

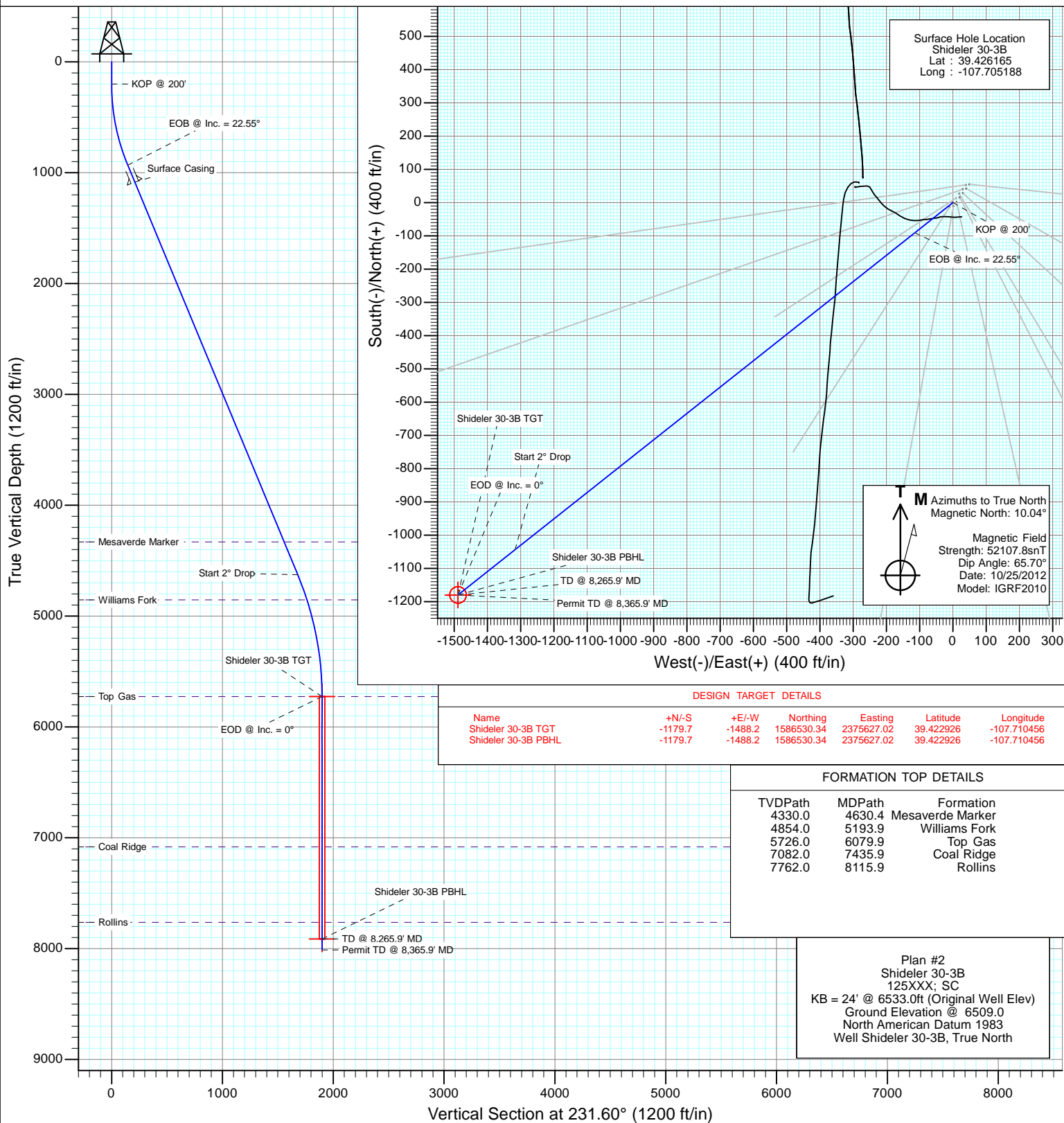


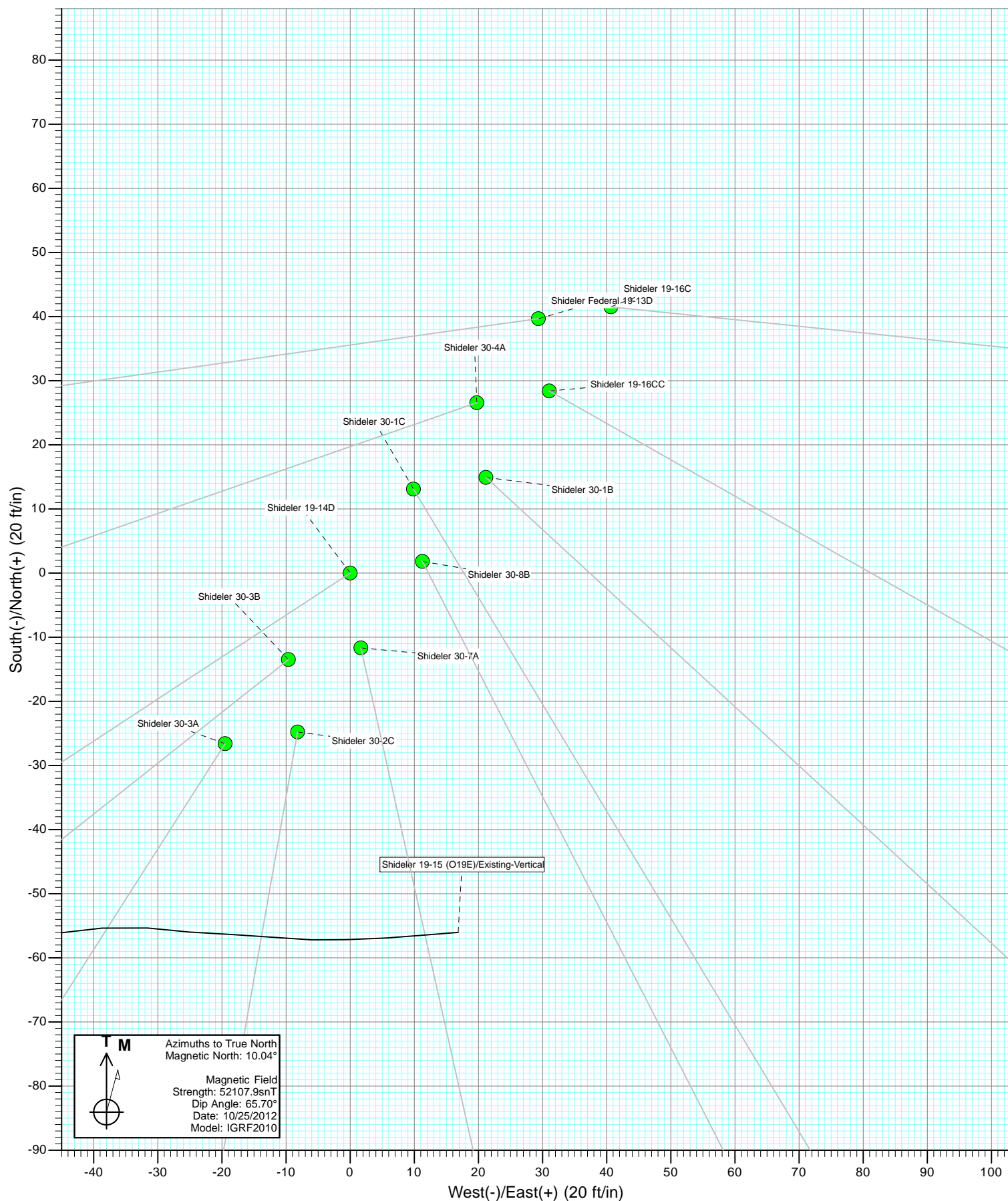
Project: Mamm Creek
Site: O19EB Pad
Well: Shideler 30-3B
Wellbore: OH
Design: Plan #2

