

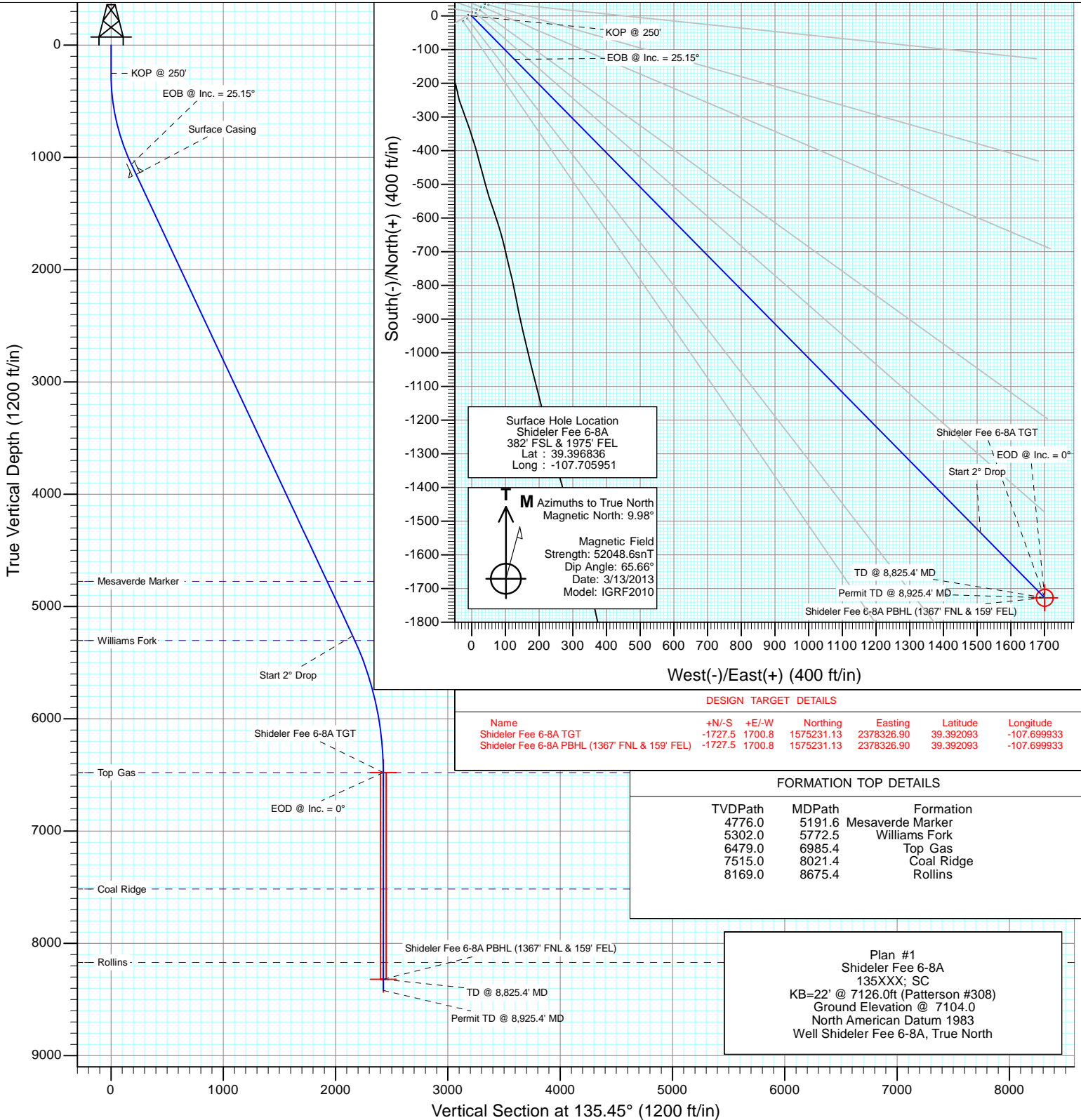


Project: Mamm Creek
 Site: O31E Pad (2nd Occupation)
 Well: Shideler Fee 6-8A
 Wellbore: OH
 Design: Plan #1



SECTION DETAILS

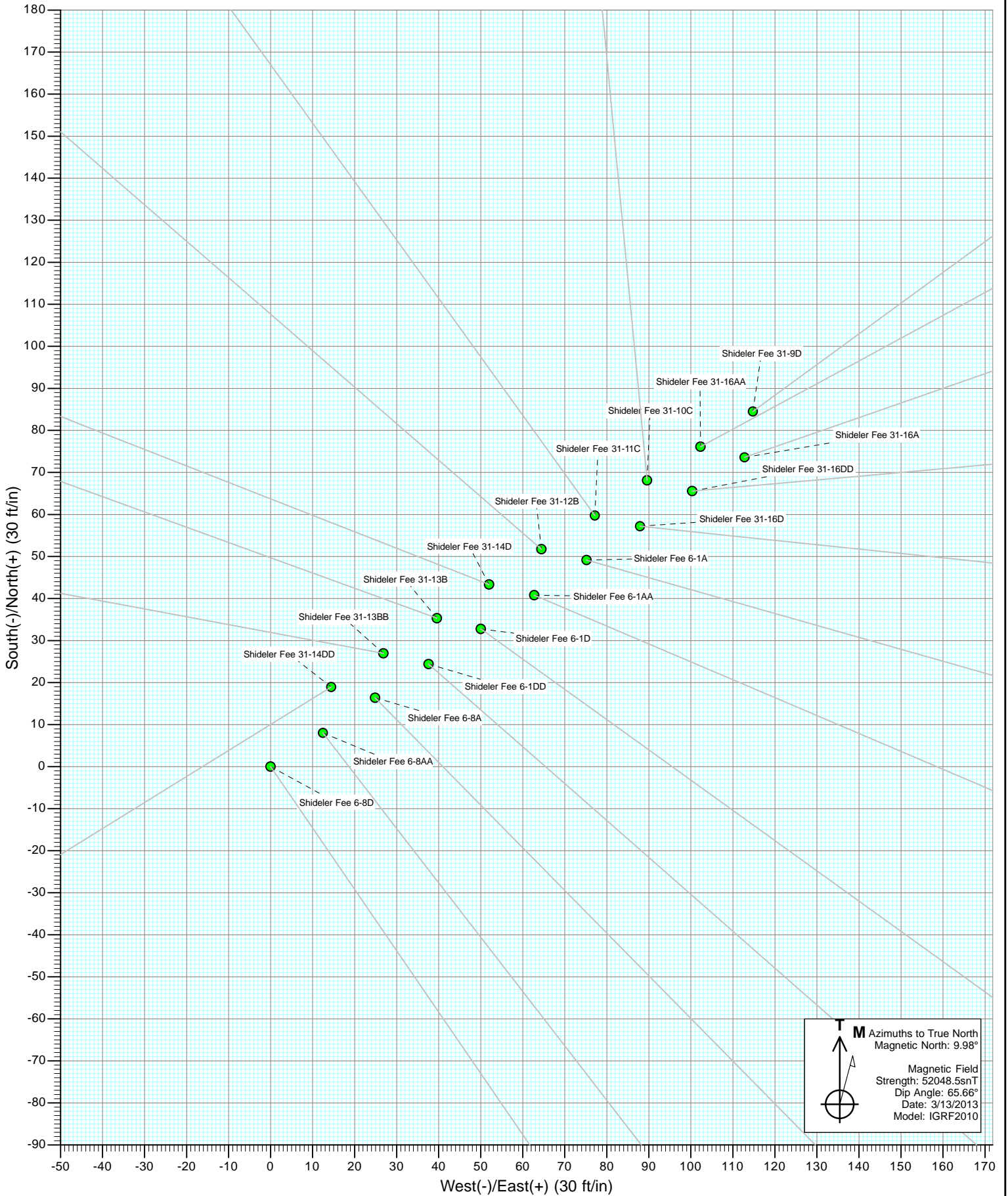
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.0	
3	1088.2	25.15	135.45	1061.6	-129.0	127.0	3.00	135.45	181.0	
4	5728.0	25.15	135.45	5261.6	-1534.0	1510.3	0.00	0.00	2152.7	
5	6985.4	0.00	0.00	6479.0	-1727.5	1700.8	2.00	180.00	2424.2	Shideler Fee 6-8A TGT
6	8825.4	0.00	0.00	8319.0	-1727.5	1700.8	0.00	0.00	2424.2	Shideler Fee 6-8A PBHL (1367' FNL & 159' FEL)
7	8925.4	0.00	0.00	8419.0	-1727.5	1700.8	0.00	0.00	2424.2	

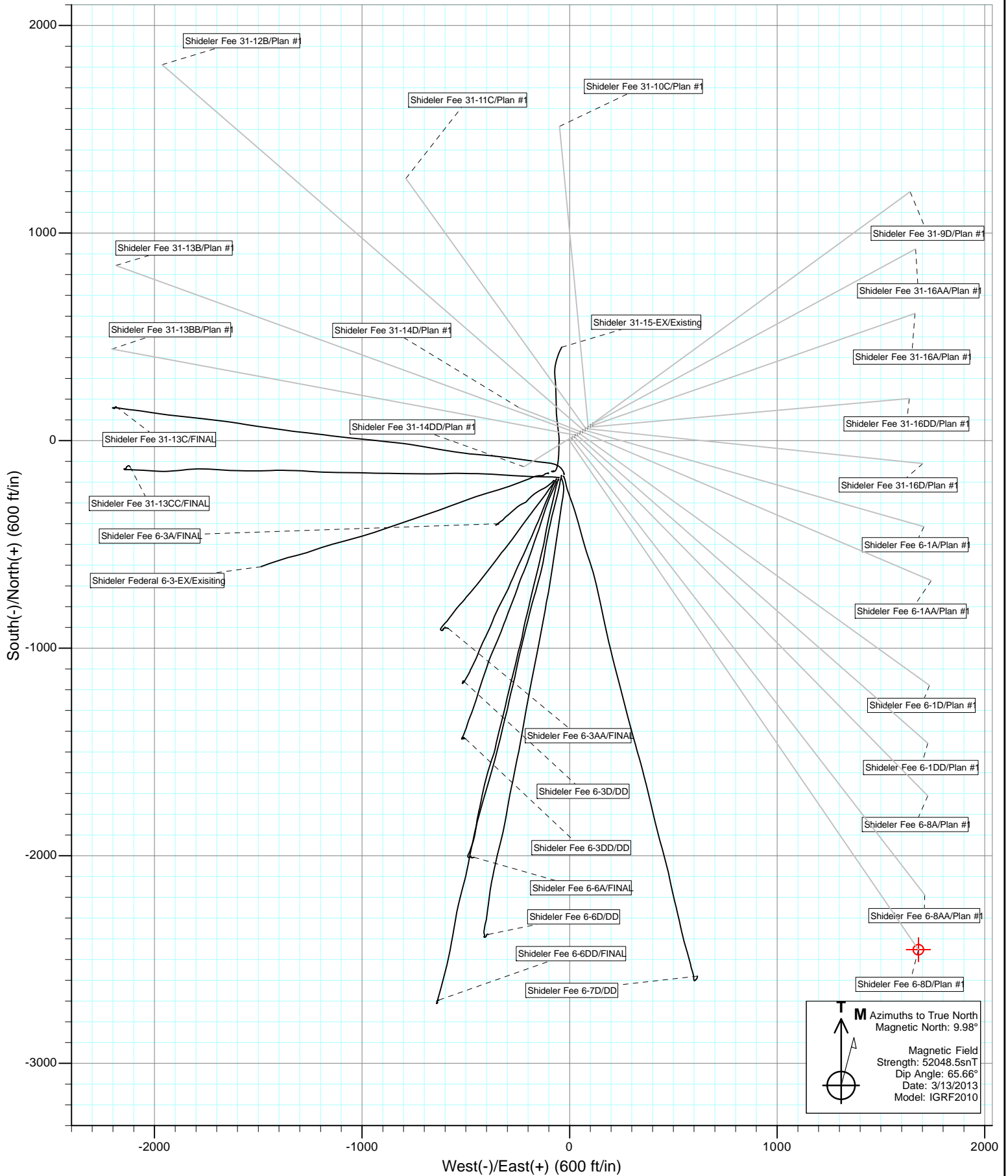


DESIGN TARGET DETAILS						
Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Shideler Fee 6-8A TGT	-1727.5	1700.8	1575231.13	2378326.90	39.392093	-107.699933
Shideler Fee 6-8A PBHL (1367' FNL & 159' FEL)	-1727.5	1700.8	1575231.13	2378326.90	39.392093	-107.699933

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4776.0	5191.6	Mesaverde Marker
5302.0	5772.5	Williams Fork
6479.0	6985.4	Top Gas
7515.0	8021.4	Coal Ridge
8169.0	8675.4	Rollins

Plan #1
 Shideler Fee 6-8A
 135XXX; SC
 KB=22' @ 7126.0ft (Patterson #308)
 Ground Elevation @ 7104.0
 North American Datum 1983
 Well Shideler Fee 6-8A, True North



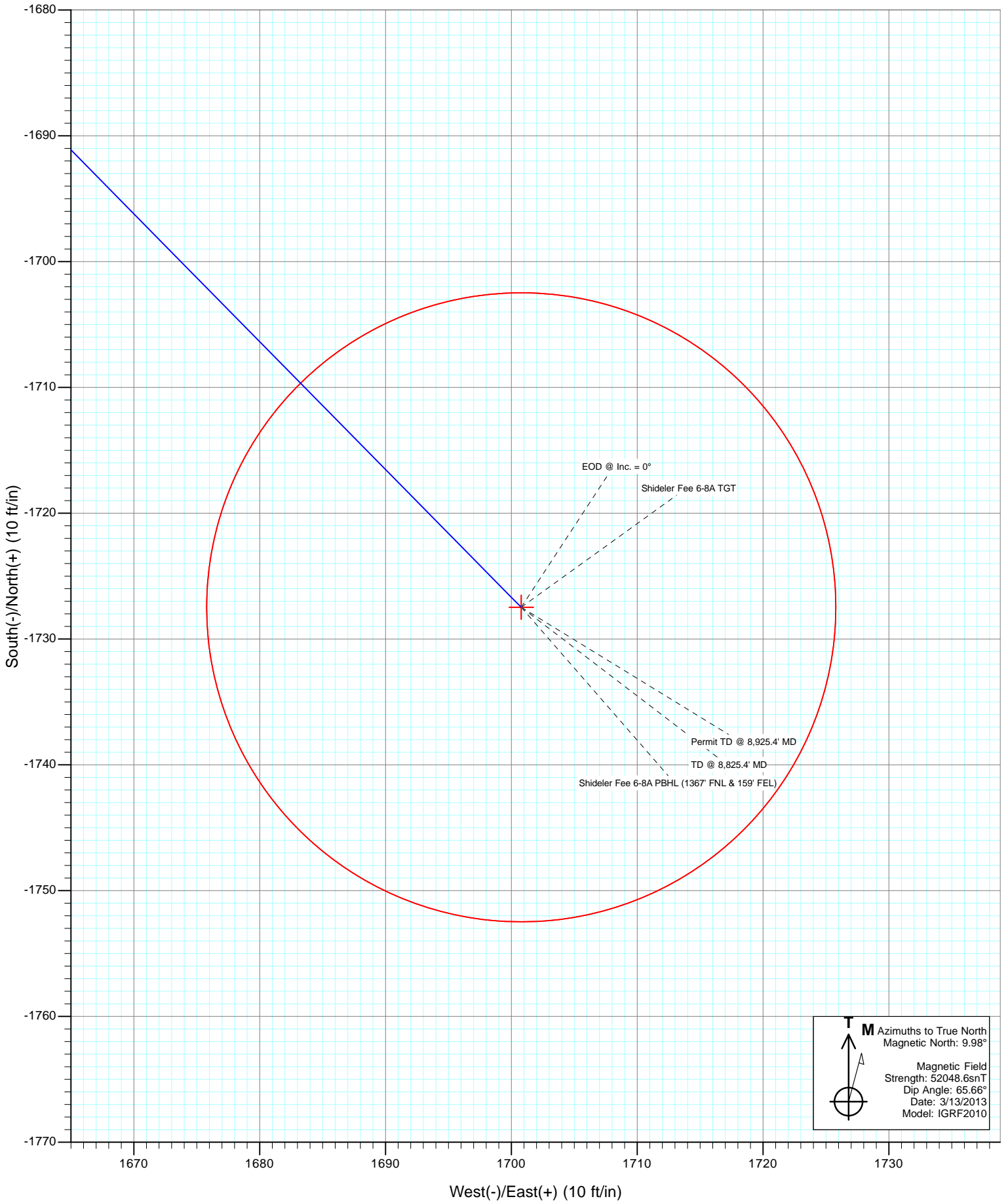


M Azimuths to True North
Magnetic North: 9.98°

Magnetic Field
Strength: 52048.5snT
Dip Angle: 65.66°
Date: 3/13/2013
Model: IGRF2010



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



Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Shideler Fee 6-8A
Company: EnCana Oil & Gas (USA) Inc	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
Project: Mamm Creek	MD Reference: KB=22' @ 7126.0ft (Patterson #308)
Site: O31E Pad (2nd Occupation)	North Reference: True
Well: Shideler Fee 6-8A	Survey Calculation Method: Minimum Curvature
Wellbore: OH	
Design: Plan #1	

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

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

Well Shideler Fee 6-8A						
Well Position	+N/-S	0.0 ft	Northing:	1,576,999.40 ft	Latitude:	39.396836
	+E/-W	0.0 ft	Easting:	2,376,668.55 ft	Longitude:	-107.705951
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	135.45	

