

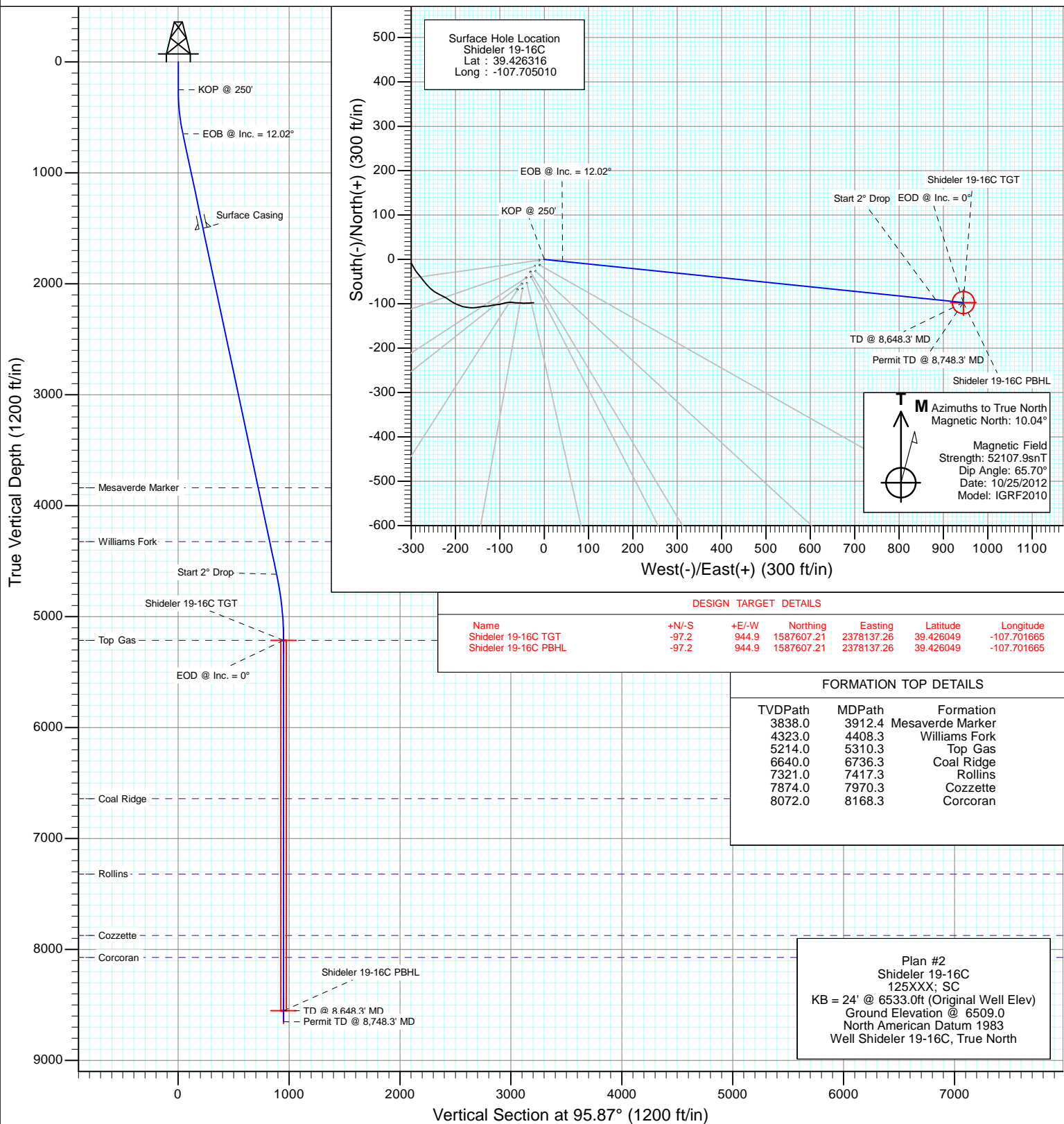


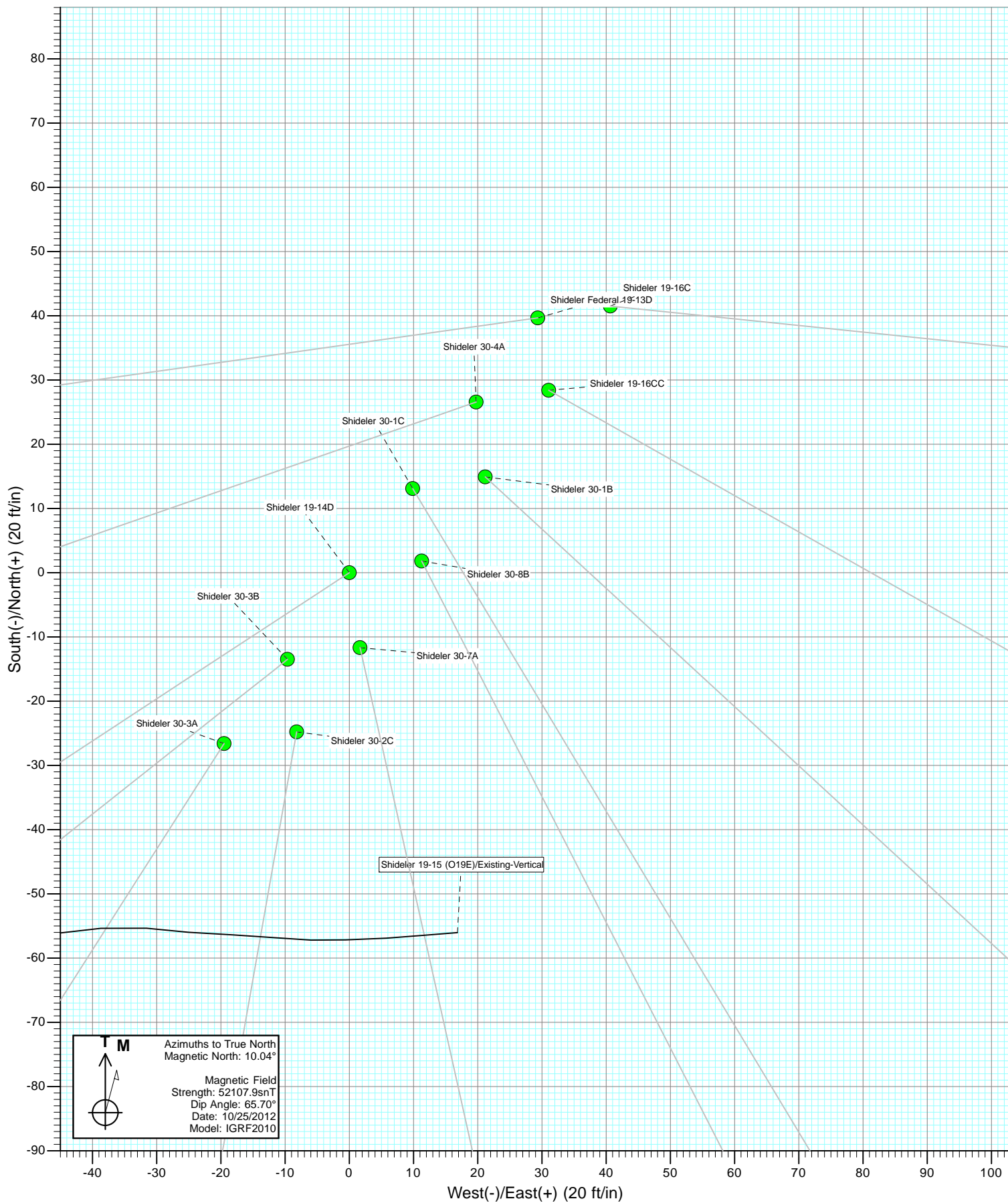
Project: Mamm Creek  
Site: O19EB Pad  
Well: Shideler 19-16C  
Wellbore: OH  
Design: Plan #2

