

WESTERN DIVISION

PBNM

Norwalk_Section 34

Thistle Unit 137H

Wellbore #1

Design #1

HOBBS OCD
DEC 05 2016
RECEIVED

Anticollision Report

05 October, 2016

Devon Energy

Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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 10/5/2016				
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.00	18,183.43	Design #1 (Wellbore #1)	MWD	MWD - Standard	

Summary						
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						
Norwalk_Section 34						
Thistle Unit 112H - Wellbore #1 - Design #1	3,200.00	3,202.10	58.32	45.04	4.391	CC, ES
Thistle Unit 112H - Wellbore #1 - Design #1	18,183.43	17,130.38	963.73	706.53	3.747	SF
Thistle Unit 113H - Wellbore #1 - Design #1	3,200.00	3,201.00	30.01	20.04	3.009	CC
Thistle Unit 113H - Wellbore #1 - Design #1	3,400.00	3,400.98	30.15	19.57	2.849	ES
Thistle Unit 113H - Wellbore #1 - Design #1	3,500.00	3,500.92	30.63	19.75	2.815	SF
Thistle Unit 132H - Wellbore #1 - Design #1	3,166.26	3,167.46	49.99	40.12	5.066	CC
Thistle Unit 132H - Wellbore #1 - Design #1	3,200.00	3,201.19	49.99	40.01	5.012	ES
Thistle Unit 132H - Wellbore #1 - Design #1	18,183.43	17,691.63	889.85	687.70	4.402	SF
Thistle Unit 49H_AC - Original - Actual	0.00	0.00	733.74			
Thistle Unit 49H_AC - Original - Actual	15,143.48	16,178.03	1,140.13	1,040.50	11.443	SF

Offset Design Norwalk_Section 34 - Thistle Unit 112H - Wellbore #1 - Design #1												
Survey Program: 0-MWD(OWSG)												
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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor
0.00	0.00	2.10	2.10	0.00	0.00	-59.36	29.73	-50.17	58.32			
100.00	100.00	102.10	102.10	0.08	0.14	-59.36	29.73	-50.17	58.32	58.15	0.17	353.250
200.00	200.00	202.10	202.10	0.31	0.50	-59.36	29.73	-50.17	58.32	57.73	0.59	99.153
300.00	300.00	302.10	302.10	0.53	0.86	-59.36	29.73	-50.17	58.32	57.31	1.01	57.669
400.00	400.00	402.10	402.10	0.76	1.22	-59.36	29.73	-50.17	58.32	56.88	1.43	40.658
500.00	500.00	502.10	502.10	0.98	1.58	-59.36	29.73	-50.17	58.32	56.46	1.86	31.397
600.00	600.00	602.10	602.10	1.21	1.93	-59.36	29.73	-50.17	58.32	56.04	2.28	25.572
700.00	700.00	702.10	702.10	1.43	2.29	-59.36	29.73	-50.17	58.32	55.62	2.70	21.570
800.00	800.00	802.10	802.10	1.66	2.65	-59.36	29.73	-50.17	58.32	55.19	3.13	18.651
900.00	900.00	902.10	902.10	1.88	3.01	-59.36	29.73	-50.17	58.32	54.77	3.55	16.428
1,000.00	1,000.00	1,002.10	1,002.10	2.11	3.37	-59.36	29.73	-50.17	58.32	54.35	3.97	14.679
1,100.00	1,100.00	1,102.10	1,102.10	2.33	3.73	-59.36	29.73	-50.17	58.32	53.92	4.40	13.266
1,200.00	1,200.00	1,202.10	1,202.10	2.56	4.09	-59.36	29.73	-50.17	58.32	53.50	4.82	12.101
1,300.00	1,300.00	1,302.10	1,302.10	2.78	4.44	-59.36	29.73	-50.17	58.32	53.08	5.24	11.125
1,400.00	1,400.00	1,402.10	1,402.10	3.01	4.80	-59.36	29.73	-50.17	58.32	52.65	5.67	10.294
1,500.00	1,500.00	1,502.10	1,502.10	3.23	5.16	-59.36	29.73	-50.17	58.32	52.23	6.09	9.578
1,600.00	1,600.00	1,602.10	1,602.10	3.46	5.52	-59.36	29.73	-50.17	58.32	51.81	6.51	8.956

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 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 112H - Wellbore #1 - Design #1		Offset Site Error: 0.00 ft	
Survey Program: 0-MWD(OWSG)													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				
1,700.00	1,700.00	1,702.10	1,702.10	3.68	5.88	-59.36	29.73	-50.17	58.32	51.38	6.93	8.410				
1,800.00	1,800.00	1,802.10	1,802.10	3.91	6.24	-59.36	29.73	-50.17	58.32	50.96	7.36	7.926				
1,900.00	1,900.00	1,902.10	1,902.10	4.13	6.59	-59.36	29.73	-50.17	58.32	50.54	7.78	7.495				
2,000.00	2,000.00	2,002.10	2,002.10	4.35	6.95	-59.36	29.73	-50.17	58.32	50.11	8.20	7.108				
2,100.00	2,100.00	2,102.10	2,102.10	4.58	7.31	-59.36	29.73	-50.17	58.32	49.69	8.63	6.760				
2,200.00	2,200.00	2,202.10	2,202.10	4.80	7.67	-59.36	29.73	-50.17	58.32	49.27	9.05	6.444				
2,300.00	2,300.00	2,302.10	2,302.10	5.03	8.03	-59.36	29.73	-50.17	58.32	48.85	9.47	6.156				
2,400.00	2,400.00	2,402.10	2,402.10	5.25	8.39	-59.36	29.73	-50.17	58.32	48.42	9.90	5.893				
2,500.00	2,500.00	2,502.10	2,502.10	5.48	8.75	-59.36	29.73	-50.17	58.32	48.00	10.32	5.651				
2,600.00	2,600.00	2,602.10	2,602.10	5.70	9.10	-59.36	29.73	-50.17	58.32	47.58	10.74	5.429				
2,700.00	2,700.00	2,702.10	2,702.10	5.93	9.46	-59.36	29.73	-50.17	58.32	47.15	11.17	5.223				
2,800.00	2,800.00	2,802.10	2,802.10	6.15	9.82	-59.36	29.73	-50.17	58.32	46.73	11.59	5.032				
2,900.00	2,900.00	2,902.10	2,902.10	6.38	10.18	-59.36	29.73	-50.17	58.32	46.31	12.01	4.855				
3,000.00	3,000.00	3,002.10	3,002.10	6.60	10.54	-59.36	29.73	-50.17	58.32	45.88	12.44	4.690				
3,100.00	3,100.00	3,102.10	3,102.10	6.83	10.90	-59.36	29.73	-50.17	58.32	45.46	12.86	4.535				
3,200.00	3,200.00	3,202.10	3,202.10	7.05	11.25	-59.36	29.73	-50.17	58.32	45.04	13.28	4.391	CC, ES			
3,300.00	3,300.00	3,302.10	3,302.10	7.26	11.61	-149.68	29.73	-50.17	58.88	45.19	13.70	4.299				
3,400.00	3,399.98	3,402.08	3,402.08	7.46	11.97	-150.61	29.73	-50.17	60.59	46.48	14.11	4.295				
3,500.00	3,499.92	3,502.02	3,502.02	7.66	12.33	-152.05	29.73	-50.17	63.46	48.94	14.51	4.372				
3,600.00	3,599.82	3,601.92	3,601.92	7.86	12.69	-153.86	29.73	-50.17	67.54	52.61	14.92	4.525				
3,700.00	3,699.64	3,701.74	3,701.74	8.07	13.05	-155.88	29.73	-50.17	72.87	57.53	15.33	4.752				
3,800.00	3,799.38	3,801.48	3,801.48	8.28	13.40	-157.98	29.73	-50.17	79.49	63.75	15.75	5.048				
3,900.00	3,899.02	3,901.12	3,901.12	8.50	13.76	-160.05	29.73	-50.17	87.43	71.27	16.16	5.411				
4,000.00	3,998.54	4,000.64	4,000.64	8.72	14.12	-162.01	29.73	-50.17	96.71	80.14	16.57	5.837				
4,100.00	4,097.92	4,100.02	4,100.02	8.94	14.47	-163.81	29.73	-50.17	107.33	90.35	16.98	6.320				
4,133.34	4,131.02	4,133.12	4,133.12	9.02	14.59	-164.38	29.73	-50.17	111.17	94.05	17.12	6.494				
4,200.00	4,197.18	4,199.28	4,199.28	9.18	14.83	-165.43	29.73	-50.17	119.01	101.62	17.39	6.843				
4,300.00	4,296.44	4,298.54	4,298.54	9.42	15.18	-166.77	29.73	-50.17	130.85	113.04	17.81	7.349				
4,400.00	4,395.69	4,397.79	4,397.79	9.66	15.54	-167.89	29.73	-50.17	142.75	124.53	18.22	7.835				
4,500.00	4,494.95	4,497.05	4,497.05	9.91	15.90	-168.84	29.73	-50.17	154.69	136.05	18.63	8.302				
4,600.00	4,594.20	4,596.30	4,596.30	10.16	16.25	-169.65	29.73	-50.17	166.66	147.61	19.05	8.750				
4,700.00	4,693.46	4,695.56	4,695.56	10.41	16.61	-170.35	29.73	-50.17	178.67	159.20	19.46	9.180				
4,800.00	4,792.71	4,794.81	4,794.81	10.67	16.96	-170.97	29.73	-50.17	190.69	170.82	19.88	9.593				
4,900.00	4,891.97	4,894.07	4,894.07	10.93	17.32	-171.51	29.73	-50.17	202.74	182.45	20.30	9.989				
5,000.00	4,991.22	4,993.32	4,993.32	11.19	17.68	-171.99	29.73	-50.17	214.80	194.09	20.71	10.371				
5,100.00	5,090.47	5,092.57	5,092.57	11.46	18.03	-172.42	29.73	-50.17	226.88	205.75	21.13	10.737				
5,200.00	5,189.73	5,191.83	5,191.83	11.73	18.39	-172.80	29.73	-50.17	238.97	217.42	21.55	11.090				
5,300.00	5,288.98	5,287.28	5,287.28	12.00	18.72	-173.16	29.73	-50.84	251.75	229.81	21.94	11.473				
5,400.00	5,388.24	5,381.97	5,381.94	12.27	19.05	-173.51	29.73	-53.06	266.17	243.85	22.32	11.923				
5,500.00	5,487.49	5,476.18	5,476.07	12.54	19.37	-173.87	29.73	-56.83	282.22	259.52	22.70	12.433				
5,600.00	5,586.75	5,569.86	5,569.60	12.82	19.70	-174.21	29.73	-62.11	299.89	276.82	23.07	13.001				
5,700.00	5,686.00	5,662.96	5,662.45	13.10	20.03	-174.54	29.73	-68.87	319.16	295.73	23.43	13.623				
5,800.00	5,785.26	5,758.72	5,757.86	13.38	20.37	-174.87	29.73	-77.09	339.74	315.93	23.81	14.268				
5,900.00	5,884.51	5,856.53	5,855.30	13.66	20.73	-175.16	29.73	-85.62	360.46	336.25	24.21	14.887				
6,000.00	5,983.77	5,954.35	5,952.74	13.94	21.08	-175.43	29.73	-94.14	381.18	356.57	24.62	15.485				
6,100.00	6,083.02	6,052.16	6,050.19	14.23	21.44	-175.66	29.73	-102.67	401.91	376.90	25.02	16.064				
6,200.00	6,182.28	6,149.98	6,147.63	14.51	21.80	-175.88	29.73	-111.19	422.65	397.23	25.42	16.624				
6,300.00	6,281.53	6,247.79	6,245.07	14.80	22.17	-176.07	29.73	-119.72	443.39	417.56	25.83	17.167				
6,400.00	6,380.78	6,345.61	6,342.52	15.09	22.53	-176.25	29.73	-128.24	464.14	437.91	26.23	17.692				
6,500.00	6,480.04	6,443.42	6,439.96	15.38	22.90	-176.41	29.73	-136.77	484.89	458.25	26.64	18.201				
6,600.00	6,579.29	6,541.24	6,537.40	15.66	23.27	-176.55	29.73	-145.29	505.64	478.60	27.05	18.694				
6,700.00	6,678.55	6,639.05	6,634.84	15.96	23.65	-176.69	29.73	-153.82	526.40	498.94	27.46	19.172				

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 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 112H - Wellbore #1 - Design #1													Offset Site Error:	0.00 ft
Survey Program: 0-MWD(QWSG)													Offset Well Error:	0.00 ft
Reference		Offset		Semi Major Axis			Distance		Minimum Separation		Separation Factor		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		
6,800.00	6,777.80	6,736.87	6,732.29	16.25	24.02	-176.82	29.73	-162.35	547.16	519.29	27.87	19.636		
6,900.00	6,877.06	6,834.68	6,829.73	16.54	24.40	-176.93	29.73	-170.87	567.92	539.65	28.27	20.086		
7,000.00	6,976.31	6,935.33	6,930.01	16.83	24.79	-177.04	29.73	-179.51	588.56	559.86	28.70	20.506		
7,100.00	7,075.57	7,038.73	7,033.09	17.13	25.19	-177.15	29.73	-187.56	608.41	579.27	29.15	20.875		
7,200.00	7,174.82	7,142.50	7,136.62	17.42	25.58	-177.24	29.73	-194.70	627.38	597.79	29.59	21.203		
7,300.00	7,274.08	7,246.63	7,240.56	17.72	25.97	-177.32	29.73	-200.93	645.46	615.43	30.03	21.492		
7,400.00	7,373.33	7,351.09	7,344.89	18.01	26.36	-177.39	29.73	-206.22	662.64	632.17	30.47	21.744		
7,500.00	7,472.59	7,455.88	7,449.59	18.31	26.75	-177.46	29.73	-210.58	678.93	648.01	30.92	21.960		
7,600.00	7,571.84	7,560.98	7,554.63	18.61	27.13	-177.52	29.73	-213.99	694.32	662.96	31.36	22.141		
7,700.00	7,671.09	7,666.37	7,659.99	18.91	27.50	-177.57	29.73	-216.44	708.79	676.99	31.80	22.290		
7,800.00	7,770.35	7,772.04	7,765.85	19.20	27.87	-177.62	29.73	-217.92	722.36	690.12	32.24	22.407		
7,900.00	7,869.60	7,877.97	7,871.57	19.50	28.24	-177.66	29.73	-218.43	735.01	702.33	32.68	22.492		
8,000.00	7,968.86	7,977.35	7,970.96	19.80	28.59	-177.70	29.73	-218.43	747.19	714.09	33.10	22.572		
8,100.00	8,068.11	8,076.61	8,070.21	20.10	28.94	-177.74	29.73	-218.43	759.37	725.84	33.52	22.651		
8,200.00	8,167.37	8,175.86	8,169.47	20.40	29.29	-177.78	29.73	-218.43	771.54	737.60	33.95	22.728		
8,300.00	8,266.62	8,275.12	8,268.72	20.70	29.64	-177.81	29.73	-218.43	783.72	749.35	34.37	22.802		
8,400.00	8,365.88	8,374.37	8,367.98	21.01	29.99	-177.84	29.73	-218.43	795.90	761.11	34.79	22.875		
8,500.00	8,465.13	8,473.63	8,467.23	21.31	30.34	-177.88	29.73	-218.43	808.08	772.86	35.22	22.945		
8,600.00	8,564.39	8,572.88	8,566.49	21.61	30.69	-177.91	29.73	-218.43	820.26	784.62	35.64	23.014		
8,633.34	8,597.47	8,605.97	8,599.57	21.71	30.80	-177.92	29.73	-218.43	824.32	788.54	35.78	23.037		
8,700.00	8,693.68	8,672.17	8,665.78	21.89	31.04	-177.94	29.73	-218.43	832.15	796.09	36.06	23.078		
8,800.00	8,793.10	8,771.60	8,765.20	22.12	31.39	-177.97	29.73	-218.43	842.81	806.35	36.46	23.115		
8,900.00	8,892.66	8,871.16	8,864.76	22.35	31.74	-177.99	29.73	-218.43	852.17	815.31	36.87	23.115		
9,000.00	8,992.34	8,970.83	8,964.44	22.56	32.09	-178.01	29.73	-218.43	860.23	822.96	37.27	23.081		
9,100.00	9,092.11	9,070.60	9,064.21	22.77	32.44	-178.03	29.73	-218.43	866.99	829.31	37.67	23.013		
9,200.00	9,191.96	9,169.37	9,161.96	22.97	32.79	-177.98	30.64	-218.43	872.48	834.41	38.07	22.918		
9,300.00	9,291.87	9,269.39	9,253.02	23.16	33.11	-177.18	43.17	-218.53	877.30	838.87	38.44	22.825		
9,400.00	9,391.83	9,369.39	9,353.30	23.35	33.40	-175.58	67.91	-218.71	882.27	843.50	38.77	22.756		
9,500.00	9,491.82	9,469.37	9,453.26	23.52	33.64	-173.50	100.38	-218.95	886.60	849.54	39.05	22.753		
9,566.67	9,528.49	9,499.54	9,483.42	23.63	33.78	-81.99	124.08	-219.13	894.26	855.06	39.20	22.812		
9,600.00	9,561.82	9,490.86	9,462.22	23.69	33.84	-81.22	136.14	-219.22	897.74	858.49	39.26	22.868		
9,700.00	9,661.82	9,550.02	9,508.53	23.88	34.02	-78.91	172.90	-219.49	911.91	872.56	39.36	23.170		
9,800.00	9,761.82	9,600.02	9,544.55	24.06	34.19	-76.76	207.56	-219.74	932.31	893.01	39.31	23.720		
9,900.00	9,861.82	9,639.21	9,570.58	24.25	34.36	-74.97	236.84	-219.96	959.44	920.38	39.05	24.567		
10,000.00	9,961.82	9,674.65	9,592.35	24.44	34.54	-73.30	264.79	-220.17	993.44	954.78	38.67	25.693		
10,100.00	10,061.82	9,700.02	9,606.85	24.63	34.69	-72.07	285.61	-220.32	1,034.17	996.08	38.08	27.155		
10,128.24	10,090.06	9,712.71	9,613.76	24.69	34.77	-71.45	296.26	-220.40	1,046.80	1,008.82	37.98	27.563		
10,150.00	10,111.81	9,718.65	9,616.91	24.73	34.81	-69.75	301.28	-220.44	1,056.77	1,018.92	37.85	27.921		
10,200.00	10,161.63	9,732.84	9,624.22	24.82	34.90	-66.70	313.45	-220.53	1,079.75	1,042.20	37.54	28.759		
10,250.00	10,210.90	9,750.02	9,632.67	24.92	35.02	-63.66	328.41	-220.64	1,102.62	1,065.35	37.27	29.587		
10,300.00	10,259.26	9,750.02	9,632.67	25.01	35.02	-61.40	328.41	-220.64	1,125.28	1,088.50	36.78	30.595		
10,350.00	10,306.32	9,779.21	9,645.99	25.10	35.25	-58.30	354.38	-220.83	1,147.00	1,110.35	36.65	31.294		
10,400.00	10,351.74	9,800.02	9,654.66	25.20	35.42	-55.74	373.29	-220.97	1,168.10	1,131.68	36.42	32.071		
10,450.00	10,395.17	9,800.02	9,654.66	25.29	35.42	-53.94	373.29	-220.97	1,188.30	1,152.34	35.96	33.046		
10,500.00	10,436.28	9,829.69	9,665.83	25.38	35.69	-51.62	400.78	-221.18	1,207.03	1,171.17	35.87	33.654		
10,550.00	10,474.75	9,850.02	9,672.66	25.48	35.87	-49.77	419.92	-221.32	1,224.60	1,188.92	35.67	34.327		
10,600.00	10,510.29	9,850.02	9,672.66	25.59	35.87	-48.47	419.92	-221.32	1,240.90	1,205.61	35.28	35.169		
10,650.00	10,542.64	9,882.84	9,682.23	25.70	36.20	-46.86	451.31	-221.55	1,255.17	1,219.88	35.29	35.566		
10,700.00	10,571.54	9,900.02	9,686.52	25.83	36.38	-45.70	467.95	-221.67	1,267.98	1,232.83	35.15	36.070		
10,750.00	10,596.77	9,919.24	9,690.72	25.98	36.59	-44.70	486.70	-221.81	1,279.01	1,243.93	35.08	36.460		
10,800.00	10,618.15	9,950.02	9,696.14	26.14	36.93	-43.81	516.99	-222.04	1,288.35	1,253.19	35.16	36.645		
10,850.00	10,635.52	9,950.02	9,696.14	26.34	36.93	-43.32	516.99	-222.04	1,295.51	1,260.53	34.98	37.037		

