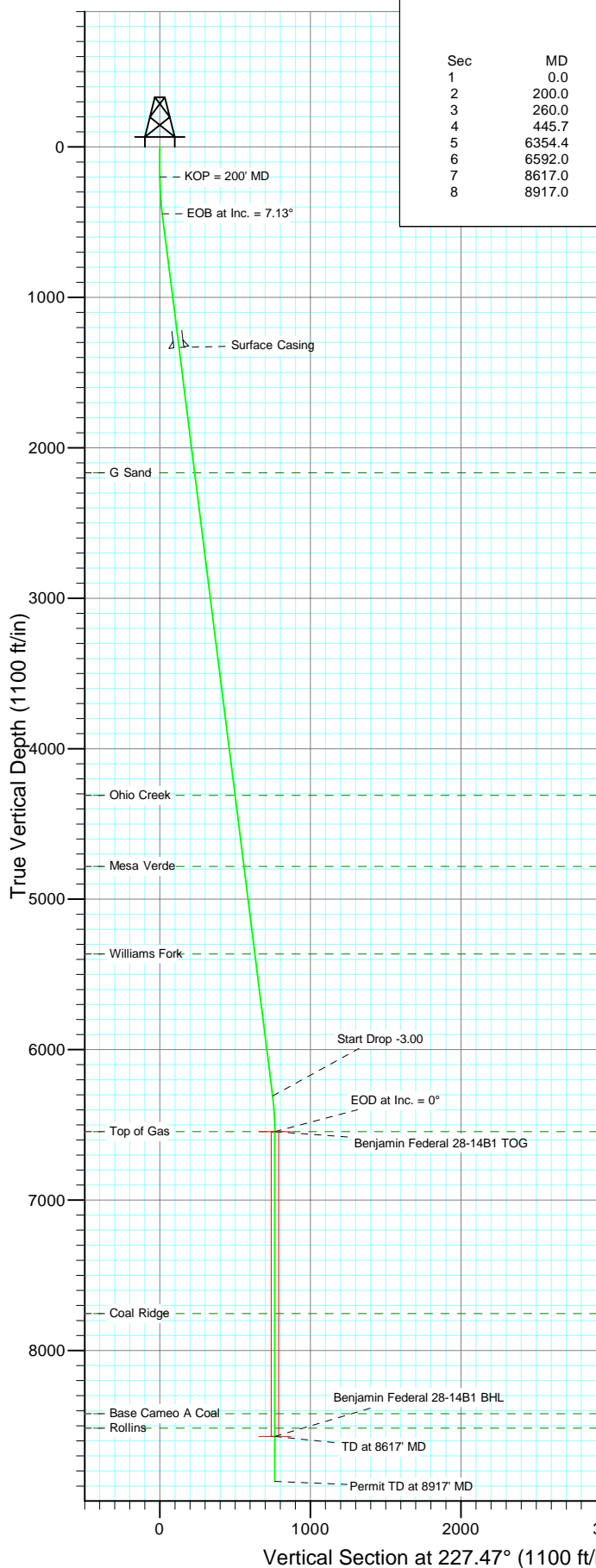


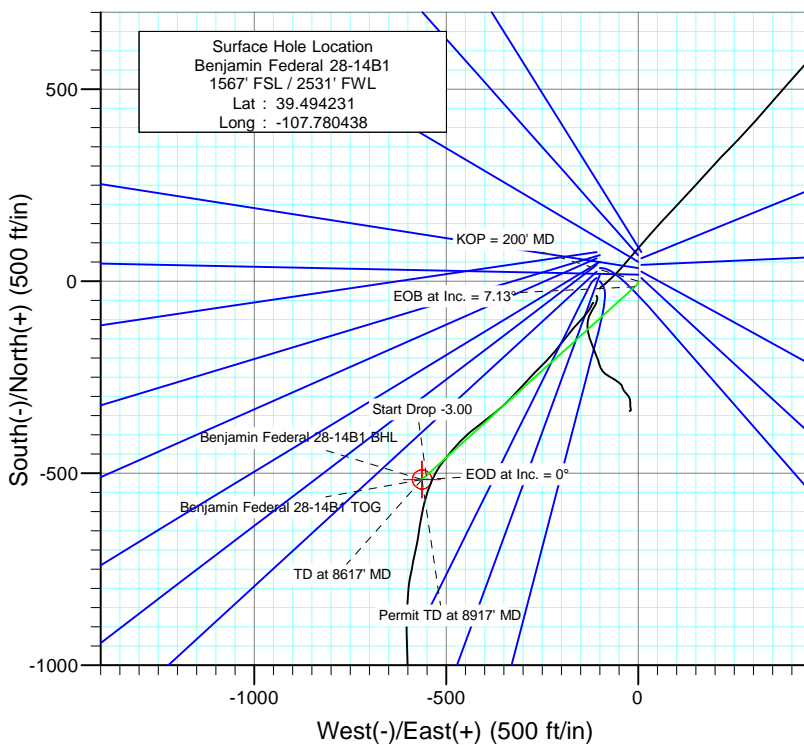


Project: Mamm Creek  
Site: K28NW Pad  
Well: Benjamin Federal 28-14B1  
Wellbore: DD  
Design: Plan #2



#### 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	260.0	3.00	180.00	260.0	-1.6	0.0	5.00	180.00	1.1	
4	445.7	7.13	227.83	445.0	-14.2	-8.5	3.00	71.24	15.9	
5	6354.4	7.13	227.83	6308.1	-506.3	-551.8	0.00	0.00	748.9	
6	6592.0	0.00	0.00	6545.0	-516.2	-562.7	3.00	180.00	763.6	Benjamin Federal 28-14B1 TOG
7	8617.0	0.00	0.00	8570.0	-516.2	-562.7	0.00	0.00	763.6	Benjamin Federal 28-14B1 BHL
8	8917.0	0.00	0.00	8870.0	-516.2	-562.7	0.00	0.00	763.6	



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2166.0	2180.1	G Sand
4310.0	4340.8	Ohio Creek
4782.0	4816.5	Mesa Verde
5364.0	5403.0	Williams Fork
6545.0	6592.0	Top of Gas
7754.0	7801.0	Coal Ridge
8420.0	8467.0	Base Cameo A Coal
8515.0	8562.0	Rollins



Azimuths to True North  
Magnetic North: 10.30°

Magnetic Field  
Strength: 52364.6snT  
Dip Angle: 65.81°  
Date: 11/24/2010  
Model: IGRF200510

Plan #2  
Benjamin Federal 28-14B1  
BHL = (1060 FSL - 1950 FWL) Job#10xxx: KR  
WELL @ 5965.0ft (Original Well Elev)  
North American Datum 1983  
Well Benjamin Federal 28-14B1, True North

Target	Azimuth	Origin Type	N/S	E/W	
Benjamin Federal 28-14B1 BHL	227.47	Slot	0.0	0.0	
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
		-516.2	-562.7	39.492814	-107.782432
Benjamin Federal 28-14B1 BHL	570.0	-516.2	-562.7	39.492814	-107.782432

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site:</b>	K28NW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

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

Site		K28NW Pad			
Site Position:		Northing:	1,613,160.16 ft	Latitude:	39.494711
From:	Lat/Long	Easting:	2,356,412.22 ft	Longitude:	-107.780819
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.44 °

Well	Benjamin Federal 28-14B1					
Well Position	+N/-S	0.0 ft	Northing:	1,612,982.63 ft	Latitude:	39.494231
	+E/-W	0.0 ft	Easting:	2,356,515.44 ft	Longitude:	-107.780438
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,943.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	11/24/2010	10.30	65.81	52,365

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	227.47

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	
260.0	3.00	180.00	260.0	-1.6	0.0	5.00	5.00	0.00	180.00	
445.7	7.13	227.83	445.0	-14.2	-8.5	3.00	2.22	25.75	71.24	
6,354.4	7.13	227.83	6,308.1	-506.3	-551.8	0.00	0.00	0.00	0.00	
6,592.0	0.00	0.00	6,545.0	-516.2	-562.7	3.00	-3.00	0.00	180.00	Benjamin Federal 28-
8,617.0	0.00	0.00	8,570.0	-516.2	-562.7	0.00	0.00	0.00	0.00	Benjamin Federal 28-
8,917.0	0.00	0.00	8,870.0	-516.2	-562.7	0.00	0.00	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site:</b>	K28NW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP = 200' MD
260.0	3.00	180.00	260.0	-1.6	0.0	1.1	5.00	5.00	
300.0	3.57	198.56	299.9	-3.8	-0.4	2.9	3.00	1.43	
400.0	5.89	222.48	399.6	-10.5	-4.9	10.7	3.00	2.32	
445.7	7.12	227.83	445.0	-14.2	-8.5	15.9	3.00	2.69	EOB at Inc. = 7.13°
500.0	7.13	227.83	498.9	-18.7	-13.5	22.6	0.00	0.00	
600.0	7.13	227.83	598.1	-27.0	-22.7	35.0	0.00	0.00	
700.0	7.13	227.83	697.3	-35.3	-31.9	47.4	0.00	0.00	
800.0	7.13	227.83	796.5	-43.7	-41.1	59.8	0.00	0.00	
900.0	7.13	227.83	895.8	-52.0	-50.3	72.2	0.00	0.00	
1,000.0	7.13	227.83	995.0	-60.3	-59.5	84.6	0.00	0.00	
1,100.0	7.13	227.83	1,094.2	-68.7	-68.7	97.0	0.00	0.00	
1,200.0	7.13	227.83	1,193.4	-77.0	-77.9	109.4	0.00	0.00	
1,300.0	7.13	227.83	1,292.7	-85.3	-87.1	121.8	0.00	0.00	
1,340.0	7.13	227.83	1,332.4	-88.6	-90.8	126.8	0.00	0.00	Surface Casing
1,400.0	7.13	227.83	1,391.9	-93.6	-96.3	134.3	0.00	0.00	
1,500.0	7.13	227.83	1,491.1	-102.0	-105.5	146.7	0.00	0.00	
1,600.0	7.13	227.83	1,590.4	-110.3	-114.7	159.1	0.00	0.00	
1,700.0	7.13	227.83	1,689.6	-118.6	-123.9	171.5	0.00	0.00	
1,800.0	7.13	227.83	1,788.8	-127.0	-133.1	183.9	0.00	0.00	
1,900.0	7.13	227.83	1,888.0	-135.3	-142.3	196.3	0.00	0.00	
2,000.0	7.13	227.83	1,987.3	-143.6	-151.4	208.7	0.00	0.00	
2,100.0	7.13	227.83	2,086.5	-151.9	-160.6	221.1	0.00	0.00	
2,180.1	7.13	227.83	2,166.0	-158.6	-168.0	231.0	0.00	0.00	G Sand
2,200.0	7.13	227.83	2,185.7	-160.3	-169.8	233.5	0.00	0.00	
2,300.0	7.13	227.83	2,285.0	-168.6	-179.0	245.9	0.00	0.00	
2,400.0	7.13	227.83	2,384.2	-176.9	-188.2	258.3	0.00	0.00	
2,500.0	7.13	227.83	2,483.4	-185.3	-197.4	270.7	0.00	0.00	
2,600.0	7.13	227.83	2,582.6	-193.6	-206.6	283.1	0.00	0.00	
2,700.0	7.13	227.83	2,681.9	-201.9	-215.8	295.5	0.00	0.00	
2,800.0	7.13	227.83	2,781.1	-210.2	-225.0	307.9	0.00	0.00	
2,900.0	7.13	227.83	2,880.3	-218.6	-234.2	320.3	0.00	0.00	
3,000.0	7.13	227.83	2,979.5	-226.9	-243.4	332.7	0.00	0.00	
3,100.0	7.13	227.83	3,078.8	-235.2	-252.6	345.1	0.00	0.00	
3,200.0	7.13	227.83	3,178.0	-243.6	-261.8	357.5	0.00	0.00	
3,300.0	7.13	227.83	3,277.2	-251.9	-271.0	369.9	0.00	0.00	
3,400.0	7.13	227.83	3,376.5	-260.2	-280.2	382.4	0.00	0.00	
3,500.0	7.13	227.83	3,475.7	-268.5	-289.4	394.8	0.00	0.00	
3,600.0	7.13	227.83	3,574.9	-276.9	-298.6	407.2	0.00	0.00	
3,700.0	7.13	227.83	3,674.1	-285.2	-307.7	419.6	0.00	0.00	
3,800.0	7.13	227.83	3,773.4	-293.5	-316.9	432.0	0.00	0.00	
3,900.0	7.13	227.83	3,872.6	-301.8	-326.1	444.4	0.00	0.00	
4,000.0	7.13	227.83	3,971.8	-310.2	-335.3	456.8	0.00	0.00	
4,100.0	7.13	227.83	4,071.0	-318.5	-344.5	469.2	0.00	0.00	
4,200.0	7.13	227.83	4,170.3	-326.8	-353.7	481.6	0.00	0.00	
4,300.0	7.13	227.83	4,269.5	-335.2	-362.9	494.0	0.00	0.00	
4,340.8	7.13	227.83	4,310.0	-338.6	-366.7	499.1	0.00	0.00	Ohio Creek
4,400.0	7.13	227.83	4,368.7	-343.5	-372.1	506.4	0.00	0.00	
4,500.0	7.13	227.83	4,468.0	-351.8	-381.3	518.8	0.00	0.00	
4,600.0	7.13	227.83	4,567.2	-360.1	-390.5	531.2	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site:</b>	K28NW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #2		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,700.0	7.13	227.83	4,666.4	-368.5	-399.7	543.6	0.00	0.00	
4,800.0	7.13	227.83	4,765.6	-376.8	-408.9	556.0	0.00	0.00	
4,816.5	7.13	227.83	4,782.0	-378.2	-410.4	558.1	0.00	0.00	Mesa Verde
4,900.0	7.13	227.83	4,864.9	-385.1	-418.1	568.4	0.00	0.00	
5,000.0	7.13	227.83	4,964.1	-393.5	-427.3	580.8	0.00	0.00	
5,100.0	7.13	227.83	5,063.3	-401.8	-436.5	593.2	0.00	0.00	
5,200.0	7.13	227.83	5,162.6	-410.1	-445.7	605.6	0.00	0.00	
5,300.0	7.13	227.83	5,261.8	-418.4	-454.9	618.0	0.00	0.00	
5,400.0	7.13	227.83	5,361.0	-426.8	-464.0	630.5	0.00	0.00	
5,403.0	7.13	227.83	5,364.0	-427.0	-464.3	630.8	0.00	0.00	Williams Fork
5,500.0	7.13	227.83	5,460.2	-435.1	-473.2	642.9	0.00	0.00	
5,600.0	7.13	227.83	5,559.5	-443.4	-482.4	655.3	0.00	0.00	
5,700.0	7.13	227.83	5,658.7	-451.8	-491.6	667.7	0.00	0.00	
5,800.0	7.13	227.83	5,757.9	-460.1	-500.8	680.1	0.00	0.00	
5,900.0	7.13	227.83	5,857.1	-468.4	-510.0	692.5	0.00	0.00	
6,000.0	7.13	227.83	5,956.4	-476.7	-519.2	704.9	0.00	0.00	
6,100.0	7.13	227.83	6,055.6	-485.1	-528.4	717.3	0.00	0.00	
6,200.0	7.13	227.83	6,154.8	-493.4	-537.6	729.7	0.00	0.00	
6,300.0	7.13	227.83	6,254.1	-501.7	-546.8	742.1	0.00	0.00	
6,354.4	7.13	227.83	6,308.0	-506.3	-551.8	748.8	0.00	0.00	Start Drop -3.00
6,400.0	5.76	227.83	6,353.3	-509.7	-555.6	754.0	3.00	-3.00	
6,500.0	2.76	227.83	6,453.1	-514.7	-561.1	761.4	3.00	-3.00	
6,592.0	0.00	0.00	6,545.0	-516.2	-562.7	763.6	3.00	-3.00	EOD at Inc. = 0° - Top of Gas - Benjamin Feder
6,600.0	0.00	0.00	6,553.0	-516.2	-562.7	763.6	0.00	0.00	
6,700.0	0.00	0.00	6,653.0	-516.2	-562.7	763.6	0.00	0.00	
6,800.0	0.00	0.00	6,753.0	-516.2	-562.7	763.6	0.00	0.00	
6,900.0	0.00	0.00	6,853.0	-516.2	-562.7	763.6	0.00	0.00	
7,000.0	0.00	0.00	6,953.0	-516.2	-562.7	763.6	0.00	0.00	
7,100.0	0.00	0.00	7,053.0	-516.2	-562.7	763.6	0.00	0.00	
7,200.0	0.00	0.00	7,153.0	-516.2	-562.7	763.6	0.00	0.00	
7,300.0	0.00	0.00	7,253.0	-516.2	-562.7	763.6	0.00	0.00	
7,400.0	0.00	0.00	7,353.0	-516.2	-562.7	763.6	0.00	0.00	
7,500.0	0.00	0.00	7,453.0	-516.2	-562.7	763.6	0.00	0.00	
7,600.0	0.00	0.00	7,553.0	-516.2	-562.7	763.6	0.00	0.00	
7,700.0	0.00	0.00	7,653.0	-516.2	-562.7	763.6	0.00	0.00	
7,800.0	0.00	0.00	7,753.0	-516.2	-562.7	763.6	0.00	0.00	
7,801.0	0.00	0.00	7,754.0	-516.2	-562.7	763.6	0.00	0.00	Coal Ridge
7,900.0	0.00	0.00	7,853.0	-516.2	-562.7	763.6	0.00	0.00	
8,000.0	0.00	0.00	7,953.0	-516.2	-562.7	763.6	0.00	0.00	
8,100.0	0.00	0.00	8,053.0	-516.2	-562.7	763.6	0.00	0.00	
8,200.0	0.00	0.00	8,153.0	-516.2	-562.7	763.6	0.00	0.00	
8,300.0	0.00	0.00	8,253.0	-516.2	-562.7	763.6	0.00	0.00	
8,400.0	0.00	0.00	8,353.0	-516.2	-562.7	763.6	0.00	0.00	
8,467.0	0.00	0.00	8,420.0	-516.2	-562.7	763.6	0.00	0.00	Base Cameo A Coal
8,500.0	0.00	0.00	8,453.0	-516.2	-562.7	763.6	0.00	0.00	
8,562.0	0.00	0.00	8,515.0	-516.2	-562.7	763.6	0.00	0.00	Rollins
8,600.0	0.00	0.00	8,553.0	-516.2	-562.7	763.6	0.00	0.00	
8,617.0	0.00	0.00	8,570.0	-516.2	-562.7	763.6	0.00	0.00	TD at 8617' MD - Benjamin Federal 28-14B1 Bl
8,700.0	0.00	0.00	8,653.0	-516.2	-562.7	763.6	0.00	0.00	
8,800.0	0.00	0.00	8,753.0	-516.2	-562.7	763.6	0.00	0.00	
8,900.0	0.00	0.00	8,853.0	-516.2	-562.7	763.6	0.00	0.00	
8,917.0	0.00	0.00	8,870.0	-516.2	-562.7	763.6	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site:</b>	K28NW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	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									
Benjamin Federal 28-14/ - plan hits target center - Point	0.00	0.00	6,545.0	-516.2	-562.7	1,612,480.76	2,355,939.93	39.492814	-107.782432
Benjamin Federal 28-14/ - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,570.0	-516.2	-562.7	1,612,480.76	2,355,939.93	39.492814	-107.782432