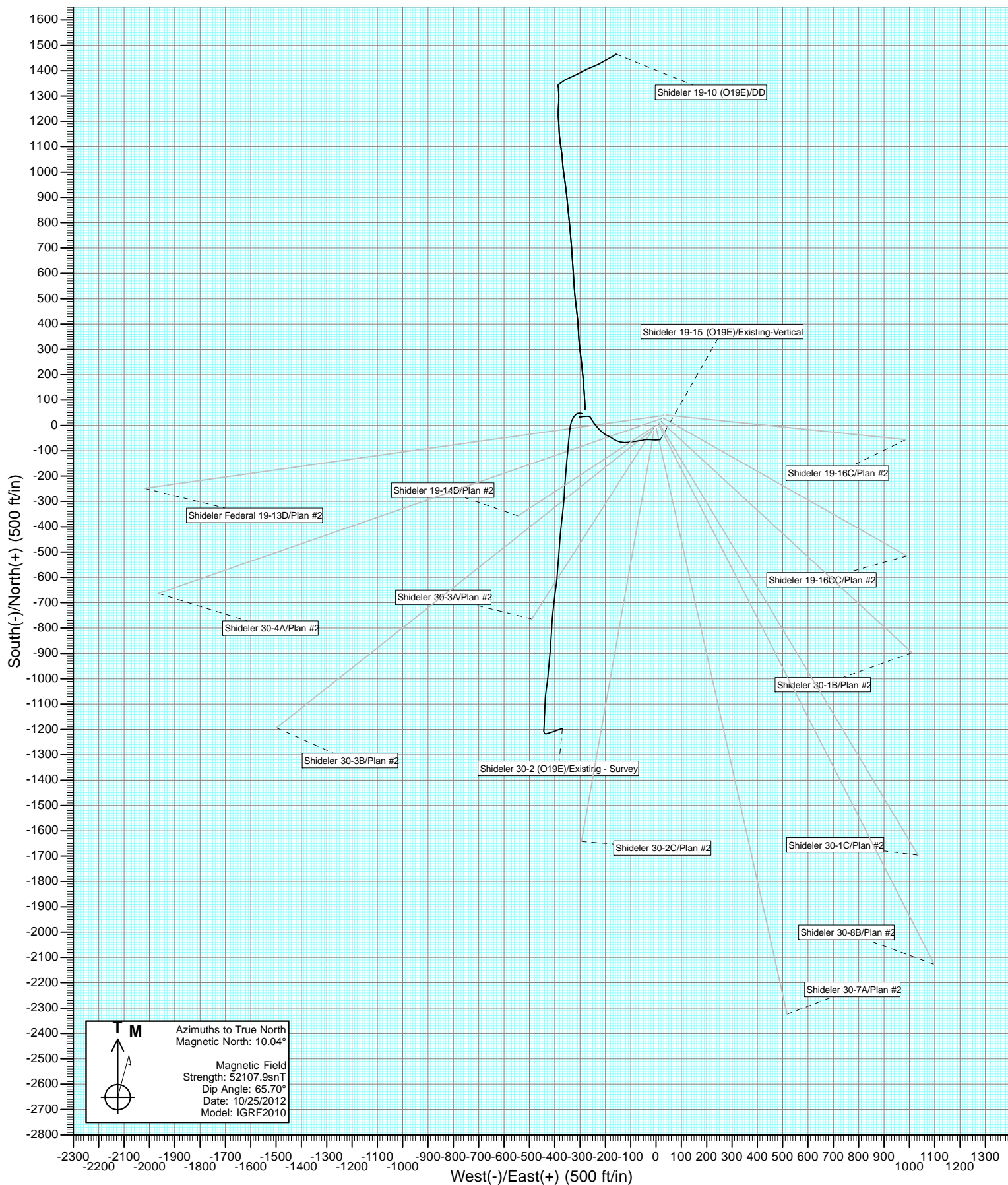


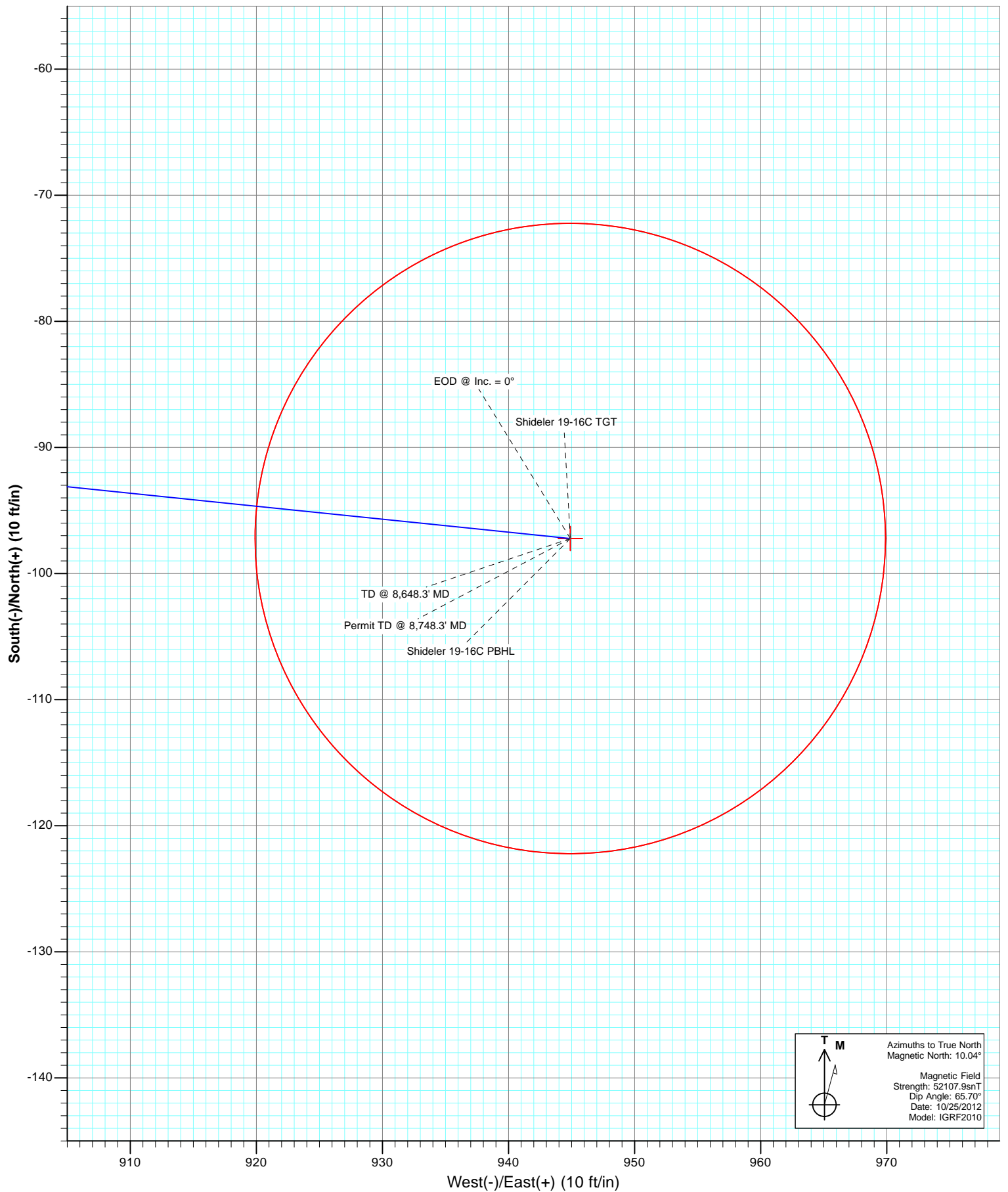
#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.0	
3	650.7	12.02	95.87	647.7	-4.3	41.7	3.00	95.87	41.9	
4	4709.3	12.02	95.87	4617.4	-90.8	882.4	0.00	0.00	887.1	
5	5310.3	0.00	0.00	5214.0	-97.2	944.9	2.00	180.00	949.9	Shideler 19-16C TGT
6	8648.3	0.00	0.00	8552.0	-97.2	944.9	0.00	0.00	949.9	Shideler 19-16C PBHL
7	8748.3	0.00	0.00	8652.0	-97.2	944.9	0.00	0.00	949.9	









# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site:</b>	O19EB Pad	<b>North Reference:</b>	True
<b>Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

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		O19EB Pad			
Site Position:		Northing:	1,587,688.01 ft	Latitude:	39.426206
From:	Lat/Long	Easting:	2,377,164.37 ft	Longitude:	-107.705115
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.39 °

Well	Shideler 19-16C					
Well Position	+N/-S	0.0 ft	Northing:	1,587,727.33 ft	Latitude:	39.426316
	+E/-W	0.0 ft	Easting:	2,377,194.99 ft	Longitude:	-107.705010
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,509.0 ft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/25/2012	10.04	65.70	52,108

Design	Plan #2			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	95.87

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	
650.7	12.02	95.87	647.7	-4.3	41.7	3.00	3.00	0.00	95.87	
4,709.3	12.02	95.87	4,617.4	-90.8	882.4	0.00	0.00	0.00	0.00	
5,310.3	0.00	0.00	5,214.0	-97.2	944.9	2.00	-2.00	0.00	180.00	Shideler 19-16C TGT
8,648.3	0.00	0.00	8,552.0	-97.2	944.9	0.00	0.00	0.00	0.00	Shideler 19-16C PBH
8,748.3	0.00	0.00	8,652.0	-97.2	944.9	0.00	0.00	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site:</b>	O19EB Pad	<b>North Reference:</b>	True
<b>Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

### 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	95.87	300.0	-0.1	0.7	0.7	3.00	3.00	
400.0	4.50	95.87	399.8	-0.6	5.9	5.9	3.00	3.00	
500.0	7.50	95.87	499.3	-1.7	16.3	16.3	3.00	3.00	
600.0	10.50	95.87	598.0	-3.3	31.8	32.0	3.00	3.00	
650.7	12.02	95.87	647.7	-4.3	41.7	41.9	3.00	3.00	EOB @ Inc. = 12.02°
700.0	12.02	95.87	696.0	-5.3	51.9	52.1	0.00	0.00	
800.0	12.02	95.87	793.8	-7.5	72.6	73.0	0.00	0.00	
900.0	12.02	95.87	891.6	-9.6	93.3	93.8	0.00	0.00	
1,000.0	12.02	95.87	989.4	-11.7	114.0	114.6	0.00	0.00	
1,100.0	12.02	95.87	1,087.2	-13.9	134.7	135.4	0.00	0.00	
1,200.0	12.02	95.87	1,185.0	-16.0	155.5	156.3	0.00	0.00	
1,300.0	12.02	95.87	1,282.8	-18.1	176.2	177.1	0.00	0.00	
1,400.0	12.02	95.87	1,380.6	-20.3	196.9	197.9	0.00	0.00	
1,500.0	12.02	95.87	1,478.4	-22.4	217.6	218.7	0.00	0.00	
1,522.0	12.02	95.87	1,500.0	-22.9	222.2	223.3	0.00	0.00	Surface Casing
1,600.0	12.02	95.87	1,576.3	-24.5	238.3	239.6	0.00	0.00	
1,700.0	12.02	95.87	1,674.1	-26.7	259.0	260.4	0.00	0.00	
1,800.0	12.02	95.87	1,771.9	-28.8	279.7	281.2	0.00	0.00	
1,900.0	12.02	95.87	1,869.7	-30.9	300.5	302.0	0.00	0.00	
2,000.0	12.02	95.87	1,967.5	-33.0	321.2	322.9	0.00	0.00	
2,100.0	12.02	95.87	2,065.3	-35.2	341.9	343.7	0.00	0.00	
2,200.0	12.02	95.87	2,163.1	-37.3	362.6	364.5	0.00	0.00	
2,300.0	12.02	95.87	2,260.9	-39.4	383.3	385.3	0.00	0.00	
2,400.0	12.02	95.87	2,358.7	-41.6	404.0	406.2	0.00	0.00	
2,500.0	12.02	95.87	2,456.5	-43.7	424.8	427.0	0.00	0.00	
2,600.0	12.02	95.87	2,554.3	-45.8	445.5	447.8	0.00	0.00	
2,700.0	12.02	95.87	2,652.1	-48.0	466.2	468.6	0.00	0.00	
2,800.0	12.02	95.87	2,749.9	-50.1	486.9	489.5	0.00	0.00	
2,900.0	12.02	95.87	2,847.8	-52.2	507.6	510.3	0.00	0.00	
3,000.0	12.02	95.87	2,945.6	-54.4	528.3	531.1	0.00	0.00	
3,100.0	12.02	95.87	3,043.4	-56.5	549.0	551.9	0.00	0.00	
3,200.0	12.02	95.87	3,141.2	-58.6	569.8	572.8	0.00	0.00	
3,300.0	12.02	95.87	3,239.0	-60.8	590.5	593.6	0.00	0.00	
3,400.0	12.02	95.87	3,336.8	-62.9	611.2	614.4	0.00	0.00	
3,500.0	12.02	95.87	3,434.6	-65.0	631.9	635.2	0.00	0.00	
3,600.0	12.02	95.87	3,532.4	-67.2	652.6	656.1	0.00	0.00	
3,700.0	12.02	95.87	3,630.2	-69.3	673.3	676.9	0.00	0.00	
3,800.0	12.02	95.87	3,728.0	-71.4	694.1	697.7	0.00	0.00	
3,900.0	12.02	95.87	3,825.8	-73.5	714.8	718.5	0.00	0.00	
3,912.4	12.02	95.87	3,838.0	-73.8	717.3	721.1	0.00	0.00	Mesaverde Marker
4,000.0	12.02	95.87	3,923.6	-75.7	735.5	739.4	0.00	0.00	
4,100.0	12.02	95.87	4,021.4	-77.8	756.2	760.2	0.00	0.00	
4,200.0	12.02	95.87	4,119.3	-79.9	776.9	781.0	0.00	0.00	
4,300.0	12.02	95.87	4,217.1	-82.1	797.6	801.8	0.00	0.00	
4,400.0	12.02	95.87	4,314.9	-84.2	818.3	822.7	0.00	0.00	
4,408.3	12.02	95.87	4,323.0	-84.4	820.1	824.4	0.00	0.00	Williams Fork
4,500.0	12.02	95.87	4,412.7	-86.3	839.1	843.5	0.00	0.00	
4,600.0	12.02	95.87	4,510.5	-88.5	859.8	864.3	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site:</b>	O19EB Pad	<b>North Reference:</b>	True
<b>Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

