

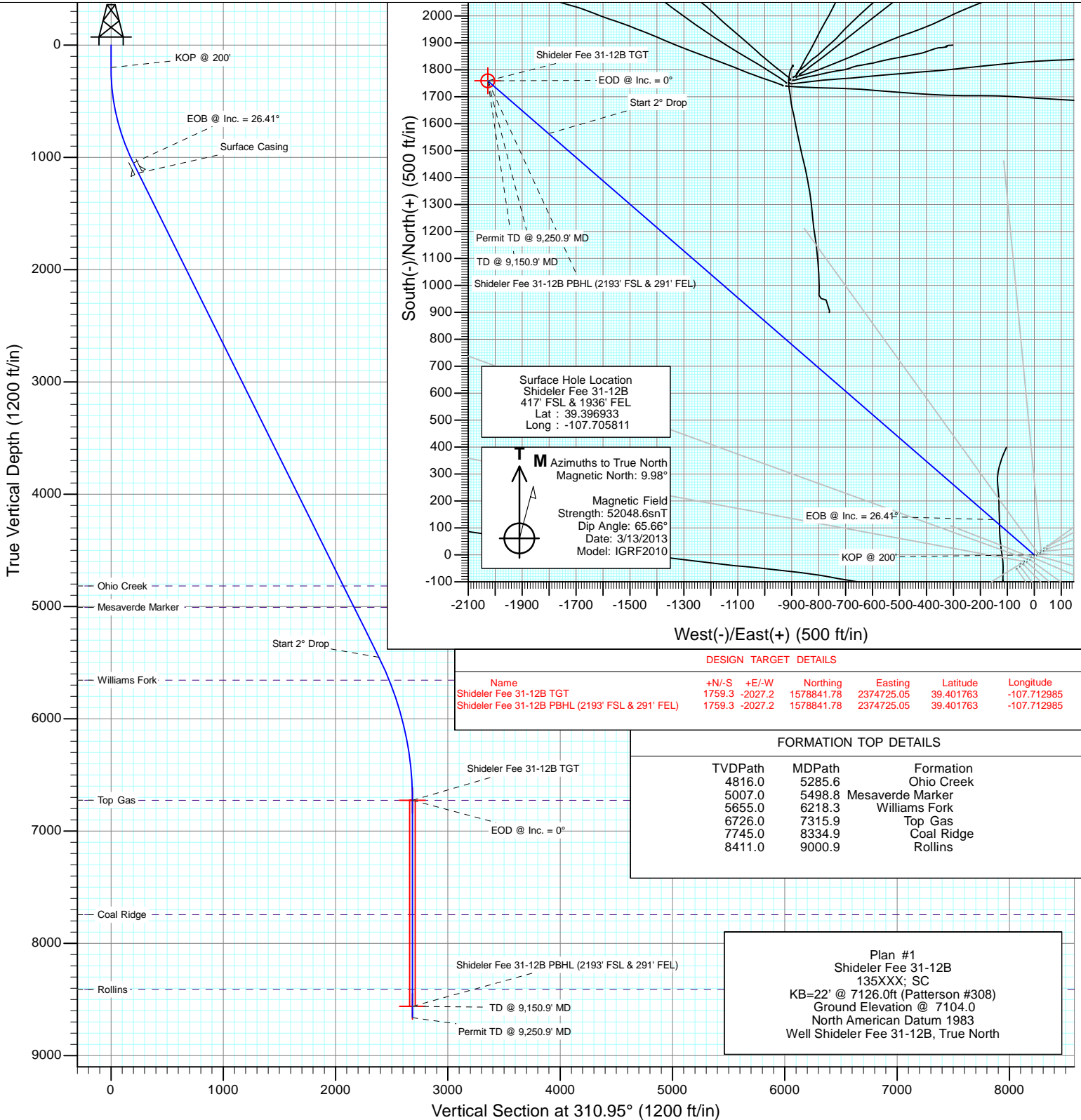


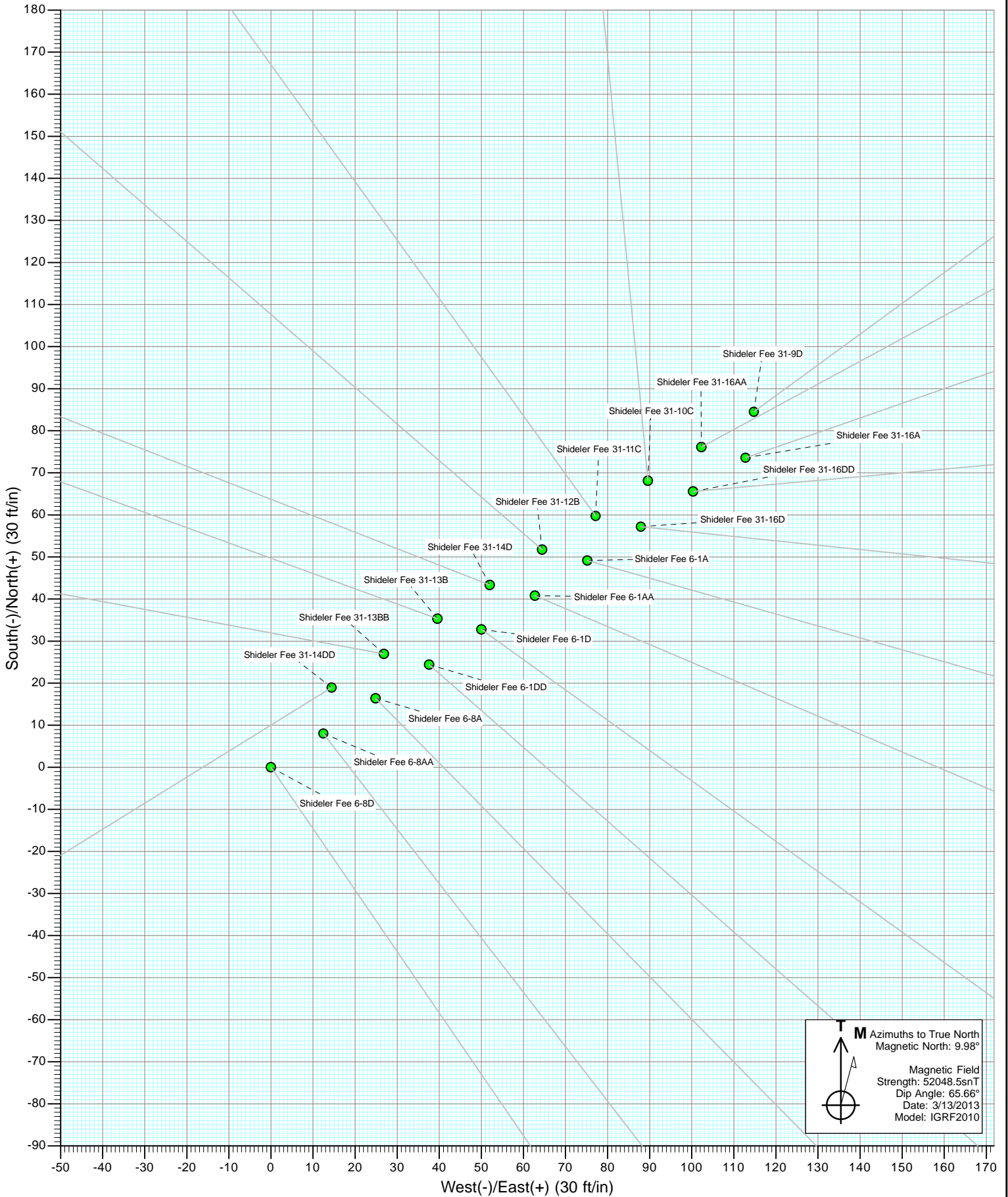
Project: Mamm Creek
 Site: O31E Pad (2nd Occupation)
 Well: Shideler Fee 31-12B
 Wellbore: OH
 Design: Plan #1

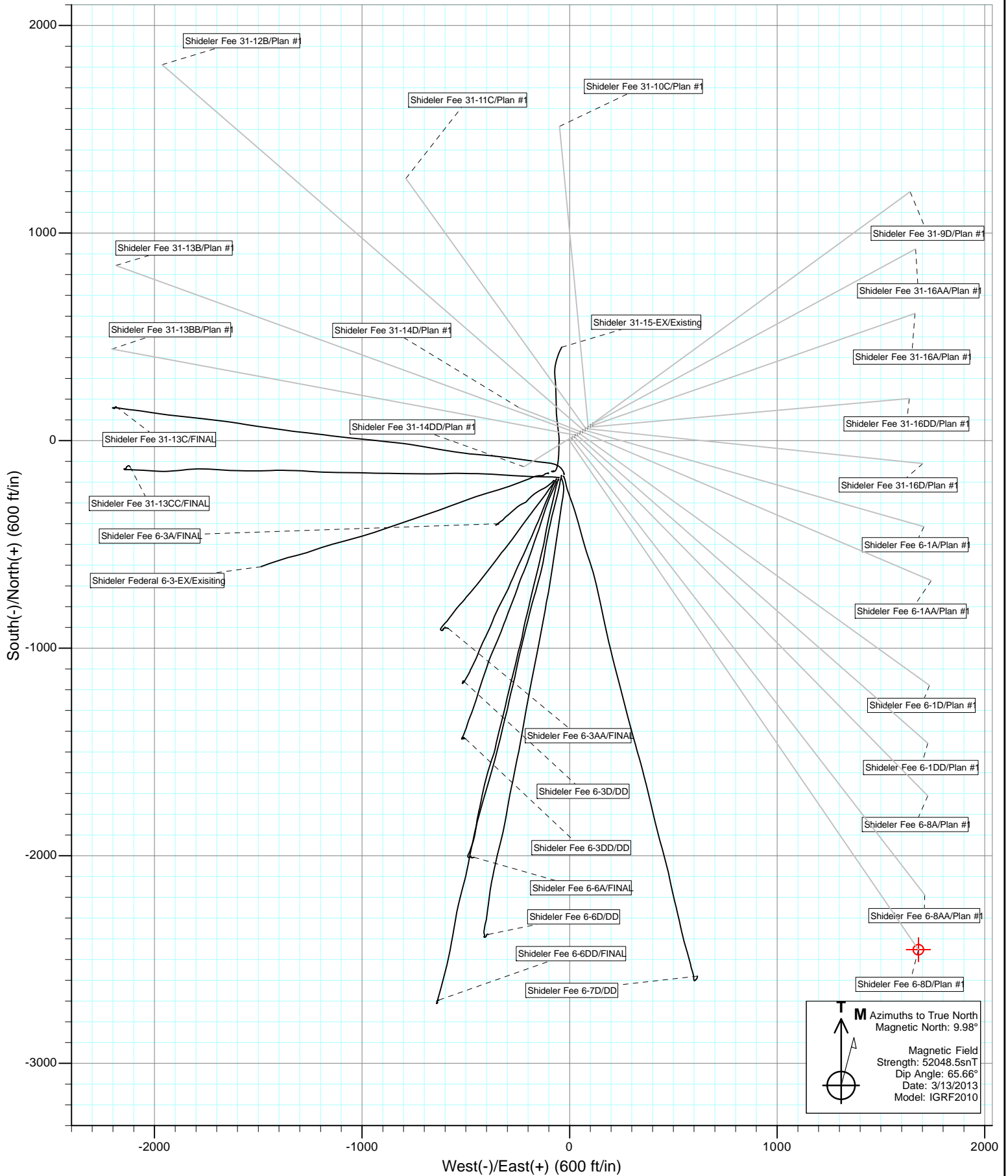


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1080.2	26.41	310.95	1049.4	130.6	-150.5	3.00	310.95	199.3	
4	5995.6	26.41	310.95	5452.0	1563.4	-1801.5	0.00	0.00	2385.3	
5	7315.9	0.00	0.00	6726.0	1759.3	-2027.2	2.00	180.00	2684.2	Shideler Fee 31-12B TGT
6	9150.9	0.00	0.00	8561.0	1759.3	-2027.2	0.00	0.00	2684.2	Shideler Fee 31-12B PBHL (2193' FSL & 291' FEL)
7	9250.9	0.00	0.00	8661.0	1759.3	-2027.2	0.00	0.00	2684.2	

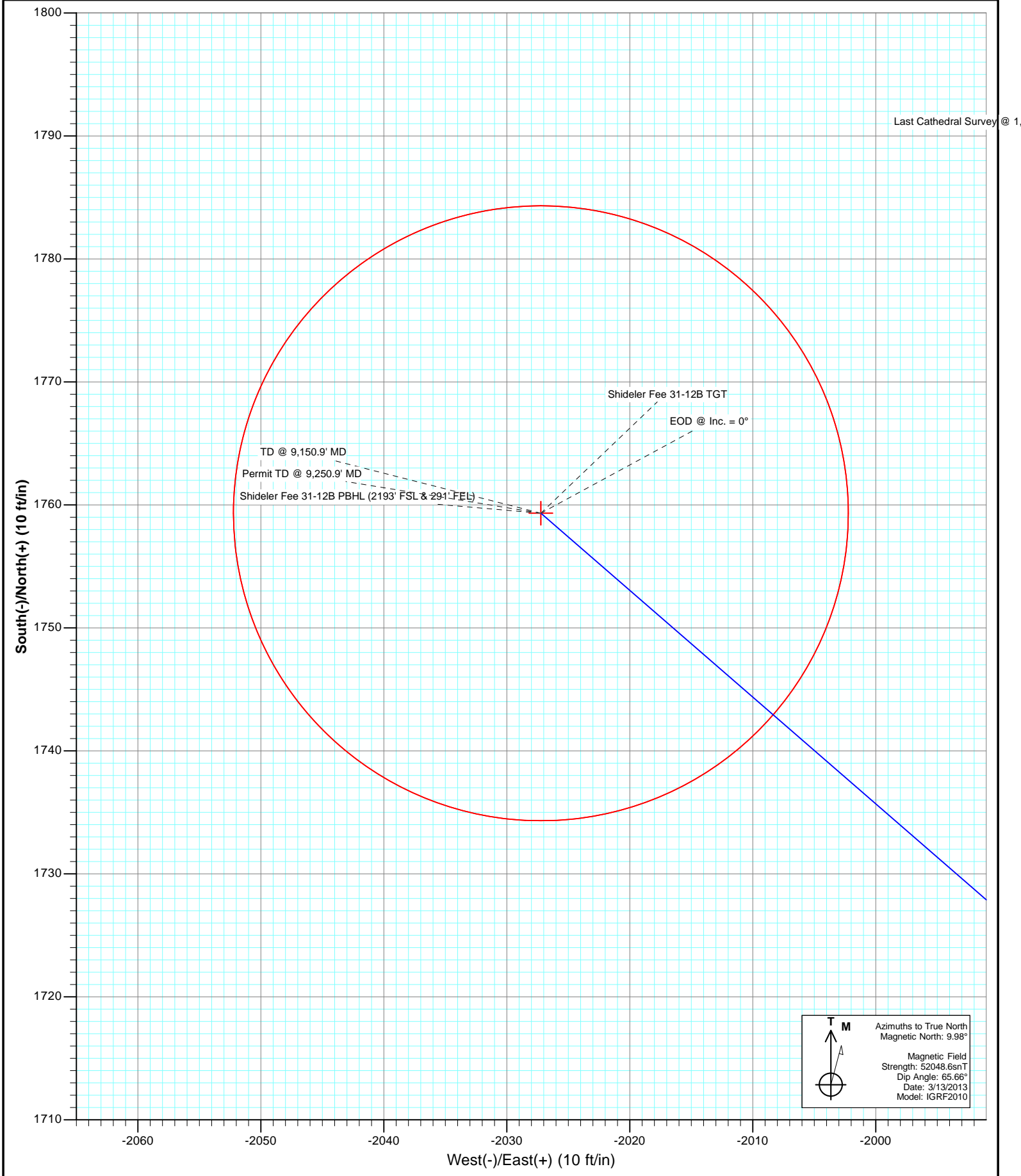








Project: Mamm Creek
Site: O31E Pad (2nd Occupation)
Well: Shideler Fee 31-12B
Wellbore: OH
Plan: Plan #1



Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Shideler Fee 31-12B
Company: EnCana Oil & Gas (USA) Inc	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
Project: Mamm Creek	MD Reference: KB=22' @ 7126.0ft (Patterson #308)
Site: O31E Pad (2nd Occupation)	North Reference: True
Well: Shideler Fee 31-12B	Survey Calculation Method: Minimum Curvature
Wellbore: OH	
Design: Plan #1	

Project Mamm Creek		
Map System: US State Plane 1983	System Datum: Mean Sea Level	
Geo Datum: North American Datum 1983		
Map Zone: Colorado Central Zone		

Site O31E Pad (2nd Occupation)					
Site Position:		Northing:	1,577,065.31 ft	Latitude:	39.397023
From:	Lat/Long	Easting:	2,376,760.05 ft	Longitude:	-107.705633
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.39 °

Well Shideler Fee 31-12B						
Well Position	+N/-S	0.0 ft	Northing:	1,577,033.76 ft	Latitude:	39.396933
	+E/-W	0.0 ft	Easting:	2,376,708.96 ft	Longitude:	-107.705811
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,104.0 ft

Wellbore OH					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	IGRF2010	3/13/2013	(°)	(°)	(nT)
			9.98	65.66	52,049

Design Plan #1					
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	310.95	

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,080.2	26.41	310.95	1,049.4	130.6	-150.5	3.00	3.00	0.00	310.95	
5,995.6	26.41	310.95	5,452.0	1,563.4	-1,801.5	0.00	0.00	0.00	0.00	
7,315.9	0.00	0.00	6,726.0	1,759.3	-2,027.2	2.00	-2.00	0.00	180.00	Shideler Fee 31-12B
9,150.9	0.00	0.00	8,561.0	1,759.3	-2,027.2	0.00	0.00	0.00	0.00	Shideler Fee 31-12B I
9,250.9	0.00	0.00	8,661.0	1,759.3	-2,027.2	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	North Reference:	True
Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
300.0	3.00	310.95	300.0	1.7	-2.0	2.6	3.00	3.00	
400.0	6.00	310.95	399.6	6.9	-7.9	10.5	3.00	3.00	
500.0	9.00	310.95	498.8	15.4	-17.8	23.5	3.00	3.00	
600.0	12.00	310.95	597.1	27.4	-31.5	41.7	3.00	3.00	
700.0	15.00	310.95	694.3	42.7	-49.1	65.1	3.00	3.00	
800.0	18.00	310.95	790.2	61.3	-70.6	93.5	3.00	3.00	
900.0	21.00	310.95	884.4	83.1	-95.8	126.9	3.00	3.00	
1,000.0	24.00	310.95	976.8	108.2	-124.7	165.1	3.00	3.00	
1,080.2	26.41	310.95	1,049.4	130.6	-150.5	199.3	3.00	3.00	EOB @ Inc. = 26.41°
1,100.0	26.41	310.95	1,067.1	136.4	-157.1	208.1	0.00	0.00	
1,180.2	26.41	310.95	1,138.9	159.8	-184.1	243.7	0.00	0.00	Surface Casing
1,200.0	26.41	310.95	1,156.7	165.5	-190.7	252.5	0.00	0.00	
1,300.0	26.41	310.95	1,246.2	194.7	-224.3	297.0	0.00	0.00	
1,400.0	26.41	310.95	1,335.8	223.8	-257.9	341.5	0.00	0.00	
1,500.0	26.41	310.95	1,425.4	253.0	-291.5	386.0	0.00	0.00	
1,600.0	26.41	310.95	1,514.9	282.1	-325.1	430.4	0.00	0.00	
1,700.0	26.41	310.95	1,604.5	311.3	-358.7	474.9	0.00	0.00	
1,800.0	26.41	310.95	1,694.1	340.4	-392.3	519.4	0.00	0.00	
1,900.0	26.41	310.95	1,783.6	369.6	-425.8	563.9	0.00	0.00	
2,000.0	26.41	310.95	1,873.2	398.7	-459.4	608.3	0.00	0.00	
2,100.0	26.41	310.95	1,962.8	427.9	-493.0	652.8	0.00	0.00	
2,200.0	26.41	310.95	2,052.3	457.0	-526.6	697.3	0.00	0.00	
2,300.0	26.41	310.95	2,141.9	486.2	-560.2	741.7	0.00	0.00	
2,400.0	26.41	310.95	2,231.5	515.3	-593.8	786.2	0.00	0.00	
2,500.0	26.41	310.95	2,321.0	544.5	-627.4	830.7	0.00	0.00	
2,600.0	26.41	310.95	2,410.6	573.6	-661.0	875.2	0.00	0.00	
2,700.0	26.41	310.95	2,500.2	602.8	-694.6	919.6	0.00	0.00	
2,800.0	26.41	310.95	2,589.7	631.9	-728.1	964.1	0.00	0.00	
2,900.0	26.41	310.95	2,679.3	661.1	-761.7	1,008.6	0.00	0.00	
3,000.0	26.41	310.95	2,768.9	690.2	-795.3	1,053.1	0.00	0.00	
3,100.0	26.41	310.95	2,858.4	719.4	-828.9	1,097.5	0.00	0.00	
3,200.0	26.41	310.95	2,948.0	748.5	-862.5	1,142.0	0.00	0.00	
3,300.0	26.41	310.95	3,037.6	777.7	-896.1	1,186.5	0.00	0.00	
3,400.0	26.41	310.95	3,127.1	806.8	-929.7	1,230.9	0.00	0.00	
3,500.0	26.41	310.95	3,216.7	836.0	-963.3	1,275.4	0.00	0.00	
3,600.0	26.41	310.95	3,306.3	865.1	-996.8	1,319.9	0.00	0.00	
3,700.0	26.41	310.95	3,395.8	894.3	-1,030.4	1,364.4	0.00	0.00	
3,800.0	26.41	310.95	3,485.4	923.4	-1,064.0	1,408.8	0.00	0.00	
3,900.0	26.41	310.95	3,575.0	952.6	-1,097.6	1,453.3	0.00	0.00	
4,000.0	26.41	310.95	3,664.5	981.7	-1,131.2	1,497.8	0.00	0.00	
4,100.0	26.41	310.95	3,754.1	1,010.9	-1,164.8	1,542.3	0.00	0.00	
4,200.0	26.41	310.95	3,843.7	1,040.0	-1,198.4	1,586.7	0.00	0.00	
4,300.0	26.41	310.95	3,933.2	1,069.2	-1,232.0	1,631.2	0.00	0.00	
4,400.0	26.41	310.95	4,022.8	1,098.3	-1,265.5	1,675.7	0.00	0.00	
4,500.0	26.41	310.95	4,112.4	1,127.5	-1,299.1	1,720.1	0.00	0.00	
4,600.0	26.41	310.95	4,201.9	1,156.6	-1,332.7	1,764.6	0.00	0.00	
4,700.0	26.41	310.95	4,291.5	1,185.8	-1,366.3	1,809.1	0.00	0.00	
4,800.0	26.41	310.95	4,381.1	1,214.9	-1,399.9	1,853.6	0.00	0.00	
4,900.0	26.41	310.95	4,470.6	1,244.0	-1,433.5	1,898.0	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	North Reference:	True
Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,000.0	26.41	310.95	4,560.2	1,273.2	-1,467.1	1,942.5	0.00	0.00	
5,100.0	26.41	310.95	4,649.8	1,302.3	-1,500.7	1,987.0	0.00	0.00	
5,200.0	26.41	310.95	4,739.3	1,331.5	-1,534.2	2,031.5	0.00	0.00	
5,285.6	26.41	310.95	4,816.0	1,356.4	-1,563.0	2,069.5	0.00	0.00	Ohio Creek
5,300.0	26.41	310.95	4,828.9	1,360.6	-1,567.8	2,075.9	0.00	0.00	
5,400.0	26.41	310.95	4,918.5	1,389.8	-1,601.4	2,120.4	0.00	0.00	
5,498.8	26.41	310.95	5,007.0	1,418.6	-1,634.6	2,164.4	0.00	0.00	Mesaverde Marker
5,500.0	26.41	310.95	5,008.0	1,418.9	-1,635.0	2,164.9	0.00	0.00	
5,600.0	26.41	310.95	5,097.6	1,448.1	-1,668.6	2,209.3	0.00	0.00	
5,700.0	26.41	310.95	5,187.2	1,477.2	-1,702.2	2,253.8	0.00	0.00	
5,800.0	26.41	310.95	5,276.7	1,506.4	-1,735.8	2,298.3	0.00	0.00	
5,900.0	26.41	310.95	5,366.3	1,535.5	-1,769.4	2,342.8	0.00	0.00	
5,995.6	26.41	310.95	5,452.0	1,563.4	-1,801.5	2,385.3	0.00	0.00	Start 2° Drop
6,000.0	26.32	310.95	5,455.9	1,564.7	-1,802.9	2,387.2	2.00	-2.00	
6,100.0	24.32	310.95	5,546.3	1,592.7	-1,835.2	2,430.0	2.00	-2.00	
6,200.0	22.32	310.95	5,638.1	1,618.7	-1,865.1	2,469.6	2.00	-2.00	
6,218.3	21.95	310.95	5,655.0	1,623.2	-1,870.3	2,476.5	2.00	-2.00	Williams Fork
6,300.0	20.32	310.95	5,731.2	1,642.5	-1,892.6	2,505.9	2.00	-2.00	
6,400.0	18.32	310.95	5,825.6	1,664.2	-1,917.6	2,539.0	2.00	-2.00	
6,500.0	16.32	310.95	5,921.1	1,683.7	-1,940.1	2,568.8	2.00	-2.00	
6,600.0	14.32	310.95	6,017.5	1,701.0	-1,960.0	2,595.2	2.00	-2.00	
6,700.0	12.32	310.95	6,114.8	1,716.1	-1,977.4	2,618.2	2.00	-2.00	
6,800.0	10.32	310.95	6,212.9	1,729.0	-1,992.2	2,637.9	2.00	-2.00	
6,900.0	8.32	310.95	6,311.5	1,739.6	-2,004.5	2,654.0	2.00	-2.00	
7,000.0	6.32	310.95	6,410.7	1,747.9	-2,014.1	2,666.8	2.00	-2.00	
7,100.0	4.32	310.95	6,510.3	1,754.0	-2,021.1	2,676.1	2.00	-2.00	
7,200.0	2.32	310.95	6,610.1	1,757.8	-2,025.4	2,681.8	2.00	-2.00	
7,300.0	0.32	310.95	6,710.1	1,759.3	-2,027.2	2,684.1	2.00	-2.00	
7,315.9	0.00	0.00	6,726.0	1,759.3	-2,027.2	2,684.2	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
7,400.0	0.00	0.00	6,810.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
7,500.0	0.00	0.00	6,910.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
7,600.0	0.00	0.00	7,010.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
7,700.0	0.00	0.00	7,110.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
7,800.0	0.00	0.00	7,210.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
7,900.0	0.00	0.00	7,310.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,000.0	0.00	0.00	7,410.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,100.0	0.00	0.00	7,510.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,200.0	0.00	0.00	7,610.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,300.0	0.00	0.00	7,710.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,334.9	0.00	0.00	7,745.0	1,759.3	-2,027.2	2,684.2	0.00	0.00	Coal Ridge
8,400.0	0.00	0.00	7,810.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,500.0	0.00	0.00	7,910.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,600.0	0.00	0.00	8,010.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,700.0	0.00	0.00	8,110.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,800.0	0.00	0.00	8,210.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
8,900.0	0.00	0.00	8,310.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
9,000.0	0.00	0.00	8,410.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
9,000.9	0.00	0.00	8,411.0	1,759.3	-2,027.2	2,684.2	0.00	0.00	Rollins
9,100.0	0.00	0.00	8,510.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
9,150.9	0.00	0.00	8,561.0	1,759.3	-2,027.2	2,684.2	0.00	0.00	TD @ 9,150.9' MD
9,200.0	0.00	0.00	8,610.1	1,759.3	-2,027.2	2,684.2	0.00	0.00	
9,250.9	0.00	0.00	8,661.0	1,759.3	-2,027.2	2,684.2	0.00	0.00	Permit TD @ 9,250.9' MD

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: Mamm Creek
Site: O31E Pad (2nd Occupation)
Well: Shideler Fee 31-12B
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Shideler Fee 31-12B
TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
MD Reference: KB=22' @ 7126.0ft (Patterson #308)
North Reference: True
Survey Calculation Method: Minimum Curvature

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Shideler Fee 31-12B TG - hit/miss target - Shape	0.00	0.00	6,726.0	1,759.3	-2,027.2	1,578,841.78	2,374,725.05	39.401763	-107.712985
Shideler Fee 31-12B PB - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,561.0	1,759.3	-2,027.2	1,578,841.78	2,374,725.05	39.401763	-107.712985

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,180.2	1,138.9	Surface Casing		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,285.6	4,816.0	Ohio Creek			
5,498.8	5,007.0	Mesaverde Marker			
6,218.3	5,655.0	Williams Fork			
7,315.9	6,726.0	Top Gas			
8,334.9	7,745.0	Coal Ridge			
9,000.9	8,411.0	Rollins			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
1,080.2	1,049.4	130.6	-150.5	EOB @ Inc. = 26.41°
5,995.6	5,452.0	1,563.4	-1,801.5	Start 2° Drop
7,315.9	6,726.0	1,759.3	-2,027.2	EOD @ Inc. = 0°
9,150.9	8,561.0	1,759.3	-2,027.2	TD @ 9,150.9' MD
9,250.9	8,661.0	1,759.3	-2,027.2	Permit TD @ 9,250.9' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

O31E Pad (2nd Occupation)

