

HOBBS OCD

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WESTERN DIVISION

PBNM

Norwalk

Thistle Unit 118H

Wellbore #1

Design #1

Anticollision Report

05 October, 2016

Devon Energy

Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 118H
Project:	PBNM	TVD Reference:	RKB @ 3674.60ft
Reference Site:	Norwalk	MD Reference:	RKB @ 3674.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 118H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000 US Production
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 10,000.00 ft	Error Surface:	Combined Covariances
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	8/29/2016		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	16,755.39	Design #1 (Wellbore #1)	MWD	MWD - Standard	

Summary						
Site Name	Reference Measured Depth	Offset Measured Depth	Distance		Separation Factor	Warning
Offset Well - Wellbore - Design	(ft)	(ft)	Between Centres (ft)	Between Ellipses (ft)		
Norwalk						
Thistle Unit 131H - Wellbore #1 - Design #1	3,266.60	3,266.80	49.91	39.72	4.900	CC
Thistle Unit 131H - Wellbore #1 - Design #1	3,300.00	3,300.00	49.91	39.62	4.850	ES
Thistle Unit 131H - Wellbore #1 - Design #1	16,755.39	17,584.93	369.80	290.36	4.655	SF
Thistle Unit 47H - ST01 - ST01	2,900.63	2,906.73	416.11	406.63	43.935	CC, ES
Thistle Unit 47H - ST01 - ST01	14,300.00	16,380.03	2,255.57	2,158.03	23.123	SF
Thistle Unit 48H - Wellbore #1 - Wellbore #1	4,298.82	4,291.09	438.60	425.59	33.703	CC
Thistle Unit 48H - Wellbore #1 - Wellbore #1	4,300.00	4,292.11	438.60	425.58	33.695	ES
Thistle Unit 48H - Wellbore #1 - Wellbore #1	9,150.00	9,134.56	670.41	645.39	26.795	SF

Offset Design Norwalk - Thistle Unit 131H - Wellbore #1 - Design #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 (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
0.00	0.00	0.20	0.20	0.00	0.00	-160.55	-47.06	-16.62	49.91				
100.00	100.00	100.20	100.20	0.08	0.08	-160.55	-47.06	-16.62	49.91	49.79	0.12	417.581	
200.00	200.00	200.20	200.20	0.31	0.31	-160.55	-47.06	-16.62	49.91	49.47	0.44	114.107	
300.00	300.00	300.20	300.20	0.53	0.53	-160.55	-47.06	-16.62	49.91	49.15	0.76	66.082	
400.00	400.00	400.20	400.20	0.76	0.76	-160.55	-47.06	-16.62	49.91	48.84	1.07	46.508	
500.00	500.00	500.20	500.20	0.98	0.98	-160.55	-47.06	-16.62	49.91	48.52	1.39	35.880	
600.00	600.00	600.20	600.20	1.21	1.21	-160.55	-47.06	-16.62	49.91	48.20	1.71	29.206	
700.00	700.00	700.20	700.20	1.43	1.43	-160.55	-47.06	-16.62	49.91	47.88	2.03	24.625	
800.00	800.00	800.20	800.20	1.66	1.66	-160.55	-47.06	-16.62	49.91	47.56	2.34	21.287	
900.00	900.00	900.20	900.20	1.88	1.88	-160.55	-47.06	-16.62	49.91	47.25	2.66	18.745	
1,000.00	1,000.00	1,000.20	1,000.20	2.11	2.11	-160.55	-47.06	-16.62	49.91	46.93	2.98	16.746	
1,100.00	1,100.00	1,100.20	1,100.20	2.33	2.33	-160.55	-47.06	-16.62	49.91	46.61	3.30	15.132	
1,200.00	1,200.00	1,200.20	1,200.20	2.56	2.56	-160.55	-47.06	-16.62	49.91	46.29	3.62	13.802	
1,300.00	1,300.00	1,300.20	1,300.20	2.78	2.78	-160.55	-47.06	-16.62	49.91	45.97	3.93	12.687	
1,400.00	1,400.00	1,400.20	1,400.20	3.01	3.01	-160.55	-47.06	-16.62	49.91	45.66	4.25	11.738	
1,500.00	1,500.00	1,500.20	1,500.20	3.23	3.23	-160.55	-47.06	-16.62	49.91	45.34	4.57	10.922	
1,600.00	1,600.00	1,600.20	1,600.20	3.46	3.46	-160.55	-47.06	-16.62	49.91	45.02	4.89	10.211	
1,700.00	1,700.00	1,700.20	1,700.20	3.68	3.68	-160.55	-47.06	-16.62	49.91	44.70	5.21	9.588	
1,800.00	1,800.00	1,800.20	1,800.20	3.91	3.91	-160.55	-47.06	-16.62	49.91	44.39	5.52	9.036	
1,900.00	1,900.00	1,900.20	1,900.20	4.13	4.13	-160.55	-47.06	-16.62	49.91	44.07	5.84	8.544	

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

Devon Energy

Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 118H
Project:	PBNM	TVD Reference:	RKB @ 3674.60ft
Reference Site:	Norwalk	MD Reference:	RKB @ 3674.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 118H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000 US Production
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Norwalk - Thistle Unit 131H - Wellbore #1 - Design #1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
2,000.00	2,000.00	2,000.20	2,000.20	4.35	4.36	-160.55	-47.06	-16.62	49.91	43.75	6.16	8.103		
2,100.00	2,100.00	2,100.20	2,100.20	4.58	4.58	-160.55	-47.06	-16.62	49.91	43.43	6.48	7.706		
2,200.00	2,200.00	2,200.20	2,200.20	4.80	4.80	-160.55	-47.06	-16.62	49.91	43.11	6.79	7.345		
2,300.00	2,300.00	2,300.20	2,300.20	5.03	5.03	-160.55	-47.06	-16.62	49.91	42.80	7.11	7.017		
2,400.00	2,400.00	2,400.20	2,400.20	5.25	5.25	-160.55	-47.06	-16.62	49.91	42.48	7.43	6.717		
2,500.00	2,500.00	2,500.20	2,500.20	5.48	5.48	-160.55	-47.06	-16.62	49.91	42.16	7.75	6.441		
2,600.00	2,600.00	2,600.20	2,600.20	5.70	5.70	-160.55	-47.06	-16.62	49.91	41.84	8.07	6.187		
2,700.00	2,700.00	2,700.20	2,700.20	5.93	5.93	-160.55	-47.06	-16.62	49.91	41.52	8.38	5.953		
2,800.00	2,800.00	2,800.20	2,800.20	6.15	6.15	-160.55	-47.06	-16.62	49.91	41.21	8.70	5.735		
2,900.00	2,900.00	2,900.20	2,900.20	6.38	6.38	-160.55	-47.06	-16.62	49.91	40.89	9.02	5.533		
3,000.00	3,000.00	3,000.20	3,000.20	6.60	6.60	-160.55	-47.06	-16.62	49.91	40.57	9.34	5.345		
3,100.00	3,100.00	3,100.20	3,100.20	6.83	6.83	-160.55	-47.06	-16.62	49.91	40.25	9.66	5.169		
3,200.00	3,200.00	3,200.20	3,200.20	7.05	7.05	-160.55	-47.06	-16.62	49.91	39.94	9.97	5.004		
3,266.60	3,266.60	3,266.80	3,266.80	7.20	7.20	-160.55	-47.06	-16.62	49.91	39.72	10.19	4.900 CC		
3,300.00	3,300.00	3,300.00	3,300.00	7.28	7.28	-160.55	-47.06	-16.62	49.91	39.62	10.29	4.850 ES		
3,400.00	3,400.00	3,399.58	3,399.58	7.50	7.47	-160.79	-47.71	-16.62	50.52	39.94	10.59	4.772		
3,500.00	3,500.00	3,498.93	3,498.91	7.73	7.64	-161.49	-49.65	-16.62	52.37	41.51	10.86	4.822		
3,600.00	3,600.00	3,598.21	3,598.13	7.95	7.81	-162.55	-52.88	-16.62	55.47	44.33	11.14	4.980		
3,700.00	3,700.00	3,697.39	3,697.21	8.18	7.98	-163.85	-57.39	-16.62	59.83	48.41	11.41	5.241		
3,800.00	3,800.00	3,796.44	3,796.09	8.40	8.16	-165.26	-63.18	-16.62	65.46	53.77	11.69	5.600		
3,900.00	3,900.00	3,895.32	3,894.72	8.63	8.34	-166.69	-70.24	-16.62	72.39	60.43	11.97	6.050		
4,000.00	4,000.00	3,994.28	3,993.33	8.85	8.52	-168.05	-78.54	-16.62	80.57	68.33	12.24	6.580		
4,100.00	4,100.00	4,093.90	4,092.57	9.07	8.71	-169.21	-87.22	-16.62	89.12	76.58	12.53	7.111		
4,200.00	4,200.00	4,193.52	4,191.81	9.30	8.90	-170.17	-95.90	-16.62	97.69	84.87	12.82	7.618		
4,300.00	4,300.00	4,293.14	4,291.05	9.52	9.10	-170.97	-104.58	-16.62	106.29	93.18	13.11	8.105		
4,400.00	4,400.00	4,392.76	4,390.29	9.75	9.31	-171.65	-113.27	-16.62	114.91	101.50	13.41	8.570		
4,500.00	4,500.00	4,492.38	4,489.53	9.97	9.51	-172.24	-121.95	-16.62	123.54	109.84	13.70	9.016		
4,600.00	4,600.00	4,592.00	4,588.77	10.20	9.72	-172.75	-130.63	-16.62	132.18	118.18	14.00	9.442		
4,700.00	4,700.00	4,691.62	4,688.01	10.42	9.94	-173.20	-139.31	-16.62	140.83	126.53	14.30	9.851		
4,800.00	4,800.00	4,791.24	4,787.25	10.65	10.15	-173.59	-148.00	-16.62	149.49	134.89	14.59	10.243		
4,900.00	4,900.00	4,890.86	4,886.49	10.87	10.37	-173.94	-156.68	-16.62	158.15	143.26	14.89	10.619		
5,000.00	5,000.00	4,990.47	4,985.73	11.10	10.60	-174.26	-165.36	-16.62	166.82	151.63	15.19	10.980		
5,100.00	5,100.00	5,090.09	5,084.97	11.32	10.82	-174.55	-174.04	-16.62	175.50	160.00	15.49	11.327		
5,200.00	5,200.00	5,189.71	5,184.21	11.55	11.05	-174.80	-182.73	-16.62	184.18	168.38	15.80	11.660		
5,300.00	5,300.00	5,289.33	5,283.45	11.77	11.28	-175.04	-191.41	-16.62	192.86	176.76	16.10	11.980		
5,400.00	5,400.00	5,388.95	5,382.69	12.00	11.51	-175.25	-200.09	-16.62	201.54	185.14	16.40	12.288		
5,500.00	5,500.00	5,488.57	5,481.93	12.22	11.74	-175.45	-208.77	-16.62	210.23	193.52	16.71	12.584		
5,600.00	5,600.00	5,588.19	5,581.18	12.45	11.98	-175.63	-217.46	-16.62	218.92	201.91	17.01	12.869		
5,700.00	5,700.00	5,687.81	5,680.42	12.67	12.21	-175.80	-226.14	-16.62	227.61	210.29	17.32	13.144		
5,800.00	5,800.00	5,787.43	5,779.66	12.90	12.45	-175.95	-234.82	-16.62	236.30	218.68	17.62	13.409		
5,900.00	5,900.00	5,887.05	5,878.90	13.12	12.69	-176.10	-243.50	-16.62	245.00	227.07	17.93	13.664		
6,000.00	6,000.00	5,986.67	5,978.14	13.35	12.93	-176.23	-252.19	-16.62	253.69	235.46	18.24	13.911		
6,100.00	6,100.00	6,086.29	6,077.38	13.57	13.18	-176.35	-260.87	-16.62	262.39	243.85	18.54	14.149		
6,200.00	6,200.00	6,185.91	6,176.62	13.80	13.42	-176.47	-269.55	-16.62	271.09	252.24	18.85	14.379		
6,300.00	6,300.00	6,285.53	6,275.86	14.02	13.67	-176.58	-278.23	-16.62	279.79	260.63	19.16	14.601		
6,400.00	6,400.00	6,385.15	6,375.10	14.24	13.91	-176.68	-286.91	-16.62	288.49	269.02	19.47	14.816		
6,500.00	6,500.00	6,484.77	6,474.34	14.47	14.16	-176.78	-295.60	-16.62	297.19	277.41	19.78	15.024		
6,600.00	6,600.00	6,584.39	6,573.58	14.69	14.41	-176.87	-304.28	-16.62	305.89	285.80	20.09	15.225		
6,700.00	6,700.00	6,684.01	6,672.82	14.92	14.66	-176.96	-312.96	-16.62	314.60	294.19	20.40	15.420		
6,800.00	6,800.00	6,783.63	6,772.06	15.14	14.91	-177.04	-321.64	-16.62	323.30	302.59	20.71	15.609		
6,900.00	6,900.00	6,883.24	6,871.30	15.37	15.16	-177.12	-330.33	-16.62	332.00	310.98	21.02	15.791		
7,000.00	7,000.00	6,982.86	6,970.54	15.59	15.41	-177.19	-339.01	-16.62	340.71	319.37	21.34	15.969		

