

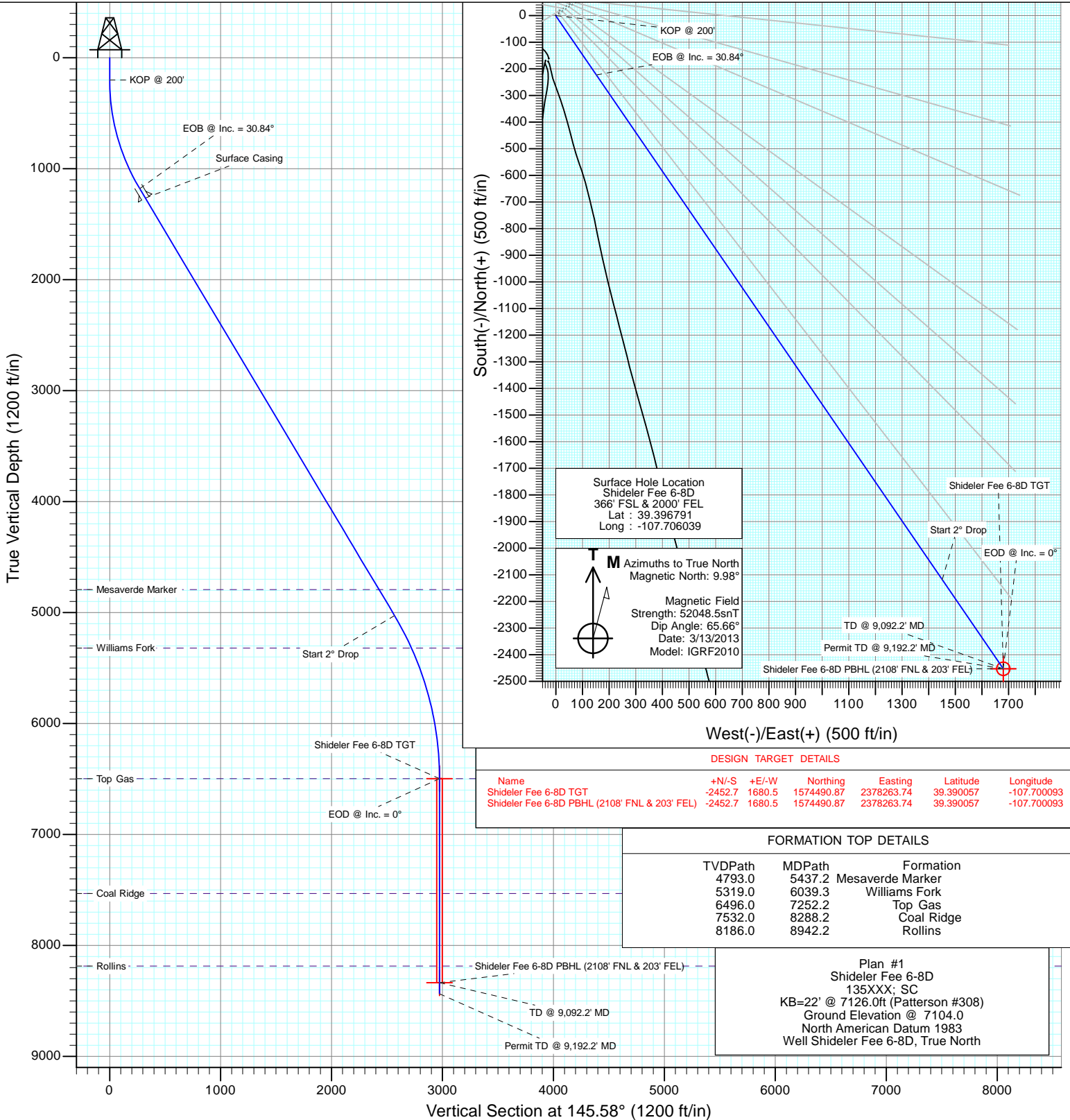


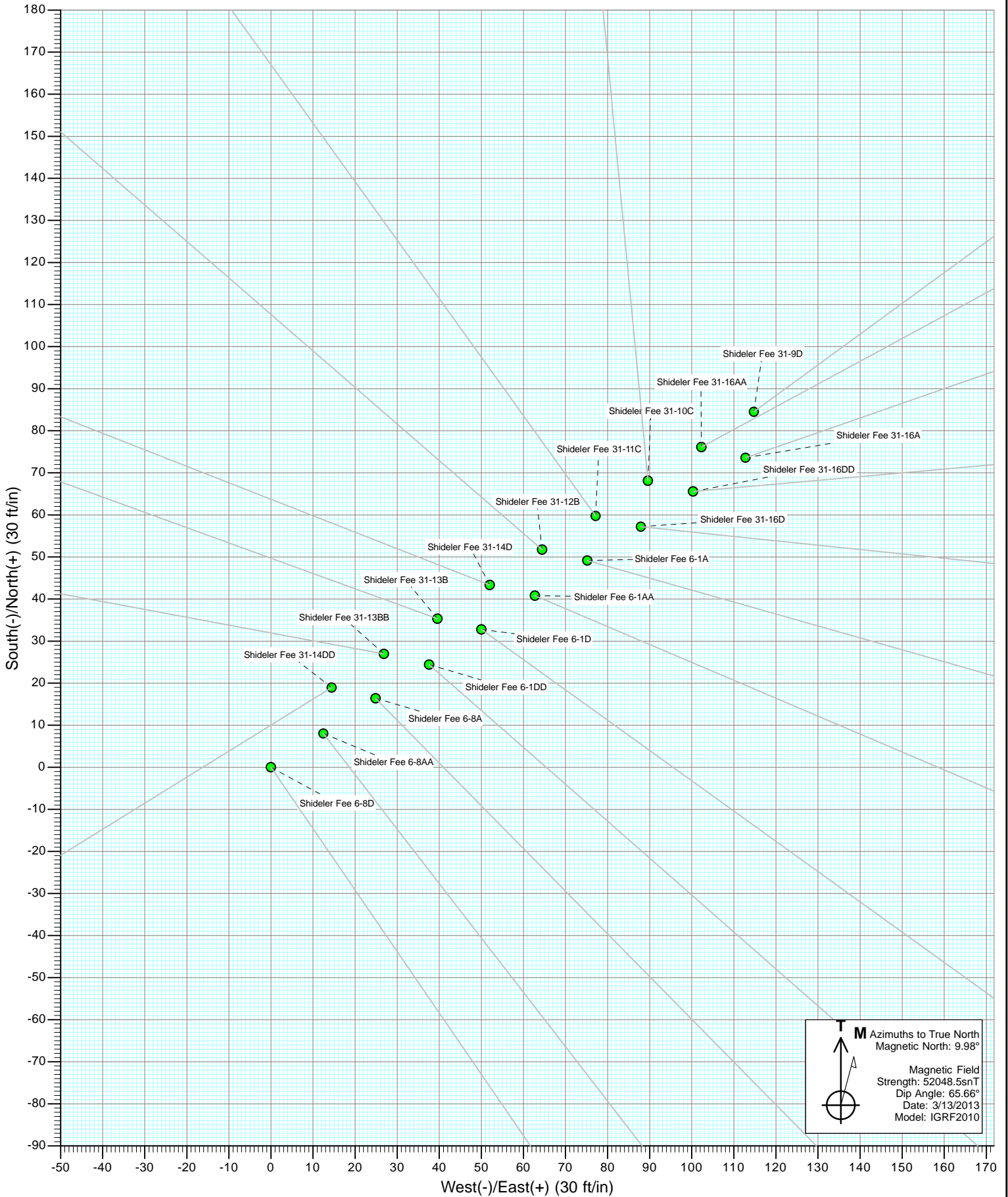
Project: Mamm Creek
 Site: O31E Pad (2nd Occupation)
 Well: Shideler Fee 6-8D
 Wellbore: OH
 Design: Plan #1

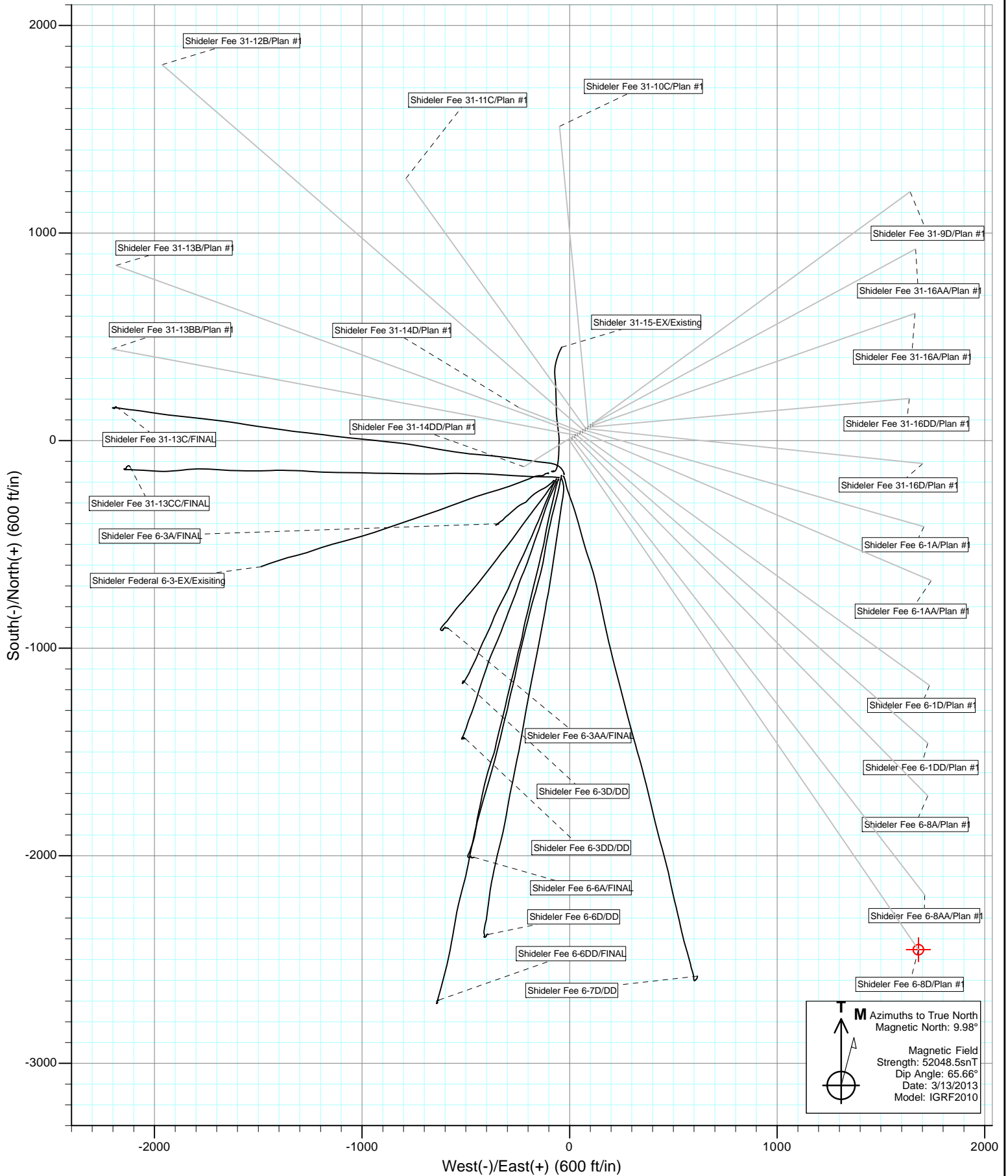


SECTION DETAILS

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	1228.1	30.84	145.58	1179.2	-222.8	152.7	3.00	145.58	270.1	
4	5710.1	30.84	145.58	5027.2	-2118.4	1451.5	0.00	0.00	2568.0	
5	7252.2	0.00	0.00	6496.0	-2452.7	1680.5	2.00	180.00	2973.1	Shideler Fee 6-8D TGT
6	9092.2	0.00	0.00	8336.0	-2452.7	1680.5	0.00	0.00	2973.1	Shideler Fee 6-8D PBHL (2108' FNL & 203' FEL)
7	9192.2	0.00	0.00	8436.0	-2452.7	1680.5	0.00	0.00	2973.1	

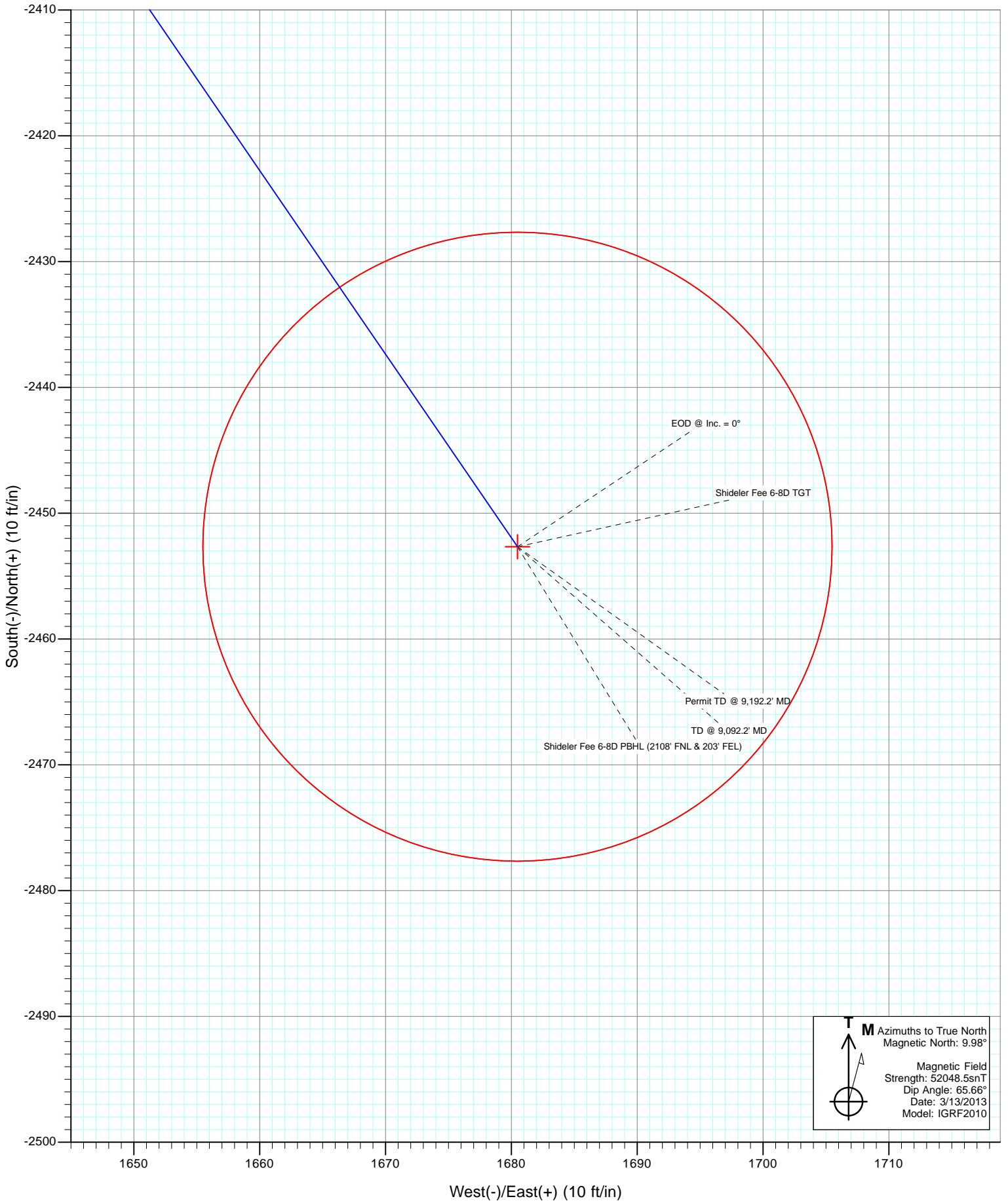








Project: Mamm Creek
Site: O31E Pad (2nd Occupation)
Well: Shideler Fee 6-8D
Wellbore: OH
Design: Plan #1



Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Shideler Fee 6-8D
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 6-8D	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 6-8D						
Well Position	+N/-S	0.0 ft	Northing:	1,576,983.62 ft	Latitude:	39.396791
	+E/-W	0.0 ft	Easting:	2,376,643.29 ft	Longitude:	-107.706039
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	145.58	