Shideler Fee 31-12B

OH

Plan #1

Anticollision Report

21 March, 2013

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users 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:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	3/14/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	9,250.9	Plan #1 (OH)	MWD	Geolink MWD	

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Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
K31E Pad						
Shideler 31-11D (K31E) (Existing) - Existing - Existing	4,260.1	3,761.0	493.7	453.8	12.394	CC, ES
Shideler 31-11D (K31E) (Existing) - Existing - Existing	4,400.0	3,878.3	499.7	459.1	12.303	SF
Shideler Fee 31-11A - DD - DD						Out of range
Shideler Fee 31-5BB - DD - FINAL						Out of range
Shideler Fee 31-5C - DD - DD						Out of range
Shideler Fee 31-5CC - DD - DD	8,781.3	8,135.1	458.9	406.1	8.687	CC
Shideler Fee 31-5CC - DD - DD	8,800.0	8,152.2	458.9	406.0	8.677	ES
Shideler Fee 31-5CC - DD - DD	9,200.0	8,550.0	460.9	406.5	8.473	SF
Shideler Fee 31-6D - DD - DD						Out of range
Shideler Fee 31-6DD - DD - FINAL						Out of range
Shideler Fee 31-8B - DD - FINAL						Out of range
Shideler Fee 31-8C - DD - FINAL						Out of range
Shideler Fee 31-9B - DD - DD						Out of range
Shideler Fee 31-9BB - DD - DD						Out of range
O31E Pad						
Shideler 31-15-EX - Existing - Existing	268.7	247.4	249.8	249.2	382.862	CC
Shideler 31-15-EX - Existing - Existing	300.0	278.6	249.9	249.1	338.573	ES
Shideler 31-15-EX - Existing - Existing	1,100.0	1,041.6	334.8	330.2	72.968	SF
Shideler Federal 6-3-EX - Existing - Existing	269.9	248.3	266.9	266.3	407.697	CC
Shideler Federal 6-3-EX - Existing - Existing	300.0	277.7	267.0	266.2	362.697	ES
Shideler Federal 6-3-EX - Existing - Existing	1,300.0	1,217.6	410.4	404.5	70.121	SF
Shideler Fee 31-13C - OH - FINAL	598.6	618.8	228.5	226.1	94.852	CC
Shideler Fee 31-13C - OH - FINAL	600.0	620.2	228.5	226.1	94.532	ES
Shideler Fee 31-13C - OH - FINAL	1,900.0	1,850.3	494.4	476.2	27.191	SF
Shideler Fee 31-13CC - OH - FINAL	0.0	3.0	257.1			
Shideler Fee 31-13CC - OH - FINAL	100.0	102.3	257.2	256.9	921.051	ES
Shideler Fee 31-13CC - OH - FINAL	1,500.0	1,440.0	485.5	472.3	36.799	SF
Shideler Fee 6-3A - DD - FINAL	0.0	3.0	282.1			
Shideler Fee 6-3A - DD - FINAL	100.0	102.1	282.2	282.0	1,011.319	ES
Shideler Fee 6-3A - DD - FINAL	1,300.0	1,238.0	476.4	469.4	68.016	SF
Shideler Fee 6-3AA - DD - FINAL	0.0	0.0	292.5			
Shideler Fee 6-3AA - DD - FINAL	1,100.0	1,013.9	495.4	489.4	83.801	SF
Shideler Fee 6-3D - DD - DD	0.0	3.0	269.7			
Shideler Fee 6-3D - DD - DD	200.0	201.9	270.1	269.5	432.382	ES
Shideler Fee 6-3D - DD - DD	1,100.0	995.0	472.9	467.2	83.706	SF
Shideler Fee 6-3DD - DD - DD	0.0	3.0	280.0			
Shideler Fee 6-3DD - DD - DD	100.0	102.2	280.1	279.9	1,003.038	ES
Shideler Fee 6-3DD - DD - DD	1,000.0	891.4	463.6	458.8	95.382	SF
Shideler Fee 6-6A - DD - FINAL	215.2	218.6	267.4	266.7	392.287	CC, ES
Shideler Fee 6-6A - DD - FINAL	1,100.0	967.5	452.1	446.7	82.786	SF
Shideler Fee 6-6D - DD - DD	132.9	136.0	253.9	253.5	646.694	CC, ES
Shideler Fee 6-6D - DD - DD	1,000.0	844.0	468.8	464.2	101.635	SF
Shideler Fee 6-6DD - DD - FINAL	153.2	156.2	243.7	243.2	526.192	CC
Shideler Fee 6-6DD - DD - FINAL	200.0	200.6	243.9	243.2	391.746	ES
Shideler Fee 6-6DD - DD - FINAL	1,000.0	844.0	461.6	456.9	98.406	SF
Shideler Fee 6-7D - DD - DD	139.9	139.9	242.2	241.8	581.094	CC, ES
Shideler Fee 6-7D - DD - DD	1,000.0	831.8	475.6	471.0	103.366	SF

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
O31E Pad (2nd Occupation)						
Shideler Fee 31-10C - OH - Plan #1	200.0	200.0	30.0	29.4	48.312	CC, ES
Shideler Fee 31-10C - OH - Plan #1	800.0	790.9	95.4	91.1	22.529	SF
Shideler Fee 31-11C - OH - Plan #1	200.0	200.0	15.0	14.4	24.191	CC, ES
Shideler Fee 31-11C - OH - Plan #1	800.0	801.1	39.3	35.2	9.656	SF
Shideler Fee 31-13B - OH - Plan #1	200.0	200.0	29.8	29.2	47.935	CC, ES
Shideler Fee 31-13B - OH - Plan #1	1,900.0	1,876.9	225.9	205.2	10.942	SF
Shideler Fee 31-13BB - OH - Plan #1	359.7	359.1	43.9	42.7	36.190	CC, ES
Shideler Fee 31-13BB - OH - Plan #1	2,700.0	2,644.7	497.3	467.3	16.534	SF
Shideler Fee 31-14D - OH - Plan #1	322.1	322.0	14.5	13.4	13.594	CC, ES
Shideler Fee 31-14D - OH - Plan #1	400.0	399.6	15.9	14.5	11.653	SF
Shideler Fee 31-14DD - OH - Plan #1	327.2	326.3	59.0	57.9	54.461	CC, ES
Shideler Fee 31-14DD - OH - Plan #1	700.0	692.1	84.8	82.0	29.683	SF
Shideler Fee 31-16A - OH - Plan #1	200.0	200.0	53.0	52.4	85.358	CC, ES
Shideler Fee 31-16A - OH - Plan #1	500.0	495.5	68.8	67.0	39.318	SF
Shideler Fee 31-16AA - OH - Plan #1	200.0	200.0	45.1	44.4	72.505	CC, ES
Shideler Fee 31-16AA - OH - Plan #1	500.0	492.7	65.9	64.1	37.328	SF
Shideler Fee 31-16D - OH - Plan #1	200.0	200.0	24.1	23.5	38.761	CC, ES
Shideler Fee 31-16D - OH - Plan #1	400.0	398.4	32.8	31.5	24.564	SF
Shideler Fee 31-16DD - OH - Plan #1	200.0	200.0	38.5	37.8	61.909	CC, ES
Shideler Fee 31-16DD - OH - Plan #1	400.0	397.3	46.9	45.5	34.826	SF
Shideler Fee 31-9D - OH - Plan #1	200.0	200.0	60.0	59.4	96.636	CC, ES
Shideler Fee 31-9D - OH - Plan #1	500.0	486.7	91.5	89.7	51.294	SF
Shideler Fee 6-1A - OH - Plan #1	200.0	200.0	11.0	10.4	17.765	CC, ES
Shideler Fee 6-1A - OH - Plan #1	300.0	300.0	13.4	12.4	13.815	SF
Shideler Fee 6-1AA - OH - Plan #1	200.0	200.0	11.1	10.4	17.797	CC, ES
Shideler Fee 6-1AA - OH - Plan #1	300.0	300.0	12.6	11.7	12.974	SF
Shideler Fee 6-1D - OH - Plan #1	200.0	200.0	23.8	23.2	38.305	CC
Shideler Fee 6-1D - OH - Plan #1	300.0	300.0	24.1	23.1	24.638	ES
Shideler Fee 6-1D - OH - Plan #1	400.0	399.0	27.7	26.3	20.309	SF
Shideler Fee 6-1DD - OH - Plan #1	293.1	293.0	38.2	37.3	40.077	CC
Shideler Fee 6-1DD - OH - Plan #1	300.0	299.9	38.2	37.3	39.059	ES
Shideler Fee 6-1DD - OH - Plan #1	500.0	495.3	51.3	49.5	28.664	SF
Shideler Fee 6-8A - OH - Plan #1	321.5	321.4	52.7	51.7	49.467	CC, ES
Shideler Fee 6-8A - OH - Plan #1	500.0	494.7	63.0	61.2	34.270	SF
Shideler Fee 6-8AA - OH - Plan #1	308.2	307.9	67.7	66.7	66.713	CC, ES
Shideler Fee 6-8AA - OH - Plan #1	500.0	493.3	77.7	75.8	41.415	SF
Shideler Fee 6-8D - OH - Plan #1	291.5	291.0	82.5	81.6	86.428	CC
Shideler Fee 6-8D - OH - Plan #1	300.0	299.4	82.5	81.5	83.679	ES
Shideler Fee 6-8D - OH - Plan #1	600.0	582.4	112.5	110.1	46.935	SF

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Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 246-MWD													Offset Well Error:		0.0 ft
K31E Pad - Shideler 31-11D (K31E) (Existing) - Existing - Existing															
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
4,200.0	3,843.7	3,711.7	3,675.0	30.4	10.2	97.81	1,376.2	-838.4	494.8	455.5	39.30	12.591			
4,260.1	3,897.5	3,761.0	3,723.6	30.9	10.4	101.05	1,367.9	-837.0	493.7	453.8	39.83	12.394	CC, ES		
4,300.0	3,933.2	3,794.6	3,756.7	31.2	10.5	103.27	1,362.2	-836.0	494.2	454.0	40.12	12.317			
4,400.0	4,022.8	3,878.3	3,839.0	32.1	10.8	108.76	1,347.6	-833.7	499.7	459.1	40.62	12.303	SF		

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Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 79-MWD													Offset Well Error:		0.0 ft
K31E Pad - Shideler Fee 31-5CC - DD - DD															
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
6,700.0	6,114.8	6,007.9	5,861.8	49.6	25.2	30.69	2,179.4	-2,130.8	490.4	442.6	47.84	10.251			
6,800.0	6,212.9	6,117.2	5,970.1	49.9	25.5	30.59	2,185.1	-2,144.4	482.3	434.1	48.26	9.994			
6,900.0	6,311.5	6,227.8	6,080.0	50.2	25.7	30.36	2,188.6	-2,156.6	474.8	426.3	48.50	9.790			
7,000.0	6,410.7	6,333.6	6,185.4	50.4	25.9	30.18	2,191.1	-2,165.7	468.8	420.1	48.70	9.627			
7,100.0	6,510.3	6,438.8	6,290.4	50.6	26.1	30.11	2,193.1	-2,171.8	464.5	415.5	48.92	9.495			
7,200.0	6,610.1	6,547.7	6,399.3	50.7	26.2	30.01	2,194.3	-2,176.1	461.8	412.8	49.06	9.414			
7,276.6	6,686.7	6,624.7	6,476.2	50.7	26.3	29.90	2,194.5	-2,178.1	460.9	411.8	49.09	9.389			
7,300.0	6,710.1	6,647.8	6,499.3	50.7	26.3	29.86	2,194.6	-2,178.7	461.0	411.9	49.09	9.391			
7,400.0	6,810.1	6,750.6	6,602.0	50.8	26.4	-19.34	2,195.1	-2,180.2	461.9	412.8	49.13	9.401			
7,500.0	6,910.1	6,848.4	6,699.9	50.8	26.5	-19.38	2,195.9	-2,180.8	462.9	413.6	49.27	9.394			
7,600.0	7,010.1	6,951.0	6,802.5	50.9	26.6	-19.36	2,196.7	-2,180.9	463.6	414.2	49.47	9.373			
7,700.0	7,110.1	7,052.0	6,903.4	50.9	26.7	-19.29	2,197.4	-2,180.6	464.1	414.4	49.70	9.339			
7,800.0	7,210.1	7,152.7	7,004.1	51.0	26.7	-19.19	2,197.9	-2,179.8	464.4	414.4	49.96	9.296			
7,900.0	7,310.1	7,256.3	7,107.7	51.0	26.8	-19.03	2,198.3	-2,178.6	464.4	414.1	50.27	9.237			
8,000.0	7,410.1	7,358.4	7,209.9	51.1	26.9	-18.97	2,197.5	-2,177.9	463.4	412.9	50.50	9.177			
8,100.0	7,510.1	7,456.9	7,308.3	51.1	27.0	-18.90	2,196.9	-2,177.0	462.5	411.8	50.74	9.115			
8,200.0	7,610.1	7,556.1	7,407.5	51.2	27.0	-18.80	2,196.6	-2,176.1	461.9	410.9	51.00	9.057			
8,300.0	7,710.1	7,657.1	7,508.5	51.2	27.1	-18.59	2,196.5	-2,174.3	461.3	410.0	51.33	8.986			
8,377.9	7,788.0	7,731.6	7,583.0	51.2	27.1	-18.37	2,196.8	-2,172.5	461.0	409.3	51.65	8.926			
8,400.0	7,810.1	7,752.9	7,604.3	51.3	27.1	-18.30	2,197.0	-2,172.0	461.0	409.3	51.74	8.910			
8,500.0	7,910.1	7,856.0	7,707.4	51.3	27.2	-18.22	2,197.1	-2,171.3	460.8	408.8	52.01	8.860			
8,600.0	8,010.1	7,957.9	7,809.3	51.4	27.3	-18.18	2,196.4	-2,170.7	460.1	407.8	52.23	8.809			
8,700.0	8,110.1	8,056.8	7,908.1	51.4	27.4	-18.01	2,196.0	-2,169.2	459.2	406.7	52.54	8.741			
8,781.3	8,191.4	8,135.1	7,986.4	51.4	27.4	-17.84	2,196.1	-2,167.8	458.9	406.1	52.82	8.687 CC			
8,800.0	8,210.1	8,152.2	8,003.6	51.5	27.4	-17.80	2,196.3	-2,167.5	458.9	406.0	52.89	8.677 ES			
8,900.0	8,310.1	8,249.4	8,100.7	51.5	27.5	-17.62	2,197.6	-2,166.5	459.9	406.7	53.21	8.644			
9,000.0	8,410.1	8,351.6	8,202.9	51.6	27.6	-17.40	2,198.7	-2,164.9	460.4	406.9	53.56	8.596			
9,100.0	8,510.1	8,452.9	8,304.2	51.6	27.6	-17.10	2,199.8	-2,162.8	460.9	406.9	53.98	8.538			
9,160.6	8,570.7	8,514.4	8,365.7	51.6	27.7	-16.90	2,200.3	-2,161.2	460.9	406.7	54.24	8.497			
9,200.0	8,610.1	8,550.0	8,401.2	51.7	27.7	-16.79	2,200.6	-2,160.3	460.9	406.5	54.40	8.473 SF			
9,250.9	8,661.0	8,550.0	8,401.2	51.7	27.7	-16.79	2,200.6	-2,160.3	464.2	409.7	54.44	8.525			

