

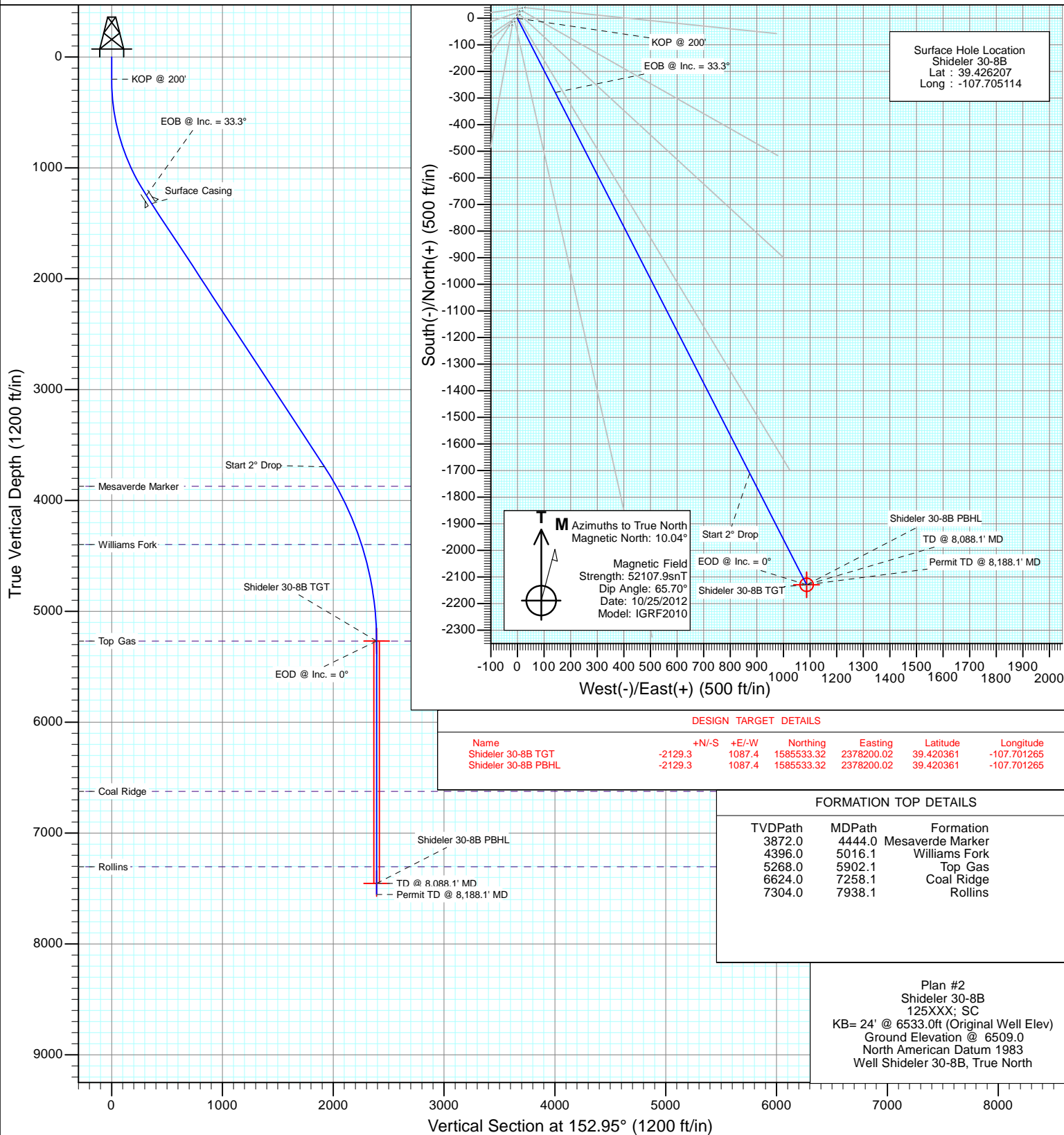


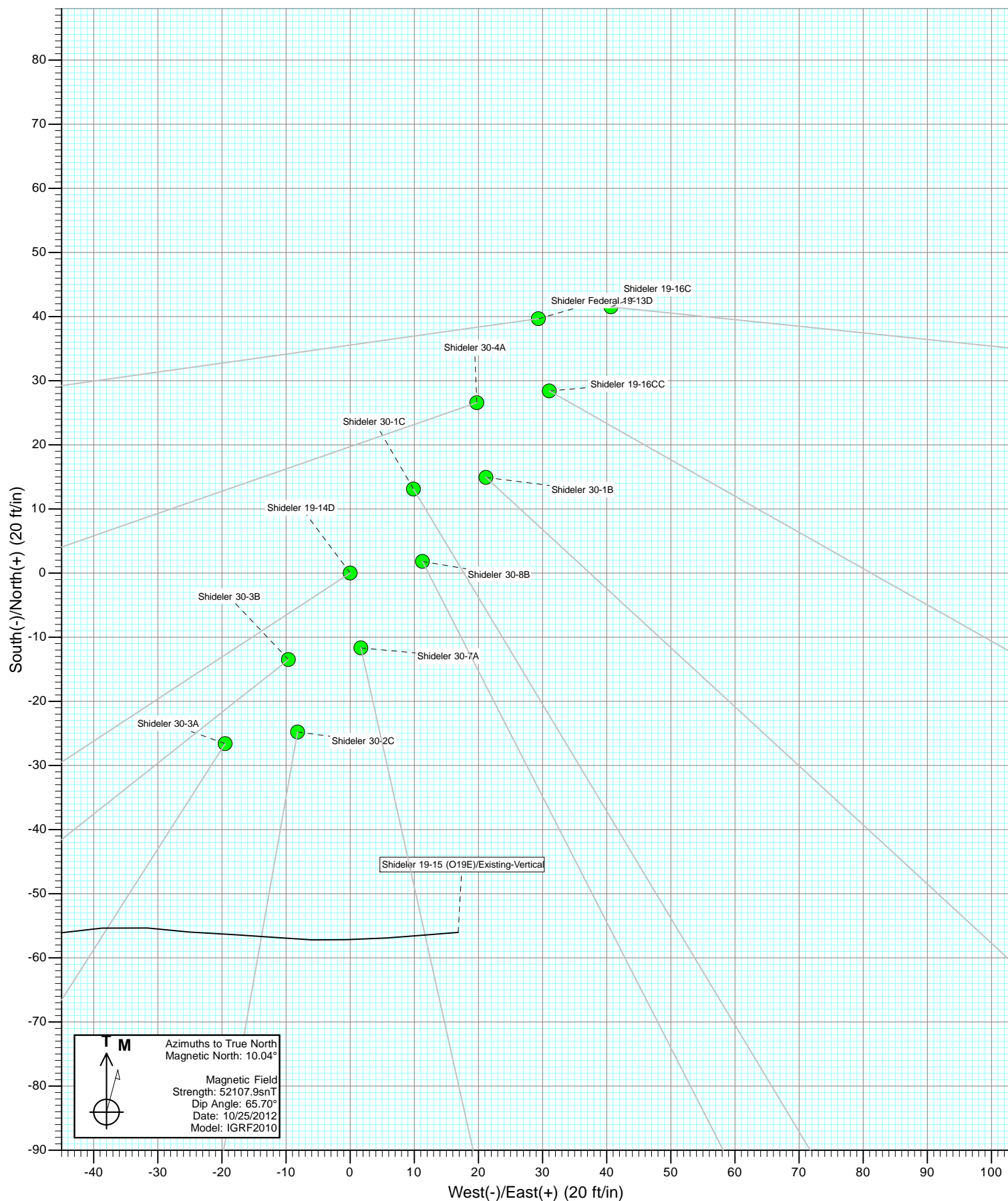
Project: Mamm Creek
 Site: O19EB Pad
 Well: Shideler 30-8B
 Wellbore: OH
 Design: Plan #2