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,340.0	1,332.4	Surface Casing		

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
2,180.1	2,166.0	G Sand			
4,340.8	4,310.0	Ohio Creek			
4,816.5	4,782.0	Mesa Verde			
5,403.0	5,364.0	Williams Fork			
6,592.0	6,545.0	Top of Gas			
7,801.0	7,754.0	Coal Ridge			
8,467.0	8,420.0	Base Cameo A Coal			
8,562.0	8,515.0	Rollins			

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP = 200' MD
445.7	445.0	-1.6	0.0	EOB at Inc. = 7.13°
6,354.4	6,308.1	-14.2	-8.5	Start Drop -3.00
6,592.0	6,545.0	-506.3	-551.8	EOD at Inc. = 0°
8,617.0	8,570.0	-516.2	-562.7	TD at 8617' MD
8,917.0	8,870.0	-516.2	-562.7	Permit TD at 8917' MD

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

**Mamm Creek**

**K28NW Pad**

**Benjamin Federal 28-14B1**

**DD**

**Plan #2**

## **Anticollision Report**

**23 November, 2010**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	MD Interval 100.0ft
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 1,205.9ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	Systematic Ellipse
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

<b>Survey Tool Program</b>	<b>Date</b>	11/23/2010
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>
0.0	8,917.0	Plan #2 (DD)
		<b>Tool Name</b>
		MWD
		<b>Description</b>
		Geolink MWD

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<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning
			Between Centres (ft)	Between Ellipses (ft)		
K28NW Pad						
Benjamin 28-11 Existing - Existing - Existing	1,659.1	1,651.5	22.8	15.9	3.297	CC, ES, SF
Benjamin Federal 28-12B2 - DD - Plan #2	200.0	200.0	34.2	33.6	55.105	CC, ES
Benjamin Federal 28-12B2 - DD - Plan #2	700.0	691.6	85.6	82.5	27.773	SF
Benjamin Federal 28-12C1 - DD - Plan #2	200.0	200.0	17.1	16.5	27.552	CC, ES
Benjamin Federal 28-12C1 - DD - Plan #2	1,500.0	1,493.4	128.7	121.4	17.701	SF
Benjamin Federal 28-12C2 - DD - Plan #2	200.0	200.0	132.2	131.6	212.739	CC, ES
Benjamin Federal 28-12C2 - DD - Plan #2	1,200.0	1,136.3	286.1	280.3	49.276	SF
Benjamin Federal 28-13B1 - DD - Plan #2	200.0	200.0	120.9	120.3	194.599	CC, ES
Benjamin Federal 28-13B1 - DD - Plan #2	1,000.0	952.7	209.4	204.7	43.903	SF
Benjamin Federal 28-13B2 - DD - Plan #2	200.0	200.0	123.2	122.6	198.358	CC, ES
Benjamin Federal 28-13B2 - DD - Plan #2	1,000.0	954.8	201.8	197.1	42.625	SF
Benjamin Federal 28-13C1 - DD - Plan #2	200.0	200.0	112.1	111.5	180.385	CC, ES
Benjamin Federal 28-13C1 - DD - Plan #2	900.0	870.8	159.8	155.6	38.061	SF
Benjamin Federal 28-13C2 - DD - Plan #2	200.0	200.0	115.9	115.3	186.567	CC, ES
Benjamin Federal 28-13C2 - DD - Plan #2	900.0	871.0	157.0	152.8	38.021	SF
Benjamin Federal 28-14B2 - DD - Plan #2	1,546.4	1,541.4	72.4	66.1	11.345	CC
Benjamin Federal 28-14B2 - DD - Plan #2	1,600.0	1,594.9	72.5	66.0	11.124	ES
Benjamin Federal 28-14B2 - DD - Plan #2	8,918.0	8,954.1	349.8	313.7	9.672	SF
Benjamin Federal 28-14C - DD - Plan #2	1,175.9	1,173.6	60.3	55.2	11.914	CC, ES
Benjamin Federal 28-14C - DD - Plan #2	1,300.0	1,296.6	62.5	57.2	11.746	SF
Benjamin Federal 28-16C - DD - Plan #2	200.0	200.0	12.0	11.4	19.273	CC, ES
Benjamin Federal 28-16C - DD - Plan #2	300.0	299.9	15.0	14.1	15.328	SF
Benjamin Federal 33-3B - DD - Plan #2	816.1	811.7	49.6	46.2	14.897	CC, ES
Benjamin Federal 33-3B - DD - Plan #2	900.0	892.5	53.0	49.4	14.715	SF
Benjamin Federal 33-4B - DD - Plan #2	200.0	200.0	110.8	110.2	178.289	CC, ES
Benjamin Federal 33-4B - DD - Plan #2	900.0	870.5	148.5	144.5	37.591	SF
Benjamin Fee 28-10D2 - DD - Plan #2	200.0	200.0	43.4	42.8	69.841	CC, ES
Benjamin Fee 28-10D2 - DD - Plan #2	400.0	397.3	58.5	57.1	43.133	SF
Benjamin Fee 28-11A - DD - Plan #2	200.0	200.0	51.0	50.4	82.071	CC, ES
Benjamin Fee 28-11A - DD - Plan #2	8,918.0	8,909.4	920.0	882.8	24.787	SF
Benjamin Fee 28-11B - DD - Plan #2	200.0	200.0	68.1	67.5	109.623	CC, ES
Benjamin Fee 28-11B - DD - Plan #2	6,100.0	5,981.1	1,193.5	1,165.2	42.210	SF
Benjamin Fee 28-15A - DD - Plan #2	200.0	200.0	26.8	26.2	43.097	CC, ES
Benjamin Fee 28-15A - DD - Plan #2	400.0	399.5	38.1	36.8	27.866	SF
Benjamin Fee 28-6C - DD - Plan #2	200.0	200.0	76.9	76.3	123.809	CC, ES
Benjamin Fee 28-6C - DD - Plan #2	4,900.0	4,744.6	1,202.7	1,180.3	53.611	SF
Benjamin Fee 28-9B - DD - Plan #2	200.0	200.0	60.3	59.7	97.038	CC, ES
Benjamin Fee 28-9B - DD - Plan #2	500.0	489.1	96.9	95.2	56.210	SF
Benjamin Fee 33-1B - DD - Plan #2	954.0	962.2	59.5	55.5	15.115	CC, ES
Benjamin Fee 33-1B - DD - Plan #2	1,000.0	1,006.8	60.8	56.6	14.623	SF
GMR 28-7D Existing - DD - Schlumberger Surveys	626.5	626.9	58.1	55.4	21.251	CC, ES
GMR 28-7D Existing - DD - Schlumberger Surveys	700.0	697.0	62.2	59.1	20.188	SF
GMU 28-14D Existing - Schlumberger Surveys - Schlumb	1,023.2	1,010.3	81.0	77.3	22.104	CC, ES
GMU 28-14D Existing - Schlumberger Surveys - Schlumb	1,200.0	1,181.3	87.2	82.8	20.227	SF



