



Devon Energy

Lea County, NM (NAD-83)

Thistle Unit Sec 22-27 Trac Pad

Thistle Unit 168H

OH

Plan #2

Anticollision Report

20 September, 2017



LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
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 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	9/20/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	17,200.48	Plan #2 (OH)	LEAM MWD+HDGM	MWD+HDGM	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Thistle Unit						
102H - OH - OH	11,835.43	22,372.15	369.86	232.88	2.700	CC
102H - OH - OH	11,900.00	22,311.53	370.18	232.81	2.695	ES
102H - OH - OH	17,200.48	16,984.45	429.33	256.39	2.483	SF
64H - OH - OH	14,455.15	9,695.27	218.72	114.38	2.096	CC, ES, SF
Thistle Unit (Offsets)						
58H - OH - OH	14,326.15	9,676.70	414.82	315.10	4.160	CC, ES, SF
71H - OH - OH	14,764.67	9,573.79	238.82	133.42	2.266	CC, ES, SF
Thistle Unit Sec 22-27 Trac Pad						
Thistle Unit 111H - OH - Plan #2	2,500.00	2,498.40	60.01	49.05	5.477	CC, ES
Thistle Unit 111H - OH - Plan #2	14,200.00	14,300.58	412.54	264.11	2.779	SF
Thistle Unit 126H - OH - Plan #2	2,416.40	2,417.20	29.99	19.40	2.833	CC
Thistle Unit 126H - OH - Plan #2	2,500.00	2,500.80	29.99	19.03	2.736	ES
Thistle Unit 126H - OH - Plan #2	2,600.00	2,600.27	30.87	19.47	2.709	SF
Thistle Unit 128H - OH - Plan #2	9,403.79	9,391.76	522.86	481.89	12.760	CC, ES
Thistle Unit 128H - OH - Plan #2	17,200.48	17,621.08	703.68	499.13	3.440	SF
Thistle Unit 96H - OH - Plan #2	4,000.00	3,998.60	30.01	12.31	1.695	CC, ES, SF

Offset Design												Thistle Unit - 102H - OH - OH		Offset Site Error:		0.00 usft											
Survey Program:												115-LEAM MWD+HDGM, 10311-MWD+IFR1+MS, 24246-Project												Offset Well Error:		0.00 usft	
Reference		Offset		Semi Major Axis			Distance																				
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning														
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)																
0.00	0.00	24,246.00	9,616.65	0.00	109.21	151.41	-462.12	251.86	9,706.03																		
100.00	100.00	24,246.00	9,616.65	0.09	109.21	151.41	-462.12	251.86	9,606.18	9,492.08	114.10	84.194															
200.00	200.00	24,246.00	9,616.65	0.31	109.21	151.41	-462.12	251.86	9,506.33	9,392.33	114.00	83.391															
300.00	300.00	24,246.00	9,616.65	0.54	109.21	151.41	-462.12	251.86	9,406.48	9,292.58	113.90	82.585															
400.00	400.00	24,246.00	9,616.65	0.76	109.21	151.41	-462.12	251.86	9,306.64	9,192.84	113.80	81.778															
500.00	500.00	24,246.00	9,616.65	0.99	109.21	151.41	-462.12	251.86	9,206.80	9,093.09	113.71	80.968															
600.00	600.00	24,246.00	9,616.65	1.21	109.21	151.41	-462.12	251.86	9,106.97	8,993.35	113.62	80.156															
700.00	700.00	24,246.00	9,616.65	1.43	109.21	151.41	-462.12	251.86	9,007.14	8,893.61	113.52	79.342															
800.00	800.00	24,246.00	9,616.65	1.66	109.21	151.41	-462.12	251.86	8,907.31	8,793.88	113.43	78.526															
900.00	900.00	24,246.00	9,616.65	1.88	109.21	151.41	-462.12	251.86	8,807.49	8,694.14	113.34	77.707															
1,000.00	1,000.00	24,246.00	9,616.65	2.11	109.21	151.41	-462.12	251.86	8,707.67	8,594.41	113.25	76.887															

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

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Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit - 102H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 115-LEAM MWD+HDGM, 10311-MWD+IFR1+MS, 24246-Project													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,100.00	1,100.00	24,246.00	9,616.65	2.33	109.21	151.41	-462.12	251.86	8,607.85	8,494.69	113.16	76.065		
1,200.00	1,200.00	24,246.00	9,616.65	2.56	109.21	151.41	-462.12	251.86	8,508.04	8,394.96	113.08	75.241		
1,300.00	1,300.00	24,246.00	9,616.65	2.78	109.21	151.41	-462.12	251.86	8,408.23	8,295.24	112.99	74.414		
1,400.00	1,400.00	24,246.00	9,616.65	3.01	109.21	151.41	-462.12	251.86	8,308.43	8,195.53	112.91	73.586		
1,500.00	1,500.00	24,246.00	9,616.65	3.23	109.21	151.41	-462.12	251.86	8,208.64	8,095.81	112.83	72.755		
1,600.00	1,600.00	24,246.00	9,616.65	3.46	109.21	151.41	-462.12	251.86	8,108.84	7,996.10	112.74	71.923		
1,700.00	1,700.00	24,246.00	9,616.65	3.68	109.21	151.41	-462.12	251.86	8,009.06	7,896.39	112.66	71.088		
1,800.00	1,800.00	24,246.00	9,616.65	3.91	109.21	151.41	-462.12	251.86	7,909.28	7,796.69	112.59	70.251		
1,900.00	1,900.00	24,246.00	9,616.65	4.13	109.21	151.41	-462.12	251.86	7,809.50	7,696.99	112.51	69.412		
2,000.00	2,000.00	24,246.00	9,616.65	4.36	109.21	151.41	-462.12	251.86	7,709.73	7,597.30	112.43	68.571		
2,100.00	2,100.00	24,246.00	9,616.65	4.58	109.21	151.41	-462.12	251.86	7,609.97	7,497.61	112.36	67.728		
2,200.00	2,200.00	24,246.00	9,616.65	4.81	109.21	151.41	-462.12	251.86	7,510.21	7,397.92	112.29	66.882		
2,300.00	2,300.00	24,246.00	9,616.65	5.03	109.21	151.41	-462.12	251.86	7,410.46	7,298.24	112.22	66.034		
2,400.00	2,400.00	24,246.00	9,616.65	5.26	109.21	151.41	-462.12	251.86	7,310.72	7,198.56	112.16	65.183		
2,500.00	2,500.00	24,246.00	9,616.65	5.48	109.21	151.41	-462.12	251.86	7,210.98	7,098.88	112.09	64.330		
2,600.00	2,600.00	24,246.00	9,616.65	5.71	109.21	151.41	-462.12	251.86	7,111.25	6,999.22	112.03	63.474		
2,700.00	2,700.00	24,246.00	9,616.65	5.93	109.21	151.41	-462.12	251.86	7,011.53	6,899.55	111.98	62.615		
2,800.00	2,800.00	24,246.00	9,616.65	6.15	109.21	151.41	-462.12	251.86	6,911.81	6,799.89	111.92	61.754		
2,900.00	2,900.00	24,246.00	9,616.65	6.38	109.21	151.41	-462.12	251.86	6,812.11	6,700.23	111.88	60.890		
3,000.00	3,000.00	24,246.00	9,616.65	6.60	109.21	151.41	-462.12	251.86	6,712.41	6,600.58	111.83	60.023		
3,100.00	3,100.00	24,246.00	9,616.65	6.83	109.21	151.41	-462.12	251.86	6,612.72	6,500.93	111.79	59.152		
3,200.00	3,200.00	24,246.00	9,616.65	7.05	109.21	151.41	-462.12	251.86	6,513.05	6,401.29	111.76	58.279		
3,300.00	3,300.00	24,246.00	9,616.65	7.28	109.21	151.41	-462.12	251.86	6,413.38	6,301.65	111.73	57.402		
3,400.00	3,400.00	24,246.00	9,616.65	7.50	109.21	151.41	-462.12	251.86	6,313.72	6,202.02	111.70	56.522		
3,500.00	3,500.00	24,246.00	9,616.65	7.73	109.21	151.41	-462.12	251.86	6,214.07	6,102.39	111.68	55.639		
3,600.00	3,600.00	24,246.00	9,616.65	7.95	109.21	151.41	-462.12	251.86	6,114.44	6,002.77	111.67	54.753		
3,700.00	3,700.00	24,246.00	9,616.65	8.18	109.21	151.41	-462.12	251.86	6,014.82	5,903.15	111.67	53.864		
3,800.00	3,800.00	24,246.00	9,616.65	8.40	109.21	151.41	-462.12	251.86	5,915.21	5,803.54	111.67	52.971		
3,900.00	3,900.00	24,246.00	9,616.65	8.63	109.21	151.41	-462.12	251.86	5,815.61	5,703.93	111.68	52.075		
4,000.00	4,000.00	24,246.00	9,616.65	8.85	109.21	151.41	-462.12	251.86	5,716.03	5,604.34	111.69	51.177		
4,100.00	4,100.00	24,246.00	9,616.65	9.08	109.21	151.41	-462.12	251.86	5,616.46	5,504.75	111.71	50.275		
4,200.00	4,200.00	24,246.00	9,616.65	9.30	109.21	151.41	-462.12	251.86	5,516.91	5,405.17	111.74	49.372		
4,300.00	4,300.00	24,246.00	9,616.65	9.53	109.21	151.41	-462.12	251.86	5,417.37	5,305.59	111.78	48.465		
4,400.00	4,400.00	24,246.00	9,616.65	9.75	109.21	151.41	-462.12	251.86	5,317.85	5,206.03	111.82	47.557		
4,500.00	4,500.00	24,246.00	9,616.65	9.98	109.21	151.41	-462.12	251.86	5,218.35	5,106.49	111.87	46.647		
4,600.00	4,600.00	24,246.00	9,616.65	10.20	109.21	-164.76	-462.12	251.86	5,118.97	5,007.04	111.92	45.737		
4,700.00	4,699.96	24,246.00	9,616.65	10.41	109.21	-166.66	-462.12	251.86	5,019.81	4,907.83	111.98	44.828		
4,800.00	4,799.86	24,246.00	9,616.65	10.63	109.21	-168.11	-462.12	251.86	4,920.92	4,808.88	112.04	43.920		
4,879.97	4,879.69	24,246.00	9,616.65	10.81	109.21	-169.04	-462.12	251.86	4,842.07	4,729.97	112.10	43.195		
4,900.00	4,899.68	24,246.00	9,616.65	10.85	109.21	-169.04	-462.12	251.86	4,822.35	4,710.24	112.11	43.014		
5,000.00	4,999.46	24,246.00	9,616.65	11.07	109.21	-169.04	-462.12	251.86	4,723.94	4,611.75	112.19	42.107		
5,100.00	5,099.24	24,246.00	9,616.65	11.29	109.21	-169.04	-462.12	251.86	4,625.59	4,513.32	112.27	41.200		
5,200.00	5,199.02	24,246.00	9,616.65	11.51	109.21	-169.04	-462.12	251.86	4,527.32	4,414.96	112.36	40.293		
5,300.00	5,298.80	24,246.00	9,616.65	11.74	109.21	-169.04	-462.12	251.86	4,429.12	4,316.67	112.45	39.387		
5,400.00	5,398.58	24,246.00	9,616.65	11.96	109.21	-169.04	-462.12	251.86	4,331.01	4,218.47	112.55	38.482		
5,500.00	5,498.36	24,246.00	9,616.65	12.19	109.21	-169.04	-462.12	251.86	4,232.99	4,120.34	112.64	37.578		
5,600.00	5,598.14	24,246.00	9,616.65	12.41	109.21	-169.04	-462.12	251.86	4,135.06	4,022.31	112.75	36.676		
5,700.00	5,697.92	24,246.00	9,616.65	12.64	109.21	-169.04	-462.12	251.86	4,037.23	3,924.38	112.85	35.776		
5,800.00	5,797.70	24,246.00	9,616.65	12.86	109.21	-169.04	-462.12	251.86	3,939.51	3,826.56	112.95	34.877		
5,900.00	5,897.48	24,246.00	9,616.65	13.09	109.21	-169.04	-462.12	251.86	3,841.91	3,728.85	113.06	33.981		
6,000.00	5,997.26	24,246.00	9,616.65	13.32	109.21	-169.04	-462.12	251.86	3,744.43	3,631.26	113.17	33.087		
6,100.00	6,097.04	24,246.00	9,616.65	13.55	109.21	-169.04	-462.12	251.86	3,647.09	3,533.82	113.28	32.196		

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

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Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit - 102H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 115-LEAM MWD+HDGM, 10311-MWD+IFR1+MS, 24246-Project													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum Separation		Warning						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
6,200.00	6,196.82	24,246.00	9,616.65	13.78	109.21	-169.04	-462.12	251.86	3,549.90	3,436.52	113.39	31.308		
6,300.00	6,296.60	24,246.00	9,616.65	14.01	109.21	-169.04	-462.12	251.86	3,452.87	3,339.38	113.49	30.424		
6,400.00	6,396.38	24,246.00	9,616.65	14.24	109.21	-169.04	-462.12	251.86	3,356.02	3,242.42	113.60	29.542		
6,500.00	6,496.16	24,246.00	9,616.65	14.47	109.21	-169.04	-462.12	251.86	3,259.35	3,145.65	113.70	28.665		
6,600.00	6,595.94	24,246.00	9,616.65	14.71	109.21	-169.04	-462.12	251.86	3,162.89	3,049.08	113.81	27.792		
6,700.00	6,695.72	24,246.00	9,616.65	14.94	109.21	-169.04	-462.12	251.86	3,066.66	2,952.75	113.90	26.923		
6,800.00	6,795.50	24,246.00	9,616.65	15.17	109.21	-169.04	-462.12	251.86	2,970.68	2,856.68	114.00	26.059		
6,900.00	6,895.28	24,246.00	9,616.65	15.40	109.21	-169.04	-462.12	251.86	2,874.97	2,760.88	114.08	25.200		
7,000.00	6,995.06	24,246.00	9,616.65	15.64	109.21	-169.04	-462.12	251.86	2,779.56	2,665.40	114.16	24.347		
7,100.00	7,094.84	24,246.00	9,616.65	15.87	109.21	-169.04	-462.12	251.86	2,684.49	2,570.26	114.23	23.500		
7,125.52	7,120.31	24,246.00	9,616.65	15.93	109.21	-169.04	-462.12	251.86	2,660.28	2,546.03	114.25	23.285		
7,200.00	7,194.65	24,246.00	9,616.65	16.09	109.21	-168.61	-462.12	251.86	2,589.63	2,475.34	114.29	22.659		
7,300.00	7,294.55	24,246.00	9,616.65	16.27	109.21	-168.00	-462.12	251.86	2,494.64	2,380.31	114.33	21.820		
7,400.00	7,394.51	24,246.00	9,616.65	16.45	109.21	-167.34	-462.12	251.86	2,399.50	2,285.15	114.36	20.983		
7,505.49	7,500.00	24,246.00	9,616.65	16.63	109.21	147.01	-462.12	251.86	2,299.00	2,184.63	114.37	20.101		
7,600.00	7,594.51	24,246.00	9,616.65	16.82	109.21	147.01	-462.12	251.86	2,209.09	2,094.72	114.37	19.316		
7,700.00	7,694.51	24,246.00	9,616.65	17.04	109.21	147.01	-462.12	251.86	2,114.38	2,000.04	114.34	18.492		
7,800.00	7,794.51	24,246.00	9,616.65	17.26	109.21	147.01	-462.12	251.86	2,020.19	1,905.90	114.29	17.677		
7,900.00	7,894.51	24,246.00	9,616.65	17.48	109.21	147.01	-462.12	251.86	1,926.58	1,812.39	114.19	16.871		
8,000.00	7,994.51	24,246.00	9,616.65	17.70	109.21	147.01	-462.12	251.86	1,833.65	1,719.60	114.05	16.077		
8,100.00	8,094.51	24,246.00	9,616.65	17.92	109.21	147.01	-462.12	251.86	1,741.50	1,627.65	113.85	15.296		
8,200.00	8,194.51	24,246.00	9,616.65	18.14	109.21	147.01	-462.12	251.86	1,650.26	1,536.68	113.58	14.529		
8,300.00	8,294.51	24,246.00	9,616.65	18.36	109.21	147.01	-462.12	251.86	1,560.10	1,446.88	113.22	13.779		
8,400.00	8,394.51	24,246.00	9,616.65	18.59	109.21	147.01	-462.12	251.86	1,471.21	1,358.47	112.75	13.049		
8,500.00	8,494.51	24,246.00	9,616.65	18.81	109.21	147.01	-462.12	251.86	1,383.84	1,271.71	112.13	12.341		
8,600.00	8,594.51	24,246.00	9,616.65	19.03	109.21	147.01	-462.12	251.86	1,298.30	1,186.96	111.34	11.661		
8,700.00	8,694.51	24,246.00	9,616.65	19.25	109.21	147.01	-462.12	251.86	1,214.96	1,104.64	110.32	11.013		
8,800.00	8,794.51	24,246.00	9,616.65	19.47	109.21	147.01	-462.12	251.86	1,134.32	1,025.31	109.01	10.406		
8,900.00	8,894.51	24,246.00	9,616.65	19.69	109.21	147.01	-462.12	251.86	1,056.99	949.66	107.33	9.848		
9,000.00	8,994.51	24,246.00	9,616.65	19.92	109.21	147.01	-462.12	251.86	983.76	878.55	105.21	9.351		
9,052.54	9,047.05	24,246.00	9,616.65	20.03	109.21	147.01	-462.12	251.86	947.25	843.36	103.89	9.118		
9,100.00	9,094.45	24,246.00	9,616.65	20.12	109.21	-35.11	-462.12	251.86	914.39	811.74	102.65	8.908		
9,150.00	9,144.04	24,246.00	9,616.65	20.20	109.21	-38.16	-462.12	251.86	878.65	777.21	101.44	8.662		
9,200.00	9,192.88	24,246.00	9,616.65	20.28	109.21	-41.63	-462.12	251.86	841.89	741.52	100.38	8.387		
9,250.00	9,240.62	24,246.00	9,616.65	20.35	109.21	-45.56	-462.12	251.86	804.29	704.77	99.52	8.082		
9,300.00	9,286.89	24,246.00	9,616.65	20.42	109.21	-49.96	-462.12	251.86	766.02	667.08	98.93	7.743		
9,350.00	9,331.32	24,246.00	9,616.65	20.49	109.21	-54.81	-462.12	251.86	727.28	628.58	98.70	7.369		
9,400.00	9,373.60	24,246.00	9,616.65	20.55	109.21	-60.05	-462.12	251.86	688.33	589.43	98.90	6.960		
9,450.00	9,413.39	24,246.00	9,616.65	20.61	109.21	-65.55	-462.12	251.86	649.44	549.82	99.62	6.519		
9,500.00	9,450.39	24,246.00	9,616.65	20.67	109.21	-71.15	-462.12	251.86	610.95	510.00	100.95	6.052		
9,550.00	9,484.32	24,246.00	9,616.65	20.74	109.21	-76.66	-462.12	251.86	573.27	470.32	102.95	5.568		
9,600.00	9,514.93	24,246.00	9,616.65	20.81	109.21	-81.87	-462.12	251.86	536.88	431.21	105.67	5.081		
9,650.00	9,541.97	24,246.00	9,616.65	20.91	109.21	-86.62	-462.12	251.86	502.36	393.26	109.10	4.605		
9,700.00	9,565.25	24,246.00	9,616.65	21.04	109.21	-90.77	-462.12	251.86	470.43	357.28	113.15	4.158		
9,750.00	9,584.58	24,246.00	9,616.65	21.21	109.21	-94.25	-462.12	251.86	441.90	324.29	117.61	3.757		
9,800.00	9,599.82	24,246.00	9,616.65	21.40	109.21	-97.00	-462.12	251.86	417.72	295.57	122.15	3.420		
9,850.00	9,610.86	24,246.00	9,616.65	21.61	109.21	-99.02	-462.12	251.86	398.88	272.61	126.26	3.159		
9,900.00	9,617.60	24,246.00	9,616.65	21.85	109.21	-100.31	-462.12	251.86	386.30	256.93	129.38	2.986		
9,950.00	9,620.00	24,246.00	9,616.65	22.11	109.21	-100.86	-462.12	251.86	380.72	249.76	130.96	2.907		
9,956.10	9,620.00	24,246.00	9,616.65	22.15	109.21	-100.88	-462.12	251.86	380.54	249.50	131.03	2.904		
9,963.99	9,619.95	24,246.00	9,616.65	22.19	109.21	-100.88	-462.12	251.86	380.45	249.37	131.09	2.902		
10,000.00	9,619.72	24,224.68	9,619.10	22.40	109.21	-101.25	-483.29	252.34	381.56	250.40	131.16	2.909		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Thistle Unit - 102H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 115-LEAM MWD+HDGM, 10311-MWD+IFR1+MS, 24246-Project													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
10,100.00	9,619.10	24,119.91	9,630.26	23.05	108.52	-102.94	-587.45	254.22	385.00	253.95	131.05	2.938		
10,200.00	9,618.48	24,018.53	9,638.95	23.79	107.77	-104.27	-688.45	255.46	387.65	256.71	130.94	2.961		
10,300.00	9,617.86	23,918.70	9,645.77	24.62	107.03	-105.30	-788.03	256.88	390.24	259.32	130.92	2.981		
10,400.00	9,617.24	23,817.24	9,650.26	25.52	106.27	-105.97	-889.36	258.91	392.83	261.83	131.00	2.999		
10,500.00	9,616.62	23,711.33	9,652.68	26.50	105.49	-106.38	-995.24	260.36	394.25	263.08	131.16	3.006		
10,600.00	9,616.00	23,605.17	9,653.52	27.54	104.70	-106.59	-1,101.39	260.94	394.49	263.10	131.39	3.003		
10,700.00	9,615.38	23,500.28	9,653.88	28.64	103.93	-106.83	-1,206.27	259.48	392.72	261.08	131.65	2.983		
10,800.00	9,614.76	23,397.66	9,654.11	29.78	103.18	-107.06	-1,308.87	257.61	390.53	258.57	131.97	2.959		
10,900.00	9,614.13	23,297.60	9,654.45	30.97	102.44	-107.34	-1,408.90	255.01	387.64	255.30	132.35	2.929		
11,000.00	9,613.51	23,197.11	9,655.26	32.20	101.70	-107.69	-1,509.35	252.46	384.96	252.21	132.74	2.900		
11,100.00	9,612.89	23,097.30	9,657.09	33.47	100.97	-108.21	-1,609.09	249.40	382.10	248.95	133.16	2.870		
11,200.00	9,612.27	22,996.29	9,658.85	34.76	100.23	-108.74	-1,710.04	246.26	379.22	245.64	133.58	2.839		
11,300.00	9,611.65	22,895.00	9,660.70	36.09	99.49	-109.31	-1,811.25	242.65	375.96	241.95	134.00	2.806		
11,400.00	9,611.03	22,801.00	9,662.35	37.44	98.80	-109.76	-1,905.21	240.69	374.05	239.51	134.54	2.780		
11,500.00	9,610.41	22,705.04	9,663.25	38.81	98.09	-110.03	-2,001.17	240.35	373.54	238.46	135.08	2.765		
11,600.00	9,609.79	22,602.20	9,663.41	40.20	97.34	-110.23	-2,104.00	239.59	372.43	236.81	135.61	2.746		
11,700.00	9,609.17	22,502.51	9,663.63	41.61	96.60	-110.45	-2,203.69	238.44	370.96	234.79	136.17	2.724		
11,800.00	9,608.54	22,405.64	9,663.97	43.03	95.89	-110.66	-2,300.55	237.74	369.95	233.19	136.76	2.705		
11,835.43	9,608.32	22,372.15	9,664.09	43.54	95.65	-110.72	-2,334.05	237.77	369.86	232.88	136.98	2.700 CC		
11,900.00	9,607.92	22,311.53	9,664.31	44.47	95.20	-110.80	-2,394.66	238.30	370.18	232.81	137.37	2.695 ES		
12,000.00	9,607.30	22,216.56	9,665.15	45.93	94.50	-110.93	-2,489.60	240.50	372.18	234.22	137.96	2.698		
12,100.00	9,606.68	22,113.71	9,667.98	47.39	93.75	-111.38	-2,592.40	241.93	374.01	235.50	138.51	2.700		
12,200.00	9,606.06	22,016.57	9,670.92	48.87	93.03	-111.85	-2,699.48	243.32	376.02	236.98	139.04	2.704		
12,300.00	9,605.44	21,919.16	9,672.06	50.36	92.32	-111.96	-2,786.84	246.36	378.90	239.24	139.65	2.713		
12,400.00	9,604.82	21,819.86	9,673.22	51.85	91.59	-112.06	-2,886.07	249.75	382.07	241.78	140.29	2.723		
12,500.00	9,604.20	21,721.03	9,673.87	53.36	90.86	-112.06	-2,984.83	253.62	385.49	244.54	140.96	2.735		
12,600.00	9,603.58	21,622.06	9,674.80	54.87	90.14	-112.09	-3,083.71	257.66	389.20	247.57	141.62	2.748		
12,700.00	9,602.95	21,523.18	9,675.41	56.39	89.41	-112.05	-3,182.48	262.09	393.14	250.82	142.31	2.763		
12,800.00	9,602.33	21,422.88	9,675.91	57.91	88.68	-111.98	-3,282.67	266.82	397.25	254.22	143.03	2.777		
12,900.00	9,601.71	21,316.36	9,676.65	59.44	87.90	-111.99	-3,389.11	270.88	400.62	256.84	143.78	2.786		
13,000.00	9,601.09	21,223.11	9,677.56	60.98	87.21	-112.07	-3,482.31	273.77	403.45	259.04	144.42	2.794		
13,100.00	9,600.47	21,125.60	9,678.08	62.52	86.50	-111.99	-3,579.68	278.79	407.97	262.84	145.13	2.811		
13,200.00	9,599.85	21,023.49	9,678.59	64.07	85.75	-111.91	-3,681.67	283.89	412.35	266.45	145.90	2.826		
13,300.00	9,599.23	20,926.30	9,679.14	65.62	85.04	-111.85	-3,778.73	288.67	416.69	270.07	146.61	2.842		
13,400.00	9,598.61	20,826.36	9,679.74	67.18	84.31	-111.77	-3,878.53	294.01	421.43	274.05	147.37	2.860		
13,500.00	9,597.98	20,720.86	9,680.11	68.74	83.42	-111.82	-4,001.98	296.83	423.18	274.99	148.19	2.856		
13,600.00	9,597.36	20,597.83	9,680.46	70.30	82.66	-112.09	-4,106.99	294.67	420.92	272.11	148.81	2.829		
13,700.00	9,596.74	20,499.97	9,681.15	71.87	81.95	-112.35	-4,204.83	293.58	419.71	270.24	149.47	2.808		
13,800.00	9,596.12	20,396.03	9,683.11	73.44	81.21	-112.87	-4,308.71	290.66	417.39	267.40	149.99	2.783		
13,900.00	9,595.50	20,300.79	9,687.82	75.01	80.52	-113.78	-4,403.77	286.93	415.34	264.96	150.38	2.762		
13,960.15	9,595.13	20,245.73	9,691.31	75.96	80.13	-114.38	-4,458.69	285.20	414.92	264.34	150.58	2.755		
14,000.00	9,594.88	20,210.30	9,693.29	76.59	79.87	-114.70	-4,494.05	284.67	415.14	264.41	150.73	2.754		
14,100.00	9,594.26	20,122.51	9,696.65	78.16	79.24	-115.16	-4,581.76	285.88	417.63	266.46	151.16	2.763		
14,200.00	9,593.64	20,028.79	9,698.86	79.74	78.56	-115.26	-4,675.32	290.73	422.89	271.13	151.76	2.787		
14,300.00	9,593.02	19,925.80	9,699.48	81.33	77.82	-115.12	-4,778.15	296.66	427.96	275.36	152.60	2.804		
14,400.00	9,592.39	19,815.36	9,699.39	82.91	77.02	-114.93	-4,888.45	301.94	431.90	278.37	153.53	2.813		
14,500.00	9,591.77	19,708.81	9,698.35	84.50	76.25	-114.79	-4,994.97	304.45	433.22	278.85	154.37	2.806		
14,600.00	9,591.15	19,608.03	9,697.87	86.09	75.53	-114.77	-5,095.74	305.86	433.89	278.76	155.13	2.797		
14,700.00	9,590.53	19,501.56	9,697.45	87.68	74.77	-114.81	-5,202.20	306.39	433.77	277.93	155.85	2.783		
14,800.00	9,589.91	19,402.76	9,697.40	89.27	74.07	-114.94	-5,301.00	306.02	433.02	276.48	156.54	2.766		
14,900.00	9,589.29	19,304.56	9,697.63	90.87	73.37	-115.08	-5,399.20	306.19	432.87	275.64	157.22	2.753		
15,000.00	9,588.67	19,194.17	9,697.10	92.46	72.58	-115.22	-5,509.58	304.83	431.12	273.27	157.85	2.731		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit - 102H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 115-LEAM MWD+HDGM, 10311-MWD+IFR1+MS, 24246-Project													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
15,100.00	9,588.05	19,093.48	9,697.25	94.06	71.87	-115.49	-5,610.23	302.32	428.54	270.10	158.44	2.705		
15,200.00	9,587.43	18,990.43	9,696.91	95.66	71.14	-115.74	-5,713.25	299.42	425.48	266.45	159.02	2.676		
15,300.00	9,586.80	18,889.67	9,696.49	97.26	70.43	-116.02	-5,813.94	295.91	421.77	262.17	159.61	2.643		
15,400.00	9,586.18	18,791.59	9,695.96	98.86	69.74	-116.26	-5,911.97	292.82	418.33	258.09	160.24	2.611		
15,500.00	9,585.56	18,695.54	9,695.46	100.46	69.07	-116.45	-6,007.99	290.46	415.52	254.62	160.90	2.582		
15,600.00	9,584.94	18,594.99	9,694.50	102.07	68.36	-116.55	-6,108.52	288.99	413.41	251.82	161.59	2.558		
15,700.00	9,584.32	18,494.52	9,693.71	103.67	67.66	-116.70	-6,208.97	286.94	410.87	248.62	162.25	2.532		
15,800.00	9,583.70	18,394.15	9,693.96	105.28	66.96	-117.02	-6,309.31	284.36	408.32	245.53	162.79	2.508		
15,883.90	9,583.18	18,320.87	9,695.03	106.62	66.45	-117.34	-6,382.56	282.83	407.05	243.80	163.24	2.494		
15,900.00	9,583.08	18,307.19	9,695.26	106.88	66.35	-117.39	-6,396.24	282.82	407.09	243.77	163.33	2.493		
16,000.00	9,582.46	18,215.97	9,696.73	108.49	65.71	-117.59	-6,487.43	284.33	408.94	245.06	163.89	2.495		
16,100.00	9,581.84	18,120.60	9,697.73	110.10	65.04	-117.60	-6,582.73	287.83	412.32	247.75	164.57	2.505		
16,200.00	9,581.21	18,020.43	9,698.21	111.71	64.34	-117.49	-6,682.80	292.43	416.25	250.85	165.41	2.517		
16,300.00	9,580.59	17,924.87	9,698.61	113.32	63.67	-117.36	-6,778.23	297.16	420.48	254.29	166.19	2.530		
16,400.00	9,579.97	17,822.03	9,699.30	114.93	62.96	-117.23	-6,880.93	302.58	425.12	258.03	167.09	2.544		
16,500.00	9,579.35	17,716.42	9,699.88	116.54	62.22	-117.16	-6,986.45	306.80	428.56	260.59	167.97	2.551		
16,600.00	9,578.73	17,617.79	9,701.59	118.16	61.54	-117.31	-7,085.03	309.61	431.52	262.92	168.61	2.559		
16,700.00	9,578.11	17,519.42	9,702.98	119.77	60.86	-117.38	-7,183.33	313.06	434.93	265.63	169.30	2.569		
16,800.00	9,577.49	17,413.08	9,703.13	121.38	60.13	-117.28	-7,289.58	317.01	437.95	267.75	170.21	2.573		
16,900.00	9,576.87	17,301.06	9,701.99	123.00	59.36	-117.18	-7,401.58	318.68	438.43	267.34	171.09	2.563		
17,000.00	9,576.25	17,191.14	9,700.81	124.61	58.61	-117.23	-7,511.49	317.55	436.67	264.90	171.77	2.542		
17,100.00	9,575.62	17,089.04	9,699.79	126.23	57.92	-117.42	-7,613.54	314.50	433.19	260.81	172.37	2.513		
17,200.48	9,575.00	16,984.45	9,698.56	127.85	57.22	-117.61	-7,718.07	311.03	429.33	256.39	172.94	2.483 SF		

