

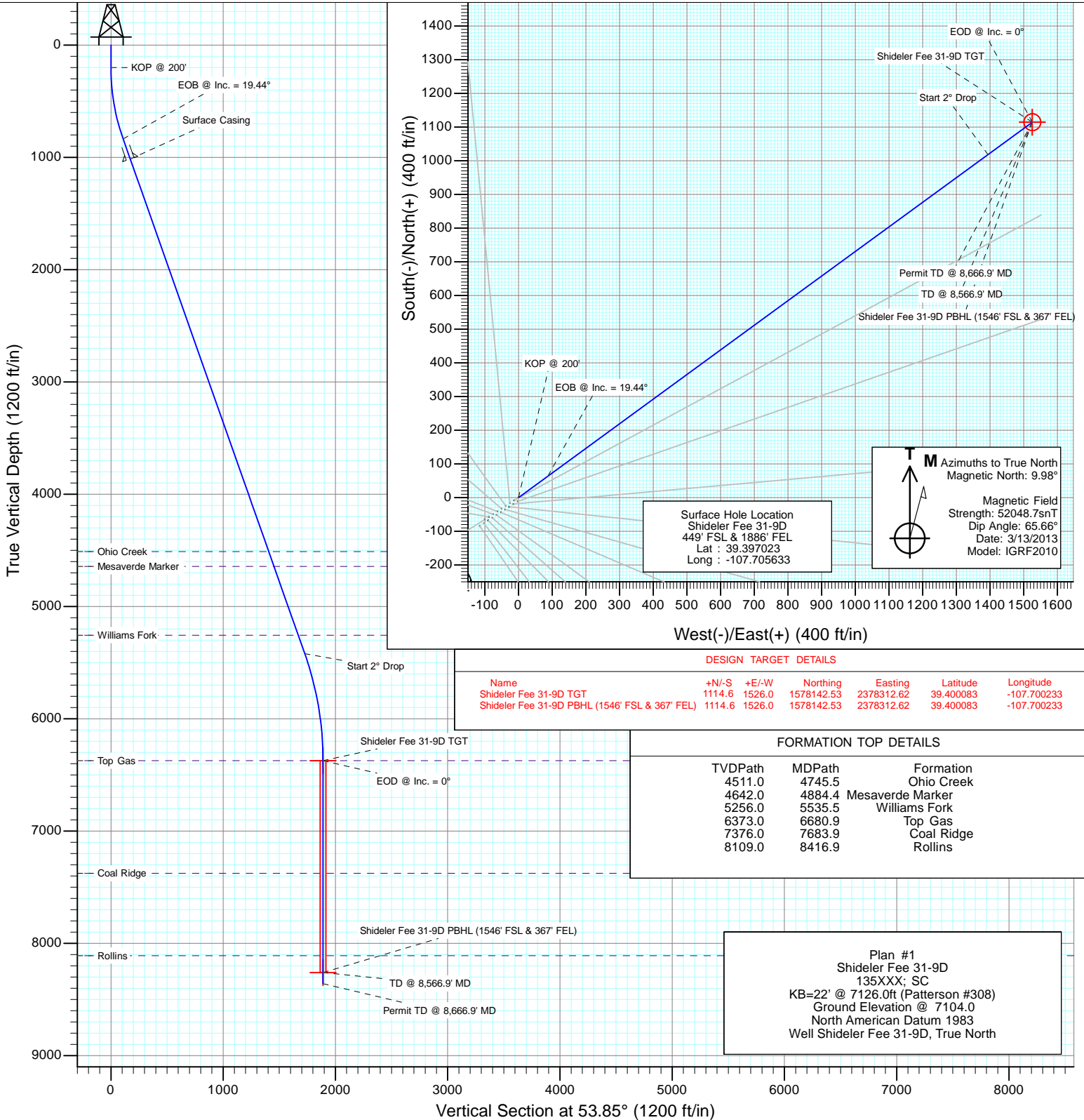


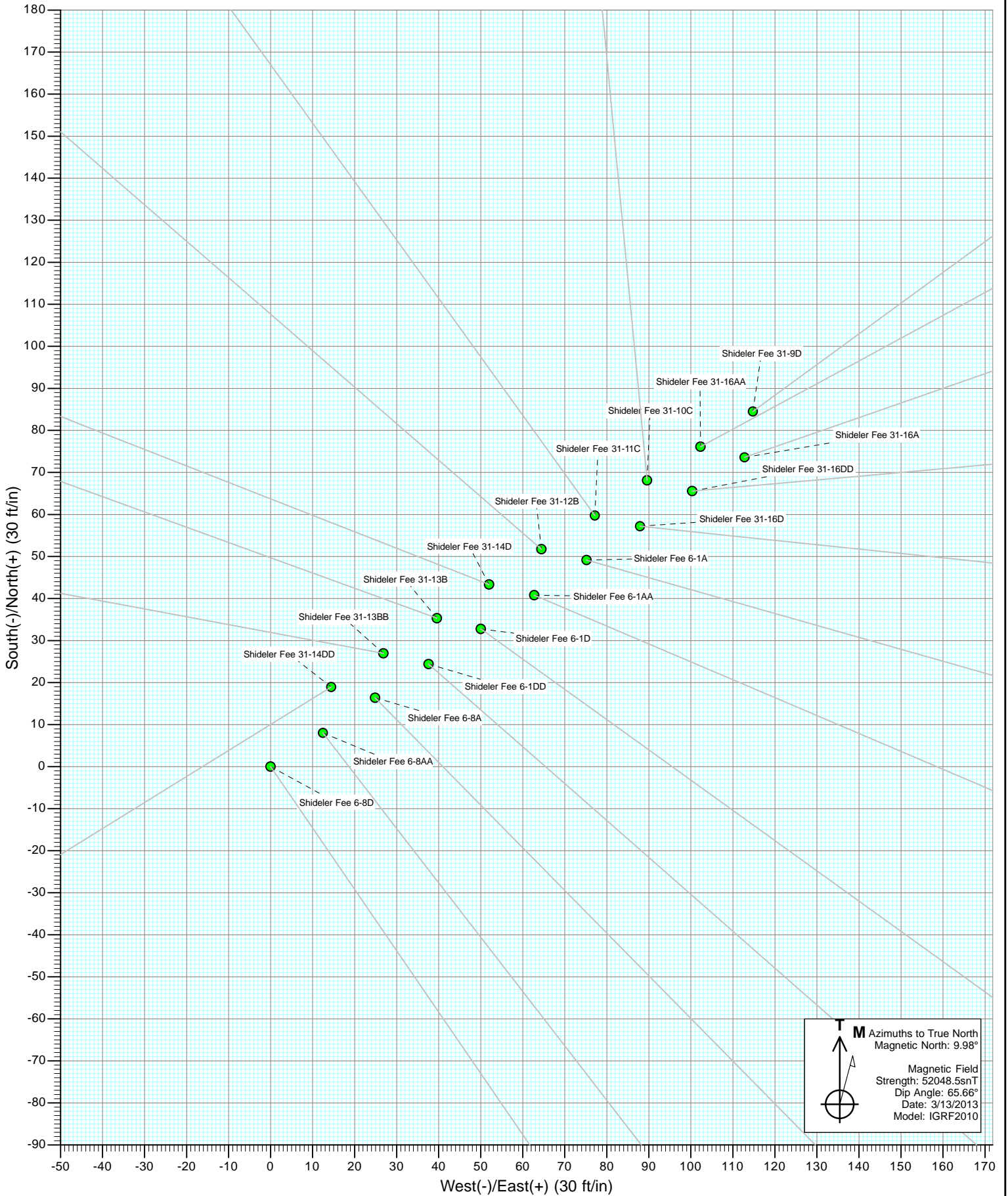
Project: Mamm Creek
 Site: O31E Pad (2nd Occupation)
 Well: Shideler Fee 31-9D
 Wellbore: OH
 Design: Plan #1

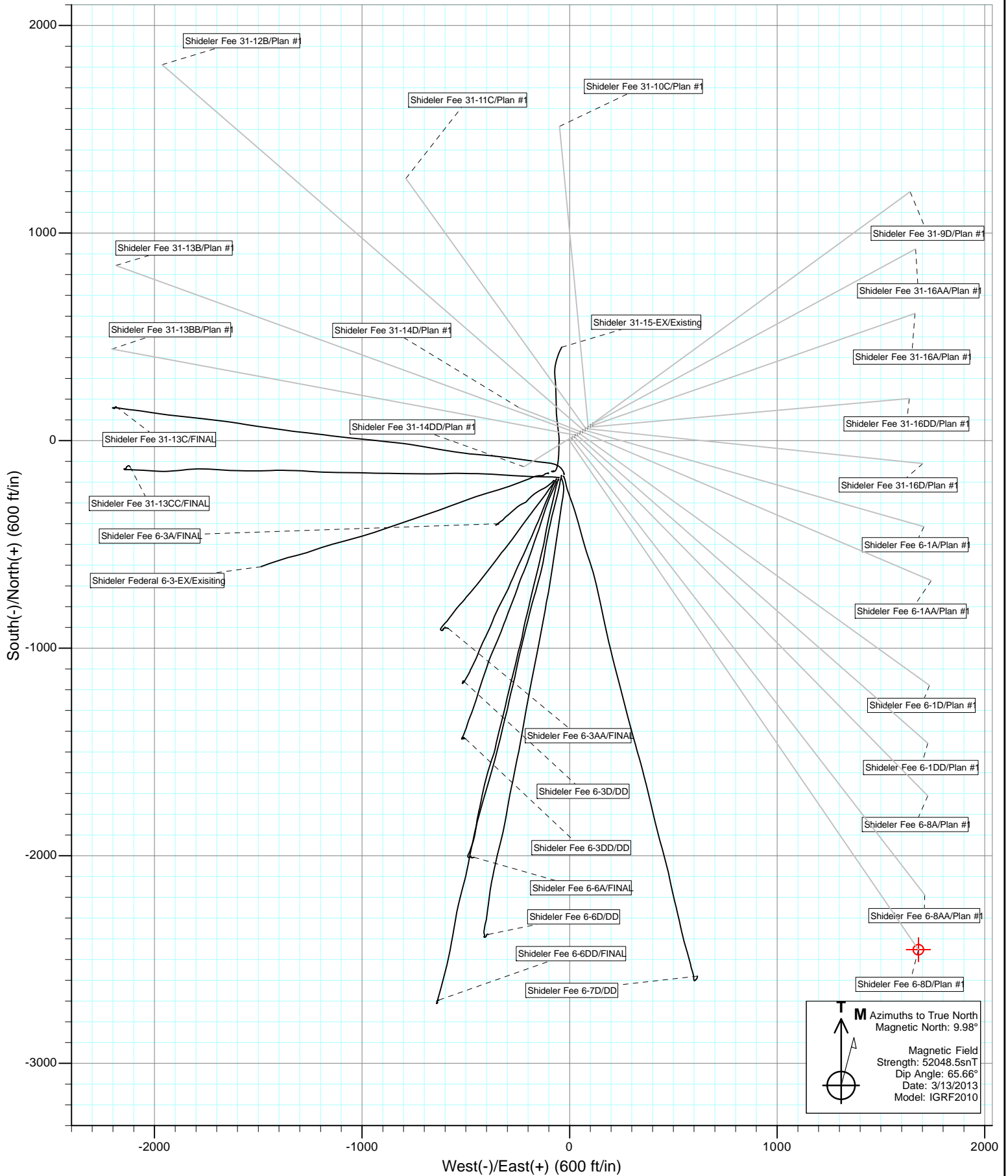


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	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	847.9	19.44	53.85	835.5	64.2	87.9	3.00	53.85	108.8	
4	5709.1	19.44	53.85	5419.7	1018.3	1394.1	0.00	0.00	1726.4	
5	6680.9	0.00	0.00	6373.0	1114.6	1526.0	2.00	180.00	1889.7	Shideler Fee 31-9D TGT
6	8566.9	0.00	0.00	8259.0	1114.6	1526.0	0.00	0.00	1889.7	Shideler Fee 31-9D PBHL (1546' FSL & 367' FEL)
7	8666.9	0.00	0.00	8359.0	1114.6	1526.0	0.00	0.00	1889.7	

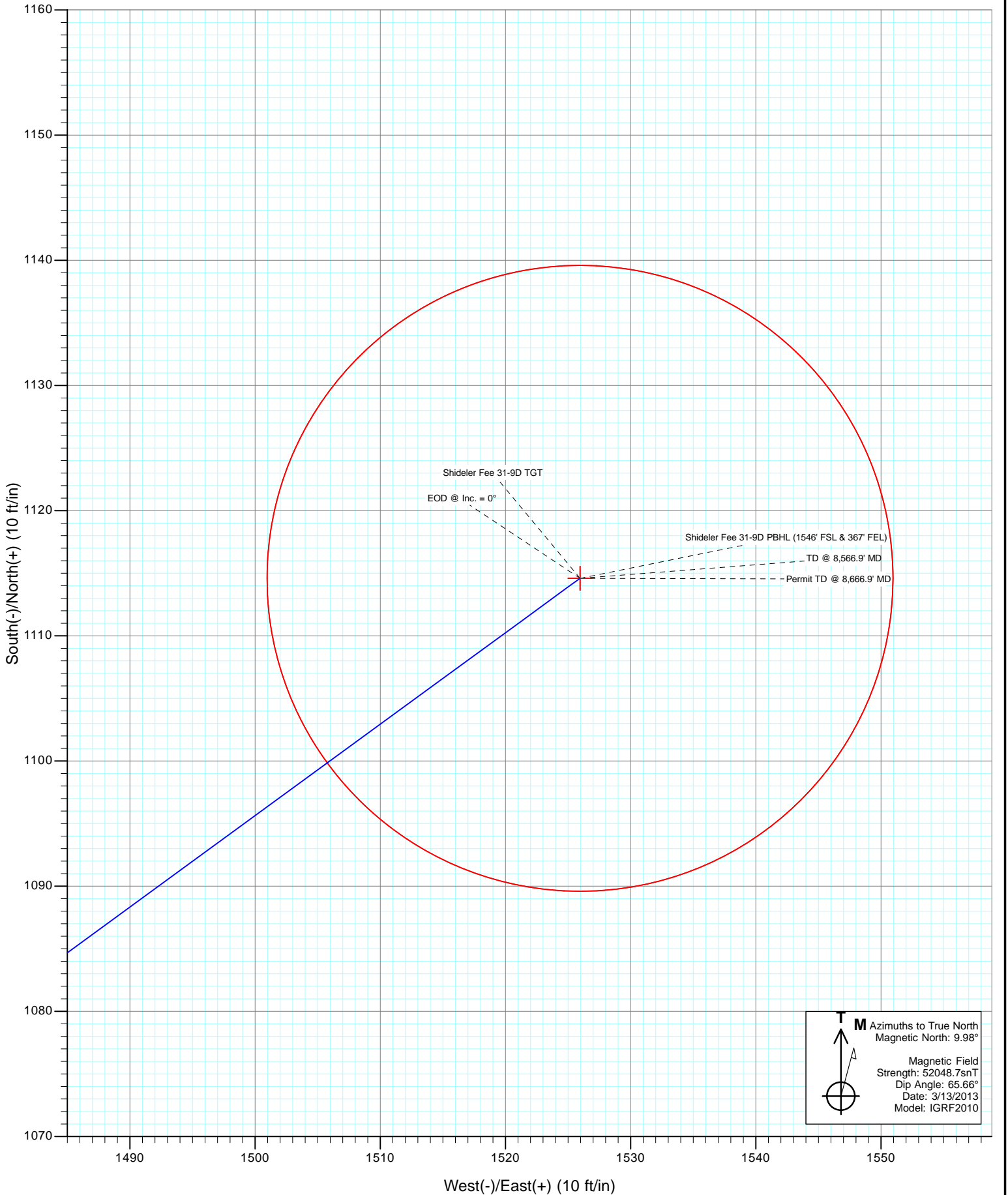








Project: Mamm Creek
Site: O31E Pad (2nd Occupation)
Well: Shideler Fee 31-9D
Wellbore: OH
Design: Plan #1



Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Shideler Fee 31-9D
Company: EnCana Oil & Gas (USA) Inc	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
Project: Mamm Creek	MD Reference: KB=22' @ 7126.0ft (Patterson #308)
Site: O31E Pad (2nd Occupation)	North Reference: True
Well: Shideler Fee 31-9D	Survey Calculation Method: Minimum Curvature
Wellbore: OH	
Design: Plan #1	

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

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

Well Shideler Fee 31-9D						
Well Position	+N/-S	0.0 ft	Northing:	1,577,065.31 ft	Latitude:	39.397023
	+E/-W	0.0 ft	Easting:	2,376,760.05 ft	Longitude:	-107.705633
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	53.85	

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	
847.9	19.44	53.85	835.5	64.2	87.9	3.00	3.00	0.00	53.85	
5,709.1	19.44	53.85	5,419.7	1,018.3	1,394.1	0.00	0.00	0.00	0.00	
6,680.9	0.00	0.00	6,373.0	1,114.6	1,526.0	2.00	-2.00	0.00	180.00	Shideler Fee 31-9D T
8,566.9	0.00	0.00	8,259.0	1,114.6	1,526.0	0.00	0.00	0.00	0.00	Shideler Fee 31-9D P
8,666.9	0.00	0.00	8,359.0	1,114.6	1,526.0	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	North Reference:	True
Well:	Shideler Fee 31-9D	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	53.85	300.0	1.5	2.1	2.6	3.00	3.00	
400.0	6.00	53.85	399.6	6.2	8.4	10.5	3.00	3.00	
500.0	9.00	53.85	498.8	13.9	19.0	23.5	3.00	3.00	
600.0	12.00	53.85	597.1	24.6	33.7	41.7	3.00	3.00	
700.0	15.00	53.85	694.3	38.4	52.6	65.1	3.00	3.00	
800.0	18.00	53.85	790.2	55.1	75.5	93.5	3.00	3.00	
847.9	19.44	53.85	835.5	64.2	87.9	108.8	3.00	3.00	EOB @ Inc. = 19.44°
900.0	19.44	53.85	884.7	74.4	101.9	126.2	0.00	0.00	
1,000.0	19.44	53.85	979.0	94.1	128.8	159.5	0.00	0.00	
1,038.2	19.44	53.85	1,015.0	101.6	139.0	172.2	0.00	0.00	Surface Casing
1,100.0	19.44	53.85	1,073.3	113.7	155.6	192.7	0.00	0.00	
1,200.0	19.44	53.85	1,167.6	133.3	182.5	226.0	0.00	0.00	
1,300.0	19.44	53.85	1,261.9	152.9	209.4	259.3	0.00	0.00	
1,400.0	19.44	53.85	1,356.2	172.6	236.2	292.6	0.00	0.00	
1,500.0	19.44	53.85	1,450.5	192.2	263.1	325.8	0.00	0.00	
1,600.0	19.44	53.85	1,544.8	211.8	290.0	359.1	0.00	0.00	
1,700.0	19.44	53.85	1,639.1	231.4	316.9	392.4	0.00	0.00	
1,800.0	19.44	53.85	1,733.4	251.1	343.7	425.7	0.00	0.00	
1,900.0	19.44	53.85	1,827.7	270.7	370.6	458.9	0.00	0.00	
2,000.0	19.44	53.85	1,922.0	290.3	397.5	492.2	0.00	0.00	
2,100.0	19.44	53.85	2,016.3	309.9	424.3	525.5	0.00	0.00	
2,200.0	19.44	53.85	2,110.6	329.6	451.2	558.8	0.00	0.00	
2,300.0	19.44	53.85	2,204.9	349.2	478.1	592.0	0.00	0.00	
2,400.0	19.44	53.85	2,299.2	368.8	505.0	625.3	0.00	0.00	
2,500.0	19.44	53.85	2,393.5	388.5	531.8	658.6	0.00	0.00	
2,600.0	19.44	53.85	2,487.8	408.1	558.7	691.9	0.00	0.00	
2,700.0	19.44	53.85	2,582.1	427.7	585.6	725.1	0.00	0.00	
2,800.0	19.44	53.85	2,676.4	447.3	612.4	758.4	0.00	0.00	
2,900.0	19.44	53.85	2,770.7	467.0	639.3	791.7	0.00	0.00	
3,000.0	19.44	53.85	2,865.0	486.6	666.2	825.0	0.00	0.00	
3,100.0	19.44	53.85	2,959.3	506.2	693.0	858.2	0.00	0.00	
3,200.0	19.44	53.85	3,053.6	525.8	719.9	891.5	0.00	0.00	
3,300.0	19.44	53.85	3,147.9	545.5	746.8	924.8	0.00	0.00	
3,400.0	19.44	53.85	3,242.2	565.1	773.7	958.1	0.00	0.00	
3,500.0	19.44	53.85	3,336.5	584.7	800.5	991.3	0.00	0.00	
3,600.0	19.44	53.85	3,430.8	604.4	827.4	1,024.6	0.00	0.00	
3,700.0	19.44	53.85	3,525.1	624.0	854.3	1,057.9	0.00	0.00	
3,800.0	19.44	53.85	3,619.4	643.6	881.1	1,091.2	0.00	0.00	
3,900.0	19.44	53.85	3,713.7	663.2	908.0	1,124.4	0.00	0.00	
4,000.0	19.44	53.85	3,808.0	682.9	934.9	1,157.7	0.00	0.00	
4,100.0	19.44	53.85	3,902.3	702.5	961.8	1,191.0	0.00	0.00	
4,200.0	19.44	53.85	3,996.6	722.1	988.6	1,224.3	0.00	0.00	
4,300.0	19.44	53.85	4,090.9	741.7	1,015.5	1,257.5	0.00	0.00	
4,400.0	19.44	53.85	4,185.2	761.4	1,042.4	1,290.8	0.00	0.00	
4,500.0	19.44	53.85	4,279.5	781.0	1,069.2	1,324.1	0.00	0.00	
4,600.0	19.44	53.85	4,373.8	800.6	1,096.1	1,357.4	0.00	0.00	
4,700.0	19.44	53.85	4,468.1	820.2	1,123.0	1,390.6	0.00	0.00	
4,745.5	19.44	53.85	4,511.0	829.2	1,135.2	1,405.8	0.00	0.00	Ohio Creek
4,800.0	19.44	53.85	4,562.4	839.9	1,149.8	1,423.9	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	North Reference:	True
Well:	Shideler Fee 31-9D	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
4,884.4	19.44	53.85	4,642.0	856.4	1,172.5	1,452.0	0.00	0.00	Mesaverde Marker
4,900.0	19.44	53.85	4,656.7	859.5	1,176.7	1,457.2	0.00	0.00	
5,000.0	19.44	53.85	4,751.0	879.1	1,203.6	1,490.5	0.00	0.00	
5,100.0	19.44	53.85	4,845.3	898.8	1,230.5	1,523.7	0.00	0.00	
5,200.0	19.44	53.85	4,939.6	918.4	1,257.3	1,557.0	0.00	0.00	
5,300.0	19.44	53.85	5,033.9	938.0	1,284.2	1,590.3	0.00	0.00	
5,400.0	19.44	53.85	5,128.2	957.6	1,311.1	1,623.6	0.00	0.00	
5,500.0	19.44	53.85	5,222.5	977.3	1,337.9	1,656.8	0.00	0.00	
5,535.5	19.44	53.85	5,256.0	984.2	1,347.5	1,668.7	0.00	0.00	Williams Fork
5,600.0	19.44	53.85	5,316.8	996.9	1,364.8	1,690.1	0.00	0.00	
5,709.1	19.44	53.85	5,419.7	1,018.3	1,394.1	1,726.4	0.00	0.00	Start 2° Drop
5,800.0	17.62	53.85	5,505.9	1,035.3	1,417.5	1,755.3	2.00	-2.00	
5,900.0	15.62	53.85	5,601.7	1,052.2	1,440.5	1,783.9	2.00	-2.00	
6,000.0	13.62	53.85	5,698.5	1,067.1	1,460.9	1,809.1	2.00	-2.00	
6,100.0	11.62	53.85	5,796.1	1,080.0	1,478.6	1,831.0	2.00	-2.00	
6,200.0	9.62	53.85	5,894.3	1,090.8	1,493.4	1,849.4	2.00	-2.00	
6,300.0	7.62	53.85	5,993.2	1,099.7	1,505.5	1,864.4	2.00	-2.00	
6,400.0	5.62	53.85	6,092.5	1,106.5	1,514.8	1,875.9	2.00	-2.00	
6,500.0	3.62	53.85	6,192.2	1,111.2	1,521.4	1,884.0	2.00	-2.00	
6,600.0	1.62	53.85	6,292.1	1,113.9	1,525.0	1,888.5	2.00	-2.00	
6,680.9	0.00	0.00	6,373.0	1,114.6	1,526.0	1,889.7	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
6,700.0	0.00	0.00	6,392.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
6,800.0	0.00	0.00	6,492.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
6,900.0	0.00	0.00	6,592.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,000.0	0.00	0.00	6,692.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,100.0	0.00	0.00	6,792.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,200.0	0.00	0.00	6,892.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,300.0	0.00	0.00	6,992.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,400.0	0.00	0.00	7,092.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,500.0	0.00	0.00	7,192.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,600.0	0.00	0.00	7,292.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,683.9	0.00	0.00	7,376.0	1,114.6	1,526.0	1,889.7	0.00	0.00	Coal Ridge
7,700.0	0.00	0.00	7,392.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,800.0	0.00	0.00	7,492.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
7,900.0	0.00	0.00	7,592.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
8,000.0	0.00	0.00	7,692.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
8,100.0	0.00	0.00	7,792.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
8,200.0	0.00	0.00	7,892.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
8,300.0	0.00	0.00	7,992.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
8,400.0	0.00	0.00	8,092.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
8,416.9	0.00	0.00	8,109.0	1,114.6	1,526.0	1,889.7	0.00	0.00	Rollins
8,500.0	0.00	0.00	8,192.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
8,566.9	0.00	0.00	8,259.0	1,114.6	1,526.0	1,889.7	0.00	0.00	TD @ 8,566.9' MD
8,600.0	0.00	0.00	8,292.1	1,114.6	1,526.0	1,889.7	0.00	0.00	
8,666.9	0.00	0.00	8,359.0	1,114.6	1,526.0	1,889.7	0.00	0.00	Permit TD @ 8,666.9' MD

Cathedral Energy Services

Planning Report

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Company: EnCana Oil & Gas (USA) Inc	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
Project: Mamm Creek	MD Reference: KB=22' @ 7126.0ft (Patterson #308)
Site: O31E Pad (2nd Occupation)	North Reference: True
Well: Shideler Fee 31-9D	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 31-9D TGT - plan hits target center - Point	0.00	0.00	6,373.0	1,114.6	1,526.0	1,578,142.53	2,378,312.62	39.400083	-107.700233
Shideler Fee 31-9D PBI- - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,259.0	1,114.6	1,526.0	1,578,142.53	2,378,312.62	39.400083	-107.700233

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,038.2	1,015.0	Surface Casing		

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
4,745.5	4,511.0	Ohio Creek			
4,884.4	4,642.0	Mesaverde Marker			
5,535.5	5,256.0	Williams Fork			
6,680.9	6,373.0	Top Gas			
7,683.9	7,376.0	Coal Ridge			
8,416.9	8,109.0	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'	
847.9	835.5	64.2	87.9	EOB @ Inc. = 19.44°	
5,709.1	5,419.7	1,018.3	1,394.1	Start 2° Drop	
6,680.9	6,373.0	1,114.6	1,526.0	EOD @ Inc. = 0°	
8,566.9	8,259.0	1,114.6	1,526.0	TD @ 8,566.9' MD	
8,666.9	8,359.0	1,114.6	1,526.0	Permit TD @ 8,666.9' MD	

EnCana Oil & Gas (USA) Inc

Mamm Creek

O31E Pad (2nd Occupation)