# Cathedral Energy Services

## Anticollision Report

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<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin 28-11 Existing - Existing - Existing													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		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
							+N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-109.25	-37.6	-107.6	114.0					
100.0	100.0	99.5	99.5	0.1	0.1	-109.31	-37.8	-107.8	114.2	114.0	0.27	420.628		
200.0	200.0	199.6	199.5	0.3	0.3	-109.50	-38.3	-108.1	114.7	114.0	0.62	184.738		
300.0	299.9	299.9	299.9	0.5	0.5	53.31	-39.1	-108.0	113.3	112.3	0.98	115.731		
400.0	399.6	400.0	400.0	0.7	0.7	31.30	-40.6	-107.2	106.7	105.4	1.34	79.340		
500.0	498.9	498.7	498.7	1.0	0.8	27.76	-42.9	-106.4	95.9	94.2	1.72	55.842		
600.0	598.1	597.3	597.2	1.2	1.0	29.69	-45.8	-106.3	85.7	83.6	2.10	40.758		
700.0	697.3	696.1	696.0	1.5	1.2	31.81	-49.3	-107.0	76.4	73.9	2.50	30.584		
800.0	796.5	795.5	795.2	1.8	1.4	34.12	-53.3	-108.2	67.8	64.9	2.90	23.335		
900.0	895.8	894.8	894.4	2.0	1.6	36.88	-57.6	-109.7	59.7	56.4	3.33	17.949		
1,000.0	995.0	994.1	993.6	2.3	1.8	40.21	-62.2	-111.8	52.4	48.6	3.77	13.905		
1,100.0	1,094.2	1,093.7	1,093.1	2.6	2.0	44.50	-66.9	-114.3	45.7	41.5	4.23	10.794		
1,200.0	1,193.4	1,193.3	1,192.6	2.9	2.1	50.26	-71.5	-117.1	39.6	34.9	4.74	8.360		
1,300.0	1,292.7	1,293.1	1,292.2	3.1	2.3	57.94	-76.1	-120.0	34.1	28.9	5.28	6.467		
1,400.0	1,391.9	1,392.8	1,391.7	3.4	2.5	67.93	-80.9	-122.9	29.5	23.7	5.85	5.050		
1,500.0	1,491.1	1,492.7	1,491.5	3.7	2.7	81.05	-85.8	-125.7	25.9	19.5	6.40	4.047		
1,600.0	1,590.4	1,592.5	1,591.2	4.0	2.9	98.29	-91.0	-127.7	23.3	16.5	6.81	3.426		
1,659.1	1,649.0	1,651.5	1,650.0	4.1	3.0	110.15	-94.1	-128.7	22.8	15.9	6.93	3.297	CC, ES, SF	
1,700.0	1,689.6	1,692.2	1,690.7	4.3	3.1	118.63	-96.2	-129.3	23.1	16.1	6.94	3.326		
1,800.0	1,788.8	1,791.8	1,790.1	4.5	3.3	137.98	-101.3	-130.5	25.8	18.9	6.88	3.755		
1,900.0	1,888.0	1,891.4	1,889.6	4.8	3.5	152.92	-106.4	-131.3	31.0	24.1	6.88	4.503		
2,000.0	1,987.3	1,990.9	1,989.0	5.1	3.7	163.52	-111.5	-131.8	37.7	30.7	7.04	5.355		
2,100.0	2,086.5	2,090.4	2,088.3	5.4	3.9	171.11	-116.6	-132.0	45.5	38.2	7.32	6.225		
2,200.0	2,185.7	2,189.8	2,187.6	5.6	4.1	176.60	-121.6	-131.9	54.2	46.5	7.66	7.075		
2,300.0	2,285.0	2,289.0	2,286.7	5.9	4.3	-179.26	-126.6	-131.4	63.5	55.5	8.04	7.903		
2,400.0	2,384.2	2,388.3	2,385.9	6.2	4.5	-176.09	-131.4	-130.6	73.4	65.0	8.43	8.712		
2,500.0	2,483.4	2,487.4	2,484.8	6.5	4.7	-173.69	-136.1	-129.5	83.8	75.0	8.83	9.492		
2,600.0	2,582.6	2,586.6	2,583.9	6.8	4.8	-171.90	-140.5	-128.3	94.6	85.4	9.23	10.252		
2,700.0	2,681.9	2,686.0	2,683.2	7.0	5.0	-170.44	-144.9	-127.0	105.5	95.9	9.63	10.964		
2,800.0	2,781.1	2,785.4	2,782.5	7.3	5.2	-169.20	-149.5	-125.6	116.5	106.5	10.03	11.622		
2,900.0	2,880.3	2,884.9	2,881.9	7.6	5.4	-168.13	-154.1	-124.2	127.5	117.1	10.43	12.228		
3,000.0	2,979.5	2,984.0	2,980.9	7.9	5.6	-167.15	-158.9	-122.7	138.5	127.7	10.83	12.791		
3,100.0	3,078.8	3,083.0	3,079.7	8.1	5.8	-166.25	-163.7	-121.0	149.8	138.6	11.23	13.333		
3,200.0	3,178.0	3,182.4	3,179.0	8.4	6.0	-165.43	-168.6	-119.0	161.2	149.6	11.64	13.850		
3,300.0	3,277.2	3,281.6	3,278.1	8.7	6.2	-164.68	-173.6	-117.1	172.7	160.6	12.05	14.331		
3,400.0	3,376.5	3,380.8	3,377.1	9.0	6.4	-164.01	-178.6	-115.0	184.2	171.8	12.45	14.791		
3,500.0	3,475.7	3,480.0	3,476.1	9.3	6.6	-163.40	-183.6	-112.9	195.9	183.0	12.86	15.229		
3,600.0	3,574.9	3,579.4	3,575.4	9.5	6.8	-162.82	-188.8	-110.7	207.5	194.2	13.27	15.638		
3,700.0	3,674.1	3,679.0	3,674.8	9.8	7.0	-162.28	-194.1	-108.5	219.1	205.4	13.68	16.014		
3,800.0	3,773.4	3,778.3	3,774.0	10.1	7.2	-161.77	-199.5	-106.4	230.6	216.5	14.09	16.364		
3,900.0	3,872.6	3,878.0	3,873.5	10.4	7.4	-161.30	-205.0	-104.3	242.0	227.5	14.50	16.691		
4,000.0	3,971.8	3,977.6	3,973.0	10.7	7.6	-160.88	-210.5	-102.4	253.4	238.5	14.91	16.991		
4,100.0	4,071.0	4,077.2	4,072.4	10.9	7.8	-160.49	-216.0	-100.6	264.6	249.3	15.32	17.271		
4,200.0	4,170.3	4,176.6	4,171.6	11.2	7.9	-160.17	-221.4	-98.9	275.8	260.1	15.73	17.539		
4,300.0	4,269.5	4,275.3	4,270.2	11.5	8.1	-159.96	-226.4	-97.2	287.1	271.0	16.12	17.810		
4,400.0	4,368.7	4,371.8	4,366.5	11.8	8.3	-159.87	-230.5	-95.3	298.9	282.4	16.50	18.119		
4,500.0	4,468.0	4,469.2	4,463.9	12.0	8.5	-159.89	-233.9	-92.8	311.7	294.8	16.87	18.477		
4,600.0	4,567.2	4,567.5	4,562.0	12.3	8.7	-159.93	-237.0	-90.0	324.8	307.6	17.24	18.839		
4,700.0	4,666.4	4,665.7	4,660.2	12.6	8.9	-159.98	-240.0	-87.0	338.2	320.6	17.61	19.204		
4,800.0	4,765.6	4,763.7	4,758.1	12.9	9.0	-160.08	-242.5	-83.8	351.8	333.8	17.97	19.575		
4,900.0	4,864.9	4,861.9	4,856.2	13.2	9.2	-160.22	-244.7	-80.5	365.8	347.4	18.33	19.954		
5,000.0	4,964.1	4,960.6	4,954.8	13.4	9.4	-160.39	-246.6	-77.1	379.9	361.2	18.69	20.328		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin 28-11 Existing - Existing - Existing													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		
5,100.0	5,063.3	5,059.0	5,053.1	13.7	9.6	-160.54	-248.4	-73.6	394.0	375.0	19.04	20.692		
5,200.0	5,162.6	5,157.5	5,151.6	14.0	9.7	-160.65	-250.4	-69.9	408.4	389.0	19.41	21.045		
5,300.0	5,261.8	5,257.0	5,250.9	14.3	9.9	-160.72	-252.7	-66.1	422.7	403.0	19.77	21.379		
5,400.0	5,361.0	5,356.6	5,350.4	14.6	10.1	-160.76	-255.2	-62.3	436.9	416.8	20.14	21.690		
5,500.0	5,460.2	5,455.7	5,449.5	14.8	10.3	-160.80	-257.7	-58.7	451.0	430.5	20.51	21.986		
5,600.0	5,559.5	5,555.1	5,548.7	15.1	10.5	-160.82	-260.4	-55.0	465.1	444.2	20.89	22.268		
5,700.0	5,658.7	5,654.3	5,647.9	15.4	10.6	-160.85	-263.0	-51.4	479.1	457.8	21.26	22.537		
5,800.0	5,757.9	5,755.2	5,748.7	15.7	10.8	-160.87	-265.7	-47.9	492.9	471.3	21.63	22.789		
5,900.0	5,857.1	5,857.3	5,850.7	15.9	11.0	-160.92	-268.5	-45.0	506.2	484.2	22.01	23.005		
6,000.0	5,956.4	5,961.2	5,954.5	16.2	11.2	-160.95	-271.8	-42.5	518.9	496.5	22.39	23.178		
6,100.0	6,055.6	6,064.5	6,057.7	16.5	11.4	-160.95	-275.7	-41.0	530.5	507.7	22.77	23.299		
6,200.0	6,154.8	6,163.4	6,156.5	16.8	11.6	-160.95	-279.6	-39.8	541.8	518.6	23.14	23.410		
6,300.0	6,254.1	6,258.0	6,251.1	17.1	11.8	-160.94	-283.1	-38.3	553.5	530.0	23.51	23.545		
6,400.0	6,353.3	6,353.3	6,346.2	17.3	12.0	-160.96	-286.4	-35.8	565.7	541.8	23.89	23.678		
6,500.0	6,453.1	6,452.2	6,445.1	17.5	12.1	-160.86	-289.8	-32.9	574.1	549.9	24.27	23.652		
6,600.0	6,553.0	6,552.3	6,545.1	17.6	12.3	67.27	-293.0	-30.1	577.6	553.0	24.63	23.451		
6,700.0	6,653.0	6,654.0	6,646.7	17.7	12.5	67.68	-296.4	-27.2	578.9	553.9	25.02	23.139		
6,800.0	6,753.0	6,756.7	6,749.3	17.8	12.7	68.08	-299.8	-24.9	579.7	554.3	25.41	22.819		
6,900.0	6,853.0	6,858.8	6,851.3	18.0	12.9	68.46	-303.2	-23.0	580.2	554.4	25.79	22.495		
7,000.0	6,953.0	6,963.3	6,955.7	18.1	13.1	68.88	-307.1	-21.5	580.2	554.0	26.18	22.157		
7,100.0	7,053.0	7,066.1	7,058.4	18.2	13.3	69.28	-311.2	-20.8	579.4	552.8	26.57	21.803		
7,200.0	7,153.0	7,168.2	7,160.4	18.3	13.5	69.70	-315.5	-20.4	578.3	551.4	26.96	21.448		
7,300.0	7,253.0	7,268.6	7,260.8	18.4	13.7	70.11	-319.9	-20.3	577.0	549.6	27.35	21.096		
7,400.0	7,353.0	7,368.4	7,360.4	18.6	13.9	70.52	-324.2	-20.1	575.6	547.9	27.73	20.756		
7,500.0	7,453.0	7,468.2	7,460.2	18.7	14.1	70.94	-328.6	-19.9	574.4	546.3	28.12	20.427		
7,600.0	7,553.0	7,564.0	7,555.9	18.8	14.2	71.32	-332.5	-19.5	573.4	544.9	28.49	20.124		
7,700.0	7,653.0	7,673.7	7,665.5	18.9	14.4	71.71	-336.5	-19.2	572.6	543.7	28.88	19.823		
7,800.0	7,753.0	7,773.9	7,765.6	19.0	14.6	71.81	-338.2	-21.4	570.0	540.8	29.21	19.517		
7,838.8	7,791.8	7,800.0	7,791.7	19.1	14.6	71.75	-337.9	-22.0	569.3	540.0	29.30	19.429		
7,900.0	7,853.0	7,800.0	7,791.7	19.2	14.6	71.75	-337.9	-22.0	572.6	543.2	29.40	19.475		
8,000.0	7,953.0	7,800.0	7,791.7	19.3	14.6	71.75	-337.9	-22.0	591.7	562.2	29.56	20.015		
8,100.0	8,053.0	7,800.0	7,791.7	19.4	14.6	71.75	-337.9	-22.0	626.4	596.7	29.73	21.072		
8,200.0	8,153.0	7,800.0	7,791.7	19.6	14.6	71.75	-337.9	-22.0	674.3	644.4	29.89	22.559		
8,300.0	8,253.0	7,800.0	7,791.7	19.7	14.6	71.75	-337.9	-22.0	732.7	702.7	30.05	24.381		
8,400.0	8,353.0	7,800.0	7,791.7	19.8	14.6	71.75	-337.9	-22.0	799.5	769.3	30.22	26.458		
8,500.0	8,453.0	7,800.0	7,791.7	19.9	14.6	71.75	-337.9	-22.0	872.6	842.2	30.38	28.722		
8,600.0	8,553.0	7,800.0	7,791.7	20.1	14.6	71.75	-337.9	-22.0	950.6	920.1	30.54	31.122		
8,700.0	8,653.0	7,800.0	7,791.7	20.2	14.6	71.75	-337.9	-22.0	1,032.4	1,001.7	30.71	33.621		
8,800.0	8,753.0	7,800.0	7,791.7	20.3	14.6	71.75	-337.9	-22.0	1,117.2	1,086.3	30.87	36.188		
8,900.0	8,853.0	7,800.0	7,791.7	20.5	14.6	71.75	-337.9	-22.0	1,204.3	1,173.3	31.04	38.803		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-12B2 - DD - 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			
0.0	0.0	0.0	0.0	0.0	0.0	0.00	34.2	0.0	34.2					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	34.2	0.0	34.2	34.0	0.27	125.752		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	34.2	0.0	34.2	33.6	0.62	55.105 CC, ES		
300.0	299.9	299.5	299.5	0.5	0.5	158.16	34.6	-2.6	38.5	37.5	0.98	39.400		
400.0	399.6	398.6	398.3	0.7	0.7	130.67	35.8	-10.2	46.7	45.3	1.39	33.707		
500.0	498.9	497.2	496.0	1.0	1.0	122.35	37.8	-22.8	57.3	55.4	1.88	30.477		
600.0	598.1	595.1	592.3	1.2	1.3	116.94	40.5	-40.2	70.0	67.6	2.46	28.515		
700.0	697.3	691.6	686.2	1.5	1.8	110.27	44.0	-62.2	85.6	82.5	3.08	27.773 SF		
800.0	796.5	786.4	777.3	1.8	2.3	103.57	48.0	-88.3	104.9	101.2	3.72	28.174		
900.0	895.8	879.1	864.9	2.0	2.9	97.46	52.7	-118.0	128.5	124.1	4.35	29.531		
1,000.0	995.0	969.3	948.7	2.3	3.5	92.19	57.9	-151.0	156.5	151.6	4.94	31.687		
1,100.0	1,094.2	1,063.1	1,034.8	2.6	4.2	87.83	63.6	-187.7	187.5	182.0	5.50	34.091		
1,200.0	1,193.4	1,157.3	1,121.4	2.9	4.9	84.68	69.4	-224.5	219.3	213.3	6.05	36.274		
1,300.0	1,292.7	1,251.5	1,207.9	3.1	5.6	82.33	75.1	-261.3	251.5	244.9	6.58	38.224		