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	
1,228.1	30.84	145.58	1,179.2	-222.8	152.7	3.00	3.00	0.00	145.58	
5,710.1	30.84	145.58	5,027.2	-2,118.4	1,451.5	0.00	0.00	0.00	0.00	
7,252.2	0.00	0.00	6,496.0	-2,452.7	1,680.5	2.00	-2.00	0.00	180.00	Shideler Fee 6-8D TC
9,092.2	0.00	0.00	8,336.0	-2,452.7	1,680.5	0.00	0.00	0.00	0.00	Shideler Fee 6-8D PB
9,192.2	0.00	0.00	8,436.0	-2,452.7	1,680.5	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 6-8D
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 6-8D	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	145.58	300.0	-2.2	1.5	2.6	3.00	3.00	
400.0	6.00	145.58	399.6	-8.6	5.9	10.5	3.00	3.00	
500.0	9.00	145.58	498.8	-19.4	13.3	23.5	3.00	3.00	
600.0	12.00	145.58	597.1	-34.4	23.6	41.7	3.00	3.00	
700.0	15.00	145.58	694.3	-53.7	36.8	65.1	3.00	3.00	
800.0	18.00	145.58	790.2	-77.1	52.8	93.5	3.00	3.00	
900.0	21.00	145.58	884.4	-104.6	71.7	126.9	3.00	3.00	
1,000.0	24.00	145.58	976.8	-136.2	93.3	165.1	3.00	3.00	
1,100.0	27.00	145.58	1,067.1	-171.7	117.7	208.2	3.00	3.00	
1,200.0	30.00	145.58	1,154.9	-211.1	144.6	255.9	3.00	3.00	
1,228.1	30.84	145.58	1,179.2	-222.8	152.7	270.1	3.00	3.00	EOB @ Inc. = 30.84°
1,300.0	30.84	145.58	1,240.9	-253.2	173.5	307.0	0.00	0.00	
1,328.1	30.84	145.58	1,265.0	-265.1	181.6	321.4	0.00	0.00	Surface Casing
1,400.0	30.84	145.58	1,326.7	-295.5	202.5	358.2	0.00	0.00	
1,500.0	30.84	145.58	1,412.6	-337.8	231.5	409.5	0.00	0.00	
1,600.0	30.84	145.58	1,498.5	-380.1	260.4	460.8	0.00	0.00	
1,700.0	30.84	145.58	1,584.3	-422.4	289.4	512.0	0.00	0.00	
1,800.0	30.84	145.58	1,670.2	-464.7	318.4	563.3	0.00	0.00	
1,900.0	30.84	145.58	1,756.0	-507.0	347.4	614.6	0.00	0.00	
2,000.0	30.84	145.58	1,841.9	-549.3	376.4	665.9	0.00	0.00	
2,100.0	30.84	145.58	1,927.7	-591.6	405.3	717.1	0.00	0.00	
2,200.0	30.84	145.58	2,013.6	-633.9	434.3	768.4	0.00	0.00	
2,300.0	30.84	145.58	2,099.5	-676.2	463.3	819.7	0.00	0.00	
2,400.0	30.84	145.58	2,185.3	-718.5	492.3	870.9	0.00	0.00	
2,500.0	30.84	145.58	2,271.2	-760.8	521.2	922.2	0.00	0.00	
2,600.0	30.84	145.58	2,357.0	-803.1	550.2	973.5	0.00	0.00	
2,700.0	30.84	145.58	2,442.9	-845.3	579.2	1,024.7	0.00	0.00	
2,800.0	30.84	145.58	2,528.7	-887.6	608.2	1,076.0	0.00	0.00	
2,900.0	30.84	145.58	2,614.6	-929.9	637.2	1,127.3	0.00	0.00	
3,000.0	30.84	145.58	2,700.5	-972.2	666.1	1,178.5	0.00	0.00	
3,100.0	30.84	145.58	2,786.3	-1,014.5	695.1	1,229.8	0.00	0.00	
3,200.0	30.84	145.58	2,872.2	-1,056.8	724.1	1,281.1	0.00	0.00	
3,300.0	30.84	145.58	2,958.0	-1,099.1	753.1	1,332.4	0.00	0.00	
3,400.0	30.84	145.58	3,043.9	-1,141.4	782.1	1,383.6	0.00	0.00	
3,500.0	30.84	145.58	3,129.7	-1,183.7	811.0	1,434.9	0.00	0.00	
3,600.0	30.84	145.58	3,215.6	-1,226.0	840.0	1,486.2	0.00	0.00	
3,700.0	30.84	145.58	3,301.5	-1,268.3	869.0	1,537.4	0.00	0.00	
3,800.0	30.84	145.58	3,387.3	-1,310.6	898.0	1,588.7	0.00	0.00	
3,900.0	30.84	145.58	3,473.2	-1,352.9	927.0	1,640.0	0.00	0.00	
4,000.0	30.84	145.58	3,559.0	-1,395.2	955.9	1,691.2	0.00	0.00	
4,100.0	30.84	145.58	3,644.9	-1,437.5	984.9	1,742.5	0.00	0.00	
4,200.0	30.84	145.58	3,730.7	-1,479.8	1,013.9	1,793.8	0.00	0.00	
4,300.0	30.84	145.58	3,816.6	-1,522.1	1,042.9	1,845.1	0.00	0.00	
4,400.0	30.84	145.58	3,902.5	-1,564.3	1,071.8	1,896.3	0.00	0.00	
4,500.0	30.84	145.58	3,988.3	-1,606.6	1,100.8	1,947.6	0.00	0.00	
4,600.0	30.84	145.58	4,074.2	-1,648.9	1,129.8	1,998.9	0.00	0.00	
4,700.0	30.84	145.58	4,160.0	-1,691.2	1,158.8	2,050.1	0.00	0.00	
4,800.0	30.84	145.58	4,245.9	-1,733.5	1,187.8	2,101.4	0.00	0.00	
4,900.0	30.84	145.58	4,331.7	-1,775.8	1,216.7	2,152.7	0.00	0.00	

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 6-8D
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well Shideler Fee 6-8D
TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
MD Reference: KB=22' @ 7126.0ft (Patterson #308)
North Reference: True
Survey Calculation Method: Minimum Curvature

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	30.84	145.58	4,417.6	-1,818.1	1,245.7	2,203.9	0.00	0.00	
5,100.0	30.84	145.58	4,503.5	-1,860.4	1,274.7	2,255.2	0.00	0.00	
5,200.0	30.84	145.58	4,589.3	-1,902.7	1,303.7	2,306.5	0.00	0.00	
5,300.0	30.84	145.58	4,675.2	-1,945.0	1,332.7	2,357.7	0.00	0.00	
5,400.0	30.84	145.58	4,761.0	-1,987.3	1,361.6	2,409.0	0.00	0.00	
5,437.2	30.84	145.58	4,793.0	-2,003.0	1,372.4	2,428.1	0.00	0.00	Mesaverde Marker
5,500.0	30.84	145.58	4,846.9	-2,029.6	1,390.6	2,460.3	0.00	0.00	
5,600.0	30.84	145.58	4,932.7	-2,071.9	1,419.6	2,511.6	0.00	0.00	
5,700.0	30.84	145.58	5,018.6	-2,114.2	1,448.6	2,562.8	0.00	0.00	
5,710.1	30.84	145.58	5,027.2	-2,118.4	1,451.5	2,568.0	0.00	0.00	Start 2° Drop
5,800.0	29.04	145.58	5,105.2	-2,155.5	1,476.9	2,612.9	2.00	-2.00	
5,900.0	27.04	145.58	5,193.4	-2,194.2	1,503.4	2,659.9	2.00	-2.00	
6,000.0	25.04	145.58	5,283.3	-2,230.5	1,528.2	2,703.8	2.00	-2.00	
6,039.3	24.26	145.58	5,319.0	-2,244.0	1,537.5	2,720.2	2.00	-2.00	Williams Fork
6,100.0	23.04	145.58	5,374.6	-2,264.1	1,551.3	2,744.5	2.00	-2.00	
6,200.0	21.04	145.58	5,467.3	-2,295.0	1,572.5	2,782.1	2.00	-2.00	
6,300.0	19.04	145.58	5,561.2	-2,323.3	1,591.9	2,816.3	2.00	-2.00	
6,400.0	17.04	145.58	5,656.3	-2,348.9	1,609.4	2,847.3	2.00	-2.00	
6,500.0	15.04	145.58	5,752.4	-2,371.7	1,625.0	2,875.0	2.00	-2.00	
6,600.0	13.04	145.58	5,849.4	-2,391.7	1,638.7	2,899.2	2.00	-2.00	
6,700.0	11.04	145.58	5,947.2	-2,408.9	1,650.5	2,920.1	2.00	-2.00	
6,800.0	9.04	145.58	6,045.6	-2,423.3	1,660.4	2,937.5	2.00	-2.00	
6,900.0	7.04	145.58	6,144.7	-2,434.8	1,668.3	2,951.5	2.00	-2.00	
7,000.0	5.04	145.58	6,244.1	-2,443.5	1,674.2	2,962.1	2.00	-2.00	
7,100.0	3.04	145.58	6,343.8	-2,449.3	1,678.2	2,969.1	2.00	-2.00	
7,200.0	1.04	145.58	6,443.8	-2,452.3	1,680.2	2,972.7	2.00	-2.00	
7,252.2	0.00	0.00	6,496.0	-2,452.7	1,680.5	2,973.1	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
7,300.0	0.00	0.00	6,543.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
7,400.0	0.00	0.00	6,643.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
7,500.0	0.00	0.00	6,743.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
7,600.0	0.00	0.00	6,843.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
7,700.0	0.00	0.00	6,943.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
7,800.0	0.00	0.00	7,043.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
7,900.0	0.00	0.00	7,143.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,000.0	0.00	0.00	7,243.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,100.0	0.00	0.00	7,343.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,200.0	0.00	0.00	7,443.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,288.2	0.00	0.00	7,532.0	-2,452.7	1,680.5	2,973.1	0.00	0.00	Coal Ridge
8,300.0	0.00	0.00	7,543.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,400.0	0.00	0.00	7,643.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,500.0	0.00	0.00	7,743.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,600.0	0.00	0.00	7,843.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,700.0	0.00	0.00	7,943.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,800.0	0.00	0.00	8,043.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,900.0	0.00	0.00	8,143.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
8,942.2	0.00	0.00	8,186.0	-2,452.7	1,680.5	2,973.1	0.00	0.00	Rollins
9,000.0	0.00	0.00	8,243.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
9,092.2	0.00	0.00	8,336.0	-2,452.7	1,680.5	2,973.1	0.00	0.00	TD @ 9,092.2' MD
9,100.0	0.00	0.00	8,343.8	-2,452.7	1,680.5	2,973.1	0.00	0.00	
9,192.2	0.00	0.00	8,436.0	-2,452.7	1,680.5	2,973.1	0.00	0.00	Permit TD @ 9,192.2' MD

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 6-8D
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 6-8D	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Shideler Fee 6-8D TGT - plan hits target center - Point	0.00	0.00	6,496.0	-2,452.7	1,680.5	1,574,490.87	2,378,263.74	39.390057	-107.700093
Shideler Fee 6-8D PBHL - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,336.0	-2,452.7	1,680.5	1,574,490.87	2,378,263.74	39.390057	-107.700093

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,328.1	1,265.0	Surface Casing		

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,437.2	4,793.0	Mesaverde Marker			
6,039.3	5,319.0	Williams Fork			
7,252.2	6,496.0	Top Gas			
8,288.2	7,532.0	Coal Ridge			
8,942.2	8,186.0	Rollins			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)		
200.0	200.0	0.0	0.0	KOP @ 200'	
1,228.1	1,179.2	-222.8	152.7	EOB @ Inc. = 30.84°	
5,710.1	5,027.2	-2,118.4	1,451.5	Start 2° Drop	
7,252.2	6,496.0	-2,452.7	1,680.5	EOD @ Inc. = 0°	
9,092.2	8,336.0	-2,452.7	1,680.5	TD @ 9,092.2' MD	
9,192.2	8,436.0	-2,452.7	1,680.5	Permit TD @ 9,192.2' MD	

EnCana Oil & Gas (USA) Inc

Mamm Creek

O31E Pad (2nd Occupation)

Shideler Fee 6-8D

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 6-8D
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 6-8D	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	9,192.2	Plan #1 (OH)	MWD	Geolink MWD	

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Reference Well:	Shideler Fee 6-8D	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						
Shideler 31-15-EX - Existing - Existing	758.7	730.2	146.7	144.0	53.119	CC, ES
Shideler 31-15-EX - Existing - Existing	1,000.0	955.5	171.7	167.5	41.170	SF
Shideler Federal 6-3-EX - Existing - Existing	683.2	653.7	175.9	173.6	76.382	CC
Shideler Federal 6-3-EX - Existing - Existing	700.0	669.7	176.0	173.6	73.506	ES
Shideler Federal 6-3-EX - Existing - Existing	1,100.0	1,038.0	233.6	228.8	48.611	SF
Shideler Fee 31-13C - OH - FINAL	712.3	708.6	110.7	107.4	33.661	CC, ES
Shideler Fee 31-13C - OH - FINAL	800.0	781.2	119.1	115.1	30.129	SF
Shideler Fee 31-13CC - OH - FINAL	538.8	528.3	178.0	176.0	85.279	CC, ES
Shideler Fee 31-13CC - OH - FINAL	900.0	836.9	230.0	225.4	50.370	SF
Shideler Fee 6-3A - DD - FINAL	752.2	736.2	203.1	199.8	61.403	CC, ES
Shideler Fee 6-3A - DD - FINAL	1,200.0	1,145.4	261.8	254.9	38.019	SF
Shideler Fee 6-3AA - DD - FINAL	0.0	0.0	218.3			
Shideler Fee 6-3AA - DD - FINAL	1,500.0	1,389.4	413.2	402.7	39.460	SF
Shideler Fee 6-3D - DD - DD	365.4	358.5	196.2	195.0	161.837	CC
Shideler Fee 6-3D - DD - DD	400.0	390.4	196.2	194.9	146.391	ES
Shideler Fee 6-3D - DD - DD	1,400.0	1,317.1	334.8	324.9	33.749	SF
Shideler Fee 6-3DD - DD - DD	0.0	3.0	207.1			
Shideler Fee 6-3DD - DD - DD	100.0	102.3	207.3	207.0	741.713	ES
Shideler Fee 6-3DD - DD - DD	1,600.0	1,487.9	409.1	396.3	32.045	SF
Shideler Fee 6-6A - DD - FINAL	697.3	677.2	176.4	173.6	61.769	CC
Shideler Fee 6-6A - DD - FINAL	700.0	679.6	176.4	173.5	61.413	ES
Shideler Fee 6-6A - DD - FINAL	1,800.0	1,685.3	440.1	424.6	28.403	SF
Shideler Fee 6-6D - DD - DD	129.6	132.7	184.0	183.6	483.020	CC, ES
Shideler Fee 6-6D - DD - DD	2,000.0	1,850.6	486.2	465.4	23.418	SF
Shideler Fee 6-6DD - DD - FINAL	152.8	155.8	173.6	173.1	375.782	CC
Shideler Fee 6-6DD - DD - FINAL	200.0	201.4	173.7	173.1	278.535	ES
Shideler Fee 6-6DD - DD - FINAL	1,800.0	1,646.4	484.8	467.1	27.396	SF
Shideler Fee 6-7D - DD - DD	137.9	137.9	174.3	173.9	425.117	CC, ES
Shideler Fee 6-7D - DD - DD	3,200.0	3,087.7	498.8	455.7	11.575	SF

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)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8D	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	112.5	111.9	181.115	CC, ES
Shideler Fee 31-10C - OH - Plan #1	600.0	575.3	150.3	148.0	64.606	SF
Shideler Fee 31-11C - OH - Plan #1	200.0	200.0	97.6	96.9	157.034	CC
Shideler Fee 31-11C - OH - Plan #1	300.0	299.8	97.8	96.8	99.897	ES
Shideler Fee 31-11C - OH - Plan #1	600.0	585.6	124.2	121.9	52.635	SF
Shideler Fee 31-12B - OH - Plan #1	290.9	291.4	82.5	81.6	86.441	CC
Shideler Fee 31-12B - OH - Plan #1	300.0	300.5	82.5	81.5	83.495	ES
Shideler Fee 31-12B - OH - Plan #1	600.0	586.5	113.1	110.7	47.367	SF
Shideler Fee 31-13B - OH - Plan #1	338.9	340.1	52.1	51.0	45.162	CC, ES
Shideler Fee 31-13B - OH - Plan #1	500.0	497.3	62.8	61.0	33.472	SF
Shideler Fee 31-13BB - OH - Plan #1	200.0	200.0	38.0	37.4	61.227	CC, ES
Shideler Fee 31-13BB - OH - Plan #1	500.0	498.7	48.1	46.4	27.309	SF
Shideler Fee 31-14D - OH - Plan #1	200.0	200.0	67.7	67.1	108.949	CC
Shideler Fee 31-14D - OH - Plan #1	300.0	300.0	68.0	67.0	69.470	ES
Shideler Fee 31-14D - OH - Plan #1	600.0	596.9	82.9	80.6	36.876	SF
Shideler Fee 31-14DD - OH - Plan #1	200.0	200.0	23.8	23.2	38.305	CC, ES
Shideler Fee 31-14DD - OH - Plan #1	400.0	400.5	27.0	25.6	19.954	SF
Shideler Fee 31-16A - OH - Plan #1	307.7	307.7	134.6	133.6	133.406	CC
Shideler Fee 31-16A - OH - Plan #1	400.0	399.6	134.8	133.4	98.161	ES
Shideler Fee 31-16A - OH - Plan #1	1,200.0	1,110.6	342.8	335.6	47.717	SF
Shideler Fee 31-16AA - OH - Plan #1	200.0	200.0	127.5	126.9	205.228	CC
Shideler Fee 31-16AA - OH - Plan #1	300.0	300.0	127.6	126.7	130.407	ES
Shideler Fee 31-16AA - OH - Plan #1	1,300.0	1,172.7	434.1	426.0	53.307	SF
Shideler Fee 31-16D - OH - Plan #1	297.8	297.7	104.8	103.9	107.968	CC
Shideler Fee 31-16D - OH - Plan #1	300.0	300.0	104.8	103.8	107.089	ES
Shideler Fee 31-16D - OH - Plan #1	1,300.0	1,243.8	308.1	298.8	33.008	SF
Shideler Fee 31-16DD - OH - Plan #1	300.0	300.0	119.8	118.8	122.384	CC, ES
Shideler Fee 31-16DD - OH - Plan #1	1,400.0	1,313.6	394.5	384.5	39.228	SF
Shideler Fee 31-9D - OH - Plan #1	200.0	200.0	142.5	141.9	229.339	CC, ES
Shideler Fee 31-9D - OH - Plan #1	1,300.0	1,143.4	489.3	481.2	60.902	SF
Shideler Fee 6-1A - OH - Plan #1	285.9	285.8	89.8	88.9	96.764	CC
Shideler Fee 6-1A - OH - Plan #1	300.0	300.0	89.8	88.8	91.744	ES
Shideler Fee 6-1A - OH - Plan #1	1,300.0	1,261.9	264.3	254.8	27.915	SF
Shideler Fee 6-1AA - OH - Plan #1	283.1	283.1	74.8	73.9	81.484	CC
Shideler Fee 6-1AA - OH - Plan #1	300.0	300.0	74.8	73.8	76.432	ES
Shideler Fee 6-1AA - OH - Plan #1	1,200.0	1,177.9	199.7	191.0	22.962	SF
Shideler Fee 6-1D - OH - Plan #1	268.6	268.5	59.8	58.9	69.050	CC
Shideler Fee 6-1D - OH - Plan #1	300.0	300.0	59.8	58.8	61.100	ES
Shideler Fee 6-1D - OH - Plan #1	1,300.0	1,290.2	163.9	153.5	15.683	SF
Shideler Fee 6-1DD - OH - Plan #1	262.8	262.8	44.8	44.0	53.003	CC
Shideler Fee 6-1DD - OH - Plan #1	300.0	299.8	44.9	43.9	45.835	ES
Shideler Fee 6-1DD - OH - Plan #1	1,200.0	1,197.7	109.1	99.7	11.529	SF
Shideler Fee 6-8A - OH - Plan #1	239.3	239.3	29.8	29.0	39.130	CC
Shideler Fee 6-8A - OH - Plan #1	300.0	299.9	29.9	28.9	30.565	ES
Shideler Fee 6-8A - OH - Plan #1	1,200.0	1,200.4	76.7	66.9	7.842	SF
Shideler Fee 6-8AA - OH - Plan #1	205.1	205.1	14.8	14.2	23.141	CC
Shideler Fee 6-8AA - OH - Plan #1	300.0	300.0	14.9	13.9	15.169	ES
Shideler Fee 6-8AA - OH - Plan #1	1,400.0	1,402.1	39.4	26.6	3.085	SF

