00	1,200.80	1,200.80	2.56	2.56	-90.37	100.03	94.91	5.12	19.543	0		0	
1,300.00	1,300.00	1,300.80	1,300.80	2.78	2.78	-90.37	100.03	94.46	5.57	17.965	0		0	
1,400.00	1,400.00	1,400.80	1,400.80	3.01	3.01	-90.37	100.03	94.01	6.02	16.623	0		0	
1,500.00	1,500.00	1,500.80	1,500.80	3.23	3.23	-90.37	100.03	93.57	6.47	15.468	0		0	
1,600.00	1,600.00	1,600.80	1,600.80	3.46	3.46	-90.37	100.03	93.12	6.92	14.462	0		0	
1,700.00	1,700.00	1,700.80	1,700.80	3.68	3.68	-90.37	100.03	92.67	7.37	13.580	0		0	
1,800.00	1,800.00	1,800.80	1,800.80	3.91	3.91	-90.37	100.03	92.22	7.82	12.799	0		0	
1,900.00	1,900.00	1,900.80	1,900.80	4.13	4.13	-90.37	100.03	91.77	8.27	12.103	0		0	
2,000.00	2,000.00	2,000.80	2,000.80	4.36	4.36	-90.37	100.03	91.32	8.71	11.478	0		0	
2,100.00	2,100.00	2,100.80	2,100.80	4.58	4.58	-90.37	100.03	90.87	9.16	10.915	0		0	
2,200.00	2,200.00	2,200.80	2,200.80	4.81	4.81	-90.37	100.03	90.42	9.61	10.405	0		0	
2,300.00	2,300.00	2,300.80	2,300.80	5.03	5.03	-90.37	100.03	89.97	10.06	9.940	0		0	
2,400.00	2,400.00	2,400.80	2,400.80	5.26	5.26	-90.37	100.03	89.52	10.51	9.515	0		0	
2,500.00	2,500.00	2,500.80	2,500.80	5.48	5.48	-90.37	100.03	89.07	10.96	9.125	0		0	
2,600.00	2,600.00	2,600.80	2,600.80	5.71	5.71	-90.37	100.03	88.62	11.41	8.766	0		0	
2,700.00	2,700.00	2,700.80	2,700.80	5.93	5.93	-90.37	100.03	88.17	11.86	8.433	0		0	
2,800.00	2,800.00	2,800.80	2,800.80	6.15	6.16	-90.37	100.03	87.72	12.31	8.125	0		0	
2,900.00	2,900.00	2,900.80	2,900.80	6.38	6.38	-90.37	100.03	87.27	12.76	7.839	0		0	
3,000.00	3,000.00	3,000.80	3,000.80	6.60	6.61	-90.37	100.03	86.82	13.21	7.572	0		0	
3,100.00	3,100.00	3,100.80	3,100.80	6.83	6.83	-90.37	100.03	86.37	13.66	7.323	0		0	
3,200.00	3,200.00	3,200.80	3,200.80	7.05	7.06	-90.37	100.03	85.92	14.11	7.090	0		0	
3,300.00	3,300.00	3,300.80	3,300.80	7.28	7.28	-90.37	100.03	85.47	14.56	6.871	0		0	
3,400.00	3,400.00	3,400.80	3,400.80	7.50	7.51	-90.37	100.03	85.02	15.01	6.665	0		0	
3,466.40	3,466.40	3,467.20	3,467.20	7.65	7.65	-90.37	100.03	84.73	15.31	6.535	0		0	CC
3,500.00	3,500.00	3,500.00	3,500.00	7.73	7.73	-90.37	100.04	84.58	15.46	6.472	0		0	ES
3,600.00	3,600.00	3,599.06	3,599.06	7.94	7.94	179.55	101.76	85.89	15.87	6.412	0		0	
3,700.00	3,699.96	3,697.17	3,697.13	8.14	8.13	179.33	106.93	90.68	16.25	6.581	0		0	
3,800.00	3,799.86	3,794.92	3,794.79	8.35	8.33	179.02	115.52	98.90	16.63	6.948	0		0	
3,900.00	3,899.68	3,892.16	3,891.85	8.56	8.53	178.65	127.53	110.53	17.00	7.501	0		0	
4,000.00	3,999.37	3,988.71	3,988.12	8.79	8.74	178.26	142.92	125.55	17.37	8.227	0		0	
4,100.00	4,098.99	4,086.92	4,085.96	9.03	8.97	177.91	160.18	142.42	17.77	9.016	0		0	
4,200.00	4,198.60	4,185.41	4,184.07	9.27	9.20	177.63	177.46	159.30	18.17	9.769	0		0	
4,300.00	4,298.22	4,283.91	4,282.19	9.52	9.45	177.39	194.74	176.18	18.57	10.488	0		0	
4,400.00	4,397.84	4,382.40	4,380.31	9.77	9.69	177.19	212.03	193.06	18.97	11.175	0		0	
4,500.00	4,497.46	4,480.89	4,478.43	10.04	9.95	177.03	229.32	209.94	19.38	11.833	0		0	
4,600.00	4,497.08	4,479.38	4,476.54	10.30	10.21	176.88	246.61	226.82	19.79	12.461	0		0	
4,700.00	4,496.70	4,477.88	4,474.66	10.57	10.47	176.76	263.90	243.70	20.20	13.063	0		0	
4,800.00	4,496.32	4,476.37	4,472.78	10.85	10.74	176.65	281.19	260.57	20.62	13.638	0		0	
4,900.00	4,495.94	4,474.86	4,470.90	11.13	11.01	176.55	298.48	277.45	21.03	14.190	0		0	
5,000.00	4,495.56	4,473.35	4,469.01	11.41	11.29	176.47	315.78	294.32	21.45	14.719	0		0	
5,100.00	5,095.18	5,071.85	5,067.13	11.70	11.57	176.39	333.07	311.20	21.87	15.227	0		0	
5,200.00	5,194.80	5,170.34	5,165.25	11.99	11.85	176.32	350.36	328.07	22.30	15.714	0		0	