1,400.0	1,391.9	1,345.8	1,294.5	3.4	6.3	80.52	80.9	-298.1	284.0	276.9	7.11	39.957		
1,500.0	1,491.1	1,440.0	1,381.0	3.7	7.0	79.07	86.6	-334.9	316.8	309.1	7.63	41.499		
1,600.0	1,590.4	1,534.2	1,467.5	4.0	7.8	77.89	92.4	-371.7	349.6	341.5	8.15	42.874		
1,700.0	1,689.6	1,628.4	1,554.1	4.3	8.5	76.92	98.1	-408.5	382.6	373.9	8.67	44.106		
1,800.0	1,788.8	1,722.7	1,640.6	4.5	9.2	76.10	103.9	-445.3	415.7	406.5	9.19	45.214		
1,900.0	1,888.0	1,816.9	1,727.2	4.8	9.9	75.40	109.7	-482.1	448.8	439.1	9.71	46.214		
2,000.0	1,987.3	1,911.1	1,813.7	5.1	10.6	74.79	115.4	-518.9	481.9	471.7	10.23	47.122		
2,100.0	2,086.5	2,005.3	1,900.3	5.4	11.3	74.27	121.2	-555.8	515.2	504.4	10.74	47.949		
2,200.0	2,185.7	2,099.6	1,986.8	5.6	12.0	73.81	126.9	-592.6	548.4	537.2	11.26	48.704		
2,300.0	2,285.0	2,193.8	2,073.4	5.9	12.8	73.40	132.7	-629.4	581.7	569.9	11.78	49.397		
2,400.0	2,384.2	2,288.0	2,159.9	6.2	13.5	73.03	138.5	-666.2	615.0	602.7	12.29	50.035		
2,500.0	2,483.4	2,382.2	2,246.4	6.5	14.2	72.70	144.2	-703.0	648.3	635.5	12.81	50.625		
2,600.0	2,582.6	2,476.5	2,333.0	6.8	14.9	72.41	150.0	-739.8	681.7	668.3	13.32	51.170		
2,700.0	2,681.9	2,570.7	2,419.5	7.0	15.6	72.14	155.7	-776.6	715.0	701.2	13.84	51.677		
2,800.0	2,781.1	2,664.9	2,506.1	7.3	16.3	71.89	161.5	-813.4	748.4	734.0	14.35	52.148		
2,900.0	2,880.3	2,759.1	2,592.6	7.6	17.0	71.67	167.3	-850.2	781.8	766.9	14.87	52.588		
3,000.0	2,979.5	2,853.3	2,679.2	7.9	17.8	71.47	173.0	-887.0	815.1	799.8	15.38	53.000		
3,100.0	3,078.8	2,947.6	2,765.7	8.1	18.5	71.28	178.8	-923.9	848.5	832.6	15.89	53.385		
3,200.0	3,178.0	3,041.8	2,852.3	8.4	19.2	71.10	184.5	-960.7	881.9	865.5	16.41	53.747		
3,300.0	3,277.2	3,136.0	2,938.8	8.7	19.9	70.94	190.3	-997.5	915.3	898.4	16.92	54.088		
3,400.0	3,376.5	3,230.2	3,025.3	9.0	20.6	70.79	196.0	-1,034.3	948.8	931.3	17.44	54.409		
3,500.0	3,475.7	3,324.5	3,111.9	9.3	21.3	70.65	201.8	-1,071.1	982.2	964.2	17.95	54.712		
3,600.0	3,574.9	3,418.7	3,198.4	9.5	22.1	70.52	207.6	-1,107.9	1,015.6	997.1	18.47	54.999		
3,700.0	3,674.1	3,512.9	3,285.0	9.8	22.8	70.40	213.3	-1,144.7	1,049.0	1,030.1	18.98	55.270		
3,800.0	3,773.4	3,607.1	3,371.5	10.1	23.5	70.28	219.1	-1,181.5	1,082.5	1,063.0	19.49	55.528		
3,900.0	3,872.6	3,701.4	3,458.1	10.4	24.2	70.17	224.8	-1,218.3	1,115.9	1,095.9	20.01	55.772		
4,000.0	3,971.8	3,795.6	3,544.6	10.7	24.9	70.07	230.6	-1,255.1	1,149.4	1,128.8	20.52	56.005		
4,100.0	4,071.0	3,889.8	3,631.1	10.9	25.6	69.97	236.4	-1,292.0	1,182.8	1,161.8	21.04	56.226		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-12C1 - DD - 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	0.00	17.1	0.0	17.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	17.1	0.0	17.1	16.8	0.27	62.876		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	17.1	0.0	17.1	16.5	0.62	27.552 CC, ES		
300.0	299.9	299.9	299.9	0.5	0.5	162.49	17.1	0.0	20.9	20.0	0.97	21.580		
400.0	399.6	399.6	399.6	0.7	0.7	147.34	17.1	0.0	28.1	26.8	1.32	21.223		
500.0	498.9	498.9	498.9	1.0	0.8	152.69	17.1	0.0	38.3	36.6	1.68	22.857		
600.0	598.1	598.1	598.1	1.2	1.0	159.27	17.1	0.0	49.6	47.6	2.02	24.537		
700.0	697.3	697.3	697.3	1.5	1.2	163.37	17.1	0.0	61.4	59.0	2.37	25.910		
800.0	796.5	797.5	797.5	1.8	1.4	165.77	17.1	-0.6	73.1	70.4	2.72	26.870		
900.0	895.8	899.3	899.1	2.0	1.5	164.85	17.2	-5.8	82.4	79.3	3.09	26.679		
1,000.0	995.0	1,001.2	1,000.5	2.3	1.8	161.11	17.5	-16.5	89.1	85.6	3.50	25.459		
1,100.0	1,094.2	1,102.7	1,100.7	2.6	2.0	154.95	17.8	-32.5	94.0	90.0	4.00	23.505		
1,200.0	1,193.4	1,203.1	1,198.9	2.9	2.4	146.56	18.2	-53.5	98.5	93.8	4.64	21.223		
1,300.0	1,292.7	1,302.0	1,294.4	3.1	2.8	136.36	18.8	-79.2	104.4	99.0	5.44	19.179		
1,400.0	1,391.9	1,398.9	1,386.5	3.4	3.3	125.18	19.4	-109.2	113.9	107.5	6.36	17.918		
1,500.0	1,491.1	1,493.4	1,474.8	3.7	3.9	114.15	20.1	-142.8	128.7	121.4	7.27	17.701 SF		
1,600.0	1,590.4	1,585.1	1,558.7	4.0	4.6	104.21	20.9	-179.6	149.8	141.7	8.10	18.495		
1,700.0	1,689.6	1,677.4	1,641.9	4.3	5.3	95.81	21.7	-219.6	176.5	167.7	8.77	20.115		
1,800.0	1,788.8	1,770.6	1,725.9	4.5	6.0	89.49	22.5	-260.2	206.1	196.8	9.36	22.031		
1,900.0	1,888.0	1,863.9	1,809.8	4.8	6.8	84.75	23.4	-300.8	237.6	227.7	9.89	24.029		
2,000.0	1,987.3	1,957.2	1,893.8	5.1	7.5	81.10	24.2	-341.4	270.2	259.8	10.39	26.005		
2,100.0	2,086.5	2,050.4	1,977.8	5.4	8.3	78.22	25.1	-382.0	303.6	292.7	10.88	27.909		
2,200.0	2,185.7	2,143.7	2,061.7	5.6	9.1	75.92	25.9	-422.5	337.5	326.1	11.36	29.718		
2,300.0	2,285.0	2,236.9	2,145.7	5.9	9.8	74.02	26.8	-463.1	371.8	360.0	11.83	31.425		
2,400.0	2,384.2	2,330.2	2,229.7	6.2	10.6	72.45	27.6	-503.7	406.5	394.2	12.31	33.028		
2,500.0	2,483.4	2,423.5	2,313.6	6.5	11.4	71.12	28.5	-544.3	441.4	428.6	12.78	34.533		
2,600.0	2,582.6	2,516.7	2,397.6	6.8	12.2	69.99	29.3	-584.8	476.4	463.2	13.25	35.943		
2,700.0	2,681.9	2,610.0	2,481.6	7.0	12.9	69.01	30.2	-625.4	511.6	497.9	13.73	37.267		
2,800.0	2,781.1	2,703.3	2,565.5	7.3	13.7	68.16	31.0	-666.0	546.9	532.7	14.20	38.508		
2,900.0	2,880.3	2,796.5	2,649.5	7.6	14.5	67.40	31.9	-706.6	582.3	567.7	14.68	39.675		
3,000.0	2,979.5	2,889.8	2,733.5	7.9	15.3	66.74	32.7	-747.2	617.8	602.7	15.15	40.772		
3,100.0	3,078.8	2,983.1	2,817.5	8.1	16.1	66.15	33.5	-787.7	653.4	637.8	15.63	41.806		
3,200.0	3,178.0	3,076.3	2,901.4	8.4	16.9	65.61	34.4	-828.3	689.0	672.9	16.11	42.780		
3,300.0	3,277.2	3,169.6	2,985.4	8.7	17.6	65.13	35.2	-868.9	724.6	708.1	16.58	43.700		
3,400.0	3,376.5	3,262.8	3,069.4	9.0	18.4	64.70	36.1	-909.5	760.3	743.3	17.06	44.570		
3,500.0	3,475.7	3,356.1	3,153.3	9.3	19.2	64.30	36.9	-950.0	796.1	778.5	17.54	45.394		
3,600.0	3,574.9	3,449.4	3,237.3	9.5	20.0	63.94	37.8	-990.6	831.8	813.8	18.02	46.174		
3,700.0	3,674.1	3,542.6	3,321.3	9.8	20.8	63.61	38.6	-1,031.2	867.6	849.1	18.49	46.915		
3,800.0	3,773.4	3,635.9	3,405.2	10.1	21.6	63.30	39.5	-1,071.8	903.4	884.5	18.97	47.619		
3,900.0	3,872.6	3,729.2	3,489.2	10.4	22.4	63.02	40.3	-1,112.4	939.3	919.8	19.45	48.288		
4,000.0	3,971.8	3,822.4	3,573.2	10.7	23.1	62.76	41.2	-1,152.9	975.1	955.2	19.93	48.926		
4,100.0	4,071.0	3,915.7	3,657.1	10.9	23.9	62.51	42.0	-1,193.5	1,011.0	990.6	20.41	49.534		
4,200.0	4,170.3	4,009.0	3,741.1	11.2	24.7	62.29	42.9	-1,234.1	1,046.9	1,026.0	20.89	50.114		
4,300.0	4,269.5	4,102.2	3,825.1	11.5	25.5	62.07	43.7	-1,274.7	1,082.8	1,061.4	21.37	50.668		
4,400.0	4,368.7	4,195.5	3,909.0	11.8	26.3	61.88	44.5	-1,315.2	1,118.7	1,096.8	21.85	51.198		
4,500.0	4,468.0	4,288.7	3,993.0	12.0	27.1	61.69	45.4	-1,355.8	1,154.6	1,132.2	22.33	51.706		
4,600.0	4,567.2	4,382.0	4,077.0	12.3	27.9	61.51	46.2	-1,396.4	1,190.5	1,167.7	22.81	52.192		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-12C2 - DD - 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	-54.64	76.5	-107.8	132.2					
100.0	100.0	100.0	100.0	0.1	0.1	-54.64	76.5	-107.8	132.2	131.9	0.27	485.482		
200.0	200.0	200.0	200.0	0.3	0.3	-54.64	76.5	-107.8	132.2	131.6	0.62	212.739 CC, ES		
300.0	299.9	295.1	295.1	0.5	0.5	107.36	76.1	-110.1	135.9	134.9	0.97	139.593		
400.0	399.6	390.0	389.7	0.7	0.7	84.47	75.1	-117.1	141.6	140.2	1.38	102.685		
500.0	498.9	484.8	483.7	1.0	1.0	80.15	73.4	-128.8	148.3	146.4	1.85	80.163		
600.0	598.1	579.1	576.6	1.2	1.3	80.02	71.0	-144.9	158.1	155.7	2.37	66.661		
700.0	697.3	672.6	667.8	1.5	1.7	78.78	68.0	-165.4	171.3	168.4	2.93	58.412		
800.0	796.5	764.7	756.5	1.8	2.2	76.76	64.4	-189.8	188.1	184.6	3.52	53.466		
900.0	895.8	855.2	842.4	2.0	2.7	74.28	60.2	-217.9	208.6	204.5	4.11	50.764		
1,000.0	995.0	944.6	925.9	2.3	3.3	71.57	55.6	-249.5	233.1	228.4	4.68	49.770		
1,100.0	1,094.2	1,040.4	1,014.8	2.6	4.0	68.97	50.3	-285.1	259.4	254.1	5.25	49.363		
1,200.0	1,193.4	1,136.3	1,103.6	2.9	4.7	66.85	45.1	-320.6	286.1	280.3	5.81	49.276 SF		
1,300.0	1,292.7	1,232.2	1,192.5	3.1	5.4	65.10	39.8	-356.1	313.2	306.8	6.34	49.372		
1,400.0	1,391.9	1,328.0	1,281.4	3.4	6.0	63.62	34.6	-391.6	340.4	333.6	6.87	49.575		
1,500.0	1,491.1	1,423.9	1,370.3	3.7	6.7	62.35	29.3	-427.2	367.9	360.5	7.38	49.839		
1,600.0	1,590.4	1,519.8	1,459.2	4.0	7.4	61.27	24.1	-462.7	395.5	387.6	7.89	50.135		
1,700.0	1,689.6	1,615.6	1,548.1	4.3	8.1	60.32	18.8	-498.2	423.2	414.8	8.39	50.447		
1,800.0	1,788.8	1,711.5	1,637.0	4.5	8.8	59.49	13.6	-533.8	451.0	442.1	8.88	50.762		
1,900.0	1,888.0	1,807.4	1,725.8	4.8	9.5	58.76	8.3	-569.3	478.8	469.5	9.38	51.075		
2,000.0	1,987.3	1,903.2	1,814.7	5.1	10.1	58.11	3.1	-604.8	506.8	496.9	9.86	51.381		
2,100.0	2,086.5	1,999.1	1,903.6	5.4	10.8	57.52	-2.1	-640.3	534.8	524.4	10.35	51.678		
2,200.0	2,185.7	2,095.0	1,992.5	5.6	11.5	56.99	-7.4	-675.9	562.8	552.0	10.83	51.964		
2,300.0	2,285.0	2,190.8	2,081.4	5.9	12.2	56.52	-12.6	-711.4	590.9	579.6	11.31	52.239		
2,400.0	2,384.2	2,286.7	2,170.3	6.2	12.9	56.08	-17.9	-746.9	619.0	607.2	11.79	52.503		
2,500.0	2,483.4	2,382.6	2,259.2	6.5	13.6	55.69	-23.1	-782.4	647.2	634.9	12.27	52.754		
2,600.0	2,582.6	2,478.4	2,348.0	6.8	14.3	55.32	-28.4	-818.0	675.3	662.6	12.74	52.995		
2,700.0	2,681.9	2,574.3	2,436.9	7.0	14.9	54.99	-33.6	-853.5	703.5	690.3	13.22	53.224		
2,800.0	2,781.1	2,670.2	2,525.8	7.3	15.6	54.68	-38.9	-889.0	731.7	718.0	13.69	53.443		
2,900.0	2,880.3	2,766.0	2,614.7	7.6	16.3	54.40	-44.1	-924.5	760.0	745.8	14.16	53.652		
3,000.0	2,979.5	2,861.9	2,703.6	7.9	17.0	54.13	-49.4	-960.1	788.2	773.6	14.64	53.852		
3,100.0	3,078.8	2,957.8	2,792.5	8.1	17.7	53.88	-54.6	-995.6	816.5	801.4	15.11	54.042		
3,200.0	3,178.0	3,053.6	2,881.4	8.4	18.4	53.65	-59.8	-1,031.1	844.8	829.2	15.58	54.224		
3,300.0	3,277.2	3,149.5	2,970.2	8.7	19.1	53.44	-65.1	-1,066.6	873.0	857.0	16.05	54.398		
3,400.0	3,376.5	3,245.4	3,059.1	9.0	19.8	53.24	-70.3	-1,102.2	901.3	884.8	16.52	54.564		
3,500.0	3,475.7	3,341.2	3,148.0	9.3	20.5	53.05	-75.6	-1,137.7	929.6	912.7	16.99	54.723		