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit - 64H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 62-ISCWSA-GYRO-3, 1483-LEAM MWD-ADJ, 15937-Project													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	-161.70	-4,563.37	-1,509.28	4,806.51					
100.00	100.00	91.62	91.62	0.09	0.09	-161.70	-4,563.20	-1,509.46	4,806.38	4,806.21	0.17	N/A		
200.00	200.00	192.68	192.68	0.31	0.26	-161.69	-4,562.86	-1,509.88	4,806.20	4,805.63	0.57	8,407.769		
300.00	300.00	296.08	296.08	0.54	0.44	-161.68	-4,562.43	-1,510.44	4,805.97	4,804.99	0.98	4,918.466		
400.00	400.00	399.27	399.26	0.76	0.62	-161.67	-4,561.88	-1,511.08	4,805.66	4,804.28	1.38	3,476.380		
500.00	500.00	497.93	497.92	0.99	0.80	-161.66	-4,561.29	-1,511.82	4,805.32	4,803.55	1.78	2,700.242		
600.00	600.00	594.70	594.68	1.21	0.97	-161.65	-4,560.70	-1,512.75	4,805.05	4,802.88	2.17	2,210.745		
688.78	688.78	671.91	671.88	1.41	1.10	-161.64	-4,560.28	-1,513.62	4,804.91	4,802.40	2.51	1,915.851		
700.00	700.00	680.92	680.89	1.43	1.12	-161.64	-4,560.24	-1,513.73	4,804.91	4,802.37	2.55	1,885.054		
800.00	800.00	764.97	764.94	1.66	1.27	-161.62	-4,560.09	-1,514.83	4,805.15	4,802.23	2.92	1,645.123		
900.00	900.00	855.89	855.85	1.88	1.43	-161.61	-4,560.09	-1,516.25	4,805.64	4,802.33	3.30	1,454.289		
1,000.00	1,000.00	953.23	953.17	2.11	1.60	-161.59	-4,560.21	-1,517.77	4,806.25	4,802.55	3.70	1,299.350		
1,100.00	1,100.00	1,052.80	1,052.74	2.33	1.77	-161.57	-4,560.35	-1,519.29	4,806.87	4,802.77	4.10	1,173.173		
1,200.00	1,200.00	1,152.36	1,152.28	2.56	1.94	-161.56	-4,560.52	-1,520.80	4,807.51	4,803.01	4.50	1,069.349		
1,300.00	1,300.00	1,254.84	1,254.75	2.78	2.12	-161.54	-4,560.68	-1,522.34	4,808.13	4,803.23	4.90	981.407		
1,400.00	1,400.00	1,367.24	1,367.14	3.01	2.28	-161.52	-4,560.77	-1,523.89	4,808.65	4,803.37	5.28	910.326		
1,500.00	1,500.00	1,489.14	1,489.03	3.23	2.39	-161.51	-4,560.45	-1,525.07	4,808.70	4,803.09	5.61	856.526		
1,518.92	1,518.92	1,502.13	1,502.02	3.28	2.39	-161.51	-4,560.41	-1,525.17	4,808.69	4,803.03	5.66	849.727		
1,600.00	1,600.00	1,546.00	1,545.89	3.46	2.40	-161.51	-4,560.55	-1,525.27	4,809.00	4,803.14	5.85	821.888		
1,700.00	1,700.00	1,594.18	1,594.05	3.68	2.42	-161.52	-4,561.56	-1,524.47	4,810.38	4,804.29	6.09	789.618		
1,800.00	1,800.00	1,671.00	1,670.71	3.91	2.46	-161.57	-4,564.54	-1,520.65	4,812.49	4,806.13	6.35	757.489		
1,900.00	1,900.00	1,721.97	1,721.50	4.13	2.49	-161.62	-4,567.23	-1,517.20	4,815.35	4,808.74	6.61	728.516		
2,000.00	2,000.00	2,062.85	2,058.85	4.36	2.95	-162.18	-4,584.25	-1,473.51	4,815.84	4,808.55	7.30	660.036		
2,100.00	2,100.00	2,164.54	2,159.04	4.58	3.15	-162.39	-4,587.97	-1,456.52	4,814.22	4,806.49	7.72	623.299		
2,200.00	2,200.00	2,257.81	2,251.01	4.81	3.35	-162.57	-4,591.35	-1,441.33	4,812.74	4,804.59	8.16	590.122		
2,300.00	2,300.00	2,353.92	2,345.78	5.03	3.59	-162.76	-4,594.76	-1,425.74	4,811.29	4,802.67	8.62	558.060		
2,400.00	2,400.00	2,413.59	2,404.60	5.26	3.75	-162.88	-4,597.21	-1,415.99	4,810.39	4,801.38	9.01	534.051		
2,443.91	2,443.91	2,436.34	2,427.01	5.35	3.82	-162.93	-4,598.31	-1,412.25	4,810.29	4,801.12	9.17	524.600		
2,500.00	2,500.00	2,470.15	2,460.31	5.48	3.91	-163.00	-4,600.13	-1,406.64	4,810.44	4,801.05	9.39	512.267		
2,600.00	2,600.00	2,562.98	2,551.74	5.71	4.18	-163.19	-4,605.32	-1,391.50	4,811.05	4,801.17	9.88	486.885		
2,700.00	2,700.00	2,651.80	2,639.29	5.93	4.44	-163.37	-4,610.27	-1,377.34	4,811.82	4,801.45	10.37	464.204		
2,800.00	2,800.00	2,777.66	2,763.37	6.15	4.82	-163.62	-4,617.02	-1,357.37	4,812.46	4,801.48	10.97	438.602		
2,900.00	2,900.00	2,886.34	2,870.55	6.38	5.16	-163.83	-4,622.46	-1,340.27	4,812.86	4,801.32	11.53	417.319		
3,000.00	3,000.00	2,999.20	2,981.97	6.60	5.50	-164.05	-4,627.56	-1,322.98	4,812.96	4,800.85	12.11	397.534		
3,100.00	3,100.00	3,105.41	3,086.86	6.83	5.84	-164.24	-4,632.09	-1,306.92	4,812.93	4,800.27	12.66	380.087		
3,137.21	3,137.21	3,139.29	3,120.31	6.91	5.94	-164.31	-4,633.52	-1,301.75	4,812.91	4,800.05	12.85	374.454		
3,200.00	3,200.00	3,190.88	3,171.24	7.05	6.11	-164.41	-4,635.80	-1,293.83	4,812.98	4,799.82	13.16	365.787		
3,300.00	3,300.00	3,262.50	3,241.91	7.28	6.34	-164.54	-4,639.27	-1,282.69	4,813.50	4,799.89	13.61	353.552		
3,400.00	3,400.00	3,353.16	3,331.26	7.50	6.64	-164.73	-4,644.31	-1,268.23	4,814.63	4,800.49	14.14	340.505		
3,500.00	3,500.00	3,459.79	3,436.36	7.73	7.00	-164.94	-4,649.92	-1,251.17	4,815.53	4,800.81	14.72	327.128		
3,600.00	3,600.00	3,582.58	3,557.46	7.95	7.41	-165.18	-4,656.19	-1,231.80	4,816.44	4,801.09	15.35	313.695		
3,700.00	3,700.00	3,687.00	3,660.53	8.18	7.75	-165.38	-4,660.88	-1,215.74	4,816.88	4,800.96	15.92	302.512		
3,800.00	3,800.00	3,768.52	3,741.07	8.40	8.01	-165.53	-4,664.53	-1,203.71	4,817.53	4,801.12	16.41	293.572		
3,900.00	3,900.00	3,860.85	3,832.28	8.63	8.32	-165.70	-4,668.97	-1,190.05	4,818.51	4,801.58	16.94	284.527		
4,000.00	4,000.00	3,953.28	3,923.50	8.85	8.62	-165.88	-4,673.62	-1,175.93	4,819.65	4,802.19	17.47	275.959		
4,100.00	4,100.00	4,041.30	4,010.43	9.08	8.91	-166.04	-4,678.11	-1,162.85	4,821.02	4,803.04	17.98	268.141		
4,200.00	4,200.00	4,127.15	4,095.21	9.30	9.20	-166.20	-4,682.71	-1,150.12	4,822.68	4,804.19	18.49	260.882		
4,300.00	4,300.00	4,206.04	4,173.11	9.53	9.46	-166.35	-4,687.15	-1,138.54	4,824.71	4,805.73	18.97	254.325		
4,400.00	4,400.00	4,312.77	4,278.50	9.75	9.82	-166.55	-4,693.55	-1,122.92	4,827.14	4,807.59	19.55	246.960		
4,500.00	4,500.00	4,423.35	4,387.90	9.98	10.17	-166.73	-4,699.32	-1,107.86	4,829.09	4,808.96	20.12	239.974		
4,600.00	4,600.00	4,512.70	4,476.23	10.20	10.46	-120.48	-4,704.16	-1,095.26	4,831.61	4,810.97	20.63	234.169		
4,700.00	4,699.96	4,599.59	4,561.91	10.41	10.76	-120.64	-4,709.34	-1,081.80	4,835.29	4,814.15	21.15	228.659		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit - 64H - OH - OH													Offset Site Error: 0.00 usft	
Survey Program: 62-ISCWSA-GYRO-3, 1483-LEAM MWD-ADJ, 15937-Project													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning	
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	+N/-S (usft)	+E/-W (usft)	(usft)	(usft)	(usft)			
4,800.00	4,799.86	4,705.21	4,665.93	10.63	11.14	-120.86	-4,715.91	-1,064.74	4,840.06	4,818.33	21.73	222.701		
4,879.97	4,879.69	4,777.15	4,736.86	10.81	11.39	-121.01	-4,720.19	-1,053.51	4,844.47	4,822.31	22.16	218.630		
4,900.00	4,899.68	4,793.56	4,753.03	10.85	11.45	-121.05	-4,721.21	-1,050.90	4,845.69	4,823.43	22.26	217.695		
5,000.00	4,999.46	4,867.68	4,825.98	11.07	11.72	-121.25	-4,726.04	-1,038.73	4,852.05	4,829.30	22.74	213.333		
5,100.00	5,099.24	4,941.09	4,898.03	11.29	12.00	-121.47	-4,731.44	-1,025.67	4,859.04	4,835.80	23.24	209.104		
5,200.00	5,199.02	5,056.31	5,010.97	11.51	12.46	-121.80	-4,740.32	-1,004.76	4,866.46	4,842.56	23.90	203.581		
5,300.00	5,298.80	5,212.27	5,164.35	11.74	13.03	-122.23	-4,750.05	-978.23	4,872.67	4,847.97	24.70	197.280		
5,400.00	5,398.58	5,304.03	5,254.90	11.96	13.35	-122.47	-4,755.12	-964.23	4,878.75	4,853.51	25.23	193.350		
5,500.00	5,498.36	5,409.75	5,359.24	12.19	13.71	-122.73	-4,760.92	-948.20	4,884.88	4,859.07	25.81	189.232		
5,600.00	5,598.14	5,516.04	5,463.92	12.41	14.09	-123.02	-4,766.77	-930.75	4,890.91	4,864.50	26.41	185.171		
5,700.00	5,697.92	5,623.12	5,569.38	12.64	14.48	-123.30	-4,772.53	-913.11	4,896.92	4,869.90	27.02	181.244		
5,800.00	5,797.70	5,724.17	5,668.89	12.86	14.84	-123.57	-4,777.74	-896.33	4,902.80	4,875.20	27.60	177.640		
5,900.00	5,897.48	5,844.37	5,787.36	13.09	15.27	-123.88	-4,783.73	-876.92	4,908.71	4,880.47	28.25	173.785		
6,000.00	5,997.26	5,928.56	5,870.35	13.32	15.57	-124.10	-4,787.67	-863.34	4,914.42	4,885.66	28.76	170.868		
6,100.00	6,097.04	6,037.45	5,977.70	13.55	15.95	-124.38	-4,792.97	-845.90	4,920.43	4,891.06	29.37	167.559		
6,200.00	6,196.82	15,937.00	11,089.45	13.78	82.96	-170.66	-51.60	-47.53	4,911.08	4,867.21	43.86	111.964		
6,300.00	6,296.60	15,937.00	11,089.45	14.01	82.96	-170.66	-51.60	-47.53	4,811.47	4,767.46	44.01	109.324		
6,400.00	6,396.38	15,937.00	11,089.45	14.24	82.96	-170.66	-51.60	-47.53	4,711.89	4,667.72	44.16	106.692		
6,500.00	6,496.16	15,937.00	11,089.45	14.47	82.96	-170.66	-51.60	-47.53	4,612.32	4,568.00	44.32	104.069		
6,600.00	6,595.94	15,937.00	11,089.45	14.71	82.96	-170.66	-51.60	-47.53	4,512.77	4,468.29	44.48	101.456		
6,700.00	6,695.72	15,937.00	11,089.45	14.94	82.96	-170.66	-51.60	-47.53	4,413.24	4,368.59	44.64	98.852		
6,800.00	6,795.50	15,937.00	11,089.45	15.17	82.96	-170.66	-51.60	-47.53	4,313.73	4,268.91	44.81	96.259		
6,900.00	6,895.28	15,937.00	11,089.45	15.40	82.96	-170.66	-51.60	-47.53	4,214.24	4,169.26	44.99	93.677		
7,000.00	6,995.06	15,937.00	11,089.45	15.64	82.96	-170.66	-51.60	-47.53	4,114.78	4,069.62	45.16	91.107		
7,100.00	7,094.84	15,937.00	11,089.45	15.87	82.96	-170.66	-51.60	-47.53	4,015.35	3,970.00	45.35	88.549		
7,125.52	7,120.31	15,937.00	11,089.45	15.93	82.96	-170.66	-51.60	-47.53	3,989.98	3,944.58	45.39	87.898		
7,200.00	7,194.65	15,937.00	11,089.45	16.09	82.96	-169.41	-51.60	-47.53	3,915.89	3,870.36	45.53	86.003		
7,300.00	7,294.55	15,937.00	11,089.45	16.27	82.96	-167.17	-51.60	-47.53	3,816.30	3,770.58	45.72	83.469		
7,400.00	7,394.51	15,937.00	11,089.45	16.45	82.96	-163.87	-51.60	-47.53	3,716.59	3,670.67	45.91	80.948		
7,505.49	7,500.00	15,937.00	11,089.45	16.63	82.96	155.43	-51.60	-47.53	3,611.29	3,565.17	46.12	78.306		
7,600.00	7,594.51	15,937.00	11,089.45	16.82	82.96	155.43	-51.60	-47.53	3,516.91	3,470.61	46.30	75.955		
7,700.00	7,694.51	15,937.00	11,089.45	17.04	82.96	155.43	-51.60	-47.53	3,417.06	3,370.56	46.50	73.481		
7,800.00	7,794.51	15,937.00	11,089.45	17.26	82.96	155.43	-51.60	-47.53	3,317.22	3,270.51	46.71	71.023		
7,900.00	7,894.51	15,937.00	11,089.45	17.48	82.96	155.43	-51.60	-47.53	3,217.38	3,170.47	46.91	68.582		
8,000.00	7,994.51	15,937.00	11,089.45	17.70	82.96	155.43	-51.60	-47.53	3,117.56	3,070.44	47.12	66.156		
8,100.00	8,094.51	15,937.00	11,089.45	17.92	82.96	155.43	-51.60	-47.53	3,017.75	2,970.41	47.34	63.747		
8,200.00	8,194.51	15,937.00	11,089.45	18.14	82.96	155.43	-51.60	-47.53	2,917.95	2,870.39	47.56	61.355		
8,300.00	8,294.51	15,937.00	11,089.45	18.36	82.96	155.43	-51.60	-47.53	2,818.17	2,770.39	47.78	58.979		
8,400.00	8,394.51	15,937.00	11,089.45	18.59	82.96	155.43	-51.60	-47.53	2,718.40	2,670.39	48.01	56.621		
8,500.00	8,494.51	15,937.00	11,089.45	18.81	82.96	155.43	-51.60	-47.53	2,618.65	2,570.41	48.24	54.281		
8,600.00	8,594.51	15,937.00	11,089.45	19.03	82.96	155.43	-51.60	-47.53	2,518.92	2,470.44	48.48	51.958		
8,700.00	8,694.51	15,937.00	11,089.45	19.25	82.96	155.43	-51.60	-47.53	2,419.22	2,370.49	48.72	49.652		
8,800.00	8,794.51	15,937.00	11,089.45	19.47	82.96	155.43	-51.60	-47.53	2,319.53	2,270.56	48.97	47.365		
8,900.00	8,894.51	15,937.00	11,089.45	19.69	82.96	155.43	-51.60	-47.53	2,219.88	2,170.65	49.23	45.096		
9,000.00	8,994.51	15,937.00	11,089.45	19.92	82.96	155.43	-51.60	-47.53	2,120.26	2,070.77	49.49	42.845		
9,052.54	9,047.05	15,937.00	11,089.45	20.03	82.96	155.43	-51.60	-47.53	2,067.93	2,018.30	49.63	41.670		
9,100.00	9,094.45	15,937.00	11,089.45	20.12	82.96	-87.65	-51.60	-47.53	2,020.56	1,970.82	49.75	40.618		
9,150.00	9,144.04	15,937.00	11,089.45	20.20	82.96	-155.65	-51.60	-47.53	1,970.66	1,920.81	49.85	39.532		
9,200.00	9,192.88	15,937.00	11,089.45	20.28	82.96	-167.16	-51.60	-47.53	1,921.15	1,871.22	49.93	38.479		
9,250.00	9,242.62	15,937.00	11,089.45	20.35	82.96	-171.22	-51.60	-47.53	1,872.46	1,822.48	49.98	37.468		
9,300.00	9,286.89	15,937.00	11,089.45	20.42	82.96	-173.26	-51.60	-47.53	1,825.03	1,775.03	49.99	36.505		
9,350.00	9,331.32	15,937.00	11,089.45	20.49	82.96	-174.46	-51.60	-47.53	1,779.34	1,729.35	49.98	35.600		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit - 64H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 62-ISCWSA-GYRO-3, 1483-LEAM MWD-ADJ, 15937-Project													Offset Well Error:	0.00 usft
Reference	Offset		Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,400.00	9,373.60	15,937.00	11,089.45	20.55	82.96	-175.25	-51.60	-47.53	1,735.89	1,685.94	49.94	34.759		
9,450.00	9,413.39	15,937.00	11,089.45	20.61	82.96	-175.80	-51.60	-47.53	1,695.19	1,645.32	49.87	33.989		
9,500.00	9,450.39	15,937.00	11,089.45	20.67	82.96	-176.20	-51.60	-47.53	1,657.77	1,607.99	49.79	33.298		
9,550.00	9,484.32	15,937.00	11,089.45	20.74	82.96	-176.49	-51.60	-47.53	1,624.16	1,574.47	49.68	32.690		
9,600.00	9,514.93	15,919.98	11,090.02	20.81	82.92	-176.68	-68.62	-47.35	1,594.75	1,545.07	49.68	32.100		
9,650.00	9,541.97	15,877.07	11,091.44	20.91	82.81	-176.79	-111.50	-46.90	1,569.15	1,519.41	49.74	31.546		
9,700.00	9,565.25	15,832.09	11,092.93	21.04	82.70	-176.87	-156.45	-46.43	1,547.39	1,497.63	49.76	31.099		
9,750.00	9,584.58	15,784.20	11,094.51	21.21	82.32	-176.93	-204.32	-45.94	1,529.62	1,479.88	49.73	30.756		
9,800.00	9,599.82	15,733.11	11,096.12	21.40	81.51	-176.98	-255.38	-45.49	1,515.90	1,466.43	49.47	30.643		
9,850.00	9,610.86	15,686.00	11,097.55	21.61	80.78	-177.01	-302.46	-45.15	1,506.37	1,457.12	49.25	30.587		
9,900.00	9,617.60	15,642.30	11,099.03	21.85	80.10	-177.03	-346.14	-44.84	1,501.31	1,452.25	49.07	30.598		
9,930.70	9,619.59	15,615.00	11,100.05	22.01	79.67	-177.03	-373.42	-44.65	1,500.46	1,451.51	48.95	30.651		
9,950.00	9,620.00	15,596.64	11,100.76	22.11	79.39	-177.03	-391.76	-44.52	1,500.79	1,451.92	48.87	30.708		
9,956.10	9,620.00	15,590.73	11,100.98	22.15	79.29	-177.03	-397.67	-44.47	1,501.04	1,452.19	48.85	30.728		
10,000.00	9,619.72	15,548.18	11,102.65	22.40	78.63	-177.03	-440.18	-44.10	1,503.03	1,454.37	48.67	30.885		
10,100.00	9,619.10	15,437.73	11,106.76	23.05	76.91	-177.02	-550.55	-42.83	1,507.40	1,459.23	48.17	31.294		
10,200.00	9,618.48	15,329.29	11,109.91	23.79	75.24	-176.98	-658.92	-40.88	1,510.97	1,463.24	47.73	31.656		
10,300.00	9,617.86	15,234.56	11,112.56	24.62	73.78	-176.93	-753.59	-38.56	1,514.48	1,467.04	47.44	31.922		
10,400.00	9,617.24	15,129.90	11,115.46	25.52	72.18	-176.87	-858.18	-36.04	1,517.95	1,470.84	47.11	32.220		
10,500.00	9,616.62	15,035.06	11,118.16	26.50	70.76	-176.84	-952.97	-34.41	1,521.47	1,474.57	46.89	32.445		
10,600.00	9,616.00	14,939.94	11,121.29	27.54	69.32	-176.82	-1,048.02	-33.09	1,525.41	1,478.70	46.71	32.660		
10,700.00	9,615.38	14,829.36	11,124.49	28.64	67.67	-176.81	-1,158.55	-31.58	1,528.94	1,482.51	46.43	32.930		
10,800.00	9,614.76	14,732.75	11,127.16	29.78	66.24	-176.81	-1,255.11	-30.73	1,532.33	1,486.05	46.29	33.106		
10,900.00	9,614.13	14,640.05	11,130.04	30.97	64.90	-176.81	-1,347.76	-29.83	1,536.07	1,489.87	46.20	33.251		
11,000.00	9,613.51	14,548.24	11,133.43	32.20	63.57	-176.80	-1,439.51	-28.86	1,540.38	1,494.25	46.14	33.388		
11,100.00	9,612.89	14,428.73	11,137.81	33.47	61.81	-176.79	-1,558.93	-27.37	1,544.78	1,498.88	45.90	33.658		
11,200.00	9,612.27	14,272.56	11,138.71	34.76	59.57	-176.79	-1,715.08	-25.99	1,545.84	1,500.40	45.44	34.019		
11,300.00	9,611.65	14,177.04	11,137.84	36.09	58.25	-176.78	-1,810.59	-25.20	1,545.56	1,500.15	45.41	34.035		
11,311.77	9,611.58	14,166.57	11,137.77	36.25	58.10	-176.78	-1,821.07	-25.10	1,545.56	1,500.15	45.41	34.032		
11,400.00	9,611.03	14,088.10	11,137.49	37.44	57.03	-176.76	-1,899.52	-23.93	1,545.84	1,500.40	45.44	34.018		
11,500.00	9,610.41	14,009.00	11,137.68	38.81	55.98	-176.71	-1,978.60	-21.98	1,546.86	1,501.31	45.55	33.959		
11,600.00	9,609.79	13,915.00	11,138.91	40.20	54.71	-176.65	-2,072.56	-19.69	1,548.90	1,503.32	45.58	33.981		
11,700.00	9,609.17	13,807.93	11,140.63	41.61	53.28	-176.61	-2,179.60	-17.63	1,551.21	1,505.66	45.55	34.058		
11,800.00	9,608.54	13,705.25	11,141.87	43.03	51.93	-176.56	-2,282.25	-15.42	1,553.11	1,507.56	45.55	34.093		
11,900.00	9,607.92	13,591.24	11,142.47	44.47	50.46	-176.50	-2,396.23	-12.84	1,554.35	1,508.83	45.51	34.152		
12,000.00	9,607.30	13,496.17	11,142.51	45.93	49.30	-176.45	-2,491.27	-10.65	1,555.12	1,509.52	45.60	34.104		
12,100.00	9,606.68	13,412.32	11,143.36	47.39	48.30	-176.39	-2,575.08	-8.48	1,556.85	1,511.09	45.76	34.019		
12,200.00	9,606.06	13,317.11	11,145.00	48.87	47.16	-176.32	-2,670.24	-5.65	1,559.34	1,513.46	45.88	33.987		
12,300.00	9,605.44	13,194.82	11,146.56	50.36	45.73	-176.28	-2,792.49	-3.44	1,561.34	1,515.47	45.86	34.043		
12,400.00	9,604.82	13,097.29	11,146.91	51.85	44.63	-176.36	-2,890.01	-5.06	1,562.16	1,516.16	46.00	33.961		
12,500.00	9,604.20	13,010.27	11,148.01	53.36	43.69	-176.47	-2,976.99	-7.18	1,563.85	1,517.64	46.21	33.845		
12,600.00	9,603.58	12,926.80	11,149.72	54.87	42.80	-176.56	-3,060.43	-8.82	1,566.36	1,519.92	46.45	33.723		
12,700.00	9,602.95	12,835.51	11,152.64	56.39	41.85	-176.64	-3,151.66	-10.37	1,570.01	1,523.34	46.67	33.643		
12,800.00	9,602.33	12,734.95	11,155.63	57.91	40.86	-176.72	-3,252.16	-11.61	1,573.49	1,526.63	46.85	33.583		
12,900.00	9,601.71	12,644.11	11,158.89	59.44	39.81	86.04	-4,956.22	-309.58	1,570.15	1,519.53	50.62	31.016		
13,000.00	9,601.09	12,562.23	11,162.00	60.98	38.22	86.58	-4,956.28	-309.42	1,471.21	1,420.29	50.92	28.891		
13,100.00	9,600.47	12,480.33	11,165.10	62.52	36.22	87.13	-4,956.34	-309.26	1,372.43	1,321.14	51.29	26.761		
13,200.00	9,599.85	12,400.42	11,168.18	64.07	33.23	87.66	-4,956.39	-309.10	1,273.82	1,222.10	51.73	24.626		
13,300.00	9,599.23	12,322.49	11,171.25	65.62	29.23	88.20	-4,956.44	-308.94	1,175.45	1,123.18	52.27	22.486		
13,400.00	9,598.61	12,244.55	11,174.30	67.18	25.24	88.73	-4,956.50	-308.79	1,077.38	1,024.41	52.97	20.341		
13,500.00	9,597.98	12,166.58	11,177.33	68.74	21.24	89.26	-4,956.55	-308.63	979.69	925.84	53.85	18.192		
13,600.00	9,597.36	12,088.61	11,180.34	70.30	17.25	89.79	-4,956.60	-308.48	882.52	827.50	55.01	16.041		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit - 64H - OH - OH													Offset Site Error: 0.00 usft	
Survey Program: 62-ISCWSA-GYRO-3, 1483-LEAM MWD-ADJ, 15937-Project													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
13,700.00	9,596.74	9,680.61	9,576.35	71.87	28.25	90.31	-4,956.65	-308.33	786.05	729.48	56.57	13.896		
13,800.00	9,596.12	9,682.60	9,578.33	73.44	28.25	90.83	-4,956.70	-308.19	690.57	631.89	58.68	11.768		
13,900.00	9,595.50	9,684.58	9,580.30	75.01	28.26	91.35	-4,956.75	-308.04	596.58	534.95	61.64	9.679		
14,000.00	9,594.88	9,686.54	9,582.25	76.59	28.26	91.86	-4,956.80	-307.90	504.89	439.04	65.85	7.667		
14,100.00	9,594.26	9,688.48	9,584.19	78.16	28.27	92.37	-4,956.85	-307.75	417.04	345.08	71.96	5.796		
14,200.00	9,593.64	9,690.41	9,586.12	79.74	28.27	92.87	-4,956.90	-307.61	336.03	255.29	80.74	4.162		
14,300.00	9,593.02	9,692.33	9,588.03	81.33	28.28	93.37	-4,956.95	-307.47	268.14	175.87	92.27	2.906		
14,400.00	9,592.39	9,694.23	9,589.92	82.91	28.28	93.87	-4,957.00	-307.33	225.56	122.96	102.60	2.198		
14,455.15	9,592.05	9,695.27	9,590.96	83.79	28.28	94.14	-4,957.02	-307.26	218.72	114.38	104.34	2.096 CC, ES, SF		
14,500.00	9,591.77	9,696.12	9,591.80	84.50	28.29	94.37	-4,957.04	-307.20	223.27	120.40	102.87	2.170		
14,600.00	9,591.15	9,697.99	9,593.67	86.09	28.29	94.86	-4,957.09	-307.06	262.32	168.41	93.91	2.793		
14,700.00	9,590.53	9,699.85	9,595.52	87.68	28.30	95.34	-4,957.14	-306.93	328.28	244.37	83.91	3.912		
14,800.00	9,589.91	9,701.69	9,597.36	89.27	28.30	95.82	-4,957.18	-306.80	408.31	332.15	76.16	5.361		
14,900.00	9,589.29	9,703.52	9,599.18	90.87	28.30	96.30	-4,957.23	-306.67	495.64	424.99	70.66	7.015		
15,000.00	9,588.67	9,705.33	9,600.99	92.46	28.31	96.78	-4,957.27	-306.54	587.02	520.26	66.76	8.793		
15,100.00	9,588.05	9,707.14	9,602.79	94.06	28.31	97.25	-4,957.32	-306.41	680.83	616.86	63.97	10.644		
15,200.00	9,587.43	9,708.93	9,604.57	95.66	28.32	97.72	-4,957.36	-306.28	776.18	714.26	61.91	12.537		
15,300.00	9,586.80	9,710.70	9,606.35	97.26	28.32	98.18	-4,957.41	-306.16	872.56	812.19	60.37	14.453		
15,400.00	9,586.18	9,712.47	9,608.10	98.86	28.32	98.64	-4,957.45	-306.03	969.68	910.48	59.20	16.380		
15,500.00	9,585.56	9,714.22	9,609.85	100.46	28.33	99.09	-4,957.49	-305.91	1,067.32	1,009.03	58.29	18.312		
15,600.00	9,584.94	9,715.95	9,611.58	102.07	28.33	99.54	-4,957.53	-305.79	1,165.36	1,107.79	57.57	20.242		
15,700.00	9,584.32	9,717.68	9,613.30	103.67	28.34	99.99	-4,957.57	-305.67	1,263.71	1,206.70	57.00	22.169		
15,800.00	9,583.70	9,719.39	9,615.01	105.28	28.34	100.43	-4,957.62	-305.55	1,362.29	1,305.74	56.55	24.090		
15,900.00	9,583.08	9,721.09	9,616.70	106.88	28.34	100.87	-4,957.66	-305.43	1,461.07	1,404.88	56.19	26.004		
16,000.00	9,582.46	9,722.78	9,618.39	108.49	28.35	101.31	-4,957.70	-305.31	1,560.00	1,504.10	55.89	27.910		
16,100.00	9,581.84	9,724.45	9,620.06	110.10	28.35	101.74	-4,957.74	-305.20	1,659.05	1,603.39	55.66	29.808		
16,200.00	9,581.21	9,726.11	9,621.72	111.71	28.36	102.17	-4,957.78	-305.08	1,758.21	1,702.74	55.47	31.698		
16,300.00	9,580.59	9,727.77	9,623.36	113.32	28.36	102.59	-4,957.82	-304.97	1,857.46	1,802.15	55.32	33.579		
16,400.00	9,579.97	9,729.41	9,625.00	114.93	28.36	103.01	-4,957.86	-304.86	1,956.79	1,901.59	55.20	35.451		
16,500.00	9,579.35	9,735.00	9,630.58	116.54	28.38	104.43	-4,957.99	-304.48	2,056.18	2,001.07	55.10	37.314		