Shideler Fee 31-9D

OH

Plan #1

Anticollision Report

21 March, 2013

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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	8,666.9	Plan #1 (OH)	MWD	Geolink MWD	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
K31E Pad						
Shideler 31-11D (K31E) (Existing) - Existing - Existing						Out of range
Shideler Fee 31-11A - DD - DD						Out of range
Shideler Fee 31-5BB - DD - FINAL						Out of range
Shideler Fee 31-5C - DD - DD						Out of range
Shideler Fee 31-5CC - DD - DD						Out of range
Shideler Fee 31-6D - DD - DD						Out of range
Shideler Fee 31-6DD - DD - FINAL						Out of range
Shideler Fee 31-8B - DD - FINAL						Out of range
Shideler Fee 31-8C - DD - FINAL						Out of range
Shideler Fee 31-9B - DD - DD						Out of range
Shideler Fee 31-9BB - DD - DD	7,130.4	7,076.8	499.9	423.1	6.506	CC
Shideler Fee 31-9BB - DD - DD	7,200.0	7,145.5	499.9	423.0	6.500	ES, SF
O31E Pad						
Shideler 31-15-EX - Existing - Existing	206.9	186.0	306.9	306.5	631.869	CC, ES
Shideler 31-15-EX - Existing - Existing	1,100.0	1,050.3	489.7	486.8	169.040	SF
Shideler Federal 6-3-EX - Existing - Existing	212.4	192.5	324.7	324.2	648.317	CC, ES
Shideler Federal 6-3-EX - Existing - Existing	1,000.0	943.2	490.4	487.8	189.477	SF
Shideler Fee 31-13C - OH - FINAL	0.0	3.0	283.4			
Shideler Fee 31-13C - OH - FINAL	201.4	204.6	283.8	283.2	449.068	ES
Shideler Fee 31-13C - OH - FINAL	1,000.0	921.0	443.9	440.1	117.367	SF
Shideler Fee 31-13CC - OH - FINAL	0.0	3.0	310.5			
Shideler Fee 31-13CC - OH - FINAL	100.0	102.1	310.6	310.4	1,113.084	ES
Shideler Fee 31-13CC - OH - FINAL	900.0	804.7	489.9	486.7	150.247	SF
Shideler Fee 6-3A - DD - FINAL	0.0	3.0	336.6			
Shideler Fee 6-3A - DD - FINAL	100.0	101.9	336.8	336.5	1,207.793	ES
Shideler Fee 6-3A - DD - FINAL	900.0	859.3	492.8	489.7	161.700	SF
Shideler Fee 6-3AA - DD - FINAL	0.0	0.0	346.6			
Shideler Fee 6-3AA - DD - FINAL	700.0	615.7	473.5	471.3	210.182	SF
Shideler Fee 6-3D - DD - DD	0.0	3.0	323.7			
Shideler Fee 6-3D - DD - DD	200.0	201.8	324.1	323.5	518.993	ES
Shideler Fee 6-3D - DD - DD	800.0	716.1	468.1	465.4	176.697	SF
Shideler Fee 6-3DD - DD - DD	0.0	3.0	333.6			
Shideler Fee 6-3DD - DD - DD	100.0	102.1	333.7	333.4	1,195.961	ES
Shideler Fee 6-3DD - DD - DD	800.0	692.9	489.4	486.8	184.752	SF
Shideler Fee 6-6A - DD - FINAL	202.2	205.6	320.4	319.8	504.300	CC, ES
Shideler Fee 6-6A - DD - FINAL	900.0	812.3	476.8	473.7	155.523	SF
Shideler Fee 6-6D - DD - DD	135.4	138.6	306.2	305.8	762.976	CC, ES
Shideler Fee 6-6D - DD - DD	800.0	699.5	453.4	450.5	154.884	SF
Shideler Fee 6-6DD - DD - FINAL	153.3	156.3	296.3	295.9	638.996	CC
Shideler Fee 6-6DD - DD - FINAL	200.0	200.2	296.5	295.9	476.937	ES
Shideler Fee 6-6DD - DD - FINAL	800.0	687.2	457.8	455.1	168.749	SF
Shideler Fee 6-7D - DD - DD	141.0	141.0	293.7	293.3	698.087	CC, ES
Shideler Fee 6-7D - DD - DD	900.0	785.7	492.0	488.3	131.861	SF

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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
O31E Pad (2nd Occupation)						
Shideler Fee 31-10C - OH - Plan #1	200.0	200.0	30.0	29.4	48.324	CC, ES
Shideler Fee 31-10C - OH - Plan #1	500.0	500.6	47.2	45.4	26.135	SF
Shideler Fee 31-11C - OH - Plan #1	200.0	200.0	45.0	44.4	72.448	CC, ES
Shideler Fee 31-11C - OH - Plan #1	500.0	497.2	70.8	69.0	40.588	SF
Shideler Fee 31-12B - OH - Plan #1	200.0	200.0	60.0	59.4	96.636	CC, ES
Shideler Fee 31-12B - OH - Plan #1	500.0	493.1	92.2	90.4	51.821	SF
Shideler Fee 31-13B - OH - Plan #1	200.0	200.0	89.8	89.2	144.571	CC, ES
Shideler Fee 31-13B - OH - Plan #1	600.0	576.7	157.8	155.7	74.350	SF
Shideler Fee 31-13BB - OH - Plan #1	200.0	200.0	105.1	104.4	169.079	CC, ES
Shideler Fee 31-13BB - OH - Plan #1	600.0	581.4	160.3	158.3	79.996	SF
Shideler Fee 31-14D - OH - Plan #1	200.0	200.0	75.0	74.4	120.764	CC, ES
Shideler Fee 31-14D - OH - Plan #1	600.0	593.8	118.1	116.1	59.356	SF
Shideler Fee 31-14DD - OH - Plan #1	200.0	200.0	119.8	119.2	192.887	CC, ES
Shideler Fee 31-14DD - OH - Plan #1	700.0	685.7	200.3	198.0	87.006	SF
Shideler Fee 31-16A - OH - Plan #1	200.0	200.0	11.1	10.5	17.879	CC, ES
Shideler Fee 31-16A - OH - Plan #1	5,200.0	5,187.5	491.5	441.9	9.905	SF
Shideler Fee 31-16AA - OH - Plan #1	200.0	200.0	15.0	14.4	24.134	CC, ES
Shideler Fee 31-16AA - OH - Plan #1	8,666.9	8,636.1	277.0	210.9	4.190	SF
Shideler Fee 31-16D - OH - Plan #1	200.0	200.0	38.3	37.7	61.648	CC, ES
Shideler Fee 31-16D - OH - Plan #1	2,600.0	2,558.8	494.4	472.3	22.288	SF
Shideler Fee 31-16DD - OH - Plan #1	200.0	200.0	23.8	23.2	38.310	CC, ES
Shideler Fee 31-16DD - OH - Plan #1	3,200.0	3,168.5	482.9	455.1	17.377	SF
Shideler Fee 6-1A - OH - Plan #1	200.0	200.0	53.0	52.4	85.378	CC, ES
Shideler Fee 6-1A - OH - Plan #1	2,200.0	2,149.9	493.2	475.5	27.868	SF
Shideler Fee 6-1AA - OH - Plan #1	200.0	200.0	67.9	67.3	109.329	CC, ES
Shideler Fee 6-1AA - OH - Plan #1	1,900.0	1,843.9	474.2	459.5	32.259	SF
Shideler Fee 6-1D - OH - Plan #1	200.0	200.0	82.8	82.2	133.336	CC, ES
Shideler Fee 6-1D - OH - Plan #1	1,600.0	1,523.3	466.3	455.0	41.200	SF
Shideler Fee 6-1DD - OH - Plan #1	200.0	200.0	97.8	97.2	157.402	CC, ES
Shideler Fee 6-1DD - OH - Plan #1	1,500.0	1,411.2	472.3	462.1	46.478	SF
Shideler Fee 6-8A - OH - Plan #1	200.0	200.0	112.8	112.1	181.485	CC, ES
Shideler Fee 6-8A - OH - Plan #1	1,400.0	1,302.3	466.1	457.0	51.398	SF
Shideler Fee 6-8AA - OH - Plan #1	200.0	200.0	127.7	127.1	205.583	CC, ES
Shideler Fee 6-8AA - OH - Plan #1	1,300.0	1,178.8	463.5	455.8	60.084	SF
Shideler Fee 6-8D - OH - Plan #1	200.0	200.0	142.5	141.9	229.339	CC, ES
Shideler Fee 6-8D - OH - Plan #1	1,300.0	1,163.8	493.3	485.7	64.835	SF

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 79-MWD													Offset Well Error:		0.0 ft
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		
7,100.0	6,792.1	7,046.7	6,587.5	36.2	45.2	-19.83	1,584.9	1,356.4	499.9	423.1	76.80	6.509			
7,130.4	6,822.5	7,076.8	6,617.5	36.2	45.2	-19.79	1,585.0	1,356.7	499.9	423.1	76.84	6.506 CC			
7,200.0	6,892.1	7,145.5	6,686.3	36.3	45.2	-19.78	1,585.0	1,356.8	499.9	423.0	76.92	6.500 ES, SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
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Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100-Gyro													Offset Well Error:		0.0 ft
Reference				Offset				Semi Major Axis		Distance				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-139.33	-233.0	-200.3	308.1						
100.0	100.0	78.5	78.5	0.1	0.1	-139.37	-233.1	-200.1	307.2	307.0	0.20	1,500.181			
200.0	200.0	179.0	179.0	0.3	0.2	-139.50	-233.4	-199.4	307.0	306.5	0.47	656.966			
206.9	206.9	186.0	186.0	0.3	0.2	166.64	-233.4	-199.3	306.9	306.5	0.49	631.869	CC, ES		
300.0	300.0	279.1	279.1	0.5	0.2	166.57	-233.7	-198.4	309.1	308.4	0.73	423.409			
400.0	399.6	379.8	379.8	0.7	0.3	166.54	-234.5	-196.7	316.3	315.3	1.00	317.538			
500.0	498.8	480.8	480.7	1.0	0.4	166.66	-235.0	-194.7	328.0	326.8	1.27	259.302			
600.0	597.1	582.8	582.7	1.4	0.5	167.16	-234.2	-193.0	344.1	342.6	1.54	223.839			
700.0	694.3	679.6	679.5	1.8	0.6	167.97	-232.0	-192.3	364.8	363.0	1.81	201.760			
800.0	790.2	770.4	770.3	2.4	0.7	168.83	-230.1	-192.4	391.4	389.3	2.08	188.480			
900.0	884.7	862.3	862.1	3.0	0.8	169.69	-229.6	-192.9	423.5	421.2	2.35	180.347			
1,000.0	979.0	956.0	955.9	3.6	0.8	170.38	-230.0	-192.8	456.5	453.9	2.62	174.064			
1,100.0	1,073.3	1,050.3	1,050.1	4.2	0.9	170.90	-230.9	-192.2	489.7	486.8	2.90	169.040	SF		

Cathedral Energy Services

Anticollision Report

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Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100-Gyro													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-138.07	-242.2	-217.5	326.3						
100.0	100.0	79.6	79.6	0.1	0.1	-138.08	-242.1	-217.3	325.3	325.1	0.21	1,580.692			
200.0	200.0	180.1	180.1	0.3	0.2	-138.12	-241.8	-216.8	324.7	324.2	0.47	693.669			
212.4	212.4	192.5	192.5	0.3	0.2	168.03	-241.7	-216.7	324.7	324.2	0.50	648.317	CC, ES		
300.0	300.0	277.6	277.6	0.5	0.2	168.11	-241.5	-216.6	326.9	326.2	0.73	449.365			
400.0	399.6	376.1	376.1	0.7	0.3	168.41	-241.5	-217.1	335.0	334.0	0.99	338.521			
500.0	498.8	474.6	474.6	1.0	0.4	168.87	-241.4	-218.0	348.3	347.1	1.25	277.816			
600.0	597.1	571.9	571.9	1.4	0.5	169.43	-241.4	-219.0	366.9	365.4	1.52	241.457			
700.0	694.3	667.2	667.2	1.8	0.6	170.04	-241.6	-220.3	391.0	389.2	1.79	218.832			
800.0	790.2	760.1	760.1	2.4	0.7	170.69	-241.9	-222.1	420.5	418.5	2.05	204.787			
900.0	884.7	851.7	851.6	3.0	0.7	171.44	-242.4	-224.4	455.0	452.6	2.32	196.004			
1,000.0	979.0	943.2	943.1	3.6	0.8	172.19	-243.1	-227.2	490.4	487.8	2.59	189.477	SF		

Cathedral Energy Services

Anticollision Report

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Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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	-150.16	-245.9	-141.0	283.4						
100.0	100.0	102.2	102.2	0.1	0.1	-150.18	-246.0	-141.0	283.6	283.3	0.28	1,015.980			
200.0	200.0	203.1	203.1	0.3	0.3	-150.19	-246.2	-141.1	283.8	283.2	0.63	452.739			
201.4	201.4	204.6	204.6	0.3	0.3	155.96	-246.2	-141.1	283.8	283.2	0.63	449.068 ES			
300.0	300.0	306.5	306.5	0.5	0.5	156.24	-245.6	-141.2	285.7	284.7	0.98	290.757			
400.0	399.6	415.5	415.3	0.7	0.7	157.46	-241.3	-142.2	290.0	288.6	1.36	213.931			
500.0	498.8	518.6	518.1	1.0	0.9	159.83	-232.7	-145.7	297.0	295.3	1.74	170.486			
600.0	597.1	614.6	613.4	1.4	1.1	162.80	-222.6	-151.7	309.3	307.2	2.15	143.791			
700.0	694.3	701.7	699.5	1.8	1.4	165.97	-212.7	-160.1	329.0	326.4	2.57	127.831			
800.0	790.2	778.6	775.0	2.4	1.6	169.03	-204.4	-171.6	358.8	355.8	2.98	120.323			
900.0	884.7	845.0	839.9	3.0	1.9	171.68	-198.9	-184.4	398.7	395.3	3.36	118.474			
1,000.0	979.0	921.0	913.8	3.6	2.2	174.43	-194.4	-201.7	443.9	440.1	3.78	117.367 SF			
1,100.0	1,073.3	991.6	982.1	4.2	2.5	176.61	-191.6	-219.7	492.9	488.7	4.18	117.793			