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

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Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8D	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			Highside		Distance		Total	Separation	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-150.06	-148.5	-85.5	172.8						
100.0	100.0	78.1	78.1	0.1	0.1	-150.14	-148.6	-85.3	171.4	171.2	0.20	838.338			
200.0	200.0	178.3	178.3	0.3	0.2	-150.38	-148.9	-84.6	171.3	170.8	0.47	367.111			
300.0	300.0	278.2	278.2	0.5	0.2	64.52	-149.2	-83.7	169.9	169.2	0.74	230.879			
400.0	399.6	378.3	378.2	0.7	0.3	66.45	-150.0	-82.0	166.5	165.4	1.04	160.266			
500.0	498.8	478.5	478.5	1.0	0.4	70.16	-150.5	-80.0	160.9	159.5	1.40	114.781			
600.0	597.1	578.5	578.4	1.4	0.5	76.45	-149.7	-78.4	154.0	152.1	1.85	83.161			
700.0	694.3	675.0	674.9	1.8	0.6	85.46	-147.6	-77.6	148.0	145.6	2.40	61.743			
758.7	750.8	730.2	730.1	2.1	0.6	91.75	-146.3	-77.5	146.7	144.0	2.76	53.119 CC, ES			
800.0	790.2	768.5	768.4	2.3	0.7	96.41	-145.7	-77.7	147.4	144.4	3.01	48.992			
900.0	884.4	862.2	862.1	3.0	0.8	108.08	-145.1	-78.2	155.3	151.7	3.62	42.861			
1,000.0	976.8	955.5	955.4	3.7	0.8	119.14	-145.5	-78.1	171.7	167.5	4.17	41.170 SF			
1,100.0	1,067.1	1,046.9	1,046.8	4.5	0.9	128.75	-146.4	-77.5	196.8	192.2	4.62	42.575			
1,200.0	1,154.9	1,135.1	1,134.9	5.4	1.0	136.58	-147.3	-76.8	230.5	225.5	5.00	46.092			
1,300.0	1,240.9	1,220.2	1,220.1	6.3	1.1	143.30	-147.7	-76.5	271.3	266.1	5.26	51.564			
1,400.0	1,326.7	1,307.6	1,307.5	7.3	1.1	148.72	-148.1	-76.0	315.1	309.7	5.46	57.758			
1,500.0	1,412.6	1,394.3	1,394.1	8.2	1.2	152.84	-148.5	-75.3	360.5	354.9	5.63	63.993			
1,600.0	1,498.5	1,481.0	1,480.9	9.1	1.3	156.13	-148.7	-74.4	407.0	401.2	5.80	70.172			
1,700.0	1,584.3	1,566.7	1,566.5	10.1	1.4	158.81	-148.5	-73.1	454.4	448.4	5.96	76.216			

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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: 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	-146.89	-157.7	-102.8	189.5						
100.0	100.0	78.9	78.9	0.1	0.1	-146.93	-157.6	-102.6	188.0	187.8	0.21	917.259			
200.0	200.0	179.1	179.1	0.3	0.2	-147.02	-157.3	-102.0	187.5	187.0	0.47	401.409			
300.0	300.0	277.8	277.8	0.5	0.2	68.16	-157.0	-101.9	186.1	185.4	0.73	253.247			
400.0	399.6	376.9	376.9	0.7	0.3	70.64	-157.0	-102.4	183.7	182.6	1.04	177.030			
500.0	498.8	475.7	475.7	1.0	0.4	74.82	-156.9	-103.2	180.2	178.8	1.40	128.472			
600.0	597.1	573.5	573.5	1.4	0.5	80.75	-156.9	-104.3	177.1	175.2	1.85	95.543			
683.2	678.1	653.7	653.7	1.7	0.6	86.89	-157.1	-105.3	175.9	173.6	2.30	76.382	CC		
700.0	694.3	669.7	669.7	1.8	0.6	88.26	-157.1	-105.6	176.0	173.6	2.39	73.506	ES		
800.0	790.2	764.2	764.1	2.3	0.7	97.02	-157.4	-107.4	179.3	176.3	3.00	59.689			
900.0	884.4	857.1	857.0	3.0	0.8	106.35	-158.0	-109.8	189.3	185.6	3.64	52.020			
1,000.0	976.8	948.2	948.1	3.7	0.8	115.42	-158.6	-112.6	207.2	203.0	4.25	48.779			
1,100.0	1,067.1	1,038.0	1,037.8	4.5	0.9	123.61	-159.4	-115.5	233.6	228.8	4.81	48.611	SF		
1,200.0	1,154.9	1,126.7	1,126.5	5.4	1.0	130.65	-160.5	-118.1	267.6	262.3	5.31	50.445			
1,300.0	1,240.9	1,214.1	1,213.9	6.3	1.1	137.01	-162.0	-120.3	307.7	302.0	5.69	54.067			
1,400.0	1,326.7	1,301.6	1,301.3	7.3	1.2	142.21	-163.6	-122.1	350.4	344.4	6.00	58.394			
1,500.0	1,412.6	1,387.0	1,386.7	8.2	1.2	146.27	-165.2	-123.7	394.9	388.6	6.28	62.915			
1,600.0	1,498.5	1,471.4	1,471.0	9.1	1.3	149.53	-166.5	-125.4	441.1	434.6	6.53	67.519			
1,700.0	1,584.3	1,553.8	1,553.4	10.1	1.4	152.14	-167.6	-127.5	488.7	481.9	6.78	72.064			

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)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8D	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	-170.75	-161.4	-26.3	163.5						
100.0	100.0	102.5	102.5	0.1	0.1	-170.75	-161.5	-26.3	163.7	163.4	0.28	585.392			
200.0	200.0	203.3	203.3	0.3	0.3	-170.74	-161.7	-26.4	163.9	163.2	0.63	261.325			
300.0	300.0	305.3	305.3	0.5	0.5	44.45	-161.1	-26.4	161.4	160.4	0.98	164.098			
400.0	399.6	411.1	411.0	0.7	0.7	47.45	-157.0	-27.4	152.3	151.0	1.37	111.325			
500.0	498.8	513.0	512.5	1.0	0.9	54.11	-148.8	-30.7	137.1	135.3	1.81	75.564			
600.0	597.1	608.4	607.2	1.4	1.1	65.45	-138.8	-36.4	120.6	118.2	2.40	50.199			
700.0	694.3	698.1	695.9	1.8	1.4	82.00	-128.6	-44.9	110.8	107.6	3.18	34.830			
712.3	706.2	708.6	706.2	1.9	1.4	84.26	-127.4	-46.2	110.7	107.4	3.29	33.661	CC, ES		
800.0	790.2	781.2	777.6	2.3	1.7	100.36	-119.7	-57.3	119.1	115.1	3.95	30.129	SF		
900.0	884.4	860.9	855.4	3.0	1.9	115.13	-113.3	-73.1	148.6	144.0	4.53	32.829			
1,000.0	976.8	937.0	929.3	3.7	2.3	124.80	-109.1	-90.8	192.9	187.9	4.98	38.705			
1,100.0	1,067.1	1,012.4	1,002.0	4.5	2.6	131.10	-106.4	-110.6	247.0	241.6	5.43	45.470			
1,200.0	1,154.9	1,080.0	1,066.6	5.4	2.9	134.78	-104.3	-130.3	308.7	302.7	5.95	51.900			
1,300.0	1,240.9	1,141.1	1,124.6	6.3	3.3	138.23	-102.1	-149.5	376.1	369.7	6.41	58.698			
1,400.0	1,326.7	1,196.4	1,176.5	7.3	3.7	140.89	-99.6	-168.6	446.7	439.9	6.85	65.166			

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 6-8D
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 6-8D	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				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	-163.86	-177.8	-51.4	185.1						
100.0	100.0	102.5	102.5	0.1	0.1	-163.83	-177.9	-51.6	185.2	184.9	0.28	662.247			
200.0	200.0	202.1	202.1	0.3	0.3	-163.81	-178.3	-51.8	185.6	185.0	0.63	296.984			
300.0	300.0	301.6	301.6	0.5	0.5	52.06	-178.2	-54.4	184.7	183.7	0.98	187.998			
400.0	399.6	399.6	399.3	0.7	0.7	56.13	-177.0	-61.0	181.2	179.9	1.38	131.194			
500.0	498.8	492.2	491.3	1.0	0.9	62.59	-176.1	-71.2	178.3	176.5	1.86	95.860			
538.8	537.0	528.3	527.1	1.1	1.0	65.72	-175.9	-76.2	178.0	176.0	2.09	85.279 CC, ES			
600.0	597.1	584.4	582.5	1.4	1.2	71.23	-175.6	-85.0	179.0	176.5	2.45	72.934			
700.0	694.3	673.4	670.0	1.8	1.5	81.17	-175.0	-101.3	185.8	182.7	3.14	59.256			
800.0	790.2	757.4	752.0	2.3	1.9	91.04	-174.5	-119.6	202.2	198.4	3.85	52.516			
900.0	884.4	836.9	828.8	3.0	2.2	99.86	-174.0	-139.6	230.0	225.4	4.57	50.370 SF			
1,000.0	976.8	912.1	901.0	3.7	2.6	107.12	-173.5	-160.9	268.8	263.5	5.27	50.993			
1,100.0	1,067.1	978.5	964.1	4.5	3.1	112.31	-173.1	-181.7	317.6	311.6	6.00	52.920			
1,200.0	1,154.9	1,037.5	1,019.2	5.4	3.4	115.91	-172.1	-202.5	375.9	369.1	6.78	55.461			
1,300.0	1,240.9	1,103.1	1,080.1	6.3	3.9	120.77	-170.6	-227.0	440.5	433.1	7.42	59.333			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8D
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 6-8D	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
O31E Pad - Shideler Fee 6-3A - DD - FINAL															
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	-158.58	-193.1	-75.7	207.4						
100.0	100.0	102.4	102.4	0.1	0.1	-158.56	-193.2	-75.8	207.5	207.3	0.28	742.755			
200.0	200.0	200.7	200.7	0.3	0.3	-158.41	-193.6	-76.6	208.3	207.6	0.62	334.559			
278.4	278.4	277.4	277.4	0.5	0.4	56.57	-194.3	-77.7	208.4	207.5	0.90	231.930			
300.0	300.0	295.0	295.0	0.5	0.5	56.82	-194.5	-78.0	208.3	207.4	0.97	215.088			
395.2	394.9	387.0	386.9	0.7	0.7	58.91	-197.2	-81.0	208.1	206.8	1.33	156.541			
400.0	399.6	391.5	391.4	0.7	0.7	59.04	-197.3	-81.2	208.1	206.8	1.35	154.420			
500.0	498.8	489.4	489.1	1.0	0.9	62.67	-201.6	-85.4	207.6	205.8	1.79	116.289			
600.0	597.1	589.4	588.9	1.4	1.1	67.76	-205.6	-89.7	205.6	203.3	2.31	89.046			
700.0	694.3	686.2	685.6	1.8	1.2	74.09	-209.4	-93.8	203.5	200.6	2.93	69.453			
752.2	744.6	736.2	735.5	2.1	1.3	77.95	-211.2	-96.1	203.1	199.8	3.31	61.403 CC, ES			
800.0	790.2	781.6	780.8	2.3	1.4	81.80	-212.8	-98.4	203.6	199.9	3.66	55.640			
900.0	884.4	875.8	874.8	3.0	1.6	90.48	-216.2	-103.0	207.7	203.2	4.47	46.474			
1,000.0	976.8	968.2	967.1	3.7	1.8	99.50	-219.7	-107.4	217.8	212.5	5.31	40.999			
1,100.0	1,067.1	1,058.2	1,056.9	4.5	2.0	108.33	-222.6	-111.9	235.5	229.4	6.13	38.420			
1,200.0	1,154.9	1,145.4	1,144.0	5.4	2.2	116.34	-225.3	-116.4	261.8	254.9	6.89	38.019 SF			
1,300.0	1,240.9	1,233.3	1,231.7	6.3	2.3	124.03	-228.1	-120.6	295.5	288.0	7.50	39.401			
1,400.0	1,326.7	1,322.9	1,321.2	7.3	2.5	130.68	-230.7	-124.0	333.0	325.0	7.99	41.696			
1,500.0	1,412.6	1,403.4	1,401.6	8.2	2.7	135.62	-232.5	-126.9	373.8	365.4	8.42	44.397			
1,600.0	1,498.5	1,486.9	1,484.9	9.1	2.8	139.87	-233.9	-131.0	418.2	409.4	8.79	47.567			
1,700.0	1,584.3	1,569.7	1,567.7	10.1	3.0	143.32	-235.5	-135.1	464.3	455.2	9.14	50.775			