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

Devon Energy

Anticollision Report

Company: WESTERN DIVISION
 Project: PBNM
 Reference Site: Norwalk
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 118H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 118H
 TVD Reference: RKB @ 3674.60ft
 MD Reference: RKB @ 3674.60ft
 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 Norwalk - Thistle Unit 131H - Wellbore #1 - Design #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 (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
7,100.00	7,100.00	7,082.48	7,069.78	15.82	15.67	-177.26	-347.69	-16.62	349.42	327.77	21.65	16.141	
7,200.00	7,200.00	7,182.10	7,169.02	16.04	15.92	-177.33	-356.37	-16.62	358.12	336.16	21.96	16.308	
7,300.00	7,300.00	7,261.72	7,268.26	16.27	16.18	-177.39	-365.06	-16.62	366.83	344.55	22.27	16.469	
7,400.00	7,400.00	7,381.34	7,367.50	16.49	16.43	-177.45	-373.74	-16.62	375.53	352.95	22.59	16.627	
7,500.00	7,500.00	7,480.96	7,466.74	16.72	16.69	-177.51	-382.42	-16.62	384.24	361.34	22.90	16.780	
7,600.00	7,600.00	7,580.58	7,565.98	16.94	16.94	-177.57	-391.10	-16.62	392.95	369.74	23.21	16.928	
7,700.00	7,700.00	7,680.20	7,665.22	17.17	17.20	-177.62	-399.79	-16.62	401.66	378.13	23.53	17.072	
7,800.00	7,800.00	7,779.82	7,764.46	17.39	17.46	-177.67	-408.47	-16.62	410.37	386.52	23.84	17.213	
7,900.00	7,900.00	7,879.44	7,863.70	17.62	17.72	-177.72	-417.15	-16.62	419.07	394.92	24.16	17.349	
8,000.00	8,000.00	7,979.79	7,963.68	17.84	17.98	-177.77	-425.89	-16.62	427.77	403.30	24.47	17.480	
8,100.00	8,100.00	8,085.45	8,069.01	18.07	18.22	-177.81	-434.19	-16.62	435.62	410.82	24.80	17.564	
8,200.00	8,200.00	8,191.32	8,174.65	18.29	18.45	-177.84	-441.04	-16.62	442.09	416.96	25.13	17.593	
8,300.00	8,300.00	8,297.36	8,280.55	18.52	18.68	-177.87	-446.44	-16.62	447.18	421.73	25.45	17.570	
8,400.00	8,400.00	8,403.53	8,386.65	18.74	18.90	-177.89	-450.37	-16.62	450.88	425.11	25.77	17.496	
8,500.00	8,500.00	8,509.78	8,492.88	18.96	19.11	-177.90	-452.82	-16.62	453.19	427.10	26.08	17.374	
8,600.00	8,600.00	8,616.09	8,599.18	19.19	19.32	-177.90	-453.80	-16.62	454.11	427.72	26.39	17.205	
8,700.00	8,700.00	8,717.11	8,700.20	19.41	19.52	-177.90	-453.82	-16.62	454.13	427.43	26.70	17.008	
8,800.00	8,800.00	8,817.11	8,800.20	19.64	19.71	-177.90	-453.82	-16.62	454.13	427.12	27.00	16.817	
8,900.00	8,900.00	8,917.11	8,900.20	19.86	19.90	-177.90	-453.82	-16.62	454.13	426.82	27.31	16.630	
9,000.00	9,000.00	9,017.11	9,000.20	20.09	20.09	-177.90	-453.82	-16.62	454.13	426.52	27.61	16.447	
9,100.00	9,100.00	9,117.11	9,100.20	20.31	20.28	-177.90	-453.82	-16.62	454.13	426.21	27.92	16.267	
9,131.04	9,131.04	9,148.15	9,131.24	20.38	20.34	-177.90	-453.82	-16.62	454.13	426.12	28.01	16.213	
9,150.00	9,150.00	9,167.11	9,150.20	20.43	20.38	-177.71	-453.82	-16.62	454.44	426.37	28.07	16.190	
9,200.00	9,199.83	9,216.95	9,200.03	20.54	20.47	-177.71	-453.82	-16.62	458.27	430.05	28.22	16.238	
9,250.00	9,249.15	9,266.26	9,249.35	20.65	20.57	-177.72	-453.82	-16.62	466.42	438.05	28.37	16.439	
9,300.00	9,297.56	9,314.67	9,297.76	20.76	20.66	-177.73	-453.82	-16.62	478.84	450.32	28.52	16.788	
9,350.00	9,344.71	9,361.82	9,344.91	20.87	20.75	-177.73	-453.82	-16.62	495.43	466.76	28.67	17.282	
9,400.00	9,390.23	9,407.34	9,390.43	20.98	20.84	-177.74	-453.82	-16.62	516.06	487.25	28.81	17.914	
9,450.00	9,433.78	9,450.89	9,433.98	21.08	20.93	-177.73	-453.82	-16.62	540.58	511.64	28.94	18.678	
9,500.00	9,475.02	9,492.14	9,475.22	21.20	21.01	-177.71	-453.82	-16.62	568.80	539.73	29.07	19.568	
9,550.00	9,513.65	10,433.84	10,063.42	21.33	21.99	-177.39	145.64	-17.27	549.83	530.10	19.73	27.864	
9,600.00	9,549.37	10,468.86	10,063.47	21.48	22.15	-177.46	180.66	-17.31	514.18	494.35	19.83	25.926	
9,650.00	9,581.90	10,506.86	10,063.53	21.65	22.33	-177.49	218.66	-17.35	481.72	461.78	19.94	24.164	
9,700.00	9,611.00	10,547.54	10,063.59	21.85	22.57	-177.51	259.34	-17.40	452.70	432.65	20.05	22.579	
9,750.00	9,636.44	10,590.60	10,063.65	22.06	22.83	-177.51	302.40	-17.44	427.33	407.16	20.17	21.190	
9,800.00	9,658.04	10,635.71	10,063.72	22.31	23.14	-177.50	347.51	-17.49	405.80	385.51	20.30	19.994	
9,850.00	9,675.63	10,682.52	10,063.79	22.58	23.47	-177.49	394.32	-17.54	388.29	367.86	20.43	19.003	
9,900.00	9,689.08	10,730.69	10,063.86	22.88	23.85	-177.48	442.48	-17.60	374.93	354.34	20.58	18.216	
9,950.00	9,698.28	10,779.83	10,063.93	23.21	24.26	-177.47	491.63	-17.65	365.80	345.06	20.74	17.638	
10,000.00	9,703.16	10,829.58	10,064.01	23.56	24.71	-177.48	541.38	-17.70	361.00	340.09	20.91	17.265	
10,030.25	9,704.00	10,859.82	10,064.05	23.79	24.99	-177.49	571.62	-17.74	360.20	339.18	21.02	17.140	
10,031.04	9,704.00	10,860.61	10,064.05	23.79	25.00	-177.49	572.41	-17.74	360.20	339.18	21.02	17.138	
10,100.00	9,704.00	10,929.57	10,064.16	24.34	25.67	-177.52	641.36	-17.81	360.29	339.02	21.27	16.935	
10,200.00	9,704.00	11,029.57	10,064.30	25.23	26.73	-177.56	741.36	-17.92	360.43	338.75	21.68	16.622	
10,300.00	9,704.00	11,129.57	10,064.45	26.22	27.87	-177.59	841.36	-18.03	360.57	338.43	22.13	16.290	
10,400.00	9,704.00	11,229.57	10,064.60	27.30	29.08	-177.63	941.36	-18.14	360.71	338.08	22.62	15.944	
10,500.00	9,704.00	11,329.57	10,064.75	28.45	30.35	-177.67	1,041.36	-18.25	360.85	337.70	23.15	15.587	
10,600.00	9,704.00	11,429.57	10,064.89	29.67	31.67	-177.71	1,141.36	-18.36	360.98	337.27	23.71	15.225	
10,700.00	9,704.00	11,529.56	10,065.04	30.95	33.05	-177.75	1,241.36	-18.47	361.12	336.82	24.30	14.861	
10,800.00	9,704.00	11,629.56	10,065.19	32.29	34.47	-177.78	1,341.36	-18.58	361.26	336.34	24.92	14.496	
10,900.00	9,704.00	11,729.56	10,065.34	33.67	35.92	-177.82	1,441.36	-18.69	361.40	335.83	25.57	14.134	
11,000.00	9,704.00	11,829.56	10,065.49	35.10	37.41	-177.86	1,541.36	-18.80	361.54	335.30	26.24	13.777	