Cathedral Energy Services

Anticollision Report

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Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD, 1242-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	3.0	3.0	0.0	0.0	-147.64	-262.3	-166.2	310.5						
100.0	100.0	102.1	102.1	0.1	0.1	-147.63	-262.4	-166.3	310.6	310.4	0.28	1,113.084	ES		
200.0	200.0	201.2	201.2	0.3	0.3	-147.64	-262.8	-166.5	311.1	310.5	0.62	498.881			
300.0	300.0	297.0	296.9	0.5	0.5	159.01	-262.7	-168.9	314.8	313.9	0.97	325.253			
400.0	399.6	391.4	391.2	0.7	0.7	160.38	-261.7	-175.0	324.8	323.5	1.33	245.058			
500.0	498.8	479.0	478.2	1.0	0.9	162.28	-260.6	-184.3	342.4	340.7	1.69	202.254			
600.0	597.1	565.9	564.3	1.4	1.1	164.48	-260.2	-196.7	368.1	366.0	2.08	176.568			
700.0	694.3	651.1	648.1	1.8	1.4	166.85	-259.7	-211.6	401.3	398.8	2.49	161.429			
800.0	790.2	730.1	725.4	2.4	1.7	169.11	-259.1	-228.0	442.1	439.2	2.87	153.792			
900.0	884.7	804.7	797.8	3.0	2.1	171.36	-258.7	-245.9	489.9	486.7	3.26	150.247	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	3.0	3.0	0.0	0.0	-145.54	-277.6	-190.5	336.6						
100.0	100.0	101.9	101.9	0.1	0.1	-145.54	-277.7	-190.6	336.8	336.5	0.28	1,207.793 ES			
200.0	200.0	198.7	198.7	0.3	0.3	-145.47	-278.1	-191.3	337.6	337.0	0.62	544.591			
300.0	300.0	295.0	295.0	0.5	0.5	160.88	-279.0	-192.8	341.7	340.8	0.96	355.134			
400.0	399.6	387.0	386.9	0.7	0.7	161.31	-281.7	-195.7	353.2	351.9	1.30	271.765			
500.0	498.8	479.0	478.7	1.0	0.8	161.90	-285.6	-199.7	371.5	369.9	1.64	226.520			
600.0	597.1	578.9	578.4	1.4	1.0	162.69	-289.7	-204.0	394.7	392.7	2.00	197.632			
700.0	694.3	673.8	673.2	1.8	1.2	163.51	-293.4	-208.0	422.5	420.2	2.35	179.967			
800.0	790.2	767.1	766.4	2.4	1.4	164.41	-296.8	-212.4	455.5	452.8	2.70	168.910			
900.0	884.7	859.3	858.4	3.0	1.6	165.47	-300.1	-216.9	492.8	489.7	3.05	161.700 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-146.44	-288.8	-191.6	346.6						
100.0	100.0	96.3	96.3	0.1	0.1	-146.44	-289.3	-191.9	347.1	346.9	0.27	1,278.363			
200.0	200.0	185.2	185.1	0.3	0.3	-146.44	-291.0	-193.1	349.5	348.9	0.60	582.634			
300.0	300.0	269.8	269.6	0.5	0.5	159.80	-295.2	-196.3	358.3	357.4	0.92	390.340			
400.0	399.6	353.9	353.2	0.7	0.7	160.08	-302.4	-201.9	376.3	375.1	1.24	302.964			
500.0	498.8	441.2	439.7	1.0	0.9	160.45	-311.8	-208.9	401.8	400.3	1.57	255.278			
600.0	597.1	525.2	522.6	1.4	1.2	160.87	-322.8	-216.8	434.7	432.8	1.91	228.147			
700.0	694.3	615.7	611.8	1.8	1.5	161.34	-335.8	-225.7	473.5	471.3	2.25	210.182 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	3.0	3.0	0.0	0.0	-146.63	-270.3	-178.0	323.7						
100.0	100.0	102.0	102.0	0.1	0.1	-146.62	-270.4	-178.2	323.8	323.5	0.28	1,160.857			
200.0	200.0	201.8	201.8	0.3	0.3	-146.63	-270.7	-178.2	324.1	323.5	0.62	518.993 ES			
300.0	300.0	295.0	295.0	0.5	0.5	159.61	-271.7	-178.8	327.8	326.8	0.96	340.752			
400.0	399.6	382.1	382.0	0.7	0.6	159.95	-274.6	-181.1	339.4	338.1	1.29	262.885			
500.0	498.8	465.1	464.7	1.0	0.8	160.32	-280.4	-184.8	359.9	358.2	1.62	222.474			
600.0	597.1	548.3	547.3	1.4	1.0	160.66	-289.3	-189.7	388.9	386.9	1.95	199.387			
700.0	694.3	631.2	629.2	1.8	1.3	160.93	-300.4	-195.3	425.3	423.0	2.29	185.504			
800.0	790.2	716.1	712.9	2.4	1.5	161.10	-314.0	-200.9	468.1	465.4	2.65	176.697 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	3.0	3.0	0.0	0.0	-147.46	-281.2	-179.5	333.6						
100.0	100.0	102.1	102.1	0.1	0.1	-147.49	-281.4	-179.4	333.7	333.4	0.28	1,195.961	ES		
200.0	200.0	199.4	199.4	0.3	0.3	-147.62	-282.4	-179.1	334.4	333.8	0.62	539.078			
300.0	300.0	287.5	287.5	0.5	0.5	158.47	-284.9	-179.7	339.6	338.7	0.95	357.325			
400.0	399.6	373.6	373.3	0.7	0.6	158.55	-290.1	-181.7	353.3	352.0	1.28	276.127			
500.0	498.8	457.1	456.4	1.0	0.8	158.66	-298.2	-184.8	375.5	373.9	1.61	232.873			
600.0	597.1	540.5	539.0	1.4	1.1	158.79	-309.1	-189.1	405.9	403.9	1.95	207.673			
700.0	694.3	617.7	615.0	1.8	1.3	158.93	-321.1	-194.1	443.7	441.4	2.30	193.148			
800.0	790.2	692.9	688.6	2.4	1.6	159.05	-335.4	-200.4	489.4	486.8	2.65	184.752	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	3.0	3.0	0.0	0.0	-148.47	-273.2	-167.6	320.5						
100.0	100.0	103.0	103.0	0.1	0.1	-148.44	-273.1	-167.7	320.5	320.2	0.28	1,143.486			
200.0	200.0	203.3	203.3	0.3	0.3	-148.35	-272.8	-168.1	320.4	319.8	0.63	510.871			
202.2	202.2	205.6	205.6	0.3	0.3	157.79	-272.8	-168.1	320.4	319.8	0.64	504.300 CC, ES			
300.0	300.0	304.2	304.2	0.5	0.5	158.03	-272.3	-168.4	322.5	321.6	0.98	329.517			
400.0	399.6	400.4	400.4	0.7	0.7	158.55	-272.1	-169.0	330.0	328.7	1.33	249.005			
500.0	498.8	491.7	491.7	1.0	0.8	159.15	-273.3	-169.9	343.9	342.2	1.67	206.114			
600.0	597.1	577.7	577.6	1.4	1.0	159.67	-276.9	-171.1	365.2	363.2	2.01	181.756			
700.0	694.3	662.0	661.6	1.8	1.1	160.10	-283.5	-173.2	394.8	392.4	2.36	167.509			
800.0	790.2	738.5	737.6	2.4	1.3	160.37	-292.1	-175.8	432.2	429.5	2.70	159.810			
900.0	884.7	812.3	810.5	3.0	1.5	160.73	-303.1	-178.9	476.8	473.7	3.07	155.523 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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	-149.57	-264.1	-155.1	306.3						
100.0	100.0	103.1	103.1	0.1	0.1	-149.55	-264.0	-155.2	306.3	306.0	0.28	1,091.968			
135.4	135.4	138.6	138.6	0.2	0.2	-149.55	-264.0	-155.2	306.2	305.8	0.40	762.976 CC, ES			
200.0	200.0	198.6	198.6	0.3	0.3	-149.67	-264.6	-154.8	306.6	306.0	0.62	495.477			
300.0	300.0	289.0	288.9	0.5	0.5	155.97	-268.3	-153.1	311.6	310.7	0.96	324.940			
400.0	399.6	380.8	380.3	0.7	0.7	155.17	-276.0	-150.0	324.4	323.0	1.32	245.089			
500.0	498.8	467.2	466.0	1.0	0.9	154.35	-286.3	-146.6	344.7	343.0	1.71	201.713			
600.0	597.1	551.1	548.9	1.4	1.2	153.66	-299.2	-144.0	372.9	370.8	2.11	176.932			
700.0	694.3	628.1	624.6	1.8	1.5	153.20	-313.5	-143.0	409.1	406.6	2.51	162.775			
800.0	790.2	699.5	694.2	2.4	1.8	152.83	-329.3	-143.5	453.4	450.5	2.93	154.884 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	3.0	3.0	0.0	0.0	-148.90	-253.9	-153.2	296.5						
100.0	100.0	103.7	103.7	0.1	0.1	-148.92	-253.9	-153.0	296.4	296.1	0.28	1,053.742			
153.3	153.3	156.3	156.3	0.2	0.2	-148.93	-253.8	-152.9	296.3	295.9	0.46	638.996 CC			
200.0	200.0	200.2	200.2	0.3	0.3	-148.93	-254.0	-153.0	296.5	295.9	0.62	476.937 ES			
300.0	300.0	288.6	288.6	0.5	0.5	157.26	-256.4	-154.0	301.8	300.9	0.95	317.292			
400.0	399.6	374.6	374.4	0.7	0.6	157.24	-262.3	-155.5	315.9	314.6	1.28	246.449			
500.0	498.8	457.5	456.7	1.0	0.8	157.19	-271.6	-157.8	338.8	337.2	1.62	209.557			
600.0	597.1	538.6	536.6	1.4	1.1	157.08	-284.4	-160.9	370.6	368.7	1.97	188.508			
700.0	694.3	615.7	612.2	1.8	1.4	156.77	-299.7	-163.6	410.2	407.9	2.33	175.832			
800.0	790.2	687.2	681.6	2.4	1.7	156.43	-316.7	-167.1	457.8	455.1	2.71	168.749 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference				Offset			Semi Major Axis			Distance					
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-150.84	-256.8	-143.3	294.1						
100.0	100.0	101.4	101.4	0.1	0.1	-150.83	-256.6	-143.2	293.8	293.5	0.28	1,038.660			
141.0	141.0	141.0	141.0	0.2	0.2	-150.83	-256.5	-143.1	293.7	293.3	0.42	698.087	CC, ES		
200.0	200.0	193.8	193.8	0.3	0.3	-150.98	-257.3	-142.7	294.2	293.6	0.62	477.827			
300.0	300.0	287.0	286.9	0.5	0.5	154.54	-261.9	-140.8	299.9	299.0	0.96	311.209			
400.0	399.6	374.9	374.3	0.7	0.7	153.77	-269.8	-138.1	313.5	312.2	1.32	237.223			
500.0	498.8	459.2	457.8	1.0	0.9	153.00	-280.7	-135.3	335.1	333.4	1.70	197.238			
600.0	597.1	545.3	542.5	1.4	1.2	152.07	-295.6	-131.5	364.4	362.3	2.12	171.696			
700.0	694.3	628.8	624.2	1.8	1.5	151.28	-313.0	-128.3	401.4	398.8	2.60	154.457			
800.0	790.2	711.0	703.6	2.4	1.9	150.06	-332.9	-121.6	443.8	440.6	3.14	141.119			
900.0	884.7	785.7	774.9	3.0	2.3	149.16	-353.9	-114.0	492.0	488.3	3.73	131.861	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.11	-16.4	-25.2	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	-123.11	-16.4	-25.2	30.0	29.8	0.27	110.277			
200.0	200.0	200.0	200.0	0.3	0.3	-123.11	-16.4	-25.2	30.0	29.4	0.62	48.324 CC, ES			
300.0	300.0	300.5	300.5	0.5	0.5	-174.84	-14.9	-25.3	32.0	31.0	0.97	32.861			
400.0	399.6	400.9	400.7	0.7	0.7	-166.71	-8.3	-25.9	37.3	36.0	1.35	27.619			
500.0	498.8	500.6	499.7	1.0	1.0	-156.52	3.4	-27.0	47.2	45.4	1.81	26.135 SF			
600.0	597.1	599.2	596.8	1.4	1.3	-147.51	20.0	-28.6	62.5	60.1	2.39	26.166			
700.0	694.3	696.4	691.6	1.8	1.7	-140.63	41.2	-30.6	83.3	80.2	3.12	26.704			
800.0	790.2	792.8	785.0	2.4	2.1	-136.65	65.0	-32.9	109.0	105.0	3.92	27.770			
900.0	884.7	888.5	877.8	3.0	2.5	-135.60	88.6	-35.2	138.0	133.2	4.76	28.993			
1,000.0	979.0	984.1	970.4	3.6	3.0	-135.26	112.1	-37.4	167.4	161.8	5.61	29.830			
1,100.0	1,073.3	1,079.6	1,062.9	4.2	3.4	-135.02	135.7	-39.7	196.8	190.3	6.47	30.405			
1,200.0	1,167.6	1,175.2	1,155.5	4.8	3.9	-134.85	159.2	-41.9	226.2	218.9	7.34	30.820			
1,300.0	1,261.9	1,270.8	1,248.1	5.4	4.3	-134.71	182.8	-44.1	255.6	247.4	8.21	31.133			
1,400.0	1,356.2	1,366.4	1,340.7	6.0	4.7	-134.60	206.3	-46.4	285.1	276.0	9.09	31.377			
1,500.0	1,450.5	1,461.9	1,433.3	6.7	5.2	-134.52	229.9	-48.6	314.5	304.5	9.96	31.571			
1,600.0	1,544.8	1,557.5	1,525.9	7.3	5.6	-134.44	253.4	-50.9	343.9	333.1	10.84	31.729			
1,700.0	1,639.1	1,653.1	1,618.5	7.9	6.1	-134.38	277.0	-53.1	373.4	361.6	11.72	31.861			
1,800.0	1,733.4	1,748.6	1,711.1	8.5	6.5	-134.33	300.5	-55.4	402.8	390.2	12.60	31.971			
1,900.0	1,827.7	1,844.2	1,803.7	9.1	7.0	-134.29	324.1	-57.6	432.2	418.7	13.48	32.066			
2,000.0	1,922.0	1,939.8	1,896.3	9.8	7.4	-134.25	347.6	-59.9	461.6	447.3	14.36	32.147			
2,100.0	2,016.3	2,035.4	1,988.9	10.4	7.8	-134.21	371.2	-62.1	491.1	475.8	15.24	32.218			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.39	-24.8	-37.6	45.0						
100.0	100.0	100.0	100.0	0.1	0.1	-123.39	-24.8	-37.6	45.0	44.7	0.27	165.330			
200.0	200.0	200.0	200.0	0.3	0.3	-123.39	-24.8	-37.6	45.0	44.4	0.62	72.448	CC, ES		
300.0	300.0	299.9	299.9	0.5	0.5	-176.61	-24.2	-38.0	47.7	46.7	0.97	49.132			
400.0	399.6	399.2	399.0	0.7	0.7	-171.74	-20.0	-41.0	56.0	54.6	1.33	41.951			
500.0	498.8	497.2	496.5	1.0	0.9	-164.89	-11.8	-46.9	70.8	69.0	1.74	40.588	SF		
600.0	597.1	593.1	591.2	1.4	1.2	-158.47	0.2	-55.5	92.7	90.5	2.22	41.691			
700.0	694.3	686.2	682.5	1.8	1.6	-153.29	15.5	-66.6	121.9	119.1	2.79	43.689			
800.0	790.2	777.8	771.2	2.4	2.0	-149.38	33.7	-79.6	157.7	154.3	3.42	46.085			
900.0	884.7	869.3	859.8	3.0	2.4	-147.50	52.3	-93.0	197.7	193.6	4.10	48.185			
1,000.0	979.0	960.7	948.2	3.6	2.8	-146.55	70.9	-106.4	238.3	233.5	4.81	49.528			
1,100.0	1,073.3	1,052.0	1,036.7	4.2	3.2	-145.88	89.5	-119.8	278.9	273.4	5.53	50.436			
1,200.0	1,167.6	1,143.4	1,125.1	4.8	3.6	-145.38	108.1	-133.2	319.5	313.3	6.26	51.082			
1,300.0	1,261.9	1,234.7	1,213.5	5.4	4.1	-144.99	126.7	-146.6	360.2	353.2	6.99	51.560			
1,400.0	1,356.2	1,326.0	1,301.9	6.0	4.5	-144.68	145.4	-160.0	400.8	393.1	7.72	51.926			
1,500.0	1,450.5	1,417.4	1,390.4	6.7	4.9	-144.43	164.0	-173.3	441.5	433.0	8.46	52.213			
1,600.0	1,544.8	1,508.7	1,478.8	7.3	5.4	-144.21	182.6	-186.7	482.1	473.0	9.19	52.445			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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	-123.09	-32.8	-50.3	60.0						