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

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Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
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Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100-Gyro													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-143.17	-200.3	-150.0	251.2						
100.0	100.0	78.3	78.3	0.1	0.1	-143.22	-200.4	-149.8	250.1	249.9	0.20	1,222.860			
200.0	200.0	178.7	178.7	0.3	0.2	-143.38	-200.6	-149.1	249.9	249.5	0.47	535.520			
268.7	268.7	247.4	247.4	0.4	0.2	-94.76	-200.8	-148.5	249.8	249.2	0.65	382.862 CC			
300.0	300.0	278.6	278.6	0.5	0.2	-95.16	-200.9	-148.1	249.9	249.1	0.74	338.573 ES			
400.0	399.6	378.7	378.7	0.7	0.3	-97.34	-201.7	-146.5	250.4	249.3	1.05	239.177			
500.0	498.8	479.1	479.1	1.0	0.4	-100.71	-202.2	-144.4	251.8	250.4	1.42	177.902			
600.0	597.1	580.7	580.6	1.4	0.5	-104.96	-201.4	-142.8	254.4	252.6	1.85	137.375			
700.0	694.3	678.5	678.4	1.8	0.6	-109.66	-199.2	-142.0	259.1	256.8	2.35	110.312			
800.0	790.2	771.1	771.0	2.4	0.7	-114.56	-197.3	-142.1	268.3	265.4	2.89	92.769			
900.0	884.4	862.5	862.4	3.0	0.8	-119.73	-196.8	-142.6	283.9	280.4	3.46	81.922			
1,000.0	976.8	952.8	952.7	3.7	0.8	-125.00	-197.2	-142.5	305.9	301.9	4.04	75.703			
1,100.0	1,067.1	1,041.6	1,041.4	4.5	0.9	-130.18	-198.0	-142.0	334.8	330.2	4.59	72.968 SF			
1,200.0	1,156.7	1,131.3	1,131.2	5.4	1.0	-135.35	-199.0	-141.3	367.9	362.8	5.04	73.055			
1,300.0	1,246.2	1,222.8	1,222.7	6.2	1.1	-139.76	-199.4	-140.9	402.9	397.4	5.42	74.306			
1,400.0	1,335.8	1,310.8	1,310.7	7.0	1.1	-143.37	-199.8	-140.4	439.7	433.9	5.77	76.229			
1,500.0	1,425.4	1,400.3	1,400.1	7.8	1.2	-146.53	-200.3	-139.7	478.0	471.9	6.07	78.696			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100-Gyro													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-141.39	-209.4	-167.2	268.9						
100.0	100.0	79.3	79.3	0.1	0.1	-141.41	-209.3	-167.0	267.8	267.6	0.21	1,303.674			
200.0	200.0	179.7	179.7	0.3	0.2	-141.46	-209.0	-166.5	267.2	266.7	0.47	571.446			
269.9	269.8	248.3	248.3	0.4	0.2	-92.69	-208.7	-166.2	266.9	266.3	0.65	407.697 CC			
300.0	300.0	277.7	277.7	0.5	0.2	-92.96	-208.7	-166.3	267.0	266.2	0.74	362.697 ES			
400.0	399.6	376.6	376.6	0.7	0.3	-94.50	-208.7	-166.8	267.8	266.8	1.04	256.792			
500.0	498.8	475.4	475.4	1.0	0.4	-97.04	-208.6	-167.7	269.6	268.2	1.41	190.983			
600.0	597.1	573.3	573.3	1.4	0.5	-100.47	-208.6	-168.7	273.0	271.1	1.85	147.319			
700.0	694.3	669.7	669.7	1.8	0.6	-104.65	-208.8	-170.0	279.0	276.7	2.37	117.934			
800.0	790.2	764.6	764.6	2.4	0.7	-109.29	-209.2	-171.9	288.8	285.8	2.94	98.244			
900.0	884.4	858.5	858.4	3.0	0.8	-114.18	-209.7	-174.3	303.2	299.6	3.56	85.248			
1,000.0	976.8	950.8	950.7	3.7	0.8	-119.08	-210.3	-177.1	322.9	318.7	4.20	76.913			
1,100.0	1,067.1	1,040.9	1,040.7	4.5	0.9	-123.92	-211.1	-180.0	348.3	343.5	4.83	72.146			
1,200.0	1,156.7	1,129.6	1,129.4	5.4	1.0	-128.77	-212.2	-182.6	377.9	372.5	5.37	70.357			
1,300.0	1,246.2	1,217.6	1,217.4	6.2	1.1	-133.00	-213.7	-184.8	410.4	404.5	5.85	70.121 SF			
1,400.0	1,335.8	1,307.0	1,306.7	7.0	1.2	-136.74	-215.5	-186.6	445.1	438.8	6.28	70.894			
1,500.0	1,425.4	1,397.9	1,397.6	7.8	1.2	-140.05	-217.1	-188.3	481.3	474.6	6.66	72.279			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference				Offset				Semi Major Axis			Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-156.94	-213.1	-90.7	231.6						
100.0	100.0	102.3	102.3	0.1	0.1	-156.95	-213.3	-90.7	231.8	231.5	0.28	829.605			
200.0	200.0	203.2	203.2	0.3	0.3	-156.96	-213.5	-90.8	232.0	231.3	0.63	369.963			
212.4	212.4	216.0	216.0	0.3	0.3	-107.91	-213.4	-90.8	232.0	231.3	0.67	345.449			
300.0	300.0	306.1	306.1	0.5	0.5	-108.46	-212.8	-90.9	232.2	231.2	0.99	234.890			
400.0	399.6	414.5	414.4	0.7	0.7	-109.85	-208.6	-91.9	231.5	230.1	1.40	165.877			
500.0	498.8	520.0	519.4	1.0	0.9	-111.50	-199.8	-95.5	229.5	227.6	1.86	123.060			
598.6	595.7	618.8	617.5	1.4	1.2	-113.40	-189.4	-101.7	228.5	226.1	2.41	94.852 CC			
600.0	597.1	620.2	618.9	1.4	1.2	-113.43	-189.2	-101.8	228.5	226.1	2.42	94.532 ES			
700.0	694.3	716.2	713.8	1.8	1.4	-115.37	-178.2	-111.6	230.2	227.1	3.07	74.893			
800.0	790.2	806.7	802.6	2.4	1.7	-116.82	-169.1	-126.4	237.2	233.3	3.84	61.693			
900.0	884.4	895.9	889.5	3.0	2.1	-118.04	-162.8	-145.5	251.0	246.2	4.73	53.019			
1,000.0	976.8	986.8	977.4	3.7	2.5	-119.28	-159.0	-168.1	270.7	265.0	5.74	47.135			
1,100.0	1,067.1	1,081.8	1,068.4	4.5	3.0	-120.55	-156.0	-195.2	294.8	288.0	6.88	42.862			
1,200.0	1,156.7	1,180.7	1,161.8	5.4	3.6	-121.64	-152.0	-227.4	319.7	311.6	8.13	39.340			
1,300.0	1,246.2	1,279.2	1,253.1	6.2	4.2	-121.72	-146.9	-263.9	343.9	334.4	9.49	36.233			
1,400.0	1,335.8	1,375.2	1,341.3	7.0	4.9	-121.45	-141.6	-301.4	368.1	357.2	10.90	33.778			
1,500.0	1,425.4	1,470.8	1,429.0	7.8	5.6	-121.15	-136.7	-339.2	392.6	380.3	12.32	31.877			
1,600.0	1,514.9	1,566.9	1,517.1	8.7	6.3	-120.84	-132.0	-377.5	417.4	403.7	13.76	30.330			
1,700.0	1,604.5	1,661.1	1,603.1	9.5	7.1	-120.49	-127.6	-415.6	442.5	427.3	15.21	29.088			
1,800.0	1,694.1	1,755.7	1,689.4	10.3	7.8	-120.14	-123.7	-454.2	468.3	451.6	16.68	28.069			
1,900.0	1,783.6	1,850.3	1,775.3	11.2	8.6	-119.73	-120.0	-493.6	494.4	476.2	18.18	27.191 SF			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 111-MWD, 1242-MWD													Offset Well Error:	0.0 ft
Reference				Offset			Semi Major Axis			Distance				Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	3.0	3.0	0.0	0.0	-153.21	-229.5	-115.9	257.1					
100.0	100.0	102.3	102.3	0.1	0.1	-153.19	-229.6	-116.0	257.2	256.9	0.28	921.051 ES		
200.0	200.0	201.6	201.6	0.3	0.3	-153.20	-230.0	-116.2	257.7	257.1	0.62	412.833		
300.0	300.0	299.2	299.2	0.5	0.5	-104.14	-229.9	-118.7	259.4	258.4	0.98	264.677		
400.0	399.6	396.3	396.1	0.7	0.7	-104.29	-228.8	-125.1	263.3	261.9	1.39	189.811		
500.0	498.8	488.4	487.5	1.0	0.9	-104.54	-227.8	-135.2	270.5	268.6	1.88	144.152		
600.0	597.1	583.5	581.7	1.4	1.2	-105.06	-227.3	-149.2	281.2	278.7	2.49	112.764		
700.0	694.3	678.6	675.1	1.8	1.5	-105.72	-226.7	-166.8	294.7	291.5	3.24	90.855		
800.0	790.2	771.6	765.8	2.4	1.9	-106.46	-226.1	-187.4	311.4	307.3	4.13	75.464		
900.0	884.4	864.7	855.6	3.0	2.4	-107.21	-225.5	-211.7	331.2	326.1	5.15	64.283		
1,000.0	976.8	957.2	943.9	3.7	2.9	-107.97	-225.0	-239.2	354.2	347.9	6.32	56.012		
1,100.0	1,067.1	1,051.9	1,032.7	4.5	3.5	-108.58	-223.5	-272.3	379.8	372.1	7.66	49.548		
1,200.0	1,156.7	1,147.6	1,121.3	5.4	4.2	-109.50	-221.3	-308.0	406.1	397.0	9.04	44.943		
1,300.0	1,246.2	1,242.1	1,209.2	6.2	4.9	-110.37	-219.6	-343.0	432.8	422.4	10.40	41.624		
1,400.0	1,335.8	1,342.0	1,301.9	7.0	5.6	-111.18	-217.6	-380.0	459.5	447.6	11.81	38.896		
1,500.0	1,425.4	1,440.0	1,393.2	7.8	6.2	-111.96	-215.1	-415.5	485.5	472.3	13.19	36.799 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	3.0	3.0	0.0	0.0	-150.20	-244.8	-140.2	282.1						
100.0	100.0	102.1	102.1	0.1	0.1	-150.19	-244.9	-140.3	282.2	282.0	0.28	1,011.319	ES		
200.0	200.0	199.5	199.5	0.3	0.3	-150.11	-245.3	-141.0	283.0	282.4	0.62	455.988			
300.0	300.0	295.0	295.0	0.5	0.5	-101.32	-246.3	-142.5	285.1	284.2	0.97	293.788			
400.0	399.6	387.0	386.9	0.7	0.7	-102.30	-248.9	-145.4	290.8	289.4	1.35	215.224			
500.0	498.8	483.9	483.6	1.0	0.8	-104.09	-253.1	-149.6	299.7	297.9	1.80	166.474			
600.0	597.1	584.7	584.3	1.4	1.0	-106.72	-257.2	-154.0	310.2	307.8	2.33	133.326			
700.0	694.3	681.4	680.8	1.8	1.2	-109.84	-260.9	-158.0	322.9	320.0	2.92	110.759			
800.0	790.2	777.8	777.0	2.4	1.4	-113.31	-264.4	-162.6	338.8	335.3	3.57	94.957			
900.0	884.4	872.0	871.0	3.0	1.6	-116.94	-267.8	-167.2	358.5	354.3	4.27	84.051			
1,000.0	976.8	965.3	964.1	3.7	1.8	-120.69	-271.3	-171.7	382.7	377.7	4.99	76.649			
1,100.0	1,067.1	1,057.6	1,056.3	4.5	2.0	-124.52	-274.3	-176.3	411.3	405.6	5.72	71.876			
1,200.0	1,156.7	1,147.4	1,145.9	5.4	2.2	-128.45	-277.1	-180.9	443.0	436.6	6.39	69.321			
1,300.0	1,246.2	1,238.0	1,236.4	6.2	2.4	-131.96	-280.0	-185.3	476.4	469.4	7.00	68.016	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-151.11	-256.1	-141.3	292.5						
100.0	100.0	96.9	96.9	0.1	0.1	-151.10	-256.5	-141.6	293.0	292.7	0.27	1,076.226			
200.0	200.0	187.3	187.3	0.3	0.3	-151.06	-258.3	-142.8	295.4	294.8	0.60	490.327			
300.0	300.0	274.0	273.8	0.5	0.5	-102.07	-262.7	-146.2	302.4	301.4	0.93	323.776			
400.0	399.6	361.5	360.7	0.7	0.7	-102.66	-270.3	-152.2	314.9	313.6	1.31	240.895			
500.0	498.8	451.3	449.7	1.0	1.0	-103.87	-280.3	-159.4	331.5	329.8	1.74	190.055			
600.0	597.1	540.4	537.6	1.4	1.3	-105.49	-292.1	-168.0	352.4	350.2	2.25	156.365			
700.0	694.3	636.2	631.9	1.8	1.6	-107.73	-306.0	-177.3	376.6	373.8	2.85	131.974			
800.0	790.2	736.9	731.2	2.4	1.9	-110.40	-319.1	-187.1	402.2	398.7	3.54	113.594			
900.0	884.4	831.9	825.2	3.0	2.2	-113.15	-330.7	-195.6	429.8	425.5	4.28	100.310			
1,000.0	976.8	924.2	916.5	3.7	2.5	-115.95	-341.7	-203.5	460.8	455.7	5.08	90.661			
1,100.0	1,067.1	1,013.9	1,005.3	4.5	2.8	-118.83	-352.1	-211.4	495.4	489.4	5.91	83.801 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	3.0	3.0	0.0	0.0	-151.73	-237.5	-127.7	269.7						
100.0	100.0	102.2	102.2	0.1	0.1	-151.72	-237.6	-127.9	269.8	269.5	0.28	966.585			
200.0	200.0	201.9	201.9	0.3	0.3	-151.73	-237.9	-127.9	270.1	269.5	0.62	432.382	ES		
300.0	300.0	295.0	295.0	0.5	0.5	-103.10	-238.9	-128.5	272.0	271.0	0.97	280.456			
400.0	399.6	387.0	386.9	0.7	0.6	-104.23	-242.1	-131.0	278.2	276.8	1.35	206.306			
500.0	498.8	471.6	471.2	1.0	0.8	-105.88	-248.2	-134.9	290.0	288.3	1.77	163.716			
600.0	597.1	558.1	557.0	1.4	1.0	-108.10	-257.7	-140.0	308.0	305.8	2.27	135.903			
700.0	694.3	644.1	642.0	1.8	1.3	-110.66	-269.6	-145.8	331.5	328.7	2.83	117.146			
800.0	790.2	732.8	729.3	2.4	1.6	-113.62	-284.0	-151.7	360.4	356.9	3.46	104.159			
900.0	884.4	821.1	816.1	3.0	1.9	-116.60	-299.0	-157.5	393.6	389.5	4.15	94.931			
1,000.0	976.8	909.5	902.9	3.7	2.2	-119.45	-314.3	-163.9	431.2	426.3	4.88	88.272			
1,100.0	1,067.1	995.0	986.9	4.5	2.5	-122.24	-328.9	-170.5	472.9	467.2	5.65	83.706	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 111-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	3.0	3.0	0.0	0.0	-152.53	-248.4	-129.1	280.0					
100.0	100.0	102.2	102.2	0.1	0.1	-152.57	-248.6	-129.0	280.1	279.9	0.28	1,003.038	ES	
200.0	200.0	199.8	199.8	0.3	0.3	-152.71	-249.6	-128.8	280.9	280.3	0.62	451.513		
300.0	300.0	289.5	289.5	0.5	0.5	-104.14	-252.2	-129.4	284.4	283.4	0.96	295.955		
400.0	399.6	377.6	377.4	0.7	0.6	-105.32	-257.7	-131.5	293.1	291.7	1.33	220.031		
500.0	498.8	463.6	462.8	1.0	0.9	-107.07	-266.2	-134.8	307.5	305.7	1.76	175.083		
600.0	597.1	550.4	548.8	1.4	1.1	-109.27	-277.7	-139.4	327.6	325.4	2.25	145.795		
700.0	694.3	631.3	628.4	1.8	1.4	-111.43	-290.8	-144.9	353.7	350.9	2.80	126.378		
800.0	790.2	714.3	709.6	2.4	1.7	-113.66	-306.9	-152.0	386.2	382.8	3.42	112.889		
900.0	884.4	803.2	796.2	3.0	2.1	-116.11	-325.1	-160.1	423.2	419.1	4.11	102.853		
1,000.0	976.8	891.4	882.2	3.7	2.4	-118.61	-343.0	-167.3	463.6	458.8	4.86	95.382	SF	