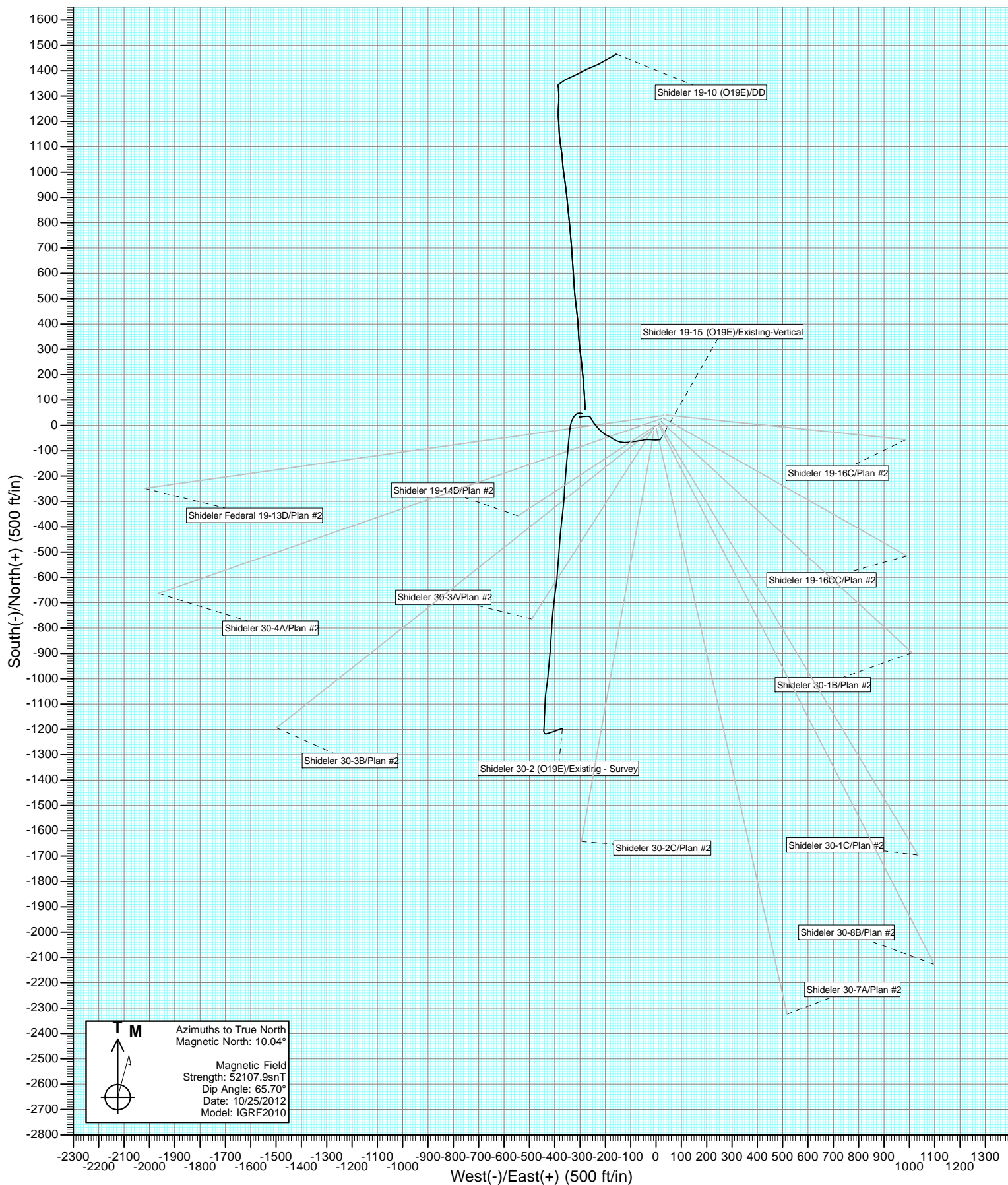


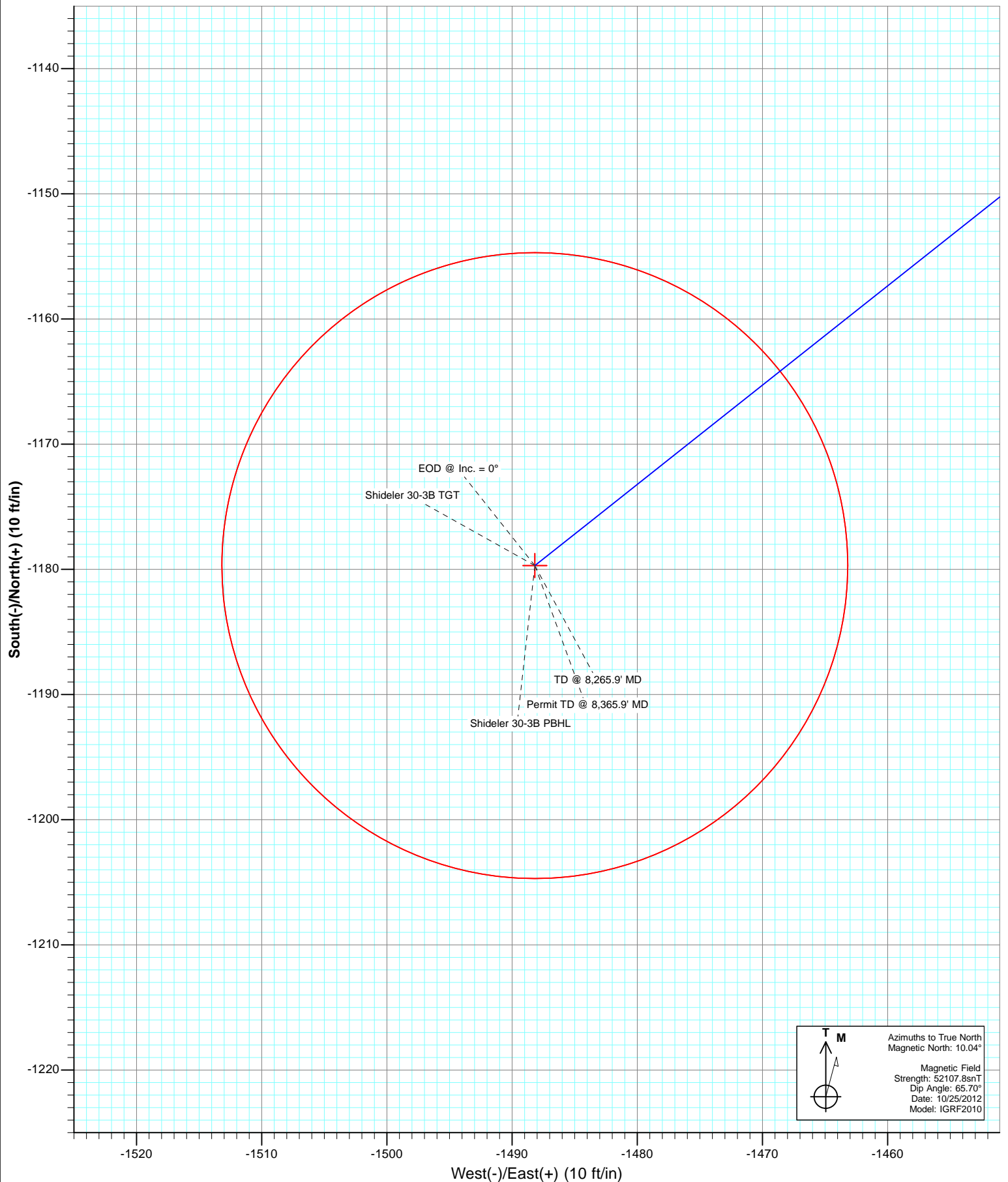
SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	951.5	22.55	231.60	932.3	-90.7	-114.4	3.00	231.60	146.0	
4	4952.6	22.55	231.60	4627.6	-1043.7	-1316.6	0.00	0.00	1680.1	
5	6079.9	0.00	0.00	5726.0	-1179.7	-1488.2	2.00	180.00	1899.0	Shideler 30-3B TGT
6	8265.9	0.00	0.00	7912.0	-1179.7	-1488.2	0.00	0.00	1899.0	Shideler 30-3B PBHL
7	8365.9	0.00	0.00	8012.0	-1179.7	-1488.2	0.00	0.00	1899.0	









Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 30-3B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site:	O19EB Pad	North Reference:	True
Well:	Shideler 30-3B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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 30-3B					
Well Position	+N/-S	0.0 ft	Northing:	1,587,673.57 ft	Latitude:	39.426165
	+E/-W	0.0 ft	Easting:	2,377,143.39 ft	Longitude:	-107.705188
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)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	231.60