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Dzurisin - Thistle Unit 1H - Wellbore #1 - Plan 1														
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (")	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision	Warning	
5,300.00	5,294.42	5,268.83	5,263.37	12.28	12.14	176.26	367.66	344.94	22.72	16.182	0			
5,400.00	5,394.04	5,367.32	5,361.48	12.58	12.43	176.20	384.95	361.81	23.15	16.631	0			
5,500.00	5,493.66	5,465.81	5,459.60	12.88	12.72	176.15	402.25	378.68	23.57	17.064	0			
5,600.00	5,593.28	5,564.31	5,557.72	13.18	13.01	176.10	419.55	395.54	24.00	17.479	0			
5,700.00	5,692.90	5,662.80	5,655.84	13.48	13.31	176.05	436.84	412.41	24.43	17.880	0			
5,800.00	5,792.52	5,761.29	5,753.95	13.78	13.61	176.01	454.14	429.27	24.86	18.265	0			
5,900.00	5,892.14	5,859.78	5,852.07	14.09	13.91	175.98	471.43	446.14	25.30	18.636	0			
6,000.00	5,991.76	5,958.28	5,950.19	14.40	14.22	175.94	488.73	463.00	25.73	18.994	0			
6,100.00	6,091.37	6,056.77	6,048.31	14.71	14.52	175.91	506.03	479.86	26.17	19.340	0			
6,200.00	6,190.99	6,155.26	6,146.43	15.02	14.83	175.88	523.33	496.72	26.60	19.673	0			
6,300.00	6,290.61	6,253.75	6,244.54	15.34	15.14	175.85	540.62	513.58	27.04	19.995	0			
6,400.00	6,390.23	6,352.25	6,342.66	15.65	15.45	175.82	557.92	530.44	27.48	20.306	0			
6,500.00	6,489.85	6,450.74	6,440.78	15.97	15.76	175.80	575.22	547.30	27.92	20.606	0			
6,600.00	6,589.47	6,549.23	6,538.90	16.29	16.07	175.77	592.52	564.16	28.36	20.896	0			
6,700.00	6,689.09	6,647.72	6,637.01	16.61	16.39	175.75	609.81	581.02	28.80	21.177	0			
6,800.00	6,788.71	6,746.21	6,735.13	16.93	16.70	175.73	627.11	597.87	29.24	21.449	0			
6,900.00	6,888.33	6,844.71	6,833.25	17.25	17.02	175.71	644.41	614.73	29.68	21.712	0			
7,000.00	6,987.95	6,943.20	6,931.37	17.57	17.34	175.69	661.71	631.58	30.12	21.967	0			
7,100.00	7,087.61	7,041.77	7,029.56	17.84	17.65	175.68	678.58	648.01	30.57	22.201	0			
7,200.00	7,187.33	7,140.47	7,127.89	18.04	17.97	175.66	694.59	663.59	30.99	22.412	0			
7,300.00	7,287.12	7,239.32	7,226.36	18.24	18.30	175.63	709.74	678.32	31.42	22.590	0			
7,400.00	7,386.96	7,338.29	7,324.95	18.43	18.62	175.60	724.03	692.19	31.84	22.737	0			
7,500.00	7,486.84	7,437.38	7,423.67	18.63	18.94	175.57	737.46	705.19	32.27	22.855	0			
7,600.00	7,586.76	7,536.59	7,522.50	18.81	19.27	175.53	750.03	717.34	32.69	22.943	0			
7,700.00	7,686.72	7,635.90	7,621.43	19.00	19.60	175.49	761.73	728.62	33.11	23.004	0			
7,800.00	7,786.69	7,735.31	7,720.46	19.18	19.92	175.45	772.57	739.04	33.53	23.039	0			