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-153.99	-240.4	-117.3	267.5						
100.0	100.0	103.1	103.1	0.1	0.1	-153.96	-240.3	-117.4	267.5	267.2	0.28	953.851			
200.0	200.0	203.4	203.4	0.3	0.3	-153.85	-240.0	-117.8	267.4	266.7	0.63	426.159			
215.2	215.2	218.6	218.6	0.3	0.3	-104.81	-240.0	-117.9	267.4	266.7	0.68	392.287 CC, ES			
300.0	300.0	304.2	304.2	0.5	0.5	-105.24	-239.5	-118.1	267.7	266.7	0.99	271.463			
400.0	399.6	401.0	401.0	0.7	0.7	-106.60	-239.3	-118.7	269.9	268.6	1.37	196.709			
500.0	498.8	493.5	493.4	1.0	0.8	-108.77	-240.6	-119.7	275.7	273.9	1.81	152.661			
600.0	597.1	581.4	581.3	1.4	1.0	-111.57	-244.4	-120.9	286.7	284.4	2.29	124.929			
700.0	694.3	662.0	661.6	1.8	1.1	-114.45	-250.7	-122.9	304.6	301.8	2.83	107.489			
800.0	790.2	753.0	751.9	2.4	1.4	-117.94	-261.3	-126.1	329.8	326.4	3.44	95.858			
900.0	884.4	824.7	822.7	3.0	1.6	-120.47	-272.4	-129.2	362.9	358.9	4.07	89.079			
1,000.0	976.8	898.3	894.8	3.7	1.8	-122.92	-286.6	-132.6	403.9	399.2	4.76	84.936			
1,100.0	1,067.1	967.5	962.1	4.5	2.1	-125.17	-302.1	-136.1	452.1	446.7	5.46	82.786 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-155.62	-231.3	-104.8	254.0						
100.0	100.0	103.2	103.2	0.1	0.1	-155.60	-231.2	-104.9	253.9	253.6	0.28	905.221			
132.9	132.9	136.0	136.0	0.2	0.2	-155.59	-231.2	-104.9	253.9	253.5	0.39	646.694 CC, ES			
200.0	200.0	198.8	198.8	0.3	0.3	-155.73	-231.9	-104.5	254.4	253.8	0.62	410.421			
300.0	300.0	289.7	289.6	0.5	0.5	-107.76	-235.5	-102.8	258.1	257.2	0.97	267.205			
400.0	399.6	381.4	380.9	0.7	0.7	-110.24	-243.3	-99.7	267.3	265.9	1.36	196.651			
500.0	498.8	468.1	466.9	1.0	0.9	-113.38	-253.6	-96.3	282.4	280.6	1.80	156.709			
600.0	597.1	553.3	551.1	1.4	1.2	-116.75	-266.8	-93.6	304.6	302.4	2.29	133.230			
700.0	694.3	632.7	629.0	1.8	1.5	-119.68	-281.6	-92.7	334.2	331.4	2.80	119.268			
800.0	790.2	708.0	702.4	2.4	1.8	-122.10	-298.6	-93.4	371.8	368.5	3.35	110.847			
900.0	884.4	779.5	771.3	3.0	2.1	-123.94	-317.2	-95.7	416.8	412.9	3.95	105.422			
1,000.0	976.8	844.0	832.9	3.7	2.5	-125.14	-336.2	-98.8	468.8	464.2	4.61	101.635 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	3.0	3.0	0.0	0.0	-155.05	-221.1	-102.9	243.9						
100.0	100.0	103.5	103.5	0.1	0.1	-155.08	-221.1	-102.7	243.8	243.5	0.28	867.654			
153.2	153.2	156.2	156.2	0.2	0.2	-155.10	-221.1	-102.6	243.7	243.2	0.46	526.192 CC			
200.0	200.0	200.6	200.6	0.3	0.3	-155.09	-221.2	-102.7	243.9	243.2	0.62	391.746 ES			
300.0	300.0	290.9	290.8	0.5	0.5	-106.48	-223.7	-103.8	247.6	246.6	0.96	257.306			
400.0	399.6	378.6	378.3	0.7	0.6	-107.95	-229.9	-105.3	257.2	255.8	1.33	193.102			
500.0	498.8	463.8	462.9	1.0	0.9	-110.08	-239.7	-107.7	273.3	271.5	1.75	156.096			
600.0	597.1	547.0	544.9	1.4	1.1	-112.59	-253.2	-110.9	296.7	294.5	2.23	133.121			
700.0	694.3	626.3	622.5	1.8	1.4	-115.24	-269.3	-113.7	327.2	324.5	2.76	118.505			
800.0	790.2	702.0	695.8	2.4	1.8	-117.57	-287.7	-117.6	365.4	362.0	3.35	109.135			
900.0	884.4	775.3	766.1	3.0	2.2	-119.60	-308.1	-121.9	410.5	406.5	3.99	102.869			
1,000.0	976.8	844.0	831.4	3.7	2.5	-121.07	-328.9	-126.9	461.6	456.9	4.69	98.406 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft		
Survey Program: 111-MWD													Offset Well Error:		0.0 ft	
Reference				Offset				Semi Major Axis			Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-157.46	-224.0	-93.0	242.5							
100.0	100.0	101.2	101.2	0.1	0.1	-157.46	-223.8	-92.9	242.3	242.0	0.28	857.442				
139.9	139.9	139.9	139.9	0.2	0.2	-157.46	-223.7	-92.8	242.2	241.8	0.42	581.094	CC, ES			
200.0	200.0	194.2	194.2	0.3	0.3	-157.63	-224.5	-92.4	242.8	242.2	0.62	393.472				
300.0	300.0	287.3	287.2	0.5	0.5	-109.80	-229.1	-90.5	247.5	246.5	0.97	255.367				
400.0	399.6	376.0	375.5	0.7	0.7	-112.20	-237.1	-87.7	257.9	256.5	1.35	190.409				
500.0	498.8	461.0	459.7	1.0	0.9	-115.20	-248.2	-85.0	274.9	273.1	1.79	153.944				
600.0	597.1	545.5	542.8	1.4	1.2	-118.74	-262.8	-81.2	299.4	297.1	2.27	131.769				
700.0	694.3	626.3	621.8	1.8	1.5	-122.02	-279.6	-78.2	331.6	328.8	2.81	118.108				
800.0	790.2	701.3	694.3	2.4	1.9	-125.34	-297.6	-72.2	371.5	368.1	3.38	110.021				
900.0	884.4	769.3	759.3	3.0	2.2	-128.11	-316.2	-65.4	419.6	415.7	3.97	105.696				
1,000.0	976.8	831.8	818.4	3.7	2.6	-130.25	-335.3	-58.5	475.6	471.0	4.60	103.366	SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.92	16.4	25.2	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.92	16.4	25.2	30.0	29.7	0.27	110.250			
200.0	200.0	200.0	200.0	0.3	0.3	56.92	16.4	25.2	30.0	29.4	0.62	48.312 CC, ES			
300.0	300.0	299.4	299.4	0.5	0.5	108.14	17.8	25.0	31.4	30.5	0.98	32.105			
400.0	399.6	398.6	398.3	0.7	0.7	110.47	24.2	24.4	36.7	35.3	1.39	26.362			
500.0	498.8	497.4	496.4	1.0	0.9	112.10	35.7	23.3	45.9	44.0	1.91	24.054			
600.0	597.1	595.6	593.2	1.4	1.3	112.98	52.1	21.7	58.8	56.3	2.55	23.058			
700.0	694.3	693.0	688.3	1.8	1.7	113.30	73.2	19.7	75.6	72.2	3.35	22.594			
800.0	790.2	790.9	783.2	2.4	2.1	114.46	97.3	17.4	95.4	91.1	4.23	22.529 SF			
900.0	884.4	888.2	877.4	3.0	2.5	117.30	121.3	15.1	117.5	112.3	5.18	22.671			
1,000.0	976.8	984.5	970.8	3.7	3.0	120.85	145.0	12.9	142.5	136.4	6.17	23.120			
1,100.0	1,067.1	1,079.7	1,063.0	4.5	3.4	124.68	168.5	10.6	170.9	163.7	7.14	23.937			
1,200.0	1,156.7	1,174.5	1,154.8	5.4	3.9	128.23	191.8	8.4	200.9	192.8	8.07	24.880			
1,300.0	1,246.2	1,269.2	1,246.6	6.2	4.3	130.86	215.2	6.2	231.4	222.4	8.99	25.738			
1,400.0	1,335.8	1,364.0	1,338.4	7.0	4.7	132.88	238.5	4.0	262.3	252.4	9.90	26.501			
1,500.0	1,425.4	1,458.7	1,430.2	7.8	5.2	134.47	261.9	1.7	293.4	282.6	10.80	27.177			
1,600.0	1,514.9	1,553.5	1,522.0	8.7	5.6	135.76	285.2	-0.5	324.7	313.0	11.69	27.775			
1,700.0	1,604.5	1,648.2	1,613.8	9.5	6.0	136.83	308.6	-2.7	356.1	343.5	12.58	28.306			
1,800.0	1,694.1	1,743.0	1,705.6	10.3	6.5	137.72	331.9	-4.9	387.6	374.1	13.47	28.779			
1,900.0	1,783.6	1,837.7	1,797.4	11.2	6.9	138.48	355.3	-7.2	419.2	404.8	14.35	29.202			
2,000.0	1,873.2	1,932.5	1,889.2	12.0	7.4	139.13	378.6	-9.4	450.8	435.5	15.24	29.583			
2,100.0	1,962.8	2,027.2	1,981.0	12.8	7.8	139.70	402.0	-11.6	482.4	466.3	16.12	29.927			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	57.78	8.0	12.7	15.0						
100.0	100.0	100.0	100.0	0.1	0.1	57.78	8.0	12.7	15.0	14.8	0.27	55.206			
200.0	200.0	200.0	200.0	0.3	0.3	57.78	8.0	12.7	15.0	14.4	0.62	24.191	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	113.52	8.5	12.3	15.9	14.9	0.98	16.213			
400.0	399.6	400.2	400.0	0.7	0.7	119.92	12.8	9.3	18.2	16.8	1.38	13.189			
500.0	498.8	500.5	499.7	1.0	0.9	123.26	21.3	3.1	21.7	19.9	1.86	11.679			
600.0	597.1	600.8	598.8	1.4	1.2	124.30	34.1	-6.0	26.4	23.9	2.46	10.716			
700.0	694.3	701.2	697.0	1.8	1.6	123.93	51.1	-18.3	32.1	28.9	3.22	9.981			
800.0	790.2	801.1	793.8	2.4	2.1	124.39	71.2	-32.7	39.3	35.2	4.07	9.656	SF		
900.0	884.4	900.5	890.0	3.0	2.5	129.26	91.5	-47.3	49.5	44.7	4.85	10.211			
1,000.0	976.8	999.3	985.6	3.7	3.0	135.79	111.6	-61.8	63.6	58.1	5.49	11.584			
1,100.0	1,067.1	1,097.2	1,080.4	4.5	3.4	142.13	131.5	-76.1	82.3	76.3	6.00	13.719			
1,200.0	1,156.7	1,194.7	1,174.8	5.4	3.9	146.82	151.4	-90.4	102.9	96.5	6.46	15.941			
1,300.0	1,246.2	1,292.3	1,269.3	6.2	4.3	149.94	171.3	-104.7	124.0	117.1	6.94	17.883			
1,400.0	1,335.8	1,389.9	1,363.7	7.0	4.8	152.14	191.1	-119.0	145.4	138.0	7.43	19.570			
1,500.0	1,425.4	1,487.4	1,458.1	7.8	5.3	153.78	211.0	-133.3	166.9	159.0	7.93	21.041			
1,600.0	1,514.9	1,585.0	1,552.6	8.7	5.7	155.05	230.9	-147.6	188.5	180.1	8.44	22.329			
1,700.0	1,604.5	1,682.5	1,647.0	9.5	6.2	156.06	250.8	-161.9	210.2	201.3	8.96	23.464			
1,800.0	1,694.1	1,780.1	1,741.5	10.3	6.6	156.87	270.6	-176.2	232.0	222.5	9.48	24.471			
1,900.0	1,783.6	1,877.7	1,835.9	11.2	7.1	157.55	290.5	-190.5	253.7	243.7	10.00	25.369			
2,000.0	1,873.2	1,975.2	1,930.3	12.0	7.6	158.12	310.4	-204.8	275.5	265.0	10.53	26.175			
2,100.0	1,962.8	2,072.8	2,024.8	12.8	8.0	158.61	330.3	-219.1	297.4	286.3	11.05	26.901			
2,200.0	2,052.3	2,170.3	2,119.2	13.7	8.5	159.03	350.1	-233.4	319.2	307.6	11.58	27.559			
2,300.0	2,141.9	2,267.9	2,213.7	14.5	9.0	159.39	370.0	-247.7	341.1	329.0	12.11	28.158			
2,400.0	2,231.5	2,365.5	2,308.1	15.3	9.4	159.72	389.9	-261.9	362.9	350.3	12.64	28.706			
2,500.0	2,321.0	2,463.0	2,402.5	16.2	9.9	160.00	409.8	-276.2	384.8	371.6	13.18	29.208			
2,600.0	2,410.6	2,560.6	2,497.0	17.0	10.3	160.26	429.6	-290.5	406.7	393.0	13.71	29.670			
2,700.0	2,500.2	2,658.1	2,591.4	17.8	10.8	160.49	449.5	-304.8	428.6	414.4	14.24	30.096			
2,800.0	2,589.7	2,755.7	2,685.9	18.7	11.3	160.69	469.4	-319.1	450.5	435.7	14.77	30.491			
2,900.0	2,679.3	2,853.3	2,780.3	19.5	11.7	160.88	489.3	-333.4	472.4	457.1	15.31	30.858			
3,000.0	2,768.9	2,950.8	2,874.7	20.3	12.2	161.05	509.1	-347.7	494.3	478.5	15.84	31.200			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.39	-16.4	-24.9	29.8						
100.0	100.0	100.0	100.0	0.1	0.1	-123.39	-16.4	-24.9	29.8	29.5	0.27	109.391			
200.0	200.0	200.0	200.0	0.3	0.3	-123.39	-16.4	-24.9	29.8	29.2	0.62	47.935 CC, ES			
300.0	300.0	299.1	299.0	0.5	0.5	-75.13	-15.5	-27.3	30.6	29.6	0.98	31.181			
400.0	399.6	398.1	397.7	0.7	0.7	-77.25	-12.9	-34.5	33.2	31.8	1.41	23.606			
500.0	498.8	497.0	495.8	1.0	1.0	-80.12	-8.5	-46.5	37.5	35.6	1.95	19.298			
600.0	597.1	595.8	592.9	1.4	1.3	-83.13	-2.4	-63.3	43.7	41.1	2.64	16.566			
700.0	694.3	694.3	688.8	1.8	1.8	-85.89	5.3	-84.7	51.8	48.3	3.51	14.752			
800.0	790.2	792.7	783.2	2.4	2.3	-88.22	14.8	-110.6	61.7	57.2	4.57	13.517			
900.0	884.4	890.7	875.8	3.0	3.0	-90.10	25.8	-141.0	73.5	67.7	5.81	12.655			
1,000.0	976.8	988.8	966.6	3.7	3.7	-91.66	38.4	-175.7	87.1	79.8	7.21	12.068			
1,100.0	1,067.1	1,087.6	1,057.6	4.5	4.4	-94.89	51.5	-211.9	101.4	92.7	8.74	11.604			
1,200.0	1,156.7	1,186.3	1,148.5	5.4	5.1	-98.41	64.7	-248.0	116.3	106.0	10.27	11.327			
1,300.0	1,246.2	1,284.9	1,239.3	6.2	5.8	-101.12	77.8	-284.2	131.5	119.7	11.78	11.165			
1,400.0	1,335.8	1,383.6	1,330.2	7.0	6.5	-103.26	90.9	-320.3	146.9	133.6	13.27	11.068			
1,500.0	1,425.4	1,482.3	1,421.0	7.8	7.3	-105.00	104.1	-356.5	162.5	147.8	14.76	11.009			
1,600.0	1,514.9	1,580.9	1,511.9	8.7	8.0	-106.43	117.2	-392.6	178.2	162.0	16.24	10.975			
1,700.0	1,604.5	1,679.6	1,602.8	9.5	8.7	-107.64	130.3	-428.8	194.0	176.3	17.71	10.955			
1,800.0	1,694.1	1,778.3	1,693.6	10.3	9.5	-108.65	143.5	-464.9	209.9	190.7	19.18	10.945			
1,900.0	1,783.6	1,876.9	1,784.5	11.2	10.2	-109.53	156.6	-501.1	225.9	205.2	20.64	10.942 SF			
2,000.0	1,873.2	1,975.6	1,875.4	12.0	10.9	-110.29	169.7	-537.2	241.8	219.7	22.10	10.942			
2,100.0	1,962.8	2,074.3	1,966.2	12.8	11.7	-110.96	182.9	-573.3	257.9	234.3	23.56	10.946			
2,200.0	2,052.3	2,172.9	2,057.1	13.7	12.4	-111.55	196.0	-609.5	273.9	248.9	25.01	10.951			
2,300.0	2,141.9	2,271.6	2,148.0	14.5	13.1	-112.07	209.1	-645.6	290.0	263.5	26.46	10.958			
2,400.0	2,231.5	2,370.3	2,238.8	15.3	13.9	-112.54	222.3	-681.8	306.1	278.2	27.91	10.965			
2,500.0	2,321.0	2,468.9	2,329.7	16.2	14.6	-112.96	235.4	-717.9	322.2	292.8	29.36	10.973			
2,600.0	2,410.6	2,567.6	2,420.5	17.0	15.3	-113.34	248.5	-754.1	338.3	307.5	30.81	10.981			
2,700.0	2,500.2	2,666.3	2,511.4	17.8	16.1	-113.69	261.7	-790.2	354.5	322.2	32.26	10.989			
2,800.0	2,589.7	2,764.9	2,602.3	18.7	16.8	-114.00	274.8	-826.4	370.6	336.9	33.70	10.997			
2,900.0	2,679.3	2,863.6	2,693.1	19.5	17.5	-114.29	287.9	-862.5	386.8	351.6	35.15	11.004			
3,000.0	2,768.9	2,962.3	2,784.0	20.3	18.3	-114.56	301.0	-898.7	402.9	366.4	36.59	11.012			
3,100.0	2,858.4	3,060.9	2,874.9	21.2	19.0	-114.80	314.2	-934.8	419.1	381.1	38.03	11.020			
3,200.0	2,948.0	3,159.6	2,965.7	22.0	19.7	-115.03	327.3	-971.0	435.3	395.8	39.48	11.027			
3,300.0	3,037.6	3,258.3	3,056.6	22.9	20.5	-115.24	340.4	-1,007.1	451.5	410.6	40.92	11.034			
3,400.0	3,127.1	3,356.9	3,147.4	23.7	21.2	-115.44	353.6	-1,043.3	467.7	425.3	42.36	11.041			
3,500.0	3,216.7	3,455.6	3,238.3	24.5	21.9	-115.62	366.7	-1,079.4	483.9	440.1	43.80	11.048			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.38	-24.8	-37.6	45.0						
100.0	100.0	100.0	100.0	0.1	0.1	-123.38	-24.8	-37.6	45.0	44.7	0.27	165.322			
200.0	200.0	200.0	200.0	0.3	0.3	-123.38	-24.8	-37.6	45.0	44.4	0.62	72.444			
300.0	300.0	300.0	300.0	0.5	0.5	-77.61	-24.8	-37.6	44.4	43.4	0.98	45.355			
359.7	359.5	359.1	359.1	0.6	0.6	-82.46	-24.7	-37.9	43.9	42.7	1.21	36.190	CC, ES		
400.0	399.6	398.7	398.7	0.7	0.7	-86.10	-24.5	-39.0	44.2	42.8	1.37	32.167			
500.0	498.8	497.2	497.0	1.0	0.9	-95.24	-23.4	-45.2	47.5	45.7	1.85	25.724			
600.0	597.1	595.8	594.9	1.4	1.1	-103.07	-21.3	-56.4	54.7	52.2	2.44	22.439			
700.0	694.3	694.3	692.0	1.8	1.4	-108.79	-18.3	-72.6	65.3	62.2	3.16	20.668			
800.0	790.2	792.6	788.0	2.4	1.8	-112.53	-14.4	-93.6	79.1	75.0	4.03	19.608			
900.0	884.4	890.8	882.5	3.0	2.3	-114.77	-9.6	-119.4	95.7	90.6	5.07	18.885			
1,000.0	976.8	988.6	975.3	3.7	2.9	-115.95	-3.9	-149.8	114.9	108.7	6.27	18.329			
1,100.0	1,067.1	1,086.0	1,066.0	4.5	3.6	-116.54	2.5	-184.6	136.6	129.0	7.61	17.944			
1,200.0	1,156.7	1,183.4	1,156.1	5.4	4.2	-117.20	9.3	-221.1	159.1	150.1	8.99	17.702			
1,300.0	1,246.2	1,280.8	1,246.2	6.2	4.9	-117.70	16.1	-257.6	181.6	171.3	10.38	17.507			
1,400.0	1,335.8	1,378.3	1,336.2	7.0	5.6	-118.08	22.9	-294.1	204.2	192.4	11.77	17.348			
1,500.0	1,425.4	1,475.7	1,426.3	7.8	6.3	-118.39	29.7	-330.6	226.7	213.5	13.17	17.216			
1,600.0	1,514.9	1,573.1	1,516.4	8.7	7.0	-118.65	36.5	-367.1	249.3	234.7	14.57	17.107			
1,700.0	1,604.5	1,670.5	1,606.5	9.5	7.7	-118.86	43.2	-403.6	271.8	255.8	15.98	17.014			
1,800.0	1,694.1	1,767.9	1,696.5	10.3	8.4	-119.04	50.0	-440.1	294.3	277.0	17.38	16.934			
1,900.0	1,783.6	1,865.4	1,786.6	11.2	9.1	-119.19	56.8	-476.6	316.9	298.1	18.79	16.865			
2,000.0	1,873.2	1,962.8	1,876.7	12.0	9.8	-119.32	63.6	-513.1	339.4	319.2	20.20	16.805			
2,100.0	1,962.8	2,060.2	1,966.7	12.8	10.6	-119.44	70.4	-549.6	362.0	340.4	21.61	16.753			
2,200.0	2,052.3	2,157.6	2,056.8	13.7	11.3	-119.54	77.1	-586.1	384.5	361.5	23.02	16.706			
2,300.0	2,141.9	2,255.0	2,146.9	14.5	12.0	-119.64	83.9	-622.6	407.1	382.7	24.43	16.664			
2,400.0	2,231.5	2,352.5	2,236.9	15.3	12.7	-119.72	90.7	-659.1	429.7	403.8	25.84	16.626			
2,500.0	2,321.0	2,449.9	2,327.0	16.2	13.4	-119.79	97.5	-695.6	452.2	425.0	27.25	16.593			
2,600.0	2,410.6	2,547.3	2,417.1	17.0	14.1	-119.86	104.3	-732.1	474.8	446.1	28.67	16.562			
2,700.0	2,500.2	2,644.7	2,507.2	17.8	14.8	-119.92	111.0	-768.6	497.3	467.3	30.08	16.534	SF		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.97	-8.4	-12.4	15.0						
100.0	100.0	100.0	100.0	0.1	0.1	-123.97	-8.4	-12.4	15.0	14.7	0.27	55.067			
200.0	200.0	200.0	200.0	0.3	0.3	-123.97	-8.4	-12.4	15.0	14.4	0.62	24.130			
300.0	300.0	300.0	300.0	0.5	0.5	-84.94	-8.4	-12.4	14.5	13.6	0.98	14.849			
322.1	322.0	322.0	322.0	0.5	0.5	-90.00	-8.4	-12.4	14.5	13.4	1.06	13.594 CC, ES			
400.0	399.6	399.6	399.6	0.7	0.7	-114.27	-8.4	-12.4	15.9	14.5	1.36	11.653 SF			
500.0	498.8	498.8	498.8	1.0	0.8	-143.23	-8.4	-12.4	24.4	22.7	1.72	14.153			
600.0	597.1	598.6	598.5	1.4	1.0	-156.33	-7.4	-14.8	38.6	36.6	2.07	18.709			
700.0	694.3	696.9	696.7	1.8	1.2	-161.99	-5.5	-19.7	56.5	54.1	2.41	23.453			
800.0	790.2	794.1	793.8	2.4	1.4	-165.82	-3.6	-24.6	79.6	76.9	2.74	29.037			
900.0	884.4	889.9	889.4	3.0	1.6	-168.44	-1.7	-29.4	107.9	104.8	3.07	35.206			