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
951.5	22.55	231.60	932.3	-90.7	-114.4	3.00	3.00	0.00	231.60	
4,952.6	22.55	231.60	4,627.6	-1,043.7	-1,316.6	0.00	0.00	0.00	0.00	
6,079.9	0.00	0.00	5,726.0	-1,179.7	-1,488.2	2.00	-2.00	0.00	180.00	Shideler 30-3B TGT
8,265.9	0.00	0.00	7,912.0	-1,179.7	-1,488.2	0.00	0.00	0.00	0.00	Shideler 30-3B PBHL
8,365.9	0.00	0.00	8,012.0	-1,179.7	-1,488.2	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 30-3B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site:	O19EB Pad	North Reference:	True
Well:	Shideler 30-3B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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	KOP @ 200'
300.0	3.00	231.60	300.0	-1.6	-2.1	2.6	3.00	3.00	
400.0	6.00	231.60	399.6	-6.5	-8.2	10.5	3.00	3.00	
500.0	9.00	231.60	498.8	-14.6	-18.4	23.5	3.00	3.00	
600.0	12.00	231.60	597.1	-25.9	-32.7	41.7	3.00	3.00	
700.0	15.00	231.60	694.3	-40.4	-51.0	65.1	3.00	3.00	
800.0	18.00	231.60	790.2	-58.1	-73.3	93.5	3.00	3.00	
900.0	21.00	231.60	884.4	-78.8	-99.4	126.9	3.00	3.00	
951.5	22.55	231.60	932.3	-90.7	-114.4	146.0	3.00	3.00	EOB @ Inc. = 22.55°
1,000.0	22.55	231.60	977.1	-102.2	-128.9	164.6	0.00	0.00	
1,100.0	22.55	231.60	1,069.4	-126.0	-159.0	202.9	0.00	0.00	
1,116.9	22.55	231.60	1,085.0	-130.1	-164.1	209.4	0.00	0.00	Surface Casing
1,200.0	22.55	231.60	1,161.8	-149.9	-189.0	241.2	0.00	0.00	
1,300.0	22.55	231.60	1,254.1	-173.7	-219.1	279.6	0.00	0.00	
1,400.0	22.55	231.60	1,346.5	-197.5	-249.1	317.9	0.00	0.00	
1,500.0	22.55	231.60	1,438.8	-221.3	-279.2	356.3	0.00	0.00	
1,600.0	22.55	231.60	1,531.2	-245.1	-309.2	394.6	0.00	0.00	
1,700.0	22.55	231.60	1,623.5	-269.0	-339.3	432.9	0.00	0.00	
1,800.0	22.55	231.60	1,715.9	-292.8	-369.3	471.3	0.00	0.00	
1,900.0	22.55	231.60	1,808.3	-316.6	-399.4	509.6	0.00	0.00	
2,000.0	22.55	231.60	1,900.6	-340.4	-429.4	548.0	0.00	0.00	
2,100.0	22.55	231.60	1,993.0	-364.2	-459.5	586.3	0.00	0.00	
2,200.0	22.55	231.60	2,085.3	-388.0	-489.5	624.7	0.00	0.00	
2,300.0	22.55	231.60	2,177.7	-411.9	-519.6	663.0	0.00	0.00	
2,400.0	22.55	231.60	2,270.0	-435.7	-549.6	701.3	0.00	0.00	
2,500.0	22.55	231.60	2,362.4	-459.5	-579.7	739.7	0.00	0.00	
2,600.0	22.55	231.60	2,454.8	-483.3	-609.7	778.0	0.00	0.00	
2,700.0	22.55	231.60	2,547.1	-507.1	-639.8	816.4	0.00	0.00	
2,800.0	22.55	231.60	2,639.5	-531.0	-669.8	854.7	0.00	0.00	
2,900.0	22.55	231.60	2,731.8	-554.8	-699.8	893.1	0.00	0.00	
3,000.0	22.55	231.60	2,824.2	-578.6	-729.9	931.4	0.00	0.00	
3,100.0	22.55	231.60	2,916.5	-602.4	-759.9	969.7	0.00	0.00	
3,200.0	22.55	231.60	3,008.9	-626.2	-790.0	1,008.1	0.00	0.00	
3,300.0	22.55	231.60	3,101.3	-650.1	-820.0	1,046.4	0.00	0.00	
3,400.0	22.55	231.60	3,193.6	-673.9	-850.1	1,084.8	0.00	0.00	
3,500.0	22.55	231.60	3,286.0	-697.7	-880.1	1,123.1	0.00	0.00	
3,600.0	22.55	231.60	3,378.3	-721.5	-910.2	1,161.5	0.00	0.00	
3,700.0	22.55	231.60	3,470.7	-745.3	-940.2	1,199.8	0.00	0.00	
3,800.0	22.55	231.60	3,563.0	-769.1	-970.3	1,238.1	0.00	0.00	
3,900.0	22.55	231.60	3,655.4	-793.0	-1,000.3	1,276.5	0.00	0.00	
4,000.0	22.55	231.60	3,747.8	-816.8	-1,030.4	1,314.8	0.00	0.00	
4,100.0	22.55	231.60	3,840.1	-840.6	-1,060.4	1,353.2	0.00	0.00	
4,200.0	22.55	231.60	3,932.5	-864.4	-1,090.5	1,391.5	0.00	0.00	
4,300.0	22.55	231.60	4,024.8	-888.2	-1,120.5	1,429.9	0.00	0.00	
4,400.0	22.55	231.60	4,117.2	-912.1	-1,150.6	1,468.2	0.00	0.00	
4,500.0	22.55	231.60	4,209.5	-935.9	-1,180.6	1,506.5	0.00	0.00	
4,600.0	22.55	231.60	4,301.9	-959.7	-1,210.6	1,544.9	0.00	0.00	
4,630.4	22.55	231.60	4,330.0	-966.9	-1,219.8	1,556.6	0.00	0.00	Mesaverde Marker
4,700.0	22.55	231.60	4,394.3	-983.5	-1,240.7	1,583.2	0.00	0.00	
4,800.0	22.55	231.60	4,486.6	-1,007.3	-1,270.7	1,621.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 30-3B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site:	O19EB Pad	North Reference:	True
Well:	Shideler 30-3B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	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
4,900.0	22.55	231.60	4,579.0	-1,031.2	-1,300.8	1,659.9	0.00	0.00	
4,952.6	22.55	231.60	4,627.6	-1,043.7	-1,316.6	1,680.1	0.00	0.00	Start 2° Drop
5,000.0	21.60	231.60	4,671.5	-1,054.7	-1,330.6	1,697.9	2.00	-2.00	
5,100.0	19.60	231.60	4,765.1	-1,076.6	-1,358.1	1,733.1	2.00	-2.00	
5,193.9	17.72	231.60	4,854.0	-1,095.3	-1,381.7	1,763.1	2.00	-2.00	Williams Fork
5,200.0	17.60	231.60	4,859.9	-1,096.4	-1,383.1	1,765.0	2.00	-2.00	
5,300.0	15.60	231.60	4,955.7	-1,114.2	-1,405.5	1,793.5	2.00	-2.00	
5,400.0	13.60	231.60	5,052.5	-1,129.8	-1,425.2	1,818.7	2.00	-2.00	
5,500.0	11.60	231.60	5,150.0	-1,143.4	-1,442.3	1,840.5	2.00	-2.00	
5,600.0	9.60	231.60	5,248.3	-1,154.8	-1,456.8	1,858.9	2.00	-2.00	
5,700.0	7.60	231.60	5,347.2	-1,164.1	-1,468.5	1,873.9	2.00	-2.00	
5,800.0	5.60	231.60	5,446.5	-1,171.2	-1,477.5	1,885.4	2.00	-2.00	
5,900.0	3.60	231.60	5,546.2	-1,176.2	-1,483.8	1,893.4	2.00	-2.00	
6,000.0	1.60	231.60	5,646.1	-1,179.0	-1,487.3	1,897.9	2.00	-2.00	
6,079.9	0.00	0.00	5,726.0	-1,179.7	-1,488.2	1,899.0	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
6,100.0	0.00	0.00	5,746.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
6,200.0	0.00	0.00	5,846.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
6,300.0	0.00	0.00	5,946.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
6,400.0	0.00	0.00	6,046.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
6,500.0	0.00	0.00	6,146.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
6,600.0	0.00	0.00	6,246.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
6,700.0	0.00	0.00	6,346.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
6,800.0	0.00	0.00	6,446.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
6,900.0	0.00	0.00	6,546.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,000.0	0.00	0.00	6,646.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,100.0	0.00	0.00	6,746.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,200.0	0.00	0.00	6,846.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,300.0	0.00	0.00	6,946.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,400.0	0.00	0.00	7,046.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,435.9	0.00	0.00	7,082.0	-1,179.7	-1,488.2	1,899.0	0.00	0.00	Coal Ridge
7,500.0	0.00	0.00	7,146.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,600.0	0.00	0.00	7,246.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,700.0	0.00	0.00	7,346.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,800.0	0.00	0.00	7,446.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
7,900.0	0.00	0.00	7,546.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
8,000.0	0.00	0.00	7,646.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
8,100.0	0.00	0.00	7,746.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
8,115.9	0.00	0.00	7,762.0	-1,179.7	-1,488.2	1,899.0	0.00	0.00	Rollins
8,200.0	0.00	0.00	7,846.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
8,265.9	0.00	0.00	7,912.0	-1,179.7	-1,488.2	1,899.0	0.00	0.00	TD @ 8,265.9' MD
8,300.0	0.00	0.00	7,946.1	-1,179.7	-1,488.2	1,899.0	0.00	0.00	
8,365.9	0.00	0.00	8,012.0	-1,179.7	-1,488.2	1,899.0	0.00	0.00	Permit TD @ 8,365.9' MD

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 30-3B
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site:	O19EB Pad	North Reference:	True
Well:	Shideler 30-3B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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 30-3B TGT	0.00	0.00	5,726.0	-1,179.7	-1,488.2	1,586,530.34	2,375,627.02	39.422926	-107.710456
- plan hits target center									
- Point									
Shideler 30-3B PBHL	0.00	0.00	7,912.0	-1,179.7	-1,488.2	1,586,530.34	2,375,627.02	39.422926	-107.710456
- plan hits target center									
- Circle (radius 25.0)									

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,116.9	1,085.0	Surface Casing		

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
4,630.4	4,330.0	Mesaverde Marker			
5,193.9	4,854.0	Williams Fork			
6,079.9	5,726.0	Top Gas			
7,435.9	7,082.0	Coal Ridge			
8,115.9	7,762.0	Rollins			

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S	+E/-W	
(ft)	(ft)	(ft)	(ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
951.5	932.3	-90.7	-114.4	EOB @ Inc. = 22.55°
4,952.6	4,627.6	-1,043.7	-1,316.6	Start 2° Drop
6,079.9	5,726.0	-1,179.7	-1,488.2	EOD @ Inc. = 0°
8,265.9	7,912.0	-1,179.7	-1,488.2	TD @ 8,265.9' MD
8,365.9	8,012.0	-1,179.7	-1,488.2	Permit TD @ 8,365.9' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

O19EB Pad

Shideler 30-3B

OH

Plan #2

Anticollision Report

13 November, 2012

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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		

Survey Tool Program		Date	11/13/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	8,365.9	Plan #2 (OH)	MWD	Geolink MWD	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
O19E Pad						
Shideler 19-10 (O19E) - DD - DD	678.9	676.3	265.0	262.1	90.903	CC
Shideler 19-10 (O19E) - DD - DD	700.0	695.0	265.1	262.0	86.709	ES
Shideler 19-10 (O19E) - DD - DD	1,100.0	1,014.3	338.4	332.1	53.908	SF
Shideler 19-10 (O19E) - Surveys - Surveys	678.9	676.3	265.0	262.1	90.903	CC
Shideler 19-10 (O19E) - Surveys - Surveys	700.0	695.0	265.1	262.0	86.709	ES
Shideler 19-10 (O19E) - Surveys - Surveys	1,100.0	1,014.3	338.4	332.1	53.908	SF
Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertic	1,065.0	1,068.1	202.8	196.8	33.530	CC, ES
Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertic	1,300.0	1,290.3	223.1	215.6	29.721	SF
Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv	1,700.0	1,699.8	59.1	48.0	5.342	SF
Shideler 30-2 (O19E) - Existing - Survey - Existing - Surv	1,753.2	1,750.7	57.1	47.3	5.823	CC, ES
O19EB Pad						
(Existing Offset) Shideler 19-6D - Existing - Existing						Out of range
Shideler 19-14D - OH - Plan #2	200.0	200.0	16.5	15.9	26.937	CC, ES
Shideler 19-14D - OH - Plan #2	500.0	502.5	23.8	22.1	14.156	SF
Shideler 19-16C - OH - Plan #2	200.0	200.0	74.5	73.9	121.297	CC, ES
Shideler 19-16C - OH - Plan #2	500.0	489.8	108.3	106.6	64.742	SF
Shideler 19-16CC - OH - Plan #2	200.0	200.0	58.4	57.8	95.039	CC, ES
Shideler 19-16CC - OH - Plan #2	500.0	495.7	85.3	83.6	50.788	SF
Shideler 30-1B - OH - Plan #2	200.0	200.0	41.9	41.3	68.188	CC, ES
Shideler 30-1B - OH - Plan #2	500.0	497.7	66.7	65.0	39.869	SF
Shideler 30-1C - OH - Plan #2	200.0	200.0	33.0	32.4	53.663	CC, ES
Shideler 30-1C - OH - Plan #2	500.0	498.8	54.2	52.4	29.795	SF
Shideler 30-2C - OH - Plan #2	200.0	200.0	11.4	10.8	18.522	CC, ES
Shideler 30-2C - OH - Plan #2	400.0	398.6	16.9	15.5	12.236	SF
Shideler 30-3A - OH - Plan #2	421.1	419.5	14.5	13.1	10.347	CC, ES
Shideler 30-3A - OH - Plan #2	700.0	696.7	21.6	18.3	6.472	SF
Shideler 30-4A - OH - Plan #2	200.0	200.0	49.7	49.1	80.869	CC, ES
Shideler 30-4A - OH - Plan #2	2,700.0	2,698.7	305.2	272.7	9.376	SF
Shideler 30-7A - OH - Plan #2	200.0	200.0	11.4	10.8	18.629	CC, ES
Shideler 30-7A - OH - Plan #2	300.0	300.0	13.8	12.8	14.282	SF
Shideler 30-8B - OH - Plan #2	200.0	200.0	25.9	25.3	42.163	CC, ES
Shideler 30-8B - OH - Plan #2	400.0	399.6	36.1	34.7	26.390	SF
Shideler Federal 19-13D - OH - Plan #2	100.0	100.0	65.9	65.7	248.529	CC
Shideler Federal 19-13D - OH - Plan #2	200.0	200.0	65.9	65.3	107.319	ES
Shideler Federal 19-13D - OH - Plan #2	2,700.0	2,670.1	480.5	448.5	15.035	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19E Pad - Shideler 19-10 (O19E) - DD - DD													Offset Site Error:	0.0 ft
Survey Program: 154--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	23.9	23.9	0.0	0.0	-74.39	75.5	-270.2	280.5					
100.0	100.0	123.5	123.5	0.1	0.2	-74.36	75.6	-270.3	280.6	280.3	0.33	853.853		
200.0	200.0	223.2	223.2	0.3	0.4	-74.30	76.0	-270.4	280.9	280.2	0.67	417.526		
300.0	300.0	322.9	322.9	0.5	0.5	54.70	76.7	-270.6	279.7	278.7	1.03	272.309		
400.0	399.6	421.7	421.7	0.7	0.7	56.52	78.7	-270.4	275.8	274.3	1.41	195.496		
500.0	498.8	515.6	515.4	1.0	0.9	59.82	83.7	-270.3	270.5	268.6	1.85	146.132		
600.0	597.1	607.0	606.4	1.4	1.1	64.74	92.5	-270.7	266.3	263.9	2.39	111.318		
678.9	673.9	676.3	675.0	1.7	1.3	69.62	102.0	-271.2	265.0	262.1	2.91	90.903 CC		
700.0	694.3	695.0	693.5	1.8	1.4	71.10	105.0	-271.2	265.1	262.0	3.06	86.709 ES		
800.0	790.2	777.5	774.6	2.4	1.6	78.21	120.3	-271.9	269.8	266.0	3.83	70.458		
900.0	884.4	857.2	852.3	3.0	2.0	85.56	137.8	-273.1	283.3	278.6	4.68	60.577		
1,000.0	977.1	935.4	928.0	3.7	2.3	93.00	157.4	-274.7	306.5	301.0	5.52	55.560		
1,100.0	1,069.4	1,014.3	1,004.0	4.4	2.7	100.09	178.5	-276.5	338.4	332.1	6.28	53.908 SF		
1,200.0	1,161.8	1,093.2	1,079.7	5.1	3.1	106.20	200.5	-278.2	376.7	369.8	6.96	54.149		
1,300.0	1,254.1	1,170.9	1,154.0	5.8	3.5	111.27	223.0	-280.2	420.1	412.5	7.57	55.455		
1,400.0	1,346.5	1,248.5	1,228.1	6.5	3.9	115.51	246.2	-282.5	467.2	459.0	8.15	57.318		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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		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			
0.0	0.0	23.9	23.9	0.0	0.0	-74.39	75.5	-270.2	280.5					
100.0	100.0	123.5	123.5	0.1	0.2	-74.36	75.6	-270.3	280.6	280.3	0.33	853.853		
200.0	200.0	223.2	223.2	0.3	0.4	-74.30	76.0	-270.4	280.9	280.2	0.67	417.526		
300.0	300.0	322.9	322.9	0.5	0.5	54.70	76.7	-270.6	279.7	278.7	1.03	272.309		
400.0	399.6	421.7	421.7	0.7	0.7	56.52	78.7	-270.4	275.8	274.3	1.41	195.496		
500.0	498.8	515.6	515.4	1.0	0.9	59.82	83.7	-270.3	270.5	268.6	1.85	146.132		
600.0	597.1	607.0	606.4	1.4	1.1	64.74	92.5	-270.7	266.3	263.9	2.39	111.318		
678.9	673.9	676.3	675.0	1.7	1.3	69.62	102.0	-271.2	265.0	262.1	2.91	90.903 CC		
700.0	694.3	695.0	693.5	1.8	1.4	71.10	105.0	-271.2	265.1	262.0	3.06	86.709 ES		
800.0	790.2	777.5	774.6	2.4	1.6	78.21	120.3	-271.9	269.8	266.0	3.83	70.458		
900.0	884.4	857.2	852.3	3.0	2.0	85.56	137.8	-273.1	283.3	278.6	4.68	60.577		
1,000.0	977.1	935.4	928.0	3.7	2.3	93.00	157.4	-274.7	306.5	301.0	5.52	55.560		
1,100.0	1,069.4	1,014.3	1,004.0	4.4	2.7	100.09	178.5	-276.5	338.4	332.1	6.28	53.908 SF		
1,200.0	1,161.8	1,093.2	1,079.7	5.1	3.1	106.20	200.5	-278.2	376.7	369.8	6.96	54.149		
1,300.0	1,254.1	1,170.9	1,154.0	5.8	3.5	111.27	223.0	-280.2	420.1	412.5	7.57	55.455		
1,400.0	1,346.5	1,248.5	1,228.1	6.5	3.9	115.51	246.2	-282.5	467.2	459.0	8.15	57.318		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	Offset Datum