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 6-8D
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 6-8D	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	-159.39	-204.3	-76.9	218.3						
100.0	100.0	97.7	97.7	0.1	0.1	-159.36	-204.8	-77.1	218.8	218.6	0.27	801.607			
200.0	200.0	190.5	190.4	0.3	0.3	-159.21	-206.7	-78.5	221.3	220.7	0.61	365.330			
300.0	300.0	280.3	280.1	0.5	0.5	56.02	-211.4	-82.2	226.3	225.3	0.94	239.522			
400.0	399.6	371.4	370.6	0.7	0.7	58.03	-219.6	-88.5	233.0	231.6	1.32	176.960			
500.0	498.8	463.8	462.0	1.0	1.0	60.94	-230.1	-96.1	240.2	238.5	1.74	137.952			
600.0	597.1	557.0	553.9	1.4	1.3	64.70	-242.7	-105.2	248.7	246.4	2.24	110.934			
700.0	694.3	655.8	651.2	1.8	1.6	69.36	-257.0	-114.8	257.2	254.4	2.85	90.205			
800.0	790.2	755.6	749.8	2.3	2.0	75.00	-269.7	-124.4	264.9	261.3	3.58	73.892			
900.0	884.4	852.0	845.1	3.0	2.3	81.07	-281.4	-132.9	273.2	268.8	4.44	61.543			
1,000.0	976.8	945.8	937.8	3.7	2.5	87.42	-292.5	-141.0	284.4	278.9	5.41	52.597			
1,100.0	1,067.1	1,037.5	1,028.6	4.5	2.8	93.93	-303.1	-149.0	299.7	293.2	6.46	46.396			
1,200.0	1,154.9	1,125.6	1,115.7	5.4	3.1	100.14	-313.3	-156.6	320.5	312.9	7.55	42.444			
1,300.0	1,240.9	1,211.9	1,201.2	6.3	3.4	106.47	-323.1	-164.5	347.5	338.9	8.60	40.409			
1,400.0	1,326.7	1,300.9	1,289.2	7.3	3.6	112.33	-333.5	-172.6	378.9	369.3	9.57	39.572			
1,500.0	1,412.6	1,389.4	1,376.7	8.2	3.9	117.30	-343.9	-180.1	413.2	402.7	10.47	39.460 SF			
1,600.0	1,498.5	1,475.6	1,462.0	9.1	4.2	121.50	-353.8	-187.5	450.2	438.9	11.29	39.863			
1,700.0	1,584.3	1,562.8	1,548.3	10.1	4.4	125.16	-363.7	-195.2	489.5	477.4	12.06	40.587			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8D
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 6-8D	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	-161.18	-185.8	-63.3	196.3						
100.0	100.0	102.4	102.4	0.1	0.1	-161.16	-185.9	-63.4	196.4	196.1	0.28	702.719			
200.0	200.0	202.1	202.1	0.3	0.3	-161.16	-186.2	-63.5	196.7	196.1	0.63	314.722			
300.0	300.0	297.9	297.9	0.5	0.5	53.92	-187.2	-64.2	196.4	195.4	0.97	202.021			
365.4	365.2	358.5	358.5	0.6	0.6	55.15	-189.0	-65.6	196.2	195.0	1.21	161.837 CC			
400.0	399.6	390.4	390.2	0.7	0.7	56.01	-190.5	-66.7	196.2	194.9	1.34	146.391 ES			
500.0	498.8	480.5	480.0	1.0	0.8	59.21	-197.3	-71.0	198.0	196.3	1.76	112.650			
600.0	597.1	571.0	569.8	1.4	1.1	63.30	-207.6	-76.4	202.3	200.0	2.25	89.736			
700.0	694.3	664.4	661.9	1.8	1.4	68.20	-221.1	-82.8	208.7	205.8	2.86	72.955			
800.0	790.2	760.4	756.4	2.3	1.7	73.73	-236.9	-89.0	216.8	213.2	3.60	60.195			
900.0	884.4	854.6	849.0	3.0	2.0	79.80	-253.1	-95.4	226.8	222.3	4.48	50.648			
1,000.0	976.8	948.6	941.3	3.7	2.3	86.42	-269.2	-102.4	239.8	234.3	5.48	43.719			
1,100.0	1,067.1	1,041.8	1,032.9	4.5	2.7	93.20	-285.3	-109.6	256.8	250.2	6.59	38.943			
1,200.0	1,154.9	1,133.0	1,122.4	5.4	3.0	99.68	-301.4	-116.1	278.2	270.5	7.75	35.878			
1,300.0	1,240.9	1,222.4	1,210.2	6.3	3.3	106.10	-317.3	-122.6	304.8	296.0	8.88	34.347			
1,400.0	1,326.7	1,317.1	1,303.1	7.3	3.7	112.11	-334.0	-129.0	334.8	324.9	9.92	33.749 SF			
1,500.0	1,412.6	1,404.3	1,389.0	8.2	4.0	116.93	-348.5	-134.3	366.9	356.0	10.86	33.773			
1,600.0	1,498.5	1,494.0	1,477.3	9.1	4.3	121.17	-363.1	-140.5	402.0	390.3	11.74	34.247			
1,700.0	1,584.3	1,585.5	1,567.4	10.1	4.6	124.86	-377.8	-146.3	438.4	425.9	12.55	34.930			
1,800.0	1,670.2	1,669.8	1,650.5	11.0	4.9	127.83	-390.9	-151.7	476.4	463.1	13.32	35.765			

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 6-8D
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 6-8D	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	-161.79	-196.7	-64.7	207.1						
100.0	100.0	102.3	102.3	0.1	0.1	-161.83	-196.9	-64.6	207.3	207.0	0.28	741.713 ES			
200.0	200.0	200.4	200.4	0.3	0.3	-161.98	-197.9	-64.4	208.1	207.5	0.62	334.037			
300.0	300.0	292.6	292.6	0.5	0.5	52.87	-200.6	-65.0	209.6	208.6	0.96	217.564			
400.0	399.6	384.0	383.7	0.7	0.7	54.44	-206.5	-67.3	211.8	210.5	1.33	159.507			
500.0	498.8	474.2	473.4	1.0	0.9	56.94	-215.8	-70.9	215.5	213.8	1.74	123.769			
600.0	597.1	566.3	564.5	1.4	1.2	60.40	-228.4	-75.9	220.9	218.6	2.24	98.775			
700.0	694.3	653.5	650.1	1.8	1.5	64.43	-243.2	-82.2	228.7	225.8	2.82	80.952			
800.0	790.2	746.1	740.6	2.3	1.9	69.32	-261.7	-90.5	239.5	236.0	3.55	67.393			
900.0	884.4	844.6	836.5	3.0	2.3	75.01	-281.8	-99.1	251.3	246.8	4.45	56.441			
1,000.0	976.8	940.2	929.9	3.7	2.6	80.87	-301.3	-106.5	264.0	258.5	5.50	47.983			
1,100.0	1,067.1	1,033.8	1,021.2	4.5	3.0	86.82	-320.6	-113.3	279.1	272.4	6.69	41.743			
1,200.0	1,154.9	1,125.0	1,110.0	5.4	3.4	92.63	-340.0	-119.8	298.1	290.1	7.97	37.414			
1,300.0	1,240.9	1,215.5	1,198.1	6.3	3.8	98.61	-359.8	-126.2	321.4	312.1	9.25	34.734			
1,400.0	1,326.7	1,305.8	1,286.0	7.3	4.2	103.98	-379.6	-132.6	348.3	337.8	10.49	33.210			
1,500.0	1,412.6	1,399.1	1,376.7	8.2	4.6	108.74	-400.3	-139.1	377.8	366.2	11.67	32.376			
1,600.0	1,498.5	1,487.9	1,463.2	9.1	5.0	112.70	-419.5	-144.9	409.1	396.3	12.77	32.045 SF			
1,700.0	1,584.3	1,576.0	1,549.2	10.1	5.4	116.25	-437.6	-151.6	443.0	429.2	13.79	32.130			
1,800.0	1,670.2	1,665.7	1,636.7	11.0	5.7	119.41	-455.9	-158.6	478.5	463.7	14.78	32.374			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8D
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 6-8D	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	-164.35	-188.7	-52.8	195.9						
100.0	100.0	103.2	103.2	0.1	0.1	-164.31	-188.6	-53.0	195.9	195.6	0.28	698.204			
200.0	200.0	203.4	203.4	0.3	0.3	-164.17	-188.3	-53.4	195.7	195.1	0.63	311.885			
300.0	300.0	304.0	304.0	0.5	0.5	51.01	-187.8	-53.6	193.6	192.6	0.98	197.041			
400.0	399.6	401.6	401.6	0.7	0.7	53.14	-187.6	-54.3	188.8	187.4	1.36	139.101			
500.0	498.8	496.1	496.1	1.0	0.8	56.52	-189.0	-55.2	183.0	181.2	1.78	102.974			
600.0	597.1	588.2	588.0	1.4	1.0	61.06	-193.1	-56.6	178.2	175.9	2.27	78.431			
697.3	691.7	677.2	676.7	1.8	1.2	66.60	-200.5	-58.9	176.4	173.6	2.86	61.769 CC			
700.0	694.3	679.6	679.1	1.8	1.2	66.76	-200.7	-59.0	176.4	173.5	2.87	61.413 ES			
800.0	790.2	769.7	768.4	2.3	1.4	73.26	-211.9	-62.3	179.0	175.4	3.60	49.758			
900.0	884.4	859.5	856.9	3.0	1.7	79.96	-227.1	-66.3	187.0	182.6	4.46	41.949			
1,000.0	976.8	949.7	944.8	3.7	2.0	86.40	-246.2	-70.7	200.6	195.1	5.46	36.730			
1,100.0	1,067.1	1,037.9	1,030.1	4.5	2.4	92.13	-268.6	-75.6	219.9	213.3	6.59	33.362			
1,200.0	1,154.9	1,125.2	1,113.3	5.4	2.9	97.09	-294.1	-81.5	245.0	237.2	7.83	31.276			
1,300.0	1,240.9	1,215.7	1,198.9	6.3	3.4	102.12	-322.7	-88.3	274.6	265.5	9.13	30.089			
1,400.0	1,326.7	1,307.5	1,285.4	7.3	3.9	106.32	-352.6	-95.4	306.5	296.1	10.42	29.414			
1,500.0	1,412.6	1,401.0	1,373.5	8.2	4.5	109.78	-383.2	-102.5	339.6	327.9	11.70	29.029			
1,600.0	1,498.5	1,496.9	1,463.9	9.1	5.0	112.74	-414.3	-109.2	373.2	360.2	12.98	28.757			
1,700.0	1,584.3	1,592.8	1,554.4	10.1	5.6	115.16	-445.7	-115.1	406.6	392.3	14.24	28.541			
1,800.0	1,670.2	1,685.3	1,641.4	11.0	6.1	117.07	-476.4	-120.4	440.1	424.6	15.50	28.403 SF			
1,900.0	1,756.0	1,772.3	1,723.3	12.0	6.7	118.60	-505.5	-126.0	474.8	458.1	16.70	28.423			

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 6-8D
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 6-8D	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	-167.32	-179.6	-40.4	184.1					
100.0	100.0	103.2	103.2	0.1	0.1	-167.30	-179.5	-40.5	184.0	183.7	0.28	655.997		
129.6	129.6	132.7	132.7	0.2	0.2	-167.29	-179.5	-40.5	184.0	183.6	0.38	483.020 CC, ES		
200.0	200.0	199.3	199.3	0.3	0.3	-167.45	-180.2	-40.1	184.6	184.0	0.62	297.442		
300.0	300.0	291.7	291.6	0.5	0.5	46.67	-184.0	-38.3	186.5	185.5	0.96	193.353		
400.0	399.6	385.9	385.4	0.7	0.7	46.77	-192.0	-35.1	188.7	187.3	1.34	140.613		
500.0	498.8	479.0	477.7	1.0	0.9	47.59	-203.5	-31.5	191.0	189.2	1.77	108.021		
600.0	597.1	571.0	568.5	1.4	1.2	49.46	-218.1	-28.9	193.7	191.4	2.26	85.876		
700.0	694.3	662.0	657.7	1.8	1.6	52.55	-236.2	-28.3	197.8	194.9	2.84	69.643		
800.0	790.2	753.0	745.9	2.3	2.0	56.75	-258.3	-30.3	204.9	201.3	3.56	57.529		
900.0	884.4	835.2	824.5	3.0	2.4	61.13	-281.8	-33.9	215.6	211.2	4.42	48.723		
1,000.0	976.8	923.7	908.2	3.7	3.0	66.02	-310.5	-38.8	230.2	224.6	5.52	41.731		
1,100.0	1,067.1	1,019.3	997.7	4.5	3.5	71.37	-343.6	-44.1	246.9	240.0	6.83	36.137		
1,200.0	1,154.9	1,113.5	1,085.9	5.4	4.1	76.82	-376.2	-48.9	264.4	256.0	8.34	31.702		
1,300.0	1,240.9	1,205.8	1,172.1	6.3	4.7	82.32	-409.0	-53.3	284.4	274.4	9.94	28.605		
1,400.0	1,326.7	1,296.8	1,256.6	7.3	5.3	87.07	-442.4	-57.7	307.5	296.0	11.53	26.664		
1,500.0	1,412.6	1,389.1	1,342.1	8.2	6.0	91.14	-477.0	-62.5	333.5	320.4	13.12	25.423		
1,600.0	1,498.5	1,477.9	1,424.0	9.1	6.6	94.43	-511.0	-67.4	361.4	346.7	14.66	24.649		
1,700.0	1,584.3	1,568.8	1,507.2	10.1	7.2	97.20	-547.0	-73.4	391.9	375.7	16.20	24.198		
1,800.0	1,670.2	1,664.7	1,595.0	11.0	7.9	99.71	-585.0	-79.4	422.9	405.2	17.75	23.831		
1,900.0	1,756.0	1,758.4	1,680.8	12.0	8.6	101.78	-622.3	-84.9	454.2	434.9	19.27	23.571		
2,000.0	1,841.9	1,850.6	1,765.1	12.9	9.3	103.56	-659.1	-90.5	486.2	465.4	20.76	23.418 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 6-8D
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 6-8D	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	-167.22	-169.4	-38.4	173.7						
100.0	100.0	103.2	103.2	0.1	0.1	-167.27	-169.3	-38.3	173.6	173.3	0.28	618.675			
152.8	152.8	155.8	155.8	0.2	0.2	-167.29	-169.3	-38.2	173.6	173.1	0.46	375.782 CC			
200.0	200.0	201.4	201.4	0.3	0.3	-167.28	-169.5	-38.3	173.7	173.1	0.62	278.535 ES			
300.0	300.0	295.0	294.9	0.5	0.5	47.89	-172.1	-39.4	175.0	174.0	0.97	181.134			
400.0	399.6	385.5	385.1	0.7	0.7	49.54	-178.8	-41.0	177.4	176.1	1.33	133.859			
500.0	498.8	475.7	474.7	1.0	0.9	52.20	-189.7	-43.7	181.6	179.9	1.73	104.921			
600.0	597.1	566.6	564.2	1.4	1.2	55.56	-205.1	-47.1	188.2	186.0	2.21	85.018			
700.0	694.3	655.2	650.6	1.8	1.5	59.25	-224.3	-50.7	197.3	194.5	2.80	70.485			
800.0	790.2	744.5	736.6	2.3	2.0	63.42	-247.5	-55.5	209.7	206.2	3.53	59.416			
900.0	884.4	832.9	820.9	3.0	2.5	67.84	-273.7	-61.6	225.3	220.9	4.42	50.979			
1,000.0	976.8	921.6	904.4	3.7	3.0	72.47	-302.4	-69.2	244.4	238.9	5.50	44.434			
1,100.0	1,067.1	1,008.3	985.1	4.5	3.6	76.79	-333.2	-77.1	266.9	260.1	6.75	39.531			
1,200.0	1,154.9	1,092.9	1,062.6	5.4	4.2	80.60	-366.2	-85.3	293.3	285.2	8.17	35.923			
1,300.0	1,240.9	1,182.1	1,142.7	6.3	4.9	84.54	-404.5	-93.8	323.4	313.7	9.71	33.308			
1,400.0	1,326.7	1,276.1	1,227.0	7.3	5.6	88.18	-445.2	-102.5	354.9	343.6	11.32	31.367			
1,500.0	1,412.6	1,371.8	1,312.9	8.2	6.4	91.26	-486.5	-110.8	387.1	374.1	12.94	29.913			
1,600.0	1,498.5	1,469.4	1,400.7	9.1	7.1	93.91	-528.5	-118.3	419.1	404.5	14.58	28.745			
1,700.0	1,584.3	1,561.4	1,483.5	10.1	7.9	96.00	-568.0	-124.7	451.1	434.9	16.17	27.897			
1,800.0	1,670.2	1,646.4	1,559.9	11.0	8.5	97.72	-604.8	-131.6	484.8	467.1	17.69	27.396 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 6-8D
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 6-8D	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	-170.59	-172.3	-28.5	174.6						
100.0	100.0	100.8	100.8	0.1	0.1	-170.61	-172.1	-28.5	174.4	174.1		0.28	618.441		
137.9	137.9	137.9	137.9	0.2	0.2	-170.62	-172.0	-28.4	174.3	173.9		0.41	425.117 CC, ES		
200.0	200.0	195.1	195.1	0.3	0.3	-170.81	-172.8	-27.9	175.1	174.5		0.62	283.024		
300.0	300.0	288.9	288.8	0.5	0.5	43.23	-177.5	-26.0	177.8	176.8		0.97	184.162		
400.0	399.6	381.4	380.8	0.7	0.7	43.44	-186.0	-23.1	180.7	179.4		1.33	135.462		
500.0	498.8	472.6	471.1	1.0	0.9	44.40	-198.3	-20.1	184.1	182.4		1.74	105.559		
600.0	597.1	564.5	561.4	1.4	1.3	45.79	-214.8	-16.1	188.1	185.9		2.22	84.579		
700.0	694.3	661.0	655.4	1.8	1.7	47.86	-235.9	-11.3	192.4	189.6		2.84	67.712		
800.0	790.2	753.0	743.8	2.3	2.2	49.38	-259.9	-2.7	196.6	193.0		3.58	54.940		
900.0	884.4	845.0	830.9	3.0	2.7	51.09	-287.8	7.5	201.4	196.9		4.47	45.092		
1,000.0	976.8	937.0	916.6	3.7	3.3	53.10	-319.4	18.7	206.8	201.2		5.53	37.413		
1,100.0	1,067.1	1,029.0	1,001.1	4.5	4.0	55.67	-354.0	30.0	212.7	206.0		6.78	31.378		
1,200.0	1,154.9	1,120.0	1,083.7	5.4	4.7	58.89	-390.6	40.6	219.4	211.1		8.25	26.574		
1,300.0	1,240.9	1,217.0	1,170.9	6.3	5.4	62.90	-431.5	51.6	227.0	217.0		9.96	22.790		
1,400.0	1,326.7	1,317.1	1,260.6	7.3	6.2	66.76	-474.4	63.0	236.3	224.5		11.77	20.080		
1,500.0	1,412.6	1,418.8	1,352.1	8.2	7.0	70.33	-517.0	75.4	245.2	231.5		13.64	17.977		
1,600.0	1,498.5	1,520.7	1,443.8	9.1	7.8	73.51	-559.1	89.3	253.6	238.1		15.53	16.332		
1,700.0	1,584.3	1,619.6	1,533.6	10.1	8.5	76.69	-598.7	102.4	262.0	244.6		17.40	15.062		
1,800.0	1,670.2	1,713.1	1,618.4	11.0	9.3	79.58	-636.4	113.8	272.1	252.9		19.22	14.154		
1,900.0	1,756.0	1,804.7	1,701.0	12.0	10.0	82.18	-674.8	123.4	285.2	264.2		21.01	13.576		
2,000.0	1,841.9	1,905.2	1,791.7	12.9	10.7	84.87	-717.0	133.2	299.6	276.8		22.86	13.108		
2,100.0	1,927.7	2,003.3	1,880.6	13.9	11.5	87.37	-757.2	143.1	313.7	289.1		24.66	12.721		
2,200.0	2,013.6	2,095.6	1,963.8	14.8	12.2	89.45	-796.2	151.4	330.0	303.6		26.39	12.503		
2,300.0	2,099.5	2,194.6	2,053.2	15.7	12.9	91.52	-837.9	159.8	347.0	318.9		28.14	12.330		
2,400.0	2,185.3	2,293.9	2,143.2	16.7	13.7	93.47	-879.2	168.3	364.1	334.2		29.88	12.186		
2,500.0	2,271.2	2,393.5	2,233.0	17.6	14.5	95.13	-921.1	177.7	381.1	349.5		31.60	12.061		
2,600.0	2,357.0	2,493.3	2,323.3	18.6	15.2	96.72	-962.6	187.2	397.9	364.6		33.28	11.956		
2,700.0	2,442.9	2,591.2	2,412.0	19.5	16.0	98.18	-1,002.9	196.8	414.8	379.8		34.95	11.866		
2,800.0	2,528.7	2,690.9	2,501.8	20.5	16.8	99.40	-1,044.9	207.0	431.8	395.2		36.62	11.792		
2,900.0	2,614.6	2,793.0	2,594.3	21.4	17.5	100.70	-1,086.7	217.6	448.4	410.1		38.26	11.717		
3,000.0	2,700.5	2,888.6	2,680.9	22.4	18.3	101.81	-1,126.0	227.8	464.9	425.0		39.87	11.659		
3,100.0	2,786.3	2,986.5	2,769.2	23.3	19.0	102.78	-1,166.9	238.2	482.0	440.5		41.48	11.618		
3,200.0	2,872.2	3,087.7	2,860.9	24.3	19.8	103.80	-1,208.4	249.1	498.8	455.7		43.09	11.575 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 6-8D
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 6-8D	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	52.76	68.1	89.6	112.5						
100.0	100.0	100.0	100.0	0.1	0.1	52.76	68.1	89.6	112.5	112.3	0.27	413.313			
200.0	200.0	200.0	200.0	0.3	0.3	52.76	68.1	89.6	112.5	111.9	0.62	181.115 CC, ES			
300.0	300.0	297.6	297.6	0.5	0.5	-94.67	69.5	89.5	113.5	112.5	0.98	116.213			
400.0	399.6	393.2	392.9	0.7	0.7	-100.58	75.5	88.9	118.3	116.9	1.38	85.824			
500.0	498.8	486.1	485.3	1.0	0.9	-109.14	85.9	87.9	129.7	127.9	1.84	70.493			
600.0	597.1	575.3	573.4	1.4	1.2	-118.25	100.0	86.5	150.3	148.0	2.33	64.606 SF			
700.0	694.3	659.7	656.0	1.8	1.5	-126.26	117.1	84.9	181.6	178.8	2.80	64.762			
800.0	790.2	742.6	736.4	2.3	1.9	-132.81	137.1	83.0	222.9	219.7	3.26	68.403			
900.0	884.4	826.7	817.9	3.0	2.3	-138.01	157.8	81.0	270.9	267.2	3.70	73.190			
1,000.0	976.8	907.9	896.6	3.7	2.6	-141.89	177.8	79.1	324.5	320.3	4.14	78.289			
1,100.0	1,067.1	986.0	972.3	4.5	3.0	-144.81	197.1	77.3	382.9	378.3	4.59	83.344			
1,200.0	1,154.9	1,060.8	1,044.7	5.4	3.3	-147.00	215.5	75.5	446.0	440.9	5.06	88.147			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8D
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 6-8D	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	52.25	59.7	77.1	97.6						
100.0	100.0	100.0	100.0	0.1	0.1	52.25	59.7	77.1	97.6	97.3	0.27	358.360			
200.0	200.0	200.0	200.0	0.3	0.3	52.25	59.7	77.1	97.6	96.9	0.62	157.034	CC		
300.0	300.0	299.8	299.8	0.5	0.5	-95.23	60.3	76.8	97.8	96.8	0.98	99.897	ES		
400.0	399.6	398.3	398.1	0.7	0.7	-102.52	64.4	73.8	99.7	98.3	1.39	71.923			
500.0	498.8	494.0	493.3	1.0	0.9	-114.06	72.4	68.1	107.0	105.1	1.86	57.389			
600.0	597.1	585.6	583.8	1.4	1.2	-126.80	83.6	60.0	124.2	121.9	2.36	52.635	SF		
700.0	694.3	671.9	668.5	1.8	1.5	-137.86	97.4	50.0	153.9	151.1	2.80	54.854			
800.0	790.2	753.8	748.0	2.3	1.9	-146.33	113.3	38.6	195.5	192.4	3.17	61.608			
900.0	884.4	836.6	828.2	3.0	2.2	-152.65	130.2	26.5	245.6	242.2	3.50	70.282			
1,000.0	976.8	916.4	905.4	3.7	2.6	-157.07	146.4	14.8	301.9	298.1	3.79	79.682			
1,100.0	1,067.1	993.0	979.6	4.5	3.0	-160.23	162.0	3.6	363.4	359.3	4.07	89.340			
1,200.0	1,154.9	1,066.1	1,050.3	5.4	3.3	-162.54	176.9	-7.1	429.5	425.2	4.34	99.026			
1,300.0	1,240.9	1,136.5	1,118.5	6.3	3.6	-164.79	191.2	-17.4	499.0	494.4	4.58	108.872			