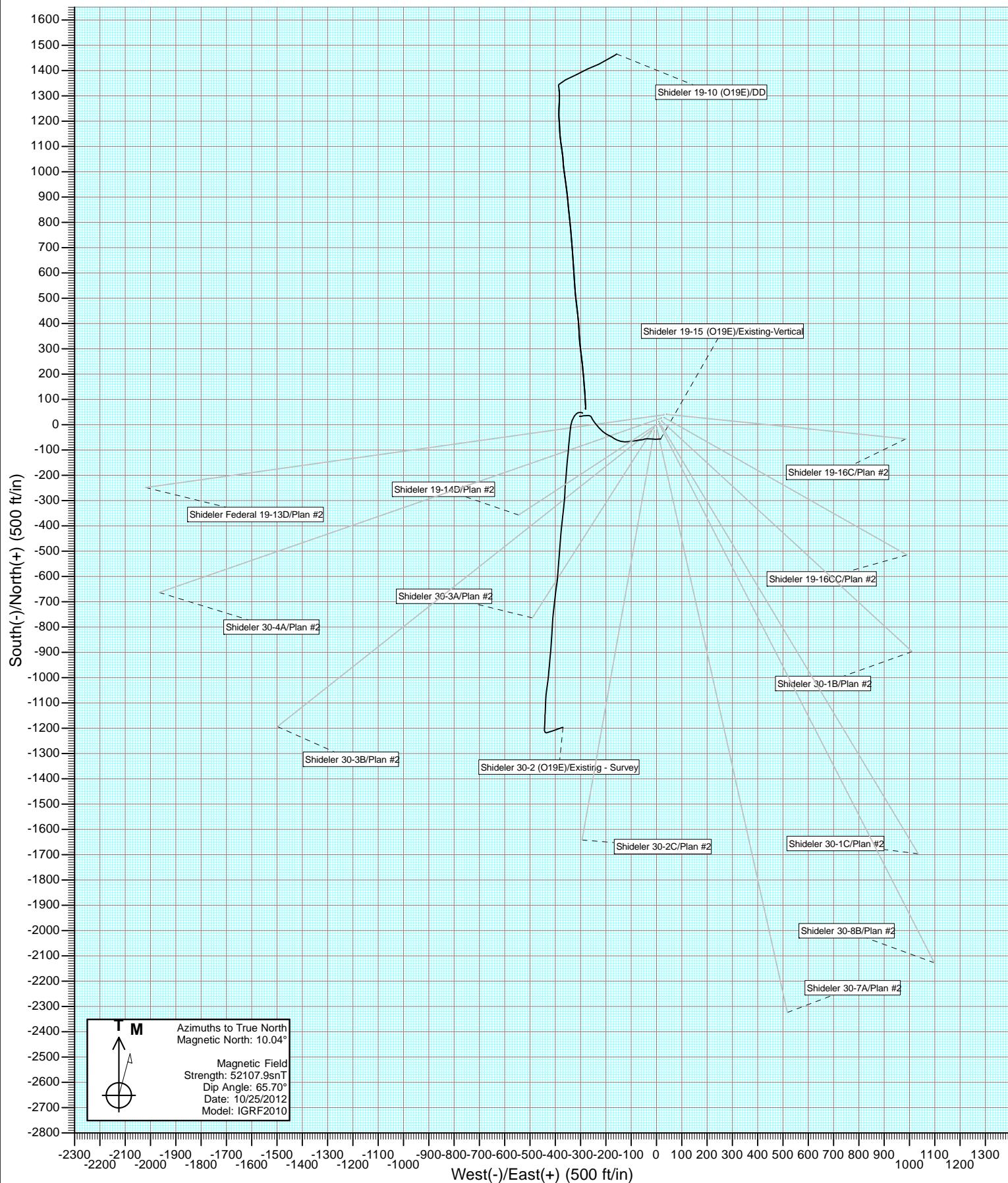


SECTION DETAILS

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	1309.9	33.30	152.95	1248.4	-279.2	142.6	3.00	152.95	313.5	
4	4237.3	33.30	152.95	3695.3	-1710.5	873.5	0.00	0.00	1920.6	
5	5902.1	0.00	0.00	5268.0	-2129.3	1087.4	2.00	180.00	2390.8	Shideler 30-8B TGT
6	8088.1	0.00	0.00	7454.0	-2129.3	1087.4	0.00	0.00	2390.8	Shideler 30-8B PBHL
7	8188.1	0.00	0.00	7554.0	-2129.3	1087.4	0.00	0.00	2390.8	

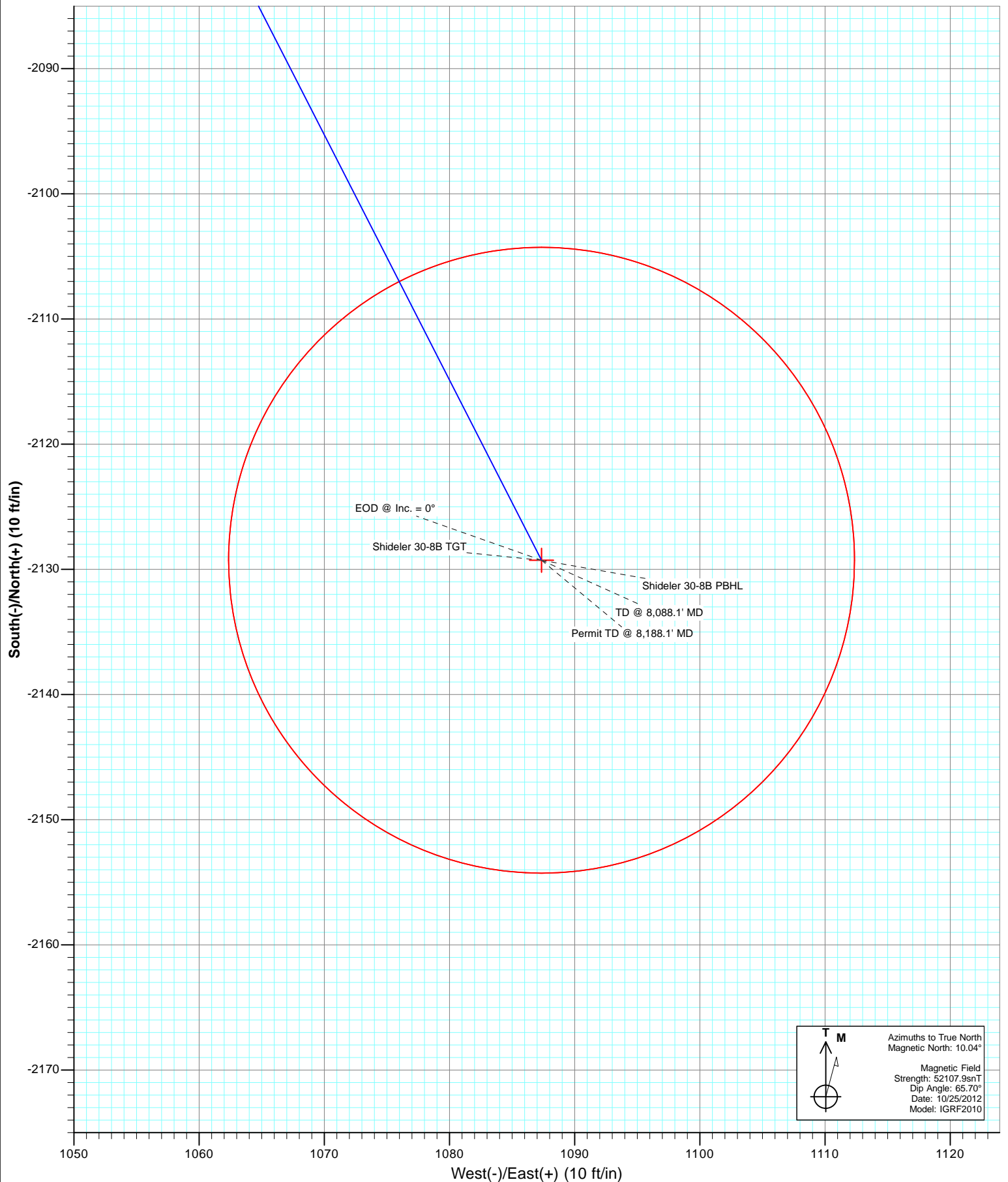








Project: Mamm Creek
Site: O19EB Pad
Well: Shideler 30-8B
Wellbore: OH
Plan: Plan #2



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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 30-8B					
Well Position	+N/-S	0.0 ft	Northing:	1,587,688.36 ft	Latitude:	39.426207
	+E/-W	0.0 ft	Easting:	2,377,164.66 ft	Longitude:	-107.705114
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	152.95