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
4,709.3	12.02	95.87	4,617.4	-90.8	882.4	887.1	0.00	0.00	Start 2° Drop
4,800.0	10.21	95.87	4,706.4	-92.6	899.8	904.6	2.00	-2.00	
4,900.0	8.21	95.87	4,805.1	-94.2	915.7	920.6	2.00	-2.00	
5,000.0	6.21	95.87	4,904.3	-95.5	928.2	933.1	2.00	-2.00	
5,100.0	4.21	95.87	5,003.9	-96.4	937.2	942.2	2.00	-2.00	
5,200.0	2.21	95.87	5,103.7	-97.0	942.8	947.8	2.00	-2.00	
5,300.0	0.21	95.87	5,203.7	-97.2	944.9	949.9	2.00	-2.00	
5,310.3	0.00	0.00	5,214.0	-97.2	944.9	949.9	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
5,400.0	0.00	0.00	5,303.7	-97.2	944.9	949.9	0.00	0.00	
5,500.0	0.00	0.00	5,403.7	-97.2	944.9	949.9	0.00	0.00	
5,600.0	0.00	0.00	5,503.7	-97.2	944.9	949.9	0.00	0.00	
5,700.0	0.00	0.00	5,603.7	-97.2	944.9	949.9	0.00	0.00	
5,800.0	0.00	0.00	5,703.7	-97.2	944.9	949.9	0.00	0.00	
5,900.0	0.00	0.00	5,803.7	-97.2	944.9	949.9	0.00	0.00	
6,000.0	0.00	0.00	5,903.7	-97.2	944.9	949.9	0.00	0.00	
6,100.0	0.00	0.00	6,003.7	-97.2	944.9	949.9	0.00	0.00	
6,200.0	0.00	0.00	6,103.7	-97.2	944.9	949.9	0.00	0.00	
6,300.0	0.00	0.00	6,203.7	-97.2	944.9	949.9	0.00	0.00	
6,400.0	0.00	0.00	6,303.7	-97.2	944.9	949.9	0.00	0.00	
6,500.0	0.00	0.00	6,403.7	-97.2	944.9	949.9	0.00	0.00	
6,600.0	0.00	0.00	6,503.7	-97.2	944.9	949.9	0.00	0.00	
6,700.0	0.00	0.00	6,603.7	-97.2	944.9	949.9	0.00	0.00	
6,736.3	0.00	0.00	6,640.0	-97.2	944.9	949.9	0.00	0.00	Coal Ridge
6,800.0	0.00	0.00	6,703.7	-97.2	944.9	949.9	0.00	0.00	
6,900.0	0.00	0.00	6,803.7	-97.2	944.9	949.9	0.00	0.00	
7,000.0	0.00	0.00	6,903.7	-97.2	944.9	949.9	0.00	0.00	
7,100.0	0.00	0.00	7,003.7	-97.2	944.9	949.9	0.00	0.00	
7,200.0	0.00	0.00	7,103.7	-97.2	944.9	949.9	0.00	0.00	
7,300.0	0.00	0.00	7,203.7	-97.2	944.9	949.9	0.00	0.00	
7,400.0	0.00	0.00	7,303.7	-97.2	944.9	949.9	0.00	0.00	
7,417.3	0.00	0.00	7,321.0	-97.2	944.9	949.9	0.00	0.00	Rollins
7,500.0	0.00	0.00	7,403.7	-97.2	944.9	949.9	0.00	0.00	
7,600.0	0.00	0.00	7,503.7	-97.2	944.9	949.9	0.00	0.00	
7,700.0	0.00	0.00	7,603.7	-97.2	944.9	949.9	0.00	0.00	
7,800.0	0.00	0.00	7,703.7	-97.2	944.9	949.9	0.00	0.00	
7,900.0	0.00	0.00	7,803.7	-97.2	944.9	949.9	0.00	0.00	
7,970.3	0.00	0.00	7,874.0	-97.2	944.9	949.9	0.00	0.00	Cozzette
8,000.0	0.00	0.00	7,903.7	-97.2	944.9	949.9	0.00	0.00	
8,100.0	0.00	0.00	8,003.7	-97.2	944.9	949.9	0.00	0.00	
8,168.3	0.00	0.00	8,072.0	-97.2	944.9	949.9	0.00	0.00	Corcoran
8,200.0	0.00	0.00	8,103.7	-97.2	944.9	949.9	0.00	0.00	
8,300.0	0.00	0.00	8,203.7	-97.2	944.9	949.9	0.00	0.00	
8,400.0	0.00	0.00	8,303.7	-97.2	944.9	949.9	0.00	0.00	
8,500.0	0.00	0.00	8,403.7	-97.2	944.9	949.9	0.00	0.00	
8,600.0	0.00	0.00	8,503.7	-97.2	944.9	949.9	0.00	0.00	
8,648.3	0.00	0.00	8,552.0	-97.2	944.9	949.9	0.00	0.00	TD @ 8,648.3' MD
8,700.0	0.00	0.00	8,603.7	-97.2	944.9	949.9	0.00	0.00	
8,748.3	0.00	0.00	8,652.0	-97.2	944.9	949.9	0.00	0.00	Permit TD @ 8,748.3' MD

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site:</b>	O19EB Pad	<b>North Reference:</b>	True
<b>Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #2		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Shideler 19-16C PBHL - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,552.0	-97.2	944.9	1,587,607.21	2,378,137.26	39.426049	-107.701665
Shideler 19-16C TGT - plan hits target center - Point	0.00	0.00	5,214.0	-97.2	944.9	1,587,607.21	2,378,137.26	39.426049	-107.701665

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,522.0	1,500.0	Surface Casing		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,912.4	3,838.0	Mesaverde Marker				
4,408.3	4,323.0	Williams Fork				
5,310.3	5,214.0	Top Gas				
6,736.3	6,640.0	Coal Ridge				
7,417.3	7,321.0	Rollins				
7,970.3	7,874.0	Cozzette				
8,168.3	8,072.0	Corcoran				

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
250.0	250.0	0.0	0.0	KOP @ 250'
650.7	647.7	-4.3	41.7	EOB @ Inc. = 12.02°
4,709.3	4,617.4	-90.8	882.4	Start 2° Drop
5,310.3	5,214.0	-97.2	944.9	EOD @ Inc. = 0°
8,648.3	8,552.0	-97.2	944.9	TD @ 8,648.3' MD
8,748.3	8,652.0	-97.2	944.9	Permit TD @ 8,748.3' MD



# **EnCana Oil & Gas (USA) Inc**

**Mamm Creek**

**O19EB Pad**

**Shideler 19-16C**

**OH**

**Plan #2**

## **Anticollision Report**

**13 November, 2012**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #2		
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		

<b>Survey Tool Program</b>	<b>Date</b>	11/13/2012		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	8,748.3	Plan #2 (OH)	MWD	Geolink MWD