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 6-8D
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 6-8D	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	51.25	51.7	64.4	82.6						
100.0	100.0	100.0	100.0	0.1	0.1	51.25	51.7	64.4	82.6	82.4	0.27	303.458			
200.0	200.0	200.0	200.0	0.3	0.3	51.25	51.7	64.4	82.6	82.0	0.62	132.976			
290.9	290.9	291.4	291.4	0.5	0.5	-97.34	53.2	62.8	82.5	81.6	0.95	86.441 CC			
300.0	300.0	300.5	300.5	0.5	0.5	-97.97	53.5	62.4	82.5	81.5	0.99	83.495 ES			
400.0	399.6	399.4	399.0	0.7	0.7	-108.42	58.5	56.6	84.1	82.7	1.42	59.182			
500.0	498.8	495.2	494.0	1.0	1.0	-123.33	66.6	47.2	92.6	90.7	1.92	48.295			
600.0	597.1	586.5	583.8	1.4	1.3	-138.17	77.3	35.0	113.1	110.7	2.39	47.367 SF			
700.0	694.3	672.3	667.5	1.8	1.7	-149.78	89.8	20.6	146.9	144.1	2.77	52.972			
800.0	790.2	751.8	744.2	2.3	2.1	-157.88	103.6	4.6	192.6	189.5	3.09	62.345			
900.0	884.4	824.5	813.5	3.0	2.5	-163.37	118.1	-12.0	248.3	244.9	3.36	73.859			
1,000.0	976.8	890.3	875.3	3.7	2.9	-167.14	132.6	-28.8	312.2	308.6	3.60	86.599			
1,100.0	1,067.1	949.0	929.9	4.5	3.4	-169.78	146.7	-45.1	383.0	379.2	3.83	99.963			
1,200.0	1,154.9	1,000.0	976.8	5.4	3.7	-171.62	159.9	-60.3	459.7	455.7	4.03	114.028			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8D
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 6-8D	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	48.24	35.3	39.6	53.0						
100.0	100.0	100.0	100.0	0.1	0.1	48.24	35.3	39.6	53.0	52.8	0.27	194.815			
200.0	200.0	200.0	200.0	0.3	0.3	48.24	35.3	39.6	53.0	52.4	0.62	85.369			
300.0	300.0	301.1	301.0	0.5	0.5	-102.82	36.2	37.1	52.4	51.4	0.99	52.992			
338.9	338.8	340.1	340.0	0.6	0.6	-107.93	37.1	34.7	52.1	51.0	1.15	45.162 CC, ES			
400.0	399.6	400.6	400.3	0.7	0.7	-118.97	38.9	29.7	53.2	51.7	1.42	37.524			
500.0	498.8	497.3	496.1	1.0	1.0	-140.82	43.2	17.9	62.8	61.0	1.88	33.472 SF			
600.0	597.1	589.8	587.1	1.4	1.3	-158.99	48.9	2.3	86.5	84.3	2.27	38.105			
700.0	694.3	677.0	672.1	1.8	1.7	-170.68	55.6	-16.1	123.4	120.8	2.61	47.318			
800.0	790.2	758.4	750.5	2.3	2.1	-177.88	63.0	-36.6	170.9	168.0	2.92	58.440			
900.0	884.4	833.3	821.8	3.0	2.6	177.48	70.9	-58.2	227.2	223.9	3.23	70.275			
1,000.0	976.8	900.0	884.4	3.7	3.0	174.32	78.6	-79.7	290.9	287.4	3.53	82.422			
1,100.0	1,067.1	964.7	944.4	4.5	3.5	171.79	86.9	-102.4	361.1	357.2	3.84	94.048			
1,200.0	1,154.9	1,028.4	1,003.1	5.4	3.9	169.74	95.4	-125.7	436.0	431.8	4.16	104.799			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8D
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 6-8D	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	44.89	27.0	26.8	38.0						
100.0	100.0	100.0	100.0	0.1	0.1	44.89	27.0	26.8	38.0	37.8	0.27	139.722			
200.0	200.0	200.0	200.0	0.3	0.3	44.89	27.0	26.8	38.0	37.4	0.62	61.227 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	-104.50	27.0	26.8	38.6	37.6	0.98	39.471			
400.0	399.6	400.2	400.1	0.7	0.7	-117.00	27.2	25.4	40.8	39.4	1.36	29.905			
500.0	498.8	498.7	498.5	1.0	0.9	-138.28	28.4	19.1	48.1	46.4	1.76	27.309 SF			
600.0	597.1	594.1	593.3	1.4	1.1	-158.22	30.4	8.2	66.7	64.6	2.13	31.402			
700.0	694.3	685.3	683.2	1.8	1.4	-171.53	33.1	-6.5	97.6	95.2	2.47	39.599			
800.0	790.2	771.3	767.2	2.3	1.7	-179.70	36.4	-24.2	139.1	136.3	2.81	49.473			
900.0	884.4	851.4	844.8	3.0	2.1	175.07	40.1	-44.0	189.5	186.4	3.17	59.783			
1,000.0	976.8	925.3	915.5	3.7	2.5	171.49	44.0	-65.1	247.7	244.2	3.54	69.985			
1,100.0	1,067.1	992.7	979.2	4.5	2.9	168.82	48.1	-86.7	312.7	308.8	3.92	79.760			
1,200.0	1,154.9	1,053.5	1,036.0	5.4	3.3	166.66	52.0	-108.1	383.7	379.4	4.32	88.863			
1,300.0	1,240.9	1,116.2	1,094.0	6.3	3.8	165.29	56.4	-131.5	458.8	454.0	4.79	95.810			

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 6-8D
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 6-8D	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	50.19	43.3	52.0	67.7						
100.0	100.0	100.0	100.0	0.1	0.1	50.19	43.3	52.0	67.7	67.4	0.27	248.626			
200.0	200.0	200.0	200.0	0.3	0.3	50.19	43.3	52.0	67.7	67.1	0.62	108.949	CC		
300.0	300.0	300.0	300.0	0.5	0.5	-97.58	43.3	52.0	68.0	67.0	0.98	69.470	ES		
400.0	399.6	399.6	399.6	0.7	0.7	-103.95	43.3	52.0	69.5	68.1	1.37	50.694			
500.0	498.8	498.8	498.8	1.0	0.8	-113.65	43.3	52.0	73.7	71.9	1.80	40.859			
600.0	597.1	596.9	596.9	1.4	1.0	-126.58	44.2	49.7	82.9	80.6	2.25	36.876	SF		
700.0	694.3	692.9	692.8	1.8	1.2	-139.80	46.1	44.9	100.1	97.5	2.64	37.929			
800.0	790.2	787.4	787.1	2.3	1.4	-149.90	48.0	40.2	125.8	122.8	2.98	42.233			
900.0	884.4	880.0	879.6	3.0	1.5	-157.13	49.8	35.6	158.7	155.4	3.28	48.419			
1,000.0	976.8	970.6	970.0	3.7	1.7	-162.24	51.6	31.0	198.0	194.4	3.55	55.700			
1,100.0	1,067.1	1,058.8	1,058.1	4.5	1.9	-165.89	53.3	26.6	242.9	239.1	3.82	63.661			
1,200.0	1,154.9	1,144.4	1,143.6	5.4	2.1	-168.55	55.0	22.3	293.0	289.0	4.06	72.092			
1,300.0	1,240.9	1,228.0	1,227.0	6.3	2.2	-170.73	56.6	18.1	346.9	342.5	4.33	80.080			
1,400.0	1,326.7	1,311.4	1,310.4	7.3	2.4	-172.41	58.2	14.0	401.2	396.6	4.61	86.942			
1,500.0	1,412.6	1,394.9	1,393.7	8.2	2.5	-173.70	59.9	9.8	455.7	450.8	4.90	92.955			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8D
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 6-8D	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	37.27	18.9	14.4	23.8						
100.0	100.0	100.0	100.0	0.1	0.1	37.27	18.9	14.4	23.8	23.5	0.27	87.413			
200.0	200.0	200.0	200.0	0.3	0.3	37.27	18.9	14.4	23.8	23.2	0.62	38.305 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	-114.05	18.9	14.4	24.7	23.8	0.98	25.322			
400.0	399.6	400.5	400.5	0.7	0.7	-132.05	17.6	12.2	27.0	25.6	1.35	19.954 SF			
500.0	498.8	499.5	499.4	1.0	0.8	-153.29	15.3	8.5	35.0	33.3	1.71	20.497			
600.0	597.1	597.7	597.5	1.4	1.0	-167.00	13.0	4.8	51.0	49.0	2.04	25.001			
700.0	694.3	694.8	694.5	1.8	1.2	-174.41	10.7	1.1	73.6	71.2	2.37	31.104			
800.0	790.2	790.5	790.1	2.3	1.4	-178.42	8.5	-2.5	101.9	99.2	2.69	37.872			
900.0	884.4	884.6	884.1	3.0	1.6	179.32	6.2	-6.1	135.5	132.5	3.01	44.990			
1,000.0	976.8	976.8	976.2	3.7	1.7	177.98	4.1	-9.6	174.0	170.7	3.32	52.357			
1,100.0	1,067.1	1,066.9	1,066.2	4.5	1.9	177.15	2.0	-13.0	217.4	213.7	3.63	59.940			
1,200.0	1,154.9	1,154.6	1,153.8	5.4	2.1	176.62	-0.1	-16.3	265.4	261.5	3.92	67.733			
1,300.0	1,240.9	1,240.3	1,239.5	6.3	2.2	176.34	-2.1	-19.6	316.8	312.5	4.24	74.655			
1,400.0	1,326.7	1,326.0	1,325.0	7.3	2.4	176.16	-4.1	-22.8	368.4	363.8	4.58	80.342			
1,500.0	1,412.6	1,411.7	1,410.6	8.2	2.6	176.03	-6.1	-26.0	419.9	415.0	4.93	85.235			
1,600.0	1,498.5	1,497.3	1,496.2	9.1	2.7	175.92	-8.1	-29.3	471.5	466.3	5.27	89.488			

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 6-8D
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 6-8D	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	56.88	73.6	112.8	134.6						
100.0	100.0	100.0	100.0	0.1	0.1	56.88	73.6	112.8	134.6	134.4	0.27	494.497			
200.0	200.0	200.0	200.0	0.3	0.3	56.88	73.6	112.8	134.6	134.0	0.62	216.690			
300.0	300.0	300.0	300.0	0.5	0.5	-89.82	73.6	112.8	134.6	133.6	0.98	137.512			
307.7	307.7	307.7	307.7	0.5	0.5	-90.00	73.6	112.8	134.6	133.6	1.01	133.406 CC			
400.0	399.6	399.6	399.6	0.7	0.7	-93.14	73.6	112.8	134.8	133.4	1.37	98.161 ES			
500.0	498.8	492.7	492.6	1.0	0.8	-97.78	74.3	114.9	138.3	136.5	1.82	76.119			
600.0	597.1	584.9	584.6	1.4	1.0	-102.96	76.5	121.2	148.3	146.0	2.33	63.538			
700.0	694.3	675.9	674.9	1.8	1.2	-107.96	80.1	131.5	165.1	162.2	2.93	56.387			
800.0	790.2	765.1	762.9	2.3	1.5	-112.27	85.0	145.6	188.8	185.2	3.60	52.366			
900.0	884.4	852.3	848.1	3.0	1.9	-115.69	91.1	163.1	219.1	214.7	4.37	50.114			
1,000.0	976.8	937.0	930.0	3.7	2.3	-118.20	98.2	183.6	255.5	250.3	5.23	48.890			
1,100.0	1,067.1	1,022.9	1,012.1	4.5	2.7	-120.15	106.5	207.4	297.4	291.2	6.17	48.173			
1,200.0	1,154.9	1,110.6	1,095.8	5.4	3.2	-122.06	115.0	232.0	342.8	335.6	7.18	47.717 SF			
1,300.0	1,240.9	1,196.6	1,177.9	6.3	3.6	-124.65	123.5	256.3	390.8	382.6	8.19	47.720			
1,400.0	1,326.7	1,282.6	1,260.0	7.3	4.1	-127.02	131.9	280.5	439.5	430.3	9.19	47.841			
1,500.0	1,412.6	1,368.6	1,342.1	8.2	4.6	-128.92	140.3	304.6	488.8	478.6	10.18	48.008			