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	
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,088.2	25.15	135.45	1,061.6	-129.0	127.0	3.00	3.00	0.00	135.45	
5,728.0	25.15	135.45	5,261.6	-1,534.0	1,510.3	0.00	0.00	0.00	0.00	
6,985.4	0.00	0.00	6,479.0	-1,727.5	1,700.8	2.00	-2.00	0.00	180.00	Shideler Fee 6-8A TG
8,825.4	0.00	0.00	8,319.0	-1,727.5	1,700.8	0.00	0.00	0.00	0.00	Shideler Fee 6-8A PB
8,925.4	0.00	0.00	8,419.0	-1,727.5	1,700.8	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	North Reference:	True
Well:	Shideler Fee 6-8A	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	
250.0	0.00	0.00	250.0	0.0	0.0	0.0	0.00	0.00	KOP @ 250'
300.0	1.50	135.45	300.0	-0.5	0.5	0.7	3.00	3.00	
400.0	4.50	135.45	399.8	-4.2	4.1	5.9	3.00	3.00	
500.0	7.50	135.45	499.3	-11.6	11.5	16.3	3.00	3.00	
600.0	10.50	135.45	598.0	-22.8	22.4	32.0	3.00	3.00	
700.0	13.50	135.45	695.8	-37.6	37.0	52.8	3.00	3.00	
800.0	16.50	135.45	792.4	-56.0	55.2	78.6	3.00	3.00	
900.0	19.50	135.45	887.5	-78.1	76.9	109.5	3.00	3.00	
1,000.0	22.50	135.45	980.9	-103.6	102.0	145.4	3.00	3.00	
1,088.2	25.15	135.45	1,061.6	-129.0	127.0	181.0	3.00	3.00	EOB @ Inc. = 25.15°
1,100.0	25.15	135.45	1,072.2	-132.6	130.5	186.0	0.00	0.00	
1,188.2	25.15	135.45	1,152.1	-159.3	156.8	223.5	0.00	0.00	Surface Casing
1,200.0	25.15	135.45	1,162.8	-162.8	160.3	228.5	0.00	0.00	
1,300.0	25.15	135.45	1,253.3	-193.1	190.1	271.0	0.00	0.00	
1,400.0	25.15	135.45	1,343.8	-223.4	219.9	313.5	0.00	0.00	
1,500.0	25.15	135.45	1,434.3	-253.7	249.8	356.0	0.00	0.00	
1,600.0	25.15	135.45	1,524.8	-284.0	279.6	398.5	0.00	0.00	
1,700.0	25.15	135.45	1,615.4	-314.2	309.4	441.0	0.00	0.00	
1,800.0	25.15	135.45	1,705.9	-344.5	339.2	483.5	0.00	0.00	
1,900.0	25.15	135.45	1,796.4	-374.8	369.0	526.0	0.00	0.00	
2,000.0	25.15	135.45	1,886.9	-405.1	398.8	568.5	0.00	0.00	
2,100.0	25.15	135.45	1,977.4	-435.4	428.6	611.0	0.00	0.00	
2,200.0	25.15	135.45	2,068.0	-465.6	458.5	653.5	0.00	0.00	
2,300.0	25.15	135.45	2,158.5	-495.9	488.3	696.0	0.00	0.00	
2,400.0	25.15	135.45	2,249.0	-526.2	518.1	738.4	0.00	0.00	
2,500.0	25.15	135.45	2,339.5	-556.5	547.9	780.9	0.00	0.00	
2,600.0	25.15	135.45	2,430.1	-586.8	577.7	823.4	0.00	0.00	
2,700.0	25.15	135.45	2,520.6	-617.1	607.5	865.9	0.00	0.00	
2,800.0	25.15	135.45	2,611.1	-647.3	637.3	908.4	0.00	0.00	
2,900.0	25.15	135.45	2,701.6	-677.6	667.2	950.9	0.00	0.00	
3,000.0	25.15	135.45	2,792.1	-707.9	697.0	993.4	0.00	0.00	
3,100.0	25.15	135.45	2,882.7	-738.2	726.8	1,035.9	0.00	0.00	
3,200.0	25.15	135.45	2,973.2	-768.5	756.6	1,078.4	0.00	0.00	
3,300.0	25.15	135.45	3,063.7	-798.7	786.4	1,120.9	0.00	0.00	
3,400.0	25.15	135.45	3,154.2	-829.0	816.2	1,163.4	0.00	0.00	
3,500.0	25.15	135.45	3,244.8	-859.3	846.0	1,205.9	0.00	0.00	
3,600.0	25.15	135.45	3,335.3	-889.6	875.8	1,248.4	0.00	0.00	
3,700.0	25.15	135.45	3,425.8	-919.9	905.7	1,290.9	0.00	0.00	
3,800.0	25.15	135.45	3,516.3	-950.2	935.5	1,333.4	0.00	0.00	
3,900.0	25.15	135.45	3,606.8	-980.4	965.3	1,375.9	0.00	0.00	
4,000.0	25.15	135.45	3,697.4	-1,010.7	995.1	1,418.4	0.00	0.00	
4,100.0	25.15	135.45	3,787.9	-1,041.0	1,024.9	1,460.9	0.00	0.00	
4,200.0	25.15	135.45	3,878.4	-1,071.3	1,054.7	1,503.4	0.00	0.00	
4,300.0	25.15	135.45	3,968.9	-1,101.6	1,084.5	1,545.9	0.00	0.00	
4,400.0	25.15	135.45	4,059.4	-1,131.8	1,114.4	1,588.3	0.00	0.00	
4,500.0	25.15	135.45	4,150.0	-1,162.1	1,144.2	1,630.8	0.00	0.00	
4,600.0	25.15	135.45	4,240.5	-1,192.4	1,174.0	1,673.3	0.00	0.00	
4,700.0	25.15	135.45	4,331.0	-1,222.7	1,203.8	1,715.8	0.00	0.00	
4,800.0	25.15	135.45	4,421.5	-1,253.0	1,233.6	1,758.3	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site:	O31E Pad (2nd Occupation)	North Reference:	True
Well:	Shideler Fee 6-8A	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
4,900.0	25.15	135.45	4,512.1	-1,283.2	1,263.4	1,800.8	0.00	0.00	
5,000.0	25.15	135.45	4,602.6	-1,313.5	1,293.2	1,843.3	0.00	0.00	
5,100.0	25.15	135.45	4,693.1	-1,343.8	1,323.1	1,885.8	0.00	0.00	
5,191.6	25.15	135.45	4,776.0	-1,371.5	1,350.4	1,924.7	0.00	0.00	Mesaverde Marker
5,200.0	25.15	135.45	4,783.6	-1,374.1	1,352.9	1,928.3	0.00	0.00	
5,300.0	25.15	135.45	4,874.1	-1,404.4	1,382.7	1,970.8	0.00	0.00	
5,400.0	25.15	135.45	4,964.7	-1,434.7	1,412.5	2,013.3	0.00	0.00	
5,500.0	25.15	135.45	5,055.2	-1,464.9	1,442.3	2,055.8	0.00	0.00	
5,600.0	25.15	135.45	5,145.7	-1,495.2	1,472.1	2,098.3	0.00	0.00	
5,700.0	25.15	135.45	5,236.2	-1,525.5	1,501.9	2,140.8	0.00	0.00	
5,728.0	25.15	135.45	5,261.6	-1,534.0	1,510.3	2,152.7	0.00	0.00	Start 2° Drop
5,772.5	24.26	135.45	5,302.0	-1,547.2	1,523.3	2,171.3	2.00	-2.00	Williams Fork
5,800.0	23.71	135.45	5,327.1	-1,555.2	1,531.2	2,182.5	2.00	-2.00	
5,900.0	21.71	135.45	5,419.4	-1,582.7	1,558.3	2,221.1	2.00	-2.00	
6,000.0	19.71	135.45	5,512.9	-1,607.9	1,583.1	2,256.4	2.00	-2.00	
6,100.0	17.71	135.45	5,607.6	-1,630.8	1,605.6	2,288.5	2.00	-2.00	
6,200.0	15.71	135.45	5,703.4	-1,651.2	1,625.7	2,317.2	2.00	-2.00	
6,300.0	13.71	135.45	5,800.1	-1,669.3	1,643.5	2,342.6	2.00	-2.00	
6,400.0	11.71	135.45	5,897.7	-1,685.0	1,659.0	2,364.6	2.00	-2.00	
6,500.0	9.71	135.45	5,995.9	-1,698.2	1,672.0	2,383.2	2.00	-2.00	
6,600.0	7.71	135.45	6,094.8	-1,709.0	1,682.6	2,398.3	2.00	-2.00	
6,700.0	5.71	135.45	6,194.1	-1,717.4	1,690.8	2,410.0	2.00	-2.00	
6,800.0	3.71	135.45	6,293.7	-1,723.2	1,696.6	2,418.2	2.00	-2.00	
6,900.0	1.71	135.45	6,393.6	-1,726.6	1,699.9	2,423.0	2.00	-2.00	
6,985.4	0.00	0.00	6,479.0	-1,727.5	1,700.8	2,424.2	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
7,000.0	0.00	0.00	6,493.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
7,100.0	0.00	0.00	6,593.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
7,200.0	0.00	0.00	6,693.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
7,300.0	0.00	0.00	6,793.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
7,400.0	0.00	0.00	6,893.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
7,500.0	0.00	0.00	6,993.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
7,600.0	0.00	0.00	7,093.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
7,700.0	0.00	0.00	7,193.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
7,800.0	0.00	0.00	7,293.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
7,900.0	0.00	0.00	7,393.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,000.0	0.00	0.00	7,493.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,021.4	0.00	0.00	7,515.0	-1,727.5	1,700.8	2,424.2	0.00	0.00	Coal Ridge
8,100.0	0.00	0.00	7,593.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,200.0	0.00	0.00	7,693.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,300.0	0.00	0.00	7,793.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,400.0	0.00	0.00	7,893.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,500.0	0.00	0.00	7,993.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,600.0	0.00	0.00	8,093.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,675.4	0.00	0.00	8,169.0	-1,727.5	1,700.8	2,424.2	0.00	0.00	Rollins
8,700.0	0.00	0.00	8,193.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,800.0	0.00	0.00	8,293.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,825.4	0.00	0.00	8,319.0	-1,727.5	1,700.8	2,424.2	0.00	0.00	TD @ 8,825.4' MD
8,900.0	0.00	0.00	8,393.6	-1,727.5	1,700.8	2,424.2	0.00	0.00	
8,925.4	0.00	0.00	8,419.0	-1,727.5	1,700.8	2,424.2	0.00	0.00	Permit TD @ 8,925.4' MD

Cathedral Energy Services

Planning Report

Database: USA EDM 5000 Multi Users DB	Local Co-ordinate Reference: Well Shideler Fee 6-8A
Company: EnCana Oil & Gas (USA) Inc	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
Project: Mamm Creek	MD Reference: KB=22' @ 7126.0ft (Patterson #308)
Site: O31E Pad (2nd Occupation)	North Reference: True
Well: Shideler Fee 6-8A	Survey Calculation Method: Minimum Curvature
Wellbore: OH	
Design: Plan #1	

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Shideler Fee 6-8A TGT - plan hits target center - Point	0.00	0.00	6,479.0	-1,727.5	1,700.8	1,575,231.13	2,378,326.90	39.392093	-107.699933
Shideler Fee 6-8A PBHL - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,319.0	-1,727.5	1,700.8	1,575,231.13	2,378,326.90	39.392093	-107.699933

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,188.2	1,152.1	Surface Casing		

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,191.6	4,776.0	Mesaverde Marker			
5,772.5	5,302.0	Williams Fork			
6,985.4	6,479.0	Top Gas			
8,021.4	7,515.0	Coal Ridge			
8,675.4	8,169.0	Rollins			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)		
250.0	250.0	0.0	0.0	KOP @ 250'	
1,088.2	1,061.6	-129.0	127.0	EOB @ Inc. = 25.15°	
5,728.0	5,261.6	-1,534.0	1,510.3	Start 2° Drop	
6,985.4	6,479.0	-1,727.5	1,700.8	EOD @ Inc. = 0°	
8,825.4	8,319.0	-1,727.5	1,700.8	TD @ 8,825.4' MD	
8,925.4	8,419.0	-1,727.5	1,700.8	Permit TD @ 8,925.4' MD	

EnCana Oil & Gas (USA) Inc

Mamm Creek

O31E Pad (2nd Occupation)

Shideler Fee 6-8A

OH

Plan #1

Anticollision Report

21 March, 2013

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	8,925.4	Plan #1 (OH)	MWD	Geolink MWD	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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)		
O31E Pad						
Shideler 31-15-EX - Existing - Existing	718.9	695.4	188.1	185.8	80.821	CC, ES
Shideler 31-15-EX - Existing - Existing	1,100.0	1,051.8	234.8	230.3	52.324	SF
Shideler Federal 6-3-EX - Existing - Existing	548.3	523.5	213.5	211.9	139.850	CC
Shideler Federal 6-3-EX - Existing - Existing	600.0	574.2	213.6	211.9	123.182	ES
Shideler Federal 6-3-EX - Existing - Existing	1,200.0	1,132.6	303.9	298.8	60.280	SF
Shideler Fee 31-13C - OH - FINAL	697.0	697.6	151.4	148.4	50.545	CC
Shideler Fee 31-13C - OH - FINAL	700.0	700.1	151.4	148.4	50.200	ES
Shideler Fee 31-13C - OH - FINAL	900.0	860.2	185.6	181.2	42.247	SF
Shideler Fee 31-13CC - OH - FINAL	0.0	3.0	208.6			
Shideler Fee 31-13CC - OH - FINAL	419.3	416.6	209.5	208.1	145.459	ES
Shideler Fee 31-13CC - OH - FINAL	1,000.0	906.9	311.6	306.6	61.836	SF
Shideler Fee 6-3A - DD - FINAL	0.0	3.0	232.4			
Shideler Fee 6-3A - DD - FINAL	100.0	102.3	232.5	232.2	832.500	ES
Shideler Fee 6-3A - DD - FINAL	1,300.0	1,241.8	340.3	333.3	48.153	SF
Shideler Fee 6-3AA - DD - FINAL	0.0	0.0	243.0			
Shideler Fee 6-3AA - DD - FINAL	1,500.0	1,395.6	470.6	461.1	49.723	SF
Shideler Fee 6-3D - DD - DD	0.0	3.0	220.6			
Shideler Fee 6-3D - DD - DD	200.0	202.0	221.0	220.4	353.635	ES
Shideler Fee 6-3D - DD - DD	1,700.0	1,594.1	489.7	478.1	42.150	SF
Shideler Fee 6-3DD - DD - DD	0.0	3.0	231.2			
Shideler Fee 6-3DD - DD - DD	100.0	102.2	231.3	231.0	827.916	ES
Shideler Fee 6-3DD - DD - DD	1,600.0	1,486.8	478.7	467.3	41.769	SF
Shideler Fee 6-6A - DD - FINAL	563.9	554.7	213.8	211.7	105.179	CC, ES
Shideler Fee 6-6A - DD - FINAL	1,700.0	1,578.1	477.2	464.3	37.156	SF
Shideler Fee 6-6D - DD - DD	131.1	134.1	206.5	206.1	534.953	CC, ES
Shideler Fee 6-6D - DD - DD	1,700.0	1,544.0	489.9	475.8	34.692	SF
Shideler Fee 6-6DD - DD - FINAL	153.0	156.0	196.1	195.7	424.017	CC
Shideler Fee 6-6DD - DD - FINAL	200.0	201.1	196.3	195.7	314.912	ES
Shideler Fee 6-6DD - DD - FINAL	1,500.0	1,342.7	474.7	463.5	42.088	SF
Shideler Fee 6-7D - DD - DD	138.9	138.9	195.7	195.3	473.643	CC, ES
Shideler Fee 6-7D - DD - DD	2,200.0	2,069.7	490.6	467.9	21.597	SF

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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)		
O31E Pad (2nd Occupation)						
Shideler Fee 31-10C - OH - Plan #1	200.0	200.0	82.8	82.2	133.327	CC, ES
Shideler Fee 31-10C - OH - Plan #1	600.0	580.7	115.9	113.7	51.989	SF
Shideler Fee 31-11C - OH - Plan #1	269.8	269.8	67.9	67.0	78.413	CC
Shideler Fee 31-11C - OH - Plan #1	300.0	299.8	67.9	66.9	69.927	ES
Shideler Fee 31-11C - OH - Plan #1	600.0	588.0	92.0	89.7	40.868	SF
Shideler Fee 31-12B - OH - Plan #1	321.4	321.5	52.7	51.7	49.467	CC, ES
Shideler Fee 31-12B - OH - Plan #1	500.0	495.4	63.1	61.2	34.314	SF
Shideler Fee 31-13B - OH - Plan #1	306.9	307.1	23.5	22.5	23.286	CC, ES
Shideler Fee 31-13B - OH - Plan #1	400.0	399.3	26.7	25.3	19.402	SF
Shideler Fee 31-13BB - OH - Plan #1	200.0	200.0	10.7	10.1	17.295	CC
Shideler Fee 31-13BB - OH - Plan #1	229.8	229.8	10.8	10.1	14.905	ES
Shideler Fee 31-13BB - OH - Plan #1	300.0	300.0	11.1	10.2	11.470	SF
Shideler Fee 31-14D - OH - Plan #1	200.0	200.0	38.2	37.6	61.548	CC
Shideler Fee 31-14D - OH - Plan #1	300.0	300.0	38.3	37.3	39.396	ES
Shideler Fee 31-14D - OH - Plan #1	600.0	597.3	50.7	48.6	23.715	SF
Shideler Fee 31-14DD - OH - Plan #1	200.0	200.0	10.8	10.1	17.322	CC
Shideler Fee 31-14DD - OH - Plan #1	228.4	228.4	10.9	10.1	15.064	ES
Shideler Fee 31-14DD - OH - Plan #1	300.0	300.0	11.3	10.4	11.670	SF
Shideler Fee 31-16A - OH - Plan #1	424.5	423.1	103.7	102.3	72.187	CC, ES
Shideler Fee 31-16A - OH - Plan #1	1,500.0	1,411.3	387.5	377.2	37.638	SF
Shideler Fee 31-16AA - OH - Plan #1	306.8	306.4	97.7	96.7	98.196	CC, ES
Shideler Fee 31-16AA - OH - Plan #1	1,600.0	1,476.4	485.4	474.1	42.858	SF
Shideler Fee 31-16D - OH - Plan #1	347.7	347.0	74.7	73.6	65.315	CC, ES
Shideler Fee 31-16D - OH - Plan #1	1,500.0	1,457.5	275.4	263.9	23.903	SF
Shideler Fee 31-16DD - OH - Plan #1	314.3	313.7	89.9	88.9	87.957	CC, ES
Shideler Fee 31-16DD - OH - Plan #1	1,600.0	1,532.5	362.4	350.2	29.737	SF
Shideler Fee 31-9D - OH - Plan #1	200.0	200.0	112.8	112.1	181.485	CC, ES
Shideler Fee 31-9D - OH - Plan #1	1,400.0	1,268.7	457.8	448.6	49.978	SF
Shideler Fee 6-1A - OH - Plan #1	378.6	378.0	59.5	58.2	47.268	CC
Shideler Fee 6-1A - OH - Plan #1	400.0	399.0	59.5	58.2	44.528	ES
Shideler Fee 6-1A - OH - Plan #1	1,400.0	1,377.0	200.4	189.9	19.121	SF
Shideler Fee 6-1AA - OH - Plan #1	355.3	354.9	44.7	43.5	38.093	CC, ES
Shideler Fee 6-1AA - OH - Plan #1	1,300.0	1,287.6	141.3	131.5	14.507	SF
Shideler Fee 6-1D - OH - Plan #1	343.0	342.8	29.8	28.7	26.390	CC
Shideler Fee 6-1D - OH - Plan #1	400.0	399.5	30.0	28.6	22.314	ES
Shideler Fee 6-1D - OH - Plan #1	1,700.0	1,696.0	111.0	96.0	7.432	SF
Shideler Fee 6-1DD - OH - Plan #1	329.9	329.8	14.9	13.8	13.793	CC
Shideler Fee 6-1DD - OH - Plan #1	400.0	399.8	15.0	13.7	11.155	ES
Shideler Fee 6-1DD - OH - Plan #1	1,500.0	1,499.7	44.8	32.1	3.526	SF
Shideler Fee 6-8AA - OH - Plan #1	200.0	200.0	15.0	14.4	24.130	CC
Shideler Fee 6-8AA - OH - Plan #1	300.0	300.0	15.0	14.1	15.446	ES
Shideler Fee 6-8AA - OH - Plan #1	1,200.0	1,196.4	45.1	35.4	4.671	SF
Shideler Fee 6-8D - OH - Plan #1	200.0	200.0	29.8	29.2	47.936	CC
Shideler Fee 6-8D - OH - Plan #1	300.0	300.0	29.9	28.9	30.557	ES
Shideler Fee 6-8D - OH - Plan #1	1,200.0	1,191.7	76.3	66.5	7.837	SF

