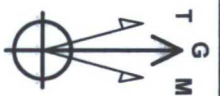




Project: Lea County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 319H (SIMOPS)
Wellbore: OH
Design: Plan #1



Azimuths to Grid North
True North: -0.33°
Magnetic North: 6.95°
Magnetic Field
Strength: 48101.3ent
Dip Angle: 60.03°
Date: 12/16/2015
Model: BGM2015



Drilling Systems LLC

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
SHL (CDU 319H)	0.00	0.00	0.00	415052.38	734159.56
PBHL (CDU 319H)	8950.00	4238.06	-257.11	419290.44	733902.45

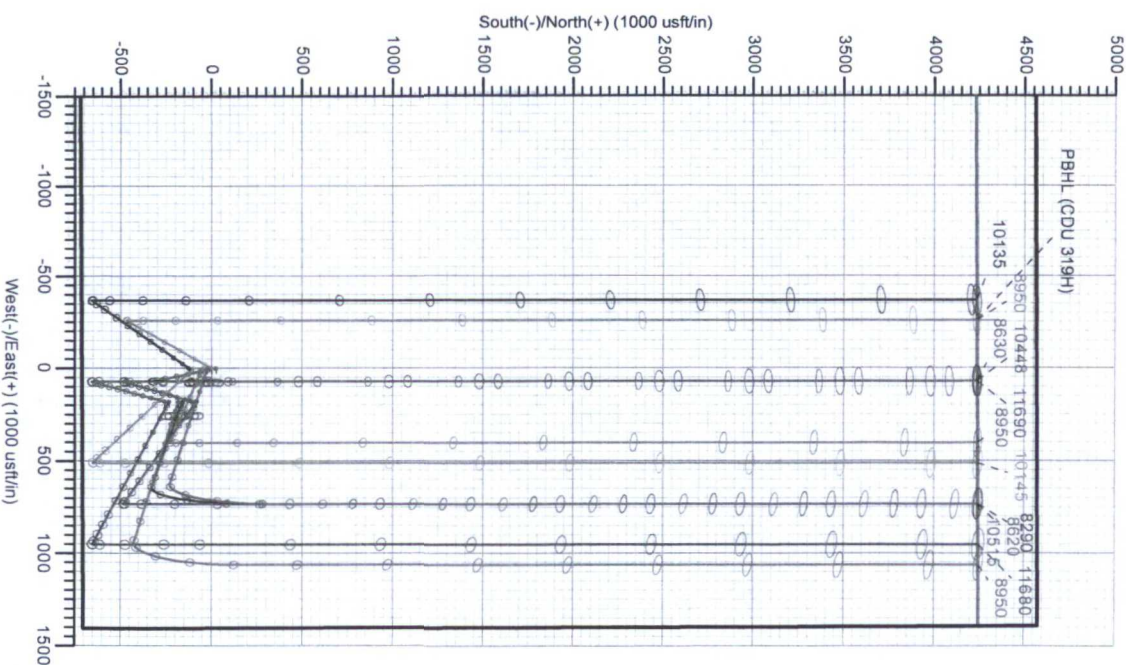
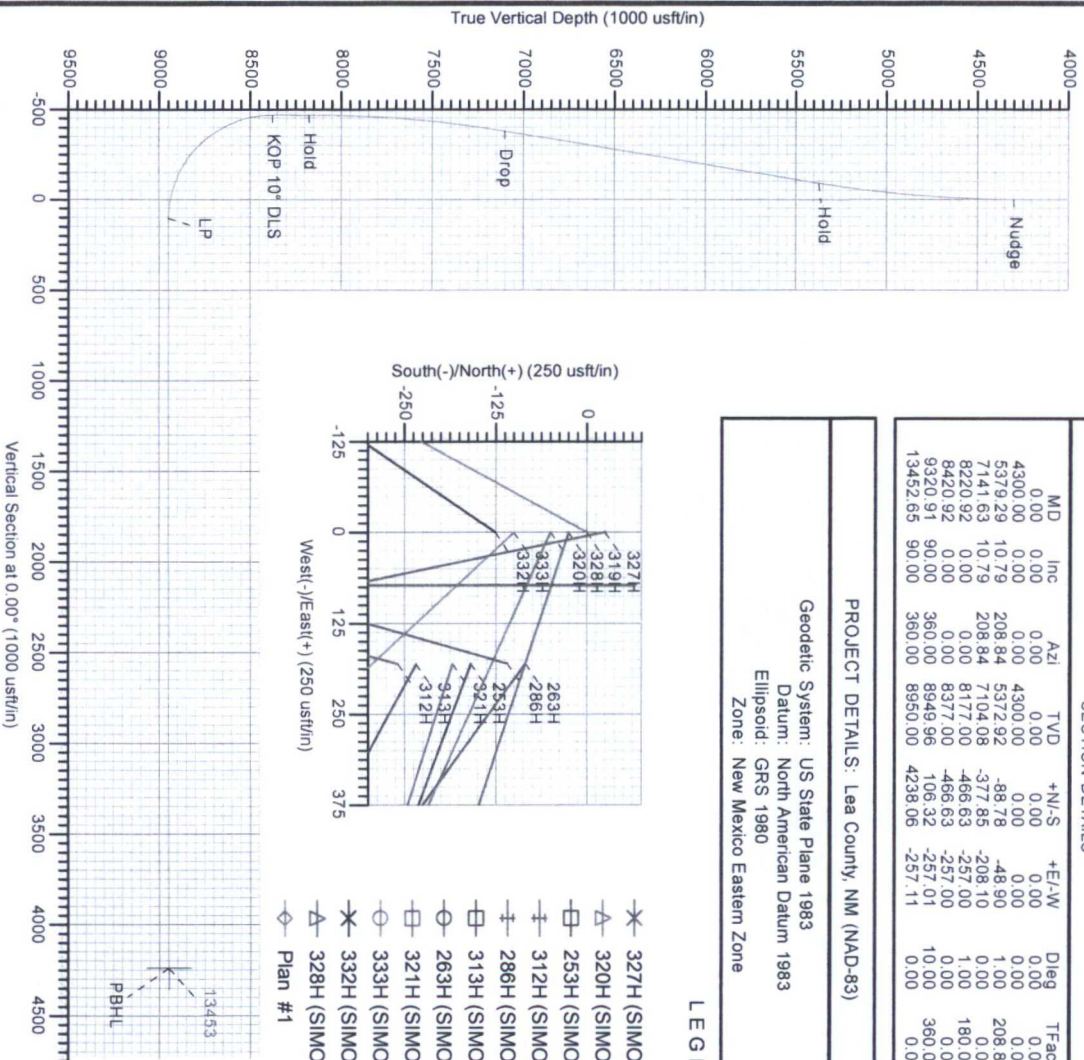
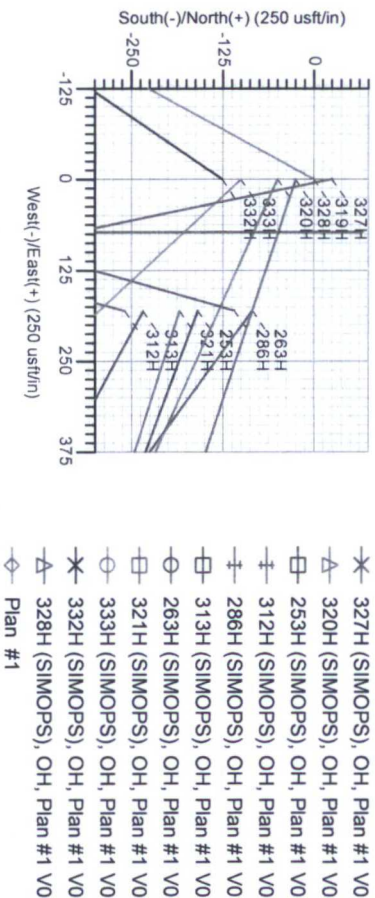
SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dieg	TFace	Vsect
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4300.00	0.00	0.00	4300.00	0.00	0.00	0.00	0.00	0.00
5379.29	10.79	208.84	5372.92	-88.78	-208.10	1.00	208.84	-88.78
7141.63	0.00	0.00	7104.08	-377.85	-208.10	0.00	0.00	-377.85
8220.92	0.00	0.00	8177.00	-466.63	-257.00	1.00	180.00	-466.63
8420.92	0.00	0.00	8377.00	-466.63	-257.00	0.00	0.00	-466.63
9320.91	90.00	360.00	8949.96	106.32	-257.01	10.00	360.00	106.32
13452.65	90.00	360.00	8950.00	4238.06	-257.11	0.00	0.00	4238.06

PROJECT DETAILS: Lea County, NM (NAD-83)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

LEGEND





DEVON ENERGY

Lea County, NM (NAD-83)

Cotton Draw Unit

319H (SIMOPS)

OH

Plan: Plan #1

Standard Planning Report

17 December, 2015





LEAM Drilling Systems LLC
Planning Report



Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 319H (SIMOPS)
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 319H (SIMOPS)
TVD Reference: 3431.4' GE + 30' KB @ 3461.40usft
MD Reference: 3431.4' GE + 30' KB @ 3461.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project: Lea County, NM (NAD-83)
Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone
System Datum: Mean Sea Level

Site: Cotton Draw Unit

Site Position: Northing: 414,142.25 usft Latitude: 32° 8' 13.293 N
From: Map Easting: 733,967.43 usft Longitude: 103° 42' 39.602 W
Position Uncertainty: 0.00 usft Slot Radius: 13-3/16 " Grid Convergence: 0.33 °

Well: 319H (SIMOPS)

Well Position: +N/-S 910.13 usft Northing: 415,052.38 usft Latitude: 32° 8' 22.289 N
+E/-W 192.13 usft Easting: 734,159.56 usft Longitude: 103° 42' 37.306 W
Position Uncertainty: 0.00 usft Wellhead Elevation: 3,461.40 usft Ground Level: 3,431.40 usft

Wellbore: OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2015	12/16/2015	7.29	60.03	48,101

Design: Plan #1

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	0.00

Plan Sections

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00	
5,379.29	10.79	208.84	5,372.92	-88.78	-48.90	1.00	1.00	0.00	208.84	
7,141.63	10.79	208.84	7,104.08	-377.85	-208.10	0.00	0.00	0.00	0.00	
8,220.92	0.00	0.00	8,177.00	-466.63	-257.00	1.00	-1.00	0.00	180.00	
8,420.92	0.00	0.00	8,377.00	-466.63	-257.00	0.00	0.00	0.00	0.00	
9,320.91	90.00	360.00	8,949.96	106.32	-257.01	10.00	10.00	0.00	360.00	
13,452.65	90.00	360.00	8,950.00	4,238.06	-257.11	0.00	0.00	0.00	0.00	PBHL (CDU 319H)



LEAM Drilling Systems LLC
Planning Report



Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 319H (SIMOPS)
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 319H (SIMOPS)
TVD Reference: 3431.4' GE + 30' KB @ 3461.40usft
MD Reference: 3431.4' GE + 30' KB @ 3461.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
SHL (CDU 319H)									
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
Nudge									
4,400.00	1.00	208.84	4,400.00	-0.76	-0.42	-0.76	1.00	1.00	0.00
4,500.00	2.00	208.84	4,499.96	-3.06	-1.68	-3.06	1.00	1.00	0.00
4,600.00	3.00	208.84	4,599.86	-6.88	-3.79	-6.88	1.00	1.00	0.00
4,700.00	4.00	208.84	4,699.68	-12.23	-6.73	-12.23	1.00	1.00	0.00
4,800.00	5.00	208.84	4,799.37	-19.10	-10.52	-19.10	1.00	1.00	0.00
4,900.00	6.00	208.84	4,898.90	-27.49	-15.14	-27.49	1.00	1.00	0.00
5,000.00	7.00	208.84	4,998.26	-37.41	-20.60	-37.41	1.00	1.00	0.00
5,100.00	8.00	208.84	5,097.40	-48.84	-26.90	-48.84	1.00	1.00	0.00



LEAM Drilling Systems LLC
Planning Report



Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 319H (SIMOPS)
Wellbore: OH
Design: Plan #1

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MD Reference: 3431.4' GE + 30' KB @ 3461.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,200.00	9.00	208.84	5,196.30	-61.79	-34.03	-61.79	1.00	1.00	0.00
5,300.00	10.00	208.84	5,294.93	-76.25	-41.99	-76.25	1.00	1.00	0.00
5,379.29	10.79	208.84	5,372.92	-88.78	-48.90	-88.78	1.00	1.00	0.00
Hold									
5,400.00	10.79	208.84	5,393.26	-92.18	-50.77	-92.18	0.00	0.00	0.00
5,500.00	10.79	208.84	5,491.49	-108.58	-59.80	-108.58	0.00	0.00	0.00
5,600.00	10.79	208.84	5,589.72	-124.98	-68.83	-124.98	0.00	0.00	0.00
5,700.00	10.79	208.84	5,687.96	-141.38	-77.87	-141.38	0.00	0.00	0.00
5,800.00	10.79	208.84	5,786.19	-157.79	-86.90	-157.79	0.00	0.00	0.00
5,900.00	10.79	208.84	5,884.42	-174.19	-95.94	-174.19	0.00	0.00	0.00
6,000.00	10.79	208.84	5,982.65	-190.59	-104.97	-190.59	0.00	0.00	0.00
6,100.00	10.79	208.84	6,080.88	-207.00	-114.00	-207.00	0.00	0.00	0.00
6,200.00	10.79	208.84	6,179.11	-223.40	-123.04	-223.40	0.00	0.00	0.00
6,300.00	10.79	208.84	6,277.34	-239.80	-132.07	-239.80	0.00	0.00	0.00
6,400.00	10.79	208.84	6,375.57	-256.20	-141.11	-256.20	0.00	0.00	0.00
6,500.00	10.79	208.84	6,473.80	-272.61	-150.14	-272.61	0.00	0.00	0.00
6,600.00	10.79	208.84	6,572.03	-289.01	-159.17	-289.01	0.00	0.00	0.00
6,700.00	10.79	208.84	6,670.27	-305.41	-168.21	-305.41	0.00	0.00	0.00
6,800.00	10.79	208.84	6,768.50	-321.81	-177.24	-321.81	0.00	0.00	0.00
6,900.00	10.79	208.84	6,866.73	-338.22	-186.28	-338.22	0.00	0.00	0.00
7,000.00	10.79	208.84	6,964.96	-354.62	-195.31	-354.62	0.00	0.00	0.00
7,100.00	10.79	208.84	7,063.19	-371.02	-204.34	-371.02	0.00	0.00	0.00
7,141.63	10.79	208.84	7,104.08	-377.85	-208.10	-377.85	0.00	0.00	0.00
Drop									
7,200.00	10.21	208.84	7,161.48	-387.17	-213.24	-387.17	1.00	-1.00	0.00
7,300.00	9.21	208.84	7,260.04	-401.94	-221.37	-401.94	1.00	-1.00	0.00
7,400.00	8.21	208.84	7,358.89	-415.20	-228.68	-415.20	1.00	-1.00	0.00
7,500.00	7.21	208.84	7,457.98	-426.95	-235.15	-426.95	1.00	-1.00	0.00
7,600.00	6.21	208.84	7,557.30	-437.19	-240.78	-437.19	1.00	-1.00	0.00
7,700.00	5.21	208.84	7,656.80	-445.90	-245.58	-445.90	1.00	-1.00	0.00
7,800.00	4.21	208.84	7,756.46	-453.09	-249.54	-453.09	1.00	-1.00	0.00
7,900.00	3.21	208.84	7,856.25	-458.76	-252.67	-458.76	1.00	-1.00	0.00
8,000.00	2.21	208.84	7,956.14	-462.90	-254.95	-462.90	1.00	-1.00	0.00
8,100.00	1.21	208.84	8,056.09	-465.51	-256.38	-465.51	1.00	-1.00	0.00
8,200.00	0.21	208.84	8,156.08	-466.60	-256.98	-466.60	1.00	-1.00	0.00
8,220.92	0.00	0.00	8,177.00	-466.63	-257.00	-466.63	1.00	-1.00	0.00
Hold									
8,300.00	0.00	0.00	8,256.08	-466.63	-257.00	-466.63	0.00	0.00	0.00
8,400.00	0.00	0.00	8,356.08	-466.63	-257.00	-466.63	0.00	0.00	0.00
8,420.92	0.00	0.00	8,377.00	-466.63	-257.00	-466.63	0.00	0.00	0.00
KOP 10° DLS									
8,450.00	2.91	360.00	8,406.07	-465.89	-257.00	-465.89	10.00	10.00	0.00
8,500.00	7.91	360.00	8,455.83	-461.18	-257.00	-461.18	10.00	10.00	0.00
8,550.00	12.91	360.00	8,504.99	-452.15	-257.00	-452.15	10.00	10.00	0.00
8,600.00	17.91	360.00	8,553.18	-438.87	-257.00	-438.87	10.00	10.00	0.00
8,650.00	22.91	360.00	8,600.03	-421.44	-257.00	-421.44	10.00	10.00	0.00
8,700.00	27.91	360.00	8,645.18	-399.99	-257.00	-399.99	10.00	10.00	0.00
8,750.00	32.91	360.00	8,688.28	-374.69	-257.00	-374.69	10.00	10.00	0.00
8,800.00	37.91	360.00	8,729.02	-345.73	-257.00	-345.73	10.00	10.00	0.00
8,850.00	42.91	360.00	8,767.08	-313.33	-257.00	-313.33	10.00	10.00	0.00
8,900.00	47.91	360.00	8,802.18	-277.74	-257.00	-277.74	10.00	10.00	0.00
8,950.00	52.91	360.00	8,834.03	-239.22	-257.01	-239.22	10.00	10.00	0.00
9,000.00	57.91	360.00	8,862.41	-198.07	-257.01	-198.07	10.00	10.00	0.00



LEAM Drilling Systems LLC

Planning Report



Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 319H (SIMOPS)
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well 319H (SIMOPS)
3431.4' GE + 30' KB @ 3461.40usft
3431.4' GE + 30' KB @ 3461.40usft
Grid
Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,050.00	62.91	360.00	8,887.09	-154.61	-257.01	-154.61	10.00	10.00	0.00
9,100.00	67.91	360.00	8,907.89	-109.16	-257.01	-109.16	10.00	10.00	0.00
9,150.00	72.91	360.00	8,924.65	-62.07	-257.01	-62.07	10.00	10.00	0.00
9,200.00	77.91	360.00	8,937.25	-13.69	-257.01	-13.69	10.00	10.00	0.00
9,250.00	82.91	360.00	8,945.57	35.59	-257.01	35.59	10.00	10.00	0.00
9,300.00	87.91	360.00	8,949.58	85.41	-257.01	85.41	10.00	10.00	0.00
9,320.91	90.00	360.00	8,949.96	106.32	-257.01	106.32	10.00	10.00	0.00
LP									
9,400.00	90.00	360.00	8,949.96	185.41	-257.01	185.41	0.00	0.00	0.00
9,500.00	90.00	360.00	8,949.96	285.41	-257.02	285.41	0.00	0.00	0.00
9,600.00	90.00	360.00	8,949.96	385.41	-257.02	385.41	0.00	0.00	0.00
9,700.00	90.00	360.00	8,949.96	485.41	-257.02	485.41	0.00	0.00	0.00
9,800.00	90.00	360.00	8,949.96	585.41	-257.02	585.41	0.00	0.00	0.00
9,900.00	90.00	360.00	8,949.96	685.41	-257.03	685.41	0.00	0.00	0.00
10,000.00	90.00	360.00	8,949.96	785.41	-257.03	785.41	0.00	0.00	0.00
10,100.00	90.00	360.00	8,949.97	885.41	-257.03	885.41	0.00	0.00	0.00
10,200.00	90.00	360.00	8,949.97	985.41	-257.03	985.41	0.00	0.00	0.00
10,300.00	90.00	360.00	8,949.97	1,085.41	-257.04	1,085.41	0.00	0.00	0.00
10,400.00	90.00	360.00	8,949.97	1,185.41	-257.04	1,185.41	0.00	0.00	0.00
10,500.00	90.00	360.00	8,949.97	1,285.41	-257.04	1,285.41	0.00	0.00	0.00
10,600.00	90.00	360.00	8,949.97	1,385.41	-257.04	1,385.41	0.00	0.00	0.00
10,700.00	90.00	360.00	8,949.97	1,485.41	-257.04	1,485.41	0.00	0.00	0.00
10,800.00	90.00	360.00	8,949.97	1,585.41	-257.05	1,585.41	0.00	0.00	0.00
10,900.00	90.00	360.00	8,949.97	1,685.41	-257.05	1,685.41	0.00	0.00	0.00
11,000.00	90.00	360.00	8,949.98	1,785.41	-257.05	1,785.41	0.00	0.00	0.00
11,100.00	90.00	360.00	8,949.98	1,885.41	-257.05	1,885.41	0.00	0.00	0.00
11,200.00	90.00	360.00	8,949.98	1,985.41	-257.06	1,985.41	0.00	0.00	0.00
11,300.00	90.00	360.00	8,949.98	2,085.41	-257.06	2,085.41	0.00	0.00	0.00
11,400.00	90.00	360.00	8,949.98	2,185.41	-257.06	2,185.41	0.00	0.00	0.00
11,500.00	90.00	360.00	8,949.98	2,285.41	-257.06	2,285.41	0.00	0.00	0.00
11,600.00	90.00	360.00	8,949.98	2,385.41	-257.07	2,385.41	0.00	0.00	0.00
11,700.00	90.00	360.00	8,949.98	2,485.41	-257.07	2,485.41	0.00	0.00	0.00
11,800.00	90.00	360.00	8,949.98	2,585.41	-257.07	2,585.41	0.00	0.00	0.00
11,900.00	90.00	360.00	8,949.98	2,685.41	-257.07	2,685.41	0.00	0.00	0.00
12,000.00	90.00	360.00	8,949.99	2,785.41	-257.07	2,785.41	0.00	0.00	0.00
12,100.00	90.00	360.00	8,949.99	2,885.41	-257.08	2,885.41	0.00	0.00	0.00
12,200.00	90.00	360.00	8,949.99	2,985.41	-257.08	2,985.41	0.00	0.00	0.00
12,300.00	90.00	360.00	8,949.99	3,085.41	-257.08	3,085.41	0.00	0.00	0.00
12,400.00	90.00	360.00	8,949.99	3,185.41	-257.08	3,185.41	0.00	0.00	0.00
12,500.00	90.00	360.00	8,949.99	3,285.41	-257.09	3,285.41	0.00	0.00	0.00
12,600.00	90.00	360.00	8,949.99	3,385.41	-257.09	3,385.41	0.00	0.00	0.00
12,700.00	90.00	360.00	8,949.99	3,485.41	-257.09	3,485.41	0.00	0.00	0.00
12,800.00	90.00	360.00	8,949.99	3,585.41	-257.09	3,585.41	0.00	0.00	0.00
12,900.00	90.00	360.00	8,949.99	3,685.41	-257.10	3,685.41	0.00	0.00	0.00
13,000.00	90.00	360.00	8,950.00	3,785.41	-257.10	3,785.41	0.00	0.00	0.00
13,100.00	90.00	360.00	8,950.00	3,885.41	-257.10	3,885.41	0.00	0.00	0.00
13,200.00	90.00	360.00	8,950.00	3,985.41	-257.10	3,985.41	0.00	0.00	0.00
13,300.00	90.00	360.00	8,950.00	4,085.41	-257.10	4,085.41	0.00	0.00	0.00
13,400.00	90.00	360.00	8,950.00	4,185.41	-257.11	4,185.41	0.00	0.00	0.00
13,452.65	90.00	360.00	8,950.00	4,238.06	-257.11	4,238.06	0.00	0.00	0.00

TD - PBHL (CDU 319H)



LEAM Drilling Systems LLC
Planning Report



Database: EDM 5000.1 Single User Db
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Site: Cotton Draw Unit
Well: 319H (SIMOPS)
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well 319H (SIMOPS)
TVD Reference: 3431.4' GE + 30' KB @ 3461.40usft
MD Reference: 3431.4' GE + 30' KB @ 3461.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Design Targets

Target Name

- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
SHL (CDU 319H)	0.00	0.00	0.00	0.00	0.00	415,052.38	734,159.56	32° 8' 22.289 N	103° 42' 37.306 W
- plan hits target center									
- Point									
PBHL (CDU 319H)	0.00	0.00	8,950.00	4,238.06	-257.11	419,290.44	733,902.45	32° 9' 4.242 N	103° 42' 40.012 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
4,300.00	4,300.00	0.00	0.00	Nudge
5,379.29	5,372.92	-88.78	-48.90	Hold
7,141.63	7,104.08	-377.85	-208.10	Drop
8,220.92	8,177.00	-466.63	-257.00	Hold
8,420.92	8,377.00	-466.63	-257.00	KOP 10° DLS
9,320.91	8,949.96	106.32	-257.01	LP
13,452.65	8,950.00	4,238.06	-257.11	TD



DEVON ENERGY

Lea County, NM (NAD-83)
Cotton Draw Unit
319H (SIMOPS)

OH
Plan #1

Anticollision Report

17 December, 2015





LEAM Drilling Systems LLC
Anticollision Report



Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 9,999.98 usft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program		Date	12/17/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	13,452.65	Plan #1 (OH)	LEAM MWD-ADJ	MWD - Standard	

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
Cotton Draw Unit						
253H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	240.63	221.59	12.640	CC, ES
253H (SIMOPS) - OH - Plan #1	13,452.65	12,656.83	1,189.82	1,047.87	8.382	SF
263H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	198.97	179.93	10.451	CC
263H (SIMOPS) - OH - Plan #1	4,500.00	4,499.96	199.23	179.38	10.034	ES
263H (SIMOPS) - OH - Plan #1	5,000.00	4,998.26	206.28	184.42	9.436	SF
286H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	210.82	191.78	11.074	CC
286H (SIMOPS) - OH - Plan #1	4,400.00	4,399.05	211.01	191.58	10.861	ES
286H (SIMOPS) - OH - Plan #1	8,650.00	8,620.38	340.79	302.10	8.808	SF
312H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	315.92	296.89	16.595	CC
312H (SIMOPS) - OH - Plan #1	6,000.00	5,976.90	318.60	292.65	12.278	ES
312H (SIMOPS) - OH - Plan #1	8,450.00	8,418.26	371.17	332.60	9.623	SF
313H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	295.74	276.70	15.534	CC, ES
313H (SIMOPS) - OH - Plan #1	4,800.00	4,775.74	307.34	286.51	14.754	SF
320H (SIMOPS) - OH - Plan #1	4,652.66	4,650.68	47.41	27.08	2.332	CC, ES
320H (SIMOPS) - OH - Plan #1	4,700.00	4,697.53	47.63	27.13	2.323	SF
321H (SIMOPS) - OH - Plan #1	4,300.00	4,300.00	257.88	238.85	13.546	CC, ES
321H (SIMOPS) - OH - Plan #1	13,452.65	13,465.96	1,319.98	1,155.35	8.018	SF
327H (SIMOPS) - OH - Plan #1	4,555.36	4,556.39	24.69	4.74	1.238	Level 2, CC
327H (SIMOPS) - OH - Plan #1	4,600.00	4,601.19	24.73	4.64	1.231	Level 2, ES, SF
328H (SIMOPS) - OH - Plan #1	4,500.89	4,500.31	24.19	4.39	1.222	Level 2, CC, ES, SF
332H (SIMOPS) - OH - Plan #1	7,392.82	7,375.60	42.71	10.50	1.326	Level 3, CC
332H (SIMOPS) - OH - Plan #1	7,400.00	7,382.78	42.71	10.47	1.325	Level 3, ES, SF
333H (SIMOPS) - OH - Plan #1	4,657.94	4,652.95	99.16	78.85	4.883	CC
333H (SIMOPS) - OH - Plan #1	4,700.00	4,694.29	99.21	78.76	4.851	ES
333H (SIMOPS) - OH - Plan #1	4,800.00	4,792.41	99.92	79.11	4.803	SF

Offset Design													Cotton Draw Unit - 253H (SIMOPS) - OH - Plan #1		Offset Site Error:		0.00 usft
Survey Program:													0-LEAM MWD-ADJ		Offset Well Error:		0.00 usft
Reference		Offset		Semi Major Axis		Distance											
Measured	Vertical	Measured	Vertical	Reference	Offset	Highside	Offset Wellbore Centre		Between	Between	Minimum	Separation	Warning				
Depth	Depth	Depth	Depth	Reference	Offset	Toolface	+N/-S	+E/-W	Centres	Ellipses	Separation	Factor					
(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)						
0.00	0.00	0.00	0.00	0.00	0.00	131.37	-159.05	180.57	240.63								
100.00	100.00	100.00	100.00	0.08	0.08	131.37	-159.05	180.57	240.63	240.47	0.16	1,529.378					
200.00	200.00	200.00	200.00	0.30	0.30	131.37	-159.05	180.57	240.63	240.02	0.61	396.506					