1,000.0	976.8	984.1	983.5	3.7	1.7	-170.28	0.1	-34.1	141.2	137.9	3.38	41.816			
1,100.0	1,067.1	1,076.4	1,075.7	4.5	1.9	-171.64	1.9	-38.7	179.4	175.7	3.69	48.669			
1,200.0	1,156.7	1,168.1	1,167.2	5.4	2.1	-172.69	3.7	-43.3	219.2	215.1	4.02	54.509			
1,300.0	1,246.2	1,259.8	1,258.8	6.2	2.3	-173.42	5.5	-47.9	259.0	254.6	4.36	59.447			
1,400.0	1,335.8	1,351.5	1,350.3	7.0	2.5	-173.95	7.3	-52.5	298.8	294.1	4.69	63.678			
1,500.0	1,425.4	1,443.2	1,441.9	7.8	2.6	-174.36	9.1	-57.1	338.7	333.7	5.03	67.343			
1,600.0	1,514.9	1,534.9	1,533.5	8.7	2.8	-174.68	10.9	-61.6	378.6	373.2	5.37	70.548			
1,700.0	1,604.5	1,626.5	1,625.0	9.5	3.0	-174.94	12.7	-66.2	418.4	412.7	5.70	73.376			
1,800.0	1,694.1	1,718.2	1,716.6	10.3	3.2	-175.16	14.5	-70.8	458.3	452.3	6.04	75.888			
1,900.0	1,783.6	1,809.9	1,808.1	11.2	3.4	-175.34	16.3	-75.4	498.2	491.8	6.38	78.135			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.24	-32.8	-50.0	59.8						
100.0	100.0	100.0	100.0	0.1	0.1	-123.24	-32.8	-50.0	59.8	59.5	0.27	219.650			
200.0	200.0	200.0	200.0	0.3	0.3	-123.24	-32.8	-50.0	59.8	59.2	0.62	96.251			
300.0	300.0	300.0	300.0	0.5	0.5	-76.65	-32.8	-50.0	59.1	58.2	0.98	60.453			
327.2	327.1	326.3	326.3	0.6	0.5	-78.12	-32.9	-50.2	59.0	57.9	1.08	54.461 CC, ES			
400.0	399.6	397.0	397.0	0.7	0.7	-83.53	-34.1	-52.1	60.3	58.9	1.37	44.042			
500.0	498.8	496.2	496.1	1.0	0.8	-94.20	-36.4	-55.8	64.3	62.5	1.83	35.207			
600.0	597.1	594.7	594.5	1.4	1.0	-107.16	-38.7	-59.6	71.8	69.5	2.34	30.668			
700.0	694.3	692.1	691.8	1.8	1.2	-120.12	-41.0	-63.3	84.8	82.0	2.86	29.683 SF			
800.0	790.2	788.3	787.9	2.4	1.4	-131.25	-43.2	-66.9	104.6	101.2	3.33	31.364			
900.0	884.4	882.9	882.4	3.0	1.6	-139.96	-45.4	-70.5	131.1	127.3	3.76	34.847			
1,000.0	976.8	975.7	975.1	3.7	1.7	-146.50	-47.6	-74.0	163.9	159.7	4.15	39.488			
1,100.0	1,067.1	1,066.5	1,065.8	4.5	1.9	-151.49	-49.7	-77.4	202.5	198.0	4.51	44.900			
1,200.0	1,156.7	1,156.5	1,155.7	5.4	2.1	-155.43	-51.8	-80.8	243.6	238.7	4.85	50.215			
1,300.0	1,246.2	1,246.6	1,245.7	6.2	2.3	-158.25	-53.9	-84.2	285.4	280.2	5.19	54.976			
1,400.0	1,335.8	1,336.7	1,335.7	7.0	2.4	-160.35	-56.1	-87.6	327.6	322.1	5.53	59.221			
1,500.0	1,425.4	1,426.7	1,425.7	7.8	2.6	-161.97	-58.2	-91.1	370.1	364.2	5.87	63.006			
1,600.0	1,514.9	1,516.8	1,515.6	8.7	2.8	-163.27	-60.3	-94.5	412.8	406.6	6.22	66.392			
1,700.0	1,604.5	1,606.9	1,605.6	9.5	2.9	-164.32	-62.4	-97.9	455.7	449.1	6.56	69.431			
1,800.0	1,694.1	1,696.9	1,695.6	10.3	3.1	-165.19	-64.5	-101.3	498.6	491.7	6.91	72.171			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	65.67	21.9	48.3	53.0						
100.0	100.0	100.0	100.0	0.1	0.1	65.67	21.9	48.3	53.0	52.8	0.27	194.791			
200.0	200.0	200.0	200.0	0.3	0.3	65.67	21.9	48.3	53.0	52.4	0.62	85.358 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	117.20	21.9	48.3	54.2	53.2	0.98	55.462			
400.0	399.6	399.6	399.6	0.7	0.7	123.97	21.9	48.3	58.2	56.8	1.36	42.920			
500.0	498.8	495.5	495.4	1.0	0.8	132.33	22.6	50.6	68.8	67.0	1.75	39.318 SF			
600.0	597.1	589.1	588.8	1.4	1.0	139.26	24.9	57.2	89.1	86.9	2.15	41.375			
700.0	694.3	679.7	678.7	1.8	1.3	143.81	28.6	67.6	118.7	116.1	2.57	46.116			
800.0	790.2	766.3	764.1	2.4	1.5	146.47	33.4	81.4	156.7	153.7	3.02	51.872			
900.0	884.4	848.3	844.2	3.0	1.8	147.88	39.0	97.8	202.6	199.1	3.51	57.766			
1,000.0	976.8	925.1	918.5	3.7	2.2	148.49	45.4	116.1	255.6	251.5	4.03	63.379			
1,100.0	1,067.1	999.0	989.2	4.5	2.6	148.84	52.4	136.2	314.9	310.3	4.60	68.509			
1,200.0	1,156.7	1,077.9	1,064.6	5.4	3.0	149.87	60.1	158.4	376.2	371.0	5.18	72.611			
1,300.0	1,246.2	1,156.8	1,139.9	6.2	3.4	150.61	67.8	180.6	437.5	431.7	5.77	75.769			
1,400.0	1,335.8	1,235.7	1,215.2	7.0	3.8	151.16	75.5	202.8	498.8	492.4	6.37	78.259			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	57.20	24.4	37.9	45.1						
100.0	100.0	100.0	100.0	0.1	0.1	57.20	24.4	37.9	45.1	44.8	0.27	165.461			
200.0	200.0	200.0	200.0	0.3	0.3	57.20	24.4	37.9	45.1	44.4	0.62	72.505 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	109.36	24.4	37.9	45.9	44.9	0.98	46.890			
400.0	399.6	397.1	397.0	0.7	0.7	117.32	25.6	40.0	51.5	50.2	1.36	37.966			
500.0	498.8	492.7	492.4	1.0	0.9	126.02	29.0	46.4	65.9	64.1	1.77	37.328 SF			
600.0	597.1	585.9	584.9	1.4	1.1	132.51	34.6	56.7	89.3	87.1	2.20	40.516			
700.0	694.3	675.9	673.4	1.8	1.4	136.58	42.0	70.3	121.2	118.6	2.68	45.172			
800.0	790.2	761.8	757.3	2.4	1.8	138.94	50.9	86.7	161.1	157.8	3.21	50.109			
900.0	884.4	843.1	835.8	3.0	2.2	140.18	60.9	105.3	208.1	204.3	3.80	54.804			
1,000.0	976.8	919.6	908.8	3.7	2.6	140.69	71.8	125.5	261.8	257.4	4.43	59.119			
1,100.0	1,067.1	1,000.4	985.4	4.5	3.0	141.36	84.1	148.1	320.3	315.2	5.11	62.655			
1,200.0	1,156.7	1,080.3	1,061.1	5.4	3.5	142.76	96.2	170.4	380.0	374.2	5.80	65.468			
1,300.0	1,246.2	1,160.2	1,136.9	6.2	4.0	143.78	108.3	192.8	439.8	433.3	6.50	67.622			
1,400.0	1,335.8	1,240.1	1,212.7	7.0	4.4	144.56	120.4	215.2	499.7	492.5	7.21	69.317			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	76.89	5.5	23.5	24.1						
100.0	100.0	100.0	100.0	0.1	0.1	76.89	5.5	23.5	24.1	23.8	0.27	88.454			
200.0	200.0	200.0	200.0	0.3	0.3	76.89	5.5	23.5	24.1	23.5	0.62	38.761	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	130.62	5.5	23.5	25.7	24.7	0.97	26.368			
400.0	399.6	398.4	398.4	0.7	0.7	141.44	5.3	24.9	32.8	31.5	1.34	24.564	SF		
500.0	498.8	494.6	494.4	1.0	0.8	150.78	4.7	30.9	50.1	48.4	1.69	29.570			
600.0	597.1	587.5	586.7	1.4	1.1	155.97	3.6	41.4	77.4	75.3	2.05	37.817			
700.0	694.3	676.2	674.2	1.8	1.4	158.58	2.1	55.5	114.0	111.6	2.40	47.481			
800.0	790.2	759.5	755.8	2.4	1.7	159.84	0.4	72.4	159.2	156.4	2.76	57.667			
900.0	884.4	837.0	830.9	3.0	2.0	160.39	-1.6	91.3	212.3	209.1	3.13	67.897			
1,000.0	976.8	911.5	902.4	3.7	2.4	160.56	-3.8	112.1	272.3	268.8	3.50	77.703			
1,100.0	1,067.1	987.9	975.5	4.5	2.8	160.85	-6.0	134.0	336.8	332.9	3.90	86.347			
1,200.0	1,156.7	1,063.1	1,047.6	5.4	3.2	161.60	-8.3	155.6	402.6	398.2	4.31	93.339			
1,300.0	1,246.2	1,138.4	1,119.7	6.2	3.6	162.14	-10.5	177.2	468.3	463.6	4.73	99.044			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Offset				Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	68.91	13.8	35.9	38.5					
100.0	100.0	100.0	100.0	0.1	0.1	68.91	13.8	35.9	38.5	38.2	0.27	141.279		
200.0	200.0	200.0	200.0	0.3	0.3	68.91	13.8	35.9	38.5	37.8	0.62	61.909	CC, ES	
300.0	300.0	300.0	300.0	0.5	0.5	121.26	13.8	35.9	39.8	38.8	0.98	40.723		
400.0	399.6	397.3	397.3	0.7	0.7	129.81	14.1	38.4	46.9	45.5	1.35	34.826	SF	
500.0	498.8	492.7	492.4	1.0	0.9	138.74	14.7	45.6	63.6	61.9	1.72	36.902		
600.0	597.1	585.0	584.0	1.4	1.1	144.92	15.7	57.0	90.3	88.2	2.11	42.820		
700.0	694.3	673.2	670.9	1.8	1.4	148.61	17.1	72.1	126.1	123.6	2.50	50.381		
800.0	790.2	756.5	752.1	2.4	1.7	150.69	18.7	90.0	170.4	167.5	2.92	58.430		
900.0	884.4	835.0	828.0	3.0	2.1	151.80	20.5	110.0	222.4	219.1	3.35	66.376		
1,000.0	976.8	916.6	906.6	3.7	2.5	152.63	22.4	132.2	279.8	276.0	3.81	73.336		
1,100.0	1,067.1	995.4	982.4	4.5	2.9	153.46	24.3	153.5	341.0	336.7	4.29	79.438		
1,200.0	1,156.7	1,073.2	1,057.2	5.4	3.3	154.75	26.2	174.6	403.5	398.7	4.78	84.477		
1,300.0	1,246.2	1,150.9	1,132.0	6.2	3.7	155.70	28.1	195.7	466.1	460.8	5.26	88.547		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.91	32.8	50.3	60.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.91	32.8	50.3	60.0	59.8	0.27	220.527			
200.0	200.0	200.0	200.0	0.3	0.3	56.91	32.8	50.3	60.0	59.4	0.62	96.636	CC, ES		
300.0	300.0	296.8	296.8	0.5	0.5	107.95	34.2	52.3	63.3	62.4	0.97	65.121			
400.0	399.6	392.7	392.3	0.7	0.7	112.77	38.5	58.1	73.6	72.2	1.35	54.337			
500.0	498.8	486.7	485.7	1.0	1.0	118.21	45.5	67.7	91.5	89.7	1.78	51.294	SF		
600.0	597.1	578.2	575.7	1.4	1.3	122.81	54.8	80.4	117.2	115.0	2.27	51.651			
700.0	694.3	666.3	661.6	1.8	1.7	126.17	66.2	96.0	150.7	147.8	2.82	53.428			
800.0	790.2	750.4	742.9	2.4	2.1	128.42	79.3	113.9	191.3	187.9	3.44	55.688			
900.0	884.4	830.3	818.9	3.0	2.5	129.81	93.6	133.5	238.7	234.6	4.11	58.080			
1,000.0	976.8	912.7	896.6	3.7	3.0	130.86	109.7	155.6	291.6	286.7	4.86	60.034			
1,100.0	1,067.1	994.6	973.9	4.5	3.5	132.13	125.8	177.6	347.7	342.0	5.64	61.592			
1,200.0	1,156.7	1,075.8	1,050.5	5.4	4.0	134.13	141.7	199.4	405.1	398.6	6.45	62.836			
1,300.0	1,246.2	1,157.0	1,127.0	6.2	4.5	135.65	157.6	221.2	462.7	455.5	7.25	63.823			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	103.38	-2.6	10.7	11.0						
100.0	100.0	100.0	100.0	0.1	0.1	103.38	-2.6	10.7	11.0	10.8	0.27	40.541			
200.0	200.0	200.0	200.0	0.3	0.3	103.38	-2.6	10.7	11.0	10.4	0.62	17.765 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	157.58	-2.6	10.7	13.4	12.4	0.97	13.815 SF			
400.0	399.6	399.1	399.1	0.7	0.7	165.40	-2.7	11.3	21.5	20.2	1.32	16.320			
500.0	498.8	496.0	495.9	1.0	0.8	168.70	-4.1	16.1	39.2	37.5	1.66	23.616			
600.0	597.1	589.7	589.0	1.4	1.1	169.51	-6.7	25.2	66.6	64.6	2.00	33.388			
700.0	694.3	678.9	677.2	1.8	1.3	169.54	-10.3	37.9	103.3	101.0	2.33	44.419			
800.0	790.2	762.6	759.4	2.4	1.6	169.32	-14.7	53.5	148.7	146.0	2.65	56.108			
900.0	884.4	840.3	834.9	3.0	2.0	168.99	-19.7	71.0	202.0	199.1	2.97	68.107			
1,000.0	976.8	911.4	903.4	3.7	2.3	168.60	-24.9	89.6	262.7	259.5	3.28	80.203			
1,100.0	1,067.1	982.1	970.8	4.5	2.7	168.30	-30.7	110.0	329.5	325.9	3.60	91.587			
1,200.0	1,156.7	1,055.3	1,040.5	5.4	3.1	168.44	-36.8	131.3	397.7	393.7	3.95	100.597			
1,300.0	1,246.2	1,128.4	1,110.2	6.2	3.5	168.54	-42.9	152.7	465.9	461.6	4.31	108.075			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset															
Semi Major Axis															
Distance															
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-171.18	-10.9	-1.7	11.1						
100.0	100.0	100.0	100.0	0.1	0.1	-171.18	-10.9	-1.7	11.1	10.8	0.27	40.613			
200.0	200.0	200.0	200.0	0.3	0.3	-171.18	-10.9	-1.7	11.1	10.4	0.62	17.797 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	-132.19	-10.9	-1.7	12.6	11.7	0.97	12.974 SF			
400.0	399.6	399.1	399.1	0.7	0.7	-153.06	-11.5	-0.4	19.8	18.5	1.33	14.946			
500.0	498.8	496.1	495.8	1.0	0.9	-168.91	-13.9	5.3	37.5	35.8	1.66	22.513			
600.0	597.1	589.5	588.6	1.4	1.1	-176.53	-18.1	15.1	65.7	63.7	1.99	32.998			
700.0	694.3	678.1	676.1	1.8	1.4	179.61	-23.7	28.3	103.6	101.2	2.31	44.902			
800.0	790.2	761.1	757.3	2.4	1.7	177.40	-30.4	43.9	150.3	147.7	2.61	57.596			
900.0	884.4	837.8	831.6	3.0	2.0	175.98	-37.7	61.3	205.1	202.2	2.90	70.788			
1,000.0	976.8	907.7	898.7	3.7	2.4	174.96	-45.5	79.5	267.2	264.1	3.17	84.331			
1,100.0	1,067.1	972.9	960.6	4.5	2.8	174.21	-53.6	98.4	335.7	332.3	3.44	97.586			
1,200.0	1,156.7	1,043.8	1,027.6	5.4	3.2	173.80	-62.6	119.6	406.2	402.5	3.76	108.024			
1,300.0	1,246.2	1,114.7	1,094.7	6.2	3.6	173.51	-71.6	140.9	476.7	472.6	4.08	116.821			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-142.73	-18.9	-14.4	23.8						
100.0	100.0	100.0	100.0	0.1	0.1	-142.73	-18.9	-14.4	23.8	23.5	0.27	87.413			
200.0	200.0	200.0	200.0	0.3	0.3	-142.73	-18.9	-14.4	23.8	23.2	0.62	38.305	CC		
300.0	300.0	300.0	300.0	0.5	0.5	-99.89	-18.9	-14.4	24.1	23.1	0.98	24.638	ES		
400.0	399.6	399.0	399.0	0.7	0.7	-121.48	-20.4	-12.3	27.7	26.3	1.36	20.309	SF		
500.0	498.8	495.7	495.4	1.0	0.9	-146.15	-24.8	-6.3	41.9	40.2	1.72	24.319			
600.0	597.1	588.6	587.5	1.4	1.1	-160.51	-31.7	3.3	69.2	67.1	2.05	33.804			
700.0	694.3	676.5	674.1	1.8	1.4	-167.84	-40.6	15.6	107.4	105.0	2.35	45.757			
800.0	790.2	758.5	754.1	2.4	1.8	-171.85	-50.9	30.0	155.0	152.4	2.63	58.928			
900.0	884.4	834.0	827.0	3.0	2.1	-174.22	-62.3	45.8	210.9	208.0	2.89	72.860			
1,000.0	976.8	900.0	890.2	3.7	2.5	-175.68	-73.6	61.4	274.2	271.1	3.13	87.487			
1,100.0	1,067.1	964.1	950.8	4.5	2.9	-176.78	-85.7	78.3	344.0	340.6	3.38	101.883			
1,200.0	1,156.7	1,022.4	1,005.3	5.4	3.2	-177.65	-97.8	95.2	417.1	413.5	3.64	114.740			
1,300.0	1,246.2	1,087.4	1,065.7	6.2	3.7	-178.37	-111.9	114.6	491.4	487.5	3.91	125.778			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-135.50	-27.3	-26.8	38.3						
100.0	100.0	100.0	100.0	0.1	0.1	-135.50	-27.3	-26.8	38.3	38.0	0.27	140.685			
200.0	200.0	200.0	200.0	0.3	0.3	-135.50	-27.3	-26.8	38.3	37.7	0.62	61.648			
293.1	293.0	293.0	293.0	0.5	0.5	-89.98	-27.4	-26.8	38.2	37.3	0.95	40.077 CC			
300.0	300.0	299.9	299.9	0.5	0.5	-90.62	-27.4	-26.7	38.2	37.3	0.98	39.059 ES			
400.0	399.6	398.9	398.8	0.7	0.7	-107.37	-30.0	-23.8	40.1	38.8	1.38	29.145			
500.0	498.8	495.3	494.8	1.0	0.9	-130.58	-35.7	-17.3	51.3	49.5	1.79	28.664 SF			
600.0	597.1	587.7	586.3	1.4	1.1	-147.94	-44.2	-7.6	76.2	74.0	2.14	35.624			
700.0	694.3	675.0	672.1	1.8	1.5	-157.99	-54.8	4.5	113.5	111.1	2.44	46.449			
800.0	790.2	756.2	751.1	2.4	1.8	-163.71	-67.1	18.5	161.0	158.3	2.73	59.068			
900.0	884.4	830.8	823.0	3.0	2.2	-167.12	-80.3	33.5	217.3	214.3	2.99	72.617			
1,000.0	976.8	900.0	888.9	3.7	2.6	-169.31	-94.2	49.3	281.0	277.8	3.24	86.699			
1,100.0	1,067.1	959.2	944.6	4.5	3.0	-170.73	-107.3	64.3	351.3	347.8	3.49	100.794			
1,200.0	1,156.7	1,015.1	996.7	5.4	3.3	-172.06	-120.7	79.6	425.0	421.2	3.74	113.752			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-131.76	-35.3	-39.6	53.0						
100.0	100.0	100.0	100.0	0.1	0.1	-131.76	-35.3	-39.6	53.0	52.8	0.27	194.815			
200.0	200.0	200.0	200.0	0.3	0.3	-131.76	-35.3	-39.6	53.0	52.4	0.62	85.369			
300.0	300.0	299.9	299.9	0.5	0.5	-86.25	-35.8	-39.1	52.8	51.8	0.98	53.893			
321.5	321.4	321.4	321.4	0.5	0.5	-88.34	-36.3	-38.6	52.7	51.7	1.07	49.467 CC, ES			
400.0	399.6	398.7	398.6	0.7	0.7	-99.99	-39.5	-35.5	53.9	52.5	1.39	38.851			
500.0	498.8	494.7	494.1	1.0	0.9	-120.14	-46.5	-28.6	63.0	61.2	1.84	34.270 SF			
600.0	597.1	586.6	584.9	1.4	1.2	-137.79	-56.4	-18.8	85.6	83.4	2.24	38.285			
700.0	694.3	673.2	669.8	1.8	1.5	-149.35	-68.6	-6.8	121.6	119.0	2.57	47.373			
800.0	790.2	753.7	747.9	2.4	1.9	-156.36	-82.4	6.8	168.6	165.7	2.86	58.906			
900.0	884.4	827.5	818.8	3.0	2.3	-160.66	-97.1	21.2	224.7	221.6	3.14	71.577			
1,000.0	976.8	900.0	887.5	3.7	2.7	-163.62	-113.4	37.3	288.7	285.3	3.41	84.750			
1,100.0	1,067.1	954.2	938.4	4.5	3.1	-165.23	-126.8	50.5	359.1	355.4	3.67	97.814			
1,200.0	1,156.7	1,009.3	989.5	5.4	3.4	-167.02	-141.5	64.9	433.1	429.2	3.92	110.384			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-130.05	-43.7	-52.0	67.9						
100.0	100.0	100.0	100.0	0.1	0.1	-130.05	-43.7	-52.0	67.9	67.7	0.27	249.485			
200.0	200.0	200.0	200.0	0.3	0.3	-130.05	-43.7	-52.0	67.9	67.3	0.62	109.325			
300.0	300.0	299.7	299.7	0.5	0.5	-84.42	-44.9	-51.1	67.7	66.7	0.98	69.009			
308.2	308.2	307.9	307.8	0.5	0.5	-85.08	-45.1	-50.9	67.7	66.7	1.01	66.713 CC, ES			
400.0	399.6	398.0	397.7	0.7	0.7	-96.05	-49.9	-47.2	69.1	67.7	1.40	49.349			
500.0	498.8	493.3	492.5	1.0	0.9	-112.94	-58.6	-40.5	77.7	75.8	1.88	41.415 SF			
600.0	597.1	584.5	582.3	1.4	1.2	-129.01	-70.4	-31.4	98.9	96.5	2.32	42.627			
700.0	694.3	670.3	666.2	1.8	1.6	-140.67	-84.6	-20.4	133.4	130.7	2.69	49.565			
800.0	790.2	749.9	743.3	2.4	2.0	-148.24	-100.4	-8.2	179.5	176.5	3.02	59.405			
900.0	884.4	822.9	813.2	3.0	2.4	-153.07	-117.2	4.8	235.2	231.8	3.34	70.509			
1,000.0	976.8	889.0	875.7	3.7	2.8	-156.13	-134.1	17.9	298.8	295.2	3.65	81.912			
1,100.0	1,067.1	948.2	931.0	4.5	3.2	-158.27	-150.7	30.7	369.1	365.2	3.96	93.201			
1,200.0	1,156.7	1,000.0	978.9	5.4	3.5	-160.39	-166.4	42.9	443.1	438.9	4.24	104.608			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