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
O19E Pad						
Shideler 19-10 (O19E) - DD - DD	0.0	23.9	321.1			
Shideler 19-10 (O19E) - DD - DD	200.0	223.4	321.4	320.7	477.742	ES
Shideler 19-10 (O19E) - DD - DD	1,100.0	1,068.5	490.2	485.5	104.032	SF
Shideler 19-10 (O19E) - Surveys - Surveys	0.0	23.9	321.1			
Shideler 19-10 (O19E) - Surveys - Surveys	200.0	223.4	321.4	320.7	477.742	ES
Shideler 19-10 (O19E) - Surveys - Surveys	1,100.0	1,068.5	490.2	485.5	104.032	SF
Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertic	300.0	329.4	342.4	341.3	331.744	CC, ES
Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertic	1,400.0	1,421.2	493.0	488.2	101.315	SF
Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv	0.0	23.9	333.1			
Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv	100.0	123.4	333.2	332.8	1,010.748	ES
Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv	900.0	896.3	475.7	472.3	138.105	SF
O19EB Pad						
(Existing Offset) Shideler 19-6D - Existing - Existing						Out of range
Shideler 19-14D - OH - Plan #2	200.0	200.0	58.1	57.5	94.615	CC
Shideler 19-14D - OH - Plan #2	228.0	228.0	58.2	57.5	81.710	ES
Shideler 19-14D - OH - Plan #2	500.0	489.3	85.1	83.4	50.742	SF
Shideler 19-16CC - OH - Plan #2	200.0	200.0	16.3	15.6	26.456	CC
Shideler 19-16CC - OH - Plan #2	229.5	229.5	16.3	15.6	22.733	ES
Shideler 19-16CC - OH - Plan #2	7,636.2	7,672.8	459.0	416.0	10.672	SF
Shideler 30-1B - OH - Plan #2	200.0	200.0	33.0	32.4	53.668	CC
Shideler 30-1B - OH - Plan #2	228.7	228.7	33.0	32.3	46.214	ES
Shideler 30-1B - OH - Plan #2	1,100.0	1,092.2	121.3	115.0	19.196	SF
Shideler 30-1C - OH - Plan #2	200.0	200.0	41.9	41.3	68.193	CC, ES
Shideler 30-1C - OH - Plan #2	800.0	785.9	114.4	110.4	28.901	SF
Shideler 30-2C - OH - Plan #2	200.0	200.0	82.4	81.7	134.054	CC, ES
Shideler 30-2C - OH - Plan #2	800.0	754.1	198.6	195.3	59.969	SF
Shideler 30-3A - OH - Plan #2	200.0	200.0	90.9	90.3	147.929	CC, ES
Shideler 30-3A - OH - Plan #2	1,700.0	1,616.8	494.8	487.5	68.151	SF
Shideler 30-3B - OH - Plan #2	200.0	200.0	74.5	73.9	121.297	CC, ES
Shideler 30-3B - OH - Plan #2	500.0	484.4	107.6	105.9	64.213	SF
Shideler 30-4A - OH - Plan #2	200.0	200.0	25.7	25.1	41.816	CC
Shideler 30-4A - OH - Plan #2	200.0	200.0	25.7	25.1	41.809	ES
Shideler 30-4A - OH - Plan #2	300.0	299.0	27.6	26.6	28.680	SF
Shideler 30-7A - OH - Plan #2	200.0	200.0	65.9	65.3	107.325	CC
Shideler 30-7A - OH - Plan #2	227.8	227.8	66.0	65.3	92.751	ES
Shideler 30-7A - OH - Plan #2	900.0	864.9	182.0	177.7	42.660	SF
Shideler 30-8B - OH - Plan #2	200.0	200.0	49.4	48.8	80.391	CC, ES
Shideler 30-8B - OH - Plan #2	800.0	780.8	128.4	124.6	33.161	SF
Shideler Federal 19-13D - OH - Plan #2	200.0	200.0	11.4	10.8	18.630	CC, ES
Shideler Federal 19-13D - OH - Plan #2	300.0	299.3	14.7	13.7	15.258	SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> O19E Pad - Shideler 19-10 (O19E) - DD - DD												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 154--MWD												<b>Offset Well Error:</b>	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	23.9	23.9	0.0	0.0	-86.34	20.5	-320.5	321.1				
100.0	100.0	123.6	123.6	0.1	0.2	-86.31	20.6	-320.5	321.2	320.9	0.33	977.183	
200.0	200.0	223.4	223.4	0.3	0.4	-86.25	21.0	-320.7	321.4	320.7	0.67	477.742 ES	
300.0	300.0	323.3	323.3	0.5	0.5	178.00	21.7	-320.8	322.2	321.2	1.02	315.174	
400.0	399.8	424.1	424.1	0.7	0.7	178.40	23.8	-320.7	327.5	326.1	1.38	238.031	
500.0	499.3	520.7	520.5	0.9	0.9	179.33	29.1	-320.6	338.3	336.5	1.73	195.051	
600.0	598.0	614.8	614.1	1.2	1.1	-179.12	38.4	-321.1	355.4	353.3	2.12	168.020	
700.0	696.0	709.7	708.0	1.6	1.4	-176.98	52.5	-321.6	378.1	375.5	2.55	148.195	
800.0	793.8	798.8	795.4	2.0	1.7	-174.64	69.7	-322.4	403.1	400.1	3.03	133.117	
900.0	891.6	886.8	881.0	2.4	2.1	-172.14	90.0	-324.0	430.4	426.9	3.55	121.281	
1,000.0	989.4	977.3	968.4	2.8	2.5	-169.56	113.4	-325.9	459.6	455.5	4.12	111.656	
1,100.0	1,087.2	1,068.5	1,056.0	3.2	2.9	-167.07	138.5	-327.9	490.2	485.5	4.71	104.032 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19E Pad - Shideler 19-10 (O19E) - Surveys - Surveys													Offset Site Error:	0.0 ft
Survey Program: 154-MWD2, 1295-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor		
0.0	0.0	23.9	23.9	0.0	0.0	-86.34	20.5	-320.5	321.1					
100.0	100.0	123.6	123.6	0.1	0.2	-86.31	20.6	-320.5	321.2	320.9	0.33	977.183		
200.0	200.0	223.4	223.4	0.3	0.4	-86.25	21.0	-320.7	321.4	320.7	0.67	477.742	ES	
300.0	300.0	323.3	323.3	0.5	0.5	178.00	21.7	-320.8	322.2	321.2	1.02	315.174		
400.0	399.8	424.1	424.1	0.7	0.7	178.40	23.8	-320.7	327.5	326.1	1.38	238.031		
500.0	499.3	520.7	520.5	0.9	0.9	179.33	29.1	-320.6	338.3	336.5	1.73	195.051		
600.0	598.0	614.8	614.1	1.2	1.1	-179.12	38.4	-321.1	355.4	353.3	2.12	168.020		
700.0	696.0	709.7	708.0	1.6	1.4	-176.98	52.5	-321.6	378.1	375.5	2.55	148.195		
800.0	793.8	798.8	795.4	2.0	1.7	-174.64	69.7	-322.4	403.1	400.1	3.03	133.117		
900.0	891.6	886.8	881.0	2.4	2.1	-172.14	90.0	-324.0	430.4	426.9	3.55	121.281		
1,000.0	989.4	977.3	968.4	2.8	2.5	-169.56	113.4	-325.9	459.6	455.5	4.12	111.656		
1,100.0	1,087.2	1,068.5	1,056.0	3.2	2.9	-167.07	138.5	-327.9	490.2	485.5	4.71	104.032	SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> O19E Pad - Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertical													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 100-MWD													<b>Offset Well Error:</b>	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	24.4	24.4	0.0	0.0	-91.33	-8.0	-343.8	343.9					
100.0	100.0	125.7	125.7	0.1	0.2	-91.33	-8.0	-343.4	343.5	343.2	0.33	1,047.947		
200.0	200.0	226.8	226.8	0.3	0.4	-91.39	-8.3	-342.8	342.9	342.3	0.68	504.851		
279.9	279.9	308.9	308.9	0.4	0.5	172.72	-8.5	-341.9	342.9	341.9	0.96	356.633		
300.0	300.0	329.4	329.4	0.5	0.6	172.72	-8.5	-341.6	342.4	341.3	1.03	331.744	CC, ES	
400.0	399.8	431.4	431.3	0.7	0.7	172.86	-8.2	-339.7	345.7	344.3	1.38	250.006		
500.0	499.3	534.3	534.3	0.9	0.9	173.12	-7.7	-337.0	353.5	351.8	1.73	203.946		
600.0	598.0	637.0	636.9	1.2	1.1	173.47	-7.0	-333.3	365.4	363.4	2.08	175.630		
700.0	696.0	737.6	737.3	1.6	1.3	173.93	-6.1	-328.9	381.2	378.8	2.43	157.051		
800.0	793.8	837.3	836.9	2.0	1.5	174.29	-5.9	-324.3	397.3	394.5	2.78	143.010		
900.0	891.6	937.0	936.5	2.4	1.7	174.65	-5.4	-319.4	413.2	410.1	3.13	132.058		
1,000.0	989.4	1,037.5	1,036.9	2.8	1.9	174.99	-4.9	-314.1	428.8	425.3	3.48	123.202		
1,100.0	1,087.2	1,137.4	1,136.7	3.2	2.1	175.22	-5.0	-308.4	444.0	440.1	3.83	115.901		
1,200.0	1,185.0	1,233.6	1,232.7	3.6	2.3	175.31	-6.1	-303.0	459.2	455.0	4.17	110.010		
1,300.0	1,282.8	1,326.2	1,325.1	4.0	2.4	175.06	-9.8	-299.0	475.6	471.1	4.52	105.328		
1,400.0	1,380.6	1,421.2	1,419.9	4.4	2.6	174.63	-15.2	-295.9	493.0	488.2	4.87	101.315	SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> O19E Pad - Shideler 30-2 (O19E) - Existing - Survey - Existing - Survey													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 164-MWD2													<b>Offset Well Error:</b>	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	23.9	23.9	0.0	0.0	-89.09	5.3	-333.0	333.1					
100.0	100.0	123.4	123.4	0.1	0.2	-89.07	5.4	-333.1	333.2	332.8	0.33	1,010.748 ES		
200.0	200.0	219.3	219.3	0.3	0.4	-89.01	5.7	-333.6	333.6	333.0	0.67	500.317		
300.0	300.0	308.0	307.9	0.5	0.5	175.23	6.5	-336.2	337.3	336.3	1.00	338.903		
400.0	399.8	395.7	395.5	0.7	0.7	175.42	7.5	-342.1	349.2	347.8	1.32	264.351		
500.0	499.3	490.8	490.2	0.9	0.9	175.24	6.1	-350.3	368.1	366.5	1.66	222.326		
600.0	598.0	587.1	585.8	1.2	1.1	174.38	-0.3	-359.1	392.6	390.6	2.01	195.821		
700.0	696.0	685.1	682.7	1.6	1.4	172.96	-11.8	-368.1	421.7	419.3	2.40	175.707		
800.0	793.8	792.7	788.6	2.0	1.8	170.97	-29.7	-375.7	449.8	446.9	2.89	155.818		
900.0	891.6	896.3	889.5	2.4	2.1	168.54	-52.7	-379.7	475.7	472.3	3.44	138.105 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 19-14D - OH - Plan #2													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		