Offset Design		O19E Pad - Shideler 19-15 (O19E) - Existing-Vertical - Existing-Vertical										Offset Site Error:		0.0 ft
Survey Program:		100-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	24.3	24.3	0.0	0.0	-80.90	47.0	-293.5	297.2					
100.0	100.0	125.5	125.5	0.1	0.2	-80.89	47.0	-293.1	296.9	296.6	0.33	906.949		
200.0	200.0	226.6	226.6	0.3	0.4	-80.94	46.7	-292.6	296.3	295.6	0.68	436.421		
300.0	300.0	328.4	328.4	0.5	0.6	47.93	46.5	-291.3	293.3	292.2	1.03	283.395		
400.0	399.6	429.5	429.4	0.7	0.7	49.39	46.8	-289.5	286.3	284.9	1.41	202.800		
500.0	498.8	530.7	530.6	1.0	0.9	51.94	47.3	-286.9	275.6	273.8	1.83	150.192		
600.0	597.1	630.7	630.6	1.4	1.1	55.78	47.9	-283.3	261.4	259.1	2.33	112.126		
700.0	694.3	728.1	727.9	1.8	1.3	61.14	48.8	-279.1	245.1	242.2	2.93	83.593		
800.0	790.2	824.0	823.7	2.4	1.5	68.15	49.1	-274.6	228.3	224.7	3.67	62.260		
900.0	884.4	916.7	916.3	3.0	1.6	77.01	49.5	-270.1	213.7	209.1	4.54	47.033		
1,000.0	977.1	1,008.1	1,007.5	3.7	1.8	87.50	50.0	-265.4	204.5	199.0	5.48	37.335		
1,065.0	1,037.1	1,068.1	1,067.4	4.1	1.9	94.67	50.2	-262.1	202.8	196.8	6.05	33.530 CC, ES		
1,100.0	1,069.4	1,100.4	1,099.6	4.4	2.0	98.54	50.1	-260.3	203.3	197.0	6.33	32.113		
1,200.0	1,161.8	1,192.4	1,191.6	5.1	2.2	109.26	49.6	-255.0	210.1	203.1	7.02	29.936		
1,300.0	1,254.1	1,290.3	1,289.3	5.8	2.4	119.43	46.9	-250.1	223.1	215.6	7.51	29.721 SF		
1,400.0	1,346.5	1,385.8	1,384.5	6.5	2.5	127.84	41.9	-246.7	239.8	232.0	7.84	30.571		
1,500.0	1,438.8	1,477.8	1,476.4	7.2	2.7	134.78	36.5	-243.8	260.5	252.4	8.09	32.202		
1,600.0	1,531.2	1,569.2	1,567.6	8.0	2.9	140.72	31.4	-240.8	285.2	276.9	8.27	34.494		
1,700.0	1,623.5	1,661.2	1,659.4	8.7	3.1	145.81	26.6	-237.5	312.8	304.4	8.40	37.225		
1,800.0	1,715.9	1,751.9	1,749.9	9.4	3.3	150.06	21.9	-234.1	342.6	334.1	8.53	40.180		
1,900.0	1,808.3	1,843.7	1,841.5	10.1	3.4	153.73	17.6	-230.2	374.6	366.0	8.64	43.338		
2,000.0	1,900.6	1,936.9	1,934.5	10.8	3.6	156.88	12.9	-226.6	407.5	398.7	8.77	46.467		
2,100.0	1,993.0	2,027.8	2,025.2	11.5	3.8	159.48	8.5	-223.1	441.5	432.5	8.91	49.518		
2,200.0	2,085.3	2,120.2	2,117.5	12.3	4.0	161.77	4.1	-219.4	476.2	467.2	9.07	52.487		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19E Pad - Shideler 30-2 (O19E) - Existing - Survey - Existing - Survey													Offset Site Error:	0.0 ft
Survey Program: 164-MWD2													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	23.9	23.9	0.0	0.0	-77.96	60.3	-282.7	289.1					
100.0	100.0	123.4	123.4	0.1	0.2	-77.94	60.4	-282.8	289.2	288.9	0.33	877.281		
200.0	200.0	219.7	219.7	0.3	0.4	-77.90	60.7	-283.3	289.8	289.1	0.67	434.234		
300.0	300.0	309.6	309.6	0.5	0.5	50.86	61.5	-286.0	291.3	290.2	1.00	290.440		
400.0	399.6	400.3	400.1	0.7	0.7	51.84	62.6	-292.2	293.2	291.8	1.37	214.705		
500.0	498.8	501.0	500.3	1.0	0.9	53.11	60.6	-301.0	293.2	291.4	1.80	163.134		
600.0	597.1	604.5	603.1	1.4	1.2	54.27	53.0	-310.5	289.3	287.0	2.34	123.485		
700.0	694.3	712.2	709.5	1.8	1.5	55.43	39.2	-320.1	280.8	277.7	3.04	92.457		
800.0	790.2	824.4	819.5	2.4	1.9	56.91	18.9	-327.0	265.2	261.3	3.90	67.935		
900.0	884.4	928.4	920.5	3.0	2.3	58.63	-5.8	-330.5	242.6	237.7	4.91	49.451		
1,000.0	977.1	1,026.0	1,014.5	3.7	2.7	60.69	-31.7	-333.4	216.7	210.7	5.98	36.224		
1,100.0	1,069.4	1,122.7	1,107.8	4.4	3.1	63.11	-57.3	-335.9	190.3	183.2	7.09	26.836		
1,200.0	1,161.8	1,219.3	1,201.1	5.1	3.6	66.53	-82.4	-337.9	164.1	155.9	8.24	19.921		
1,300.0	1,254.1	1,314.9	1,293.2	5.8	4.0	70.95	-107.6	-340.0	138.6	129.2	9.43	14.698		
1,400.0	1,346.5	1,411.5	1,386.1	6.5	4.5	76.78	-134.1	-342.7	114.1	103.5	10.60	10.764		
1,500.0	1,438.8	1,507.6	1,478.6	7.2	5.0	85.89	-160.1	-344.8	91.1	79.5	11.63	7.834		
1,600.0	1,531.2	1,603.7	1,571.0	8.0	5.5	99.95	-186.5	-347.2	71.6	59.5	12.09	5.923		
1,700.0	1,623.5	1,699.8	1,663.3	8.7	5.9	121.43	-212.9	-349.6	59.1	48.0	11.06	5.342 SF		
1,753.2	1,672.7	1,750.7	1,712.3	9.0	6.2	135.53	-226.9	-350.6	57.1	47.3	9.81	5.823 CC, ES		
1,800.0	1,715.9	1,795.5	1,755.4	9.4	6.4	148.10	-239.1	-351.4	58.7	49.9	8.75	6.706		
1,900.0	1,808.3	1,890.2	1,846.7	10.1	6.8	170.15	-264.2	-352.6	71.7	63.8	7.89	9.080		
2,000.0	1,900.6	1,987.5	1,940.6	10.8	7.3	-175.91	-289.1	-354.4	92.3	83.3	8.93	10.337		
2,100.0	1,993.0	2,083.9	2,033.7	11.5	7.8	-167.43	-314.3	-357.4	114.9	104.3	10.63	10.803		
2,200.0	2,085.3	2,180.0	2,126.3	12.3	8.3	-161.54	-339.9	-360.0	139.2	126.8	12.34	11.279		
2,300.0	2,177.7	2,276.8	2,219.4	13.0	8.8	-157.14	-366.3	-362.6	164.4	150.4	13.96	11.774		
2,400.0	2,270.0	2,373.6	2,312.3	13.7	9.3	-153.68	-393.5	-365.4	189.9	174.4	15.49	12.257		
2,500.0	2,362.4	2,468.2	2,402.9	14.4	9.8	-151.05	-420.2	-367.9	216.0	199.1	16.87	12.801		
2,600.0	2,454.8	2,562.3	2,493.4	15.1	10.2	-149.15	-446.1	-369.8	243.2	225.1	18.13	13.413		
2,700.0	2,547.1	2,659.7	2,587.1	15.8	10.7	-147.66	-472.4	-371.6	270.8	251.5	19.35	13.999		
2,800.0	2,639.5	2,757.8	2,681.5	16.6	11.2	-146.44	-499.1	-374.2	297.9	277.4	20.52	14.514		
2,900.0	2,731.8	2,851.1	2,771.4	17.3	11.7	-145.53	-524.1	-376.6	325.1	303.5	21.60	15.053		
3,000.0	2,824.2	2,943.8	2,860.9	18.0	12.1	-144.90	-548.1	-378.1	353.3	330.7	22.61	15.624		
3,100.0	2,916.5	3,042.0	2,955.7	18.7	12.6	-144.34	-573.5	-379.6	381.7	358.1	23.66	16.136		
3,200.0	3,008.9	3,142.5	3,052.6	19.4	13.1	-143.75	-600.1	-382.0	409.3	384.6	24.74	16.545		
3,300.0	3,101.3	3,243.7	3,150.1	20.2	13.6	-143.23	-627.1	-385.6	435.8	410.0	25.82	16.881		
3,400.0	3,193.6	3,336.1	3,239.0	20.9	14.1	-142.78	-652.0	-388.9	462.2	435.3	26.84	17.218		
3,500.0	3,286.0	3,432.4	3,331.6	21.6	14.5	-142.32	-678.2	-391.9	489.1	461.1	27.91	17.522		