16,600.00	9,578.73	9,735.00	9,630.58	118.16	28.38	104.43	-4,957.99	-304.48	2,155.62	2,100.58	55.03	39.169		
16,700.00	9,578.11	9,735.00	9,630.58	119.77	28.38	104.43	-4,957.99	-304.48	2,255.11	2,200.13	54.98	41.015		
16,800.00	9,577.49	9,735.00	9,630.58	121.38	28.38	104.43	-4,957.99	-304.48	2,354.64	2,299.69	54.95	42.853		
16,900.00	9,576.87	9,735.00	9,630.58	123.00	28.38	104.43	-4,957.99	-304.48	2,454.21	2,399.29	54.93	44.682		
17,000.00	9,576.25	9,735.00	9,630.58	124.61	28.38	104.43	-4,957.99	-304.48	2,553.82	2,498.90	54.92	46.503		
17,100.00	9,575.62	9,735.00	9,630.58	126.23	28.38	104.43	-4,957.99	-304.48	2,653.45	2,598.53	54.92	48.315		
17,200.48	9,575.00	9,735.00	9,630.58	127.85	28.38	104.43	-4,957.99	-304.48	2,753.59	2,698.66	54.93	50.127		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 58H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 1629-MWD-ISCWSA, 16290-Project													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Semi Major Axis (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	1,535.00	1,534.97	0.00	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,310.61				
100.00	100.00	1,535.00	1,534.97	0.09	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,282.22	5,280.93	1.29	4,099.773	
200.00	200.00	1,535.00	1,534.97	0.31	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,255.58	5,254.37	1.22	4,321.285	
300.00	300.00	1,535.00	1,534.97	0.54	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,230.72	5,229.53	1.19	4,384.040	
400.00	400.00	1,535.00	1,534.97	0.76	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,207.67	5,206.44	1.22	4,260.391	
500.00	500.00	1,535.00	1,534.97	0.99	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,186.43	5,185.13	1.30	3,987.872	
600.00	600.00	1,535.00	1,534.97	1.21	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,167.05	5,165.63	1.42	3,639.446	
700.00	700.00	1,535.00	1,534.97	1.43	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,149.53	5,147.96	1.57	3,278.887	
800.00	800.00	1,535.00	1,534.97	1.66	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,133.91	5,132.16	1.74	2,942.886	
900.00	900.00	1,535.00	1,534.97	1.88	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,120.19	5,118.25	1.94	2,645.833	
1,000.00	1,000.00	1,535.00	1,534.97	2.11	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,108.39	5,106.25	2.14	2,389.664	
1,100.00	1,100.00	1,535.00	1,534.97	2.33	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,098.52	5,096.17	2.35	2,170.927	
1,200.00	1,200.00	1,535.00	1,534.97	2.56	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,090.60	5,088.04	2.57	1,984.510	
1,300.00	1,300.00	1,535.00	1,534.97	2.78	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,084.64	5,081.85	2.79	1,825.280	
1,400.00	1,400.00	1,535.00	1,534.97	3.01	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,080.63	5,077.62	3.01	1,688.686	
1,500.00	1,500.00	1,535.00	1,534.97	3.23	0.00	-163.37	-163.37	-4,865.80	-1,453.71	5,078.60	5,075.36	3.23	1,570.901	
1,600.00	1,600.00	1,781.13	1,780.45	3.46	0.53	-163.54	-163.54	-4,863.87	-1,437.11	5,075.63	5,071.65	3.98	1,274.128	
1,700.00	1,700.00	1,881.16	1,879.87	3.68	0.81	-163.66	-163.66	-4,862.90	-1,426.15	5,071.59	5,067.11	4.48	1,133.314	
1,800.00	1,800.00	1,986.83	1,984.90	3.91	1.10	-163.78	-163.78	-4,862.01	-1,414.62	5,067.71	5,062.73	4.98	1,017.504	
1,900.00	1,900.00	2,144.94	2,141.73	4.13	1.58	-163.99	-163.99	-4,860.24	-1,394.59	5,063.06	5,057.38	5.68	891.510	
2,000.00	2,000.00	2,246.80	2,242.64	4.36	1.89	-164.13	-164.13	-4,858.67	-1,380.86	5,057.83	5,051.63	6.20	815.648	
2,100.00	2,100.00	2,321.22	2,316.43	4.58	2.11	-164.24	-164.24	-4,857.56	-1,371.24	5,052.86	5,046.22	6.63	761.607	
2,200.00	2,200.00	2,383.00	2,377.72	4.81	2.28	-164.32	-164.32	-4,857.01	-1,363.53	5,048.59	5,041.56	7.03	717.992	
2,300.00	2,300.00	2,464.57	2,458.68	5.03	2.52	-164.43	-164.43	-4,856.68	-1,353.61	5,044.90	5,037.41	7.49	673.780	
2,400.00	2,400.00	2,560.61	2,554.06	5.26	2.79	-164.55	-164.55	-4,856.39	-1,342.35	5,041.45	5,033.47	7.98	631.627	
2,500.00	2,500.00	2,666.00	2,658.82	5.48	3.09	-164.67	-164.67	-4,855.77	-1,330.84	5,037.96	5,029.47	8.49	593.075	
2,600.00	2,600.00	2,749.47	2,741.85	5.71	3.31	-164.77	-164.77	-4,855.22	-1,322.21	5,034.59	5,025.64	8.95	562.807	
2,700.00	2,700.00	2,835.81	2,827.77	5.93	3.55	-164.86	-164.86	-4,854.81	-1,313.73	5,031.55	5,022.15	9.40	535.236	
2,800.00	2,800.00	2,950.00	2,941.41	6.15	3.85	-164.98	-164.98	-4,854.18	-1,302.60	5,028.46	5,018.54	9.93	506.558	
2,900.00	2,900.00	3,044.00	3,034.75	6.38	4.12	-165.10	-165.10	-4,854.12	-1,291.51	5,025.33	5,014.91	10.42	482.324	
3,000.00	3,000.00	3,124.26	3,114.33	6.60	4.37	-165.22	-165.22	-4,854.59	-1,281.12	5,022.55	5,011.66	10.89	461.327	
3,100.00	3,100.00	3,214.63	3,203.98	6.83	4.64	-165.34	-165.34	-4,855.22	-1,269.79	5,020.01	5,008.63	11.38	440.990	
3,200.00	3,200.00	3,324.44	3,313.01	7.05	4.96	-165.49	-165.49	-4,855.80	-1,256.73	5,017.52	5,005.59	11.93	420.579	
3,300.00	3,300.00	3,435.23	3,423.09	7.28	5.28	-165.63	-165.63	-4,855.93	-1,244.20	5,014.79	5,002.32	12.47	402.133	
3,400.00	3,400.00	3,537.21	3,524.53	7.50	5.56	-165.74	-165.74	-4,855.60	-1,233.67	5,011.91	4,998.94	12.98	386.221	
3,500.00	3,500.00	3,622.81	3,609.69	7.73	5.80	-165.84	-165.84	-4,855.40	-1,225.06	5,009.20	4,995.77	13.43	372.909	
3,600.00	3,600.00	3,705.00	3,691.39	7.95	6.02	-165.94	-165.94	-4,855.66	-1,216.04	5,006.82	4,992.94	13.88	360.638	
3,700.00	3,700.00	3,799.00	3,784.68	8.18	6.30	-166.07	-166.07	-4,856.49	-1,204.53	5,004.70	4,990.32	14.38	348.000	
3,800.00	3,800.00	3,914.22	3,898.95	8.40	6.64	-166.24	-166.24	-4,857.43	-1,189.83	5,002.41	4,987.46	14.95	334.614	
3,900.00	3,900.00	3,995.66	3,979.80	8.63	6.88	-166.35	-166.35	-4,858.03	-1,180.10	5,000.27	4,984.86	15.42	324.362	
4,000.00	4,000.00	4,104.87	4,088.24	8.85	7.20	-166.49	-166.49	-4,858.88	-1,167.16	4,998.24	4,982.28	15.96	313.210	
4,100.00	4,100.00	4,216.07	4,198.50	9.08	7.53	-166.66	-166.66	-4,859.73	-1,152.81	4,995.96	4,979.45	16.52	302.507	
4,200.00	4,200.00	4,315.97	4,297.52	9.30	7.84	-166.80	-166.80	-4,860.46	-1,139.60	4,993.62	4,976.57	17.04	292.978	
4,300.00	4,300.00	4,400.50	4,381.38	9.53	8.09	-166.93	-166.93	-4,861.02	-1,128.93	4,991.39	4,973.87	17.53	284.812	
4,400.00	4,400.00	4,478.78	4,459.05	9.75	8.32	-167.04	-167.04	-4,861.90	-1,119.25	4,989.67	4,971.68	17.99	277.431	
4,500.00	4,500.00	4,633.80	4,612.92	9.98	8.78	-167.25	-167.25	-4,863.26	-1,100.40	4,987.93	4,969.27	18.67	267.205	
4,600.00	4,600.00	4,760.82	4,738.99	10.20	9.16	-121.06	-121.06	-4,862.82	-1,084.88	4,985.31	4,966.05	19.26	258.859	
4,700.00	4,699.96	4,837.72	4,815.26	10.41	9.39	-121.20	-121.20	-4,862.71	-1,075.11	4,983.74	4,964.03	19.71	252.894	
4,800.00	4,799.86	4,968.14	4,944.56	10.63	9.79	-121.45	-121.45	-4,862.45	-1,058.07	4,983.00	4,962.68	20.32	245.240	
4,874.13	4,873.86	5,050.10	5,025.82	10.79	10.04	-121.62	-121.62	-4,861.92	-1,047.41	4,982.76	4,962.03	20.73	240.382	
4,879.97	4,879.69	5,055.55	5,031.23	10.81	10.05	-121.63	-121.63	-4,861.88	-1,046.73	4,982.76	4,962.01	20.76	240.047	
4,900.00	4,899.68	5,074.24	5,049.78	10.85	10.11	-121.67	-121.67	-4,861.72	-1,044.43	4,982.78	4,961.92	20.86	238.904	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 58H - OH - OH													Offset Site Error: 0.00 usft	
Survey Program: 1629-MWD-ISCWSA, 16290-Project													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,000.00	4,999.46	5,151.18	5,126.21	11.07	10.33	-121.81	-4,861.03	-1,035.64	4,983.04	4,961.74	21.30	233.922		
5,100.00	5,099.24	5,245.29	5,219.81	11.29	10.59	-121.98	-4,860.43	-1,025.91	4,983.79	4,962.01	21.78	228.835		
5,200.00	5,199.02	5,336.30	5,310.41	11.51	10.83	-122.14	-4,859.58	-1,017.31	4,984.50	4,962.25	22.25	224.043		
5,300.00	5,298.80	5,408.00	5,381.68	11.74	11.03	-122.27	-4,859.60	-1,009.49	4,985.84	4,963.16	22.67	219.922		
5,400.00	5,398.58	5,479.73	5,452.88	11.96	11.24	-122.42	-4,860.18	-1,000.80	4,987.76	4,964.65	23.11	215.853		
5,500.00	5,498.36	5,583.31	5,555.68	12.19	11.55	-122.63	-4,861.15	-988.10	4,989.88	4,966.24	23.64	211.082		
5,600.00	5,598.14	5,676.83	5,648.49	12.41	11.82	-122.82	-4,861.97	-976.61	4,992.00	4,967.85	24.14	206.756		
5,700.00	5,697.92	5,895.56	5,865.47	12.64	12.48	-123.26	-4,860.79	-949.13	4,992.39	4,967.37	25.02	199.557		
5,729.87	5,727.72	5,921.23	5,890.93	12.71	12.56	-123.31	-4,860.43	-945.88	4,992.38	4,967.22	25.16	198.405		
5,800.00	5,797.70	5,986.60	5,955.78	12.86	12.75	-123.45	-4,859.58	-937.67	4,992.45	4,966.93	25.52	195.645		
5,900.00	5,897.48	6,106.07	6,074.28	13.09	13.11	-123.69	-4,857.63	-922.64	4,992.25	4,966.15	26.10	191.276		
5,979.31	5,976.62	6,174.65	6,142.29	13.27	13.32	-123.83	-4,856.53	-913.88	4,992.15	4,965.67	26.49	188.477		
6,000.00	5,997.26	6,191.66	6,159.17	13.32	13.37	-123.86	-4,856.28	-911.74	4,992.16	4,965.58	26.58	187.784		
6,100.00	6,097.04	6,272.91	6,239.82	13.55	13.61	-124.02	-4,855.14	-901.97	4,992.43	4,965.38	27.05	184.539		
6,200.00	6,196.82	6,352.00	6,318.40	13.78	13.84	-124.17	-4,854.25	-893.05	4,993.15	4,965.64	27.51	181.497		
6,300.00	6,296.60	6,446.00	6,411.85	14.01	14.10	-124.34	-4,853.24	-882.97	4,994.06	4,966.06	28.00	178.334		
6,400.00	6,396.38	6,541.00	6,506.20	14.24	14.37	-124.52	-4,852.49	-871.96	4,995.17	4,966.66	28.51	175.220		
6,500.00	6,496.16	6,635.00	6,599.40	14.47	14.66	-124.72	-4,852.16	-859.67	4,996.51	4,967.49	29.02	172.148		
6,600.00	6,595.94	6,715.48	6,679.17	14.71	14.90	-124.89	-4,851.99	-849.06	4,998.06	4,968.55	29.50	169.403		
6,700.00	6,695.72	6,824.50	6,787.23	14.94	15.24	-125.12	-4,851.91	-834.65	4,999.80	4,969.72	30.07	166.262		
6,800.00	6,795.50	6,906.74	6,868.78	15.17	15.49	-125.29	-4,851.82	-824.00	5,001.60	4,971.05	30.55	163.694		
6,900.00	6,895.28	6,990.18	6,951.65	15.40	15.73	-125.45	-4,851.83	-814.27	5,003.78	4,972.75	31.03	161.250		
7,000.00	6,995.06	7,074.74	7,035.69	15.64	15.97	-125.61	-4,852.03	-804.89	5,006.30	4,974.79	31.51	158.901		
7,100.00	7,094.84	7,157.22	7,117.69	15.87	16.20	-125.76	-4,852.42	-796.01	5,009.15	4,977.18	31.97	156.677		
7,125.52	7,120.31	7,177.87	7,138.22	15.93	16.26	-125.80	-4,852.55	-793.82	5,009.95	4,977.86	32.09	156.129		
7,200.00	7,194.65	7,412.39	7,371.09	16.09	16.94	-126.24	-4,849.84	-766.34	5,009.91	4,977.00	32.91	152.238		
7,300.00	7,294.55	7,492.51	7,450.62	16.27	17.18	-126.37	-4,848.13	-756.76	5,008.87	4,975.54	33.32	150.306		
7,400.00	7,394.51	7,580.00	7,537.50	16.45	17.43	-126.49	-4,846.43	-746.63	5,007.09	4,973.33	33.76	148.328		
7,505.49	7,500.00	7,674.00	7,630.88	16.63	17.70	-173.00	-4,844.89	-735.92	5,004.44	4,970.23	34.21	146.278		
7,600.00	7,594.51	7,757.28	7,713.64	16.82	17.94	-173.10	-4,843.69	-726.73	5,001.80	4,967.17	34.63	144.418		
7,700.00	7,694.51	7,825.86	7,781.86	17.04	18.13	-173.18	-4,842.82	-719.78	4,999.33	4,964.29	35.04	142.658		
7,800.00	7,794.51	7,915.76	7,871.37	17.26	18.37	-173.27	-4,842.13	-711.45	4,997.46	4,961.95	35.51	140.742		
7,900.00	7,894.51	8,017.08	7,972.06	17.48	18.65	-173.40	-4,841.43	-700.24	4,995.47	4,959.46	36.01	138.721		
8,000.00	7,994.51	8,084.35	8,038.91	17.70	18.84	-173.48	-4,841.13	-692.71	4,993.79	4,957.36	36.43	137.083		
8,100.00	8,094.51	8,147.00	8,101.06	17.92	19.03	-173.57	-4,841.60	-684.81	4,993.03	4,956.19	36.84	135.545		
8,151.06	8,145.57	8,173.25	8,127.07	18.03	19.11	-173.61	-4,841.97	-681.31	4,992.95	4,955.92	37.03	134.836		
8,200.00	8,194.51	8,213.10	8,166.58	18.14	19.23	-173.67	-4,842.59	-676.10	4,993.00	4,955.73	37.26	134.000		
8,300.00	8,294.51	8,311.29	8,263.95	18.36	19.53	-173.82	-4,844.23	-663.63	4,993.27	4,955.48	37.79	132.148		
8,400.00	8,394.51	8,524.00	8,474.84	18.59	20.18	-174.14	-4,844.00	-635.91	4,991.10	4,952.44	38.66	129.089		
8,500.00	8,494.51	8,607.88	8,558.03	18.81	20.44	-174.26	-4,843.50	-625.12	4,989.21	4,950.06	39.15	127.451		
8,600.00	8,594.51	8,684.88	8,634.44	19.03	20.67	-174.37	-4,843.37	-615.62	4,987.80	4,948.20	39.60	125.949		
8,700.00	8,694.51	8,912.81	8,860.55	19.25	21.36	-174.69	-4,839.85	-587.29	4,984.68	4,944.18	40.49	123.095		
8,800.00	8,794.51	8,996.00	8,943.13	19.47	21.60	-174.80	-4,837.85	-577.36	4,981.16	4,940.19	40.97	121.589		
8,900.00	8,894.51	9,074.74	9,021.34	19.69	21.83	-174.90	-4,836.20	-568.40	4,978.03	4,936.61	41.42	120.180		
9,000.00	8,994.51	9,154.83	9,100.96	19.92	22.06	-175.00	-4,834.78	-559.90	4,975.31	4,933.44	41.87	118.826		
9,052.54	9,047.05	9,197.82	9,143.74	20.03	22.18	-175.04	-4,834.11	-555.74	4,974.05	4,931.94	42.11	118.127		
9,100.00	9,094.45	9,238.28	9,183.99	20.12	22.29	5.36	-4,833.56	-551.60	4,971.03	4,928.72	42.31	117.483		
9,150.00	9,144.04	9,279.00	9,224.45	20.20	22.40	5.38	-4,833.10	-547.04	4,963.71	4,921.20	42.51	116.764		
9,200.00	9,192.88	9,315.98	9,261.19	20.28	22.50	5.45	-4,832.76	-542.82	4,952.24	4,909.54	42.70	115.981		
9,250.00	9,240.62	9,350.93	9,295.93	20.35	22.60	5.57	-4,832.51	-539.00	4,936.71	4,893.83	42.88	115.135		
9,300.00	9,286.89	9,416.44	9,361.07	20.42	22.78	5.73	-4,832.08	-532.14	4,917.18	4,874.05	43.14	113.993		
9,350.00	9,331.32	9,485.91	9,430.15	20.49	22.98	5.95	-4,831.10	-524.75	4,893.34	4,849.94	43.40	112.751		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 58H - OH - OH												Offset Site Error:	0.00 usft
Survey Program: 1629-MWD-ISCWSA, 16290-Project												Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
9,400.00	9,373.60	9,514.70	9,458.75	20.55	23.06	6.28	-4,830.72	-521.52	4,865.83	4,822.28	43.55	111.730	
9,450.00	9,413.39	9,541.84	9,485.70	20.61	23.14	6.70	-4,830.44	-518.33	4,834.90	4,791.21	43.69	110.664	
9,500.00	9,450.39	9,568.54	9,512.20	20.67	23.21	7.25	-4,830.23	-515.07	4,800.78	4,756.96	43.82	109.547	
9,550.00	9,484.32	9,598.07	9,541.51	20.74	23.30	7.98	-4,830.05	-511.48	4,763.67	4,719.71	43.96	108.360	
9,600.00	9,514.93	9,624.73	9,567.98	20.81	23.38	8.95	-4,829.89	-508.32	4,723.84	4,679.75	44.08	107.153	
9,650.00	9,541.97	9,648.31	9,591.40	20.91	23.45	10.28	-4,829.77	-505.58	4,681.57	4,637.38	44.19	105.936	
9,700.00	9,565.25	9,669.51	9,612.46	21.04	23.51	12.20	-4,829.66	-503.18	4,637.19	4,592.90	44.29	104.712	
9,750.00	9,584.58	9,687.65	9,630.50	21.21	23.56	15.11	-4,829.57	-501.21	4,591.01	4,546.65	44.36	103.492	
9,800.00	9,599.82	9,701.90	9,644.67	21.40	23.60	19.94	-4,829.49	-499.72	4,543.39	4,498.97	44.42	102.283	
9,850.00	9,610.86	9,712.15	9,654.87	21.61	23.62	29.06	-4,829.44	-498.68	4,494.69	4,450.23	44.46	101.092	
9,900.00	9,617.60	9,718.32	9,661.00	21.85	23.64	49.89	-4,829.40	-498.07	4,445.28	4,400.79	44.49	99.926	
9,950.00	9,620.00	9,720.36	9,663.04	22.11	23.65	95.90	-4,829.39	-497.87	4,395.54	4,351.04	44.49	98.789	
9,956.10	9,620.00	9,720.33	9,663.01	22.15	23.65	102.26	-4,829.39	-497.87	4,389.46	4,344.97	44.49	98.652	
10,000.00	9,619.72	9,719.87	9,662.55	22.40	23.65	102.20	-4,829.40	-497.92	4,345.77	4,301.27	44.49	97.672	
10,100.00	9,619.10	9,718.82	9,661.50	23.05	23.64	102.06	-4,829.40	-498.02	4,246.24	4,201.75	44.49	95.438	
10,200.00	9,618.48	9,717.77	9,660.46	23.79	23.64	101.91	-4,829.41	-498.12	4,146.73	4,102.24	44.49	93.198	
10,300.00	9,617.86	9,716.73	9,659.42	24.62	23.64	101.77	-4,829.41	-498.23	4,047.25	4,002.75	44.50	90.952	
10,400.00	9,617.24	9,715.68	9,658.38	25.52	23.63	101.63	-4,829.42	-498.33	3,947.80	3,903.29	44.51	88.702	
10,500.00	9,616.62	9,714.64	9,657.35	26.50	23.63	101.49	-4,829.42	-498.43	3,848.37	3,803.85	44.52	86.446	
10,600.00	9,616.00	9,713.61	9,656.31	27.54	23.63	101.35	-4,829.43	-498.54	3,748.98	3,704.44	44.53	84.185	
10,700.00	9,615.38	9,712.57	9,655.28	28.64	23.63	101.20	-4,829.44	-498.64	3,649.61	3,605.06	44.55	81.919	
10,800.00	9,614.76	9,711.54	9,654.26	29.78	23.62	101.06	-4,829.44	-498.74	3,550.28	3,505.71	44.57	79.648	
10,900.00	9,614.13	9,710.51	9,653.23	30.97	23.62	100.92	-4,829.45	-498.84	3,450.99	3,406.39	44.60	77.371	
11,000.00	9,613.51	9,709.48	9,652.21	32.20	23.62	100.78	-4,829.45	-498.95	3,351.75	3,307.11	44.64	75.089	
11,100.00	9,612.89	9,708.46	9,651.19	33.47	23.61	100.64	-4,829.46	-499.05	3,252.54	3,207.87	44.68	72.801	
11,200.00	9,612.27	9,707.44	9,650.17	34.76	23.61	100.50	-4,829.46	-499.15	3,153.39	3,108.67	44.72	70.508	
11,300.00	9,611.65	9,706.42	9,649.16	36.09	23.61	100.36	-4,829.47	-499.26	3,054.29	3,009.51	44.78	68.208	
11,400.00	9,611.03	9,705.40	9,648.15	37.44	23.61	100.22	-4,829.47	-499.36	2,955.26	2,910.41	44.84	65.903	
11,500.00	9,610.41	9,704.38	9,647.14	38.81	23.60	100.08	-4,829.48	-499.46	2,856.29	2,811.37	44.92	63.591	
11,600.00	9,609.79	9,703.37	9,646.13	40.20	23.60	99.94	-4,829.49	-499.57	2,757.39	2,712.39	45.00	61.272	
11,700.00	9,609.17	9,702.36	9,645.13	41.61	23.60	99.80	-4,829.49	-499.67	2,658.58	2,613.47	45.10	58.946	
11,800.00	9,608.54	9,701.35	9,644.13	43.03	23.59	99.66	-4,829.50	-499.77	2,559.85	2,514.64	45.22	56.613	
11,900.00	9,607.92	9,700.35	9,643.13	44.47	23.59	99.53	-4,829.50	-499.88	2,461.23	2,415.88	45.35	54.272	
12,000.00	9,607.30	9,699.35	9,642.13	45.93	23.59	99.39	-4,829.51	-499.98	2,362.73	2,317.22	45.51	51.922	
12,100.00	9,606.68	9,698.35	9,641.13	47.39	23.59	99.25	-4,829.51	-500.08	2,264.36	2,218.67	45.69	49.563	
12,200.00	9,606.06	9,697.35	9,640.14	48.87	23.58	99.11	-4,829.52	-500.19	2,166.13	2,120.23	45.90	47.195	
12,300.00	9,605.44	9,696.36	9,639.15	50.36	23.58	98.98	-4,829.52	-500.29	2,068.08	2,021.93	46.15	44.816	
12,400.00	9,604.82	9,695.36	9,638.17	51.85	23.58	98.84	-4,829.53	-500.39	1,970.21	1,923.78	46.44	42.428	
12,500.00	9,604.20	9,694.37	9,637.18	53.36	23.57	98.70	-4,829.53	-500.50	1,872.58	1,825.80	46.78	40.029	
12,600.00	9,603.58	9,693.38	9,636.20	54.87	23.57	98.57	-4,829.54	-500.60	1,775.21	1,728.02	47.19	37.620	
12,700.00	9,602.95	9,692.40	9,635.22	56.39	23.57	98.43	-4,829.54	-500.70	1,678.14	1,630.47	47.67	35.201	
12,800.00	9,602.33	9,691.42	9,634.24	57.91	23.57	98.30	-4,829.55	-500.81	1,581.44	1,533.19	48.25	32.773	
12,900.00	9,601.71	9,690.44	9,633.27	59.44	23.56	98.16	-4,829.55	-500.91	1,485.18	1,436.23	48.95	30.339	
13,000.00	9,601.09	9,689.46	9,632.29	60.98	23.56	98.02	-4,829.56	-501.01	1,389.45	1,339.65	49.80	27.903	
13,100.00	9,600.47	9,688.48	9,631.32	62.52	23.56	97.89	-4,829.56	-501.12	1,294.36	1,243.54	50.82	25.469	
13,200.00	9,599.85	9,687.51	9,630.35	64.07	23.56	97.76	-4,829.57	-501.22	1,200.07	1,147.99	52.07	23.046	
13,300.00	9,599.23	9,686.54	9,629.39	65.62	23.55	97.62	-4,829.58	-501.32	1,106.77	1,053.16	53.61	20.644	
13,400.00	9,598.61	9,685.57	9,628.43	67.18	23.55	97.49	-4,829.58	-501.43	1,014.76	959.25	55.51	18.281	
13,500.00	9,597.98	9,684.60	9,627.46	68.74	23.55	97.35	-4,829.59	-501.53	924.41	866.55	57.86	15.976	
13,600.00	9,597.36	9,683.64	9,626.51	70.30	23.55	97.22	-4,829.59	-501.63	836.25	775.46	60.79	13.757	
13,700.00	9,596.74	9,682.67	9,625.55	71.87	23.54	97.09	-4,829.60	-501.74	751.06	686.64	64.42	11.658	
13,800.00	9,596.12	9,681.71	9,624.59	73.44	23.54	96.96	-4,829.60	-501.84	669.98	601.06	68.92	9.721	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 58H - OH - OH												Offset Site Error: 0.00 usft	
Survey Program: 1629-MWD-ISCWSA, 16290-Project												Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Minimum Separation	Separation Factor	Warning
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
13,900.00	9,595.50	9,680.76	9,623.64	75.01	23.54	96.82	-4,829.60	-501.94	594.69	520.29	74.41	7.992	
14,000.00	9,594.88	9,679.80	9,622.69	76.59	23.53	96.69	-4,829.61	-502.05	527.67	446.82	80.85	6.527	
14,100.00	9,594.26	9,678.85	9,621.75	78.16	23.53	96.56	-4,829.61	-502.15	472.45	384.60	87.85	5.378	
14,200.00	9,593.64	9,677.90	9,620.80	79.74	23.53	96.43	-4,829.62	-502.25	433.57	339.16	94.42	4.592	
14,300.00	9,593.02	9,676.95	9,619.86	81.33	23.53	96.30	-4,829.62	-502.36	415.64	316.62	99.02	4.198	
14,326.15	9,592.85	9,676.70	9,619.61	81.74	23.53	96.26	-4,829.63	-502.38	414.82	315.10	99.71	4.160	CC, ES, SF
14,400.00	9,592.39	9,676.00	9,618.92	82.91	23.52	96.17	-4,829.63	-502.46	421.34	321.02	100.32	4.200	
14,500.00	9,591.77	9,675.06	9,617.98	84.50	23.52	96.04	-4,829.63	-502.56	449.77	351.52	98.25	4.578	
14,600.00	9,591.15	9,674.12	9,617.04	86.09	23.52	95.91	-4,829.64	-502.67	497.05	403.02	94.03	5.286	
14,700.00	9,590.53	9,673.18	9,616.11	87.68	23.52	95.78	-4,829.64	-502.77	558.41	469.34	89.07	6.269	
14,800.00	9,589.91	9,672.24	9,615.18	89.27	23.51	95.65	-4,829.65	-502.87	629.75	545.49	84.26	7.474	
14,900.00	9,589.29	9,671.31	9,614.25	90.87	23.51	95.52	-4,829.65	-502.98	708.06	628.09	79.97	8.854	
15,000.00	9,588.67	9,670.37	9,613.32	92.46	23.51	95.39	-4,829.66	-503.08	791.27	714.97	76.30	10.370	
15,100.00	9,588.05	9,669.44	9,612.40	94.06	23.51	95.26	-4,829.66	-503.18	877.99	804.78	73.21	11.993	
15,200.00	9,587.43	9,668.51	9,611.47	95.66	23.50	95.13	-4,829.67	-503.29	967.27	896.66	70.62	13.698	
15,300.00	9,586.80	9,667.59	9,610.55	97.26	23.50	95.01	-4,829.67	-503.39	1,058.47	990.03	68.44	15.466	
15,400.00	9,586.18	9,666.66	9,609.64	98.86	23.50	94.88	-4,829.68	-503.49	1,151.14	1,084.53	66.61	17.283	
15,500.00	9,585.56	9,665.74	9,608.72	100.46	23.50	94.75	-4,829.68	-503.60	1,244.94	1,179.88	65.05	19.137	
15,600.00	9,584.94	9,664.82	9,607.81	102.07	23.49	94.62	-4,829.69	-503.70	1,339.63	1,275.90	63.73	21.019	