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,309.9	33.30	152.95	1,248.4	-279.2	142.6	3.00	3.00	0.00	152.95	
4,237.3	33.30	152.95	3,695.3	-1,710.5	873.5	0.00	0.00	0.00	0.00	
5,902.1	0.00	0.00	5,268.0	-2,129.3	1,087.4	2.00	-2.00	0.00	180.00	Shideler 30-8B TGT
8,088.1	0.00	0.00	7,454.0	-2,129.3	1,087.4	0.00	0.00	0.00	0.00	Shideler 30-8B PBHL
8,188.1	0.00	0.00	7,554.0	-2,129.3	1,087.4	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB= 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 30-8B	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	152.95	300.0	-2.3	1.2	2.6	3.00	3.00	
400.0	6.00	152.95	399.6	-9.3	4.8	10.5	3.00	3.00	
500.0	9.00	152.95	498.8	-20.9	10.7	23.5	3.00	3.00	
600.0	12.00	152.95	597.1	-37.2	19.0	41.7	3.00	3.00	
700.0	15.00	152.95	694.3	-58.0	29.6	65.1	3.00	3.00	
800.0	18.00	152.95	790.2	-83.2	42.5	93.5	3.00	3.00	
900.0	21.00	152.95	884.4	-113.0	57.7	126.9	3.00	3.00	
1,000.0	24.00	152.95	976.8	-147.1	75.1	165.1	3.00	3.00	
1,100.0	27.00	152.95	1,067.1	-185.4	94.7	208.2	3.00	3.00	
1,200.0	30.00	152.95	1,154.9	-227.9	116.4	255.9	3.00	3.00	
1,309.9	33.30	152.95	1,248.4	-279.2	142.6	313.5	3.00	3.00	EOB @ Inc. = 33.3°
1,397.8	33.30	152.95	1,321.9	-322.2	164.5	361.8	0.00	0.00	Surface Casing
1,400.0	33.30	152.95	1,323.8	-323.3	165.1	363.0	0.00	0.00	
1,500.0	33.30	152.95	1,407.4	-372.2	190.1	417.9	0.00	0.00	
1,600.0	33.30	152.95	1,491.0	-421.1	215.0	472.8	0.00	0.00	
1,700.0	33.30	152.95	1,574.5	-469.9	240.0	527.7	0.00	0.00	
1,800.0	33.30	152.95	1,658.1	-518.8	265.0	582.6	0.00	0.00	
1,900.0	33.30	152.95	1,741.7	-567.7	289.9	637.5	0.00	0.00	
2,000.0	33.30	152.95	1,825.3	-616.6	314.9	692.4	0.00	0.00	
2,100.0	33.30	152.95	1,908.9	-665.5	339.9	747.3	0.00	0.00	
2,200.0	33.30	152.95	1,992.5	-714.4	364.8	802.2	0.00	0.00	
2,300.0	33.30	152.95	2,076.0	-763.3	389.8	857.1	0.00	0.00	
2,400.0	33.30	152.95	2,159.6	-812.2	414.8	912.0	0.00	0.00	
2,500.0	33.30	152.95	2,243.2	-861.1	439.7	966.9	0.00	0.00	
2,600.0	33.30	152.95	2,326.8	-910.0	464.7	1,021.8	0.00	0.00	
2,700.0	33.30	152.95	2,410.4	-958.9	489.7	1,076.6	0.00	0.00	
2,800.0	33.30	152.95	2,494.0	-1,007.7	514.6	1,131.5	0.00	0.00	
2,900.0	33.30	152.95	2,577.5	-1,056.6	539.6	1,186.4	0.00	0.00	
3,000.0	33.30	152.95	2,661.1	-1,105.5	564.6	1,241.3	0.00	0.00	
3,100.0	33.30	152.95	2,744.7	-1,154.4	589.5	1,296.2	0.00	0.00	
3,200.0	33.30	152.95	2,828.3	-1,203.3	614.5	1,351.1	0.00	0.00	
3,300.0	33.30	152.95	2,911.9	-1,252.2	639.5	1,406.0	0.00	0.00	
3,400.0	33.30	152.95	2,995.5	-1,301.1	664.4	1,460.9	0.00	0.00	
3,500.0	33.30	152.95	3,079.1	-1,350.0	689.4	1,515.8	0.00	0.00	
3,600.0	33.30	152.95	3,162.6	-1,398.9	714.4	1,570.7	0.00	0.00	
3,700.0	33.30	152.95	3,246.2	-1,447.8	739.3	1,625.6	0.00	0.00	
3,800.0	33.30	152.95	3,329.8	-1,496.7	764.3	1,680.5	0.00	0.00	
3,900.0	33.30	152.95	3,413.4	-1,545.5	789.3	1,735.4	0.00	0.00	
4,000.0	33.30	152.95	3,497.0	-1,594.4	814.2	1,790.3	0.00	0.00	
4,100.0	33.30	152.95	3,580.6	-1,643.3	839.2	1,845.2	0.00	0.00	
4,200.0	33.30	152.95	3,664.1	-1,692.2	864.2	1,900.1	0.00	0.00	
4,237.3	33.30	152.95	3,695.3	-1,710.5	873.5	1,920.6	0.00	0.00	Start 2° Drop
4,300.0	32.04	152.95	3,748.1	-1,740.6	888.9	1,954.4	2.00	-2.00	
4,400.0	30.04	152.95	3,833.8	-1,786.5	912.3	2,006.0	2.00	-2.00	
4,444.0	29.16	152.95	3,872.0	-1,805.9	922.2	2,027.7	2.00	-2.00	Mesaverde Marker
4,500.0	28.04	152.95	3,921.2	-1,829.7	934.4	2,054.5	2.00	-2.00	
4,600.0	26.04	152.95	4,010.3	-1,870.2	955.1	2,100.0	2.00	-2.00	
4,700.0	24.04	152.95	4,100.9	-1,907.9	974.3	2,142.3	2.00	-2.00	
4,800.0	22.04	152.95	4,192.9	-1,942.8	992.1	2,181.5	2.00	-2.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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	20.04	152.95	4,286.2	-1,974.8	1,008.5	2,217.4	2.00	-2.00	
5,000.0	18.04	152.95	4,380.7	-2,003.8	1,023.3	2,250.0	2.00	-2.00	
5,016.1	17.72	152.95	4,396.0	-2,008.2	1,025.5	2,254.9	2.00	-2.00	Williams Fork
5,100.0	16.04	152.95	4,476.3	-2,029.9	1,036.6	2,279.3	2.00	-2.00	
5,200.0	14.04	152.95	4,572.9	-2,053.0	1,048.4	2,305.2	2.00	-2.00	
5,300.0	12.04	152.95	4,670.3	-2,073.1	1,058.7	2,327.8	2.00	-2.00	
5,400.0	10.04	152.95	4,768.5	-2,090.2	1,067.4	2,347.0	2.00	-2.00	
5,500.0	8.04	152.95	4,867.2	-2,104.2	1,074.5	2,362.7	2.00	-2.00	
5,600.0	6.04	152.95	4,966.4	-2,115.1	1,080.1	2,374.9	2.00	-2.00	
5,700.0	4.04	152.95	5,066.1	-2,122.9	1,084.1	2,383.7	2.00	-2.00	
5,800.0	2.04	152.95	5,165.9	-2,127.7	1,086.5	2,389.0	2.00	-2.00	
5,902.1	0.00	0.00	5,268.0	-2,129.3	1,087.4	2,390.8	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
6,000.0	0.00	0.00	5,365.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
6,100.0	0.00	0.00	5,465.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
6,200.0	0.00	0.00	5,565.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
6,300.0	0.00	0.00	5,665.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
6,400.0	0.00	0.00	5,765.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
6,500.0	0.00	0.00	5,865.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
6,600.0	0.00	0.00	5,965.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
6,700.0	0.00	0.00	6,065.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
6,800.0	0.00	0.00	6,165.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
6,900.0	0.00	0.00	6,265.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,000.0	0.00	0.00	6,365.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,100.0	0.00	0.00	6,465.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,200.0	0.00	0.00	6,565.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,258.1	0.00	0.00	6,624.0	-2,129.3	1,087.4	2,390.8	0.00	0.00	Coal Ridge
7,300.0	0.00	0.00	6,665.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,400.0	0.00	0.00	6,765.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,500.0	0.00	0.00	6,865.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,600.0	0.00	0.00	6,965.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,700.0	0.00	0.00	7,065.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,800.0	0.00	0.00	7,165.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,900.0	0.00	0.00	7,265.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
7,938.1	0.00	0.00	7,304.0	-2,129.3	1,087.4	2,390.8	0.00	0.00	Rollins
8,000.0	0.00	0.00	7,365.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
8,088.1	0.00	0.00	7,454.0	-2,129.3	1,087.4	2,390.8	0.00	0.00	TD @ 8,088.1' MD
8,100.0	0.00	0.00	7,465.9	-2,129.3	1,087.4	2,390.8	0.00	0.00	
8,188.1	0.00	0.00	7,554.0	-2,129.3	1,087.4	2,390.8	0.00	0.00	Permit TD @ 8,188.1' MD

Targets									
Target Name	- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	
- Shape									Latitude Longitude
Shideler 30-8B TGT	- plan hits target center	0.00	0.00	5,268.0	-2,129.3	1,087.4	1,585,533.32	2,378,200.02	39.420361 -107.701265
	- Point								
Shideler 30-8B PBHL	- plan hits target center	0.00	0.00	7,454.0	-2,129.3	1,087.4	1,585,533.32	2,378,200.02	39.420361 -107.701265
	- Circle (radius 25.0)								

Cathedral Energy Services

Planning Report

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Project:	Mamm Creek	MD Reference:	KB= 24' @ 6533.0ft (Original Well Elev)
Site:	O19EB Pad	North Reference:	True
Well:	Shideler 30-8B	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,397.8	1,321.9	Surface Casing		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,444.0	3,872.0	Mesaverde Marker			
5,016.1	4,396.0	Williams Fork			
5,902.1	5,268.0	Top Gas			
7,258.1	6,624.0	Coal Ridge			
7,938.1	7,304.0	Rollins			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
1,309.9	1,248.4	-279.2	142.6	EOB @ Inc. = 33.3°
4,237.3	3,695.3	-1,710.5	873.5	Start 2° Drop
5,902.1	5,268.0	-2,129.3	1,087.4	EOD @ Inc. = 0°
8,088.1	7,454.0	-2,129.3	1,087.4	TD @ 8,088.1' MD
8,188.1	7,554.0	-2,129.3	1,087.4	Permit TD @ 8,188.1' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

O19EB Pad

Shideler 30-8B

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 30-8B
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 30-8B	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	8,188.1	Plan #2 (OH)	MWD	Geolink MWD	