3,600.0	3,574.9	3,437.1	3,236.9	9.5	21.1	52.87	-80.8	-1,173.2	958.0	940.5	17.46	54.876		
3,700.0	3,674.1	3,533.0	3,325.8	9.8	21.8	52.70	-86.1	-1,208.7	986.3	968.4	17.93	55.022		
3,800.0	3,773.4	3,628.8	3,414.7	10.1	22.5	52.54	-91.3	-1,244.3	1,014.6	996.2	18.39	55.161		
3,900.0	3,872.6	3,724.7	3,503.6	10.4	23.2	52.39	-96.6	-1,279.8	1,043.0	1,024.1	18.86	55.296		
4,000.0	3,971.8	3,820.6	3,592.4	10.7	23.9	52.25	-101.8	-1,315.3	1,071.3	1,052.0	19.33	55.425		
4,100.0	4,071.0	3,916.4	3,681.3	10.9	24.6	52.12	-107.1	-1,350.8	1,099.7	1,079.9	19.80	55.548		
4,200.0	4,170.3	4,012.3	3,770.2	11.2	25.3	51.99	-112.3	-1,386.4	1,128.0	1,107.7	20.26	55.667		
4,300.0	4,269.5	4,108.1	3,859.1	11.5	26.0	51.87	-117.5	-1,421.9	1,156.4	1,135.6	20.73	55.782		
4,400.0	4,368.7	4,204.0	3,948.0	11.8	26.6	51.75	-122.8	-1,457.4	1,184.7	1,163.5	21.20	55.892		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-13B1 - DD - 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	-55.71	68.1	-99.9	120.9					
100.0	100.0	100.0	100.0	0.1	0.1	-55.71	68.1	-99.9	120.9	120.6	0.27	444.085		
200.0	200.0	200.0	200.0	0.3	0.3	-55.71	68.1	-99.9	120.9	120.3	0.62	194.599 CC, ES		
300.0	299.9	296.1	296.0	0.5	0.5	106.27	67.4	-102.2	124.3	123.3	0.98	127.349		
400.0	399.6	392.0	391.7	0.7	0.7	83.23	65.3	-109.1	129.2	127.8	1.39	93.022		
500.0	498.9	487.9	486.8	1.0	1.0	78.58	61.9	-120.6	134.6	132.7	1.87	71.808		
600.0	598.1	583.4	580.8	1.2	1.3	77.85	57.1	-136.6	142.6	140.2	2.42	59.041		
700.0	697.3	678.0	673.1	1.5	1.7	75.80	51.0	-156.9	153.8	150.8	3.00	51.295		
800.0	796.5	771.4	762.9	1.8	2.2	72.86	43.7	-181.2	168.4	164.8	3.60	46.771		
900.0	895.8	863.1	849.9	2.0	2.8	69.43	35.3	-209.0	186.9	182.7	4.20	44.477		
1,000.0	995.0	952.7	933.4	2.3	3.4	65.86	26.0	-240.1	209.4	204.7	4.77	43.903 SF		
1,100.0	1,094.2	1,047.9	1,021.2	2.6	4.1	62.39	15.3	-275.4	234.8	229.5	5.32	44.136		
1,200.0	1,193.4	1,143.7	1,109.5	2.9	4.8	59.57	4.6	-311.0	260.9	255.0	5.84	44.652		
1,300.0	1,292.7	1,239.6	1,197.8	3.1	5.5	57.26	-6.0	-346.6	287.4	281.1	6.34	45.313		
1,400.0	1,391.9	1,335.4	1,286.1	3.4	6.2	55.34	-16.7	-382.1	314.3	307.5	6.83	46.040		
1,500.0	1,491.1	1,431.2	1,374.5	3.7	6.9	53.72	-27.4	-417.7	341.5	334.2	7.30	46.786		
1,600.0	1,590.4	1,527.0	1,462.8	4.0	7.6	52.34	-38.1	-453.2	368.9	361.2	7.76	47.526		
1,700.0	1,689.6	1,622.8	1,551.1	4.3	8.3	51.15	-48.8	-488.8	396.5	388.3	8.22	48.246		
1,800.0	1,788.8	1,718.6	1,639.5	4.5	9.0	50.11	-59.5	-524.4	424.2	415.6	8.67	48.938		
1,900.0	1,888.0	1,814.4	1,727.8	4.8	9.7	49.20	-70.2	-559.9	452.1	443.0	9.11	49.599		
2,000.0	1,987.3	1,910.3	1,816.1	5.1	10.4	48.40	-80.9	-595.5	480.0	470.4	9.56	50.227		
2,100.0	2,086.5	2,006.1	1,904.4	5.4	11.1	47.68	-91.6	-631.0	508.0	498.0	10.00	50.822		
2,200.0	2,185.7	2,101.9	1,992.8	5.6	11.8	47.04	-102.3	-666.6	536.1	525.6	10.43	51.386		
2,300.0	2,285.0	2,197.7	2,081.1	5.9	12.5	46.46	-112.9	-702.2	564.2	553.3	10.87	51.918		
2,400.0	2,384.2	2,293.5	2,169.4	6.2	13.2	45.94	-123.6	-737.7	592.4	581.1	11.30	52.421		
2,500.0	2,483.4	2,389.3	2,257.7	6.5	14.0	45.46	-134.3	-773.3	620.6	608.9	11.73	52.897		
2,600.0	2,582.6	2,485.2	2,346.1	6.8	14.7	45.03	-145.0	-808.8	648.8	636.7	12.16	53.348		
2,700.0	2,681.9	2,581.0	2,434.4	7.0	15.4	44.63	-155.7	-844.4	677.1	664.5	12.59	53.774		
2,800.0	2,781.1	2,676.8	2,522.7	7.3	16.1	44.26	-166.4	-879.9	705.4	692.4	13.02	54.178		
2,900.0	2,880.3	2,772.6	2,611.1	7.6	16.8	43.92	-177.1	-915.5	733.8	720.3	13.45	54.561		
3,000.0	2,979.5	2,868.4	2,699.4	7.9	17.5	43.61	-187.8	-951.1	762.1	748.2	13.88	54.924		
3,100.0	3,078.8	2,964.2	2,787.7	8.1	18.2	43.32	-198.5	-986.6	790.5	776.2	14.30	55.270		
3,200.0	3,178.0	3,060.0	2,876.0	8.4	18.9	43.05	-209.2	-1,022.2	818.9	804.2	14.73	55.598		
3,300.0	3,277.2	3,155.9	2,964.4	8.7	19.6	42.80	-219.8	-1,057.7	847.3	832.1	15.15	55.910		
3,400.0	3,376.5	3,251.7	3,052.7	9.0	20.3	42.56	-230.5	-1,093.3	875.7	860.1	15.58	56.207		
3,500.0	3,475.7	3,347.5	3,141.0	9.3	21.1	42.34	-241.2	-1,128.9	904.2	888.2	16.01	56.491		
3,600.0	3,574.9	3,443.3	3,229.4	9.5	21.8	42.13	-251.9	-1,164.4	932.6	916.2	16.43	56.762		
3,700.0	3,674.1	3,539.1	3,317.7	9.8	22.5	41.94	-262.6	-1,200.0	961.1	944.2	16.85	57.020		
3,800.0	3,773.4	3,634.9	3,406.0	10.1	23.2	41.75	-273.3	-1,235.5	989.5	972.3	17.28	57.267		
3,900.0	3,872.6	3,730.7	3,494.3	10.4	23.9	41.58	-284.0	-1,271.1	1,018.0	1,000.3	17.70	57.504		
4,000.0	3,971.8	3,826.6	3,582.7	10.7	24.6	41.41	-294.7	-1,306.7	1,046.5	1,028.4	18.13	57.730		
4,100.0	4,071.0	3,922.4	3,671.0	10.9	25.3	41.26	-305.4	-1,342.2	1,075.0	1,056.4	18.55	57.947		
4,200.0	4,170.3	4,018.2	3,759.3	11.2	26.0	41.11	-316.1	-1,377.8	1,103.5	1,084.5	18.97	58.155		
4,300.0	4,269.5	4,114.0	3,847.6	11.5	26.7	40.97	-326.7	-1,413.3	1,132.0	1,112.6	19.40	58.355		
4,400.0	4,368.7	4,209.8	3,936.0	11.8	27.5	40.84	-337.4	-1,448.9	1,160.5	1,140.7	19.82	58.547		
4,500.0	4,468.0	4,305.6	4,024.3	12.0	28.2	40.71	-348.1	-1,484.4	1,189.0	1,168.8	20.25	58.731		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-13B2 - DD - 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	-61.01	59.7	-107.8	123.2					
100.0	100.0	100.0	100.0	0.1	0.1	-61.01	59.7	-107.8	123.2	123.0	0.27	452.663		
200.0	200.0	200.0	200.0	0.3	0.3	-61.01	59.7	-107.8	123.2	122.6	0.62	198.358 CC, ES		
300.0	299.9	296.2	296.1	0.5	0.5	101.02	58.8	-110.0	126.3	125.3	0.98	129.210		
400.0	399.6	392.3	391.9	0.7	0.7	77.94	55.8	-116.7	130.2	128.8	1.39	93.615		
500.0	498.9	488.3	487.2	1.0	1.0	73.10	51.0	-127.7	134.2	132.4	1.88	71.520		
600.0	598.1	584.1	581.5	1.2	1.3	72.12	44.2	-143.0	140.8	138.4	2.42	58.208		
700.0	697.3	679.0	674.0	1.5	1.7	69.79	35.6	-162.5	150.4	147.4	3.00	50.158		
800.0	796.5	772.8	764.2	1.8	2.2	66.52	25.4	-185.8	163.5	159.9	3.59	45.499		
900.0	895.8	864.8	851.5	2.0	2.8	62.73	13.5	-212.6	180.6	176.4	4.18	43.195		
1,000.0	995.0	954.8	935.3	2.3	3.4	58.82	0.3	-242.5	201.8	197.1	4.74	42.625 SF		
1,100.0	1,094.2	1,047.3	1,020.1	2.6	4.1	54.96	-14.6	-276.3	227.0	221.8	5.25	43.248		
1,200.0	1,193.4	1,142.8	1,107.5	2.9	4.8	51.71	-30.1	-311.6	253.4	247.7	5.73	44.187		
1,300.0	1,292.7	1,238.4	1,194.9	3.1	5.5	49.06	-45.7	-346.9	280.4	274.2	6.19	45.264		
1,400.0	1,391.9	1,333.9	1,282.3	3.4	6.3	46.88	-61.2	-382.2	307.9	301.2	6.64	46.388		
1,500.0	1,491.1	1,429.4	1,369.8	3.7	7.0	45.06	-76.8	-417.4	335.7	328.6	7.07	47.511		
1,600.0	1,590.4	1,525.0	1,457.2	4.0	7.7	43.51	-92.3	-452.7	363.8	356.3	7.48	48.605		
1,700.0	1,689.6	1,620.5	1,544.6	4.3	8.5	42.18	-107.9	-488.0	392.1	384.2	7.90	49.655		
1,800.0	1,788.8	1,716.1	1,632.0	4.5	9.2	41.03	-123.4	-523.2	420.5	412.2	8.30	50.656		
1,900.0	1,888.0	1,811.6	1,719.4	4.8	9.9	40.03	-139.0	-558.5	449.1	440.4	8.70	51.604		
2,000.0	1,987.3	1,907.2	1,806.9	5.1	10.7	39.14	-154.5	-593.8	477.8	468.7	9.10	52.499		
2,100.0	2,086.5	2,002.7	1,894.3	5.4	11.4	38.36	-170.0	-629.1	506.6	497.2	9.50	53.344		
2,200.0	2,185.7	2,098.2	1,981.7	5.6	12.1	37.66	-185.6	-664.3	535.5	525.6	9.89	54.140		
2,300.0	2,285.0	2,193.8	2,069.1	5.9	12.9	37.03	-201.1	-699.6	564.5	554.2	10.28	54.890		
2,400.0	2,384.2	2,289.3	2,156.5	6.2	13.6	36.46	-216.7	-734.9	593.5	582.8	10.67	55.597		
2,500.0	2,483.4	2,384.9	2,244.0	6.5	14.3	35.95	-232.2	-770.2	622.5	611.5	11.06	56.264		
2,600.0	2,582.6	2,480.4	2,331.4	6.8	15.1	35.48	-247.8	-805.4	651.6	640.2	11.45	56.893		
2,700.0	2,681.9	2,576.0	2,418.8	7.0	15.8	35.05	-263.3	-840.7	680.8	668.9	11.84	57.488		
2,800.0	2,781.1	2,671.5	2,506.2	7.3	16.5	34.66	-278.9	-876.0	709.9	697.7	12.23	58.050		
2,900.0	2,880.3	2,767.0	2,593.6	7.6	17.3	34.29	-294.4	-911.2	739.1	726.5	12.62	58.581		
3,000.0	2,979.5	2,862.6	2,681.1	7.9	18.0	33.96	-310.0	-946.5	768.4	755.4	13.00	59.085		
3,100.0	3,078.8	2,958.1	2,768.5	8.1	18.7	33.65	-325.5	-981.8	797.6	784.2	13.39	59.563		
3,200.0	3,178.0	3,053.7	2,855.9	8.4	19.5	33.36	-341.1	-1,017.1	826.9	813.1	13.78	60.016		
3,300.0	3,277.2	3,149.2	2,943.3	8.7	20.2	33.09	-356.6	-1,052.3	856.1	842.0	14.16	60.447		
3,400.0	3,376.5	3,244.7	3,030.7	9.0	20.9	32.84	-372.2	-1,087.6	885.4	870.9	14.55	60.857		
3,500.0	3,475.7	3,340.3	3,118.2	9.3	21.7	32.60	-387.7	-1,122.9	914.8	899.8	14.94	61.247		
3,600.0	3,574.9	3,435.8	3,205.6	9.5	22.4	32.38	-403.3	-1,158.2	944.1	928.8	15.32	61.619		
3,700.0	3,674.1	3,531.4	3,293.0	9.8	23.2	32.17	-418.8	-1,193.4	973.4	957.7	15.71	61.973		
3,800.0	3,773.4	3,626.9	3,380.4	10.1	23.9	31.98	-434.4	-1,228.7	1,002.8	986.7	16.09	62.312		
3,900.0	3,872.6	3,722.5	3,467.9	10.4	24.6	31.80	-449.9	-1,264.0	1,032.1	1,015.6	16.48	62.636		
4,000.0	3,971.8	3,818.0	3,555.3	10.7	25.4	31.62	-465.5	-1,299.2	1,061.5	1,044.6	16.86	62.945		
4,100.0	4,071.0	3,913.5	3,642.7	10.9	26.1	31.46	-481.0	-1,334.5	1,090.9	1,073.6	17.25	63.242		
4,200.0	4,170.3	4,009.1	3,730.1	11.2	26.8	31.30	-496.6	-1,369.8	1,120.2	1,102.6	17.63	63.526		
4,300.0	4,269.5	4,104.6	3,817.5	11.5	27.6	31.15	-512.1	-1,405.1	1,149.6	1,131.6	18.02	63.798		
4,400.0	4,368.7	4,200.2	3,905.0	11.8	28.3	31.01	-527.7	-1,440.3	1,179.0	1,160.6	18.41	64.059		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-13C1 - DD - 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	-62.94	51.0	-99.8	112.1					
100.0	100.0	100.0	100.0	0.1	0.1	-62.94	51.0	-99.8	112.1	111.8	0.27	411.647	CC, ES	
200.0	200.0	200.0	200.0	0.3	0.3	-62.94	51.0	-99.8	112.1	111.5	0.62	180.385		
300.0	299.9	297.0	296.9	0.5	0.5	99.13	49.7	-101.9	114.8	113.8	0.98	117.179		
400.0	399.6	393.9	393.6	0.7	0.7	75.93	45.9	-108.2	117.9	116.5	1.40	84.288		
500.0	498.9	490.8	489.7	1.0	1.0	70.76	39.5	-118.7	120.5	118.6	1.89	63.660		
600.0	598.1	587.5	584.8	1.2	1.3	69.16	30.7	-133.3	125.4	122.9	2.45	51.250	SF	
700.0	697.3	683.3	678.2	1.5	1.7	65.94	19.4	-151.8	133.2	130.1	3.04	43.864		
800.0	796.5	777.9	769.1	1.8	2.2	61.62	5.9	-174.0	144.4	140.8	3.63	39.787		
900.0	895.8	870.8	857.1	2.0	2.8	56.77	-9.6	-199.5	159.8	155.6	4.20	38.061		