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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			Offset Wellbore Centre		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 (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-146.20	-164.9	-110.4	199.7						
100.0	100.0	78.2	78.2	0.1	0.1	-146.27	-165.0	-110.2	198.4	198.2	0.20	970.485			
200.0	200.0	178.5	178.5	0.3	0.2	-146.47	-165.3	-109.5	198.3	197.8	0.47	424.956			
300.0	300.0	278.4	278.4	0.5	0.2	77.99	-165.6	-108.5	197.9	197.1	0.73	271.128			
400.0	399.8	378.8	378.7	0.7	0.3	79.01	-166.4	-106.9	196.5	195.5	1.01	194.319			
500.0	499.3	479.5	479.4	0.9	0.4	81.54	-166.9	-104.8	194.0	192.7	1.34	144.704			
600.0	598.0	580.3	580.2	1.2	0.5	86.10	-166.1	-103.2	190.6	188.9	1.74	109.487			
700.0	695.8	677.4	677.3	1.6	0.6	92.56	-163.9	-102.4	188.2	185.9	2.22	84.696			
718.9	714.2	695.4	695.3	1.7	0.6	93.96	-163.5	-102.4	188.1	185.8	2.33	80.821	CC, ES		
800.0	792.4	771.0	770.9	2.1	0.7	100.27	-162.0	-102.6	190.0	187.3	2.77	68.575			
900.0	887.5	865.3	865.2	2.7	0.8	108.60	-161.5	-103.1	198.3	195.0	3.36	59.030			
1,000.0	980.9	959.4	959.3	3.4	0.8	116.84	-161.9	-102.9	213.1	209.1	3.95	53.989			
1,100.0	1,072.2	1,051.8	1,051.6	4.1	0.9	124.57	-162.8	-102.4	234.8	230.3	4.49	52.324	SF		
1,200.0	1,162.8	1,142.5	1,142.4	4.9	1.0	131.63	-163.8	-101.7	262.0	257.1	4.92	53.301			
1,300.0	1,253.3	1,232.7	1,232.5	5.7	1.1	137.48	-164.1	-101.3	292.9	287.6	5.26	55.652			
1,400.0	1,343.8	1,324.6	1,324.5	6.5	1.2	142.35	-164.6	-100.8	326.1	320.5	5.55	58.721			
1,500.0	1,434.3	1,416.2	1,416.1	7.2	1.2	146.35	-165.0	-100.0	360.8	355.0	5.81	62.124			
1,600.0	1,524.8	1,508.2	1,508.1	8.0	1.3	149.74	-165.1	-98.9	396.7	390.7	6.04	65.733			
1,700.0	1,615.4	1,599.1	1,598.9	8.8	1.4	152.62	-164.7	-97.5	433.5	427.3	6.24	69.445			
1,800.0	1,705.9	1,691.3	1,691.1	9.6	1.5	155.23	-163.4	-95.6	471.1	464.6	6.43	73.309			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 100-Gyro													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-143.74	-174.1	-127.7	217.0						
100.0	100.0	79.0	79.0	0.1	0.1	-143.77	-174.0	-127.5	215.7	215.5	0.21	1,051.282			
200.0	200.0	179.3	179.3	0.3	0.2	-143.84	-173.6	-126.9	215.1	214.6	0.47	460.341			
300.0	300.0	277.8	277.8	0.5	0.2	80.89	-173.4	-126.7	214.6	213.9	0.73	294.765			
400.0	399.8	377.0	377.0	0.7	0.3	82.40	-173.3	-127.3	214.2	213.2	1.01	212.595			
500.0	499.3	476.0	476.0	0.9	0.4	85.35	-173.3	-128.1	213.6	212.2	1.34	159.941			
548.3	547.1	523.5	523.5	1.1	0.5	87.28	-173.3	-128.6	213.5	211.9	1.53	139.850 CC			
600.0	598.0	574.2	574.1	1.2	0.5	89.67	-173.3	-129.2	213.6	211.9	1.73	123.182 ES			
700.0	695.8	670.8	670.8	1.6	0.6	95.16	-173.5	-130.5	215.7	213.5	2.21	97.472			
800.0	792.4	765.6	765.6	2.1	0.7	101.57	-173.8	-132.3	221.5	218.7	2.76	80.193			
900.0	887.5	859.0	858.9	2.7	0.8	108.50	-174.4	-134.7	232.6	229.2	3.36	69.287			
1,000.0	980.9	950.8	950.7	3.4	0.8	115.46	-175.0	-137.5	250.1	246.1	3.97	63.051			
1,100.0	1,072.2	1,041.4	1,041.3	4.1	0.9	122.14	-175.8	-140.5	274.6	270.0	4.55	60.287			
1,200.0	1,162.8	1,132.6	1,132.4	4.9	1.0	128.53	-176.9	-143.1	303.9	298.8	5.04	60.280 SF			
1,300.0	1,253.3	1,224.3	1,224.0	5.7	1.1	133.79	-178.5	-145.4	335.9	330.5	5.46	61.493			
1,400.0	1,343.8	1,316.1	1,315.8	6.5	1.2	138.16	-180.3	-147.2	369.8	363.9	5.83	63.374			
1,500.0	1,434.3	1,406.0	1,405.7	7.2	1.2	141.77	-181.9	-148.9	405.2	399.0	6.17	65.657			
1,600.0	1,524.8	1,494.7	1,494.3	8.0	1.3	144.81	-183.2	-150.8	442.1	435.6	6.48	68.220			
1,700.0	1,615.4	1,580.6	1,580.2	8.8	1.4	147.34	-184.3	-153.2	480.6	473.9	6.78	70.936			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	-163.95	-177.8	-51.2	185.0						
100.0	100.0	102.4	102.4	0.1	0.1	-163.96	-177.9	-51.2	185.1	184.9	0.28	662.346			
200.0	200.0	203.2	203.2	0.3	0.3	-163.95	-178.1	-51.2	185.3	184.7	0.63	295.592			
300.0	300.0	305.6	305.6	0.5	0.5	60.88	-177.5	-51.3	184.4	183.5	0.98	188.107			
400.0	399.8	412.2	412.1	0.7	0.7	63.27	-173.4	-52.2	178.6	177.2	1.36	131.541			
500.0	499.3	514.7	514.2	0.9	0.9	68.87	-165.0	-55.7	167.8	166.0	1.79	93.846			
600.0	598.0	610.6	609.4	1.2	1.1	77.72	-155.0	-61.5	156.8	154.5	2.33	67.216			
697.0	692.9	697.6	695.4	1.6	1.4	89.09	-145.0	-69.7	151.4	148.4	3.00	50.545 CC			
700.0	695.8	700.1	697.9	1.6	1.4	89.46	-144.7	-70.0	151.4	148.4	3.02	50.200 ES			
800.0	792.4	782.2	778.5	2.1	1.7	102.12	-136.0	-82.3	159.9	156.2	3.74	42.735			
900.0	887.5	860.2	854.8	2.7	1.9	113.21	-129.7	-97.8	185.6	181.2	4.39	42.247 SF			
1,000.0	980.9	937.0	929.3	3.4	2.3	121.82	-125.5	-115.7	225.5	220.6	4.96	45.498			
1,100.0	1,072.2	1,009.0	998.7	4.1	2.6	127.95	-122.9	-134.5	276.0	270.6	5.47	50.445			
1,200.0	1,162.8	1,077.6	1,064.4	4.9	2.9	133.36	-120.8	-154.4	333.3	327.4	5.88	56.648			
1,300.0	1,253.3	1,142.0	1,125.5	5.7	3.3	137.22	-118.4	-174.7	394.7	388.4	6.28	62.895			
1,400.0	1,343.8	1,200.4	1,180.2	6.5	3.7	139.98	-115.8	-194.9	459.8	453.1	6.67	68.970			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 111-MWD, 1242-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	3.0	3.0	0.0	0.0	-158.55	-194.2	-76.3	208.6					
100.0	100.0	102.4	102.4	0.1	0.1	-158.52	-194.2	-76.4	208.7	208.5	0.28	746.864		
200.0	200.0	201.9	201.9	0.3	0.3	-158.51	-194.7	-76.6	209.2	208.6	0.62	334.858		
300.0	300.0	300.7	300.6	0.5	0.5	66.87	-194.6	-79.2	209.8	208.9	0.98	215.076		
400.0	399.8	398.2	397.9	0.7	0.7	69.90	-193.5	-85.7	209.6	208.2	1.36	154.440		
419.3	419.1	416.6	416.3	0.7	0.7	70.75	-193.2	-87.4	209.5	208.1	1.44	145.459 ES		
500.0	499.3	489.9	489.0	0.9	0.9	74.90	-192.5	-95.8	210.7	208.9	1.80	116.890		
600.0	598.0	581.7	579.8	1.2	1.2	81.57	-192.0	-109.4	215.6	213.2	2.35	91.843		
700.0	695.8	670.4	667.0	1.6	1.5	89.21	-191.4	-125.5	226.0	223.1	2.97	76.024		
800.0	792.4	753.0	747.7	2.1	1.8	96.74	-190.9	-143.4	244.7	241.1	3.64	67.189		
900.0	887.5	832.5	824.7	2.7	2.2	103.80	-190.4	-163.3	273.2	268.9	4.34	62.972		
1,000.0	980.9	906.9	896.0	3.4	2.6	109.76	-190.0	-184.2	311.6	306.6	5.04	61.836 SF		
1,100.0	1,072.2	972.8	958.7	4.1	3.0	114.42	-189.6	-204.7	359.4	353.7	5.75	62.479		
1,200.0	1,162.8	1,031.5	1,013.7	4.9	3.4	119.19	-188.6	-225.2	415.2	408.9	6.35	65.351		
1,300.0	1,253.3	1,100.8	1,077.9	5.7	3.9	123.89	-187.1	-251.0	475.9	469.0	6.88	69.174		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	-154.34	-209.4	-100.6	232.4					
100.0	100.0	102.3	102.3	0.1	0.1	-154.33	-209.6	-100.7	232.5	232.2	0.28	832.500 ES		
200.0	200.0	200.3	200.3	0.3	0.3	-154.21	-210.0	-101.5	233.3	232.7	0.62	375.141		
300.0	300.0	295.0	295.0	0.5	0.5	70.67	-210.9	-102.9	234.6	233.7	0.96	243.631		
400.0	399.8	389.9	389.8	0.7	0.7	72.09	-213.7	-106.0	237.0	235.7	1.32	179.313		
500.0	499.3	487.8	487.5	0.9	0.9	74.77	-217.9	-110.2	239.9	238.2	1.73	138.588		
600.0	598.0	588.3	587.8	1.2	1.1	78.69	-222.0	-114.6	242.1	239.9	2.22	109.196		
700.0	695.8	685.4	684.8	1.6	1.2	83.55	-225.7	-118.6	244.6	241.8	2.79	87.802		
800.0	792.4	781.2	780.4	2.1	1.4	89.40	-229.2	-123.2	249.1	245.6	3.44	72.324		
900.0	887.5	875.8	874.8	2.7	1.6	95.91	-232.6	-127.9	257.0	252.8	4.18	61.516		
1,000.0	980.9	968.9	967.8	3.4	1.8	102.69	-236.1	-132.4	269.7	264.7	4.96	54.369		
1,100.0	1,072.2	1,059.7	1,058.4	4.1	2.0	109.51	-239.0	-136.9	288.3	282.5	5.75	50.172		
1,200.0	1,162.8	1,149.0	1,147.6	4.9	2.2	116.18	-241.8	-141.4	312.5	306.0	6.45	48.476		
1,300.0	1,253.3	1,241.8	1,240.2	5.7	2.4	122.15	-244.8	-145.9	340.3	333.3	7.07	48.153 SF		
1,400.0	1,343.8	1,337.1	1,335.4	6.5	2.5	127.41	-247.4	-149.3	370.3	362.6	7.62	48.603		
1,500.0	1,434.3	1,419.6	1,417.8	7.2	2.7	131.41	-249.2	-152.5	402.8	394.7	8.12	49.606		
1,600.0	1,524.8	1,509.8	1,507.9	8.0	2.9	135.25	-250.7	-157.0	438.3	429.7	8.56	51.177		
1,700.0	1,615.4	1,592.8	1,590.7	8.8	3.1	138.23	-252.5	-161.4	475.6	466.6	9.00	52.858		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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)	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	-155.25	-220.7	-101.7	243.0						
100.0	100.0	97.4	97.4	0.1	0.1	-155.24	-221.2	-102.0	243.6	243.3	0.27	892.784			
200.0	200.0	189.3	189.3	0.3	0.3	-155.14	-223.0	-103.3	246.0	245.4	0.61	406.555			
300.0	300.0	278.0	277.8	0.5	0.5	69.73	-227.7	-106.9	252.3	251.3	0.93	270.043			
400.0	399.8	368.0	367.2	0.7	0.7	70.94	-235.6	-113.1	261.5	260.2	1.29	203.404			
500.0	499.3	459.6	457.9	0.9	1.0	72.99	-245.9	-120.6	272.1	270.4	1.68	161.688			
600.0	598.0	551.7	548.7	1.2	1.3	75.80	-258.4	-129.5	284.7	282.5	2.15	132.470			
700.0	695.8	650.1	645.6	1.6	1.6	79.40	-272.6	-139.1	297.9	295.2	2.71	109.770			
800.0	792.4	750.6	744.8	2.1	1.9	83.83	-285.5	-148.8	310.7	307.3	3.39	91.770			
900.0	887.5	847.3	840.4	2.7	2.2	88.57	-297.2	-157.4	324.2	320.0	4.16	77.978			
1,000.0	980.9	941.2	933.2	3.4	2.5	93.47	-308.4	-165.4	340.2	335.2	5.02	67.712			
1,100.0	1,072.2	1,032.9	1,024.0	4.1	2.8	98.56	-319.0	-173.4	359.8	353.8	5.96	60.341			
1,200.0	1,162.8	1,122.3	1,112.5	4.9	3.1	103.75	-329.3	-181.2	383.2	376.3	6.88	55.680			
1,300.0	1,253.3	1,211.6	1,200.8	5.7	3.4	108.42	-339.5	-189.4	410.1	402.4	7.77	52.772			
1,400.0	1,343.8	1,303.8	1,292.0	6.5	3.6	112.67	-350.2	-197.7	439.6	430.9	8.64	50.903			
1,500.0	1,434.3	1,395.6	1,382.8	7.2	3.9	116.35	-361.0	-205.5	470.6	461.1	9.46	49.723 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference				Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-156.44	-202.2	-88.2	220.6						
100.0	100.0	102.4	102.4	0.1	0.1	-156.42	-202.3	-88.3	220.7	220.4	0.28	789.997			
200.0	200.0	202.0	202.0	0.3	0.3	-156.43	-202.6	-88.4	221.0	220.4	0.62	353.635 ES			
300.0	300.0	297.2	297.2	0.5	0.5	68.30	-203.6	-89.0	222.0	221.1	0.97	229.830			
400.0	399.8	388.8	388.7	0.7	0.7	69.61	-206.8	-91.5	224.5	223.2	1.32	170.477			
500.0	499.3	479.0	478.5	0.9	0.8	71.92	-213.5	-95.7	229.8	228.1	1.71	134.361			
600.0	598.0	568.1	566.9	1.2	1.1	74.91	-223.6	-101.1	238.3	236.1	2.17	109.681			
700.0	695.8	662.0	659.6	1.6	1.4	78.64	-237.1	-107.5	249.4	246.7	2.74	91.165			
800.0	792.4	754.6	750.8	2.1	1.7	82.63	-252.3	-113.5	262.6	259.2	3.41	77.083			
900.0	887.5	848.1	842.6	2.7	2.0	87.13	-268.3	-119.8	277.8	273.6	4.20	66.212			
1,000.0	980.9	941.7	934.6	3.4	2.3	92.05	-284.4	-126.8	295.8	290.7	5.10	58.036			
1,100.0	1,072.2	1,034.3	1,025.5	4.1	2.6	97.17	-300.4	-133.9	317.1	311.0	6.08	52.121			
1,200.0	1,162.8	1,126.4	1,115.9	4.9	3.0	102.37	-316.6	-140.5	341.5	334.4	7.07	48.280			
1,300.0	1,253.3	1,217.8	1,205.7	5.7	3.3	106.85	-332.9	-147.1	368.6	360.6	8.04	45.826			
1,400.0	1,343.8	1,316.2	1,302.3	6.5	3.7	111.03	-350.3	-153.9	397.3	388.3	9.00	44.134			
1,500.0	1,434.3	1,406.3	1,390.9	7.2	4.0	114.45	-365.2	-159.3	426.5	416.6	9.90	43.079			
1,600.0	1,524.8	1,498.9	1,482.1	8.0	4.3	117.61	-380.2	-165.7	457.8	447.0	10.77	42.492			
1,700.0	1,615.4	1,594.1	1,575.9	8.8	4.6	120.45	-395.5	-171.7	489.7	478.1	11.62	42.150 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	-157.20	-213.1	-89.6	231.2						
100.0	100.0	102.2	102.2	0.1	0.1	-157.24	-213.3	-89.5	231.3	231.0	0.28	827.916 ES			
200.0	200.0	200.2	200.2	0.3	0.3	-157.39	-214.3	-89.2	232.1	231.5	0.62	372.703			
300.0	300.0	291.6	291.5	0.5	0.5	67.15	-216.9	-89.9	234.9	233.9	0.96	245.463			
400.0	399.8	382.0	381.7	0.7	0.7	68.02	-222.7	-92.1	239.7	238.4	1.31	183.657			
500.0	499.3	471.1	470.3	0.9	0.9	69.73	-231.8	-95.6	246.9	245.2	1.70	145.559			
600.0	598.0	562.0	560.2	1.2	1.1	72.26	-244.1	-100.5	256.4	254.3	2.16	118.640			
700.0	695.8	647.6	644.4	1.6	1.5	75.25	-258.4	-106.6	269.0	266.3	2.71	99.221			
800.0	792.4	738.4	733.1	2.1	1.8	78.90	-276.5	-114.6	285.2	281.8	3.38	84.334			
900.0	887.5	836.1	828.3	2.7	2.2	83.23	-296.5	-123.3	302.7	298.5	4.19	72.186			
1,000.0	980.9	931.6	921.4	3.4	2.6	87.67	-315.9	-130.8	321.2	316.0	5.13	62.579			
1,100.0	1,072.2	1,024.7	1,012.3	4.1	3.0	92.21	-335.1	-137.5	341.8	335.6	6.18	55.309			
1,200.0	1,162.8	1,115.9	1,101.1	4.9	3.4	96.86	-354.4	-144.0	365.4	358.1	7.25	50.383			
1,300.0	1,253.3	1,207.9	1,190.7	5.7	3.8	100.94	-374.5	-150.5	391.5	383.2	8.32	47.029			
1,400.0	1,343.8	1,299.9	1,280.2	6.5	4.2	104.51	-394.7	-157.1	419.4	410.0	9.39	44.686			
1,500.0	1,434.3	1,395.0	1,372.8	7.2	4.6	107.74	-415.7	-163.7	448.8	438.3	10.45	42.967			
1,600.0	1,524.8	1,486.8	1,462.1	8.0	5.0	110.50	-435.7	-169.7	478.7	467.3	11.46	41.769 SF			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	-159.25	-205.1	-77.7	219.3						
100.0	100.0	103.1	103.1	0.1	0.1	-159.20	-205.0	-77.9	219.3	219.0	0.28	781.734			
200.0	200.0	203.4	203.4	0.3	0.3	-159.08	-204.7	-78.3	219.1	218.5	0.63	349.247			
300.0	300.0	304.1	304.1	0.5	0.5	65.76	-204.2	-78.5	218.5	217.5	0.98	223.286			
400.0	399.8	401.6	401.6	0.7	0.7	67.22	-204.0	-79.1	216.4	215.1	1.34	161.634			
500.0	499.3	495.7	495.7	0.9	0.8	69.80	-205.3	-80.1	214.3	212.6	1.74	123.377			
563.9	562.5	554.7	554.6	1.1	0.9	71.92	-207.5	-80.8	213.8	211.7	2.03	105.179	CC, ES		
600.0	598.0	586.9	586.8	1.2	1.0	73.26	-209.4	-81.5	214.1	211.9	2.20	97.229			
700.0	695.8	677.2	676.7	1.6	1.2	77.50	-216.9	-83.8	217.3	214.5	2.76	78.834			
800.0	792.4	765.7	764.5	2.1	1.4	82.19	-227.7	-87.0	225.0	221.6	3.41	65.917			
900.0	887.5	853.4	850.9	2.7	1.7	86.93	-242.3	-90.9	238.1	233.9	4.19	56.874			
1,000.0	980.9	941.4	936.8	3.4	2.0	91.45	-260.7	-95.2	256.4	251.4	5.08	50.449			
1,100.0	1,072.2	1,029.0	1,021.5	4.1	2.4	95.67	-282.6	-100.0	280.2	274.1	6.10	45.954			
1,200.0	1,162.8	1,110.8	1,099.7	4.9	2.8	99.45	-306.1	-105.4	309.0	301.9	7.14	43.286			
1,300.0	1,253.3	1,200.1	1,184.2	5.7	3.3	102.62	-334.1	-112.0	341.1	332.9	8.23	41.440			
1,400.0	1,343.8	1,291.3	1,270.2	6.5	3.8	105.18	-363.7	-119.0	374.7	365.4	9.36	40.057			
1,500.0	1,434.3	1,385.4	1,358.8	7.2	4.4	107.34	-394.5	-126.2	409.1	398.6	10.50	38.960			
1,600.0	1,524.8	1,481.6	1,449.5	8.0	4.9	109.24	-425.7	-133.1	443.3	431.6	11.66	38.005			
1,700.0	1,615.4	1,578.1	1,540.5	8.8	5.5	110.80	-457.2	-139.1	477.2	464.3	12.84	37.156	SF		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-161.58	-196.0	-65.3	206.6						
100.0	100.0	103.2	103.2	0.1	0.1	-161.56	-195.9	-65.3	206.5	206.2	0.28	736.214			
131.1	131.1	134.1	134.1	0.2	0.2	-161.55	-195.9	-65.3	206.5	206.1	0.39	534.953 CC, ES			
200.0	200.0	199.2	199.2	0.3	0.3	-161.71	-196.5	-65.0	207.0	206.4	0.62	333.679			
300.0	300.0	291.2	291.0	0.5	0.5	62.16	-200.3	-63.2	210.1	209.1	0.96	218.721			
400.0	399.8	385.0	384.5	0.7	0.7	61.72	-208.3	-60.0	214.7	213.4	1.33	161.396			
500.0	499.3	479.0	477.7	0.9	0.9	62.04	-219.9	-56.3	220.4	218.6	1.75	125.563			
600.0	598.0	571.0	568.5	1.2	1.2	63.36	-234.5	-53.7	227.4	225.1	2.24	101.435			
700.0	695.8	655.0	650.8	1.6	1.6	65.49	-251.0	-53.2	236.6	233.8	2.80	84.382			
800.0	792.4	740.6	734.0	2.1	1.9	68.43	-271.4	-54.7	249.5	246.0	3.48	71.594			
900.0	887.5	824.9	814.8	2.7	2.4	71.80	-295.0	-58.2	266.6	262.3	4.30	61.932			
1,000.0	980.9	910.3	895.5	3.4	2.9	75.32	-322.4	-62.9	287.8	282.5	5.30	54.347			
1,100.0	1,072.2	1,002.7	982.1	4.1	3.4	79.24	-354.2	-68.1	311.8	305.4	6.46	48.307			
1,200.0	1,162.8	1,096.7	1,070.2	4.9	4.0	83.48	-386.7	-72.9	337.1	329.4	7.71	43.752			
1,300.0	1,253.3	1,188.2	1,155.7	5.7	4.6	86.94	-419.1	-77.3	364.3	355.3	8.98	40.548			
1,400.0	1,343.8	1,278.6	1,239.8	6.5	5.2	89.78	-452.0	-81.6	393.3	383.0	10.27	38.305			
1,500.0	1,434.3	1,369.0	1,323.4	7.2	5.8	92.18	-485.8	-86.3	424.0	412.5	11.56	36.692			
1,600.0	1,524.8	1,458.1	1,405.8	8.0	6.5	94.19	-519.7	-91.1	455.9	443.0	12.85	35.484			
1,700.0	1,615.4	1,544.0	1,484.5	8.8	7.1	95.82	-553.6	-96.6	489.9	475.8	14.12	34.692 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	3.0	3.0	0.0	0.0	-161.18	-185.8	-63.3	196.3						
100.0	100.0	103.3	103.3	0.1	0.1	-161.23	-185.7	-63.1	196.2	195.9	0.28	698.789			