0.0	0.0	0.0	0.0	0.0	0.0	-135.59	-41.5	-40.7	58.1					
100.0	100.0	100.0	100.0	0.1	0.1	-135.59	-41.5	-40.7	58.1	57.9	0.27	219.107		
200.0	200.0	200.0	200.0	0.3	0.3	-135.59	-41.5	-40.7	58.1	57.5	0.61	94.615 CC		
228.0	228.0	228.0	228.0	0.4	0.4	128.61	-41.5	-40.7	58.2	57.5	0.71	81.710 ES		
300.0	300.0	298.5	298.5	0.5	0.5	129.12	-41.9	-41.2	59.2	58.2	0.96	61.552		
400.0	399.8	394.9	394.8	0.7	0.7	133.12	-44.5	-45.3	67.6	66.3	1.31	51.478		
500.0	499.3	489.3	488.7	0.9	0.9	138.58	-49.7	-53.2	85.1	83.4	1.68	50.742 SF		
600.0	598.0	585.0	583.5	1.2	1.1	143.67	-56.6	-63.7	110.4	108.3	2.06	53.710		
700.0	696.0	680.0	677.7	1.6	1.4	147.96	-63.5	-74.2	140.1	137.6	2.44	57.482		
800.0	793.8	774.8	771.7	2.0	1.7	151.05	-70.3	-84.7	170.9	168.0	2.82	60.610		
900.0	891.6	869.6	865.6	2.4	1.9	153.19	-77.2	-95.2	201.9	198.7	3.20	63.104		
1,000.0	989.4	964.4	959.6	2.8	2.2	154.76	-84.1	-105.7	233.2	229.6	3.58	65.126		
1,100.0	1,087.2	1,059.2	1,053.6	3.2	2.5	155.96	-90.9	-116.2	264.6	260.6	3.96	66.790		
1,200.0	1,185.0	1,154.0	1,147.6	3.6	2.7	156.90	-97.8	-126.6	296.1	291.7	4.34	68.180		
1,300.0	1,282.8	1,248.9	1,241.6	4.0	3.0	157.67	-104.6	-137.1	327.6	322.9	4.72	69.358		
1,400.0	1,380.6	1,343.7	1,335.6	4.4	3.3	158.30	-111.5	-147.6	359.2	354.1	5.10	70.366		
1,500.0	1,478.4	1,438.5	1,429.5	4.8	3.6	158.83	-118.4	-158.1	390.8	385.3	5.49	71.240		
1,600.0	1,576.3	1,533.3	1,523.5	5.2	3.8	159.28	-125.2	-168.6	422.5	416.6	5.87	72.003		
1,700.0	1,674.1	1,628.1	1,617.5	5.6	4.1	159.66	-132.1	-179.1	454.1	447.9	6.25	72.675		
1,800.0	1,771.9	1,722.9	1,711.5	6.0	4.4	160.00	-138.9	-189.5	485.8	479.2	6.63	73.271		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 19-16CC - OH - Plan #2													Offset Site Error: 0.0 ft	
Survey Program: O-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-143.78	-13.1	-9.6	16.3					
100.0	100.0	100.0	100.0	0.1	0.1	-143.78	-13.1	-9.6	16.3	16.0	0.27	61.267		
200.0	200.0	200.0	200.0	0.3	0.3	-143.78	-13.1	-9.6	16.3	15.6	0.61	26.456 CC		
229.5	229.5	229.5	229.5	0.4	0.4	120.69	-13.1	-9.6	16.3	15.6	0.72	22.733 ES		
300.0	300.0	300.0	300.0	0.5	0.5	122.29	-13.1	-9.6	16.6	15.6	0.96	17.218		
400.0	399.8	400.1	400.1	0.7	0.7	127.76	-14.4	-7.3	19.1	17.8	1.33	14.349		
500.0	499.3	500.3	500.0	0.9	0.9	129.24	-18.3	-0.5	23.6	21.8	1.75	13.445		
600.0	598.0	600.5	599.3	1.2	1.1	128.22	-24.7	10.9	30.0	27.7	2.28	13.123		
700.0	696.0	700.6	697.7	1.6	1.5	125.38	-33.7	26.8	37.9	34.9	2.95	12.842		
800.0	793.8	800.4	794.7	2.0	1.9	117.95	-45.2	47.0	45.6	41.8	3.78	12.056		
900.0	891.6	899.9	891.1	2.4	2.4	110.99	-57.3	68.6	53.8	49.1	4.65	11.576		
1,000.0	989.4	999.4	987.5	2.8	2.8	105.92	-69.5	90.1	62.6	57.1	5.51	11.361		
1,100.0	1,087.2	1,098.9	1,083.8	3.2	3.3	102.12	-81.7	111.6	71.8	65.4	6.36	11.279		
1,200.0	1,185.0	1,198.3	1,180.2	3.6	3.7	99.19	-93.9	133.1	81.2	74.0	7.21	11.264		
1,300.0	1,282.8	1,297.8	1,276.5	4.0	4.2	96.88	-106.1	154.6	90.8	82.7	8.04	11.284		
1,400.0	1,380.6	1,397.3	1,372.9	4.4	4.7	95.01	-118.2	176.2	100.5	91.6	8.87	11.321		
1,500.0	1,478.4	1,496.8	1,469.2	4.8	5.1	93.46	-130.4	197.7	110.2	100.5	9.70	11.366		
1,600.0	1,576.3	1,596.3	1,565.6	5.2	5.6	92.18	-142.6	219.2	120.1	109.6	10.52	11.415		
1,700.0	1,674.1	1,695.7	1,661.9	5.6	6.1	91.08	-154.8	240.7	130.0	118.7	11.34	11.463		
1,800.0	1,771.9	1,795.2	1,758.3	6.0	6.6	90.14	-167.0	262.3	139.9	127.8	12.16	11.511		
1,900.0	1,869.7	1,894.7	1,854.7	6.4	7.0	89.33	-179.1	283.8	149.9	136.9	12.97	11.557		
2,000.0	1,967.5	1,994.2	1,951.0	6.8	7.5	88.62	-191.3	305.3	159.9	146.1	13.79	11.601		
2,100.0	2,065.3	2,093.7	2,047.4	7.2	8.0	87.99	-203.5	326.8	169.9	155.3	14.60	11.642		
2,200.0	2,163.1	2,193.1	2,143.7	7.7	8.4	87.43	-215.7	348.4	180.0	164.6	15.41	11.681		
2,300.0	2,260.9	2,292.6	2,240.1	8.1	8.9	86.93	-227.9	369.9	190.0	173.8	16.22	11.717		
2,400.0	2,358.7	2,392.1	2,336.4	8.5	9.4	86.48	-240.0	391.4	200.1	183.1	17.03	11.752		
2,500.0	2,456.5	2,491.6	2,432.8	8.9	9.9	86.08	-252.2	412.9	210.2	192.4	17.84	11.784		
2,600.0	2,554.3	2,591.1	2,529.2	9.3	10.3	85.71	-264.4	434.5	220.3	201.6	18.65	11.815		
2,700.0	2,652.1	2,690.5	2,625.5	9.7	10.8	85.37	-276.6	456.0	230.4	210.9	19.45	11.843		
2,800.0	2,749.9	2,790.0	2,721.9	10.1	11.3	85.06	-288.8	477.5	240.5	220.2	20.26	11.870		
2,900.0	2,847.8	2,889.5	2,818.2	10.5	11.8	84.78	-300.9	499.0	250.6	229.5	21.07	11.896		
3,000.0	2,945.6	2,989.0	2,914.6	10.9	12.2	84.52	-313.1	520.5	260.7	238.9	21.87	11.920		
3,100.0	3,043.4	3,088.5	3,010.9	11.3	12.7	84.28	-325.3	542.1	270.9	248.2	22.68	11.942		
3,200.0	3,141.2	3,187.9	3,107.3	11.8	13.2	84.05	-337.5	563.6	281.0	257.5	23.49	11.964		
3,300.0	3,239.0	3,287.4	3,203.7	12.2	13.6	83.84	-349.7	585.1	291.1	266.8	24.29	11.984		
3,400.0	3,336.8	3,386.9	3,300.0	12.6	14.1	83.65	-361.8	606.6	301.2	276.1	25.10	12.003		
3,500.0	3,434.6	3,486.4	3,396.4	13.0	14.6	83.47	-374.0	628.2	311.4	285.5	25.90	12.021		
3,600.0	3,532.4	3,585.9	3,492.7	13.4	15.1	83.30	-386.2	649.7	321.5	294.8	26.71	12.039		
3,700.0	3,630.2	3,685.3	3,589.1	13.8	15.5	83.14	-398.4	671.2	331.7	304.2	27.51	12.055		
3,800.0	3,728.0	3,784.8	3,685.4	14.2	16.0	82.98	-410.6	692.7	341.8	313.5	28.32	12.071		
3,900.0	3,825.8	3,884.3	3,781.8	14.6	16.5	82.84	-422.7	714.3	352.0	322.8	29.12	12.086		
4,000.0	3,923.6	3,983.8	3,878.2	15.0	17.0	82.71	-434.9	735.8	362.1	332.2	29.93	12.100		
4,100.0	4,021.4	4,083.3	3,974.5	15.4	17.4	82.58	-447.1	757.3	372.3	341.5	30.73	12.114		
4,200.0	4,119.3	4,182.7	4,070.9	15.8	17.9	82.46	-459.3	778.8	382.4	350.9	31.54	12.127		
4,300.0	4,217.1	4,282.2	4,167.2	16.3	18.4	82.35	-471.5	800.3	392.6	360.2	32.34	12.139		
4,400.0	4,314.9	4,381.7	4,263.6	16.7	18.9	82.24	-483.6	821.9	402.7	369.6	33.14	12.151		
4,500.0	4,412.7	4,481.2	4,359.9	17.1	19.3	82.14	-495.8	843.4	412.9	378.9	33.95	12.163		
4,600.0	4,510.5	4,580.7	4,456.3	17.5	19.8	82.04	-508.0	864.9	423.1	388.3	34.75	12.173		
4,700.0	4,608.3	4,685.9	4,558.5	17.9	20.3	82.05	-520.4	886.9	432.8	397.2	35.57	12.167		
4,800.0	4,706.4	4,794.0	4,664.3	18.3	20.7	82.43	-531.4	906.2	440.8	404.5	36.35	12.127		
4,900.0	4,805.1	4,902.3	4,771.1	18.6	21.0	82.76	-540.3	922.0	447.4	410.4	37.02	12.088		
5,000.0	4,904.3	5,010.9	4,878.7	18.8	21.3	83.03	-547.3	934.4	452.6	415.0	37.56	12.051		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 19-16CC - OH - Plan #2													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		
5,100.0	5,003.9	5,119.5	4,986.8	19.0	21.5	83.24	-552.3	943.2	456.2	418.2	37.98	12.012		
5,200.0	5,103.7	5,228.2	5,095.4	19.1	21.6	83.39	-555.2	948.4	458.3	420.1	38.29	11.971		
5,300.0	5,203.7	5,336.6	5,203.7	19.2	21.7	83.49	-556.2	950.0	459.0	420.5	38.49	11.924		
5,342.2	5,245.9	5,378.7	5,245.9	19.3	21.8	83.50	-556.2	950.0	459.0	420.4	38.56	11.901		
5,400.0	5,303.7	5,436.6	5,303.7	19.3	21.8	179.36	-556.2	950.0	459.0	420.3	38.66	11.872		
5,500.0	5,403.7	5,536.6	5,403.7	19.4	21.9	179.36	-556.2	950.0	459.0	420.1	38.83	11.820		
5,600.0	5,503.7	5,636.6	5,503.7	19.5	22.0	179.36	-556.2	950.0	459.0	420.0	39.00	11.767		
5,700.0	5,603.7	5,736.6	5,603.7	19.6	22.0	179.36	-556.2	950.0	459.0	419.8	39.18	11.714		
5,800.0	5,703.7	5,836.6	5,703.7	19.7	22.1	179.36	-556.2	950.0	459.0	419.6	39.36	11.661		
5,900.0	5,803.7	5,936.6	5,803.7	19.8	22.2	179.36	-556.2	950.0	459.0	419.4	39.54	11.608		
6,000.0	5,903.7	6,036.6	5,903.7	19.8	22.3	179.36	-556.2	950.0	459.0	419.2	39.72	11.555		
6,100.0	6,003.7	6,136.6	6,003.7	19.9	22.4	179.36	-556.2	950.0	459.0	419.1	39.91	11.501		
6,200.0	6,103.7	6,236.6	6,103.7	20.0	22.4	179.36	-556.2	950.0	459.0	418.9	40.09	11.447		
6,300.0	6,203.7	6,336.6	6,203.7	20.1	22.5	179.36	-556.2	950.0	459.0	418.7	40.28	11.394		
6,400.0	6,303.7	6,436.6	6,303.7	20.2	22.6	179.36	-556.2	950.0	459.0	418.5	40.47	11.340		
6,500.0	6,403.7	6,536.6	6,403.7	20.3	22.7	179.36	-556.2	950.0	459.0	418.3	40.67	11.286		
6,600.0	6,503.7	6,636.6	6,503.7	20.4	22.8	179.36	-556.2	950.0	459.0	418.1	40.86	11.232		