100.0	100.0	100.0	100.0	0.1	0.1	-123.09	-32.8	-50.3	60.0	59.8	0.27	220.527			
200.0	200.0	200.0	200.0	0.3	0.3	-123.09	-32.8	-50.3	60.0	59.4	0.62	96.636	CC, ES		
300.0	300.0	299.0	298.9	0.5	0.5	-174.84	-31.1	-52.2	63.4	62.4	0.98	65.005			
400.0	399.6	397.0	396.6	0.7	0.7	-169.69	-26.1	-58.0	73.9	72.6	1.36	54.473			
500.0	498.8	493.1	491.9	1.0	1.0	-163.80	-18.1	-67.3	92.2	90.4	1.78	51.821	SF		
600.0	597.1	586.4	583.8	1.4	1.3	-158.63	-7.2	-79.7	118.6	116.3	2.25	52.637			
700.0	694.3	676.3	671.4	1.8	1.7	-154.52	5.9	-94.9	152.7	150.0	2.78	54.885			
800.0	790.2	762.0	754.0	2.4	2.2	-151.32	21.0	-112.3	194.3	190.9	3.37	57.593			
900.0	884.7	843.5	831.4	3.0	2.6	-149.12	37.6	-131.4	242.1	238.1	4.03	60.149			
1,000.0	979.0	921.8	904.8	3.6	3.2	-147.42	55.6	-152.1	293.0	288.3	4.73	61.983			
1,100.0	1,073.3	1,000.0	976.8	4.2	3.7	-145.74	75.4	-175.0	346.5	341.1	5.47	63.337			
1,200.0	1,167.6	1,069.3	1,039.6	4.8	4.3	-144.28	94.7	-197.2	402.5	396.3	6.21	64.815			
1,300.0	1,261.9	1,148.8	1,110.8	5.4	4.9	-142.79	117.8	-223.8	460.1	453.1	7.01	65.668			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.19	-49.2	-75.2	89.8						
100.0	100.0	100.0	100.0	0.1	0.1	-123.19	-49.2	-75.2	89.8	89.6	0.27	329.918			
200.0	200.0	200.0	200.0	0.3	0.3	-123.19	-49.2	-75.2	89.8	89.2	0.62	144.571	CC, ES		
300.0	300.0	297.1	297.0	0.5	0.5	-175.91	-48.3	-77.5	94.0	93.0	0.97	96.929			
400.0	399.6	392.9	392.6	0.7	0.7	-173.05	-45.9	-84.3	106.6	105.3	1.33	79.946			
500.0	498.8	486.5	485.4	1.0	1.0	-169.54	-41.9	-95.3	127.9	126.2	1.72	74.459			
600.0	597.1	576.7	574.3	1.4	1.3	-166.20	-36.5	-110.0	157.8	155.7	2.12	74.350	SF		
700.0	694.3	662.8	658.2	1.8	1.7	-163.34	-30.1	-127.6	196.1	193.5	2.55	76.906			
800.0	790.2	743.9	736.6	2.4	2.1	-160.96	-22.9	-147.5	242.2	239.2	3.00	80.733			
900.0	884.7	820.1	809.3	3.0	2.5	-159.26	-15.1	-169.0	295.1	291.6	3.49	84.617			
1,000.0	979.0	892.7	877.6	3.6	3.0	-157.99	-6.7	-192.0	351.1	347.1	4.01	87.533			
1,100.0	1,073.3	964.7	944.4	4.2	3.5	-156.77	2.4	-217.2	409.8	405.3	4.56	89.867			
1,200.0	1,167.6	1,041.2	1,014.9	4.8	4.0	-155.65	12.6	-245.2	469.9	464.8	5.14	91.474			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.22	-57.6	-87.9	105.1						
100.0	100.0	100.0	100.0	0.1	0.1	-123.22	-57.6	-87.9	105.1	104.8	0.27	385.848			
200.0	200.0	200.0	200.0	0.3	0.3	-123.22	-57.6	-87.9	105.1	104.4	0.62	169.079	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-177.14	-57.6	-87.9	107.7	106.7	0.97	111.049			
400.0	399.6	396.5	396.5	0.7	0.7	-176.85	-57.3	-89.2	116.5	115.2	1.31	88.903			
500.0	498.8	490.4	490.2	1.0	0.8	-175.36	-56.2	-94.9	134.0	132.4	1.65	81.095			
600.0	597.1	581.4	580.6	1.4	1.1	-173.28	-54.4	-104.8	160.3	158.3	2.00	79.996	SF		
700.0	694.3	668.6	666.8	1.8	1.3	-171.10	-51.9	-118.2	195.1	192.7	2.37	82.466			
800.0	790.2	751.2	747.7	2.4	1.6	-169.09	-48.9	-134.4	238.1	235.4	2.74	86.907			
900.0	884.7	828.8	823.0	3.0	2.0	-167.46	-45.5	-152.8	288.2	285.1	3.14	91.792			
1,000.0	979.0	900.0	891.4	3.6	2.4	-166.18	-41.9	-172.3	341.8	338.2	3.56	95.977			
1,100.0	1,073.3	973.6	961.2	4.2	2.8	-164.90	-37.6	-195.1	398.1	394.1	4.02	98.972			
1,200.0	1,167.6	1,041.1	1,024.4	4.8	3.2	-163.78	-33.3	-218.3	457.1	452.6	4.48	101.966			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.27	-41.2	-62.7	75.0						
100.0	100.0	100.0	100.0	0.1	0.1	-123.27	-41.2	-62.7	75.0	74.8	0.27	275.589			
200.0	200.0	200.0	200.0	0.3	0.3	-123.27	-41.2	-62.7	75.0	74.4	0.62	120.764	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-177.22	-41.2	-62.7	77.6	76.7	0.97	80.087			
400.0	399.6	399.6	399.6	0.7	0.7	-177.46	-41.2	-62.7	85.5	84.2	1.32	65.001			
500.0	498.8	498.8	498.8	1.0	0.8	-177.78	-41.2	-62.7	98.5	96.9	1.66	59.476			
600.0	597.1	593.8	593.7	1.4	1.0	-177.15	-40.3	-64.9	118.1	116.1	1.99	59.356	SF		
700.0	694.3	689.9	689.7	1.8	1.2	-175.83	-38.4	-69.7	144.4	142.1	2.32	62.142			
800.0	790.2	784.8	784.5	2.4	1.4	-175.02	-36.6	-74.4	175.8	173.2	2.65	66.227			
900.0	884.7	878.2	877.8	3.0	1.5	-174.59	-34.8	-79.1	211.5	208.5	2.99	70.636			
1,000.0	979.0	971.4	970.8	3.6	1.7	-174.33	-32.9	-83.8	247.7	244.4	3.35	74.018			
1,100.0	1,073.3	1,064.6	1,063.9	4.2	1.9	-174.14	-31.1	-88.4	283.9	280.2	3.70	76.728			
1,200.0	1,167.6	1,157.8	1,157.0	4.8	2.1	-173.99	-29.3	-93.1	320.1	316.1	4.06	78.947			
1,300.0	1,261.9	1,251.0	1,250.0	5.4	2.3	-173.87	-27.5	-97.7	356.4	352.0	4.41	80.794			
1,400.0	1,356.2	1,344.2	1,343.1	6.0	2.4	-173.77	-25.6	-102.4	392.6	387.8	4.77	82.355			
1,500.0	1,450.5	1,437.4	1,436.2	6.7	2.6	-173.69	-23.8	-107.1	428.8	423.7	5.12	83.691			
1,600.0	1,544.8	1,530.6	1,529.2	7.3	2.8	-173.62	-22.0	-111.7	465.1	459.6	5.48	84.847			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-123.17	-65.6	-100.3	119.8						
100.0	100.0	100.0	100.0	0.1	0.1	-123.17	-65.6	-100.3	119.8	119.6	0.27	440.177			
200.0	200.0	200.0	200.0	0.3	0.3	-123.17	-65.6	-100.3	119.8	119.2	0.62	192.887	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-177.08	-65.6	-100.3	122.5	121.5	0.97	126.306			
400.0	399.6	393.8	393.7	0.7	0.7	-177.20	-66.8	-102.3	132.7	131.4	1.30	101.706			
500.0	498.8	492.2	492.1	1.0	0.8	-177.37	-69.1	-106.0	150.1	148.5	1.64	91.307			
600.0	597.1	589.6	589.4	1.4	1.0	-177.58	-71.4	-109.7	172.7	170.7	1.98	87.339			
700.0	694.3	685.7	685.4	1.8	1.2	-177.78	-73.6	-113.3	200.3	198.0	2.30	87.006	SF		
800.0	790.2	780.2	779.8	2.4	1.4	-177.97	-75.8	-116.9	232.9	230.3	2.62	88.966			
900.0	884.7	873.2	872.7	3.0	1.6	-178.16	-78.0	-120.4	269.8	266.9	2.94	91.781			
1,000.0	979.0	965.9	965.3	3.6	1.7	-178.32	-80.2	-123.9	307.2	303.9	3.27	93.878			
1,100.0	1,073.3	1,058.7	1,058.0	4.2	1.9	-178.44	-82.3	-127.4	344.6	341.0	3.61	95.598			
1,200.0	1,167.6	1,151.4	1,150.6	4.8	2.1	-178.55	-84.5	-130.9	382.1	378.1	3.94	97.033			
1,300.0	1,261.9	1,244.1	1,243.2	5.4	2.3	-178.63	-86.7	-134.4	419.5	415.2	4.27	98.250			
1,400.0	1,356.2	1,336.9	1,335.9	6.0	2.4	-178.70	-88.8	-138.0	456.9	452.3	4.60	99.295			
1,500.0	1,450.5	1,429.6	1,428.5	6.7	2.6	-178.76	-91.0	-141.5	494.3	489.4	4.93	100.202			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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				Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning									
0.0	0.0	0.0	0.0	0.0	0.0	-169.74	-10.9	-2.0	11.1													
100.0	100.0	100.0	100.0	0.1	0.1	-169.74	-10.9	-2.0	11.1	10.8	0.27	40.801										
200.0	200.0	200.0	200.0	0.3	0.3	-169.74	-10.9	-2.0	11.1	10.5	0.62	17.879	CC, ES									
300.0	300.0	300.0	300.0	0.5	0.5	144.27	-10.9	-2.0	13.1	12.2	0.97	13.497										
400.0	399.6	399.6	399.6	0.7	0.7	157.40	-10.9	-2.0	20.0	18.7	1.32	15.129										
500.0	498.8	500.1	500.1	1.0	0.8	163.74	-10.1	0.5	30.3	28.6	1.68	18.072										
600.0	597.1	601.1	600.8	1.4	1.0	164.80	-7.5	8.0	41.3	39.2	2.04	20.213										
700.0	694.3	702.6	701.3	1.8	1.3	163.78	-3.1	20.6	52.8	50.4	2.44	21.624										
800.0	790.2	804.4	801.4	2.4	1.7	161.81	3.1	38.3	64.9	62.0	2.91	22.313										
900.0	884.7	906.7	900.8	3.0	2.1	159.23	11.0	61.1	77.1	73.6	3.50	22.051										
1,000.0	979.0	1,008.5	998.3	3.6	2.6	155.41	20.5	88.6	86.0	81.7	4.26	20.190										
1,100.0	1,073.3	1,108.0	1,093.3	4.2	3.1	151.84	30.3	116.6	94.2	89.1	5.12	18.394										
1,200.0	1,167.6	1,207.5	1,188.3	4.8	3.7	148.86	40.0	144.6	102.8	96.8	6.06	16.977										
1,300.0	1,261.9	1,307.0	1,283.3	5.4	4.2	146.34	49.7	172.6	111.6	104.6	7.04	15.865										
1,400.0	1,356.2	1,406.5	1,378.3	6.0	4.8	144.19	59.5	200.6	120.6	112.6	8.05	14.987										
1,500.0	1,450.5	1,506.0	1,473.3	6.7	5.3	142.34	69.2	228.6	129.8	120.7	9.08	14.286										
1,600.0	1,544.8	1,605.5	1,568.2	7.3	5.9	140.73	78.9	256.6	139.0	128.9	10.13	13.716										
1,700.0	1,639.1	1,705.0	1,663.2	7.9	6.4	139.33	88.7	284.6	148.4	137.2	11.20	13.249										
1,800.0	1,733.4	1,804.5	1,758.2	8.5	7.0	138.09	98.4	312.6	157.8	145.5	12.27	12.859										
1,900.0	1,827.7	1,904.0	1,853.2	9.1	7.6	137.00	108.1	340.6	167.3	153.9	13.35	12.531										
2,000.0	1,922.0	2,003.5	1,948.2	9.8	8.1	136.02	117.9	368.6	176.8	162.4	14.43	12.251										
2,100.0	2,016.3	2,103.0	2,043.2	10.4	8.7	135.14	127.6	396.6	186.4	170.9	15.52	12.010										
2,200.0	2,110.6	2,202.5	2,138.1	11.0	9.2	134.35	137.3	424.6	196.0	179.4	16.61	11.802										
2,300.0	2,204.9	2,302.0	2,233.1	11.6	9.8	133.63	147.0	452.6	205.7	188.0	17.70	11.619										
2,400.0	2,299.2	2,401.5	2,328.1	12.3	10.4	132.98	156.8	480.6	215.4	196.6	18.80	11.458										
2,500.0	2,393.5	2,501.0	2,423.1	12.9	10.9	132.38	166.5	508.6	225.1	205.2	19.89	11.315										
2,600.0	2,487.8	2,600.5	2,518.1	13.5	11.5	131.83	176.2	536.6	234.9	213.9	20.99	11.188										
2,700.0	2,582.1	2,700.0	2,613.1	14.1	12.0	131.33	186.0	564.6	244.6	222.5	22.09	11.073										
2,800.0	2,676.4	2,799.5	2,708.0	14.8	12.6	130.86	195.7	592.6	254.4	231.2	23.19	10.970										
2,900.0	2,770.7	2,899.0	2,803.0	15.4	13.2	130.43	205.4	620.6	264.2	239.9	24.29	10.877										
3,000.0	2,865.0	2,998.5	2,898.0	16.0	13.7	130.03	215.2	648.5	274.0	248.6	25.39	10.792										
3,100.0	2,959.3	3,098.0	2,993.0	16.6	14.3	129.66	224.9	676.5	283.8	257.3	26.49	10.714										
3,200.0	3,053.6	3,197.5	3,088.0	17.3	14.9	129.31	234.6	704.5	293.6	266.1	27.59	10.643										
3,300.0	3,147.9	3,297.0	3,183.0	17.9	15.4	128.99	244.4	732.5	303.5	274.8	28.69	10.578										
3,400.0	3,242.2	3,396.5	3,277.9	18.5	16.0	128.68	254.1	760.5	313.3	283.5	29.79	10.517										
3,500.0	3,336.5	3,496.0	3,372.9	19.1	16.5	128.39	263.8	788.5	323.2	292.3	30.89	10.461										
3,600.0	3,430.8	3,595.5	3,467.9	19.8	17.1	128.13	273.6	816.5	333.1	301.1	32.00	10.409										
3,700.0	3,525.1	3,695.0	3,562.9	20.4	17.7	127.87	283.3	844.5	342.9	309.8	33.10	10.361										
3,800.0	3,619.4	3,794.5	3,657.9	21.0	18.2	127.63	293.0	872.5	352.8	318.6	34.20	10.316										
3,900.0	3,713.7	3,894.0	3,752.9	21.7	18.8	127.41	302.7	900.5	362.7	327.4	35.30	10.274										
4,000.0	3,808.0	3,993.5	3,847.8	22.3	19.4	127.19	312.5	928.5	372.6	336.2	36.40	10.235										
4,100.0	3,902.3	4,093.0	3,942.8	22.9	19.9	126.99	322.2	956.5	382.5	345.0	37.50	10.198										
4,200.0	3,996.6	4,192.5	4,037.8	23.5	20.5	126.79	331.9	984.5	392.4	353.8	38.61	10.163										
4,300.0	4,090.9	4,292.0	4,132.8	24.2	21.1	126.61	341.7	1,012.5	402.3	362.6	39.71	10.131										
4,400.0	4,185.2	4,391.5	4,227.8	24.8	21.6	126.44	351.4	1,040.5	412.2	371.4	40.81	10.100										
4,500.0	4,279.5	4,491.0	4,322.8	25.4	22.2	126.27	361.1	1,068.5	422.1	380.2	41.91	10.071										
4,600.0	4,373.8	4,590.5	4,417.7	26.0	22.8	126.11	370.9	1,096.5	432.0	389.0	43.01	10.043										
4,700.0	4,468.1	4,690.0	4,512.7	26.7	23.3	125.96	380.6	1,124.5	441.9	397.8	44.12	10.017										
4,800.0	4,562.4	4,789.5	4,607.7	27.3	23.9	125.81	390.3	1,152.5	451.8	406.6	45.22	9.992										
4,900.0	4,656.7	4,889.0	4,702.7	27.9	24.4	125.68	400.1	1,180.5	461.8	415.4	46.32	9.969										
5,000.0	4,751.0	4,988.5	4,797.7	28.5	25.0	125.54	409.8	1,208.5	471.7	424.3	47.42	9.946										
5,100.0	4,845.3	5,088.0	4,892.7	29.2	25.6	125.41	419.5	1,236.5	481.6	433.1	48.52	9.925										