153.0	153.0	156.0	156.0	0.2	0.2	-161.24	-185.7	-63.1	196.1	195.7	0.46	424.017 CC			
200.0	200.0	201.1	201.1	0.3	0.3	-161.24	-185.8	-63.1	196.3	195.7	0.62	314.912 ES			
300.0	300.0	293.2	293.1	0.5	0.5	63.49	-188.4	-64.3	199.0	198.1	0.96	207.584			
400.0	399.8	383.3	383.0	0.7	0.7	64.37	-195.0	-65.9	204.2	202.9	1.31	156.358			
500.0	499.3	472.3	471.3	0.9	0.9	66.12	-205.6	-68.5	212.0	210.3	1.69	125.152			
600.0	598.0	561.8	559.5	1.2	1.2	68.48	-220.6	-71.8	223.0	220.9	2.16	103.388			
700.0	695.8	648.6	644.2	1.6	1.5	71.09	-239.1	-75.2	237.0	234.3	2.71	87.310			
800.0	792.4	735.5	728.1	2.1	1.9	74.07	-261.4	-79.9	254.9	251.5	3.40	75.019			
900.0	887.5	821.5	810.0	2.7	2.4	77.21	-286.6	-85.6	276.3	272.1	4.21	65.593			
1,000.0	980.9	907.2	890.9	3.4	2.9	80.52	-314.0	-92.8	301.4	296.2	5.18	58.219			
1,100.0	1,072.2	990.9	969.0	4.1	3.5	83.71	-343.2	-100.3	330.0	323.8	6.28	52.572			
1,200.0	1,162.8	1,072.2	1,043.8	4.9	4.1	87.03	-374.2	-108.2	362.8	355.4	7.45	48.691			
1,300.0	1,253.3	1,155.8	1,119.2	5.7	4.7	89.50	-409.4	-116.3	399.3	390.7	8.67	46.051			
1,400.0	1,343.8	1,248.8	1,202.5	6.5	5.4	91.65	-449.8	-124.9	437.0	427.0	9.96	43.868			
1,500.0	1,434.3	1,342.7	1,286.8	7.2	6.2	93.46	-490.4	-133.2	474.7	463.5	11.28	42.088 SF			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 111-MWD													Offset Well Error:		0.0 ft
Reference				Offset				Semi Major Axis			Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	-164.19	-188.7	-53.4	196.1						
100.0	100.0	100.9	100.9	0.1	0.1	-164.20	-188.5	-53.3	195.9	195.6	0.28	693.980			
138.9	138.9	138.9	138.9	0.2	0.2	-164.21	-188.3	-53.3	195.7	195.3	0.41	473.643 CC, ES			
200.0	200.0	194.8	194.8	0.3	0.3	-164.40	-189.2	-52.8	196.5	195.9	0.62	317.782			
300.0	300.0	288.6	288.4	0.5	0.5	59.35	-193.8	-50.9	200.4	199.4	0.96	208.106			
400.0	399.8	380.1	379.5	0.7	0.7	59.01	-202.3	-48.0	205.8	204.5	1.33	155.259			
500.0	499.3	470.3	468.8	0.9	0.9	59.42	-214.3	-45.1	212.6	210.9	1.73	122.666			
600.0	598.0	561.0	558.0	1.2	1.2	60.27	-230.5	-41.0	220.9	218.7	2.22	99.492			
700.0	695.8	655.4	650.0	1.6	1.7	61.81	-251.0	-36.6	230.3	227.5	2.85	80.882			
800.0	792.4	746.4	737.5	2.1	2.1	62.92	-274.4	-28.2	240.1	236.5	3.61	66.579			
900.0	887.5	836.6	823.0	2.7	2.7	64.19	-301.5	-18.4	251.3	246.8	4.52	55.661			
1,000.0	980.9	927.1	907.4	3.4	3.3	65.69	-332.2	-7.5	263.9	258.3	5.59	47.220			
1,100.0	1,072.2	1,017.2	990.3	4.1	3.9	67.59	-365.8	3.7	277.8	271.0	6.82	40.763			
1,200.0	1,162.8	1,107.7	1,072.6	4.9	4.6	69.83	-401.9	14.4	294.3	286.1	8.13	36.199			
1,300.0	1,253.3	1,200.7	1,156.3	5.7	5.3	71.75	-440.9	24.9	313.2	303.7	9.50	32.975			
1,400.0	1,343.8	1,299.0	1,244.4	6.5	6.1	73.48	-483.1	36.0	333.4	322.5	10.93	30.505			
1,500.0	1,434.3	1,401.3	1,336.4	7.2	6.9	75.04	-526.1	48.3	352.7	340.3	12.42	28.398			
1,600.0	1,524.8	1,503.8	1,428.7	8.0	7.7	76.32	-568.6	62.1	370.9	357.0	13.93	26.634			
1,700.0	1,615.4	1,605.1	1,520.4	8.8	8.4	77.57	-609.4	75.7	388.3	372.9	15.42	25.183			
1,800.0	1,705.9	1,696.3	1,603.2	9.6	9.1	78.75	-645.9	86.9	406.2	389.4	16.87	24.085			
1,900.0	1,796.4	1,783.3	1,681.7	10.4	9.8	79.78	-682.1	96.5	426.5	408.2	18.27	23.340			
2,000.0	1,886.9	1,882.6	1,771.2	11.2	10.6	80.94	-724.0	106.1	448.1	428.3	19.78	22.653			
2,100.0	1,977.4	1,984.5	1,863.6	12.0	11.3	82.07	-765.9	116.4	468.8	447.5	21.31	21.998			
2,200.0	2,068.0	2,069.7	1,940.5	12.8	12.0	82.95	-801.5	124.3	490.6	467.9	22.72	21.597 SF			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	51.37	51.7	64.7	82.8						
100.0	100.0	100.0	100.0	0.1	0.1	51.37	51.7	64.7	82.8	82.6	0.27	304.258			
200.0	200.0	200.0	200.0	0.3	0.3	51.37	51.7	64.7	82.8	82.2	0.62	133.327 CC, ES			
300.0	300.0	298.2	298.2	0.5	0.5	-85.30	53.1	64.6	83.6	82.6	0.97	86.201			
400.0	399.8	394.9	394.7	0.7	0.7	-91.83	59.2	64.0	87.4	86.0	1.35	64.826			
500.0	499.3	489.5	488.7	0.9	0.9	-102.25	69.9	63.0	97.1	95.3	1.78	54.630			
600.0	598.0	580.7	578.6	1.2	1.2	-113.41	84.6	61.6	115.9	113.7	2.23	51.989 SF			
700.0	695.8	667.4	663.5	1.6	1.6	-122.83	102.5	59.9	145.6	142.9	2.68	54.374			
800.0	792.4	753.4	746.9	2.1	1.9	-130.15	123.4	57.9	185.1	182.0	3.12	59.370			
900.0	887.5	839.6	830.4	2.7	2.3	-135.63	144.6	55.9	230.9	227.3	3.57	64.750			
1,000.0	980.9	923.2	911.3	3.4	2.7	-139.63	165.2	53.9	281.8	277.8	4.03	69.997			
1,100.0	1,072.2	1,003.9	989.5	4.1	3.1	-142.76	185.1	52.0	337.5	333.0	4.49	75.086			
1,200.0	1,162.8	1,083.4	1,066.6	4.9	3.4	-146.03	204.7	50.1	395.6	390.6	4.93	80.265			
1,300.0	1,253.3	1,162.9	1,143.7	5.7	3.8	-148.49	224.3	48.3	454.3	448.9	5.36	84.733			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	50.34	43.3	52.3	67.9						
100.0	100.0	100.0	100.0	0.1	0.1	50.34	43.3	52.3	67.9	67.6	0.27	249.424			
200.0	200.0	200.0	200.0	0.3	0.3	50.34	43.3	52.3	67.9	67.3	0.62	109.298			
269.8	269.8	269.8	269.8	0.4	0.4	-85.73	43.4	52.2	67.9	67.0	0.87	78.413 CC			
300.0	300.0	299.8	299.8	0.5	0.5	-86.20	43.9	51.9	67.9	66.9	0.97	69.927 ES			
400.0	399.8	398.7	398.6	0.7	0.7	-94.75	48.0	48.9	68.8	67.5	1.35	50.819			
500.0	499.3	495.2	494.6	0.9	0.9	-109.81	56.1	43.1	74.9	73.1	1.80	41.622			
600.0	598.0	588.0	586.2	1.2	1.2	-126.05	67.6	34.9	92.0	89.7	2.25	40.868 SF			
700.0	695.8	675.8	672.3	1.6	1.5	-138.80	81.7	24.7	122.3	119.6	2.64	46.297			
800.0	792.4	759.6	753.6	2.1	1.9	-147.55	98.1	12.9	164.5	161.5	2.97	55.333			
900.0	887.5	844.0	835.3	2.7	2.3	-153.49	115.3	0.5	214.3	211.0	3.28	65.326			
1,000.0	980.9	925.4	914.2	3.4	2.6	-157.42	131.9	-11.4	269.7	266.1	3.58	75.375			
1,100.0	1,072.2	1,003.8	990.0	4.1	3.0	-160.24	147.8	-22.9	330.0	326.1	3.87	85.287			
1,200.0	1,162.8	1,080.9	1,064.6	4.9	3.4	-162.82	163.5	-34.2	392.4	388.2	4.15	94.521			
1,300.0	1,253.3	1,158.0	1,139.3	5.7	3.7	-164.70	179.2	-45.5	455.1	450.7	4.44	102.598			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	48.24	35.3	39.6	53.0						
100.0	100.0	100.0	100.0	0.1	0.1	48.24	35.3	39.6	53.0	52.8	0.27	194.815			
200.0	200.0	200.0	200.0	0.3	0.3	48.24	35.3	39.6	53.0	52.4	0.62	85.369			
300.0	300.0	300.2	300.2	0.5	0.5	-90.76	37.1	37.6	52.8	51.8	0.98	53.861			
321.4	321.4	321.5	321.5	0.5	0.5	-92.83	37.9	36.6	52.7	51.7	1.07	49.467 CC, ES			
400.0	399.8	399.2	398.8	0.7	0.7	-104.54	42.1	31.7	53.9	52.5	1.39	38.839			
500.0	499.3	495.4	494.2	0.9	1.0	-124.75	50.3	22.3	63.1	61.2	1.84	34.314 SF			
600.0	598.0	587.5	584.8	1.2	1.3	-142.43	61.0	10.0	85.7	83.5	2.23	38.425			
700.0	695.8	674.2	669.4	1.6	1.7	-154.04	73.7	-4.7	121.8	119.2	2.55	47.677			
800.0	792.4	754.8	747.1	2.1	2.1	-161.12	87.8	-20.9	168.9	166.1	2.84	59.491			
900.0	887.5	828.8	817.5	2.7	2.5	-165.50	102.6	-37.9	225.2	222.1	3.10	72.624			
1,000.0	980.9	900.0	884.4	3.4	3.0	-168.52	118.5	-56.2	289.2	285.9	3.35	86.461			
1,100.0	1,072.2	955.5	936.0	4.1	3.4	-170.26	132.0	-71.8	359.9	356.3	3.58	100.562			
1,200.0	1,162.8	1,010.4	986.3	4.9	3.8	-172.00	146.4	-88.4	434.2	430.4	3.82	113.751			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	37.81	18.9	14.7	24.0						
100.0	100.0	100.0	100.0	0.1	0.1	37.81	18.9	14.7	24.0	23.7	0.27	88.045			
200.0	200.0	200.0	200.0	0.3	0.3	37.81	18.9	14.7	24.0	23.4	0.62	38.582			
300.0	300.0	300.3	300.2	0.5	0.5	-105.37	19.8	12.2	23.5	22.5	0.98	23.953			
306.9	306.9	307.1	307.1	0.5	0.5	-106.71	20.0	11.9	23.5	22.5	1.01	23.286 CC, ES			
400.0	399.8	399.3	399.0	0.7	0.7	-133.54	22.5	4.9	26.7	25.3	1.38	19.402 SF			
500.0	499.3	495.7	494.6	0.9	1.0	-160.44	26.7	-6.8	42.8	41.0	1.75	24.485			
600.0	598.0	588.2	585.5	1.2	1.3	-174.18	32.4	-22.3	72.1	70.0	2.08	34.715			
700.0	695.8	675.5	670.6	1.6	1.7	179.10	39.0	-40.7	112.0	109.6	2.39	46.773			
800.0	792.4	757.0	749.1	2.1	2.1	175.40	46.5	-61.1	161.0	158.3	2.70	59.512			
900.0	887.5	832.0	820.5	2.7	2.6	173.10	54.3	-82.7	217.9	214.9	3.00	72.524			
1,000.0	980.9	900.0	884.4	3.4	3.0	171.50	62.3	-104.5	281.9	278.6	3.29	85.631			
1,100.0	1,072.2	964.7	944.4	4.1	3.5	170.27	70.5	-127.3	352.2	348.6	3.59	98.191			
1,200.0	1,162.8	1,029.3	1,003.9	4.9	3.9	169.69	79.1	-151.0	425.0	421.1	3.93	108.044			
1,300.0	1,253.3	1,097.7	1,066.9	5.7	4.4	169.26	88.2	-176.0	497.9	493.6	4.29	116.000			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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			Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	10.61	10.6	2.0	10.7						
100.0	100.0	100.0	100.0	0.1	0.1	10.61	10.6	2.0	10.7	10.5	0.27	39.469			
200.0	200.0	200.0	200.0	0.3	0.3	10.61	10.6	2.0	10.7	10.1	0.62	17.295	CC		
229.8	229.8	229.8	229.8	0.4	0.4	-125.34	10.6	2.0	10.8	10.1	0.73	14.905	ES		
300.0	300.0	300.0	300.0	0.5	0.5	-127.59	10.6	2.0	11.1	10.2	0.97	11.470	SF		
400.0	399.8	399.6	399.6	0.7	0.7	-148.75	10.8	0.5	15.4	14.1	1.32	11.668			
500.0	499.3	497.6	497.4	0.9	0.9	-171.27	12.0	-5.7	29.3	27.6	1.67	17.511			
600.0	598.0	592.6	591.7	1.2	1.1	177.89	14.0	-16.4	53.9	51.9	2.01	26.744			
700.0	695.8	683.4	681.3	1.6	1.4	172.67	16.7	-31.0	88.2	85.9	2.36	37.395			
800.0	792.4	769.0	765.0	2.1	1.7	169.75	19.9	-48.5	131.5	128.8	2.71	48.584			
900.0	887.5	848.7	842.2	2.7	2.1	167.87	23.6	-68.2	182.8	179.8	3.05	59.880			
1,000.0	980.9	922.1	912.4	3.4	2.5	166.49	27.5	-89.0	241.6	238.2	3.40	71.029			
1,100.0	1,072.2	988.9	975.6	4.1	2.9	165.43	31.4	-110.3	307.0	303.2	3.76	81.704			
1,200.0	1,162.8	1,050.8	1,033.5	4.9	3.3	165.02	35.5	-132.0	376.1	372.0	4.15	90.585			
1,300.0	1,253.3	1,117.4	1,095.1	5.7	3.8	164.59	40.1	-156.9	447.0	442.4	4.57	97.851			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design O31E Pad (2nd Occupation) - Shideler Fee 31-14D - OH - Plan #1														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						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	45.19	27.0	27.1	38.2						
100.0	100.0	100.0	100.0	0.1	0.1	45.19	27.0	27.1	38.2	38.0	0.27	140.456			
200.0	200.0	200.0	200.0	0.3	0.3	45.19	27.0	27.1	38.2	37.6	0.62	61.548 CC			
246.7	246.7	246.7	246.7	0.4	0.4	-90.69	27.0	27.1	38.2	37.5	0.78	48.753			
300.0	300.0	300.0	300.0	0.5	0.5	-91.24	27.0	27.1	38.3	37.3	0.97	39.396 ES			
400.0	399.8	399.8	399.8	0.7	0.7	-98.98	27.0	27.1	38.7	37.4	1.34	28.942			
500.0	499.3	499.3	499.3	0.9	0.8	-113.18	27.0	27.1	41.7	39.9	1.74	23.947			
600.0	598.0	597.3	597.2	1.2	1.0	-132.14	27.9	24.8	50.7	48.6	2.14	23.715 SF			
700.0	695.8	693.9	693.7	1.6	1.2	-148.70	29.7	20.0	69.5	67.0	2.48	28.043			
800.0	792.4	789.0	788.7	2.1	1.4	-158.92	31.6	15.2	96.4	93.6	2.78	34.617			
900.0	887.5	882.5	882.0	2.7	1.5	-165.15	33.4	10.6	129.8	126.8	3.08	42.206			
1,000.0	980.9	973.9	973.3	3.4	1.7	-169.12	35.2	6.0	169.0	165.6	3.36	50.314			
1,100.0	1,072.2	1,063.2	1,062.4	4.1	1.9	-171.78	37.0	1.5	213.2	209.6	3.63	58.672			
1,200.0	1,162.8	1,151.5	1,150.6	4.9	2.1	-173.73	38.7	-2.9	259.6	255.7	3.94	65.853			
1,300.0	1,253.3	1,239.8	1,238.8	5.7	2.2	-175.09	40.4	-7.3	306.2	301.9	4.25	71.970			
1,400.0	1,343.8	1,328.1	1,327.0	6.5	2.4	-176.10	42.2	-11.7	352.8	348.3	4.57	77.229			
1,500.0	1,434.3	1,416.4	1,415.2	7.2	2.6	-176.87	43.9	-16.1	399.5	394.7	4.88	81.792			
1,600.0	1,524.8	1,504.7	1,503.3	8.0	2.8	-177.48	45.6	-20.6	446.3	441.1	5.20	85.783			
1,700.0	1,615.4	1,593.0	1,591.5	8.8	2.9	-177.97	47.4	-25.0	493.1	487.6	5.52	89.300			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-76.30	2.5	-10.5	10.8						
100.0	100.0	100.0	100.0	0.1	0.1	-76.30	2.5	-10.5	10.8	10.5	0.27	39.529			
200.0	200.0	200.0	200.0	0.3	0.3	-76.30	2.5	-10.5	10.8	10.1	0.62	17.322	CC		
228.4	228.4	228.4	228.4	0.4	0.4	148.55	2.5	-10.5	10.9	10.1	0.72	15.064	ES		
300.0	300.0	300.0	300.0	0.5	0.5	149.99	2.5	-10.5	11.3	10.4	0.97	11.670	SF		
400.0	399.8	399.4	399.3	0.7	0.7	152.34	1.2	-12.6	17.6	16.3	1.32	13.300			
500.0	499.3	498.6	498.5	0.9	0.8	155.02	-1.1	-16.4	29.8	28.1	1.68	17.673			
600.0	598.0	597.1	596.9	1.2	1.0	158.63	-3.4	-20.1	46.7	44.7	2.05	22.836			
700.0	695.8	694.6	694.3	1.6	1.2	161.67	-5.7	-23.8	68.7	66.3	2.41	28.537			
800.0	792.4	790.9	790.4	2.1	1.4	164.05	-7.9	-27.4	95.6	92.8	2.76	34.636			
900.0	887.5	885.6	885.0	2.7	1.6	165.87	-10.2	-31.0	127.5	124.4	3.11	41.052			
1,000.0	980.9	978.5	977.8	3.4	1.8	167.29	-12.3	-34.5	164.2	160.8	3.44	47.734			
1,100.0	1,072.2	1,069.3	1,068.6	4.1	1.9	168.42	-14.5	-38.0	205.8	202.0	3.77	54.589			
1,200.0	1,162.8	1,159.3	1,158.5	4.9	2.1	169.45	-16.6	-41.4	249.2	245.0	4.12	60.427			
1,300.0	1,253.3	1,249.3	1,248.5	5.7	2.3	170.17	-18.7	-44.8	292.6	288.2	4.48	65.353			
1,400.0	1,343.8	1,339.4	1,338.4	6.5	2.4	170.70	-20.8	-48.2	336.1	331.3	4.83	69.564			
1,500.0	1,434.3	1,429.4	1,428.3	7.2	2.6	171.11	-22.9	-51.6	379.6	374.4	5.19	73.207			
1,600.0	1,524.8	1,519.4	1,518.2	8.0	2.8	171.44	-25.0	-55.0	423.1	417.6	5.54	76.388			
1,700.0	1,615.4	1,609.4	1,608.2	8.8	3.0	171.70	-27.1	-58.4	466.6	460.8	5.89	79.189			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.95	57.2	87.9	104.9						
100.0	100.0	100.0	100.0	0.1	0.1	56.95	57.2	87.9	104.9	104.6	0.27	385.108			
200.0	200.0	200.0	200.0	0.3	0.3	56.95	57.2	87.9	104.9	104.2	0.62	168.755			
300.0	300.0	300.0	300.0	0.5	0.5	-78.85	57.2	87.9	104.7	103.8	0.97	107.864			
400.0	399.8	399.8	399.8	0.7	0.7	-81.71	57.2	87.9	103.8	102.5	1.34	77.615			
424.5	424.3	423.1	423.1	0.7	0.7	-82.77	57.2	88.0	103.7	102.3	1.44	72.187	CC, ES		
500.0	499.3	494.5	494.5	0.9	0.8	-86.64	58.0	90.1	105.1	103.4	1.75	60.222			
600.0	598.0	588.7	588.4	1.2	1.0	-92.68	60.2	96.7	111.8	109.6	2.23	50.151			
700.0	695.8	682.0	681.0	1.6	1.3	-98.81	64.0	107.5	124.6	121.8	2.81	44.377			
800.0	792.4	774.1	771.7	2.1	1.6	-104.24	69.2	122.4	143.6	140.1	3.49	41.159			
900.0	887.5	864.5	860.0	2.7	1.9	-108.59	75.6	141.0	168.8	164.5	4.28	39.398			
1,000.0	980.9	953.1	945.4	3.4	2.3	-111.82	83.3	163.0	199.8	194.6	5.19	38.492			
1,100.0	1,072.2	1,043.9	1,032.1	4.1	2.8	-114.61	92.1	188.4	235.5	229.3	6.19	38.010			
1,200.0	1,162.8	1,135.8	1,119.8	4.9	3.3	-117.77	101.1	214.3	272.8	265.6	7.21	37.814			
1,300.0	1,253.3	1,227.6	1,207.5	5.7	3.8	-120.17	110.1	240.1	310.7	302.5	8.24	37.709			
1,400.0	1,343.8	1,319.4	1,295.2	6.5	4.3	-122.06	119.1	265.9	349.0	339.7	9.27	37.657			
1,500.0	1,434.3	1,411.3	1,382.8	7.2	4.8	-123.58	128.1	291.8	387.5	377.2	10.29	37.638	SF		
1,600.0	1,524.8	1,503.1	1,470.5	8.0	5.3	-124.82	137.0	317.6	426.2	414.9	11.32	37.639			
1,700.0	1,615.4	1,595.0	1,558.2	8.8	5.8	-125.86	146.0	343.5	465.0	452.7	12.35	37.652			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	52.35	59.7	77.4	97.8						
100.0	100.0	100.0	100.0	0.1	0.1	52.35	59.7	77.4	97.8	97.5	0.27	359.181			
200.0	200.0	200.0	200.0	0.3	0.3	52.35	59.7	77.4	97.8	97.2	0.62	157.394			
300.0	300.0	300.0	300.0	0.5	0.5	-83.48	59.7	77.4	97.7	96.7	0.97	100.645			
306.8	306.8	306.4	306.4	0.5	0.5	-83.58	59.7	77.4	97.7	96.7	1.00	98.196 CC, ES			
400.0	399.8	395.0	395.0	0.7	0.7	-86.03	60.9	79.5	99.7	98.4	1.33	74.942			
500.0	499.3	489.5	489.2	0.9	0.9	-90.34	64.2	85.7	106.6	104.9	1.74	61.265			
600.0	598.0	582.9	581.8	1.2	1.1	-95.47	69.7	95.8	119.2	116.9	2.23	53.479			
700.0	695.8	674.7	672.3	1.6	1.4	-100.49	77.2	109.6	137.9	135.0	2.81	48.995			
800.0	792.4	764.5	759.9	2.1	1.8	-104.81	86.5	126.9	162.8	159.3	3.51	46.426			
900.0	887.5	852.0	844.3	2.7	2.2	-108.23	97.4	147.1	193.9	189.6	4.31	44.977			
1,000.0	980.9	938.3	926.6	3.4	2.7	-110.84	110.0	170.3	230.7	225.5	5.22	44.232			
1,100.0	1,072.2	1,028.5	1,012.1	4.1	3.2	-113.52	123.7	195.5	271.1	264.9	6.22	43.601			
1,200.0	1,162.8	1,118.1	1,097.0	4.9	3.7	-116.67	137.3	220.6	313.1	305.8	7.24	43.256			
1,300.0	1,253.3	1,207.7	1,181.9	5.7	4.2	-119.09	150.8	245.7	355.6	347.4	8.26	43.056			
1,400.0	1,343.8	1,297.3	1,266.8	6.5	4.8	-120.99	164.4	270.7	398.6	389.3	9.28	42.943			
1,500.0	1,434.3	1,386.8	1,351.7	7.2	5.3	-122.53	178.0	295.8	441.9	431.6	10.30	42.883			
1,600.0	1,524.8	1,476.4	1,436.6	8.0	5.8	-123.80	191.6	320.9	485.4	474.1	11.33	42.858 SF			