1,000.0	995.0	961.7	941.7	2.3	3.5	51.89	-26.9	-227.9	179.8	175.1	4.72	38.078		
1,100.0	1,094.2	1,050.2	1,022.4	2.6	4.1	47.32	-45.7	-258.9	204.6	199.4	5.18	39.496		
1,200.0	1,193.4	1,144.5	1,107.4	2.9	4.9	43.13	-66.9	-293.7	232.6	227.0	5.60	41.518		
1,300.0	1,292.7	1,239.2	1,192.8	3.1	5.7	39.83	-88.2	-328.8	261.5	255.5	6.00	43.616		
1,400.0	1,391.9	1,333.9	1,278.2	3.4	6.4	37.17	-109.5	-363.8	291.1	284.8	6.37	45.685		
1,500.0	1,491.1	1,428.7	1,363.6	3.7	7.2	35.01	-130.8	-398.9	321.2	314.5	6.74	47.674		
1,600.0	1,590.4	1,523.4	1,449.0	4.0	8.0	33.21	-152.0	-433.9	351.6	344.5	7.09	49.561		
1,700.0	1,689.6	1,618.1	1,534.4	4.3	8.8	31.70	-173.3	-468.9	382.3	374.9	7.45	51.335		
1,800.0	1,788.8	1,712.8	1,619.7	4.5	9.5	30.41	-194.6	-504.0	413.2	405.4	7.80	52.998		
1,900.0	1,888.0	1,807.6	1,705.1	4.8	10.3	29.30	-215.9	-539.0	444.3	436.1	8.14	54.551		
2,000.0	1,987.3	1,902.3	1,790.5	5.1	11.1	28.33	-237.2	-574.0	475.5	467.0	8.49	56.002		
2,100.0	2,086.5	1,997.0	1,875.9	5.4	11.9	27.48	-258.5	-609.1	506.8	497.9	8.84	57.356		
2,200.0	2,185.7	2,091.7	1,961.3	5.6	12.6	26.73	-279.8	-644.1	538.1	529.0	9.18	58.620		
2,300.0	2,285.0	2,186.5	2,046.7	5.9	13.4	26.07	-301.1	-679.2	569.6	560.1	9.52	59.802		
2,400.0	2,384.2	2,281.2	2,132.1	6.2	14.2	25.47	-322.4	-714.2	601.1	591.3	9.87	60.908		
2,500.0	2,483.4	2,375.9	2,217.5	6.5	15.0	24.93	-343.7	-749.2	632.7	622.5	10.21	61.944		
2,600.0	2,582.6	2,470.6	2,302.9	6.8	15.8	24.44	-365.0	-784.3	664.3	653.8	10.56	62.916		
2,700.0	2,681.9	2,565.4	2,388.3	7.0	16.5	24.00	-386.3	-819.3	696.0	685.1	10.90	63.829		
2,800.0	2,781.1	2,660.1	2,473.7	7.3	17.3	23.60	-407.6	-854.3	727.7	716.4	11.25	64.687		
2,900.0	2,880.3	2,754.8	2,559.0	7.6	18.1	23.23	-428.9	-889.4	759.4	747.8	11.59	65.495		
3,000.0	2,979.5	2,849.5	2,644.4	7.9	18.9	22.88	-450.2	-924.4	791.2	779.2	11.94	66.257		
3,100.0	3,078.8	2,944.2	2,729.8	8.1	19.7	22.57	-471.5	-959.5	822.9	810.7	12.29	66.976		
3,200.0	3,178.0	3,039.0	2,815.2	8.4	20.4	22.28	-492.7	-994.5	854.7	842.1	12.63	67.656		
3,300.0	3,277.2	3,133.7	2,900.6	8.7	21.2	22.01	-514.0	-1,029.5	886.6	873.6	12.98	68.299		
3,400.0	3,376.5	3,228.4	2,986.0	9.0	22.0	21.76	-535.3	-1,064.6	918.4	905.1	13.33	68.909		
3,500.0	3,475.7	3,323.1	3,071.4	9.3	22.8	21.52	-556.6	-1,099.6	950.2	936.6	13.67	69.488		
3,600.0	3,574.9	3,417.9	3,156.8	9.5	23.5	21.30	-577.9	-1,134.6	982.1	968.1	14.02	70.037		
3,700.0	3,674.1	3,512.6	3,242.2	9.8	24.3	21.10	-599.2	-1,169.7	1,014.0	999.6	14.37	70.559		
3,800.0	3,773.4	3,607.3	3,327.6	10.1	25.1	20.90	-620.5	-1,204.7	1,045.8	1,031.1	14.72	71.057		
3,900.0	3,872.6	3,702.0	3,412.9	10.4	25.9	20.72	-641.8	-1,239.7	1,077.7	1,062.7	15.07	71.531		
4,000.0	3,971.8	3,796.8	3,498.3	10.7	26.7	20.55	-663.1	-1,274.8	1,109.6	1,094.2	15.42	71.983		
4,100.0	4,071.0	3,891.5	3,583.7	10.9	27.4	20.39	-684.4	-1,309.8	1,141.6	1,125.8	15.76	72.414		
4,200.0	4,170.3	3,986.2	3,669.1	11.2	28.2	20.23	-705.7	-1,344.9	1,173.5	1,157.4	16.11	72.826		
4,300.0	4,269.5	4,080.9	3,754.5	11.5	29.0	20.09	-727.0	-1,379.9	1,205.4	1,188.9	16.46	73.221		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-13C2 - DD - 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	-68.43	42.6	-107.8	115.9					
100.0	100.0	100.0	100.0	0.1	0.1	-68.43	42.6	-107.8	115.9	115.6	0.27	425.755		
200.0	200.0	200.0	200.0	0.3	0.3	-68.43	42.6	-107.8	115.9	115.3	0.62	186.567 CC, ES		
300.0	299.9	296.9	296.9	0.5	0.5	93.67	41.1	-109.8	118.3	117.3	0.98	120.661		
400.0	399.6	393.8	393.5	0.7	0.7	70.41	36.7	-115.6	120.6	119.2	1.40	86.225		
500.0	498.9	490.8	489.7	1.0	1.0	65.04	29.2	-125.4	122.0	120.1	1.89	64.613		
600.0	598.1	587.4	584.8	1.2	1.3	63.22	18.9	-139.0	125.7	123.2	2.43	51.618		
700.0	697.3	683.3	678.2	1.5	1.7	59.76	5.7	-156.2	132.3	129.3	3.01	43.924		
800.0	796.5	778.0	769.2	1.8	2.2	55.17	-10.0	-176.8	142.5	138.9	3.59	39.728		
900.0	895.8	871.0	857.3	2.0	2.8	50.05	-28.1	-200.6	157.0	152.8	4.13	38.021 SF		
1,000.0	995.0	961.9	941.9	2.3	3.5	44.92	-48.3	-227.1	176.2	171.6	4.62	38.161		
1,100.0	1,094.2	1,050.5	1,022.7	2.6	4.2	40.14	-70.3	-256.0	200.5	195.4	5.05	39.697		
1,200.0	1,193.4	1,138.4	1,101.2	2.9	4.9	35.84	-94.3	-287.5	229.6	224.2	5.42	42.334		
1,300.0	1,292.7	1,232.2	1,184.3	3.1	5.7	32.12	-120.5	-321.9	261.0	255.2	5.77	45.198		
1,400.0	1,391.9	1,325.9	1,267.4	3.4	6.5	29.19	-146.7	-356.3	293.1	287.0	6.11	47.996		
1,500.0	1,491.1	1,419.6	1,350.5	3.7	7.3	26.84	-173.0	-390.8	325.9	319.4	6.43	50.664		
1,600.0	1,590.4	1,513.3	1,433.7	4.0	8.1	24.91	-199.2	-425.2	359.0	352.2	6.75	53.177		
1,700.0	1,689.6	1,607.0	1,516.8	4.3	8.9	23.31	-225.4	-459.6	392.4	385.4	7.07	55.526		
1,800.0	1,788.8	1,700.7	1,599.9	4.5	9.8	21.95	-251.7	-494.1	426.1	418.7	7.38	57.715		
1,900.0	1,888.0	1,794.5	1,683.0	4.8	10.6	20.79	-277.9	-528.5	459.9	452.2	7.70	59.750		
2,000.0	1,987.3	1,888.2	1,766.2	5.1	11.4	19.79	-304.1	-562.9	493.9	485.9	8.01	61.641		
2,100.0	2,086.5	1,981.9	1,849.3	5.4	12.2	18.92	-330.4	-597.4	528.0	519.7	8.33	63.399		
2,200.0	2,185.7	2,075.6	1,932.4	5.6	13.0	18.16	-356.6	-631.8	562.2	553.6	8.65	65.034		
2,300.0	2,285.0	2,169.3	2,015.5	5.9	13.8	17.48	-382.8	-666.2	596.5	587.6	8.96	66.556		
2,400.0	2,384.2	2,263.0	2,098.6	6.2	14.7	16.87	-409.1	-700.7	630.9	621.6	9.28	67.974		
2,500.0	2,483.4	2,356.8	2,181.8	6.5	15.5	16.33	-435.3	-735.1	665.3	655.7	9.60	69.298		
2,600.0	2,582.6	2,450.5	2,264.9	6.8	16.3	15.84	-461.5	-769.5	699.7	689.8	9.92	70.535		
2,700.0	2,681.9	2,544.2	2,348.0	7.0	17.1	15.40	-487.8	-804.0	734.2	724.0	10.24	71.693		
2,800.0	2,781.1	2,637.9	2,431.1	7.3	17.9	14.99	-514.0	-838.4	768.8	758.2	10.56	72.778		
2,900.0	2,880.3	2,731.6	2,514.2	7.6	18.8	14.63	-540.2	-872.8	803.3	792.4	10.89	73.796		
3,000.0	2,979.5	2,825.4	2,597.4	7.9	19.6	14.29	-566.5	-907.3	837.9	826.7	11.21	74.753		
3,100.0	3,078.8	2,919.1	2,680.5	8.1	20.4	13.97	-592.7	-941.7	872.5	861.0	11.53	75.654		
3,200.0	3,178.0	3,012.8	2,763.6	8.4	21.2	13.69	-618.9	-976.1	907.2	895.3	11.86	76.502		
3,300.0	3,277.2	3,106.5	2,846.7	8.7	22.0	13.42	-645.2	-1,010.6	941.8	929.6	12.18	77.303		
3,400.0	3,376.5	3,200.2	2,929.8	9.0	22.9	13.17	-671.4	-1,045.0	976.5	964.0	12.51	78.060		
3,500.0	3,475.7	3,293.9	3,013.0	9.3	23.7	12.94	-697.6	-1,079.4	1,011.2	998.3	12.84	78.776		
3,600.0	3,574.9	3,387.7	3,096.1	9.5	24.5	12.72	-723.9	-1,113.8	1,045.8	1,032.7	13.16	79.455		
3,700.0	3,674.1	3,481.4	3,179.2	9.8	25.3	12.52	-750.1	-1,148.3	1,080.6	1,067.1	13.49	80.098		
3,800.0	3,773.4	3,575.1	3,262.3	10.1	26.1	12.33	-776.3	-1,182.7	1,115.3	1,101.5	13.82	80.709		
3,900.0	3,872.6	3,668.8	3,345.4	10.4	27.0	12.15	-802.6	-1,217.1	1,150.0	1,135.9	14.15	81.290		
4,000.0	3,971.8	3,762.5	3,428.6	10.7	27.8	11.99	-828.8	-1,251.6	1,184.7	1,170.3	14.48	81.842		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-14B2 - DD - 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	-85.36	8.7	-107.8	108.2					
100.0	100.0	100.0	100.0	0.1	0.1	-85.36	8.7	-107.8	108.2	107.9	0.27	397.240		
200.0	200.0	200.0	200.0	0.3	0.3	-85.36	8.7	-107.8	108.2	107.5	0.62	174.072		
300.0	299.9	299.9	299.9	0.5	0.5	78.12	8.7	-107.8	108.1	107.2	0.98	110.367		
400.0	399.6	399.6	399.6	0.7	0.7	58.26	8.7	-107.8	104.7	103.4	1.36	76.834		
500.0	498.9	498.9	498.9	1.0	0.8	58.60	8.7	-107.8	98.2	96.4	1.77	55.318		
600.0	598.1	595.5	595.5	1.2	1.0	63.73	7.4	-109.8	93.6	91.4	2.20	42.488		
700.0	697.3	694.0	693.7	1.5	1.2	66.67	3.0	-115.7	92.2	89.6	2.66	34.739		
800.0	796.5	795.8	794.8	1.8	1.4	66.73	-6.2	-123.2	90.2	87.1	3.15	28.664		
900.0	895.8	896.8	894.4	2.0	1.7	63.61	-20.5	-130.9	86.5	82.9	3.67	23.598		
1,000.0	995.0	996.5	992.7	2.3	2.0	59.37	-35.9	-138.5	82.8	78.6	4.18	19.794		
1,100.0	1,094.2	1,096.3	1,090.9	2.6	2.3	54.75	-51.3	-146.2	79.5	74.8	4.68	16.989		
1,200.0	1,193.4	1,196.0	1,189.1	2.9	2.6	49.77	-66.7	-153.8	76.8	71.6	5.14	14.920		
1,300.0	1,292.7	1,295.7	1,287.4	3.1	3.0	44.47	-82.2	-161.5	74.7	69.1	5.57	13.409		
1,400.0	1,391.9	1,395.4	1,385.6	3.4	3.3	38.92	-97.6	-169.1	73.2	67.3	5.94	12.330		
1,500.0	1,491.1	1,495.2	1,483.8	3.7	3.6	33.20	-113.0	-176.8	72.5	66.3	6.26	11.593		
1,546.4	1,537.2	1,541.4	1,529.4	3.8	3.8	30.52	-120.1	-180.3	72.4	66.1	6.38	11.345 CC		
1,600.0	1,590.4	1,594.9	1,582.1	4.0	4.0	27.43	-128.4	-184.4	72.5	66.0	6.52	11.124 ES		
1,700.0	1,689.6	1,694.6	1,680.3	4.3	4.3	21.72	-143.8	-192.1	73.3	66.6	6.75	10.865		
1,800.0	1,788.8	1,794.4	1,778.6	4.5	4.7	16.18	-159.2	-199.7	74.8	67.8	6.95	10.762		
1,900.0	1,888.0	1,894.1	1,876.8	4.8	5.0	10.90	-174.7	-207.4	76.9	69.8	7.14	10.769		
2,000.0	1,987.3	1,993.8	1,975.0	5.1	5.3	5.95	-190.1	-215.0	79.7	72.3	7.35	10.844		
2,100.0	2,086.5	2,093.6	2,073.3	5.4	5.7	1.36	-205.5	-222.7	83.0	75.4	7.58	10.955		
2,200.0	2,185.7	2,193.3	2,171.5	5.6	6.0	-2.86	-220.9	-230.3	86.8	79.0	7.84	11.078		
2,300.0	2,285.0	2,293.0	2,269.7	5.9	6.4	-6.70	-236.3	-238.0	91.1	82.9	8.13	11.199		
2,400.0	2,384.2	2,392.8	2,368.0	6.2	6.7	-10.19	-251.7	-245.6	95.7	87.2	8.46	11.309		
2,500.0	2,483.4	2,492.5	2,466.2	6.5	7.1	-13.35	-267.1	-253.3	100.6	91.8	8.82	11.407		
2,600.0	2,582.6	2,592.2	2,564.4	6.8	7.4	-16.20	-282.6	-260.9	105.8	96.6	9.21	11.490		
2,700.0	2,681.9	2,692.0	2,662.7	7.0	7.7	-18.78	-298.0	-268.6	111.3	101.6	9.62	11.562		
2,800.0	2,781.1	2,791.7	2,760.9	7.3	8.1	-21.12	-313.4	-276.2	116.9	106.9	10.06	11.624		
2,900.0	2,880.3	2,891.4	2,859.1	7.6	8.4	-23.24	-328.8	-283.9	122.8	112.2	10.51	11.679		
3,000.0	2,979.5	2,991.2	2,957.4	7.9	8.8	-25.17	-344.2	-291.5	128.7	117.8	10.98	11.727		
3,100.0	3,078.8	3,090.9	3,055.6	8.1	9.1	-26.92	-359.6	-299.2	134.9	123.4	11.46	11.772		
3,200.0	3,178.0	3,190.6	3,153.9	8.4	9.5	-28.52	-375.1	-306.8	141.1	129.1	11.94	11.813		
3,300.0	3,277.2	3,290.3	3,252.1	8.7	9.8	-29.98	-390.5	-314.5	147.4	135.0	12.44	11.853		
3,400.0	3,376.5	3,390.1	3,350.3	9.0	10.2	-31.32	-405.9	-322.1	153.8	140.9	12.94	11.890		