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 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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	35.48	13.5	9.6	16.5					
100.0	100.0	100.0	100.0	0.1	0.1	35.48	13.5	9.6	16.5	16.3	0.27	62.380		
200.0	200.0	200.0	200.0	0.3	0.3	35.48	13.5	9.6	16.5	15.9	0.61	26.937 CC, ES		
300.0	300.0	300.4	300.4	0.5	0.5	165.39	13.1	9.0	18.5	17.5	0.96	19.143		
400.0	399.6	401.4	401.2	0.7	0.7	165.89	10.2	4.6	21.1	19.8	1.32	16.004		
500.0	498.8	502.5	501.7	1.0	0.9	165.13	4.4	-4.3	23.8	22.1	1.68	14.156 SF		
600.0	597.1	602.3	600.7	1.4	1.2	165.40	-2.9	-15.4	29.1	27.0	2.05	14.183		
700.0	694.3	701.8	699.3	1.8	1.5	167.45	-10.1	-26.4	39.4	37.0	2.40	16.389		
800.0	790.2	800.5	797.2	2.4	1.7	169.67	-17.2	-37.3	54.9	52.1	2.74	19.999		
900.0	884.4	898.3	894.1	3.0	2.0	171.50	-24.3	-48.1	75.5	72.4	3.07	24.578		
1,000.0	977.1	995.1	990.1	3.7	2.3	172.90	-31.3	-58.8	100.6	97.2	3.40	29.571		
1,100.0	1,069.4	1,091.7	1,085.8	4.4	2.6	173.81	-38.3	-69.5	126.4	122.7	3.75	33.732		
1,200.0	1,161.8	1,188.3	1,181.5	5.1	2.8	174.41	-45.3	-80.2	152.3	148.2	4.10	37.184		
1,300.0	1,254.1	1,284.9	1,277.3	5.8	3.1	174.84	-52.2	-90.8	178.1	173.7	4.44	40.093		
1,400.0	1,346.5	1,381.5	1,373.0	6.5	3.4	175.16	-59.2	-101.5	204.0	199.2	4.79	42.578		
1,500.0	1,438.8	1,478.1	1,468.8	7.2	3.7	175.40	-66.2	-112.2	229.9	224.7	5.14	44.727		
1,600.0	1,531.2	1,574.7	1,564.5	8.0	4.0	175.60	-73.2	-122.9	255.7	250.3	5.49	46.602		
1,700.0	1,623.5	1,671.2	1,660.3	8.7	4.2	175.76	-80.2	-133.5	281.6	275.8	5.84	48.254		
1,800.0	1,715.9	1,767.8	1,756.0	9.4	4.5	175.89	-87.2	-144.2	307.5	301.3	6.18	49.719		
1,900.0	1,808.3	1,864.4	1,851.8	10.1	4.8	176.01	-94.2	-154.9	333.4	326.8	6.53	51.029		
2,000.0	1,900.6	1,961.0	1,947.5	10.8	5.1	176.10	-101.2	-165.6	359.2	352.4	6.88	52.205		
2,100.0	1,993.0	2,057.6	2,043.3	11.5	5.4	176.19	-108.1	-176.2	385.1	377.9	7.23	53.269		
2,200.0	2,085.3	2,154.2	2,139.0	12.3	5.6	176.26	-115.1	-186.9	411.0	403.4	7.58	54.235		
2,300.0	2,177.7	2,250.8	2,234.7	13.0	5.9	176.32	-122.1	-197.6	436.9	429.0	7.93	55.116		
2,400.0	2,270.0	2,347.4	2,330.5	13.7	6.2	176.38	-129.1	-208.3	462.8	454.5	8.28	55.923		
2,500.0	2,362.4	2,444.0	2,426.2	14.4	6.5	176.43	-136.1	-219.0	488.6	480.0	8.62	56.664		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	Offset Datum