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

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Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference														
Offset				Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	57.08	40.8	63.0	75.1					
100.0	100.0	100.0	100.0	0.1	0.1	57.08	40.8	63.0	75.1	74.8	0.27	275.719		
200.0	200.0	200.0	200.0	0.3	0.3	57.08	40.8	63.0	75.1	74.4	0.62	120.821		
300.0	300.0	300.0	300.0	0.5	0.5	-78.86	40.8	63.0	74.9	74.0	0.97	77.187		
347.7	347.6	347.0	347.0	0.6	0.6	-80.16	40.8	63.1	74.7	73.6	1.14	65.315 CC, ES		
400.0	399.8	397.8	397.7	0.7	0.7	-82.00	40.7	64.4	75.2	73.8	1.34	56.287		
500.0	499.3	494.8	494.5	0.9	0.9	-86.20	40.0	70.5	78.6	76.8	1.76	44.699		
600.0	598.0	591.6	590.7	1.2	1.1	-90.76	38.9	81.5	85.7	83.4	2.29	37.487		
700.0	695.8	688.0	685.8	1.6	1.4	-95.06	37.2	97.2	96.6	93.6	2.95	32.721		
800.0	792.4	783.9	779.5	2.1	1.8	-98.72	35.1	117.6	111.2	107.5	3.77	29.481		
900.0	887.5	879.2	871.5	2.7	2.2	-101.61	32.5	142.4	129.6	124.8	4.75	27.290		
1,000.0	980.9	976.4	964.6	3.4	2.7	-104.66	29.6	170.3	150.6	144.8	5.85	25.756		
1,100.0	1,072.2	1,073.0	1,057.0	4.1	3.2	-108.49	26.8	198.0	173.7	166.7	7.01	24.765		
1,200.0	1,162.8	1,169.1	1,149.1	4.9	3.8	-112.42	23.9	225.5	198.3	190.1	8.16	24.284		
1,300.0	1,253.3	1,265.2	1,241.1	5.7	4.3	-115.48	21.0	253.1	223.5	214.2	9.30	24.042		
1,400.0	1,343.8	1,361.4	1,333.2	6.5	4.8	-117.93	18.2	280.6	249.3	238.9	10.42	23.934		
1,500.0	1,434.3	1,457.5	1,425.2	7.2	5.3	-119.91	15.3	308.2	275.4	263.9	11.52	23.903 SF		
1,600.0	1,524.8	1,553.6	1,517.3	8.0	5.8	-121.56	12.4	335.7	301.8	289.1	12.62	23.915		
1,700.0	1,615.4	1,649.7	1,609.3	8.8	6.4	-122.94	9.6	363.3	328.3	314.6	13.71	23.953		
1,800.0	1,705.9	1,745.9	1,701.4	9.6	6.9	-124.11	6.7	390.8	355.0	340.2	14.79	24.006		
1,900.0	1,796.4	1,842.0	1,793.4	10.4	7.4	-125.12	3.8	418.4	381.8	366.0	15.87	24.066		
2,000.0	1,886.9	1,938.1	1,885.5	11.2	7.9	-126.00	1.0	445.9	408.8	391.8	16.94	24.131		
2,100.0	1,977.4	2,034.3	1,977.5	12.0	8.5	-126.77	-1.9	473.5	435.8	417.8	18.01	24.196		
2,200.0	2,068.0	2,130.4	2,069.6	12.8	9.0	-127.45	-4.8	501.0	462.8	443.8	19.08	24.261		
2,300.0	2,158.5	2,226.5	2,161.6	13.6	9.5	-128.06	-7.6	528.6	490.0	469.8	20.14	24.325		

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

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Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.91	49.2	75.5	90.1						
100.0	100.0	100.0	100.0	0.1	0.1	56.91	49.2	75.5	90.1	89.8	0.27	330.778			
200.0	200.0	200.0	200.0	0.3	0.3	56.91	49.2	75.5	90.1	89.4	0.62	144.948			
300.0	300.0	300.0	300.0	0.5	0.5	-78.95	49.2	75.5	89.9	89.0	0.97	92.629			
314.3	314.3	313.7	313.7	0.5	0.5	-79.19	49.2	75.5	89.9	88.9	1.02	87.957 CC, ES			
400.0	399.8	396.0	395.9	0.7	0.7	-81.29	49.4	77.9	91.2	89.9	1.33	68.450			
500.0	499.3	491.7	491.4	0.9	0.9	-84.84	50.0	85.0	96.3	94.6	1.75	54.951			
600.0	598.0	586.9	585.8	1.2	1.1	-89.01	51.1	96.9	105.6	103.3	2.27	46.500			
700.0	695.8	681.4	678.9	1.6	1.4	-93.16	52.5	113.3	119.3	116.4	2.92	40.892			
800.0	792.4	774.9	770.0	2.1	1.8	-96.87	54.4	134.0	137.5	133.8	3.71	37.068			
900.0	887.5	869.3	861.0	2.7	2.3	-100.15	56.6	158.9	159.9	155.3	4.64	34.485			
1,000.0	980.9	965.3	953.4	3.4	2.7	-103.87	58.9	184.9	184.5	178.8	5.68	32.467			
1,100.0	1,072.2	1,060.2	1,044.8	4.1	3.2	-107.91	61.2	210.7	211.5	204.7	6.80	31.103			
1,200.0	1,162.8	1,154.7	1,135.7	4.9	3.7	-112.05	63.5	236.3	240.3	232.4	7.91	30.380			
1,300.0	1,253.3	1,249.2	1,226.5	5.7	4.2	-115.31	65.8	261.9	270.0	261.0	9.00	29.999			
1,400.0	1,343.8	1,343.6	1,317.4	6.5	4.7	-117.92	68.1	287.5	300.4	290.3	10.07	29.813			
1,500.0	1,434.3	1,438.1	1,408.3	7.2	5.2	-120.06	70.4	313.1	331.2	320.1	11.14	29.741			
1,600.0	1,524.8	1,532.5	1,499.2	8.0	5.6	-121.84	72.6	338.8	362.4	350.2	12.19	29.737 SF			
1,700.0	1,615.4	1,627.0	1,590.1	8.8	6.1	-123.34	74.9	364.4	393.9	380.6	13.23	29.773			
1,800.0	1,705.9	1,721.4	1,681.0	9.6	6.6	-124.61	77.2	390.0	425.5	411.3	14.26	29.833			
1,900.0	1,796.4	1,815.9	1,771.9	10.4	7.1	-125.72	79.5	415.6	457.3	442.1	15.29	29.907			
2,000.0	1,886.9	1,910.3	1,862.7	11.2	7.6	-126.67	81.8	441.2	489.3	473.0	16.32	29.988			

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Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	52.84	68.1	89.9	112.8							
100.0	100.0	100.0	100.0	0.1	0.1	52.84	68.1	89.9	112.8	112.5	0.27	414.159				
200.0	200.0	200.0	200.0	0.3	0.3	52.84	68.1	89.9	112.8	112.1	0.62	181.485 CC, ES				
300.0	300.0	294.3	294.3	0.5	0.5	-82.84	69.5	91.7	115.2	114.2	0.96	119.795				
400.0	399.8	388.2	387.9	0.7	0.7	-84.86	73.6	97.3	122.0	120.7	1.32	92.509				
500.0	499.3	480.9	479.9	0.9	0.9	-88.39	80.3	106.5	133.6	131.9	1.72	77.484				
600.0	598.0	572.0	569.6	1.2	1.3	-92.64	89.4	119.0	150.8	148.5	2.21	68.321				
700.0	695.8	660.8	656.4	1.6	1.6	-96.89	100.8	134.5	173.8	171.0	2.78	62.463				
800.0	792.4	747.1	739.7	2.1	2.1	-100.68	114.0	152.7	203.0	199.6	3.46	58.636				
900.0	887.5	830.4	819.1	2.7	2.5	-103.80	128.9	173.1	238.3	234.1	4.24	56.179				
1,000.0	980.9	918.3	901.9	3.4	3.1	-106.70	146.1	196.7	278.5	273.4	5.14	54.179				
1,100.0	1,072.2	1,006.4	985.0	4.1	3.6	-109.61	163.4	220.4	321.4	315.3	6.12	52.486				
1,200.0	1,162.8	1,093.8	1,067.5	4.9	4.1	-113.07	180.6	243.8	366.1	358.9	7.14	51.301				
1,300.0	1,253.3	1,181.3	1,149.9	5.7	4.7	-115.80	197.7	267.3	411.6	403.5	8.15	50.512				
1,400.0	1,343.8	1,268.7	1,232.4	6.5	5.2	-118.00	214.9	290.8	457.8	448.6	9.16	49.978 SF				