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_Section 34
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 137H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 137H
 TVD Reference: KB @ 3666.70ft
 MD Reference: KB @ 3666.70ft
 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_Section 34 - Thistle Unit 112H - Wellbore #1 - Design #1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD(CWSG)													Offset Well Error: 0.00 ft
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
10,900.00	10,848.72	9,974.70	9,999.31	26.56	37.23	-42.84	541.47	-222.22	1,300.78	1,265.69	35.09	37.069	
10,950.00	10,857.68	10,000.02	9,701.45	26.82	37.54	-42.55	566.69	-222.41	1,304.16	1,268.91	35.25	36.997	
11,000.00	10,862.32	10,011.96	9,702.08	27.11	37.69	-42.46	578.62	-222.49	1,305.43	1,270.08	35.35	36.931	
11,050.00	10,862.60	10,035.99	9,702.58	27.43	38.00	-42.52	602.63	-222.67	1,304.76	1,269.16	35.60	36.649	
11,075.86	10,861.04	10,047.39	9,702.58	27.60	38.16	-42.63	614.04	-222.76	1,303.55	1,267.80	35.75	36.462	
11,100.00	10,859.04	10,071.44	9,702.59	27.78	38.49	-42.69	638.09	-222.94	1,302.09	1,266.08	36.01	36.156	
11,200.00	10,850.73	10,171.10	9,702.59	28.56	39.98	-42.94	737.74	-223.67	1,296.07	1,258.88	37.20	34.845	
11,300.00	10,842.43	10,270.75	9,702.60	29.46	41.63	-43.20	837.40	-224.41	1,290.07	1,251.55	38.53	33.487	
11,400.00	10,834.13	10,370.41	9,702.60	30.44	43.44	-43.46	937.05	-225.15	1,284.10	1,244.11	40.00	32.106	
11,500.00	10,825.83	10,470.06	9,702.61	31.50	45.38	-43.72	1,036.70	-225.89	1,278.16	1,236.56	41.60	30.726	
11,600.00	10,817.53	10,569.72	9,702.62	32.63	47.44	-43.98	1,136.35	-226.63	1,272.24	1,228.92	43.32	29.368	
11,700.00	10,809.23	10,669.37	9,702.62	33.82	49.60	-44.24	1,236.00	-227.37	1,266.35	1,221.20	45.15	28.046	
11,800.00	10,800.92	10,769.02	9,702.63	35.07	51.86	-44.51	1,335.65	-228.10	1,260.49	1,213.40	47.09	26.770	
11,900.00	10,592.62	10,868.68	9,702.63	36.37	54.20	-44.78	1,435.30	-228.84	1,254.65	1,205.54	49.11	25.546	
12,000.00	10,584.32	10,968.33	9,702.64	37.72	56.60	-45.05	1,534.96	-229.58	1,248.85	1,197.62	51.23	24.379	
12,100.00	10,576.02	11,067.99	9,702.64	39.10	59.07	-45.32	1,634.61	-230.32	1,243.07	1,189.65	53.42	23.271	
12,200.00	10,567.72	11,167.64	9,702.65	40.52	61.59	-45.60	1,734.26	-231.06	1,237.32	1,181.64	55.68	22.221	
12,300.00	10,559.42	11,267.30	9,702.66	41.97	64.16	-45.88	1,833.91	-231.80	1,231.60	1,173.58	58.01	21.229	
12,400.00	10,551.12	11,366.95	9,702.66	43.45	66.78	-46.16	1,933.56	-232.54	1,225.90	1,165.49	60.41	20.293	
12,500.00	10,542.81	11,466.60	9,702.67	44.95	69.42	-46.45	2,033.21	-233.27	1,220.24	1,157.38	62.86	19.411	
12,600.00	10,534.51	11,566.26	9,702.67	46.48	72.11	-46.74	2,132.86	-234.01	1,214.61	1,149.24	65.38	18.579	
12,700.00	10,526.21	11,665.91	9,702.68	48.03	74.82	-47.03	2,232.52	-234.75	1,209.01	1,141.07	67.94	17.796	
12,800.00	10,517.91	11,765.57	9,702.69	49.60	77.56	-47.32	2,332.17	-235.49	1,203.44	1,132.89	70.55	17.058	
12,900.00	10,509.61	11,865.22	9,702.69	51.18	80.32	-47.61	2,431.82	-236.23	1,197.91	1,124.69	73.21	16.362	
13,000.00	10,501.31	11,964.88	9,702.70	52.79	83.11	-47.91	2,531.47	-236.97	1,192.40	1,116.48	75.92	15.707	
13,100.00	10,493.00	12,064.53	9,702.70	54.40	85.91	-48.21	2,631.12	-237.70	1,186.93	1,108.26	78.66	15.089	
13,200.00	10,484.70	12,164.18	9,702.71	56.03	88.73	-48.52	2,730.77	-238.44	1,181.49	1,100.03	81.45	14.505	
13,300.00	10,476.40	12,263.84	9,702.71	57.67	91.57	-48.82	2,830.43	-239.18	1,176.08	1,091.80	84.28	13.954	
13,400.00	10,468.10	12,363.49	9,702.72	59.32	94.42	-49.13	2,930.08	-239.92	1,170.71	1,083.56	87.15	13.433	
13,500.00	10,459.80	12,463.15	9,702.73	60.98	97.29	-49.44	3,029.73	-240.66	1,165.37	1,075.31	90.06	12.940	
13,600.00	10,451.50	12,562.80	9,702.73	62.65	100.16	-49.76	3,129.38	-241.40	1,160.07	1,067.07	93.00	12.474	
13,700.00	10,443.19	12,662.46	9,702.74	64.33	103.05	-50.08	3,229.03	-242.14	1,154.80	1,058.82	95.98	12.032	
13,800.00	10,434.89	12,762.11	9,702.74	66.02	105.95	-50.40	3,328.68	-242.87	1,149.57	1,050.58	98.99	11.613	
13,900.00	10,426.59	12,861.76	9,702.75	67.71	108.86	-50.72	3,428.33	-243.61	1,144.38	1,042.34	102.04	11.215	
14,000.00	10,418.29	12,961.42	9,702.76	69.41	111.77	-51.05	3,527.99	-244.35	1,139.22	1,034.10	105.12	10.838	
14,100.00	10,409.99	13,061.07	9,702.76	71.12	114.70	-51.38	3,627.64	-245.09	1,134.10	1,025.87	108.23	10.479	
14,200.00	10,401.69	13,160.73	9,702.77	72.84	117.63	-51.71	3,727.29	-245.83	1,129.02	1,017.64	111.37	10.137	
14,300.00	10,393.39	13,260.38	9,702.77	74.55	120.57	-52.05	3,826.94	-246.57	1,123.97	1,009.42	114.55	9.812	
14,400.00	10,385.08	13,360.04	9,702.78	76.28	123.51	-52.38	3,926.59	-247.31	1,118.97	1,001.21	117.75	9.503	
14,500.00	10,376.78	13,459.69	9,702.78	78.01	126.46	-52.73	4,026.24	-248.04	1,114.00	993.01	120.99	9.207	
14,600.00	10,368.48	13,559.34	9,702.79	79.74	129.42	-53.07	4,125.90	-248.78	1,109.08	984.82	124.26	8.926	
14,700.00	10,360.18	13,659.00	9,702.80	81.48	132.38	-53.42	4,225.55	-249.52	1,104.19	976.64	127.55	8.657	
14,800.00	10,351.88	13,758.65	9,702.80	83.22	135.35	-53.77	4,325.20	-250.26	1,099.35	968.47	130.88	8.400	
14,900.00	10,343.58	13,858.31	9,702.81	84.96	138.32	-54.12	4,424.85	-251.00	1,094.55	960.32	134.23	8.154	
15,000.00	10,335.27	13,957.96	9,702.81	86.71	141.29	-54.48	4,524.50	-251.74	1,089.79	952.18	137.61	7.919	
15,100.00	10,326.97	14,057.62	9,702.82	88.46	144.27	-54.84	4,624.15	-252.47	1,085.07	944.05	141.02	7.695	
15,200.00	10,318.67	14,157.27	9,702.83	90.22	147.26	-55.20	4,723.80	-253.21	1,080.39	935.94	144.45	7.479	
15,300.00	10,310.37	14,256.92	9,702.83	91.98	150.24	-55.57	4,823.46	-253.95	1,075.76	927.85	147.92	7.273	
15,400.00	10,302.07	14,356.58	9,702.84	93.74	153.23	-55.94	4,923.11	-254.69	1,071.18	919.77	151.41	7.075	
15,500.00	10,293.77	14,456.23	9,702.84	95.50	156.22	-56.31	5,022.76	-255.43	1,066.64	911.71	154.92	6.885	
15,600.00	10,285.47	14,555.89	9,702.85	97.26	159.22	-56.69	5,122.41	-256.17	1,062.14	903.68	158.47	6.703	
15,700.00	10,277.16	14,655.54	9,702.85	99.03	162.22	-57.06	5,222.06	-256.91	1,057.69	895.66	162.03	6.528	

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 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 112H - Wellbore #1 - Design #1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD(OWSG)														
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	
15,800.00	10,268.86	14,755.20	9,702.86	100.80	165.22	-57.45	5,321.71	-257.84	1,053.29	887.66	165.63	6.359		
15,900.00	10,260.56	14,854.85	9,702.87	102.57	168.22	-57.83	5,421.37	-258.38	1,048.94	879.69	169.25	6.198		
16,000.00	10,252.26	14,954.50	9,702.87	104.35	171.23	-58.22	5,521.02	-259.12	1,044.63	871.74	172.89	6.042		
16,100.00	10,243.96	15,054.16	9,702.88	106.12	174.23	-58.61	5,620.67	-259.86	1,040.37	863.82	176.56	5.893		
16,200.00	10,235.66	15,153.81	9,702.88	107.90	177.24	-59.01	5,720.32	-260.60	1,036.16	855.92	180.25	5.749		
16,300.00	10,227.35	15,253.47	9,702.89	109.68	180.26	-59.40	5,819.97	-261.34	1,032.00	848.04	183.96	5.610		
16,400.00	10,219.05	15,353.12	9,702.90	111.46	183.27	-59.80	5,919.62	-262.07	1,027.89	840.20	187.69	5.476		
16,500.00	10,210.75	15,452.78	9,702.90	113.24	186.29	-60.21	6,019.27	-262.81	1,023.83	832.38	191.45	5.348		
16,600.00	10,202.45	15,552.43	9,702.91	115.03	189.30	-60.62	6,118.93	-263.55	1,019.83	824.59	195.23	5.224		
16,700.00	10,194.15	15,652.08	9,702.91	116.81	192.32	-61.03	6,218.58	-264.29	1,015.87	816.84	199.04	5.104		
16,800.00	10,185.85	15,751.74	9,702.92	118.60	195.34	-61.44	6,318.23	-265.03	1,011.97	809.11	202.86	4.989		
16,900.00	10,177.54	15,851.39	9,702.93	120.39	198.36	-61.86	6,417.88	-265.77	1,008.12	801.42	206.70	4.877		
17,000.00	10,169.24	15,951.05	9,702.93	122.17	201.39	-62.28	6,517.53	-266.51	1,004.33	793.76	210.56	4.770		
17,100.00	10,160.94	16,050.70	9,702.94	123.96	204.41	-62.70	6,617.18	-267.24	1,000.59	786.14	214.45	4.666		
17,200.00	10,152.64	16,150.35	9,702.94	125.76	207.44	-63.13	6,716.84	-267.98	996.90	778.55	218.35	4.566		
17,300.00	10,144.34	16,250.01	9,702.95	127.55	210.47	-63.56	6,816.49	-268.72	993.27	771.01	222.27	4.469		
17,400.00	10,136.04	16,349.66	9,702.95	129.34	213.49	-63.99	6,916.14	-269.46	989.70	763.50	226.20	4.375		
17,500.00	10,127.74	16,449.32	9,702.96	131.14	216.52	-64.42	7,015.79	-270.20	986.18	756.03	230.16	4.285		
17,600.00	10,119.43	16,548.97	9,702.97	132.93	219.55	-64.86	7,115.44	-270.94	982.73	748.60	234.13	4.197		
17,700.00	10,111.13	16,648.63	9,702.97	134.73	222.59	-65.30	7,215.09	-271.68	979.33	741.22	238.11	4.113		
17,800.00	10,102.83	16,748.28	9,702.98	136.52	225.62	-65.75	7,314.74	-272.41	975.99	733.87	242.11	4.031		
17,900.00	10,094.53	16,847.93	9,702.98	138.32	228.65	-66.20	7,414.40	-273.15	972.70	726.58	246.12	3.952		
18,000.00	10,086.23	16,947.59	9,702.99	140.12	231.69	-66.65	7,514.05	-273.89	969.48	719.33	250.15	3.876		
18,100.00	10,077.93	17,047.24	9,703.00	141.92	234.72	-67.10	7,613.70	-274.63	966.32	712.13	254.19	3.802		
18,183.43	10,071.00	17,130.38	9,703.00	143.42	236.79	-67.48	7,696.84	-275.25	963.73	706.53	257.21	3.747 SF		