6,700.0	6,603.7	6,736.6	6,603.7	20.5	22.9	179.36	-556.2	950.0	459.0	417.9	41.06	11.178		
6,800.0	6,703.7	6,836.6	6,703.7	20.6	23.0	179.36	-556.2	950.0	459.0	417.7	41.26	11.123		
6,900.0	6,803.7	6,936.6	6,803.7	20.7	23.1	179.36	-556.2	950.0	459.0	417.5	41.46	11.069		
7,000.0	6,903.7	7,036.6	6,903.7	20.8	23.2	179.36	-556.2	950.0	459.0	417.3	41.67	11.015		
7,100.0	7,003.7	7,136.6	7,003.7	20.9	23.2	179.36	-556.2	950.0	459.0	417.1	41.87	10.961		
7,200.0	7,103.7	7,236.6	7,103.7	21.0	23.3	179.36	-556.2	950.0	459.0	416.9	42.08	10.907		
7,300.0	7,203.7	7,336.6	7,203.7	21.1	23.4	179.36	-556.2	950.0	459.0	416.7	42.29	10.853		
7,400.0	7,303.7	7,436.6	7,303.7	21.2	23.5	179.36	-556.2	950.0	459.0	416.5	42.50	10.799		
7,500.0	7,403.7	7,536.6	7,403.7	21.3	23.6	179.36	-556.2	950.0	459.0	416.3	42.71	10.746		
7,600.0	7,503.7	7,636.6	7,503.7	21.4	23.7	179.36	-556.2	950.0	459.0	416.0	42.93	10.692		
7,636.2	7,539.9	7,672.8	7,539.9	21.5	23.8	179.36	-556.2	950.0	459.0	416.0	43.00	10.672 SF		
7,700.0	7,603.7	7,688.9	7,556.0	21.6	23.8	179.36	-556.2	950.0	461.4	418.3	43.09	10.708		
7,800.0	7,703.7	7,688.9	7,556.0	21.7	23.8	179.36	-556.2	950.0	482.1	438.9	43.20	11.160		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 30-1B - OH - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-143.76	-26.6	-19.5	33.0					
100.0	100.0	100.0	100.0	0.1	0.1	-143.76	-26.6	-19.5	33.0	32.7	124.284			
200.0	200.0	200.0	200.0	0.3	0.3	-143.76	-26.6	-19.5	33.0	32.4	0.61	53.668 CC		
228.7	228.7	228.7	228.7	0.4	0.4	120.52	-26.6	-19.5	33.0	32.3	0.71	46.214 ES		
300.0	300.0	300.0	300.0	0.5	0.5	121.33	-26.6	-19.5	33.3	32.3	0.96	34.560		
400.0	399.8	399.8	399.8	0.7	0.7	126.01	-27.6	-18.4	36.3	35.0	1.33	27.368		
500.0	499.3	499.7	499.4	0.9	0.9	128.47	-32.0	-13.6	42.6	40.8	1.74	24.485		
600.0	598.0	599.3	598.4	1.2	1.1	128.86	-39.9	-5.0	52.0	49.7	2.25	23.134		
700.0	696.0	698.7	696.3	1.6	1.4	127.68	-51.3	7.3	64.0	61.1	2.87	22.283		
800.0	793.8	797.7	792.9	2.0	1.8	123.50	-66.0	23.3	76.5	72.9	3.63	21.065		
900.0	891.6	896.0	887.5	2.4	2.3	117.28	-84.0	42.8	90.0	85.5	4.52	19.920		
1,000.0	989.4	994.0	980.9	2.8	2.8	110.78	-104.3	64.8	105.1	99.7	5.43	19.364		
1,100.0	1,087.2	1,092.2	1,074.4	3.2	3.4	105.86	-124.7	87.0	121.3	115.0	6.32	19.196 SF		
1,200.0	1,185.0	1,190.4	1,167.8	3.6	3.9	102.12	-145.1	109.1	138.2	131.0	7.19	19.218		
1,300.0	1,282.8	1,288.6	1,261.3	4.0	4.5	99.19	-165.5	131.3	155.5	147.5	8.05	19.331		
1,400.0	1,380.6	1,386.9	1,354.8	4.4	5.0	96.86	-185.9	153.4	173.2	164.3	8.89	19.485		
1,500.0	1,478.4	1,485.1	1,448.3	4.8	5.6	94.95	-206.3	175.5	191.0	181.3	9.72	19.655		
1,600.0	1,576.3	1,583.3	1,541.8	5.2	6.2	93.37	-226.7	197.7	209.1	198.5	10.54	19.828		
1,700.0	1,674.1	1,681.5	1,635.2	5.6	6.7	92.05	-247.1	219.8	227.2	215.9	11.36	19.997		
1,800.0	1,771.9	1,779.7	1,728.7	6.0	7.3	90.91	-267.5	242.0	245.5	233.3	12.18	20.159		
1,900.0	1,869.7	1,877.9	1,822.2	6.4	7.8	89.94	-287.9	264.1	263.8	250.8	12.99	20.311		
2,000.0	1,967.5	1,976.1	1,915.7	6.8	8.4	89.09	-308.3	286.3	282.2	268.4	13.80	20.455		
2,100.0	2,065.3	2,074.3	2,009.2	7.2	9.0	88.35	-328.7	308.4	300.7	286.1	14.60	20.590		
2,200.0	2,163.1	2,172.5	2,102.6	7.7	9.5	87.69	-349.1	330.6	319.2	303.8	15.41	20.715		
2,300.0	2,260.9	2,270.8	2,196.1	8.1	10.1	87.11	-369.5	352.7	337.7	321.5	16.21	20.833		
2,400.0	2,358.7	2,369.0	2,289.6	8.5	10.6	86.58	-389.9	374.9	356.3	339.3	17.01	20.943		
2,500.0	2,456.5	2,467.2	2,383.1	8.9	11.2	86.11	-410.3	397.0	374.9	357.1	17.81	21.045		
2,600.0	2,554.3	2,565.4	2,476.6	9.3	11.8	85.68	-430.7	419.2	393.5	374.9	18.61	21.141		
2,700.0	2,652.1	2,663.6	2,570.0	9.7	12.3	85.29	-451.1	441.3	412.2	392.8	19.41	21.231		
2,800.0	2,749.9	2,761.8	2,663.5	10.1	12.9	84.93	-471.5	463.5	430.8	410.6	20.21	21.316		
2,900.0	2,847.8	2,860.0	2,757.0	10.5	13.5	84.61	-491.9	485.6	449.5	428.5	21.01	21.395		
3,000.0	2,945.6	2,958.2	2,850.5	10.9	14.0	84.31	-512.3	507.7	468.2	446.4	21.81	21.470		
3,100.0	3,043.4	3,056.4	2,944.0	11.3	14.6	84.03	-532.7	529.9	486.9	464.3	22.60	21.540		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 30-1C - OH - Plan #2													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	-132.70	-28.4	-30.8	41.9					
100.0	100.0	100.0	100.0	0.1	0.1	-132.70	-28.4	-30.8	41.9	41.6	0.27	157.921		
200.0	200.0	200.0	200.0	0.3	0.3	-132.70	-28.4	-30.8	41.9	41.3	0.61	68.193	CC, ES	
300.0	300.0	299.5	299.4	0.5	0.5	128.67	-30.6	-29.5	42.9	41.9	0.97	44.200		
400.0	399.8	398.6	398.2	0.7	0.7	124.45	-37.3	-25.5	48.3	46.9	1.37	35.194		
500.0	499.3	497.1	495.9	0.9	1.0	120.64	-48.2	-18.9	58.4	56.6	1.86	31.452		
600.0	598.0	594.6	591.8	1.2	1.3	117.74	-63.2	-9.9	73.3	70.9	2.46	29.795		
700.0	696.0	690.9	685.5	1.6	1.8	115.62	-82.2	1.5	92.5	89.3	3.17	29.147		
800.0	793.8	785.9	776.7	2.0	2.3	112.54	-104.9	15.1	114.4	110.4	3.96	28.901	SF	
900.0	891.6	879.2	864.9	2.4	2.8	108.80	-130.9	30.7	139.1	134.3	4.78	29.083		
1,000.0	989.4	970.4	949.7	2.8	3.5	104.93	-159.9	48.0	167.0	161.3	5.62	29.709		
1,100.0	1,087.2	1,059.2	1,030.5	3.2	4.2	101.21	-191.4	67.0	198.3	191.8	6.45	30.741		
1,200.0	1,185.0	1,149.0	1,110.7	3.6	4.9	97.74	-226.1	87.8	232.9	225.6	7.26	32.091		
1,300.0	1,282.8	1,241.8	1,193.3	4.0	5.7	94.99	-262.3	109.5	268.5	260.4	8.05	33.331		
1,400.0	1,380.6	1,334.6	1,275.9	4.4	6.4	92.88	-298.5	131.2	304.5	295.6	8.84	34.442		
1,500.0	1,478.4	1,427.4	1,358.5	4.8	7.2	91.21	-334.7	152.9	340.7	331.1	9.62	35.432		
1,600.0	1,576.3	1,520.1	1,441.1	5.2	8.0	89.86	-370.9	174.6	377.2	366.8	10.39	36.313		
1,700.0	1,674.1	1,612.9	1,523.8	5.6	8.7	88.75	-407.1	196.3	413.9	402.7	11.16	37.099		
1,800.0	1,771.9	1,705.7	1,606.4	6.0	9.5	87.82	-443.3	218.1	450.6	438.7	11.92	37.802		
1,900.0	1,869.7	1,798.4	1,689.0	6.4	10.3	87.03	-479.6	239.8	487.5	474.8	12.68	38.434		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 30-2C - OH - Plan #2													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		
0.0	0.0	0.0	0.0	0.0	0.0	-143.60	-66.3	-48.9	82.4					
100.0	100.0	100.0	100.0	0.1	0.1	-143.60	-66.3	-48.9	82.4	82.1	0.27	310.440		
200.0	200.0	200.0	200.0	0.3	0.3	-143.60	-66.3	-48.9	82.4	81.7	0.61	134.054 CC, ES		
300.0	300.0	296.2	296.2	0.5	0.5	120.11	-68.7	-49.3	84.9	84.0	0.96	88.601		
400.0	399.8	391.7	391.4	0.7	0.7	120.58	-75.8	-50.5	94.3	93.0	1.32	71.360		
500.0	499.3	485.8	484.8	0.9	1.0	121.85	-87.3	-52.6	110.8	109.1	1.73	64.020		
600.0	598.0	577.8	575.3	1.2	1.3	123.33	-103.0	-55.3	134.4	132.1	2.21	60.888		
700.0	696.0	667.1	662.4	1.6	1.7	124.87	-122.3	-58.8	164.4	161.7	2.74	59.981		
800.0	793.8	754.1	746.4	2.0	2.1	125.66	-144.9	-62.8	198.6	195.3	3.31	59.969 SF		
900.0	891.6	838.7	826.8	2.4	2.6	125.66	-170.5	-67.3	236.3	232.4	3.90	60.549		
1,000.0	989.4	927.2	910.1	2.8	3.1	125.28	-200.1	-72.5	276.7	272.2	4.52	61.165		
1,100.0	1,087.2	1,018.6	996.0	3.2	3.6	124.97	-230.9	-77.9	317.3	312.1	5.16	61.489		
1,200.0	1,185.0	1,110.0	1,081.9	3.6	4.2	124.72	-261.7	-83.4	357.8	352.0	5.80	61.694		
1,300.0	1,282.8	1,201.4	1,167.7	4.0	4.8	124.53	-292.4	-88.8	398.4	391.9	6.44	61.829		
1,400.0	1,380.6	1,292.8	1,253.6	4.4	5.3	124.37	-323.2	-94.2	439.0	431.9	7.09	61.920		
1,500.0	1,478.4	1,384.2	1,339.5	4.8	5.9	124.23	-354.0	-99.7	479.5	471.8	7.74	61.984		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 30-3A - OH - Plan #2													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		
0.0	0.0	0.0	0.0	0.0	0.0	-138.54	-68.1	-60.2	90.9					
100.0	100.0	100.0	100.0	0.1	0.1	-138.54	-68.1	-60.2	90.9	90.6	0.27	342.573		
200.0	200.0	200.0	200.0	0.3	0.3	-138.54	-68.1	-60.2	90.9	90.3	0.61	147.929 CC, ES		
300.0	300.0	296.6	296.6	0.5	0.5	125.73	-69.2	-60.9	92.7	91.7	0.96	96.729		
400.0	399.8	391.4	391.1	0.7	0.7	127.26	-74.2	-64.1	101.9	100.6	1.31	77.785		
500.0	499.3	484.4	483.6	0.9	0.9	129.70	-82.9	-69.6	119.3	117.6	1.69	70.618		
600.0	598.0	575.6	573.7	1.2	1.2	132.25	-95.1	-77.4	144.8	142.7	2.10	68.820		
700.0	696.0	670.4	667.0	1.6	1.5	135.16	-109.2	-86.4	175.4	172.8	2.56	68.626		