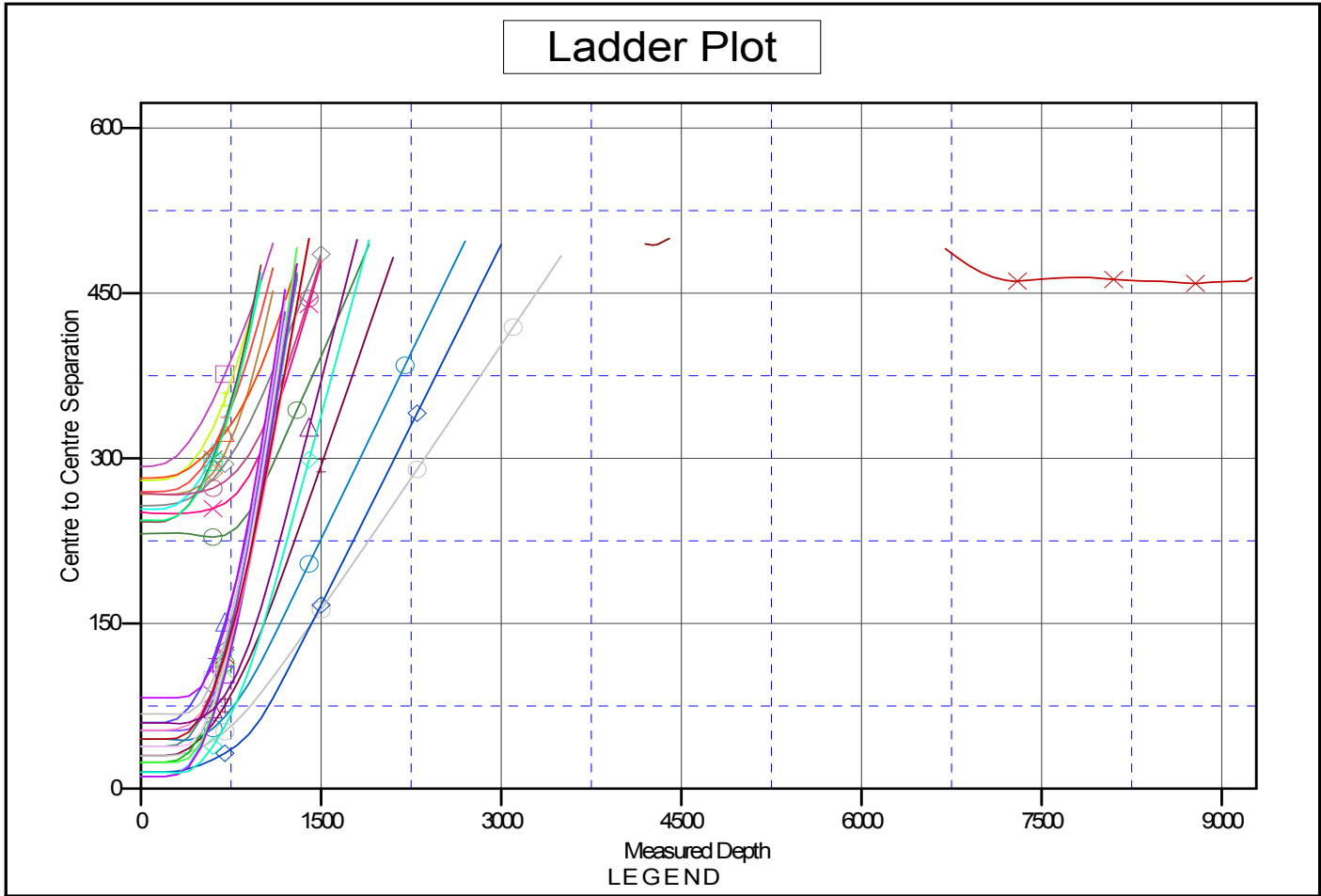
Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-128.75	-51.7	-64.4	82.6						
100.0	100.0	100.0	100.0	0.1	0.1	-128.75	-51.7	-64.4	82.6	82.4	0.27	303.458			
200.0	200.0	200.0	200.0	0.3	0.3	-128.75	-51.7	-64.4	82.6	82.0	0.62	132.976			
291.5	291.4	291.0	290.9	0.5	0.5	-82.70	-53.5	-63.2	82.5	81.6	0.95	86.428	CC		
300.0	300.0	299.4	299.4	0.5	0.5	-83.28	-53.9	-63.0	82.5	81.5	0.99	83.679	ES		
400.0	399.6	397.2	396.9	0.7	0.7	-93.57	-60.1	-58.7	84.1	82.7	1.42	59.326			
500.0	498.8	492.0	490.9	1.0	1.0	-108.27	-70.1	-51.8	92.4	90.5	1.91	48.250			
600.0	597.1	582.4	579.9	1.4	1.3	-122.94	-83.2	-42.9	112.5	110.1	2.40	46.935	SF		
700.0	694.3	667.5	662.8	1.8	1.7	-134.39	-98.7	-32.3	145.8	143.0	2.81	51.872			
800.0	790.2	746.3	738.9	2.4	2.1	-142.28	-115.7	-20.6	191.0	187.8	3.18	60.123			
900.0	884.4	818.6	807.8	3.0	2.5	-147.49	-133.6	-8.3	246.0	242.5	3.52	69.832			
1,000.0	976.8	883.9	869.4	3.7	2.9	-150.86	-151.7	4.0	309.3	305.4	3.87	79.818			
1,100.0	1,067.1	942.3	923.8	4.5	3.3	-153.27	-169.2	16.1	379.4	375.2	4.23	89.731			
1,200.0	1,156.7	1,000.0	976.8	5.4	3.7	-155.99	-187.9	28.9	453.3	448.8	4.51	100.434			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-12B
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-12B	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=22' @ 7126.0ft (Patterson #308) Coordinates are relative to: Shideler Fee 31-12B
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Central Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: -1.39°