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 6-8D
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 6-8D	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	53.35	76.1	102.3	127.5							
100.0	100.0	100.0	100.0	0.1	0.1	53.35	76.1	102.3	127.5	127.2	0.27	468.341				
200.0	200.0	200.0	200.0	0.3	0.3	53.35	76.1	102.3	127.5	126.9	0.62	205.228 CC				
300.0	300.0	300.0	300.0	0.5	0.5	-93.41	76.1	102.3	127.6	126.7	0.98	130.407 ES				
400.0	399.6	393.4	393.4	0.7	0.7	-96.36	77.2	104.3	130.7	129.4	1.36	95.955				
500.0	498.8	486.1	485.8	1.0	0.8	-100.46	80.4	110.3	139.8	138.0	1.81	77.380				
600.0	597.1	577.3	576.3	1.4	1.1	-104.94	85.7	120.0	155.4	153.1	2.32	66.870				
700.0	694.3	666.5	664.3	1.8	1.4	-109.15	92.8	133.1	177.9	175.0	2.92	60.890				
800.0	790.2	753.3	749.1	2.3	1.7	-112.71	101.6	149.4	207.3	203.7	3.60	57.510				
900.0	884.4	837.2	830.1	3.0	2.1	-115.48	111.9	168.3	243.2	238.8	4.37	55.627				
1,000.0	976.8	918.6	907.9	3.7	2.6	-117.53	123.4	189.6	285.4	280.1	5.22	54.657				
1,100.0	1,067.1	1,004.7	989.4	4.5	3.1	-119.42	136.5	213.7	332.0	325.8	6.16	53.917				
1,200.0	1,154.9	1,089.6	1,069.9	5.4	3.6	-121.16	149.3	237.5	381.8	374.6	7.15	53.408				
1,300.0	1,240.9	1,172.7	1,148.8	6.3	4.0	-123.70	161.9	260.8	434.1	426.0	8.14	53.307 SF				
1,400.0	1,326.7	1,255.8	1,227.5	7.3	4.5	-126.07	174.5	284.0	487.3	478.1	9.13	53.348				

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 6-8D
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 6-8D	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	56.95	57.2	87.9	104.9						
100.0	100.0	100.0	100.0	0.1	0.1	56.95	57.2	87.9	104.9	104.6	0.27	385.108			
200.0	200.0	200.0	200.0	0.3	0.3	56.95	57.2	87.9	104.9	104.2	0.62	168.755			
297.8	297.7	297.7	297.7	0.5	0.5	-90.00	57.2	87.9	104.8	103.9	0.97	107.968 CC			
300.0	300.0	300.0	300.0	0.5	0.5	-90.06	57.2	87.9	104.8	103.8	0.98	107.089 ES			
400.0	399.6	396.8	396.8	0.7	0.7	-93.65	57.0	89.2	106.1	104.8	1.37	77.509			
500.0	498.8	492.5	492.3	1.0	0.8	-97.76	56.4	95.2	111.8	110.0	1.83	61.090			
600.0	597.1	587.9	587.0	1.4	1.1	-101.83	55.3	105.9	122.2	119.8	2.39	51.061			
700.0	694.3	682.6	680.5	1.8	1.4	-105.45	53.7	121.1	137.2	134.2	3.08	44.592			
800.0	790.2	776.5	772.3	2.3	1.7	-108.38	51.7	140.7	156.9	153.1	3.90	40.256			
900.0	884.4	869.4	862.0	3.0	2.2	-110.60	49.2	164.5	181.1	176.2	4.85	37.318			
1,000.0	976.8	964.4	953.0	3.7	2.7	-112.70	46.4	191.7	208.8	202.9	5.92	35.291			
1,100.0	1,067.1	1,058.9	1,043.5	4.5	3.2	-115.22	43.6	218.8	239.0	232.0	7.04	33.955			
1,200.0	1,154.9	1,151.9	1,132.6	5.4	3.7	-117.90	40.8	245.5	272.2	264.0	8.20	33.206			
1,300.0	1,240.9	1,243.8	1,220.5	6.3	4.2	-121.09	38.1	271.8	308.1	298.8	9.33	33.008 SF			
1,400.0	1,326.7	1,335.5	1,308.4	7.3	4.7	-123.88	35.3	298.1	344.9	334.4	10.44	33.019			
1,500.0	1,412.6	1,427.3	1,396.3	8.2	5.2	-126.14	32.6	324.4	382.2	370.7	11.54	33.135			
1,600.0	1,498.5	1,519.1	1,484.2	9.1	5.7	-128.00	29.8	350.7	420.0	407.4	12.61	33.305			
1,700.0	1,584.3	1,610.9	1,572.1	10.1	6.2	-129.56	27.1	377.0	458.1	444.5	13.68	33.500			
1,800.0	1,670.2	1,702.7	1,660.0	11.0	6.7	-130.88	24.4	403.3	496.5	481.8	14.73	33.705			

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 6-8D
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 6-8D	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	56.83	65.6	100.3	119.8						
100.0	100.0	100.0	100.0	0.1	0.1	56.83	65.6	100.3	119.8	119.6	0.27	440.168			
200.0	200.0	200.0	200.0	0.3	0.3	56.83	65.6	100.3	119.8	119.2	0.62	192.883			
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	65.6	100.3	119.8	118.8	0.98	122.405			
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	65.6	100.3	119.8	118.8	0.98	122.384	CC, ES		
400.0	399.6	394.6	394.5	0.7	0.7	-92.88	65.8	102.7	122.1	120.8	1.37	89.403			
500.0	498.8	488.8	488.5	1.0	0.9	-96.47	66.4	109.6	129.4	127.6	1.82	70.911			
600.0	597.1	582.3	581.3	1.4	1.1	-100.27	67.4	121.1	141.9	139.5	2.38	59.618			
700.0	694.3	674.7	672.3	1.8	1.4	-103.81	68.8	136.8	159.7	156.6	3.05	52.392			
800.0	790.2	765.8	761.2	2.3	1.8	-106.82	70.6	156.6	182.8	179.0	3.84	47.617			
900.0	884.4	857.1	849.3	3.0	2.2	-109.33	72.7	180.5	211.0	206.2	4.74	44.479			
1,000.0	976.8	951.1	939.8	3.7	2.7	-112.04	75.0	205.9	242.2	236.4	5.75	42.144			
1,100.0	1,067.1	1,043.7	1,028.8	4.5	3.1	-114.86	77.2	231.1	276.2	269.4	6.81	40.567			
1,200.0	1,154.9	1,134.6	1,116.3	5.4	3.6	-117.62	79.4	255.7	313.4	305.5	7.91	39.624			
1,300.0	1,240.9	1,224.1	1,202.5	6.3	4.1	-120.89	81.6	280.0	353.4	344.4	9.00	39.290			
1,400.0	1,326.7	1,313.6	1,288.5	7.3	4.5	-123.79	83.7	304.2	394.5	384.5	10.06	39.228	SF		
1,500.0	1,412.6	1,403.0	1,374.6	8.2	5.0	-126.16	85.9	328.5	436.4	425.3	11.10	39.315			
1,600.0	1,498.5	1,492.5	1,460.7	9.1	5.4	-128.12	88.1	352.8	478.7	466.6	12.12	39.482			

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 6-8D
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 6-8D	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)	Offset Wellbore Centre +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	53.63	84.5	114.7	142.5						
100.0	100.0	100.0	100.0	0.1	0.1	53.63	84.5	114.7	142.5	142.2	0.27	523.363			
200.0	200.0	200.0	200.0	0.3	0.3	53.63	84.5	114.7	142.5	141.9	0.62	229.339	CC, ES		
300.0	300.0	292.9	292.9	0.5	0.5	-92.84	85.8	116.6	145.0	144.1	0.97	150.026			
400.0	399.6	385.2	384.9	0.7	0.7	-95.27	89.8	122.0	152.9	151.5	1.35	113.364			
500.0	498.8	476.0	475.0	1.0	0.9	-98.72	96.2	130.8	166.6	164.8	1.79	93.051			
600.0	597.1	564.8	562.6	1.4	1.2	-102.55	105.0	142.8	186.6	184.3	2.30	80.999			
700.0	694.3	651.0	646.8	1.8	1.6	-106.21	115.8	157.5	213.4	210.5	2.90	73.667			
800.0	790.2	734.1	727.1	2.3	2.0	-109.38	128.3	174.6	247.0	243.4	3.57	69.156			
900.0	884.4	813.7	803.2	3.0	2.4	-111.91	142.2	193.7	287.0	282.7	4.32	66.399			
1,000.0	976.8	895.8	880.7	3.7	2.9	-114.13	158.1	215.5	332.8	327.7	5.16	64.463			
1,100.0	1,067.1	980.5	960.6	4.5	3.4	-116.24	174.7	238.3	382.0	375.9	6.08	62.828			
1,200.0	1,154.9	1,062.9	1,038.3	5.4	4.0	-118.08	190.9	260.4	434.3	427.2	7.05	61.601			
1,300.0	1,240.9	1,143.4	1,114.2	6.3	4.4	-120.78	206.7	282.0	489.3	481.2	8.03	60.902	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 6-8D
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 6-8D	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	56.81	49.2	75.2	89.8						
100.0	100.0	100.0	100.0	0.1	0.1	56.81	49.2	75.2	89.8	89.6	0.27	329.900			
200.0	200.0	200.0	200.0	0.3	0.3	56.81	49.2	75.2	89.8	89.2	0.62	144.563			
285.9	285.8	285.8	285.8	0.5	0.5	-90.00	49.2	75.2	89.8	88.9	0.93	96.764 CC			
300.0	300.0	300.0	300.0	0.5	0.5	-90.44	49.2	75.2	89.8	88.8	0.98	91.744 ES			
400.0	399.6	398.3	398.3	0.7	0.7	-94.99	49.0	75.8	90.6	89.2	1.37	66.052			
500.0	498.8	495.4	495.2	1.0	0.8	-100.06	47.7	80.5	95.0	93.2	1.83	51.902			
600.0	597.1	592.4	591.7	1.4	1.1	-104.77	45.0	89.9	103.6	101.2	2.39	43.347			
700.0	694.3	689.1	687.3	1.8	1.3	-108.70	41.0	104.1	116.3	113.3	3.08	37.827			
800.0	790.2	785.5	781.7	2.3	1.7	-111.69	35.7	122.7	132.9	129.0	3.90	34.079			
900.0	884.4	881.3	874.5	3.0	2.2	-113.81	29.1	145.8	153.2	148.4	4.88	31.427			
1,000.0	976.8	977.2	966.1	3.7	2.7	-115.33	21.4	173.0	176.9	170.9	5.97	29.631			
1,100.0	1,067.1	1,073.3	1,057.6	4.5	3.2	-117.39	13.4	201.0	203.3	196.1	7.13	28.501			
1,200.0	1,154.9	1,168.1	1,148.0	5.4	3.7	-119.88	5.6	228.7	232.5	224.2	8.32	27.952			
1,300.0	1,240.9	1,261.9	1,237.4	6.3	4.2	-122.92	-2.2	256.0	264.3	254.8	9.47	27.915 SF			
1,400.0	1,326.7	1,355.7	1,326.8	7.3	4.8	-125.54	-10.0	283.4	296.8	286.2	10.59	28.024			
1,500.0	1,412.6	1,449.5	1,416.2	8.2	5.3	-127.65	-17.7	310.8	329.8	318.1	11.70	28.192			
1,600.0	1,498.5	1,543.3	1,505.5	9.1	5.8	-129.38	-25.5	338.1	363.1	350.3	12.79	28.387			
1,700.0	1,584.3	1,637.0	1,594.9	10.1	6.4	-130.81	-33.3	365.5	396.6	382.8	13.87	28.590			
1,800.0	1,670.2	1,730.8	1,684.2	11.0	6.9	-132.03	-41.0	392.8	430.4	415.4	14.95	28.791			
1,900.0	1,756.0	1,824.6	1,773.6	12.0	7.4	-133.07	-48.8	420.2	464.3	448.2	16.02	28.986			
2,000.0	1,841.9	1,918.3	1,862.9	12.9	8.0	-133.97	-56.6	447.5	498.3	481.2	17.08	29.172			

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 6-8D
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 6-8D	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	56.97	40.8	62.7	74.8						
100.0	100.0	100.0	100.0	0.1	0.1	56.97	40.8	62.7	74.8	74.6	0.27	274.849			
200.0	200.0	200.0	200.0	0.3	0.3	56.97	40.8	62.7	74.8	74.2	0.62	120.439			
283.1	283.1	283.1	283.1	0.5	0.5	-90.00	40.8	62.7	74.8	73.9	0.92	81.484 CC			
300.0	300.0	300.0	300.0	0.5	0.5	-90.62	40.8	62.7	74.8	73.8	0.98	76.432 ES			
400.0	399.6	398.3	398.3	0.7	0.7	-95.51	40.2	64.0	75.9	74.6	1.37	55.345			
500.0	498.8	496.3	496.1	1.0	0.9	-100.50	37.8	69.8	80.4	78.6	1.84	43.658			
600.0	597.1	594.4	593.5	1.4	1.1	-104.93	33.4	80.2	88.4	86.0	2.43	36.435			
700.0	694.3	692.3	690.0	1.8	1.4	-108.48	27.0	95.1	99.7	96.5	3.15	31.675			
800.0	790.2	790.0	785.4	2.3	1.8	-111.09	18.7	114.6	114.1	110.1	4.02	28.394			
900.0	884.4	887.4	879.3	3.0	2.3	-112.87	8.6	138.4	131.5	126.4	5.05	26.046			
1,000.0	976.8	984.6	971.6	3.7	2.8	-114.03	-3.3	166.3	151.7	145.5	6.21	24.414			
1,100.0	1,067.1	1,081.7	1,063.5	4.5	3.4	-115.87	-15.7	195.4	174.4	166.9	7.45	23.417			
1,200.0	1,154.9	1,177.9	1,154.4	5.4	4.0	-118.43	-28.0	224.2	199.7	191.0	8.69	22.962 SF			
1,300.0	1,240.9	1,273.2	1,244.5	6.3	4.6	-121.60	-40.1	252.8	227.4	217.5	9.90	22.973			
1,400.0	1,326.7	1,368.5	1,334.6	7.3	5.1	-124.29	-52.3	281.3	255.8	244.7	11.07	23.105			
1,500.0	1,412.6	1,463.7	1,424.7	8.2	5.7	-126.44	-64.4	309.8	284.6	272.4	12.23	23.282			
1,600.0	1,498.5	1,559.0	1,514.7	9.1	6.3	-128.19	-76.6	338.3	313.8	300.4	13.37	23.477			
1,700.0	1,584.3	1,654.2	1,604.8	10.1	6.9	-129.65	-88.7	366.9	343.2	328.7	14.49	23.675			
1,800.0	1,670.2	1,749.5	1,694.9	11.0	7.5	-130.88	-100.9	395.4	372.7	357.1	15.61	23.868			
1,900.0	1,756.0	1,844.7	1,784.9	12.0	8.0	-131.93	-113.0	423.9	402.4	385.6	16.73	24.053			
2,000.0	1,841.9	1,940.0	1,875.0	12.9	8.6	-132.83	-125.2	452.4	432.2	414.3	17.84	24.228			
2,100.0	1,927.7	2,035.3	1,965.1	13.9	9.2	-133.62	-137.3	481.0	462.0	443.1	18.94	24.393			
2,200.0	2,013.6	2,130.5	2,055.1	14.8	9.8	-134.32	-149.5	509.5	492.0	471.9	20.04	24.547			