15,700.00	9,584.32	9,663.90	9,606.89	103.67	23.49	94.50	-4,829.69	-503.80	1,435.05	1,372.44	62.60	22.922	
15,800.00	9,583.70	9,662.99	9,605.98	105.28	23.49	94.37	-4,829.69	-503.90	1,531.05	1,469.41	61.63	24.841	
15,900.00	9,583.08	9,657.00	9,600.03	106.88	23.47	93.55	-4,829.72	-504.58	1,627.54	1,566.70	60.84	26.753	
16,000.00	9,582.46	12,785.36	11,247.36	108.49	43.01	-178.28	-6,443.91	-27.81	1,685.08	1,622.66	62.42	26.994	
16,100.00	9,581.84	12,879.30	11,250.64	110.10	44.12	-178.19	-6,537.72	-24.17	1,689.29	1,625.49	63.80	26.477	
16,200.00	9,581.21	12,999.03	11,254.56	111.71	45.58	-178.16	-6,657.37	-22.42	1,693.25	1,627.91	65.33	25.917	
16,300.00	9,580.59	13,160.81	11,255.64	113.32	47.62	-178.18	-6,819.13	-21.74	1,694.51	1,627.38	67.13	25.242	
16,400.00	9,579.97	13,258.73	11,254.19	114.93	48.89	-178.22	-6,917.04	-22.11	1,693.62	1,625.08	68.55	24.707	
16,420.53	9,579.84	13,272.45	11,254.08	115.26	49.07	-178.22	-6,930.76	-22.11	1,693.58	1,624.78	68.80	24.616	
16,500.00	9,579.35	13,323.00	11,254.14	116.54	49.72	-178.22	-6,981.31	-21.85	1,694.20	1,624.45	69.76	24.287	
16,600.00	9,578.73	13,381.34	11,255.42	118.16	50.48	-178.22	-7,039.63	-21.28	1,697.07	1,626.14	70.93	23.926	
16,700.00	9,578.11	13,448.31	11,258.63	119.77	51.35	-178.21	-7,106.52	-20.49	1,702.40	1,630.25	72.15	23.595	
16,800.00	9,577.49	13,563.25	11,265.04	121.38	52.88	-178.22	-7,221.28	-19.60	1,708.67	1,635.00	73.68	23.191	
16,900.00	9,576.87	13,706.48	11,269.48	123.00	54.86	-178.22	-7,364.43	-18.51	1,712.30	1,636.91	75.39	22.712	
17,000.00	9,576.25	13,847.14	11,270.82	124.61	56.86	-178.16	-7,505.04	-15.45	1,713.97	1,636.89	77.09	22.235	
17,100.00	9,575.62	13,952.85	11,269.87	126.23	58.39	-178.12	-7,610.73	-13.66	1,713.70	1,635.14	78.56	21.813	
17,103.16	9,575.60	13,955.58	11,269.85	126.28	58.43	-178.12	-7,613.47	-13.60	1,713.70	1,635.10	78.61	21.801	
17,200.48	9,575.00	14,052.56	11,269.31	127.85	59.85	-178.05	-7,710.40	-10.92	1,713.83	1,633.82	80.01	21.421	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 71H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 126-ISCWSA-GYRO-3													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
0.00	0.00	0.00	0.00	0.00	0.00	179.59	-5,252.07	37.76	5,252.27					
100.00	100.00	69.81	69.81	0.09	0.06	179.59	-5,252.09	37.74	5,252.23	5,252.08	0.15	N/A		
200.00	200.00	177.75	177.75	0.31	0.20	179.59	-5,252.16	37.69	5,252.30	5,251.79	0.51	N/A		
300.00	300.00	298.50	298.50	0.54	0.41	179.59	-5,251.77	37.60	5,251.97	5,251.02	0.95	5,533.324		
400.00	400.00	384.05	384.05	0.76	0.56	179.59	-5,251.52	37.77	5,251.67	5,250.34	1.32	3,973.616		
500.00	500.00	487.57	487.57	0.99	0.74	179.58	-5,251.27	38.16	5,251.43	5,249.70	1.73	3,040.080		
600.00	600.00	588.05	588.05	1.21	0.92	179.58	-5,250.98	38.59	5,251.14	5,249.01	2.13	2,467.992		
700.00	700.00	684.44	684.43	1.43	1.09	179.57	-5,250.74	39.06	5,250.90	5,248.38	2.52	2,083.089		
800.00	800.00	778.56	778.55	1.66	1.25	179.57	-5,250.59	39.54	5,250.74	5,247.83	2.91	1,804.579		
883.19	883.19	856.70	856.69	1.85	1.39	179.56	-5,250.55	39.96	5,250.70	5,247.47	3.23	1,624.118		
900.00	900.00	872.75	872.74	1.88	1.42	179.56	-5,250.55	40.05	5,250.71	5,247.41	3.30	1,591.746		
1,000.00	1,000.00	966.01	966.00	2.11	1.58	179.56	-5,250.61	40.66	5,250.77	5,247.09	3.69	1,424.500		
1,100.00	1,100.00	1,062.82	1,062.81	2.33	1.75	179.55	-5,250.81	41.15	5,250.99	5,246.91	4.08	1,287.162		
1,200.00	1,200.00	1,205.55	1,205.53	2.56	2.00	179.55	-5,250.69	41.48	5,250.95	5,246.39	4.55	1,153.104		
1,300.00	1,300.00	1,308.55	1,308.53	2.78	2.18	179.55	-5,249.99	41.32	5,250.27	5,245.31	4.96	1,058.807		
1,400.00	1,400.00	1,402.30	1,402.28	3.01	2.34	179.55	-5,249.42	41.05	5,249.66	5,244.31	5.35	981.749		
1,500.00	1,500.00	1,547.00	1,546.97	3.23	2.59	179.56	-5,247.99	40.44	5,248.66	5,242.83	5.83	900.904		
1,600.00	1,600.00	1,636.00	1,635.96	3.46	2.75	179.56	-5,246.85	40.17	5,247.38	5,241.17	6.21	845.505		
1,700.00	1,700.00	1,707.21	1,707.17	3.68	2.87	179.56	-5,246.46	39.91	5,246.72	5,240.17	6.56	800.395		
1,800.00	1,800.00	1,835.04	1,834.99	3.91	3.10	179.57	-5,245.24	39.21	5,245.74	5,238.74	7.00	748.966		
1,900.00	1,900.00	1,925.07	1,925.01	4.13	3.26	179.58	-5,244.32	38.40	5,244.72	5,237.33	7.39	710.070		
2,000.00	2,000.00	2,057.88	2,057.81	4.36	3.49	179.60	-5,242.68	36.98	5,243.49	5,235.65	7.84	668.499		
2,100.00	2,100.00	2,180.39	2,180.28	4.58	3.70	179.61	-5,240.40	35.39	5,241.61	5,233.33	8.28	632.806		
2,200.00	2,200.00	2,279.69	2,279.55	4.81	3.88	179.63	-5,238.44	34.05	5,239.62	5,230.94	8.68	603.506		
2,300.00	2,300.00	2,391.81	2,391.64	5.03	4.08	179.65	-5,235.95	32.36	5,237.39	5,228.28	9.10	575.325		
2,400.00	2,400.00	2,474.32	2,474.11	5.26	4.22	179.66	-5,234.20	30.94	5,235.26	5,225.78	9.47	552.647		
2,500.00	2,500.00	2,565.29	2,565.05	5.48	4.38	179.68	-5,232.67	29.07	5,233.55	5,223.70	9.86	530.917		
2,600.00	2,600.00	2,678.97	2,678.69	5.71	4.58	179.71	-5,230.41	26.53	5,231.54	5,221.26	10.28	508.813		
2,700.00	2,700.00	2,762.48	2,762.16	5.93	4.73	179.73	-5,228.85	24.85	5,229.66	5,219.01	10.65	490.884		
2,800.00	2,800.00	2,874.94	2,874.58	6.15	4.93	179.75	-5,226.96	22.45	5,227.99	5,216.91	11.08	472.023		
2,900.00	2,900.00	3,010.47	3,010.04	6.38	5.17	179.79	-5,223.81	19.57	5,225.63	5,214.09	11.54	452.901		
3,000.00	3,000.00	3,114.52	3,114.03	6.60	5.35	179.81	-5,221.05	17.44	5,222.97	5,211.02	11.95	437.212		
3,100.00	3,100.00	3,236.38	3,235.81	6.83	5.57	179.84	-5,217.60	14.44	5,220.14	5,207.76	12.38	421.491		
3,200.00	3,200.00	3,367.54	3,366.86	7.05	5.80	179.87	-5,212.99	11.71	5,216.58	5,203.74	12.84	406.291		
3,300.00	3,300.00	3,464.18	3,463.42	7.28	5.98	179.89	-5,209.49	10.24	5,212.96	5,199.73	13.23	393.880		
3,400.00	3,400.00	3,568.87	3,568.03	7.50	6.17	179.90	-5,205.60	8.76	5,209.24	5,195.60	13.64	381.800		
3,500.00	3,500.00	3,654.61	3,653.70	7.73	6.32	179.92	-5,202.48	7.49	5,205.60	5,191.58	14.02	371.276		
3,600.00	3,600.00	3,757.34	3,756.36	7.95	6.51	179.94	-5,199.00	5.76	5,202.22	5,187.79	14.43	360.595		
3,700.00	3,700.00	3,853.95	3,852.90	8.18	6.68	179.95	-5,195.59	4.19	5,198.69	5,183.87	14.82	350.734		
3,800.00	3,800.00	3,951.82	3,950.70	8.40	6.86	179.97	-5,192.25	3.01	5,195.27	5,180.05	15.22	341.352		
3,900.00	3,900.00	4,029.99	4,028.82	8.63	7.00	179.98	-5,189.73	2.11	5,192.05	5,176.47	15.58	333.172		
4,000.00	4,000.00	4,110.79	4,109.59	8.85	7.14	179.99	-5,187.47	0.92	5,189.26	5,173.31	15.95	325.304		
4,100.00	4,100.00	4,196.66	4,195.42	9.08	7.30	-180.00	-5,185.35	-0.24	5,186.78	5,170.45	16.33	317.644		
4,200.00	4,200.00	4,288.00	4,286.73	9.30	7.46	-179.98	-5,183.29	-2.00	5,184.53	5,167.81	16.72	310.167		
4,300.00	4,300.00	4,370.93	4,369.62	9.53	7.61	-179.96	-5,181.58	-3.48	5,182.48	5,165.39	17.09	303.302		
4,400.00	4,400.00	4,433.41	4,432.09	9.75	7.72	-179.96	-5,180.58	-3.84	5,180.91	5,163.49	17.42	297.375		
4,500.00	4,500.00	4,496.00	4,494.67	9.98	7.82	-179.97	-5,180.27	-2.97	5,180.31	5,162.55	17.76	291.745		
4,513.04	4,513.04	4,496.00	4,494.67	10.00	7.82	-133.57	-5,180.27	-2.97	5,180.28	5,162.50	17.78	291.273		
4,600.00	4,600.00	4,547.49	4,546.14	10.20	7.91	-133.58	-5,180.43	-1.60	5,181.11	5,163.04	18.07	286.801		
4,700.00	4,699.96	4,640.56	4,639.17	10.41	8.08	-133.62	-5,181.10	1.33	5,183.62	5,165.18	18.44	281.058		
4,800.00	4,799.86	4,726.71	4,725.25	10.63	8.22	-133.66	-5,181.69	4.48	5,187.34	5,168.53	18.81	275.776		
4,879.97	4,879.69	4,783.98	4,782.44	10.81	8.32	-133.69	-5,182.33	7.57	5,191.53	5,172.44	19.08	272.045		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 71H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 126-ISCWSA-GYRO-3													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		+N/-S (usft)	+E/-W (usft)						
4,900.00	4,899.68	4,797.90	4,796.33	10.85	8.35	-133.70	-5,182.53	8.43	5,192.73	5,173.58	19.15	271.144		
5,000.00	4,999.46	4,853.00	4,851.29	11.07	8.45	-133.77	-5,183.45	12.28	5,199.12	5,179.65	19.46	267.128		
5,100.00	5,099.24	4,943.00	4,940.97	11.29	8.60	-133.90	-5,185.53	19.49	5,206.09	5,186.25	19.84	262.412		
5,200.00	5,199.02	5,026.87	5,024.52	11.51	8.75	-134.02	-5,187.83	26.45	5,213.49	5,193.29	20.21	258.024		
5,300.00	5,298.80	5,158.86	5,156.11	11.74	8.98	-134.20	-5,191.20	36.14	5,220.78	5,200.12	20.66	252.677		
5,400.00	5,398.58	5,245.35	5,242.43	11.96	9.14	-134.30	-5,193.03	41.24	5,227.63	5,206.60	21.03	248.527		
5,500.00	5,498.36	5,343.77	5,340.69	12.19	9.31	-134.40	-5,195.51	46.20	5,234.86	5,213.43	21.43	244.277		
5,600.00	5,598.14	5,455.50	5,452.24	12.41	9.51	-134.52	-5,198.07	51.99	5,241.90	5,220.05	21.85	239.892		
5,700.00	5,697.92	5,577.77	5,574.31	12.64	9.73	-134.66	-5,200.40	58.73	5,248.56	5,226.27	22.29	235.447		
5,800.00	5,797.70	5,704.21	5,700.54	12.86	9.95	-134.80	-5,202.38	65.66	5,254.93	5,232.19	22.74	231.085		
5,900.00	5,897.48	5,802.94	5,799.12	13.09	10.12	-134.91	-5,203.54	70.91	5,260.91	5,237.78	23.14	227.369		
6,000.00	5,997.26	5,921.37	5,917.39	13.32	10.33	-135.03	-5,204.79	76.97	5,266.79	5,243.22	23.57	223.431		
6,100.00	6,097.04	6,028.86	6,024.74	13.55	10.52	-135.15	-5,205.64	82.46	5,272.42	5,248.44	23.99	219.805		
6,200.00	6,196.82	6,125.88	6,121.63	13.78	10.69	-135.25	-5,206.33	87.29	5,277.98	5,253.60	24.38	216.464		
6,300.00	6,296.60	6,223.60	6,219.25	14.01	10.86	-135.35	-5,207.15	91.78	5,283.68	5,258.90	24.78	213.220		
6,400.00	6,396.38	6,329.09	6,324.64	14.24	11.04	-135.45	-5,207.95	96.35	5,289.31	5,264.12	25.19	209.955		
6,500.00	6,496.16	6,422.08	6,417.55	14.47	11.20	-135.54	-5,208.66	100.09	5,294.95	5,269.36	25.58	206.976		
6,600.00	6,595.94	6,539.25	6,534.63	14.71	11.41	-135.64	-5,209.50	104.50	5,300.54	5,274.52	26.02	203.739		
6,700.00	6,695.72	6,649.87	6,645.18	14.94	11.60	-135.74	-5,209.93	108.45	5,305.81	5,279.37	26.44	200.687		
6,800.00	6,795.50	6,754.51	6,749.76	15.17	11.78	-135.83	-5,210.23	112.06	5,310.99	5,284.14	26.85	197.805		
6,900.00	6,895.28	6,858.17	6,853.36	15.40	11.96	-135.92	-5,210.41	115.55	5,316.06	5,288.80	27.26	195.017		
7,000.00	6,995.06	6,958.25	6,953.38	15.64	12.14	-136.01	-5,210.55	118.92	5,321.11	5,293.45	27.66	192.353		
7,100.00	7,094.84	7,037.73	7,032.82	15.87	12.28	-136.07	-5,210.79	121.45	5,326.34	5,298.31	28.03	190.021		
7,125.52	7,120.31	7,061.00	7,056.08	15.93	12.32	-136.09	-5,210.93	122.20	5,327.75	5,299.62	28.13	189.402		
7,200.00	7,194.65	7,126.48	7,121.52	16.09	12.43	-136.17	-5,211.38	124.41	5,331.58	5,303.18	28.39	187.769		
7,300.00	7,294.55	7,216.51	7,211.49	16.27	12.59	-136.26	-5,212.10	127.48	5,335.75	5,307.03	28.73	185.737		
7,400.00	7,394.51	7,315.44	7,310.37	16.45	12.76	-136.34	-5,213.04	130.52	5,338.81	5,309.74	29.08	183.613		
7,505.49	7,500.00	7,407.25	7,402.13	16.63	12.92	-136.42	-5,213.99	133.34	5,340.77	5,311.35	29.42	181.539		
7,600.00	7,594.51	7,506.73	7,501.56	16.82	13.10	-136.51	-5,215.15	136.32	5,342.01	5,312.23	29.78	179.381		
7,700.00	7,694.51	7,615.72	7,610.50	17.04	13.29	-136.60	-5,216.16	139.79	5,343.08	5,312.89	30.19	176.961		
7,800.00	7,794.51	7,690.87	7,685.60	17.26	13.42	-136.68	-5,217.05	142.10	5,344.42	5,313.87	30.54	174.970		
7,900.00	7,894.51	7,807.81	7,802.49	17.48	13.63	-136.77	-5,218.36	145.16	5,345.64	5,314.67	30.97	172.591		
8,000.00	7,994.51	7,886.80	7,881.46	17.70	13.76	-136.85	-5,219.41	146.80	5,347.08	5,315.74	31.33	170.662		
8,100.00	8,094.51	7,971.20	7,965.83	17.92	13.91	-136.93	-5,220.82	148.44	5,348.84	5,317.14	31.70	168.735		
8,200.00	8,194.51	8,057.04	8,051.64	18.14	14.07	-137.01	-5,222.49	150.08	5,350.89	5,318.82	32.07	166.847		
8,300.00	8,294.51	8,153.69	8,148.25	18.36	14.24	-137.09	-5,224.61	151.71	5,353.16	5,320.70	32.46	164.907		
8,400.00	8,394.51	8,256.82	8,251.36	18.59	14.42	-137.17	-5,226.66	152.63	5,355.19	5,322.32	32.86	162.949		
8,500.00	8,494.51	8,328.97	8,323.49	18.81	14.55	-137.25	-5,228.43	153.23	5,357.67	5,324.46	33.21	161.332		
8,600.00	8,594.51	8,426.23	8,420.71	19.03	14.72	-137.33	-5,231.03	154.20	5,360.39	5,326.79	33.60	159.532		
8,700.00	8,694.51	8,531.34	8,525.77	19.25	14.91	-137.41	-5,233.86	155.38	5,363.14	5,329.13	34.01	157.705		
8,800.00	8,794.51	8,635.50	8,629.89	19.47	15.09	-137.49	-5,236.48	156.23	5,365.69	5,331.28	34.41	155.926		
8,900.00	8,894.51	8,733.30	8,727.66	19.69	15.26	-137.57	-5,239.02	156.51	5,368.30	5,333.50	34.80	154.243		
9,000.00	8,994.51	8,860.38	8,854.70	19.92	15.49	-137.65	-5,242.03	156.88	5,370.68	5,335.43	35.25	152.357		
9,052.54	9,047.05	8,907.68	8,901.99	20.03	15.57	-137.73	-5,243.04	157.01	5,371.81	5,336.36	35.45	151.535		
9,100.00	9,094.45	8,952.18	8,946.48	20.12	15.65	-2.61	-5,244.04	157.10	5,370.92	5,335.30	35.62	150.787		
9,150.00	9,144.04	9,002.90	8,997.19	20.20	15.74	-2.64	-5,245.18	157.09	5,365.74	5,329.94	35.79	149.913		
9,200.00	9,192.88	9,050.66	9,044.94	20.28	15.82	-2.68	-5,246.26	156.96	5,356.25	5,320.29	35.96	148.955		
9,250.00	9,240.62	9,095.50	9,089.76	20.35	15.90	-2.76	-5,247.31	156.78	5,342.54	5,306.43	36.12	147.921		
9,300.00	9,286.89	9,134.94	9,129.20	20.42	15.97	-2.85	-5,248.25	156.58	5,324.74	5,288.48	36.26	146.834		
9,350.00	9,331.32	9,169.45	9,163.69	20.49	16.03	-2.98	-5,249.15	156.38	5,303.03	5,266.63	36.40	145.698		
9,400.00	9,373.60	9,205.00	9,199.23	20.55	16.09	-3.15	-5,250.14	156.17	5,277.57	5,241.04	36.53	144.475		
9,450.00	9,413.39	9,232.64	9,226.85	20.61	16.14	-3.37	-5,250.97	156.01	5,248.53	5,211.89	36.64	143.237		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 71H - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 126-ISCWSA-GYRO-3													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
9,500.00	9,450.39	9,260.84	9,255.04	20.67	16.19	-3.64	-5,251.87	155.85	5,216.14	5,179.39	36.75	141.928		
9,550.00	9,484.32	9,294.00	9,288.18	20.74	16.25	-4.00	-5,252.99	155.68	5,180.64	5,143.77	36.87	140.525		
9,600.00	9,514.93	9,314.98	9,309.14	20.81	16.29	-4.46	-5,253.73	155.56	5,142.24	5,105.28	36.95	139.157		
9,650.00	9,541.97	9,341.63	9,335.77	20.91	16.33	-5.09	-5,254.67	155.35	5,101.22	5,064.18	37.04	137.705		
9,700.00	9,565.25	9,364.86	9,358.99	21.04	16.37	-5.97	-5,255.51	155.13	5,057.89	5,020.77	37.12	136.242		
9,750.00	9,584.58	9,384.61	9,378.73	21.21	16.41	-7.25	-5,256.22	154.91	5,012.57	4,975.38	37.19	134.775		
9,800.00	9,599.82	9,403.89	9,397.99	21.40	16.44	-9.31	-5,256.92	154.67	4,965.59	4,928.34	37.25	133.292		
9,850.00	9,610.86	9,418.39	9,412.49	21.61	16.47	-13.03	-5,257.45	154.48	4,917.32	4,880.02	37.30	131.829		
9,900.00	9,617.60	9,428.04	9,422.12	21.85	16.49	-21.48	-5,257.79	154.35	4,868.12	4,830.78	37.33	130.394		
9,950.00	9,620.00	9,432.76	9,426.84	22.11	16.49	-52.06	-5,257.96	154.28	4,818.36	4,781.01	37.35	128.992		
9,956.10	9,620.00	9,433.00	9,427.08	22.15	16.49	-60.48	-5,257.97	154.28	4,812.27	4,774.92	37.36	128.820		
10,000.00	9,619.72	9,434.44	9,428.53	22.40	16.50	-60.74	-5,258.02	154.25	4,768.45	4,731.08	37.37	127.614		
10,100.00	9,619.10	9,437.73	9,431.81	23.05	16.50	-61.33	-5,258.13	154.21	4,668.62	4,631.23	37.39	124.864		
10,200.00	9,618.48	9,441.00	9,435.08	23.79	16.51	-61.93	-5,258.25	154.16	4,568.80	4,531.38	37.42	122.109		
10,300.00	9,617.86	9,444.25	9,438.33	24.62	16.51	-62.53	-5,258.36	154.11	4,468.98	4,431.53	37.44	119.351		
10,400.00	9,617.24	9,447.49	9,441.56	25.52	16.52	-63.13	-5,258.48	154.06	4,369.17	4,331.69	37.48	116.588		
10,500.00	9,616.62	9,450.71	9,444.78	26.50	16.53	-63.74	-5,258.59	154.01	4,269.36	4,231.85	37.51	113.823		
10,600.00	9,616.00	9,453.92	9,447.98	27.54	16.53	-64.35	-5,258.70	153.96	4,169.56	4,132.02	37.55	111.054		
10,700.00	9,615.38	9,457.11	9,451.17	28.64	16.54	-64.96	-5,258.81	153.91	4,069.77	4,032.19	37.58	108.283		
10,800.00	9,614.76	9,460.28	9,454.35	29.78	16.54	-65.58	-5,258.93	153.86	3,969.99	3,932.36	37.63	105.508		
10,900.00	9,614.13	9,463.44	9,457.50	30.97	16.55	-66.20	-5,259.04	153.81	3,870.22	3,832.54	37.67	102.732		
11,000.00	9,613.51	9,466.59	9,460.65	32.20	16.55	-66.83	-5,259.14	153.76	3,770.45	3,732.73	37.72	99.954		
11,100.00	9,612.89	9,469.72	9,463.78	33.47	16.56	-67.46	-5,259.25	153.71	3,670.70	3,632.92	37.77	97.174		
11,200.00	9,612.27	9,472.84	9,466.89	34.76	16.56	-68.09	-5,259.36	153.66	3,570.96	3,533.13	37.83	94.392		
11,300.00	9,611.65	9,473.00	9,467.05	36.09	16.56	-68.12	-5,259.37	153.65	3,471.23	3,433.34	37.89	91.623		
11,400.00	9,611.03	9,473.00	9,467.05	37.44	16.56	-68.12	-5,259.37	153.65	3,371.52	3,333.57	37.94	88.854		
11,500.00	9,610.41	9,480.07	9,474.12	38.81	16.58	-69.58	-5,259.61	153.54	3,271.81	3,233.79	38.02	86.050		
11,600.00	9,609.79	9,482.51	9,476.56	40.20	16.58	-70.09	-5,259.70	153.50	3,172.13	3,134.03	38.10	83.267		
11,700.00	9,609.17	9,484.98	9,479.02	41.61	16.59	-70.60	-5,259.79	153.45	3,072.46	3,034.29	38.18	80.483		
11,800.00	9,608.54	9,487.47	9,481.51	43.03	16.59	-71.13	-5,259.87	153.41	2,972.82	2,934.56	38.26	77.698		
11,900.00	9,607.92	9,489.98	9,484.02	44.47	16.59	-71.67	-5,259.96	153.37	2,873.20	2,834.84	38.35	74.912		
12,000.00	9,607.30	9,492.52	9,486.56	45.93	16.60	-72.21	-5,260.05	153.33	2,773.60	2,735.14	38.45	72.126		
12,100.00	9,606.68	9,495.09	9,489.12	47.39	16.60	-72.76	-5,260.15	153.28	2,674.03	2,635.46	38.56	69.340		
12,200.00	9,606.06	9,497.68	9,491.71	48.87	16.61	-73.32	-5,260.24	153.24	2,574.48	2,535.80	38.68	66.552		
12,300.00	9,605.44	9,500.29	9,494.33	50.36	16.61	-73.90	-5,260.33	153.19	2,474.98	2,436.16	38.81	63.765		
12,400.00	9,604.82	9,502.94	9,496.97	51.85	16.62	-74.48	-5,260.43	153.15	2,375.51	2,336.55	38.96	60.976		
12,500.00	9,604.20	9,505.60	9,499.63	53.36	16.62	-75.07	-5,260.53	153.10	2,276.08	2,236.96	39.12	58.187		
12,600.00	9,603.58	9,508.30	9,502.32	54.87	16.63	-75.67	-5,260.62	153.06	2,176.70	2,137.41	39.29	55.397		
12,700.00	9,602.95	9,511.02	9,505.05	56.39	16.63	-76.27	-5,260.72	153.01	2,077.38	2,037.89	39.49	52.606		
12,800.00	9,602.33	9,513.77	9,507.79	57.91	16.64	-76.89	-5,260.83	152.96	1,978.13	1,938.41	39.71	49.813		
12,900.00	9,601.71	9,516.55	9,510.57	59.44	16.64	-77.52	-5,260.93	152.92	1,878.94	1,838.98	39.96	47.019		
13,000.00	9,601.09	9,519.36	9,513.37	60.98	16.65	-78.16	-5,261.03	152.87	1,779.85	1,739.60	40.25	44.223		
13,100.00	9,600.47	9,522.19	9,516.21	62.52	16.65	-78.81	-5,261.14	152.82	1,680.85	1,640.28	40.58	41.426		
13,200.00	9,599.85	9,525.06	9,519.07	64.07	16.66	-79.46	-5,261.25	152.77	1,581.98	1,541.02	40.96	38.626		
13,300.00	9,599.23	9,527.95	9,521.96	65.62	16.66	-80.13	-5,261.35	152.72	1,483.25	1,441.85	41.40	35.824		
13,400.00	9,598.61	9,530.88	9,524.88	67.18	16.67	-80.81	-5,261.47	152.67	1,384.70	1,342.76	41.93	33.021		
13,500.00	9,597.98	9,533.83	9,527.84	68.74	16.67	-81.50	-5,261.58	152.61	1,286.36	1,243.79	42.57	30.217		
13,600.00	9,597.36	9,536.82	9,530.82	70.30	16.68	-82.20	-5,261.69	152.56	1,188.29	1,144.95	43.34	27.415		
13,700.00	9,596.74	9,539.84	9,533.84	71.87	16.68	-82.90	-5,261.81	152.51	1,090.57	1,046.27	44.30	24.618		
13,800.00	9,596.12	9,542.89	9,536.89	73.44	16.69	-83.62	-5,261.92	152.45	993.29	947.79	45.50	21.832		
13,900.00	9,595.50	9,545.98	9,539.97	75.01	16.69	-84.35	-5,262.04	152.40	896.59	849.57	47.02	19.068		
14,000.00	9,594.88	9,549.09	9,543.08	76.59	16.70	-85.09	-5,262.16	152.34	800.70	751.70	49.00	16.340		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit (Offsets) - 71H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 126-ISCWSA-GYRO-3													Offset Well Error: 0.00 usft
Reference	Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
14,100.00	9,594.26	9,552.25	9,546.23	78.16	16.70	-85.84	-5,262.29	152.29	705.93	654.30	51.63	13.673	
14,200.00	9,593.64	9,555.43	9,549.42	79.74	16.71	-86.60	-5,262.41	152.23	612.81	557.62	55.19	11.104	
14,300.00	9,593.02	9,558.65	9,552.64	81.33	16.71	-87.37	-5,262.54	152.17	522.22	462.10	60.12	8.686	
14,400.00	9,592.39	9,561.91	9,555.89	82.91	16.72	-88.14	-5,262.67	152.11	435.74	368.68	67.06	6.497	
14,500.00	9,591.77	9,565.18	9,559.15	84.50	16.73	-88.93	-5,262.80	152.05	356.38	279.56	76.82	4.639	
14,600.00	9,591.15	9,568.44	9,562.41	86.09	16.73	-89.71	-5,262.93	152.00	290.03	200.48	89.56	3.239	
14,700.00	9,590.53	9,571.69	9,565.66	87.68	16.74	-90.49	-5,263.06	151.94	247.41	145.50	101.91	2.428	
14,764.67	9,590.13	9,573.79	9,567.75	88.71	16.74	-90.99	-5,263.14	151.90	238.82	133.42	105.39	2.266	CC, ES, SF
14,800.00	9,589.91	9,574.93	9,568.90	89.27	16.74	-91.26	-5,263.18	151.88	241.41	136.57	104.85	2.303	
14,900.00	9,589.29	9,578.18	9,572.14	90.87	16.75	-92.04	-5,263.31	151.83	274.46	178.63	95.83	2.864	
15,000.00	9,588.67	9,581.41	9,575.37	92.46	16.76	-92.82	-5,263.44	151.78	335.19	251.70	83.49	4.015	
15,100.00	9,588.05	9,584.65	9,578.60	94.06	16.76	-93.59	-5,263.57	151.73	411.53	338.27	73.27	5.617	
15,200.00	9,587.43	9,587.88	9,581.83	95.66	16.77	-94.36	-5,263.70	151.67	496.33	430.53	65.80	7.543	
15,300.00	9,586.80	9,591.10	9,585.05	97.26	16.77	-95.13	-5,263.82	151.63	585.92	525.45	60.47	9.689	
15,400.00	9,586.18	9,594.32	9,588.27	98.86	16.78	-95.90	-5,263.95	151.58	678.41	621.79	56.62	11.982	
15,500.00	9,585.56	9,597.53	9,591.48	100.46	16.78	-96.66	-5,264.08	151.53	772.76	718.98	53.79	14.367	
15,600.00	9,584.94	9,600.74	9,594.69	102.07	16.79	-97.43	-5,264.20	151.48	868.37	816.70	51.67	16.807	