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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	
O31E Pad (2nd Occupation) - Shideler Fee 31-16A - OH - Plan #1													Offset Well Error:	0.0 ft	
Survey Program: 0-MWD															
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
5,200.0	4,939.6	5,187.5	4,987.6	29.8	26.1	125.29	429.2	1,264.5	491.5	441.9	49.63	9.905 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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	-123.98	-8.4	-12.4	15.0						
100.0	100.0	100.0	100.0	0.1	0.1	-123.98	-8.4	-12.4	15.0	14.7	0.27	55.076			
200.0	200.0	200.0	200.0	0.3	0.3	-123.98	-8.4	-12.4	15.0	14.4	0.62	24.134	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-178.16	-8.4	-12.4	17.6	16.6	0.97	18.164			
400.0	399.6	400.9	400.8	0.7	0.7	-179.48	-7.1	-10.1	22.8	21.5	1.32	17.335			
500.0	498.8	502.1	501.7	1.0	0.9	178.23	-3.3	-3.0	28.1	26.4	1.67	16.864			
600.0	597.1	603.5	602.2	1.4	1.2	175.42	3.1	8.7	33.4	31.4	2.02	16.542			
700.0	694.3	705.2	702.2	1.8	1.5	172.31	12.0	25.2	38.8	36.4	2.39	16.225			
800.0	790.2	807.2	801.2	2.4	2.0	169.04	23.5	46.4	44.4	41.5	2.81	15.771			
900.0	884.7	909.4	899.1	3.0	2.5	165.51	37.5	72.3	49.4	46.1	3.34	14.814			
1,000.0	979.0	1,009.5	994.0	3.6	3.1	161.48	52.7	100.3	52.4	48.4	4.00	13.093			
1,100.0	1,073.3	1,109.4	1,088.7	4.2	3.7	157.89	67.8	128.3	55.6	50.8	4.77	11.645			
1,200.0	1,167.6	1,209.3	1,183.4	4.8	4.3	154.71	83.0	156.2	58.9	53.3	5.63	10.466			
1,300.0	1,261.9	1,309.2	1,278.1	5.4	4.8	151.87	98.1	184.2	62.5	55.9	6.56	9.519			
1,400.0	1,356.2	1,409.0	1,372.8	6.0	5.4	149.35	113.2	212.2	66.1	58.6	7.55	8.762			
1,500.0	1,450.5	1,508.9	1,467.5	6.7	6.0	147.09	128.4	240.1	69.9	61.4	8.58	8.153			
1,600.0	1,544.8	1,608.8	1,562.2	7.3	6.6	145.07	143.5	268.1	73.8	64.2	9.64	7.658			
1,700.0	1,639.1	1,708.7	1,656.9	7.9	7.2	143.25	158.6	296.0	77.8	67.1	10.72	7.253			
1,800.0	1,733.4	1,808.6	1,751.6	8.5	7.8	141.61	173.8	324.0	81.8	70.0	11.83	6.916			
1,900.0	1,827.7	1,908.5	1,846.3	9.1	8.4	140.12	188.9	351.9	85.9	73.0	12.95	6.635			
2,000.0	1,922.0	2,008.4	1,941.0	9.8	9.0	138.77	204.1	379.9	90.1	76.0	14.08	6.397			
2,100.0	2,016.3	2,108.3	2,035.7	10.4	9.6	137.54	219.2	407.9	94.2	79.0	15.22	6.193			
2,200.0	2,110.6	2,208.2	2,130.4	11.0	10.2	136.42	234.3	435.8	98.5	82.1	16.36	6.018			
2,300.0	2,204.9	2,308.1	2,225.1	11.6	10.8	135.39	249.5	463.8	102.7	85.2	17.51	5.866			
2,400.0	2,299.2	2,408.0	2,319.8	12.3	11.4	134.44	264.6	491.7	107.0	88.4	18.67	5.733			
2,500.0	2,393.5	2,507.9	2,414.5	12.9	12.0	133.56	279.8	519.7	111.4	91.5	19.83	5.616			
2,600.0	2,487.8	2,607.8	2,509.2	13.5	12.6	132.75	294.9	547.7	115.7	94.7	20.99	5.513			
2,700.0	2,582.1	2,707.6	2,603.9	14.1	13.2	132.00	310.0	575.6	120.1	97.9	22.15	5.420			
2,800.0	2,676.4	2,807.5	2,698.6	14.8	13.8	131.30	325.2	603.6	124.5	101.2	23.32	5.338			
2,900.0	2,770.7	2,907.4	2,793.2	15.4	14.4	130.65	340.3	631.5	128.9	104.4	24.49	5.263			
3,000.0	2,865.0	3,007.3	2,887.9	16.0	15.0	130.04	355.5	659.5	133.3	107.6	25.65	5.196			
3,100.0	2,959.3	3,107.2	2,982.6	16.6	15.6	129.47	370.6	687.4	137.7	110.9	26.82	5.135			
3,200.0	3,053.6	3,207.1	3,077.3	17.3	16.2	128.94	385.7	715.4	142.2	114.2	27.99	5.080			
3,300.0	3,147.9	3,307.0	3,172.0	17.9	16.8	128.44	400.9	743.4	146.6	117.5	29.16	5.029			
3,400.0	3,242.2	3,406.9	3,266.7	18.5	17.4	127.97	416.0	771.3	151.1	120.8	30.33	4.983			
3,500.0	3,336.5	3,506.8	3,361.4	19.1	18.0	127.52	431.1	799.3	155.6	124.1	31.50	4.940			
3,600.0	3,430.8	3,606.7	3,456.1	19.8	18.6	127.10	446.3	827.2	160.1	127.4	32.67	4.900			
3,700.0	3,525.1	3,706.6	3,550.8	20.4	19.2	126.71	461.4	855.2	164.6	130.7	33.84	4.864			
3,800.0	3,619.4	3,806.5	3,645.5	21.0	19.8	126.33	476.6	883.1	169.1	134.1	35.01	4.830			
3,900.0	3,713.7	3,906.4	3,740.2	21.7	20.4	125.98	491.7	911.1	173.6	137.4	36.18	4.799			
4,000.0	3,808.0	4,006.2	3,834.9	22.3	21.0	125.64	506.8	939.1	178.1	140.8	37.35	4.769			
4,100.0	3,902.3	4,106.1	3,929.6	22.9	21.6	125.32	522.0	967.0	182.6	144.1	38.52	4.742			
4,200.0	3,996.6	4,206.0	4,024.3	23.5	22.2	125.01	537.1	995.0	187.2	147.5	39.69	4.716			
4,300.0	4,090.9	4,305.9	4,119.0	24.2	22.8	124.72	552.3	1,022.9	191.7	150.8	40.86	4.692			
4,400.0	4,185.2	4,405.8	4,213.7	24.8	23.4	124.44	567.4	1,050.9	196.2	154.2	42.03	4.670			
4,500.0	4,279.5	4,505.7	4,308.4	25.4	24.0	124.18	582.5	1,078.9	200.8	157.6	43.19	4.648			
4,600.0	4,373.8	4,605.6	4,403.1	26.0	24.6	123.93	597.7	1,106.8	205.3	161.0	44.36	4.628			
4,700.0	4,468.1	4,705.5	4,497.8	26.7	25.2	123.68	612.8	1,134.8	209.9	164.4	45.53	4.610			
4,800.0	4,562.4	4,805.4	4,592.5	27.3	25.8	123.45	627.9	1,162.7	214.4	167.7	46.70	4.592			
4,900.0	4,656.7	4,905.3	4,687.2	27.9	26.4	123.23	643.1	1,190.7	219.0	171.1	47.87	4.575			
5,000.0	4,751.0	5,005.2	4,781.9	28.5	27.0	123.02	658.2	1,218.6	223.6	174.5	49.04	4.559			
5,100.0	4,845.3	5,105.1	4,876.6	29.2	27.7	122.81	673.4	1,246.6	228.1	177.9	50.21	4.544			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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		
5,200.0	4,939.6	5,205.0	4,971.3	29.8	28.3	122.61	688.5	1,274.6	232.7	181.3	51.38	4.529			
5,300.0	5,033.9	5,304.9	5,066.0	30.4	28.9	122.43	703.6	1,302.5	237.3	184.7	52.54	4.515			
5,400.0	5,128.2	5,404.7	5,160.7	31.0	29.5	122.24	718.8	1,330.5	241.8	188.1	53.71	4.502			
5,500.0	5,222.5	5,504.6	5,255.4	31.7	30.1	122.07	733.9	1,358.4	246.4	191.5	54.88	4.490			
5,600.0	5,316.8	5,604.5	5,350.1	32.3	30.7	121.90	749.1	1,386.4	251.0	194.9	56.05	4.478			
5,700.0	5,411.1	5,704.4	5,444.8	32.9	31.3	121.74	764.2	1,414.3	255.6	198.3	57.22	4.467			
5,800.0	5,505.9	5,800.0	5,535.7	33.5	31.8	121.58	778.3	1,440.4	259.8	201.5	58.31	4.455			
5,900.0	5,601.7	5,898.0	5,629.8	34.0	32.3	121.42	791.3	1,464.3	263.5	204.2	59.31	4.443			
6,000.0	5,698.5	5,994.3	5,723.1	34.5	32.7	121.28	802.5	1,485.1	266.8	206.6	60.18	4.434			
6,100.0	5,796.1	6,090.6	5,817.3	34.8	33.1	121.15	812.3	1,503.2	269.6	208.7	60.94	4.425			
6,200.0	5,894.3	6,187.0	5,912.0	35.2	33.4	121.05	820.6	1,518.4	272.0	210.4	61.59	4.417			
6,300.0	5,993.2	6,283.3	6,007.3	35.5	33.7	120.95	827.3	1,530.9	273.9	211.8	62.13	4.409			
6,400.0	6,092.5	6,379.7	6,103.0	35.7	33.9	120.87	832.5	1,540.5	275.4	212.8	62.57	4.401			
6,500.0	6,192.2	6,476.0	6,199.1	35.8	34.0	120.80	836.2	1,547.2	276.4	213.5	62.90	4.394			
6,600.0	6,292.1	6,572.4	6,295.3	35.9	34.1	120.74	838.3	1,551.2	276.9	213.8	63.12	4.387			
6,700.0	6,392.1	6,669.2	6,392.1	36.0	34.2	174.55	838.9	1,552.3	277.0	213.7	63.27	4.378			
6,800.0	6,492.1	6,769.2	6,492.1	36.0	34.2	174.55	838.9	1,552.3	277.0	213.6	63.40	4.369			
6,900.0	6,592.1	6,869.2	6,592.1	36.1	34.3	174.55	838.9	1,552.3	277.0	213.4	63.53	4.360			
7,000.0	6,692.1	6,969.2	6,692.1	36.2	34.4	174.55	838.9	1,552.3	277.0	213.3	63.66	4.351			
7,100.0	6,792.1	7,069.2	6,792.1	36.2	34.4	174.55	838.9	1,552.3	277.0	213.2	63.79	4.342			
7,200.0	6,892.1	7,169.2	6,892.1	36.3	34.5	174.55	838.9	1,552.3	277.0	213.0	63.93	4.333			
7,300.0	6,992.1	7,269.2	6,992.1	36.3	34.5	174.55	838.9	1,552.3	277.0	212.9	64.07	4.323			
7,400.0	7,092.1	7,369.2	7,092.1	36.4	34.6	174.55	838.9	1,552.3	277.0	212.8	64.20	4.314			
7,500.0	7,192.1	7,469.2	7,192.1	36.5	34.7	174.55	838.9	1,552.3	277.0	212.6	64.35	4.304			
7,600.0	7,292.1	7,569.2	7,292.1	36.5	34.7	174.55	838.9	1,552.3	277.0	212.5	64.49	4.295			
7,700.0	7,392.1	7,669.2	7,392.1	36.6	34.8	174.55	838.9	1,552.3	277.0	212.3	64.63	4.285			
7,800.0	7,492.1	7,769.2	7,492.1	36.6	34.9	174.55	838.9	1,552.3	277.0	212.2	64.78	4.276			
7,900.0	7,592.1	7,869.2	7,592.1	36.7	34.9	174.55	838.9	1,552.3	277.0	212.0	64.92	4.266			
8,000.0	7,692.1	7,969.2	7,692.1	36.8	35.0	174.55	838.9	1,552.3	277.0	211.9	65.07	4.256			
8,100.0	7,792.1	8,069.2	7,792.1	36.8	35.1	174.55	838.9	1,552.3	277.0	211.8	65.22	4.247			
8,200.0	7,892.1	8,169.2	7,892.1	36.9	35.2	174.55	838.9	1,552.3	277.0	211.6	65.37	4.237			
8,300.0	7,992.1	8,269.2	7,992.1	37.0	35.2	174.55	838.9	1,552.3	277.0	211.4	65.53	4.227			
8,400.0	8,092.1	8,369.2	8,092.1	37.0	35.3	174.55	838.9	1,552.3	277.0	211.3	65.68	4.217			
8,500.0	8,192.1	8,469.2	8,192.1	37.1	35.4	174.55	838.9	1,552.3	277.0	211.1	65.84	4.207			
8,600.0	8,292.1	8,569.2	8,292.1	37.2	35.4	174.55	838.9	1,552.3	277.0	211.0	65.99	4.197			
8,666.9	8,359.0	8,636.1	8,359.0	37.2	35.5	174.55	838.9	1,552.3	277.0	210.9	66.10	4.190 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-135.50	-27.3	-26.8	38.3						
100.0	100.0	100.0	100.0	0.1	0.1	-135.50	-27.3	-26.8	38.3	38.0	0.27	140.684			
200.0	200.0	200.0	200.0	0.3	0.3	-135.50	-27.3	-26.8	38.3	37.7	0.62	61.648	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	171.23	-27.3	-26.8	40.9	39.9	0.97	42.164			
400.0	399.6	400.9	400.8	0.7	0.7	171.25	-27.5	-25.3	47.7	46.4	1.32	36.143			
500.0	498.8	502.1	501.8	1.0	0.9	167.97	-28.2	-18.7	56.5	54.8	1.69	33.467			
600.0	597.1	603.1	602.2	1.4	1.1	162.87	-29.4	-6.7	67.7	65.6	2.12	31.929			
700.0	694.3	703.8	701.3	1.8	1.4	157.15	-31.2	10.4	81.7	79.0	2.67	30.558			
800.0	790.2	803.8	798.8	2.4	1.9	151.56	-33.5	32.5	98.9	95.5	3.40	29.067			
900.0	884.7	902.7	894.0	3.0	2.4	146.50	-36.3	59.3	119.0	114.7	4.32	27.569			
1,000.0	979.0	1,000.1	987.3	3.6	2.9	142.55	-39.2	87.2	139.8	134.5	5.31	26.347			
1,100.0	1,073.3	1,097.6	1,080.5	4.2	3.4	139.64	-42.1	115.2	161.1	154.8	6.33	25.461			
1,200.0	1,167.6	1,195.0	1,173.8	4.8	3.9	137.40	-45.0	143.1	182.7	175.4	7.37	24.808			
1,300.0	1,261.9	1,292.4	1,267.1	5.4	4.4	135.64	-47.9	171.0	204.5	196.1	8.41	24.316			
1,400.0	1,356.2	1,389.8	1,360.4	6.0	4.9	134.22	-50.8	198.9	226.5	217.0	9.46	23.934			
1,500.0	1,450.5	1,487.2	1,453.7	6.7	5.5	133.04	-53.7	226.8	248.6	238.1	10.52	23.632			
1,600.0	1,544.8	1,584.6	1,547.0	7.3	6.0	132.06	-56.6	254.8	270.7	259.2	11.58	23.388			
1,700.0	1,639.1	1,682.1	1,640.3	7.9	6.5	131.23	-59.5	282.7	293.0	280.3	12.63	23.187			
1,800.0	1,733.4	1,779.5	1,733.5	8.5	7.1	130.52	-62.4	310.6	315.2	301.5	13.69	23.020			
1,900.0	1,827.7	1,876.9	1,826.8	9.1	7.6	129.90	-65.3	338.5	337.6	322.8	14.75	22.878			
2,000.0	1,922.0	1,974.3	1,920.1	9.8	8.1	129.35	-68.2	366.4	359.9	344.1	15.82	22.757			
2,100.0	2,016.3	2,071.7	2,013.4	10.4	8.7	128.87	-71.1	394.4	382.3	365.4	16.88	22.652			
2,200.0	2,110.6	2,169.1	2,106.7	11.0	9.2	128.45	-74.0	422.3	404.7	386.7	17.94	22.560			
2,300.0	2,204.9	2,266.6	2,200.0	11.6	9.7	128.07	-77.0	450.2	427.1	408.1	19.00	22.479			
2,400.0	2,299.2	2,364.0	2,293.3	12.3	10.3	127.72	-79.9	478.1	449.5	429.5	20.06	22.408			
2,500.0	2,393.5	2,461.4	2,386.5	12.9	10.8	127.41	-82.8	506.1	472.0	450.9	21.12	22.345			
2,600.0	2,487.8	2,558.8	2,479.8	13.5	11.3	127.13	-85.7	534.0	494.4	472.3	22.18	22.288	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-142.74	-18.9	-14.4	23.8						
100.0	100.0	100.0	100.0	0.1	0.1	-142.74	-18.9	-14.4	23.8	23.5	0.27	87.426			
200.0	200.0	200.0	200.0	0.3	0.3	-142.74	-18.9	-14.4	23.8	23.2	0.62	38.310	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	165.02	-18.9	-14.4	26.3	25.4	0.97	27.132			
400.0	399.6	400.9	400.8	0.7	0.7	165.21	-18.7	-11.8	32.1	30.7	1.32	24.213			
500.0	498.8	501.9	501.5	1.0	0.9	161.69	-18.0	-3.8	39.3	37.6	1.71	22.994			
600.0	597.1	602.8	601.5	1.4	1.2	156.47	-16.8	9.4	48.2	46.0	2.17	22.225			
700.0	694.3	703.6	700.6	1.8	1.5	150.80	-15.2	27.9	59.3	56.5	2.78	21.365			