Devon Energy

Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 113H - Wellbore #1 - Design #1													Offset Well Error:	0.00 ft
Survey Program: 0-MWD														
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	
0.00	0.00	1.00	1.00	0.00	0.00	-0.47	30.01	-0.25	30.01					
100.00	100.00	101.00	101.00	0.08	0.09	-0.47	30.01	-0.25	30.01	29.89	0.12	248.461		
200.00	200.00	201.00	201.00	0.31	0.31	-0.47	30.01	-0.25	30.01	29.58	0.44	68.422		
300.00	300.00	301.00	301.00	0.53	0.54	-0.47	30.01	-0.25	30.01	29.26	0.76	39.674		
400.00	400.00	401.00	401.00	0.76	0.76	-0.47	30.01	-0.25	30.01	28.94	1.07	27.936		
500.00	500.00	501.00	501.00	0.98	0.99	-0.47	30.01	-0.25	30.01	28.62	1.39	21.558		
600.00	600.00	601.00	601.00	1.21	1.21	-0.47	30.01	-0.25	30.01	28.30	1.71	17.551		
700.00	700.00	701.00	701.00	1.43	1.44	-0.47	30.01	-0.25	30.01	27.99	2.03	14.800		
800.00	800.00	801.00	801.00	1.66	1.66	-0.47	30.01	-0.25	30.01	27.67	2.35	12.795		
900.00	900.00	901.00	901.00	1.88	1.88	-0.47	30.01	-0.25	30.01	27.35	2.66	11.268		
1,000.00	1,000.00	1,001.00	1,001.00	2.11	2.11	-0.47	30.01	-0.25	30.01	27.03	2.98	10.066		
1,100.00	1,100.00	1,101.00	1,101.00	2.33	2.33	-0.47	30.01	-0.25	30.01	26.71	3.30	9.097		
1,200.00	1,200.00	1,201.00	1,201.00	2.56	2.56	-0.47	30.01	-0.25	30.01	26.40	3.62	8.297		
1,300.00	1,300.00	1,301.00	1,301.00	2.78	2.78	-0.47	30.01	-0.25	30.01	26.08	3.94	7.627		
1,400.00	1,400.00	1,401.00	1,401.00	3.01	3.01	-0.47	30.01	-0.25	30.01	25.76	4.25	7.057		
1,500.00	1,500.00	1,501.00	1,501.00	3.23	3.23	-0.47	30.01	-0.25	30.01	25.44	4.57	6.566		
1,600.00	1,600.00	1,601.00	1,601.00	3.46	3.46	-0.47	30.01	-0.25	30.01	25.13	4.89	6.139		
1,700.00	1,700.00	1,701.00	1,701.00	3.68	3.68	-0.47	30.01	-0.25	30.01	24.81	5.21	5.765		
1,800.00	1,800.00	1,801.00	1,801.00	3.91	3.91	-0.47	30.01	-0.25	30.01	24.49	5.52	5.433		
1,900.00	1,900.00	1,901.00	1,901.00	4.13	4.13	-0.47	30.01	-0.25	30.01	24.17	5.84	5.137		
2,000.00	2,000.00	2,001.00	2,001.00	4.35	4.36	-0.47	30.01	-0.25	30.01	23.85	6.16	4.872		
2,100.00	2,100.00	2,101.00	2,101.00	4.58	4.58	-0.47	30.01	-0.25	30.01	23.54	6.48	4.633		
2,200.00	2,200.00	2,201.00	2,201.00	4.80	4.81	-0.47	30.01	-0.25	30.01	23.22	6.80	4.416		
2,300.00	2,300.00	2,301.00	2,301.00	5.03	5.03	-0.47	30.01	-0.25	30.01	22.90	7.11	4.219		
2,400.00	2,400.00	2,401.00	2,401.00	5.25	5.26	-0.47	30.01	-0.25	30.01	22.58	7.43	4.039		
2,500.00	2,500.00	2,501.00	2,501.00	5.48	5.48	-0.47	30.01	-0.25	30.01	22.26	7.75	3.873		
2,600.00	2,600.00	2,601.00	2,601.00	5.70	5.71	-0.47	30.01	-0.25	30.01	21.95	8.07	3.720		
2,700.00	2,700.00	2,701.00	2,701.00	5.93	5.93	-0.47	30.01	-0.25	30.01	21.63	8.39	3.579		
2,800.00	2,800.00	2,801.00	2,801.00	6.15	6.16	-0.47	30.01	-0.25	30.01	21.31	8.70	3.449		
2,900.00	2,900.00	2,901.00	2,901.00	6.38	6.38	-0.47	30.01	-0.25	30.01	20.99	9.02	3.327		
3,000.00	3,000.00	3,001.00	3,001.00	6.60	6.60	-0.47	30.01	-0.25	30.01	20.68	9.34	3.214		
3,100.00	3,100.00	3,101.00	3,101.00	6.83	6.83	-0.47	30.01	-0.25	30.01	20.36	9.66	3.108		
3,200.00	3,200.00	3,201.00	3,201.00	7.05	7.05	-0.47	30.01	-0.25	30.01	20.04	9.97	3.009 CC		
3,202.51	3,202.51	3,203.51	3,203.51	7.06	7.06	-90.47	30.01	-0.25	30.01	20.03	9.98	3.007		
3,300.00	3,300.00	3,301.00	3,301.00	7.26	7.28	-91.72	30.01	-0.25	30.03	19.74	10.28	2.920		
3,400.00	3,399.98	3,400.98	3,400.98	7.46	7.50	-95.45	30.01	-0.25	30.15	19.57	10.58	2.849 ES		
3,500.00	3,499.92	3,500.92	3,500.92	7.66	7.73	-101.55	30.01	-0.25	30.63	19.75	10.88	2.815 SF		
3,600.00	3,599.82	3,600.82	3,600.82	7.86	7.95	-109.63	30.01	-0.25	31.87	20.69	11.18	2.850		
3,700.00	3,699.64	3,700.64	3,700.64	8.07	8.18	-118.90	30.01	-0.25	34.30	22.81	11.49	2.986		
3,800.00	3,799.38	3,800.38	3,800.38	8.28	8.40	-128.32	30.01	-0.25	38.30	26.51	11.79	3.249		
3,900.00	3,899.02	3,900.02	3,900.02	8.50	8.63	-136.98	30.01	-0.25	44.09	31.99	12.09	3.645		
4,000.00	3,998.54	3,999.54	3,999.54	8.72	8.85	-144.36	30.01	-0.25	51.70	39.30	12.40	4.170		
4,100.00	4,097.92	4,098.92	4,098.92	8.94	9.07	-150.40	30.01	-0.25	61.08	48.38	12.70	4.809		
4,133.34	4,131.02	4,132.02	4,132.02	9.02	9.15	-152.13	30.01	-0.25	64.59	51.78	12.80	5.044		
4,200.00	4,197.18	4,198.18	4,198.18	9.18	9.30	-155.16	30.01	-0.25	71.88	58.87	13.01	5.526		
4,300.00	4,296.44	4,297.44	4,297.44	9.42	9.52	-158.69	30.01	-0.25	83.11	69.80	13.31	6.243		
4,400.00	4,395.69	4,396.69	4,396.69	9.66	9.74	-161.37	30.01	-0.25	94.58	80.96	13.62	6.945		
4,500.00	4,494.95	4,495.95	4,495.95	9.91	9.96	-163.47	30.01	-0.25	106.21	92.28	13.93	7.627		
4,600.00	4,594.20	4,595.20	4,595.20	10.16	10.19	-165.15	30.01	-0.25	117.95	103.71	14.23	8.286		
4,700.00	4,693.46	4,694.46	4,694.46	10.41	10.41	-166.53	30.01	-0.25	129.77	115.23	14.54	8.923		
4,800.00	4,792.71	4,793.71	4,793.71	10.67	10.63	-167.68	30.01	-0.25	141.65	126.80	14.85	9.537		
4,900.00	4,891.97	4,892.97	4,892.97	10.93	10.86	-168.65	30.01	-0.25	153.59	138.42	15.16	10.129		

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_Section 34
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 137H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 137H
 TVD Reference: KB @ 3666.70ft
 MD Reference: KB @ 3666.70ft
 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_Section 34 - Thistle Unit 113H - 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
5,000.00	4,991.22	4,992.22	4,992.22	11.19	11.08	-169.48	30.01	-0.25	165.55	150.08	15.47	10.699	
5,100.00	5,090.47	5,091.47	5,091.47	11.46	11.30	-170.20	30.01	-0.25	177.55	161.77	15.79	11.248	
5,200.00	5,189.73	5,190.73	5,190.73	11.73	11.53	-170.82	30.01	-0.25	189.58	173.48	16.10	11.776	
5,300.00	5,288.98	5,289.98	5,289.98	12.00	11.75	-171.38	30.01	-0.25	201.62	185.21	16.41	12.285	
5,400.00	5,388.24	5,389.24	5,389.24	12.27	11.97	-171.87	30.01	-0.25	213.68	196.95	16.72	12.776	
5,500.00	5,487.49	5,488.49	5,488.49	12.54	12.20	-172.30	30.01	-0.25	225.75	208.71	17.04	13.249	
5,600.00	5,586.75	5,587.75	5,587.75	12.82	12.42	-172.70	30.01	-0.25	237.83	220.48	17.35	13.705	
5,700.00	5,686.00	5,687.00	5,687.00	13.10	12.64	-173.05	30.01	-0.25	249.93	232.26	17.67	14.145	
5,800.00	5,785.26	5,786.26	5,786.26	13.38	12.87	-173.37	30.01	-0.25	262.03	244.05	17.98	14.570	
5,900.00	5,884.51	5,885.51	5,885.51	13.66	13.09	-173.67	30.01	-0.25	274.14	255.84	18.30	14.980	
6,000.00	5,983.77	5,984.77	5,984.77	13.94	13.31	-173.94	30.01	-0.25	286.26	267.64	18.62	15.377	
6,100.00	6,083.02	6,084.02	6,084.02	14.23	13.53	-174.18	30.01	-0.25	298.38	279.45	18.93	15.760	
6,200.00	6,182.28	6,183.28	6,183.28	14.51	13.76	-174.41	30.01	-0.25	310.51	291.26	19.25	16.130	
6,300.00	6,281.53	6,282.53	6,282.53	14.80	13.98	-174.62	30.01	-0.25	322.64	303.07	19.57	16.488	
6,400.00	6,380.78	6,381.78	6,381.78	15.09	14.20	-174.82	30.01	-0.25	334.78	314.89	19.89	16.835	
6,500.00	6,480.04	6,481.04	6,481.04	15.38	14.43	-175.00	30.01	-0.25	346.92	326.71	20.20	17.171	
6,600.00	6,579.29	6,580.29	6,580.29	15.66	14.65	-175.17	30.01	-0.25	359.06	338.54	20.52	17.496	
6,700.00	6,678.55	6,679.55	6,679.55	15.96	14.87	-175.33	30.01	-0.25	371.20	350.36	20.84	17.811	
6,800.00	6,777.80	6,778.80	6,778.80	16.25	15.10	-175.48	30.01	-0.25	383.35	362.19	21.16	18.116	
6,900.00	6,877.06	6,878.06	6,878.06	16.54	15.32	-175.62	30.01	-0.25	395.50	374.02	21.48	18.413	
7,000.00	6,976.31	6,977.31	6,977.31	16.83	15.54	-175.75	30.01	-0.25	407.66	385.86	21.80	18.700	
7,100.00	7,075.57	7,076.57	7,076.57	17.13	15.77	-175.87	30.01	-0.25	419.81	397.69	22.12	18.979	
7,200.00	7,174.82	7,175.82	7,175.82	17.42	15.99	-175.99	30.01	-0.25	431.97	409.53	22.44	19.250	
7,300.00	7,274.08	7,275.08	7,275.08	17.72	16.21	-176.10	30.01	-0.25	444.13	421.37	22.76	19.514	
7,400.00	7,373.33	7,374.33	7,374.33	18.01	16.43	-176.20	30.01	-0.25	456.29	433.21	23.08	19.769	
7,500.00	7,472.59	7,473.59	7,473.59	18.31	16.66	-176.30	30.01	-0.25	468.45	445.05	23.40	20.018	
7,600.00	7,571.84	7,572.84	7,572.84	18.61	16.88	-176.39	30.01	-0.25	480.61	456.89	23.72	20.260	
7,700.00	7,671.09	7,672.09	7,672.09	18.91	17.10	-176.48	30.01	-0.25	492.77	468.73	24.04	20.495	
7,800.00	7,770.35	7,771.35	7,771.35	19.20	17.33	-176.57	30.01	-0.25	504.94	480.57	24.36	20.724	
7,900.00	7,869.60	7,870.60	7,870.60	19.50	17.55	-176.65	30.01	-0.25	517.10	492.42	24.69	20.947	
8,000.00	7,968.86	7,969.86	7,969.86	19.80	17.77	-176.72	30.01	-0.25	529.27	504.26	25.01	21.164	
8,100.00	8,068.11	8,069.11	8,069.11	20.10	18.00	-176.80	30.01	-0.25	541.44	516.11	25.33	21.376	
8,200.00	8,167.37	8,168.37	8,168.37	20.40	18.22	-176.87	30.01	-0.25	553.61	527.96	25.65	21.581	
8,300.00	8,266.62	8,267.62	8,267.62	20.70	18.44	-176.94	30.01	-0.25	565.78	539.80	25.97	21.782	
8,400.00	8,365.88	8,366.88	8,366.88	21.01	18.67	-177.00	30.01	-0.25	577.95	551.65	26.30	21.978	
8,500.00	8,465.13	8,466.13	8,466.13	21.31	18.89	-177.06	30.01	-0.25	590.12	563.50	26.62	22.169	
8,600.00	8,564.39	8,565.39	8,565.39	21.61	19.11	-177.12	30.01	-0.25	602.29	575.35	26.94	22.355	
8,633.34	8,597.47	8,598.47	8,598.47	21.71	19.19	-177.14	30.01	-0.25	606.35	579.30	27.05	22.416	
8,700.00	8,663.68	8,664.68	8,664.68	21.89	19.33	-177.18	30.01	-0.25	614.17	586.92	27.26	22.533	
8,800.00	8,763.10	8,764.10	8,764.10	22.12	19.56	-177.23	30.01	-0.25	624.83	597.28	27.55	22.678	
8,900.00	8,862.66	8,863.66	8,863.66	22.35	19.78	-177.28	30.01	-0.25	634.19	606.34	27.85	22.773	
9,000.00	8,962.34	8,963.34	8,963.34	22.56	20.01	-177.31	30.01	-0.25	642.24	614.10	28.14	22.820	
9,100.00	9,062.11	9,063.11	9,063.11	22.77	20.23	-177.34	30.01	-0.25	648.99	620.55	28.44	22.821	
9,200.00	9,161.96	9,164.10	9,164.09	22.97	20.46	-177.30	30.80	-0.18	654.41	625.68	28.73	22.774	
9,300.00	9,261.87	9,265.80	9,264.64	23.16	20.69	-176.07	45.05	0.96	658.23	629.21	29.03	22.676	
9,400.00	9,361.83	9,359.87	9,354.06	23.35	20.89	-173.59	73.80	3.26	661.41	632.11	29.30	22.572	
9,500.00	9,461.82	9,442.75	9,428.03	23.52	21.08	-170.39	110.93	6.24	666.00	636.45	29.55	22.542	
9,566.67	9,528.49	9,491.22	9,468.53	23.63	21.18	-78.13	137.44	8.36	671.00	641.33	29.67	22.615	
9,600.00	9,561.82	9,513.46	9,486.33	23.69	21.23	-77.00	150.73	9.42	674.40	644.68	29.72	22.693	
9,700.00	9,661.82	9,572.79	9,531.15	23.88	21.40	-73.75	189.44	12.53	689.51	659.74	29.77	23.159	
9,800.00	9,761.82	9,622.30	9,565.31	24.06	21.55	-70.81	225.14	15.39	712.88	683.22	29.66	24.035	
9,900.00	9,861.82	9,663.65	9,591.39	24.25	21.69	-68.25	257.11	17.95	744.96	715.58	29.38	25.357	