7,900.00	7,886.68	7,834.81	7,819.58	19.36	20.25	175.40	782.55	748.59	33.95	23.048	0			
8,000.00	7,986.68	7,934.39	7,918.78	19.52	20.58	-94.65	791.66	757.29	34.37	23.031	0			
8,100.00	8,086.68	8,036.55	8,020.56	19.70	20.90	-94.71	800.28	765.48	34.80	22.996	0			
8,200.00	8,186.68	8,143.72	8,127.40	19.90	21.15	-94.77	808.18	772.95	35.23	22.938	0			
8,300.00	8,286.68	8,251.05	8,234.46	20.09	21.36	-94.82	815.15	779.49	35.66	22.861	0			
8,400.00	8,386.68	8,358.51	8,341.72	20.29	21.57	-94.86	821.19	785.11	36.08	22.760	0			
8,500.00	8,486.68	8,466.08	8,449.15	20.49	21.78	-94.89	826.30	789.79	36.50	22.636	0			
8,600.00	8,586.68	8,573.74	8,556.72	20.69	21.98	-94.92	830.47	793.54	36.93	22.488	0			
8,700.00	8,686.68	8,681.48	8,664.40	20.88	22.18	-94.94	833.70	796.35	37.35	22.320	0			
8,800.00	8,786.68	8,789.28	8,772.17	21.08	22.36	-94.96	836.00	798.23	37.78	22.130	0			
8,900.00	8,886.68	8,897.11	8,879.99	21.28	22.55	-94.96	837.37	799.17	38.20	21.919	0			
9,000.00	8,986.68	9,004.61	8,987.48	21.48	22.72	-94.97	837.79	799.17	38.63	21.690	0			
9,100.00	9,086.68	9,104.61	9,087.48	21.68	22.90	-94.97	837.79	798.75	39.05	21.456	0			
9,200.00	9,186.68	9,204.61	9,187.48	21.88	23.08	-94.97	837.79	798.32	39.48	21.223	0			
9,300.00	9,286.68	9,304.61	9,287.48	22.08	23.27	-94.97	837.79	797.89	39.91	20.994	0			
9,400.00	9,386.68	9,404.61	9,387.48	22.29	23.46	-94.97	837.79	797.46	40.34	20.770	0			
9,500.00	9,486.68	9,504.61	9,487.48	22.49	23.65	-94.97	837.79	797.03	40.77	20.550	0			
9,590.00	9,576.68	9,595.28	9,578.16	22.67	23.82	-94.97	837.79	796.63	41.16	20.356	0			
9,600.00	9,586.68	9,606.74	9,589.61	22.69	23.84	-94.56	837.78	796.58	41.20	20.334	0			
9,625.00	9,611.65	9,635.37	9,618.18	22.74	23.89	-94.53	837.76	796.45	41.31	20.279	0			
9,650.00	9,636.52	9,663.96	9,646.54	22.79	23.94	-94.48	837.73	796.32	41.42	20.228	0			
9,675.00	9,661.23	9,692.50	9,674.59	22.84	23.99	-94.42	837.70	796.18	41.52	20.178	0			
9,700.00	9,685.71	9,720.96	9,702.20	22.89	24.03	-94.35	837.66	796.05	41.61	20.130	0			
9,725.00	9,709.89	9,749.34	9,729.28	22.94	24.07	-94.26	837.63	795.92	41.71	20.083	0			
9,750.00	9,733.70	9,777.63	9,755.71	22.99	24.11	-94.16	837.59	795.78	41.81	20.035	0			
9,775.00	9,757.09	9,805.80	9,781.41	23.05	24.15	-94.05	837.55	795.64	41.91	19.986	0			
9,800.00	9,779.98	9,833.86	9,806.27	23.10	24.18	-93.92	837.51	795.50	42.02	19.933	0			
9,825.00	9,802.31	9,861.79	9,830.22	23.15	24.22	-93.78	837.48	795.34	42.14	19.875	0			