800.0	790.2	804.1	798.3	2.4	2.0	145.35	-13.1	51.5	72.8	69.2	3.57	20.358			
900.0	884.7	903.0	893.5	3.0	2.4	141.31	-10.7	78.2	88.8	84.3	4.49	19.758			
1,000.0	979.0	1,001.5	988.3	3.6	2.9	138.76	-8.3	104.9	105.5	100.1	5.45	19.350			
1,100.0	1,073.3	1,100.0	1,083.1	4.2	3.4	136.91	-5.9	131.6	122.4	116.0	6.43	19.023			
1,200.0	1,167.6	1,198.5	1,177.8	4.8	3.9	135.51	-3.5	158.3	139.4	131.9	7.43	18.762			
1,300.0	1,261.9	1,297.0	1,272.6	5.4	4.4	134.41	-1.2	185.0	156.4	147.9	8.43	18.553			
1,400.0	1,356.2	1,395.5	1,367.4	6.0	4.9	133.53	1.2	211.7	173.4	164.0	9.44	18.382			
1,500.0	1,450.5	1,494.0	1,462.2	6.7	5.4	132.81	3.6	238.5	190.6	180.1	10.45	18.241			
1,600.0	1,544.8	1,592.5	1,557.0	7.3	6.0	132.20	6.0	265.2	207.7	196.2	11.46	18.123			
1,700.0	1,639.1	1,691.0	1,651.7	7.9	6.5	131.69	8.4	291.9	224.8	212.4	12.48	18.022			
1,800.0	1,733.4	1,789.5	1,746.5	8.5	7.0	131.25	10.7	318.6	242.0	228.5	13.49	17.936			
1,900.0	1,827.7	1,888.0	1,841.3	9.1	7.5	130.87	13.1	345.3	259.2	244.7	14.51	17.861			
2,000.0	1,922.0	1,986.5	1,936.1	9.8	8.0	130.53	15.5	372.0	276.3	260.8	15.53	17.795			
2,100.0	2,016.3	2,085.0	2,030.9	10.4	8.5	130.24	17.9	398.7	293.5	277.0	16.55	17.738			
2,200.0	2,110.6	2,183.5	2,125.6	11.0	9.0	129.98	20.3	425.4	310.7	293.2	17.57	17.686			
2,300.0	2,204.9	2,282.0	2,220.4	11.6	9.5	129.74	22.7	452.2	327.9	309.3	18.59	17.641			
2,400.0	2,299.2	2,380.5	2,315.2	12.3	10.0	129.53	25.0	478.9	345.1	325.5	19.61	17.599			
2,500.0	2,393.5	2,479.0	2,410.0	12.9	10.6	129.34	27.4	505.6	362.4	341.7	20.63	17.562			
2,600.0	2,487.8	2,577.5	2,504.7	13.5	11.1	129.17	29.8	532.3	379.6	357.9	21.66	17.528			
2,700.0	2,582.1	2,676.0	2,599.5	14.1	11.6	129.01	32.2	559.0	396.8	374.1	22.68	17.498			
2,800.0	2,676.4	2,774.5	2,694.3	14.8	12.1	128.86	34.6	585.7	414.0	390.3	23.70	17.469			
2,900.0	2,770.7	2,873.0	2,789.1	15.4	12.6	128.73	37.0	612.4	431.2	406.5	24.72	17.443			
3,000.0	2,865.0	2,971.5	2,883.9	16.0	13.1	128.60	39.3	639.1	448.5	422.7	25.75	17.419			
3,100.0	2,959.3	3,070.0	2,978.6	16.6	13.6	128.49	41.7	665.9	465.7	438.9	26.77	17.397			
3,200.0	3,053.6	3,168.5	3,073.4	17.3	14.2	128.38	44.1	692.6	482.9	455.1	27.79	17.377	SF		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-131.77	-35.3	-39.6	53.0						
100.0	100.0	100.0	100.0	0.1	0.1	-131.77	-35.3	-39.6	53.0	52.8	0.27	194.837			
200.0	200.0	200.0	200.0	0.3	0.3	-131.77	-35.3	-39.6	53.0	52.4	0.62	85.378	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	174.63	-35.3	-39.6	55.7	54.7	0.97	57.397			
400.0	399.6	400.5	400.5	0.7	0.7	174.77	-35.5	-38.9	63.1	61.8	1.32	47.903			
500.0	498.8	501.9	501.7	1.0	0.9	172.14	-37.0	-33.8	73.3	71.7	1.68	43.711			
600.0	597.1	602.8	602.1	1.4	1.1	167.59	-39.9	-23.5	86.4	84.3	2.08	41.444			
700.0	694.3	703.0	701.0	1.8	1.4	162.23	-44.2	-8.3	102.8	100.2	2.59	39.707			
800.0	790.2	802.3	798.1	2.4	1.8	156.84	-49.9	11.7	123.1	119.9	3.25	37.935			
900.0	884.7	900.4	892.8	3.0	2.2	151.86	-56.9	36.2	147.0	142.9	4.09	35.974			
1,000.0	979.0	997.0	985.0	3.6	2.8	147.18	-64.8	64.0	171.6	166.5	5.06	33.881			
1,100.0	1,073.3	1,093.1	1,076.5	4.2	3.3	143.58	-72.7	92.1	197.0	190.9	6.08	32.376			
1,200.0	1,167.6	1,189.2	1,168.1	4.8	3.8	140.80	-80.7	120.1	222.9	215.8	7.12	31.295			
1,300.0	1,261.9	1,285.2	1,259.6	5.4	4.4	138.60	-88.6	148.1	249.2	241.1	8.17	30.499			
1,400.0	1,356.2	1,381.3	1,351.2	6.0	4.9	136.82	-96.6	176.1	275.8	266.6	9.23	29.897			
1,500.0	1,450.5	1,477.4	1,442.7	6.7	5.4	135.35	-104.6	204.2	302.6	292.4	10.28	29.430			
1,600.0	1,544.8	1,573.4	1,534.3	7.3	6.0	134.12	-112.5	232.2	329.6	318.3	11.34	29.060			
1,700.0	1,639.1	1,669.5	1,625.8	7.9	6.5	133.08	-120.5	260.2	356.7	344.3	12.40	28.762			
1,800.0	1,733.4	1,765.6	1,717.4	8.5	7.1	132.18	-128.4	288.2	383.9	370.4	13.46	28.517			
1,900.0	1,827.7	1,861.7	1,808.9	9.1	7.6	131.40	-136.4	316.2	411.1	396.6	14.52	28.313			
2,000.0	1,922.0	1,957.7	1,900.5	9.8	8.2	130.72	-144.4	344.3	438.4	422.9	15.58	28.141			
2,100.0	2,016.3	2,053.8	1,992.0	10.4	8.7	130.12	-152.3	372.3	465.8	449.2	16.64	27.995			
2,200.0	2,110.6	2,149.9	2,083.6	11.0	9.3	129.58	-160.3	400.3	493.2	475.5	17.70	27.868	SF		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-130.05	-43.7	-52.0	67.9						
100.0	100.0	100.0	100.0	0.1	0.1	-130.05	-43.7	-52.0	67.9	67.7	0.27	249.495			
200.0	200.0	200.0	200.0	0.3	0.3	-130.05	-43.7	-52.0	67.9	67.3	0.62	109.329 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	176.23	-43.7	-52.0	70.5	69.6	0.97	72.755			
400.0	399.6	401.0	401.0	0.7	0.7	175.61	-44.3	-50.6	77.7	76.4	1.32	58.880			
500.0	498.8	502.2	502.0	1.0	0.9	172.31	-46.9	-44.4	87.9	86.2	1.69	52.039			
600.0	597.1	602.7	601.8	1.4	1.1	167.38	-51.6	-33.5	101.7	99.6	2.12	48.041			
700.0	694.3	702.1	699.7	1.8	1.4	161.85	-58.3	-17.9	119.7	117.0	2.65	45.159			
800.0	790.2	800.1	795.2	2.4	1.8	156.42	-66.7	2.1	142.4	139.0	3.33	42.727			
900.0	884.7	896.4	887.9	3.0	2.3	151.55	-77.0	26.1	169.3	165.2	4.19	40.448			
1,000.0	979.0	991.5	978.1	3.6	2.9	146.92	-88.7	53.7	197.6	192.4	5.18	38.153			
1,100.0	1,073.3	1,086.2	1,067.7	4.2	3.4	143.20	-100.8	82.0	226.8	220.6	6.21	36.496			
1,200.0	1,167.6	1,180.9	1,157.2	4.8	4.0	140.33	-112.9	110.4	256.7	249.5	7.27	35.331			
1,300.0	1,261.9	1,275.6	1,246.8	5.4	4.6	138.05	-124.9	138.7	287.1	278.8	8.33	34.488			
1,400.0	1,356.2	1,370.3	1,336.3	6.0	5.1	136.21	-137.0	167.1	317.8	308.4	9.39	33.859			
1,500.0	1,450.5	1,465.0	1,425.9	6.7	5.7	134.69	-149.1	195.5	348.8	338.4	10.45	33.379			
1,600.0	1,544.8	1,559.7	1,515.4	7.3	6.3	133.42	-161.2	223.8	380.0	368.4	11.51	33.003			
1,700.0	1,639.1	1,654.4	1,605.0	7.9	6.9	132.34	-173.3	252.2	411.3	398.7	12.58	32.703			
1,800.0	1,733.4	1,749.1	1,694.5	8.5	7.5	131.41	-185.3	280.5	442.7	429.0	13.64	32.460			
1,900.0	1,827.7	1,843.9	1,784.1	9.1	8.0	130.60	-197.4	308.9	474.2	459.5	14.70	32.259 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-128.63	-51.7	-64.7	82.8						
100.0	100.0	100.0	100.0	0.1	0.1	-128.63	-51.7	-64.7	82.8	82.6	0.27	304.278			
200.0	200.0	200.0	200.0	0.3	0.3	-128.63	-51.7	-64.7	82.8	82.2	0.62	133.336	CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	177.58	-51.7	-64.7	85.5	84.5	0.97	88.145			
400.0	399.6	400.9	400.8	0.7	0.7	176.19	-53.3	-62.6	92.6	91.3	1.32	69.968			
500.0	498.8	501.2	500.8	1.0	0.9	172.38	-57.9	-56.1	103.9	102.2	1.71	60.879			
600.0	597.1	600.2	598.9	1.4	1.1	167.27	-65.5	-45.6	120.0	117.9	2.15	55.729			
700.0	694.3	697.4	694.6	1.8	1.5	161.86	-75.8	-31.3	141.7	138.9	2.70	52.424			
800.0	790.2	792.5	787.1	2.4	1.9	156.74	-88.6	-13.5	169.1	165.7	3.38	50.082			
900.0	884.7	885.1	876.0	3.0	2.4	152.33	-103.7	7.5	201.8	197.6	4.19	48.179			
1,000.0	979.0	975.8	961.8	3.6	2.9	148.31	-120.9	31.3	236.6	231.5	5.13	46.136			
1,100.0	1,073.3	1,066.1	1,045.9	4.2	3.5	144.50	-140.0	57.9	273.3	267.1	6.14	44.532			
1,200.0	1,167.6	1,157.5	1,130.9	4.8	4.1	141.41	-159.8	85.3	310.9	303.8	7.17	43.357			
1,300.0	1,261.9	1,249.0	1,215.9	5.4	4.8	138.99	-179.5	112.8	349.2	341.0	8.21	42.541			
1,400.0	1,356.2	1,340.4	1,300.8	6.0	5.4	137.04	-199.2	140.2	388.0	378.7	9.25	41.955			
1,500.0	1,450.5	1,431.9	1,385.8	6.7	6.0	135.44	-219.0	167.6	427.0	416.7	10.28	41.524			
1,600.0	1,544.8	1,523.3	1,470.8	7.3	6.6	134.11	-238.7	195.0	466.3	455.0	11.32	41.200	SF		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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	-127.92	-60.1	-77.1	97.8						
100.0	100.0	100.0	100.0	0.1	0.1	-127.92	-60.1	-77.1	97.8	97.5	0.27	359.200			
200.0	200.0	200.0	200.0	0.3	0.3	-127.92	-60.1	-77.1	97.8	97.2	0.62	157.402	CC, ES		
300.0	300.0	300.2	300.2	0.5	0.5	178.17	-60.2	-77.0	100.4	99.4	0.97	103.487			
400.0	399.6	400.8	400.7	0.7	0.7	176.21	-62.8	-74.0	107.6	106.2	1.33	80.973			
500.0	498.8	500.5	500.0	1.0	0.9	172.21	-68.9	-67.2	119.5	117.7	1.72	69.309			
600.0	597.1	598.6	597.1	1.4	1.2	167.18	-78.2	-56.6	136.8	134.6	2.19	62.556			
700.0	694.3	694.7	691.3	1.8	1.5	161.95	-90.4	-42.6	160.2	157.4	2.75	58.346			
800.0	790.2	788.1	782.0	2.4	2.0	157.06	-105.3	-25.7	189.8	186.4	3.42	55.575			
900.0	884.7	878.7	868.7	3.0	2.5	152.90	-122.5	-6.0	225.1	220.9	4.21	53.495			
1,000.0	979.0	967.1	952.1	3.6	3.0	149.19	-141.9	16.1	262.9	257.8	5.11	51.415			
1,100.0	1,073.3	1,053.3	1,031.9	4.2	3.6	145.68	-163.3	40.4	302.8	296.7	6.08	49.824			
1,200.0	1,167.6	1,142.8	1,114.1	4.8	4.2	142.53	-186.6	67.0	344.3	337.2	7.10	48.500			
1,300.0	1,261.9	1,232.2	1,196.3	5.4	4.9	140.04	-209.9	93.6	386.5	378.4	8.12	47.592			
1,400.0	1,356.2	1,321.7	1,278.5	6.0	5.5	138.03	-233.3	120.2	429.2	420.1	9.14	46.948			
1,500.0	1,450.5	1,411.2	1,360.7	6.7	6.2	136.38	-256.6	146.8	472.3	462.1	10.16	46.478	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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	-127.16	-68.1	-89.9	112.8						
100.0	100.0	100.0	100.0	0.1	0.1	-127.16	-68.1	-89.9	112.8	112.5	0.27	414.159			
200.0	200.0	200.0	200.0	0.3	0.3	-127.16	-68.1	-89.9	112.8	112.1	0.62	181.485 CC, ES			
300.0	300.0	300.3	300.3	0.5	0.5	178.68	-68.6	-89.4	115.3	114.3	0.97	118.768			
400.0	399.6	400.6	400.4	0.7	0.7	176.30	-72.3	-85.7	122.6	121.3	1.34	91.751			
500.0	498.8	499.7	499.0	1.0	0.9	172.20	-79.7	-78.4	135.1	133.4	1.75	77.377			
600.0	597.1	597.0	595.1	1.4	1.2	167.24	-90.5	-67.8	153.5	151.3	2.23	68.980			
700.0	694.3	691.9	688.0	1.8	1.6	162.19	-104.4	-54.2	178.4	175.6	2.79	63.866			
800.0	790.2	783.9	777.0	2.4	2.0	157.48	-120.9	-37.8	209.8	206.4	3.46	60.649			
900.0	884.7	872.8	861.8	3.0	2.5	153.51	-139.8	-19.3	247.2	243.0	4.24	58.352			
1,000.0	979.0	959.2	943.0	3.6	3.1	150.03	-160.9	1.5	287.2	282.1	5.11	56.177			
1,100.0	1,073.3	1,043.1	1,020.5	4.2	3.7	146.77	-183.8	24.0	329.5	323.5	6.05	54.450			
1,200.0	1,167.6	1,127.5	1,097.1	4.8	4.3	143.68	-209.0	48.8	374.2	367.1	7.04	53.137			
1,300.0	1,261.9	1,214.9	1,176.2	5.4	5.0	141.06	-235.5	74.9	419.8	411.8	8.06	52.114			
1,400.0	1,356.2	1,302.3	1,255.4	6.0	5.7	138.94	-261.9	101.0	466.1	457.0	9.07	51.398 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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	-126.79	-76.5	-102.3	127.7						
100.0	100.0	100.0	100.0	0.1	0.1	-126.79	-76.5	-102.3	127.7	127.5	0.27	469.150			
200.0	200.0	200.0	200.0	0.3	0.3	-126.79	-76.5	-102.3	127.7	127.1	0.62	205.583 CC, ES			
300.0	300.0	300.0	300.0	0.5	0.5	178.72	-77.7	-101.4	130.3	129.4	0.97	134.046			
400.0	399.6	399.4	399.1	0.7	0.7	176.09	-82.8	-97.4	138.3	136.9	1.35	102.643			
500.0	498.8	497.3	496.4	1.0	0.9	172.03	-91.8	-90.4	152.2	150.4	1.77	85.912			
600.0	597.1	593.1	590.8	1.4	1.3	167.32	-104.5	-80.7	172.6	170.3	2.26	76.399			
700.0	694.3	686.1	681.6	1.8	1.7	162.62	-120.3	-68.4	200.0	197.1	2.82	70.901			
800.0	790.2	775.8	768.2	2.4	2.1	158.28	-138.9	-54.1	234.3	230.9	3.46	67.698			
900.0	884.7	861.9	850.1	3.0	2.6	154.67	-159.7	-38.0	274.9	270.7	4.19	65.548			
1,000.0	979.0	945.3	928.3	3.6	3.1	151.57	-182.7	-20.2	318.3	313.3	5.01	63.542			
1,100.0	1,073.3	1,026.0	1,002.7	4.2	3.7	148.70	-207.4	-1.1	364.2	358.3	5.88	61.965			
1,200.0	1,167.6	1,100.0	1,069.7	4.8	4.3	146.17	-232.3	18.2	412.6	405.9	6.75	61.111			
1,300.0	1,261.9	1,178.8	1,139.6	5.4	5.0	143.61	-261.0	40.4	463.5	455.8	7.71	60.084 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 31-9D
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 31-9D	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