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 253H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)						
300.00	300.00	300.00	300.00	0.53	0.53	131.37	-159.05	180.57	240.63	239.57	1.06	227.780		
400.00	400.00	400.00	400.00	0.75	0.75	131.37	-159.05	180.57	240.63	239.12	1.51	159.786		
500.00	500.00	500.00	500.00	0.98	0.98	131.37	-159.05	180.57	240.63	238.67	1.96	123.054		
600.00	600.00	600.00	600.00	1.20	1.20	131.37	-159.05	180.57	240.63	238.22	2.40	100.053		
700.00	700.00	700.00	700.00	1.43	1.43	131.37	-159.05	180.57	240.63	237.77	2.85	84.297		
800.00	800.00	800.00	800.00	1.65	1.65	131.37	-159.05	180.57	240.63	237.32	3.30	72.828		
900.00	900.00	900.00	900.00	1.88	1.88	131.37	-159.05	180.57	240.63	236.87	3.75	64.106		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	131.37	-159.05	180.57	240.63	236.42	4.20	57.250		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	131.37	-159.05	180.57	240.63	235.97	4.65	51.718		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	131.37	-159.05	180.57	240.63	235.52	5.10	47.162		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	131.37	-159.05	180.57	240.63	235.08	5.55	43.343		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	131.37	-159.05	180.57	240.63	234.63	6.00	40.096		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	131.37	-159.05	180.57	240.63	234.18	6.45	37.302		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	131.37	-159.05	180.57	240.63	233.73	6.90	34.872		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	131.37	-159.05	180.57	240.63	233.28	7.35	32.739		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	131.37	-159.05	180.57	240.63	232.83	7.80	30.852		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	131.37	-159.05	180.57	240.63	232.38	8.25	29.171		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	131.37	-159.05	180.57	240.63	231.93	8.70	27.663		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	131.37	-159.05	180.57	240.63	231.48	9.15	26.304		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	131.37	-159.05	180.57	240.63	231.03	9.60	25.072		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	131.37	-159.05	180.57	240.63	230.58	10.05	23.950		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	131.37	-159.05	180.57	240.63	230.13	10.50	22.924		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	131.37	-159.05	180.57	240.63	229.68	10.95	21.983		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	131.37	-159.05	180.57	240.63	229.23	11.40	21.116		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	131.37	-159.05	180.57	240.63	228.78	11.85	20.314		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	131.37	-159.05	180.57	240.63	228.33	12.29	19.572		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	131.37	-159.05	180.57	240.63	227.88	12.74	18.881		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	131.37	-159.05	180.57	240.63	227.43	13.19	18.238		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	131.37	-159.05	180.57	240.63	226.98	13.64	17.637		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	131.37	-159.05	180.57	240.63	226.53	14.09	17.074		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	131.37	-159.05	180.57	240.63	226.08	14.54	16.547		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	131.37	-159.05	180.57	240.63	225.64	14.99	16.050		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	131.37	-159.05	180.57	240.63	225.19	15.44	15.583		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	131.37	-159.05	180.57	240.63	224.74	15.89	15.142		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	131.37	-159.05	180.57	240.63	224.29	16.34	14.726		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	131.37	-159.05	180.57	240.63	223.84	16.79	14.332		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	131.37	-159.05	180.57	240.63	223.39	17.24	13.958		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	131.37	-159.05	180.57	240.63	222.94	17.69	13.603		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	131.37	-159.05	180.57	240.63	222.49	18.14	13.266		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	131.37	-159.05	180.57	240.63	222.04	18.59	12.945		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	131.37	-159.05	180.57	240.63	221.59	19.04	12.640 CC, ES		
4,400.00	4,400.00	4,396.21	4,396.21	9.72	9.72	-77.73	-159.33	181.33	241.22	221.79	19.43	12.414		
4,500.00	4,499.96	4,492.33	4,492.30	9.89	9.90	-78.49	-160.17	183.60	243.04	223.26	19.78	12.285		
4,600.00	4,599.86	4,588.26	4,588.14	10.06	10.08	-79.74	-161.56	187.37	246.18	226.04	20.14	12.225		
4,700.00	4,699.68	4,683.90	4,683.61	10.24	10.27	-81.42	-163.50	192.63	250.77	230.28	20.49	12.236		
4,800.00	4,799.37	4,779.16	4,778.60	10.42	10.45	-83.48	-165.97	199.36	257.00	236.15	20.86	12.322		
4,900.00	4,898.90	4,873.95	4,872.99	10.60	10.64	-85.84	-168.98	207.52	265.08	243.86	21.22	12.490		
5,000.00	4,998.26	4,968.17	4,966.66	10.79	10.84	-88.43	-172.51	217.08	275.22	253.62	21.60	12.743		
5,100.00	5,097.40	5,061.75	5,059.51	10.99	11.04	-91.15	-176.54	228.01	287.61	265.64	21.98	13.088		
5,200.00	5,196.30	5,154.60	5,151.43	11.20	11.25	-93.94	-181.05	240.26	302.44	280.08	22.36	13.525		
5,300.00	5,294.93	5,246.63	5,242.33	11.41	11.46	-96.70	-186.03	253.78	319.84	297.09	22.75	14.056		
5,379.29	5,372.92	5,322.94	5,317.59	11.59	11.64	-98.97	-190.39	265.61	335.11	312.03	23.08	14.520		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 253H (SIMOPS) - OH - Plan #1													Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD-ADJ													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		
5,400.00	5,393.26	5,342.91	5,337.28	11.64	11.69	-99.60	-191.53	268.70	339.21	316.05	23.16	14.644		
5,500.00	5,491.49	5,439.33	5,432.38	11.88	11.93	-102.41	-197.04	283.65	359.55	335.97	23.58	15.246		
5,600.00	5,589.72	5,535.74	5,527.47	12.13	12.17	-104.92	-202.55	298.60	380.66	356.65	24.01	15.853		
5,700.00	5,687.96	5,632.16	5,622.56	12.39	12.42	-107.17	-208.06	313.55	402.40	377.96	24.45	16.460		
5,800.00	5,786.19	5,728.58	5,717.65	12.66	12.68	-109.19	-213.57	328.50	424.69	399.80	24.89	17.061		
5,900.00	5,884.42	5,825.00	5,812.74	12.93	12.94	-111.02	-219.08	343.45	447.45	422.10	25.34	17.654		
6,000.00	5,982.65	5,921.41	5,907.84	13.21	13.21	-112.66	-224.59	358.39	470.59	444.79	25.81	18.237		
6,100.00	6,080.88	6,017.83	6,002.93	13.50	13.48	-114.16	-230.10	373.34	494.08	467.81	26.27	18.806		
6,200.00	6,179.11	6,114.25	6,098.02	13.80	13.75	-115.52	-235.61	388.29	517.86	491.12	26.75	19.362		
6,300.00	6,277.34	6,210.66	6,193.11	14.10	14.03	-116.76	-241.12	403.24	541.90	514.67	27.23	19.902		
6,400.00	6,375.57	6,307.08	6,288.20	14.40	14.31	-117.90	-246.63	418.19	566.16	538.44	27.72	20.428		
6,500.00	6,473.80	6,403.50	6,383.30	14.71	14.60	-118.94	-252.14	433.14	590.61	562.40	28.21	20.937		
6,600.00	6,572.03	6,499.92	6,478.39	15.03	14.89	-119.90	-257.65	448.09	615.24	586.53	28.71	21.431		
6,700.00	6,670.27	6,596.33	6,573.48	15.35	15.18	-120.79	-263.16	463.04	640.02	610.80	29.21	21.909		
6,800.00	6,768.50	6,692.75	6,668.57	15.67	15.48	-121.62	-268.67	477.98	664.93	635.21	29.72	22.372		
6,900.00	6,866.73	6,789.17	6,763.66	16.00	15.78	-122.38	-274.18	492.93	689.96	659.73	30.24	22.819		
7,000.00	6,964.96	6,885.59	6,858.76	16.33	16.08	-123.09	-279.68	507.88	715.10	684.35	30.75	23.252		
7,100.00	7,063.19	6,982.00	6,953.85	16.67	16.39	-123.75	-285.19	522.83	740.34	709.06	31.28	23.670		
7,141.63	7,104.08	7,022.14	6,993.43	16.81	16.51	-124.02	-287.49	529.05	750.87	719.38	31.50	23.840		
7,200.00	7,161.48	7,078.48	7,049.00	17.00	16.69	-124.48	-290.71	537.79	765.50	733.69	31.81	24.062		
7,300.00	7,260.04	7,175.28	7,144.46	17.29	17.01	-125.15	-296.24	552.80	789.85	757.51	32.35	24.419		
7,400.00	7,358.89	7,272.39	7,240.24	17.58	17.32	-125.68	-301.79	567.85	813.27	780.39	32.87	24.738		
7,500.00	7,457.98	7,369.79	7,336.30	17.86	17.64	-126.09	-307.35	582.95	835.70	802.31	33.40	25.022		
7,600.00	7,557.30	7,467.45	7,432.62	18.13	17.96	-126.37	-312.93	598.10	857.15	823.23	33.92	25.271		
7,700.00	7,656.80	7,565.34	7,529.16	18.39	18.28	-126.55	-318.53	613.27	877.58	843.15	34.43	25.490		
7,800.00	7,756.46	7,663.43	7,625.90	18.64	18.60	-126.63	-324.13	628.48	897.00	862.07	34.93	25.679		
7,900.00	7,856.25	7,755.85	7,717.08	18.87	18.91	-126.66	-328.84	642.81	915.50	880.09	35.40	25.858		
8,000.00	7,956.14	7,835.19	7,795.27	19.09	19.13	-127.17	-324.32	655.10	934.49	898.69	35.80	26.103		
8,100.00	8,056.09	7,911.43	7,869.14	19.30	19.32	-128.23	-309.72	666.72	954.64	918.50	36.14	26.417		
8,200.00	8,156.08	7,982.72	7,935.90	19.49	19.48	-129.68	-287.21	677.21	976.41	939.99	36.42	26.808		
8,220.92	8,177.00	8,000.00	7,951.64	19.53	19.51	78.76	-280.49	679.69	981.23	944.75	36.48	26.899		
8,300.00	8,256.08	8,050.00	7,995.94	19.68	19.61	77.56	-258.41	686.65	1,000.75	964.09	36.66	27.296		
8,400.00	8,356.08	8,100.00	8,038.16	19.87	19.69	76.16	-232.51	693.29	1,029.04	992.16	36.89	27.898		
8,420.92	8,377.00	8,116.90	8,051.91	19.91	19.72	75.65	-222.92	695.45	1,035.49	998.56	36.93	28.037		
8,450.00	8,406.07	8,132.28	8,064.17	19.96	19.74	74.26	-213.85	697.38	1,044.63	1,007.64	36.99	28.242		
8,500.00	8,455.83	8,150.00	8,078.00	20.02	19.78	72.17	-202.98	699.55	1,060.38	1,023.34	37.05	28.623		
8,550.00	8,504.99	8,184.99	8,104.30	20.06	19.83	69.75	-180.27	703.69	1,075.82	1,038.77	37.05	29.039		
8,600.00	8,553.18	8,211.28	8,123.12	20.08	19.87	67.69	-162.17	706.65	1,090.93	1,053.95	36.98	29.501		
8,650.00	8,600.03	8,237.54	8,141.09	20.07	19.91	65.77	-143.23	709.47	1,105.48	1,068.65	36.84	30.012		
8,700.00	8,645.18	8,263.77	8,158.17	20.04	19.95	64.02	-123.50	712.15	1,119.33	1,082.73	36.60	30.586		
8,750.00	8,688.28	8,300.00	8,180.24	19.99	20.01	62.29	-95.00	715.62	1,132.40	1,096.09	36.32	31.181		
8,800.00	8,729.02	8,316.20	8,189.53	19.93	20.04	61.01	-81.80	717.08	1,144.36	1,108.39	35.97	31.815		
8,850.00	8,767.08	8,350.00	8,207.70	19.86	20.10	59.69	-53.45	719.94	1,155.36	1,119.82	35.55	32.500		
8,900.00	8,802.18	8,368.61	8,216.99	19.78	20.14	58.68	-37.39	721.40	1,165.11	1,129.99	35.12	33.175		
8,950.00	8,834.03	8,400.00	8,231.48	19.71	20.21	57.74	-9.64	723.68	1,173.68	1,139.00	34.68	33.844		
9,000.00	8,862.41	8,421.04	8,240.34	19.63	20.26	57.02	9.38	725.07	1,180.88	1,146.61	34.27	34.457		
9,050.00	8,887.09	8,450.00	8,251.39	19.56	20.34	56.43	36.09	726.81	1,186.75	1,152.82	33.93	34.980		
9,100.00	8,907.89	8,473.49	8,259.37	19.49	20.40	56.02	58.15	728.06	1,191.19	1,157.52	33.67	35.377		
9,150.00	8,924.65	8,500.00	8,267.29	19.43	20.49	55.77	83.42	729.31	1,194.20	1,160.66	33.54	35.609		
9,200.00	8,937.25	8,526.00	8,273.93	19.38	20.58	55.67	108.53	730.35	1,195.75	1,162.20	33.55	35.640		
9,250.00	8,945.57	8,550.00	8,279.06	19.36	20.68	55.73	131.96	731.16	1,195.83	1,162.13	33.70	35.481		
9,300.00	8,949.58	8,578.56	8,283.89	19.48	20.80	55.96	160.10	731.92	1,194.45	1,160.39	34.05	35.074		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 253H (SIMOPS) - OH - Plan #1													Offset Site Error: 0.00 usft	
Survey Program: 0-LEAM MWD-ADJ													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		
9,320.91	8,949.96	8,600.00	8,286.60	19.55	20.91	56.16	181.36	732.34	1,193.53	1,159.21	34.32	34.781		
9,400.00	8,949.96	8,631.50	8,289.15	19.90	21.07	56.27	212.75	732.75	1,190.39	1,155.60	34.79	34.216		
9,474.58	8,949.96	8,678.76	8,290.00	20.31	21.34	56.31	259.99	732.88	1,189.72	1,154.29	35.43	33.577		
9,500.00	8,949.96	8,704.18	8,290.00	20.45	21.50	56.31	285.41	732.88	1,189.72	1,154.00	35.72	33.308		
9,600.00	8,949.96	8,804.18	8,290.00	21.14	22.24	56.31	385.41	732.88	1,189.73	1,152.69	37.03	32.128		
9,700.00	8,949.96	8,904.18	8,290.00	21.95	23.11	56.31	485.41	732.88	1,189.73	1,151.17	38.56	30.858		
9,800.00	8,949.96	9,004.18	8,290.00	22.87	24.10	56.31	585.41	732.88	1,189.73	1,149.46	40.27	29.545		
9,900.00	8,949.96	9,104.18	8,290.00	23.89	25.18	56.31	685.41	732.88	1,189.73	1,147.59	42.15	28.228		
10,000.00	8,949.96	9,204.18	8,290.00	25.00	26.35	56.31	785.41	732.88	1,189.74	1,145.56	44.17	26.934		
10,100.00	8,949.97	9,304.18	8,290.00	26.19	27.59	56.31	885.41	732.88	1,189.74	1,143.42	46.32	25.684		
10,200.00	8,949.97	9,404.18	8,290.00	27.45	28.90	56.31	985.41	732.88	1,189.74	1,141.16	48.58	24.490		
10,300.00	8,949.97	9,504.18	8,290.00	28.77	30.26	56.31	1,085.41	732.88	1,189.74	1,138.81	50.93	23.358		
10,400.00	8,949.97	9,604.18	8,290.00	30.14	31.66	56.31	1,185.41	732.88	1,189.75	1,136.38	53.37	22.292		
10,500.00	8,949.97	9,704.18	8,290.00	31.56	33.11	56.31	1,285.41	732.88	1,189.75	1,133.87	55.88	21.292		
10,600.00	8,949.97	9,804.18	8,290.00	33.01	34.59	56.31	1,385.41	732.88	1,189.75	1,131.30	58.45	20.356		
10,700.00	8,949.97	9,904.18	8,290.00	34.50	36.11	56.31	1,485.41	732.88	1,189.75	1,128.68	61.07	19.481		
10,800.00	8,949.97	10,004.18	8,290.00	36.03	37.65	56.31	1,585.41	732.88	1,189.76	1,126.01	63.74	18.665		
10,900.00	8,949.97	10,104.18	8,290.00	37.58	39.21	56.31	1,685.41	732.88	1,189.76	1,123.30	66.46	17.903		
11,000.00	8,949.98	10,204.18	8,290.00	39.15	40.80	56.31	1,785.41	732.88	1,189.76	1,120.55	69.21	17.191		
11,100.00	8,949.98	10,304.18	8,290.00	40.74	42.41	56.31	1,885.41	732.88	1,189.76	1,117.77	71.99	16.527		
11,200.00	8,949.98	10,404.18	8,290.00	42.35	44.03	56.31	1,985.41	732.88	1,189.77	1,114.96	74.80	15.906		
11,300.00	8,949.98	10,504.18	8,290.00	43.98	45.67	56.31	2,085.41	732.88	1,189.77	1,112.13	77.64	15.324		
11,400.00	8,949.98	10,604.18	8,290.00	45.63	47.33	56.31	2,185.41	732.88	1,189.77	1,109.27	80.50	14.779		
11,500.00	8,949.98	10,704.18	8,290.00	47.29	48.99	56.31	2,285.41	732.88	1,189.77	1,106.39	83.38	14.269		
11,600.00	8,949.98	10,804.18	8,290.00	48.96	50.67	56.31	2,385.41	732.88	1,189.78	1,103.49	86.28	13.789		
11,700.00	8,949.98	10,904.18	8,290.00	50.64	52.35	56.31	2,485.41	732.88	1,189.78	1,100.58	89.20	13.338		
11,800.00	8,949.98	11,004.18	8,290.00	52.33	54.05	56.31	2,585.41	732.88	1,189.78	1,097.65	92.13	12.914		
11,900.00	8,949.98	11,104.18	8,290.00	54.03	55.75	56.31	2,685.41	732.88	1,189.78	1,094.70	95.08	12.513		
12,000.00	8,949.99	11,204.18	8,290.00	55.73	57.46	56.31	2,785.41	732.88	1,189.79	1,091.75	98.04	12.136		
12,100.00	8,949.99	11,304.18	8,290.00	57.45	59.18	56.31	2,885.41	732.88	1,189.79	1,088.78	101.01	11.779		
12,200.00	8,949.99	11,404.18	8,290.00	59.17	60.91	56.31	2,985.41	732.88	1,189.79	1,085.80	103.99	11.441		
12,300.00	8,949.99	11,504.18	8,290.00	60.90	62.64	56.31	3,085.41	732.88	1,189.79	1,082.81	106.98	11.121		
12,400.00	8,949.99	11,604.18	8,290.00	62.63	64.37	56.31	3,185.41	732.88	1,189.79	1,079.81	109.98	10.818		
12,500.00	8,949.99	11,704.18	8,290.00	64.37	66.11	56.31	3,285.41	732.88	1,189.80	1,076.81	112.99	10.530		
12,600.00	8,949.99	11,804.18	8,290.00	66.11	67.86	56.31	3,385.41	732.88	1,189.80	1,073.80	116.00	10.256		
12,700.00	8,949.99	11,904.18	8,290.00	67.86	69.61	56.31	3,485.41	732.88	1,189.80	1,070.78	119.03	9.996		
12,800.00	8,949.99	12,004.18	8,290.00	69.61	71.36	56.31	3,585.41	732.88	1,189.80	1,067.75	122.06	9.748		
12,900.00	8,949.99	12,104.18	8,290.00	71.36	73.12	56.31	3,685.41	732.88	1,189.81	1,064.72	125.09	9.512		
13,000.00	8,950.00	12,204.18	8,290.00	73.12	74.88	56.31	3,785.41	732.88	1,189.81	1,061.68	128.13	9.286		
13,100.00	8,950.00	12,304.18	8,290.00	74.89	76.64	56.31	3,885.41	732.88	1,189.81	1,058.64	131.17	9.070		
13,200.00	8,950.00	12,404.18	8,290.00	76.65	78.41	56.31	3,985.41	732.88	1,189.81	1,055.59	134.22	8.864		
13,300.00	8,950.00	12,504.18	8,290.00	78.42	80.18	56.31	4,085.41	732.88	1,189.82	1,052.54	137.28	8.667		
13,400.00	8,950.00	12,604.18	8,290.00	80.19	81.95	56.31	4,185.41	732.88	1,189.82	1,049.48	140.34	8.478		
13,452.65	8,950.00	12,656.83	8,290.00	81.12	82.88	56.31	4,238.06	732.88	1,189.82	1,047.87	141.95	8.382 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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 263H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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	114.99	-84.06	180.34	198.97					
100.00	100.00	100.00	100.00	0.08	0.08	114.99	-84.06	180.34	198.97	198.81	0.16	1,264.591		
200.00	200.00	200.00	200.00	0.30	0.30	114.99	-84.06	180.34	198.97	198.36	0.61	327.857		
300.00	300.00	300.00	300.00	0.53	0.53	114.99	-84.06	180.34	198.97	197.91	1.06	188.344		
400.00	400.00	400.00	400.00	0.75	0.75	114.99	-84.06	180.34	198.97	197.46	1.51	132.122		
500.00	500.00	500.00	500.00	0.98	0.98	114.99	-84.06	180.34	198.97	197.01	1.96	101.749		
600.00	600.00	600.00	600.00	1.20	1.20	114.99	-84.06	180.34	198.97	196.56	2.40	82.730		
700.00	700.00	700.00	700.00	1.43	1.43	114.99	-84.06	180.34	198.97	196.11	2.85	69.702		
800.00	800.00	800.00	800.00	1.65	1.65	114.99	-84.06	180.34	198.97	195.66	3.30	60.219		
900.00	900.00	900.00	900.00	1.88	1.88	114.99	-84.06	180.34	198.97	195.21	3.75	53.007		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	114.99	-84.06	180.34	198.97	194.76	4.20	47.338		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	114.99	-84.06	180.34	198.97	194.31	4.65	42.764		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	114.99	-84.06	180.34	198.97	193.86	5.10	38.996		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	114.99	-84.06	180.34	198.97	193.41	5.55	35.839		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	114.99	-84.06	180.34	198.97	192.96	6.00	33.154		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	114.99	-84.06	180.34	198.97	192.52	6.45	30.844		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	114.99	-84.06	180.34	198.97	192.07	6.90	28.834		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	114.99	-84.06	180.34	198.97	191.62	7.35	27.071		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	114.99	-84.06	180.34	198.97	191.17	7.80	25.511		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	114.99	-84.06	180.34	198.97	190.72	8.25	24.120		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	114.99	-84.06	180.34	198.97	190.27	8.70	22.874		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	114.99	-84.06	180.34	198.97	189.82	9.15	21.750		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	114.99	-84.06	180.34	198.97	189.37	9.60	20.731		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	114.99	-84.06	180.34	198.97	188.92	10.05	19.803		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	114.99	-84.06	180.34	198.97	188.47	10.50	18.955		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	114.99	-84.06	180.34	198.97	188.02	10.95	18.177		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	114.99	-84.06	180.34	198.97	187.57	11.40	17.460		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	114.99	-84.06	180.34	198.97	187.12	11.85	16.797		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	114.99	-84.06	180.34	198.97	186.67	12.29	16.183		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	114.99	-84.06	180.34	198.97	186.22	12.74	15.612		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	114.99	-84.06	180.34	198.97	185.77	13.19	15.080		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	114.99	-84.06	180.34	198.97	185.32	13.64	14.583		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	114.99	-84.06	180.34	198.97	184.87	14.09	14.118		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	114.99	-84.06	180.34	198.97	184.42	14.54	13.682		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	114.99	-84.06	180.34	198.97	183.97	14.99	13.272		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	114.99	-84.06	180.34	198.97	183.52	15.44	12.885		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	114.99	-84.06	180.34	198.97	183.08	15.89	12.521		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	114.99	-84.06	180.34	198.97	182.63	16.34	12.176		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	114.99	-84.06	180.34	198.97	182.18	16.79	11.850		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	114.99	-84.06	180.34	198.97	181.73	17.24	11.541		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	114.99	-84.06	180.34	198.97	181.28	17.69	11.248		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	114.99	-84.06	180.34	198.97	180.83	18.14	10.969		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	114.99	-84.06	180.34	198.97	180.38	18.59	10.704		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	114.99	-84.06	180.34	198.97	179.93	19.04	10.451 CC		
4,400.00	4,400.00	4,400.00	4,400.00	9.72	9.74	-94.10	-84.06	180.34	199.03	179.57	19.46	10.228		
4,500.00	4,499.96	4,499.96	4,499.96	9.89	9.97	-94.85	-84.06	180.34	199.23	179.38	19.85	10.034 ES		
4,600.00	4,599.86	4,599.86	4,599.86	10.06	10.19	-96.09	-84.06	180.34	199.65	179.40	20.25	9.858		
4,700.00	4,699.68	4,699.68	4,699.68	10.24	10.42	-97.82	-84.06	180.34	200.39	179.74	20.65	9.704		
4,800.00	4,799.37	4,799.37	4,799.37	10.42	10.64	-100.01	-84.06	180.34	201.61	180.56	21.05	9.576		
4,900.00	4,898.90	4,898.90	4,898.90	10.60	10.86	-102.64	-84.06	180.34	203.50	182.04	21.46	9.484		
5,000.00	4,998.26	4,998.26	4,998.26	10.79	11.09	-105.66	-84.06	180.34	206.28	184.42	21.86	9.436 SF		
5,100.00	5,097.40	5,094.29	5,094.29	10.99	11.28	-108.82	-84.51	180.97	210.93	188.69	22.24	9.484		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 263H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)				Between Centres (usft)	Between Ellipses (usft)	
5,200.00	5,196.30	5,190.04	5,190.00	11.20	11.46	-112.01	-85.91	182.89	218.35	195.75		22.60	9.661	
5,300.00	5,294.93	5,285.49	5,285.37	11.41	11.63	-115.12	-88.23	186.10	228.60	205.64		22.96	9.956	
5,379.29	5,372.92	5,360.90	5,360.87	11.59	11.77	-117.46	-90.72	189.54	238.76	215.51		23.25	10.270	
5,400.00	5,393.26	5,380.57	5,380.29	11.64	11.81	-118.07	-91.47	190.57	241.69	218.36		23.33	10.362	
5,500.00	5,491.49	5,475.42	5,474.87	11.88	11.99	-120.68	-95.62	196.30	256.97	233.26		23.71	10.839	
5,600.00	5,589.72	5,570.08	5,569.14	12.13	12.17	-122.79	-100.68	203.29	273.98	249.88		24.10	11.370	
5,700.00	5,687.96	5,664.51	5,663.02	12.39	12.35	-124.45	-106.63	211.52	292.53	268.03		24.50	11.941	
5,800.00	5,786.19	5,758.65	5,756.43	12.66	12.55	-125.71	-113.47	220.96	312.46	287.55		24.91	12.544	
5,900.00	5,884.42	5,852.45	5,849.31	12.93	12.74	-126.62	-121.18	231.61	333.66	308.33		25.33	13.173	
6,000.00	5,982.65	5,945.87	5,941.58	13.21	12.95	-127.25	-129.74	243.43	356.06	330.29		25.76	13.821	
6,100.00	6,080.88	6,038.85	6,033.17	13.50	13.16	-127.64	-139.14	256.41	379.59	353.39		26.21	14.485	
6,200.00	6,179.11	6,134.66	6,127.34	13.80	13.39	-127.87	-149.48	270.70	403.95	377.28		26.67	15.148	
6,300.00	6,277.34	6,231.63	6,222.64	14.10	13.63	-128.08	-159.98	285.20	428.34	401.20		27.14	15.783	
6,400.00	6,375.57	6,328.60	6,317.95	14.40	13.88	-128.26	-170.48	299.70	452.75	425.12		27.62	16.391	
6,500.00	6,473.80	6,425.57	6,413.25	14.71	14.13	-128.42	-180.97	314.20	477.15	449.04		28.11	16.973	
6,600.00	6,572.03	6,522.53	6,508.55	15.03	14.39	-128.57	-191.47	328.70	501.56	472.95		28.61	17.530	
6,700.00	6,670.27	6,619.50	6,603.85	15.35	14.66	-128.70	-201.97	343.20	525.98	496.86		29.12	18.063	
6,800.00	6,768.50	6,716.47	6,699.15	15.67	14.93	-128.82	-212.47	357.70	550.39	520.76		29.63	18.573	
6,900.00	6,866.73	6,813.44	6,794.45	16.00	15.21	-128.93	-222.97	372.20	574.81	544.65		30.16	19.061	
7,000.00	6,964.96	6,910.40	6,889.75	16.33	15.49	-129.04	-233.46	386.70	599.23	568.54		30.68	19.529	
7,100.00	7,063.19	7,007.37	6,985.05	16.67	15.78	-129.13	-243.96	401.20	623.65	592.43		31.22	19.976	
7,141.63	7,104.08	7,047.74	7,024.72	16.81	15.90	-129.17	-248.33	407.24	633.81	602.37		31.44	20.156	
7,200.00	7,161.48	7,104.38	7,080.40	17.00	16.07	-129.31	-254.47	415.71	647.89	616.12		31.77	20.392	
7,300.00	7,260.04	7,201.64	7,175.98	17.29	16.37	-129.45	-264.99	430.25	671.15	638.82		32.33	20.762	
7,400.00	7,358.89	7,299.13	7,271.79	17.58	16.67	-129.46	-275.55	444.83	693.33	660.45		32.88	21.089	
7,500.00	7,457.98	7,396.83	7,367.81	17.86	16.98	-129.37	-286.13	459.44	714.44	681.01		33.42	21.375	
7,600.00	7,557.30	7,494.70	7,464.00	18.13	17.29	-129.18	-296.72	474.08	734.48	700.52		33.97	21.624	
7,700.00	7,656.80	7,592.72	7,560.33	18.39	17.61	-128.89	-307.33	488.74	753.48	718.98		34.50	21.840	
7,800.00	7,756.46	7,690.85	7,656.78	18.64	17.93	-128.51	-317.96	503.41	771.45	736.43		35.03	22.026	
7,900.00	7,856.25	7,789.07	7,753.31	18.87	18.25	-128.05	-328.59	518.10	788.43	752.89		35.54	22.183	
8,000.00	7,956.14	7,887.35	7,849.90	19.09	18.58	-127.51	-339.23	532.79	804.43	768.39		36.05	22.317	
8,100.00	8,056.09	7,985.65	7,946.51	19.30	18.91	-126.89	-349.88	547.49	819.51	782.97		36.54	22.428	
8,200.00	8,156.08	8,083.95	8,043.13	19.49	19.25	-126.20	-360.52	562.19	833.70	796.68		37.02	22.521	
8,220.92	8,177.00	8,104.51	8,063.33	19.53	19.32	82.80	-362.74	565.27	836.56	799.45		37.12	22.539	
8,300.00	8,256.08	8,182.23	8,139.72	19.68	19.58	83.47	-371.16	576.89	847.37	809.88		37.48	22.606	
8,400.00	8,356.08	8,280.52	8,236.31	19.87	19.92	84.29	-381.80	591.59	861.19	823.23		37.95	22.690	
8,420.92	8,377.00	8,301.07	8,256.51	19.91	19.99	84.46	-384.02	594.66	864.10	826.05		38.05	22.708	
8,450.00	8,406.07	8,329.56	8,284.51	19.96	20.09	84.34	-387.11	598.92	868.09	829.91		38.19	22.733	
8,500.00	8,455.83	8,377.96	8,332.08	20.02	20.26	84.36	-392.35	606.16	874.70	836.31		38.39	22.784	
8,550.00	8,504.99	8,425.30	8,378.60	20.06	20.42	84.65	-397.47	613.24	881.07	842.51		38.56	22.849	
8,600.00	8,553.18	8,471.22	8,423.74	20.08	20.58	85.15	-402.44	620.11	887.36	848.66		38.70	22.931	
8,650.00	8,600.03	8,515.37	8,467.13	20.07	20.74	85.81	-407.23	626.71	893.76	854.96		38.80	23.034	
8,700.00	8,645.18	8,557.43	8,508.46	20.04	20.88	86.56	-411.78	633.00	900.52	861.64		38.88	23.162	
8,750.00	8,688.28	8,597.05	8,547.41	19.99	21.02	87.33	-416.07	638.92	907.88	868.94		38.93	23.319	
8,800.00	8,729.02	8,633.96	8,583.68	19.93	21.15	88.05	-420.06	644.44	916.11	877.14		38.97	23.510	
8,850.00	8,767.08	8,667.86	8,616.99	19.86	21.27	88.65	-423.73	649.51	925.47	886.48		38.99	23.737	
8,900.00	8,802.18	8,699.67	8,648.26	19.78	21.38	89.12	-427.17	654.27	936.18	897.18		39.00	24.003	
8,950.00	8,834.03	8,731.70	8,679.77	19.71	21.48	89.52	-430.56	658.95	946.36	909.34		39.02	24.307	
9,000.00	8,862.41	8,759.73	8,707.36	19.63	21.56	89.61	-433.45	662.93	962.14	923.11		39.04	24.646	
9,050.00	8,887.09	8,783.47	8,730.75	19.56	21.64	89.31	-435.82	666.21	977.88	938.61		39.07	25.022	
9,100.00	8,907.89	8,802.67	8,749.68	19.49	21.69	88.58	-437.71	668.81	995.05	955.93		39.12	25.437	
9,150.00	8,924.65	8,817.12	8,763.93	19.43	21.73	87.36	-439.10	670.74	1,014.25	975.08		39.17	25.896	