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Dzurisin - Thistle Unit 1H - Wellbore #1 - Plan 1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD														Offset Well Error: 0.00 ft		
Reference		Offset		Semi Major Axis		Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Riskd Separation Factor	Probability of Collision				
9,850.00	9,824.02	9,889.58	9,853.18	23.20	24.25	-93.64	837.45	795.17	42.27	19.810	0					
9,875.00	9,845.06	9,917.23	9,875.08	23.26	24.29	-93.48	837.42	794.99	42.43	19.737	0					
9,900.00	9,865.36	9,944.71	9,895.85	23.32	24.33	-93.31	837.40	794.79	42.61	19.654	0					
9,925.00	9,884.86	9,972.04	9,915.44	23.38	24.37	-93.13	837.38	794.58	42.81	19.562	0					
9,950.00	9,903.53	9,999.21	9,933.80	23.45	24.41	-92.94	837.38	794.34	43.04	19.456	0					
9,952.21	9,905.13	10,001.60	9,935.36	23.46	24.41	-92.93	837.38	794.32	43.06	19.445	0					
9,975.00	9,921.30	10,026.20	9,950.88	23.52	24.46	-92.75	837.38	794.08	43.31	19.336	0					
10,000.00	9,938.12	10,053.01	9,966.66	23.61	24.51	-92.55	837.40	793.79	43.61	19.203	0					
10,025.00	9,953.95	10,079.65	9,981.10	23.70	24.58	-92.34	837.42	793.48	43.95	19.055	0					
10,050.00	9,968.75	10,106.11	9,994.19	23.80	24.65	-92.13	837.46	793.13	44.33	18.893	0					
10,075.00	9,982.48	10,132.39	10,005.91	23.92	24.74	-91.91	837.51	792.77	44.75	18.716	0					
10,100.00	9,995.09	10,158.49	10,016.25	24.06	24.85	-91.68	837.58	792.37	45.21	18.526	0					
10,125.00	10,006.55	10,184.41	10,025.21	24.22	24.98	-91.45	837.66	791.94	45.72	18.323	0					
10,150.00	10,016.84	10,210.14	10,032.79	24.40	25.13	-91.22	837.75	791.49	46.26	18.109	0					
10,175.00	10,025.92	10,235.70	10,038.99	24.61	25.32	-90.99	837.86	791.01	46.85	17.884	0					
10,200.00	10,033.77	10,261.08	10,043.83	24.84	25.53	-90.75	837.98	790.51	47.48	17.651	0					
10,225.00	10,040.36	10,286.29	10,047.32	25.10	25.78	-90.52	838.12	789.98	48.14	17.410	0					
10,250.00	10,045.69	10,311.32	10,049.48	25.39	26.05	-90.28	838.27	789.43	48.84	17.164	0					
10,275.00	10,049.73	10,336.19	10,050.33	25.70	26.35	-90.04	838.44	788.87	49.57	16.914	0					
10,300.00	10,052.47	10,361.04	10,050.38	26.03	26.62	-89.84	838.62	788.39	50.23	16.695	0					
10,325.00	10,053.91	10,385.99	10,050.43	26.39	26.91	-89.72	838.80	787.90	50.90	16.479	0					
10,338.67	10,054.15	10,399.66	10,050.46	26.59	27.07	-89.69	838.89	787.62	51.28	16.359	0					
10,385.10	10,054.27	10,446.09	10,050.55	27.32	27.77	-89.69	839.22	786.33	52.88	15.869	0					
10,400.00	10,054.31	10,460.99	10,050.58	27.56	28.01	-89.69	839.32	785.91	53.41	15.715	0					
10,500.00	10,054.58	10,560.99	10,050.78	29.35	29.77	-89.69	840.02	782.82	57.19	14.688	0					