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						
O19EB Pad						
(Existing Offset) Shideler 19-6D - Existing - Existing						Out of range
Shideler 19-14D - OH - Plan #2	200.0	200.0	11.4	10.8	18.629	CC, ES
Shideler 19-14D - OH - Plan #2	300.0	299.7	13.0	12.1	13.443	SF
Shideler 19-16C - OH - Plan #2	200.0	200.0	49.4	48.8	80.391	CC, ES
Shideler 19-16C - OH - Plan #2	800.0	786.6	129.2	125.3	33.166	SF
Shideler 19-16CC - OH - Plan #2	200.0	200.0	33.1	32.5	53.936	CC, ES
Shideler 19-16CC - OH - Plan #2	900.0	896.4	103.6	98.8	21.653	SF
Shideler 30-1B - OH - Plan #2	200.0	200.0	16.4	15.8	26.725	CC, ES
Shideler 30-1B - OH - Plan #2	1,000.0	1,003.0	84.3	78.9	15.693	SF
Shideler 30-1C - OH - Plan #2	200.0	200.0	11.4	10.8	18.522	CC
Shideler 30-1C - OH - Plan #2	500.0	501.6	12.0	10.2	6.853	ES
Shideler 30-1C - OH - Plan #2	1,100.0	1,104.5	20.7	12.5	2.528	SF
Shideler 30-2C - OH - Plan #2	200.0	200.0	33.0	32.4	53.663	CC, ES
Shideler 30-2C - OH - Plan #2	1,100.0	1,074.9	149.8	141.7	18.595	SF
Shideler 30-3A - OH - Plan #2	223.2	223.2	41.9	41.2	60.082	CC, ES
Shideler 30-3A - OH - Plan #2	800.0	784.3	110.9	107.0	28.418	SF
Shideler 30-3B - OH - Plan #2	200.0	200.0	25.9	25.3	42.163	CC, ES
Shideler 30-3B - OH - Plan #2	400.0	396.5	35.9	34.5	26.294	SF
Shideler 30-4A - OH - Plan #2	200.0	200.0	26.2	25.6	42.610	CC, ES
Shideler 30-4A - OH - Plan #2	400.0	400.5	31.7	30.3	23.492	SF
Shideler 30-7A - OH - Plan #2	321.5	321.1	15.8	14.8	15.003	CC, ES
Shideler 30-7A - OH - Plan #2	4,200.0	4,169.0	488.7	422.5	7.384	SF
Shideler Federal 19-13D - OH - Plan #2	200.0	200.0	42.0	41.4	68.314	CC
Shideler Federal 19-13D - OH - Plan #2	207.8	207.9	42.0	41.3	65.323	ES
Shideler Federal 19-13D - OH - Plan #2	500.0	498.8	57.8	55.9	31.808	SF