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 263H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)						
9,200.00	8,937.25	8,826.60	8,773.28	19.38	21.76	85.63	-440.00	671.98	1,035.20	996.01	39.20	26.411		
9,250.00	8,945.57	8,830.94	8,777.58	19.36	21.77	83.38	-440.41	672.55	1,057.77	1,018.60	39.18	26.999		
9,300.00	8,949.58	8,830.03	8,776.67	19.48	21.77	80.62	-440.33	672.43	1,081.74	1,042.67	39.07	27.686		
9,320.91	8,949.96	8,828.06	8,774.73	19.55	21.77	79.32	-440.14	672.17	1,092.11	1,053.12	38.99	28.008		
9,400.00	8,949.96	8,818.74	8,765.53	19.90	21.74	78.76	-439.25	670.95	1,133.73	1,094.53	39.19	28.926		
9,500.00	8,949.96	8,806.69	8,753.65	20.45	21.70	78.04	-438.10	669.35	1,191.70	1,152.12	39.58	30.108		
9,600.00	8,949.96	8,794.33	8,741.46	21.14	21.67	77.29	-436.89	667.69	1,254.89	1,214.79	40.10	31.292		
9,700.00	8,949.96	8,781.65	8,728.96	21.95	21.63	76.53	-435.64	665.96	1,322.53	1,281.79	40.74	32.459		
9,800.00	8,949.96	8,768.63	8,716.13	22.87	21.59	75.76	-434.35	664.17	1,393.98	1,352.49	41.49	33.597		
9,900.00	8,949.96	8,755.26	8,702.96	23.89	21.55	74.96	-432.99	662.30	1,468.67	1,426.34	42.33	34.697		
10,000.00	8,949.96	8,741.53	8,689.44	25.00	21.51	74.15	-431.58	660.36	1,546.14	1,502.90	43.24	35.757		
10,100.00	8,949.97	8,727.42	8,675.56	26.19	21.47	73.31	-430.12	658.33	1,625.98	1,581.76	44.21	36.775		
10,200.00	8,949.97	8,712.92	8,661.29	27.45	21.42	72.46	-428.59	656.22	1,707.85	1,662.62	45.24	37.754		
10,300.00	8,949.97	8,698.01	8,646.62	28.77	21.38	71.58	-427.00	654.02	1,791.48	1,745.19	46.30	38.697		
10,400.00	8,949.97	11,935.84	10,482.51	30.14	33.83	147.14	1,169.21	732.85	1,824.50	1,780.80	43.70	41.747		
10,500.00	8,949.97	12,035.84	10,483.56	31.56	35.16	147.16	1,269.19	732.85	1,825.39	1,779.98	45.41	40.196		
10,600.00	8,949.97	12,135.83	10,484.62	33.01	36.53	147.18	1,369.18	732.85	1,826.28	1,779.11	47.17	38.715		
10,700.00	8,949.97	12,235.83	10,485.68	34.50	37.94	147.19	1,469.17	732.85	1,827.17	1,778.19	48.98	37.305		
10,800.00	8,949.97	12,335.82	10,486.73	36.03	39.38	147.21	1,569.16	732.86	1,828.06	1,777.23	50.83	35.967		
10,900.00	8,949.97	12,435.82	10,487.79	37.58	40.86	147.23	1,669.15	732.86	1,828.95	1,776.24	52.71	34.699		
11,000.00	8,949.98	12,535.81	10,488.85	39.15	42.36	147.25	1,769.14	732.86	1,829.84	1,775.21	54.62	33.499		
11,100.00	8,949.98	12,635.80	10,489.90	40.74	43.88	147.27	1,869.13	732.86	1,830.73	1,774.16	56.57	32.363		
11,200.00	8,949.98	12,735.80	10,490.96	42.35	45.43	147.28	1,969.12	732.86	1,831.62	1,773.08	58.54	31.289		
11,300.00	8,949.98	12,835.79	10,492.02	43.98	46.99	147.30	2,069.11	732.86	1,832.51	1,771.98	60.53	30.274		
11,400.00	8,949.98	12,935.79	10,493.07	45.63	48.58	147.32	2,169.09	732.86	1,833.40	1,770.85	62.55	29.313		
11,500.00	8,949.98	13,035.78	10,494.13	47.29	50.18	147.34	2,269.08	732.86	1,834.29	1,769.71	64.58	28.404		
11,600.00	8,949.98	13,135.78	10,495.19	48.96	51.79	147.35	2,369.07	732.86	1,835.18	1,768.55	66.63	27.543		
11,700.00	8,949.98	13,235.77	10,496.24	50.64	53.42	147.37	2,469.06	732.86	1,836.07	1,767.38	68.69	26.728		
11,800.00	8,949.98	13,335.77	10,497.30	52.33	55.06	147.39	2,569.05	732.86	1,836.96	1,766.19	70.77	25.955		
11,900.00	8,949.98	13,435.76	10,498.36	54.03	56.72	147.41	2,669.04	732.86	1,837.85	1,764.99	72.87	25.223		
12,000.00	8,949.99	13,535.75	10,499.41	55.73	58.38	147.43	2,769.03	732.87	1,838.74	1,763.77	74.97	24.527		
12,100.00	8,949.99	13,635.75	10,500.47	57.45	60.05	147.44	2,869.02	732.87	1,839.63	1,762.55	77.08	23.866		
12,200.00	8,949.99	13,735.74	10,501.53	59.17	61.73	147.46	2,969.01	732.87	1,840.53	1,761.32	79.20	23.238		
12,300.00	8,949.99	13,835.74	10,502.58	60.90	63.42	147.48	3,068.99	732.87	1,841.42	1,760.08	81.34	22.640		
12,400.00	8,949.99	13,935.73	10,503.64	62.63	65.12	147.50	3,168.98	732.87	1,842.31	1,758.83	83.47	22.070		
12,500.00	8,949.99	14,035.73	10,504.70	64.37	66.82	147.51	3,268.97	732.87	1,843.20	1,757.58	85.62	21.527		
12,600.00	8,949.99	14,135.72	10,505.75	66.11	68.53	147.53	3,368.96	732.87	1,844.09	1,756.32	87.77	21.010		
12,700.00	8,949.99	14,235.71	10,506.81	67.86	70.25	147.55	3,468.95	732.87	1,844.99	1,755.05	89.93	20.515		
12,800.00	8,949.99	14,335.71	10,507.87	69.61	71.97	147.57	3,568.94	732.87	1,845.88	1,753.78	92.10	20.043		
12,900.00	8,949.99	14,435.70	10,508.92	71.36	73.69	147.58	3,668.93	732.87	1,846.77	1,752.51	94.27	19.591		
13,000.00	8,950.00	14,535.70	10,509.98	73.12	75.42	147.60	3,768.92	732.87	1,847.66	1,751.23	96.44	19.159		
13,100.00	8,950.00	14,635.69	10,511.04	74.89	77.16	147.62	3,868.90	732.88	1,848.56	1,749.94	98.62	18.745		
13,200.00	8,950.00	14,735.69	10,512.09	76.65	78.90	147.64	3,968.89	732.88	1,849.45	1,748.65	100.80	18.348		
13,300.00	8,950.00	14,835.68	10,513.15	78.42	80.64	147.65	4,068.88	732.88	1,850.34	1,747.36	102.98	17.968		
13,400.00	8,950.00	14,935.68	10,514.21	80.19	82.39	147.67	4,168.87	732.88	1,851.24	1,746.07	105.17	17.602		
13,452.65	8,950.00	14,988.33	10,514.76	81.12	83.31	147.68	4,221.52	732.88	1,851.71	1,745.39	106.32	17.416		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 286H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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	121.15	-109.06	180.42	210.82					
100.00	100.00	100.00	100.00	0.08	0.08	121.15	-109.06	180.42	210.82	0.16	1,339.921			
200.00	200.00	200.00	200.00	0.30	0.30	121.15	-109.06	180.42	210.82	0.61	347.387			
300.00	300.00	300.00	300.00	0.53	0.53	121.15	-109.06	180.42	210.82	1.06	199.563			
400.00	400.00	400.00	400.00	0.75	0.75	121.15	-109.06	180.42	210.82	1.51	139.992			
500.00	500.00	500.00	500.00	0.98	0.98	121.15	-109.06	180.42	210.82	1.96	107.810			
600.00	600.00	600.00	600.00	1.20	1.20	121.15	-109.06	180.42	210.82	2.40	87.658			
700.00	700.00	700.00	700.00	1.43	1.43	121.15	-109.06	180.42	210.82	2.85	73.854			
800.00	800.00	800.00	800.00	1.65	1.65	121.15	-109.06	180.42	210.82	3.30	63.806			
900.00	900.00	900.00	900.00	1.88	1.88	121.15	-109.06	180.42	210.82	3.75	56.164			
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	121.15	-109.06	180.42	210.82	4.20	50.158			
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	121.15	-109.06	180.42	210.82	4.65	45.311			
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	121.15	-109.06	180.42	210.82	5.10	41.319			
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	121.15	-109.06	180.42	210.82	5.55	37.974			
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	121.15	-109.06	180.42	210.82	6.00	35.129			
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	121.15	-109.06	180.42	210.82	6.45	32.681			
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	121.15	-109.06	180.42	210.82	6.90	30.552			
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	121.15	-109.06	180.42	210.82	7.35	28.683			
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	121.15	-109.06	180.42	210.82	7.80	27.030			
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	121.15	-109.06	180.42	210.82	8.25	25.557			
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	121.15	-109.06	180.42	210.82	8.70	24.236			
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	121.15	-109.06	180.42	210.82	9.15	23.045			
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	121.15	-109.06	180.42	210.82	9.60	21.966			
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	121.15	-109.06	180.42	210.82	10.05	20.983			
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	121.15	-109.06	180.42	210.82	10.50	20.084			
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	121.15	-109.06	180.42	210.82	10.95	19.260			
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	121.15	-109.06	180.42	210.82	11.40	18.500			
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	121.15	-109.06	180.42	210.82	11.85	17.798			
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	121.15	-109.06	180.42	210.82	12.29	17.147			
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	121.15	-109.06	180.42	210.82	12.74	16.542			
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	121.15	-109.06	180.42	210.82	13.19	15.979			
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	121.15	-109.06	180.42	210.82	13.64	15.452			
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	121.15	-109.06	180.42	210.82	14.09	14.959			
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	121.15	-109.06	180.42	210.82	14.54	14.497			
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	121.15	-109.06	180.42	210.82	14.99	14.062			
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	121.15	-109.06	180.42	210.82	15.44	13.653			
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	121.15	-109.06	180.42	210.82	15.89	13.267			
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	121.15	-109.06	180.42	210.82	16.34	12.902			
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	121.15	-109.06	180.42	210.82	16.79	12.556			
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	121.15	-109.06	180.42	210.82	17.24	12.229			
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	121.15	-109.06	180.42	210.82	17.69	11.918			
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	121.15	-109.06	180.42	210.82	18.14	11.623			
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	121.15	-109.06	180.42	210.82	18.59	11.342			
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	121.15	-109.06	180.42	210.82	19.04	11.074 CC			
4,400.00	4,400.00	4,399.05	4,399.04	9.72	9.71	-87.70	-109.88	180.18	211.01	19.43	10.861 ES			
4,500.00	4,499.96	4,498.10	4,498.06	9.89	9.88	-87.72	-112.35	179.47	211.58	19.77	10.704			
4,600.00	4,599.86	4,597.14	4,597.01	10.06	10.05	-87.76	-116.46	178.29	212.53	20.11	10.570			
4,700.00	4,699.68	4,696.18	4,695.86	10.24	10.22	-87.82	-122.22	176.64	213.86	20.46	10.455			
4,800.00	4,799.37	4,795.20	4,794.59	10.42	10.40	-87.89	-129.62	174.51	215.58	20.81	10.360			
4,900.00	4,898.90	4,895.13	4,894.14	10.60	10.58	-88.18	-137.99	172.11	217.47	21.17	10.271			
5,000.00	4,998.26	4,995.07	4,993.69	10.79	10.76	-88.91	-146.36	169.70	219.33	21.55	10.179			
5,100.00	5,097.40	5,094.95	5,093.19	10.99	10.95	-90.09	-154.73	167.30	221.23	21.93	10.086			

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 286H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)						
5,200.00	5,196.30	5,194.73	5,192.59	11.20	11.14	-91.69	-163.09	164.90	223.26	200.93	22.33	9.998		
5,300.00	5,294.93	5,294.38	5,291.87	11.41	11.33	-93.69	-171.44	162.50	225.58	202.84	22.74	9.920		
5,379.29	5,372.92	5,373.29	5,370.47	11.59	11.49	-95.55	-178.05	160.80	227.73	204.66	23.08	9.869		
5,400.00	5,393.26	5,393.88	5,390.99	11.64	11.53	-96.07	-179.77	160.10	228.35	205.19	23.16	9.858		
5,500.00	5,491.49	5,493.33	5,490.06	11.88	11.73	-98.54	-188.10	157.71	231.60	208.00	23.60	9.814		
5,600.00	5,589.72	5,592.78	5,589.13	12.13	11.94	-100.94	-196.44	155.32	235.27	211.23	24.04	9.786		
5,700.00	5,687.96	5,692.23	5,688.20	12.39	12.14	-103.27	-204.77	152.92	239.34	214.85	24.49	9.773		
5,800.00	5,786.19	5,791.68	5,787.27	12.66	12.35	-105.51	-213.10	150.53	243.79	218.84	24.95	9.772		
5,900.00	5,884.42	5,891.13	5,886.34	12.93	12.56	-107.67	-221.43	148.14	248.61	223.20	25.41	9.784		
6,000.00	5,982.65	5,990.58	5,985.41	13.21	12.78	-109.75	-229.77	145.74	253.77	227.89	25.88	9.806		
6,100.00	6,080.88	6,090.03	6,084.48	13.50	13.00	-111.74	-238.10	143.35	259.25	232.90	26.35	9.839		
6,200.00	6,179.11	6,189.48	6,183.55	13.80	13.22	-113.65	-246.43	140.95	265.03	238.21	26.82	9.881		
6,300.00	6,277.34	6,288.92	6,282.62	14.10	13.44	-115.47	-254.76	138.56	271.10	243.80	27.30	9.931		
6,400.00	6,375.57	6,388.37	6,381.69	14.40	13.66	-117.22	-263.09	136.17	277.43	249.65	27.78	9.987		
6,500.00	6,473.80	6,487.82	6,480.76	14.71	13.88	-118.88	-271.43	133.77	284.00	255.74	28.26	10.051		
6,600.00	6,572.03	6,587.27	6,579.83	15.03	14.11	-120.47	-279.76	131.38	290.81	262.07	28.74	10.119		
6,700.00	6,670.27	6,686.72	6,678.90	15.35	14.34	-121.99	-288.09	128.99	297.82	268.61	29.22	10.193		
6,800.00	6,768.50	6,786.17	6,777.97	15.67	14.57	-123.43	-296.42	126.59	305.04	275.34	29.70	10.271		
6,900.00	6,866.73	6,885.62	6,877.04	16.00	14.80	-124.81	-304.76	124.20	312.44	282.26	30.18	10.352		
7,000.00	6,964.96	6,985.07	6,976.11	16.33	15.04	-126.12	-313.09	121.81	320.02	289.35	30.66	10.436		
7,100.00	7,063.19	7,084.51	7,075.18	16.67	15.27	-127.38	-321.42	119.41	327.75	296.61	31.15	10.523		
7,141.63	7,104.08	7,125.91	7,116.43	16.81	15.37	-127.88	-324.89	118.42	331.02	299.67	31.35	10.560		
7,200.00	7,161.48	7,183.99	7,174.28	17.00	15.51	-128.57	-329.75	117.02	335.45	303.82	31.64	10.603		
7,300.00	7,260.04	7,283.62	7,273.53	17.29	15.74	-129.52	-338.10	114.62	342.27	310.14	32.13	10.653		
7,400.00	7,358.89	7,383.37	7,372.91	17.58	15.98	-130.21	-346.46	112.22	348.04	315.42	32.62	10.669		
7,500.00	7,457.98	7,483.23	7,472.38	17.86	16.22	-130.65	-354.83	109.82	352.72	319.61	33.11	10.652		
7,600.00	7,557.30	7,583.16	7,571.93	18.13	16.47	-130.87	-363.20	107.41	356.27	322.66	33.61	10.601		
7,700.00	7,656.80	7,683.13	7,671.52	18.39	16.71	-130.86	-371.57	105.00	358.68	324.58	34.10	10.519		
7,800.00	7,756.46	7,783.11	7,771.12	18.64	16.95	-130.63	-379.95	102.60	359.96	325.37	34.59	10.406		
7,900.00	7,856.25	7,883.07	7,870.70	18.87	17.20	-130.19	-388.33	100.19	360.11	325.03	35.08	10.265		
8,000.00	7,956.14	7,982.98	7,970.23	19.09	17.45	-129.52	-396.70	97.79	359.17	323.60	35.57	10.097		
8,100.00	8,056.09	8,082.81	8,069.67	19.30	17.69	-128.62	-405.06	95.38	357.18	321.12	36.06	9.905		
8,200.00	8,156.08	8,182.52	8,169.01	19.49	17.94	-127.49	-413.41	92.98	354.22	317.67	36.55	9.692		
8,220.92	8,177.00	8,203.36	8,189.77	19.53	17.99	81.62	-415.16	92.48	353.48	316.83	36.65	9.645		
8,300.00	8,256.08	8,282.14	8,268.25	19.68	18.19	82.64	-421.76	90.59	350.68	313.65	37.03	9.469		
8,400.00	8,356.08	8,381.76	8,367.49	19.87	18.44	83.96	-430.11	88.19	347.30	309.77	37.53	9.254		
8,420.92	8,377.00	8,402.60	8,388.25	19.91	18.49	84.24	-431.85	87.69	346.62	308.98	37.64	9.210		
8,450.00	8,406.07	8,431.50	8,417.04	19.96	18.56	84.85	-434.28	86.99	345.62	307.83	37.78	9.147		
8,500.00	8,455.83	8,480.68	8,466.03	20.02	18.69	86.47	-438.40	85.81	343.72	305.68	38.04	9.036		
8,550.00	8,504.99	8,528.78	8,513.95	20.06	18.81	88.75	-442.42	84.65	341.91	303.62	38.29	8.930		
8,600.00	8,553.18	8,575.33	8,560.34	20.08	18.92	91.54	-446.18	83.57	340.73	302.22	38.51	8.848		
8,624.00	8,575.85	8,597.16	8,582.10	20.07	18.97	93.03	-447.88	83.08	340.56	301.96	38.60	8.822		
8,650.00	8,600.03	8,620.38	8,605.25	20.07	19.02	94.72	-449.64	82.58	340.79	302.10	38.69	8.808 SF		
8,700.00	8,645.18	8,663.63	8,648.36	20.04	19.12	96.10	-452.81	81.67	342.78	303.98	38.80	8.836		
8,750.00	8,688.28	8,704.75	8,689.38	19.99	19.22	101.48	-455.68	80.84	347.42	308.62	38.80	8.955		
8,800.00	8,729.02	8,743.47	8,728.01	19.93	19.31	104.65	-458.25	80.11	355.39	316.71	38.68	9.187		
8,850.00	8,767.08	8,779.50	8,763.96	19.86	19.39	107.44	-460.53	79.45	367.26	328.80	38.46	9.549		
8,900.00	8,802.18	8,812.57	8,796.96	19.78	19.46	109.66	-462.52	78.88	383.39	345.22	38.17	10.045		
8,950.00	8,834.03	8,842.41	8,826.75	19.71	19.53	111.17	-464.24	78.38	403.95	366.09	37.86	10.669		
9,000.00	8,862.41	8,868.80	8,853.09	19.63	19.59	111.85	-465.71	77.96	428.86	391.24	37.61	11.401		
9,050.00	8,887.09	8,891.50	8,875.76	19.56	19.64	111.55	-466.92	77.62	457.86	420.36	37.50	12.208		
9,100.00	8,907.89	8,910.30	8,894.53	19.49	19.68	110.13	-467.89	77.34	490.56	452.97	37.59	13.050		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 286H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
9,150.00	8,924.65	8,925.03	8,909.24	19.43	19.71	107.41	-468.62	77.12	526.47	488.57	37.90	13.891		
9,200.00	8,937.25	8,935.53	8,919.73	19.38	19.74	103.19	-469.14	76.98	565.05	526.66	38.39	14.719		
9,250.00	8,945.57	8,941.66	8,925.85	19.36	19.75	97.30	-469.44	76.89	605.75	566.85	38.90	15.573		
9,300.00	8,949.58	8,943.32	8,927.51	19.48	19.75	89.69	-469.52	76.87	648.01	608.87	39.14	16.556		
9,320.91	8,949.96	8,942.67	8,926.86	19.55	19.75	86.04	-469.49	76.88	666.01	626.93	39.08	17.042		
9,400.00	8,949.96	8,938.68	8,922.88	19.90	19.74	85.36	-469.29	76.93	735.45	696.13	39.32	18.703		
9,500.00	8,949.96	8,933.56	8,917.76	20.45	19.73	84.49	-469.04	77.00	825.72	785.95	39.76	20.767		
9,600.00	8,949.96	8,928.34	8,912.55	21.14	19.72	83.61	-468.79	77.08	917.97	877.63	40.34	22.757		
9,700.00	8,949.96	8,923.04	8,907.25	21.95	19.71	82.72	-468.53	77.15	1,011.68	970.64	41.04	24.653		
9,800.00	8,949.96	8,917.63	8,901.85	22.87	19.70	81.81	-468.26	77.23	1,106.46	1,064.61	41.85	26.442		
9,900.00	8,949.96	8,912.13	8,896.36	23.89	19.69	80.89	-467.98	77.31	1,202.06	1,159.32	42.75	28.121		
10,000.00	8,949.96	8,906.52	8,890.76	25.00	19.67	79.96	-467.69	77.39	1,298.31	1,254.58	43.72	29.693		
10,100.00	8,949.97	8,900.81	8,885.05	26.19	19.66	79.02	-467.40	77.48	1,395.06	1,350.29	44.77	31.161		
10,200.00	8,949.97	8,894.99	8,879.24	27.45	19.65	78.07	-467.10	77.56	1,492.22	1,446.36	45.87	32.535		
10,300.00	8,949.97	11,804.55	10,457.87	28.77	32.07	167.66	1,090.14	72.91	1,543.59	1,509.20	34.39	44.889		
10,400.00	8,949.97	11,904.55	10,457.56	30.14	33.41	167.66	1,190.14	72.91	1,543.28	1,507.74	35.55	43.417		
10,500.00	8,949.97	12,004.55	10,457.25	31.56	34.80	167.65	1,290.14	72.91	1,542.98	1,506.24	36.74	41.998		
10,600.00	8,949.97	12,104.55	10,456.93	33.01	36.23	167.65	1,390.14	72.91	1,542.67	1,504.70	37.97	40.633		
10,700.00	8,949.97	12,204.55	10,456.62	34.50	37.69	167.85	1,490.13	72.90	1,542.36	1,503.14	39.22	39.324		
10,800.00	8,949.97	12,304.55	10,456.31	36.03	39.18	167.84	1,590.13	72.90	1,542.05	1,501.55	40.50	38.071		
10,900.00	8,949.97	12,404.55	10,455.99	37.58	40.70	167.64	1,690.13	72.90	1,541.75	1,499.94	41.81	36.874		
11,000.00	8,949.98	12,504.55	10,455.68	39.15	42.25	167.64	1,790.13	72.90	1,541.44	1,498.30	43.14	35.731		
11,100.00	8,949.98	12,604.55	10,455.37	40.74	43.81	167.64	1,890.13	72.90	1,541.13	1,496.64	44.49	34.640		
11,200.00	8,949.98	12,704.55	10,455.05	42.35	45.40	167.63	1,990.13	72.90	1,540.83	1,494.97	45.86	33.601		
11,300.00	8,949.98	12,804.55	10,454.74	43.98	47.00	167.63	2,090.13	72.90	1,540.52	1,493.28	47.24	32.610		
11,400.00	8,949.98	12,904.55	10,454.43	45.63	48.62	167.63	2,190.13	72.90	1,540.21	1,491.57	48.64	31.665		
11,500.00	8,949.98	13,004.55	10,454.11	47.29	50.25	167.63	2,290.13	72.90	1,539.91	1,489.85	50.05	30.765		
11,600.00	8,949.98	13,104.55	10,453.80	48.96	51.90	167.62	2,390.13	72.90	1,539.60	1,488.12	51.48	29.906		
11,700.00	8,949.98	13,204.55	10,453.49	50.64	53.56	167.62	2,490.13	72.90	1,539.29	1,486.37	52.92	29.087		
11,800.00	8,949.98	13,304.55	10,453.17	52.33	55.23	167.62	2,590.12	72.90	1,538.99	1,484.62	54.37	28.306		
11,900.00	8,949.98	13,404.55	10,452.86	54.03	56.91	167.62	2,690.12	72.90	1,538.68	1,482.85	55.83	27.561		
12,000.00	8,949.99	13,504.55	10,452.55	55.73	58.59	167.61	2,790.12	72.90	1,538.37	1,481.07	57.30	26.849		
12,100.00	8,949.99	13,604.55	10,452.23	57.45	60.29	167.61	2,890.12	72.90	1,538.07	1,479.29	58.78	26.168		
12,200.00	8,949.99	13,704.55	10,451.92	59.17	61.99	167.61	2,990.12	72.90	1,537.76	1,477.50	60.26	25.518		
12,300.00	8,949.99	13,804.55	10,451.61	60.90	63.70	167.61	3,090.12	72.89	1,537.45	1,475.70	61.76	24.896		
12,400.00	8,949.99	13,904.54	10,451.29	62.63	65.42	167.60	3,190.12	72.89	1,537.15	1,473.89	63.26	24.300		
12,500.00	8,949.99	14,004.54	10,450.98	64.37	67.14	167.60	3,290.12	72.89	1,536.84	1,472.07	64.76	23.730		
12,600.00	8,949.99	14,104.54	10,450.66	66.11	68.87	167.60	3,390.12	72.89	1,536.53	1,470.25	66.28	23.183		
12,700.00	8,949.99	14,204.54	10,450.35	67.86	70.60	167.60	3,490.12	72.89	1,536.22	1,468.43	67.80	22.659		
12,800.00	8,949.99	14,304.54	10,450.04	69.61	72.34	167.59	3,590.11	72.89	1,535.92	1,466.60	69.32	22.157		
12,900.00	8,949.99	14,404.54	10,449.72	71.36	74.08	167.59	3,690.11	72.89	1,535.61	1,464.76	70.85	21.674		
13,000.00	8,950.00	14,504.54	10,449.41	73.12	75.82	167.59	3,790.11	72.89	1,535.30	1,462.92	72.38	21.210		
13,100.00	8,950.00	14,604.54	10,449.10	74.89	77.57	167.59	3,890.11	72.89	1,535.00	1,461.07	73.92	20.765		
13,200.00	8,950.00	14,704.54	10,448.78	76.65	79.32	167.58	3,990.11	72.89	1,534.69	1,459.22	75.47	20.336		
13,300.00	8,950.00	14,804.54	10,448.47	78.42	81.08	167.58	4,090.11	72.89	1,534.38	1,457.37	77.01	19.924		
13,400.00	8,950.00	14,904.54	10,448.16	80.19	82.84	167.58	4,190.11	72.89	1,534.08	1,455.51	78.56	19.527		
13,452.65	8,950.00	14,954.50	10,448.00	81.12	83.72	167.58	4,240.07	72.89	1,533.92	1,454.56	79.36	19.328		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 312H (SIMOPS) - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)		Between Centres (usft)	Between Ellipses (usft)					
0.00	0.00	0.00	0.00	0.00	0.00	145.07	-259.02	180.88	315.92				
100.00	100.00	100.00	100.00	0.08	0.08	145.07	-259.02	180.88	315.92	0.16	2,007.950		
200.00	200.00	200.00	200.00	0.30	0.30	145.07	-259.02	180.88	315.92	0.61	520.580		
300.00	300.00	300.00	300.00	0.53	0.53	145.07	-259.02	180.88	315.92	1.06	299.057		
400.00	400.00	400.00	400.00	0.75	0.75	145.07	-259.02	180.88	315.92	1.51	209.786		
500.00	500.00	500.00	500.00	0.98	0.98	145.07	-259.02	180.88	315.92	1.96	161.559		
600.00	600.00	600.00	600.00	1.20	1.20	145.07	-259.02	180.88	315.92	2.40	131.361		
700.00	700.00	700.00	700.00	1.43	1.43	145.07	-259.02	180.88	315.92	2.85	110.675		
800.00	800.00	800.00	800.00	1.65	1.65	145.07	-259.02	180.88	315.92	3.30	95.617		
900.00	900.00	900.00	900.00	1.88	1.88	145.07	-259.02	180.88	315.92	3.75	84.166		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	145.07	-259.02	180.88	315.92	4.20	75.164		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	145.07	-259.02	180.88	315.92	4.65	67.902		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	145.07	-259.02	180.88	315.92	5.10	61.919		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	145.07	-259.02	180.88	315.92	5.55	56.906		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	145.07	-259.02	180.88	315.92	6.00	52.643		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	145.07	-259.02	180.88	315.92	6.45	48.974		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	145.07	-259.02	180.88	315.92	6.90	45.784		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	145.07	-259.02	180.88	315.92	7.35	42.984		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	145.07	-259.02	180.88	315.92	7.80	40.506		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	145.07	-259.02	180.88	315.92	8.25	38.299		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	145.07	-259.02	180.88	315.92	8.70	36.320		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	145.07	-259.02	180.88	315.92	9.15	34.535		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	145.07	-259.02	180.88	315.92	9.60	32.917		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	145.07	-259.02	180.88	315.92	10.05	31.444		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	145.07	-259.02	180.88	315.92	10.50	30.098		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	145.07	-259.02	180.88	315.92	10.95	28.862		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	145.07	-259.02	180.88	315.92	11.40	27.723		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	145.07	-259.02	180.88	315.92	11.85	26.671		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	145.07	-259.02	180.88	315.92	12.29	25.696		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	145.07	-259.02	180.88	315.92	12.74	24.790		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	145.07	-259.02	180.88	315.92	13.19	23.945		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	145.07	-259.02	180.88	315.92	13.64	23.156		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	145.07	-259.02	180.88	315.92	14.09	22.417		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	145.07	-259.02	180.88	315.92	14.54	21.724		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	145.07	-259.02	180.88	315.92	14.99	21.073		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	145.07	-259.02	180.88	315.92	15.44	20.459		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	145.07	-259.02	180.88	315.92	15.89	19.881		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	145.07	-259.02	180.88	315.92	16.34	19.334		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	145.07	-259.02	180.88	315.92	16.79	18.816		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	145.07	-259.02	180.88	315.92	17.24	18.326		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	145.07	-259.02	180.88	315.92	17.69	17.860		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	145.07	-259.02	180.88	315.92	18.14	17.417		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	145.07	-259.02	180.88	315.92	18.59	16.996		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	145.07	-259.02	180.88	315.92	19.04	16.595 CC		
4,400.00	4,400.00	4,396.58	4,396.58	9.72	9.71	-63.79	-259.81	180.66	316.08	19.42	16.273		
4,500.00	4,499.96	4,493.17	4,493.13	9.89	9.87	-63.86	-262.16	180.02	316.54	19.76	16.022		
4,600.00	4,599.86	4,589.75	4,589.62	10.06	10.04	-63.97	-266.09	178.96	317.32	20.09	15.793		
4,700.00	4,699.68	4,686.32	4,686.03	10.24	10.21	-64.13	-271.58	177.47	318.41	20.43	15.583		
4,800.00	4,799.37	4,782.89	4,782.32	10.42	10.37	-64.32	-278.65	175.55	319.81	20.78	15.392		
4,900.00	4,898.90	4,881.00	4,880.02	10.60	10.55	-64.59	-287.25	173.21	321.42	21.13	15.210		
5,000.00	4,998.26	4,980.95	4,979.54	10.79	10.73	-65.11	-296.26	170.77	322.45	21.50	14.998		
5,100.00	5,097.40	5,080.84	5,078.99	10.99	10.92	-65.92	-305.26	168.32	322.80	21.88	14.756		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 312H (SIMOPS) - OH - Plan #1												Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ												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
5,200.00	5,196.30	5,180.65	5,178.37	11.20	11.11	-67.01	-314.25	165.88	322.53	300.26	22.27	14.485	
5,300.00	5,294.93	5,280.35	5,277.63	11.41	11.31	-68.39	-323.24	163.44	321.73	299.06	22.67	14.191	
5,379.29	5,372.92	5,359.29	5,356.23	11.59	11.47	-69.70	-330.35	161.51	320.79	297.79	23.01	13.944	
5,400.00	5,393.26	5,379.90	5,376.74	11.64	11.51	-70.07	-332.21	161.01	320.53	297.43	23.10	13.878	
5,500.00	5,491.49	5,479.40	5,475.81	11.88	11.71	-71.83	-341.17	158.58	319.43	295.89	23.54	13.569	
5,600.00	5,589.72	5,578.90	5,574.87	12.13	11.92	-73.61	-350.14	156.14	318.64	294.64	24.00	13.277	
5,700.00	5,687.96	5,678.40	5,673.94	12.39	12.12	-75.40	-359.10	153.71	318.16	293.69	24.47	13.002	
5,800.00	5,786.19	5,777.90	5,773.01	12.66	12.34	-77.18	-368.07	151.27	317.99	293.04	24.95	12.744	
5,802.94	5,789.07	5,780.83	5,775.92	12.67	12.34	-77.24	-368.33	151.20	317.99	293.03	24.97	12.737	
5,900.00	5,884.42	5,877.40	5,872.07	12.93	12.55	-78.97	-377.04	148.84	318.14	292.70	25.45	12.503	
6,000.00	5,982.65	5,976.90	5,971.14	13.21	12.77	-80.76	-386.00	146.41	318.60	292.65	25.95	12.278 ES	
6,100.00	6,080.88	6,076.41	6,070.21	13.50	12.99	-82.54	-394.97	143.97	319.37	292.91	26.46	12.069	
6,200.00	6,179.11	6,175.91	6,169.27	13.80	13.21	-84.30	-403.93	141.54	320.45	293.47	26.98	11.876	
6,300.00	6,277.34	6,275.41	6,268.34	14.10	13.44	-86.06	-412.90	139.10	321.84	294.33	27.51	11.698	
6,400.00	6,375.57	6,374.91	6,367.40	14.40	13.66	-87.80	-421.86	136.67	323.53	295.48	28.05	11.535	
6,500.00	6,473.80	6,474.41	6,466.47	14.71	13.89	-89.52	-430.83	134.24	325.51	296.92	28.59	11.386	
6,600.00	6,572.03	6,573.91	6,565.54	15.03	14.12	-91.21	-439.80	131.80	327.79	298.65	29.13	11.251	
6,700.00	6,670.27	6,673.41	6,664.60	15.35	14.35	-92.88	-448.76	129.37	330.35	300.67	29.68	11.129	
6,800.00	6,768.50	6,772.91	6,763.67	15.67	14.59	-94.53	-457.73	126.93	333.19	302.96	30.24	11.019	
6,900.00	6,866.73	6,872.41	6,862.74	16.00	14.82	-96.15	-466.69	124.50	336.31	305.51	30.79	10.921	
7,000.00	6,964.96	6,971.91	6,961.80	16.33	15.06	-97.73	-475.66	122.07	339.69	308.34	31.35	10.835	
7,100.00	7,063.19	7,071.42	7,060.87	16.67	15.30	-99.28	-484.62	119.63	343.32	311.41	31.91	10.759	
7,141.63	7,104.08	7,112.84	7,102.11	16.81	15.40	-99.92	-488.36	118.62	344.91	312.77	32.14	10.731	
7,200.00	7,161.48	7,170.94	7,159.96	17.00	15.54	-100.78	-493.59	117.20	347.15	314.69	32.46	10.695	
7,300.00	7,260.04	7,270.61	7,259.19	17.29	15.78	-102.00	-502.57	114.76	350.87	317.89	32.98	10.638	
7,400.00	7,358.89	7,370.40	7,358.54	17.58	16.03	-102.93	-511.56	112.32	354.35	320.85	33.50	10.577	
7,500.00	7,457.98	7,470.28	7,457.99	17.86	16.27	-103.56	-520.56	109.88	357.50	323.48	34.02	10.509	
7,600.00	7,557.30	7,570.22	7,557.49	18.13	16.52	-103.91	-529.57	107.43	360.26	325.73	34.53	10.434	
7,700.00	7,656.80	7,670.19	7,657.03	18.39	16.77	-103.98	-538.58	104.99	362.61	327.58	35.03	10.350	
7,800.00	7,756.46	7,770.16	7,756.56	18.64	17.02	-103.79	-547.59	102.54	364.54	329.01	35.53	10.259	
7,900.00	7,856.25	7,870.10	7,856.06	18.87	17.27	-103.32	-556.59	100.09	366.07	330.05	36.02	10.162	
8,000.00	7,956.14	7,969.98	7,955.51	19.09	17.52	-102.59	-565.59	97.65	367.25	330.74	36.51	10.059	
8,100.00	8,056.09	8,069.77	8,054.86	19.30	17.77	-101.60	-574.58	95.21	368.13	331.14	36.98	9.954	
8,200.00	8,156.08	8,169.43	8,154.09	19.49	18.02	-100.35	-583.56	92.77	368.80	331.35	37.45	9.849	
8,220.92	8,177.00	8,190.26	8,174.83	19.53	18.08	-100.79	-585.44	92.26	368.92	331.38	37.54	9.827	
8,300.00	8,256.08	8,269.00	8,253.22	19.68	18.28	-100.92	-592.53	90.34	369.46	331.57	37.90	9.749	
8,400.00	8,356.08	8,368.56	8,352.35	19.87	18.53	-111.36	-601.51	87.90	370.35	332.00	38.35	9.657	
8,420.92	8,377.00	8,389.39	8,373.09	19.91	18.58	-111.66	-603.38	87.39	370.57	332.12	38.45	9.638	
8,450.00	8,406.07	8,418.26	8,401.83	19.96	18.66	-112.12	-605.98	86.69	371.17	332.60	38.57	9.623 SF	
8,500.00	8,455.83	8,467.48	8,450.84	20.02	18.78	-113.25	-610.40	85.49	373.62	334.89	38.72	9.648	
8,550.00	8,504.99	8,515.93	8,499.09	20.06	18.90	-114.70	-614.58	84.35	378.07	339.28	38.79	9.747	
8,600.00	8,553.18	8,563.16	8,546.15	20.08	19.01	-116.38	-618.47	83.30	384.85	346.09	38.76	9.930	
8,650.00	8,600.03	8,608.86	8,591.70	20.07	19.12	-118.15	-622.05	82.32	394.28	355.66	38.61	10.211	
8,700.00	8,645.18	8,652.72	8,635.43	20.04	19.22	-119.90	-625.33	81.43	406.71	368.35	38.36	10.603	
8,750.00	8,688.28	8,694.44	8,677.03	19.99	19.32	-121.49	-628.29	80.63	422.41	384.42	38.00	11.118	
8,800.00	8,729.02	8,733.71	8,716.20	19.93	19.41	-122.81	-630.95	79.91	441.61	404.06	37.55	11.761	
8,850.00	8,767.08	8,770.24	8,752.66	19.86	19.49	-123.73	-633.31	79.27	464.40	427.34	37.06	12.530	
8,900.00	8,802.18	8,803.77	8,786.12	19.78	19.57	-124.16	-635.37	78.71	490.78	454.18	36.59	13.411	
8,950.00	8,834.03	8,834.04	8,816.33	19.71	19.64	-123.97	-637.15	78.23	520.62	484.41	36.21	14.378	
9,000.00	8,862.41	8,860.78	8,843.03	19.63	19.70	-123.03	-638.66	77.82	553.71	517.72	35.99	15.383	
9,050.00	8,887.09	8,883.79	8,866.00	19.56	19.75	-121.16	-639.91	77.48	589.78	553.75	36.03	16.369	
9,100.00	8,907.89	8,902.84	8,885.02	19.49	19.79	-118.15	-640.91	77.20	628.48	592.09	36.38	17.273	