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

Devon Energy

Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 118H
Project:	PBNM	TVD Reference:	RKB @ 3674.60ft
Reference Site:	Norwalk	MD Reference:	RKB @ 3674.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 118H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000 US Production
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Norwalk - Thistle Unit 131H - Wellbore #1 - Design #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 (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
11,100.00	9,704.00	11,929.56	10,065.63	36.56	38.93	-177.90	1,641.36	-18.90	361.68	334.74	26.94	13.427		
11,200.00	9,704.00	12,029.56	10,065.78	38.05	40.47	-177.94	1,741.36	-19.01	361.82	334.16	27.65	13.084		
11,300.00	9,704.00	12,129.56	10,065.93	39.57	42.04	-177.97	1,841.36	-19.12	361.96	333.57	28.39	12.749		
11,400.00	9,704.00	12,229.56	10,066.08	41.12	43.63	-178.01	1,941.36	-19.23	362.10	332.95	29.15	12.423		
11,500.00	9,704.00	12,329.56	10,066.23	42.69	45.24	-178.05	2,041.36	-19.34	362.24	332.32	29.92	12.108		
11,600.00	9,704.00	12,429.56	10,066.37	44.28	46.86	-178.09	2,141.35	-19.45	362.38	331.67	30.71	11.802		
11,700.00	9,704.00	12,529.56	10,066.52	45.88	48.50	-178.13	2,241.35	-19.56	362.52	331.01	31.51	11.506		
11,800.00	9,704.00	12,629.56	10,066.67	47.51	50.15	-178.16	2,341.35	-19.67	362.66	330.33	32.32	11.220		
11,900.00	9,704.00	12,729.56	10,066.82	49.15	51.81	-178.20	2,441.35	-19.78	362.80	329.65	33.15	10.944		
12,000.00	9,704.00	12,829.56	10,066.97	50.80	53.49	-178.24	2,541.35	-19.89	362.94	328.95	33.99	10.678		
12,100.00	9,704.00	12,929.56	10,067.11	52.47	55.17	-178.28	2,641.35	-19.99	363.08	328.24	34.84	10.422		
12,200.00	9,704.00	13,029.56	10,067.26	54.14	56.87	-178.31	2,741.35	-20.10	363.22	327.52	35.70	10.175		
12,300.00	9,704.00	13,129.56	10,067.41	55.83	58.57	-178.35	2,841.35	-20.21	363.36	326.79	36.57	9.937		
12,400.00	9,704.00	13,229.56	10,067.56	57.52	60.28	-178.39	2,941.35	-20.32	363.50	326.06	37.44	9.708		
12,500.00	9,704.00	13,329.56	10,067.71	59.23	62.00	-178.43	3,041.35	-20.43	363.64	325.32	38.33	9.488		
12,600.00	9,704.00	13,429.56	10,067.85	60.94	63.72	-178.46	3,141.35	-20.54	363.78	324.56	39.22	9.276		
12,700.00	9,704.00	13,529.56	10,068.00	62.65	65.45	-178.50	3,241.35	-20.65	363.93	323.81	40.12	9.071		
12,800.00	9,704.00	13,629.56	10,068.15	64.38	67.19	-178.54	3,341.35	-20.76	364.07	323.04	41.02	8.875		
12,900.00	9,704.00	13,729.56	10,068.30	66.11	68.93	-178.58	3,441.35	-20.87	364.21	322.27	41.93	8.685		
13,000.00	9,704.00	13,829.56	10,068.44	67.84	70.67	-178.61	3,541.35	-20.98	364.35	321.50	42.85	8.503		
13,100.00	9,704.00	13,929.56	10,068.59	69.58	72.42	-178.65	3,641.35	-21.08	364.49	320.72	43.77	8.327		
13,200.00	9,704.00	14,029.56	10,068.74	71.33	74.18	-178.69	3,741.35	-21.19	364.64	319.94	44.70	8.157		
13,300.00	9,704.00	14,129.55	10,068.89	73.08	75.93	-178.73	3,841.35	-21.30	364.78	319.15	45.63	7.994		
13,400.00	9,704.00	14,229.55	10,069.04	74.83	77.69	-178.76	3,941.34	-21.41	364.92	318.35	46.57	7.836		
13,500.00	9,704.00	14,329.55	10,069.18	76.59	79.46	-178.80	4,041.34	-21.52	365.06	317.56	47.51	7.684		
13,600.00	9,704.00	14,429.55	10,069.33	78.35	81.23	-178.84	4,141.34	-21.63	365.21	316.76	48.45	7.538		
13,700.00	9,704.00	14,529.55	10,069.48	80.11	83.00	-178.88	4,241.34	-21.74	365.35	315.95	49.40	7.396		
13,800.00	9,704.00	14,629.55	10,069.63	81.88	84.77	-178.91	4,341.34	-21.85	365.49	315.14	50.35	7.259		
13,900.00	9,704.00	14,729.55	10,069.78	83.65	86.54	-178.95	4,441.34	-21.96	365.64	314.33	51.30	7.127		
14,000.00	9,704.00	14,829.55	10,069.92	85.42	88.32	-178.99	4,541.34	-22.07	365.78	313.52	52.26	6.999		
14,100.00	9,704.00	14,929.55	10,070.07	87.20	90.10	-179.02	4,641.34	-22.17	365.92	312.70	53.22	6.876		
14,200.00	9,704.00	15,029.55	10,070.22	88.98	91.88	-179.06	4,741.34	-22.28	366.07	311.89	54.18	6.756		
14,300.00	9,704.00	15,129.55	10,070.37	90.76	93.67	-179.10	4,841.34	-22.39	366.21	311.06	55.15	6.640		
14,400.00	9,704.00	15,229.55	10,070.52	92.54	95.45	-179.14	4,941.34	-22.50	366.36	310.24	56.12	6.529		
14,500.00	9,704.00	15,329.55	10,070.66	94.32	97.24	-179.17	5,041.34	-22.61	366.50	309.41	57.09	6.420		
14,600.00	9,704.00	15,429.55	10,070.81	96.11	99.03	-179.21	5,141.34	-22.72	366.65	308.59	58.06	6.315		
14,700.00	9,704.00	15,529.55	10,070.96	97.90	100.82	-179.25	5,241.34	-22.83	366.79	307.76	59.03	6.213		
14,800.00	9,704.00	15,629.55	10,071.11	99.69	102.61	-179.28	5,341.34	-22.94	366.94	306.93	60.01	6.114		
14,900.00	9,704.00	15,729.55	10,071.26	101.48	104.41	-179.32	5,441.34	-23.05	367.08	306.09	60.99	6.019		
15,000.00	9,704.00	15,829.55	10,071.40	103.27	106.20	-179.36	5,541.34	-23.16	367.23	305.26	61.97	5.926		
15,100.00	9,704.00	15,929.55	10,071.55	105.06	108.00	-179.39	5,641.34	-23.26	367.37	304.42	62.95	5.836		
15,200.00	9,704.00	16,029.55	10,071.70	106.86	109.79	-179.43	5,741.33	-23.37	367.52	303.58	63.94	5.748		
15,300.00	9,704.00	16,129.55	10,071.85	108.65	111.59	-179.47	5,841.33	-23.48	367.66	302.74	64.92	5.663		
15,400.00	9,704.00	16,229.55	10,071.99	110.45	113.39	-179.50	5,941.33	-23.59	367.81	301.90	65.91	5.581		
15,500.00	9,704.00	16,329.55	10,072.14	112.25	115.19	-179.54	6,041.33	-23.70	367.95	301.06	66.90	5.500		
15,600.00	9,704.00	16,429.55	10,072.29	114.05	117.00	-179.58	6,141.33	-23.81	368.10	300.21	67.89	5.422		
15,700.00	9,704.00	16,529.55	10,072.44	115.85	118.80	-179.61	6,241.33	-23.92	368.25	299.37	68.88	5.346		
15,800.00	9,704.00	16,629.55	10,072.59	117.65	120.60	-179.65	6,341.33	-24.03	368.39	298.52	69.87	5.272		
15,900.00	9,704.00	16,729.54	10,072.73	119.46	122.41	-179.69	6,441.33	-24.14	368.54	297.67	70.87	5.200		
16,000.00	9,704.00	16,829.54	10,072.88	121.26	124.21	-179.72	6,541.33	-24.25	368.69	296.82	71.86	5.130		
16,100.00	9,704.00	16,929.54	10,073.03	123.07	126.02	-179.76	6,641.33	-24.35	368.83	295.97	72.86	5.062		
16,200.00	9,704.00	17,029.54	10,073.18	124.87	127.83	-179.80	6,741.33	-24.46	368.98	295.12	73.86	4.996		

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

Devon Energy
Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 118H
Project:	PBNM	TVD Reference:	RKB @ 3674.60ft
Reference Site:	Norwalk	MD Reference:	RKB @ 3674.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 118H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000 US Production
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Norwalk - Thistle Unit 131H - Wellbore #1 - Design #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 (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
16,300.00	9,704.00	17,129.54	10,073.33	126.68	129.63	-179.83	6,841.33	-24.57	369.13	294.27	74.86	4.931		
16,400.00	9,704.00	17,229.54	10,073.47	128.49	131.44	-179.87	6,941.33	-24.68	369.27	293.42	75.86	4.868		
16,500.00	9,704.00	17,329.54	10,073.62	130.29	133.25	-179.91	7,041.33	-24.79	369.42	292.56	76.86	4.806		
16,600.00	9,704.00	17,429.54	10,073.77	132.10	135.06	-179.94	7,141.33	-24.90	369.57	291.71	77.86	4.746		
16,700.00	9,704.00	17,529.54	10,073.92	133.91	136.87	-179.98	7,241.33	-25.01	369.72	290.85	78.87	4.688		
16,755.39	9,704.00	17,584.93	10,074.00	134.92	137.87	-180.00	7,296.72	-25.07	369.80	290.38	79.42	4.656		
16,755.39	9,704.00	17,584.93	10,074.00	134.92	137.87	179.94	7,296.72	-25.07	369.80	290.36	79.44	4.655 SF		

Devon Energy

Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 118H
Project:	PBNM	TVD Reference:	RKB @ 3674.60ft
Reference Site:	Norwalk	MD Reference:	RKB @ 3674.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 118H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000 US Production
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Norwalk - Thistle Unit 47H - ST01 - ST01												Offset Site Error:	0.00 ft
Survey Program: 100-MWD												Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	Offset Wellbore Centre +E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	137.53	-342.86	313.89	464.93				
100.00	100.00	92.16	92.16	0.08	0.08	137.57	-343.02	313.56	464.74	464.63	0.11	4,043.633	
200.00	200.00	191.32	191.31	0.31	0.29	137.71	-343.65	312.64	464.59	464.16	0.42	1,096.615	
214.85	214.85	205.96	205.95	0.34	0.32	137.73	-343.80	312.47	464.58	464.11	0.47	987.547	
300.00	300.00	289.40	289.38	0.53	0.51	137.91	-344.90	311.49	464.74	464.00	0.74	629.730	
400.00	400.00	389.97	389.93	0.76	0.71	138.14	-346.39	310.35	465.08	464.04	1.04	446.387	
500.00	500.00	490.41	490.36	0.98	0.91	138.32	-347.50	309.41	465.28	463.94	1.34	347.392	
600.00	600.00	590.51	590.45	1.21	1.12	138.48	-348.50	308.50	465.43	463.78	1.65	282.782	
700.00	700.00	691.04	690.97	1.43	1.33	138.65	-349.46	307.55	465.52	463.56	1.95	238.189	
800.00	800.00	791.38	791.30	1.66	1.54	138.77	-350.11	306.80	465.51	463.25	2.26	205.930	
900.00	900.00	892.23	892.16	1.88	1.75	138.85	-350.43	306.22	465.38	462.81	2.57	181.100	
1,000.00	1,000.00	991.30	991.23	2.11	1.96	138.92	-350.69	305.72	465.24	462.36	2.88	161.795	
1,100.00	1,100.00	1,091.57	1,091.49	2.33	2.17	139.00	-351.09	305.19	465.19	462.01	3.18	146.150	
1,200.00	1,200.00	1,191.46	1,191.38	2.56	2.38	139.08	-351.43	304.68	465.12	461.63	3.49	133.246	
1,222.06	1,222.06	1,213.26	1,213.18	2.61	2.42	139.09	-351.51	304.57	465.11	461.55	3.56	130.721	
1,300.00	1,300.00	1,290.13	1,290.04	2.78	2.58	139.16	-351.93	304.24	465.21	461.42	3.80	122.568	
1,400.00	1,400.00	1,389.58	1,389.49	3.01	2.79	139.26	-352.71	303.78	465.50	461.40	4.10	113.483	
1,500.00	1,500.00	1,494.25	1,494.14	3.23	3.01	139.51	-354.06	302.29	465.56	461.14	4.42	105.399	
1,600.00	1,600.00	1,604.01	1,603.76	3.46	3.25	140.13	-355.89	297.27	463.88	459.14	4.74	97.802	
1,700.00	1,700.00	1,714.48	1,713.81	3.68	3.50	141.19	-357.98	287.95	459.98	454.90	5.08	90.596	
1,800.00	1,800.00	1,820.35	1,818.92	3.91	3.77	142.59	-360.21	275.54	454.37	448.95	5.42	83.895	
1,900.00	1,900.00	1,922.39	1,919.77	4.13	4.04	144.39	-363.51	260.31	448.02	442.26	5.76	77.721	
2,000.00	2,000.00	2,021.28	2,017.35	4.35	4.32	146.30	-366.90	244.65	441.77	435.65	6.12	72.223	
2,100.00	2,100.00	2,118.05	2,112.98	4.58	4.58	148.11	-369.95	230.17	436.26	429.79	6.47	67.477	
2,200.00	2,200.00	2,214.81	2,208.57	4.80	4.86	150.01	-373.64	215.65	431.76	424.94	6.82	63.277	
2,300.00	2,300.00	2,313.77	2,306.27	5.03	5.16	152.05	-377.89	200.49	428.06	420.86	7.19	59.503	
2,400.00	2,400.00	2,413.56	2,404.86	5.25	5.45	154.08	-381.69	185.54	424.82	417.06	7.56	56.156	
2,500.00	2,500.00	2,512.70	2,502.85	5.48	5.75	156.07	-385.22	170.93	421.60	413.67	7.93	53.147	
2,600.00	2,600.00	2,610.26	2,599.16	5.70	6.06	158.18	-389.08	155.77	419.18	410.87	8.32	50.407	
2,700.00	2,700.00	2,708.90	2,696.44	5.93	6.38	160.40	-393.44	140.07	417.66	408.96	8.70	47.985	
2,800.00	2,800.00	2,808.44	2,794.67	6.15	6.69	162.60	-397.52	124.56	416.59	407.51	9.09	45.846	
2,900.00	2,900.00	2,906.12	2,891.13	6.38	7.00	164.73	-401.41	109.62	416.11	406.64	9.47	43.947	
2,900.63	2,900.63	2,906.73	2,891.73	6.38	7.00	164.74	-401.43	109.53	416.11	406.63	9.47	43.935 CC, ES	
3,000.00	3,000.00	3,001.65	2,985.37	6.60	7.32	166.87	-405.82	94.64	416.75	406.90	9.85	42.300	
3,100.00	3,100.00	3,100.41	3,082.78	6.83	7.64	169.09	-410.88	79.21	418.53	408.29	10.24	40.876	
3,200.00	3,200.00	3,199.08	3,180.21	7.05	7.96	171.21	-415.71	64.27	420.79	410.17	10.62	39.616	
3,300.00	3,300.00	3,295.66	3,275.37	7.28	8.30	173.41	-420.81	48.62	423.90	412.89	11.01	38.506	
3,400.00	3,400.00	3,393.36	3,371.35	7.50	8.66	175.81	-426.48	31.25	428.08	416.67	11.41	37.528	
3,500.00	3,500.00	3,494.15	3,470.35	7.73	9.03	178.24	-432.12	13.25	432.82	421.01	11.80	36.666	
3,600.00	3,600.00	3,594.23	3,568.89	7.95	9.37	-179.54	-437.20	-3.52	437.77	425.59	12.18	35.943	
3,700.00	3,700.00	3,695.39	3,668.76	8.18	9.70	-177.55	-441.82	-18.93	442.79	430.24	12.55	35.289	
3,800.00	3,800.00	3,792.52	3,764.68	8.40	10.02	-175.71	-446.26	-33.49	448.29	435.39	12.90	34.746	
3,900.00	3,900.00	3,892.24	3,863.12	8.63	10.36	-173.83	-450.86	-48.75	454.35	441.09	13.26	34.257	
4,000.00	4,000.00	3,991.06	3,960.75	8.85	10.69	-172.06	-455.09	-63.46	460.50	446.89	13.61	33.828	
4,100.00	4,100.00	4,081.93	4,050.42	9.07	11.00	-170.45	-459.97	-77.38	468.20	454.27	13.93	33.604	
4,200.00	4,200.00	4,177.42	4,144.48	9.30	11.33	-168.77	-466.20	-92.57	477.58	463.31	14.27	33.470	
4,300.00	4,300.00	4,279.99	4,245.61	9.52	11.69	-167.08	-472.68	-108.43	487.09	472.47	14.62	33.311	
4,400.00	4,400.00	4,381.42	4,345.83	9.75	12.02	-165.61	-478.76	-122.86	496.34	481.38	14.96	33.176	
4,500.00	4,500.00	4,483.69	4,447.04	9.97	12.34	-164.30	-484.56	-136.24	505.28	489.98	15.30	33.033	
4,600.00	4,600.00	4,587.41	4,549.75	10.20	12.66	-162.99	-489.63	-149.82	513.71	498.08	15.63	32.861	
4,700.00	4,700.00	4,689.52	4,650.93	10.42	12.98	-161.74	-493.74	-162.92	521.47	505.51	15.96	32.669	
4,800.00	4,800.00	4,787.52	4,748.03	10.65	13.28	-160.55	-497.48	-175.63	529.32	513.04	16.28	32.515	