15,700.00	9,584.32	11,180.84	10,503.73	103.67	24.38	-169.15	-6,190.38	101.15	963.16	887.81	75.35	12.782	
15,800.00	9,583.70	11,273.01	10,505.73	105.28	25.38	-169.38	-6,282.48	98.33	965.19	889.18	76.01	12.698	
15,900.00	9,583.08	11,400.48	10,506.49	106.88	26.85	-169.57	-6,409.92	96.27	965.93	888.97	76.96	12.551	
15,981.97	9,582.57	11,476.80	10,505.98	108.20	27.76	-169.65	-6,486.23	95.46	965.63	888.05	77.58	12.447	
16,000.00	9,582.46	11,490.51	10,505.96	108.49	27.93	-169.66	-6,499.95	95.42	965.68	887.98	77.70	12.429	
16,100.00	9,581.84	11,571.16	10,506.97	110.10	28.92	-169.70	-6,580.59	95.57	967.39	889.01	78.38	12.342	
16,200.00	9,581.21	11,678.67	10,508.83	111.71	30.29	-169.82	-6,688.08	94.75	969.43	890.18	79.26	12.232	
16,300.00	9,580.59	11,783.11	10,510.51	113.32	31.65	-170.08	-6,792.45	91.50	970.96	890.93	80.02	12.133	
16,400.00	9,579.97	11,880.27	10,511.51	114.93	32.95	-170.22	-6,889.60	90.11	972.21	891.41	80.80	12.032	
16,500.00	9,579.35	11,997.15	10,512.08	116.54	34.55	-170.23	-7,006.46	90.96	973.37	891.52	81.85	11.892	
16,600.00	9,578.73	12,112.12	10,509.97	118.16	36.15	-170.24	-7,121.41	91.35	972.06	889.17	82.89	11.727	
16,700.00	9,578.11	12,199.65	10,508.54	119.77	37.39	-170.23	-7,208.94	92.06	971.07	887.37	83.69	11.603	
16,800.00	9,577.49	12,302.42	10,507.43	121.38	38.87	-170.15	-7,311.67	94.02	970.83	886.13	84.69	11.463	
16,900.00	9,576.87	12,404.90	10,505.14	123.00	40.36	-170.07	-7,414.12	95.93	969.42	883.71	85.71	11.310	
16,951.41	9,576.55	12,447.00	10,504.58	123.83	40.98	-170.04	-7,456.20	96.72	969.17	883.05	86.12	11.254	
17,000.00	9,576.25	12,480.73	10,504.55	124.61	41.48	-170.01	-7,489.92	97.41	969.53	883.11	86.42	11.219	
17,100.00	9,575.62	12,556.74	10,506.30	126.23	42.60	-169.96	-7,565.89	99.26	972.61	885.52	87.09	11.168	
17,200.48	9,575.00	12,671.31	10,509.19	127.85	44.32	-169.91	-7,680.40	101.65	975.96	887.67	88.29	11.054	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 111H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
0.00	0.00	0.00	0.00	0.00	0.00	89.68	0.34	60.01	60.03					
100.00	100.00	98.40	98.40	0.09	0.08	89.68	0.34	60.01	60.01	59.84	0.17	351.825		
200.00	200.00	198.40	198.40	0.31	0.31	89.68	0.34	60.01	60.01	59.39	0.62	97.124		
300.00	300.00	298.40	298.40	0.54	0.53	89.68	0.34	60.01	60.01	58.94	1.07	56.221		
400.00	400.00	398.40	398.40	0.76	0.76	89.68	0.34	60.01	60.01	58.49	1.52	39.560		
500.00	500.00	498.40	498.40	0.99	0.98	89.68	0.34	60.01	60.01	58.04	1.97	30.517		
600.00	600.00	598.40	598.40	1.21	1.21	89.68	0.34	60.01	60.01	57.59	2.42	24.839		
700.00	700.00	698.40	698.40	1.43	1.43	89.68	0.34	60.01	60.01	57.15	2.87	20.942		
800.00	800.00	798.40	798.40	1.66	1.66	89.68	0.34	60.01	60.01	56.70	3.32	18.102		
900.00	900.00	898.40	898.40	1.88	1.88	89.68	0.34	60.01	60.01	56.25	3.76	15.941		
1,000.00	1,000.00	998.40	998.40	2.11	2.11	89.68	0.34	60.01	60.01	55.80	4.21	14.240		
1,100.00	1,100.00	1,098.40	1,098.40	2.33	2.33	89.68	0.34	60.01	60.01	55.35	4.66	12.868		
1,200.00	1,200.00	1,198.40	1,198.40	2.56	2.55	89.68	0.34	60.01	60.01	54.90	5.11	11.736		
1,300.00	1,300.00	1,298.40	1,298.40	2.78	2.78	89.68	0.34	60.01	60.01	54.45	5.56	10.788		
1,400.00	1,400.00	1,398.40	1,398.40	3.01	3.00	89.68	0.34	60.01	60.01	54.00	6.01	9.981		
1,500.00	1,500.00	1,498.40	1,498.40	3.23	3.23	89.68	0.34	60.01	60.01	53.55	6.46	9.287		
1,600.00	1,600.00	1,598.40	1,598.40	3.46	3.45	89.68	0.34	60.01	60.01	53.10	6.91	8.683		
1,700.00	1,700.00	1,698.40	1,698.40	3.68	3.68	89.68	0.34	60.01	60.01	52.65	7.36	8.153		
1,800.00	1,800.00	1,798.40	1,798.40	3.91	3.90	89.68	0.34	60.01	60.01	52.20	7.81	7.683		
1,900.00	1,900.00	1,898.40	1,898.40	4.13	4.13	89.68	0.34	60.01	60.01	51.75	8.26	7.265		
2,000.00	2,000.00	1,998.40	1,998.40	4.36	4.35	89.68	0.34	60.01	60.01	51.30	8.71	6.890		
2,100.00	2,100.00	2,098.40	2,098.40	4.58	4.58	89.68	0.34	60.01	60.01	50.85	9.16	6.552		
2,200.00	2,200.00	2,198.40	2,198.40	4.81	4.80	89.68	0.34	60.01	60.01	50.40	9.61	6.246		
2,300.00	2,300.00	2,298.40	2,298.40	5.03	5.03	89.68	0.34	60.01	60.01	49.95	10.06	5.966		
2,400.00	2,400.00	2,398.40	2,398.40	5.26	5.25	89.68	0.34	60.01	60.01	49.50	10.51	5.711		
2,500.00	2,500.00	2,498.40	2,498.40	5.48	5.48	89.68	0.34	60.01	60.01	49.05	10.96	5.477 CC, ES		
2,600.00	2,600.00	2,597.52	2,597.52	5.71	5.69	89.26	0.78	60.71	60.72	49.33	11.40	5.328		
2,700.00	2,700.00	2,696.58	2,696.54	5.93	5.90	88.05	2.14	62.86	62.92	51.10	11.83	5.320		
2,800.00	2,800.00	2,795.51	2,795.38	6.15	6.12	86.20	4.41	66.45	66.67	54.41	12.26	5.439		
2,900.00	2,900.00	2,895.25	2,894.98	6.38	6.33	84.16	7.25	70.96	71.41	58.71	12.69	5.626		
3,000.00	3,000.00	2,995.11	2,994.69	6.60	6.55	82.37	10.11	75.47	76.24	63.11	13.13	5.806		
3,100.00	3,100.00	3,094.96	3,094.40	6.83	6.77	80.80	12.96	79.99	81.13	67.56	13.57	5.979		
3,200.00	3,200.00	3,194.82	3,194.12	7.05	6.99	79.40	15.81	84.51	86.08	72.07	14.01	6.145		
3,300.00	3,300.00	3,294.68	3,293.83	7.28	7.21	78.16	18.67	89.03	91.08	76.63	14.45	6.303		
3,400.00	3,400.00	3,394.53	3,393.55	7.50	7.43	77.04	21.52	93.55	96.11	81.22	14.89	6.454		
3,500.00	3,500.00	3,494.39	3,493.26	7.73	7.66	76.04	24.37	98.06	101.18	85.85	15.33	6.598		
3,600.00	3,600.00	3,594.25	3,592.97	7.95	7.88	75.13	27.23	102.58	106.27	90.50	15.78	6.736		
3,700.00	3,700.00	3,694.10	3,692.69	8.18	8.11	74.31	30.08	107.10	111.39	95.17	16.22	6.868		
3,800.00	3,800.00	3,793.96	3,792.40	8.40	8.33	73.56	32.94	111.62	116.53	99.87	16.66	6.993		
3,900.00	3,900.00	3,893.82	3,892.11	8.63	8.56	72.87	35.79	116.14	121.69	104.58	17.11	7.113		
4,000.00	4,000.00	3,993.67	3,991.83	8.85	8.79	72.24	38.64	120.66	126.86	109.31	17.55	7.228		
4,100.00	4,100.00	4,093.53	4,091.54	9.08	9.02	71.66	41.50	125.17	132.05	114.05	18.00	7.337		
4,200.00	4,200.00	4,193.39	4,191.25	9.30	9.24	71.12	44.35	129.69	137.25	118.81	18.44	7.442		
4,300.00	4,300.00	4,293.24	4,290.97	9.53	9.47	70.62	47.20	134.21	142.46	123.57	18.89	7.542		
4,400.00	4,400.00	4,393.10	4,390.68	9.75	9.70	70.16	50.06	138.73	147.69	128.35	19.33	7.638		
4,500.00	4,500.00	4,492.96	4,490.40	9.98	9.93	69.73	52.91	143.25	152.92	133.14	19.78	7.731		
4,600.00	4,600.00	4,592.80	4,590.09	10.20	10.16	115.96	55.76	147.76	158.53	138.31	20.22	7.839		
4,700.00	4,699.96	4,692.59	4,689.74	10.41	10.39	116.33	58.62	152.28	164.92	144.26	20.66	7.982		
4,800.00	4,799.86	4,792.29	4,789.30	10.63	10.63	117.19	61.46	156.79	172.11	151.01	21.10	8.157		
4,879.97	4,879.69	4,871.94	4,868.84	10.81	10.81	118.18	63.74	160.39	178.47	157.02	21.45	8.320		
4,900.00	4,899.68	4,891.88	4,888.75	10.85	10.86	118.47	64.31	161.30	180.14	158.60	21.54	8.364		
5,000.00	4,999.46	4,991.43	4,988.15	11.07	11.09	119.83	67.16	165.80	188.54	166.56	21.98	8.579		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 111H - OH - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: O-LEAM MWD+HDGM													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,099.24	5,090.98	5,087.56	11.29	11.32	121.08	70.00	170.31	197.04	174.62	22.42	8.789		
5,200.00	5,199.02	5,190.53	5,186.97	11.51	11.55	122.22	72.85	174.81	205.62	182.76	22.86	8.994		
5,300.00	5,298.80	5,290.08	5,286.38	11.74	11.78	123.27	75.69	179.31	214.27	190.97	23.30	9.195		
5,400.00	5,398.58	5,389.63	5,385.79	11.96	12.01	124.24	78.53	183.82	222.99	199.25	23.75	9.390		
5,500.00	5,498.36	5,489.18	5,485.19	12.19	12.25	125.14	81.38	188.32	231.78	207.58	24.19	9.580		
5,600.00	5,598.14	5,588.74	5,584.60	12.41	12.48	125.97	84.22	192.83	240.61	215.97	24.64	9.765		
5,700.00	5,697.92	5,688.29	5,684.01	12.64	12.71	126.74	87.07	197.33	249.49	224.40	25.09	9.945		
5,800.00	5,797.70	5,787.84	5,783.42	12.86	12.95	127.46	89.91	201.84	258.41	232.88	25.53	10.120		
5,900.00	5,897.48	5,887.39	5,882.83	13.09	13.18	128.13	92.76	206.34	267.37	241.39	25.98	10.291		
6,000.00	5,997.26	5,986.94	5,982.23	13.32	13.41	128.75	95.60	210.84	276.36	249.93	26.43	10.456		
6,100.00	6,097.04	6,086.49	6,081.64	13.55	13.65	129.34	98.45	215.35	285.39	258.51	26.88	10.617		
6,200.00	6,196.82	6,186.04	6,181.05	13.78	13.88	129.89	101.29	219.85	294.44	267.11	27.33	10.774		
6,300.00	6,296.60	6,285.59	6,280.46	14.01	14.11	130.41	104.14	224.36	303.51	275.73	27.78	10.926		
6,400.00	6,396.38	6,385.14	6,379.87	14.24	14.35	130.90	106.98	228.86	312.62	284.38	28.23	11.073		
6,500.00	6,496.16	6,484.69	6,479.27	14.47	14.58	131.36	109.83	233.37	321.74	293.05	28.68	11.217		
6,600.00	6,595.94	6,584.24	6,578.68	14.71	14.82	131.80	112.67	237.87	330.88	301.74	29.13	11.357		
6,700.00	6,695.72	6,683.79	6,678.09	14.94	15.05	132.21	115.52	242.38	340.04	310.45	29.59	11.493		
6,800.00	6,795.50	6,788.10	6,782.28	15.17	15.27	132.67	118.13	246.51	348.64	318.60	30.04	11.606		
6,900.00	6,895.28	6,893.46	6,887.59	15.40	15.46	133.27	119.75	249.08	355.68	325.22	30.47	11.675		
7,000.00	6,995.06	6,998.95	6,993.08	15.64	15.65	133.99	120.34	250.01	361.16	330.28	30.88	11.695		
7,100.00	7,094.84	7,099.11	7,093.24	15.87	15.84	134.74	120.34	250.01	365.81	334.50	31.31	11.684		
7,125.52	7,120.31	7,124.58	7,118.71	15.93	15.90	134.92	120.34	250.01	367.00	335.58	31.42	11.680		
7,200.00	7,194.65	7,198.92	7,193.05	16.09	16.06	135.43	120.34	250.01	370.16	338.43	31.74	11.664		
7,300.00	7,294.55	7,298.82	7,292.95	16.27	16.27	135.94	120.34	250.01	373.35	341.22	32.13	11.619		
7,400.00	7,394.51	7,398.78	7,392.91	16.45	16.49	136.24	120.34	250.01	375.31	342.78	32.53	11.537		
7,505.49	7,500.00	7,504.27	7,498.40	16.63	16.71	89.95	120.34	250.01	376.01	343.06	32.95	11.413		
7,600.00	7,594.51	7,598.78	7,592.91	16.82	16.92	89.95	120.34	250.01	376.01	342.67	33.34	11.279		
7,700.00	7,694.51	7,698.78	7,692.91	17.04	17.13	89.95	120.34	250.01	376.01	342.23	33.78	11.132		
7,800.00	7,794.51	7,798.78	7,792.91	17.26	17.35	89.95	120.34	250.01	376.01	341.79	34.22	10.989		
7,900.00	7,894.51	7,898.78	7,892.91	17.48	17.57	89.95	120.34	250.01	376.01	341.35	34.66	10.849		
8,000.00	7,994.51	7,998.78	7,992.91	17.70	17.78	89.95	120.34	250.01	376.01	340.91	35.10	10.713		
8,100.00	8,094.51	8,098.78	8,092.91	17.92	18.00	89.95	120.34	250.01	376.01	340.47	35.54	10.580		
8,200.00	8,194.51	8,198.78	8,192.91	18.14	18.22	89.95	120.34	250.01	376.01	340.03	35.98	10.450		
8,300.00	8,294.51	8,298.78	8,292.91	18.36	18.43	89.95	120.34	250.01	376.01	339.59	36.42	10.324		
8,400.00	8,394.51	8,398.78	8,392.91	18.59	18.65	89.95	120.34	250.01	376.01	339.15	36.86	10.200		
8,500.00	8,494.51	8,498.78	8,492.91	18.81	18.87	89.95	120.34	250.01	376.01	338.71	37.30	10.080		
8,600.00	8,594.51	8,598.78	8,592.91	19.03	19.09	89.95	120.34	250.01	376.01	338.26	37.75	9.962		
8,700.00	8,694.51	8,698.78	8,692.91	19.25	19.30	89.95	120.34	250.01	376.01	337.82	38.19	9.846		
8,800.00	8,794.51	8,798.78	8,792.91	19.47	19.52	89.95	120.34	250.01	376.01	337.38	38.63	9.734		
8,900.00	8,894.51	8,898.78	8,892.91	19.69	19.74	89.95	120.34	250.01	376.01	336.94	39.07	9.623		
9,000.00	8,994.51	8,998.78	8,992.91	19.92	19.96	89.95	120.34	250.01	376.01	336.50	39.51	9.516		
9,052.54	9,047.05	9,051.32	9,045.45	20.03	20.07	89.95	120.34	250.01	376.01	336.26	39.75	9.460		
9,100.00	9,094.45	9,098.72	9,092.85	20.12	20.18	-89.93	120.34	250.01	376.00	336.06	39.94	9.414		
9,104.92	9,099.35	9,103.62	9,097.75	20.13	20.19	-90.00	120.34	250.01	376.00	336.04	39.96	9.409		
9,150.00	9,144.04	9,148.31	9,142.44	20.20	20.29	-90.88	120.34	250.01	376.05	335.92	40.13	9.372		
9,200.00	9,192.88	9,198.27	9,192.37	20.28	20.38	-92.25	118.85	250.02	376.30	336.01	40.29	9.339		
9,250.00	9,240.62	9,249.16	9,242.90	20.35	20.47	-93.62	112.93	250.06	376.78	336.35	40.43	9.318		
9,300.00	9,286.89	9,300.93	9,293.55	20.42	20.55	-94.97	102.34	250.14	377.47	336.91	40.56	9.306		
9,350.00	9,331.32	9,353.60	9,343.89	20.49	20.63	-96.30	86.92	250.26	378.36	337.68	40.68	9.301		
9,400.00	9,373.60	9,407.20	9,393.45	20.55	20.70	-97.57	66.55	250.41	379.41	338.63	40.78	9.304		
9,450.00	9,413.39	9,461.74	9,441.69	20.61	20.78	-98.80	41.16	250.59	380.61	339.74	40.87	9.312		
9,500.00	9,450.39	9,517.22	9,488.07	20.67	20.85	-99.96	10.75	250.82	381.90	340.95	40.95	9.325		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 111H - OH - Plan #2												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Minimum Separation (usft)	Separation Factor	Warning		
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N-S (usft)	+E-W (usft)					
9,550.00	9,484.32	9,573.62	9,531.97	20.74	20.93	-101.04	-24.61	251.08	383.25	342.22	41.03	9.340	
9,600.00	9,514.93	9,630.91	9,572.80	20.81	21.01	-102.03	-64.78	251.37	384.61	343.49	41.12	9.354	
9,650.00	9,541.97	9,689.06	9,609.92	20.91	21.11	-102.93	-109.50	251.70	385.93	344.71	41.22	9.362	
9,700.00	9,565.25	9,747.99	9,642.72	21.04	21.22	-103.71	-158.42	252.06	387.16	345.80	41.36	9.361	
9,750.00	9,584.58	9,807.62	9,670.63	21.21	21.38	-104.37	-211.09	252.45	388.26	346.71	41.55	9.345	
9,800.00	9,599.82	9,867.84	9,693.10	21.40	21.58	-104.91	-266.93	252.86	389.18	347.39	41.80	9.311	
9,850.00	9,610.86	9,928.55	9,709.69	21.61	21.81	-105.31	-325.29	253.29	389.90	347.77	42.13	9.254	
9,900.00	9,617.60	9,989.59	9,720.07	21.85	22.09	-105.57	-385.42	253.73	390.38	347.82	42.55	9.174	
9,950.00	9,620.00	10,050.84	9,723.99	22.11	22.40	-105.68	-446.51	254.18	390.60	347.53	43.07	9.069	
9,956.10	9,620.00	10,057.15	9,724.04	22.15	22.44	-105.69	-452.82	254.23	390.61	347.48	43.13	9.056	
10,000.00	9,619.72	10,101.04	9,724.42	22.40	22.69	-105.78	-496.71	254.55	390.79	347.19	43.60	8.963	
10,100.00	9,619.10	10,201.03	9,725.29	23.05	23.33	-105.99	-596.69	255.29	391.21	346.40	44.81	8.730	
10,200.00	9,618.48	10,301.02	9,726.15	23.79	24.06	-106.20	-696.67	256.02	391.63	345.42	46.21	8.476	
10,300.00	9,617.86	10,401.01	9,727.02	24.62	24.88	-106.41	-796.66	256.76	392.06	344.29	47.76	8.208	
10,400.00	9,617.24	10,501.00	9,727.88	25.52	25.78	-106.62	-896.64	257.49	392.49	343.02	49.47	7.934	
10,500.00	9,616.62	10,600.99	9,728.75	26.50	26.75	-106.82	-996.62	258.23	392.93	341.61	51.31	7.658	
10,600.00	9,616.00	10,700.98	9,729.62	27.54	27.78	-107.03	-1,096.60	258.96	393.37	340.10	53.27	7.385	
10,700.00	9,615.38	10,800.96	9,730.48	28.64	28.87	-107.24	-1,196.59	259.70	393.81	338.48	55.33	7.117	
10,800.00	9,614.76	10,900.95	9,731.35	29.78	30.01	-107.44	-1,296.57	260.44	394.27	336.78	57.48	6.859	
10,900.00	9,614.13	11,000.94	9,732.21	30.97	31.19	-107.65	-1,396.55	261.17	394.72	335.00	59.72	6.610	
11,000.00	9,613.51	11,100.93	9,733.08	32.20	32.42	-107.85	-1,496.53	261.91	395.19	333.16	62.03	6.371	
11,100.00	9,612.89	11,200.92	9,733.95	33.47	33.68	-108.06	-1,596.52	262.64	395.65	331.26	64.40	6.144	
11,200.00	9,612.27	11,300.91	9,734.81	34.76	34.96	-108.26	-1,696.50	263.38	396.12	329.30	66.82	5.928	
11,300.00	9,611.65	11,400.90	9,735.68	36.09	36.28	-108.47	-1,796.48	264.11	396.60	327.31	69.29	5.724	
11,400.00	9,611.03	11,500.89	9,736.54	37.44	37.63	-108.67	-1,896.46	264.85	397.08	325.27	71.81	5.530	
11,500.00	9,610.41	11,600.88	9,737.41	38.81	38.99	-108.87	-1,996.45	265.59	397.57	323.21	74.36	5.346	
11,600.00	9,609.79	11,700.86	9,738.27	40.20	40.38	-109.07	-2,096.43	266.32	398.06	321.11	76.95	5.173	
11,700.00	9,609.17	11,800.85	9,739.14	41.61	41.78	-109.28	-2,196.41	267.06	398.56	318.99	79.57	5.009	
11,800.00	9,608.54	11,900.84	9,740.01	43.03	43.20	-109.48	-2,296.39	267.79	399.06	316.86	82.21	4.854	
11,900.00	9,607.92	12,000.83	9,740.87	44.47	44.64	-109.68	-2,396.38	268.53	399.57	314.70	84.87	4.708	
12,000.00	9,607.30	12,100.82	9,741.74	45.93	46.09	-109.88	-2,496.36	269.26	400.08	312.53	87.55	4.570	
12,100.00	9,606.68	12,200.81	9,742.60	47.39	47.55	-110.08	-2,596.34	270.00	400.60	310.34	90.25	4.439	
12,200.00	9,606.06	12,300.80	9,743.47	48.87	49.02	-110.28	-2,696.32	270.73	401.12	308.15	92.97	4.315	
12,300.00	9,605.44	12,400.79	9,744.34	50.36	50.50	-110.47	-2,796.31	271.47	401.65	305.95	95.70	4.197	
12,400.00	9,604.82	12,500.78	9,745.20	51.85	52.00	-110.67	-2,896.29	272.21	402.18	303.74	98.44	4.086	
12,500.00	9,604.20	12,600.77	9,746.07	53.36	53.50	-110.87	-2,996.27	272.94	402.71	301.53	101.19	3.980	
12,600.00	9,603.58	12,700.75	9,746.93	54.87	55.01	-111.07	-3,096.25	273.68	403.25	299.31	103.94	3.880	
12,700.00	9,602.95	12,800.74	9,747.80	56.39	56.52	-111.26	-3,196.24	274.41	403.80	297.09	106.71	3.784	
12,800.00	9,602.33	12,900.73	9,748.66	57.91	58.05	-111.46	-3,296.22	275.15	404.35	294.87	109.48	3.693	
12,900.00	9,601.71	13,000.72	9,749.53	59.44	59.57	-111.65	-3,396.20	275.88	404.90	292.65	112.25	3.607	
13,000.00	9,601.09	13,100.71	9,750.40	60.98	61.11	-111.85	-3,496.18	276.62	405.46	290.43	115.03	3.525	
13,100.00	9,600.47	13,200.70	9,751.26	62.52	62.65	-112.04	-3,596.17	277.36	406.03	288.22	117.81	3.446	
13,200.00	9,599.85	13,300.69	9,752.13	64.07	64.19	-112.24	-3,696.15	278.09	406.60	286.00	120.60	3.372	
13,300.00	9,599.23	13,400.68	9,752.99	65.62	65.74	-112.43	-3,796.13	278.83	407.17	283.79	123.38	3.300	
13,400.00	9,598.61	13,500.67	9,753.86	67.18	67.30	-112.62	-3,896.11	279.56	407.75	281.58	126.17	3.232	
13,500.00	9,597.98	13,600.65	9,754.73	68.74	68.85	-112.81	-3,996.10	280.30	408.33	279.38	128.95	3.166	
13,600.00	9,597.36	13,700.64	9,755.59	70.30	70.42	-113.01	-4,096.08	281.03	408.92	277.18	131.74	3.104	
13,700.00	9,596.74	13,800.63	9,756.46	71.87	71.98	-113.20	-4,196.06	281.77	409.51	274.98	134.53	3.044	
13,800.00	9,596.12	13,900.62	9,757.32	73.44	73.55	-113.39	-4,296.04	282.51	410.11	272.79	137.31	2.987	
13,900.00	9,595.50	14,000.61	9,758.19	75.01	75.12	-113.58	-4,396.03	283.24	410.71	270.61	140.09	2.932	
14,000.00	9,594.88	14,100.60	9,759.05	76.59	76.69	-113.77	-4,496.01	283.98	411.31	268.44	142.88	2.879	
14,100.00	9,594.26	14,200.59	9,759.92	78.16	78.27	-113.96	-4,595.99	284.71	411.92	266.27	145.65	2.828	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 111H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore +N/-S (usft)	Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
14,200.00	9,593.64	14,300.58	9,760.79	79.74	79.85	-114.14	-4,695.97	285.45	412.54	264.11	148.43	2.779 SF		
14,300.00	9,593.02	14,325.29	9,761.00	81.33	80.24	-114.19	-4,720.69	285.63	419.96	272.01	147.95	2.839		
14,400.00	9,592.39	14,325.29	9,761.00	82.91	80.24	-114.19	-4,720.69	285.63	449.37	308.71	140.66	3.195		
14,500.00	9,591.77	14,325.29	9,761.00	84.50	80.24	-114.19	-4,720.69	285.63	497.49	367.63	129.86	3.831		
14,600.00	9,591.15	14,325.29	9,761.00	86.09	80.24	-114.19	-4,720.69	285.63	559.52	441.03	118.49	4.722		
14,700.00	9,590.53	14,325.29	9,761.00	87.68	80.24	-114.19	-4,720.69	285.63	631.37	523.24	108.13	5.839		
14,800.00	9,589.91	14,325.29	9,761.00	89.27	80.24	-114.19	-4,720.69	285.63	710.07	610.77	99.30	7.151		
14,900.00	9,589.29	14,325.29	9,761.00	90.87	80.24	-114.19	-4,720.69	285.63	793.57	701.60	91.97	8.629		
15,000.00	9,588.67	14,325.29	9,761.00	92.46	80.24	-114.19	-4,720.69	285.63	880.53	794.58	85.95	10.245		
15,100.00	9,588.05	14,325.29	9,761.00	94.06	80.24	-114.19	-4,720.69	285.63	970.00	888.99	81.01	11.974		
15,200.00	9,587.43	14,325.29	9,761.00	95.66	80.24	-114.19	-4,720.69	285.63	1,061.35	984.41	76.93	13.795		
15,300.00	9,586.80	14,325.29	9,761.00	97.26	80.24	-114.19	-4,720.69	285.63	1,154.13	1,080.57	73.56	15.690		
15,400.00	9,586.18	14,325.29	9,761.00	98.86	80.24	-114.19	-4,720.69	285.63	1,248.03	1,177.29	70.74	17.641		
15,500.00	9,585.56	14,325.29	9,761.00	100.46	80.24	-114.19	-4,720.69	285.63	1,342.82	1,274.44	68.38	19.638		
15,600.00	9,584.94	14,325.29	9,761.00	102.07	80.24	-114.19	-4,720.69	285.63	1,438.30	1,371.92	66.38	21.667		
15,700.00	9,584.32	14,325.29	9,761.00	103.67	80.24	-114.19	-4,720.69	285.63	1,534.37	1,469.69	64.68	23.722		
15,800.00	9,583.70	14,325.29	9,761.00	105.28	80.24	-114.19	-4,720.69	285.63	1,630.91	1,567.68	63.23	25.795		
15,900.00	9,583.08	14,325.29	9,761.00	106.88	80.24	-114.19	-4,720.69	285.63	1,727.84	1,665.86	61.98	27.880		
16,000.00	9,582.46	14,325.29	9,761.00	108.49	80.24	-114.19	-4,720.69	285.63	1,825.10	1,764.20	60.89	29.972		
16,100.00	9,581.84	14,325.29	9,761.00	110.10	80.24	-114.19	-4,720.69	285.63	1,922.64	1,862.69	59.96	32.067		
16,200.00	9,581.21	14,325.29	9,761.00	111.71	80.24	-114.19	-4,720.69	285.63	2,020.42	1,961.29	59.14	34.164		
16,300.00	9,580.59	14,325.29	9,761.00	113.32	80.24	-114.19	-4,720.69	285.63	2,118.41	2,059.99	58.43	36.259		
16,400.00	9,579.97	14,325.29	9,761.00	114.93	80.24	-114.19	-4,720.69	285.63	2,216.58	2,158.79	57.80	38.350		
16,500.00	9,579.35	14,325.29	9,761.00	116.54	80.24	-114.19	-4,720.69	285.63	2,314.91	2,257.66	57.25	40.435		
16,600.00	9,578.73	14,325.29	9,761.00	118.16	80.24	-114.19	-4,720.69	285.63	2,413.38	2,356.61	56.77	42.514		
16,700.00	9,578.11	14,325.29	9,761.00	119.77	80.24	-114.19	-4,720.69	285.63	2,511.96	2,455.62	56.34	44.586		
16,800.00	9,577.49	14,325.29	9,761.00	121.38	80.24	-114.19	-4,720.69	285.63	2,610.65	2,554.69	55.96	46.649		
16,900.00	9,576.87	14,325.29	9,761.00	123.00	80.24	-114.19	-4,720.69	285.63	2,709.44	2,653.81	55.63	48.704		
17,000.00	9,576.25	14,325.29	9,761.00	124.61	80.24	-114.19	-4,720.69	285.63	2,808.32	2,752.98	55.34	50.749		
17,100.00	9,575.62	14,325.29	9,761.00	126.23	80.24	-114.19	-4,720.69	285.63	2,907.27	2,852.19	55.08	52.784		
17,200.48	9,575.00	14,325.29	9,761.00	127.85	80.24	-114.19	-4,720.69	285.63	3,006.77	2,951.92	54.85	54.818		