Offset Design O19EB Pad - Shideler 19-16C - 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 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	42.43	55.0	50.3	74.5				
100.0	100.0	100.0	100.0	0.1	0.1	42.43	55.0	50.3	74.5	74.3	0.27	280.898	
200.0	200.0	200.0	200.0	0.3	0.3	42.43	55.0	50.3	74.5	73.9	0.61	121.297 CC, ES	
300.0	300.0	298.8	298.8	0.5	0.5	171.50	54.9	50.9	77.5	76.5	0.96	80.632	
400.0	399.6	395.4	395.3	0.7	0.7	174.75	54.4	55.8	88.5	87.2	1.31	67.451	
500.0	498.8	489.8	489.1	1.0	0.9	179.25	53.5	65.2	108.3	106.6	1.67	64.742 SF	
600.0	597.1	580.7	579.1	1.4	1.2	-176.42	52.1	78.7	137.2	135.1	2.04	67.216	
700.0	694.3	668.6	665.2	1.8	1.5	-172.79	50.3	95.6	174.9	172.5	2.41	72.622	
800.0	790.2	758.1	752.8	2.4	1.8	-170.20	48.4	114.2	218.8	216.0	2.78	78.569	
900.0	884.4	845.3	838.1	3.0	2.2	-168.56	46.6	132.3	267.5	264.3	3.16	84.602	
1,000.0	977.1	930.3	921.2	3.7	2.5	-167.64	44.8	149.9	320.1	316.5	3.56	89.970	
1,100.0	1,069.4	1,014.9	1,004.0	4.4	2.8	-167.14	43.0	167.4	373.3	369.3	3.98	93.782	
1,200.0	1,161.8	1,099.5	1,086.7	5.1	3.2	-166.77	41.1	184.9	426.6	422.2	4.41	96.752	
1,300.0	1,254.1	1,184.1	1,169.5	5.8	3.5	-166.48	39.3	202.4	479.8	475.0	4.84	99.119	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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		
0.0	0.0	0.0	0.0	0.0	0.0	44.16	41.9	40.7	58.4					
100.0	100.0	100.0	100.0	0.1	0.1	44.16	41.9	40.7	58.4	58.1	0.27	220.090		
200.0	200.0	200.0	200.0	0.3	0.3	44.16	41.9	40.7	58.4	57.8	0.61	95.039 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	172.87	41.9	40.7	61.0	60.0	0.96	63.346		
400.0	399.6	398.6	398.5	0.7	0.7	175.68	40.6	42.9	69.5	68.2	1.31	52.981		
500.0	498.8	495.7	495.3	1.0	0.9	-178.82	37.0	49.4	85.3	83.6	1.68	50.788 SF		
600.0	597.1	590.2	589.0	1.4	1.1	-172.96	31.1	59.8	109.0	106.9	2.08	52.498		
700.0	694.3	681.2	678.7	1.8	1.4	-167.89	23.2	73.7	140.8	138.3	2.51	56.074		
800.0	790.2	768.1	763.4	2.4	1.8	-163.81	13.8	90.4	180.7	177.7	2.99	60.491		
900.0	884.4	855.6	848.2	3.0	2.2	-160.72	3.1	109.3	227.1	223.6	3.50	64.813		
1,000.0	977.1	941.8	931.7	3.7	2.6	-159.05	-7.5	127.9	277.5	273.4	4.05	68.449		
1,100.0	1,069.4	1,027.6	1,014.8	4.4	2.9	-158.16	-18.0	146.5	328.6	323.9	4.64	70.864		
1,200.0	1,161.8	1,113.5	1,098.0	5.1	3.3	-157.50	-28.5	165.1	379.7	374.5	5.23	72.609		
1,300.0	1,254.1	1,199.4	1,181.2	5.8	3.7	-157.00	-39.0	183.6	430.9	425.0	5.83	73.915		
1,400.0	1,346.5	1,285.3	1,264.4	6.5	4.1	-156.61	-49.5	202.2	482.0	475.6	6.43	74.920		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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		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	47.31	28.4	30.8	41.9					
100.0	100.0	100.0	100.0	0.1	0.1	47.31	28.4	30.8	41.9	41.6	0.27	157.910		
200.0	200.0	200.0	200.0	0.3	0.3	47.31	28.4	30.8	41.9	41.3	0.61	68.188 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	175.96	28.4	30.8	44.5	43.5	0.96	46.231		
400.0	399.6	399.4	399.4	0.7	0.7	178.13	27.4	31.9	52.5	51.2	1.31	40.079		
500.0	498.8	497.7	497.4	1.0	0.9	-176.01	23.1	36.5	66.7	65.0	1.67	39.869 SF		
600.0	597.1	593.9	593.0	1.4	1.1	-169.49	15.6	44.7	87.9	85.8	2.08	42.342		
700.0	694.3	687.3	685.1	1.8	1.4	-163.84	5.2	56.0	116.7	114.1	2.54	45.852		
800.0	790.2	777.2	773.0	2.4	1.7	-159.33	-7.7	70.0	152.8	149.7	3.09	49.502		
900.0	884.4	863.0	856.0	3.0	2.2	-155.75	-22.6	86.2	196.0	192.3	3.70	52.903		
1,000.0	977.1	946.3	935.5	3.7	2.6	-153.15	-39.4	104.3	245.2	240.8	4.39	55.908		
1,100.0	1,069.4	1,032.4	1,017.4	4.4	3.1	-151.50	-57.2	123.8	295.6	290.5	5.12	57.717		
1,200.0	1,161.8	1,118.5	1,099.4	5.1	3.5	-150.32	-75.1	143.2	346.2	340.3	5.87	58.970		
1,300.0	1,254.1	1,204.6	1,181.3	5.8	4.0	-149.45	-93.0	162.6	396.8	390.2	6.63	59.874		
1,400.0	1,346.5	1,290.7	1,263.2	6.5	4.5	-148.77	-110.9	182.0	447.6	440.2	7.39	60.551		
1,500.0	1,438.8	1,376.8	1,345.2	7.2	5.0	-148.23	-128.8	201.4	498.3	490.1	8.16	61.076		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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									
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	36.24	26.6	19.5	33.0							
100.0	100.0	100.0	100.0	0.1	0.1	36.24	26.6	19.5	33.0	32.7	0.27	124.271				
200.0	200.0	200.0	200.0	0.3	0.3	36.24	26.6	19.5	33.0	32.4	0.61	53.663	CC, ES			
300.0	300.0	300.6	300.5	0.5	0.5	169.84	24.3	20.9	34.6	33.6	0.97	35.613				
400.0	399.6	400.4	400.0	0.7	0.7	-177.63	17.6	24.9	40.9	39.6	1.36	30.004				
500.0	498.8	498.8	497.6	1.0	1.0	-164.36	6.6	31.5	54.2	52.4	1.82	29.795	SF			
600.0	597.1	595.2	592.3	1.4	1.3	-154.29	-8.3	40.4	75.4	73.0	2.36	31.876				
700.0	694.3	688.9	683.6	1.8	1.8	-147.45	-26.8	51.5	104.0	100.9	3.01	34.560				
800.0	790.2	779.5	770.7	2.4	2.2	-142.76	-48.2	64.4	139.3	135.6	3.75	37.162				
900.0	884.4	866.6	853.2	3.0	2.8	-139.38	-72.2	78.7	181.0	176.4	4.58	39.489				
1,000.0	977.1	950.1	930.9	3.7	3.3	-137.19	-98.1	94.3	228.0	222.5	5.49	41.494				
1,100.0	1,069.4	1,030.9	1,004.9	4.4	3.9	-135.51	-126.0	111.0	277.6	271.1	6.47	42.932				
1,200.0	1,161.8	1,109.6	1,075.6	5.1	4.6	-133.79	-155.7	128.8	329.4	321.9	7.47	44.096				
1,300.0	1,254.1	1,194.1	1,150.9	5.8	5.3	-132.22	-188.7	148.6	382.2	373.7	8.52	44.883				
1,400.0	1,346.5	1,278.6	1,226.1	6.5	6.0	-131.03	-221.7	168.4	435.2	425.6	9.56	45.509				
1,500.0	1,438.8	1,363.1	1,301.4	7.2	6.7	-130.09	-254.6	188.2	488.3	477.7	10.61	46.019				