10,600.00	10,054.86	10,660.99	10,050.98	31.35	31.74	-89.68	840.71	779.37	61.35	13.705	0					
10,700.00	10,055.13	10,760.98	10,051.18	33.52	33.89	-89.68	841.41	775.61	65.80	12.787	0					
10,800.00	10,055.40	10,860.98	10,051.38	35.81	36.17	-89.67	842.10	771.61	70.50	11.945	0					
10,900.00	10,055.67	10,960.98	10,051.57	38.21	38.56	-89.67	842.80	767.41	75.39	11.179	0					
11,000.00	10,055.94	11,060.98	10,051.77	40.70	41.04	-89.66	843.50	763.05	80.45	10.485	0					
11,100.00	10,056.21	11,160.97	10,051.97	43.26	43.60	-89.66	844.19	758.55	85.64	9.857	0					
11,200.00	10,056.48	11,260.97	10,052.17	45.88	46.21	-89.65	844.89	753.95	90.94	9.290	0					
11,300.00	10,056.75	11,360.97	10,052.37	48.55	48.87	-89.65	845.58	749.25	96.33	8.778	0					
11,400.00	10,057.02	11,460.97	10,052.57	51.26	51.58	-89.65	846.28	744.48	101.80	8.313	0					
11,500.00	10,057.30	11,560.96	10,052.76	54.00	54.32	-89.64	846.98	739.64	107.34	7.891	0					
11,600.00	10,057.57	11,660.96	10,052.96	56.78	57.09	-89.64	847.67	734.74	112.93	7.506	0					
11,700.00	10,057.84	11,760.96	10,053.16	59.58	59.89	-89.63	848.37	729.80	118.57	7.155	0					
11,800.00	10,058.11	11,860.96	10,053.36	62.40	62.71	-89.63	849.06	724.81	124.25	6.833	0					
11,900.00	10,058.38	11,960.95	10,053.56	65.24	65.55	-89.62	849.76	719.79	129.97	6.538	0					
12,000.00	10,058.65	12,060.95	10,053.76	68.10	68.40	-89.62	850.46	714.74	135.72	6.266	0					
12,100.00	10,058.92	12,160.95	10,053.96	70.98	71.28	-89.61	851.15	709.66	141.50	6.015	0					
12,200.00	10,059.19	12,260.95	10,054.15	73.87	74.16	-89.61	851.85	704.55	147.30	5.783	0					
12,300.00	10,059.47	12,360.94	10,054.35	76.77	77.06	-89.60	852.54	699.42	153.12	5.568	0					
12,400.00	10,059.74	12,460.94	10,054.55	79.68	79.97	-89.60	853.24	694.28	158.96	5.368	0					
12,500.00	10,060.01	12,560.94	10,054.75	82.60	82.88	-89.59	853.94	689.12	164.82	5.181	0					
12,600.00	10,060.28	12,660.94	10,054.95	85.52	85.81	-89.59	854.63	683.94	170.69	5.007	0					
12,700.00	10,060.55	12,760.93	10,055.15	88.46	88.74	-89.59	855.33	678.75	176.58	4.844	0					
12,800.00	10,060.82	12,860.93	10,055.34	91.40	91.68	-89.58	856.02	673.54	182.48	4.691	0					
12,900.00	10,061.09	12,960.93	10,055.54	94.35	94.63	-89.58	856.72	668.33	188.39	4.547	0					
13,000.00	10,061.36	13,060.93	10,055.74	97.31	97.58	-89.57	857.42	663.10	194.32	4.412	0					
13,100.00	10,061.63	13,160.93	10,055.94	100.26	100.54	-89.57	858.11	657.86	200.25	4.285	0					
13,200.00	10,061.91	13,260.92	10,056.14	103.23	103.50	-89.56	858.81	652.62	206.19	4.165	0					
13,300.00	10,062.18	13,360.92	10,056.34	106.20	106.47	-89.56	859.50	647.37	212.14	4.052	0					
13,400.00	10,062.45	13,460.92	10,056.53	109.17	109.44	-89.55	860.20	642.11	218.09	3.944	0					