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Well Error:	0.0ft	Output errors are at	2.00 sigma
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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			Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	56.91	32.8	50.3	60.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.91	32.8	50.3	60.0	59.8	0.27	220.510			
200.0	200.0	200.0	200.0	0.3	0.3	56.91	32.8	50.3	60.0	59.4	0.62	96.628			
300.0	300.0	300.0	300.0	0.5	0.5	-79.15	32.8	50.3	59.9	58.9	0.97	61.707			
378.6	378.5	378.0	378.0	0.6	0.6	-82.46	32.7	50.5	59.5	58.2	1.26	47.268 CC			
400.0	399.8	399.0	398.9	0.7	0.7	-83.59	32.6	50.9	59.5	58.2	1.34	44.528 ES			
500.0	499.3	497.0	496.9	0.9	0.8	-89.24	31.2	55.7	61.7	59.9	1.76	35.038			
600.0	598.0	595.2	594.5	1.2	1.1	-94.83	28.5	65.4	67.0	64.7	2.29	29.263			
700.0	695.8	693.3	691.4	1.6	1.4	-99.70	24.4	79.9	75.5	72.5	2.96	25.525			
800.0	792.4	791.2	787.3	2.1	1.7	-103.54	18.9	99.1	87.0	83.3	3.78	23.009			
900.0	887.5	888.9	881.8	2.7	2.2	-106.34	12.1	123.0	101.5	96.7	4.77	21.257			
1,000.0	980.9	986.8	975.3	3.4	2.7	-108.56	4.2	150.9	118.5	112.6	5.89	20.111			
1,100.0	1,072.2	1,084.6	1,068.4	4.1	3.2	-111.90	-3.9	179.4	137.7	130.6	7.07	19.477			
1,200.0	1,162.8	1,182.0	1,161.3	4.9	3.8	-115.45	-12.0	207.9	158.2	150.0	8.22	19.242			
1,300.0	1,253.3	1,279.5	1,254.2	5.7	4.3	-118.19	-20.0	236.3	179.1	169.8	9.36	19.144			
1,400.0	1,343.8	1,377.0	1,347.1	6.5	4.9	-120.35	-28.1	264.7	200.4	189.9	10.48	19.121 SF			
1,500.0	1,434.3	1,474.4	1,439.9	7.2	5.4	-122.10	-36.2	293.2	221.8	210.2	11.59	19.137			
1,600.0	1,524.8	1,571.9	1,532.8	8.0	6.0	-123.54	-44.3	321.6	243.5	230.8	12.70	19.175			
1,700.0	1,615.4	1,669.4	1,625.7	8.8	6.5	-124.74	-52.3	350.0	265.2	251.4	13.80	19.224			
1,800.0	1,705.9	1,766.8	1,718.6	9.6	7.1	-125.77	-60.4	378.4	287.1	272.2	14.89	19.279			
1,900.0	1,796.4	1,864.3	1,811.4	10.4	7.7	-126.64	-68.5	406.9	309.0	293.0	15.98	19.336			
2,000.0	1,886.9	1,961.8	1,904.3	11.2	8.2	-127.41	-76.6	435.3	331.0	313.9	17.07	19.392			
2,100.0	1,977.4	2,059.2	1,997.2	12.0	8.8	-128.07	-84.6	463.7	353.0	334.9	18.15	19.447			
2,200.0	2,068.0	2,156.7	2,090.1	12.8	9.3	-128.66	-92.7	492.2	375.1	355.9	19.24	19.500			
2,300.0	2,158.5	2,254.2	2,182.9	13.6	9.9	-129.18	-100.8	520.6	397.2	376.9	20.32	19.551			
2,400.0	2,249.0	2,351.6	2,275.8	14.3	10.5	-129.65	-108.9	549.0	419.3	398.0	21.40	19.600			
2,500.0	2,339.5	2,449.1	2,368.7	15.1	11.0	-130.07	-116.9	577.5	441.5	419.0	22.47	19.646			
2,600.0	2,430.1	2,546.6	2,461.6	15.9	11.6	-130.45	-125.0	605.9	463.7	440.1	23.55	19.689			
2,700.0	2,520.6	2,644.0	2,554.5	16.7	12.1	-130.80	-133.1	634.3	485.9	461.3	24.63	19.731			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Tooface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)					
0.0	0.0	0.0	0.0	0.0	0.0	57.20	24.4	37.9	45.1						
100.0	100.0	100.0	100.0	0.1	0.1	57.20	24.4	37.9	45.1	44.8	0.27	165.461			
200.0	200.0	200.0	200.0	0.3	0.3	57.20	24.4	37.9	45.1	44.4	0.62	72.505			
300.0	300.0	300.0	300.0	0.5	0.5	-79.07	24.4	37.9	44.9	44.0	0.97	46.268			
355.3	355.3	354.9	354.9	0.6	0.6	-81.63	24.3	38.1	44.7	43.5	1.17	38.093 CC, ES			
400.0	399.8	399.0	399.0	0.7	0.7	-84.03	23.8	39.2	44.9	43.6	1.34	33.550			
500.0	499.3	497.9	497.7	0.9	0.9	-89.66	21.3	45.1	47.1	45.3	1.77	26.572			
600.0	598.0	596.8	595.9	1.2	1.1	-94.97	16.8	55.6	51.7	49.4	2.33	22.253			
700.0	695.8	695.7	693.4	1.6	1.4	-99.40	10.3	70.9	58.7	55.7	3.03	19.409			
800.0	792.4	794.6	789.9	2.1	1.8	-102.77	1.9	90.7	68.0	64.1	3.89	17.470			
900.0	887.5	893.4	885.1	2.7	2.3	-105.15	-8.5	115.1	79.4	74.5	4.93	16.104			
1,000.0	980.9	992.2	978.8	3.4	2.9	-106.92	-20.7	143.7	92.8	86.7	6.12	15.182			
1,100.0	1,072.2	1,090.8	1,072.1	4.1	3.5	-110.19	-33.3	173.3	108.1	100.8	7.35	14.705			
1,200.0	1,162.8	1,189.2	1,165.1	4.9	4.0	-113.80	-45.8	202.7	124.5	115.9	8.55	14.555			
1,300.0	1,253.3	1,287.6	1,258.1	5.7	4.6	-116.57	-58.4	232.2	141.3	131.5	9.74	14.507 SF			
1,400.0	1,343.8	1,386.0	1,351.2	6.5	5.2	-118.75	-70.9	261.7	158.3	147.4	10.91	14.512			
1,500.0	1,434.3	1,484.4	1,444.2	7.2	5.8	-120.50	-83.5	291.1	175.5	163.4	12.06	14.544			
1,600.0	1,524.8	1,582.7	1,537.2	8.0	6.4	-121.95	-96.0	320.6	192.8	179.6	13.21	14.590			
1,700.0	1,615.4	1,681.1	1,630.2	8.8	7.0	-123.15	-108.5	350.0	210.2	195.8	14.36	14.641			
1,800.0	1,705.9	1,779.5	1,723.3	9.6	7.6	-124.17	-121.1	379.5	227.7	212.2	15.49	14.695			
1,900.0	1,796.4	1,877.9	1,816.3	10.4	8.2	-125.04	-133.6	409.0	245.3	228.6	16.63	14.749			
2,000.0	1,886.9	1,976.3	1,909.3	11.2	8.8	-125.80	-146.2	438.4	262.9	245.1	17.76	14.801			
2,100.0	1,977.4	2,074.7	2,002.3	12.0	9.4	-126.46	-158.7	467.9	280.5	261.6	18.89	14.852			
2,200.0	2,068.0	2,173.0	2,095.4	12.8	10.1	-127.05	-171.3	497.4	298.2	278.2	20.01	14.899			
2,300.0	2,158.5	2,271.4	2,188.4	13.6	10.7	-127.57	-183.8	526.8	315.9	294.8	21.14	14.945			
2,400.0	2,249.0	2,369.8	2,281.4	14.3	11.3	-128.03	-196.4	556.3	333.6	311.4	22.26	14.988			
2,500.0	2,339.5	2,468.2	2,374.4	15.1	11.9	-128.45	-208.9	585.7	351.4	328.0	23.38	15.028			
2,600.0	2,430.1	2,566.6	2,467.5	15.9	12.5	-128.82	-221.5	615.2	369.1	344.6	24.50	15.066			
2,700.0	2,520.6	2,665.0	2,560.5	16.7	13.1	-129.16	-234.0	644.7	386.9	361.3	25.62	15.102			
2,800.0	2,611.1	2,763.3	2,653.5	17.5	13.7	-129.48	-246.6	674.1	404.7	377.9	26.74	15.136			
2,900.0	2,701.6	2,861.7	2,746.5	18.3	14.3	-129.76	-259.1	703.6	422.5	394.6	27.85	15.167			
3,000.0	2,792.1	2,960.1	2,839.6	19.1	14.9	-130.03	-271.7	733.0	440.3	411.3	28.97	15.198			
3,100.0	2,882.7	3,058.5	2,932.6	19.9	15.5	-130.27	-284.2	762.5	458.1	428.0	30.09	15.226			
3,200.0	2,973.2	3,156.9	3,025.6	20.7	16.1	-130.49	-296.8	792.0	475.9	444.7	31.20	15.253			
3,300.0	3,063.7	3,255.2	3,118.6	21.5	16.7	-130.70	-309.3	821.4	493.8	461.4	32.32	15.278			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	OH	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft	
Survey Program: O-MWD													Offset Well Error:		0.0 ft
Reference															
Offset				Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	56.91	16.4	25.2	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	56.91	16.4	25.2	30.0	29.7	0.27	110.259			
200.0	200.0	200.0	200.0	0.3	0.3	56.91	16.4	25.2	30.0	29.4	0.62	48.316			
300.0	300.0	300.0	300.0	0.5	0.5	-79.77	16.4	25.2	29.9	28.9	0.97	30.793			
343.0	343.0	342.8	342.8	0.6	0.6	-81.94	16.1	25.5	29.8	28.7	1.13	26.390 CC			
400.0	399.8	399.5	399.4	0.7	0.7	-84.92	14.9	27.3	30.0	28.6	1.34	22.314 ES			
500.0	499.3	499.1	498.8	0.9	0.9	-90.15	10.3	33.6	31.2	29.4	1.80	17.361			
600.0	598.0	598.8	597.6	1.2	1.1	-94.95	2.8	44.1	33.5	31.1	2.38	14.095			
700.0	695.8	698.7	695.8	1.6	1.5	-98.99	-7.8	58.8	36.9	33.8	3.11	11.851			
800.0	792.4	798.6	793.0	2.1	1.9	-102.14	-21.4	77.7	41.3	37.3	4.01	10.284			
900.0	887.5	898.6	888.9	2.7	2.5	-104.46	-38.0	100.7	46.6	41.6	5.09	9.165			
1,000.0	980.9	998.7	983.2	3.4	3.1	-106.06	-57.5	127.7	52.9	46.5	6.34	8.342			
1,100.0	1,072.2	1,098.5	1,076.0	4.1	3.7	-108.52	-78.9	157.5	60.2	52.5	7.66	7.856			
1,200.0	1,162.8	1,198.1	1,168.5	4.9	4.4	-112.06	-100.4	187.4	68.3	59.4	8.92	7.655			
1,300.0	1,253.3	1,297.6	1,261.1	5.7	5.1	-114.85	-121.9	217.2	76.6	66.4	10.16	7.542			
1,400.0	1,343.8	1,397.2	1,353.6	6.5	5.8	-117.08	-143.4	247.1	85.1	73.7	11.37	7.480			
1,500.0	1,434.3	1,496.8	1,446.2	7.2	6.5	-118.91	-164.9	276.9	93.6	81.1	12.57	7.448			
1,600.0	1,524.8	1,596.4	1,538.7	8.0	7.1	-120.43	-186.4	306.8	102.3	88.5	13.76	7.434			
1,700.0	1,615.4	1,696.0	1,631.3	8.8	7.8	-121.72	-207.8	336.6	111.0	96.0	14.93	7.432 SF			
1,800.0	1,705.9	1,795.6	1,723.8	9.6	8.5	-122.81	-229.3	366.5	119.7	103.6	16.10	7.436			
1,900.0	1,796.4	1,895.2	1,816.4	10.4	9.2	-123.76	-250.8	396.3	128.5	111.2	17.26	7.445			
2,000.0	1,886.9	1,994.8	1,908.9	11.2	9.9	-124.59	-272.3	426.1	137.3	118.9	18.42	7.456			
2,100.0	1,977.4	2,094.4	2,001.5	12.0	10.6	-125.31	-293.8	456.0	146.2	126.6	19.57	7.469			
2,200.0	2,068.0	2,194.0	2,094.0	12.8	11.3	-125.96	-315.3	485.8	155.0	134.3	20.72	7.483			
2,300.0	2,158.5	2,293.6	2,186.6	13.6	12.0	-126.53	-336.8	515.7	163.9	142.1	21.86	7.498			
2,400.0	2,249.0	2,393.2	2,279.2	14.3	12.6	-127.04	-358.3	545.5	172.8	149.8	23.00	7.512			
2,500.0	2,339.5	2,492.8	2,371.7	15.1	13.3	-127.51	-379.8	575.4	181.7	157.6	24.14	7.526			
2,600.0	2,430.1	2,592.3	2,464.3	15.9	14.0	-127.93	-401.3	605.2	190.6	165.4	25.28	7.540			
2,700.0	2,520.6	2,691.9	2,556.8	16.7	14.7	-128.31	-422.8	635.1	199.6	173.1	26.42	7.554			
2,800.0	2,611.1	2,791.5	2,649.4	17.5	15.4	-128.66	-444.2	664.9	208.5	180.9	27.55	7.567			
2,900.0	2,701.6	2,891.1	2,741.9	18.3	16.1	-128.98	-465.7	694.8	217.4	188.8	28.69	7.580			
3,000.0	2,792.1	2,990.7	2,834.5	19.1	16.8	-129.28	-487.2	724.6	226.4	196.6	29.82	7.592			
3,100.0	2,882.7	3,090.3	2,927.0	19.9	17.5	-129.55	-508.7	754.5	235.4	204.4	30.95	7.604			
3,200.0	2,973.2	3,189.9	3,019.6	20.7	18.2	-129.81	-530.2	784.3	244.3	212.2	32.08	7.615			
3,300.0	3,063.7	3,289.5	3,112.1	21.5	18.9	-130.04	-551.7	814.2	253.3	220.1	33.21	7.626			
3,400.0	3,154.2	3,389.1	3,204.7	22.3	19.6	-130.26	-573.2	844.0	262.2	227.9	34.34	7.637			
3,500.0	3,244.8	3,488.7	3,297.2	23.1	20.2	-130.47	-594.7	873.9	271.2	235.7	35.47	7.647			
3,600.0	3,335.3	3,588.3	3,389.8	23.9	20.9	-130.66	-616.2	903.7	280.2	243.6	36.60	7.657			
3,700.0	3,425.8	3,687.9	3,482.3	24.6	21.6	-130.84	-637.7	933.6	289.2	251.4	37.72	7.666			
3,800.0	3,516.3	3,787.4	3,574.9	25.4	22.3	-131.01	-659.1	963.4	298.2	259.3	38.85	7.675			
3,900.0	3,606.8	3,887.0	3,667.4	26.2	23.0	-131.17	-680.6	993.3	307.1	267.2	39.98	7.683			
4,000.0	3,697.4	3,986.6	3,760.0	27.0	23.7	-131.32	-702.1	1,023.1	316.1	275.0	41.10	7.691			
4,100.0	3,787.9	4,086.2	3,852.5	27.8	24.4	-131.46	-723.6	1,053.0	325.1	282.9	42.23	7.699			
4,200.0	3,878.4	4,185.8	3,945.1	28.6	25.1	-131.59	-745.1	1,082.8	334.1	290.7	43.35	7.707			
4,300.0	3,968.9	4,285.4	4,037.6	29.4	25.8	-131.72	-766.6	1,112.7	343.1	298.6	44.48	7.714			
4,400.0	4,059.4	4,385.0	4,130.2	30.2	26.5	-131.84	-788.1	1,142.5	352.1	306.5	45.60	7.721			
4,500.0	4,150.0	4,484.6	4,222.7	31.0	27.2	-131.95	-809.6	1,172.4	361.1	314.3	46.72	7.728			
4,600.0	4,240.5	4,584.2	4,315.3	31.8	27.9	-132.06	-831.1	1,202.2	370.1	322.2	47.85	7.734			
4,700.0	4,331.0	4,683.8	4,407.8	32.6	28.5	-132.17	-852.6	1,232.1	379.1	330.1	48.97	7.740			
4,800.0	4,421.5	4,783.4	4,500.4	33.4	29.2	-132.27	-874.1	1,261.9	388.1	338.0	50.10	7.746			
4,900.0	4,512.1	4,883.0	4,592.9	34.2	29.9	-132.36	-895.5	1,291.8	397.1	345.8	51.22	7.752			
5,000.0	4,602.6	4,982.6	4,685.5	35.0	30.6	-132.45	-917.0	1,321.6	406.1	353.7	52.34	7.758			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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													Warning		
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			
5,100.0	4,693.1	5,082.1	4,778.0	35.7	31.3	-132.54	-938.5	1,351.5	415.1	361.6	53.47	7.763			
5,200.0	4,783.6	5,181.7	4,870.6	36.5	32.0	-132.62	-960.0	1,381.3	424.1	369.5	54.59	7.768			
5,300.0	4,874.1	5,281.3	4,963.1	37.3	32.7	-132.70	-981.5	1,411.2	433.1	377.4	55.71	7.774			
5,400.0	4,964.7	5,380.9	5,055.7	38.1	33.4	-132.78	-1,003.0	1,441.0	442.1	385.2	56.83	7.778			
5,500.0	5,055.2	5,480.5	5,148.3	38.9	34.1	-132.85	-1,024.5	1,470.9	451.1	393.1	57.96	7.783			
5,600.0	5,145.7	5,580.1	5,240.8	39.7	34.8	-132.92	-1,046.0	1,500.7	460.1	401.0	59.08	7.788			
5,700.0	5,236.2	5,679.7	5,333.4	40.5	35.5	-132.99	-1,067.5	1,530.6	469.1	408.9	60.20	7.792			
5,800.0	5,327.1	5,774.7	5,421.8	41.3	36.1	-133.11	-1,087.7	1,558.7	477.7	416.5	61.26	7.799			
5,900.0	5,419.4	5,865.8	5,507.5	42.0	36.7	-133.24	-1,105.8	1,583.7	485.7	423.5	62.19	7.810			
6,000.0	5,512.9	5,956.8	5,594.1	42.6	37.2	-133.37	-1,122.1	1,606.5	493.0	430.0	63.03	7.822			
6,100.0	5,607.6	6,047.8	5,681.4	43.2	37.6	-133.50	-1,136.9	1,627.0	499.8	436.0	63.78	7.836			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	57.80	8.0	12.7	15.0						
100.0	100.0	100.0	100.0	0.1	0.1	57.80	8.0	12.7	15.0	14.8	0.27	55.197			
200.0	200.0	200.0	200.0	0.3	0.3	57.80	8.0	12.7	15.0	14.4	0.62	24.187			
300.0	300.0	299.9	299.9	0.5	0.5	-79.50	7.9	12.8	14.9	14.0	0.97	15.391			
329.9	329.9	329.8	329.8	0.5	0.5	-81.02	7.5	13.3	14.9	13.8	1.08	13.793 CC			
400.0	399.8	399.8	399.7	0.7	0.7	-84.66	5.3	15.8	15.0	13.7	1.35	11.155 ES			
500.0	499.3	499.7	499.1	0.9	0.9	-89.79	-0.7	22.6	15.6	13.8	1.81	8.619			
600.0	598.0	599.6	598.1	1.2	1.2	-94.45	-10.1	33.4	16.7	14.3	2.42	6.926			
700.0	695.8	699.6	696.2	1.6	1.6	-98.37	-23.0	48.1	18.3	15.1	3.18	5.762			
800.0	792.4	799.7	793.1	2.1	2.0	-101.46	-39.2	66.6	20.3	16.2	4.10	4.951			
900.0	887.5	899.9	888.8	2.7	2.6	-103.76	-58.8	88.9	22.7	17.5	5.20	4.372			
1,000.0	980.9	1,000.1	982.8	3.4	3.2	-105.39	-81.7	114.9	25.5	19.0	6.46	3.947			
1,100.0	1,072.2	1,100.1	1,075.0	4.1	3.9	-107.62	-107.4	144.2	28.8	21.0	7.83	3.678			
1,200.0	1,162.8	1,200.0	1,166.7	4.9	4.7	-111.65	-133.4	173.9	32.6	23.5	9.09	3.588			
1,300.0	1,253.3	1,299.9	1,258.5	5.7	5.4	-114.83	-159.5	203.6	36.6	26.3	10.32	3.526			
1,400.0	1,343.8	1,399.8	1,350.2	6.5	6.1	-117.38	-185.6	233.3	40.6	29.1	11.52	3.549			
1,500.0	1,434.3	1,499.7	1,442.0	7.2	6.8	-119.47	-211.6	263.0	44.8	32.1	12.69	3.526 SF			
1,600.0	1,524.8	1,599.7	1,533.7	8.0	7.6	-121.20	-237.7	292.7	48.9	35.1	13.85	3.532			
1,700.0	1,615.4	1,699.6	1,625.5	8.8	8.3	-122.66	-263.7	322.4	53.1	38.1	14.99	3.543			
1,800.0	1,705.9	1,799.5	1,717.3	9.6	9.0	-123.90	-289.8	352.1	57.4	41.2	16.13	3.557			
1,900.0	1,796.4	1,899.4	1,809.0	10.4	9.8	-124.97	-315.9	381.8	61.6	44.4	17.25	3.572			
2,000.0	1,886.9	1,999.3	1,900.8	11.2	10.5	-125.91	-341.9	411.5	65.9	47.5	18.37	3.587			
2,100.0	1,977.4	2,099.2	1,992.5	12.0	11.2	-126.73	-368.0	441.2	70.2	50.7	19.48	3.603			
2,200.0	2,068.0	2,199.1	2,084.3	12.8	12.0	-127.45	-394.0	470.9	74.5	53.9	20.59	3.618			
2,300.0	2,158.5	2,299.0	2,176.1	13.6	12.7	-128.10	-420.1	500.6	78.8	57.1	21.69	3.633			
2,400.0	2,249.0	2,398.9	2,267.8	14.3	13.5	-128.68	-446.2	530.3	83.1	60.3	22.79	3.647			
2,500.0	2,339.5	2,498.8	2,359.6	15.1	14.2	-129.20	-472.2	559.9	87.5	63.6	23.89	3.661			
2,600.0	2,430.1	2,598.7	2,451.3	15.9	14.9	-129.67	-498.3	589.6	91.8	66.8	24.98	3.675			
2,700.0	2,520.6	2,698.6	2,543.1	16.7	15.7	-130.10	-524.3	619.3	96.1	70.1	26.07	3.687			
2,800.0	2,611.1	2,798.5	2,634.8	17.5	16.4	-130.49	-550.4	649.0	100.5	73.3	27.16	3.699			
2,900.0	2,701.6	2,898.4	2,726.6	18.3	17.2	-130.85	-576.5	678.7	104.8	76.6	28.25	3.711			
3,000.0	2,792.1	2,998.3	2,818.4	19.1	17.9	-131.18	-602.5	708.4	109.2	79.9	29.34	3.722			
3,100.0	2,882.7	3,098.2	2,910.1	19.9	18.6	-131.49	-628.6	738.1	113.6	83.1	30.43	3.732			
3,200.0	2,973.2	3,198.1	3,001.9	20.7	19.4	-131.77	-654.6	767.8	117.9	86.4	31.51	3.742			
3,300.0	3,063.7	3,298.0	3,093.6	21.5	20.1	-132.04	-680.7	797.5	122.3	89.7	32.60	3.751			
3,400.0	3,154.2	3,397.9	3,185.4	22.3	20.8	-132.28	-706.8	827.2	126.6	93.0	33.68	3.760			
3,500.0	3,244.8	3,497.8	3,277.2	23.1	21.6	-132.51	-732.8	856.9	131.0	96.3	34.76	3.769			
3,600.0	3,335.3	3,597.7	3,368.9	23.9	22.3	-132.72	-758.9	886.6	135.4	99.5	35.84	3.777			
3,700.0	3,425.8	3,697.6	3,460.7	24.6	23.1	-132.92	-784.9	916.3	139.8	102.8	36.93	3.785			
3,800.0	3,516.3	3,797.5	3,552.4	25.4	23.8	-133.11	-811.0	946.0	144.1	106.1	38.01	3.793			
3,900.0	3,606.8	3,897.4	3,644.2	26.2	24.5	-133.29	-837.1	975.7	148.5	109.4	39.09	3.800			
4,000.0	3,697.4	3,997.3	3,735.9	27.0	25.3	-133.46	-863.1	1,005.4	152.9	112.7	40.17	3.807			
4,100.0	3,787.9	4,097.2	3,827.7	27.8	26.0	-133.61	-889.2	1,035.1	157.3	116.0	41.24	3.813			
4,200.0	3,878.4	4,197.1	3,919.5	28.6	26.8	-133.76	-915.2	1,064.8	161.7	119.3	42.32	3.819			
4,300.0	3,968.9	4,297.0	4,011.2	29.4	27.5	-133.90	-941.3	1,094.5	166.0	122.6	43.40	3.826			
4,400.0	4,059.4	4,396.9	4,103.0	30.2	28.2	-134.04	-967.4	1,124.2	170.4	125.9	44.48	3.831			
4,500.0	4,150.0	4,496.8	4,194.7	31.0	29.0	-134.16	-993.4	1,153.9	174.8	129.2	45.56	3.837			
4,600.0	4,240.5	4,596.7	4,286.5	31.8	29.7	-134.29	-1,019.5	1,183.6	179.2	132.5	46.64	3.842			
4,700.0	4,331.0	4,696.6	4,378.3	32.6	30.5	-134.40	-1,045.6	1,213.3	183.6	135.9	47.71	3.847			
4,800.0	4,421.5	4,796.6	4,470.0	33.4	31.2	-134.51	-1,071.6	1,243.0	188.0	139.2	48.79	3.852			
4,900.0	4,512.1	4,896.5	4,561.8	34.2	31.9	-134.62	-1,097.7	1,272.7	192.3	142.5	49.87	3.857			
5,000.0	4,602.6	4,996.4	4,653.5	35.0	32.7	-134.72	-1,123.7	1,302.4	196.7	145.8	50.94	3.862			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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		
5,100.0	4,693.1	5,096.3	4,745.3	35.7	33.4	-134.81	-1,149.8	1,332.1	201.1	149.1	52.02	3.866			