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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 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	-99.16	-1.8	-11.3	11.4					
100.0	100.0	100.0	100.0	0.1	0.1	-99.16	-1.8	-11.3	11.4	11.2	0.27	43.142		
200.0	200.0	200.0	200.0	0.3	0.3	-99.16	-1.8	-11.3	11.4	10.8	0.61	18.629 CC, ES		
300.0	300.0	299.7	299.7	0.5	0.5	117.65	-2.2	-11.8	13.0	12.1	0.97	13.443 SF		
400.0	399.6	398.6	398.5	0.7	0.7	128.35	-5.0	-16.1	21.4	20.0	1.35	15.806		
500.0	498.8	496.4	495.7	1.0	0.9	132.62	-10.5	-24.6	36.9	35.1	1.79	20.611		
600.0	597.1	594.0	592.5	1.4	1.2	135.58	-17.6	-35.4	58.0	55.7	2.28	25.428		
700.0	694.3	690.7	688.3	1.8	1.4	139.18	-24.6	-46.0	82.9	80.1	2.80	29.632		
800.0	790.2	786.1	782.9	2.3	1.7	142.55	-31.5	-56.6	112.1	108.7	3.33	33.625		
900.0	884.4	880.0	876.0	3.0	2.0	145.48	-38.3	-67.0	145.6	141.7	3.87	37.595		
1,000.0	976.8	972.1	967.3	3.7	2.2	147.97	-44.9	-77.2	183.6	179.2	4.41	41.619		
1,100.0	1,067.1	1,062.2	1,056.6	4.5	2.5	150.04	-51.4	-87.1	226.1	221.1	4.94	45.720		
1,200.0	1,154.9	1,150.0	1,143.6	5.4	2.7	151.76	-57.8	-96.8	273.0	267.5	5.47	49.897		
1,300.0	1,240.2	1,235.2	1,228.1	6.4	3.0	153.17	-63.9	-106.2	324.3	318.3	5.99	54.103		
1,400.0	1,323.8	1,318.9	1,311.0	7.3	3.2	154.95	-70.0	-115.5	378.2	371.7	6.50	58.143		
1,500.0	1,407.4	1,402.5	1,393.9	8.3	3.5	156.35	-76.0	-124.7	432.4	425.4	7.02	61.635		
1,600.0	1,491.0	1,486.1	1,476.8	9.3	3.7	157.45	-82.1	-134.0	486.7	479.2	7.52	64.685		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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		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	36.50	39.7	29.4	49.4					
100.0	100.0	100.0	100.0	0.1	0.1	36.50	39.7	29.4	49.4	0.27	186.169			
200.0	200.0	200.0	200.0	0.3	0.3	36.50	39.7	29.4	49.4	0.61	80.391 CC, ES			
300.0	300.0	299.3	299.3	0.5	0.5	-118.40	39.6	30.0	50.9	0.97	52.536			
400.0	399.6	397.8	397.7	0.7	0.7	-120.60	39.1	35.1	57.2	1.36	41.918			
500.0	498.8	495.8	495.1	1.0	0.9	-121.99	38.1	45.1	68.4	1.84	37.164			
600.0	597.1	592.9	591.1	1.4	1.2	-122.60	36.6	59.9	84.5	2.43	34.780			
700.0	694.3	689.6	685.8	1.8	1.6	-122.86	34.6	79.1	105.3	3.13	33.661			
800.0	790.2	786.6	780.7	2.3	1.9	-124.40	32.5	99.2	129.2	3.90	33.166 SF			
900.0	884.4	882.6	874.6	3.0	2.3	-126.79	30.5	119.1	156.3	4.71	33.208			
1,000.0	976.8	977.3	967.2	3.7	2.7	-129.49	28.5	138.7	186.9	5.54	33.737			
1,100.0	1,067.1	1,070.4	1,058.3	4.5	3.1	-132.19	26.5	158.0	221.3	6.38	34.697			
1,200.0	1,154.9	1,161.7	1,147.6	5.4	3.4	-134.74	24.5	176.9	259.7	7.21	36.022			
1,300.0	1,240.2	1,251.0	1,235.0	6.4	3.8	-137.04	22.6	195.4	302.2	8.03	37.625			
1,400.0	1,323.8	1,339.0	1,321.0	7.3	4.1	-139.78	20.7	213.6	347.4	8.80	39.467			
1,500.0	1,407.4	1,427.0	1,407.0	8.3	4.5	-141.97	18.9	231.9	393.3	9.56	41.137			
1,600.0	1,491.0	1,515.0	1,493.1	9.3	4.9	-143.72	17.0	250.1	439.5	10.31	42.640			
1,700.0	1,574.5	1,602.9	1,579.1	10.3	5.2	-145.14	15.1	268.3	485.9	11.05	43.991			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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		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	36.64	26.6	19.8	33.1					
100.0	100.0	100.0	100.0	0.1	0.1	36.64	26.6	19.8	33.1	32.9	0.27	124.903		
200.0	200.0	200.0	200.0	0.3	0.3	36.64	26.6	19.8	33.1	32.5	0.61	53.936 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-120.19	26.6	19.8	34.4	33.4	0.97	35.455		
400.0	399.6	399.8	399.7	0.7	0.7	-126.28	25.3	22.0	38.7	37.3	1.35	28.595		
500.0	498.8	499.7	499.3	1.0	0.9	-129.50	21.5	28.8	46.1	44.3	1.80	25.597		
600.0	597.1	599.5	598.2	1.4	1.1	-130.43	15.1	40.2	56.4	54.0	2.35	23.934		
700.0	694.3	699.0	696.1	1.8	1.5	-129.94	6.1	55.9	69.3	66.3	3.05	22.740		
800.0	790.2	798.2	792.6	2.3	1.9	-128.76	-5.2	75.9	84.9	81.1	3.89	21.836		
900.0	884.4	896.4	887.7	3.0	2.3	-129.12	-17.2	97.2	103.6	98.8	4.79	21.653 SF		
1,000.0	976.8	993.8	982.1	3.7	2.8	-131.04	-29.1	118.3	125.7	120.0	5.69	22.102		
1,100.0	1,067.1	1,090.2	1,075.4	4.5	3.2	-133.65	-40.9	139.1	151.4	144.8	6.57	23.054		
1,200.0	1,154.9	1,185.2	1,167.4	5.4	3.7	-136.45	-52.6	159.7	181.0	173.6	7.41	24.431		
1,300.0	1,240.2	1,278.6	1,257.9	6.4	4.1	-139.16	-64.0	179.9	214.8	206.6	8.22	26.152		
1,400.0	1,323.8	1,371.0	1,347.4	7.3	4.5	-142.05	-75.3	199.9	251.5	242.5	8.95	28.092		
1,500.0	1,407.4	1,463.3	1,436.8	8.3	5.0	-144.27	-86.6	219.8	288.6	278.9	9.68	29.806		
1,600.0	1,491.0	1,555.6	1,526.3	9.3	5.4	-145.99	-97.9	239.8	326.0	315.6	10.41	31.315		
1,700.0	1,574.5	1,648.0	1,615.7	10.3	5.9	-147.35	-109.2	259.8	363.6	352.5	11.14	32.647		
1,800.0	1,658.1	1,740.3	1,705.2	11.3	6.3	-148.46	-120.5	279.8	401.3	389.5	11.86	33.829		
1,900.0	1,741.7	1,832.7	1,794.6	12.3	6.7	-149.38	-131.9	299.8	439.2	426.6	12.59	34.882		
2,000.0	1,825.3	1,925.0	1,884.1	13.3	7.2	-150.16	-143.2	319.7	477.1	463.8	13.32	35.826		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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	37.03	13.1	9.9	16.4					
100.0	100.0	100.0	100.0	0.1	0.1	37.03	13.1	9.9	16.4	16.2	0.27	61.889		
200.0	200.0	200.0	200.0	0.3	0.3	37.03	13.1	9.9	16.4	15.8	0.61	26.725 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-123.52	13.1	9.9	17.7	16.8	0.97	18.285		
400.0	399.6	400.0	400.0	0.7	0.7	-136.69	12.1	11.0	22.3	21.0	1.34	16.668		
500.0	498.8	500.5	500.2	1.0	0.9	-142.73	7.7	15.8	29.1	27.3	1.74	16.719		
600.0	597.1	601.1	600.1	1.4	1.1	-144.33	-0.4	24.5	37.3	35.1	2.20	16.930		
700.0	694.3	701.9	699.4	1.8	1.4	-143.65	-12.0	37.1	46.8	44.1	2.78	16.878		
800.0	790.2	802.8	797.8	2.3	1.9	-141.85	-27.2	53.6	57.7	54.2	3.49	16.502		
900.0	884.4	903.7	894.9	3.0	2.4	-139.53	-45.9	73.9	69.8	65.4	4.39	15.903		
1,000.0	976.8	1,003.0	989.4	3.7	2.9	-138.15	-66.4	96.2	84.3	78.9	5.37	15.693 SF		
1,100.0	1,067.1	1,101.3	1,083.0	4.5	3.4	-138.99	-86.8	118.4	102.6	96.3	6.30	16.279		