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

Devon Energy

Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 118H
Project:	PBNM	TVD Reference:	RKB @ 3674.60ft
Reference Site:	Norwalk	MD Reference:	RKB @ 3674.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 118H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000 US Production
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Norwalk - Thistle Unit 47H - ST01 - ST01												Offset Site Error:	0.00 ft
Survey Program: 100-MWD												Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	
4,900.00	4,900.00	4,882.65	4,842.26	10.87	13.58	-159.45	-501.59	-188.07	537.91	521.33	16.58	32.435	
5,000.00	5,000.00	4,969.75	4,928.41	11.10	13.87	-158.46	-506.43	-199.89	548.05	531.19	16.86	32.505	
5,100.00	5,100.00	5,061.74	5,018.98	11.32	14.20	-157.27	-512.55	-214.74	560.37	543.22	17.16	32.661	
5,200.00	5,200.00	5,162.50	5,117.99	11.55	14.57	-155.89	-519.04	-232.34	573.35	555.86	17.49	32.779	
5,300.00	5,300.00	5,268.38	5,222.22	11.77	14.95	-154.56	-525.21	-249.86	585.68	567.84	17.84	32.822	
5,400.00	5,400.00	5,376.45	5,328.67	12.00	15.34	-153.15	-529.55	-268.02	596.78	578.58	18.20	32.792	
5,500.00	5,500.00	5,479.23	5,429.86	12.22	15.70	-151.74	-531.83	-285.83	606.87	588.34	18.53	32.751	
5,600.00	5,600.00	5,578.65	5,527.83	12.45	16.05	-150.46	-534.03	-302.59	617.05	598.20	18.85	32.739	
5,700.00	5,700.00	5,676.01	5,623.85	12.67	16.38	-149.29	-536.36	-318.57	627.45	608.29	19.16	32.754	
5,800.00	5,800.00	5,759.87	5,706.47	12.90	16.68	-148.35	-539.46	-332.57	639.36	619.95	19.41	32.932	
5,900.00	5,900.00	5,857.24	5,802.28	13.12	17.04	-147.34	-544.57	-349.11	652.93	633.21	19.72	33.104	
6,000.00	6,000.00	5,954.87	5,898.42	13.35	17.39	-146.41	-549.94	-365.28	666.68	646.64	20.03	33.280	
6,100.00	6,100.00	6,055.81	5,997.89	13.57	17.75	-145.54	-555.83	-381.38	680.50	660.15	20.35	33.435	
6,200.00	6,200.00	6,164.55	6,105.16	13.80	18.12	-144.63	-561.17	-398.40	693.56	672.86	20.70	33.504	
6,300.00	6,300.00	6,272.07	6,211.43	14.02	18.48	-143.76	-565.17	-414.23	705.23	684.19	21.04	33.520	
6,400.00	6,400.00	6,372.63	6,310.95	14.24	18.81	-143.04	-568.95	-428.15	716.55	695.20	21.35	33.560	
6,500.00	6,500.00	6,466.77	6,404.17	14.47	19.11	-142.40	-572.47	-440.80	727.73	706.08	21.64	33.623	
6,600.00	6,600.00	6,551.61	6,487.86	14.69	19.40	-141.75	-576.21	-454.18	740.91	719.01	21.90	33.830	
6,700.00	6,700.00	6,653.45	6,588.23	14.92	19.77	-140.98	-580.90	-470.79	754.77	732.55	22.22	33.962	
6,800.00	6,800.00	6,756.09	6,689.53	15.14	20.13	-140.27	-585.49	-486.64	768.07	745.52	22.55	34.062	
6,900.00	6,900.00	6,857.45	6,789.63	15.37	20.47	-139.62	-590.13	-501.89	781.31	758.44	22.87	34.166	
7,000.00	7,000.00	6,959.65	6,890.63	15.59	20.82	-138.98	-594.26	-516.92	794.01	770.82	23.19	34.242	
7,100.00	7,100.00	7,061.66	6,991.40	15.82	21.16	-138.30	-597.60	-532.49	806.60	783.10	23.51	34.314	
7,200.00	7,200.00	7,149.65	7,078.31	16.04	21.46	-137.73	-600.52	-545.88	819.35	795.57	23.78	34.459	
7,300.00	7,300.00	7,242.31	7,169.67	16.27	21.79	-137.20	-605.30	-560.58	833.90	809.83	24.07	34.650	
7,400.00	7,400.00	7,346.98	7,272.97	16.49	22.15	-136.64	-610.59	-576.65	848.12	823.72	24.40	34.760	
7,500.00	7,500.00	7,452.39	7,377.11	16.72	22.51	-136.11	-615.59	-592.12	861.72	836.98	24.73	34.840	
7,600.00	7,600.00	7,538.36	7,462.03	16.94	22.81	-135.69	-619.61	-604.87	875.47	850.47	25.00	35.020	
7,700.00	7,700.00	7,633.48	7,555.74	17.17	23.15	-135.20	-624.66	-620.41	890.74	865.45	25.30	35.211	
7,800.00	7,800.00	7,741.14	7,661.94	17.39	23.53	-134.70	-630.40	-637.11	905.53	879.89	25.64	35.314	
7,900.00	7,900.00	7,859.02	7,778.58	17.62	23.92	-134.26	-636.33	-653.10	918.75	892.74	26.02	35.315	
8,000.00	8,000.00	7,946.02	7,864.73	17.84	24.20	-133.93	-640.16	-664.53	931.33	905.05	26.29	35.432	
8,100.00	8,100.00	8,041.02	7,958.61	18.07	24.51	-133.52	-644.32	-678.51	945.03	918.45	26.58	35.554	
8,200.00	8,200.00	8,136.40	8,052.71	18.29	24.84	-133.08	-648.47	-693.56	959.52	932.64	26.88	35.696	
8,300.00	8,300.00	8,242.85	8,157.86	18.52	25.21	-132.62	-652.97	-709.48	973.39	946.17	27.22	35.761	
8,400.00	8,400.00	8,324.99	8,238.90	18.74	25.49	-132.27	-656.55	-722.36	987.95	960.47	27.47	35.959	
8,500.00	8,500.00	8,431.36	8,343.76	18.96	25.87	-131.80	-661.34	-739.57	1,003.02	975.21	27.81	36.061	
8,600.00	8,600.00	8,542.53	8,453.56	19.19	26.26	-131.36	-665.96	-756.36	1,017.10	988.93	28.17	36.106	
8,700.00	8,700.00	8,639.98	8,549.93	19.41	26.59	-131.00	-669.65	-770.28	1,030.38	1,001.90	28.48	36.180	
8,800.00	8,800.00	8,727.47	8,636.29	19.64	26.89	-130.67	-673.41	-783.80	1,044.89	1,016.13	28.75	36.339	
8,900.00	8,900.00	8,837.60	8,745.01	19.86	27.27	-130.24	-677.67	-800.83	1,059.20	1,030.10	29.10	36.393	
9,000.00	9,000.00	8,931.00	8,837.34	20.09	27.59	-129.90	-681.14	-814.52	1,072.86	1,043.46	29.40	36.490	
9,100.00	9,100.00	9,015.33	8,920.47	20.31	27.88	-129.59	-684.89	-828.17	1,086.14	1,056.48	29.67	36.679	
9,131.04	9,131.04	9,048.56	8,953.22	20.38	28.00	-129.47	-686.40	-833.62	1,092.98	1,063.20	29.77	36.709	
9,150.00	9,150.00	9,068.86	8,973.23	20.43	28.07	-128.97	-687.30	-836.91	1,096.09	1,066.25	29.84	36.731	
9,200.00	9,199.83	9,133.81	9,037.34	20.54	28.30	-128.18	-690.10	-846.94	1,105.82	1,075.76	30.06	36.786	
9,250.00	9,249.15	9,195.62	9,098.51	20.65	28.51	-127.48	-692.59	-855.39	1,117.41	1,087.12	30.28	36.901	
9,300.00	9,297.56	9,246.49	9,148.91	20.76	28.67	-126.72	-694.59	-862.00	1,131.30	1,100.82	30.48	37.116	
9,350.00	9,344.71	9,293.51	9,195.52	20.87	28.82	-125.87	-696.37	-868.01	1,147.64	1,116.96	30.68	37.406	
9,400.00	9,390.23	9,336.79	9,238.39	20.98	28.95	-124.86	-697.80	-873.76	1,166.52	1,135.64	30.88	37.771	
9,450.00	9,433.78	9,376.57	9,277.77	21.08	29.08	-123.64	-698.93	-879.25	1,187.91	1,156.82	31.09	38.207	
9,500.00	9,475.02	9,410.70	9,311.54	21.20	29.19	-122.11	-699.95	-884.11	1,211.85	1,180.55	31.30	38.720	