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 312H (SIMOPS) - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														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)		Between Centres (usft)	Between Ellipses (usft)							
9,150.00	8,924.65	8,917.75	8,899.91	19.43	19.82	113.71	-641.68	77.00	669.42	632.34	37.07	18.057			
9,200.00	8,937.25	8,928.36	8,910.51	19.38	19.85	107.54	-642.21	76.85	712.18	674.18	38.00	18.742			
9,250.00	8,945.57	8,934.54	8,916.68	19.36	19.86	99.36	-642.51	76.77	756.35	717.46	38.89	19.450			
9,300.00	8,949.58	8,936.17	8,918.31	19.48	19.86	89.20	-642.59	76.75	801.48	762.24	39.24	20.424			
9,320.91	8,949.96	8,935.49	8,917.63	19.55	19.86	84.47	-642.56	76.76	820.53	781.43	39.10	20.984			
9,400.00	8,949.96	8,931.36	8,913.50	19.90	19.85	83.77	-642.36	76.81	893.29	853.96	39.33	22.712			
9,500.00	8,949.96	8,928.05	8,908.19	20.45	19.84	82.87	-642.09	76.88	986.66	946.90	39.75	24.819			
9,600.00	8,949.96	8,920.64	8,902.79	21.14	19.83	81.96	-641.82	76.96	1,081.19	1,040.88	40.31	26.820			
9,700.00	8,949.96	8,915.13	8,897.29	21.95	19.82	81.04	-641.54	77.03	1,176.60	1,135.61	40.99	28.703			
9,800.00	8,949.96	8,909.51	8,891.68	22.87	19.81	80.11	-641.26	77.11	1,272.69	1,230.92	41.78	30.483			
9,900.00	8,949.96	8,903.79	8,885.97	23.89	19.79	79.16	-640.96	77.19	1,369.33	1,326.67	42.66	32.102			
10,000.00	8,949.96	8,897.97	8,880.16	25.00	19.78	78.21	-640.66	77.27	1,466.39	1,422.78	43.61	33.625			
10,100.00	8,949.97	8,892.03	8,874.23	26.19	19.77	77.24	-640.35	77.36	1,563.81	1,519.18	44.63	35.041			
10,200.00	8,949.97	8,885.98	8,868.18	27.45	19.75	76.26	-640.03	77.44	1,661.51	1,615.81	45.70	36.361			
10,300.00	8,949.97	8,879.81	8,862.02	28.77	19.74	75.27	-639.70	77.53	1,759.45	1,712.65	46.80	37.592			
10,400.00	8,949.97	8,873.52	8,855.74	30.14	19.72	74.28	-639.36	77.63	1,857.59	1,809.65	47.94	38.747			
10,500.00	8,949.97	8,867.10	8,849.33	31.56	19.71	73.27	-639.01	77.72	1,955.91	1,906.81	49.10	39.835			
10,600.00	8,949.97	8,860.55	8,842.80	33.01	19.70	72.25	-638.65	77.82	2,054.37	2,004.09	50.27	40.864			
10,700.00	8,949.97	8,853.87	8,836.13	34.50	19.68	71.23	-638.28	77.92	2,152.95	2,101.50	51.45	41.842			
10,800.00	8,949.97	8,847.06	8,829.33	36.03	19.67	70.20	-637.89	78.02	2,251.64	2,199.01	52.64	42.778			
10,900.00	8,949.97	8,840.10	8,822.38	37.58	19.65	69.16	-637.50	78.13	2,350.43	2,296.62	53.81	43.678			
11,000.00	8,949.98	8,833.00	8,815.29	39.15	19.63	68.12	-637.09	78.24	2,449.30	2,394.32	54.98	44.548			
11,100.00	8,949.98	8,825.74	8,808.05	40.74	19.62	67.06	-636.67	78.36	2,548.24	2,492.10	56.14	45.394			
11,200.00	8,949.98	8,818.33	8,800.65	42.35	19.60	66.01	-636.24	78.47	2,647.24	2,589.97	57.27	46.220			
11,300.00	8,949.98	8,810.77	8,793.10	43.98	19.58	64.95	-635.79	78.60	2,746.30	2,687.91	58.39	47.032			
11,400.00	8,949.98	14,304.45	11,690.00	45.63	52.17	173.13	2,185.41	72.88	2,759.81	2,710.45	49.37	55.904			
11,500.00	8,949.98	14,404.45	11,690.00	47.29	53.79	173.13	2,285.41	72.88	2,759.81	2,709.18	50.64	54.501			
11,600.00	8,949.98	14,504.45	11,690.00	48.96	55.41	173.13	2,385.41	72.88	2,759.81	2,707.89	51.92	53.154			
11,700.00	8,949.98	14,604.45	11,690.00	50.64	57.05	173.13	2,485.41	72.88	2,759.81	2,706.59	53.22	51.859			
11,800.00	8,949.98	14,704.45	11,690.00	52.33	58.70	173.13	2,585.41	72.88	2,759.81	2,705.29	54.52	50.616			
11,900.00	8,949.98	14,804.45	11,690.00	54.03	60.37	173.13	2,685.41	72.88	2,759.81	2,703.97	55.84	49.422			
12,000.00	8,949.99	14,904.45	11,690.00	55.73	62.04	173.13	2,785.41	72.88	2,759.81	2,702.64	57.17	48.275			
12,100.00	8,949.99	15,004.45	11,690.00	57.45	63.72	173.13	2,885.41	72.88	2,759.81	2,701.30	58.51	47.172			
12,200.00	8,949.99	15,104.45	11,690.00	59.17	65.40	173.13	2,985.41	72.88	2,759.81	2,699.96	59.85	46.112			
12,300.00	8,949.99	15,204.45	11,690.00	60.90	67.10	173.13	3,085.41	72.89	2,759.81	2,698.61	61.20	45.093			
12,400.00	8,949.99	15,304.45	11,690.00	62.63	68.80	173.13	3,185.41	72.89	2,759.81	2,697.24	62.56	44.113			
12,500.00	8,949.99	15,404.45	11,690.00	64.37	70.51	173.13	3,285.41	72.89	2,759.81	2,695.88	63.93	43.169			
12,600.00	8,949.99	15,504.45	11,690.00	66.11	72.22	173.13	3,385.41	72.89	2,759.81	2,694.50	65.30	42.261			
12,700.00	8,949.99	15,604.45	11,690.00	67.86	73.94	173.13	3,485.41	72.89	2,759.81	2,693.12	66.68	41.387			
12,800.00	8,949.99	15,704.45	11,690.00	69.61	75.66	173.13	3,585.41	72.89	2,759.80	2,691.74	68.07	40.544			
12,900.00	8,949.99	15,804.45	11,690.00	71.36	77.39	173.13	3,685.41	72.89	2,759.80	2,690.34	69.46	39.732			
13,000.00	8,950.00	15,904.45	11,690.00	73.12	79.12	173.13	3,785.41	72.89	2,759.80	2,688.95	70.86	38.949			
13,100.00	8,950.00	16,004.45	11,690.00	74.89	80.86	173.13	3,885.41	72.89	2,759.80	2,687.54	72.26	38.194			
13,200.00	8,950.00	16,104.45	11,690.00	76.65	82.60	173.13	3,985.41	72.89	2,759.80	2,686.14	73.66	37.465			
13,300.00	8,950.00	16,204.45	11,690.00	78.42	84.35	173.13	4,085.41	72.89	2,759.80	2,684.73	75.07	36.761			
13,400.00	8,950.00	16,304.45	11,690.00	80.19	86.10	173.13	4,185.41	72.89	2,759.80	2,683.31	76.49	36.082			
13,452.65	8,950.00	16,357.11	11,690.00	81.12	87.02	173.13	4,238.06	72.89	2,759.80	2,682.57	77.23	35.733			

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 313H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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	142.31	-234.03	180.81	295.74					
100.00	100.00	100.00	100.00	0.08	0.08	142.31	-234.03	180.81	295.74	0.16	1,879.655			
200.00	200.00	200.00	200.00	0.30	0.30	142.31	-234.03	180.81	295.74	0.61	487.319			
300.00	300.00	300.00	300.00	0.53	0.53	142.31	-234.03	180.81	295.74	1.06	279.949			
400.00	400.00	400.00	400.00	0.75	0.75	142.31	-234.03	180.81	295.74	1.51	196.382			
500.00	500.00	500.00	500.00	0.98	0.98	142.31	-234.03	180.81	295.74	1.96	151.237			
600.00	600.00	600.00	600.00	1.20	1.20	142.31	-234.03	180.81	295.74	2.40	122.968			
700.00	700.00	700.00	700.00	1.43	1.43	142.31	-234.03	180.81	295.74	2.85	103.603			
800.00	800.00	800.00	800.00	1.65	1.65	142.31	-234.03	180.81	295.74	3.30	89.508			
900.00	900.00	900.00	900.00	1.88	1.88	142.31	-234.03	180.81	295.74	3.75	78.788			
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	142.31	-234.03	180.81	295.74	4.20	70.362			
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	142.31	-234.03	180.81	295.74	4.65	63.563			
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	142.31	-234.03	180.81	295.74	5.10	57.963			
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	142.31	-234.03	180.81	295.74	5.55	53.270			
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	142.31	-234.03	180.81	295.74	6.00	49.279			
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	142.31	-234.03	180.81	295.74	6.45	45.845			
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	142.31	-234.03	180.81	295.74	6.90	42.859			
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	142.31	-234.03	180.81	295.74	7.35	40.237			
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	142.31	-234.03	180.81	295.74	7.80	37.918			
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	142.31	-234.03	180.81	295.74	8.25	35.852			
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	142.31	-234.03	180.81	295.74	8.70	33.999			
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	142.31	-234.03	180.81	295.74	9.15	32.328			
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	142.31	-234.03	180.81	295.74	9.60	30.814			
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	142.31	-234.03	180.81	295.74	10.05	29.435			
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	142.31	-234.03	180.81	295.74	10.50	28.175			
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	142.31	-234.03	180.81	295.74	10.95	27.018			
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	142.31	-234.03	180.81	295.74	11.40	25.952			
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	142.31	-234.03	180.81	295.74	11.85	24.987			
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	142.31	-234.03	180.81	295.74	12.29	24.054			
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	142.31	-234.03	180.81	295.74	12.74	23.206			
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	142.31	-234.03	180.81	295.74	13.19	22.415			
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	142.31	-234.03	180.81	295.74	13.64	21.676			
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	142.31	-234.03	180.81	295.74	14.09	20.985			
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	142.31	-234.03	180.81	295.74	14.54	20.336			
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	142.31	-234.03	180.81	295.74	14.99	19.727			
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	142.31	-234.03	180.81	295.74	15.44	19.152			
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	142.31	-234.03	180.81	295.74	15.89	18.610			
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	142.31	-234.03	180.81	295.74	16.34	18.098			
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	142.31	-234.03	180.81	295.74	16.79	17.614			
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	142.31	-234.03	180.81	295.74	17.24	17.155			
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	142.31	-234.03	180.81	295.74	17.69	16.719			
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	142.31	-234.03	180.81	295.74	18.14	16.304			
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	142.31	-234.03	180.81	295.74	18.59	15.910			
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	142.31	-234.03	180.81	295.74	19.04	15.534 CC, ES			
4,400.00	4,400.00	4,395.48	4,395.47	9.72	9.71	-66.74	-234.41	181.51	296.16	19.43	15.243			
4,500.00	4,499.96	4,490.87	4,490.84	9.89	9.89	-67.35	-235.55	183.60	297.43	19.77	15.041			
4,600.00	4,599.86	4,586.10	4,585.98	10.06	10.07	-68.36	-237.43	187.09	299.64	20.12	14.891			
4,700.00	4,699.68	4,681.09	4,680.81	10.24	10.25	-69.74	-240.07	191.94	302.89	20.47	14.794			
4,800.00	4,799.37	4,775.74	4,775.20	10.42	10.43	-71.46	-243.44	198.16	307.34	20.83	14.754 SF			
4,900.00	4,898.90	4,870.00	4,869.06	10.60	10.62	-73.48	-247.54	205.71	313.19	21.19	14.777			
5,000.00	4,998.26	4,963.76	4,962.28	10.79	10.81	-75.75	-252.34	214.57	320.62	21.56	14.869			
5,100.00	5,097.40	5,056.97	5,054.77	10.99	11.00	-78.21	-257.83	224.70	329.84	21.94	15.033			

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 313H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)						
5,200.00	5,196.30	5,149.55	5,146.44	11.20	11.20	-80.81	-264.00	236.07	341.07	318.74	22.33	15.275		
5,300.00	5,294.93	5,241.42	5,237.19	11.41	11.41	-83.49	-270.82	248.64	354.49	331.76	22.73	15.598		
5,379.29	5,372.92	5,316.86	5,311.57	11.59	11.59	-85.72	-276.82	259.71	366.56	343.50	23.06	15.898		
5,400.00	5,393.26	5,336.91	5,331.33	11.64	11.64	-86.34	-278.43	262.67	369.82	346.67	23.14	15.979		
5,500.00	5,491.49	5,433.73	5,426.79	11.88	11.88	-89.20	-286.16	276.93	386.15	362.57	23.57	16.380		
5,600.00	5,589.72	5,530.55	5,522.24	12.13	12.12	-91.82	-293.90	291.19	403.37	379.35	24.01	16.797		
5,700.00	5,687.96	5,627.37	5,617.69	12.39	12.37	-94.24	-301.63	305.45	421.37	396.91	24.46	17.226		
5,800.00	5,786.19	5,724.19	5,713.14	12.66	12.62	-96.46	-309.37	319.72	440.06	415.14	24.92	17.661		
5,900.00	5,884.42	5,821.02	5,808.60	12.93	12.88	-98.50	-317.10	333.98	459.35	433.97	25.38	18.098		
6,000.00	5,982.65	5,917.84	5,904.05	13.21	13.15	-100.38	-324.84	348.24	479.17	453.31	25.85	18.534		
6,100.00	6,080.88	6,014.66	5,999.50	13.50	13.42	-102.11	-332.57	362.51	499.45	473.12	26.33	18.967		
6,200.00	6,179.11	6,111.48	6,094.95	13.80	13.70	-103.70	-340.31	376.77	520.15	493.33	26.82	19.394		
6,300.00	6,277.34	6,208.30	6,190.41	14.10	13.98	-105.18	-348.04	391.03	541.21	513.90	27.31	19.815		
6,400.00	6,375.57	6,305.12	6,285.86	14.40	14.26	-106.55	-355.78	405.29	562.60	534.78	27.81	20.227		
6,500.00	6,473.80	6,401.94	6,381.31	14.71	14.55	-107.81	-363.51	419.56	584.27	555.95	28.32	20.630		
6,600.00	6,572.03	6,498.77	6,476.76	15.03	14.84	-108.99	-371.25	433.82	606.20	577.37	28.83	21.024		
6,700.00	6,670.27	6,595.59	6,572.22	15.35	15.14	-110.09	-378.98	448.08	628.36	599.01	29.35	21.407		
6,800.00	6,768.50	6,692.41	6,667.67	15.67	15.44	-111.11	-386.72	462.35	650.73	620.85	29.88	21.780		
6,900.00	6,866.73	6,789.23	6,763.12	16.00	15.74	-112.06	-394.46	476.61	673.28	642.88	30.41	22.142		
7,000.00	6,964.96	6,886.05	6,858.57	16.33	16.05	-112.96	-402.19	490.87	696.01	665.06	30.94	22.494		
7,100.00	7,063.19	6,982.87	6,954.03	16.67	16.35	-113.79	-409.93	505.13	718.88	687.40	31.48	22.835		
7,141.63	7,104.08	7,023.18	6,993.76	16.81	16.48	-114.13	-413.15	511.07	728.44	696.74	31.71	22.974		
7,200.00	7,161.48	7,079.75	7,049.53	17.00	16.66	-114.68	-417.67	519.40	741.77	709.75	32.03	23.162		
7,300.00	7,260.04	7,176.90	7,145.31	17.29	16.98	-115.50	-425.43	533.72	764.12	731.56	32.56	23.470		
7,400.00	7,358.89	7,274.34	7,241.36	17.58	17.30	-116.16	-433.21	548.07	785.79	752.71	33.08	23.751		
7,500.00	7,457.98	7,372.01	7,337.66	17.86	17.62	-116.68	-441.02	562.46	806.75	773.15	33.61	24.005		
7,600.00	7,557.30	7,469.91	7,434.17	18.13	17.94	-117.06	-448.84	576.88	826.96	792.84	34.12	24.234		
7,700.00	7,656.80	7,568.00	7,530.87	18.39	18.26	-117.31	-456.67	591.33	846.40	811.77	34.63	24.439		
7,800.00	7,756.46	7,666.24	7,627.73	18.64	18.59	-117.45	-464.52	605.80	865.05	829.92	35.13	24.622		
7,900.00	7,856.25	7,764.61	7,724.71	18.87	18.92	-117.48	-472.38	620.29	882.92	847.30	35.62	24.786		
8,000.00	7,956.14	7,863.08	7,821.78	19.09	19.25	-117.41	-480.25	634.80	900.00	863.90	36.10	24.931		
8,100.00	8,056.09	7,961.62	7,918.93	19.30	19.59	-117.25	-488.12	649.31	916.30	879.74	36.57	25.059		
8,200.00	8,156.08	8,060.19	8,016.11	19.49	19.92	-116.99	-496.00	663.83	931.86	894.84	37.02	25.173		
8,220.92	8,177.00	8,080.81	8,036.44	19.53	19.99	91.92	-497.64	666.87	935.02	897.91	37.11	25.196		
8,300.00	8,256.08	8,158.78	8,113.30	19.68	20.26	92.28	-503.87	678.36	946.92	909.47	37.45	25.282		
8,400.00	8,356.08	8,257.36	8,210.49	19.87	20.60	92.72	-511.75	692.88	962.03	924.13	37.90	25.386		
8,420.92	8,377.00	8,277.99	8,230.82	19.91	20.67	92.81	-513.40	695.92	965.20	927.21	37.99	25.408		
8,450.00	8,406.07	8,306.59	8,259.02	19.96	20.77	92.53	-515.68	700.13	969.64	931.52	38.12	25.439		
8,500.00	8,455.83	8,355.27	8,307.01	20.02	20.94	92.22	-519.57	707.30	977.46	939.15	38.31	25.514		
8,550.00	8,504.99	8,403.01	8,354.08	20.06	21.10	92.11	-523.39	714.33	985.57	947.09	38.47	25.618		
8,600.00	8,553.18	8,449.46	8,399.87	20.08	21.26	92.16	-527.10	721.18	994.04	955.44	38.60	25.753		
8,650.00	8,600.03	8,494.25	8,444.03	20.07	21.42	92.32	-530.67	727.77	1,003.02	964.32	38.70	25.920		
8,700.00	8,645.18	8,537.05	8,486.22	20.04	21.57	92.55	-534.09	734.08	1,012.66	973.90	38.77	26.123		
8,750.00	8,688.28	8,577.52	8,526.12	19.99	21.71	92.78	-537.33	740.04	1,023.15	984.34	38.81	26.362		
8,800.00	8,729.02	8,615.37	8,563.44	19.93	21.84	92.96	-540.35	745.62	1,034.67	995.83	38.84	26.640		
8,850.00	8,767.08	8,650.31	8,597.88	19.86	21.96	93.02	-543.14	750.76	1,047.40	1,008.54	38.86	26.954		
8,900.00	8,802.18	8,682.06	8,629.18	19.78	22.07	92.90	-545.68	755.44	1,061.49	1,022.61	38.88	27.303		
8,950.00	8,834.03	8,710.39	8,657.11	19.71	22.17	92.54	-547.94	759.61	1,077.09	1,038.18	38.91	27.684		
9,000.00	8,862.41	8,735.07	8,681.45	19.63	22.26	91.89	-549.91	763.25	1,094.29	1,055.34	38.95	28.095		
9,050.00	8,887.09	8,755.94	8,702.01	19.56	22.33	90.90	-551.58	766.32	1,113.13	1,074.12	39.01	28.535		
9,100.00	8,907.89	8,772.81	8,718.65	19.49	22.39	89.53	-552.93	768.81	1,133.60	1,094.52	39.08	29.007		
9,150.00	8,924.65	8,785.57	8,731.23	19.43	22.44	87.75	-553.95	770.69	1,155.65	1,116.50	39.15	29.522		