3,500.0	3,475.7	3,489.8	3,448.6	9.3	10.5	-32.56	-421.3	-329.8	160.3	146.9	13.44	11.927		
3,600.0	3,574.9	3,589.5	3,546.8	9.5	10.9	-33.69	-436.7	-337.4	166.9	152.9	13.95	11.962		
3,700.0	3,674.1	3,689.3	3,645.0	9.8	11.2	-34.75	-452.1	-345.1	173.5	159.1	14.46	11.997		
3,800.0	3,773.4	3,789.0	3,743.3	10.1	11.6	-35.72	-467.6	-352.7	180.2	165.2	14.98	12.031		
3,900.0	3,872.6	3,888.7	3,841.5	10.4	11.9	-36.62	-483.0	-360.4	186.9	171.4	15.49	12.065		
4,000.0	3,971.8	3,988.5	3,939.7	10.7	12.2	-37.46	-498.4	-368.0	193.7	177.7	16.01	12.098		
4,100.0	4,071.0	4,088.2	4,038.0	10.9	12.6	-38.25	-513.8	-375.7	200.5	184.0	16.53	12.131		
4,200.0	4,170.3	4,187.9	4,136.2	11.2	12.9	-38.98	-529.2	-383.3	207.4	190.3	17.05	12.163		
4,300.0	4,269.5	4,287.7	4,234.4	11.5	13.3	-39.67	-544.6	-391.0	214.2	196.7	17.57	12.194		
4,400.0	4,368.7	4,387.4	4,332.7	11.8	13.6	-40.31	-560.0	-398.6	221.1	203.0	18.09	12.226		
4,500.0	4,468.0	4,487.1	4,430.9	12.0	14.0	-40.91	-575.5	-406.3	228.1	209.5	18.61	12.256		
4,600.0	4,567.2	4,586.9	4,529.2	12.3	14.3	-41.48	-590.9	-413.9	235.0	215.9	19.13	12.286		
4,700.0	4,666.4	4,686.6	4,627.4	12.6	14.7	-42.02	-606.3	-421.6	242.0	222.3	19.65	12.316		
4,800.0	4,765.6	4,786.3	4,725.6	12.9	15.0	-42.52	-621.7	-429.2	249.0	228.8	20.17	12.345		
4,900.0	4,864.9	4,886.1	4,823.9	13.2	15.4	-43.00	-637.1	-436.9	256.0	235.3	20.69	12.373		
5,000.0	4,964.1	4,985.8	4,922.1	13.4	15.7	-43.45	-652.5	-444.5	263.0	241.8	21.21	12.401		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-14B2 - DD - 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)				
5,100.0	5,063.3	5,085.5	5,020.3	13.7	16.1	-43.88	-668.0	-452.2	270.1	248.4	21.73	12.429		
5,200.0	5,162.6	5,185.2	5,118.6	14.0	16.4	-44.29	-683.4	-459.8	277.1	254.9	22.25	12.455		
5,300.0	5,261.8	5,285.0	5,216.8	14.3	16.8	-44.67	-698.8	-467.5	284.2	261.4	22.77	12.482		
5,400.0	5,361.0	5,384.7	5,315.0	14.6	17.1	-45.04	-714.2	-475.1	291.3	268.0	23.29	12.507		
5,500.0	5,460.2	5,484.4	5,413.3	14.8	17.5	-45.39	-729.6	-482.8	298.4	274.6	23.81	12.532		
5,600.0	5,559.5	5,584.2	5,511.5	15.1	17.8	-45.73	-745.0	-490.4	305.5	281.2	24.33	12.557		
5,700.0	5,658.7	5,683.9	5,609.7	15.4	18.1	-46.05	-760.5	-498.1	312.6	287.8	24.85	12.581		
5,800.0	5,757.9	5,783.6	5,708.0	15.7	18.5	-46.35	-775.9	-505.7	319.8	294.4	25.37	12.605		
5,900.0	5,857.1	5,883.4	5,806.2	15.9	18.8	-46.64	-791.3	-513.4	326.9	301.0	25.89	12.628		
6,000.0	5,956.4	5,983.1	5,904.5	16.2	19.2	-46.92	-806.7	-521.0	334.0	307.6	26.41	12.650		
6,100.0	6,055.6	6,082.8	6,002.7	16.5	19.5	-47.19	-822.1	-528.7	341.2	314.3	26.92	12.672		
6,200.0	6,154.8	6,190.7	6,109.1	16.8	19.9	-47.53	-837.9	-536.5	347.6	320.1	27.47	12.651		
6,300.0	6,254.1	6,302.8	6,220.2	17.1	20.2	-48.18	-850.7	-542.9	350.7	322.6	28.09	12.485		
6,400.0	6,353.3	6,414.8	6,331.9	17.3	20.4	-49.07	-859.6	-547.3	350.7	322.0	28.73	12.209		
6,500.0	6,453.1	6,526.9	6,443.8	17.5	20.6	-49.66	-864.6	-549.7	350.3	321.1	29.19	11.998		
6,600.0	6,553.0	6,636.2	6,553.0	17.6	20.7	-177.97	-865.8	-550.3	349.8	320.4	29.49	11.861		
6,700.0	6,653.0	6,736.2	6,653.0	17.7	20.8	-177.97	-865.8	-550.3	349.8	320.1	29.77	11.752		
6,800.0	6,753.0	6,836.2	6,753.0	17.8	20.9	-177.97	-865.8	-550.3	349.8	319.8	30.04	11.645		
6,900.0	6,853.0	6,936.2	6,853.0	18.0	21.0	-177.97	-865.8	-550.3	349.8	319.5	30.32	11.538		
7,000.0	6,953.0	7,036.2	6,953.0	18.1	21.1	-177.97	-865.8	-550.3	349.8	319.2	30.60	11.433		
7,100.0	7,053.0	7,136.2	7,053.0	18.2	21.2	-177.97	-865.8	-550.3	349.8	319.0	30.88	11.330		
7,200.0	7,153.0	7,236.2	7,153.0	18.3	21.3	-177.97	-865.8	-550.3	349.8	318.7	31.16	11.228		
7,300.0	7,253.0	7,336.2	7,253.0	18.4	21.4	-177.97	-865.8	-550.3	349.8	318.4	31.44	11.127		
7,400.0	7,353.0	7,436.2	7,353.0	18.6	21.5	-177.97	-865.8	-550.3	349.8	318.1	31.73	11.027		
7,500.0	7,453.0	7,536.2	7,453.0	18.7	21.6	-177.97	-865.8	-550.3	349.8	317.8	32.01	10.929		
7,600.0	7,553.0	7,636.2	7,553.0	18.8	21.7	-177.97	-865.8	-550.3	349.8	317.6	32.30	10.832		
7,700.0	7,653.0	7,736.2	7,653.0	18.9	21.8	-177.97	-865.8	-550.3	349.8	317.3	32.58	10.737		
7,800.0	7,753.0	7,836.2	7,753.0	19.0	21.9	-177.97	-865.8	-550.3	349.8	317.0	32.87	10.642		
7,900.0	7,853.0	7,936.2	7,853.0	19.2	22.0	-177.97	-865.8	-550.3	349.8	316.7	33.16	10.549		
8,000.0	7,953.0	8,036.2	7,953.0	19.3	22.1	-177.97	-865.8	-550.3	349.8	316.4	33.45	10.458		
8,100.0	8,053.0	8,136.2	8,053.0	19.4	22.2	-177.97	-865.8	-550.3	349.8	316.1	33.75	10.367		
8,200.0	8,153.0	8,236.2	8,153.0	19.6	22.3	-177.97	-865.8	-550.3	349.8	315.8	34.04	10.278		
8,300.0	8,253.0	8,336.2	8,253.0	19.7	22.5	-177.97	-865.8	-550.3	349.8	315.5	34.33	10.190		
8,400.0	8,353.0	8,436.2	8,353.0	19.8	22.6	-177.97	-865.8	-550.3	349.8	315.2	34.63	10.103		
8,500.0	8,453.0	8,536.2	8,453.0	19.9	22.7	-177.97	-865.8	-550.3	349.8	314.9	34.92	10.017		
8,600.0	8,553.0	8,636.2	8,553.0	20.1	22.8	-177.97	-865.8	-550.3	349.8	314.6	35.22	9.933		
8,700.0	8,653.0	8,736.2	8,653.0	20.2	22.9	-177.97	-865.8	-550.3	349.8	314.3	35.52	9.849		
8,800.0	8,753.0	8,836.2	8,753.0	20.3	23.0	-177.97	-865.8	-550.3	349.8	314.0	35.82	9.767		
8,900.0	8,853.0	8,936.2	8,853.0	20.5	23.1	-177.97	-865.8	-550.3	349.8	313.7	36.12	9.686		
8,918.0	8,871.0	8,954.1	8,871.0	20.5	23.2	-177.97	-865.8	-550.3	349.8	313.7	36.17	9.672 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-14C - DD - Plan #2													Offset Site Error: 0.0 ft	
Survey Program: O-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
							+N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-80.27	17.1	-99.8	101.3					
100.0	100.0	100.0	100.0	0.1	0.1	-80.27	17.1	-99.8	101.3	101.0	0.27	371.927		
200.0	200.0	200.0	200.0	0.3	0.3	-80.27	17.1	-99.8	101.3	100.6	0.62	162.979		
300.0	299.9	299.9	299.9	0.5	0.5	83.33	17.1	-99.8	101.6	100.6	0.98	103.683		
400.0	399.6	399.6	399.6	0.7	0.7	63.88	17.1	-99.8	98.9	97.5	1.37	72.388		
500.0	498.9	498.9	498.9	1.0	0.8	64.89	17.1	-99.8	93.4	91.6	1.78	52.378		
600.0	598.1	598.8	598.7	1.2	1.0	70.53	14.7	-100.7	88.4	86.2	2.22	39.771		
700.0	697.3	699.3	698.9	1.5	1.2	73.30	7.4	-103.4	83.3	80.6	2.69	30.930		
800.0	796.5	799.9	798.7	1.8	1.5	72.61	-5.0	-107.9	77.2	74.0	3.20	24.097		
900.0	895.8	900.0	897.1	2.0	1.8	67.57	-22.1	-114.1	70.5	66.7	3.77	18.707		
1,000.0	995.0	999.3	993.8	2.3	2.1	57.84	-43.0	-121.8	64.6	60.3	4.33	14.940		
1,100.0	1,094.2	1,098.4	1,090.3	2.6	2.5	46.23	-64.2	-129.5	61.1	56.3	4.80	12.742		
1,175.9	1,169.6	1,173.6	1,163.6	2.8	2.8	36.82	-80.4	-135.4	60.3	55.2	5.06	11.914 CC, ES		
1,200.0	1,193.4	1,197.5	1,186.8	2.9	2.9	33.81	-85.5	-137.3	60.3	55.2	5.12	11.781		
1,300.0	1,292.7	1,296.6	1,283.3	3.1	3.3	21.66	-106.7	-145.0	62.5	57.2	5.32	11.746 SF		
1,400.0	1,391.9	1,395.7	1,379.8	3.4	3.8	10.74	-128.0	-152.8	67.2	61.8	5.46	12.314		
1,500.0	1,491.1	1,494.8	1,476.3	3.7	4.2	1.53	-149.2	-160.5	74.1	68.4	5.62	13.187		
1,600.0	1,590.4	1,593.9	1,572.8	4.0	4.6	-5.99	-170.5	-168.3	82.5	76.7	5.83	14.147		
1,700.0	1,689.6	1,693.1	1,669.3	4.3	5.0	-12.04	-191.7	-176.1	92.1	86.0	6.11	15.076		
1,800.0	1,788.8	1,792.2	1,765.8	4.5	5.4	-16.92	-212.9	-183.8	102.5	96.0	6.44	15.921		
1,900.0	1,888.0	1,891.3	1,862.3	4.8	5.9	-20.88	-234.2	-191.6	113.5	106.7	6.81	16.671		
2,000.0	1,987.3	1,990.4	1,958.8	5.1	6.3	-24.13	-255.4	-199.3	124.9	117.7	7.21	17.331		
2,100.0	2,086.5	2,089.5	2,055.3	5.4	6.7	-26.83	-276.7	-207.1	136.7	129.1	7.63	17.911		
2,200.0	2,185.7	2,188.6	2,151.8	5.6	7.1	-29.09	-297.9	-214.9	148.7	140.7	8.07	18.423		
2,300.0	2,285.0	2,287.7	2,248.3	5.9	7.6	-31.02	-319.2	-222.6	161.0	152.5	8.53	18.879		
2,400.0	2,384.2	2,386.9	2,344.8	6.2	8.0	-32.68	-340.4	-230.4	173.4	164.4	8.99	19.286		
2,500.0	2,483.4	2,486.0	2,441.3	6.5	8.4	-34.11	-361.7	-238.1	185.9	176.4	9.46	19.653		
2,600.0	2,582.6	2,585.1	2,537.8	6.8	8.9	-35.36	-382.9	-245.9	198.5	188.6	9.93	19.986		
2,700.0	2,681.9	2,684.2	2,634.3	7.0	9.3	-36.46	-404.1	-253.7	211.2	200.8	10.41	20.288		
2,800.0	2,781.1	2,783.3	2,730.8	7.3	9.7	-37.44	-425.4	-261.4	223.9	213.0	10.89	20.565		
2,900.0	2,880.3	2,882.4	2,827.3	7.6	10.1	-38.31	-446.6	-269.2	236.7	225.4	11.37	20.820		
3,000.0	2,979.5	2,981.5	2,923.8	7.9	10.6	-39.09	-467.9	-276.9	249.6	237.8	11.86	21.055		
3,100.0	3,078.8	3,080.7	3,020.3	8.1	11.0	-39.80	-489.1	-284.7	262.5	250.2	12.34	21.273		
3,200.0	3,178.0	3,179.8	3,116.8	8.4	11.4	-40.44	-510.4	-292.4	275.5	262.6	12.83	21.476		
3,300.0	3,277.2	3,278.9	3,213.3	8.7	11.9	-41.02	-531.6	-300.2	288.4	275.1	13.31	21.664		
3,400.0	3,376.5	3,378.0	3,309.8	9.0	12.3	-41.55	-552.9	-308.0	301.4	287.6	13.80	21.840		
3,500.0	3,475.7	3,477.1	3,406.3	9.3	12.7	-42.04	-574.1	-315.7	314.5	300.2	14.29	22.005		
3,600.0	3,574.9	3,576.2	3,502.8	9.5	13.2	-42.49	-595.4	-323.5	327.5	312.7	14.78	22.160		
3,700.0	3,674.1	3,675.3	3,599.3	9.8	13.6	-42.90	-616.6	-331.2	340.6	325.3	15.27	22.306		
3,800.0	3,773.4	3,774.5	3,695.8	10.1	14.0	-43.29	-637.8	-339.0	353.6	337.9	15.76	22.443		
3,900.0	3,872.6	3,873.6	3,792.3	10.4	14.4	-43.64	-659.1	-346.8	366.7	350.5	16.25	22.573		
4,000.0	3,971.8	3,972.7	3,888.8	10.7	14.9	-43.97	-680.3	-354.5	379.8	363.1	16.74	22.695		
4,100.0	4,071.0	4,071.8	3,985.3	10.9	15.3	-44.28	-701.6	-362.3	393.0	375.7	17.23	22.812		
4,200.0	4,170.3	4,170.9	4,081.8	11.2	15.7	-44.57	-722.8	-370.0	406.1	388.4	17.72	22.922		
4,300.0	4,269.5	4,270.0	4,178.3	11.5	16.2	-44.85	-744.1	-377.8	419.2	401.0	18.21	23.026		
4,400.0	4,368.7	4,369.1	4,274.8	11.8	16.6	-45.10	-765.3	-385.6	432.4	413.7	18.70	23.126		
4,500.0	4,468.0	4,468.3	4,371.3	12.0	17.0	-45.34	-786.6	-393.3	445.5	426.3	19.19	23.221		
4,600.0	4,567.2	4,567.4	4,467.8	12.3	17.5	-45.57	-807.8	-401.1	458.7	439.0	19.68	23.311		
4,700.0	4,666.4	4,666.5	4,564.3	12.6	17.9	-45.78	-829.0	-408.8	471.9	451.7	20.17	23.397		
4,800.0	4,765.6	4,765.6	4,660.8	12.9	18.3	-45.98	-850.3	-416.6	485.0	464.4	20.66	23.480		