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 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 113H - 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				
10,000.00	9,961.82	9,700.00	9,612.35	24.44	21.83	-65.93	286.71	20.32	785.60	756.62	28.98	27.110				
10,100.00	10,061.82	9,727.73	9,627.05	24.63	21.95	-64.15	310.15	22.20	834.15	805.69	28.46	29.309				
10,128.24	10,090.06	9,735.20	9,630.82	24.69	21.98	-63.67	316.58	22.71	849.18	820.87	28.31	29.995				
10,150.00	10,111.81	9,750.00	9,638.02	24.73	22.04	-61.14	329.46	23.74	861.07	832.78	28.29	30.439				
10,200.00	10,161.63	9,750.00	9,638.02	24.82	22.04	-58.38	329.46	23.74	888.00	860.12	27.88	31.852				
10,250.00	10,210.90	9,769.16	9,646.86	24.92	22.14	-54.73	346.41	25.10	914.57	886.90	27.67	33.057				
10,300.00	10,259.26	9,784.32	9,653.43	25.01	22.21	-51.59	360.02	26.19	940.50	913.08	27.41	34.311				
10,350.00	10,306.32	9,800.00	9,659.86	25.10	22.28	-48.72	374.28	27.34	965.51	938.35	27.16	35.547				
10,400.00	10,351.74	9,816.25	9,666.10	25.20	22.37	-46.12	389.23	28.53	989.39	962.47	26.92	36.747				
10,450.00	10,395.17	9,832.88	9,672.05	25.29	22.46	-43.80	404.71	29.77	1,011.96	985.26	26.70	37.905				
10,500.00	10,436.28	9,850.00	9,677.69	25.38	22.55	-41.74	420.83	31.06	1,033.04	1,006.55	26.48	39.007				
10,550.00	10,474.75	9,867.19	9,682.88	25.48	22.65	-39.93	437.16	32.37	1,052.48	1,026.19	26.28	40.044				
10,600.00	10,510.29	9,884.77	9,687.67	25.59	22.75	-38.36	454.03	33.73	1,070.15	1,044.05	26.10	41.002				
10,650.00	10,542.64	9,900.00	9,691.39	25.70	22.84	-37.05	468.74	34.90	1,085.96	1,060.04	25.91	41.905				
10,700.00	10,571.54	9,920.62	9,695.81	25.83	22.98	-35.86	488.81	36.51	1,099.77	1,073.98	25.79	42.637				
10,750.00	10,596.77	9,950.00	9,700.85	25.98	23.16	-34.75	517.67	38.82	1,111.69	1,085.93	25.75	43.167				
10,800.00	10,618.15	9,950.00	9,700.85	26.14	23.16	-34.20	517.67	38.82	1,121.24	1,095.71	25.53	43.912				
10,850.00	10,635.52	9,975.57	9,704.02	26.34	23.34	-33.51	542.96	40.85	1,128.64	1,103.12	25.52	44.230				
10,900.00	10,648.72	10,000.00	9,705.99	26.56	23.51	-33.01	567.23	42.80	1,133.91	1,108.40	25.52	44.440				
10,950.00	10,657.68	10,012.69	9,706.60	26.82	23.60	-32.77	579.87	43.81	1,136.84	1,111.36	25.48	44.617				
11,000.00	10,662.32	10,034.04	9,707.00	27.11	23.76	-32.61	601.14	45.51	1,137.54	1,112.02	25.52	44.567				
11,050.00	10,662.80	10,076.59	9,707.00	27.43	24.09	-32.57	643.55	48.91	1,135.44	1,109.73	25.71	44.165				
11,075.86	10,661.04	10,102.30	9,707.00	27.60	24.29	-32.66	669.18	50.96	1,132.92	1,107.08	25.84	43.847				
11,100.00	10,659.04	10,126.27	9,707.00	27.78	24.50	-32.62	693.07	52.88	1,130.12	1,104.15	25.97	43.514				
11,200.00	10,650.73	10,225.56	9,707.00	28.56	25.39	-32.48	792.04	60.81	1,118.51	1,091.96	26.56	42.116				
11,300.00	10,642.43	10,324.84	9,707.00	29.46	26.37	-32.33	891.01	68.74	1,106.92	1,079.69	27.22	40.663				
11,400.00	10,634.13	10,424.13	9,707.00	30.44	27.43	-32.18	989.98	76.67	1,095.32	1,067.37	27.95	39.183				
11,500.00	10,625.83	10,523.41	9,707.00	31.50	28.57	-32.03	1,088.95	84.60	1,083.74	1,054.99	28.75	37.695				
11,600.00	10,617.53	10,622.70	9,707.00	32.63	29.77	-31.88	1,187.91	92.53	1,072.16	1,042.56	29.60	36.219				
11,700.00	10,609.23	10,721.98	9,707.00	33.82	31.03	-31.72	1,286.88	100.46	1,060.60	1,030.09	30.50	34.770				
11,800.00	10,600.92	10,821.27	9,707.00	35.07	32.34	-31.56	1,385.85	108.38	1,049.04	1,017.59	31.45	33.357				
11,900.00	10,592.62	10,920.55	9,707.00	36.37	33.70	-31.39	1,484.82	116.31	1,037.48	1,005.05	32.43	31.988				
12,000.00	10,584.32	11,019.84	9,707.00	37.72	35.09	-31.22	1,583.79	124.24	1,025.94	992.49	33.45	30.670				
12,100.00	10,576.02	11,119.12	9,707.00	39.10	36.52	-31.05	1,682.76	132.17	1,014.41	979.91	34.50	29.405				
12,200.00	10,567.72	11,218.41	9,707.00	40.52	37.99	-30.87	1,781.72	140.10	1,002.88	967.32	35.57	28.196				
12,300.00	10,559.42	11,317.69	9,707.00	41.97	39.48	-30.69	1,880.69	148.03	991.37	954.71	36.66	27.042				
12,400.00	10,551.12	11,416.98	9,707.00	43.45	40.99	-30.50	1,979.66	155.96	979.87	942.10	37.77	25.943				
12,500.00	10,542.81	11,516.26	9,707.00	44.95	42.53	-30.31	2,078.63	163.89	968.37	929.48	38.89	24.898				
12,600.00	10,534.51	11,615.55	9,707.00	46.48	44.09	-30.12	2,177.60	171.82	956.89	916.86	40.03	23.905				
12,700.00	10,526.21	11,714.83	9,707.00	48.03	45.66	-29.92	2,276.56	179.75	945.42	904.24	41.17	22.962				
12,800.00	10,517.91	11,814.12	9,707.00	49.60	47.25	-29.71	2,375.53	187.68	933.96	891.63	42.32	22.068				
12,900.00	10,509.61	11,913.40	9,707.00	51.18	48.86	-29.50	2,474.50	195.61	922.51	879.03	43.48	21.219				
13,000.00	10,501.31	12,012.69	9,707.00	52.79	50.48	-29.29	2,573.47	203.54	911.07	866.44	44.63	20.413				
13,100.00	10,493.00	12,111.98	9,707.00	54.40	52.11	-29.07	2,672.44	211.47	899.65	853.86	45.79	19.648				
13,200.00	10,484.70	12,211.26	9,707.00	56.03	53.75	-28.84	2,771.40	219.40	888.24	841.30	46.94	18.922				
13,300.00	10,476.40	12,310.55	9,707.00	57.67	55.40	-28.61	2,870.37	227.33	876.84	828.75	48.09	18.232				
13,400.00	10,468.10	12,409.83	9,707.00	59.32	57.06	-28.38	2,969.34	235.26	865.46	816.22	49.24	17.577				
13,500.00	10,459.80	12,509.12	9,707.00	60.98	58.73	-28.13	3,068.31	243.19	854.10	803.72	50.38	16.954				
13,600.00	10,451.50	12,608.40	9,707.00	62.65	60.40	-27.88	3,167.28	251.12	842.74	791.24	51.51	16.361				
13,700.00	10,443.19	12,707.69	9,707.00	64.33	62.09	-27.62	3,266.25	259.05	831.41	778.78	52.63	15.797				
13,800.00	10,434.89	12,806.97	9,707.00	66.02	63.77	-27.36	3,365.21	266.98	820.09	766.35	53.74	15.260				
13,900.00	10,426.59	12,906.26	9,707.00	67.71	65.47	-27.09	3,464.18	274.90	808.80	753.95	54.84	14.748				

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_Section 34
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 137H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 137H
 TVD Reference: KB @ 3666.70ft
 MD Reference: KB @ 3666.70ft
 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_Section 34 - Thistle Unit 113H - 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	
14,000.00	10,418.29	13,005.54	9,707.00	69.41	67.17	-26.81	3,563.15	282.83	797.51	741.59	55.93	14.260	
14,100.00	10,409.99	13,104.83	9,707.00	71.12	68.87	-26.52	3,662.12	290.76	786.25	729.26	57.00	13.795	
14,200.00	10,401.69	13,204.11	9,707.00	72.84	70.58	-26.22	3,761.09	298.69	775.01	716.96	58.05	13.351	
14,300.00	10,393.39	13,303.40	9,707.00	74.55	72.30	-25.92	3,860.05	306.62	763.79	704.70	59.09	12.926	
14,400.00	10,385.08	13,402.68	9,707.00	76.28	74.02	-25.61	3,959.02	314.55	752.59	692.49	60.11	12.521	
14,500.00	10,376.78	13,501.97	9,707.00	78.01	75.74	-25.28	4,057.99	322.48	741.42	680.31	61.11	12.133	
14,600.00	10,368.48	13,601.25	9,707.00	79.74	77.46	-24.95	4,156.96	330.41	730.27	668.18	62.08	11.763	
14,700.00	10,360.18	13,700.54	9,707.00	81.48	79.19	-24.61	4,255.93	338.34	719.14	656.10	63.04	11.408	
14,800.00	10,351.88	13,799.83	9,707.00	83.22	80.92	-24.25	4,354.89	346.27	708.04	644.07	63.97	11.068	
14,900.00	10,343.58	13,899.11	9,707.00	84.96	82.66	-23.89	4,453.86	354.20	696.97	632.09	64.88	10.742	
15,000.00	10,335.27	13,998.40	9,707.00	86.71	84.39	-23.51	4,552.83	362.13	685.93	620.16	65.76	10.430	
15,100.00	10,326.97	14,097.68	9,707.00	88.46	86.13	-23.12	4,651.80	370.06	674.91	608.30	66.62	10.131	
15,200.00	10,318.67	14,196.97	9,707.00	90.22	87.88	-22.72	4,750.77	377.99	663.93	596.49	67.45	9.844	
15,300.00	10,310.37	14,296.25	9,707.00	91.98	89.62	-22.30	4,849.73	385.92	652.99	584.74	68.24	9.568	
15,400.00	10,302.07	14,395.54	9,707.00	93.74	91.37	-21.87	4,948.70	393.85	642.07	573.06	69.01	9.304	
15,500.00	10,293.77	14,494.82	9,707.00	95.50	93.12	-21.43	5,047.67	401.78	631.20	561.45	69.75	9.050	
15,600.00	10,285.47	14,594.11	9,707.00	97.26	94.87	-20.97	5,146.64	409.71	620.36	549.91	70.45	8.806	
15,700.00	10,277.16	14,693.39	9,707.00	99.03	96.62	-20.49	5,245.61	417.64	609.57	538.45	71.12	8.571	
15,800.00	10,268.86	14,792.68	9,707.00	100.80	98.37	-20.00	5,344.58	425.57	598.82	527.06	71.75	8.345	
15,900.00	10,260.56	14,891.96	9,707.00	102.57	100.13	-19.49	5,443.54	433.50	588.11	515.76	72.35	8.128	
16,000.00	10,252.26	14,991.25	9,707.00	104.35	101.88	-18.96	5,542.51	441.42	577.45	504.54	72.92	7.919	
16,100.00	10,243.96	15,090.53	9,707.00	106.12	103.64	-18.41	5,641.48	449.35	566.84	493.40	73.44	7.718	
16,200.00	10,235.66	15,189.82	9,707.00	107.90	105.40	-17.84	5,740.45	457.28	556.29	482.36	73.93	7.525	
16,300.00	10,227.35	15,289.10	9,707.00	109.68	107.16	-17.24	5,839.42	465.21	545.79	471.41	74.38	7.338	
16,400.00	10,219.05	15,388.39	9,707.00	111.46	108.93	-16.63	5,938.38	473.14	535.36	460.56	74.80	7.158	
16,500.00	10,210.75	15,487.67	9,707.00	113.24	110.69	-15.99	6,037.35	481.07	524.99	449.81	75.17	6.984	
16,600.00	10,202.45	15,586.96	9,707.00	115.03	112.45	-15.32	6,136.32	489.00	514.68	439.17	75.52	6.816	
16,700.00	10,194.15	15,686.25	9,707.00	116.81	114.22	-14.63	6,235.29	496.93	504.45	428.62	75.83	6.653	
16,800.00	10,185.85	15,785.53	9,707.00	118.60	115.99	-13.91	6,334.26	504.86	494.29	418.19	76.10	6.495	
16,900.00	10,177.54	15,884.82	9,707.00	120.39	117.75	-13.15	6,433.22	512.79	484.22	407.86	76.36	6.342	
17,000.00	10,169.24	15,984.10	9,707.00	122.17	119.52	-12.37	6,532.19	520.72	474.23	397.64	76.58	6.192	
17,100.00	10,160.94	16,083.39	9,707.00	123.96	121.29	-11.56	6,631.16	528.65	464.33	387.53	76.80	6.046	
17,200.00	10,152.64	16,182.67	9,707.00	125.76	123.06	-10.70	6,730.13	536.58	454.53	377.53	77.00	5.903	
17,300.00	10,144.34	16,281.96	9,707.00	127.55	124.83	-9.81	6,829.10	544.51	444.84	367.64	77.20	5.762	
17,400.00	10,136.04	16,381.24	9,707.00	129.34	126.60	-8.89	6,928.07	552.44	435.25	357.85	77.41	5.623	
17,500.00	10,127.74	16,480.53	9,707.00	131.14	128.38	-7.92	7,027.03	560.37	425.79	348.15	77.64	5.484	
17,600.00	10,119.43	16,579.81	9,707.00	132.93	130.15	-6.90	7,126.00	568.30	416.45	338.54	77.91	5.345	
17,700.00	10,111.13	16,679.10	9,707.00	134.73	131.92	-5.85	7,224.97	576.23	407.25	329.01	78.24	5.205	
17,800.00	10,102.83	16,778.38	9,707.00	136.52	133.70	-4.74	7,323.94	584.16	398.19	319.55	78.64	5.063	
17,900.00	10,094.53	16,877.67	9,707.00	138.32	135.47	-3.58	7,422.91	592.09	389.29	310.13	79.16	4.918	
18,000.00	10,086.23	16,976.95	9,707.00	140.12	137.25	-2.37	7,521.87	600.02	380.55	300.75	79.80	4.769	
18,100.00	10,077.93	17,076.24	9,707.00	141.92	139.03	-1.10	7,620.84	607.94	371.99	291.38	80.61	4.615	
18,183.43	10,071.00	17,159.07	9,707.00	143.42	140.51	0.00	7,703.41	614.56	365.00	283.56	81.44	4.482	

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 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 132H - Wellbore #1 - Design #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 (°)	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	1.20	1.20	0.00	0.00	-90.29	-0.25	-49.99	49.99				
100.00	100.00	101.20	101.20	0.08	0.09	-90.29	-0.25	-49.99	49.99	49.87	0.12	412.719	
200.00	200.00	201.20	201.20	0.31	0.31	-90.29	-0.25	-49.99	49.99	49.55	0.44	113.877	
300.00	300.00	301.20	301.20	0.53	0.54	-90.29	-0.25	-49.99	49.99	49.23	0.76	66.050	
400.00	400.00	401.20	401.20	0.76	0.76	-90.29	-0.25	-49.99	49.99	48.91	1.07	46.515	
500.00	500.00	501.20	501.20	0.98	0.99	-90.29	-0.25	-49.99	49.99	48.60	1.39	35.897	
600.00	600.00	601.20	601.20	1.21	1.21	-90.29	-0.25	-49.99	49.99	48.28	1.71	29.226	
700.00	700.00	701.20	701.20	1.43	1.44	-90.29	-0.25	-49.99	49.99	47.96	2.03	24.646	
800.00	800.00	801.20	801.20	1.66	1.66	-90.29	-0.25	-49.99	49.99	47.64	2.35	21.307	
900.00	900.00	901.20	901.20	1.88	1.89	-90.29	-0.25	-49.99	49.99	47.33	2.66	18.765	
1,000.00	1,000.00	1,001.20	1,001.20	2.11	2.11	-90.29	-0.25	-49.99	49.99	47.01	2.98	16.764	
1,100.00	1,100.00	1,101.20	1,101.20	2.33	2.33	-90.29	-0.25	-49.99	49.99	46.69	3.30	15.149	
1,200.00	1,200.00	1,201.20	1,201.20	2.56	2.56	-90.29	-0.25	-49.99	49.99	46.37	3.62	13.818	
1,300.00	1,300.00	1,301.20	1,301.20	2.78	2.78	-90.29	-0.25	-49.99	49.99	46.05	3.94	12.702	
1,400.00	1,400.00	1,401.20	1,401.20	3.01	3.01	-90.29	-0.25	-49.99	49.99	45.74	4.25	11.753	
1,500.00	1,500.00	1,501.20	1,501.20	3.23	3.23	-90.29	-0.25	-49.99	49.99	45.42	4.57	10.936	
1,600.00	1,600.00	1,601.20	1,601.20	3.46	3.46	-90.29	-0.25	-49.99	49.99	45.10	4.89	10.225	
1,700.00	1,700.00	1,701.20	1,701.20	3.68	3.68	-90.29	-0.25	-49.99	49.99	44.78	5.21	9.600	
1,800.00	1,800.00	1,801.20	1,801.20	3.91	3.91	-90.29	-0.25	-49.99	49.99	44.46	5.52	9.048	
1,900.00	1,900.00	1,901.20	1,901.20	4.13	4.13	-90.29	-0.25	-49.99	49.99	44.15	5.84	8.556	
2,000.00	2,000.00	2,001.20	2,001.20	4.35	4.36	-90.29	-0.25	-49.99	49.99	43.83	6.16	8.114	
2,100.00	2,100.00	2,101.20	2,101.20	4.58	4.58	-90.29	-0.25	-49.99	49.99	43.51	6.48	7.716	
2,200.00	2,200.00	2,201.20	2,201.20	4.80	4.81	-90.29	-0.25	-49.99	49.99	43.19	6.80	7.355	
2,300.00	2,300.00	2,301.20	2,301.20	5.03	5.03	-90.29	-0.25	-49.99	49.99	42.88	7.11	7.027	
2,400.00	2,400.00	2,401.20	2,401.20	5.25	5.26	-90.29	-0.25	-49.99	49.99	42.56	7.43	6.726	
2,500.00	2,500.00	2,501.20	2,501.20	5.48	5.48	-90.29	-0.25	-49.99	49.99	42.24	7.75	6.450	
2,600.00	2,600.00	2,601.20	2,601.20	5.70	5.71	-90.29	-0.25	-49.99	49.99	41.92	8.07	6.196	
2,700.00	2,700.00	2,701.20	2,701.20	5.93	5.93	-90.29	-0.25	-49.99	49.99	41.60	8.39	5.961	
2,800.00	2,800.00	2,801.20	2,801.20	6.15	6.16	-90.29	-0.25	-49.99	49.99	41.29	8.70	5.744	
2,900.00	2,900.00	2,901.20	2,901.20	6.38	6.38	-90.29	-0.25	-49.99	49.99	40.97	9.02	5.541	
3,000.00	3,000.00	3,001.20	3,001.20	6.60	6.61	-90.29	-0.25	-49.99	49.99	40.65	9.34	5.353	
3,100.00	3,100.00	3,101.20	3,101.20	6.83	6.83	-90.29	-0.25	-49.99	49.99	40.33	9.66	5.176	
3,166.26	3,166.26	3,167.46	3,167.46	6.98	6.98	-90.29	-0.25	-49.99	49.99	40.12	9.87	5.066 CC	
3,200.00	3,200.00	3,201.19	3,201.19	7.05	7.05	-90.29	-0.25	-49.99	49.99	40.01	9.97	5.012 ES	
3,300.00	3,300.00	3,300.72	3,300.71	7.26	7.25	179.19	-0.72	-50.46	51.12	40.86	10.26	4.981	
3,400.00	3,399.98	3,400.00	3,399.98	7.46	7.43	177.79	-2.10	-51.84	54.51	43.99	10.52	5.179	
3,500.00	3,499.92	3,499.41	3,499.34	7.66	7.61	175.80	-4.40	-54.14	60.21	49.43	10.79	5.581	
3,600.00	3,599.82	3,598.41	3,598.23	7.86	7.79	173.59	-7.60	-57.33	68.28	57.23	11.05	6.177	
3,700.00	3,699.64	3,697.07	3,696.72	8.07	7.98	171.41	-11.68	-61.42	78.76	67.44	11.32	6.957	
3,800.00	3,799.38	3,795.91	3,795.33	8.28	8.16	169.51	-16.50	-66.23	91.44	79.85	11.59	7.888	
3,900.00	3,899.02	3,894.89	3,894.06	8.50	8.36	168.18	-21.38	-71.12	105.54	93.67	11.87	8.892	
4,000.00	3,998.54	3,993.68	3,992.61	8.72	8.55	167.30	-26.25	-75.99	120.94	108.79	12.15	9.955	
4,100.00	4,097.92	4,092.27	4,090.97	8.94	8.75	166.73	-31.12	-80.85	137.62	125.19	12.43	11.072	
4,133.34	4,131.02	4,125.09	4,123.70	9.02	8.82	166.59	-32.73	-82.47	143.46	130.93	12.52	11.454	
4,200.00	4,197.18	4,190.70	4,189.15	9.18	8.95	166.39	-35.97	-85.71	155.28	142.57	12.71	12.213	
4,300.00	4,296.44	4,289.11	4,287.32	9.42	9.16	166.13	-40.82	-90.56	173.02	160.02	13.00	13.309	
4,400.00	4,395.69	4,387.52	4,385.49	9.66	9.36	165.92	-45.68	-95.42	190.76	177.47	13.29	14.354	
4,500.00	4,494.95	4,485.93	4,483.67	9.91	9.57	165.74	-50.53	-100.27	208.50	194.92	13.58	15.353	
4,600.00	4,594.20	4,584.34	4,581.84	10.16	9.78	165.60	-55.39	-105.12	226.24	212.37	13.87	16.307	
4,700.00	4,693.46	4,682.76	4,680.01	10.41	10.00	165.47	-60.24	-109.98	243.99	229.82	14.17	17.219	
4,800.00	4,792.71	4,781.17	4,778.18	10.67	10.21	165.36	-65.10	-114.83	261.73	247.27	14.47	18.091	
4,900.00	4,891.97	4,879.58	4,876.35	10.93	10.43	165.27	-69.95	-119.69	279.48	264.71	14.77	18.926	