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



LEAM Drilling Systems LLC
Anticollision Report



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Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 313H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)						
9,200.00	8,937.25	8,794.12	8,739.66	19.38	22.47	85.56	-554.63	771.95	1,179.16	1,139.98	39.18	30.097		
9,250.00	8,945.57	8,798.40	8,743.87	19.36	22.48	82.95	-554.97	772.58	1,203.95	1,164.81	39.15	30.754		
9,300.00	8,949.58	8,798.36	8,743.84	19.48	22.48	79.96	-554.97	772.57	1,229.82	1,190.81	39.02	31.519		
9,320.91	8,949.96	8,797.07	8,742.56	19.55	22.48	78.61	-554.87	772.38	1,240.90	1,201.97	38.93	31.876		
9,400.00	8,949.96	8,790.75	8,736.33	19.90	22.46	78.27	-554.36	771.45	1,284.77	1,245.62	39.16	32.811		
9,500.00	8,949.96	8,782.76	8,728.46	20.45	22.43	77.83	-553.72	770.27	1,344.82	1,305.24	39.58	33.976		
9,600.00	8,949.96	8,774.77	8,720.58	21.14	22.40	77.40	-553.09	769.10	1,409.36	1,369.22	40.15	35.104		
9,700.00	8,949.96	8,766.78	8,712.71	21.95	22.37	76.97	-552.45	767.92	1,477.82	1,436.97	40.84	36.182		
9,800.00	8,949.96	8,758.79	8,704.83	22.87	22.34	76.53	-551.81	766.74	1,549.66	1,508.01	41.65	37.203		
9,900.00	8,949.96	8,750.80	8,696.95	23.89	22.32	76.10	-551.17	765.57	1,624.45	1,581.89	42.56	38.164		
10,000.00	8,949.96	8,742.82	8,689.08	25.00	22.29	75.67	-550.53	764.39	1,701.79	1,658.23	43.56	39.066		
10,100.00	8,949.97	8,734.83	8,681.20	26.19	22.26	75.24	-549.89	763.21	1,781.36	1,736.72	44.63	39.911		
10,200.00	8,949.97	8,726.84	8,673.33	27.45	22.23	74.81	-549.26	762.04	1,862.86	1,817.09	45.77	40.702		
10,300.00	8,949.97	8,718.85	8,665.45	28.77	22.20	74.38	-548.62	760.86	1,946.05	1,899.09	46.96	41.443		
10,400.00	8,949.97	8,710.86	8,657.58	30.14	22.18	73.96	-547.98	759.68	2,030.73	1,982.54	48.19	42.139		
10,500.00	8,949.97	8,702.87	8,649.70	31.56	22.15	73.53	-547.34	758.51	2,116.71	2,067.25	49.46	42.793		
10,600.00	8,949.97	8,694.88	8,641.82	33.01	22.12	73.10	-546.70	757.33	2,203.85	2,153.08	50.77	43.409		
10,700.00	8,949.97	8,686.90	8,633.95	34.50	22.09	72.68	-546.07	756.15	2,292.01	2,239.91	52.10	43.992		
10,800.00	8,949.97	8,678.91	8,626.07	36.03	22.06	72.25	-545.43	754.98	2,381.09	2,327.63	53.46	44.544		
10,900.00	8,949.97	8,670.92	8,618.20	37.58	22.04	71.83	-544.79	753.80	2,470.97	2,416.14	54.83	45.068		
11,000.00	8,949.98	8,662.93	8,610.32	39.15	22.01	71.41	-544.15	752.62	2,561.57	2,505.36	56.21	45.568		
11,100.00	8,949.98	8,654.94	8,602.45	40.74	21.98	70.99	-543.51	751.45	2,652.83	2,595.22	57.61	46.045		
11,200.00	8,949.98	8,646.95	8,594.57	42.35	21.95	70.57	-542.87	750.27	2,744.67	2,685.65	59.02	46.502		
11,300.00	8,949.98	8,638.96	8,586.69	43.98	21.92	70.15	-542.24	749.09	2,837.05	2,776.61	60.44	46.942		
11,400.00	8,949.98	8,630.98	8,578.82	45.63	21.90	69.73	-541.60	747.92	2,929.90	2,868.04	61.86	47.364		
11,500.00	8,949.98	14,455.78	11,684.52	47.29	54.76	156.13	2,291.71	952.85	2,990.25	2,930.06	60.19	49.677		
11,600.00	8,949.98	14,555.78	11,684.29	48.96	56.34	156.13	2,391.71	952.85	2,990.04	2,928.13	61.92	48.291		
11,700.00	8,949.98	14,655.78	11,684.05	50.64	57.94	156.13	2,491.71	952.85	2,989.83	2,926.18	63.66	46.968		
11,800.00	8,949.98	14,755.78	11,683.82	52.33	59.56	156.13	2,591.71	952.85	2,989.62	2,924.21	65.41	45.705		
11,900.00	8,949.98	14,855.78	11,683.59	54.03	61.18	156.13	2,691.71	952.85	2,989.41	2,922.23	67.18	44.499		
12,000.00	8,949.99	14,955.78	11,683.36	55.73	62.82	156.12	2,791.71	952.86	2,989.20	2,920.24	68.96	43.348		
12,100.00	8,949.99	15,055.78	11,683.13	57.45	64.47	156.12	2,891.71	952.86	2,988.99	2,918.24	70.75	42.247		
12,200.00	8,949.99	15,155.78	11,682.90	59.17	66.12	156.12	2,991.71	952.86	2,988.78	2,916.23	72.55	41.195		
12,300.00	8,949.99	15,255.77	11,682.67	60.90	67.79	156.12	3,091.71	952.86	2,988.57	2,914.20	74.36	40.188		
12,400.00	8,949.99	15,355.77	11,682.44	62.63	69.46	156.12	3,191.71	952.86	2,988.36	2,912.17	76.19	39.224		
12,500.00	8,949.99	15,455.77	11,682.21	64.37	71.14	156.11	3,291.71	952.86	2,988.15	2,910.13	78.02	38.301		
12,600.00	8,949.99	15,555.77	11,681.97	66.11	72.83	156.11	3,391.71	952.86	2,987.93	2,908.08	79.85	37.417		
12,700.00	8,949.99	15,655.77	11,681.74	67.86	74.52	156.11	3,491.71	952.87	2,987.72	2,906.02	81.70	36.569		
12,800.00	8,949.99	15,755.77	11,681.51	69.61	76.22	156.11	3,591.71	952.87	2,987.51	2,903.96	83.55	35.756		
12,900.00	8,949.99	15,855.77	11,681.28	71.36	77.93	156.11	3,691.71	952.87	2,987.30	2,901.89	85.41	34.975		
13,000.00	8,950.00	15,955.77	11,681.05	73.12	79.64	156.10	3,791.71	952.87	2,987.09	2,899.81	87.28	34.225		
13,100.00	8,950.00	16,055.77	11,680.82	74.89	81.35	156.10	3,891.71	952.87	2,986.88	2,897.73	89.15	33.504		
13,200.00	8,950.00	16,155.77	11,680.59	76.65	83.08	156.10	3,991.71	952.87	2,986.67	2,895.64	91.03	32.811		
13,300.00	8,950.00	16,255.77	11,680.36	78.42	84.80	156.10	4,091.71	952.87	2,986.46	2,893.55	92.91	32.144		
13,400.00	8,950.00	16,355.77	11,680.12	80.19	86.53	156.10	4,191.70	952.88	2,986.25	2,891.45	94.80	31.502		
13,452.65	8,950.00	16,408.43	11,680.00	81.12	87.44	156.10	4,244.36	952.88	2,986.14	2,890.35	95.79	31.174		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 320H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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	179.84	-50.00	0.14	50.00	49.84	0.16	317.792		
100.00	100.00	100.00	100.00	0.08	0.08	179.84	-50.00	0.14	50.00	49.39	0.61	82.391		
200.00	200.00	200.00	200.00	0.30	0.30	179.84	-50.00	0.14	50.00	48.94	1.06	47.331		
300.00	300.00	300.00	300.00	0.53	0.53	179.84	-50.00	0.14	50.00	48.49	1.51	33.202		
400.00	400.00	400.00	400.00	0.75	0.75	179.84	-50.00	0.14	50.00	48.04	1.96	25.569		
500.00	500.00	500.00	500.00	0.98	0.98	179.84	-50.00	0.14	50.00	47.60	2.40	20.790		
600.00	600.00	600.00	600.00	1.20	1.20	179.84	-50.00	0.14	50.00	47.15	2.85	17.516		
700.00	700.00	700.00	700.00	1.43	1.43	179.84	-50.00	0.14	50.00	46.70	3.30	15.133		
800.00	800.00	800.00	800.00	1.65	1.65	179.84	-50.00	0.14	50.00	46.25	3.75	13.321		
900.00	900.00	900.00	900.00	1.88	1.88	179.84	-50.00	0.14	50.00	45.80	4.20	11.896		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	179.84	-50.00	0.14	50.00	45.35	4.65	10.747		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	179.84	-50.00	0.14	50.00	44.90	5.10	9.800		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	179.84	-50.00	0.14	50.00	44.45	5.55	9.006		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	179.84	-50.00	0.14	50.00	44.00	6.00	8.332		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	179.84	-50.00	0.14	50.00	43.55	6.45	7.751		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	179.84	-50.00	0.14	50.00	43.10	6.90	7.246		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	179.84	-50.00	0.14	50.00	42.65	7.35	6.803		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	179.84	-50.00	0.14	50.00	42.20	7.80	6.411		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	179.84	-50.00	0.14	50.00	41.75	8.25	6.061		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	179.84	-50.00	0.14	50.00	41.30	8.70	5.748		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	179.84	-50.00	0.14	50.00	40.85	9.15	5.466		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	179.84	-50.00	0.14	50.00	40.40	9.60	5.210		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	179.84	-50.00	0.14	50.00	39.95	10.05	4.977		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	179.84	-50.00	0.14	50.00	39.50	10.50	4.763		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	179.84	-50.00	0.14	50.00	39.05	10.95	4.568		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	179.84	-50.00	0.14	50.00	38.60	11.40	4.388		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	179.84	-50.00	0.14	50.00	38.16	11.85	4.221		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	179.84	-50.00	0.14	50.00	37.71	12.29	4.067		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	179.84	-50.00	0.14	50.00	37.26	12.74	3.923		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	179.84	-50.00	0.14	50.00	36.81	13.19	3.790		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	179.84	-50.00	0.14	50.00	36.36	13.64	3.665		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	179.84	-50.00	0.14	50.00	35.91	14.09	3.548		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	179.84	-50.00	0.14	50.00	35.46	14.54	3.438		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	179.84	-50.00	0.14	50.00	35.01	14.99	3.335		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	179.84	-50.00	0.14	50.00	34.56	15.44	3.238		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	179.84	-50.00	0.14	50.00	34.11	15.89	3.146		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	179.84	-50.00	0.14	50.00	33.66	16.34	3.060		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	179.84	-50.00	0.14	50.00	33.21	16.79	2.978		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	179.84	-50.00	0.14	50.00	32.76	17.24	2.900		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	179.84	-50.00	0.14	50.00	32.31	17.69	2.827		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	179.84	-50.00	0.14	50.00	31.86	18.14	2.757		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	179.84	-50.00	0.14	50.00	31.41	18.59	2.690		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	179.84	-50.00	0.14	50.00	30.96	19.04	2.626		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	179.84	-50.00	0.14	50.00	30.51	19.49	2.562		
4,400.00	4,400.00	4,399.63	4,399.62	9.72	9.72	-30.41	-50.35	0.93	49.61	30.17	19.44	2.552		
4,500.00	4,499.96	4,499.15	4,499.11	9.89	9.91	-34.73	-51.41	3.30	48.62	28.83	19.79	2.457		
4,600.00	4,599.86	4,598.49	4,598.35	10.06	10.10	-42.22	-53.17	7.24	47.61	27.47	20.14	2.364		
4,652.66	4,652.43	4,650.68	4,650.46	10.16	10.20	-47.47	-54.38	9.94	47.41	27.08	20.33	2.332 CC, ES		
4,700.00	4,699.68	4,697.53	4,697.21	10.24	10.29	-52.89	-55.63	12.73	47.63	27.13	20.50	2.323 SF		
4,800.00	4,799.37	4,796.18	4,795.56	10.42	10.48	-65.91	-58.77	19.74	50.04	29.16	20.88	2.397		
4,900.00	4,898.90	4,894.35	4,893.29	10.60	10.68	-79.36	-62.58	28.26	56.09	34.83	21.25	2.639		
5,000.00	4,998.26	4,991.95	4,990.27	10.79	10.88	-91.25	-67.04	38.24	66.36	44.73	21.63	3.068		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 320H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)						
5,100.00	5,097.40	5,088.89	5,086.40	10.99	11.09	-100.72	-72.14	49.84	80.76	58.76	22.00	3.670		
5,200.00	5,196.30	5,186.13	5,182.65	11.20	11.30	-108.00	-77.78	62.25	98.56	76.18	22.38	4.404		
5,300.00	5,294.93	5,283.54	5,279.06	11.41	11.52	-113.73	-83.47	74.98	118.27	95.52	22.75	5.198		
5,379.29	5,372.92	5,360.56	5,355.28	11.59	11.70	-117.50	-87.97	85.05	135.10	112.05	23.05	5.861		
5,400.00	5,393.26	5,380.65	5,375.17	11.64	11.75	-118.42	-89.15	87.67	139.65	116.51	23.13	6.037		
5,500.00	5,491.49	5,477.64	5,471.16	11.88	11.98	-122.13	-94.82	100.34	162.01	138.48	23.54	6.884		
5,600.00	5,589.72	5,574.64	5,567.16	12.13	12.22	-124.94	-100.49	113.02	184.88	160.92	23.95	7.719		
5,700.00	5,687.96	5,671.64	5,663.16	12.39	12.46	-127.13	-106.15	125.69	208.07	183.69	24.38	8.535		
5,800.00	5,786.19	5,768.64	5,759.16	12.66	12.71	-128.88	-111.82	138.36	231.49	206.67	24.82	9.328		
5,900.00	5,884.42	5,865.63	5,855.16	12.93	12.96	-130.31	-117.49	151.04	255.08	229.82	25.26	10.097		
6,000.00	5,982.65	5,962.63	5,951.16	13.21	13.21	-131.50	-123.16	163.71	278.80	253.08	25.72	10.841		
6,100.00	6,080.88	6,059.63	6,047.16	13.50	13.47	-132.50	-128.83	176.38	302.61	276.43	26.18	11.558		
6,200.00	6,179.11	6,156.63	6,143.16	13.80	13.73	-133.36	-134.50	189.06	326.50	299.84	26.65	12.251		
6,300.00	6,277.34	6,253.63	6,239.16	14.10	13.99	-134.10	-140.16	201.73	350.44	323.31	27.13	12.919		
6,400.00	6,375.57	6,350.62	6,335.16	14.40	14.26	-134.75	-145.83	214.40	374.44	346.83	27.61	13.562		
6,500.00	6,473.80	6,447.62	6,431.16	14.71	14.53	-135.31	-151.50	227.08	398.47	370.37	28.10	14.182		
6,600.00	6,572.03	6,544.62	6,527.16	15.03	14.80	-135.82	-157.17	239.75	422.54	393.94	28.59	14.779		
6,700.00	6,670.27	6,641.62	6,623.15	15.35	15.08	-136.26	-162.84	252.42	446.63	417.54	29.09	15.353		
6,800.00	6,768.50	6,738.62	6,719.15	15.67	15.35	-136.67	-168.51	265.10	470.75	441.15	29.59	15.907		
6,900.00	6,866.73	6,835.61	6,815.15	16.00	15.63	-137.03	-174.17	277.77	494.88	464.78	30.10	16.441		
7,000.00	6,964.96	6,932.61	6,911.15	16.33	15.92	-137.36	-179.84	290.44	519.04	488.42	30.61	16.954		
7,100.00	7,063.19	7,029.61	7,007.15	16.67	16.20	-137.66	-185.51	303.12	543.20	512.07	31.13	17.450		
7,141.63	7,104.08	7,069.99	7,047.11	16.81	16.32	-137.78	-187.87	308.39	553.27	521.92	31.35	17.650		
7,200.00	7,161.48	7,126.66	7,103.21	17.00	16.49	-138.01	-191.18	315.80	567.17	535.50	31.67	17.908		
7,300.00	7,260.04	7,224.02	7,199.56	17.29	16.78	-138.29	-196.87	326.52	589.99	557.77	32.22	18.310		
7,400.00	7,358.89	7,321.67	7,296.20	17.58	17.07	-138.45	-202.58	341.27	611.54	578.77	32.77	18.662		
7,500.00	7,457.98	7,422.72	7,396.23	17.86	17.36	-138.49	-208.43	354.35	631.73	598.42	33.31	18.965		
7,600.00	7,557.30	7,529.70	7,502.34	18.13	17.63	-138.50	-213.98	366.76	649.58	615.75	33.83	19.200		
7,700.00	7,656.80	7,637.41	7,609.42	18.39	17.89	-138.51	-218.74	377.42	664.81	630.47	34.34	19.360		
7,800.00	7,756.46	7,745.74	7,717.31	18.64	18.14	-138.52	-222.71	386.28	677.41	642.58	34.83	19.448		
7,900.00	7,856.25	7,854.59	7,825.88	18.87	18.38	-138.53	-225.85	393.31	687.35	652.05	35.31	19.467		
8,000.00	7,956.14	7,963.82	7,934.97	19.09	18.62	-138.54	-228.16	398.47	694.63	658.86	35.77	19.421		
8,100.00	8,056.09	8,073.33	8,044.41	19.30	18.84	-138.54	-229.62	401.74	699.22	663.02	36.21	19.312		
8,200.00	8,156.08	8,182.98	8,154.06	19.49	19.04	-138.55	-230.23	403.10	701.13	664.51	36.62	19.145		
8,220.92	8,177.00	8,205.92	8,177.00	19.53	19.09	70.30	-230.25	403.14	701.19	664.48	36.71	19.103		
8,300.00	8,256.08	8,285.00	8,256.08	19.68	19.23	70.30	-230.25	403.14	701.19	664.18	37.01	18.945		
8,400.00	8,356.08	8,385.00	8,356.08	19.87	19.43	70.30	-230.25	403.14	701.19	663.77	37.42	18.739		
8,420.92	8,377.00	8,405.92	8,377.00	19.91	19.47	70.30	-230.25	403.14	701.19	663.68	37.50	18.696		
8,450.00	8,406.07	8,426.51	8,397.59	19.96	19.51	70.32	-229.88	403.14	701.11	663.52	37.59	18.650		
8,500.00	8,455.83	8,461.93	8,432.92	20.02	19.58	70.44	-227.51	403.14	700.65	662.95	37.70	18.583		
8,550.00	8,504.99	8,500.00	8,470.66	20.06	19.65	70.68	-222.54	403.14	699.78	662.01	37.77	18.528		
8,600.00	8,553.18	8,532.96	8,503.00	20.08	19.70	71.00	-216.22	403.14	698.48	660.71	37.78	18.490		
8,650.00	8,600.03	8,568.64	8,537.54	20.07	19.75	71.45	-207.30	403.14	696.81	659.06	37.75	18.457		
8,700.00	8,645.18	8,600.00	8,567.39	20.04	19.79	71.95	-197.69	403.14	694.81	657.12	37.70	18.431		
8,750.00	8,688.28	8,640.50	8,605.07	19.99	19.83	72.65	-182.90	403.14	692.46	654.82	37.64	18.399		
8,800.00	8,729.02	8,676.76	8,637.86	19.93	19.87	73.41	-167.42	403.14	689.85	652.28	37.57	18.362		
8,850.00	8,767.08	8,713.30	8,669.84	19.86	19.91	74.26	-149.76	403.14	687.02	649.51	37.51	18.315		
8,900.00	8,802.18	8,750.00	8,700.77	19.78	19.94	75.21	-130.00	403.14	684.03	646.55	37.48	18.252		
8,950.00	8,834.03	8,787.39	8,730.91	19.71	19.97	76.26	-107.88	403.14	680.93	643.46	37.48	18.170		
9,000.00	8,862.41	8,825.06	8,759.74	19.63	20.00	77.38	-83.66	403.13	677.80	640.29	37.52	18.067		
9,050.00	8,887.09	8,863.21	8,787.26	19.56	20.03	78.59	-57.25	403.13	674.71	637.11	37.60	17.944		
9,100.00	8,907.89	8,900.00	8,812.08	19.49	20.07	79.82	-30.10	403.13	671.72	634.00	37.73	17.805		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 320H (SIMOPS) - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														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)				Between Centres (usft)	Between Ellipses (usft)		
9,150.00	8,924.65	8,941.26	8,837.78	19.43	20.10	81.22	2.17	403.13	668.92	631.00		37.92	17.640		
9,200.00	8,937.25	8,981.32	8,860.44	19.38	20.14	82.63	35.20	403.13	666.39	628.23		38.16	17.464		
9,250.00	8,945.57	9,022.19	8,881.13	19.36	20.20	84.10	70.43	403.13	664.19	625.75		38.44	17.279		
9,300.00	8,949.58	9,063.98	8,899.63	19.48	20.27	85.61	107.89	403.12	662.40	623.64		38.76	17.089		
9,320.91	8,949.96	9,081.76	8,906.66	19.55	20.31	86.25	124.22	403.12	661.80	622.88		38.91	17.008		
9,400.00	8,949.96	9,152.44	8,929.52	19.90	20.51	88.23	191.06	403.12	660.47	620.93		39.54	16.702		
9,500.00	8,949.96	9,248.85	8,947.12	20.45	20.95	89.75	285.73	403.11	660.14	619.56		40.58	16.269		
9,555.34	8,949.96	9,304.00	8,949.95	20.83	21.27	90.00	340.78	403.11	660.13	618.84		41.28	15.990		
9,600.00	8,949.96	9,348.66	8,949.96	21.14	21.57	90.00	385.45	403.11	660.13	618.23		41.90	15.755		
9,700.00	8,949.96	9,448.66	8,949.96	21.95	22.34	90.00	485.45	403.10	660.12	616.65		43.47	15.185		
9,800.00	8,949.96	9,548.66	8,949.96	22.87	23.23	90.00	585.45	403.10	660.12	614.83		45.29	14.577		
9,900.00	8,949.96	9,648.66	8,949.96	23.89	24.22	90.00	685.45	403.09	660.12	612.80		47.31	13.952		
10,000.00	8,949.96	9,748.66	8,949.96	25.00	25.31	90.00	785.45	403.08	660.11	610.59		49.53	13.329		
10,100.00	8,949.97	9,848.66	8,949.96	26.19	26.48	90.00	885.45	403.08	660.11	608.21		51.90	12.718		
10,200.00	8,949.97	9,948.66	8,949.96	27.45	27.71	90.00	985.45	403.07	660.11	605.69		54.42	12.130		
10,300.00	8,949.97	10,048.66	8,949.97	28.77	29.01	90.00	1,085.45	403.07	660.10	603.04		57.06	11.568		
10,400.00	8,949.97	10,148.66	8,949.97	30.14	30.37	90.00	1,185.45	403.06	660.10	600.29		59.81	11.037		
10,500.00	8,949.97	10,248.66	8,949.97	31.56	31.77	90.00	1,285.45	403.05	660.10	597.44		62.65	10.536		
10,600.00	8,949.97	10,348.66	8,949.97	33.01	33.21	90.00	1,385.45	403.05	660.09	594.52		65.57	10.067		
10,700.00	8,949.97	10,448.66	8,949.97	34.50	34.69	90.00	1,485.45	403.04	660.09	591.52		68.56	9.627		
10,800.00	8,949.97	10,548.66	8,949.97	36.03	36.20	90.00	1,585.45	403.04	660.08	588.47		71.62	9.217		
10,900.00	8,949.97	10,648.66	8,949.97	37.58	37.74	90.00	1,685.45	403.03	660.08	585.36		74.73	8.833		
11,000.00	8,949.98	10,748.66	8,949.97	39.15	39.30	90.00	1,785.45	403.03	660.08	582.20		77.88	8.475		
11,100.00	8,949.98	10,848.66	8,949.97	40.74	40.88	90.00	1,885.45	403.02	660.07	579.00		81.08	8.141		
11,200.00	8,949.98	10,948.66	8,949.98	42.35	42.49	90.00	1,985.45	403.01	660.07	575.76		84.31	7.829		
11,300.00	8,949.98	11,048.66	8,949.98	43.98	44.11	90.00	2,085.45	403.01	660.07	572.49		87.58	7.537		
11,400.00	8,949.98	11,148.66	8,949.98	45.63	45.74	90.00	2,185.45	403.00	660.06	569.19		90.88	7.263		
11,500.00	8,949.98	11,248.66	8,949.98	47.29	47.39	90.00	2,285.45	403.00	660.06	565.86		94.20	7.007		
11,600.00	8,949.98	11,348.66	8,949.98	48.96	49.05	90.00	2,385.45	402.99	660.06	562.51		97.55	6.767		
11,700.00	8,949.98	11,448.66	8,949.98	50.64	50.73	90.00	2,485.45	402.99	660.05	559.14		100.91	6.541		
11,800.00	8,949.98	11,548.66	8,949.98	52.33	52.41	90.00	2,585.45	402.98	660.05	555.75		104.30	6.328		
11,900.00	8,949.98	11,648.66	8,949.98	54.03	54.11	90.00	2,685.45	402.97	660.05	552.34		107.71	6.128		
12,000.00	8,949.99	11,748.66	8,949.98	55.73	55.81	90.00	2,785.45	402.97	660.04	548.91		111.13	5.939		
12,100.00	8,949.99	11,848.66	8,949.99	57.45	57.52	90.00	2,885.45	402.96	660.04	545.48		114.56	5.761		
12,200.00	8,949.99	11,948.66	8,949.99	59.17	59.23	90.00	2,985.45	402.96	660.04	542.02		118.01	5.593		
12,300.00	8,949.99	12,048.66	8,949.99	60.90	60.96	90.00	3,085.45	402.95	660.03	538.56		121.47	5.434		
12,400.00	8,949.99	12,148.66	8,949.99	62.63	62.68	90.00	3,185.45	402.94	660.03	535.08		124.94	5.283		
12,500.00	8,949.99	12,248.66	8,949.99	64.37	64.42	90.00	3,285.45	402.94	660.02	531.60		128.43	5.139		
12,600.00	8,949.99	12,348.66	8,949.99	66.11	66.16	90.00	3,385.45	402.93	660.02	528.10		131.92	5.003		
12,700.00	8,949.99	12,448.66	8,949.99	67.86	67.90	90.00	3,485.45	402.93	660.02	524.60		135.42	4.874		
12,800.00	8,949.99	12,548.66	8,949.99	69.61	69.65	90.00	3,585.45	402.92	660.01	521.09		138.92	4.751		
12,900.00	8,949.99	12,648.66	8,949.99	71.36	71.40	90.00	3,685.45	402.92	660.01	517.57		142.44	4.634		
13,000.00	8,950.00	12,748.66	8,950.00	73.12	73.16	90.00	3,785.45	402.91	660.01	514.05		145.96	4.522		
13,100.00	8,950.00	12,848.66	8,950.00	74.89	74.92	90.00	3,885.45	402.90	660.00	510.51		149.49	4.415		
13,200.00	8,950.00	12,948.66	8,950.00	76.65	76.68	90.00	3,985.45	402.90	660.00	506.98		153.02	4.313		
13,300.00	8,950.00	13,048.66	8,950.00	78.42	78.44	90.00	4,085.45	402.89	660.00	503.43		156.56	4.216		
13,400.00	8,950.00	13,148.66	8,950.00	80.19	80.21	90.00	4,185.45	402.89	659.99	499.89		160.11	4.122		
13,452.65	8,950.00	13,201.32	8,950.00	81.12	81.14	90.00	4,238.10	402.88	659.99	498.02		161.98	4.075		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 321H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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	135.53	-184.04	180.65	257.88					
100.00	100.00	100.00	100.00	0.08	0.08	135.53	-184.04	180.65	257.88	0.16	1,639.059			
200.00	200.00	200.00	200.00	0.30	0.30	135.53	-184.04	180.65	257.88	0.61	424.942			
300.00	300.00	300.00	300.00	0.53	0.53	135.53	-184.04	180.65	257.88	1.06	244.115			
400.00	400.00	400.00	400.00	0.75	0.75	135.53	-184.04	180.65	257.88	1.51	171.245			
500.00	500.00	500.00	500.00	0.98	0.98	135.53	-184.04	180.65	257.88	1.96	131.878			
600.00	600.00	600.00	600.00	1.20	1.20	135.53	-184.04	180.65	257.88	2.40	107.228			
700.00	700.00	700.00	700.00	1.43	1.43	135.53	-184.04	180.65	257.88	2.85	90.342			
800.00	800.00	800.00	800.00	1.65	1.65	135.53	-184.04	180.65	257.88	3.30	78.051			
900.00	900.00	900.00	900.00	1.88	1.88	135.53	-184.04	180.65	257.88	3.75	68.703			
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	135.53	-184.04	180.65	257.88	4.20	61.355			
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	135.53	-184.04	180.65	257.88	4.65	55.427			
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	135.53	-184.04	180.65	257.88	5.10	50.544			
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	135.53	-184.04	180.65	257.88	5.55	46.451			
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	135.53	-184.04	180.65	257.88	6.00	42.972			
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	135.53	-184.04	180.65	257.88	6.45	39.977			
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	135.53	-184.04	180.65	257.88	6.90	37.373			
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	135.53	-184.04	180.65	257.88	7.35	35.087			
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	135.53	-184.04	180.65	257.88	7.80	33.065			
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	135.53	-184.04	180.65	257.88	8.25	31.263			
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	135.53	-184.04	180.65	257.88	8.70	29.647			
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	135.53	-184.04	180.65	257.88	9.15	28.190			
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	135.53	-184.04	180.65	257.88	9.60	26.870			
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	135.53	-184.04	180.65	257.88	10.05	25.668			
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	135.53	-184.04	180.65	257.88	10.50	24.568			
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	135.53	-184.04	180.65	257.88	10.95	23.559			
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	135.53	-184.04	180.65	257.88	11.40	22.630			
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	135.53	-184.04	180.65	257.88	11.85	21.771			
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	135.53	-184.04	180.65	257.88	12.29	20.975			
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	135.53	-184.04	180.65	257.88	12.74	20.235			
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	135.53	-184.04	180.65	257.88	13.19	19.546			
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	135.53	-184.04	180.65	257.88	13.64	18.902			
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	135.53	-184.04	180.65	257.88	14.09	18.299			
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	135.53	-184.04	180.65	257.88	14.54	17.733			
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	135.53	-184.04	180.65	257.88	14.99	17.202			
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	135.53	-184.04	180.65	257.88	15.44	16.701			
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	135.53	-184.04	180.65	257.88	15.89	16.228			
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	135.53	-184.04	180.65	257.88	16.34	15.782			
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	135.53	-184.04	180.65	257.88	16.79	15.359			
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	135.53	-184.04	180.65	257.88	17.24	14.959			
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	135.53	-184.04	180.65	257.88	17.69	14.579			
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	135.53	-184.04	180.65	257.88	18.14	14.217			
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	135.53	-184.04	180.65	257.88	18.59	13.874			
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	135.53	-184.04	180.65	257.88	19.04	13.546 CC, ES			
4,400.00	4,400.00	4,395.28	4,395.28	9.72	9.72	-73.58	-184.34	181.58	258.55	19.43	13.306			
4,500.00	4,499.96	4,490.44	4,490.38	9.89	9.90	-74.39	-185.23	184.38	260.57	19.78	13.173			
4,600.00	4,599.86	4,585.33	4,585.15	10.06	10.08	-75.69	-186.72	189.02	264.07	20.13	13.115			
4,700.00	4,699.68	4,679.84	4,679.42	10.24	10.26	-77.45	-188.79	195.48	269.21	20.49	13.138			
4,800.00	4,799.37	4,773.84	4,773.02	10.42	10.45	-79.60	-191.42	203.72	276.20	20.85	13.245			
4,900.00	4,898.90	4,867.22	4,865.80	10.60	10.65	-82.05	-194.62	213.69	285.29	21.22	13.445			
5,000.00	4,998.26	4,959.84	4,957.61	10.79	10.84	-84.72	-198.35	225.35	296.72	21.59	13.743			
5,100.00	5,097.40	5,051.61	5,048.32	10.99	11.05	-87.51	-202.59	238.62	310.72	21.97	14.143			