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 126H - OH - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: O-LEAM MWD+HDGM, 9994-MWD+IFR1+MS													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Distance							Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
0.00	0.00	0.80	0.80	0.00	0.00	-90.31	-0.16	-29.99	29.99					
100.00	100.00	100.80	100.80	0.09	0.09	-90.31	-0.16	-29.99	29.99	29.82	0.17	172.612		
200.00	200.00	200.80	200.80	0.31	0.31	-90.31	-0.16	-29.99	29.99	29.37	0.62	48.117		
300.00	300.00	300.80	300.80	0.54	0.54	-90.31	-0.16	-29.99	29.99	28.92	1.07	27.955		
400.00	400.00	400.80	400.80	0.76	0.76	-90.31	-0.16	-29.99	29.99	28.47	1.52	19.700		
500.00	500.00	500.80	500.80	0.99	0.99	-90.31	-0.16	-29.99	29.99	28.02	1.97	15.209		
600.00	600.00	600.80	600.80	1.21	1.21	-90.31	-0.16	-29.99	29.99	27.57	2.42	12.386		
700.00	700.00	700.80	700.80	1.43	1.44	-90.31	-0.16	-29.99	29.99	27.12	2.87	10.446		
800.00	800.00	800.80	800.80	1.66	1.66	-90.31	-0.16	-29.99	29.99	26.67	3.32	9.032		
900.00	900.00	900.80	900.80	1.88	1.89	-90.31	-0.16	-29.99	29.99	26.22	3.77	7.955		
1,000.00	1,000.00	1,000.80	1,000.80	2.11	2.11	-90.31	-0.16	-29.99	29.99	25.77	4.22	7.108		
1,100.00	1,100.00	1,100.80	1,100.80	2.33	2.34	-90.31	-0.16	-29.99	29.99	25.32	4.67	6.423		
1,200.00	1,200.00	1,200.80	1,200.80	2.56	2.56	-90.31	-0.16	-29.99	29.99	24.87	5.12	5.859		
1,300.00	1,300.00	1,300.80	1,300.80	2.78	2.78	-90.31	-0.16	-29.99	29.99	24.42	5.57	5.386		
1,400.00	1,400.00	1,400.80	1,400.80	3.01	3.01	-90.31	-0.16	-29.99	29.99	23.97	6.02	4.984		
1,500.00	1,500.00	1,500.80	1,500.80	3.23	3.23	-90.31	-0.16	-29.99	29.99	23.52	6.47	4.637		
1,600.00	1,600.00	1,600.80	1,600.80	3.46	3.46	-90.31	-0.16	-29.99	29.99	23.07	6.92	4.336		
1,700.00	1,700.00	1,700.80	1,700.80	3.68	3.68	-90.31	-0.16	-29.99	29.99	22.62	7.37	4.071		
1,800.00	1,800.00	1,800.80	1,800.80	3.91	3.91	-90.31	-0.16	-29.99	29.99	22.17	7.82	3.837		
1,900.00	1,900.00	1,900.80	1,900.80	4.13	4.13	-90.31	-0.16	-29.99	29.99	21.73	8.27	3.628		
2,000.00	2,000.00	2,000.80	2,000.80	4.36	4.36	-90.31	-0.16	-29.99	29.99	21.28	8.71	3.441		
2,100.00	2,100.00	2,100.80	2,100.80	4.58	4.58	-90.31	-0.16	-29.99	29.99	20.83	9.16	3.272		
2,200.00	2,200.00	2,200.80	2,200.80	4.81	4.81	-90.31	-0.16	-29.99	29.99	20.38	9.61	3.119		
2,300.00	2,300.00	2,300.80	2,300.80	5.03	5.03	-90.31	-0.16	-29.99	29.99	19.93	10.06	2.980		
2,400.00	2,400.00	2,400.80	2,400.80	5.26	5.26	-90.31	-0.16	-29.99	29.99	19.48	10.51	2.853		
2,416.40	2,416.40	2,417.20	2,417.20	5.29	5.29	-90.31	-0.16	-29.99	29.99	19.40	10.59	2.833 CC		
2,500.00	2,500.00	2,500.80	2,500.80	5.48	5.48	-90.31	-0.16	-29.99	29.99	19.03	10.96	2.736 ES		
2,600.00	2,600.00	2,600.27	2,600.26	5.71	5.69	-90.51	-0.27	-30.86	30.87	19.47	11.39	2.709 SF		
2,700.00	2,700.00	2,699.68	2,699.64	5.93	5.88	-91.04	-0.60	-33.44	33.47	21.66	11.81	2.835		
2,800.00	2,800.00	2,798.97	2,798.84	6.15	6.08	-91.76	-1.16	-37.72	37.79	25.58	12.22	3.093		
2,900.00	2,900.00	2,898.09	2,897.77	6.38	6.28	-92.52	-1.93	-43.70	43.85	31.22	12.63	3.473		
3,000.00	3,000.00	2,996.96	2,996.34	6.60	6.49	-93.25	-2.91	-51.35	51.63	38.59	13.03	3.961		
3,100.00	3,100.00	3,095.54	3,094.47	6.83	6.70	-93.88	-4.11	-60.66	61.13	47.69	13.44	4.549		
3,200.00	3,200.00	3,194.60	3,192.95	7.05	6.92	-94.40	-5.48	-71.31	71.95	58.10	13.86	5.193		
3,300.00	3,300.00	3,294.00	3,291.75	7.28	7.14	-94.78	-6.87	-82.09	82.87	68.59	14.28	5.802		
3,400.00	3,400.00	3,393.40	3,390.56	7.50	7.37	-95.08	-8.26	-92.86	93.79	79.08	14.71	6.374		
3,500.00	3,500.00	3,492.80	3,489.36	7.73	7.60	-95.32	-9.65	-103.64	104.71	89.57	15.15	6.914		
3,600.00	3,600.00	3,592.20	3,588.17	7.95	7.84	-95.51	-11.04	-114.42	115.64	100.06	15.58	7.422		
3,700.00	3,700.00	3,691.61	3,686.97	8.18	8.07	-95.67	-12.42	-125.19	126.56	110.55	16.02	7.903		
3,800.00	3,800.00	3,791.01	3,785.78	8.40	8.32	-95.80	-13.81	-135.97	137.49	121.04	16.45	8.357		
3,900.00	3,900.00	3,890.41	3,884.58	8.63	8.56	-95.91	-15.20	-146.74	148.42	131.53	16.89	8.787		
4,000.00	4,000.00	3,989.81	3,983.39	8.85	8.81	-96.01	-16.59	-157.52	159.35	142.02	17.33	9.195		
4,100.00	4,100.00	4,089.21	4,082.19	9.08	9.06	-96.10	-17.98	-168.30	170.27	152.50	17.77	9.582		
4,200.00	4,200.00	4,188.61	4,181.00	9.30	9.31	-96.17	-19.37	-179.07	181.20	162.99	18.21	9.950		
4,300.00	4,300.00	4,288.01	4,279.80	9.53	9.56	-96.24	-20.75	-189.85	192.13	173.48	18.65	10.300		
4,400.00	4,400.00	4,387.41	4,378.61	9.75	9.82	-96.30	-22.14	-200.62	203.06	183.96	19.10	10.634		
4,500.00	4,500.00	4,486.81	4,477.41	9.98	10.07	-96.35	-23.53	-211.40	213.99	194.45	19.54	10.951		
4,600.00	4,600.00	4,586.27	4,576.27	10.20	10.33	-50.09	-24.92	-222.18	224.36	204.38	19.98	11.230		
4,700.00	4,699.96	4,685.81	4,675.22	10.41	10.59	-50.55	-26.31	-232.97	233.63	213.21	20.42	11.444		
4,800.00	4,799.86	4,785.42	4,774.23	10.63	10.85	-51.30	-27.70	-243.77	241.83	220.98	20.85	11.597		
4,879.97	4,879.69	4,865.10	4,853.43	10.81	11.06	-52.10	-28.81	-252.41	247.65	226.44	21.20	11.680		
4,900.00	4,899.68	4,885.05	4,873.27	10.85	11.12	-52.33	-29.09	-254.57	249.03	227.74	21.29	11.696		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 126H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM, 9994-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance								
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
5,000.00	4,999.46	4,984.69	4,972.31	11.07	11.38	-53.44	-30.48	-265.38	255.98	234.24	21.73	11.779		
5,100.00	5,099.24	5,084.33	5,071.35	11.29	11.65	-54.49	-31.88	-276.18	263.01	240.84	22.17	11.861		
5,200.00	5,199.02	5,183.97	5,170.39	11.51	11.91	-55.48	-33.27	-286.98	270.14	247.52	22.62	11.942		
5,300.00	5,298.80	5,283.61	5,269.44	11.74	12.18	-56.43	-34.66	-297.78	277.34	254.27	23.07	12.023		
5,400.00	5,398.58	5,383.25	5,368.48	11.96	12.45	-57.32	-36.05	-308.58	284.61	261.09	23.52	12.103		
5,500.00	5,498.36	5,482.89	5,467.52	12.19	12.72	-58.17	-37.44	-319.39	291.95	267.98	23.97	12.181		
5,600.00	5,598.14	5,582.52	5,566.56	12.41	12.99	-58.98	-38.83	-330.19	299.35	274.93	24.42	12.258		
5,700.00	5,697.92	5,682.16	5,665.60	12.64	13.26	-59.75	-40.22	-340.99	306.80	281.93	24.87	12.334		
5,800.00	5,797.70	5,781.80	5,764.64	12.86	13.53	-60.49	-41.62	-351.79	314.31	288.98	25.33	12.409		
5,900.00	5,897.48	5,881.44	5,863.69	13.09	13.80	-61.19	-43.01	-362.59	321.86	296.08	25.79	12.482		
6,000.00	5,997.26	5,981.08	5,962.73	13.32	14.07	-61.86	-44.40	-373.40	329.47	303.22	26.25	12.553		
6,100.00	6,097.04	6,080.72	6,061.77	13.55	14.34	-62.49	-45.79	-384.20	337.11	310.41	26.71	12.623		
6,200.00	6,196.82	6,180.36	6,160.81	13.78	14.62	-63.10	-47.18	-395.00	344.80	317.63	27.17	12.691		
6,300.00	6,296.60	6,280.00	6,259.85	14.01	14.89	-63.68	-48.57	-405.80	352.52	324.89	27.63	12.758		
6,400.00	6,396.38	6,379.63	6,358.89	14.24	15.17	-64.24	-49.97	-416.60	360.27	332.18	28.10	12.823		
6,500.00	6,496.16	6,479.27	6,457.94	14.47	15.44	-64.78	-51.36	-427.41	368.06	339.50	28.56	12.887		
6,600.00	6,595.94	6,578.91	6,556.98	14.71	15.72	-65.29	-52.75	-438.21	375.88	346.85	29.03	12.949		
6,700.00	6,695.72	6,678.55	6,656.02	14.94	15.99	-65.78	-54.14	-449.01	383.73	354.23	29.50	13.010		
6,800.00	6,795.50	6,778.19	6,755.06	15.17	16.27	-66.25	-55.53	-459.81	391.61	361.64	29.97	13.069		
6,900.00	6,895.28	6,877.83	6,854.10	15.40	16.54	-66.70	-56.92	-470.61	399.51	369.07	30.44	13.126		
7,000.00	6,995.06	6,977.47	6,953.14	15.64	16.82	-67.14	-58.31	-481.41	407.43	376.52	30.91	13.183		
7,100.00	7,094.84	7,077.11	7,052.19	15.87	17.10	-67.56	-59.71	-492.22	415.38	384.00	31.38	13.238		
7,125.52	7,120.31	7,102.53	7,077.46	15.93	17.17	-67.66	-60.06	-494.97	417.41	385.91	31.50	13.252		
7,200.00	7,194.65	7,176.74	7,151.22	16.09	17.37	-67.95	-61.10	-503.02	423.53	391.69	31.83	13.305		
7,300.00	7,294.55	7,276.35	7,250.23	16.27	17.65	-68.16	-62.49	-513.82	432.31	400.06	32.25	13.405		
7,400.00	7,394.51	7,375.90	7,349.19	16.45	17.93	-68.15	-63.88	-524.61	441.75	409.09	32.66	13.525		
7,505.49	7,500.00	7,480.82	7,453.48	16.63	18.22	-114.33	-65.34	-535.98	452.41	419.33	33.09	13.673		
7,600.00	7,594.51	7,574.76	7,546.86	16.82	18.48	-113.95	-66.66	-546.17	462.31	428.82	33.49	13.805		
7,700.00	7,694.51	7,674.16	7,645.66	17.04	18.76	-113.57	-68.04	-556.94	472.80	438.86	33.94	13.932		
7,800.00	7,794.51	7,773.56	7,744.47	17.26	19.04	-113.21	-69.43	-567.72	483.31	448.92	34.38	14.056		
7,900.00	7,894.51	7,872.96	7,843.27	17.48	19.32	-112.87	-70.82	-578.50	493.84	459.00	34.83	14.178		
8,000.00	7,994.51	7,972.36	7,942.08	17.70	19.60	-112.53	-72.21	-589.27	504.38	469.10	35.28	14.296		
8,100.00	8,094.51	8,071.76	8,040.89	17.92	19.88	-112.21	-73.60	-600.05	514.94	479.21	35.73	14.412		
8,200.00	8,194.51	8,171.17	8,139.69	18.14	20.16	-111.91	-74.99	-610.83	525.52	489.34	36.18	14.526		
8,300.00	8,294.51	8,274.85	8,242.78	18.36	20.43	-111.61	-76.41	-621.87	535.94	499.29	36.64	14.625		
8,400.00	8,394.51	8,384.46	8,351.92	18.59	20.67	-111.35	-77.69	-631.83	544.82	507.71	37.11	14.681		
8,500.00	8,494.51	8,494.42	8,461.59	18.81	20.89	-111.15	-78.71	-639.73	551.86	514.30	37.56	14.693		
8,600.00	8,594.51	8,604.64	8,571.65	19.03	21.09	-111.00	-79.46	-645.56	557.03	519.04	38.00	14.660		
8,700.00	8,694.51	8,715.05	8,681.99	19.25	21.29	-110.91	-79.94	-649.29	560.35	521.92	38.42	14.584		
8,800.00	8,794.51	8,825.56	8,792.49	19.47	21.48	-110.87	-80.15	-650.91	561.79	522.95	38.84	14.465		
8,900.00	8,894.51	8,928.37	8,895.31	19.69	21.67	-110.87	-80.16	-650.99	561.85	522.60	39.26	14.313		
9,000.00	8,994.51	9,028.37	8,995.31	19.92	21.85	-110.87	-80.16	-650.99	561.85	522.17	39.68	14.159		
9,052.54	9,047.05	9,080.92	9,047.85	20.03	21.95	-110.87	-80.16	-650.99	561.85	521.95	39.90	14.080		
9,100.00	9,094.45	9,128.32	9,095.25	20.12	22.04	69.80	-80.16	-650.99	561.17	521.08	40.09	13.998		
9,150.00	9,144.04	9,172.27	9,139.20	20.20	22.12	70.49	-80.42	-650.99	559.13	518.88	40.25	13.892		
9,200.00	9,192.88	9,209.65	9,176.50	20.28	22.19	71.27	-82.75	-650.97	556.64	516.26	40.38	13.784		
9,250.00	9,240.62	9,250.00	9,216.50	20.35	22.27	72.21	-88.00	-650.93	553.91	513.41	40.50	13.677		
9,300.00	9,286.89	9,285.25	9,251.07	20.42	22.34	73.17	-94.88	-650.88	550.98	510.39	40.59	13.576		
9,350.00	9,331.32	9,323.58	9,288.09	20.49	22.41	74.29	-104.75	-650.81	547.92	507.24	40.68	13.470		
9,400.00	9,373.60	9,362.32	9,324.76	20.55	22.49	75.50	-117.22	-650.72	544.81	504.03	40.77	13.362		
9,450.00	9,413.39	9,400.00	9,359.54	20.61	22.57	76.77	-131.70	-650.61	541.71	500.83	40.88	13.251		
9,500.00	9,450.39	9,441.29	9,396.47	20.67	22.66	78.22	-150.16	-650.48	538.69	497.66	41.03	13.129		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 126H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM, 9994-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference	Offset		Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
9,550.00	9,484.32	9,481.65	9,431.19	20.74	22.75	79.71	-170.72	-650.33	535.83	494.63	41.21	13.003		
9,600.00	9,514.93	9,522.70	9,464.93	20.81	22.85	81.28	-194.09	-650.16	533.23	491.80	41.43	12.870		
9,650.00	9,541.97	9,564.52	9,497.49	20.91	22.96	82.92	-220.31	-649.96	530.94	489.24	41.70	12.732		
9,700.00	9,565.25	9,607.21	9,528.67	21.04	23.07	84.61	-249.46	-649.75	529.05	487.03	42.02	12.590		
9,750.00	9,584.58	9,650.00	9,557.65	21.21	23.20	86.33	-280.92	-649.52	527.63	485.25	42.38	12.449		
9,800.00	9,599.82	9,695.62	9,585.87	21.40	23.34	88.14	-316.75	-649.26	526.73	483.95	42.79	12.311		
9,850.00	9,610.86	9,741.58	9,611.33	21.61	23.50	89.96	-355.00	-648.98	526.42	483.20	43.21	12.182		
9,851.25	9,611.08	9,742.75	9,611.94	21.62	23.51	90.01	-356.00	-648.97	526.42	483.19	43.22	12.179		
9,900.00	9,617.60	9,788.90	9,634.26	21.85	23.69	91.80	-396.38	-648.68	526.71	483.06	43.65	12.066		
9,950.00	9,620.00	9,837.74	9,654.26	22.11	23.90	93.64	-440.91	-648.35	527.64	483.55	44.09	11.966		
9,956.10	9,620.00	9,843.81	9,656.48	22.15	23.92	93.87	-446.57	-648.31	527.80	483.65	44.15	11.956		
10,000.00	9,619.72	9,888.84	9,671.04	22.40	24.14	95.47	-489.16	-648.00	529.04	484.50	44.54	11.878		
10,100.00	9,619.10	9,999.06	9,692.26	23.05	28.14	97.82	-597.14	-647.21	531.40	485.98	45.42	11.700		
10,200.00	9,618.48	10,106.14	9,695.07	23.79	28.30	98.19	-704.13	-646.42	531.83	485.76	46.07	11.544		
10,300.00	9,617.86	10,206.14	9,695.21	24.62	28.37	98.27	-804.13	-645.69	531.93	485.00	46.93	11.334		
10,400.00	9,617.24	10,306.13	9,695.36	25.52	28.45	98.36	-904.12	-644.96	532.04	484.14	47.90	11.108		
10,500.00	9,616.62	10,406.13	9,695.50	26.50	28.53	98.44	-1,004.12	-644.23	532.14	483.19	48.95	10.870		
10,600.00	9,616.00	10,506.13	9,695.64	27.54	28.61	98.52	-1,104.11	-643.50	532.25	482.15	50.10	10.623		
10,700.00	9,615.38	10,606.12	9,695.78	28.64	28.70	98.60	-1,204.10	-642.76	532.36	481.03	51.33	10.371		
10,800.00	9,614.76	10,706.12	9,695.93	29.78	28.78	98.68	-1,304.10	-642.03	532.47	479.84	52.63	10.117		
10,900.00	9,614.13	10,806.12	9,696.07	30.97	28.87	98.76	-1,404.09	-641.30	532.58	478.58	54.00	9.863		
11,000.00	9,613.51	10,906.12	9,696.21	32.20	28.97	98.84	-1,504.09	-640.57	532.69	477.26	55.43	9.610		
11,100.00	9,612.89	11,006.11	9,696.35	33.47	29.06	98.92	-1,604.08	-639.84	532.80	475.89	56.92	9.361		
11,200.00	9,612.27	11,106.11	9,696.50	34.76	29.16	99.01	-1,704.08	-639.10	532.92	474.46	58.46	9.117		
11,300.00	9,611.65	11,206.11	9,696.64	36.09	29.27	99.09	-1,804.07	-638.37	533.03	472.99	60.04	8.877		
11,400.00	9,611.03	11,306.10	9,696.78	37.44	29.37	99.17	-1,904.06	-637.64	533.15	471.47	61.68	8.644		
11,500.00	9,610.41	11,406.10	9,696.92	38.81	29.49	99.25	-2,004.06	-636.91	533.26	469.91	63.35	8.418		
11,600.00	9,609.79	11,506.10	9,697.07	40.20	29.60	99.33	-2,104.05	-636.18	533.38	468.32	65.06	8.198		
11,700.00	9,609.17	11,606.10	9,697.21	41.61	29.73	99.41	-2,204.05	-635.45	533.50	466.69	66.81	7.985		
11,800.00	9,608.54	11,706.09	9,697.35	43.03	29.86	99.49	-2,304.04	-634.71	533.62	465.03	68.59	7.780		
11,900.00	9,607.92	11,806.09	9,697.49	44.47	30.00	99.57	-2,404.04	-633.98	533.74	463.34	70.40	7.581		
12,000.00	9,607.30	11,906.09	9,697.64	45.93	30.15	99.65	-2,504.03	-633.25	533.87	461.62	72.24	7.390		
12,100.00	9,606.68	12,006.08	9,697.78	47.39	30.31	99.74	-2,604.02	-632.52	533.99	459.88	74.11	7.205		
12,200.00	9,606.06	12,106.08	9,697.92	48.87	30.49	99.82	-2,704.02	-631.79	534.11	458.11	76.00	7.028		
12,300.00	9,605.44	12,206.08	9,698.06	50.36	30.69	99.90	-2,804.01	-631.05	534.24	456.32	77.92	6.857		
12,400.00	9,604.82	12,306.07	9,698.21	51.85	30.91	99.98	-2,904.01	-630.32	534.37	454.51	79.85	6.692		
12,500.00	9,604.20	12,406.07	9,698.35	53.36	31.15	100.06	-3,004.00	-629.59	534.49	452.68	81.81	6.533		
12,600.00	9,603.58	12,506.07	9,698.49	54.87	31.43	100.14	-3,104.00	-628.86	534.62	450.84	83.78	6.381		
12,700.00	9,602.95	12,606.07	9,698.63	56.39	31.74	100.22	-3,203.99	-628.13	534.75	448.97	85.78	6.234		
12,800.00	9,602.33	12,706.06	9,698.78	57.91	32.09	100.30	-3,303.98	-627.39	534.88	447.10	87.79	6.093		
12,900.00	9,601.71	12,806.06	9,698.92	59.44	32.47	100.38	-3,403.98	-626.66	535.01	445.20	89.81	5.957		
13,000.00	9,601.09	12,906.06	9,699.06	60.98	32.88	100.46	-3,503.97	-625.93	535.15	443.29	91.85	5.826		
13,100.00	9,600.47	13,006.05	9,699.20	62.52	33.32	100.54	-3,603.97	-625.20	535.28	441.37	93.91	5.700		
13,200.00	9,599.85	13,106.05	9,699.35	64.07	33.79	100.62	-3,703.96	-624.47	535.42	439.44	95.97	5.579		
13,300.00	9,599.23	13,206.05	9,699.49	65.62	34.28	100.70	-3,803.96	-623.74	535.55	437.50	98.05	5.462		
13,400.00	9,598.61	13,306.05	9,699.63	67.18	34.79	100.78	-3,903.95	-623.00	535.69	435.55	100.14	5.349		
13,500.00	9,597.98	13,406.04	9,699.77	68.74	35.31	100.86	-4,003.94	-622.27	535.83	433.59	102.24	5.241		
13,600.00	9,597.36	13,506.04	9,699.92	70.30	35.85	100.94	-4,103.94	-621.54	535.97	431.61	104.35	5.136		
13,700.00	9,596.74	13,606.04	9,700.06	71.87	36.41	101.02	-4,203.93	-620.81	536.11	429.63	106.47	5.035		
13,800.00	9,596.12	13,706.03	9,700.20	73.44	36.97	101.10	-4,303.93	-620.08	536.25	427.65	108.60	4.938		
13,900.00	9,595.50	13,806.03	9,700.34	75.01	37.55	101.18	-4,403.92	-619.34	536.39	425.65	110.74	4.844		
14,000.00	9,594.88	13,906.03	9,700.49	76.59	38.13	101.26	-4,503.92	-618.61	536.54	423.65	112.89	4.753		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 126H - OH - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM, 9994-MWD+IFR1+MS													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
14,100.00	9,594.26	14,006.03	9,700.63	78.16	38.73	101.34	-4,603.91	-617.88	536.68	421.64	115.04	4.665		
14,200.00	9,593.64	14,106.02	9,700.77	79.74	39.33	101.42	-4,703.91	-617.15	536.83	419.63	117.20	4.580		
14,300.00	9,593.02	14,206.02	9,700.91	81.33	39.93	101.50	-4,803.90	-616.42	536.97	417.61	119.37	4.499		
14,400.00	9,592.39	14,306.02	9,701.06	82.91	40.55	101.58	-4,903.89	-615.69	537.12	415.58	121.54	4.419		
14,500.00	9,591.77	14,406.01	9,701.20	84.50	41.17	101.66	-5,003.89	-614.95	537.27	413.55	123.72	4.343		
14,600.00	9,591.15	14,506.01	9,701.34	86.09	41.80	101.74	-5,103.88	-614.22	537.42	411.52	125.90	4.269		
14,700.00	9,590.53	14,606.01	9,701.48	87.68	42.43	101.82	-5,203.88	-613.49	537.57	409.48	128.09	4.197		
14,800.00	9,589.91	14,706.01	9,701.63	89.27	43.07	101.90	-5,303.87	-612.76	537.72	407.44	130.28	4.127		
14,900.00	9,589.29	14,806.00	9,701.77	90.87	43.71	101.98	-5,403.87	-612.03	537.87	405.39	132.48	4.060		
15,000.00	9,588.67	14,906.00	9,701.91	92.46	44.35	102.06	-5,503.86	-611.29	538.03	403.34	134.69	3.995		
15,100.00	9,588.05	15,006.00	9,702.05	94.06	45.00	102.14	-5,603.85	-610.56	538.18	401.29	136.89	3.931		
15,200.00	9,587.43	15,105.99	9,702.19	95.66	45.66	102.22	-5,703.85	-609.83	538.34	399.23	139.10	3.870		
15,300.00	9,586.80	15,205.99	9,702.34	97.26	46.32	102.30	-5,803.84	-609.10	538.50	397.18	141.32	3.810		
15,400.00	9,586.18	15,305.99	9,702.48	98.86	46.98	102.38	-5,903.84	-608.37	538.65	395.12	143.54	3.753		
15,500.00	9,585.56	15,405.98	9,702.62	100.46	47.64	102.46	-6,003.83	-607.63	538.81	393.05	145.76	3.697		
15,600.00	9,584.94	15,505.98	9,702.76	102.07	48.31	102.54	-6,103.83	-606.90	538.97	390.99	147.98	3.642		
15,700.00	9,584.32	15,605.98	9,702.91	103.67	48.98	102.62	-6,203.82	-606.17	539.14	388.92	150.21	3.589		
15,800.00	9,583.70	15,705.98	9,703.05	105.28	49.66	102.70	-6,303.81	-605.44	539.30	386.85	152.44	3.538		
15,900.00	9,583.08	15,805.97	9,703.19	106.88	50.33	102.78	-6,403.81	-604.71	539.46	384.78	154.68	3.488		
16,000.00	9,582.46	15,905.97	9,703.33	108.49	51.01	102.86	-6,503.80	-603.98	539.62	382.71	156.91	3.439		
16,100.00	9,581.84	16,005.97	9,703.48	110.10	51.69	102.94	-6,603.80	-603.24	539.79	380.64	159.15	3.392		
16,200.00	9,581.21	16,105.96	9,703.62	111.71	52.38	103.02	-6,703.79	-602.51	539.96	378.57	161.39	3.346		
16,300.00	9,580.59	16,205.96	9,703.76	113.32	53.07	103.09	-6,803.79	-601.78	540.12	376.49	163.63	3.301		
16,400.00	9,579.97	16,305.96	9,703.90	114.93	53.75	103.17	-6,903.78	-601.05	540.29	374.42	165.87	3.257		
16,500.00	9,579.35	16,405.96	9,704.05	116.54	54.45	103.25	-7,003.77	-600.32	540.46	372.34	168.12	3.215		
16,600.00	9,578.73	16,505.95	9,704.19	118.16	55.14	103.33	-7,103.77	-599.58	540.63	370.26	170.37	3.173		
16,700.00	9,578.11	16,605.95	9,704.33	119.77	55.83	103.41	-7,203.76	-598.85	540.80	368.19	172.62	3.133		
16,800.00	9,577.49	16,705.95	9,704.47	121.38	56.53	103.49	-7,303.76	-598.12	540.98	366.11	174.87	3.094		
16,900.00	9,576.87	16,805.94	9,704.62	123.00	57.23	103.57	-7,403.75	-597.39	541.15	364.03	177.12	3.055		
17,000.00	9,576.25	16,905.94	9,704.76	124.61	57.93	103.65	-7,503.75	-596.66	541.32	361.95	179.37	3.018		
17,100.00	9,575.62	17,005.94	9,704.90	126.23	58.63	103.72	-7,603.74	-595.93	541.50	359.87	181.63	2.981		
17,102.88	9,575.61	17,008.82	9,704.91	126.28	58.65	103.73	-7,606.62	-595.90	541.51	359.81	181.69	2.980		
17,200.48	9,575.00	17,074.97	9,705.00	127.85	59.12	103.78	-7,672.77	-595.42	542.59	359.00	183.59	2.955		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 128H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)						
0.00	0.00	4.10	4.10	0.00	0.00	-96.18	-108.13	-999.09	1,004.92					
100.00	100.00	104.10	104.10	0.09	0.10	-96.18	-108.13	-999.09	1,004.92	1,004.74	0.18	5,547.114		
200.00	200.00	204.10	204.10	0.31	0.32	-96.18	-108.13	-999.09	1,004.92	1,004.29	0.63	1,593.364		
300.00	300.00	304.10	304.10	0.54	0.54	-96.18	-108.13	-999.09	1,004.92	1,003.84	1.08	930.291		
400.00	400.00	404.10	404.10	0.76	0.77	-96.18	-108.13	-999.09	1,004.92	1,003.39	1.53	656.917		
500.00	500.00	504.10	504.10	0.99	0.99	-96.18	-108.13	-999.09	1,004.92	1,002.95	1.98	507.720		
600.00	600.00	604.10	604.10	1.21	1.22	-96.18	-108.13	-999.09	1,004.92	1,002.50	2.43	413.750		
700.00	700.00	704.10	704.10	1.43	1.44	-96.18	-108.13	-999.09	1,004.92	1,002.05	2.88	349.132		
800.00	800.00	804.10	804.10	1.66	1.67	-96.18	-108.13	-999.09	1,004.92	1,001.60	3.33	301.971		
900.00	900.00	904.10	904.10	1.88	1.89	-96.18	-108.13	-999.09	1,004.92	1,001.15	3.78	266.035		
1,000.00	1,000.00	1,004.10	1,004.10	2.11	2.12	-96.18	-108.13	-999.09	1,004.92	1,000.70	4.23	237.742		
1,100.00	1,100.00	1,104.10	1,104.10	2.33	2.34	-96.18	-108.13	-999.09	1,004.92	1,000.25	4.68	214.889		
1,200.00	1,200.00	1,204.10	1,204.10	2.56	2.57	-96.18	-108.13	-999.09	1,004.92	999.80	5.13	196.044		
1,300.00	1,300.00	1,304.10	1,304.10	2.78	2.79	-96.18	-108.13	-999.09	1,004.92	999.35	5.58	180.238		
1,400.00	1,400.00	1,404.10	1,404.10	3.01	3.02	-96.18	-108.13	-999.09	1,004.92	998.90	6.03	166.790		
1,500.00	1,500.00	1,504.10	1,504.10	3.23	3.24	-96.18	-108.13	-999.09	1,004.92	998.45	6.47	155.210		
1,600.00	1,600.00	1,604.10	1,604.10	3.46	3.47	-96.18	-108.13	-999.09	1,004.92	998.00	6.92	145.133		
1,700.00	1,700.00	1,704.10	1,704.10	3.68	3.69	-96.18	-108.13	-999.09	1,004.92	997.55	7.37	136.285		
1,800.00	1,800.00	1,804.10	1,804.10	3.91	3.92	-96.18	-108.13	-999.09	1,004.92	997.10	7.82	128.454		
1,900.00	1,900.00	1,904.10	1,904.10	4.13	4.14	-96.18	-108.13	-999.09	1,004.92	996.65	8.27	121.474		
2,000.00	2,000.00	2,004.10	2,004.10	4.36	4.37	-96.18	-108.13	-999.09	1,004.92	996.20	8.72	115.214		
2,100.00	2,100.00	2,104.10	2,104.10	4.58	4.59	-96.18	-108.13	-999.09	1,004.92	995.75	9.17	109.567		
2,200.00	2,200.00	2,204.10	2,204.10	4.81	4.82	-96.18	-108.13	-999.09	1,004.92	995.30	9.62	104.447		
2,300.00	2,300.00	2,304.10	2,304.10	5.03	5.04	-96.18	-108.13	-999.09	1,004.92	994.85	10.07	99.785		
2,400.00	2,400.00	2,404.10	2,404.10	5.26	5.26	-96.18	-108.13	-999.09	1,004.92	994.40	10.52	95.522		
2,500.00	2,500.00	2,504.95	2,504.95	5.48	5.49	-96.18	-108.13	-999.09	1,004.92	993.95	10.97	91.595		
2,600.00	2,600.00	2,625.57	2,625.56	5.71	5.75	-96.16	-107.68	-997.79	1,003.81	992.36	11.45	87.662		
2,700.00	2,700.00	2,746.08	2,746.00	5.93	6.00	-96.11	-106.42	-994.09	1,000.65	988.73	11.92	83.961		
2,800.00	2,800.00	2,862.73	2,862.49	6.15	6.25	-96.03	-104.43	-988.26	995.47	983.10	12.38	80.436		
2,900.00	2,900.00	2,962.55	2,962.13	6.38	6.46	-95.95	-102.48	-982.57	989.61	976.80	12.81	77.256		
3,000.00	3,000.00	3,062.37	3,061.77	6.60	6.68	-95.88	-100.54	-976.89	983.74	970.50	13.24	74.279		
3,100.00	3,100.00	3,162.19	3,161.41	6.83	6.89	-95.80	-98.60	-971.21	977.88	964.20	13.68	71.484		
3,200.00	3,200.00	3,262.01	3,261.05	7.05	7.11	-95.72	-96.66	-965.53	972.02	957.91	14.12	68.857		
3,300.00	3,300.00	3,361.83	3,360.68	7.28	7.33	-95.64	-94.71	-959.84	966.16	951.61	14.55	66.383		
3,400.00	3,400.00	3,461.65	3,460.32	7.50	7.56	-95.55	-92.77	-954.16	960.31	945.32	14.99	64.050		
3,500.00	3,500.00	3,561.47	3,559.96	7.73	7.78	-95.47	-90.83	-948.48	954.46	939.02	15.43	61.847		
3,600.00	3,600.00	3,661.28	3,659.60	7.95	8.00	-95.39	-88.89	-942.80	948.60	932.73	15.87	59.763		
3,700.00	3,700.00	3,761.10	3,759.24	8.18	8.23	-95.30	-86.94	-937.12	942.75	926.44	16.31	57.788		
3,800.00	3,800.00	3,860.92	3,858.87	8.40	8.46	-95.21	-85.00	-931.43	936.91	920.15	16.76	55.916		
3,900.00	3,900.00	3,960.74	3,958.51	8.63	8.68	-95.13	-83.06	-925.75	931.06	913.86	17.20	54.138		
4,000.00	4,000.00	4,060.56	4,058.15	8.85	8.91	-95.04	-81.11	-920.07	925.22	907.58	17.64	52.448		
4,100.00	4,100.00	4,160.38	4,157.79	9.08	9.14	-94.95	-79.17	-914.39	919.38	901.29	18.08	50.839		
4,200.00	4,200.00	4,260.20	4,257.43	9.30	9.37	-94.86	-77.23	-908.71	913.54	895.01	18.53	49.306		
4,300.00	4,300.00	4,360.02	4,357.06	9.53	9.60	-94.77	-75.29	-903.02	907.70	888.73	18.97	47.844		
4,400.00	4,400.00	4,459.84	4,456.70	9.75	9.83	-94.67	-73.34	-897.34	901.87	882.45	19.42	46.448		
4,500.00	4,500.00	4,559.65	4,556.34	9.98	10.06	-94.58	-71.40	-891.66	896.04	876.18	19.86	45.113		
4,600.00	4,600.00	4,659.44	4,655.95	10.20	10.30	-94.48	-69.46	-885.98	889.63	869.33	20.30	43.818		
4,700.00	4,699.96	4,759.15	4,755.48	10.41	10.53	-94.38	-67.52	-880.30	882.06	861.32	20.74	42.531		
4,800.00	4,799.86	4,858.76	4,854.90	10.63	10.76	-94.24	-65.58	-874.63	873.33	852.16	21.18	41.242		
4,879.97	4,879.69	4,938.31	4,934.31	10.81	10.95	-94.66	-64.03	-870.11	865.53	844.00	21.52	40.211		
4,900.00	4,899.68	4,958.22	4,954.19	10.85	11.00	-94.71	-63.65	-868.97	863.48	841.87	21.61	39.953		
5,000.00	4,999.46	5,057.64	5,053.42	11.07	11.23	-94.94	-61.71	-863.31	853.28	831.23	22.05	38.699		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 128H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		+N-S (usft)	+E-W (usft)						
5,100.00	5,099.24	5,157.05	5,152.66	11.29	11.46	-49.19	-59.78	-857.65	843.09	820.60	22.49	37.492		
5,200.00	5,199.02	5,256.47	5,251.89	11.51	11.70	-49.44	-57.84	-852.00	832.92	809.99	22.93	36.330		
5,300.00	5,298.80	5,355.88	5,351.13	11.74	11.93	-49.69	-55.91	-846.34	822.76	799.39	23.37	35.211		
5,400.00	5,398.58	5,455.30	5,450.36	11.96	12.16	-49.95	-53.97	-840.68	812.62	788.81	23.81	34.132		
5,500.00	5,498.36	5,554.71	5,549.60	12.19	12.40	-50.22	-52.04	-835.02	802.50	778.25	24.25	33.093		
5,600.00	5,598.14	5,654.13	5,648.83	12.41	12.63	-50.49	-50.10	-829.36	792.39	767.70	24.69	32.090		
5,700.00	5,697.92	5,753.54	5,748.07	12.64	12.87	-50.78	-48.17	-823.70	782.30	757.17	25.14	31.122		
5,800.00	5,797.70	5,852.96	5,847.30	12.86	13.11	-51.07	-46.23	-818.04	772.24	746.65	25.58	30.187		
5,900.00	5,897.48	5,952.37	5,946.54	13.09	13.34	-51.36	-44.30	-812.38	762.19	736.16	26.03	29.284		
6,000.00	5,997.26	6,051.79	6,045.77	13.32	13.58	-51.67	-42.36	-806.72	752.16	725.69	26.47	28.411		
6,100.00	6,097.04	6,151.20	6,145.01	13.55	13.81	-51.98	-40.43	-801.06	742.16	715.23	26.92	27.568		
6,200.00	6,196.82	6,250.62	6,244.24	13.78	14.05	-52.30	-38.49	-795.40	732.17	704.80	27.37	26.752		
6,300.00	6,296.60	6,350.03	6,343.48	14.01	14.29	-52.63	-36.56	-789.75	722.21	694.40	27.82	25.962		
6,400.00	6,396.38	6,449.45	6,442.71	14.24	14.52	-52.97	-34.62	-784.09	712.28	684.01	28.27	25.198		
6,500.00	6,496.16	6,548.87	6,541.95	14.47	14.76	-53.32	-32.69	-778.43	702.37	673.65	28.72	24.458		
6,600.00	6,595.94	6,648.28	6,641.18	14.71	15.00	-53.68	-30.76	-772.77	692.49	663.32	29.17	23.741		
6,700.00	6,695.72	6,747.70	6,740.42	14.94	15.24	-54.05	-28.82	-767.11	682.63	653.01	29.62	23.046		
6,800.00	6,795.50	6,847.11	6,839.65	15.17	15.47	-54.43	-26.89	-761.45	672.80	642.73	30.07	22.373		
6,900.00	6,895.28	6,946.53	6,938.89	15.40	15.71	-54.82	-24.95	-755.79	663.01	632.48	30.53	21.720		
7,000.00	6,995.06	7,045.94	7,038.12	15.64	15.95	-55.22	-23.02	-750.13	653.24	622.27	30.98	21.087		
7,100.00	7,094.84	7,145.36	7,137.36	15.87	16.19	-55.64	-21.08	-744.47	643.51	612.08	31.43	20.473		
7,125.52	7,120.31	7,170.73	7,162.69	15.93	16.25	-55.75	-20.59	-743.03	641.04	609.49	31.55	20.319		
7,200.00	7,194.65	7,244.82	7,236.64	16.09	16.42	-55.97	-19.15	-738.81	634.09	602.22	31.87	19.896		
7,300.00	7,294.55	7,344.41	7,336.05	16.27	16.66	-56.18	-17.21	-733.14	625.62	593.35	32.28	19.383		
7,400.00	7,394.51	7,444.12	7,435.58	16.45	16.90	-56.26	-15.27	-727.47	618.14	585.45	32.68	18.914		
7,505.49	7,500.00	7,549.38	7,540.66	16.63	17.15	-102.61	-13.22	-721.47	611.29	578.18	33.11	18.465		
7,600.00	7,594.51	7,643.72	7,634.82	16.82	17.38	-102.55	-11.38	-716.10	605.64	572.13	33.50	18.076		
7,700.00	7,694.51	7,743.54	7,734.46	17.04	17.62	-102.49	-9.44	-710.42	599.66	565.71	33.95	17.662		
7,800.00	7,794.51	7,843.36	7,834.10	17.26	17.86	-102.42	-7.50	-704.74	593.68	559.28	34.40	17.259		
7,900.00	7,894.51	7,943.18	7,933.73	17.48	18.10	-102.36	-5.56	-699.06	587.70	552.86	34.85	16.866		
8,000.00	7,994.51	8,043.00	8,033.37	17.70	18.34	-102.29	-3.61	-693.38	581.73	546.43	35.29	16.483		
8,100.00	8,094.51	8,142.81	8,133.01	17.92	18.58	-102.22	-1.67	-687.69	575.75	540.01	35.74	16.110		
8,200.00	8,194.51	8,242.63	8,232.65	18.14	18.82	-102.15	0.27	-682.01	569.78	533.59	36.19	15.745		
8,300.00	8,294.51	8,342.45	8,332.29	18.36	19.06	-102.08	2.22	-676.33	563.80	527.17	36.63	15.390		
8,400.00	8,394.51	8,442.27	8,431.93	18.59	19.30	-102.01	4.16	-670.65	557.83	520.75	37.08	15.043		
8,500.00	8,494.51	8,542.09	8,531.56	18.81	19.54	-101.93	6.10	-664.97	551.86	514.33	37.53	14.704		
8,600.00	8,594.51	8,641.91	8,631.20	19.03	19.78	-101.86	8.04	-659.28	545.88	507.91	37.98	14.374		
8,700.00	8,694.51	8,735.25	8,724.40	19.25	19.98	-101.79	9.72	-654.37	540.37	501.97	38.40	14.072		
8,800.00	8,794.51	8,826.65	8,815.72	19.47	20.14	-101.74	10.91	-650.89	536.38	497.59	38.80	13.825		
8,900.00	8,894.51	8,918.14	8,907.19	19.69	20.31	-101.71	11.63	-648.80	533.98	494.80	39.19	13.626		
9,000.00	8,994.51	9,009.68	8,998.72	19.92	20.47	-101.70	11.87	-648.09	533.17	493.60	39.57	13.474		
9,017.99	9,012.50	9,027.56	9,016.60	19.96	20.50	-101.70	11.87	-648.09	533.17	493.53	39.64	13.449		
9,052.54	9,047.05	9,062.11	9,051.15	20.03	20.57	-101.70	11.87	-648.09	533.17	493.38	39.79	13.400		
9,100.00	9,094.45	9,109.51	9,098.55	20.12	20.66	-101.70	11.87	-648.09	532.79	492.81	39.98	13.328		
9,150.00	9,144.04	9,159.10	9,148.14	20.20	20.76	-101.70	11.87	-648.09	531.61	491.46	40.15	13.239		
9,200.00	9,192.88	9,207.94	9,196.98	20.28	20.86	-101.70	11.87	-648.09	529.80	489.48	40.32	13.138		
9,250.00	9,240.62	9,255.68	9,244.72	20.35	20.96	-101.70	11.87	-648.09	527.61	487.13	40.49	13.031		
9,300.00	9,286.89	9,301.94	9,290.99	20.42	21.06	-101.70	11.87	-648.09	525.41	484.77	40.65	12.927		
9,350.00	9,331.32	9,346.38	9,335.42	20.49	21.15	-101.70	11.87	-648.09	523.66	482.85	40.80	12.834		
9,400.00	9,373.60	9,388.66	9,377.70	20.55	21.24	-101.70	11.87	-648.09	522.87	481.90	40.96	12.764		
9,403.79	9,376.70	9,391.76	9,380.80	20.56	21.25	-101.70	11.87	-648.09	522.86	481.89	40.98	12.760 CC, ES		
9,450.00	9,413.39	9,428.45	9,417.49	20.61	21.32	-101.70	11.87	-648.09	523.62	482.48	41.13	12.730		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 128H - OH - Plan #2												Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD+HDGM												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	+E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
9,500.00	9,450.39	9,465.45	9,454.49	20.67	21.40	94.79	11.87	-648.09	526.49	485.17	41.32	12.742	
9,550.00	9,484.32	9,499.38	9,488.42	20.74	21.47	96.93	11.87	-648.09	532.04	490.52	41.52	12.813	
9,600.00	9,514.93	9,529.99	9,519.03	20.81	21.53	98.66	11.87	-648.09	540.74	499.00	41.74	12.954	
9,650.00	9,541.97	9,557.03	9,546.07	20.91	21.59	99.84	11.87	-648.09	552.96	510.98	41.98	13.171	
9,700.00	9,565.25	9,581.76	9,570.80	21.04	21.64	100.50	11.86	-648.09	568.89	526.66	42.23	13.471	
9,750.00	9,584.58	9,618.85	9,607.85	21.21	21.71	101.99	10.42	-648.08	588.23	545.74	42.49	13.844	
9,800.00	9,599.82	9,660.21	9,648.97	21.40	21.78	103.50	5.99	-648.05	610.54	567.84	42.69	14.301	
9,850.00	9,610.86	9,708.66	9,696.57	21.61	21.86	105.29	-2.95	-647.98	635.46	592.68	42.78	14.853	
9,900.00	9,617.60	9,770.07	9,755.53	21.85	21.95	107.86	-20.00	-647.86	662.55	619.89	42.66	15.532	
9,950.00	9,620.00	9,858.82	9,836.75	22.11	22.08	112.30	-55.55	-647.60	691.04	648.98	42.05	16.433	
9,956.10	9,620.00	9,873.01	9,849.19	22.15	22.10	113.06	-62.39	-647.55	694.55	652.63	41.92	16.569	
10,000.00	9,619.72	10,027.32	9,971.71	22.40	22.32	123.47	-155.42	-646.88	718.37	678.30	40.08	17.925	
10,100.00	9,619.10	10,527.68	10,139.47	23.05	23.99	134.64	-610.70	-643.57	734.82	697.18	37.64	19.524	
10,200.00	9,618.48	10,627.68	10,138.21	23.79	24.61	134.60	-710.69	-642.84	734.37	695.65	38.72	18.968	
10,300.00	9,617.86	10,727.68	10,136.95	24.62	25.32	134.57	-810.68	-642.12	733.92	693.99	39.93	18.380	
10,400.00	9,617.24	10,827.68	10,135.68	25.52	26.12	134.53	-910.66	-641.39	733.47	692.20	41.27	17.773	
10,500.00	9,616.62	10,927.68	10,134.42	26.50	26.99	134.50	-1,010.65	-640.66	733.02	690.30	42.72	17.158	
10,600.00	9,616.00	11,027.67	10,133.16	27.54	27.93	134.46	-1,110.64	-639.94	732.58	688.30	44.28	16.546	
10,700.00	9,615.38	11,127.67	10,131.90	28.64	28.93	134.42	-1,210.63	-639.21	732.13	686.21	45.92	15.943	
10,800.00	9,614.76	11,227.67	10,130.64	29.78	29.99	134.39	-1,310.61	-638.49	731.68	684.03	47.65	15.355	
10,900.00	9,614.13	11,327.67	10,129.38	30.97	31.10	134.35	-1,410.60	-637.76	731.23	681.78	49.45	14.786	
11,000.00	9,613.51	11,427.67	10,128.12	32.20	32.25	134.32	-1,510.59	-637.03	730.79	679.46	51.33	14.238	
11,100.00	9,612.89	11,527.66	10,126.86	33.47	33.44	134.28	-1,610.58	-636.31	730.34	677.08	53.26	13.713	
11,200.00	9,612.27	11,627.66	10,125.59	34.76	34.67	134.24	-1,710.56	-635.58	729.89	674.65	55.24	13.212	
11,300.00	9,611.65	11,727.66	10,124.33	36.09	35.94	134.21	-1,810.55	-634.86	729.45	672.17	57.28	12.735	
11,400.00	9,611.03	11,827.66	10,123.07	37.44	37.23	134.17	-1,910.54	-634.13	729.00	669.64	59.36	12.282	
11,500.00	9,610.41	11,927.66	10,121.81	38.81	38.55	134.14	-2,010.52	-633.40	728.55	667.08	61.47	11.851	
11,600.00	9,609.79	12,027.65	10,120.55	40.20	39.89	134.10	-2,110.51	-632.68	728.11	664.48	63.63	11.443	
11,700.00	9,609.17	12,127.65	10,119.29	41.61	41.25	134.06	-2,210.50	-631.95	727.66	661.85	65.82	11.056	
11,800.00	9,608.54	12,227.65	10,118.03	43.03	42.64	134.03	-2,310.49	-631.22	727.22	659.18	68.04	10.689	
11,900.00	9,607.92	12,327.65	10,116.77	44.47	44.04	133.99	-2,410.47	-630.50	726.77	656.49	70.28	10.341	
12,000.00	9,607.30	12,427.64	10,115.50	45.93	45.45	133.95	-2,510.46	-629.77	726.33	653.78	72.55	10.011	
12,100.00	9,606.68	12,527.64	10,114.24	47.39	46.88	133.92	-2,610.45	-629.05	725.89	651.04	74.84	9.699	
12,200.00	9,606.06	12,627.64	10,112.98	48.87	48.33	133.88	-2,710.44	-628.32	725.44	648.28	77.16	9.402	
12,300.00	9,605.44	12,727.64	10,111.72	50.36	49.78	133.85	-2,810.42	-627.59	725.00	645.51	79.49	9.120	
12,400.00	9,604.82	12,827.64	10,110.46	51.85	51.25	133.81	-2,910.41	-626.87	724.56	642.71	81.84	8.853	
12,500.00	9,604.20	12,927.63	10,109.20	53.36	52.73	133.77	-3,010.40	-626.14	724.11	639.90	84.21	8.599	
12,600.00	9,603.58	13,027.63	10,107.94	54.87	54.21	133.74	-3,110.39	-625.42	723.67	637.07	86.60	8.357	
12,700.00	9,602.95	13,127.63	10,106.68	56.39	55.71	133.70	-3,210.37	-624.69	723.23	634.23	89.00	8.126	
12,800.00	9,602.33	13,227.63	10,105.41	57.91	57.21	133.66	-3,310.36	-623.96	722.79	631.38	91.41	7.907	
12,900.00	9,601.71	13,327.63	10,104.15	59.44	58.72	133.63	-3,410.35	-623.24	722.35	628.51	93.84	7.698	
13,000.00	9,601.09	13,427.62	10,102.89	60.98	60.24	133.59	-3,510.34	-622.51	721.90	625.63	96.27	7.499	
13,100.00	9,600.47	13,527.62	10,101.63	62.52	61.76	133.55	-3,610.32	-621.78	721.46	622.74	98.72	7.308	
13,200.00	9,599.85	13,627.62	10,100.37	64.07	63.29	133.51	-3,710.31	-621.06	721.02	619.84	101.18	7.126	
13,300.00	9,599.23	13,727.62	10,099.11	65.62	64.83	133.48	-3,810.30	-620.33	720.58	616.93	103.65	6.952	
13,400.00	9,598.61	13,827.62	10,097.85	67.18	66.37	133.44	-3,910.28	-619.61	720.14	614.02	106.13	6.786	
13,500.00	9,597.98	13,927.61	10,096.59	68.74	67.91	133.40	-4,010.27	-618.88	719.70	611.09	108.62	6.626	
13,600.00	9,597.36	14,027.61	10,095.32	70.30	69.46	133.37	-4,110.26	-618.15	719.26	608.15	111.11	6.473	
13,700.00	9,596.74	14,127.61	10,094.06	71.87	71.01	133.33	-4,210.25	-617.43	718.82	605.21	113.62	6.327	
13,800.00	9,596.12	14,227.61	10,092.80	73.44	72.57	133.29	-4,310.23	-616.70	718.39	602.26	116.13	6.186	
13,900.00	9,595.50	14,327.61	10,091.54	75.01	74.13	133.26	-4,410.22	-615.98	717.95	599.30	118.65	6.051	
14,000.00	9,594.88	14,427.60	10,090.28	76.59	75.69	133.22	-4,510.21	-615.25	717.51	596.34	121.17	5.921	