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_Section 34
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 137H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 137H
 TVD Reference: KB @ 3666.70ft
 MD Reference: KB @ 3666.70ft
 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_Section 34 - Thistle Unit 132H - Wellbore #1 - Design #1													Offset Site Error: 0.00 ft
Survey Program: 0-MWD													Offset Well Error: 0.00 ft
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	4,991.22	4,977.99	4,974.53	11.19	10.65	165.18	-74.80	-124.54	297.23	282.16	15.07	19.726	
5,100.00	5,090.47	5,076.40	5,072.70	11.46	10.87	165.11	-79.66	-129.39	314.98	299.60	15.37	20.492	
5,200.00	5,189.73	5,174.81	5,170.87	11.73	11.09	165.04	-84.51	-134.25	332.72	317.05	15.68	21.226	
5,300.00	5,288.98	5,273.23	5,269.04	12.00	11.31	164.98	-89.37	-139.10	350.47	334.49	15.98	21.931	
5,400.00	5,388.24	5,371.64	5,367.21	12.27	11.54	164.93	-94.22	-143.96	368.22	351.93	16.29	22.607	
5,500.00	5,487.49	5,470.05	5,465.39	12.54	11.76	164.88	-99.07	-148.81	385.97	369.37	16.60	23.256	
5,600.00	5,586.75	5,568.46	5,563.56	12.82	11.99	164.84	-103.93	-153.67	403.72	386.81	16.91	23.880	
5,700.00	5,686.00	5,666.87	5,661.73	13.10	12.22	164.80	-108.78	-158.52	421.47	404.25	17.22	24.479	
5,800.00	5,785.26	5,765.28	5,759.90	13.38	12.45	164.76	-113.64	-163.37	439.22	421.69	17.53	25.056	
5,900.00	5,884.51	5,863.70	5,858.07	13.66	12.68	164.72	-118.49	-168.23	456.97	439.13	17.84	25.611	
6,000.00	5,983.77	5,962.11	5,956.25	13.94	12.91	164.69	-123.35	-173.08	474.72	456.56	18.16	26.146	
6,100.00	6,083.02	6,060.52	6,054.42	14.23	13.14	164.66	-128.20	-177.94	492.47	474.00	18.47	26.661	
6,200.00	6,182.28	6,158.93	6,152.59	14.51	13.38	164.63	-133.05	-182.79	510.22	491.43	18.79	27.157	
6,300.00	6,281.53	6,257.34	6,250.76	14.80	13.61	164.61	-137.91	-187.65	527.97	508.87	19.10	27.636	
6,400.00	6,380.78	6,355.75	6,348.93	15.09	13.85	164.58	-142.76	-192.50	545.72	526.30	19.42	28.098	
6,500.00	6,480.04	6,454.17	6,447.11	15.38	14.08	164.56	-147.62	-197.35	563.47	543.73	19.74	28.543	
6,600.00	6,579.29	6,552.58	6,545.28	15.66	14.32	164.54	-152.47	-202.21	581.22	561.16	20.06	28.974	
6,700.00	6,678.55	6,650.99	6,643.45	15.96	14.56	164.52	-157.32	-207.06	598.97	578.59	20.38	29.390	
6,800.00	6,777.80	6,750.61	6,742.83	16.25	14.79	164.50	-162.22	-211.96	616.71	596.01	20.70	29.787	
6,900.00	6,877.06	6,850.71	6,842.73	16.54	15.03	164.53	-166.77	-216.51	633.67	612.63	21.04	30.118	
7,000.00	6,976.31	6,963.22	6,955.13	16.83	15.25	164.62	-170.28	-220.02	649.45	628.07	21.37	30.389	
7,100.00	7,075.57	7,070.11	7,061.96	17.13	15.47	164.77	-172.76	-222.49	664.02	642.32	21.70	30.601	
7,200.00	7,174.82	7,177.34	7,169.17	17.42	15.69	164.97	-174.18	-223.91	677.40	655.38	22.02	30.756	
7,300.00	7,274.08	7,283.45	7,275.28	17.72	15.90	165.23	-174.55	-224.28	689.60	667.26	22.35	30.861	
7,400.00	7,373.33	7,382.70	7,374.53	18.01	16.10	165.49	-174.55	-224.28	701.40	678.74	22.66	30.958	
7,500.00	7,472.59	7,481.96	7,473.79	18.31	16.30	165.73	-174.55	-224.28	713.21	690.24	22.97	31.051	
7,600.00	7,571.84	7,581.21	7,573.04	18.61	16.50	165.97	-174.55	-224.28	725.03	701.75	23.28	31.142	
7,700.00	7,671.09	7,680.47	7,672.29	18.91	16.71	166.20	-174.55	-224.28	736.86	713.27	23.59	31.231	
7,800.00	7,770.35	7,779.72	7,771.55	19.20	16.91	166.42	-174.55	-224.28	748.71	724.80	23.91	31.317	
7,900.00	7,869.60	7,878.98	7,870.80	19.50	17.11	166.64	-174.55	-224.28	760.57	736.35	24.22	31.402	
8,000.00	7,968.86	7,978.23	7,970.06	19.80	17.32	166.85	-174.55	-224.28	772.43	747.90	24.53	31.484	
8,100.00	8,068.11	8,077.49	8,069.31	20.10	17.52	167.05	-174.55	-224.28	784.31	759.46	24.85	31.564	
8,200.00	8,167.37	8,176.74	8,168.57	20.40	17.73	167.24	-174.55	-224.28	796.20	771.03	25.16	31.641	
8,300.00	8,266.62	8,276.00	8,267.82	20.70	17.94	167.44	-174.55	-224.28	808.09	782.61	25.48	31.717	
8,400.00	8,365.88	8,375.25	8,367.08	21.01	18.14	167.62	-174.55	-224.28	819.99	794.20	25.79	31.792	
8,500.00	8,465.13	8,474.51	8,466.33	21.31	18.35	167.80	-174.55	-224.28	831.91	805.80	26.11	31.864	
8,600.00	8,564.39	8,573.76	8,565.59	21.61	18.56	167.98	-174.55	-224.28	843.82	817.40	26.42	31.934	
8,633.34	8,597.47	8,606.85	8,598.67	21.71	18.63	168.03	-174.55	-224.28	847.80	821.27	26.53	31.957	
8,700.00	8,663.68	8,673.05	8,664.88	21.89	18.76	168.15	-174.55	-224.28	855.47	828.74	26.73	32.005	
8,800.00	8,763.10	8,772.48	8,764.30	22.12	18.97	168.31	-174.55	-224.28	865.92	838.90	27.02	32.053	
8,900.00	8,862.66	8,872.04	8,863.86	22.35	19.18	168.45	-174.55	-224.28	875.09	847.79	27.30	32.054	
9,000.00	8,962.34	8,971.71	8,963.54	22.56	19.39	168.57	-174.55	-224.28	883.00	855.41	27.59	32.009	
9,100.00	9,062.11	9,071.48	9,063.31	22.77	19.60	168.66	-174.55	-224.28	889.62	861.75	27.87	31.920	
9,200.00	9,161.96	9,171.33	9,163.16	22.97	19.81	168.74	-174.55	-224.28	894.97	866.81	28.15	31.788	
9,300.00	9,261.87	9,271.25	9,263.07	23.16	20.02	168.80	-174.55	-224.28	899.03	870.60	28.44	31.615	
9,400.00	9,361.83	9,371.20	9,363.03	23.35	20.23	168.84	-174.55	-224.28	901.82	873.10	28.72	31.401	
9,500.00	9,461.82	9,471.19	9,463.02	23.52	20.45	168.86	-174.55	-224.28	903.31	874.31	29.00	31.148	
9,566.67	9,528.49	9,536.65	9,528.34	23.63	20.62	-100.91	-170.93	-224.31	903.12	873.91	29.21	30.915	
9,600.00	9,561.82	9,569.78	9,561.92	23.69	20.70	-100.47	-163.91	-224.35	902.20	872.89	29.31	30.778	
9,700.00	9,661.82	9,670.07	9,663.04	23.88	20.90	-98.05	-125.48	-224.60	897.30	867.73	29.57	30.348	
9,800.00	9,761.82	9,770.07	9,763.04	24.06	21.03	-94.71	-73.12	-224.94	891.46	861.66	29.80	29.916	
9,900.00	9,861.82	9,870.07	9,863.04	24.25	21.11	-91.26	-19.55	-225.29	887.89	857.86	30.03	29.565	

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 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 132H - 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				
9,927.15	9,888.97	9,943.61	9,890.17	24.30	21.13	-90.37	-5.75	-225.38	887.69	857.60	30.09	29.501				
10,000.00	9,961.82	9,990.64	9,921.94	24.44	21.18	-88.13	28.91	-225.60	889.32	859.09	30.22	29.423				
10,100.00	10,061.82	10,043.05	9,953.86	24.63	21.23	-85.46	70.45	-225.87	897.62	867.29	30.33	29.599				
10,128.24	10,090.06	10,055.75	9,961.01	24.69	21.24	-84.79	80.94	-225.94	901.38	871.04	30.33	29.716				
10,150.00	10,111.81	10,065.25	9,966.21	24.73	21.25	-83.61	88.90	-225.99	904.67	874.34	30.33	29.825				
10,200.00	10,161.63	10,087.32	9,977.78	24.82	21.30	-81.61	107.70	-226.11	913.30	882.99	30.31	30.128				
10,250.00	10,210.90	10,109.68	9,988.74	24.92	21.36	-79.52	127.18	-226.24	923.20	892.93	30.28	30.493				
10,300.00	10,259.26	10,132.27	9,999.04	25.01	21.43	-77.38	147.28	-226.37	934.13	903.91	30.22	30.907				
10,350.00	10,306.32	10,150.00	10,006.56	25.10	21.49	-75.43	163.34	-226.47	945.86	915.73	30.13	31.392				
10,400.00	10,351.74	10,178.00	10,017.42	25.20	21.60	-73.08	189.14	-226.64	958.09	928.00	30.09	31.843				
10,450.00	10,395.17	10,200.00	10,025.06	25.29	21.68	-71.01	209.77	-226.77	970.66	940.65	30.01	32.349				
10,500.00	10,436.28	10,224.29	10,032.57	25.38	21.79	-68.94	232.87	-226.92	983.33	953.38	29.94	32.839				
10,550.00	10,474.75	10,250.00	10,039.44	25.48	21.91	-66.93	257.64	-227.08	995.91	966.02	29.89	33.316				
10,600.00	10,510.29	10,271.01	10,044.23	25.59	22.01	-65.17	278.09	-227.21	1,008.21	978.38	29.83	33.795				
10,650.00	10,542.64	10,300.00	10,049.60	25.70	22.16	-63.33	306.58	-227.40	1,020.10	990.28	29.83	34.199				
10,700.00	10,571.54	10,318.02	10,052.21	25.83	22.26	-61.90	324.41	-227.51	1,031.35	1,001.56	29.79	34.621				
10,750.00	10,596.77	10,350.00	10,055.45	25.98	22.44	-60.32	356.22	-227.72	1,041.95	1,012.11	29.85	34.912				
10,800.00	10,618.15	10,365.27	10,056.37	26.14	22.53	-59.21	371.46	-227.82	1,051.58	1,021.74	29.84	35.235				
10,850.00	10,635.52	10,390.65	10,057.00	26.34	22.68	-58.07	396.83	-227.98	1,060.32	1,030.40	29.92	35.434				
10,900.00	10,648.72	10,435.47	10,057.12	26.56	22.99	-56.92	441.65	-228.27	1,067.54	1,037.39	30.15	35.408				
10,950.00	10,657.68	10,484.67	10,057.26	26.82	23.33	-56.12	490.85	-228.59	1,072.47	1,042.03	30.45	35.226				
11,000.00	10,662.32	10,534.45	10,057.40	27.11	23.72	-55.71	540.63	-228.91	1,075.02	1,044.20	30.81	34.889				
11,050.00	10,662.60	10,584.44	10,057.53	27.43	24.13	-55.69	590.61	-229.24	1,075.11	1,043.87	31.24	34.414				
11,075.86	10,661.04	10,610.24	10,057.60	27.60	24.35	-55.84	616.42	-229.40	1,074.19	1,042.70	31.49	34.112				
11,100.00	10,659.04	10,634.29	10,057.67	27.78	24.57	-55.93	640.47	-229.56	1,073.04	1,041.29	31.74	33.806				
11,200.00	10,650.73	10,733.92	10,057.94	28.56	25.52	-56.31	740.10	-230.20	1,068.27	1,035.42	32.85	32.523				
11,300.00	10,642.43	10,833.56	10,058.21	29.46	26.56	-56.70	839.73	-230.85	1,063.55	1,029.47	34.08	31.210				
11,400.00	10,634.13	10,933.19	10,058.49	30.44	27.68	-57.09	939.36	-231.49	1,058.87	1,023.45	35.42	29.893				
11,500.00	10,625.83	11,032.82	10,058.76	31.50	28.87	-57.48	1,038.98	-232.14	1,054.25	1,017.38	36.87	28.591				
11,600.00	10,617.53	11,132.45	10,059.03	32.63	30.12	-57.87	1,138.61	-232.78	1,049.68	1,011.26	38.42	27.321				
11,700.00	10,609.23	11,232.08	10,059.31	33.82	31.44	-58.27	1,238.24	-233.43	1,045.15	1,005.10	40.06	26.093				
11,800.00	10,600.92	11,331.72	10,059.58	35.07	32.79	-58.67	1,337.87	-234.07	1,040.68	998.91	41.77	24.914				
11,900.00	10,592.62	11,431.35	10,059.85	36.37	34.20	-59.08	1,437.50	-234.72	1,036.26	992.70	43.56	23.790				
12,000.00	10,584.32	11,530.98	10,060.12	37.72	35.64	-59.48	1,537.13	-235.36	1,031.89	986.48	45.41	22.722				
12,100.00	10,576.02	11,630.61	10,060.40	39.10	37.11	-59.90	1,636.76	-236.01	1,027.58	980.25	47.33	21.711				
12,200.00	10,567.72	11,730.24	10,060.67	40.52	38.61	-60.31	1,736.39	-236.66	1,023.32	974.01	49.30	20.756				
12,300.00	10,559.42	11,829.87	10,060.94	41.97	40.14	-60.73	1,836.02	-237.30	1,019.11	967.78	51.33	19.856				
12,400.00	10,551.12	11,929.51	10,061.22	43.45	41.70	-61.15	1,935.65	-237.95	1,014.96	961.56	53.40	19.008				
12,500.00	10,542.81	12,029.14	10,061.49	44.95	43.27	-61.58	2,035.28	-238.59	1,010.86	955.35	55.51	18.209				
12,600.00	10,534.51	12,128.77	10,061.76	46.48	44.87	-62.00	2,134.91	-239.24	1,006.82	949.15	57.67	17.458				
12,700.00	10,526.21	12,228.40	10,062.03	48.03	46.48	-62.44	2,234.54	-239.88	1,002.84	942.97	59.86	16.752				
12,800.00	10,517.91	12,328.03	10,062.31	49.60	48.10	-62.87	2,334.17	-240.53	998.91	936.82	62.10	16.087				
12,900.00	10,509.61	12,427.66	10,062.58	51.18	49.74	-63.31	2,433.79	-241.17	995.04	930.68	64.36	15.461				
13,000.00	10,501.31	12,527.30	10,062.85	52.79	51.39	-63.75	2,533.42	-241.82	991.24	924.58	66.66	14.871				
13,100.00	10,493.00	12,626.93	10,063.13	54.40	53.06	-64.20	2,633.05	-242.46	987.49	918.51	68.98	14.315				
13,200.00	10,484.70	12,726.56	10,063.40	56.03	54.73	-64.65	2,732.68	-243.11	983.80	912.47	71.33	13.791				
13,300.00	10,476.40	12,826.19	10,063.67	57.67	56.41	-65.10	2,832.31	-243.75	980.17	906.46	73.71	13.297				
13,400.00	10,468.10	12,925.82	10,063.94	59.32	58.10	-65.56	2,931.94	-244.40	976.61	900.49	76.12	12.830				
13,500.00	10,459.80	13,025.45	10,064.22	60.98	59.80	-66.01	3,031.57	-245.04	973.11	894.56	78.55	12.389				
13,600.00	10,451.50	13,125.09	10,064.49	62.65	61.51	-66.48	3,131.20	-245.69	969.67	888.67	81.00	11.972				
13,700.00	10,443.19	13,224.72	10,064.76	64.33	63.22	-66.94	3,230.83	-246.33	966.29	882.82	83.47	11.577				
13,800.00	10,434.89	13,324.35	10,065.04	66.02	64.94	-67.41	3,330.46	-246.98	962.98	877.02	85.96	11.203				