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 321H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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		
5,200.00	5,196.30	5,142.42	5,137.78	11.20	11.26	-90.34	-207.33	253.43	327.48	305.12	22.35	14.649		
5,300.00	5,294.93	5,232.15	5,225.87	11.41	11.48	-93.13	-212.54	269.71	347.14	324.39	22.75	15.261		
5,379.29	5,372.92	5,302.48	5,294.67	11.59	11.67	-95.27	-216.99	283.60	364.85	341.78	23.06	15.819		
5,400.00	5,393.26	5,320.82	5,312.57	11.64	11.71	-95.87	-218.20	287.38	369.78	346.63	23.15	15.975		
5,500.00	5,491.49	5,415.89	5,405.35	11.88	11.98	-98.74	-224.53	307.16	394.37	370.80	23.57	16.734		
5,600.00	5,589.72	5,510.96	5,498.12	12.13	12.25	-101.28	-230.86	326.94	419.81	395.81	24.00	17.495		
5,700.00	5,687.96	5,606.03	5,590.90	12.39	12.53	-103.53	-237.19	346.72	445.96	421.52	24.43	18.252		
5,800.00	5,786.19	5,701.11	5,683.67	12.66	12.82	-105.54	-243.52	366.50	472.69	447.81	24.88	19.000		
5,900.00	5,884.42	5,796.18	5,776.45	12.93	13.12	-107.33	-249.85	386.28	499.92	474.58	25.33	19.733		
6,000.00	5,982.65	5,891.25	5,869.22	13.21	13.43	-108.94	-256.18	406.06	527.56	501.76	25.80	20.450		
6,100.00	6,080.88	5,986.32	5,962.00	13.50	13.75	-110.40	-262.51	425.84	555.56	529.29	26.27	21.149		
6,200.00	6,179.11	6,081.39	6,054.77	13.80	14.07	-111.71	-268.84	445.62	583.86	557.11	26.75	21.828		
6,300.00	6,277.34	6,176.46	6,147.55	14.10	14.40	-112.91	-275.17	465.40	612.43	585.19	27.24	22.486		
6,400.00	6,375.57	6,271.53	6,240.32	14.40	14.73	-114.00	-281.50	485.18	641.22	613.49	27.73	23.122		
6,500.00	6,473.80	6,366.60	6,333.10	14.71	15.07	-115.00	-287.83	504.96	670.21	641.98	28.23	23.738		
6,600.00	6,572.03	6,461.68	6,425.88	15.03	15.42	-115.92	-294.16	524.74	699.37	670.63	28.74	24.332		
6,700.00	6,670.27	6,556.75	6,518.65	15.35	15.77	-116.76	-300.49	544.52	728.69	699.43	29.26	24.906		
6,800.00	6,768.50	6,651.82	6,611.43	15.67	16.12	-117.54	-306.82	564.30	758.14	728.36	29.78	25.459		
6,900.00	6,866.73	6,746.89	6,704.20	16.00	16.48	-118.26	-313.15	584.08	787.71	757.40	30.31	25.991		
7,000.00	6,964.96	6,841.96	6,796.98	16.33	16.85	-118.93	-319.48	603.86	817.38	786.55	30.84	26.505		
7,100.00	7,063.19	6,937.03	6,889.75	16.67	17.21	-119.55	-325.81	623.63	847.16	815.78	31.38	26.999		
7,141.63	7,104.08	6,976.61	6,928.37	16.81	17.37	-119.80	-328.45	631.87	859.58	827.97	31.60	27.199		
7,200.00	7,161.48	7,032.17	6,982.59	17.00	17.58	-120.27	-332.14	643.43	876.87	844.94	31.93	27.465		
7,300.00	7,260.04	7,127.65	7,075.76	17.29	17.96	-120.97	-338.50	663.29	905.88	873.41	32.47	27.898		
7,400.00	7,358.89	7,223.47	7,169.27	17.58	18.34	-121.53	-344.88	683.23	934.06	901.05	33.01	28.294		
7,500.00	7,457.98	7,319.61	7,263.09	17.86	18.72	-121.98	-351.28	703.23	961.39	927.84	33.55	28.656		
7,600.00	7,557.30	7,416.03	7,357.18	18.13	19.11	-122.32	-357.70	723.29	987.83	953.75	34.08	28.985		
7,700.00	7,656.80	7,512.71	7,451.53	18.39	19.50	-122.55	-364.14	743.40	1,013.37	978.77	34.60	29.285		
7,800.00	7,756.46	7,609.62	7,546.10	18.64	19.90	-122.70	-370.59	763.57	1,038.00	1,002.89	35.12	29.557		
7,900.00	7,856.25	7,706.73	7,640.86	18.87	20.30	-122.75	-377.06	783.77	1,061.73	1,026.10	35.62	29.804		
8,000.00	7,956.14	7,804.00	7,735.79	19.09	20.70	-122.73	-383.53	804.01	1,084.54	1,048.43	36.12	30.029		
8,100.00	8,056.09	7,901.42	7,830.85	19.30	21.10	-122.62	-390.02	824.27	1,106.46	1,069.86	36.60	30.233		
8,200.00	8,156.08	7,998.94	7,926.02	19.49	21.51	-122.45	-396.51	844.56	1,127.49	1,090.43	37.07	30.418		
8,220.92	8,177.00	8,019.36	7,945.94	19.53	21.59	-86.44	-397.87	848.81	1,131.78	1,094.62	37.16	30.455		
8,300.00	8,256.08	8,096.53	8,021.24	19.68	21.91	-86.75	-403.01	864.87	1,147.95	1,110.43	37.51	30.601		
8,400.00	8,356.08	8,194.11	8,116.47	19.87	22.33	-87.14	-409.51	885.17	1,168.43	1,130.46	37.97	30.776		
8,420.92	8,377.00	8,214.52	8,136.39	19.91	22.41	-87.22	-410.87	889.42	1,172.72	1,134.66	38.06	30.812		
8,450.00	8,406.07	8,242.84	8,164.03	19.96	22.53	-86.76	-412.75	895.31	1,178.65	1,140.45	38.20	30.852		
8,500.00	8,455.83	8,291.09	8,211.11	20.02	22.73	-86.14	-415.97	905.34	1,188.69	1,150.26	38.42	30.937		
8,550.00	8,504.99	8,338.46	8,257.34	20.06	22.94	-85.73	-419.12	915.20	1,198.53	1,159.93	38.61	31.045		
8,600.00	8,553.18	8,384.60	8,302.36	20.08	23.13	-85.50	-422.19	924.80	1,208.24	1,169.48	38.75	31.177		
8,650.00	8,600.03	8,429.16	8,345.84	20.07	23.32	-85.42	-425.16	934.07	1,217.90	1,179.03	38.87	31.335		
8,700.00	8,645.18	8,473.59	8,389.25	20.04	23.49	-85.43	-426.87	943.32	1,227.60	1,188.66	38.94	31.522		
8,750.00	8,688.28	8,519.85	8,434.45	19.99	23.66	-85.48	-425.04	952.96	1,237.33	1,198.33	38.99	31.733		
8,800.00	8,729.02	8,568.22	8,481.39	19.93	23.81	-85.58	-419.14	962.97	1,247.01	1,208.00	39.01	31.964		
8,850.00	8,767.08	8,619.03	8,529.98	19.86	23.97	-85.74	-408.61	973.33	1,256.59	1,217.57	39.01	32.210		
8,900.00	8,802.18	8,672.68	8,580.10	19.78	24.11	-85.96	-392.76	984.01	1,265.97	1,226.97	39.00	32.463		
8,950.00	8,834.03	8,729.64	8,631.46	19.71	24.25	-86.24	-370.77	994.96	1,275.05	1,236.08	38.98	32.712		
9,000.00	8,862.41	8,790.41	8,683.62	19.63	24.37	-86.59	-341.69	1,006.08	1,283.74	1,244.77	38.97	32.945		
9,050.00	8,887.09	8,855.51	8,735.81	19.56	24.49	-87.02	-304.47	1,017.21	1,291.89	1,252.91	38.98	33.146		
9,100.00	8,907.89	8,925.46	8,786.90	19.49	24.60	-87.50	-258.01	1,028.10	1,299.35	1,260.32	39.02	33.296		
9,150.00	8,924.65	9,000.70	8,835.22	19.43	24.71	-88.03	-201.35	1,038.40	1,305.95	1,266.81	39.13	33.373		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 321H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD-ADJ													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)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)						
9,200.00	8,937.25	9,081.45	8,878.54	19.38	24.81	88.59	-133.90	1,047.64	1,311.49	1,272.16	39.33	33.346		
9,250.00	8,945.57	9,167.63	8,914.05	19.36	24.94	89.13	-55.83	1,055.21	1,315.78	1,276.14	39.64	33.191		
9,300.00	8,949.58	9,258.65	8,938.69	19.48	25.11	89.61	31.53	1,060.46	1,318.62	1,278.53	40.09	32.888		
9,320.91	8,949.96	9,297.90	8,945.07	19.55	25.20	89.79	70.23	1,061.82	1,319.34	1,279.01	40.33	32.715		
9,400.00	8,949.96	9,413.30	8,950.00	19.90	25.53	90.00	185.41	1,062.87	1,319.89	1,278.64	41.25	31.998		
9,500.00	8,949.96	9,513.30	8,950.00	20.45	25.96	90.00	285.41	1,062.87	1,319.89	1,277.47	42.43	31.111		
9,600.00	8,949.96	9,613.30	8,950.00	21.14	26.53	90.00	385.41	1,062.87	1,319.89	1,276.02	43.88	30.082		
9,700.00	8,949.96	9,713.30	8,950.00	21.95	27.23	90.00	485.41	1,062.87	1,319.90	1,274.32	45.57	28.961		
9,800.00	8,949.96	9,813.30	8,950.00	22.87	28.06	90.00	585.41	1,062.87	1,319.90	1,272.40	47.49	27.790		
9,900.00	8,949.96	9,913.30	8,950.00	23.89	28.99	90.00	685.41	1,062.87	1,319.90	1,270.29	49.61	26.605		
10,000.00	8,949.96	10,013.30	8,950.00	25.00	30.02	90.00	785.41	1,062.87	1,319.90	1,268.00	51.90	25.432		
10,100.00	8,949.97	10,113.30	8,950.00	26.19	31.12	90.00	885.41	1,062.87	1,319.91	1,265.57	54.34	24.291		
10,200.00	8,949.97	10,213.30	8,950.00	27.45	32.31	90.00	985.41	1,062.87	1,319.91	1,263.00	56.91	23.195		
10,300.00	8,949.97	10,313.30	8,950.00	28.77	33.55	90.00	1,085.41	1,062.87	1,319.91	1,260.32	59.59	22.151		
10,400.00	8,949.97	10,413.30	8,950.00	30.14	34.85	90.00	1,185.41	1,062.87	1,319.91	1,257.54	62.37	21.163		
10,500.00	8,949.97	10,513.30	8,950.00	31.56	36.19	90.00	1,285.41	1,062.87	1,319.91	1,254.68	65.24	20.232		
10,600.00	8,949.97	10,613.30	8,950.00	33.01	37.58	90.00	1,385.41	1,062.87	1,319.92	1,251.74	68.18	19.359		
10,700.00	8,949.97	10,713.30	8,950.00	34.50	39.01	90.00	1,485.41	1,062.87	1,319.92	1,248.73	71.19	18.540		
10,800.00	8,949.97	10,813.30	8,950.00	36.03	40.47	90.00	1,585.41	1,062.87	1,319.92	1,245.66	74.26	17.775		
10,900.00	8,949.97	10,913.30	8,950.00	37.58	41.95	90.00	1,685.41	1,062.87	1,319.92	1,242.55	77.38	17.058		
11,000.00	8,949.98	11,013.30	8,950.00	39.15	43.47	90.00	1,785.41	1,062.87	1,319.93	1,239.38	80.54	16.388		
11,100.00	8,949.98	11,113.30	8,950.00	40.74	45.01	90.00	1,885.41	1,062.87	1,319.93	1,236.18	83.75	15.761		
11,200.00	8,949.98	11,213.30	8,950.00	42.35	46.57	90.00	1,985.41	1,062.87	1,319.93	1,232.95	86.98	15.174		
11,300.00	8,949.98	11,313.30	8,950.00	43.98	48.14	90.00	2,085.41	1,062.87	1,319.93	1,229.68	90.26	14.624		
11,400.00	8,949.98	11,413.30	8,950.00	45.63	49.74	90.00	2,185.41	1,062.87	1,319.94	1,226.38	93.56	14.109		
11,500.00	8,949.98	11,513.30	8,950.00	47.29	51.35	90.00	2,285.41	1,062.87	1,319.94	1,223.06	96.88	13.624		
11,600.00	8,949.98	11,613.30	8,950.00	48.96	52.97	90.00	2,385.41	1,062.87	1,319.94	1,219.71	100.23	13.169		
11,700.00	8,949.98	11,713.30	8,950.00	50.64	54.61	90.00	2,485.41	1,062.87	1,319.94	1,216.34	103.60	12.741		
11,800.00	8,949.98	11,813.30	8,950.00	52.33	56.26	90.00	2,585.41	1,062.87	1,319.94	1,212.96	106.99	12.338		
11,900.00	8,949.98	11,913.30	8,950.00	54.03	57.92	90.00	2,685.41	1,062.87	1,319.95	1,209.56	110.39	11.957		
12,000.00	8,949.99	12,013.30	8,950.00	55.73	59.59	90.00	2,785.41	1,062.87	1,319.95	1,206.14	113.81	11.598		
12,100.00	8,949.99	12,113.30	8,950.00	57.45	61.27	90.00	2,885.41	1,062.87	1,319.95	1,202.71	117.24	11.258		
12,200.00	8,949.99	12,213.30	8,950.00	59.17	62.96	90.00	2,985.41	1,062.87	1,319.95	1,199.26	120.69	10.937		
12,300.00	8,949.99	12,313.30	8,950.00	60.90	64.65	90.00	3,085.41	1,062.87	1,319.96	1,195.81	124.15	10.632		
12,400.00	8,949.99	12,413.30	8,950.00	62.63	66.35	90.00	3,185.41	1,062.87	1,319.96	1,192.34	127.62	10.343		
12,500.00	8,949.99	12,513.30	8,950.00	64.37	68.06	90.00	3,285.41	1,062.87	1,319.96	1,188.86	131.10	10.068		
12,600.00	8,949.99	12,613.30	8,950.00	66.11	69.78	90.00	3,385.41	1,062.87	1,319.96	1,185.37	134.59	9.807		
12,700.00	8,949.99	12,713.30	8,950.00	67.86	71.50	90.00	3,485.41	1,062.87	1,319.97	1,181.88	138.09	9.559		
12,800.00	8,949.99	12,813.30	8,950.00	69.61	73.22	90.00	3,585.41	1,062.87	1,319.97	1,178.37	141.59	9.322		
12,900.00	8,949.99	12,913.30	8,950.00	71.36	74.95	90.00	3,685.41	1,062.87	1,319.97	1,174.86	145.11	9.097		
13,000.00	8,950.00	13,013.30	8,950.00	73.12	76.68	90.00	3,785.41	1,062.87	1,319.97	1,171.35	148.63	8.881		
13,100.00	8,950.00	13,113.30	8,950.00	74.89	78.42	90.00	3,885.41	1,062.87	1,319.97	1,167.82	152.15	8.675		
13,200.00	8,950.00	13,213.30	8,950.00	76.65	80.16	90.00	3,985.41	1,062.87	1,319.98	1,164.29	155.68	8.479		
13,300.00	8,950.00	13,313.30	8,950.00	78.42	81.91	90.00	4,085.41	1,062.87	1,319.98	1,160.76	159.22	8.290		
13,400.00	8,950.00	13,413.30	8,950.00	80.19	83.66	90.00	4,185.41	1,062.87	1,319.98	1,157.22	162.76	8.110		
13,452.65	8,950.00	13,465.96	8,950.00	81.12	84.58	90.00	4,238.06	1,062.87	1,319.98	1,155.35	164.63	8.018 SF		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 327H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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	0.00	0.00	0.00	0.00	-0.16	25.00	-0.07	25.00					
100.00	100.00	100.00	100.00	0.08	0.08	-0.16	25.00	-0.07	25.00	24.84	0.16	158.896		
200.00	200.00	200.00	200.00	0.30	0.30	-0.16	25.00	-0.07	25.00	24.39	0.61	41.195		
300.00	300.00	300.00	300.00	0.53	0.53	-0.16	25.00	-0.07	25.00	23.94	1.06	23.665		
400.00	400.00	400.00	400.00	0.75	0.75	-0.16	25.00	-0.07	25.00	23.49	1.51	16.601		
500.00	500.00	500.00	500.00	0.98	0.98	-0.16	25.00	-0.07	25.00	23.04	1.96	12.785		
600.00	600.00	600.00	600.00	1.20	1.20	-0.16	25.00	-0.07	25.00	22.60	2.40	10.395		
700.00	700.00	700.00	700.00	1.43	1.43	-0.16	25.00	-0.07	25.00	22.15	2.85	8.758		
800.00	800.00	800.00	800.00	1.65	1.65	-0.16	25.00	-0.07	25.00	21.70	3.30	7.566		
900.00	900.00	900.00	900.00	1.88	1.88	-0.16	25.00	-0.07	25.00	21.25	3.75	6.660		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	-0.16	25.00	-0.07	25.00	20.80	4.20	5.948		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	-0.16	25.00	-0.07	25.00	20.35	4.65	5.373		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	-0.16	25.00	-0.07	25.00	19.90	5.10	4.900		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	-0.16	25.00	-0.07	25.00	19.45	5.55	4.503		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	-0.16	25.00	-0.07	25.00	19.00	6.00	4.166		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	-0.16	25.00	-0.07	25.00	18.55	6.45	3.876		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	-0.16	25.00	-0.07	25.00	18.10	6.90	3.623		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	-0.16	25.00	-0.07	25.00	17.65	7.35	3.401		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	-0.16	25.00	-0.07	25.00	17.20	7.80	3.205		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	-0.16	25.00	-0.07	25.00	16.75	8.25	3.031		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	-0.16	25.00	-0.07	25.00	16.30	8.70	2.874		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	-0.16	25.00	-0.07	25.00	15.85	9.15	2.733		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	-0.16	25.00	-0.07	25.00	15.40	9.60	2.605		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	-0.16	25.00	-0.07	25.00	14.95	10.05	2.488		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	-0.16	25.00	-0.07	25.00	14.50	10.50	2.382		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	-0.16	25.00	-0.07	25.00	14.05	10.95	2.284		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	-0.16	25.00	-0.07	25.00	13.60	11.40	2.194		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	-0.16	25.00	-0.07	25.00	13.15	11.85	2.111		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	-0.16	25.00	-0.07	25.00	12.71	12.29	2.033		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	-0.16	25.00	-0.07	25.00	12.26	12.74	1.962		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	-0.16	25.00	-0.07	25.00	11.81	13.19	1.895		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	-0.16	25.00	-0.07	25.00	11.36	13.64	1.832		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	-0.16	25.00	-0.07	25.00	10.91	14.09	1.774		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	-0.16	25.00	-0.07	25.00	10.46	14.54	1.719		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	-0.16	25.00	-0.07	25.00	10.01	14.99	1.668		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	-0.16	25.00	-0.07	25.00	9.56	15.44	1.619		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	-0.16	25.00	-0.07	25.00	9.11	15.89	1.573		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	-0.16	25.00	-0.07	25.00	8.66	16.34	1.530		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	-0.16	25.00	-0.07	25.00	8.21	16.79	1.489 Level 3		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	-0.16	25.00	-0.07	25.00	7.76	17.24	1.450 Level 3		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	-0.16	25.00	-0.07	25.00	7.31	17.69	1.413 Level 3		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	-0.16	25.00	-0.07	25.00	6.86	18.14	1.378 Level 3		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	-0.16	25.00	-0.07	25.00	6.41	18.59	1.345 Level 3		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	-0.16	25.00	-0.07	25.00	5.96	19.04	1.313 Level 3		
4,400.00	4,400.00	4,400.43	4,400.42	9.72	9.72	152.37	24.14	0.11	24.91	5.48	19.43	1.282 Level 3		
4,500.00	4,499.96	4,500.83	4,500.79	9.89	9.88	156.56	21.55	0.64	24.73	4.97	19.76	1.251 Level 3		
4,555.36	4,555.27	4,556.39	4,556.31	9.98	9.98	160.10	19.38	1.08	24.69	4.74	19.95	1.238 Level 2, CC		
4,600.00	4,599.86	4,601.19	4,601.05	10.06	10.06	163.59	17.25	1.52	24.73	4.64	20.09	1.231 Level 2, ES, SF		
4,700.00	4,699.68	4,701.48	4,701.15	10.24	10.23	173.20	11.23	2.76	25.34	4.92	20.42	1.241 Level 2		
4,800.00	4,799.37	4,801.69	4,801.05	10.42	10.41	-175.51	3.50	4.35	27.10	6.35	20.75	1.306 Level 3		
4,900.00	4,898.90	4,901.78	4,900.68	10.60	10.59	-164.04	-5.93	6.29	30.45	9.37	21.08	1.445 Level 3		
5,000.00	4,998.26	5,001.75	4,999.99	10.79	10.77	-153.75	-17.04	8.57	35.62	14.19	21.43	1.662		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 327H (SIMOPS) - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)					
5,100.00	5,097.40	5,101.42	5,098.87	10.99	10.96	-145.84	-29.39	11.11	42.72	20.93	21.79	1.960	
5,200.00	5,196.30	5,200.95	5,197.58	11.20	11.16	-141.39	-41.79	13.66	51.73	29.56	22.17	2.333	
5,300.00	5,294.93	5,300.37	5,296.20	11.41	11.37	-139.31	-54.18	16.21	62.25	39.70	22.55	2.761	
5,379.29	5,372.92	5,379.11	5,374.30	11.59	11.53	-138.74	-63.99	18.22	71.56	48.71	22.85	3.131	
5,400.00	5,393.26	5,399.66	5,394.69	11.64	11.58	-138.71	-66.55	18.75	74.10	51.16	22.94	3.230	
5,500.00	5,491.49	5,498.91	5,493.12	11.88	11.79	-138.56	-78.92	21.29	86.36	62.99	23.37	3.696	
5,600.00	5,589.72	5,598.15	5,591.56	12.13	12.01	-138.45	-91.29	23.83	98.62	74.82	23.80	4.143	
5,700.00	5,687.96	5,697.40	5,690.00	12.39	12.23	-138.37	-103.66	26.38	110.88	86.63	24.25	4.572	
5,800.00	5,786.19	5,796.64	5,788.44	12.66	12.46	-138.30	-116.02	28.92	123.14	98.43	24.71	4.984	
5,900.00	5,884.42	5,895.89	5,886.88	12.93	12.70	-138.24	-128.39	31.46	135.40	110.23	25.18	5.378	
6,000.00	5,982.65	5,995.14	5,985.32	13.21	12.93	-138.19	-140.76	34.00	147.66	122.01	25.65	5.757	
6,100.00	6,080.88	6,094.38	6,083.76	13.50	13.17	-138.15	-153.13	36.54	159.92	133.79	26.13	6.120	
6,200.00	6,179.11	6,193.63	6,182.20	13.80	13.42	-138.12	-165.49	39.09	172.18	145.56	26.62	6.468	
6,300.00	6,277.34	6,292.87	6,280.64	14.10	13.66	-138.09	-177.86	41.63	184.44	157.32	27.12	6.801	
6,400.00	6,375.57	6,392.12	6,379.08	14.40	13.91	-138.07	-190.23	44.17	196.70	169.08	27.62	7.121	
6,500.00	6,473.80	6,491.36	6,477.52	14.71	14.17	-138.04	-202.59	46.71	208.97	180.83	28.13	7.428	
6,600.00	6,572.03	6,590.61	6,575.95	15.03	14.42	-138.02	-214.96	49.26	221.23	192.58	28.65	7.722	
6,700.00	6,670.27	6,689.85	6,674.39	15.35	14.68	-138.00	-227.33	51.80	233.49	204.32	29.17	8.004	
6,800.00	6,768.50	6,789.10	6,772.83	15.67	14.94	-137.99	-239.70	54.34	245.75	216.05	29.70	8.274	
6,900.00	6,866.73	6,888.34	6,871.27	16.00	15.20	-137.97	-252.06	56.88	258.01	227.78	30.23	8.534	
7,000.00	6,964.96	6,987.59	6,969.71	16.33	15.47	-137.96	-264.43	59.42	270.27	239.50	30.77	8.784	
7,100.00	7,063.19	7,086.84	7,068.15	16.67	15.74	-137.95	-276.80	61.97	282.53	251.22	31.31	9.023	
7,141.63	7,104.08	7,128.15	7,109.13	16.81	15.85	-137.94	-281.95	63.02	287.64	256.10	31.54	9.120	
7,200.00	7,161.48	7,185.83	7,166.36	17.00	16.00	-137.97	-289.01	64.48	294.59	262.72	31.87	9.243	
7,300.00	7,260.04	7,284.51	7,264.41	17.29	16.26	-138.08	-299.83	66.70	305.67	273.25	32.42	9.428	
7,400.00	7,358.89	7,383.25	7,362.71	17.58	16.50	-138.28	-309.01	68.59	315.69	282.74	32.95	9.582	
7,500.00	7,457.98	7,482.06	7,461.22	17.86	16.74	-138.55	-316.52	70.13	324.66	291.20	33.45	9.705	
7,600.00	7,557.30	7,580.90	7,559.87	18.13	16.97	-138.90	-322.38	71.34	332.58	298.64	33.94	9.800	
7,700.00	7,656.80	7,679.75	7,658.63	18.39	17.19	-139.33	-326.57	72.20	339.45	305.05	34.40	9.868	
7,800.00	7,756.46	7,778.60	7,757.44	18.64	17.40	-139.82	-329.08	72.71	345.30	310.46	34.84	9.911	
7,900.00	7,856.25	7,877.42	7,856.26	18.87	17.60	-140.39	-329.93	72.89	350.12	314.87	35.25	9.933	
8,000.00	7,956.14	7,977.29	7,956.14	19.09	17.80	-140.90	-329.93	72.89	353.77	318.12	35.65	9.923	
8,100.00	8,056.09	8,077.25	8,056.09	19.30	18.00	-141.22	-329.93	72.89	356.09	320.04	36.05	9.877	
8,200.00	8,156.08	8,157.64	8,136.23	19.49	18.13	-142.15	-324.43	72.89	359.75	323.40	36.35	9.897	
8,220.92	8,177.00	8,174.13	8,152.53	19.53	18.15	66.31	-321.91	72.89	361.07	324.68	36.39	9.922	
8,300.00	8,256.08	8,234.86	8,211.76	19.68	18.21	64.41	-308.63	72.89	368.45	331.92	36.53	10.086	
8,400.00	8,356.08	8,306.69	8,279.52	19.87	18.24	61.16	-284.96	72.89	384.31	347.66	36.65	10.486	
8,420.92	8,377.00	8,320.87	8,292.52	19.91	18.24	60.41	-279.28	72.89	388.67	352.00	36.67	10.600	
8,450.00	8,406.07	8,340.31	8,310.10	19.96	18.24	58.84	-271.00	72.89	394.99	358.35	36.64	10.780	
8,500.00	8,455.83	8,373.41	8,339.36	20.02	18.23	56.34	-255.53	72.89	405.82	369.28	36.54	11.107	
8,550.00	8,504.99	8,400.00	8,362.18	20.06	18.23	54.32	-241.89	72.89	416.45	380.10	36.35	11.457	
8,600.00	8,553.18	8,438.57	8,394.11	20.08	18.22	52.09	-220.26	72.89	426.52	390.48	36.04	11.835	
8,650.00	8,600.03	8,470.73	8,419.57	20.07	18.21	50.33	-200.62	72.89	436.07	400.43	35.63	12.237	
8,700.00	8,645.18	8,500.00	8,441.75	20.04	18.20	48.85	-181.53	72.89	444.90	409.77	35.13	12.663	
8,750.00	8,688.28	8,534.38	8,466.52	19.99	18.20	47.47	-157.69	72.89	452.88	418.35	34.53	13.115	
8,800.00	8,729.02	8,565.94	8,487.96	19.93	18.19	46.35	-134.54	72.89	459.94	426.08	33.86	13.583	
8,850.00	8,767.08	8,600.00	8,509.63	19.86	18.19	45.39	-108.27	72.89	466.01	432.87	33.13	14.064	
8,900.00	8,802.18	8,628.68	8,526.64	19.78	18.20	44.69	-85.18	72.89	470.99	438.59	32.40	14.538	
8,950.00	8,834.03	8,659.91	8,543.82	19.71	18.22	44.13	-59.11	72.89	474.86	443.19	31.67	14.994	
9,000.00	8,862.41	8,700.00	8,563.75	19.63	18.25	43.69	-24.33	72.89	477.71	446.72	30.99	15.415	
9,050.00	8,887.09	8,722.20	8,573.73	19.56	18.27	43.53	-4.50	72.89	479.12	448.71	30.41	15.756	
9,100.00	8,907.89	8,750.00	8,585.13	19.49	18.31	43.47	20.85	72.89	479.49	449.55	29.95	16.012	

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 327H (SIMOPS) - OH - Plan #1													Offset Site Error: 0.00 usft		
Survey Program: 0-LEAM MWD-ADJ														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		
9,150.00	8,924.65	8,784.42	8,597.52	19.43	18.38	43.59	52.97	72.89	478.63	448.96	29.66	16.135			
9,200.00	8,937.25	8,815.57	8,607.04	19.38	18.46	43.88	82.61	72.89	476.59	447.03	29.57	16.119			
9,250.00	8,945.57	8,850.00	8,615.68	19.36	18.55	44.37	115.94	72.89	473.41	443.71	29.70	15.941			
9,300.00	8,949.58	8,878.02	8,621.23	19.48	18.65	44.97	143.39	72.89	469.05	439.04	30.01	15.628			
9,320.91	8,949.96	8,900.00	8,624.64	19.55	18.73	45.40	165.11	72.89	467.04	436.77	30.27	15.427			
9,400.00	8,949.96	8,950.00	8,629.27	19.90	18.94	45.81	214.88	72.89	461.03	430.22	30.81	14.962			
9,457.61	8,949.96	8,978.15	8,629.96	20.22	19.07	45.87	243.02	72.89	459.61	428.43	31.17	14.743			
9,500.00	8,949.96	9,020.54	8,629.96	20.45	19.31	45.87	285.41	72.89	459.61	428.07	31.54	14.573			
9,600.00	8,949.96	9,120.54	8,629.96	21.14	19.94	45.87	385.41	72.89	459.61	427.05	32.56	14.115			
9,700.00	8,949.96	9,220.54	8,629.96	21.95	20.72	45.87	485.41	72.89	459.61	425.82	33.79	13.601			
9,800.00	8,949.96	9,320.54	8,629.96	22.87	21.63	45.87	585.41	72.89	459.61	424.41	35.20	13.056			
9,900.00	8,949.96	9,420.54	8,629.96	23.89	22.64	45.87	685.41	72.89	459.61	422.84	36.78	12.497			
10,000.00	8,949.96	9,520.54	8,629.96	25.00	23.75	45.87	785.41	72.89	459.62	421.12	38.49	11.940			
10,100.00	8,949.97	9,620.54	8,629.96	26.19	24.95	45.87	885.41	72.89	459.62	419.28	40.33	11.396			
10,200.00	8,949.97	9,720.54	8,629.97	27.45	26.22	45.87	985.41	72.89	459.62	417.34	42.28	10.871			
10,300.00	8,949.97	9,820.54	8,629.97	28.77	27.55	45.87	1,085.41	72.89	459.62	415.30	44.32	10.370			
10,400.00	8,949.97	9,920.54	8,629.97	30.14	28.94	45.87	1,185.41	72.89	459.62	413.18	46.44	9.896			
10,500.00	8,949.97	10,020.54	8,629.97	31.56	30.37	45.88	1,285.41	72.89	459.62	410.99	48.64	9.450			
10,600.00	8,949.97	10,120.54	8,629.97	33.01	31.84	45.88	1,385.41	72.89	459.62	408.74	50.89	9.032			
10,700.00	8,949.97	10,220.54	8,629.97	34.50	33.35	45.88	1,485.41	72.89	459.63	406.43	53.20	8.640			
10,800.00	8,949.97	10,320.54	8,629.97	36.03	34.89	45.88	1,585.41	72.89	459.63	404.08	55.55	8.274			
10,900.00	8,949.97	10,420.54	8,629.97	37.58	36.45	45.88	1,685.41	72.89	459.63	401.68	57.95	7.932			
11,000.00	8,949.98	10,520.54	8,629.97	39.15	38.04	45.88	1,785.41	72.89	459.63	399.25	60.38	7.612			
11,100.00	8,949.98	10,620.54	8,629.98	40.74	39.65	45.88	1,885.41	72.89	459.63	396.79	62.84	7.314			
11,200.00	8,949.98	10,720.54	8,629.98	42.35	41.28	45.88	1,985.41	72.89	459.63	394.30	65.34	7.035			
11,300.00	8,949.98	10,820.54	8,629.98	43.98	42.92	45.88	2,085.41	72.89	459.64	391.78	67.85	6.774			
11,400.00	8,949.98	10,920.54	8,629.98	45.63	44.58	45.88	2,185.41	72.89	459.64	389.24	70.40	6.529			
11,500.00	8,949.98	11,020.54	8,629.98	47.29	46.25	45.88	2,285.41	72.89	459.64	386.68	72.96	6.300			
11,600.00	8,949.98	11,120.54	8,629.98	48.96	47.93	45.88	2,385.41	72.89	459.64	384.11	75.54	6.085			
11,700.00	8,949.98	11,220.54	8,629.98	50.64	49.62	45.88	2,485.41	72.89	459.64	381.51	78.13	5.883			
11,800.00	8,949.98	11,320.54	8,629.98	52.33	51.33	45.88	2,585.41	72.89	459.64	378.90	80.74	5.693			
11,900.00	8,949.98	11,420.54	8,629.98	54.03	53.04	45.88	2,685.41	72.89	459.65	376.28	83.36	5.514			
12,000.00	8,949.99	11,520.54	8,629.98	55.73	54.75	45.88	2,785.41	72.89	459.65	373.65	86.00	5.345			
12,100.00	8,949.99	11,620.54	8,629.99	57.45	56.48	45.88	2,885.41	72.89	459.65	371.00	88.65	5.185			
12,200.00	8,949.99	11,720.54	8,629.99	59.17	58.21	45.88	2,985.41	72.89	459.65	368.35	91.30	5.034			
12,300.00	8,949.99	11,820.54	8,629.99	60.90	59.94	45.88	3,085.41	72.89	459.65	365.68	93.97	4.891			
12,400.00	8,949.99	11,920.54	8,629.99	62.63	61.69	45.88	3,185.41	72.89	459.65	363.01	96.65	4.756			
12,500.00	8,949.99	12,020.54	8,629.99	64.37	63.43	45.88	3,285.41	72.89	459.66	360.33	99.33	4.628			
12,600.00	8,949.99	12,120.54	8,629.99	66.11	65.18	45.88	3,385.41	72.89	459.66	357.64	102.02	4.506			
12,700.00	8,949.99	12,220.54	8,629.99	67.86	66.94	45.88	3,485.41	72.89	459.66	354.94	104.72	4.390			
12,800.00	8,949.99	12,320.54	8,629.99	69.61	68.70	45.88	3,585.41	72.89	459.66	352.24	107.42	4.279			
12,900.00	8,949.99	12,420.54	8,629.99	71.36	70.46	45.88	3,685.41	72.89	459.66	349.53	110.13	4.174			
13,000.00	8,950.00	12,520.54	8,630.00	73.12	72.22	45.88	3,785.41	72.89	459.66	346.82	112.84	4.074			
13,100.00	8,950.00	12,620.54	8,630.00	74.89	73.99	45.88	3,885.41	72.89	459.67	344.11	115.56	3.978			
13,200.00	8,950.00	12,720.54	8,630.00	76.65	75.76	45.88	3,985.41	72.89	459.67	341.38	118.28	3.886			
13,300.00	8,950.00	12,820.54	8,630.00	78.42	77.54	45.88	4,085.41	72.89	459.67	338.66	121.01	3.799			
13,400.00	8,950.00	12,920.54	8,630.00	80.19	79.31	45.88	4,185.41	72.89	459.67	335.93	123.74	3.715			
13,452.65	8,950.00	12,973.20	8,630.00	81.12	80.25	45.88	4,238.07	72.89	459.67	334.49	125.18	3.672			

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



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Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 328H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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	179.84	-25.00	0.07	25.00					
100.00	100.00	100.00	100.00	0.08	0.08	179.84	-25.00	0.07	25.00	24.84	0.16	158.896		
200.00	200.00	200.00	200.00	0.30	0.30	179.84	-25.00	0.07	25.00	24.39	0.61	41.195		
300.00	300.00	300.00	300.00	0.53	0.53	179.84	-25.00	0.07	25.00	23.94	1.06	23.665		
400.00	400.00	400.00	400.00	0.75	0.75	179.84	-25.00	0.07	25.00	23.49	1.51	16.601		
500.00	500.00	500.00	500.00	0.98	0.98	179.84	-25.00	0.07	25.00	23.04	1.96	12.785		
600.00	600.00	600.00	600.00	1.20	1.20	179.84	-25.00	0.07	25.00	22.60	2.40	10.395		
700.00	700.00	700.00	700.00	1.43	1.43	179.84	-25.00	0.07	25.00	22.15	2.85	8.758		
800.00	800.00	800.00	800.00	1.65	1.65	179.84	-25.00	0.07	25.00	21.70	3.30	7.566		
900.00	900.00	900.00	900.00	1.88	1.88	179.84	-25.00	0.07	25.00	21.25	3.75	6.660		
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	179.84	-25.00	0.07	25.00	20.80	4.20	5.948		
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	179.84	-25.00	0.07	25.00	20.35	4.65	5.373		
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	179.84	-25.00	0.07	25.00	19.90	5.10	4.900		
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	179.84	-25.00	0.07	25.00	19.45	5.55	4.503		
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	179.84	-25.00	0.07	25.00	19.00	6.00	4.166		
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	179.84	-25.00	0.07	25.00	18.55	6.45	3.876		
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	179.84	-25.00	0.07	25.00	18.10	6.90	3.623		
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	179.84	-25.00	0.07	25.00	17.65	7.35	3.401		
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	179.84	-25.00	0.07	25.00	17.20	7.80	3.205		
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	179.84	-25.00	0.07	25.00	16.75	8.25	3.031		
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	179.84	-25.00	0.07	25.00	16.30	8.70	2.874		
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	179.84	-25.00	0.07	25.00	15.85	9.15	2.733		
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	179.84	-25.00	0.07	25.00	15.40	9.60	2.605		
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	179.84	-25.00	0.07	25.00	14.95	10.05	2.488		
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	179.84	-25.00	0.07	25.00	14.50	10.50	2.382		
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	179.84	-25.00	0.07	25.00	14.05	10.95	2.284		
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	179.84	-25.00	0.07	25.00	13.60	11.40	2.194		
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	179.84	-25.00	0.07	25.00	13.15	11.85	2.111		
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	179.84	-25.00	0.07	25.00	12.71	12.29	2.033		
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	179.84	-25.00	0.07	25.00	12.26	12.74	1.962		
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	179.84	-25.00	0.07	25.00	11.81	13.19	1.895		
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	179.84	-25.00	0.07	25.00	11.36	13.64	1.832		
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	179.84	-25.00	0.07	25.00	10.91	14.09	1.774		
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	179.84	-25.00	0.07	25.00	10.46	14.54	1.719		
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	179.84	-25.00	0.07	25.00	10.01	14.99	1.668		
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	179.84	-25.00	0.07	25.00	9.56	15.44	1.619		
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	179.84	-25.00	0.07	25.00	9.11	15.89	1.573		
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	179.84	-25.00	0.07	25.00	8.66	16.34	1.530		
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	179.84	-25.00	0.07	25.00	8.21	16.79	1.489 Level 3		
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	179.84	-25.00	0.07	25.00	7.76	17.24	1.450 Level 3		
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	179.84	-25.00	0.07	25.00	7.31	17.69	1.413 Level 3		
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	179.84	-25.00	0.07	25.00	6.86	18.14	1.378 Level 3		
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	179.84	-25.00	0.07	25.00	6.41	18.59	1.345 Level 3		
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	179.84	-25.00	0.07	25.00	5.96	19.04	1.313 Level 3		
4,400.00	4,400.00	4,399.79	4,399.78	9.72	9.72	-32.55	-25.36	1.17	24.65	5.21	19.44	1.268 Level 3		
4,500.00	4,499.96	4,499.42	4,499.35	9.89	9.91	-43.55	-26.45	4.46	24.19	4.39	19.79	1.222 Level 2		
4,500.89	4,500.85	4,500.31	4,500.24	9.89	9.91	-43.68	-26.46	4.50	24.19	4.39	19.80	1.222 Level 2, CC, ES, SF		
4,600.00	4,599.86	4,598.73	4,598.49	10.06	10.10	-61.42	-28.24	9.92	25.42	5.26	20.16	1.261 Level 3		
4,700.00	4,699.68	4,697.57	4,697.00	10.24	10.30	-81.15	-30.74	17.51	30.62	10.10	20.52	1.492 Level 3		
4,800.00	4,799.37	4,795.78	4,794.68	10.42	10.50	-96.78	-33.92	27.18	40.78	19.89	20.89	1.952		
4,900.00	4,898.90	4,893.22	4,891.34	10.60	10.70	-107.19	-37.77	38.86	55.49	34.24	21.25	2.611		
5,000.00	4,998.26	4,989.74	4,986.79	10.79	10.91	-113.89	-42.25	52.49	74.14	52.53	21.61	3.431		