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| Shideler Fee 6-3DD, DD, DD V0 | Shideler Federal 6-3-EX, Existing, Existing V0 | Shideler Fee 31-16D, OH, Plan #1 V0 |
| Shideler Fee 6-3AA, DD, FINAL V0 | Shideler Fee 31-5CC, DD, DD V0 | Shideler Fee 31-16DD, OH, Plan #1 V0 |
| Shideler Fee 31-13C, OH, FINAL V0 | Shideler 31-11D (K31E) (Existing), Existing, Existing V0 | Shideler Fee 6-1D, OH, Plan #1 V0 |
| Shideler Fee 31-13CC, OH, FINAL V0 | Shideler Fee 31-9D, OH, Plan #1 V0 | Shideler Fee 6-1AA, OH, Plan #1 V0 |
| Shideler Fee 31-15-EX, Existing, Existing V0 | Shideler Fee 31-10C, OH, Plan #1 V0 | Shideler Fee 6-8A, OH, Plan #1 V0 |
| Shideler Fee 6-6D, DD, DD V0 | Shideler Fee 31-13B, OH, Plan #1 V0 | Shideler Fee 6-1DD, OH, Plan #1 V0 |
| Shideler Fee 6-6A, DD, FINAL V0 | Shideler Fee 6-8AA, OH, Plan #1 V0 | Shideler Fee 31-16A, OH, Plan #1 V0 |
| Shideler Fee 6-7D, DD, DD V0 | Shideler Fee 31-13BB, OH, Plan #1 V0 | Shideler Fee 31-14D, OH, Plan #1 V0 |
| Shideler Fee 6-3A, DD, FINAL V0 | Shideler Fee 31-11C, OH, Plan #1 V0 | Shideler Fee 31-16AA, OH, Plan #1 V0 |
| Shideler Fee 6-3D, DD, DD V0 | Shideler Fee 6-8D, OH, Plan #1 V0 | Shideler Fee 31-14DD, OH, Plan #1 V0 |

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