800.0	793.8	765.1	760.2	2.0	1.8	137.58	-123.2	-95.4	206.8	203.7	3.02	68.562		
900.0	891.6	859.7	853.3	2.4	2.1	139.36	-137.3	-104.4	238.4	234.9	3.48	68.493		
1,000.0	989.4	954.3	946.5	2.8	2.5	140.72	-151.3	-113.3	270.2	266.3	3.95	68.430		
1,100.0	1,087.2	1,049.0	1,039.6	3.2	2.8	141.80	-165.4	-122.3	302.1	297.7	4.42	68.373		
1,200.0	1,185.0	1,143.6	1,132.8	3.6	3.1	142.68	-179.4	-131.3	334.1	329.3	4.89	68.323		
1,300.0	1,282.8	1,238.2	1,225.9	4.0	3.5	143.40	-193.5	-140.2	366.2	360.8	5.36	68.279		
1,400.0	1,380.6	1,332.9	1,319.1	4.4	3.8	144.00	-207.5	-149.2	398.3	392.5	5.84	68.241		
1,500.0	1,478.4	1,427.5	1,412.2	4.8	4.1	144.52	-221.6	-158.2	430.4	424.1	6.31	68.207		
1,600.0	1,576.3	1,522.1	1,505.4	5.2	4.5	144.96	-235.6	-167.2	462.6	455.8	6.79	68.177		
1,700.0	1,674.1	1,616.8	1,598.5	5.6	4.8	145.34	-249.7	-176.1	494.8	487.5	7.26	68.151 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 30-3B - OH - Plan #2													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		
0.0	0.0	0.0	0.0	0.0	0.0	-137.57	-55.0	-50.3	74.5					
100.0	100.0	100.0	100.0	0.1	0.1	-137.57	-55.0	-50.3	74.5	74.3	0.27	280.898		
200.0	200.0	200.0	200.0	0.3	0.3	-137.57	-55.0	-50.3	74.5	73.9	0.61	121.297	CC, ES	
300.0	300.0	296.2	296.1	0.5	0.5	127.17	-56.5	-52.2	77.4	76.4	0.96	80.852		
400.0	399.8	391.4	391.1	0.7	0.7	130.22	-61.0	-57.8	88.1	86.8	1.31	67.369		
500.0	499.3	484.4	483.3	0.9	1.0	134.42	-68.1	-66.8	107.6	105.9	1.68	64.213	SF	
600.0	598.0	574.0	571.7	1.2	1.3	138.36	-77.7	-78.9	136.0	133.9	2.06	66.020		
700.0	696.0	659.7	655.3	1.6	1.6	141.71	-89.2	-93.4	172.6	170.2	2.45	70.422		
800.0	793.8	742.1	734.8	2.0	2.0	144.04	-102.5	-110.2	214.2	211.4	2.85	75.289		
900.0	891.6	821.3	810.4	2.4	2.5	145.43	-117.2	-128.8	259.8	256.6	3.24	80.155		
1,000.0	989.4	900.0	884.4	2.8	3.0	146.29	-133.8	-149.7	309.0	305.3	3.64	84.806		
1,100.0	1,087.2	973.3	952.4	3.2	3.5	146.78	-150.9	-171.2	361.3	357.3	4.04	89.352		
1,200.0	1,185.0	1,057.9	1,030.5	3.6	4.1	147.17	-171.0	-196.6	414.6	410.1	4.47	92.738		
1,300.0	1,282.8	1,142.5	1,108.7	4.0	4.7	147.48	-191.2	-222.0	467.8	462.9	4.90	95.488		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 30-4A - OH - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					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)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-125.54	-14.9	-20.9	25.7					
100.0	100.0	100.0	100.0	0.1	0.1	-125.54	-14.9	-20.9	25.7	25.4	0.27	96.837		
200.0	200.0	200.0	200.0	0.3	0.3	-125.54	-14.9	-20.9	25.7	25.1	0.61	41.816 CC		
200.0	200.0	200.0	200.0	0.3	0.3	-125.54	-14.9	-20.9	25.7	25.1	0.61	41.809 ES		
300.0	300.0	299.0	299.0	0.5	0.5	140.28	-15.4	-22.3	27.6	26.6	0.96	28.680 SF		
400.0	399.8	396.7	396.4	0.7	0.7	147.48	-17.5	-28.2	38.1	36.8	1.31	29.095		
500.0	499.3	492.0	491.1	0.9	0.9	153.98	-21.0	-38.5	58.7	57.0	1.66	35.392		
600.0	598.0	583.6	581.5	1.2	1.2	158.01	-25.9	-52.6	89.0	87.0	2.00	44.528		
700.0	696.0	670.6	666.6	1.6	1.6	160.46	-31.9	-69.8	128.0	125.6	2.34	54.759		
800.0	793.8	754.0	747.3	2.0	2.0	161.76	-38.8	-89.7	171.7	169.0	2.68	64.107		
900.0	891.6	833.9	823.6	2.4	2.5	162.38	-46.5	-111.8	219.2	216.2	3.02	72.663		
1,000.0	989.4	910.2	895.6	2.8	2.9	162.66	-54.8	-135.8	270.3	266.9	3.35	80.625		
1,100.0	1,087.2	983.0	963.2	3.2	3.5	162.75	-63.6	-161.1	324.6	320.9	3.69	88.086		
1,200.0	1,185.0	1,052.2	1,026.6	3.6	4.0	162.75	-72.8	-187.5	382.0	378.0	4.01	95.187		
1,300.0	1,282.8	1,131.1	1,098.0	4.0	4.6	162.70	-83.8	-219.1	441.2	436.8	4.36	101.184		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 30-7A - OH - Plan #2													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	-143.76	-53.2	-39.0	65.9					
100.0	100.0	100.0	100.0	0.1	0.1	-143.76	-53.2	-39.0	65.9	65.7	0.27	248.542		
200.0	200.0	200.0	200.0	0.3	0.3	-143.76	-53.2	-39.0	65.9	65.3	0.61	107.325 CC		
227.8	227.8	227.8	227.8	0.4	0.4	120.44	-53.2	-39.0	66.0	65.3	0.71	92.751 ES		
300.0	300.0	298.9	298.9	0.5	0.5	120.42	-53.8	-38.8	66.7	65.7	0.96	69.314		
400.0	399.8	396.4	396.2	0.7	0.7	120.78	-58.6	-37.8	72.7	71.4	1.33	54.648		
500.0	499.3	493.1	492.4	0.9	0.9	121.30	-68.3	-35.6	84.7	82.9	1.76	48.144		
600.0	598.0	588.5	586.7	1.2	1.2	121.79	-82.4	-32.5	102.6	100.3	2.28	45.028		
700.0	696.0	682.3	678.6	1.6	1.6	122.19	-100.7	-28.4	125.9	123.0	2.88	43.654		
800.0	793.8	774.5	767.9	2.0	2.0	121.49	-123.0	-23.4	152.4	148.9	3.55	42.925		
900.0	891.6	864.9	854.3	2.4	2.5	119.89	-148.9	-17.6	182.0	177.7	4.27	42.660 SF		
1,000.0	989.4	953.1	937.3	2.8	3.0	117.86	-178.1	-11.1	214.6	209.5	5.01	42.828		
1,100.0	1,087.2	1,038.8	1,016.6	3.2	3.6	115.69	-209.9	-4.0	250.3	244.6	5.77	43.389		
1,200.0	1,185.0	1,121.9	1,091.9	3.6	4.3	113.52	-244.1	3.6	289.4	282.8	6.53	44.296		
1,300.0	1,282.8	1,200.0	1,161.3	4.0	4.9	111.49	-279.1	11.4	331.6	324.4	7.28	45.566		
1,400.0	1,380.6	1,279.4	1,230.2	4.4	5.6	109.49	-317.4	20.0	377.1	369.1	8.04	46.898		
1,500.0	1,478.4	1,361.2	1,299.9	4.8	6.4	107.57	-359.3	29.4	425.2	416.4	8.79	48.357		
1,600.0	1,576.3	1,447.8	1,373.5	5.2	7.2	105.92	-403.9	39.3	473.9	464.4	9.56	49.597		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler 30-8B - OH - Plan #2													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	-143.50	-39.7	-29.4	49.4					
100.0	100.0	100.0	100.0	0.1	0.1	-143.50	-39.7	-29.4	49.4	49.1	0.27	186.169		
200.0	200.0	200.0	200.0	0.3	0.3	-143.50	-39.7	-29.4	49.4	48.8	0.61	80.391	CC, ES	
300.0	300.0	298.8	298.7	0.5	0.5	118.64	-42.0	-28.2	50.9	49.9	0.97	52.576		
400.0	399.8	397.2	396.8	0.7	0.7	116.28	-48.8	-24.8	57.1	55.8	1.36	41.944		
500.0	499.3	494.9	493.7	0.9	1.0	114.59	-59.9	-19.0	68.3	66.5	1.84	37.186		
600.0	598.0	591.5	588.8	1.2	1.3	113.53	-75.3	-11.2	84.4	82.0	2.43	34.796		
700.0	696.0	686.8	681.6	1.6	1.7	112.88	-94.7	-1.3	105.0	101.8	3.12	33.664		
800.0	793.8	780.8	771.8	2.0	2.2	111.12	-117.7	10.5	128.4	124.6	3.87	33.161	SF	
900.0	891.6	873.0	859.1	2.4	2.8	108.51	-144.2	24.0	154.8	150.2	4.67	33.175		
1,000.0	989.4	963.1	942.9	2.8	3.4	105.58	-173.7	39.0	184.4	178.9	5.48	33.658		
1,100.0	1,087.2	1,050.7	1,022.9	3.2	4.1	102.64	-205.7	55.4	217.3	211.0	6.29	34.553		
1,200.0	1,185.0	1,135.8	1,098.8	3.6	4.8	99.83	-239.8	72.8	253.7	246.6	7.09	35.798		
1,300.0	1,282.8	1,217.9	1,170.4	4.0	5.5	97.23	-275.6	91.1	293.6	285.7	7.86	37.331		
1,400.0	1,380.6	1,297.0	1,237.7	4.4	6.3	94.86	-312.7	110.0	336.9	328.3	8.62	39.084		
1,500.0	1,478.4	1,383.2	1,309.7	4.8	7.2	92.59	-354.8	131.5	382.6	373.2	9.37	40.812		
1,600.0	1,576.3	1,471.2	1,383.3	5.2	8.0	90.75	-397.8	153.5	428.7	418.5	10.12	42.346		
1,700.0	1,674.1	1,559.1	1,456.8	5.6	8.9	89.27	-440.8	175.4	475.1	464.2	10.86	43.727		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design O19EB Pad - Shideler Federal 19-13D - OH - Plan #2													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			
0.0	0.0	0.0	0.0	0.0	0.0	-99.18	-1.8	-11.3	11.4					
100.0	100.0	100.0	100.0	0.1	0.1	-99.18	-1.8	-11.3	11.4	11.2	0.27	43.144		
200.0	200.0	200.0	200.0	0.3	0.3	-99.18	-1.8	-11.3	11.4	10.8	0.61	18.630 CC, ES		
300.0	300.0	299.3	299.2	0.5	0.5	165.80	-2.2	-13.9	14.7	13.7	0.96	15.258 SF		
400.0	399.8	397.4	397.0	0.7	0.7	168.46	-3.2	-21.4	27.5	26.2	1.31	21.072		
500.0	499.3	492.8	491.6	0.9	1.0	170.09	-4.9	-33.5	50.4	48.8	1.64	30.699		
600.0	598.0	584.1	581.5	1.2	1.3	170.89	-7.2	-49.4	83.0	81.0	1.97	42.159		
700.0	696.0	670.6	665.9	1.6	1.7	171.34	-9.8	-68.4	124.1	121.8	2.29	54.202		
800.0	793.8	753.3	745.5	2.0	2.1	171.51	-12.9	-90.1	169.8	167.2	2.61	65.011		
900.0	891.6	832.2	820.7	2.4	2.6	171.50	-16.2	-114.0	219.2	216.2	2.93	74.858		
1,000.0	989.4	907.5	891.4	2.8	3.1	171.42	-19.8	-139.6	272.0	268.8	3.24	84.007		
1,100.0	1,087.2	979.1	957.7	3.2	3.6	171.31	-23.6	-166.5	328.1	324.5	3.54	92.611		
1,200.0	1,185.0	1,049.1	1,021.4	3.6	4.2	171.18	-27.6	-195.1	387.0	383.2	3.84	100.709		
1,300.0	1,282.8	1,129.0	1,093.8	4.0	4.8	171.05	-32.4	-228.7	447.1	442.9	4.16	107.456		