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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)						
5,100.00	5,097.40	5,085.21	5,080.86	10.99	11.14	-118.28	-47.35	67.96	96.30	74.33	4.383			
5,200.00	5,196.30	5,180.61	5,174.51	11.20	11.37	-121.33	-53.02	85.19	121.52	99.17	5.439			
5,300.00	5,294.93	5,276.78	5,268.87	11.41	11.61	-123.80	-58.84	102.87	148.22	125.50	6.524			
5,379.29	5,372.92	5,352.78	5,343.43	11.59	11.81	-125.50	-63.44	116.84	170.23	147.21	7.395			
5,400.00	5,393.26	5,372.60	5,362.88	11.64	11.87	-125.95	-64.63	120.48	176.09	152.99	7.621			
5,500.00	5,491.49	5,468.31	5,456.78	11.88	12.13	-127.78	-70.43	138.07	204.49	180.97	8.694			
5,600.00	5,589.72	5,564.02	5,550.67	12.13	12.40	-129.17	-76.22	155.66	233.03	209.08	9.730			
5,700.00	5,687.96	5,659.72	5,644.57	12.39	12.67	-130.25	-82.01	173.25	261.67	237.28	10.729			
5,800.00	5,786.19	5,755.43	5,738.47	12.66	12.96	-131.12	-87.80	190.85	290.38	265.54	11.690			
5,900.00	5,884.42	5,851.14	5,832.37	12.93	13.25	-131.83	-93.59	208.44	319.14	293.84	12.614			
6,000.00	5,982.65	5,946.84	5,926.26	13.21	13.54	-132.43	-99.38	226.03	347.93	322.17	13.502			
6,100.00	6,080.88	6,042.55	6,020.16	13.50	13.84	-132.93	-105.17	243.62	376.78	350.51	14.354			
6,200.00	6,179.11	6,138.26	6,114.06	13.80	14.15	-133.37	-110.96	261.21	405.61	378.88	15.173			
6,300.00	6,277.34	6,233.96	6,207.96	14.10	14.46	-133.74	-116.75	278.80	434.48	407.25	15.959			
6,400.00	6,375.57	6,329.67	6,301.86	14.40	14.78	-134.07	-122.54	296.39	463.36	435.64	16.713			
6,500.00	6,473.80	6,425.37	6,395.75	14.71	15.10	-134.36	-128.33	313.98	492.26	464.03	17.437			
6,600.00	6,572.03	6,521.08	6,489.65	15.03	15.42	-134.62	-134.12	331.57	521.16	492.42	18.133			
6,700.00	6,670.27	6,616.79	6,583.55	15.35	15.75	-134.85	-139.91	349.16	550.07	520.82	18.800			
6,800.00	6,768.50	6,712.49	6,677.45	15.67	16.08	-135.05	-145.70	366.75	579.00	549.21	19.441			
6,900.00	6,866.73	6,808.20	6,771.34	16.00	16.41	-135.24	-151.49	384.34	607.92	577.61	20.057			
7,000.00	6,964.96	6,903.91	6,865.24	16.33	16.75	-135.41	-157.28	401.93	636.86	606.01	20.648			
7,100.00	7,063.19	6,999.61	6,959.14	16.67	17.09	-135.57	-163.07	419.52	665.79	634.41	21.216			
7,141.63	7,104.08	7,039.45	6,998.23	16.81	17.23	-135.63	-165.48	426.85	677.84	646.24	21.446			
7,200.00	7,161.48	7,095.38	7,053.10	17.00	17.43	-135.82	-168.86	437.13	694.53	662.59	21.741			
7,300.00	7,260.04	7,191.49	7,147.39	17.29	17.78	-136.04	-174.68	454.79	722.17	689.65	22.207			
7,400.00	7,358.89	7,287.92	7,242.00	17.58	18.13	-136.15	-180.51	472.51	748.61	715.52	22.624			
7,500.00	7,457.98	7,384.67	7,336.92	17.86	18.49	-136.17	-186.36	490.30	773.83	740.18	22.995			
7,600.00	7,557.30	7,481.69	7,432.10	18.13	18.85	-136.10	-192.23	508.13	797.84	763.63	23.324			
7,700.00	7,656.80	7,578.95	7,527.53	18.39	19.21	-135.95	-198.12	526.01	820.64	785.89	23.615			
7,800.00	7,756.46	7,676.44	7,623.17	18.64	19.57	-135.72	-204.02	543.92	842.26	806.97	23.870			
7,900.00	7,856.25	7,774.11	7,719.00	18.87	19.94	-135.42	-209.92	561.87	862.69	826.88	24.092			
8,000.00	7,956.14	7,871.94	7,814.98	19.09	20.31	-135.06	-215.84	579.86	881.96	845.64	24.285			
8,100.00	8,056.09	7,969.90	7,911.09	19.30	20.68	-134.62	-221.77	597.86	900.09	863.28	24.450			
8,200.00	8,156.08	8,067.96	8,007.29	19.49	21.05	-134.13	-227.70	615.88	917.12	879.82	24.590			
8,220.92	8,177.00	8,086.48	8,027.43	19.53	21.13	74.83	-228.94	619.65	920.54	883.14	24.617			
8,300.00	8,256.08	8,150.00	8,087.86	19.68	21.34	75.08	-229.95	630.98	934.25	896.55	24.783			
8,400.00	8,356.08	8,214.02	8,150.48	19.87	21.54	74.91	-224.02	642.71	954.26	916.23	25.094			
8,420.92	8,377.00	8,228.20	8,164.24	19.91	21.58	74.82	-221.75	645.29	958.84	920.74	25.170			
8,450.00	8,406.07	8,250.00	8,185.27	19.96	21.64	74.04	-217.58	649.23	965.23	927.03	25.265			
8,500.00	8,455.83	8,281.38	8,215.23	20.02	21.72	72.83	-210.16	654.85	975.90	937.57	25.461			
8,550.00	8,504.99	8,314.85	8,246.70	20.06	21.81	71.73	-200.42	660.75	986.08	947.69	25.682			
8,600.00	8,553.18	8,350.00	8,279.08	20.08	21.89	70.74	-188.20	666.83	995.70	957.31	25.933			
8,650.00	8,600.03	8,381.64	8,307.55	20.07	21.96	69.88	-175.49	672.17	1,004.68	966.36	26.218			
8,700.00	8,645.18	8,415.01	8,336.79	20.04	22.02	69.14	-160.36	677.65	1,012.97	974.78	26.527			
8,750.00	8,688.28	8,450.00	8,366.46	19.99	22.09	68.54	-142.68	683.22	1,020.50	982.50	26.854			
8,800.00	8,729.02	8,481.91	8,392.55	19.93	22.15	68.05	-124.97	688.12	1,027.23	989.46	27.196			
8,850.00	8,767.08	8,515.50	8,418.91	19.86	22.20	67.69	-104.77	693.07	1,033.13	995.61	27.536			
8,900.00	8,802.18	8,550.00	8,444.74	19.78	22.26	67.47	-82.42	697.92	1,038.17	1,000.90	27.858			
8,950.00	8,834.03	8,583.11	8,468.23	19.71	22.31	67.36	-59.52	702.33	1,042.32	1,005.29	28.149			
9,000.00	8,862.41	8,617.20	8,491.02	19.63	22.36	67.38	-34.54	706.61	1,045.58	1,008.75	28.388			
9,050.00	8,887.09	8,650.00	8,511.54	19.56	22.41	67.51	-9.25	710.47	1,047.94	1,011.25	28.558			
9,100.00	8,907.89	8,686.12	8,532.44	19.49	22.46	67.80	19.94	714.40	1,049.41	1,012.77	28.640			

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 328H (SIMOPS) - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														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)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)							
9,150.00	8,924.65	8,721.02	8,550.88	19.43	22.52	68.20	49.36	717.87	1,050.01	1,013.30	36.71	28.606			
9,200.00	8,937.25	8,750.00	8,564.83	19.38	22.57	68.62	74.62	720.50	1,049.77	1,012.96	36.81	28.518			
9,250.00	8,945.57	8,791.90	8,582.74	19.36	22.65	69.36	112.34	723.87	1,048.65	1,011.54	37.11	28.259			
9,300.00	8,949.58	8,827.97	8,595.96	19.48	22.72	70.12	145.80	726.36	1,046.77	1,009.29	37.48	27.927			
9,320.91	8,949.96	8,843.20	8,600.91	19.55	22.75	70.48	160.17	727.30	1,045.75	1,008.09	37.67	27.764			
9,400.00	8,949.96	8,900.00	8,616.04	19.90	22.90	71.31	214.82	730.16	1,042.54	1,004.21	38.32	27.203			
9,500.00	8,949.96	8,982.08	8,628.34	20.45	23.16	71.99	295.87	732.50	1,040.53	1,001.17	39.36	26.438			
9,558.66	8,949.96	9,030.36	8,630.21	20.86	23.35	72.10	344.09	732.88	1,040.26	1,000.22	40.04	25.983			
9,600.00	8,949.96	9,070.83	8,630.10	21.14	23.53	72.09	384.57	732.88	1,040.29	999.72	40.57	25.641			
9,700.00	8,949.96	9,170.83	8,629.84	21.95	24.10	72.08	484.57	732.88	1,040.38	998.30	42.08	24.726			
9,800.00	8,949.96	9,270.83	8,629.58	22.87	24.82	72.07	584.57	732.88	1,040.46	996.66	43.80	23.753			
9,900.00	8,949.96	9,370.83	8,629.32	23.89	25.66	72.05	684.57	732.88	1,040.54	994.81	45.73	22.752			
10,000.00	8,949.96	9,470.83	8,629.06	25.00	26.62	72.04	784.57	732.88	1,040.62	992.78	47.84	21.751			
10,100.00	8,949.97	9,570.83	8,628.80	26.19	27.68	72.02	884.57	732.88	1,040.71	990.60	50.11	20.769			
10,200.00	8,949.97	9,670.83	8,628.53	27.45	28.82	72.01	984.57	732.88	1,040.79	988.28	52.51	19.821			
10,300.00	8,949.97	9,770.83	8,628.27	28.77	30.03	72.00	1,084.57	732.88	1,040.87	985.84	55.03	18.915			
10,400.00	8,949.97	9,870.83	8,628.01	30.14	31.30	71.98	1,184.57	732.88	1,040.96	983.31	57.65	18.056			
10,500.00	8,949.97	9,970.83	8,627.75	31.56	32.63	71.97	1,284.57	732.88	1,041.04	980.68	60.36	17.246			
10,600.00	8,949.97	10,070.83	8,627.49	33.01	34.00	71.96	1,384.57	732.88	1,041.13	977.97	63.15	16.486			
10,700.00	8,949.97	10,170.83	8,627.22	34.50	35.42	71.94	1,484.56	732.88	1,041.21	975.20	66.01	15.773			
10,800.00	8,949.97	10,270.83	8,626.96	36.03	36.87	71.93	1,584.56	732.88	1,041.29	972.37	68.93	15.107			
10,900.00	8,949.97	10,370.83	8,626.70	37.58	38.35	71.91	1,684.56	732.88	1,041.38	969.48	71.89	14.485			
11,000.00	8,949.98	10,470.83	8,626.44	39.15	39.87	71.90	1,784.56	732.88	1,041.46	966.55	74.91	13.903			
11,100.00	8,949.98	10,570.83	8,626.18	40.74	41.41	71.89	1,884.56	732.88	1,041.54	963.58	77.96	13.360			
11,200.00	8,949.98	10,670.83	8,625.92	42.35	42.97	71.87	1,984.56	732.88	1,041.63	960.58	81.05	12.851			
11,300.00	8,949.98	10,770.83	8,625.65	43.98	44.55	71.86	2,084.56	732.88	1,041.71	957.54	84.17	12.376			
11,400.00	8,949.98	10,870.83	8,625.39	45.63	46.15	71.85	2,184.56	732.88	1,041.80	954.47	87.32	11.931			
11,500.00	8,949.98	10,970.83	8,625.13	47.29	47.76	71.83	2,284.56	732.88	1,041.88	951.38	90.50	11.513			
11,600.00	8,949.98	11,070.83	8,624.87	48.96	49.40	71.82	2,384.56	732.88	1,041.96	948.27	93.69	11.121			
11,700.00	8,949.98	11,170.83	8,624.61	50.64	51.04	71.81	2,484.56	732.88	1,042.05	945.14	96.91	10.753			
11,800.00	8,949.98	11,270.83	8,624.34	52.33	52.70	71.79	2,584.56	732.88	1,042.13	941.98	100.15	10.406			
11,900.00	8,949.98	11,370.83	8,624.08	54.03	54.36	71.78	2,684.56	732.88	1,042.22	938.82	103.40	10.079			
12,000.00	8,949.99	11,470.83	8,623.82	55.73	56.04	71.76	2,784.56	732.88	1,042.30	935.63	106.67	9.771			
12,100.00	8,949.99	11,570.83	8,623.56	57.45	57.72	71.75	2,884.56	732.88	1,042.39	932.44	109.95	9.481			
12,200.00	8,949.99	11,670.83	8,623.30	59.17	59.42	71.74	2,984.55	732.88	1,042.47	929.23	113.24	9.206			
12,300.00	8,949.99	11,770.83	8,623.04	60.90	61.12	71.72	3,084.55	732.88	1,042.55	926.01	116.55	8.945			
12,400.00	8,949.99	11,870.83	8,622.77	62.63	62.83	71.71	3,184.55	732.88	1,042.64	922.78	119.86	8.699			
12,500.00	8,949.99	11,970.82	8,622.51	64.37	64.55	71.70	3,284.55	732.88	1,042.72	919.54	123.19	8.464			
12,600.00	8,949.99	12,070.82	8,622.25	66.11	66.27	71.68	3,384.55	732.88	1,042.81	916.29	126.52	8.242			
12,700.00	8,949.99	12,170.82	8,621.99	67.86	67.99	71.67	3,484.55	732.88	1,042.89	913.03	129.86	8.031			
12,800.00	8,949.99	12,270.82	8,621.73	69.61	69.72	71.65	3,584.55	732.88	1,042.98	909.77	133.21	7.830			
12,900.00	8,949.99	12,370.82	8,621.47	71.36	71.46	71.64	3,684.55	732.88	1,043.06	906.50	136.57	7.638			
13,000.00	8,950.00	12,470.82	8,621.20	73.12	73.20	71.63	3,784.55	732.88	1,043.15	903.22	139.93	7.455			
13,100.00	8,950.00	12,570.82	8,620.94	74.89	74.95	71.61	3,884.55	732.88	1,043.23	899.94	143.30	7.280			
13,200.00	8,950.00	12,670.82	8,620.68	76.65	76.70	71.60	3,984.55	732.88	1,043.32	896.65	146.67	7.113			
13,300.00	8,950.00	12,770.82	8,620.42	78.42	78.45	71.59	4,084.55	732.88	1,043.40	893.36	150.05	6.954			
13,400.00	8,950.00	12,870.82	8,620.16	80.19	80.20	71.57	4,184.55	732.88	1,043.49	890.06	153.43	6.801			
13,452.65	8,950.00	12,923.48	8,620.02	81.12	81.13	71.57	4,237.20	732.88	1,043.53	888.32	155.21	6.723			

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 332H (SIMOPS) - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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	179.84	-125.00	0.36	125.00				
100.00	100.00	100.00	100.00	0.08	0.08	179.84	-125.00	0.36	125.00	124.84	0.16	794.480	
200.00	200.00	200.00	200.00	0.30	0.30	179.84	-125.00	0.36	125.00	124.39	0.61	205.976	
300.00	300.00	300.00	300.00	0.53	0.53	179.84	-125.00	0.36	125.00	123.94	1.06	118.327	
400.00	400.00	400.00	400.00	0.75	0.75	179.84	-125.00	0.36	125.00	123.49	1.51	83.005	
500.00	500.00	500.00	500.00	0.98	0.98	179.84	-125.00	0.36	125.00	123.05	1.96	63.924	
600.00	600.00	600.00	600.00	1.20	1.20	179.84	-125.00	0.36	125.00	122.60	2.40	51.975	
700.00	700.00	700.00	700.00	1.43	1.43	179.84	-125.00	0.36	125.00	122.15	2.85	43.790	
800.00	800.00	800.00	800.00	1.65	1.65	179.84	-125.00	0.36	125.00	121.70	3.30	37.832	
900.00	900.00	900.00	900.00	1.88	1.88	179.84	-125.00	0.36	125.00	121.25	3.75	33.302	
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	179.84	-125.00	0.36	125.00	120.80	4.20	29.740	
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	179.84	-125.00	0.36	125.00	120.35	4.65	26.866	
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	179.84	-125.00	0.36	125.00	119.90	5.10	24.499	
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	179.84	-125.00	0.36	125.00	119.45	5.55	22.516	
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	179.84	-125.00	0.36	125.00	119.00	6.00	20.829	
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	179.84	-125.00	0.36	125.00	118.55	6.45	19.378	
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	179.84	-125.00	0.36	125.00	118.10	6.90	18.115	
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	179.84	-125.00	0.36	125.00	117.65	7.35	17.007	
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	179.84	-125.00	0.36	125.00	117.20	7.80	16.027	
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	179.84	-125.00	0.36	125.00	116.75	8.25	15.154	
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	179.84	-125.00	0.36	125.00	116.30	8.70	14.370	
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	179.84	-125.00	0.36	125.00	115.85	9.15	13.664	
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	179.84	-125.00	0.36	125.00	115.40	9.60	13.024	
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	179.84	-125.00	0.36	125.00	114.95	10.05	12.442	
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	179.84	-125.00	0.36	125.00	114.50	10.50	11.909	
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	179.84	-125.00	0.36	125.00	114.05	10.95	11.420	
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	179.84	-125.00	0.36	125.00	113.60	11.40	10.969	
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	179.84	-125.00	0.36	125.00	113.16	11.85	10.553	
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	179.84	-125.00	0.36	125.00	112.71	12.29	10.167	
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	179.84	-125.00	0.36	125.00	112.26	12.74	9.808	
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	179.84	-125.00	0.36	125.00	111.81	13.19	9.474	
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	179.84	-125.00	0.36	125.00	111.36	13.64	9.162	
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	179.84	-125.00	0.36	125.00	110.91	14.09	8.870	
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	179.84	-125.00	0.36	125.00	110.46	14.54	8.596	
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	179.84	-125.00	0.36	125.00	110.01	14.99	8.338	
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	179.84	-125.00	0.36	125.00	109.56	15.44	8.095	
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	179.84	-125.00	0.36	125.00	109.11	15.89	7.866	
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	179.84	-125.00	0.36	125.00	108.66	16.34	7.650	
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	179.84	-125.00	0.36	125.00	108.21	16.79	7.445	
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	179.84	-125.00	0.36	125.00	107.76	17.24	7.251	
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	179.84	-125.00	0.36	125.00	107.31	17.69	7.067	
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	179.84	-125.00	0.36	125.00	106.86	18.14	6.891	
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	179.84	-125.00	0.36	125.00	106.41	18.59	6.725	
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	179.84	-125.00	0.36	125.00	105.96	19.04	6.566	
4,400.00	4,400.00	4,398.24	4,398.24	9.72	9.71	-28.98	-125.69	-0.12	124.94	105.51	19.43	6.431	
4,500.00	4,499.96	4,496.48	4,496.44	9.89	9.88	-28.89	-127.77	-1.56	124.76	105.00	19.76	6.313	
4,600.00	4,599.86	4,594.72	4,594.59	10.06	10.06	-28.74	-131.24	-3.95	124.47	104.37	20.10	6.193	
4,700.00	4,699.68	4,692.96	4,692.65	10.24	10.23	-28.53	-136.08	-7.30	124.06	103.62	20.43	6.071	
4,800.00	4,799.37	4,791.20	4,790.60	10.42	10.41	-28.26	-142.31	-11.60	123.53	102.76	20.77	5.948	
4,900.00	4,898.90	4,889.44	4,888.40	10.60	10.59	-27.93	-149.93	-16.86	122.90	101.79	21.11	5.822	
5,000.00	4,898.26	4,887.68	4,886.03	10.79	10.78	-27.53	-158.92	-23.07	122.15	100.70	21.44	5.696	
5,100.00	5,097.40	5,085.92	5,083.46	10.99	10.98	-27.07	-169.28	-30.23	121.29	99.51	21.78	5.568	

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
Project: Lea County, NM (NAD-83)
Reference Site: Cotton Draw Unit
Site Error: 0.00 usft
Reference Well: 319H (SIMOPS)
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference: Well 319H (SIMOPS)
TVD Reference: 3431.4' GE + 30' KB @ 3461.40usft
MD Reference: 3431.4' GE + 30' KB @ 3461.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Cotton Draw Unit - 332H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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		
5,200.00	5,196.30	5,184.25	5,180.75	11.20	11.18	-26.53	-181.03	-38.34	120.33	98.21	22.13	5.439		
5,300.00	5,294.93	5,284.23	5,279.55	11.41	11.40	-26.16	-193.61	-47.02	118.47	96.00	22.47	5.272		
5,379.29	5,372.92	5,363.48	5,357.87	11.59	11.57	-26.13	-203.58	-53.91	115.89	93.14	22.75	5.094		
5,400.00	5,393.26	5,384.17	5,378.32	11.64	11.62	-26.14	-206.18	-55.71	115.08	92.25	22.84	5.040		
5,500.00	5,491.49	5,484.10	5,477.07	11.88	11.85	-26.24	-218.75	-64.39	111.20	87.96	23.25	4.783		
5,600.00	5,589.72	5,584.02	5,575.82	12.13	12.08	-26.35	-231.32	-73.07	107.32	83.65	23.67	4.534		
5,700.00	5,687.96	5,683.95	5,674.57	12.39	12.33	-26.46	-243.88	-81.75	103.44	79.35	24.10	4.293		
5,800.00	5,786.19	5,783.87	5,773.32	12.66	12.57	-26.58	-256.45	-90.43	99.56	75.04	24.53	4.059		
5,900.00	5,884.42	5,883.80	5,872.07	12.93	12.83	-26.71	-269.02	-99.11	95.68	70.72	24.97	3.832		
6,000.00	5,982.65	5,983.72	5,970.82	13.21	13.09	-26.85	-281.59	-107.79	91.81	66.39	25.42	3.612		
6,100.00	6,080.88	6,083.64	6,069.57	13.50	13.35	-27.00	-294.16	-116.46	87.93	62.06	25.87	3.399		
6,200.00	6,179.11	6,183.57	6,168.32	13.80	13.62	-27.17	-306.73	-125.14	84.05	57.72	26.33	3.192		
6,300.00	6,277.34	6,283.49	6,267.07	14.10	13.89	-27.36	-319.30	-133.82	80.17	53.38	26.79	2.992		
6,400.00	6,375.57	6,383.42	6,365.82	14.40	14.16	-27.56	-331.86	-142.50	76.30	49.03	27.26	2.798		
6,500.00	6,473.80	6,483.34	6,464.57	14.71	14.44	-27.79	-344.43	-151.18	72.42	44.68	27.74	2.611		
6,600.00	6,572.03	6,583.27	6,563.32	15.03	14.73	-28.04	-357.00	-159.86	68.55	40.32	28.23	2.429		
6,700.00	6,670.27	6,683.19	6,662.07	15.35	15.01	-28.32	-369.57	-168.54	64.68	35.96	28.72	2.252		
6,800.00	6,768.50	6,783.12	6,760.82	15.67	15.30	-28.63	-382.14	-177.22	60.81	31.59	29.22	2.081		
6,900.00	6,866.73	6,883.04	6,859.57	16.00	15.59	-28.99	-394.71	-185.90	56.94	27.22	29.72	1.916		
7,000.00	6,964.96	6,982.97	6,958.32	16.33	15.89	-29.40	-407.27	-194.58	53.08	22.84	30.23	1.756		
7,100.00	7,063.19	7,082.89	7,057.07	16.67	16.19	-29.88	-419.84	-203.26	49.21	18.46	30.76	1.600		
7,141.63	7,104.08	7,124.49	7,098.18	16.81	16.31	-30.10	-425.08	-206.88	47.61	16.63	30.98	1.537		
7,200.00	7,161.48	7,182.82	7,155.83	17.00	16.49	-30.24	-432.41	-211.94	45.61	14.31	31.30	1.457 Level 3		
7,300.00	7,260.04	7,282.80	7,254.63	17.29	16.79	-29.58	-444.99	-220.63	43.39	11.58	31.81	1.364 Level 3		
7,392.82	7,351.78	7,375.60	7,346.34	17.56	17.07	-27.91	-456.66	-228.69	42.71	10.50	32.21	1.326 Level 3, CC		
7,400.00	7,358.89	7,382.78	7,353.44	17.58	17.10	-27.73	-457.56	-229.31	42.71	10.47	32.24	1.325 Level 3, ES, SF		
7,500.00	7,457.98	7,482.75	7,452.24	17.86	17.40	-24.84	-470.14	-238.00	43.66	11.05	32.60	1.339 Level 3		
7,600.00	7,557.30	7,582.68	7,550.99	18.13	17.71	-21.27	-482.71	-246.68	46.33	13.40	32.93	1.407 Level 3		
7,700.00	7,656.80	7,682.52	7,649.66	18.39	18.02	-17.50	-495.27	-255.35	50.82	17.59	33.24	1.529		
7,800.00	7,756.46	7,782.26	7,748.22	18.64	18.34	-13.92	-507.81	-264.01	57.19	23.63	33.56	1.704		
7,900.00	7,856.25	7,881.86	7,846.65	18.87	18.65	-10.78	-520.34	-272.67	65.45	31.55	33.90	1.931		
8,000.00	7,956.14	7,981.29	7,944.92	19.09	18.97	-8.15	-532.84	-281.30	75.58	41.32	34.26	2.206		
8,100.00	8,056.09	8,080.53	8,042.98	19.30	19.28	-6.03	-545.33	-289.92	87.56	52.92	34.64	2.528		
8,200.00	8,156.08	8,179.53	8,140.83	19.49	19.60	-4.35	-557.78	-298.52	101.35	66.34	35.02	2.894		
8,220.92	8,177.00	8,200.21	8,161.26	19.53	19.66	-155.20	-560.38	-300.32	104.47	69.37	35.10	2.977		
8,300.00	8,256.08	8,278.36	8,238.49	19.68	19.92	-154.18	-570.21	-307.11	116.40	80.99	35.41	3.287		
8,400.00	8,356.08	8,377.19	8,336.16	19.87	20.23	-153.16	-582.64	-315.69	131.53	95.70	35.83	3.671		
8,420.92	8,377.00	8,397.86	8,356.59	19.91	20.30	-152.98	-585.24	-317.49	134.70	98.78	35.92	3.750		
8,450.00	8,406.07	8,426.49	8,384.89	19.96	20.39	-152.64	-588.84	-319.98	139.75	103.81	35.95	3.888		
8,500.00	8,455.83	8,475.08	8,432.90	20.02	20.55	-152.55	-594.95	-324.20	151.45	115.59	35.86	4.223		
8,550.00	8,504.99	8,522.53	8,479.79	20.06	20.70	-152.90	-600.92	-328.32	166.89	131.29	35.60	4.688		
8,600.00	8,553.18	8,569.78	8,526.51	20.08	20.85	-153.56	-606.75	-332.34	185.93	150.76	35.17	5.287		
8,650.00	8,600.03	8,615.67	8,571.93	20.07	20.98	-154.36	-612.10	-336.04	208.30	173.75	34.55	6.028		
8,700.00	8,645.18	8,659.70	8,615.57	20.04	21.10	-155.14	-616.96	-339.39	233.97	200.20	33.77	6.928		
8,750.00	8,688.28	8,701.58	8,657.11	19.99	21.21	-155.81	-621.33	-342.41	262.86	230.02	32.83	8.006		
8,800.00	8,729.02	8,741.02	8,696.27	19.93	21.31	-156.27	-625.21	-345.09	294.85	263.08	31.77	9.281		
8,850.00	8,767.08	8,777.73	8,732.74	19.86	21.41	-156.45	-628.62	-347.45	329.80	299.17	30.63	10.768		
8,900.00	8,802.18	8,811.42	8,766.24	19.78	21.49	-156.28	-631.58	-349.49	367.50	338.03	29.47	12.470		
8,950.00	8,834.03	8,841.83	8,796.49	19.71	21.57	-155.65	-634.12	-351.25	407.72	379.34	28.38	14.366		
9,000.00	8,862.41	8,868.68	8,823.22	19.63	21.63	-154.38	-636.25	-352.72	450.22	422.73	27.49	16.377		
9,050.00	8,887.09	8,891.72	8,846.16	19.56	21.69	-152.18	-637.99	-353.92	494.70	467.70	27.00	18.322		
9,100.00	8,907.89	8,910.70	8,865.07	19.49	21.74	-148.50	-639.37	-354.87	540.87	513.64	27.23	19.864		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 332H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ													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)						
9,150.00	8,924.65	8,925.41	8,879.72	19.43	21.77	-142.18	-640.41	-355.59	588.40	559.67	28.73	20.479		
9,200.00	8,937.25	8,935.63	8,889.91	19.38	21.79	-130.67	-641.11	-356.07	636.95	604.56	32.39	19.668		
9,250.00	8,945.57	8,941.19	8,895.45	19.36	21.81	-108.82	-641.48	-356.33	686.15	647.90	38.25	17.936		
9,300.00	8,949.58	8,941.92	8,896.18	19.48	21.81	-74.89	-641.53	-356.36	735.65	695.95	39.69	18.534		
9,320.91	8,949.96	8,940.77	8,895.03	19.55	21.81	-61.06	-641.46	-356.31	756.34	719.04	37.30	20.279		
9,400.00	8,949.96	8,934.68	8,888.96	19.90	21.79	-58.37	-641.04	-356.03	834.60	797.67	36.93	22.599		
9,500.00	8,949.96	8,926.75	8,881.06	20.45	21.77	-55.07	-640.50	-355.65	933.70	897.17	36.53	25.559		
9,600.00	8,949.96	8,918.56	8,872.89	21.14	21.75	-51.90	-639.93	-355.26	1,032.91	996.72	36.19	28.540		
9,700.00	8,949.96	8,910.07	8,864.44	21.95	21.73	-48.85	-639.33	-354.84	1,132.22	1,096.31	35.91	31.533		
9,800.00	8,949.96	11,177.84	10,134.96	22.87	26.72	-174.69	585.40	-367.13	1,190.11	1,162.51	27.59	43.131		
9,900.00	8,949.96	11,277.84	10,134.97	23.89	27.78	-174.69	685.40	-367.13	1,190.11	1,161.61	28.49	41.770		
10,000.00	8,949.96	11,377.84	10,134.97	25.00	28.92	-174.69	785.40	-367.13	1,190.11	1,160.67	29.44	40.424		
10,100.00	8,949.97	11,477.84	10,134.97	26.19	30.13	-174.69	885.40	-367.13	1,190.11	1,159.67	30.43	39.105		
10,200.00	8,949.97	11,577.84	10,134.97	27.45	31.39	-174.69	985.40	-367.13	1,190.11	1,158.64	31.47	37.821		
10,300.00	8,949.97	11,677.84	10,134.97	28.77	32.70	-174.69	1,085.40	-367.13	1,190.10	1,157.57	32.54	36.578		
10,400.00	8,949.97	11,777.84	10,134.97	30.14	34.06	-174.69	1,185.40	-367.13	1,190.10	1,156.47	33.64	35.379		
10,500.00	8,949.97	11,877.84	10,134.97	31.56	35.47	-174.69	1,285.40	-367.13	1,190.10	1,155.33	34.77	34.227		
10,600.00	8,949.97	11,977.84	10,134.97	33.01	36.90	-174.69	1,385.40	-367.13	1,190.10	1,154.17	35.93	33.123		
10,700.00	8,949.97	12,077.84	10,134.97	34.50	38.38	-174.69	1,485.40	-367.13	1,190.10	1,152.99	37.11	32.067		
10,800.00	8,949.97	12,177.84	10,134.97	36.03	39.88	-174.69	1,585.40	-367.13	1,190.10	1,151.78	38.32	31.058		
10,900.00	8,949.97	12,277.84	10,134.98	37.58	41.40	-174.69	1,685.40	-367.13	1,190.10	1,150.56	39.54	30.095		
11,000.00	8,949.98	12,377.84	10,134.98	39.15	42.95	-174.69	1,785.40	-367.12	1,190.10	1,149.31	40.79	29.178		
11,100.00	8,949.98	12,477.84	10,134.98	40.74	44.52	-174.69	1,885.40	-367.12	1,190.10	1,148.05	42.05	28.303		
11,200.00	8,949.98	12,577.84	10,134.98	42.35	46.11	-174.69	1,985.40	-367.12	1,190.10	1,146.78	43.32	27.470		
11,300.00	8,949.98	12,677.84	10,134.98	43.98	47.72	-174.69	2,085.40	-367.12	1,190.10	1,145.49	44.61	26.676		
11,400.00	8,949.98	12,777.84	10,134.98	45.63	49.34	-174.69	2,185.40	-367.12	1,190.10	1,144.19	45.91	25.920		
11,500.00	8,949.98	12,877.84	10,134.98	47.29	50.97	-174.69	2,285.40	-367.12	1,190.10	1,142.87	47.23	25.199		
11,600.00	8,949.98	12,977.84	10,134.98	48.96	52.62	-174.69	2,385.40	-367.12	1,190.10	1,141.55	48.55	24.512		
11,700.00	8,949.98	13,077.84	10,134.98	50.64	54.28	-174.69	2,485.40	-367.12	1,190.10	1,140.21	49.89	23.856		
11,800.00	8,949.98	13,177.84	10,134.98	52.33	55.95	-174.69	2,585.40	-367.12	1,190.10	1,138.87	51.23	23.231		
11,900.00	8,949.98	13,277.84	10,134.99	54.03	57.63	-174.69	2,685.40	-367.12	1,190.10	1,137.52	52.58	22.633		
12,000.00	8,949.99	13,377.84	10,134.99	55.73	59.31	-174.69	2,785.40	-367.12	1,190.10	1,136.16	53.94	22.063		
12,100.00	8,949.99	13,477.84	10,134.99	57.45	61.01	-174.69	2,885.40	-367.12	1,190.10	1,134.79	55.31	21.518		
12,200.00	8,949.99	13,577.84	10,134.99	59.17	62.71	-174.69	2,985.40	-367.12	1,190.10	1,133.42	56.68	20.997		
12,300.00	8,949.99	13,677.84	10,134.99	60.90	64.42	-174.70	3,085.40	-367.12	1,190.10	1,132.04	58.06	20.498		
12,400.00	8,949.99	13,777.84	10,134.99	62.63	66.14	-174.70	3,185.40	-367.11	1,190.10	1,130.65	59.44	20.020		
12,500.00	8,949.99	13,877.84	10,134.99	64.37	67.86	-174.70	3,285.40	-367.11	1,190.10	1,129.26	60.84	19.563		
12,600.00	8,949.99	13,977.84	10,134.99	66.11	69.58	-174.70	3,385.40	-367.11	1,190.10	1,127.87	62.23	19.124		
12,700.00	8,949.99	14,077.84	10,134.99	67.86	71.32	-174.70	3,485.40	-367.11	1,190.10	1,126.47	63.63	18.703		
12,800.00	8,949.99	14,177.84	10,134.99	69.61	73.05	-174.70	3,585.40	-367.11	1,190.10	1,125.06	65.04	18.299		
12,900.00	8,949.99	14,277.84	10,134.99	71.36	74.79	-174.70	3,685.40	-367.11	1,190.10	1,123.65	66.44	17.911		
13,000.00	8,950.00	14,377.84	10,135.00	73.12	76.54	-174.70	3,785.40	-367.11	1,190.10	1,122.24	67.86	17.538		
13,100.00	8,950.00	14,477.84	10,135.00	74.89	78.29	-174.70	3,885.40	-367.11	1,190.10	1,120.82	69.27	17.180		
13,200.00	8,950.00	14,577.84	10,135.00	76.65	80.04	-174.70	3,985.40	-367.11	1,190.10	1,119.40	70.69	16.835		
13,300.00	8,950.00	14,677.84	10,135.00	78.42	81.79	-174.70	4,085.40	-367.11	1,190.09	1,117.98	72.12	16.503		
13,400.00	8,950.00	14,777.84	10,135.00	80.19	83.55	-174.70	4,185.40	-367.11	1,190.09	1,116.55	73.54	16.183		
13,440.08	8,950.00	14,817.92	10,135.00	80.90	84.26	-174.70	4,225.48	-367.11	1,190.09	1,115.98	74.11	16.058		
13,452.65	8,950.00	14,829.84	10,135.00	81.12	84.47	-174.70	4,237.40	-367.11	1,190.09	1,115.81	74.29	16.020		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 333H (SIMOPS) - OH - Plan #1													Offset Site Error: 0.00 usft
Survey Program: 0-LEAM MWD-ADJ													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Tooface (")	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)				Between Centres (usft)	Between Ellipses (usft)
0.00	0.00	0.00	0.00	0.00	0.00	179.84	-100.00	0.29	100.00				
100.00	100.00	100.00	100.00	0.08	0.08	179.84	-100.00	0.29	100.00	99.84	0.16	635.584	
200.00	200.00	200.00	200.00	0.30	0.30	179.84	-100.00	0.29	100.00	99.39	0.61	164.781	
300.00	300.00	300.00	300.00	0.53	0.53	179.84	-100.00	0.29	100.00	98.94	1.06	94.662	
400.00	400.00	400.00	400.00	0.75	0.75	179.84	-100.00	0.29	100.00	98.49	1.51	66.404	
500.00	500.00	500.00	500.00	0.98	0.98	179.84	-100.00	0.29	100.00	98.05	1.96	51.139	
600.00	600.00	600.00	600.00	1.20	1.20	179.84	-100.00	0.29	100.00	97.60	2.40	41.580	
700.00	700.00	700.00	700.00	1.43	1.43	179.84	-100.00	0.29	100.00	97.15	2.85	35.032	
800.00	800.00	800.00	800.00	1.65	1.65	179.84	-100.00	0.29	100.00	96.70	3.30	30.266	
900.00	900.00	900.00	900.00	1.88	1.88	179.84	-100.00	0.29	100.00	96.25	3.75	26.641	
1,000.00	1,000.00	1,000.00	1,000.00	2.10	2.10	179.84	-100.00	0.29	100.00	95.80	4.20	23.792	
1,100.00	1,100.00	1,100.00	1,100.00	2.33	2.33	179.84	-100.00	0.29	100.00	95.35	4.65	21.493	
1,200.00	1,200.00	1,200.00	1,200.00	2.55	2.55	179.84	-100.00	0.29	100.00	94.90	5.10	19.600	
1,300.00	1,300.00	1,300.00	1,300.00	2.78	2.78	179.84	-100.00	0.29	100.00	94.45	5.55	18.013	
1,400.00	1,400.00	1,400.00	1,400.00	3.00	3.00	179.84	-100.00	0.29	100.00	94.00	6.00	16.663	
1,500.00	1,500.00	1,500.00	1,500.00	3.23	3.23	179.84	-100.00	0.29	100.00	93.55	6.45	15.502	
1,600.00	1,600.00	1,600.00	1,600.00	3.45	3.45	179.84	-100.00	0.29	100.00	93.10	6.90	14.492	
1,700.00	1,700.00	1,700.00	1,700.00	3.67	3.67	179.84	-100.00	0.29	100.00	92.65	7.35	13.606	
1,800.00	1,800.00	1,800.00	1,800.00	3.90	3.90	179.84	-100.00	0.29	100.00	92.20	7.80	12.822	
1,900.00	1,900.00	1,900.00	1,900.00	4.12	4.12	179.84	-100.00	0.29	100.00	91.75	8.25	12.123	
2,000.00	2,000.00	2,000.00	2,000.00	4.35	4.35	179.84	-100.00	0.29	100.00	91.30	8.70	11.496	
2,100.00	2,100.00	2,100.00	2,100.00	4.57	4.57	179.84	-100.00	0.29	100.00	90.85	9.15	10.931	
2,200.00	2,200.00	2,200.00	2,200.00	4.80	4.80	179.84	-100.00	0.29	100.00	90.40	9.60	10.419	
2,300.00	2,300.00	2,300.00	2,300.00	5.02	5.02	179.84	-100.00	0.29	100.00	89.95	10.05	9.953	
2,400.00	2,400.00	2,400.00	2,400.00	5.25	5.25	179.84	-100.00	0.29	100.00	89.50	10.50	9.527	
2,500.00	2,500.00	2,500.00	2,500.00	5.47	5.47	179.84	-100.00	0.29	100.00	89.05	10.95	9.136	
2,600.00	2,600.00	2,600.00	2,600.00	5.70	5.70	179.84	-100.00	0.29	100.00	88.60	11.40	8.775	
2,700.00	2,700.00	2,700.00	2,700.00	5.92	5.92	179.84	-100.00	0.29	100.00	88.16	11.85	8.442	
2,800.00	2,800.00	2,800.00	2,800.00	6.15	6.15	179.84	-100.00	0.29	100.00	87.71	12.29	8.134	
2,900.00	2,900.00	2,900.00	2,900.00	6.37	6.37	179.84	-100.00	0.29	100.00	87.26	12.74	7.847	
3,000.00	3,000.00	3,000.00	3,000.00	6.60	6.60	179.84	-100.00	0.29	100.00	86.81	13.19	7.579	
3,100.00	3,100.00	3,100.00	3,100.00	6.82	6.82	179.84	-100.00	0.29	100.00	86.36	13.64	7.330	
3,200.00	3,200.00	3,200.00	3,200.00	7.05	7.05	179.84	-100.00	0.29	100.00	85.91	14.09	7.096	
3,300.00	3,300.00	3,300.00	3,300.00	7.27	7.27	179.84	-100.00	0.29	100.00	85.46	14.54	6.876	
3,400.00	3,400.00	3,400.00	3,400.00	7.50	7.50	179.84	-100.00	0.29	100.00	85.01	14.99	6.670	
3,500.00	3,500.00	3,500.00	3,500.00	7.72	7.72	179.84	-100.00	0.29	100.00	84.56	15.44	6.476	
3,600.00	3,600.00	3,600.00	3,600.00	7.95	7.95	179.84	-100.00	0.29	100.00	84.11	15.89	6.293	
3,700.00	3,700.00	3,700.00	3,700.00	8.17	8.17	179.84	-100.00	0.29	100.00	83.66	16.34	6.120	
3,800.00	3,800.00	3,800.00	3,800.00	8.40	8.40	179.84	-100.00	0.29	100.00	83.21	16.79	5.956	
3,900.00	3,900.00	3,900.00	3,900.00	8.62	8.62	179.84	-100.00	0.29	100.00	82.76	17.24	5.801	
4,000.00	4,000.00	4,000.00	4,000.00	8.84	8.84	179.84	-100.00	0.29	100.00	82.31	17.69	5.653	
4,100.00	4,100.00	4,100.00	4,100.00	9.07	9.07	179.84	-100.00	0.29	100.00	81.86	18.14	5.513	
4,200.00	4,200.00	4,200.00	4,200.00	9.29	9.29	179.84	-100.00	0.29	100.00	81.41	18.59	5.380	
4,300.00	4,300.00	4,300.00	4,300.00	9.52	9.52	179.84	-100.00	0.29	100.00	80.96	19.04	5.253	
4,400.00	4,400.00	4,398.72	4,398.72	9.72	9.72	-29.58	-100.62	0.86	99.88	80.45	19.43	5.140	
4,500.00	4,499.96	4,497.39	4,497.35	9.89	9.89	-31.30	-102.49	2.60	99.56	79.79	19.77	5.036	
4,600.00	4,599.86	4,595.93	4,595.80	10.06	10.07	-34.18	-105.60	5.49	99.24	79.13	20.11	4.935	
4,657.94	4,657.71	4,652.95	4,652.73	10.16	10.17	-36.38	-107.96	7.68	99.16	78.85	20.31	4.883 CC	
4,700.00	4,699.68	4,694.29	4,693.98	10.24	10.25	-38.21	-109.93	9.52	99.21	78.76	20.45	4.851 ES	
4,800.00	4,799.37	4,792.41	4,791.80	10.42	10.43	-43.34	-115.49	14.68	99.92	79.11	20.80	4.803 SF	
4,900.00	4,898.90	4,890.23	4,889.19	10.60	10.61	-49.42	-122.25	20.96	101.87	80.71	21.16	4.814	
5,000.00	4,998.26	4,987.69	4,986.04	10.79	10.80	-56.18	-130.20	28.35	105.62	84.08	21.53	4.905	