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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					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	172.87	-11.3	1.4	11.4					
100.0	100.0	100.0	100.0	0.1	0.1	172.87	-11.3	1.4	11.4	11.1	0.27	42.893		
200.0	200.0	200.0	200.0	0.3	0.3	172.87	-11.3	1.4	11.4	10.8	0.61	18.522 CC, ES		
300.0	300.0	299.4	299.4	0.5	0.5	-65.36	-13.8	1.0	12.6	11.6	0.97	12.971		
400.0	399.6	398.6	398.2	0.7	0.7	-78.77	-21.5	-0.4	16.9	15.5	1.38	12.236 SF		
500.0	498.8	497.4	496.2	1.0	1.0	-89.80	-34.0	-2.6	25.2	23.3	1.92	13.156		
600.0	597.1	595.6	592.8	1.4	1.3	-96.63	-51.5	-5.7	37.4	34.9	2.59	14.443		
700.0	694.3	693.0	687.6	1.8	1.8	-100.60	-73.6	-9.6	53.5	50.1	3.42	15.631		
800.0	790.2	789.5	780.2	2.4	2.3	-102.93	-100.2	-14.3	73.1	68.7	4.40	16.611		
900.0	884.4	885.3	870.8	3.0	2.8	-104.34	-131.0	-19.7	96.2	90.7	5.52	17.437		
1,000.0	977.1	982.0	961.6	3.7	3.4	-106.73	-163.6	-25.5	121.3	114.6	6.71	18.077		
1,100.0	1,069.4	1,078.6	1,052.4	4.4	4.0	-108.82	-196.1	-31.2	146.7	138.8	7.91	18.548		
1,200.0	1,161.8	1,175.2	1,143.2	5.1	4.6	-110.28	-228.6	-37.0	172.3	163.2	9.11	18.904		
1,300.0	1,254.1	1,271.8	1,233.9	5.8	5.2	-111.37	-261.2	-42.7	197.9	187.6	10.32	19.182		
1,400.0	1,346.5	1,368.4	1,324.7	6.5	5.8	-112.21	-293.7	-48.5	223.6	212.1	11.52	19.404		
1,500.0	1,438.8	1,465.0	1,415.5	7.2	6.4	-112.88	-326.2	-54.2	249.3	236.6	12.73	19.586		
1,600.0	1,531.2	1,561.6	1,506.2	8.0	7.0	-113.42	-358.8	-60.0	275.1	261.2	13.94	19.737		
1,700.0	1,623.5	1,658.2	1,597.0	8.7	7.6	-113.87	-391.3	-65.7	300.9	285.7	15.15	19.864		
1,800.0	1,715.9	1,754.8	1,687.8	9.4	8.2	-114.25	-423.8	-71.4	326.7	310.3	16.35	19.974		
1,900.0	1,808.3	1,851.4	1,778.6	10.1	8.8	-114.57	-456.4	-77.2	352.5	334.9	17.56	20.068		
2,000.0	1,900.6	1,948.0	1,869.3	10.8	9.4	-114.85	-488.9	-82.9	378.3	359.5	18.77	20.150		
2,100.0	1,993.0	2,044.6	1,960.1	11.5	10.0	-115.09	-521.4	-88.7	404.1	384.1	19.98	20.223		
2,200.0	2,085.3	2,141.2	2,050.9	12.3	10.6	-115.31	-554.0	-94.4	429.9	408.7	21.19	20.287		
2,300.0	2,177.7	2,237.8	2,141.6	13.0	11.2	-115.50	-586.5	-100.2	455.7	433.3	22.40	20.345		
2,400.0	2,270.0	2,334.4	2,232.4	13.7	11.8	-115.67	-619.0	-105.9	481.6	457.9	23.61	20.396		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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							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	-142.98	-13.1	-9.9	16.4					
100.0	100.0	100.0	100.0	0.1	0.1	-142.98	-13.1	-9.9	16.4	16.2	0.27	61.902		
200.0	200.0	200.0	200.0	0.3	0.3	-142.98	-13.1	-9.9	16.4	15.8	0.61	26.731		
300.0	300.0	299.4	299.4	0.5	0.5	-17.45	-14.3	-10.7	15.4	14.4	0.96	15.963		
400.0	399.6	398.6	398.3	0.7	0.7	-27.37	-19.8	-14.1	14.6	13.3	1.32	11.041		
421.1	420.6	419.5	419.2	0.8	0.7	-30.40	-21.5	-15.2	14.5	13.1	1.41	10.347	CC, ES	
500.0	498.8	497.7	496.8	1.0	0.9	-43.77	-29.5	-20.4	15.1	13.4	1.76	8.605		
600.0	597.1	597.1	594.8	1.4	1.3	-62.21	-43.3	-29.2	17.9	15.5	2.42	7.394		
700.0	694.3	696.7	692.8	1.8	1.6	-85.71	-58.1	-38.6	21.6	18.3	3.34	6.472	SF	
800.0	790.2	795.8	790.4	2.4	1.9	-110.47	-72.8	-48.0	29.2	25.1	4.17	7.002		
900.0	884.4	894.1	887.2	3.0	2.3	-129.16	-87.4	-57.3	43.0	38.4	4.67	9.214		
1,000.0	977.1	991.6	983.1	3.7	2.6	-141.10	-101.9	-66.6	62.7	57.7	4.99	12.557		
1,100.0	1,069.4	1,088.9	1,078.9	4.4	2.9	-147.60	-116.3	-75.8	84.3	79.0	5.34	15.779		
1,200.0	1,161.8	1,186.2	1,174.7	5.1	3.3	-151.44	-130.8	-85.0	106.5	100.8	5.74	18.571		
1,300.0	1,254.1	1,283.5	1,270.4	5.8	3.6	-153.94	-145.2	-94.2	129.1	122.9	6.16	20.963		
1,400.0	1,346.5	1,380.8	1,366.2	6.5	4.0	-155.70	-159.6	-103.5	151.8	145.2	6.59	23.018		
1,500.0	1,438.8	1,478.1	1,462.0	7.2	4.3	-157.00	-174.1	-112.7	174.6	167.6	7.04	24.797		
1,600.0	1,531.2	1,575.4	1,557.8	8.0	4.7	-158.01	-188.5	-121.9	197.5	190.0	7.50	26.347		
1,700.0	1,623.5	1,672.7	1,653.5	8.7	5.0	-158.80	-203.0	-131.1	220.4	212.4	7.95	27.709		
1,800.0	1,715.9	1,770.0	1,749.3	9.4	5.3	-159.44	-217.4	-140.4	243.3	234.9	8.42	28.914		
1,900.0	1,808.3	1,867.2	1,845.1	10.1	5.7	-159.98	-231.8	-149.6	266.3	257.4	8.88	29.986		
2,000.0	1,900.6	1,964.5	1,940.9	10.8	6.0	-160.42	-246.3	-158.8	289.3	280.0	9.35	30.947		
2,100.0	1,993.0	2,061.8	2,036.7	11.5	6.4	-160.81	-260.7	-168.0	312.3	302.5	9.82	31.813		
2,200.0	2,085.3	2,159.1	2,132.4	12.3	6.7	-161.14	-275.2	-177.3	335.3	325.1	10.29	32.597		
2,300.0	2,177.7	2,256.4	2,228.2	13.0	7.1	-161.42	-289.6	-186.5	358.4	347.6	10.76	33.310		
2,400.0	2,270.0	2,353.7	2,324.0	13.7	7.4	-161.68	-304.1	-195.7	381.4	370.2	11.23	33.961		
2,500.0	2,362.4	2,451.0	2,419.8	14.4	7.7	-161.90	-318.5	-204.9	404.5	392.8	11.70	34.558		
2,600.0	2,454.8	2,548.3	2,515.5	15.1	8.1	-162.10	-332.9	-214.2	427.5	415.3	12.18	35.107		
2,700.0	2,547.1	2,645.6	2,611.3	15.8	8.4	-162.28	-347.4	-223.4	450.6	437.9	12.65	35.614		
2,800.0	2,639.5	2,742.9	2,707.1	16.6	8.8	-162.44	-361.8	-232.6	473.6	460.5	13.13	36.083		
2,900.0	2,731.8	2,840.2	2,802.9	17.3	9.1	-162.59	-376.3	-241.8	496.7	483.1	13.60	36.519		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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				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	36.25	40.1	29.4	49.7					
100.0	100.0	100.0	100.0	0.1	0.1	36.25	40.1	29.4	49.7	49.4	0.27	187.275		
200.0	200.0	200.0	200.0	0.3	0.3	36.25	40.1	29.4	49.7	49.1	0.61	80.869 CC, ES		
300.0	300.0	301.7	301.6	0.5	0.5	164.46	39.6	27.9	51.0	50.0	0.97	52.687		
400.0	399.6	403.9	403.6	0.7	0.7	162.55	37.3	21.5	53.1	51.7	1.34	39.749		
500.0	498.8	506.1	505.1	1.0	1.0	159.11	33.3	9.9	56.0	54.2	1.75	32.084		
600.0	597.1	608.2	605.6	1.4	1.3	154.52	27.5	-6.8	60.0	57.7	2.25	26.677		
700.0	694.3	710.2	705.0	1.8	1.8	149.22	20.0	-28.5	65.3	62.4	2.91	22.423		
800.0	790.2	812.0	802.8	2.4	2.3	143.68	10.7	-55.2	72.2	68.4	3.80	19.012		
900.0	884.4	913.5	898.7	3.0	3.0	138.24	-0.2	-86.6	80.9	75.9	4.94	16.376		
1,000.0	977.1	1,014.8	992.5	3.7	3.7	133.00	-12.8	-122.7	91.0	84.7	6.33	14.383		
1,100.0	1,069.4	1,114.8	1,083.3	4.4	4.5	126.89	-26.5	-162.2	100.5	92.6	7.93	12.674		
1,200.0	1,161.8	1,213.8	1,172.9	5.1	5.3	121.65	-40.3	-201.9	110.9	101.3	9.57	11.585		
1,300.0	1,254.1	1,312.8	1,262.6	5.8	6.1	117.33	-54.0	-241.5	122.0	110.8	11.21	10.887		
1,400.0	1,346.5	1,411.8	1,352.2	6.5	6.9	113.74	-67.8	-281.2	133.7	120.9	12.82	10.426		
1,500.0	1,438.8	1,510.7	1,441.9	7.2	7.7	110.73	-81.6	-320.8	145.8	131.4	14.42	10.112		
1,600.0	1,531.2	1,609.7	1,531.6	8.0	8.5	108.19	-95.4	-360.4	158.3	142.3	16.00	9.895		
1,700.0	1,623.5	1,708.7	1,621.2	8.7	9.3	106.02	-109.1	-400.1	171.0	153.5	17.56	9.741		
1,800.0	1,715.9	1,807.7	1,710.9	9.4	10.1	104.16	-122.9	-439.7	183.9	164.8	19.10	9.631		
1,900.0	1,808.3	1,906.7	1,800.5	10.1	10.9	102.53	-136.7	-479.3	197.0	176.4	20.63	9.552		
2,000.0	1,900.6	2,005.7	1,890.2	10.8	11.7	101.12	-150.4	-519.0	210.3	188.1	22.15	9.496		
2,100.0	1,993.0	2,104.7	1,979.9	11.5	12.5	99.87	-164.2	-558.6	223.6	200.0	23.65	9.455		
2,200.0	2,085.3	2,203.7	2,069.5	12.3	13.3	98.76	-178.0	-598.3	237.1	211.9	25.15	9.425		
2,300.0	2,177.7	2,302.7	2,159.2	13.0	14.1	97.77	-191.7	-637.9	250.6	223.9	26.64	9.405		
2,400.0	2,270.0	2,401.7	2,248.9	13.7	14.9	96.88	-205.5	-677.5	264.2	236.0	28.13	9.391		
2,500.0	2,362.4	2,500.7	2,338.5	14.4	15.7	96.08	-219.3	-717.2	277.8	248.2	29.61	9.383		
2,600.0	2,454.8	2,599.7	2,428.2	15.1	16.5	95.35	-233.1	-756.8	291.5	260.4	31.09	9.378		
2,700.0	2,547.1	2,698.7	2,517.8	15.8	17.3	94.69	-246.8	-796.4	305.2	272.7	32.56	9.376 SF		
2,800.0	2,639.5	2,797.7	2,607.5	16.6	18.1	94.09	-260.6	-836.1	319.0	285.0	34.02	9.376		
2,900.0	2,731.8	2,896.7	2,697.2	17.3	18.9	93.53	-274.4	-875.7	332.8	297.3	35.49	9.378		
3,000.0	2,824.2	2,995.7	2,786.8	18.0	19.7	93.02	-288.1	-915.3	346.6	309.7	36.95	9.381		
3,100.0	2,916.5	3,094.6	2,876.5	18.7	20.5	92.55	-301.9	-955.0	360.5	322.1	38.41	9.385		
3,200.0	3,008.9	3,193.6	2,966.1	19.4	21.3	92.11	-315.7	-994.6	374.4	334.5	39.87	9.390		
3,300.0	3,101.3	3,292.6	3,055.8	20.2	22.1	91.71	-329.4	-1,034.3	388.3	346.9	41.32	9.396		
3,400.0	3,193.6	3,391.6	3,145.5	20.9	23.0	91.33	-343.2	-1,073.9	402.2	359.4	42.78	9.402		
3,500.0	3,286.0	3,490.6	3,235.1	21.6	23.8	90.98	-357.0	-1,113.5	416.1	371.9	44.23	9.408		
3,600.0	3,378.3	3,589.6	3,324.8	22.3	24.6	90.65	-370.8	-1,153.2	430.0	384.4	45.68	9.414		
3,700.0	3,470.7	3,688.6	3,414.4	23.0	25.4	90.34	-384.5	-1,192.8	444.0	396.9	47.13	9.421		
3,800.0	3,563.0	3,787.6	3,504.1	23.8	26.2	90.05	-398.3	-1,232.4	458.0	409.4	48.58	9.428		
3,900.0	3,655.4	3,886.6	3,593.8	24.5	27.0	89.78	-412.1	-1,272.1	472.0	421.9	50.02	9.435		
4,000.0	3,747.8	3,985.6	3,683.4	25.2	27.8	89.52	-425.8	-1,311.7	485.9	434.5	51.47	9.441		
4,100.0	3,840.1	4,084.6	3,773.1	25.9	28.6	89.28	-439.6	-1,351.3	499.9	447.0	52.91	9.448		

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 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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	80.84	1.8	11.3	11.4					
100.0	100.0	100.0	100.0	0.1	0.1	80.84	1.8	11.3	11.4	11.2	0.27	43.142		
200.0	200.0	200.0	200.0	0.3	0.3	80.84	1.8	11.3	11.4	10.8	0.61	18.629 CC, ES		
300.0	300.0	300.0	299.9	0.5	0.5	-153.33	1.2	11.4	13.8	12.8	0.97	14.282 SF		
400.0	399.6	399.6	399.5	0.7	0.7	-148.57	-3.9	12.6	20.9	19.6	1.34	15.587		
500.0	498.8	498.6	497.9	1.0	0.9	-142.24	-13.9	14.8	33.3	31.5	1.80	18.493		
600.0	597.1	596.4	594.5	1.4	1.2	-137.37	-28.8	18.1	51.0	48.6	2.37	21.544		
700.0	694.3	692.7	688.8	1.8	1.6	-133.87	-48.0	22.4	74.0	71.0	3.06	24.196		
800.0	790.2	787.1	780.1	2.4	2.0	-131.28	-71.4	27.6	102.3	98.4	3.88	26.352		
900.0	884.4	879.3	868.0	3.0	2.6	-129.23	-98.4	33.7	135.5	130.7	4.83	28.081		
1,000.0	977.1	969.1	952.2	3.7	3.1	-127.83	-128.7	40.5	173.3	167.4	5.87	29.511		
1,100.0	1,069.4	1,057.1	1,033.3	4.4	3.8	-126.29	-162.2	47.9	213.1	206.1	6.99	30.478		
1,200.0	1,161.8	1,143.1	1,110.9	5.1	4.4	-124.37	-198.3	56.0	254.9	246.7	8.17	31.201		
1,300.0	1,254.1	1,226.9	1,184.9	5.8	5.2	-122.28	-236.8	64.6	298.7	289.3	9.38	31.840		
1,400.0	1,346.5	1,308.2	1,254.9	6.5	5.9	-120.17	-277.1	73.6	344.8	334.1	10.61	32.495		
1,500.0	1,438.8	1,395.3	1,328.9	7.2	6.7	-118.14	-321.9	83.6	392.2	380.3	11.88	33.020		
1,600.0	1,531.2	1,482.6	1,403.1	8.0	7.5	-116.55	-366.8	93.6	439.9	426.7	13.13	33.492		
1,700.0	1,623.5	1,569.9	1,477.3	8.7	8.3	-115.26	-411.7	103.6	487.8	473.4	14.38	33.914		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-3B
Project:	Mamm Creek	TVD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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					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	53.80	15.3	20.9	25.9					
100.0	100.0	100.0	100.0	0.1	0.1	53.80	15.3	20.9	25.9	25.6	0.27	97.641		
200.0	200.0	200.0	200.0	0.3	0.3	53.80	15.3	20.9	25.9	25.3	0.61	42.163 CC, ES		
300.0	300.0	300.1	300.1	0.5	0.5	-172.72	13.0	22.1	28.2	27.2	0.97	29.038		
400.0	399.6	399.6	399.2	0.7	0.7	-161.78	6.0	25.6	36.1	34.7	1.37	26.390 SF		
500.0	498.8	497.7	496.5	1.0	1.0	-151.65	-5.3	31.4	50.8	48.9	1.84	27.654		
600.0	597.1	594.0	591.2	1.4	1.3	-144.53	-20.8	39.3	72.4	70.1	2.40	30.198		
700.0	694.3	687.8	682.5	1.8	1.8	-139.79	-39.9	49.1	100.8	97.7	3.07	32.870		
800.0	790.2	778.8	770.0	2.4	2.2	-136.50	-62.2	60.5	135.3	131.5	3.83	35.286		
900.0	884.4	866.6	853.1	3.0	2.8	-134.06	-87.2	73.3	175.7	171.0	4.70	37.377		
1,000.0	977.1	950.9	931.7	3.7	3.3	-132.54	-114.5	87.2	221.2	215.5	5.65	39.177		
1,100.0	1,069.4	1,032.8	1,006.7	4.4	3.9	-131.29	-143.9	102.2	269.2	262.6	6.65	40.490		
1,200.0	1,161.8	1,112.1	1,077.9	5.1	4.6	-129.84	-175.0	118.1	319.4	311.7	7.69	41.557		
1,300.0	1,254.1	1,188.8	1,145.2	5.8	5.3	-128.34	-207.6	134.7	371.8	363.0	8.75	42.485		
1,400.0	1,346.5	1,262.7	1,208.7	6.5	6.0	-126.83	-241.3	151.9	426.3	416.5	9.84	43.337		
1,500.0	1,438.8	1,337.7	1,271.7	7.2	6.7	-125.32	-277.5	170.4	483.0	472.0	10.94	44.166		