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 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 132H - Wellbore #1 - Design #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 (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor	Warning
13,900.00	10,426.59	13,423.98	10,065.31	67.71	66.66	-67.88	3,430.09	-247.62	959.73	871.27	88.47	10.848	
14,000.00	10,418.29	13,523.81	10,065.58	69.41	68.39	-68.36	3,529.72	-248.27	956.56	865.56	91.00	10.512	
14,100.00	10,409.99	13,623.24	10,065.86	71.12	70.12	-68.83	3,629.35	-248.91	953.44	859.90	93.54	10.193	
14,200.00	10,401.69	13,722.88	10,066.13	72.84	71.86	-69.32	3,728.97	-249.56	950.40	854.29	96.10	9.889	
14,300.00	10,393.39	13,822.51	10,066.40	74.55	73.60	-69.80	3,828.60	-250.20	947.42	848.74	98.68	9.601	
14,400.00	10,385.08	13,922.14	10,066.67	76.28	75.35	-70.29	3,928.23	-250.85	944.51	843.23	101.27	9.326	
14,500.00	10,376.78	14,021.77	10,066.95	78.01	77.10	-70.78	4,027.86	-251.49	941.67	837.79	103.88	9.065	
14,600.00	10,368.48	14,121.40	10,067.22	79.74	78.85	-71.27	4,127.49	-252.14	938.90	832.40	106.49	8.816	
14,700.00	10,360.18	14,221.03	10,067.49	81.48	80.61	-71.77	4,227.12	-252.78	936.19	827.07	109.12	8.579	
14,800.00	10,351.88	14,320.67	10,067.77	83.22	82.37	-72.26	4,326.75	-253.43	933.57	821.80	111.76	8.353	
14,900.00	10,343.58	14,420.30	10,068.04	84.96	84.13	-72.77	4,426.38	-254.07	931.01	816.59	114.41	8.137	
15,000.00	10,335.27	14,519.93	10,068.31	86.71	85.89	-73.27	4,526.01	-254.72	928.52	811.45	117.08	7.931	
15,100.00	10,326.97	14,619.56	10,068.58	88.46	87.66	-73.78	4,625.64	-255.36	926.11	806.36	119.74	7.734	
15,200.00	10,318.67	14,719.19	10,068.86	90.22	89.43	-74.29	4,725.27	-256.01	923.77	801.35	122.42	7.546	
15,300.00	10,310.37	14,818.83	10,069.13	91.98	91.20	-74.80	4,824.90	-256.65	921.50	796.40	125.10	7.366	
15,400.00	10,302.07	14,918.46	10,069.40	93.74	92.97	-75.31	4,924.53	-257.30	919.31	791.51	127.79	7.194	
15,500.00	10,293.77	15,018.09	10,069.68	95.50	94.75	-75.83	5,024.16	-257.94	917.19	786.70	130.49	7.029	
15,600.00	10,285.47	15,117.72	10,069.95	97.26	96.53	-76.35	5,123.78	-258.59	915.15	781.96	133.19	6.871	
15,700.00	10,277.16	15,217.35	10,070.22	99.03	98.30	-76.87	5,223.41	-259.23	913.19	777.29	135.90	6.720	
15,800.00	10,268.86	15,316.98	10,070.49	100.80	100.08	-77.39	5,323.04	-259.88	911.30	772.69	138.60	6.575	
15,900.00	10,260.56	15,416.62	10,070.77	102.57	101.87	-77.92	5,422.67	-260.52	909.48	768.17	141.31	6.436	
16,000.00	10,252.26	15,516.25	10,071.04	104.35	103.65	-78.45	5,522.30	-261.17	907.75	763.72	144.03	6.303	
16,100.00	10,243.96	15,615.88	10,071.31	106.12	105.43	-78.98	5,621.93	-261.81	906.09	759.35	146.74	6.175	
16,200.00	10,235.66	15,715.51	10,071.59	107.90	107.22	-79.51	5,721.56	-262.46	904.51	755.06	149.45	6.052	
16,300.00	10,227.35	15,815.14	10,071.86	109.68	109.01	-80.04	5,821.19	-263.10	903.01	750.85	152.16	5.934	
16,400.00	10,219.05	15,914.77	10,072.13	111.46	110.80	-80.58	5,920.82	-263.75	901.59	746.72	154.88	5.821	
16,500.00	10,210.75	16,014.41	10,072.40	113.24	112.58	-81.11	6,020.45	-264.39	900.25	742.67	157.58	5.713	
16,600.00	10,202.45	16,114.04	10,072.68	115.03	114.37	-81.65	6,120.08	-265.04	898.99	738.70	160.29	5.608	
16,700.00	10,194.15	16,213.67	10,072.95	116.81	116.17	-82.19	6,219.71	-265.68	897.81	734.81	162.99	5.508	
16,800.00	10,185.85	16,313.30	10,073.22	118.60	117.96	-82.73	6,319.34	-266.33	896.71	731.02	165.69	5.412	
16,900.00	10,177.54	16,412.93	10,073.50	120.39	119.75	-83.28	6,418.96	-266.97	895.69	727.30	168.38	5.319	
17,000.00	10,169.24	16,512.56	10,073.77	122.17	121.55	-83.82	6,518.59	-267.62	894.75	723.68	171.07	5.230	
17,100.00	10,160.94	16,612.20	10,074.04	123.96	123.34	-84.36	6,618.22	-268.26	893.89	720.14	173.75	5.145	
17,200.00	10,152.64	16,711.83	10,074.31	125.76	125.14	-84.91	6,717.85	-268.91	893.11	716.69	176.42	5.062	
17,300.00	10,144.34	16,811.46	10,074.59	127.55	126.93	-85.46	6,817.48	-269.55	892.42	713.33	179.09	4.983	
17,400.00	10,136.04	16,911.09	10,074.86	129.34	128.73	-86.00	6,917.11	-270.20	891.80	710.06	181.74	4.907	
17,500.00	10,127.74	17,010.72	10,075.13	131.14	130.53	-86.55	7,016.74	-270.84	891.27	706.89	184.39	4.834	
17,600.00	10,119.43	17,110.35	10,075.41	132.93	132.33	-87.10	7,116.37	-271.49	890.82	703.80	187.02	4.763	
17,700.00	10,111.13	17,209.99	10,075.68	134.73	134.13	-87.65	7,216.00	-272.13	890.46	700.81	189.64	4.695	
17,800.00	10,102.83	17,309.62	10,075.95	136.52	135.93	-88.20	7,315.63	-272.78	890.17	697.92	192.26	4.630	
17,900.00	10,094.53	17,409.25	10,076.22	138.32	137.73	-88.75	7,415.26	-273.42	889.97	695.12	194.86	4.567	
18,000.00	10,086.23	17,508.88	10,076.50	140.12	139.53	-89.30	7,514.89	-274.07	889.85	692.41	197.44	4.507	
18,093.91	10,078.43	17,602.45	10,076.75	141.81	141.22	-89.81	7,608.45	-274.67	889.82	689.96	199.86	4.452	
18,100.00	10,077.93	17,608.51	10,076.77	141.92	141.33	-89.85	7,614.52	-274.71	889.82	689.80	200.01	4.449	
18,183.43	10,071.00	17,691.63	10,077.00	143.42	142.83	-90.31	7,697.63	-275.25	889.85	687.70	202.15	4.402 SF	

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_Section 34
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 137H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference:
 TVD Reference: KB @ 3666.70ft
 MD Reference: KB @ 3666.70ft
 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_Section 34 - Thistle Unit 49H_AC - Original - Actual													Offset Site Error: 0.00 ft	
Survey Program: 100-MWD+IGRF													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	0.00	0.00	0.00	0.00	-85.20	61.34	-731.17	733.74					
100.00	100.00	91.69	91.69	0.08	0.12	-85.21	61.27	-731.63	734.23	734.08	0.15	4,858.206		
200.00	200.00	193.54	193.54	0.31	0.47	-85.24	61.00	-732.60	735.16	734.59	0.56	1,306.631		
300.00	300.00	290.41	290.39	0.53	0.82	-85.28	60.62	-733.54	736.09	735.11	0.98	753.892		
400.00	400.00	391.74	391.72	0.76	1.18	-85.31	60.21	-734.70	737.20	735.80	1.40	525.251		
500.00	500.00	491.35	491.33	0.98	1.54	-85.37	59.61	-735.75	738.20	736.38	1.83	404.382		
600.00	600.00	589.22	589.18	1.21	1.89	-85.44	58.75	-736.97	739.38	737.14	2.24	329.721		
700.00	700.00	691.35	691.30	1.43	2.26	-85.52	57.80	-738.30	740.60	737.92	2.67	277.142		
800.00	800.00	790.76	790.70	1.66	2.62	-85.59	56.97	-739.42	741.66	738.56	3.09	239.715		
900.00	900.00	895.28	895.22	1.88	2.99	-85.65	56.35	-740.36	742.51	738.98	3.53	210.289		
1,000.00	1,000.00	995.68	995.61	2.11	3.35	-85.71	55.58	-740.89	742.98	739.02	3.95	187.899		
1,100.00	1,100.00	1,095.02	1,094.94	2.33	3.70	-85.80	54.40	-741.47	743.48	739.10	4.37	169.985		
1,200.00	1,200.00	1,193.26	1,193.17	2.56	4.06	-85.91	53.06	-742.22	744.14	739.35	4.79	155.320		
1,300.00	1,300.00	1,292.61	1,292.50	2.78	4.41	-86.03	51.63	-743.15	744.97	739.76	5.21	142.926		
1,400.00	1,400.00	1,391.39	1,391.26	3.01	4.77	-86.14	50.17	-744.20	745.93	740.29	5.63	132.438		
1,500.00	1,500.00	1,490.22	1,490.08	3.23	5.12	-86.24	48.96	-745.38	747.04	740.99	6.05	123.433		
1,600.00	1,600.00	1,592.21	1,592.07	3.46	5.49	-86.27	48.73	-746.51	748.13	741.65	6.48	115.489		
1,700.00	1,700.00	1,686.63	1,686.47	3.68	5.82	-86.25	49.01	-747.68	749.39	742.51	6.88	108.946		
1,800.00	1,800.00	1,790.03	1,789.86	3.91	6.18	-86.23	49.32	-749.25	750.92	743.62	7.31	102.768		
1,900.00	1,900.00	1,894.19	1,894.02	4.13	6.55	-86.19	49.92	-750.18	751.86	744.13	7.73	97.226		
2,000.00	2,000.00	1,994.95	1,994.78	4.35	6.89	-86.14	50.61	-750.74	752.46	744.31	8.15	92.355		
2,100.00	2,100.00	2,090.21	2,090.03	4.58	7.23	-86.11	51.11	-751.32	753.11	744.56	8.55	88.104		
2,200.00	2,200.00	2,189.01	2,188.81	4.80	7.57	-86.04	52.06	-752.55	754.42	745.46	8.96	84.197		
2,300.00	2,300.00	2,288.67	2,288.46	5.03	7.92	-85.96	53.23	-753.87	755.82	746.44	9.38	80.621		
2,400.00	2,400.00	2,388.53	2,388.30	5.25	8.27	-85.86	54.69	-755.17	757.23	747.44	9.79	77.348		
2,500.00	2,500.00	2,487.13	2,486.88	5.48	8.62	-85.73	56.45	-756.54	758.74	748.54	10.20	74.382		
2,600.00	2,600.00	2,591.25	2,590.97	5.70	8.98	-85.60	58.32	-758.00	760.28	749.65	10.63	71.532		
2,700.00	2,700.00	2,687.96	2,687.66	5.93	9.32	-85.47	60.13	-759.13	761.60	750.56	11.03	69.022		
2,800.00	2,800.00	2,787.10	2,786.77	6.15	9.67	-85.32	62.20	-760.42	763.06	751.61	11.45	66.658		
2,900.00	2,900.00	2,889.08	2,888.70	6.38	10.02	-85.14	64.82	-761.79	764.62	752.75	11.87	64.421		
3,000.00	3,000.00	2,991.49	2,991.07	6.60	10.38	-84.92	67.79	-762.76	765.81	753.52	12.29	62.307		
3,100.00	3,100.00	3,091.04	3,090.56	6.83	10.73	-84.68	71.07	-763.51	766.86	754.15	12.70	60.363		
3,200.00	3,200.00	3,194.28	3,193.73	7.05	11.08	-84.41	74.84	-764.02	767.70	754.57	13.13	58.477		
3,300.00	3,300.00	3,295.82	3,295.20	7.26	11.44	-174.13	78.61	-764.23	768.92	755.38	13.54	56.792		
3,400.00	3,399.98	3,399.59	3,398.88	7.46	11.80	-173.83	82.86	-764.07	771.15	757.20	13.95	55.281		
3,500.00	3,499.92	3,502.31	3,501.52	7.66	12.15	-173.55	86.99	-763.51	774.31	759.95	14.36	53.931		
3,600.00	3,599.82	3,600.87	3,600.00	7.86	12.49	-173.29	90.83	-762.61	778.40	763.65	14.75	52.757		
3,700.00	3,699.64	3,704.29	3,703.34	8.07	12.85	-173.05	94.68	-761.48	783.60	768.43	15.17	51.669		
3,800.00	3,799.38	3,804.58	3,803.57	8.28	13.20	-172.86	97.92	-760.26	789.92	774.35	15.57	50.738		
3,900.00	3,899.02	3,906.40	3,905.34	8.50	13.55	-172.72	100.76	-758.84	797.31	781.34	15.98	49.907		
4,000.00	3,998.54	4,002.52	4,001.43	8.72	13.88	-172.66	102.49	-757.74	806.14	789.78	16.37	49.253		
4,100.00	4,097.92	4,102.57	4,101.48	8.94	14.23	-172.71	102.98	-757.16	816.64	799.88	16.77	48.704		
4,133.34	4,131.02	4,136.96	4,135.87	9.02	14.34	-172.73	103.09	-756.92	820.39	803.49	16.90	48.534		
4,200.00	4,197.18	4,203.62	4,202.53	9.18	14.57	-172.78	103.36	-756.38	827.95	810.78	17.17	48.221		
4,300.00	4,296.44	4,302.29	4,301.19	9.42	14.91	-172.83	104.02	-755.48	839.23	821.66	17.57	47.769		
4,400.00	4,395.69	4,445.81	4,444.64	9.66	15.40	-172.95	104.01	-751.38	848.70	830.63	18.07	46.974		
4,500.00	4,494.95	4,570.00	4,568.43	9.91	15.82	-173.15	101.61	-741.94	852.93	834.42	18.50	46.097		
4,600.00	4,594.20	4,656.85	4,654.98	10.16	16.11	-173.32	99.57	-735.11	856.98	838.09	18.88	45.382		
4,700.00	4,693.46	4,775.05	4,772.74	10.41	16.51	-173.59	95.99	-725.56	860.70	841.40	19.31	44.574		
4,800.00	4,792.71	4,879.81	4,876.98	10.67	16.87	-173.92	91.45	-716.08	863.37	843.66	19.72	43.789		
4,900.00	4,891.97	4,976.55	4,973.20	10.93	17.20	-174.21	87.33	-706.97	865.70	845.58	20.12	43.036		
5,000.00	4,991.22	5,058.97	5,055.27	11.19	17.48	-174.44	84.17	-700.13	869.23	848.73	20.50	42.410		