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

Devon Energy

Anticollision Risk Report

Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Dzurisin - Thistle Unit 1H - Wellbore #1 - Plan 1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD														
Reference		Offset		Semi Major Axis		Distance								Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Risked Separation Factor	Probability of Collision		
13,500.00	10,062.72	13,560.92	10,056.73	112.14	112.42	-89.55	860.90	636.84	224.05	3.842	0			
13,600.00	10,062.99	13,660.91	10,056.93	115.12	115.39	-89.54	861.59	631.57	230.02	3.746	0			
13,700.00	10,063.26	13,760.91	10,057.13	118.11	118.37	-89.54	862.29	626.29	235.99	3.654	0			
13,800.00	10,063.53	13,860.91	10,057.33	121.09	121.36	-89.54	862.98	621.01	241.97	3.566	0			
13,900.00	10,063.80	13,960.91	10,057.53	124.08	124.34	-89.53	863.68	615.72	247.96	3.483	0			
14,000.00	10,064.07	14,060.90	10,057.73	127.07	127.33	-89.53	864.38	610.43	253.95	3.404	0			
14,100.00	10,064.35	14,160.90	10,057.92	130.06	130.33	-89.52	865.07	605.13	259.94	3.328	0			
14,200.00	10,064.62	14,260.90	10,058.12	133.06	133.32	-89.52	865.77	599.83	265.93	3.256	0			
14,300.00	10,064.89	14,360.90	10,058.32	136.05	136.31	-89.51	866.46	594.53	271.93	3.186	0			
14,400.00	10,065.16	14,460.89	10,058.52	139.05	139.31	-89.51	867.16	589.22	277.94	3.120	0			
14,500.00	10,065.43	14,560.89	10,058.72	142.05	142.31	-89.51	867.86	583.91	283.94	3.056	0			
14,600.00	10,065.70	14,660.89	10,058.92	145.05	145.31	-89.50	868.55	578.60	289.95	2.995	0			
14,700.00	10,065.97	14,760.89	10,059.11	148.06	148.32	-89.50	869.25	573.28	295.97	2.937	0			
14,800.00	10,066.24	14,860.88	10,059.31	151.06	151.32	-89.49	869.94	567.96	301.98	2.881	0			
14,900.00	10,066.51	14,960.88	10,059.51	154.07	154.33	-89.49	870.64	562.64	308.00	2.827	0			
15,000.00	10,066.79	15,060.88	10,059.71	157.07	157.33	-89.48	871.34	557.32	314.02	2.775	0			
15,100.00	10,067.06	15,160.88	10,059.91	160.08	160.34	-89.48	872.03	551.99	320.04	2.725	0			
15,200.00	10,067.33	15,260.87	10,060.11	163.09	163.35	-89.47	872.73	546.66	326.07	2.677	0			
15,300.00	10,067.60	15,360.87	10,060.31	166.10	166.36	-89.47	873.42	541.33	332.09	2.630	0			
15,400.00	10,067.87	15,460.87	10,060.50	169.12	169.37	-89.47	874.12	536.00	338.12	2.585	0			
15,500.00	10,068.14	15,560.87	10,060.70	172.13	172.38	-89.46	874.82	530.67	344.15	2.542	0			
15,600.00	10,068.41	15,660.86	10,060.90	175.14	175.40	-89.46	875.51	525.33	350.18	2.500	0			
15,700.00	10,068.68	15,760.86	10,061.10	178.16	178.41	-89.45	876.21	519.99	356.22	2.460	0			
15,800.00	10,068.96	15,860.86	10,061.30	181.17	181.43	-89.45	876.91	514.66	362.25	2.421	0			
15,900.00	10,069.23	15,960.86	10,061.50	184.19	184.44	-89.44	877.60	509.32	368.29	2.383	0			
16,000.00	10,069.50	16,060.85	10,061.69	187.21	187.46	-89.44	878.30	503.97	374.32	2.346	0			
16,100.00	10,069.77	16,160.85	10,061.89	190.22	190.48	-89.44	878.99	498.63	380.36	2.311	0			
16,200.00	10,070.04	16,260.85	10,062.09	193.24	193.49	-89.43	879.69	493.29	386.40	2.277	0			
16,300.00	10,070.31	16,360.85	10,062.29	196.26	196.51	-89.43	880.39	487.94	392.44	2.243	0			
16,400.00	10,070.58	16,460.84	10,062.49	199.28	199.53	-89.42	881.08	482.60	398.49	2.211	0			
16,500.00	10,070.85	16,560.84	10,062.69	202.30	202.55	-89.42	881.78	477.25	404.53	2.180	0			
16,600.00	10,071.12	16,660.84	10,062.88	205.32	205.57	-89.41	882.47	471.90	410.57	2.149	0			
16,700.00	10,071.40	16,760.84	10,063.08	208.34	208.59	-89.41	883.17	466.55	416.62	2.120	0			
16,800.00	10,071.67	16,860.83	10,063.28	211.37	211.62	-89.41	883.87	461.20	422.67	2.091	0			
16,900.00	10,071.94	16,960.83	10,063.48	214.39	214.64	-89.40	884.56	455.85	428.71	2.063	0			
17,000.00	10,072.21	17,060.83	10,063.68	217.41	217.66	-89.40	885.26	450.50	434.76	2.036	0			
17,100.00	10,072.48	17,160.83	10,063.88	220.44	220.68	-89.39	885.96	445.15	440.81	2.010	0			
17,200.00	10,072.75	17,260.82	10,064.08	223.46	223.71	-89.39	886.65	439.79	446.86	1.984	0			
17,300.00	10,073.02	17,360.82	10,064.27	226.48	226.73	-89.38	887.35	434.44	452.91	1.959	0			
17,400.00	10,073.29	17,460.82	10,064.47	229.51	229.75	-89.38	888.04	429.08	458.96	1.935	0			
17,500.00	10,073.56	17,560.82	10,064.67	232.53	232.78	-89.38	888.74	423.73	465.01	1.911	0			
17,598.34	10,073.83	17,659.15	10,064.87	235.51	235.75	-89.37	889.42	418.46	470.97	1.889	0			
17,600.00	10,073.84	17,660.82	10,064.87	235.55	235.80	-89.37	889.44	418.38	471.05	1.888	0			
17,659.64	10,074.00	17,720.49	10,064.99	236.40	237.57	-89.37	889.85	416.19	473.67	1.879	0		SF	