Cathedral Energy Services

Anticollision Report

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Reference Site:	O19EB Pad	MD Reference:	KB = 24' @ 6533.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	36.25	53.2	39.0	65.9					
100.0	100.0	100.0	100.0	0.1	0.1	36.25	53.2	39.0	65.9	65.7	0.27	248.529	CC	
200.0	200.0	200.0	200.0	0.3	0.3	36.25	53.2	39.0	65.9	65.3	0.61	107.319	ES	
300.0	300.0	302.4	302.4	0.5	0.5	163.56	52.8	36.3	66.6	65.6	0.97	68.445		
400.0	399.6	404.8	404.4	0.7	0.7	160.43	51.6	28.1	68.7	67.4	1.36	50.511		
500.0	498.8	506.8	505.5	1.0	1.0	155.67	49.8	14.6	72.7	70.8	1.82	39.936		
600.0	597.1	608.5	605.4	1.4	1.4	149.87	47.1	-4.1	78.9	76.5	2.41	32.730		
700.0	694.3	709.8	703.7	1.8	1.9	143.70	43.8	-28.0	87.8	84.6	3.19	27.515		
800.0	790.2	810.4	800.1	2.4	2.4	137.74	39.7	-56.8	99.7	95.5	4.19	23.763		
900.0	884.4	910.4	894.1	3.0	3.1	132.33	35.0	-90.3	114.6	109.2	5.42	21.132		
1,000.0	977.1	1,009.6	985.6	3.7	3.8	127.59	29.7	-128.4	132.2	125.3	6.84	19.325		
1,100.0	1,069.4	1,107.6	1,074.3	4.4	4.6	122.95	23.9	-169.4	150.4	142.0	8.36	17.994		
1,200.0	1,161.8	1,205.2	1,162.7	5.1	5.4	119.26	18.1	-210.5	169.4	159.5	9.88	17.145		
1,300.0	1,254.1	1,302.9	1,251.2	5.8	6.2	116.31	12.4	-251.6	188.9	177.5	11.39	16.581		
1,400.0	1,346.5	1,400.5	1,339.6	6.5	7.0	113.92	6.6	-292.7	208.8	195.9	12.90	16.190		
1,500.0	1,438.8	1,498.2	1,428.0	7.2	7.8	111.95	0.8	-333.7	229.0	214.6	14.39	15.911		
1,600.0	1,531.2	1,595.8	1,516.4	8.0	8.6	110.29	-4.9	-374.8	249.4	233.6	15.88	15.706		
1,700.0	1,623.5	1,693.5	1,604.8	8.7	9.4	108.89	-10.7	-415.9	270.0	252.7	17.36	15.553		
1,800.0	1,715.9	1,791.2	1,693.2	9.4	10.2	107.68	-16.5	-457.0	290.8	271.9	18.84	15.435		
1,900.0	1,808.3	1,888.8	1,781.6	10.1	11.0	106.64	-22.2	-498.1	311.6	291.3	20.31	15.344		
2,000.0	1,900.6	1,986.5	1,870.0	10.8	11.8	105.72	-28.0	-539.1	332.5	310.8	21.77	15.272		
2,100.0	1,993.0	2,084.1	1,958.4	11.5	12.6	104.91	-33.8	-580.2	353.5	330.3	23.24	15.215		
2,200.0	2,085.3	2,181.8	2,046.8	12.3	13.4	104.20	-39.5	-621.3	374.6	349.9	24.70	15.168		
2,300.0	2,177.7	2,279.4	2,135.2	13.0	14.2	103.56	-45.3	-662.4	395.7	369.5	26.15	15.131		
2,400.0	2,270.0	2,377.1	2,223.7	13.7	15.0	102.98	-51.1	-703.5	416.8	389.2	27.61	15.100		
2,500.0	2,362.4	2,474.8	2,312.1	14.4	15.8	102.46	-56.8	-744.5	438.0	409.0	29.06	15.074		
2,600.0	2,454.8	2,572.4	2,400.5	15.1	16.6	101.99	-62.6	-785.6	459.2	428.7	30.51	15.053		
2,700.0	2,547.1	2,670.1	2,488.9	15.8	17.4	101.56	-68.4	-826.7	480.5	448.5	31.96	15.035	SF	

Cathedral Energy Services

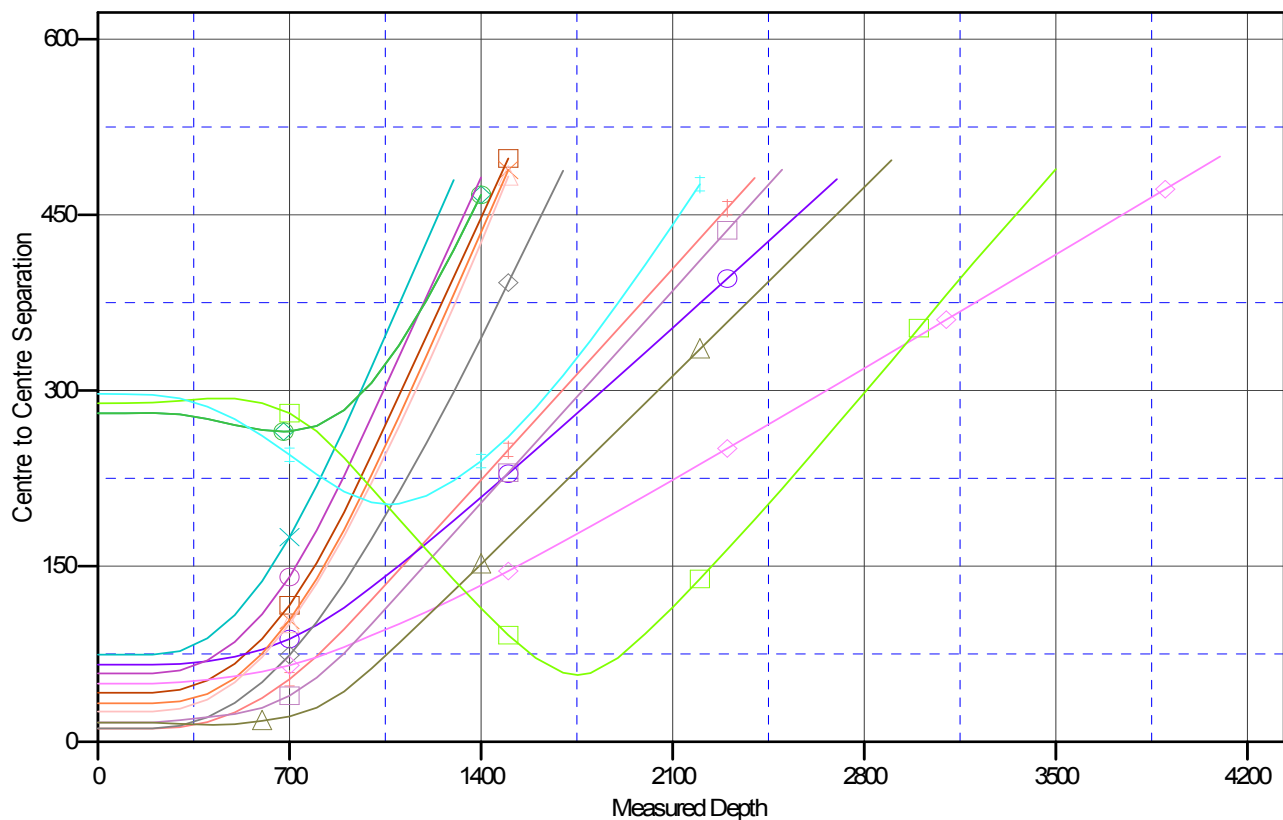
Anticollision Report

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Reference Well:	Shideler 30-3B	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 #2	Offset TVD Reference:	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 30-3B
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.39°

Ladder Plot



LEGEND

2C, OH, Plan #2 V0	Shideler 30-4A, OH, Plan #2 V0	Shideler 30-3A, OH, Plan #2 V0
1B, OH, Plan #2 V0	Shideler 19-16C, OH, Plan #2 V0	Shideler 30-2 (O19E), Existing - Survey, ES
eral 19-13D, OH, Plan #2 V0	Shideler 30-8B, OH, Plan #2 V0	Shideler 19-10 (O19E), Surveys, Surveys V
7A, OH, Plan #2 V0	Shideler 19-14D, OH, Plan #2 V0	Shideler 19-10 (O19E), DD, DD V0
1C, OH, Plan #2 V0	Shideler 19-16CC, OH, Plan #2 V0	Shideler 19-15 (O19E), Existing-Vertical, E