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_Section 34
 Site Error: 0.00 ft
 Reference Well: Thistle Unit 137H
 Well Error: 0.00 ft
 Reference Wellbore: Wellbore #1
 Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 137H
 TVD Reference: KB @ 3666.70ft
 MD Reference: KB @ 3666.70ft
 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_Section 34 - Thistle Unit 49H_AC - Original - Actual													Offset Site Error: 0.00 ft
Survey Program: 100-MWD+IGRF													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	
5,100.00	5,090.47	5,143.75	5,139.83	11.46	17.78	-174.67	81.09	-694.90	874.88	854.00	20.87	41.911	
5,200.00	5,189.73	5,229.21	5,225.15	11.73	18.07	-174.89	78.36	-690.85	882.03	860.78	21.25	41.507	
5,300.00	5,288.98	5,328.52	5,324.34	12.00	18.42	-175.14	75.14	-687.26	890.31	868.65	21.66	41.109	
5,400.00	5,388.24	5,453.01	5,448.63	12.27	18.85	-175.41	71.70	-681.26	897.54	875.43	22.12	40.579	
5,500.00	5,487.49	5,592.53	5,592.49	12.54	19.36	-175.51	70.46	-667.61	900.15	877.56	22.59	39.847	
5,600.00	5,586.75	5,696.13	5,690.40	12.82	19.72	-175.58	69.41	-655.99	900.48	877.48	23.00	39.148	
5,700.00	5,686.00	5,779.01	5,772.80	13.10	20.02	-175.71	67.42	-647.35	902.04	878.65	23.40	38.555	
5,800.00	5,785.26	5,868.74	5,862.02	13.38	20.34	-176.06	62.21	-639.58	905.13	881.34	23.79	38.039	
5,900.00	5,884.51	5,961.81	5,954.28	13.66	20.67	-176.71	52.17	-632.62	909.12	884.92	24.20	37.570	
6,000.00	5,983.77	6,059.67	6,050.85	13.94	21.02	-177.62	37.84	-625.95	913.71	889.10	24.61	37.125	
6,100.00	6,083.02	6,152.20	6,142.05	14.23	21.35	-178.54	23.35	-620.03	918.91	893.89	25.02	36.729	
6,200.00	6,182.28	6,246.83	6,235.53	14.51	21.70	-179.39	9.79	-614.48	924.93	899.50	25.43	36.368	
6,300.00	6,281.53	6,344.65	6,332.35	14.80	22.05	-179.81	-3.06	-609.00	931.44	905.58	25.86	36.025	
6,400.00	6,380.78	6,454.88	6,441.38	15.09	22.46	-178.91	-17.81	-602.20	937.57	911.26	26.31	35.632	
6,500.00	6,480.04	6,560.96	6,546.05	15.38	22.86	-177.98	-33.24	-594.52	942.86	916.09	26.76	35.228	
6,600.00	6,579.29	6,659.42	6,643.10	15.66	23.24	-177.09	-48.03	-587.03	948.02	920.82	27.20	34.847	
6,700.00	6,678.55	6,755.70	6,738.07	15.96	23.61	-176.26	-62.18	-579.98	953.68	926.03	27.64	34.499	
6,800.00	6,777.80	6,854.21	6,835.27	16.25	23.99	-175.41	-76.57	-572.82	959.60	931.51	28.09	34.161	
6,900.00	6,877.06	6,949.73	6,929.60	16.54	24.36	-174.64	-89.96	-566.11	965.91	937.38	28.53	33.854	
7,000.00	6,976.31	7,043.27	7,022.11	16.83	24.73	-173.94	-102.44	-560.03	972.87	943.91	28.97	33.584	
7,100.00	7,075.57	7,143.50	7,121.42	17.13	25.12	-173.27	-114.60	-554.11	980.45	951.03	29.42	33.323	
7,200.00	7,174.82	7,255.66	7,232.35	17.42	25.56	-172.47	-129.13	-546.28	987.19	957.27	29.92	32.997	
7,300.00	7,274.08	7,363.96	7,338.86	17.72	26.00	-171.51	-146.42	-537.03	992.96	962.54	30.41	32.649	
7,400.00	7,373.33	7,462.72	7,435.80	18.01	26.41	-170.59	-162.98	-527.96	998.45	967.56	30.89	32.322	
7,500.00	7,472.59	7,558.46	7,529.91	18.31	26.80	-169.75	-178.39	-519.46	1,004.39	973.03	31.36	32.026	
7,600.00	7,571.84	7,657.09	7,626.98	18.61	27.21	-168.93	-193.63	-511.00	1,010.74	978.90	31.84	31.743	
7,700.00	7,671.09	7,751.44	7,720.04	18.91	27.60	-168.22	-207.12	-503.29	1,017.45	985.15	32.31	31.494	
7,800.00	7,770.35	7,851.46	7,824.75	19.20	28.04	-167.49	-221.39	-494.76	1,024.30	991.49	32.81	31.222	
7,900.00	7,869.60	7,960.72	7,926.52	19.50	28.47	-166.72	-236.25	-485.54	1,030.64	997.33	33.31	30.943	
8,000.00	7,968.86	8,052.72	8,017.19	19.80	28.86	-166.04	-249.62	-477.46	1,037.32	1,003.55	33.78	30.713	
8,100.00	8,068.11	8,146.07	8,109.32	20.10	29.25	-165.40	-262.62	-469.97	1,044.76	1,010.51	34.25	30.508	
8,200.00	8,167.37	8,238.23	8,200.47	20.40	29.63	-164.83	-274.48	-463.41	1,052.93	1,018.22	34.71	30.339	
8,300.00	8,266.62	8,335.00	8,296.31	20.70	30.03	-164.29	-286.32	-457.10	1,061.63	1,026.45	35.18	30.178	
8,400.00	8,365.88	8,433.44	8,393.81	21.01	30.43	-163.75	-298.39	-450.88	1,070.63	1,034.97	35.66	30.023	
8,500.00	8,465.13	8,551.53	8,510.57	21.31	30.92	-163.05	-313.75	-442.24	1,079.01	1,042.80	36.22	29.792	
8,600.00	8,564.39	8,672.26	8,629.62	21.61	31.44	-162.27	-329.93	-430.37	1,085.16	1,048.37	36.79	29.497	
8,633.34	8,597.47	8,707.02	8,663.86	21.71	31.59	-162.04	-334.62	-426.62	1,086.96	1,050.00	36.96	29.408	
8,700.00	8,663.68	8,766.28	8,722.28	21.89	31.85	-161.67	-342.42	-420.44	1,090.50	1,053.23	37.27	29.261	
8,800.00	8,763.10	8,856.88	8,811.80	22.12	32.23	-161.15	-353.53	-412.04	1,095.69	1,057.98	37.71	29.052	
8,900.00	8,862.66	8,949.88	8,903.93	22.35	32.61	-160.68	-363.66	-404.45	1,100.37	1,062.21	38.16	28.838	
9,000.00	8,962.34	9,041.75	8,995.30	22.56	32.98	-160.35	-371.05	-398.46	1,104.50	1,065.92	38.58	28.630	
9,100.00	9,062.11	9,134.54	9,087.84	22.77	33.33	-160.14	-376.30	-393.92	1,108.16	1,069.17	38.99	28.425	
9,200.00	9,161.96	9,230.65	9,183.76	22.97	33.69	-159.95	-380.90	-390.01	1,111.09	1,071.70	39.39	28.205	
9,300.00	9,261.87	9,326.78	9,279.81	23.16	34.04	-159.85	-383.30	-387.18	1,113.08	1,073.29	39.79	27.975	
9,400.00	9,361.83	9,420.05	9,373.04	23.35	34.37	-159.79	-384.94	-385.16	1,114.31	1,074.14	40.16	27.744	
9,500.00	9,461.82	9,516.51	9,469.48	23.52	34.70	-159.72	-386.39	-383.76	1,114.90	1,074.35	40.55	27.497	
9,566.67	9,528.49	9,581.58	9,534.54	23.63	34.92	-110.29	-386.51	-383.19	1,114.67	1,073.87	40.80	27.322	
9,600.00	9,561.82	9,612.57	9,565.54	23.69	35.03	-110.29	-386.48	-383.02	1,114.49	1,073.57	40.92	27.237	
9,700.00	9,661.82	9,709.97	9,662.94	23.88	35.35	-110.29	-386.40	-382.82	1,114.27	1,072.97	41.30	26.978	
9,762.00	9,723.82	9,769.86	9,722.82	23.99	35.55	-110.30	-386.46	-382.70	1,114.17	1,072.63	41.54	26.822	
9,800.00	9,761.82	9,804.46	9,757.42	24.06	35.67	-110.30	-386.55	-382.72	1,114.23	1,072.55	41.68	26.735	
9,900.00	9,861.82	9,900.25	9,853.21	24.25	35.99	-110.32	-387.04	-383.14	1,114.81	1,072.75	42.06	26.508	

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 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 49H_AC - Original - Actual													Offset Site Error:	0.00 ft
Survey Program: 100-MWD+IGRF													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)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Minimum Separation (ft)	Separation Factor		
10,000.00	9,961.82	9,999.37	9,952.33	24.44	36.32	-110.34	-387.81	-383.62	1,115.53	1,073.08	42.45	26.279		
10,100.00	10,061.82	10,098.82	10,051.78	24.63	36.66	-110.39	-388.96	-384.03	1,116.32	1,073.47	42.85	26.054		
10,128.24	10,090.06	10,126.94	10,079.89	24.69	36.75	-110.41	-389.33	-384.14	1,116.55	1,073.59	42.96	25.991		
10,150.00	10,111.81	10,148.52	10,101.46	24.73	36.83	-110.05	-389.62	-384.22	1,116.87	1,073.83	43.05	25.946		
10,200.00	10,161.63	10,197.82	10,150.76	24.82	36.99	-110.10	-390.30	-384.42	1,118.71	1,075.46	43.25	25.869		
10,250.00	10,210.90	10,246.54	10,199.48	24.92	37.16	-110.21	-390.99	-384.63	1,122.10	1,078.66	43.44	25.829		
10,300.00	10,259.26	10,294.31	10,247.24	25.01	37.32	-110.35	-391.72	-384.83	1,127.11	1,083.47	43.64	25.828		
10,350.00	10,306.32	10,341.40	10,294.32	25.10	37.48	-110.50	-392.50	-385.01	1,133.82	1,089.99	43.83	25.867		
10,400.00	10,351.74	10,387.77	10,340.69	25.20	37.64	-110.65	-393.24	-385.17	1,142.30	1,098.27	44.03	25.946		
10,450.00	10,395.17	10,431.33	10,384.24	25.29	37.79	-110.72	-393.91	-385.27	1,152.65	1,108.44	44.21	26.073		
10,500.00	10,436.28	10,471.07	10,423.98	25.38	37.93	-110.62	-394.55	-385.37	1,165.05	1,120.67	44.38	26.254		
10,550.00	10,474.75	10,508.11	10,461.01	25.48	38.06	-110.35	-395.19	-385.47	1,179.62	1,135.08	44.53	26.488		
10,600.00	10,510.29	10,544.31	10,497.21	25.59	38.18	-109.92	-395.86	-385.55	1,196.41	1,151.72	44.69	26.771		
10,650.00	10,542.64	10,577.28	10,530.17	25.70	38.30	-109.21	-396.47	-385.57	1,215.44	1,170.60	44.83	27.110		
10,700.00	10,571.54	11,758.57	11,236.31	25.83	40.38	-117.01	331.67	-356.85	1,217.95	1,175.08	42.87	28.408		
10,750.00	10,596.77	11,805.37	11,234.02	25.98	40.58	-117.46	378.39	-355.08	1,201.61	1,158.21	43.40	27.686		
10,800.00	10,618.15	11,855.86	11,230.94	26.14	40.81	-117.76	428.74	-353.23	1,187.31	1,143.37	43.94	27.021		
10,850.00	10,635.52	11,907.00	11,227.55	26.34	41.07	-118.01	479.73	-351.21	1,175.01	1,130.53	44.48	26.416		
10,900.00	10,648.72	11,958.02	11,224.58	26.56	41.34	-118.29	530.61	-348.68	1,164.67	1,119.68	44.99	25.886		
10,950.00	10,657.68	11,997.00	11,222.72	26.82	41.58	-118.67	569.48	-346.63	1,156.59	1,111.18	45.41	25.473		
11,000.00	10,662.32	12,035.41	11,221.31	27.11	41.81	-118.99	607.82	-344.79	1,151.09	1,105.32	45.77	25.147		
11,050.00	10,662.60	12,083.44	11,219.95	27.43	42.11	-119.25	655.79	-342.69	1,148.07	1,101.88	46.19	24.854		
11,075.86	10,661.04	12,112.30	11,218.97	27.60	42.30	-119.39	684.61	-341.43	1,147.29	1,100.85	46.44	24.707		
11,100.00	10,659.04	12,139.23	11,217.93	27.78	42.48	-119.47	711.49	-340.25	1,146.76	1,100.10	46.66	24.576		
11,200.00	10,650.73	12,236.02	11,214.71	28.56	43.19	-119.81	808.12	-335.67	1,144.56	1,097.03	47.53	24.078		
11,300.00	10,642.43	12,342.94	11,212.23	29.46	44.03	-120.25	914.84	-329.78	1,142.24	1,093.67	48.57	23.516		
11,400.00	10,634.13	12,431.03	11,210.83	30.44	44.78	-120.64	1,002.78	-324.81	1,140.22	1,090.74	49.49	23.042		
11,500.00	10,625.83	12,538.42	11,209.61	31.50	45.77	-121.15	1,109.98	-318.57	1,138.37	1,087.71	50.67	22.468		
11,600.00	10,617.53	12,636.56	11,208.86	32.63	46.72	-121.65	1,207.93	-312.48	1,136.45	1,084.66	51.80	21.940		
11,700.00	10,609.23	12,746.56	11,207.68	33.82	47.85	-122.20	1,317.68	-305.17	1,134.09	1,080.96	53.13	21.346		
11,800.00	10,600.92	12,841.46	11,205.24	35.07	48.88	-122.61	1,412.35	-299.15	1,131.28	1,076.93	54.35	20.816		
11,900.00	10,592.62	12,923.93	11,204.61	36.37	49.81	-123.02	1,494.69	-294.39	1,129.95	1,074.53	55.42	20.390		
12,000.00	10,584.32	13,022.84	11,204.44	37.72	50.96	-123.53	1,593.45	-289.07	1,129.38	1,072.65	56.73	19.908		
12,100.00	10,576.02	13,127.32	11,202.70	39.10	52.22	-123.97	1,697.80	-284.23	1,128.70	1,070.51	58.19	19.397		
12,200.00	10,567.72	13,228.26	11,202.14	40.52	53.48	-124.49	1,798.56	-278.26	1,127.64	1,068.04	59.60	18.922		
12,300.00	10,559.42	13,325.42	11,203.12	41.97	54.73	-125.07	1,895.50	-271.77	1,126.93	1,066.01	60.93	18.496		
12,390.67	10,551.89	13,409.49	11,203.25	43.31	55.83	-125.53	1,979.41	-266.73	1,126.48	1,064.37	62.11	18.137		
12,400.00	10,551.12	13,417.18	11,203.29	43.45	55.94	-125.57	1,987.10	-266.31	1,126.48	1,064.27	62.22	18.106		
12,500.00	10,542.81	13,509.11	11,204.34	44.95	57.18	-126.09	2,078.90	-261.55	1,127.28	1,063.77	63.51	17.750		
12,600.00	10,534.51	13,609.44	11,204.52	46.48	58.56	-126.59	2,179.11	-256.84	1,128.03	1,063.06	64.97	17.363		
12,700.00	10,526.21	13,707.85	11,205.23	48.03	59.94	-127.11	2,277.41	-252.24	1,129.20	1,062.81	66.39	17.008		
12,800.00	10,517.91	13,814.30	11,205.04	49.60	61.46	-127.63	2,383.76	-247.46	1,130.07	1,062.09	67.98	16.623		
12,900.00	10,509.61	13,909.28	11,203.33	51.18	62.85	-128.00	2,478.66	-244.04	1,130.73	1,061.29	69.44	16.284		
13,000.00	10,501.31	14,001.12	11,202.99	52.79	64.21	-128.42	2,570.44	-240.60	1,132.20	1,061.39	70.81	15.990		
13,100.00	10,493.00	14,099.28	11,203.73	54.40	65.68	-128.91	2,668.51	-236.61	1,134.20	1,061.95	72.25	15.698		
13,200.00	10,484.70	14,192.84	11,204.27	56.03	67.10	-129.37	2,761.99	-233.07	1,136.41	1,062.78	73.62	15.436		
13,300.00	10,476.40	14,282.80	11,206.33	57.67	68.49	-129.88	2,851.86	-229.33	1,139.49	1,064.61	74.88	15.218		
13,400.00	10,468.10	14,405.86	11,208.62	59.32	70.40	-130.54	2,974.79	-224.43	1,142.65	1,065.95	76.70	14.897		
13,500.00	10,459.80	14,507.28	11,207.85	60.98	72.00	-130.98	3,076.13	-220.39	1,144.09	1,065.86	78.23	14.625		
13,600.00	10,451.50	14,635.08	11,205.21	62.65	74.04	-131.50	3,203.76	-214.64	1,144.34	1,064.11	80.22	14.264		
13,700.00	10,443.19	14,742.42	11,201.66	64.33	75.77	-131.93	3,310.85	-208.36	1,142.80	1,060.94	81.86	13.961		
13,800.00	10,434.89	14,836.40	11,197.59	66.02	77.30	-132.23	3,404.65	-204.08	1,141.62	1,058.29	83.33	13.700		