1,200.0	1,154.9	1,198.6	1,175.6	5.4	4.0	-140.97	-107.1	140.3	124.9	117.7	7.16	17.445		
1,300.0	1,240.2	1,294.8	1,267.2	6.4	4.5	-143.38	-127.0	162.0	151.4	143.5	7.94	19.065		
1,400.0	1,323.8	1,390.1	1,357.9	7.3	5.1	-145.96	-146.9	183.5	180.6	172.0	8.65	20.891		
1,500.0	1,407.4	1,485.5	1,448.7	8.3	5.6	-147.86	-166.7	205.0	210.2	200.8	9.36	22.454		
1,600.0	1,491.0	1,580.8	1,539.4	9.3	6.1	-149.29	-186.5	226.5	239.8	229.7	10.08	23.797		
1,700.0	1,574.5	1,676.2	1,630.2	10.3	6.7	-150.41	-206.3	248.0	269.6	258.8	10.80	24.960		
1,800.0	1,658.1	1,771.5	1,720.9	11.3	7.2	-151.31	-226.1	269.5	299.5	287.9	11.53	25.975		
1,900.0	1,741.7	1,866.9	1,811.7	12.3	7.8	-152.04	-245.9	291.0	329.4	317.1	12.26	26.868		
2,000.0	1,825.3	1,962.2	1,902.4	13.3	8.3	-152.65	-265.7	312.5	359.3	346.3	12.99	27.658		
2,100.0	1,908.9	2,057.6	1,993.2	14.3	8.9	-153.17	-285.5	334.0	389.3	375.6	13.73	28.363		
2,200.0	1,992.5	2,152.9	2,083.9	15.3	9.4	-153.61	-305.3	355.5	419.3	404.8	14.46	28.994		
2,300.0	2,076.0	2,248.3	2,174.7	16.3	10.0	-154.00	-325.1	377.0	449.3	434.1	15.20	29.564		
2,400.0	2,159.6	2,343.6	2,265.5	17.3	10.5	-154.33	-344.9	398.5	479.4	463.4	15.94	30.079		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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: O-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	-7.13	11.3	-1.4	11.4					
100.0	100.0	100.0	100.0	0.1	0.1	-7.13	11.3	-1.4	11.4	11.1	0.27	42.893		
200.0	200.0	200.0	200.0	0.3	0.3	-7.13	11.3	-1.4	11.4	10.8	0.61	18.522 CC		
300.0	300.0	300.5	300.5	0.5	0.5	-159.22	9.0	-0.1	11.4	10.5	0.97	11.831		
400.0	399.6	401.1	400.7	0.7	0.7	-156.68	2.2	4.0	11.6	10.3	1.33	8.711		
500.0	498.8	501.6	500.4	1.0	1.0	-152.65	-9.1	10.8	12.0	10.2	1.74	6.853 ES		
600.0	597.1	602.2	599.2	1.4	1.4	-147.42	-24.9	20.3	12.5	10.3	2.26	5.547		
700.0	694.3	702.7	696.9	1.8	1.8	-141.45	-45.1	32.4	13.4	10.4	2.95	4.540		
800.0	790.2	803.2	793.2	2.3	2.4	-135.22	-69.7	47.2	14.6	10.7	3.88	3.765		
900.0	884.4	903.6	887.8	3.0	3.0	-129.17	-98.6	64.5	16.2	11.2	5.08	3.198		
1,000.0	976.8	1,004.1	980.6	3.7	3.7	-123.62	-131.7	84.4	18.3	11.8	6.53	2.800		
1,100.0	1,067.1	1,104.5	1,071.1	4.5	4.5	-118.73	-169.0	106.7	20.7	12.5	8.20	2.528 SF		
1,200.0	1,154.9	1,204.4	1,160.0	5.4	5.3	-120.43	-208.0	130.1	24.7	15.1	9.59	2.576		
1,300.0	1,240.2	1,304.1	1,248.8	6.4	6.2	-129.62	-246.9	153.4	31.7	21.5	10.21	3.110		
1,400.0	1,323.8	1,403.4	1,337.2	7.3	7.0	-138.48	-285.7	176.7	41.6	31.2	10.36	4.015		
1,500.0	1,407.4	1,502.8	1,425.7	8.3	7.8	-143.90	-324.4	199.9	52.1	41.4	10.63	4.898		
1,600.0	1,491.0	1,602.1	1,514.2	9.3	8.6	-147.49	-363.2	223.2	62.9	51.9	11.00	5.713		
1,700.0	1,574.5	1,701.5	1,602.6	10.3	9.5	-150.02	-402.0	246.5	73.8	62.4	11.44	6.451		
1,800.0	1,658.1	1,800.8	1,691.1	11.3	10.3	-151.90	-440.8	269.7	84.9	72.9	11.93	7.114		
1,900.0	1,741.7	1,900.2	1,779.6	12.3	11.1	-153.34	-479.6	293.0	96.0	83.5	12.45	7.711		
2,000.0	1,825.3	1,999.5	1,868.0	13.3	11.9	-154.48	-518.3	316.2	107.2	94.2	12.99	8.248		
2,100.0	1,908.9	2,098.9	1,956.5	14.3	12.8	-155.41	-557.1	339.5	118.4	104.8	13.56	8.733		
2,200.0	1,992.5	2,198.2	2,045.0	15.3	13.6	-156.17	-595.9	362.7	129.6	115.5	14.13	9.173		
2,300.0	2,076.0	2,297.6	2,133.4	16.3	14.4	-156.81	-634.7	386.0	140.9	126.2	14.72	9.573		
2,400.0	2,159.6	2,396.9	2,221.9	17.3	15.2	-157.36	-673.5	409.3	152.1	136.8	15.31	9.938		
2,500.0	2,243.2	2,496.3	2,310.3	18.3	16.1	-157.83	-712.2	432.5	163.4	147.5	15.91	10.272		
2,600.0	2,326.8	2,595.7	2,398.8	19.3	16.9	-158.25	-751.0	455.8	174.7	158.2	16.52	10.579		
2,700.0	2,410.4	2,695.0	2,487.3	20.3	17.7	-158.61	-789.8	479.0	186.0	168.9	17.13	10.862		
2,800.0	2,494.0	2,794.4	2,575.7	21.3	18.5	-158.93	-828.6	502.3	197.3	179.6	17.74	11.124		
2,900.0	2,577.5	2,893.7	2,664.2	22.3	19.4	-159.21	-867.4	525.5	208.6	190.3	18.36	11.366		
3,000.0	2,661.1	2,993.1	2,752.7	23.3	20.2	-159.47	-906.1	548.8	220.0	201.0	18.98	11.592		
3,100.0	2,744.7	3,092.4	2,841.1	24.3	21.0	-159.70	-944.9	572.1	231.3	211.7	19.60	11.802		
3,200.0	2,828.3	3,191.8	2,929.6	25.3	21.9	-159.91	-983.7	595.3	242.6	222.4	20.22	11.998		
3,300.0	2,911.9	3,291.1	3,018.1	26.3	22.7	-160.10	-1,022.5	618.6	253.9	233.1	20.85	12.182		
3,400.0	2,995.5	3,390.5	3,106.5	27.3	23.5	-160.28	-1,061.3	641.8	265.3	243.8	21.47	12.354		
3,500.0	3,079.1	3,489.8	3,195.0	28.3	24.3	-160.44	-1,100.1	665.1	276.6	254.5	22.10	12.515		
3,600.0	3,162.6	3,589.2	3,283.5	29.3	25.2	-160.58	-1,138.8	688.4	287.9	265.2	22.73	12.668		
3,700.0	3,246.2	3,688.5	3,371.9	30.3	26.0	-160.72	-1,177.6	711.6	299.3	275.9	23.36	12.811		
3,800.0	3,329.8	3,787.9	3,460.4	31.3	26.8	-160.85	-1,216.4	734.9	310.6	286.6	23.99	12.947		
3,900.0	3,413.4	3,887.2	3,548.9	32.3	27.7	-160.96	-1,255.2	758.1	321.9	297.3	24.62	13.075		
4,000.0	3,497.0	3,986.6	3,637.3	33.3	28.5	-161.07	-1,294.0	781.4	333.3	308.0	25.25	13.197		
4,100.0	3,580.6	4,086.0	3,725.8	34.3	29.3	-161.18	-1,332.7	804.6	344.6	318.7	25.89	13.312		
4,200.0	3,664.1	4,185.3	3,814.3	35.3	30.1	-161.27	-1,371.5	827.9	355.9	329.4	26.52	13.422		
4,300.0	3,748.1	4,284.7	3,902.8	36.3	31.0	-161.37	-1,410.3	851.2	366.6	339.5	27.18	13.492		
4,400.0	3,833.8	4,378.7	3,986.6	37.2	31.7	-161.34	-1,446.7	873.0	374.7	346.8	27.91	13.426		
4,500.0	3,921.2	4,467.5	4,067.0	38.1	32.4	-161.31	-1,479.2	892.5	382.0	353.4	28.59	13.360		
4,600.0	4,010.3	4,556.2	4,148.4	38.9	33.0	-161.28	-1,509.5	910.6	388.9	359.6	29.23	13.302		
4,700.0	4,100.9	4,644.8	4,230.7	39.6	33.6	-161.26	-1,537.5	927.5	395.3	365.4	29.83	13.251		
4,800.0	4,192.9	4,733.3	4,313.8	40.3	34.1	-161.25	-1,563.4	943.0	401.3	370.9	30.38	13.206		
4,900.0	4,286.2	4,821.6	4,397.8	40.9	34.6	-161.24	-1,587.0	957.1	406.8	375.9	30.89	13.168		
5,000.0	4,380.7	4,909.8	4,482.4	41.5	35.0	-161.23	-1,608.3	969.9	411.9	380.5	31.36	13.134		
5,100.0	4,476.3	5,000.0	4,569.7	42.0	35.4	-161.23	-1,627.8	981.6	416.5	384.7	31.78	13.103		