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 333H (SIMOPS) - OH - Plan #1													Offset Site Error:	0.00 usft
Survey Program: O-LEAM MWD-ADJ													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)						
5,100.00	5,097.40	5,084.74	5,082.29	10.99	11.00	-63.25	-139.30	36.81	111.67	89.76	21.91	5.096		
5,200.00	5,196.30	5,181.32	5,177.85	11.20	11.21	-70.23	-149.55	46.34	120.43	98.11	22.31	5.398		
5,300.00	5,294.93	5,277.38	5,272.65	11.41	11.42	-76.79	-160.92	56.90	132.08	109.36	22.72	5.813		
5,379.29	5,372.92	5,353.14	5,347.22	11.59	11.60	-81.54	-170.70	65.99	143.42	120.36	23.06	6.220		
5,400.00	5,393.26	5,373.07	5,366.81	11.64	11.64	-82.73	-173.39	68.49	146.69	123.54	23.15	6.338		
5,500.00	5,491.49	5,470.70	5,462.75	11.88	11.88	-87.90	-186.60	80.77	163.32	139.73	23.58	6.925		
5,600.00	5,589.72	5,568.32	5,558.70	12.13	12.13	-92.10	-199.82	93.05	181.02	156.99	24.03	7.532		
5,700.00	5,687.96	5,665.94	5,654.64	12.39	12.39	-95.54	-213.03	105.33	199.51	175.02	24.49	8.146		
5,800.00	5,786.19	5,763.57	5,750.58	12.66	12.65	-98.40	-226.25	117.81	218.58	193.62	24.96	8.756		
5,900.00	5,884.42	5,861.19	5,846.52	12.93	12.92	-100.80	-239.46	129.89	238.10	212.66	25.45	9.357		
6,000.00	5,982.65	5,958.81	5,942.47	13.21	13.20	-102.84	-252.67	142.17	257.97	232.03	25.94	9.945		
6,100.00	6,080.88	6,056.44	6,038.41	13.50	13.48	-104.59	-265.89	154.45	278.10	251.65	26.44	10.516		
6,200.00	6,179.11	6,154.06	6,134.35	13.80	13.77	-106.10	-279.10	166.73	298.45	271.49	26.96	11.070		
6,300.00	6,277.34	6,251.68	6,230.29	14.10	14.07	-107.42	-292.32	179.01	318.97	291.49	27.49	11.605		
6,400.00	6,375.57	6,349.31	6,326.23	14.40	14.37	-108.57	-305.53	191.29	339.64	311.62	28.02	12.121		
6,500.00	6,473.80	6,446.93	6,422.18	14.71	14.67	-109.60	-318.74	203.57	360.42	331.86	28.56	12.618		
6,600.00	6,572.03	6,544.55	6,518.12	15.03	14.98	-110.51	-331.96	215.85	381.30	352.19	29.12	13.096		
6,700.00	6,670.27	6,642.18	6,614.06	15.35	15.30	-111.33	-345.17	228.13	402.27	372.60	29.67	13.556		
6,800.00	6,768.50	6,739.80	6,710.00	15.67	15.61	-112.07	-358.39	240.41	423.31	393.07	30.24	13.998		
6,900.00	6,866.73	6,837.42	6,805.94	16.00	15.93	-112.74	-371.60	252.69	444.41	413.59	30.81	14.422		
7,000.00	6,964.96	6,935.05	6,901.89	16.33	16.26	-113.35	-384.81	264.97	465.56	434.17	31.39	14.830		
7,100.00	7,063.19	7,032.67	6,997.83	16.67	16.59	-113.90	-398.03	277.25	486.76	454.78	31.98	15.221		
7,141.63	7,104.08	7,073.31	7,037.77	16.81	16.73	-114.12	-403.53	282.36	495.59	463.37	32.22	15.379		
7,200.00	7,161.48	7,130.33	7,093.81	17.00	16.92	-114.50	-411.25	289.53	507.87	475.30	32.57	15.592		
7,300.00	7,260.04	7,228.18	7,189.97	17.29	17.25	-114.97	-424.49	301.84	528.37	495.22	33.15	15.938		
7,400.00	7,358.89	7,326.20	7,286.30	17.58	17.59	-115.24	-437.76	314.17	548.14	514.42	33.73	16.253		
7,500.00	7,457.98	7,424.36	7,382.77	17.86	17.94	-115.34	-451.05	326.52	567.19	532.90	34.29	16.539		
7,600.00	7,557.30	7,522.64	7,479.36	18.13	18.28	-115.27	-464.35	338.88	585.51	550.66	34.85	16.800		
7,700.00	7,656.80	7,621.00	7,576.03	18.39	18.63	-115.07	-477.66	351.26	603.12	567.72	35.40	17.038		
7,800.00	7,756.46	7,719.42	7,672.76	18.64	18.98	-114.73	-490.99	363.64	620.03	584.09	35.93	17.255		
7,900.00	7,856.25	7,817.87	7,769.51	18.87	19.33	-114.26	-504.31	376.02	636.27	599.82	36.45	17.455		
8,000.00	7,956.14	7,916.31	7,866.25	19.09	19.68	-113.68	-517.64	388.40	651.90	614.94	36.96	17.639		
8,100.00	8,056.09	8,014.72	7,962.96	19.30	20.04	-113.00	-530.96	400.78	666.95	629.51	37.44	17.812		
8,200.00	8,156.08	8,113.06	8,059.61	19.49	20.40	-112.20	-544.27	413.15	681.48	643.57	37.91	17.975		
8,220.92	8,177.00	8,133.62	8,079.82	19.53	20.47	-96.82	-547.05	415.74	684.46	646.45	38.01	18.008		
8,300.00	8,256.08	8,211.34	8,156.20	19.68	20.76	-97.59	-557.57	425.51	695.75	657.39	38.36	18.138		
8,400.00	8,356.08	8,309.61	8,252.78	19.87	21.12	-98.53	-570.87	437.88	710.20	671.40	38.81	18.300		
8,420.92	8,377.00	8,330.17	8,272.99	19.91	21.19	-98.72	-573.66	440.46	713.25	674.35	38.90	18.334		
8,450.00	8,406.07	8,358.64	8,300.97	19.96	21.30	-98.61	-577.51	444.04	717.61	678.58	39.04	18.383		
8,500.00	8,455.83	8,410.95	8,352.39	20.02	21.47	-98.67	-584.49	450.53	725.61	686.37	39.23	18.494		
8,550.00	8,504.99	8,463.63	8,404.28	20.06	21.63	-99.00	-591.18	456.75	734.11	694.73	39.38	18.642		
8,600.00	8,553.18	8,514.98	8,454.93	20.08	21.79	-99.52	-597.37	462.50	743.27	703.80	39.48	18.827		
8,650.00	8,600.03	8,564.68	8,504.02	20.07	21.93	-100.16	-603.04	467.77	753.32	713.79	39.53	19.056		
8,700.00	8,645.18	8,612.39	8,551.21	20.04	22.07	-100.86	-608.19	472.56	764.48	724.94	39.54	19.332		
8,750.00	8,688.28	8,657.79	8,596.17	19.99	22.20	-101.54	-612.83	476.86	777.01	737.49	39.52	19.660		
8,800.00	8,729.02	8,700.56	8,638.56	19.93	22.32	-102.12	-616.95	480.70	791.17	751.69	39.48	20.040		
8,850.00	8,767.08	8,740.37	8,678.07	19.86	22.43	-102.51	-620.58	484.07	807.17	767.74	39.43	20.472		
8,900.00	8,802.18	8,776.93	8,714.37	19.78	22.52	-102.64	-623.74	487.01	825.22	785.82	39.40	20.947		
8,950.00	8,834.03	8,809.92	8,747.16	19.71	22.61	-102.41	-626.45	489.52	845.46	806.05	39.40	21.456		
9,000.00	8,862.41	8,839.06	8,776.13	19.63	22.68	-101.75	-628.72	491.64	867.97	828.49	39.47	21.989		
9,050.00	8,887.09	8,864.07	8,801.01	19.56	22.75	-100.58	-630.59	493.37	892.77	853.14	39.62	22.532		
9,100.00	8,907.89	8,884.69	8,821.53	19.49	22.80	-98.82	-632.06	494.74	919.79	879.94	39.85	23.082		

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 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design Cotton Draw Unit - 333H (SIMOPS) - OH - Plan #1														Offset Site Error:	0.00 usft
Survey Program: 0-LEAM MWD-ADJ														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)		Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)							
9,150.00	8,924.65	8,900.66	8,837.43	19.43	22.84	96.40	-633.17	495.77	948.92	908.79	40.13	23.646			
9,200.00	8,937.25	8,911.78	8,848.50	19.38	22.86	93.28	-633.92	496.47	979.95	939.54	40.41	24.250			
9,250.00	8,945.57	8,917.84	8,854.53	19.36	22.88	89.42	-634.33	496.85	1,012.61	972.01	40.80	24.938			
9,300.00	8,949.58	8,918.68	8,855.37	19.48	22.88	84.86	-634.38	496.90	1,046.60	1,005.99	40.61	25.771			
9,320.91	8,949.96	8,917.45	8,854.15	19.55	22.88	82.76	-634.30	496.82	1,061.12	1,020.58	40.53	26.178			
9,400.00	8,949.96	8,910.95	8,847.67	19.90	22.86	82.27	-633.87	496.42	1,117.74	1,076.97	40.77	27.417			
9,500.00	8,949.96	8,902.49	8,839.25	20.45	22.84	81.64	-633.30	495.89	1,192.96	1,151.76	41.20	28.957			
9,600.00	8,949.96	8,893.75	8,830.55	21.14	22.82	80.98	-632.70	495.33	1,271.55	1,229.78	41.77	30.444			
9,700.00	8,949.96	8,884.72	8,821.56	21.95	22.80	80.31	-632.07	494.74	1,352.92	1,310.46	42.46	31.864			
9,800.00	8,949.96	11,199.92	10,144.96	22.87	27.06	147.21	585.38	512.81	1,421.50	1,386.58	34.92	40.705			
9,900.00	8,949.96	11,299.92	10,144.97	23.89	28.10	147.21	685.38	512.81	1,421.51	1,385.27	36.24	39.226			
10,000.00	8,949.96	11,399.92	10,144.97	25.00	29.22	147.21	785.38	512.81	1,421.51	1,383.85	37.65	37.751			
10,100.00	8,949.97	11,499.92	10,144.97	26.19	30.40	147.21	885.38	512.82	1,421.51	1,382.35	39.16	36.302			
10,200.00	8,949.97	11,599.92	10,144.97	27.45	31.64	147.21	985.38	512.82	1,421.51	1,380.77	40.74	34.894			
10,300.00	8,949.97	11,699.92	10,144.97	28.77	32.93	147.21	1,085.38	512.82	1,421.52	1,379.13	42.39	33.535			
10,400.00	8,949.97	11,799.92	10,144.97	30.14	34.27	147.21	1,185.38	512.82	1,421.52	1,377.42	44.10	32.234			
10,500.00	8,949.97	11,899.92	10,144.97	31.56	35.66	147.21	1,285.38	512.82	1,421.52	1,375.65	45.87	30.993			
10,600.00	8,949.97	11,999.92	10,144.97	33.01	37.07	147.21	1,385.38	512.83	1,421.52	1,373.84	47.68	29.814			
10,700.00	8,949.97	12,099.92	10,144.97	34.50	38.53	147.21	1,485.38	512.83	1,421.52	1,371.99	49.54	28.696			
10,800.00	8,949.97	12,199.92	10,144.97	36.03	40.01	147.21	1,585.38	512.83	1,421.53	1,370.09	51.43	27.638			
10,900.00	8,949.97	12,299.92	10,144.98	37.58	41.52	147.21	1,685.38	512.83	1,421.53	1,368.16	53.36	26.638			
11,000.00	8,949.98	12,399.92	10,144.98	39.15	43.05	147.21	1,785.38	512.83	1,421.53	1,366.21	55.33	25.694			
11,100.00	8,949.98	12,499.92	10,144.98	40.74	44.61	147.21	1,885.38	512.84	1,421.53	1,364.22	57.31	24.802			
11,200.00	8,949.98	12,599.92	10,144.98	42.35	46.18	147.21	1,985.38	512.84	1,421.54	1,362.21	59.33	23.961			
11,300.00	8,949.98	12,699.92	10,144.98	43.98	47.77	147.21	2,085.38	512.84	1,421.54	1,360.17	61.36	23.166			
11,400.00	8,949.98	12,799.92	10,144.98	45.63	49.38	147.21	2,185.38	512.84	1,421.54	1,358.12	63.42	22.414			
11,500.00	8,949.98	12,899.92	10,144.98	47.29	51.00	147.21	2,285.38	512.84	1,421.54	1,356.05	65.50	21.704			
11,600.00	8,949.98	12,999.92	10,144.98	48.96	52.64	147.21	2,385.38	512.85	1,421.54	1,353.96	67.59	21.033			
11,700.00	8,949.98	13,099.92	10,144.98	50.64	54.28	147.21	2,485.38	512.85	1,421.55	1,351.85	69.69	20.397			
11,800.00	8,949.98	13,199.92	10,144.98	52.33	55.94	147.21	2,585.38	512.85	1,421.55	1,349.74	71.81	19.795			
11,900.00	8,949.98	13,299.92	10,144.99	54.03	57.61	147.21	2,685.38	512.85	1,421.55	1,347.60	73.95	19.224			
12,000.00	8,949.99	13,399.92	10,144.99	55.73	59.29	147.21	2,785.38	512.85	1,421.55	1,345.46	76.09	18.682			
12,100.00	8,949.99	13,499.92	10,144.99	57.45	60.97	147.21	2,885.38	512.86	1,421.56	1,343.31	78.25	18.168			
12,200.00	8,949.99	13,599.92	10,144.99	59.17	62.67	147.21	2,985.38	512.86	1,421.56	1,341.15	80.41	17.678			
12,300.00	8,949.99	13,699.92	10,144.99	60.90	64.37	147.21	3,085.38	512.86	1,421.56	1,338.97	82.59	17.213			
12,400.00	8,949.99	13,799.92	10,144.99	62.63	66.08	147.21	3,185.38	512.86	1,421.56	1,336.79	84.77	16.770			
12,500.00	8,949.99	13,899.92	10,144.99	64.37	67.79	147.21	3,285.38	512.86	1,421.57	1,334.61	86.96	16.348			
12,600.00	8,949.99	13,999.92	10,144.99	66.11	69.51	147.21	3,385.38	512.86	1,421.57	1,332.41	89.16	15.945			
12,700.00	8,949.99	14,099.92	10,144.99	67.86	71.24	147.21	3,485.38	512.87	1,421.57	1,330.21	91.36	15.560			
12,800.00	8,949.99	14,199.92	10,144.99	69.61	72.97	147.21	3,585.38	512.87	1,421.57	1,328.00	93.57	15.192			
12,900.00	8,949.99	14,299.92	10,144.99	71.36	74.70	147.21	3,685.38	512.87	1,421.57	1,325.79	95.79	14.841			
13,000.00	8,950.00	14,399.92	10,145.00	73.12	76.44	147.21	3,785.38	512.87	1,421.58	1,323.57	98.01	14.505			
13,100.00	8,950.00	14,499.92	10,145.00	74.89	78.18	147.21	3,885.38	512.87	1,421.58	1,321.34	100.23	14.183			
13,200.00	8,950.00	14,599.92	10,145.00	76.65	79.93	147.20	3,985.38	512.88	1,421.58	1,319.12	102.46	13.874			
13,300.00	8,950.00	14,699.92	10,145.00	78.42	81.68	147.20	4,085.38	512.88	1,421.58	1,316.88	104.70	13.578			
13,400.00	8,950.00	14,799.92	10,145.00	80.19	83.43	147.20	4,185.38	512.88	1,421.59	1,314.65	106.94	13.293			
13,452.65	8,950.00	14,852.57	10,145.00	81.12	84.36	147.20	4,238.04	512.88	1,421.59	1,313.47	108.12	13.148			



LEAM Drilling Systems LLC
Anticollision Report



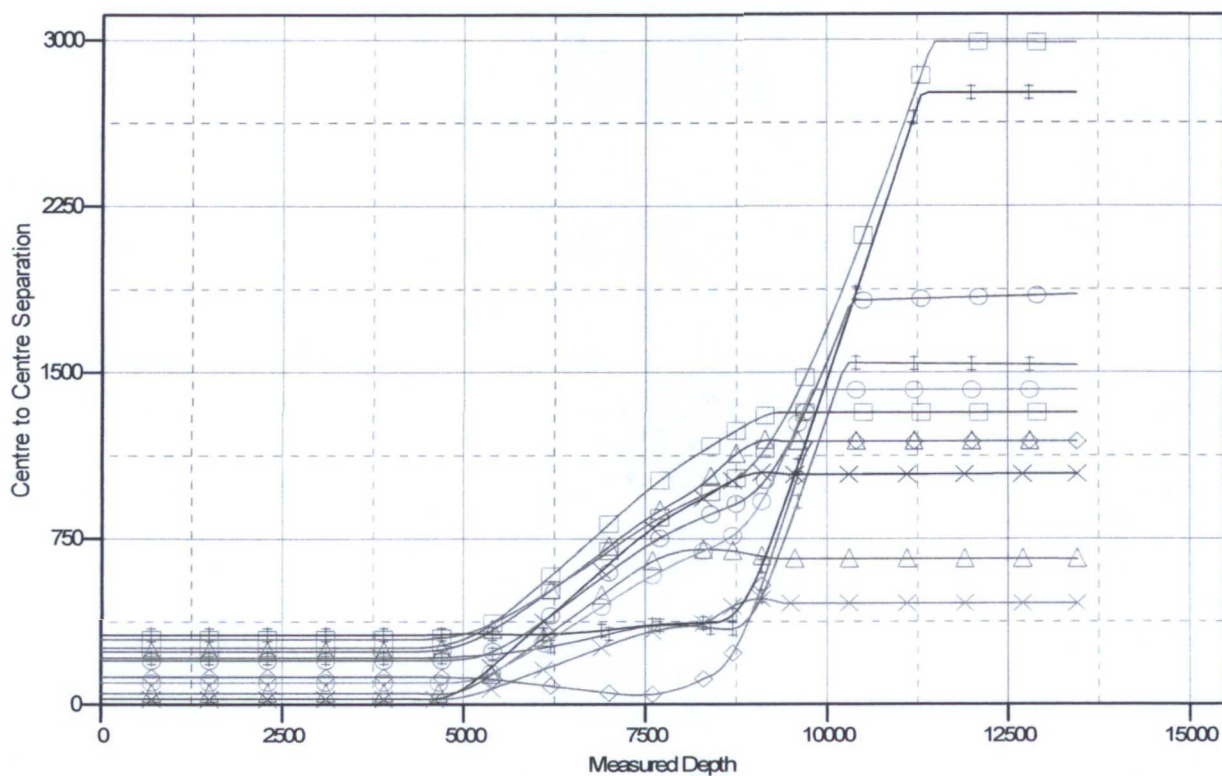
Company: DEVON ENERGY
Project: Lea County, NM (NAD-83)
Reference Site: Cotton Draw Unit
Site Error: 0.00 usft
Reference Well: 319H (SIMOPS)
Well Error: 0.00 usft
Reference Wellbore: OH
Reference Design: Plan #1

Local Co-ordinate Reference:
TVD Reference: 3431.4' GE + 30' KB @ 3461.40usft
MD Reference: 3431.4' GE + 30' KB @ 3461.40usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to 3431.4' GE + 30' KB @ 3461.40usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 319H (SIMOPS)
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.33°

Ladder Plot



LEGEND

✕ 327H (SIMOPS), OH, Plan #1 V0	✕ 286H (SIMOPS), OH, Plan #1 V0	✕ 333H (SIMOPS), OH, Plan #1 V0
✕ 320H (SIMOPS), OH, Plan #1 V0	✕ 313H (SIMOPS), OH, Plan #1 V0	✕ 332H (SIMOPS), OH, Plan #1 V0
✕ 253H (SIMOPS), OH, Plan #1 V0	✕ 263H (SIMOPS), OH, Plan #1 V0	✕ 328H (SIMOPS), OH, Plan #1 V0
✕ 312H (SIMOPS), OH, Plan #1 V0	✕ 321H (SIMOPS), OH, Plan #1 V0	

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



LEAM Drilling Systems LLC
Anticollision Report

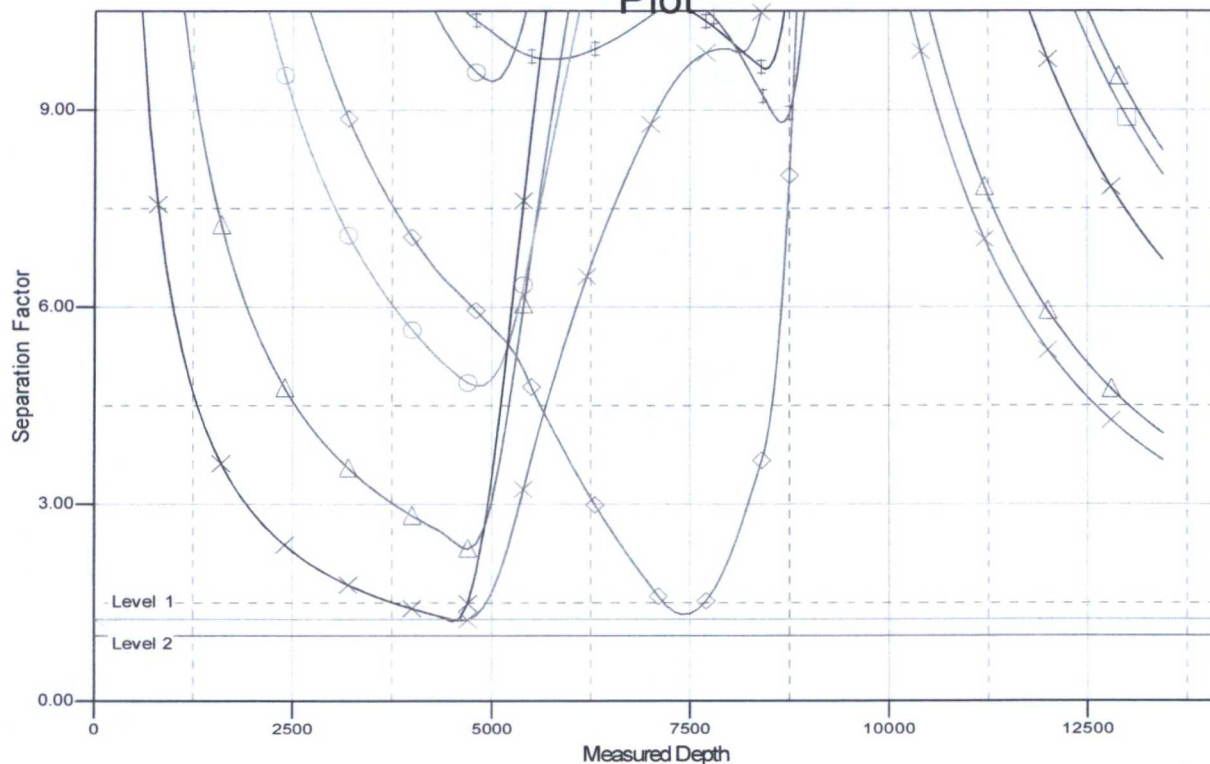


Company:	DEVON ENERGY	Local Co-ordinate Reference:	Well 319H (SIMOPS)
Project:	Lea County, NM (NAD-83)	TVD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Reference Site:	Cotton Draw Unit	MD Reference:	3431.4' GE + 30' KB @ 3461.40usft
Site Error:	0.00 usft	North Reference:	Grid
Reference Well:	319H (SIMOPS)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	EDM 5000.1 Single User Db
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to 3431.4' GE + 30' KB @ 3461.40usft
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: 319H (SIMOPS)
Coordinate System is US State Plane 1983, New Mexico Eastern Zone
Grid Convergence at Surface is: 0.33°

Separation Factor Plot



LEGEND

✕ 327H(SIMOPS),OH,Plan #1 V0	✕ 286H(SIMOPS),OH,Plan #1 V0	✕ 333H(SIMOPS),OH,Plan #1 V0
✕ 320H(SIMOPS),OH,Plan #1 V0	✕ 313H(SIMOPS),OH,Plan #1 V0	✕ 332H(SIMOPS),OH,Plan #1 V0
✕ 253H(SIMOPS),OH,Plan #1 V0	✕ 263H(SIMOPS),OH,Plan #1 V0	✕ 328H(SIMOPS),OH,Plan #1 V0
✕ 312H(SIMOPS),OH,Plan #1 V0	✕ 321H(SIMOPS),OH,Plan #1 V0	

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