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 128H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM													Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset		+N/-S (usft)	+E/-W (usft)						
14,100.00	9,594.26	14,527.60	10,089.02	78.16	77.25	133.18	-4,610.20	-614.52	717.07	593.36	123.71	5.797		
14,200.00	9,593.64	14,627.60	10,087.76	79.74	78.82	133.14	-4,710.18	-613.80	716.63	590.39	126.25	5.676		
14,300.00	9,593.02	14,727.60	10,086.50	81.33	80.40	133.11	-4,810.17	-613.07	716.20	587.40	128.79	5.561		
14,400.00	9,592.39	14,827.60	10,085.23	82.91	81.97	133.07	-4,910.16	-612.34	715.76	584.41	131.34	5.449		
14,500.00	9,591.77	14,927.59	10,083.97	84.50	83.55	133.03	-5,010.15	-611.62	715.32	581.42	133.90	5.342		
14,600.00	9,591.15	15,027.59	10,082.71	86.09	85.13	132.99	-5,110.13	-610.89	714.89	578.42	136.47	5.239		
14,700.00	9,590.53	15,127.59	10,081.45	87.68	86.71	132.96	-5,210.12	-610.17	714.45	575.42	139.03	5.139		
14,800.00	9,589.91	15,227.59	10,080.19	89.27	88.29	132.92	-5,310.11	-609.44	714.01	572.41	141.61	5.042		
14,900.00	9,589.29	15,327.59	10,078.93	90.87	89.88	132.88	-5,410.10	-608.71	713.58	569.39	144.19	4.949		
15,000.00	9,588.67	15,427.58	10,077.67	92.46	91.46	132.84	-5,510.08	-607.99	713.14	566.37	146.77	4.859		
15,100.00	9,588.05	15,527.58	10,076.41	94.06	93.05	132.81	-5,610.07	-607.26	712.71	563.35	149.36	4.772		
15,200.00	9,587.43	15,627.58	10,075.14	95.66	94.65	132.77	-5,710.06	-606.54	712.27	560.32	151.96	4.687		
15,300.00	9,586.80	15,727.58	10,073.88	97.26	96.24	132.73	-5,810.04	-605.81	711.84	557.29	154.55	4.606		
15,400.00	9,586.18	15,827.58	10,072.62	98.86	97.83	132.69	-5,910.03	-605.08	711.41	554.25	157.16	4.527		
15,500.00	9,585.56	15,927.57	10,071.36	100.46	99.43	132.65	-6,010.02	-604.36	710.97	551.21	159.76	4.450		
15,600.00	9,584.94	16,027.57	10,070.10	102.07	101.02	132.62	-6,110.01	-603.63	710.54	548.16	162.38	4.376		
15,700.00	9,584.32	16,127.57	10,068.84	103.67	102.62	132.58	-6,209.99	-602.91	710.11	545.11	164.99	4.304		
15,800.00	9,583.70	16,227.57	10,067.58	105.28	104.22	132.54	-6,309.98	-602.18	709.67	542.06	167.61	4.234		
15,900.00	9,583.08	16,327.56	10,066.32	106.88	105.82	132.50	-6,409.97	-601.45	709.24	539.01	170.24	4.166		
16,000.00	9,582.46	16,427.56	10,065.05	108.49	107.42	132.46	-6,509.96	-600.73	708.81	535.95	172.86	4.100		
16,100.00	9,581.84	16,527.56	10,063.79	110.10	109.03	132.43	-6,609.94	-600.00	708.38	532.88	175.49	4.036		
16,200.00	9,581.21	16,627.56	10,062.53	111.71	110.63	132.39	-6,709.93	-599.27	707.95	529.82	178.13	3.974		
16,300.00	9,580.59	16,727.56	10,061.27	113.32	112.24	132.35	-6,809.92	-598.55	707.52	526.75	180.77	3.914		
16,400.00	9,579.97	16,827.55	10,060.01	114.93	113.84	132.31	-6,909.91	-597.82	707.08	523.67	183.41	3.855		
16,500.00	9,579.35	16,927.55	10,058.75	116.54	115.45	132.27	-7,009.89	-597.10	706.65	520.60	186.06	3.798		
16,600.00	9,578.73	17,027.55	10,057.49	118.16	117.06	132.23	-7,109.88	-596.37	706.22	517.52	188.71	3.742		
16,700.00	9,578.11	17,127.55	10,056.23	119.77	118.67	132.19	-7,209.87	-595.64	705.79	514.43	191.36	3.688		
16,800.00	9,577.49	17,227.55	10,054.96	121.38	120.28	132.16	-7,309.86	-594.92	705.36	511.35	194.02	3.636		
16,900.00	9,576.87	17,327.54	10,053.70	123.00	121.89	132.12	-7,409.84	-594.19	704.94	508.26	196.68	3.584		
17,000.00	9,576.25	17,427.54	10,052.44	124.61	123.50	132.08	-7,509.83	-593.47	704.51	505.16	199.34	3.534		
17,100.00	9,575.62	17,527.54	10,051.18	126.23	125.11	132.04	-7,609.82	-592.74	704.08	502.07	202.01	3.485		
17,193.90	9,575.04	17,621.08	10,050.00	127.75	126.62	132.00	-7,703.35	-592.06	703.68	499.17	204.51	3.441		
17,200.48	9,575.00	17,621.08	10,050.00	127.85	126.62	132.00	-7,703.35	-592.06	703.68	499.13	204.55	3.440 SF		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 96H - OH - Plan #2													Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD+HDGM, 10516-MWD+IFR1+MS													Offset Well Error: 0.00 usft	
Reference		Offset		Semi Major Axis		Highside Toolface (")	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	89.68	0.17	30.01	30.04					
100.00	100.00	98.60	98.60	0.09	0.08	89.68	0.17	30.01	30.01	29.84	0.17	175.764		
200.00	200.00	198.60	198.60	0.31	0.31	89.68	0.17	30.01	30.01	29.39	0.62	48.535		
300.00	300.00	298.60	298.60	0.54	0.53	89.68	0.17	30.01	30.01	28.94	1.07	28.103		
400.00	400.00	398.60	398.60	0.76	0.76	89.68	0.17	30.01	30.01	28.49	1.52	19.778		
500.00	500.00	498.60	498.60	0.99	0.98	89.68	0.17	30.01	30.01	28.04	1.97	15.258		
600.00	600.00	598.60	598.60	1.21	1.21	89.68	0.17	30.01	30.01	27.59	2.42	12.419		
700.00	700.00	698.60	698.60	1.43	1.43	89.68	0.17	30.01	30.01	27.14	2.87	10.471		
800.00	800.00	798.60	798.60	1.66	1.66	89.68	0.17	30.01	30.01	26.69	3.32	9.052		
900.00	900.00	898.60	898.60	1.88	1.88	89.68	0.17	30.01	30.01	26.25	3.77	7.971		
1,000.00	1,000.00	998.60	998.60	2.11	2.11	89.68	0.17	30.01	30.01	25.80	4.21	7.121		
1,100.00	1,100.00	1,098.60	1,098.60	2.33	2.33	89.68	0.17	30.01	30.01	25.35	4.66	6.434		
1,200.00	1,200.00	1,198.60	1,198.60	2.56	2.56	89.68	0.17	30.01	30.01	24.90	5.11	5.869		
1,300.00	1,300.00	1,298.60	1,298.60	2.78	2.78	89.68	0.17	30.01	30.01	24.45	5.56	5.394		
1,400.00	1,400.00	1,398.60	1,398.60	3.01	3.00	89.68	0.17	30.01	30.01	24.00	6.01	4.991		
1,500.00	1,500.00	1,498.60	1,498.60	3.23	3.23	89.68	0.17	30.01	30.01	23.55	6.46	4.644		
1,600.00	1,600.00	1,598.60	1,598.60	3.46	3.45	89.68	0.17	30.01	30.01	23.10	6.91	4.342		
1,700.00	1,700.00	1,698.60	1,698.60	3.68	3.68	89.68	0.17	30.01	30.01	22.65	7.36	4.077		
1,800.00	1,800.00	1,798.60	1,798.60	3.91	3.90	89.68	0.17	30.01	30.01	22.20	7.81	3.842		
1,900.00	1,900.00	1,898.60	1,898.60	4.13	4.13	89.68	0.17	30.01	30.01	21.75	8.26	3.633		
2,000.00	2,000.00	1,998.60	1,998.60	4.36	4.35	89.68	0.17	30.01	30.01	21.30	8.71	3.446		
2,100.00	2,100.00	2,098.60	2,098.60	4.58	4.58	89.68	0.17	30.01	30.01	20.85	9.16	3.276		
2,200.00	2,200.00	2,198.60	2,198.60	4.81	4.80	89.68	0.17	30.01	30.01	20.40	9.61	3.123		
2,300.00	2,300.00	2,298.60	2,298.60	5.03	5.03	89.68	0.17	30.01	30.01	19.95	10.06	2.984		
2,400.00	2,400.00	2,398.60	2,398.60	5.26	5.25	89.68	0.17	30.01	30.01	19.50	10.51	2.856		
2,500.00	2,500.00	2,498.60	2,498.60	5.48	5.48	89.68	0.17	30.01	30.01	19.05	10.96	2.739		
2,600.00	2,600.00	2,598.60	2,598.60	5.71	5.70	89.68	0.17	30.01	30.01	18.60	11.41	2.631		
2,700.00	2,700.00	2,698.60	2,698.60	5.93	5.93	89.68	0.17	30.01	30.01	18.15	11.86	2.531		
2,800.00	2,800.00	2,798.60	2,798.60	6.15	6.15	89.68	0.17	30.01	30.01	17.70	12.31	2.439		
2,900.00	2,900.00	2,898.60	2,898.60	6.38	6.38	89.68	0.17	30.01	30.01	17.25	12.76	2.353		
3,000.00	3,000.00	2,998.60	2,998.60	6.60	6.60	89.68	0.17	30.01	30.01	16.81	13.21	2.273		
3,100.00	3,100.00	3,098.60	3,098.60	6.83	6.83	89.68	0.17	30.01	30.01	16.36	13.65	2.198		
3,200.00	3,200.00	3,198.60	3,198.60	7.05	7.05	89.68	0.17	30.01	30.01	15.91	14.10	2.128		
3,300.00	3,300.00	3,298.60	3,298.60	7.28	7.28	89.68	0.17	30.01	30.01	15.46	14.55	2.062		
3,400.00	3,400.00	3,398.60	3,398.60	7.50	7.50	89.68	0.17	30.01	30.01	15.01	15.00	2.000		
3,500.00	3,500.00	3,498.60	3,498.60	7.73	7.72	89.68	0.17	30.01	30.01	14.56	15.45	1.942		
3,600.00	3,600.00	3,598.60	3,598.60	7.95	7.95	89.68	0.17	30.01	30.01	14.11	15.90	1.887		
3,700.00	3,700.00	3,698.60	3,698.60	8.18	8.17	89.68	0.17	30.01	30.01	13.66	16.35	1.835		
3,800.00	3,800.00	3,798.60	3,798.60	8.40	8.40	89.68	0.17	30.01	30.01	13.21	16.80	1.786		
3,900.00	3,900.00	3,898.60	3,898.60	8.63	8.62	89.68	0.17	30.01	30.01	12.76	17.25	1.740		
4,000.00	4,000.00	3,998.60	3,998.60	8.85	8.85	89.68	0.17	30.01	30.01	12.31	17.70	1.695 CC, ES, SF		
4,100.00	4,100.00	4,098.08	4,098.07	9.08	9.06	89.68	0.17	30.85	30.85	12.72	18.13	1.702		
4,200.00	4,200.00	4,197.49	4,197.45	9.30	9.26	89.71	0.17	33.41	33.43	14.89	18.54	1.803		
4,300.00	4,300.00	4,297.22	4,297.11	9.53	9.45	89.74	0.17	37.32	37.35	18.38	18.96	1.969		
4,400.00	4,400.00	4,397.14	4,396.95	9.75	9.66	89.76	0.17	41.31	41.35	21.96	19.39	2.133		
4,500.00	4,500.00	4,497.06	4,496.79	9.98	9.86	89.79	0.17	45.31	45.35	25.54	19.81	2.289		
4,600.00	4,600.00	4,596.95	4,596.60	10.20	10.06	136.86	0.17	49.31	49.98	29.75	20.23	2.470		
4,700.00	4,699.96	4,696.76	4,696.32	10.41	10.27	138.62	0.17	53.30	55.92	35.27	20.65	2.708		
4,800.00	4,799.86	4,796.46	4,795.94	10.63	10.47	141.04	0.17	57.29	63.24	42.18	21.07	3.002		
4,879.97	4,879.69	4,876.09	4,875.51	10.81	10.64	143.22	0.17	60.47	70.17	48.77	21.40	3.279		
4,900.00	4,899.68	4,896.02	4,895.42	10.85	10.68	143.78	0.17	61.27	72.03	50.54	21.49	3.352		
5,000.00	4,999.46	4,995.52	4,994.85	11.07	10.89	146.17	0.17	65.25	81.41	59.50	21.91	3.716		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 96H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM, 10516-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference	Offset	Semi Major Axis		Distance		Minimum		Separation		Warning				
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	Offset Wellbore Centre +E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
5,100.00	5,099.24	5,095.03	5,094.28	11.29	11.10	148.06	0.17	69.23	90.90	68.57	22.33	4.071		
5,200.00	5,199.02	5,194.54	5,193.71	11.51	11.31	149.59	0.17	73.22	100.47	77.72	22.75	4.416		
5,300.00	5,298.80	5,294.05	5,293.14	11.74	11.52	150.86	0.17	77.20	110.10	86.93	23.17	4.751		
5,400.00	5,398.58	5,393.56	5,392.56	11.96	11.73	151.92	0.17	81.18	119.78	96.18	23.60	5.075		
5,500.00	5,498.36	5,493.07	5,491.99	12.19	11.94	152.83	0.17	85.16	129.49	105.46	24.03	5.390		
5,600.00	5,598.14	5,592.57	5,591.42	12.41	12.16	153.60	0.17	89.14	139.22	114.77	24.45	5.694		
5,700.00	5,697.92	5,692.08	5,690.85	12.64	12.37	154.28	0.17	93.12	148.98	124.10	24.88	5.988		
5,800.00	5,797.70	5,791.59	5,790.28	12.86	12.58	154.87	0.17	97.10	158.76	133.45	25.31	6.272		
5,900.00	5,897.48	5,891.10	5,889.71	13.09	12.80	155.40	0.17	101.08	168.55	142.81	25.74	6.548		
6,000.00	5,997.26	5,990.61	5,989.14	13.32	13.01	155.86	0.17	105.06	178.36	152.18	26.17	6.815		
6,100.00	6,097.04	6,090.12	6,088.56	13.55	13.23	156.28	0.17	109.05	188.17	161.57	26.60	7.073		
6,200.00	6,196.82	6,189.62	6,187.99	13.78	13.45	156.66	0.17	113.03	198.00	170.96	27.04	7.323		
6,300.00	6,296.60	6,289.13	6,287.42	14.01	13.66	157.00	0.17	117.01	207.83	180.36	27.47	7.565		
6,400.00	6,396.38	6,388.64	6,386.85	14.24	13.88	157.31	0.17	120.99	217.67	189.76	27.91	7.800		
6,500.00	6,496.16	6,488.15	6,486.28	14.47	14.10	157.59	0.17	124.97	227.51	199.17	28.34	8.028		
6,600.00	6,595.94	6,587.66	6,585.71	14.71	14.32	157.85	0.17	128.95	237.36	208.58	28.78	8.248		
6,700.00	6,695.72	6,687.16	6,685.14	14.94	14.54	158.09	0.17	132.93	247.21	218.00	29.21	8.462		
6,800.00	6,795.50	6,786.67	6,784.56	15.17	14.76	158.31	0.17	136.91	257.07	227.42	29.65	8.670		
6,900.00	6,895.28	6,886.18	6,883.99	15.40	14.98	158.51	0.17	140.90	266.93	236.84	30.09	8.872		
7,000.00	6,995.06	6,985.69	6,983.42	15.64	15.20	158.70	0.17	144.88	276.79	246.27	30.53	9.068		
7,100.00	7,094.84	7,085.20	7,082.85	15.87	15.42	158.88	0.17	148.86	286.66	255.70	30.96	9.258		
7,125.52	7,120.31	7,110.59	7,108.23	15.93	15.47	158.92	0.17	149.87	289.18	258.10	31.08	9.305		
7,200.00	7,194.65	7,184.75	7,182.32	16.09	15.64	159.04	0.17	152.84	296.08	264.69	31.39	9.433		
7,300.00	7,294.55	7,284.44	7,281.93	16.27	15.86	159.07	0.17	156.83	303.93	272.15	31.78	9.564		
7,400.00	7,394.51	7,384.24	7,381.66	16.45	16.08	159.99	0.17	160.82	310.15	277.98	32.17	9.640		
7,505.49	7,500.00	7,489.62	7,486.95	16.63	16.32	112.38	0.17	165.04	314.96	282.37	32.59	9.665		
7,600.00	7,594.51	7,584.05	7,581.30	16.82	16.53	112.12	0.17	168.82	318.46	285.48	32.98	9.656		
7,700.00	7,694.51	7,683.97	7,681.14	17.04	16.75	111.85	0.17	172.81	322.17	288.75	33.42	9.640		
7,800.00	7,794.51	7,783.89	7,780.98	17.26	16.98	111.59	0.17	176.81	325.88	292.02	33.86	9.624		
7,900.00	7,894.51	7,883.81	7,880.82	17.48	17.20	111.33	0.17	180.81	329.61	295.31	34.30	9.609		
8,000.00	7,994.51	7,983.73	7,980.66	17.70	17.42	111.08	0.17	184.81	333.34	298.60	34.74	9.594		
8,100.00	8,094.51	8,083.65	8,080.50	17.92	17.65	110.84	0.17	188.80	337.08	301.89	35.18	9.580		
8,200.00	8,194.51	8,183.57	8,180.34	18.14	17.87	110.60	0.17	192.80	340.82	305.19	35.63	9.567		
8,300.00	8,294.51	8,284.05	8,280.74	18.36	18.10	110.37	0.17	196.81	344.56	308.49	36.07	9.553		
8,400.00	8,394.51	8,390.01	8,386.66	18.59	18.30	110.19	0.17	199.89	347.28	310.77	36.51	9.512		
8,500.00	8,494.51	8,496.05	8,492.69	18.81	18.50	110.13	0.17	201.01	348.27	311.33	36.94	9.429		
8,600.00	8,594.51	8,596.47	8,593.11	19.03	18.70	110.12	0.17	201.01	348.27	310.91	37.36	9.322		
8,700.00	8,694.51	8,696.47	8,693.11	19.25	18.91	110.12	0.17	201.01	348.27	310.47	37.80	9.214		
8,800.00	8,794.51	8,796.47	8,793.11	19.47	19.13	110.12	0.17	201.01	348.27	310.04	38.24	9.108		
8,900.00	8,894.51	8,896.47	8,893.11	19.69	19.34	110.12	0.17	201.01	348.27	309.60	38.68	9.004		
9,000.00	8,994.51	8,996.47	8,993.11	19.92	19.56	110.12	0.17	201.01	348.27	309.16	39.12	8.903		
9,052.54	9,047.05	9,049.01	9,045.65	20.03	19.67	110.12	0.17	201.01	348.27	308.92	39.35	8.851		
9,100.00	9,094.45	9,096.41	9,093.05	20.12	19.78	-69.83	0.17	201.01	347.59	308.04	39.54	8.790		
9,150.00	9,144.04	9,146.00	9,142.64	20.20	19.88	-71.00	0.17	201.01	345.46	305.73	39.73	8.695		
9,200.00	9,192.88	9,194.85	9,191.48	20.28	19.99	-72.96	0.17	201.01	342.11	302.20	39.91	8.572		
9,250.00	9,240.62	9,242.58	9,239.22	20.35	20.09	-75.67	0.17	201.01	337.93	297.85	40.08	8.431		
9,300.00	9,286.89	9,288.85	9,285.49	20.42	20.19	-79.03	0.17	201.01	333.47	293.22	40.25	8.285		
9,350.00	9,331.32	9,333.28	9,329.92	20.49	20.29	-82.91	0.17	201.01	329.46	289.05	40.41	8.152		
9,400.00	9,373.60	9,375.56	9,372.20	20.55	20.38	-87.11	0.17	201.01	326.75	286.17	40.57	8.053		
9,433.75	9,400.75	9,402.71	9,399.35	20.59	20.44	-90.00	0.17	201.01	326.13	285.45	40.68	8.017		
9,450.00	9,413.39	9,415.35	9,411.99	20.61	20.47	-91.38	0.17	201.01	326.29	285.56	40.73	8.010		
9,500.00	9,450.39	9,452.35	9,448.99	20.67	20.55	-95.45	0.17	201.01	329.06	288.16	40.90	8.046		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 96H - OH - Plan #2													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM, 10516-MWD+IFR1+MS													Offset Well Error:	0.00 usft
Reference	Offset		Semi Major Axis		Distance		Minimum		Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
9,550.00	9,484.32	9,486.28	9,482.92	20.74	20.62	-99.06	0.17	201.01	335.92	294.86	41.07	8.180		
9,600.00	9,514.93	9,516.89	9,513.53	20.81	20.69	-101.99	0.17	201.01	347.52	306.29	41.24	8.428		
9,650.00	9,541.97	9,543.93	9,540.57	20.91	20.74	-104.06	0.17	201.01	364.18	322.79	41.40	8.797		
9,700.00	9,565.25	9,567.21	9,563.85	21.04	20.79	-105.10	0.17	201.01	385.91	344.36	41.55	9.288		
9,750.00	9,584.58	9,586.54	9,583.18	21.21	20.84	-105.00	0.17	201.01	412.39	370.71	41.68	9.894		
9,800.00	9,599.82	9,603.29	9,599.93	21.40	20.87	-103.85	0.16	201.01	443.13	401.33	41.79	10.602		
9,850.00	9,610.86	9,632.08	9,628.70	21.61	20.93	-103.93	-0.70	201.02	477.24	435.35	41.89	11.392		
9,900.00	9,617.60	9,662.97	9,659.48	21.85	20.99	-103.66	-3.24	201.04	513.96	472.05	41.92	12.261		
9,950.00	9,620.00	9,698.41	9,694.57	22.11	21.06	-103.44	-8.19	201.07	552.81	510.97	41.85	13.211		
9,956.10	9,620.00	9,703.32	9,699.41	22.15	21.07	-103.46	-9.05	201.08	557.68	515.85	41.83	13.333		
10,000.00	9,619.72	9,759.23	9,753.84	22.40	21.17	-112.12	-21.70	201.17	592.98	551.49	41.49	14.292		
10,100.00	9,619.10	10,523.16	10,170.12	23.05	24.05	-149.44	-595.52	205.39	641.53	609.90	31.63	20.283		
10,200.00	9,618.48	10,623.15	10,170.56	23.79	28.16	-149.49	-695.51	206.12	642.45	610.23	32.23	19.934		
10,300.00	9,617.86	10,723.14	10,171.01	24.62	28.25	-149.53	-795.50	206.86	643.38	610.61	32.77	19.630		
10,400.00	9,617.24	10,823.14	10,171.46	25.52	28.34	-149.58	-895.49	207.59	644.31	610.90	33.41	19.288		
10,500.00	9,616.62	10,923.13	10,171.91	26.50	28.44	-149.63	-995.48	208.33	645.23	611.12	34.11	18.914		
10,600.00	9,616.00	11,023.13	10,172.36	27.54	28.53	-149.68	-1,095.47	209.06	646.16	611.26	34.90	18.516		
10,700.00	9,615.38	11,123.12	10,172.81	28.64	28.62	-149.72	-1,195.46	209.80	647.09	611.34	35.75	18.100		
10,800.00	9,614.76	11,223.12	10,173.26	29.78	28.72	-149.77	-1,295.45	210.53	648.02	611.35	36.67	17.672		
10,900.00	9,614.13	11,323.11	10,173.71	30.97	28.81	-149.82	-1,395.44	211.26	648.95	611.30	37.64	17.239		
11,000.00	9,613.51	11,423.10	10,174.16	32.20	28.91	-149.86	-1,495.43	212.00	649.88	611.20	38.68	16.803		
11,100.00	9,612.89	11,523.10	10,174.60	33.47	29.01	-149.91	-1,595.42	212.73	650.81	611.05	39.76	16.368		
11,200.00	9,612.27	11,623.09	10,175.05	34.76	29.11	-149.96	-1,695.41	213.47	651.74	610.84	40.89	15.938		
11,300.00	9,611.65	11,723.09	10,175.50	36.09	29.21	-150.00	-1,795.40	214.20	652.67	610.60	42.06	15.516		
11,400.00	9,611.03	11,823.08	10,175.95	37.44	29.32	-150.05	-1,895.39	214.94	653.60	610.32	43.28	15.102		
11,500.00	9,610.41	11,923.08	10,176.40	38.81	29.42	-150.10	-1,995.38	215.67	654.53	610.00	44.53	14.698		
11,600.00	9,609.79	12,023.07	10,176.85	40.20	29.53	-150.14	-2,095.38	216.41	655.46	609.64	45.82	14.306		
11,700.00	9,609.17	12,123.06	10,177.30	41.61	29.64	-150.19	-2,195.37	217.14	656.39	609.26	47.13	13.926		
11,800.00	9,608.54	12,223.06	10,177.75	43.03	29.75	-150.23	-2,295.36	217.88	657.33	608.85	48.48	13.559		
11,900.00	9,607.92	12,323.05	10,178.20	44.47	29.87	-150.28	-2,395.35	218.61	658.26	608.41	49.85	13.205		
12,000.00	9,607.30	12,423.05	10,178.64	45.93	29.98	-150.33	-2,495.34	219.35	659.19	607.94	51.25	12.863		
12,100.00	9,606.68	12,523.04	10,179.09	47.39	30.11	-150.37	-2,595.33	220.08	660.13	607.46	52.67	12.534		
12,200.00	9,606.06	12,623.04	10,179.54	48.87	30.24	-150.42	-2,695.32	220.82	661.06	606.95	54.11	12.218		
12,300.00	9,605.44	12,723.03	10,179.99	50.36	30.38	-150.46	-2,795.31	221.55	661.99	606.43	55.57	11.914		
12,400.00	9,604.82	12,823.02	10,180.44	51.85	30.55	-150.51	-2,895.30	222.29	662.93	605.89	57.04	11.622		
12,500.00	9,604.20	12,923.02	10,180.89	53.36	30.75	-150.55	-2,995.29	223.02	663.87	605.33	58.54	11.341		
12,600.00	9,603.58	13,023.01	10,181.34	54.87	31.01	-150.60	-3,095.28	223.76	664.80	604.76	60.04	11.072		
12,700.00	9,602.95	13,123.01	10,181.79	56.39	31.35	-150.64	-3,195.27	224.49	665.74	604.17	61.56	10.814		
12,800.00	9,602.33	13,223.00	10,182.23	57.91	31.75	-150.68	-3,295.26	225.22	666.67	603.58	63.10	10.566		
12,900.00	9,601.71	13,323.00	10,182.68	59.44	32.20	-150.73	-3,395.25	225.96	667.61	602.97	64.64	10.328		
13,000.00	9,601.09	13,422.99	10,183.13	60.98	32.67	-150.77	-3,495.24	226.69	668.55	602.35	66.20	10.099		
13,100.00	9,600.47	13,522.98	10,183.58	62.52	33.18	-150.82	-3,595.23	227.43	669.49	601.72	67.77	9.879		
13,200.00	9,599.85	13,622.98	10,184.03	64.07	33.69	-150.86	-3,695.22	228.16	670.43	601.08	69.34	9.669		
13,300.00	9,599.23	13,722.97	10,184.48	65.62	34.22	-150.91	-3,795.21	228.90	671.36	600.44	70.93	9.466		
13,400.00	9,598.61	13,822.97	10,184.93	67.18	34.76	-150.95	-3,895.21	229.63	672.30	599.79	72.52	9.271		
13,500.00	9,597.98	13,922.96	10,185.38	68.74	35.31	-150.99	-3,995.20	230.37	673.24	599.13	74.12	9.084		
13,600.00	9,597.36	14,022.96	10,185.83	70.30	35.87	-151.04	-4,095.19	231.10	674.18	598.46	75.72	8.903		
13,700.00	9,596.74	14,122.95	10,186.27	71.87	36.44	-151.08	-4,195.18	231.84	675.12	597.79	77.33	8.730		
13,800.00	9,596.12	14,222.94	10,186.72	73.44	37.02	-151.12	-4,295.17	232.57	676.06	597.11	78.95	8.563		
13,900.00	9,595.50	14,322.94	10,187.17	75.01	37.60	-151.17	-4,395.16	233.31	677.00	596.43	80.57	8.402		
14,000.00	9,594.88	14,422.93	10,187.62	76.59	38.20	-151.21	-4,495.15	234.04	677.95	595.74	82.20	8.247		
14,100.00	9,594.26	14,522.93	10,188.07	78.16	38.79	-151.25	-4,595.14	234.78	678.89	595.05	83.84	8.098		