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 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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_Section 34 - Thistle Unit 49H_AC - Original - Actual												Offset Well Error:	0.00 ft
Survey Program: 100-MWD+IGRF													
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	10,426.59	14,928.99	11,195.50	67.71	78.81	-132.64	3,497.05	-198.64	1,140.90	1,056.23	84.67	13.475	
13,921.37	10,424.82	14,947.78	11,195.49	68.08	79.12	-132.75	3,515.79	-197.29	1,140.86	1,055.94	84.92	13.435	
14,000.00	10,418.29	15,030.81	11,196.61	69.41	80.48	-133.29	3,598.53	-190.44	1,140.93	1,054.97	85.97	13.272	
14,100.00	10,409.99	15,156.69	11,196.65	71.12	82.56	-134.10	3,723.86	-178.79	1,139.52	1,051.95	87.57	13.013	
14,200.00	10,401.69	15,244.98	11,194.81	72.84	84.03	-134.59	3,811.81	-171.25	1,137.31	1,048.60	88.71	12.821	
14,260.48	10,396.67	15,288.89	11,194.09	73.87	84.76	-134.81	3,855.59	-168.08	1,136.79	1,047.54	89.25	12.737	
14,300.00	10,393.39	15,314.46	11,194.10	74.55	85.19	-134.95	3,881.11	-166.34	1,137.04	1,047.50	89.53	12.700	
14,400.00	10,385.08	15,392.24	11,196.13	76.28	86.50	-135.45	3,958.69	-161.34	1,139.69	1,049.33	90.36	12.613	
14,500.00	10,376.78	15,514.95	11,200.54	78.01	88.57	-136.34	4,080.94	-151.58	1,142.31	1,050.56	91.75	12.450	
14,600.00	10,368.48	15,638.49	11,202.06	79.74	90.66	-137.18	4,203.95	-140.33	1,142.54	1,049.39	93.14	12.266	
14,659.94	10,363.51	15,692.05	11,202.00	80.78	91.57	-137.51	4,257.30	-135.64	1,142.33	1,048.61	93.72	12.189	
14,700.00	10,360.18	15,726.97	11,202.30	81.48	92.17	-137.75	4,292.07	-132.48	1,142.42	1,048.36	94.06	12.146	
14,800.00	10,351.88	15,817.60	11,203.45	83.22	93.72	-138.35	4,382.37	-124.71	1,143.37	1,048.42	94.95	12.042	
14,900.00	10,343.58	15,940.70	11,202.81	84.96	95.83	-139.04	4,505.11	-115.49	1,143.86	1,047.45	96.41	11.865	
15,000.00	10,335.27	16,051.51	11,198.44	86.71	97.75	-139.47	4,615.64	-108.96	1,142.91	1,045.04	97.87	11.677	
15,100.00	10,326.97	16,160.28	11,191.39	88.46	99.65	-139.75	4,724.05	-103.84	1,140.82	1,041.37	99.46	11.470	
15,143.48	10,323.36	16,178.03	11,190.18	89.23	99.96	-139.80	4,741.75	-103.03	1,140.13	1,040.50	99.64	11.443 SF	
15,200.00	10,318.67	16,178.03	11,190.18	90.22	99.96	-139.80	4,741.75	-103.03	1,141.53	1,042.21	99.33	11.493	
15,300.00	10,310.37	16,178.03	11,190.18	91.98	99.96	-139.80	4,741.75	-103.03	1,150.83	1,052.49	98.33	11.703	
15,400.00	10,302.07	16,178.03	11,190.18	93.74	99.96	-139.80	4,741.75	-103.03	1,168.63	1,071.81	96.83	12.069	
15,500.00	10,293.77	16,178.03	11,190.18	95.50	99.96	-139.80	4,741.75	-103.03	1,194.57	1,099.69	94.88	12.590	
15,600.00	10,285.47	16,178.03	11,190.18	97.26	99.96	-139.80	4,741.75	-103.03	1,228.13	1,135.52	92.62	13.260	
15,700.00	10,277.16	16,178.03	11,190.18	99.03	99.96	-139.80	4,741.75	-103.03	1,268.71	1,178.58	90.13	14.076	
15,800.00	10,268.86	16,178.03	11,190.18	100.80	99.96	-139.80	4,741.75	-103.03	1,315.64	1,228.12	87.53	15.031	
15,900.00	10,260.56	16,178.03	11,190.18	102.57	99.96	-139.80	4,741.75	-103.03	1,368.29	1,283.40	84.89	16.118	
16,000.00	10,252.26	16,178.03	11,190.18	104.35	99.96	-139.80	4,741.75	-103.03	1,426.02	1,343.73	82.29	17.329	
16,100.00	10,243.96	16,178.03	11,190.18	106.12	99.96	-139.80	4,741.75	-103.03	1,488.23	1,408.45	79.78	18.654	
16,200.00	10,235.66	16,178.03	11,190.18	107.90	99.96	-139.80	4,741.75	-103.03	1,554.39	1,477.00	77.39	20.085	
16,300.00	10,227.35	16,178.03	11,190.18	109.68	99.96	-139.80	4,741.75	-103.03	1,624.02	1,548.87	75.14	21.612	
16,400.00	10,219.05	16,178.03	11,190.18	111.46	99.96	-139.80	4,741.75	-103.03	1,696.68	1,623.63	73.05	23.226	
16,500.00	10,210.75	16,178.03	11,190.18	113.24	99.96	-139.80	4,741.75	-103.03	1,772.02	1,700.90	71.11	24.919	
16,600.00	10,202.45	16,178.03	11,190.18	115.03	99.96	-139.80	4,741.75	-103.03	1,849.69	1,780.36	69.33	26.680	
16,700.00	10,194.15	16,178.03	11,190.18	116.81	99.96	-139.80	4,741.75	-103.03	1,929.42	1,861.73	67.69	28.503	
16,800.00	10,185.85	16,178.03	11,190.18	118.60	99.96	-139.80	4,741.75	-103.03	2,010.96	1,944.76	66.19	30.380	
16,900.00	10,177.54	16,178.03	11,190.18	120.39	99.96	-139.80	4,741.75	-103.03	2,094.10	2,029.27	64.83	32.303	
17,000.00	10,169.24	16,178.03	11,190.18	122.17	99.96	-139.80	4,741.75	-103.03	2,178.66	2,115.08	63.58	34.266	
17,100.00	10,160.94	16,178.03	11,190.18	123.96	99.96	-139.80	4,741.75	-103.03	2,264.48	2,202.03	62.44	36.264	
17,200.00	10,152.64	16,178.03	11,190.18	125.76	99.96	-139.80	4,741.75	-103.03	2,351.42	2,290.01	61.41	38.291	
17,300.00	10,144.34	16,178.03	11,190.18	127.55	99.96	-139.80	4,741.75	-103.03	2,439.36	2,378.89	60.47	40.342	
17,400.00	10,136.04	16,178.03	11,190.18	129.34	99.96	-139.80	4,741.75	-103.03	2,528.19	2,468.59	59.61	42.413	
17,500.00	10,127.74	16,178.03	11,190.18	131.14	99.96	-139.80	4,741.75	-103.03	2,617.84	2,559.01	58.83	44.501	
17,600.00	10,119.43	16,178.03	11,190.18	132.93	99.96	-139.80	4,741.75	-103.03	2,708.21	2,650.09	58.11	46.603	
17,700.00	10,111.13	16,178.03	11,190.18	134.73	99.96	-139.80	4,741.75	-103.03	2,799.23	2,741.77	57.46	48.715	
17,800.00	10,102.83	16,178.03	11,190.18	136.52	99.96	-139.80	4,741.75	-103.03	2,890.84	2,833.98	56.87	50.836	
17,900.00	10,094.53	16,178.03	11,190.18	138.32	99.96	-139.80	4,741.75	-103.03	2,983.00	2,926.68	56.32	52.962	
18,000.00	10,086.23	16,178.03	11,190.18	140.12	99.96	-139.80	4,741.75	-103.03	3,075.64	3,019.82	55.83	55.093	
18,100.00	10,077.93	16,178.03	11,190.18	141.92	99.96	-139.80	4,741.75	-103.03	3,168.74	3,113.37	55.37	57.227	
18,183.43	10,071.00	16,178.03	11,190.18	143.42	99.96	-139.80	4,741.75	-103.03	3,246.72	3,191.69	55.02	59.009	

Devon Energy
Anticollision Report

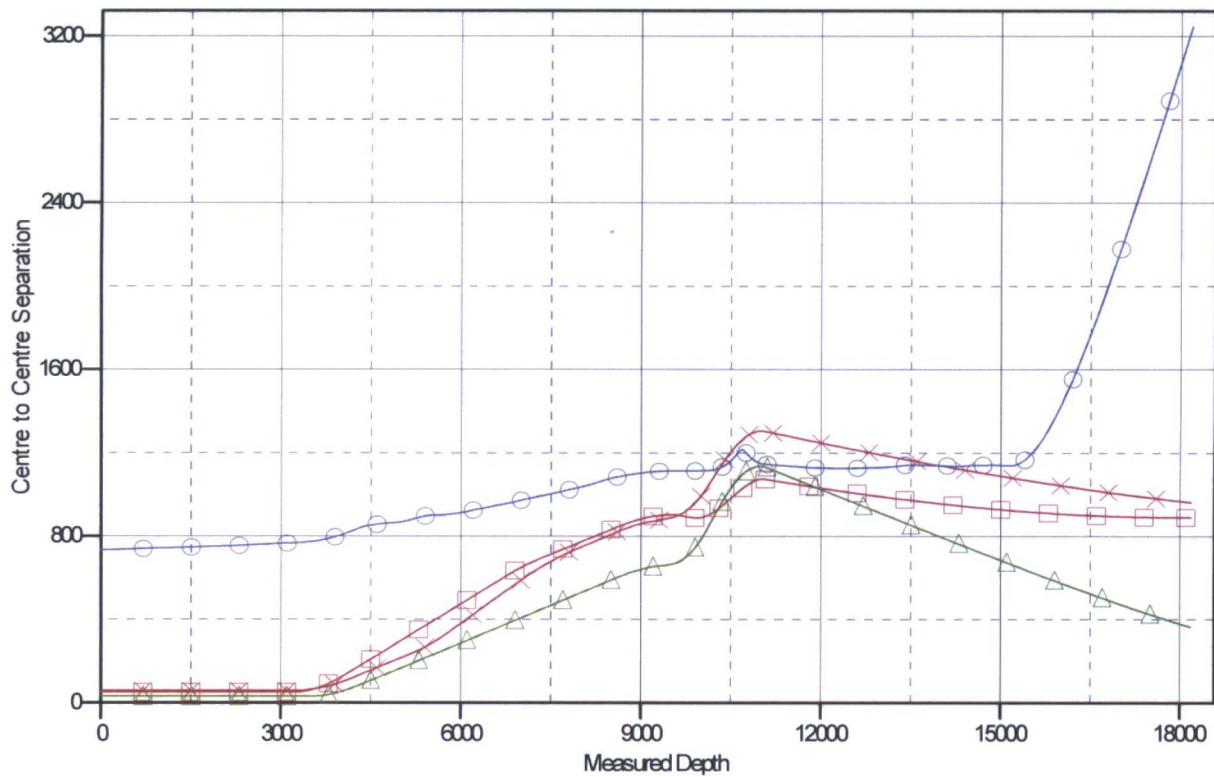
Company: WESTERN DIVISION
Project: PBNM
Reference Site: Norwalk_Section 34
Site Error: 0.00 ft
Reference Well: Thistle Unit 137H
Well Error: 0.00 ft
Reference Wellbore: Wellbore #1
Reference Design: Design #1

Local Co-ordinate Reference: Well Thistle Unit 137H
TVD Reference: KB @ 3666.70ft
MD Reference: KB @ 3666.70ft
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 KB @ 3666.70ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Thistle Unit 137H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.41°

Ladder Plot



LEGEND

■ Thistle Unit 132H, Wellbore #1, Design #1 V0
 ▲ Thistle Unit 113H, Wellbore #1, Design #1 V0
× Thistle Unit 112H, Wellbore #1, Design #1 V0
 ● Thistle Unit 49H_AC, Original, Actual V0

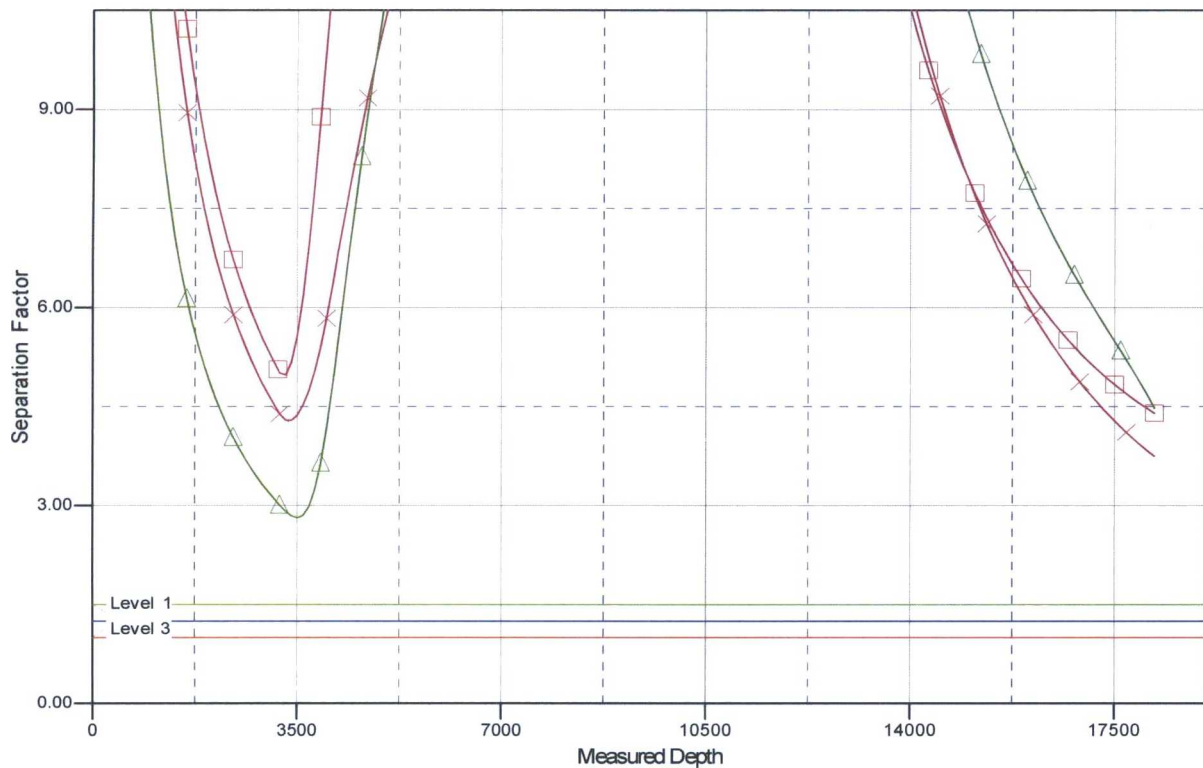
Devon Energy
Anticollision Report

Company:	WESTERN DIVISION	Local Co-ordinate Reference:	Well Thistle Unit 137H
Project:	PBNM	TVD Reference:	KB @ 3666.70ft
Reference Site:	Norwalk_Section 34	MD Reference:	KB @ 3666.70ft
Site Error:	0.00 ft	North Reference:	Grid
Reference Well:	Thistle Unit 137H	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 Depths are relative to KB @ 3666.70ft
Offset Depths are relative to Offset Datum
Central Meridian is -104.333334

Coordinates are relative to: Thistle Unit 137H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.41°

Separation Factor Plot



LEGEND

- Thistle Unit 132H, Wellbore #1, Design #1 V0
- ▲ Thistle Unit 113H, Wellbore #1, Design #1 V0
- × Thistle Unit 112H, Wellbore #1, Design #1 V0
- Thistle Unit 49H_AC, Original, Actual V0