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 30-8B
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 30-8B	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				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
5,200.0	4,572.9	5,086.0	4,653.5	42.5	35.8	-161.24	-1,644.2	991.4	420.6	388.5	32.15	13.081		
5,300.0	4,670.3	5,173.9	4,739.8	42.9	36.1	-161.25	-1,658.7	1,000.1	424.3	391.8	32.49	13.060		
5,400.0	4,768.5	5,261.8	4,826.5	43.2	36.3	-161.26	-1,670.9	1,007.5	427.5	394.7	32.77	13.044		
5,500.0	4,867.2	5,349.6	4,913.6	43.5	36.5	-161.27	-1,680.9	1,013.4	430.2	397.2	33.02	13.030		
5,600.0	4,966.4	5,437.4	5,000.9	43.7	36.7	-161.29	-1,688.5	1,018.0	432.5	399.2	33.22	13.019		
5,700.0	5,066.1	5,525.1	5,088.4	43.8	36.8	-161.31	-1,693.8	1,021.2	434.2	400.9	33.38	13.010		
5,800.0	5,165.9	5,612.8	5,176.0	43.9	36.9	-161.34	-1,696.9	1,023.0	435.5	402.0	33.50	13.003		
5,900.0	5,265.9	5,702.7	5,265.9	44.0	36.9	-161.36	-1,697.7	1,023.5	436.3	402.7	33.58	12.994		
6,000.0	5,365.9	5,802.7	5,365.9	44.0	37.0	-8.42	-1,697.7	1,023.5	436.3	402.5	33.79	12.914		
6,100.0	5,465.9	5,902.7	5,465.9	44.1	37.0	-8.42	-1,697.7	1,023.5	436.3	402.3	34.00	12.833		
6,200.0	5,565.9	6,002.7	5,565.9	44.1	37.1	-8.42	-1,697.7	1,023.5	436.3	402.1	34.22	12.752		
6,300.0	5,665.9	6,102.7	5,665.9	44.1	37.1	-8.42	-1,697.7	1,023.5	436.3	401.9	34.43	12.671		
6,400.0	5,765.9	6,202.7	5,765.9	44.2	37.2	-8.42	-1,697.7	1,023.5	436.3	401.7	34.65	12.591		
6,500.0	5,865.9	6,302.7	5,865.9	44.2	37.2	-8.42	-1,697.7	1,023.5	436.3	401.4	34.87	12.511		
6,600.0	5,965.9	6,402.7	5,965.9	44.3	37.3	-8.42	-1,697.7	1,023.5	436.3	401.2	35.10	12.431		
6,700.0	6,065.9	6,502.7	6,065.9	44.3	37.3	-8.42	-1,697.7	1,023.5	436.3	401.0	35.32	12.352		
6,800.0	6,165.9	6,602.7	6,165.9	44.4	37.4	-8.42	-1,697.7	1,023.5	436.3	400.8	35.55	12.273		
6,900.0	6,265.9	6,702.7	6,265.9	44.4	37.4	-8.42	-1,697.7	1,023.5	436.3	400.5	35.78	12.194		
7,000.0	6,365.9	6,802.7	6,365.9	44.5	37.5	-8.42	-1,697.7	1,023.5	436.3	400.3	36.01	12.115		
7,100.0	6,465.9	6,902.7	6,465.9	44.5	37.5	-8.42	-1,697.7	1,023.5	436.3	400.1	36.25	12.037		
7,200.0	6,565.9	7,002.7	6,565.9	44.6	37.6	-8.42	-1,697.7	1,023.5	436.3	399.8	36.48	11.960		
7,300.0	6,665.9	7,102.7	6,665.9	44.6	37.7	-8.42	-1,697.7	1,023.5	436.3	399.6	36.72	11.882		
7,400.0	6,765.9	7,202.7	6,765.9	44.7	37.7	-8.42	-1,697.7	1,023.5	436.3	399.4	36.96	11.805		
7,500.0	6,865.9	7,302.7	6,865.9	44.7	37.8	-8.42	-1,697.7	1,023.5	436.3	399.1	37.20	11.729		
7,600.0	6,965.9	7,402.7	6,965.9	44.8	37.8	-8.42	-1,697.7	1,023.5	436.3	398.9	37.44	11.653		
7,700.0	7,065.9	7,502.7	7,065.9	44.8	37.9	-8.42	-1,697.7	1,023.5	436.3	398.6	37.69	11.578		
7,800.0	7,165.9	7,602.7	7,165.9	44.9	38.0	-8.42	-1,697.7	1,023.5	436.3	398.4	37.93	11.503		
7,900.0	7,265.9	7,702.7	7,265.9	44.9	38.0	-8.42	-1,697.7	1,023.5	436.3	398.1	38.18	11.428		
8,000.0	7,365.9	7,802.7	7,365.9	45.0	38.1	-8.42	-1,697.7	1,023.5	436.3	397.9	38.43	11.354		
8,100.0	7,465.9	7,902.7	7,465.9	45.0	38.1	-8.42	-1,697.7	1,023.5	436.3	397.6	38.68	11.280		
8,150.1	7,516.0	7,952.8	7,516.0	45.1	38.2	-8.42	-1,697.7	1,023.5	436.3	397.5	38.81	11.244		
8,188.1	7,554.0	7,970.8	7,534.0	45.1	38.2	-8.42	-1,697.7	1,023.5	436.8	397.9	38.88	11.235		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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	-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	0.27	124.271		
200.0	200.0	200.0	200.0	0.3	0.3	-143.76	-26.6	-19.5	33.0	32.4	0.61	53.663 CC, ES		
300.0	300.0	298.4	298.4	0.5	0.5	65.25	-29.1	-19.9	34.1	33.2	0.97	35.193		
400.0	399.6	396.7	396.4	0.7	0.7	70.34	-36.6	-21.3	37.8	36.4	1.37	27.549		
500.0	498.8	494.7	493.6	1.0	1.0	76.81	-48.9	-23.4	44.5	42.6	1.88	23.679		
600.0	597.1	592.2	589.5	1.4	1.3	83.01	-66.1	-26.5	54.4	51.9	2.53	21.497		
700.0	694.3	689.2	683.8	1.8	1.8	88.14	-87.9	-30.3	67.8	64.5	3.35	20.229		
800.0	790.2	785.4	776.3	2.3	2.3	92.04	-114.2	-35.0	84.6	80.3	4.34	19.502		
900.0	884.4	881.1	866.8	3.0	2.8	94.93	-144.9	-40.4	104.6	99.2	5.47	19.144		
1,000.0	976.8	978.4	958.2	3.7	3.4	98.36	-177.6	-46.2	126.4	119.7	6.72	18.818		
1,100.0	1,067.1	1,074.9	1,048.9	4.5	4.0	102.53	-210.2	-51.9	149.8	141.7	8.05	18.595 SF		
1,200.0	1,154.9	1,170.5	1,138.7	5.4	4.6	106.96	-242.3	-57.6	175.3	165.9	9.43	18.600		
1,300.0	1,240.2	1,264.9	1,227.4	6.4	5.2	111.37	-274.1	-63.2	203.7	192.9	10.80	18.867		
1,400.0	1,323.8	1,358.4	1,315.3	7.3	5.7	115.93	-305.6	-68.8	234.7	222.6	12.09	19.409		
1,500.0	1,407.4	1,451.9	1,403.2	8.3	6.3	119.52	-337.1	-74.3	266.7	253.4	13.33	20.009		
1,600.0	1,491.0	1,545.5	1,491.1	9.3	6.9	122.34	-368.6	-79.9	299.5	285.0	14.53	20.609		
1,700.0	1,574.5	1,639.0	1,579.0	10.3	7.5	124.61	-400.1	-85.5	332.9	317.2	15.72	21.182		
1,800.0	1,658.1	1,732.5	1,666.8	11.3	8.1	126.47	-431.6	-91.0	366.6	349.7	16.88	21.719		
1,900.0	1,741.7	1,826.0	1,754.7	12.3	8.6	128.02	-463.1	-96.6	400.6	382.6	18.03	22.217		
2,000.0	1,825.3	1,919.6	1,842.6	13.3	9.2	129.33	-494.6	-102.1	434.9	415.7	19.18	22.676		
2,100.0	1,908.9	2,013.1	1,930.5	14.3	9.8	130.45	-526.1	-107.7	469.3	449.0	20.32	23.098		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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	-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		
223.2	223.2	223.2	223.2	0.3	0.3	74.54	-28.4	-30.8	41.9	41.2	0.70	60.082 CC, ES		
300.0	300.0	298.4	298.4	0.5	0.5	77.17	-29.6	-31.5	42.6	41.7	0.97	43.998		
400.0	399.6	396.0	395.8	0.7	0.7	83.82	-34.9	-34.9	47.3	46.0	1.37	34.664		
500.0	498.8	493.0	492.1	1.0	0.9	91.67	-44.2	-40.9	57.0	55.1	1.85	30.852		
600.0	597.1	589.6	587.4	1.4	1.2	98.67	-57.5	-49.4	72.0	69.5	2.44	29.495		
700.0	694.3	687.4	683.7	1.8	1.6	105.72	-72.0	-58.6	90.0	86.8	3.14	28.676		
800.0	790.2	784.3	779.1	2.3	1.9	112.66	-86.4	-67.8	110.9	107.0	3.90	28.418 SF		
900.0	884.4	880.1	873.3	3.0	2.2	119.05	-100.6	-76.9	135.6	130.9	4.70	28.855		
1,000.0	976.8	974.4	966.2	3.7	2.5	124.67	-114.6	-85.9	164.5	159.0	5.50	29.939		
1,100.0	1,067.1	1,067.1	1,057.4	4.5	2.9	129.50	-128.4	-94.6	197.9	191.7	6.27	31.560		
1,200.0	1,154.9	1,157.8	1,146.8	5.4	3.2	133.56	-141.8	-103.2	236.0	229.0	7.02	33.604		
1,300.0	1,240.2	1,246.4	1,233.9	6.4	3.5	136.94	-155.0	-111.6	278.7	271.0	7.75	35.947		
1,400.0	1,323.8	1,333.6	1,319.8	7.3	3.8	140.45	-167.9	-119.9	324.6	316.2	8.42	38.544		
1,500.0	1,407.4	1,420.7	1,405.6	8.3	4.1	143.18	-180.9	-128.2	371.3	362.2	9.07	40.932		
1,600.0	1,491.0	1,507.9	1,491.4	9.3	4.4	145.32	-193.8	-136.4	418.5	408.8	9.71	43.101		
1,700.0	1,574.5	1,595.1	1,577.2	10.3	4.7	147.03	-206.7	-144.7	466.1	455.8	10.34	45.065		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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 30-3B - 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					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	-126.20	-15.3	-20.9	25.9					
100.0	100.0	100.0	100.0	0.1	0.1	-126.20	-15.3	-20.9	25.9	25.6	0.27	97.641		
200.0	200.0	200.0	200.0	0.3	0.3	-126.20	-15.3	-20.9	25.9	25.3	0.61	42.163 CC, ES		
300.0	300.0	298.6	298.5	0.5	0.5	85.78	-16.9	-22.9	28.2	27.2	0.97	29.057		
400.0	399.6	396.5	396.1	0.7	0.7	96.38	-21.6	-28.8	35.9	34.5	1.37	26.294 SF		
500.0	498.8	493.2	492.0	1.0	1.0	106.10	-29.2	-38.5	50.3	48.5	1.84	27.416		
600.0	597.1	588.0	585.4	1.4	1.3	112.69	-39.7	-51.7	71.7	69.3	2.40	29.838		
700.0	694.3	680.5	675.5	1.8	1.7	116.73	-52.7	-68.0	99.6	96.5	3.07	32.424		