5,200.0	4,783.6	5,196.2	4,837.0	36.5	34.2	-134.90	-1,175.9	1,361.8	205.5	152.4	53.10	3.870			
5,300.0	4,874.1	5,296.1	4,928.8	37.3	34.9	-134.99	-1,201.9	1,391.5	209.9	155.7	54.17	3.875			
5,400.0	4,964.7	5,396.0	5,020.6	38.1	35.6	-135.08	-1,228.0	1,421.2	214.3	159.0	55.25	3.879			
5,500.0	5,055.2	5,495.9	5,112.3	38.9	36.4	-135.16	-1,254.0	1,450.8	218.7	162.3	56.32	3.882			
5,600.0	5,145.7	5,595.8	5,204.1	39.7	37.1	-135.23	-1,280.1	1,480.5	223.1	165.7	57.40	3.886			
5,700.0	5,236.2	5,695.7	5,295.8	40.5	37.9	-135.31	-1,306.2	1,510.2	227.4	169.0	58.47	3.890			
5,800.0	5,327.1	5,793.1	5,385.5	41.3	38.6	-135.34	-1,331.4	1,539.0	231.5	171.9	59.56	3.886			
5,900.0	5,419.4	5,888.0	5,473.8	42.0	39.2	-135.33	-1,354.2	1,565.0	235.0	174.4	60.58	3.879			
6,000.0	5,512.9	5,982.7	5,563.1	42.6	39.7	-135.32	-1,375.1	1,588.8	238.2	176.7	61.50	3.873			
6,100.0	5,607.6	6,077.5	5,653.3	43.2	40.3	-135.32	-1,394.0	1,610.4	241.2	178.8	62.34	3.869			
6,200.0	5,703.4	6,172.1	5,744.5	43.7	40.7	-135.32	-1,411.0	1,629.7	243.8	180.7	63.08	3.865			
6,300.0	5,800.1	6,266.8	5,836.3	44.1	41.1	-135.32	-1,425.9	1,646.7	246.1	182.4	63.74	3.861			
6,400.0	5,897.7	6,361.4	5,928.9	44.5	41.5	-135.32	-1,438.8	1,661.4	248.2	183.8	64.31	3.859			
6,500.0	5,995.9	6,455.9	6,022.0	44.8	41.8	-135.33	-1,449.7	1,673.8	249.9	185.1	64.80	3.856			
6,600.0	6,094.8	6,550.5	6,115.6	45.1	42.0	-135.34	-1,458.6	1,683.9	251.3	186.1	65.20	3.855			
6,700.0	6,194.1	6,645.0	6,209.5	45.3	42.2	-135.35	-1,465.4	1,691.7	252.4	186.9	65.51	3.853			
6,800.0	6,293.7	6,739.5	6,303.7	45.4	42.3	-135.36	-1,470.2	1,697.2	253.2	187.5	65.74	3.852			
6,900.0	6,393.6	6,834.0	6,398.1	45.5	42.4	-135.37	-1,472.9	1,700.3	253.7	187.8	65.89	3.851			
7,000.0	6,493.6	6,929.5	6,493.6	45.6	42.5	0.06	-1,473.6	1,701.1	253.9	187.9	65.97	3.848			
7,100.0	6,593.6	7,029.5	6,593.6	45.6	42.5	0.06	-1,473.6	1,701.1	253.9	187.8	66.10	3.840			
7,200.0	6,693.6	7,129.5	6,693.6	45.7	42.6	0.06	-1,473.6	1,701.1	253.9	187.6	66.23	3.833			
7,300.0	6,793.6	7,229.5	6,793.6	45.7	42.6	0.06	-1,473.6	1,701.1	253.9	187.5	66.37	3.825			
7,400.0	6,893.6	7,329.5	6,893.6	45.8	42.7	0.06	-1,473.6	1,701.1	253.9	187.4	66.50	3.818			
7,500.0	6,993.6	7,429.5	6,993.6	45.8	42.7	0.06	-1,473.6	1,701.1	253.9	187.2	66.64	3.810			
7,600.0	7,093.6	7,529.5	7,093.6	45.9	42.8	0.06	-1,473.6	1,701.1	253.9	187.1	66.77	3.802			
7,700.0	7,193.6	7,629.5	7,193.6	45.9	42.8	0.06	-1,473.6	1,701.1	253.9	187.0	66.91	3.794			
7,800.0	7,293.6	7,729.5	7,293.6	46.0	42.9	0.06	-1,473.6	1,701.1	253.9	186.8	67.05	3.786			
7,900.0	7,393.6	7,829.5	7,393.6	46.0	42.9	0.06	-1,473.6	1,701.1	253.9	186.7	67.19	3.778			
8,000.0	7,493.6	7,929.5	7,493.6	46.1	43.0	0.06	-1,473.6	1,701.1	253.9	186.5	67.33	3.770			
8,100.0	7,593.6	8,029.5	7,593.6	46.1	43.0	0.06	-1,473.6	1,701.1	253.9	186.4	67.48	3.762			
8,200.0	7,693.6	8,129.5	7,693.6	46.2	43.1	0.06	-1,473.6	1,701.1	253.9	186.2	67.63	3.754			
8,300.0	7,793.6	8,229.5	7,793.6	46.2	43.2	0.06	-1,473.6	1,701.1	253.9	186.1	67.77	3.746			
8,400.0	7,893.6	8,329.5	7,893.6	46.3	43.2	0.06	-1,473.6	1,701.1	253.9	185.9	67.92	3.738			
8,500.0	7,993.6	8,429.5	7,993.6	46.4	43.3	0.06	-1,473.6	1,701.1	253.9	185.8	68.07	3.729			
8,600.0	8,093.6	8,529.5	8,093.6	46.4	43.3	0.06	-1,473.6	1,701.1	253.9	185.6	68.22	3.721			
8,700.0	8,193.6	8,629.5	8,193.6	46.5	43.4	0.06	-1,473.6	1,701.1	253.9	185.5	68.38	3.713			
8,800.0	8,293.6	8,729.5	8,293.6	46.5	43.5	0.06	-1,473.6	1,701.1	253.9	185.3	68.53	3.704			
8,900.0	8,393.6	8,829.5	8,393.6	46.6	43.5	0.06	-1,473.6	1,701.1	253.9	185.2	68.69	3.696			
8,925.4	8,419.0	8,854.9	8,419.0	46.6	43.5	0.06	-1,473.6	1,701.1	253.9	185.1	68.73	3.694			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	-123.97	-8.4	-12.4	15.0						
100.0	100.0	100.0	100.0	0.1	0.1	-123.97	-8.4	-12.4	15.0	14.7	0.27	55.067			
200.0	200.0	200.0	200.0	0.3	0.3	-123.97	-8.4	-12.4	15.0	14.4	0.62	24.130	CC		
245.8	245.8	245.9	245.9	0.4	0.4	101.18	-8.5	-12.4	15.0	14.3	0.78	19.226			
300.0	300.0	300.0	300.0	0.5	0.5	97.43	-9.5	-11.5	15.0	14.1	0.97	15.446	ES		
400.0	399.8	400.0	399.8	0.7	0.7	92.47	-14.7	-7.5	15.7	14.3	1.37	11.454			
500.0	499.3	499.9	498.9	0.9	1.0	88.14	-24.0	-0.4	17.1	15.2	1.87	9.139			
600.0	598.0	599.7	597.3	1.2	1.3	84.76	-37.4	10.0	19.2	16.7	2.51	7.645			
700.0	695.8	699.4	694.5	1.6	1.7	82.38	-54.7	23.4	21.9	18.6	3.31	6.632			
800.0	792.4	799.0	790.4	2.1	2.2	80.83	-76.1	39.9	25.3	21.0	4.27	5.919			
900.0	887.5	898.5	884.7	2.7	2.8	79.93	-101.4	59.5	29.2	23.8	5.41	5.401			
1,000.0	980.9	998.0	977.0	3.4	3.5	79.49	-130.4	81.9	33.7	27.0	6.73	5.013			
1,100.0	1,072.2	1,097.3	1,067.3	4.1	4.3	79.33	-163.2	107.3	38.8	30.6	8.22	4.720			
1,200.0	1,162.8	1,196.4	1,155.1	4.9	5.2	75.59	-199.6	135.4	45.1	35.4	9.65	4.671	SF		
1,300.0	1,253.3	1,296.1	1,242.3	5.7	6.0	70.60	-237.7	164.9	52.4	41.5	10.92	4.797			
1,400.0	1,343.8	1,395.7	1,329.6	6.5	6.9	66.85	-275.8	194.3	60.0	47.9	12.14	4.942			
1,500.0	1,434.3	1,495.4	1,416.8	7.2	7.8	63.95	-313.8	223.7	67.8	54.5	13.33	5.089			
1,600.0	1,524.8	1,595.0	1,504.1	8.0	8.7	61.66	-351.9	253.2	75.8	61.3	14.49	5.229			
1,700.0	1,615.4	1,694.6	1,591.4	8.8	9.6	59.80	-390.0	282.6	83.8	68.2	15.64	5.360			
1,800.0	1,705.9	1,794.3	1,678.6	9.6	10.4	58.27	-428.0	312.0	92.0	75.2	16.78	5.480			
1,900.0	1,796.4	1,893.9	1,765.9	10.4	11.3	56.99	-466.1	341.5	100.1	82.2	17.92	5.590			
2,000.0	1,886.9	1,993.6	1,853.1	11.2	12.2	55.90	-504.2	370.9	108.4	89.3	19.04	5.691			
2,100.0	1,977.4	2,093.2	1,940.4	12.0	13.1	54.97	-542.2	400.3	116.6	96.5	20.17	5.783			
2,200.0	2,068.0	2,192.8	2,027.6	12.8	14.0	54.16	-580.3	429.8	124.9	103.6	21.29	5.868			
2,300.0	2,158.5	2,292.5	2,114.9	13.6	14.9	53.45	-618.4	459.2	133.2	110.8	22.40	5.945			
2,400.0	2,249.0	2,392.1	2,202.1	14.3	15.8	52.82	-656.5	488.6	141.5	118.0	23.52	6.017			
2,500.0	2,339.5	2,491.8	2,289.4	15.1	16.7	52.27	-694.5	518.0	149.9	125.2	24.64	6.083			
2,600.0	2,430.1	2,591.4	2,376.6	15.9	17.6	51.77	-732.6	547.5	158.2	132.5	25.75	6.144			
2,700.0	2,520.6	2,691.1	2,463.9	16.7	18.5	51.32	-770.7	576.9	166.6	139.7	26.86	6.200			
2,800.0	2,611.1	2,790.7	2,551.1	17.5	19.3	50.92	-808.7	606.3	174.9	147.0	27.98	6.253			
2,900.0	2,701.6	2,890.3	2,638.4	18.3	20.2	50.55	-846.8	635.8	183.3	154.2	29.09	6.302			
3,000.0	2,792.1	2,990.0	2,725.6	19.1	21.1	50.21	-884.9	665.2	191.7	161.5	30.20	6.348			
3,100.0	2,882.7	3,089.6	2,812.9	19.9	22.0	49.91	-922.9	694.6	200.1	168.8	31.31	6.390			
3,200.0	2,973.2	3,189.3	2,900.2	20.7	22.9	49.62	-961.0	724.1	208.5	176.1	32.42	6.430			
3,300.0	3,063.7	3,288.9	2,987.4	21.5	23.8	49.36	-999.1	753.5	216.9	183.3	33.53	6.468			
3,400.0	3,154.2	3,388.6	3,074.7	22.3	24.7	49.12	-1,037.1	782.9	225.3	190.6	34.64	6.503			
3,500.0	3,244.8	3,488.2	3,161.9	23.1	25.6	48.90	-1,075.2	812.4	233.7	197.9	35.75	6.536			
3,600.0	3,335.3	3,587.8	3,249.2	23.9	26.5	48.69	-1,113.3	841.8	242.1	205.2	36.86	6.568			
3,700.0	3,425.8	3,687.5	3,336.4	24.6	27.4	48.49	-1,151.3	871.2	250.5	212.5	37.97	6.597			
3,800.0	3,516.3	3,787.1	3,423.7	25.4	28.3	48.31	-1,189.4	900.7	258.9	219.8	39.08	6.626			
3,900.0	3,606.8	3,886.8	3,510.9	26.2	29.2	48.14	-1,227.5	930.1	267.3	227.1	40.19	6.652			
4,000.0	3,697.4	3,986.4	3,598.2	27.0	30.0	47.98	-1,265.5	959.5	275.8	234.5	41.30	6.677			
4,100.0	3,787.9	4,086.0	3,685.4	27.8	30.9	47.83	-1,303.6	989.0	284.2	241.8	42.40	6.701			
4,200.0	3,878.4	4,185.7	3,772.7	28.6	31.8	47.69	-1,341.7	1,018.4	292.6	249.1	43.51	6.724			
4,300.0	3,968.9	4,285.3	3,859.9	29.4	32.7	47.55	-1,379.7	1,047.8	301.0	256.4	44.62	6.746			
4,400.0	4,059.4	4,385.0	3,947.2	30.2	33.6	47.43	-1,417.8	1,077.3	309.4	263.7	45.73	6.767			
4,500.0	4,150.0	4,484.6	4,034.4	31.0	34.5	47.31	-1,455.9	1,106.7	317.9	271.0	46.84	6.787			
4,600.0	4,240.5	4,584.3	4,121.7	31.8	35.4	47.19	-1,493.9	1,136.1	326.3	278.4	47.95	6.805			
4,700.0	4,331.0	4,683.9	4,209.0	32.6	36.3	47.09	-1,532.0	1,165.5	334.7	285.7	49.06	6.824			
4,800.0	4,421.5	4,783.5	4,296.2	33.4	37.2	46.98	-1,570.1	1,195.0	343.2	293.0	50.16	6.841			
4,900.0	4,512.1	4,883.2	4,383.5	34.2	38.1	46.88	-1,608.2	1,224.4	351.6	300.3	51.27	6.857			
5,000.0	4,602.6	4,982.8	4,470.7	35.0	39.0	46.79	-1,646.2	1,253.8	360.0	307.7	52.38	6.873			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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			Total	Separation	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)	Uncertainty Axis		Factor		
5,100.0	4,693.1	5,082.5	4,558.0	35.7	39.9	46.70	-1,684.3	1,283.3	368.5	315.0	53.49	6.889			
5,200.0	4,783.6	5,182.1	4,645.2	36.5	40.8	46.62	-1,722.4	1,312.7	376.9	322.3	54.60	6.903			
5,300.0	4,874.1	5,281.8	4,732.5	37.3	41.6	46.54	-1,760.4	1,342.1	385.3	329.6	55.71	6.918			
5,400.0	4,964.7	5,381.4	4,819.7	38.1	42.5	46.46	-1,798.5	1,371.6	393.8	337.0	56.81	6.931			
5,500.0	5,055.2	5,481.0	4,907.0	38.9	43.4	46.38	-1,836.6	1,401.0	402.2	344.3	57.92	6.944			
5,600.0	5,145.7	5,580.7	4,994.2	39.7	44.3	46.31	-1,874.6	1,430.4	410.7	351.6	59.03	6.957			
5,700.0	5,236.2	5,680.3	5,081.5	40.5	45.2	46.24	-1,912.7	1,459.9	419.1	359.0	60.14	6.969			
5,800.0	5,327.1	5,789.2	5,177.4	41.3	46.1	46.26	-1,953.5	1,491.4	427.4	366.1	61.30	6.972			
5,900.0	5,419.4	5,901.9	5,278.6	42.0	47.0	46.30	-1,992.7	1,521.7	435.1	372.7	62.39	6.974			
6,000.0	5,512.9	6,014.9	5,381.9	42.6	47.8	46.34	-2,028.9	1,549.7	442.2	378.8	63.39	6.976			
6,100.0	5,607.6	6,128.2	5,487.2	43.2	48.6	46.37	-2,061.9	1,575.2	448.7	384.4	64.29	6.979			
6,200.0	5,703.4	6,241.8	5,594.4	43.7	49.2	46.39	-2,091.6	1,598.2	454.5	389.4	65.10	6.982			
6,300.0	5,800.1	6,355.6	5,703.2	44.1	49.8	46.41	-2,118.1	1,618.6	459.7	393.9	65.81	6.986			
6,400.0	5,897.7	6,469.6	5,813.5	44.5	50.3	46.42	-2,141.1	1,636.4	464.3	397.9	66.43	6.990			
6,500.0	5,995.9	6,583.9	5,925.0	44.8	50.8	46.42	-2,160.6	1,651.5	468.2	401.3	66.95	6.993			
6,600.0	6,094.8	6,698.2	6,037.5	45.1	51.1	46.42	-2,176.7	1,664.0	471.5	404.1	67.39	6.997			
6,700.0	6,194.1	6,812.8	6,151.0	45.3	51.4	46.41	-2,189.2	1,673.6	474.1	406.4	67.72	7.001			
6,800.0	6,293.7	6,927.4	6,265.0	45.4	51.6	46.39	-2,198.0	1,680.5	476.0	408.0	67.96	7.004			
6,900.0	6,393.6	7,042.1	6,379.5	45.5	51.7	46.37	-2,203.3	1,684.6	477.2	409.1	68.11	7.007			
7,000.0	6,493.6	7,156.2	6,493.6	45.6	51.8	-178.21	-2,205.0	1,685.8	477.7	409.5	68.19	7.006			
7,100.0	6,593.6	7,256.2	6,593.6	45.6	51.8	-178.21	-2,205.0	1,685.8	477.7	409.4	68.32	6.993			
7,200.0	6,693.6	7,356.2	6,693.6	45.7	51.9	-178.21	-2,205.0	1,685.8	477.7	409.3	68.45	6.980			
7,300.0	6,793.6	7,456.2	6,793.6	45.7	51.9	-178.21	-2,205.0	1,685.8	477.7	409.2	68.58	6.967			
7,400.0	6,893.6	7,556.2	6,893.6	45.8	51.9	-178.21	-2,205.0	1,685.8	477.7	409.0	68.71	6.953			
7,500.0	6,993.6	7,656.2	6,993.6	45.8	52.0	-178.21	-2,205.0	1,685.8	477.7	408.9	68.84	6.940			
7,600.0	7,093.6	7,756.2	7,093.6	45.9	52.0	-178.21	-2,205.0	1,685.8	477.7	408.8	68.98	6.926			
7,700.0	7,193.6	7,856.2	7,193.6	45.9	52.1	-178.21	-2,205.0	1,685.8	477.7	408.6	69.11	6.913			
7,800.0	7,293.6	7,956.2	7,293.6	46.0	52.1	-178.21	-2,205.0	1,685.8	477.7	408.5	69.25	6.899			
7,900.0	7,393.6	8,056.2	7,393.6	46.0	52.2	-178.21	-2,205.0	1,685.8	477.7	408.4	69.39	6.885			
8,000.0	7,493.6	8,156.2	7,493.6	46.1	52.2	-178.21	-2,205.0	1,685.8	477.7	408.2	69.53	6.871			
8,100.0	7,593.6	8,256.2	7,593.6	46.1	52.3	-178.21	-2,205.0	1,685.8	477.7	408.1	69.67	6.857			
8,200.0	7,693.6	8,356.2	7,693.6	46.2	52.3	-178.21	-2,205.0	1,685.8	477.7	407.9	69.81	6.843			
8,300.0	7,793.6	8,456.2	7,793.6	46.2	52.4	-178.21	-2,205.0	1,685.8	477.7	407.8	69.96	6.829			
8,400.0	7,893.6	8,556.2	7,893.6	46.3	52.4	-178.21	-2,205.0	1,685.8	477.7	407.6	70.10	6.815			
8,500.0	7,993.6	8,656.2	7,993.6	46.4	52.5	-178.21	-2,205.0	1,685.8	477.7	407.5	70.25	6.800			
8,600.0	8,093.6	8,756.2	8,093.6	46.4	52.5	-178.21	-2,205.0	1,685.8	477.7	407.3	70.40	6.786			
8,700.0	8,193.6	8,856.2	8,193.6	46.5	52.6	-178.21	-2,205.0	1,685.8	477.7	407.2	70.55	6.771			
8,800.0	8,293.6	8,956.2	8,293.6	46.5	52.6	-178.21	-2,205.0	1,685.8	477.7	407.0	70.70	6.757			
8,900.0	8,393.6	9,056.2	8,393.6	46.6	52.7	-178.21	-2,205.0	1,685.8	477.7	406.9	70.86	6.742			
8,925.4	8,419.0	9,081.6	8,419.0	46.6	52.7	-178.21	-2,205.0	1,685.8	477.7	406.8	70.90	6.739			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler Fee 6-8A
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Reference Site:	O31E Pad (2nd Occupation)	MD Reference:	KB=22' @ 7126.0ft (Patterson #308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler Fee 6-8A	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	-123.39	-16.4	-24.9	29.8						
100.0	100.0	100.0	100.0	0.1	0.1	-123.39	-16.4	-24.9	29.8	29.5	0.27	109.391			
200.0	200.0	200.0	200.0	0.3	0.3	-123.39	-16.4	-24.9	29.8	29.2	0.62	47.936	CC		
207.4	207.4	207.4	207.4	0.3	0.3	101.15	-16.4	-24.9	29.8	29.1	0.65	45.988			
300.0	300.0	300.0	300.0	0.5	0.5	97.38	-18.5	-23.4	29.9	28.9	0.98	30.557	ES		
400.0	399.8	399.8	399.4	0.7	0.7	92.47	-25.0	-19.0	31.1	29.7	1.39	22.339			
500.0	499.3	499.4	498.2	0.9	1.0	88.14	-35.7	-11.6	33.4	31.5	1.91	17.470			
600.0	598.0	598.9	596.0	1.2	1.4	84.64	-50.6	-1.4	36.7	34.1	2.57	14.306			
700.0	695.8	698.2	692.6	1.6	1.8	82.02	-69.7	11.7	41.0	37.7	3.37	12.160			
800.0	792.4	797.4	787.7	2.1	2.3	80.19	-92.8	27.5	46.3	41.9	4.34	10.653			
900.0	887.5	896.3	881.0	2.7	3.0	79.01	-119.9	46.1	52.4	46.9	5.48	9.559			
1,000.0	980.9	995.0	972.3	3.4	3.7	78.31	-150.9	67.3	59.3	52.5	6.79	8.738			
1,100.0	1,072.2	1,093.6	1,061.3	4.1	4.5	77.97	-185.7	91.1	67.0	58.8	8.26	8.115			
1,200.0	1,162.8	1,191.7	1,147.7	4.9	5.3	75.78	-224.1	117.4	76.3	66.5	9.73	7.837	SF		
1,300.0	1,253.3	1,290.3	1,232.6	5.7	6.2	71.62	-265.5	145.8	87.4	76.3	11.05	7.904			
1,400.0	1,343.8	1,389.5	1,317.7	6.5	7.2	68.22	-307.5	174.6	99.0	86.7	12.32	8.036			
1,500.0	1,434.3	1,488.6	1,402.8	7.2	8.1	65.54	-349.4	203.3	111.0	97.4	13.56	8.185			
1,600.0	1,524.8	1,587.8	1,488.0	8.0	9.0	63.38	-391.3	232.0	123.1	108.3	14.77	8.335			
1,700.0	1,615.4	1,687.0	1,573.1	8.8	10.0	61.61	-433.3	260.8	135.3	119.4	15.96	8.481			
1,800.0	1,705.9	1,786.1	1,658.3	9.6	10.9	60.14	-475.2	289.5	147.7	130.6	17.14	8.619			
1,900.0	1,796.4	1,885.3	1,743.4	10.4	11.8	58.89	-517.2	318.2	160.2	141.9	18.31	8.748			
2,000.0	1,886.9	1,984.5	1,828.6	11.2	12.8	57.82	-559.1	347.0	172.7	153.2	19.47	8.867			
2,100.0	1,977.4	2,083.6	1,913.7	12.0	13.7	56.90	-601.0	375.7	185.2	164.6	20.63	8.979			
2,200.0	2,068.0	2,182.8	1,998.8	12.8	14.6	56.10	-643.0	404.5	197.9	176.1	21.79	9.082			
2,300.0	2,158.5	2,282.0	2,084.0	13.6	15.6	55.39	-684.9	433.2	210.5	187.6	22.94	9.177			
2,400.0	2,249.0	2,381.1	2,169.1	14.3	16.5	54.76	-726.9	461.9	223.2	199.1	24.08	9.266			
2,500.0	2,339.5	2,480.3	2,254.3	15.1	17.4	54.20	-768.8	490.7	235.9	210.6	25.23	9.348			
2,600.0	2,430.1	2,579.5	2,339.4	15.9	18.4	53.70	-810.8	519.4	248.6	222.2	26.37	9.425			
2,700.0	2,520.6	2,678.6	2,424.5	16.7	19.3	53.24	-852.7	548.1	261.3	233.8	27.52	9.496			
2,800.0	2,611.1	2,777.8	2,509.7	17.5	20.3	52.83	-894.6	576.9	274.0	245.4	28.66	9.563			
2,900.0	2,701.6	2,877.0	2,594.8	18.3	21.2	52.45	-936.6	605.6	286.8	257.0	29.80	9.625			
3,000.0	2,792.1	2,976.1	2,680.0	19.1	22.1	52.11	-978.5	634.4	299.6	268.6	30.94	9.684			
3,100.0	2,882.7	3,075.3	2,765.1	19.9	23.1	51.79	-1,020.5	663.1	312.3	280.3	32.07	9.738			
3,200.0	2,973.2	3,174.5	2,850.2	20.7	24.0	51.50	-1,062.4	691.8	325.1	291.9	33.21	9.790			
3,300.0	3,063.7	3,273.6	2,935.4	21.5	25.0	51.23	-1,104.3	720.6	337.9	303.6	34.35	9.839			
3,400.0	3,154.2	3,372.8	3,020.5	22.3	25.9	50.99	-1,146.3	749.3	350.7	315.2	35.48	9.884			
3,500.0	3,244.8	3,472.0	3,105.7	23.1	26.8	50.75	-1,188.2	778.0	363.5	326.9	36.62	9.928			
3,600.0	3,335.3	3,571.1	3,190.8	23.9	27.8	50.54	-1,230.2	806.8	376.3	338.6	37.75	9.968			
3,700.0	3,425.8	3,670.3	3,276.0	24.6	28.7	50.34	-1,272.1	835.5	389.2	350.3	38.89	10.007			
3,800.0	3,516.3	3,769.5	3,361.1	25.4	29.7	50.15	-1,314.1	864.3	402.0	362.0	40.02	10.044			
3,900.0	3,606.8	3,868.6	3,446.2	26.2	30.6	49.97	-1,356.0	893.0	414.8	373.7	41.16	10.079			
4,000.0	3,697.4	3,967.8	3,531.4	27.0	31.5	49.81	-1,397.9	921.7	427.6	385.4	42.29	10.112			
4,100.0	3,787.9	4,067.0	3,616.5	27.8	32.5	49.65	-1,439.9	950.5	440.5	397.1	43.42	10.144			
4,200.0	3,878.4	4,166.1	3,701.7	28.6	33.4	49.50	-1,481.8	979.2	453.3	408.8	44.56	10.174			
4,300.0	3,968.9	4,265.3	3,786.8	29.4	34.3	49.36	-1,523.8	1,007.9	466.1	420.5	45.69	10.202			
4,400.0	4,059.4	4,364.5	3,871.9	30.2	35.3	49.23	-1,565.7	1,036.7	479.0	432.2	46.82	10.230			
4,500.0	4,150.0	4,463.6	3,957.1	31.0	36.2	49.10	-1,607.6	1,065.4	491.8	443.9	47.96	10.256			