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

Devon Energy
Anticollision Risk Report

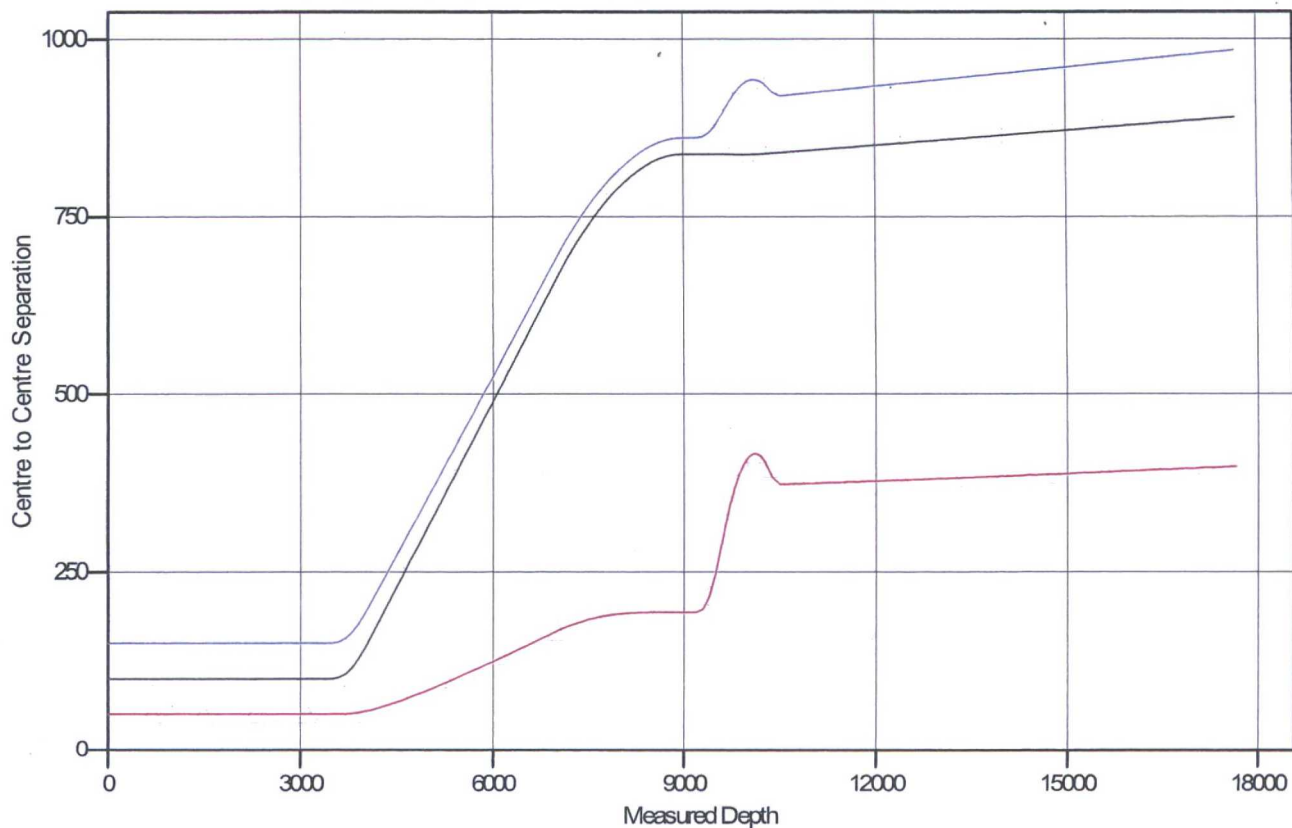
Company: WESTERN DIVISION
Project: PBNM
Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
Reference Wellbore: Wellbore #1
Reference Design: Plan 1

Local Co-ordinate Reference: Well Thistle Unit 144H
TVD Reference: 1 @ 3673.20ft
MD Reference: 1 @ 3673.20ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Reference Depths are relative to 1 @ 3673.20ft
Offset Depths are relative to Offset Datum
Central Meridian is

Coordinates are relative to: Thistle Unit 144H
Coordinate System is Flat Earth, No Conversions
Grid Convergence at Surface is: 0.00°