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

Devon Energy

Anticollision Report

Company: WESTERN DIVISION
 Project: PBNM
 Reference Site: Norwalk
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 118H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 118H
 TVD Reference: RKB @ 3674.60ft
 MD Reference: RKB @ 3674.60ft
 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 Norwalk - Thistle Unit 47H - ST01 - ST01													Offset Site Error: 0.00 ft
Survey Program: 100-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (ft)	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
9,550.00	9,513.65	9,442.33	9,342.81	21.33	29.29	-120.29	-701.00	-888.70	1,238.28	1,206.77	31.51	39.297	
9,600.00	9,549.37	9,459.02	9,359.31	21.48	29.35	-117.70	-701.60	-891.17	1,267.14	1,235.45	31.69	39.982	
9,650.00	9,581.90	9,491.03	9,390.91	21.65	29.46	-115.26	-702.82	-896.11	1,298.18	1,266.25	31.94	40.649	
9,700.00	9,611.00	9,510.18	9,409.80	21.85	29.53	-111.96	-703.59	-899.24	1,331.37	1,299.22	32.15	41.411	
9,750.00	9,636.44	9,526.60	9,425.96	22.06	29.59	-108.08	-704.27	-902.03	1,366.42	1,334.06	32.37	42.219	
9,800.00	9,658.04	9,554.02	9,452.91	22.31	29.68	-104.30	-705.46	-906.90	1,403.16	1,370.54	32.62	43.010	
9,850.00	9,675.63	9,554.02	9,452.91	22.58	29.68	-98.61	-705.46	-906.90	1,441.03	1,408.23	32.80	43.934	
9,900.00	9,689.08	9,561.88	9,460.63	22.88	29.71	-92.89	-705.81	-908.33	1,480.00	1,446.99	33.01	44.841	
9,950.00	9,698.28	9,570.04	9,468.66	23.21	29.74	-86.86	-706.19	-909.80	1,519.69	1,486.48	33.21	45.754	
10,000.00	9,703.16	9,573.08	9,471.64	23.56	29.75	-80.37	-706.32	-910.34	1,559.82	1,526.41	33.41	46.692	
10,031.04	9,704.00	9,572.39	9,470.97	23.79	29.75	-76.20	-706.29	-910.22	1,584.81	1,551.29	33.52	47.284	
10,100.00	9,704.00	9,568.72	9,467.36	24.34	29.74	-75.98	-706.12	-909.56	1,640.84	1,607.09	33.75	48.617	
10,200.00	9,704.00	9,563.46	9,462.19	25.23	29.72	-75.66	-705.89	-908.62	1,723.75	1,689.68	34.07	50.591	
10,300.00	9,704.00	9,558.29	9,457.11	26.22	29.70	-75.35	-705.65	-907.68	1,808.38	1,774.01	34.37	52.610	
10,400.00	9,704.00	9,554.02	9,452.91	27.30	29.68	-75.09	-705.46	-906.90	1,894.49	1,859.84	34.66	54.666	
10,500.00	9,704.00	9,554.02	9,452.91	28.45	29.68	-75.09	-705.46	-906.90	1,981.91	1,946.98	34.93	56.737	
10,600.00	9,704.00	9,554.02	9,452.91	29.67	29.68	-75.09	-705.46	-906.90	2,070.46	2,035.27	35.19	58.841	
10,700.00	9,704.00	13,245.52	11,240.26	30.95	48.92	-136.64	1,194.76	-1,463.38	2,125.73	2,088.46	37.27	57.036	
10,800.00	9,704.00	13,321.50	11,240.89	32.29	49.72	-136.61	1,270.70	-1,465.70	2,128.21	2,089.64	38.58	55.168	
10,900.00	9,704.00	13,408.48	11,240.27	33.67	50.70	-136.49	1,357.49	-1,471.33	2,131.89	2,091.91	39.97	53.333	
11,000.00	9,704.00	13,530.84	11,237.30	35.10	52.18	-136.27	1,479.47	-1,480.52	2,135.07	2,093.58	41.50	51.453	
11,100.00	9,704.00	13,655.03	11,232.75	36.56	53.75	-136.02	1,603.27	-1,489.19	2,137.00	2,093.90	43.10	49.578	
11,200.00	9,704.00	13,735.20	11,230.13	38.05	54.75	-135.88	1,683.24	-1,494.26	2,138.86	2,094.19	44.66	47.888	
11,300.00	9,704.00	13,798.64	11,229.52	39.57	55.53	-135.80	1,746.56	-1,498.10	2,142.17	2,095.97	46.21	46.358	
11,400.00	9,704.00	13,871.47	11,230.43	41.12	56.43	-135.73	1,819.23	-1,502.75	2,147.22	2,099.45	47.77	44.951	
11,500.00	9,704.00	13,998.53	11,233.21	42.69	58.04	-135.66	1,946.07	-1,509.58	2,152.36	2,102.98	49.38	43.587	
11,600.00	9,704.00	14,119.42	11,236.02	44.28	59.60	-135.65	2,066.87	-1,513.27	2,155.89	2,104.89	50.99	42.278	
11,700.00	9,704.00	14,214.60	11,239.00	45.88	60.81	-135.68	2,161.99	-1,515.08	2,159.21	2,106.63	52.59	41.061	
11,800.00	9,704.00	14,308.20	11,242.51	47.51	62.02	-135.72	2,255.51	-1,516.64	2,162.82	2,108.64	54.18	39.921	
11,900.00	9,704.00	14,394.03	11,245.44	49.15	63.15	-135.74	2,341.26	-1,518.92	2,166.88	2,111.08	55.80	38.832	
12,000.00	9,704.00	14,489.93	11,247.93	50.80	64.45	-135.71	2,437.04	-1,522.94	2,171.43	2,113.95	57.48	37.778	
12,100.00	9,704.00	14,614.97	11,249.17	52.47	66.23	-135.62	2,561.90	-1,529.50	2,175.60	2,116.34	59.26	36.712	
12,200.00	9,704.00	14,790.03	11,248.13	54.14	68.76	-135.50	2,736.85	-1,535.43	2,177.30	2,116.18	61.12	35.624	
12,207.15	9,704.00	14,799.63	11,247.98	54.26	68.89	-135.50	2,746.44	-1,535.59	2,177.29	2,116.04	61.25	35.550	
12,300.00	9,704.00	14,885.03	11,247.20	55.83	70.09	-135.46	2,831.83	-1,536.89	2,177.44	2,114.57	62.87	34.636	
12,400.00	9,704.00	14,967.69	11,247.43	57.52	71.23	-135.46	2,914.48	-1,537.82	2,178.16	2,113.58	64.58	33.728	
12,500.00	9,704.00	15,048.61	11,248.34	59.23	72.36	-135.46	2,995.40	-1,538.82	2,179.59	2,113.30	66.30	32.875	
12,600.00	9,704.00	15,157.67	11,249.26	60.94	73.93	-135.44	3,104.43	-1,541.18	2,181.49	2,113.43	68.06	32.050	
12,700.00	9,704.00	15,317.11	11,246.52	62.65	76.31	-135.32	3,263.77	-1,545.40	2,182.06	2,112.11	69.95	31.196	
12,800.00	9,704.00	15,457.05	11,237.55	64.38	78.44	-135.08	3,403.34	-1,550.07	2,179.50	2,107.57	71.93	30.302	
12,900.00	9,704.00	15,556.04	11,230.93	66.11	79.92	-134.91	3,502.07	-1,552.75	2,176.43	2,102.58	73.86	29.468	
13,000.00	9,704.00	15,645.43	11,225.92	67.84	81.24	-134.79	3,591.30	-1,554.59	2,173.69	2,097.93	75.76	28.694	
13,100.00	9,704.00	15,735.03	11,221.66	69.58	82.57	-134.69	3,680.79	-1,555.89	2,171.16	2,093.51	77.65	27.962	
13,200.00	9,704.00	15,800.79	11,219.46	71.33	83.55	-134.63	3,746.50	-1,556.87	2,169.72	2,090.20	79.52	27.286	
13,229.27	9,704.00	15,830.03	11,219.04	71.84	83.99	-134.62	3,775.74	-1,557.39	2,169.73	2,089.67	80.06	27.100	
13,300.00	9,704.00	15,855.46	11,218.97	73.08	84.37	-134.61	3,801.16	-1,557.94	2,170.26	2,088.91	81.35	26.678	
13,400.00	9,704.00	15,924.03	11,220.19	74.83	85.40	-134.60	3,869.68	-1,560.01	2,173.17	2,090.02	83.16	26.134	
13,500.00	9,704.00	15,971.91	11,221.90	76.59	86.13	-134.60	3,917.50	-1,561.90	2,177.83	2,092.92	84.91	25.647	
13,600.00	9,704.00	16,069.70	11,225.93	78.35	87.64	-134.60	4,015.10	-1,566.34	2,183.70	2,096.95	86.75	25.173	
13,700.00	9,704.00	16,177.92	11,229.74	80.11	89.34	-134.59	4,123.16	-1,570.79	2,188.84	2,100.23	88.62	24.700	
13,800.00	9,704.00	16,272.73	11,233.58	81.88	90.82	-134.60	4,217.82	-1,574.39	2,194.15	2,103.71	90.44	24.260	
13,900.00	9,704.00	16,371.21	11,238.12	83.65	92.36	-134.63	4,316.14	-1,577.81	2,199.61	2,107.35	92.26	23.842	

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

Devon Energy

Anticollision Report

Company: WESTERN DIVISION
 Project: PBNM
 Reference Site: Norwalk
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 118H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 118H
 TVD Reference: RKB @ 3674.60ft
 MD Reference: RKB @ 3674.60ft
 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 Norwalk - Thistle Unit 47H - ST01 - ST01													Offset Site Error:	0.00 ft
Survey Program: 100-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 (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
14,000.00	9,704.00	16,380.03	11,238.53	85.42	92.50	-134.63	4,324.95	-1,578.11	2,206.96	2,113.11	93.85	23.515		
14,100.00	9,704.00	16,380.03	11,238.53	87.20	92.50	-134.63	4,324.95	-1,578.11	2,218.78	2,123.52	95.26	23.291		
14,200.00	9,704.00	16,380.03	11,238.53	88.98	92.50	-134.63	4,324.95	-1,578.11	2,235.02	2,138.52	96.49	23.162		
14,300.00	9,704.00	16,380.03	11,238.53	90.76	92.50	-134.63	4,324.95	-1,578.11	2,255.57	2,158.03	97.55	23.123 SF		
14,400.00	9,704.00	16,380.03	11,238.53	92.54	92.50	-134.63	4,324.95	-1,578.11	2,280.34	2,181.91	98.43	23.168		
14,500.00	9,704.00	16,380.03	11,238.53	94.32	92.50	-134.63	4,324.95	-1,578.11	2,309.17	2,210.03	99.14	23.293		
14,600.00	9,704.00	16,380.03	11,238.53	96.11	92.50	-134.63	4,324.95	-1,578.11	2,341.91	2,242.23	99.68	23.494		
14,700.00	9,704.00	16,380.03	11,238.53	97.90	92.50	-134.63	4,324.95	-1,578.11	2,378.42	2,278.34	100.08	23.766		
14,800.00	9,704.00	16,380.03	11,238.53	99.69	92.50	-134.63	4,324.95	-1,578.11	2,418.51	2,318.18	100.33	24.105		
14,900.00	9,704.00	16,380.03	11,238.53	101.48	92.50	-134.63	4,324.95	-1,578.11	2,462.01	2,361.56	100.45	24.509		
15,000.00	9,704.00	16,380.03	11,238.53	103.27	92.50	-134.63	4,324.95	-1,578.11	2,508.75	2,408.29	100.46	24.972		
15,100.00	9,704.00	16,380.03	11,238.53	105.06	92.50	-134.63	4,324.95	-1,578.11	2,558.54	2,458.18	100.36	25.493		
15,200.00	9,704.00	16,380.03	11,238.53	106.86	92.50	-134.63	4,324.95	-1,578.11	2,611.22	2,511.04	100.17	26.067		
15,300.00	9,704.00	16,380.03	11,238.53	108.65	92.50	-134.63	4,324.95	-1,578.11	2,666.60	2,566.70	99.90	26.692		
15,400.00	9,704.00	16,380.03	11,238.53	110.45	92.50	-134.63	4,324.95	-1,578.11	2,724.53	2,624.97	99.56	27.365		
15,500.00	9,704.00	16,380.03	11,238.53	112.25	92.50	-134.63	4,324.95	-1,578.11	2,784.85	2,685.68	99.17	28.083		
15,600.00	9,704.00	16,380.03	11,238.53	114.05	92.50	-134.63	4,324.95	-1,578.11	2,847.40	2,748.68	98.72	28.844		
15,700.00	9,704.00	16,380.03	11,238.53	115.85	92.50	-134.63	4,324.95	-1,578.11	2,912.05	2,813.82	98.23	29.645		
15,800.00	9,704.00	16,380.03	11,238.53	117.65	92.50	-134.63	4,324.95	-1,578.11	2,978.65	2,880.94	97.71	30.485		
15,900.00	9,704.00	16,380.03	11,238.53	119.46	92.50	-134.63	4,324.95	-1,578.11	3,047.07	2,949.91	97.16	31.361		
16,000.00	9,704.00	16,380.03	11,238.53	121.26	92.50	-134.63	4,324.95	-1,578.11	3,117.20	3,020.61	96.59	32.271		
16,100.00	9,704.00	16,380.03	11,238.53	123.07	92.50	-134.63	4,324.95	-1,578.11	3,188.93	3,092.92	96.01	33.214		
16,200.00	9,704.00	16,380.03	11,238.53	124.87	92.50	-134.63	4,324.95	-1,578.11	3,262.14	3,166.73	95.42	34.187		
16,300.00	9,704.00	16,380.03	11,238.53	126.68	92.50	-134.63	4,324.95	-1,578.11	3,336.75	3,241.93	94.82	35.190		
16,400.00	9,704.00	16,380.03	11,238.53	128.49	92.50	-134.63	4,324.95	-1,578.11	3,412.66	3,318.44	94.22	36.220		
16,500.00	9,704.00	16,380.03	11,238.53	130.29	92.50	-134.63	4,324.95	-1,578.11	3,489.77	3,396.16	93.62	37.277		
16,600.00	9,704.00	16,380.03	11,238.53	132.10	92.50	-134.63	4,324.95	-1,578.11	3,568.03	3,475.01	93.02	38.358		
16,700.00	9,704.00	16,380.03	11,238.53	133.91	92.50	-134.63	4,324.95	-1,578.11	3,647.35	3,554.92	92.43	39.462		
16,755.39	9,704.00	16,380.03	11,238.53	134.92	92.50	-134.63	4,324.95	-1,578.11	3,691.72	3,599.62	92.10	40.084		
16,755.39	9,704.00	16,380.03	11,238.53	134.92	92.50	-152.41	4,324.95	-1,578.11	3,691.72	3,599.62	92.09	40.087		