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

LEAM Drilling Systems LLC

Anticollision Report

Company:	Devon Energy	Local Co-ordinate Reference:	Well Thistle Unit 168H
Project:	Lea County, NM (NAD-83)	TVD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Reference Site:	Thistle Unit Sec 22-27 Trac Pad	MD Reference:	3709.0' GE + 23.5' KB @ 3732.50usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design												Offset Site Error:	0.00 usft
Thistle Unit Sec 22-27 Trac Pad - Thistle Unit 96H - OH - Plan #2												Offset Well Error:	0.00 usft
Survey Program: 0-LEAM MWD+HDGM, 10516-MWD+HFR1+MS													
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (")	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.00	9,593.64	14,622.92	10,188.52	79.74	39.40	-151.29	-4,695.13	235.51	679.83	594.36	85.47	7.954	
14,300.00	9,593.02	14,722.92	10,188.97	81.33	40.01	-151.34	-4,795.12	236.25	680.77	593.66	87.11	7.815	
14,400.00	9,592.39	14,822.91	10,189.42	82.91	40.62	-151.38	-4,895.11	236.98	681.72	592.96	88.76	7.681	
14,500.00	9,591.77	14,922.90	10,189.86	84.50	41.24	-151.42	-4,995.10	237.72	682.66	592.25	90.41	7.551	
14,600.00	9,591.15	15,022.90	10,190.31	86.09	41.86	-151.46	-5,095.09	238.45	683.60	591.54	92.06	7.426	
14,700.00	9,590.53	15,122.89	10,190.76	87.68	42.49	-151.51	-5,195.08	239.18	684.55	590.83	93.71	7.305	
14,800.00	9,589.91	15,222.89	10,191.21	89.27	43.13	-151.55	-5,295.07	239.92	685.49	590.12	95.37	7.188	
14,900.00	9,589.29	15,322.88	10,191.66	90.87	43.77	-151.59	-5,395.06	240.65	686.44	589.41	97.03	7.075	
15,000.00	9,588.67	15,422.88	10,192.11	92.46	44.41	-151.63	-5,495.05	241.39	687.38	588.69	98.69	6.965	
15,100.00	9,588.05	15,522.87	10,192.56	94.06	45.06	-151.67	-5,595.05	242.12	688.33	587.97	100.35	6.859	
15,200.00	9,587.43	15,622.86	10,193.01	95.66	45.71	-151.72	-5,695.04	242.86	689.27	587.25	102.02	6.756	
15,300.00	9,586.80	15,722.86	10,193.46	97.26	46.36	-151.76	-5,795.03	243.59	690.22	586.53	103.69	6.657	
15,400.00	9,586.18	15,822.85	10,193.90	98.86	47.02	-151.80	-5,895.02	244.33	691.17	585.81	105.36	6.560	
15,500.00	9,585.56	15,922.85	10,194.35	100.46	47.68	-151.84	-5,995.01	245.06	692.11	585.08	107.03	6.467	
15,600.00	9,584.94	16,022.84	10,194.80	102.07	48.34	-151.88	-6,095.00	245.80	693.06	584.36	108.70	6.376	
15,700.00	9,584.32	16,122.84	10,195.25	103.67	49.01	-151.92	-6,194.99	246.53	694.01	583.63	110.38	6.288	
15,800.00	9,583.70	16,222.83	10,195.70	105.28	49.68	-151.96	-6,294.98	247.27	694.96	582.90	112.05	6.202	
15,900.00	9,583.08	16,322.82	10,196.15	106.88	50.35	-152.00	-6,394.97	248.00	695.90	582.18	113.73	6.119	
16,000.00	9,582.46	16,422.82	10,196.60	108.49	51.02	-152.04	-6,494.96	248.74	696.85	581.45	115.40	6.038	
16,100.00	9,581.84	16,522.81	10,197.05	110.10	51.70	-152.09	-6,594.95	249.47	697.80	580.72	117.08	5.960	
16,200.00	9,581.21	16,622.81	10,197.50	111.71	52.38	-152.13	-6,694.94	250.21	698.75	579.99	118.76	5.884	
16,300.00	9,580.59	16,722.80	10,197.94	113.32	53.06	-152.17	-6,794.93	250.94	699.70	579.26	120.44	5.809	
16,400.00	9,579.97	16,822.80	10,198.39	114.93	53.75	-152.21	-6,894.92	251.68	700.65	578.53	122.12	5.737	
16,500.00	9,579.35	16,922.79	10,198.84	116.54	54.43	-152.25	-6,994.91	252.41	701.60	577.80	123.80	5.667	
16,600.00	9,578.73	17,022.78	10,199.29	118.16	55.12	-152.29	-7,094.90	253.14	702.55	577.07	125.48	5.599	
16,700.00	9,578.11	17,122.78	10,199.74	119.77	55.81	-152.33	-7,194.89	253.88	703.50	576.34	127.17	5.532	
16,800.00	9,577.49	17,222.77	10,200.19	121.38	56.50	-152.37	-7,294.88	254.61	704.46	575.61	128.85	5.467	
16,900.00	9,576.87	17,322.77	10,200.64	123.00	57.20	-152.41	-7,394.88	255.35	705.41	574.87	130.53	5.404	
17,000.00	9,576.25	17,422.76	10,201.09	124.61	57.89	-152.45	-7,494.87	256.08	706.36	574.14	132.22	5.342	
17,100.00	9,575.62	17,522.76	10,201.53	126.23	58.59	-152.49	-7,594.86	256.82	707.31	573.41	133.90	5.282	
17,200.48	9,575.00	17,623.23	10,201.99	127.85	59.30	-152.52	-7,695.33	257.56	708.27	572.68	135.59	5.224	

LEAM Drilling Systems LLC

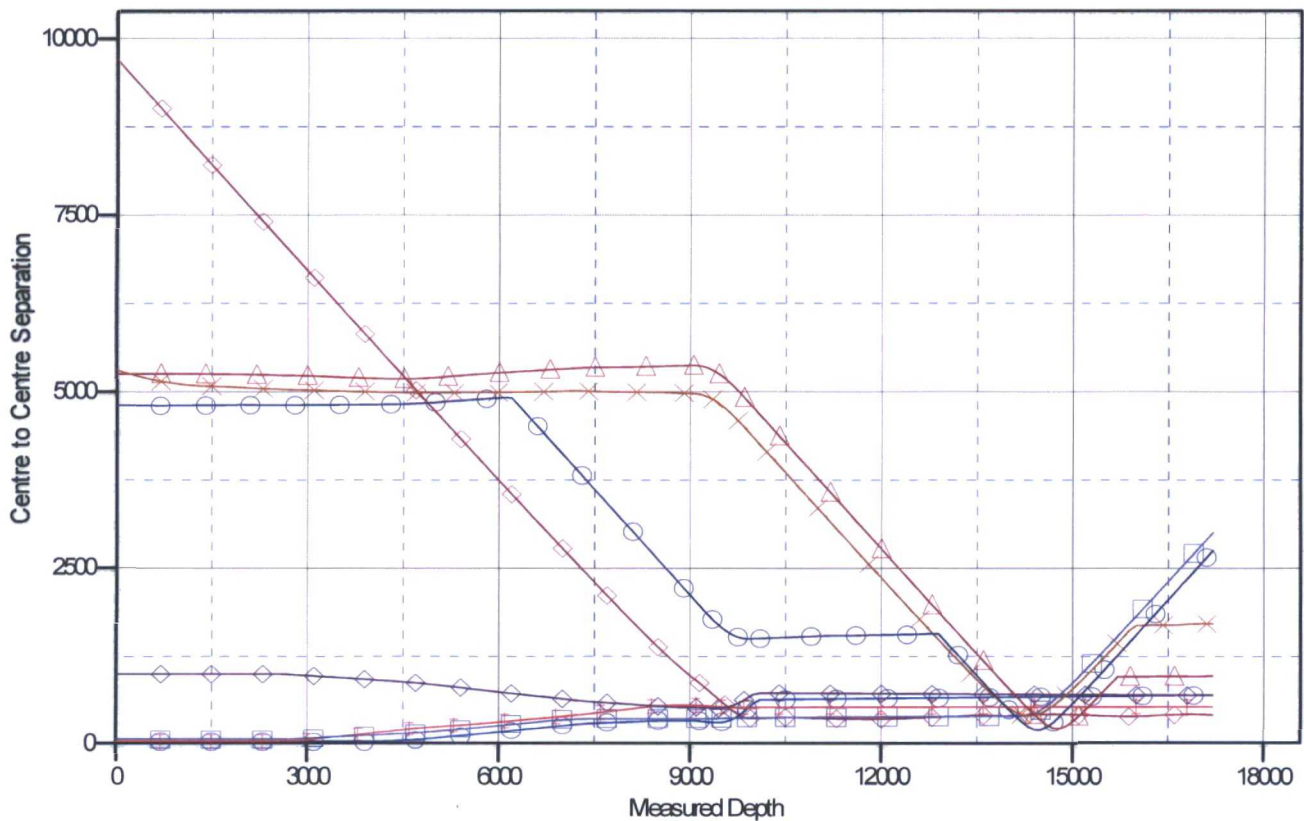
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Reference Well:	Thistle Unit 168H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Multi User Db
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3709.0' GE + 23.5' KB @ 3732.50usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.0000 W

Coordinates are relative to: Thistle Unit 168H
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.42°

Ladder Plot



LEGEND

- 102H, OH, OH V0
- Thistle Unit 128H, OH, Plan #2 V0
- 58H, OH, OH V0
- Thistle Unit 96H, OH, Plan #2 V0
- Thistle Unit 111H, OH, Plan #2 V0
- 64H, OH, OH V0
- Thistle Unit 126H, OH, Plan #2 V0
- 71H, OH, OH V0

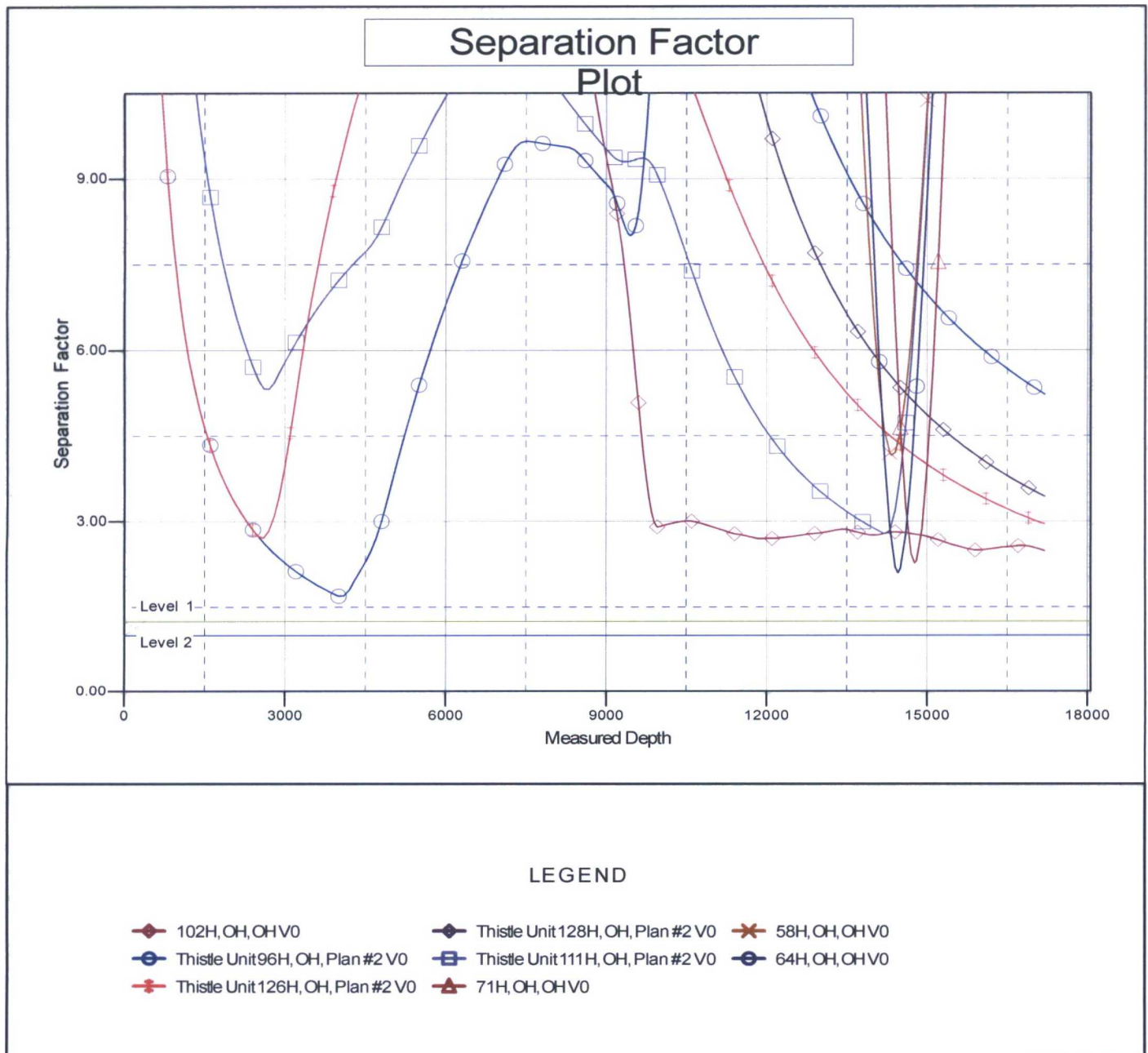
LEAM Drilling Systems LLC

Anticollision Report

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