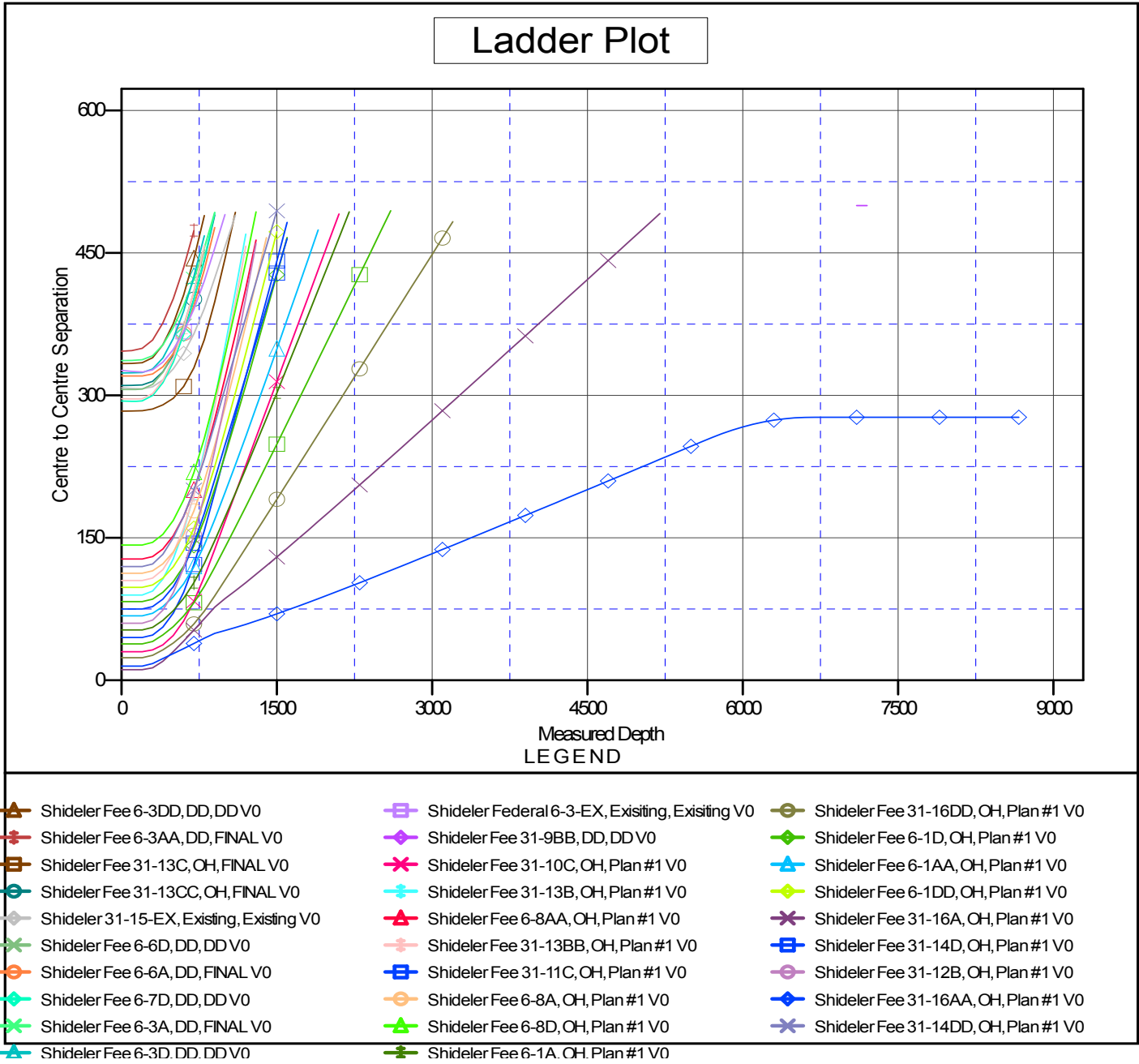
Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	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	-126.37	-84.5	-114.7	142.5						
100.0	100.0	100.0	100.0	0.1	0.1	-126.37	-84.5	-114.7	142.5	142.2	0.27	523.363			
200.0	200.0	200.0	200.0	0.3	0.3	-126.37	-84.5	-114.7	142.5	141.9	0.62	229.339	CC, ES		
300.0	300.0	299.6	299.6	0.5	0.5	178.75	-86.6	-113.3	145.2	144.2	0.98	148.587			
400.0	399.6	398.4	398.0	0.7	0.7	175.92	-93.0	-108.9	153.7	152.3	1.37	112.489			
500.0	498.8	495.5	494.3	1.0	1.0	171.89	-103.3	-101.8	168.4	166.6	1.81	93.234			
600.0	597.1	590.3	587.6	1.4	1.3	167.34	-117.3	-92.3	190.0	187.7	2.31	82.398			
700.0	694.3	682.0	676.9	1.8	1.7	162.84	-134.4	-80.5	218.8	215.9	2.87	76.245			
800.0	790.2	770.2	761.8	2.4	2.2	158.70	-154.2	-67.0	254.8	251.3	3.50	72.755			
900.0	884.7	854.7	841.9	3.0	2.7	155.26	-176.2	-51.9	297.1	292.9	4.22	70.468			
1,000.0	979.0	936.3	918.2	3.6	3.2	152.35	-200.1	-35.5	342.4	337.4	5.01	68.396			
1,100.0	1,073.3	1,015.1	990.5	4.2	3.8	149.66	-225.8	-17.9	390.2	384.3	5.84	66.808			
1,200.0	1,167.6	1,090.9	1,058.9	4.8	4.4	147.18	-252.8	0.6	440.5	433.7	6.71	65.643			
1,300.0	1,261.9	1,163.8	1,123.4	5.4	5.1	144.92	-280.9	19.8	493.3	485.7	7.61	64.835	SF		

Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Shideler Fee 31-9D	
Project: Mamm Creek	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)	
Reference Site: O31E Pad (2nd Occupation)	MD Reference: KB=22' @ 7126.0ft (Patterson #308)	
Site Error: 0.0ft	North Reference: True	
Reference Well: Shideler Fee 31-9D	Survey Calculation Method: Minimum Curvature	
Well Error: 0.0ft	Output errors are at 2.00 sigma	
Reference Wellbore OH	Database: USA EDM 5000 Multi Users DB	
Reference Design: Plan #1	Offset TVD Reference: Offset Datum	

Reference Depths are relative to KB=22' @ 7126.0ft (Patterson #308) Coordinates are relative to: Shideler Fee 31-9D
 Offset Depths are relative to Offset Datum Coordinate System is US State Plane 1983, Colorado Central Zone
 Central Meridian is -105.500000 ° Grid Convergence at Surface is: -1.39°



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