Devon Energy

Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 118H
Project:	PBNM	TVD Reference:	RKB @ 3674.60ft
Reference Site:	Norwalk	MD Reference:	RKB @ 3674.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 118H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000 US Production
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design Norwalk - Thistle Unit 48H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 ft
Survey Program: 141-MWD, 5315-MWD													Offset Well Error:	0.00 ft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (ft)	+E-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
0.00	0.00	0.00	0.00	0.00	0.00	133.27	-342.57	363.88	499.85					
100.00	100.00	93.04	93.04	0.08	0.09	133.22	-342.10	364.04	499.56	499.44	0.12	4,120.990		
200.00	200.00	192.69	192.68	0.31	0.25	133.04	-340.60	364.70	499.02	498.62	0.40	1,261.471		
300.00	300.00	296.49	296.44	0.53	0.47	132.75	-338.40	366.06	498.54	497.83	0.71	700.431		
400.00	400.00	394.92	394.84	0.76	0.67	132.54	-336.21	366.42	497.31	496.29	1.01	490.827		
500.00	500.00	493.66	493.57	0.98	0.87	132.37	-334.71	366.98	496.71	495.39	1.31	377.804		
600.00	600.00	591.23	591.14	1.21	1.08	132.22	-333.57	367.57	496.36	494.74	1.62	306.726		
620.94	620.94	611.84	611.74	1.26	1.12	132.19	-333.35	367.76	496.36	494.67	1.68	295.012		
700.00	700.00	690.16	690.05	1.43	1.29	132.07	-332.59	368.53	496.42	494.49	1.93	257.693		
800.00	800.00	790.53	790.42	1.66	1.50	131.93	-331.76	369.39	496.50	494.27	2.23	222.187		
900.00	900.00	888.41	888.29	1.88	1.71	131.81	-331.21	370.30	496.82	494.28	2.54	195.564		
1,000.00	1,000.00	988.60	988.48	2.11	1.92	131.75	-331.14	371.02	497.31	494.46	2.85	174.460		
1,100.00	1,100.00	1,088.76	1,088.63	2.33	2.13	131.74	-331.39	371.42	497.77	494.61	3.16	157.541		
1,200.00	1,200.00	1,189.40	1,189.27	2.56	2.34	131.74	-331.65	371.68	498.13	494.67	3.47	143.683		
1,300.00	1,300.00	1,290.05	1,289.92	2.78	2.55	131.75	-331.87	371.83	498.39	494.62	3.77	132.027		
1,400.00	1,400.00	1,391.15	1,391.03	3.01	2.77	131.78	-332.10	371.72	498.46	494.37	4.08	122.027		
1,500.00	1,500.00	1,496.29	1,496.16	3.23	2.98	131.78	-331.85	371.42	498.10	493.70	4.40	113.257		
1,600.00	1,600.00	1,600.78	1,600.64	3.46	3.20	131.69	-330.09	370.61	496.39	491.68	4.71	105.355		
1,700.00	1,700.00	1,699.58	1,699.41	3.68	3.41	131.66	-328.59	369.36	494.44	489.42	5.02	98.505		
1,800.00	1,800.00	1,797.65	1,797.47	3.91	3.62	131.64	-327.51	368.31	492.91	487.59	5.32	92.605		
1,900.00	1,900.00	1,896.41	1,896.22	4.13	3.82	131.60	-326.41	367.67	491.69	486.07	5.63	87.402		
2,000.00	2,000.00	1,996.52	1,996.33	4.35	4.03	131.59	-325.61	366.92	490.60	484.67	5.93	82.672		
2,100.00	2,100.00	2,098.09	2,097.89	4.58	4.25	131.64	-325.12	365.63	489.33	483.08	6.25	78.332		
2,200.00	2,200.00	2,200.09	2,199.87	4.80	4.47	131.72	-324.47	363.95	487.68	481.12	6.56	74.363		
2,300.00	2,300.00	2,302.53	2,302.29	5.03	4.68	131.79	-323.46	361.93	485.54	478.68	6.87	70.691		
2,400.00	2,400.00	2,402.87	2,402.60	5.25	4.89	131.84	-322.16	359.86	483.14	475.97	7.17	67.346		
2,500.00	2,500.00	2,503.51	2,503.21	5.48	5.10	131.85	-320.55	357.90	480.63	473.15	7.48	64.261		
2,600.00	2,600.00	2,604.43	2,604.09	5.70	5.32	131.87	-318.90	355.81	477.99	470.20	7.79	61.366		
2,700.00	2,700.00	2,706.64	2,706.26	5.93	5.54	131.90	-317.04	353.31	474.95	466.85	8.10	58.623		
2,800.00	2,800.00	2,808.19	2,807.74	6.15	5.76	131.89	-314.61	350.81	471.52	463.11	8.41	56.054		
2,900.00	2,900.00	2,909.46	2,908.95	6.38	5.98	131.86	-311.91	348.13	467.78	459.05	8.72	53.629		
3,000.00	3,000.00	3,008.30	3,007.71	6.60	6.19	131.77	-308.84	345.74	463.90	454.87	9.03	51.380		
3,100.00	3,100.00	3,105.05	3,104.39	6.83	6.39	131.56	-305.41	344.51	460.60	451.27	9.33	49.365		
3,200.00	3,200.00	3,204.69	3,203.97	7.05	6.60	131.32	-302.16	343.69	457.82	448.19	9.64	47.509		
3,300.00	3,300.00	3,305.43	3,304.65	7.28	6.82	131.08	-298.74	342.67	454.82	444.87	9.95	45.727		
3,400.00	3,400.00	3,406.84	3,405.97	7.50	7.04	130.73	-294.55	342.06	451.66	441.40	10.26	44.035		
3,500.00	3,500.00	3,504.70	3,503.71	7.73	7.25	130.26	-289.71	342.05	448.44	437.87	10.56	42.453		
3,600.00	3,600.00	3,603.16	3,602.05	7.95	7.46	129.74	-284.87	342.69	445.78	434.91	10.87	41.012		
3,700.00	3,700.00	3,702.14	3,700.92	8.18	7.67	129.20	-280.18	343.48	443.38	432.20	11.18	39.669		
3,800.00	3,800.00	3,799.04	3,797.71	8.40	7.88	128.68	-275.84	344.55	441.42	429.94	11.48	38.443		
3,900.00	3,900.00	3,897.15	3,895.73	8.63	8.09	128.18	-272.03	345.93	440.10	428.31	11.79	37.328		
4,000.00	4,000.00	3,994.03	3,992.58	8.85	8.29	127.66	-269.63	346.85	439.33	427.23	12.09	36.323		
4,100.00	4,100.00	4,092.70	4,091.24	9.07	8.50	127.69	-268.43	347.48	439.08	426.68	12.40	35.407		
4,200.00	4,200.00	4,193.47	4,192.01	9.30	8.71	127.57	-267.61	347.87	438.89	426.18	12.71	34.528		
4,298.82	4,298.82	4,291.09	4,289.62	9.52	8.92	127.44	-266.64	348.25	438.60	425.59	13.01	33.703 CC		
4,300.00	4,300.00	4,292.11	4,290.64	9.52	8.92	127.44	-266.63	348.25	438.60	425.58	13.02	33.695 ES		
4,400.00	4,400.00	4,376.04	4,374.55	9.75	9.09	127.27	-266.42	350.05	440.20	426.91	13.29	33.122		
4,500.00	4,500.00	4,460.38	4,458.76	9.97	9.26	127.05	-267.63	354.56	445.38	431.83	13.55	32.868		
4,600.00	4,600.00	4,548.20	4,546.21	10.20	9.43	126.73	-270.21	362.07	453.98	440.17	13.81	32.867		
4,700.00	4,700.00	4,651.99	4,649.46	10.42	9.64	126.31	-273.48	372.15	463.67	449.54	14.14	32.803		
4,800.00	4,800.00	4,748.23	4,745.24	10.65	9.84	125.91	-276.07	381.19	472.86	458.43	14.43	32.769		
4,900.00	4,900.00	4,844.42	4,840.90	10.87	10.03	125.57	-279.36	390.65	482.85	468.13	14.72	32.795		

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

Devon Energy

Anticollision Report

Company: WESTERN DIVISION
 Project: PBNM
 Reference Site: Norwalk
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 118H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 118H
 TVD Reference: RKB @ 3674.60ft
 MD Reference: RKB @ 3674.60ft
 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 Norwalk - Thistle Unit 48H - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 ft
Survey Program: 141-MWD, 5315-MWD													Offset Well Error: 0.00 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
5,000.00	5,000.00	4,944.89	4,940.81	11.10	10.24	125.29	-283.38	400.45	493.12	478.08	15.03	32.799	
5,100.00	5,100.00	5,056.53	5,051.98	11.32	10.48	124.98	-286.89	410.06	501.96	486.57	15.39	32.622	
5,200.00	5,200.00	5,161.97	5,157.14	11.55	10.67	124.76	-289.61	417.31	509.07	493.38	15.69	32.438	
5,300.00	5,300.00	5,265.30	5,260.25	11.77	10.79	124.61	-292.20	423.40	515.34	499.40	15.94	32.329	
5,400.00	5,400.00	5,367.25	5,362.04	12.00	10.85	124.55	-295.04	428.45	521.00	504.85	16.15	32.264	
5,500.00	5,500.00	5,467.89	5,462.49	12.22	10.86	124.83	-300.20	431.54	526.45	510.13	16.32	32.257	
5,600.00	5,600.00	5,571.48	5,565.75	12.45	10.87	125.51	-308.46	432.22	531.59	515.09	16.50	32.221	
5,700.00	5,700.00	5,687.16	5,680.77	12.67	10.88	126.74	-320.02	428.76	535.12	518.43	16.69	32.062	
5,800.00	5,800.00	5,788.72	5,781.60	12.90	10.90	128.03	-330.66	422.82	536.84	519.97	16.87	31.818	
5,900.00	5,900.00	5,894.74	5,886.88	13.12	10.92	129.36	-341.20	415.96	538.01	520.94	17.06	31.532	
6,000.00	6,000.00	5,995.56	5,987.04	13.35	10.94	130.58	-350.44	409.12	538.70	521.45	17.25	31.225	
6,100.00	6,100.00	6,095.81	6,086.68	13.57	10.97	131.75	-359.23	402.43	539.46	522.01	17.45	30.919	
6,200.00	6,200.00	6,196.64	6,186.99	13.80	11.01	132.84	-367.29	396.06	540.17	522.52	17.65	30.609	
6,300.00	6,300.00	6,296.77	6,286.63	14.02	11.06	133.88	-374.92	389.88	540.92	523.07	17.85	30.300	
6,400.00	6,400.00	6,393.56	6,382.95	14.24	11.11	134.88	-382.29	383.89	541.83	523.77	18.06	30.003	
6,500.00	6,500.00	6,487.98	6,476.78	14.47	11.17	135.98	-391.04	377.93	544.00	525.73	18.27	29.780	
6,600.00	6,600.00	6,587.55	6,575.62	14.69	11.24	137.20	-401.01	371.31	546.72	528.24	18.48	29.577	
6,700.00	6,700.00	6,687.81	6,675.19	14.92	11.32	138.41	-410.80	364.64	549.51	530.80	18.71	29.374	
6,800.00	6,800.00	6,787.39	6,774.13	15.14	11.40	139.54	-420.11	358.34	552.43	533.50	18.93	29.179	
6,900.00	6,900.00	6,887.93	6,874.08	15.37	11.49	140.61	-429.09	352.37	555.49	536.32	19.16	28.988	
7,000.00	7,000.00	6,988.31	6,973.91	15.59	11.59	141.65	-437.76	346.37	558.47	539.08	19.40	28.792	
7,100.00	7,100.00	7,088.26	7,073.27	15.82	11.69	142.72	-446.59	339.98	561.54	541.91	19.63	28.601	
7,200.00	7,200.00	7,188.94	7,173.15	16.04	11.80	143.96	-456.38	332.08	564.69	544.81	19.88	28.410	
7,300.00	7,300.00	7,288.73	7,272.14	16.27	11.92	145.20	-466.05	323.93	567.88	547.76	20.12	28.222	
7,400.00	7,400.00	7,388.09	7,370.73	16.49	12.04	146.39	-475.47	316.03	571.28	550.91	20.37	28.047	
7,500.00	7,500.00	7,487.09	7,469.01	16.72	12.17	147.53	-484.68	308.46	574.93	554.31	20.62	27.887	
7,600.00	7,600.00	7,585.25	7,566.50	16.94	12.30	148.61	-493.73	301.30	578.92	558.05	20.86	27.748	
7,700.00	7,700.00	7,684.92	7,665.49	17.17	12.43	149.67	-502.90	294.23	583.20	562.08	21.12	27.619	
7,800.00	7,800.00	7,786.91	7,766.86	17.39	12.58	150.69	-511.77	287.30	587.39	566.01	21.38	27.477	
7,900.00	7,900.00	7,886.44	7,865.85	17.62	12.72	151.61	-519.92	280.98	591.51	569.88	21.63	27.341	
8,000.00	8,000.00	7,983.81	7,962.71	17.84	12.86	152.48	-527.92	275.07	595.94	574.06	21.89	27.228	
8,100.00	8,100.00	8,080.23	8,058.44	18.07	13.01	153.48	-537.02	268.03	601.06	578.92	22.14	27.150	
8,200.00	8,200.00	8,180.33	8,157.71	18.29	13.17	154.59	-546.96	259.87	606.46	584.05	22.40	27.069	
8,300.00	8,300.00	8,281.03	8,257.65	18.52	13.34	155.63	-556.64	252.13	611.98	589.31	22.67	26.991	
8,400.00	8,400.00	8,379.34	8,355.27	18.74	13.51	156.60	-565.59	244.76	617.30	594.36	22.94	26.910	
8,500.00	8,500.00	8,471.05	8,446.14	18.96	13.67	157.61	-575.32	237.06	623.84	600.66	23.19	26.903	
8,600.00	8,600.00	8,568.16	8,542.24	19.19	13.86	158.69	-586.48	228.77	631.39	607.94	23.45	26.922	
8,700.00	8,700.00	8,669.13	8,642.21	19.41	14.06	159.78	-597.89	220.27	639.03	615.30	23.73	26.927	
8,800.00	8,800.00	8,771.28	8,743.43	19.64	14.26	160.79	-608.92	212.14	646.55	622.53	24.02	26.921	
8,900.00	8,900.00	8,873.19	8,844.56	19.86	14.47	161.70	-619.09	204.70	653.70	629.40	24.30	26.902	
9,000.00	9,000.00	8,973.55	8,944.22	20.09	14.67	162.53	-628.70	197.87	660.75	636.17	24.58	26.884	
9,100.00	9,100.00	9,082.29	9,052.28	20.31	14.88	163.38	-638.39	190.56	667.34	642.46	24.88	26.827	
9,131.04	9,131.04	9,115.21	9,084.99	20.38	14.94	163.66	-641.07	187.94	669.07	644.10	24.97	26.799	
9,150.00	9,150.00	9,134.56	9,104.21	20.43	14.98	163.99	-642.63	186.38	670.41	645.39	25.02	26.795 SF	
9,200.00	9,199.83	9,185.19	9,154.51	20.54	15.08	164.34	-646.62	182.27	676.78	651.62	25.16	26.899	
9,250.00	9,249.15	9,235.09	9,204.10	20.65	15.18	164.66	-650.44	178.27	687.25	661.95	25.30	27.164	
9,300.00	9,297.56	9,283.90	9,252.65	20.76	15.28	164.92	-654.00	174.60	701.76	676.32	25.44	27.590	
9,350.00	9,344.71	9,333.19	9,301.70	20.87	15.37	165.14	-657.36	171.11	720.16	694.59	25.57	28.164	
9,400.00	9,390.23	9,380.66	9,348.97	20.98	15.46	165.27	-660.31	167.89	742.29	716.59	25.70	28.884	
9,450.00	9,433.78	9,422.93	9,391.07	21.08	15.54	165.27	-662.84	165.00	768.10	742.29	25.81	29.755	
9,500.00	9,475.02	9,462.63	9,430.59	21.20	15.62	165.15	-665.23	162.13	797.51	771.59	25.92	30.767	
9,550.00	9,513.65	9,499.02	9,466.81	21.33	15.69	164.87	-667.44	159.43	830.32	804.30	26.02	31.911	