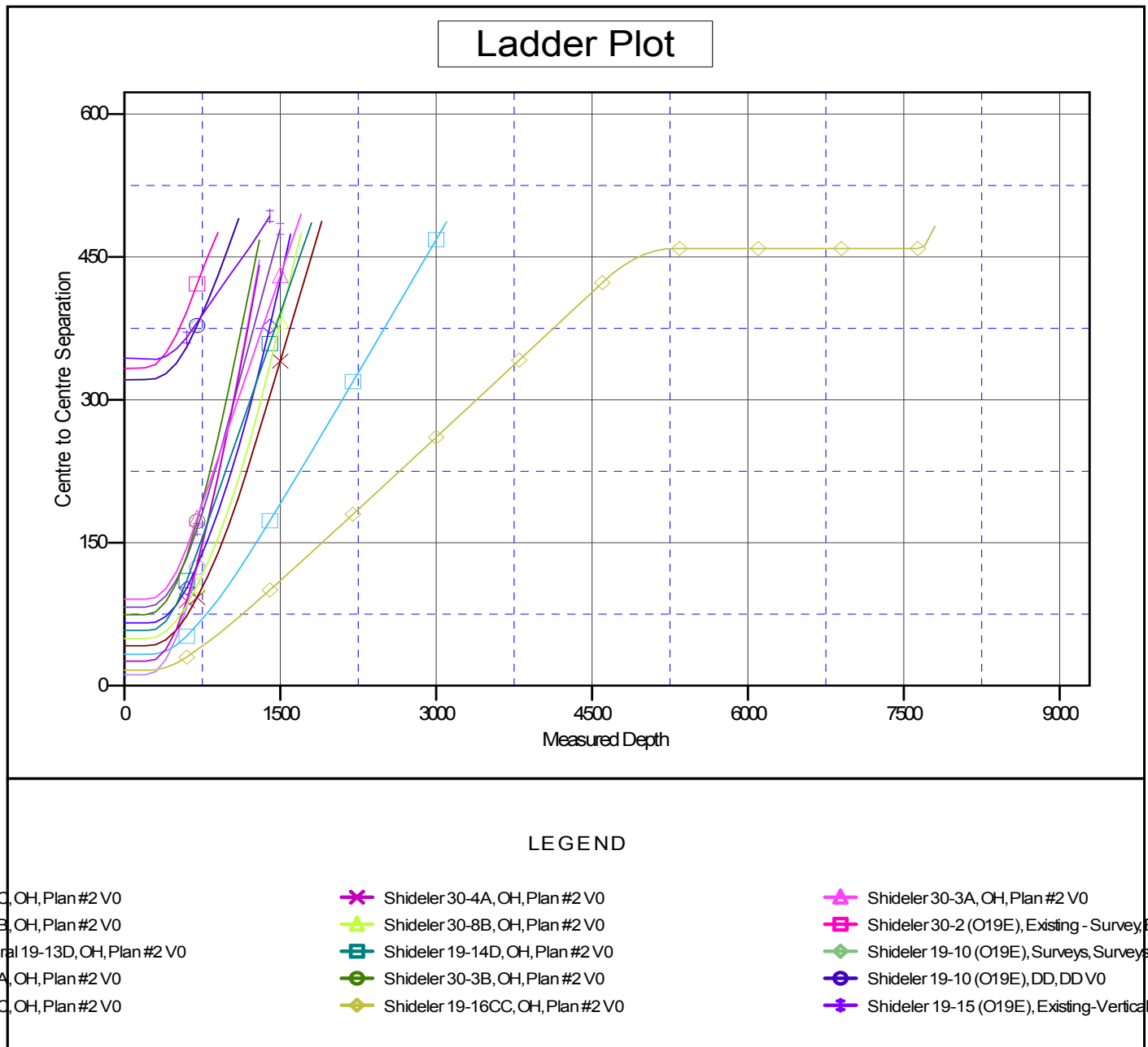
# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Shideler 19-16C
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Reference Site:</b>	O19EB Pad	<b>MD Reference:</b>	KB = 24' @ 6533.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Shideler 19-16C	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	OH	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB = 24' @ 6533.0ft (Original Well Ele  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

Coordinates are relative to: Shideler 19-16C  
Coordinate System is US State Plane 1983, Colorado Central Zone  
Grid Convergence at Surface is: -1.39°



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