800.0	790.2	770.3	761.9	2.3	2.2	119.12	-67.8	-87.1	133.6	129.8	3.84	34.789		
900.0	884.4	856.9	844.0	3.0	2.7	120.46	-84.8	-108.6	173.4	168.7	4.70	36.857		
1,000.0	976.8	940.1	921.7	3.7	3.3	121.11	-103.3	-131.9	218.6	213.0	5.65	38.724		
1,100.0	1,067.1	1,025.8	1,000.9	4.5	3.9	121.65	-123.7	-157.6	268.0	261.3	6.67	40.164		
1,200.0	1,154.9	1,110.6	1,079.2	5.4	4.5	122.38	-143.9	-183.1	320.1	312.4	7.75	41.299		
1,300.0	1,240.2	1,193.3	1,155.5	6.4	5.1	123.14	-163.5	-207.9	375.0	366.1	8.87	42.259		
1,400.0	1,323.8	1,274.6	1,230.7	7.3	5.6	125.17	-182.9	-232.4	431.7	421.7	10.01	43.118		
1,500.0	1,407.4	1,355.9	1,305.8	8.3	6.2	126.87	-202.3	-256.8	488.7	477.6	11.15	43.845		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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						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	18.89	24.8	8.5	26.2				
100.0	100.0	100.0	100.0	0.1	0.1	18.89	24.8	8.5	26.2	25.9	0.27	98.675	
200.0	200.0	200.0	200.0	0.3	0.3	18.89	24.8	8.5	26.2	25.6	0.61	42.610 CC, ES	
300.0	300.0	300.5	300.5	0.5	0.5	-140.50	24.3	7.1	27.3	26.3	0.97	28.112	
400.0	399.6	400.5	400.2	0.7	0.7	-159.95	22.1	0.9	31.7	30.3	1.35	23.492 SF	
500.0	498.8	498.7	497.8	1.0	0.9	179.23	18.3	-10.0	44.4	42.7	1.76	25.178	
600.0	597.1	594.4	592.1	1.4	1.3	165.21	13.1	-25.2	67.1	64.8	2.24	29.969	
700.0	694.3	686.9	682.4	1.8	1.7	156.84	6.5	-44.0	98.6	95.8	2.79	35.387	
800.0	790.2	775.4	767.8	2.3	2.1	151.62	-1.1	-65.9	137.9	134.5	3.41	40.447	
900.0	884.4	859.6	847.9	3.0	2.6	148.05	-9.5	-90.2	184.1	180.0	4.10	44.910	
1,000.0	976.8	939.0	922.5	3.7	3.1	145.36	-18.5	-116.1	236.7	231.9	4.85	48.796	
1,100.0	1,067.1	1,013.5	991.3	4.5	3.7	143.14	-27.9	-143.1	295.1	289.5	5.65	52.210	
1,200.0	1,154.9	1,085.6	1,056.9	5.4	4.3	141.16	-37.8	-171.5	358.6	352.1	6.51	55.089	
1,300.0	1,240.2	1,159.8	1,124.1	6.4	4.8	139.57	-48.1	-201.2	425.7	418.3	7.43	57.323	
1,400.0	1,323.8	1,232.3	1,189.7	7.3	5.4	139.81	-58.2	-230.2	494.5	486.1	8.37	59.084	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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: O-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	-144.52	-13.5	-9.6	16.5					
100.0	100.0	100.0	100.0	0.1	0.1	-144.52	-13.5	-9.6	16.5	16.3	0.27	62.380		
200.0	200.0	200.0	200.0	0.3	0.3	-144.52	-13.5	-9.6	16.5	15.9	0.61	26.937		
300.0	300.0	299.7	299.7	0.5	0.5	69.17	-14.1	-9.5	15.9	14.9	0.97	16.362		
321.5	321.4	321.1	321.1	0.5	0.5	71.36	-14.8	-9.3	15.8	14.8	1.06	15.003 CC, ES		
400.0	399.6	399.3	399.1	0.7	0.7	79.96	-19.2	-8.3	16.4	15.0	1.38	11.876		
500.0	498.8	498.9	498.2	1.0	0.9	90.32	-29.3	-6.1	18.7	16.8	1.90	9.840		
600.0	597.1	598.6	596.6	1.4	1.2	98.11	-44.4	-2.7	22.9	20.3	2.57	8.889		
700.0	694.3	698.3	694.2	1.8	1.6	103.12	-64.6	1.8	28.6	25.2	3.39	8.424		
800.0	790.2	798.1	790.6	2.3	2.1	106.05	-89.7	7.4	35.7	31.3	4.37	8.168		
900.0	884.4	897.8	885.5	3.0	2.7	107.62	-119.7	14.1	44.1	38.6	5.51	8.002		
1,000.0	976.8	997.6	978.6	3.7	3.3	108.34	-154.5	21.9	53.8	46.9	6.82	7.878		
1,100.0	1,067.1	1,097.3	1,069.7	4.5	4.1	108.52	-193.9	30.7	64.6	56.3	8.31	7.778		
1,200.0	1,154.9	1,196.9	1,158.6	5.4	4.9	108.38	-237.9	40.5	76.6	66.7	9.96	7.693		
1,300.0	1,240.2	1,296.5	1,244.9	6.4	5.8	108.03	-286.3	51.3	89.7	78.0	11.78	7.616		
1,400.0	1,323.8	1,395.6	1,329.1	7.3	6.7	107.85	-337.3	62.7	103.5	89.9	13.63	7.592		
1,500.0	1,407.4	1,494.6	1,413.3	8.3	7.6	107.73	-388.3	74.1	117.2	101.8	15.49	7.570		
1,600.0	1,491.0	1,593.7	1,497.5	9.3	8.5	107.64	-439.2	85.4	131.0	113.7	17.35	7.550		
1,700.0	1,574.5	1,692.7	1,581.6	10.3	9.5	107.56	-490.2	96.8	144.8	125.5	19.22	7.533		
1,800.0	1,658.1	1,791.8	1,665.8	11.3	10.4	107.50	-541.1	108.2	158.5	137.4	21.09	7.518		
1,900.0	1,741.7	1,890.8	1,750.0	12.3	11.3	107.45	-592.1	119.6	172.3	149.3	22.96	7.504		
2,000.0	1,825.3	1,989.9	1,834.1	13.3	12.3	107.40	-643.1	131.0	186.0	161.2	24.83	7.492		
2,100.0	1,908.9	2,088.9	1,918.3	14.3	13.2	107.36	-694.0	142.3	199.8	173.1	26.71	7.481		
2,200.0	1,992.5	2,188.0	2,002.5	15.3	14.1	107.33	-745.0	153.7	213.5	185.0	28.58	7.472		
2,300.0	2,076.0	2,287.0	2,086.7	16.3	15.0	107.30	-795.9	165.1	227.3	196.8	30.46	7.463		
2,400.0	2,159.6	2,386.1	2,170.8	17.3	16.0	107.27	-846.9	176.5	241.1	208.7	32.34	7.455		
2,500.0	2,243.2	2,485.1	2,255.0	18.3	16.9	107.25	-897.9	187.8	254.8	220.6	34.21	7.448		
2,600.0	2,326.8	2,584.2	2,339.2	19.3	17.8	107.23	-948.8	199.2	268.6	232.5	36.09	7.441		
2,700.0	2,410.4	2,683.2	2,423.3	20.3	18.8	107.21	-999.8	210.6	282.3	244.4	37.97	7.436		
2,800.0	2,494.0	2,782.3	2,507.5	21.3	19.7	107.19	-1,050.7	222.0	296.1	256.2	39.85	7.430		
2,900.0	2,577.5	2,881.3	2,591.7	22.3	20.6	107.17	-1,101.7	233.4	309.9	268.1	41.73	7.425		
3,000.0	2,661.1	2,980.4	2,675.8	23.3	21.6	107.16	-1,152.7	244.7	323.6	280.0	43.61	7.421		
3,100.0	2,744.7	3,079.4	2,760.0	24.3	22.5	107.15	-1,203.6	256.1	337.4	291.9	45.49	7.416		
3,200.0	2,828.3	3,178.5	2,844.2	25.3	23.4	107.13	-1,254.6	267.5	351.1	303.8	47.37	7.412		
3,300.0	2,911.9	3,277.5	2,928.3	26.3	24.4	107.12	-1,305.5	278.9	364.9	315.6	49.25	7.409		
3,400.0	2,995.5	3,376.6	3,012.5	27.3	25.3	107.11	-1,356.5	290.2	378.6	327.5	51.13	7.405		
3,500.0	3,079.1	3,475.6	3,096.7	28.3	26.2	107.10	-1,407.5	301.6	392.4	339.4	53.01	7.402		
3,600.0	3,162.6	3,574.7	3,180.8	29.3	27.2	107.09	-1,458.4	313.0	406.2	351.3	54.90	7.399		
3,700.0	3,246.2	3,673.7	3,265.0	30.3	28.1	107.08	-1,509.4	324.4	419.9	363.1	56.78	7.396		
3,800.0	3,329.8	3,772.8	3,349.2	31.3	29.0	107.08	-1,560.3	335.8	433.7	375.0	58.66	7.393		
3,900.0	3,413.4	3,871.8	3,433.4	32.3	30.0	107.07	-1,611.3	347.1	447.4	386.9	60.54	7.391		
4,000.0	3,497.0	3,970.9	3,517.5	33.3	30.9	107.06	-1,662.3	358.5	461.2	398.8	62.42	7.388		
4,100.0	3,580.6	4,069.9	3,601.7	34.3	31.8	107.06	-1,713.2	369.9	475.0	410.7	64.30	7.386		
4,200.0	3,664.1	4,169.0	3,685.9	35.3	32.7	107.05	-1,764.2	381.3	488.7	422.5	66.18	7.384 SF		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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	25.52	37.9	18.1	42.0				
100.0	100.0	100.0	100.0	0.1	0.1	25.52	37.9	18.1	42.0	41.7	0.27	158.201	
200.0	200.0	200.0	200.0	0.3	0.3	25.52	37.9	18.1	42.0	41.4	0.61	68.314 CC	
207.8	207.8	207.9	207.9	0.3	0.3	-127.47	37.9	18.1	42.0	41.3	0.64	65.323 ES	
300.0	300.0	301.0	301.0	0.5	0.5	-133.29	37.5	15.4	42.3	41.3	0.98	43.330	
400.0	399.6	401.0	400.6	0.7	0.7	-149.30	36.4	7.6	45.8	44.4	1.38	33.204	
500.0	498.8	498.8	497.5	1.0	1.0	-168.55	34.6	-5.0	57.8	55.9	1.82	31.808 SF	
600.0	597.1	593.4	590.6	1.4	1.3	176.42	32.3	-21.9	80.8	78.6	2.27	35.624	
700.0	694.3	684.2	679.0	1.8	1.7	166.66	29.4	-42.4	114.2	111.4	2.76	41.399	
800.0	790.2	770.3	761.9	2.3	2.2	160.39	26.1	-65.6	156.4	153.1	3.30	47.407	
900.0	884.4	851.5	838.9	3.0	2.7	156.10	22.6	-90.9	206.2	202.3	3.89	53.030	
1,000.0	976.8	927.2	909.7	3.7	3.2	152.92	18.9	-117.4	262.8	258.3	4.52	58.116	
1,100.0	1,067.1	1,000.0	976.8	4.5	3.8	150.31	14.9	-145.4	325.5	320.2	5.21	62.509	
1,200.0	1,154.9	1,065.5	1,036.2	5.4	4.3	148.09	11.1	-172.6	393.3	387.4	5.92	66.498	
1,300.0	1,240.2	1,135.4	1,099.5	6.4	4.9	146.20	7.0	-202.1	464.8	458.1	6.69	69.470	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Shideler 30-8B
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 30-8B	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 30-8B
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.39°