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

Devon Energy

Anticollision Report

Company: WESTERN DIVISION
 Project: PBNM
 Reference Site: Norwalk
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 118H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 118H
 TVD Reference: RKB @ 3674.60ft
 MD Reference: RKB @ 3674.60ft
 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 Norwalk - Thistle Unit 48H - Wellbore #1 - Wellbore #1													Offset Site Error:	0.00 ft
Survey Program: 141-MWD, 5315-MWD													Offset Well Error:	0.00 ft
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Semi Major Axis Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
9,600.00	9,549.37	9,532.20	9,499.85	21.48	15.75	164.35	-669.44	157.04	866.30	840.19	26.11	33.180		
9,650.00	9,581.90	9,562.08	9,529.60	21.65	15.80	163.52	-671.24	154.97	905.16	878.97	26.19	34.562		
9,700.00	9,611.00	9,589.37	9,556.78	21.85	15.85	162.28	-672.86	153.15	946.59	920.33	26.26	36.046		
9,750.00	9,636.44	9,613.15	9,580.47	22.06	15.90	160.40	-674.24	151.65	990.25	963.93	26.32	37.620		
9,800.00	9,658.04	9,632.95	9,600.21	22.31	15.94	157.47	-675.36	150.46	1,035.81	1,009.43	26.37	39.274		
9,850.00	9,675.63	9,648.59	9,615.80	22.58	15.96	152.67	-676.23	149.56	1,082.91	1,056.49	26.41	40.997		
9,900.00	9,689.08	9,659.91	9,627.08	22.88	15.99	144.11	-676.85	148.93	1,131.20	1,104.76	26.44	42.778		
9,950.00	9,698.28	9,666.34	9,633.49	23.21	16.00	126.92	-677.20	148.58	1,180.31	1,153.85	26.46	44.605		
10,000.00	9,703.16	9,668.41	9,635.55	23.56	16.00	93.03	-677.31	148.47	1,229.86	1,203.39	26.47	46.462		
10,031.04	9,704.00	9,667.60	9,634.75	23.79	16.00	67.67	-677.27	148.51	1,260.68	1,234.21	26.47	47.624		
10,100.00	9,704.00	9,662.00	9,629.16	24.34	15.99	65.86	-676.97	148.81	1,329.12	1,302.65	26.47	50.215		
10,200.00	9,704.00	9,658.50	9,625.67	25.23	15.98	64.77	-676.78	149.01	1,428.43	1,401.96	26.47	53.958		
10,300.00	9,704.00	9,652.64	9,619.83	26.22	15.97	62.98	-676.46	149.33	1,527.82	1,501.34	26.47	57.708		
10,400.00	9,704.00	12,777.08	11,228.21	27.30	29.03	-179.07	930.43	-28.11	1,533.65	1,507.71	25.94	59.117		
10,500.00	9,704.00	12,875.43	11,229.60	28.45	30.39	-178.92	1,028.67	-32.50	1,535.13	1,508.66	26.46	58.011		
10,600.00	9,704.00	12,980.78	11,229.93	29.67	31.90	-178.75	1,133.91	-37.35	1,535.52	1,508.47	27.05	56.772		
10,700.00	9,704.00	13,060.27	11,230.68	30.95	33.06	-178.60	1,213.28	-41.66	1,536.60	1,509.07	27.53	55.821		
10,800.00	9,704.00	13,157.66	11,232.76	32.29	34.52	-178.40	1,310.48	-47.39	1,538.87	1,510.75	28.12	54.716		
10,900.00	9,704.00	13,288.82	11,234.00	33.67	36.56	-178.16	1,441.44	-54.36	1,539.99	1,511.06	28.93	53.226		
10,955.54	9,704.00	13,344.39	11,233.93	34.46	37.42	-178.07	1,496.95	-56.95	1,540.01	1,510.70	29.30	52.557		
11,000.00	9,704.00	13,379.00	11,233.89	35.10	37.96	-178.02	1,531.53	-58.52	1,540.05	1,510.51	29.54	52.133		
11,100.00	9,704.00	13,452.48	11,234.67	36.56	39.07	-177.91	1,604.92	-61.76	1,541.34	1,511.26	30.07	51.254		
11,200.00	9,704.00	13,590.87	11,236.80	38.05	41.24	-177.74	1,743.20	-66.90	1,543.20	1,512.19	31.00	49.775		
11,300.00	9,704.00	13,716.44	11,235.00	39.57	43.25	-177.65	1,868.73	-69.73	1,541.74	1,509.86	31.88	48.359		
11,400.00	9,704.00	13,793.47	11,233.92	41.12	44.46	-177.60	1,945.73	-71.09	1,540.47	1,507.99	32.48	47.422		
11,411.02	9,704.00	13,800.46	11,233.91	41.29	44.57	-177.60	1,952.72	-71.26	1,540.46	1,507.92	32.54	47.336		
11,500.00	9,704.00	13,850.00	11,234.31	42.69	45.34	-177.55	2,002.23	-72.79	1,541.42	1,508.45	32.97	46.750		
11,600.00	9,704.00	13,945.00	11,236.69	44.28	46.86	-177.41	2,097.11	-76.94	1,544.11	1,510.39	33.72	45.797		
11,700.00	9,704.00	14,028.66	11,239.80	45.88	48.21	-177.27	2,180.60	-81.27	1,547.97	1,513.56	34.40	44.994		
11,800.00	9,704.00	14,152.47	11,243.40	47.51	50.23	-177.04	2,304.18	-87.97	1,551.12	1,515.75	35.37	43.853		
11,900.00	9,704.00	14,276.60	11,245.18	49.15	52.28	-176.78	2,428.06	-95.59	1,552.89	1,516.53	36.36	42.710		
12,000.00	9,704.00	14,429.84	11,243.59	50.80	54.88	-176.47	2,581.03	-104.38	1,552.24	1,514.69	37.55	41.340		
12,100.00	9,704.00	14,547.89	11,238.99	52.47	56.89	-176.30	2,698.88	-109.19	1,548.48	1,509.97	38.51	40.206		
12,200.00	9,704.00	14,630.78	11,236.40	54.14	58.25	-176.21	2,781.70	-111.65	1,545.50	1,506.23	39.27	39.360		
12,300.00	9,704.00	14,721.80	11,233.88	55.83	59.74	-176.15	2,872.66	-113.56	1,542.88	1,502.81	40.08	38.499		
12,400.00	9,704.00	14,795.00	11,233.37	57.52	60.94	-176.10	2,945.85	-114.92	1,542.14	1,501.37	40.78	37.820		
12,500.00	9,704.00	14,935.80	11,231.37	59.23	63.28	-176.03	3,086.60	-117.24	1,540.92	1,499.00	41.93	36.754		
12,600.00	9,704.00	15,012.34	11,228.96	60.94	64.56	-175.96	3,163.08	-119.16	1,538.13	1,495.46	42.67	36.047		
12,625.63	9,704.00	15,023.95	11,228.82	61.38	64.75	-175.95	3,174.68	-119.56	1,537.88	1,495.08	42.81	35.925		
12,700.00	9,704.00	15,078.00	11,229.55	62.65	65.65	-175.87	3,228.67	-121.93	1,538.80	1,495.45	43.35	35.499		
12,800.00	9,704.00	15,078.00	11,229.55	64.38	65.65	-175.87	3,228.67	-121.93	1,542.88	1,499.36	43.52	35.454		
12,900.00	9,704.00	15,143.46	11,233.66	66.11	66.74	-175.76	3,293.90	-125.46	1,550.14	1,505.97	44.17	35.096		
13,000.00	9,704.00	15,230.89	11,243.01	67.84	68.21	-175.61	3,380.68	-130.50	1,561.07	1,516.06	45.01	34.686		
13,100.00	9,704.00	15,493.94	11,253.64	69.58	72.75	-175.31	3,643.18	-140.39	1,564.08	1,516.87	47.21	33.131		
13,200.00	9,704.00	15,656.83	11,249.89	71.33	75.58	-175.21	3,805.98	-143.35	1,561.87	1,513.32	48.55	32.168		
13,300.00	9,704.00	15,768.22	11,244.69	73.08	77.47	-175.13	3,917.23	-145.45	1,557.35	1,507.78	49.57	31.418		
13,400.00	9,704.00	15,862.14	11,239.85	74.83	79.06	-175.05	4,011.00	-147.61	1,552.40	1,501.91	50.49	30.747		
13,500.00	9,704.00	15,948.91	11,236.52	76.59	80.53	-174.95	4,097.66	-150.42	1,548.75	1,497.37	51.38	30.143		
13,600.00	9,704.00	16,077.08	11,229.25	78.35	82.71	-174.75	4,225.52	-155.45	1,543.20	1,490.67	52.54	29.372		
13,700.00	9,704.00	16,153.99	11,225.28	80.11	84.00	-174.63	4,302.26	-158.59	1,538.42	1,485.03	53.39	28.813		
13,800.00	9,704.00	16,233.00	11,222.60	81.88	85.31	-174.50	4,381.15	-162.18	1,535.38	1,481.12	54.27	28.294		
13,839.76	9,704.00	16,233.00	11,222.60	82.58	85.31	-174.50	4,381.15	-162.18	1,534.87	1,480.48	54.39	28.219		