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 6-8D
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 6-8D	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	56.76	32.8	50.0	59.8						
100.0	100.0	100.0	100.0	0.1	0.1	56.76	32.8	50.0	59.8	59.5	0.27	219.650			
200.0	200.0	200.0	200.0	0.3	0.3	56.76	32.8	50.0	59.8	59.2	0.62	96.251			
268.6	268.5	268.5	268.5	0.4	0.4	-90.00	32.8	50.0	59.8	58.9	0.87	69.050 CC			
300.0	300.0	300.0	300.0	0.5	0.5	-91.33	32.8	50.0	59.8	58.8	0.98	61.100 ES			
400.0	399.6	398.9	398.9	0.7	0.7	-96.31	31.3	52.1	61.0	59.7	1.38	44.318			
500.0	498.8	498.1	497.8	1.0	0.9	-101.01	26.8	58.4	64.5	62.7	1.87	34.592			
600.0	597.1	597.5	596.3	1.4	1.1	-105.04	19.3	68.8	70.2	67.7	2.48	28.315			
700.0	694.3	696.9	694.0	1.8	1.5	-108.22	8.8	83.4	77.9	74.7	3.24	24.053			
800.0	790.2	796.4	790.8	2.3	1.9	-110.53	-4.7	102.1	87.6	83.4	4.16	21.062			
900.0	884.4	895.9	886.3	3.0	2.4	-112.09	-21.1	124.9	99.0	93.8	5.24	18.896			
1,000.0	976.8	995.4	980.1	3.7	3.1	-113.03	-40.4	151.6	112.2	105.7	6.49	17.279			
1,100.0	1,067.1	1,094.3	1,072.1	4.5	3.7	-114.10	-61.6	181.1	127.2	119.3	7.84	16.221			
1,200.0	1,154.9	1,192.6	1,163.4	5.4	4.4	-116.62	-82.8	210.6	144.5	135.3	9.19	15.727			
1,300.0	1,240.9	1,290.2	1,254.2	6.3	5.0	-120.02	-103.9	239.8	163.9	153.5	10.45	15.683 SF			
1,400.0	1,326.7	1,387.8	1,344.9	7.3	5.7	-122.86	-124.9	269.1	184.0	172.3	11.68	15.752			
1,500.0	1,412.6	1,485.4	1,435.6	8.2	6.4	-125.14	-146.0	298.3	204.4	191.5	12.88	15.866			
1,600.0	1,498.5	1,583.0	1,526.3	9.1	7.0	-127.01	-167.1	327.6	225.1	211.0	14.07	16.001			
1,700.0	1,584.3	1,680.6	1,617.0	10.1	7.7	-128.57	-188.1	356.9	246.0	230.7	15.24	16.142			
1,800.0	1,670.2	1,778.2	1,707.7	11.0	8.4	-129.88	-209.2	386.1	267.0	250.6	16.40	16.283			
1,900.0	1,756.0	1,875.8	1,798.4	12.0	9.1	-131.00	-230.3	415.4	288.1	270.5	17.55	16.420			
2,000.0	1,841.9	1,973.4	1,889.1	12.9	9.7	-131.97	-251.3	444.6	309.3	290.6	18.69	16.551			
2,100.0	1,927.7	2,071.0	1,979.8	13.9	10.4	-132.81	-272.4	473.9	330.6	310.8	19.83	16.675			
2,200.0	2,013.6	2,168.6	2,070.5	14.8	11.1	-133.55	-293.4	503.1	351.9	331.0	20.96	16.792			
2,300.0	2,099.5	2,266.2	2,161.2	15.7	11.8	-134.21	-314.5	532.4	373.3	351.3	22.09	16.902			
2,400.0	2,185.3	2,363.8	2,251.9	16.7	12.4	-134.79	-335.6	561.6	394.8	371.6	23.21	17.006			
2,500.0	2,271.2	2,461.4	2,342.6	17.6	13.1	-135.32	-356.6	590.9	416.3	391.9	24.34	17.103			
2,600.0	2,357.0	2,559.0	2,433.3	18.6	13.8	-135.79	-377.7	620.1	437.8	412.3	25.46	17.194			
2,700.0	2,442.9	2,656.6	2,524.0	19.5	14.5	-136.22	-398.7	649.4	459.3	432.7	26.58	17.279			
2,800.0	2,528.7	2,754.2	2,614.7	20.5	15.1	-136.61	-419.8	678.6	480.9	453.2	27.70	17.360			

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 6-8D
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 6-8D	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	57.01	24.4	37.6	44.8						
100.0	100.0	100.0	100.0	0.1	0.1	57.01	24.4	37.6	44.8	44.5	0.27	164.580			
200.0	200.0	200.0	200.0	0.3	0.3	57.01	24.4	37.6	44.8	44.2	0.62	72.120			
262.8	262.8	262.8	262.8	0.4	0.4	-89.89	24.4	37.6	44.8	44.0	0.85	53.003 CC			
300.0	300.0	299.8	299.8	0.5	0.5	-91.71	24.3	37.7	44.9	43.9	0.98	45.835 ES			
400.0	399.6	399.3	399.2	0.7	0.7	-96.67	21.7	40.6	46.1	44.7	1.38	33.353			
500.0	498.8	499.0	498.5	1.0	0.9	-101.21	15.7	47.4	49.0	47.1	1.89	25.996			
600.0	597.1	598.8	597.2	1.4	1.2	-104.99	6.3	58.2	53.5	50.9	2.52	21.205			
700.0	694.3	698.7	695.2	1.8	1.6	-107.91	-6.5	72.8	59.4	56.1	3.31	17.947			
800.0	790.2	798.7	792.2	2.3	2.0	-109.98	-22.7	91.2	66.6	62.4	4.26	15.660			
900.0	884.4	898.8	887.7	3.0	2.6	-111.33	-42.2	113.5	75.2	69.8	5.37	14.003			
1,000.0	976.8	998.9	981.7	3.7	3.2	-112.11	-65.0	139.5	85.0	78.3	6.66	12.763			
1,100.0	1,067.1	1,098.7	1,073.6	4.5	3.9	-112.79	-90.6	168.6	96.0	88.0	8.07	11.898			
1,200.0	1,154.9	1,197.7	1,164.5	5.4	4.6	-115.37	-116.4	198.1	109.1	99.7	9.46	11.529 SF			
1,300.0	1,240.9	1,296.2	1,255.0	6.3	5.4	-119.16	-142.1	227.3	124.3	113.5	10.75	11.561			
1,400.0	1,326.7	1,394.7	1,345.5	7.3	6.1	-122.27	-167.8	256.6	140.0	128.0	11.98	11.680			
1,500.0	1,412.6	1,493.2	1,436.0	8.2	6.8	-124.76	-193.5	285.9	156.0	142.8	13.19	11.828			
1,600.0	1,498.5	1,591.7	1,526.4	9.1	7.5	-126.78	-219.2	315.2	172.2	157.9	14.37	11.985			
1,700.0	1,584.3	1,690.2	1,616.9	10.1	8.2	-128.45	-244.9	344.5	188.7	173.1	15.54	12.143			
1,800.0	1,670.2	1,788.7	1,707.4	11.0	9.0	-129.85	-270.6	373.7	205.2	188.5	16.69	12.295			
1,900.0	1,756.0	1,887.2	1,797.9	12.0	9.7	-131.05	-296.3	403.0	221.9	204.1	17.84	12.440			
2,000.0	1,841.9	1,985.7	1,888.3	12.9	10.4	-132.07	-322.0	432.3	238.6	219.7	18.98	12.576			
2,100.0	1,927.7	2,084.2	1,978.8	13.9	11.1	-132.97	-347.7	461.6	255.5	235.3	20.11	12.703			
2,200.0	2,013.6	2,182.7	2,069.3	14.8	11.9	-133.75	-373.4	490.9	272.3	251.1	21.24	12.823			
2,300.0	2,099.5	2,281.2	2,159.8	15.7	12.6	-134.44	-399.1	520.1	289.2	266.9	22.36	12.934			
2,400.0	2,185.3	2,379.7	2,250.2	16.7	13.3	-135.05	-424.8	549.4	306.2	282.7	23.48	13.038			
2,500.0	2,271.2	2,478.2	2,340.7	17.6	14.0	-135.60	-450.5	578.7	323.1	298.5	24.60	13.135			
2,600.0	2,357.0	2,576.7	2,431.2	18.6	14.8	-136.10	-476.2	608.0	340.1	314.4	25.72	13.225			
2,700.0	2,442.9	2,675.2	2,521.7	19.5	15.5	-136.55	-501.9	637.3	357.2	330.3	26.83	13.310			
2,800.0	2,528.7	2,773.8	2,612.1	20.5	16.2	-136.95	-527.6	666.6	374.2	346.2	27.95	13.390			
2,900.0	2,614.6	2,872.3	2,702.6	21.4	17.0	-137.33	-553.3	695.8	391.2	362.2	29.06	13.464			
3,000.0	2,700.5	2,970.8	2,793.1	22.4	17.7	-137.67	-578.9	725.1	408.3	378.1	30.17	13.534			
3,100.0	2,786.3	3,069.3	2,883.5	23.3	18.4	-137.98	-604.6	754.4	425.4	394.1	31.28	13.600			
3,200.0	2,872.2	3,167.8	2,974.0	24.3	19.1	-138.27	-630.3	783.7	442.5	410.1	32.39	13.662			
3,300.0	2,958.0	3,266.3	3,064.5	25.2	19.9	-138.54	-656.0	813.0	459.6	426.1	33.50	13.721			
3,400.0	3,043.9	3,364.8	3,155.0	26.2	20.6	-138.79	-681.7	842.2	476.7	442.1	34.60	13.776			
3,500.0	3,129.7	3,463.3	3,245.4	27.1	21.3	-139.02	-707.4	871.5	493.8	458.1	35.71	13.829			

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 6-8D
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 6-8D	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: O-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	56.61	16.4	24.9	29.8						
100.0	100.0	100.0	100.0	0.1	0.1	56.61	16.4	24.9	29.8	29.5	0.27	109.391			
200.0	200.0	200.0	200.0	0.3	0.3	56.61	16.4	24.9	29.8	29.2	0.62	47.936			
239.3	239.3	239.3	239.3	0.4	0.4	-89.75	16.4	24.9	29.8	29.0	0.76	39.130 CC			
300.0	300.0	299.9	299.9	0.5	0.5	-92.75	15.9	25.3	29.9	28.9	0.98	30.565 ES			
400.0	399.6	399.7	399.5	0.7	0.7	-97.62	12.2	29.0	31.1	29.7	1.39	22.341			
500.0	498.8	499.6	498.9	1.0	0.9	-101.90	4.8	36.3	33.4	31.5	1.91	17.468			
600.0	597.1	599.7	597.7	1.4	1.2	-105.32	-6.4	47.3	36.7	34.2	2.57	14.302			
700.0	694.3	699.8	695.6	1.8	1.6	-107.82	-21.2	61.9	41.1	37.7	3.38	12.154			
800.0	790.2	800.0	792.4	2.3	2.1	-109.51	-39.7	80.0	46.4	42.0	4.35	10.645			
900.0	884.4	900.3	887.8	3.0	2.7	-110.52	-61.7	101.8	52.5	47.0	5.50	9.549			
1,000.0	976.8	1,000.6	981.4	3.7	3.4	-111.02	-87.4	127.0	59.5	52.7	6.82	8.727			
1,100.0	1,067.1	1,100.9	1,073.0	4.5	4.1	-111.16	-116.4	155.6	67.3	59.0	8.31	8.105			
1,200.0	1,154.9	1,200.4	1,163.1	5.4	4.9	-113.38	-146.6	185.3	76.7	66.9	9.78	7.842 SF			
1,300.0	1,240.9	1,299.6	1,252.9	6.3	5.7	-117.52	-176.6	214.9	87.9	76.8	11.10	7.917			
1,400.0	1,326.7	1,398.8	1,342.7	7.3	6.5	-120.89	-206.6	244.4	99.6	87.2	12.37	8.051			
1,500.0	1,412.6	1,497.9	1,432.4	8.2	7.2	-123.54	-236.7	274.0	111.5	97.9	13.60	8.201			
1,600.0	1,498.5	1,597.1	1,522.2	9.1	8.0	-125.68	-266.7	303.6	123.6	108.8	14.81	8.351			
1,700.0	1,584.3	1,696.2	1,612.0	10.1	8.8	-127.43	-296.7	333.1	135.9	119.9	16.00	8.496			
1,800.0	1,670.2	1,795.4	1,701.7	11.0	9.6	-128.89	-326.7	362.7	148.3	131.1	17.18	8.633			
1,900.0	1,756.0	1,894.6	1,791.5	12.0	10.4	-130.13	-356.8	392.3	160.7	142.4	18.35	8.761			
2,000.0	1,841.9	1,993.7	1,881.3	12.9	11.1	-131.19	-386.8	421.8	173.3	153.8	19.51	8.881			
2,100.0	1,927.7	2,092.9	1,971.0	13.9	11.9	-132.11	-416.8	451.4	185.8	165.2	20.67	8.991			
2,200.0	2,013.6	2,192.1	2,060.8	14.8	12.7	-132.91	-446.9	481.0	198.4	176.6	21.82	9.094			
2,300.0	2,099.5	2,291.2	2,150.6	15.7	13.5	-133.61	-476.9	510.5	211.1	188.1	22.97	9.189			
2,400.0	2,185.3	2,390.4	2,240.3	16.7	14.3	-134.23	-506.9	540.1	223.8	199.6	24.12	9.277			
2,500.0	2,271.2	2,489.6	2,330.1	17.6	15.1	-134.79	-536.9	569.7	236.4	211.2	25.26	9.359			
2,600.0	2,357.0	2,588.7	2,419.9	18.6	15.8	-135.29	-567.0	599.2	249.2	222.8	26.41	9.435			
2,700.0	2,442.9	2,687.9	2,509.6	19.5	16.6	-135.75	-597.0	628.8	261.9	234.3	27.55	9.506			
2,800.0	2,528.7	2,787.1	2,599.4	20.5	17.4	-136.16	-627.0	658.4	274.6	245.9	28.69	9.572			
2,900.0	2,614.6	2,886.2	2,689.2	21.4	18.2	-136.53	-657.1	687.9	287.4	257.6	29.83	9.634			
3,000.0	2,700.5	2,985.4	2,778.9	22.4	19.0	-136.87	-687.1	717.5	300.2	269.2	30.97	9.692			
3,100.0	2,786.3	3,084.6	2,868.7	23.3	19.8	-137.19	-717.1	747.0	312.9	280.8	32.11	9.747			
3,200.0	2,872.2	3,183.7	2,958.5	24.3	20.6	-137.48	-747.1	776.6	325.7	292.5	33.24	9.798			
3,300.0	2,958.0	3,282.9	3,048.2	25.2	21.3	-137.74	-777.2	806.2	338.5	304.1	34.38	9.846			
3,400.0	3,043.9	3,382.1	3,138.0	26.2	22.1	-137.99	-807.2	835.7	351.3	315.8	35.52	9.892			
3,500.0	3,129.7	3,481.2	3,227.8	27.1	22.9	-138.22	-837.2	865.3	364.1	327.5	36.65	9.935			
3,600.0	3,215.6	3,580.4	3,317.5	28.0	23.7	-138.44	-867.3	894.9	376.9	339.2	37.79	9.976			
3,700.0	3,301.5	3,679.6	3,407.3	29.0	24.5	-138.64	-897.3	924.4	389.8	350.8	38.92	10.014			
3,800.0	3,387.3	3,778.7	3,497.1	29.9	25.3	-138.83	-927.3	954.0	402.6	362.5	40.06	10.051			
3,900.0	3,473.2	3,877.9	3,586.8	30.9	26.1	-139.00	-957.4	983.6	415.4	374.2	41.19	10.085			
4,000.0	3,559.0	3,977.1	3,676.6	31.8	26.8	-139.17	-987.4	1,013.1	428.2	385.9	42.32	10.118			
4,100.0	3,644.9	4,076.2	3,766.4	32.8	27.6	-139.33	-1,017.4	1,042.7	441.1	397.6	43.46	10.150			
4,200.0	3,730.7	4,175.4	3,856.1	33.7	28.4	-139.47	-1,047.4	1,072.3	453.9	409.3	44.59	10.180			
4,300.0	3,816.6	4,274.6	3,945.9	34.7	29.2	-139.61	-1,077.5	1,101.8	466.7	421.0	45.72	10.208			
4,400.0	3,902.5	4,373.7	4,035.7	35.6	30.0	-139.74	-1,107.5	1,131.4	479.6	432.7	46.86	10.235			
4,500.0	3,988.3	4,472.9	4,125.4	36.6	30.8	-139.87	-1,137.5	1,161.0	492.4	444.4	47.99	10.261			