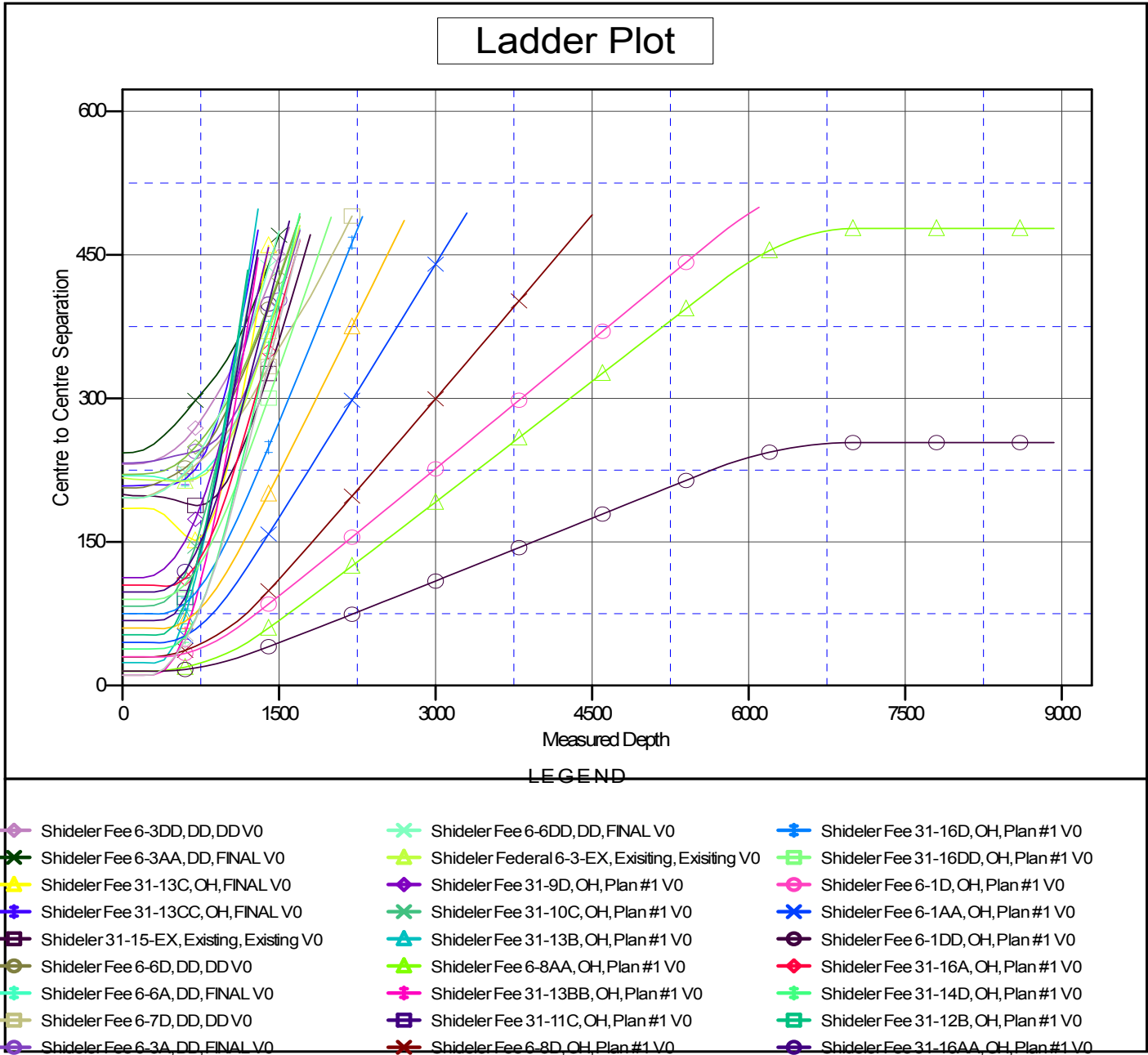
CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Shideler Fee 6-8A
Project: Mamm Creek	TVD Reference: KB=22' @ 7126.0ft (Patterson #308)
Reference Site: O31E Pad (2nd Occupation)	MD Reference: KB=22' @ 7126.0ft (Patterson #308)
Site Error: 0.0ft	North Reference: True
Reference Well: Shideler Fee 6-8A	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 6-8A
 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