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

Devon Energy

Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 118H
Project:	PBNM	TVD Reference:	RKB @ 3674.60ft
Reference Site:	Norwalk	MD Reference:	RKB @ 3674.60ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 118H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 ft	Output errors are at	2.00 sigma
Reference Wellbore	Wellbore #1	Database:	EDM r5000 US Production
Reference Design:	Design #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.00 ft
Norwalk - Thistle Unit 48H - Wellbore #1 - Wellbore #1													Offset Well Error:	0.00 ft
Survey Program: 141-MWD, 5315-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 (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning	
13,900.00	9,704.00	16,233.00	11,222.60	83.65	85.31	-174.50	4,381.15	-162.18	1,536.05	1,481.51	54.54	28.166		
14,000.00	9,704.00	16,233.00	11,222.60	85.42	85.31	-174.50	4,381.15	-162.18	1,543.21	1,488.55	54.65	28.235		
14,100.00	9,704.00	16,233.00	11,222.60	87.20	85.31	-174.50	4,381.15	-162.18	1,556.77	1,502.15	54.63	28.499		
14,200.00	9,704.00	16,233.00	11,222.60	88.98	85.31	-174.50	4,381.15	-162.18	1,576.57	1,522.12	54.46	28.952		
14,300.00	9,704.00	16,233.00	11,222.60	90.76	85.31	-174.50	4,381.15	-162.18	1,602.38	1,548.23	54.16	29.587		
14,400.00	9,704.00	16,233.00	11,222.60	92.54	85.31	-174.50	4,381.15	-162.18	1,633.92	1,580.17	53.75	30.398		
14,500.00	9,704.00	16,233.00	11,222.60	94.32	85.31	-174.50	4,381.15	-162.18	1,670.85	1,617.60	53.25	31.376		
14,600.00	9,704.00	16,233.00	11,222.60	96.11	85.31	-174.50	4,381.15	-162.18	1,712.83	1,660.15	52.68	32.513		
14,700.00	9,704.00	16,233.00	11,222.60	97.90	85.31	-174.50	4,381.15	-162.18	1,759.50	1,707.44	52.06	33.799		
14,800.00	9,704.00	16,233.00	11,222.60	99.69	85.31	-174.50	4,381.15	-162.18	1,810.49	1,759.09	51.40	35.226		
14,900.00	9,704.00	16,233.00	11,222.60	101.48	85.31	-174.50	4,381.15	-162.18	1,865.45	1,814.74	50.72	36.783		
15,000.00	9,704.00	16,233.00	11,222.60	103.27	85.31	-174.50	4,381.15	-162.18	1,924.05	1,874.02	50.03	38.461		
15,100.00	9,704.00	16,233.00	11,222.60	105.06	85.31	-174.50	4,381.15	-162.18	1,985.95	1,936.62	49.34	40.251		
15,200.00	9,704.00	16,233.00	11,222.60	106.86	85.31	-174.50	4,381.15	-162.18	2,050.87	2,002.21	48.66	42.144		
15,300.00	9,704.00	16,233.00	11,222.60	108.65	85.31	-174.50	4,381.15	-162.18	2,118.52	2,070.51	48.00	44.131		
15,400.00	9,704.00	16,233.00	11,222.60	110.45	85.31	-174.50	4,381.15	-162.18	2,188.64	2,141.28	47.37	46.205		
15,500.00	9,704.00	16,233.00	11,222.60	112.25	85.31	-174.50	4,381.15	-162.18	2,261.02	2,214.26	46.76	48.357		
15,600.00	9,704.00	16,233.00	11,222.60	114.05	85.31	-174.50	4,381.15	-162.18	2,335.43	2,289.26	46.17	50.580		
15,700.00	9,704.00	16,233.00	11,222.60	115.85	85.31	-174.50	4,381.15	-162.18	2,411.70	2,366.08	45.62	52.868		
15,800.00	9,704.00	16,233.00	11,222.60	117.65	85.31	-174.50	4,381.15	-162.18	2,489.65	2,444.56	45.09	55.213		
15,900.00	9,704.00	16,233.00	11,222.60	119.46	85.31	-174.50	4,381.15	-162.18	2,569.12	2,524.53	44.59	57.611		
16,000.00	9,704.00	16,233.00	11,222.60	121.26	85.31	-174.50	4,381.15	-162.18	2,649.99	2,605.86	44.13	60.056		
16,100.00	9,704.00	16,233.00	11,222.60	123.07	85.31	-174.50	4,381.15	-162.18	2,732.12	2,688.44	43.68	62.542		
16,200.00	9,704.00	16,233.00	11,222.60	124.87	85.31	-174.50	4,381.15	-162.18	2,815.41	2,772.14	43.27	65.065		
16,300.00	9,704.00	16,233.00	11,222.60	126.68	85.31	-174.50	4,381.15	-162.18	2,899.76	2,856.87	42.88	67.622		
16,400.00	9,704.00	16,233.00	11,222.60	128.49	85.31	-174.50	4,381.15	-162.18	2,985.07	2,942.55	42.52	70.208		
16,500.00	9,704.00	16,233.00	11,222.60	130.29	85.31	-174.50	4,381.15	-162.18	3,071.27	3,029.09	42.18	72.819		
16,600.00	9,704.00	16,233.00	11,222.60	132.10	85.31	-174.50	4,381.15	-162.18	3,158.28	3,116.42	41.86	75.453		
16,700.00	9,704.00	16,233.00	11,222.60	133.91	85.31	-174.50	4,381.15	-162.18	3,246.04	3,204.48	41.56	78.106		
16,755.39	9,704.00	16,233.00	11,222.60	134.92	85.31	-174.50	4,381.15	-162.18	3,294.95	3,253.55	41.40	79.583		
16,755.39	9,704.00	16,233.00	11,222.60	134.92	85.31	-177.31	4,381.15	-162.18	3,294.95	3,253.57	41.38	79.618		

Devon Energy

Anticollision Report

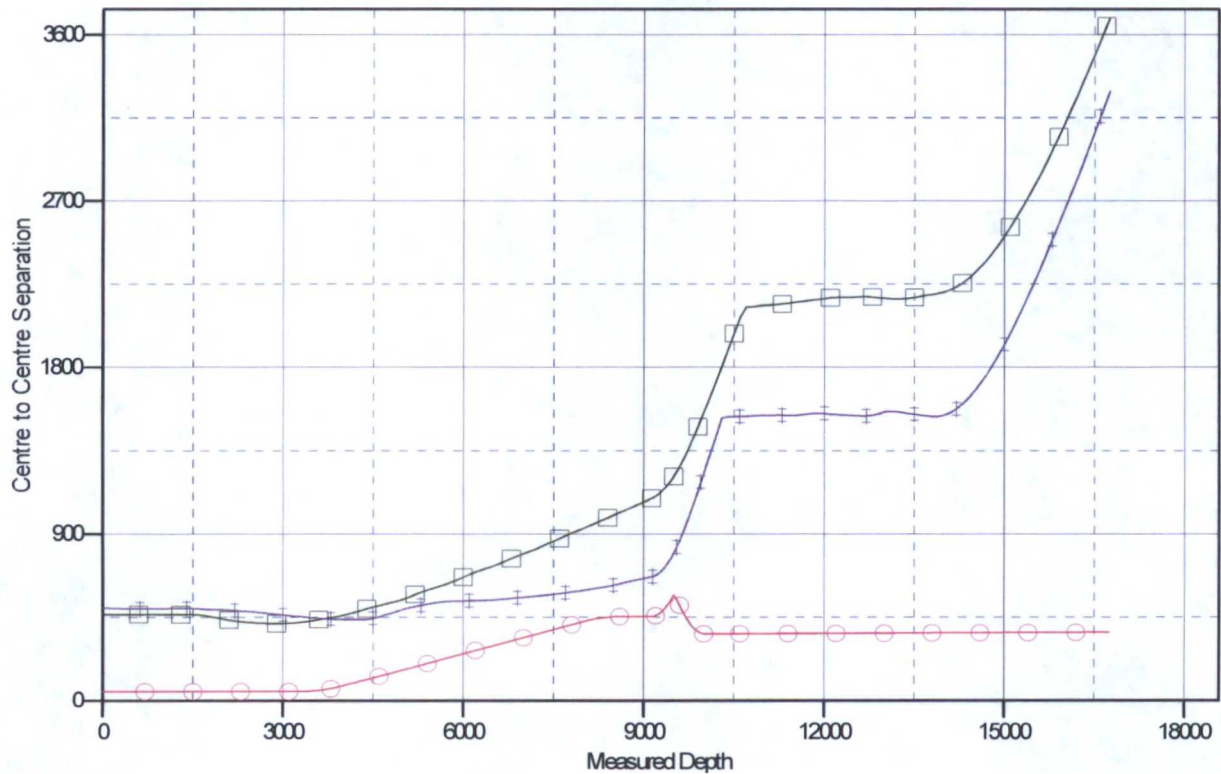
Company: WESTERN DIVISION
 Project: PBNM
 Reference Site: Norwalk
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 118H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 118H
 TVD Reference: RKB @ 3674.60ft
 MD Reference: RKB @ 3674.60ft
 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 RKB @ 3674.60ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Thistle Unit 118H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.41°

Ladder Plot



LEGEND

—○— Thistle Unit 131H, Wellbore #1, Design #1 V0
 —■— Thistle Unit 47H, ST01, ST01 V0
 —+— Thistle Unit 48H, Wellbore #1, Wellbore #1 V0

Devon Energy

Anticollision Report

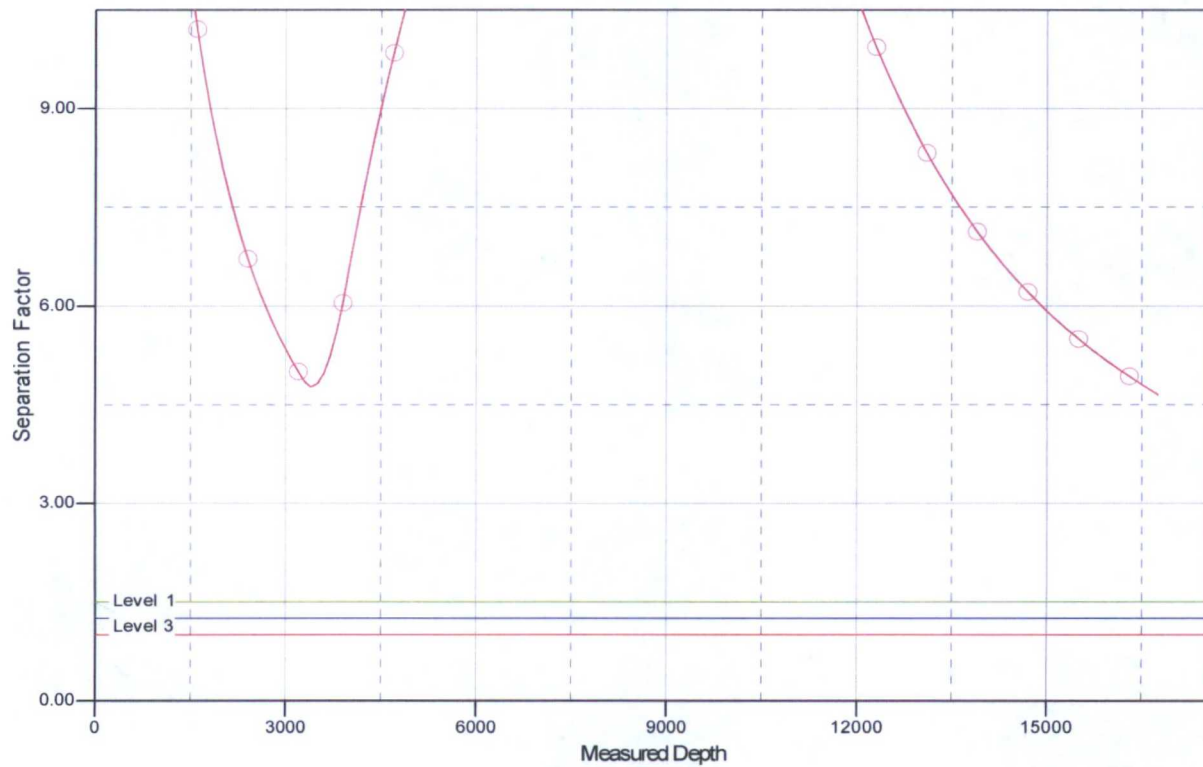
Company: WESTERN DIVISION
 Project: PBNM
 Reference Site: Norwalk
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 118H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 118H
 TVD Reference: RKB @ 3674.60ft
 MD Reference: RKB @ 3674.60ft
 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 RKB @ 3674.60ft
 Offset Depths are relative to Offset Datum
 Central Meridian is -104.333334

Coordinates are relative to: Thistle Unit 118H
 Coordinate System is US State Plane 1983, New Mexico Eastern Zone
 Grid Convergence at Surface is: 0.41°

Separation Factor Plot



LEGEND

—○— Thistle Unit131H, Wellbore #1, Design #1 V0
 —■— Thistle Unit47H, ST01, ST01 V0
 —■— Thistle Unit48H, Wellbore #1, Wellbore #1 V0