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 6-8D
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 6-8D	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													O31E Pad (2nd Occupation) - Shideler Fee 6-8AA - OH - Plan #1		Offset Site Error:	0.0 ft
Survey Program: 0-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	57.20	8.0	12.4	14.8							
100.0	100.0	100.0	100.0	0.1	0.1	57.20	8.0	12.4	14.8	14.5	0.27	54.330				
200.0	200.0	200.0	200.0	0.3	0.3	57.20	8.0	12.4	14.8	14.2	0.62	23.808				
205.1	205.1	205.1	205.1	0.3	0.3	-88.41	8.0	12.4	14.8	14.2	0.64	23.141	CC			
300.0	300.0	300.0	299.9	0.5	0.5	-92.81	6.8	13.3	14.9	13.9	0.98	15.169	ES			
400.0	399.6	400.0	399.7	0.7	0.7	-97.65	1.7	17.3	15.4	14.0	1.41	10.942				
500.0	498.8	500.1	499.1	1.0	1.0	-101.94	-7.6	24.5	16.3	14.3	1.94	8.376				
600.0	597.1	600.2	597.8	1.4	1.3	-105.51	-21.1	34.9	17.5	14.9	2.62	6.698				
700.0	694.3	700.4	695.5	1.8	1.7	-108.28	-38.6	48.4	19.1	15.7	3.44	5.561				
800.0	790.2	800.7	792.0	2.3	2.2	-110.33	-60.1	65.1	21.0	16.6	4.42	4.764				
900.0	884.4	901.0	887.0	3.0	2.8	-111.73	-85.7	84.9	23.2	17.7	5.55	4.186				
1,000.0	976.8	1,001.4	980.2	3.7	3.5	-112.60	-115.1	107.6	25.7	18.9	6.85	3.751				
1,100.0	1,067.1	1,101.9	1,071.4	4.5	4.3	-113.06	-148.5	133.4	28.4	20.1	8.32	3.415				
1,200.0	1,154.9	1,202.3	1,160.2	5.4	5.2	-113.29	-185.5	162.0	31.4	21.5	9.95	3.156				
1,300.0	1,240.9	1,302.2	1,247.7	6.3	6.1	-116.40	-223.7	191.5	35.3	23.9	11.39	3.099				
1,400.0	1,326.7	1,402.1	1,335.2	7.3	7.0	-119.17	-261.8	221.1	39.4	26.6	12.77	3.085	SF			
1,500.0	1,412.6	1,502.0	1,422.7	8.2	7.8	-121.41	-300.0	250.6	43.6	29.4	14.12	3.085				
1,600.0	1,498.5	1,601.9	1,510.1	9.1	8.7	-123.26	-338.2	280.1	47.8	32.3	15.44	3.094				
1,700.0	1,584.3	1,701.8	1,597.6	10.1	9.6	-124.81	-376.3	309.6	52.0	35.3	16.74	3.108				
1,800.0	1,670.2	1,801.7	1,685.1	11.0	10.5	-126.13	-414.5	339.1	56.3	38.3	18.03	3.124				
1,900.0	1,756.0	1,901.6	1,772.6	12.0	11.4	-127.26	-452.7	368.6	60.6	41.3	19.31	3.141				
2,000.0	1,841.9	2,001.5	1,860.1	12.9	12.3	-128.23	-490.8	398.1	65.0	44.4	20.57	3.158				
2,100.0	1,927.7	2,101.4	1,947.5	13.9	13.2	-129.09	-529.0	427.6	69.3	47.5	21.83	3.175				
2,200.0	2,013.6	2,201.3	2,035.0	14.8	14.1	-129.84	-567.2	457.1	73.7	50.6	23.09	3.192				
2,300.0	2,099.5	2,301.2	2,122.5	15.7	15.0	-130.51	-605.3	486.6	78.1	53.7	24.33	3.208				
2,400.0	2,185.3	2,401.1	2,210.0	16.7	15.9	-131.11	-643.5	516.1	82.5	56.9	25.58	3.224				
2,500.0	2,271.2	2,501.0	2,297.5	17.6	16.8	-131.65	-681.7	545.6	86.9	60.0	26.82	3.238				
2,600.0	2,357.0	2,600.9	2,384.9	18.6	17.6	-132.14	-719.8	575.2	91.3	63.2	28.06	3.253				
2,700.0	2,442.9	2,700.8	2,472.4	19.5	18.5	-132.58	-758.0	604.7	95.7	66.4	29.29	3.266				
2,800.0	2,528.7	2,800.7	2,559.9	20.5	19.4	-132.98	-796.2	634.2	100.1	69.6	30.52	3.279				
2,900.0	2,614.6	2,900.6	2,647.4	21.4	20.3	-133.35	-834.3	663.7	104.5	72.7	31.75	3.291				
3,000.0	2,700.5	3,000.5	2,734.9	22.4	21.2	-133.69	-872.5	693.2	108.9	75.9	32.98	3.302				
3,100.0	2,786.3	3,100.4	2,822.3	23.3	22.1	-134.00	-910.7	722.7	113.3	79.1	34.21	3.313				
3,200.0	2,872.2	3,200.3	2,909.8	24.3	23.0	-134.29	-948.8	752.2	117.8	82.3	35.43	3.324				
3,300.0	2,958.0	3,300.2	2,997.3	25.2	23.9	-134.55	-987.0	781.7	122.2	85.5	36.66	3.333				
3,400.0	3,043.9	3,400.1	3,084.8	26.2	24.8	-134.80	-1,025.2	811.2	126.6	88.8	37.88	3.343				
3,500.0	3,129.7	3,500.0	3,172.3	27.1	25.7	-135.04	-1,063.3	840.7	131.1	92.0	39.10	3.352				
3,600.0	3,215.6	3,599.9	3,259.7	28.0	26.6	-135.25	-1,101.5	870.2	135.5	95.2	40.33	3.360				
3,700.0	3,301.5	3,699.8	3,347.2	29.0	27.5	-135.46	-1,139.7	899.7	139.9	98.4	41.55	3.368				
3,800.0	3,387.3	3,799.7	3,434.7	29.9	28.4	-135.65	-1,177.8	929.2	144.4	101.6	42.77	3.376				
3,900.0	3,473.2	3,899.6	3,522.2	30.9	29.3	-135.83	-1,216.0	958.8	148.8	104.8	43.99	3.384				
4,000.0	3,559.0	3,999.5	3,609.6	31.8	30.2	-135.99	-1,254.2	988.3	153.3	108.1	45.20	3.391				
4,100.0	3,644.9	4,099.4	3,697.1	32.8	31.1	-136.15	-1,292.3	1,017.8	157.7	111.3	46.42	3.398				
4,200.0	3,730.7	4,199.3	3,784.6	33.7	31.9	-136.30	-1,330.5	1,047.3	162.2	114.5	47.64	3.404				
4,300.0	3,816.6	4,299.2	3,872.1	34.7	32.8	-136.45	-1,368.7	1,076.8	166.6	117.8	48.86	3.410				
4,400.0	3,902.5	4,399.1	3,959.6	35.6	33.7	-136.58	-1,406.8	1,106.3	171.1	121.0	50.07	3.416				
4,500.0	3,988.3	4,499.0	4,047.0	36.6	34.6	-136.71	-1,445.0	1,135.8	175.5	124.2	51.29	3.422				
4,600.0	4,074.2	4,598.9	4,134.5	37.5	35.5	-136.83	-1,483.2	1,165.3	180.0	127.5	52.51	3.427				
4,700.0	4,160.0	4,698.8	4,222.0	38.5	36.4	-136.95	-1,521.3	1,194.8	184.4	130.7	53.72	3.433				
4,800.0	4,245.9	4,798.7	4,309.5	39.4	37.3	-137.06	-1,559.5	1,224.3	188.9	133.9	54.94	3.438				
4,900.0	4,331.7	4,898.6	4,397.0	40.4	38.2	-137.16	-1,597.7	1,253.8	193.3	137.2	56.15	3.443				
5,000.0	4,417.6	4,998.5	4,484.4	41.3	39.1	-137.27	-1,635.8	1,283.3	197.8	140.4	57.37	3.447				

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 6-8D
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 6-8D	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												O31E Pad (2nd Occupation) - Shideler Fee 6-8AA - OH - Plan #1		Offset Site Error:	0.0 ft
Survey Program: 0-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)					
5,100.0	4,503.5	5,098.4	4,571.9	42.3	40.0	-137.36	-1,674.0	1,312.9	202.2	143.6	58.58	3.452			
5,200.0	4,589.3	5,198.3	4,659.4	43.2	40.9	-137.45	-1,712.2	1,342.4	206.7	146.9	59.80	3.456			
5,300.0	4,675.2	5,298.2	4,746.9	44.2	41.8	-137.54	-1,750.3	1,371.9	211.1	150.1	61.01	3.461			
5,400.0	4,761.0	5,398.1	4,834.4	45.1	42.7	-137.63	-1,788.5	1,401.4	215.6	153.4	62.23	3.465			
5,500.0	4,846.9	5,498.0	4,921.8	46.0	43.6	-137.71	-1,826.7	1,430.9	220.0	156.6	63.44	3.469			
5,600.0	4,932.7	5,597.9	5,009.3	47.0	44.5	-137.79	-1,864.8	1,460.4	224.5	159.9	64.65	3.472			
5,700.0	5,018.6	5,697.8	5,096.8	47.9	45.4	-137.86	-1,903.0	1,489.9	229.0	163.1	65.87	3.476			
5,800.0	5,105.2	5,792.8	5,180.6	48.8	46.2	-137.98	-1,938.4	1,517.3	233.3	166.3	66.97	3.484			
5,900.0	5,193.4	5,887.3	5,265.3	49.7	46.9	-138.10	-1,971.4	1,542.8	237.4	169.4	67.98	3.492			
6,000.0	5,283.3	5,981.6	5,351.3	50.5	47.6	-138.21	-2,002.2	1,566.6	241.2	172.3	68.92	3.500			
6,100.0	5,374.6	6,075.9	5,438.4	51.2	48.2	-138.31	-2,030.7	1,588.6	244.8	175.0	69.78	3.508			
6,200.0	5,467.3	6,170.0	5,526.5	51.8	48.8	-138.41	-2,056.9	1,608.9	248.1	177.5	70.57	3.516			
6,300.0	5,561.2	6,264.2	5,615.7	52.4	49.4	-138.49	-2,080.7	1,627.3	251.1	179.9	71.29	3.523			
6,400.0	5,656.3	6,358.2	5,705.7	53.0	49.8	-138.58	-2,102.2	1,643.9	253.9	182.0	71.93	3.530			
6,500.0	5,752.4	6,452.2	5,796.6	53.5	50.3	-138.65	-2,121.4	1,658.8	256.4	183.9	72.50	3.536			
6,600.0	5,849.4	6,546.2	5,888.1	53.9	50.6	-138.72	-2,138.2	1,671.7	258.6	185.6	72.99	3.542			
6,700.0	5,947.2	6,640.1	5,980.2	54.2	50.9	-138.79	-2,152.6	1,682.9	260.5	187.1	73.41	3.548			
6,800.0	6,045.6	6,734.0	6,072.8	54.5	51.2	-138.85	-2,164.6	1,692.1	262.1	188.3	73.75	3.554			
6,900.0	6,144.7	6,827.8	6,165.9	54.8	51.4	-138.90	-2,174.1	1,699.5	263.4	189.4	74.03	3.558			
7,000.0	6,244.1	6,921.6	6,259.3	55.0	51.6	-138.95	-2,181.3	1,705.1	264.5	190.2	74.23	3.563			
7,100.0	6,343.8	7,015.4	6,352.9	55.1	51.7	-139.00	-2,186.0	1,708.7	265.2	190.9	74.36	3.567			
7,200.0	6,443.8	7,109.2	6,446.6	55.2	51.8	-139.04	-2,188.3	1,710.5	265.7	191.3	74.42	3.570			
7,300.0	6,543.8	7,206.4	6,543.8	55.2	51.8	6.53	-2,188.6	1,710.7	265.8	191.3	74.49	3.568			
7,400.0	6,643.8	7,306.4	6,643.8	55.3	51.8	6.53	-2,188.6	1,710.7	265.8	191.2	74.61	3.562			
7,500.0	6,743.8	7,406.4	6,743.8	55.3	51.9	6.53	-2,188.6	1,710.7	265.8	191.1	74.73	3.557			
7,600.0	6,843.8	7,506.4	6,843.8	55.3	51.9	6.53	-2,188.6	1,710.7	265.8	190.9	74.85	3.551			
7,700.0	6,943.8	7,606.4	6,943.8	55.4	52.0	6.53	-2,188.6	1,710.7	265.8	190.8	74.98	3.545			
7,800.0	7,043.8	7,706.4	7,043.8	55.4	52.0	6.53	-2,188.6	1,710.7	265.8	190.7	75.10	3.539			
7,900.0	7,143.8	7,806.4	7,143.8	55.5	52.1	6.53	-2,188.6	1,710.7	265.8	190.6	75.23	3.533			
8,000.0	7,243.8	7,906.4	7,243.8	55.5	52.1	6.53	-2,188.6	1,710.7	265.8	190.4	75.36	3.527			
8,100.0	7,343.8	8,006.4	7,343.8	55.5	52.2	6.53	-2,188.6	1,710.7	265.8	190.3	75.48	3.521			
8,200.0	7,443.8	8,106.4	7,443.8	55.6	52.2	6.53	-2,188.6	1,710.7	265.8	190.2	75.61	3.515			
8,300.0	7,543.8	8,206.4	7,543.8	55.6	52.2	6.53	-2,188.6	1,710.7	265.8	190.0	75.75	3.509			
8,400.0	7,643.8	8,306.4	7,643.8	55.7	52.3	6.53	-2,188.6	1,710.7	265.8	189.9	75.88	3.503			
8,500.0	7,743.8	8,406.4	7,743.8	55.7	52.3	6.53	-2,188.6	1,710.7	265.8	189.8	76.01	3.497			
8,600.0	7,843.8	8,506.4	7,843.8	55.8	52.4	6.53	-2,188.6	1,710.7	265.8	189.6	76.15	3.490			
8,700.0	7,943.8	8,606.4	7,943.8	55.8	52.4	6.53	-2,188.6	1,710.7	265.8	189.5	76.29	3.484			
8,800.0	8,043.8	8,706.4	8,043.8	55.9	52.5	6.53	-2,188.6	1,710.7	265.8	189.4	76.43	3.478			
8,900.0	8,143.8	8,806.4	8,143.8	55.9	52.5	6.53	-2,188.6	1,710.7	265.8	189.2	76.57	3.471			
9,000.0	8,243.8	8,906.4	8,243.8	56.0	52.6	6.53	-2,188.6	1,710.7	265.8	189.1	76.71	3.465			
9,100.0	8,343.8	9,006.4	8,343.8	56.0	52.6	6.53	-2,188.6	1,710.7	265.8	188.9	76.85	3.459			
9,159.0	8,402.7	9,065.3	8,402.7	56.0	52.7	6.53	-2,188.6	1,710.7	265.8	188.9	76.93	3.455			
9,192.2	8,436.0	9,091.6	8,429.0	56.1	52.7	6.53	-2,188.6	1,710.7	265.9	188.9	76.98	3.454			

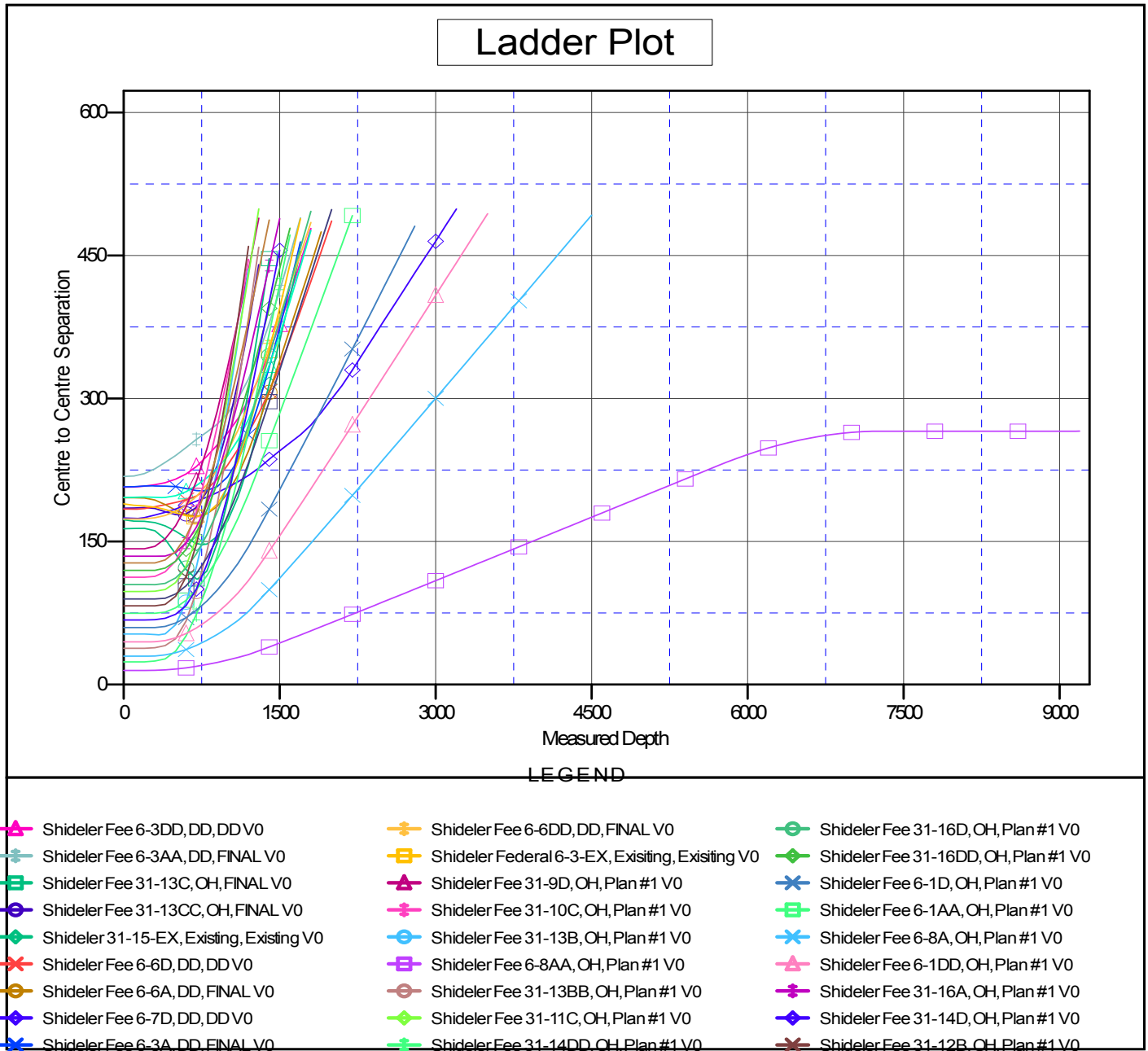
Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Shideler Fee 6-8D	
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 6-8D	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)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Shideler Fee 6-8D
 Coordinate System is US State Plane 1983, Colorado Central Zone
 Grid Convergence at Surface is: -1.39°



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