Ladder Plot



LEGEND

Thistle Unit 1H, Wellbore #1, Plan 1 V0 Thistle Unit 156H, Wellbore #1, Plan 1 V0 Thistle Unit 145H, Wellbore #1, Plan 1 V0

Devon Energy
Anticollision Risk Report

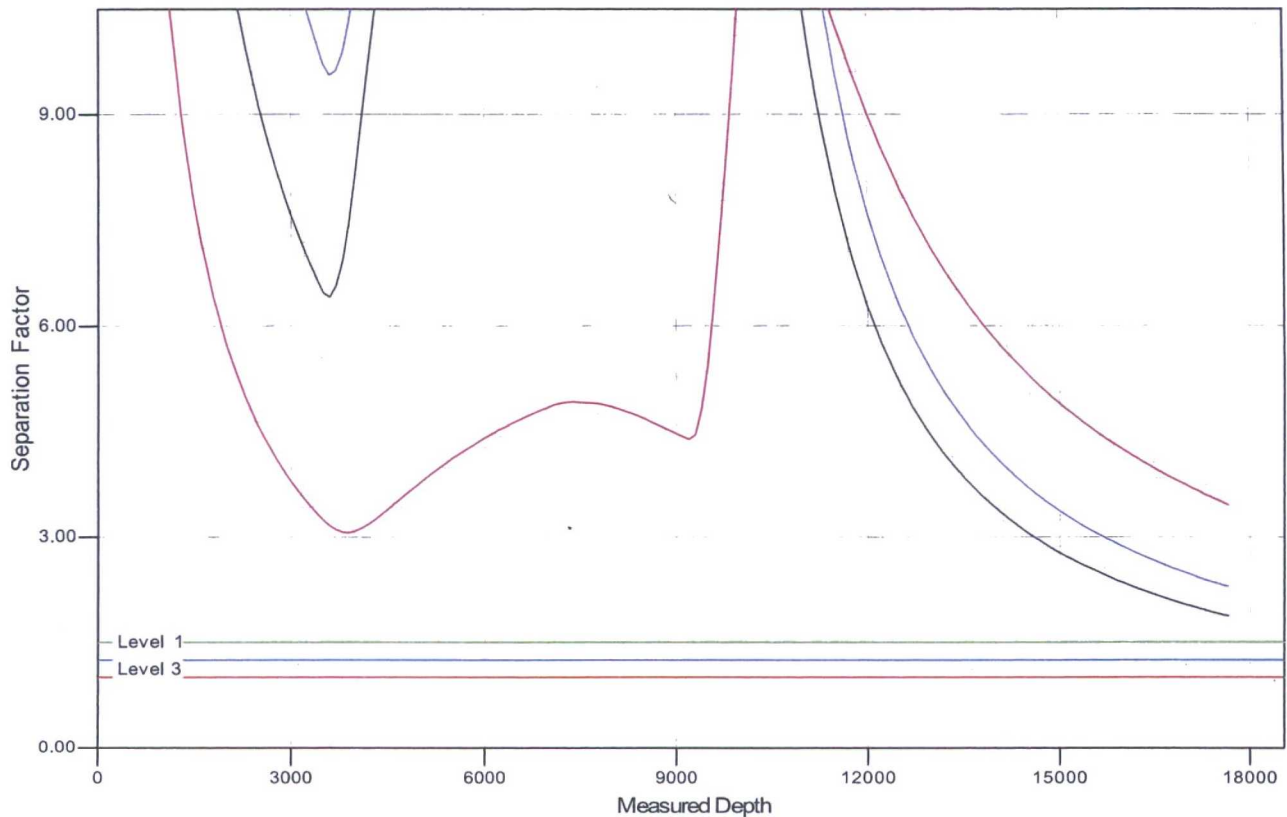
Company: WESTERN DIVISION
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Reference Site: Dzurisin
Site Error: 0.00
Reference Well: Thistle Unit 144H
Well Error: 0.00
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Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM r5000 US Production
Offset TVD Reference: Offset Datum

Reference Depths are relative to 1 @ 3673.20ft
Offset Depths are relative to Offset Datum
Central Meridian is

Coordinates are relative to: Thistle Unit 144H
Coordinate System is Flat Earth, No Conversions
Grid Convergence at Surface is: 0.00°

Separation Factor Plot



LEGEND

Thistle Unit 1H, Wellbore #1, Plan 1 V0 Thistle Unit 156H, Wellbore #1, Plan 1 V0 Thistle Unit 145H, Wellbore #1, Plan 1 V0