4,900.0	4,864.9	4,864.7	4,757.3	13.2	18.8	-46.17	-871.5	-424.3	498.2	477.1	21.15	23.559		
5,000.0	4,964.1	4,963.8	4,853.8	13.4	19.2	-46.36	-892.8	-432.1	511.4	489.8	21.64	23.634		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-14C - DD - 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)				
5,100.0	5,063.3	5,062.9	4,950.3	13.7	19.6	-46.53	-914.0	-439.9	524.6	502.5	22.13	23.707		
5,200.0	5,162.6	5,162.1	5,046.8	14.0	20.1	-46.69	-935.3	-447.6	537.8	515.2	22.62	23.776		
5,300.0	5,261.8	5,261.2	5,143.3	14.3	20.5	-46.85	-956.5	-455.4	551.0	527.9	23.11	23.843		
5,400.0	5,361.0	5,360.3	5,239.8	14.6	20.9	-47.00	-977.8	-463.1	564.2	540.6	23.60	23.907		
5,500.0	5,460.2	5,459.4	5,336.3	14.8	21.4	-47.14	-999.0	-470.9	577.4	553.3	24.09	23.969		
5,600.0	5,559.5	5,558.5	5,432.8	15.1	21.8	-47.28	-1,020.3	-478.7	590.6	566.0	24.58	24.028		
5,700.0	5,658.7	5,657.6	5,529.3	15.4	22.2	-47.40	-1,041.5	-486.4	603.8	578.7	25.07	24.085		
5,800.0	5,757.9	5,756.7	5,625.8	15.7	22.6	-47.53	-1,062.7	-494.2	617.0	591.5	25.56	24.140		
5,900.0	5,857.1	5,855.9	5,722.3	15.9	23.1	-47.65	-1,084.0	-501.9	630.2	604.2	26.05	24.193		
6,000.0	5,956.4	5,955.0	5,818.8	16.2	23.5	-47.76	-1,105.2	-509.7	643.5	616.9	26.54	24.245		
6,100.0	6,055.6	6,069.2	5,930.2	16.5	24.0	-47.91	-1,128.9	-518.3	656.0	629.0	27.07	24.236		
6,200.0	6,154.8	6,196.2	6,055.0	16.8	24.4	-48.23	-1,150.7	-526.3	664.9	637.3	27.66	24.041		
6,300.0	6,254.1	6,323.7	6,181.3	17.1	24.7	-48.71	-1,167.3	-532.3	669.7	641.4	28.28	23.680		
6,400.0	6,353.3	6,451.4	6,308.4	17.3	25.0	-49.32	-1,178.6	-536.5	670.7	641.8	28.90	23.211		
6,500.0	6,453.1	6,579.0	6,435.9	17.5	25.2	-49.73	-1,184.6	-538.7	670.5	641.1	29.34	22.849		
6,600.0	6,553.0	6,696.2	6,553.0	17.6	25.3	177.97	-1,185.6	-539.0	669.8	640.2	29.64	22.603		
6,700.0	6,653.0	6,796.2	6,653.0	17.7	25.3	177.97	-1,185.6	-539.0	669.8	639.9	29.91	22.396		
6,800.0	6,753.0	6,896.2	6,753.0	17.8	25.4	177.97	-1,185.6	-539.0	669.8	639.7	30.18	22.192		
6,900.0	6,853.0	6,996.2	6,853.0	18.0	25.5	177.97	-1,185.6	-539.0	669.8	639.4	30.46	21.990		
7,000.0	6,953.0	7,096.2	6,953.0	18.1	25.6	177.97	-1,185.6	-539.0	669.8	639.1	30.74	21.791		
7,100.0	7,053.0	7,196.2	7,053.0	18.2	25.7	177.97	-1,185.6	-539.0	669.8	638.8	31.02	21.595		
7,200.0	7,153.0	7,296.2	7,153.0	18.3	25.8	177.97	-1,185.6	-539.0	669.8	638.5	31.30	21.401		
7,300.0	7,253.0	7,396.2	7,253.0	18.4	25.8	177.97	-1,185.6	-539.0	669.8	638.3	31.58	21.210		
7,400.0	7,353.0	7,496.2	7,353.0	18.6	25.9	177.97	-1,185.6	-539.0	669.8	638.0	31.87	21.021		
7,500.0	7,453.0	7,596.2	7,453.0	18.7	26.0	177.97	-1,185.6	-539.0	669.8	637.7	32.15	20.835		
7,600.0	7,553.0	7,696.2	7,553.0	18.8	26.1	177.97	-1,185.6	-539.0	669.8	637.4	32.44	20.651		
7,700.0	7,653.0	7,796.2	7,653.0	18.9	26.2	177.97	-1,185.6	-539.0	669.8	637.1	32.72	20.470		
7,800.0	7,753.0	7,896.2	7,753.0	19.0	26.3	177.97	-1,185.6	-539.0	669.8	636.8	33.01	20.291		
7,900.0	7,853.0	7,996.2	7,853.0	19.2	26.4	177.97	-1,185.6	-539.0	669.8	636.5	33.30	20.114		
8,000.0	7,953.0	8,096.2	7,953.0	19.3	26.5	177.97	-1,185.6	-539.0	669.8	636.3	33.59	19.940		
8,100.0	8,053.0	8,196.2	8,053.0	19.4	26.6	177.97	-1,185.6	-539.0	669.8	636.0	33.89	19.768		
8,200.0	8,153.0	8,296.2	8,153.0	19.6	26.7	177.97	-1,185.6	-539.0	669.8	635.7	34.18	19.599		
8,300.0	8,253.0	8,396.2	8,253.0	19.7	26.8	177.97	-1,185.6	-539.0	669.8	635.4	34.47	19.432		
8,400.0	8,353.0	8,496.2	8,353.0	19.8	26.8	177.97	-1,185.6	-539.0	669.8	635.1	34.77	19.267		
8,500.0	8,453.0	8,596.2	8,453.0	19.9	26.9	177.97	-1,185.6	-539.0	669.8	634.8	35.06	19.104		
8,600.0	8,553.0	8,696.2	8,553.0	20.1	27.0	177.97	-1,185.6	-539.0	669.8	634.5	35.36	18.944		
8,700.0	8,653.0	8,796.2	8,653.0	20.2	27.1	177.97	-1,185.6	-539.0	669.8	634.2	35.66	18.785		
8,800.0	8,753.0	8,896.2	8,753.0	20.3	27.2	177.97	-1,185.6	-539.0	669.8	633.9	35.96	18.629		
8,861.7	8,814.7	8,957.9	8,814.7	20.4	27.3	177.97	-1,185.6	-539.0	669.8	633.7	36.14	18.534		
8,900.0	8,853.0	8,983.2	8,840.0	20.5	27.3	177.97	-1,185.6	-539.0	670.0	633.7	36.24	18.489		
8,918.0	8,871.0	8,983.2	8,840.0	20.5	27.3	177.97	-1,185.6	-539.0	670.6	634.3	36.26	18.492		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 28-16C - DD - 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	43.11	8.7	8.2	12.0					
100.0	100.0	100.0	100.0	0.1	0.1	43.11	8.7	8.2	12.0	11.7	0.27	43.981		
200.0	200.0	200.0	200.0	0.3	0.3	43.11	8.7	8.2	12.0	11.4	0.62	19.273 CC, ES		
300.0	299.9	299.9	299.9	0.5	0.5	-154.23	7.0	10.1	15.0	14.1	0.98	15.328 SF		
400.0	399.6	399.2	398.8	0.7	0.7	-162.98	1.7	15.8	24.0	22.7	1.38	17.460		
500.0	498.9	496.9	495.7	1.0	1.0	-154.43	-6.9	25.1	40.5	38.7	1.82	22.259		
600.0	598.1	592.8	590.0	1.2	1.3	-145.05	-18.6	37.8	61.6	59.3	2.31	26.721		
700.0	697.3	686.6	681.4	1.5	1.8	-138.25	-33.1	53.5	86.9	84.1	2.81	30.916		
800.0	796.5	778.0	769.2	1.8	2.2	-133.09	-50.1	72.0	116.5	113.2	3.33	35.035		
900.0	895.8	866.7	853.2	2.0	2.8	-129.06	-69.4	92.8	150.3	146.5	3.84	39.180		
1,000.0	995.0	957.6	938.3	2.3	3.4	-125.87	-91.1	116.3	187.3	183.0	4.34	43.111		
1,100.0	1,094.2	1,050.0	1,024.7	2.6	3.9	-123.66	-113.2	140.4	224.8	219.9	4.85	46.329		
1,200.0	1,193.4	1,142.4	1,111.2	2.9	4.5	-122.08	-135.4	164.4	262.4	257.1	5.36	48.998		
1,300.0	1,292.7	1,234.8	1,197.7	3.1	5.1	-120.90	-157.5	188.4	300.2	294.3	5.86	51.240		
1,400.0	1,391.9	1,327.3	1,284.1	3.4	5.8	-119.98	-179.7	212.4	338.1	331.7	6.36	53.147		
1,500.0	1,491.1	1,419.7	1,370.6	3.7	6.4	-119.24	-201.9	236.4	376.0	369.2	6.86	54.788		
1,600.0	1,590.4	1,512.1	1,457.0	4.0	7.0	-118.64	-224.0	260.4	414.0	406.6	7.36	56.213		
1,700.0	1,689.6	1,604.6	1,543.5	4.3	7.6	-118.14	-246.2	284.4	452.0	444.1	7.87	57.462		
1,800.0	1,788.8	1,697.0	1,630.0	4.5	8.2	-117.72	-268.3	308.4	490.0	481.7	8.37	58.566		
1,900.0	1,888.0	1,789.4	1,716.4	4.8	8.8	-117.36	-290.5	332.5	528.1	519.2	8.87	59.547		
2,000.0	1,987.3	1,881.8	1,802.9	5.1	9.4	-117.05	-312.7	356.5	566.2	556.8	9.37	60.425		
2,100.0	2,086.5	1,974.3	1,889.4	5.4	10.0	-116.77	-334.8	380.5	604.2	594.4	9.87	61.217		
2,200.0	2,185.7	2,066.7	1,975.8	5.6	10.6	-116.53	-357.0	404.5	642.3	632.0	10.37	61.933		
2,300.0	2,285.0	2,159.1	2,062.3	5.9	11.2	-116.32	-379.1	428.5	680.4	669.6	10.87	62.584		
2,400.0	2,384.2	2,251.6	2,148.7	6.2	11.8	-116.13	-401.3	452.5	718.5	707.2	11.37	63.178		
2,500.0	2,483.4	2,344.0	2,235.2	6.5	12.4	-115.96	-423.4	476.5	756.7	744.8	11.87	63.723		
2,600.0	2,582.6	2,436.4	2,321.7	6.8	13.1	-115.80	-445.6	500.5	794.8	782.4	12.38	64.224		
2,700.0	2,681.9	2,528.8	2,408.1	7.0	13.7	-115.66	-467.8	524.5	832.9	820.0	12.88	64.687		
2,800.0	2,781.1	2,621.3	2,494.6	7.3	14.3	-115.53	-489.9	548.6	871.0	857.7	13.38	65.116		
2,900.0	2,880.3	2,713.7	2,581.0	7.6	14.9	-115.41	-512.1	572.6	909.2	895.3	13.88	65.513		
3,000.0	2,979.5	2,806.1	2,667.5	7.9	15.5	-115.30	-534.2	596.6	947.3	932.9	14.38	65.884		
3,100.0	3,078.8	2,898.6	2,754.0	8.1	16.1	-115.20	-556.4	620.6	985.4	970.6	14.88	66.229		
3,200.0	3,178.0	2,991.0	2,840.4	8.4	16.7	-115.11	-578.6	644.6	1,023.6	1,008.2	15.38	66.553		
3,300.0	3,277.2	3,083.4	2,926.9	8.7	17.3	-115.03	-600.7	668.6	1,061.7	1,045.8	15.88	66.856		
3,400.0	3,376.5	3,175.8	3,013.3	9.0	17.9	-114.94	-622.9	692.6	1,099.9	1,083.5	16.38	67.140		
3,500.0	3,475.7	3,268.3	3,099.8	9.3	18.5	-114.87	-645.0	716.6	1,138.0	1,121.1	16.88	67.408		
3,600.0	3,574.9	3,360.7	3,186.3	9.5	19.2	-114.80	-667.2	740.7	1,176.2	1,158.8	17.38	67.661		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 33-3B - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: O-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	-90.00	0.0	-99.8	99.8					
100.0	100.0	100.0	100.0	0.1	0.1	-90.00	0.0	-99.8	99.8	99.5	0.27	366.574		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-99.8	99.8	99.2	0.62	160.633		
300.0	299.9	302.2	302.2	0.5	0.5	72.95	-1.4	-98.6	98.3	97.3	0.99	99.680		
400.0	399.6	404.2	404.0	0.7	0.7	51.04	-5.6	-95.1	90.5	89.1	1.38	65.606		
500.0	498.9	503.3	502.7	1.0	0.9	47.23	-12.6	-90.2	77.0	75.2	1.80	42.723		
600.0	598.1	601.0	599.8	1.2	1.2	45.48	-23.7	-87.1	64.5	62.2	2.27	28.419		
700.0	697.3	698.8	696.3	1.5	1.5	38.25	-39.2	-86.5	54.7	51.9	2.78	19.671		
800.0	796.5	796.2	791.6	1.8	1.8	24.00	-59.0	-88.1	49.7	46.4	3.26	15.236		
816.1	812.5	811.7	806.8	1.8	1.9	21.16	-62.5	-88.6	49.6	46.2	3.33	14.897 CC, ES		
900.0	895.8	892.5	884.9	2.0	2.3	5.69	-82.7	-92.0	53.0	49.4	3.60	14.715 SF		
1,000.0	995.0	987.5	975.6	2.3	2.8	-9.75	-110.2	-98.1	66.0	62.1	3.85	17.120		
1,100.0	1,094.2	1,083.2	1,065.9	2.6	3.3	-19.81	-141.0	-106.1	86.3	82.1	4.12	20.941		
1,200.0	1,193.4	1,180.1	1,157.1	2.9	3.9	-26.05	-172.6	-114.3	108.5	104.1	4.43	24.507		
1,300.0	1,292.7	1,277.1	1,248.4	3.1	4.4	-30.15	-204.1	-122.5	131.6	126.9	4.77	27.592		
1,400.0	1,391.9	1,374.0	1,339.7	3.4	5.0	-33.03	-235.7	-130.7	155.2	150.0	5.14	30.207		
1,500.0	1,491.1	1,470.9	1,431.0	3.7	5.6	-35.14	-267.2	-138.9	179.0	173.5	5.52	32.414		
1,600.0	1,590.4	1,567.9	1,522.3	4.0	6.2	-36.76	-298.8	-147.1	203.0	197.1	5.92	34.281		
1,700.0	1,689.6	1,664.8	1,613.6	4.3	6.8	-38.04	-330.3	-155.3	227.1	220.8	6.33	35.867		
1,800.0	1,788.8	1,761.8	1,704.9	4.5	7.4	-39.07	-361.9	-163.5	251.3	244.6	6.75	37.224		
1,900.0	1,888.0	1,858.7	1,796.2	4.8	7.9	-39.92	-393.4	-171.7	275.6	268.4	7.18	38.395		
2,000.0	1,987.3	1,955.6	1,887.5	5.1	8.5	-40.63	-425.0	-179.9	299.9	292.3	7.61	39.411		
2,100.0	2,086.5	2,052.6	1,978.8	5.4	9.1	-41.24	-456.5	-188.1	324.2	316.2	8.05	40.299		
2,200.0	2,185.7	2,149.5	2,070.1	5.6	9.7	-41.76	-488.1	-196.3	348.6	340.1	8.49	41.081		
2,300.0	2,285.0	2,246.4	2,161.4	5.9	10.3	-42.21	-519.6	-204.5	373.0	364.1	8.93	41.774		
2,400.0	2,384.2	2,343.4	2,252.6	6.2	10.9	-42.61	-551.2	-212.7	397.4	388.1	9.38	42.392		
2,500.0	2,483.4	2,440.3	2,343.9	6.5	11.5	-42.96	-582.7	-220.9	421.9	412.0	9.82	42.945		
2,600.0	2,582.6	2,537.3	2,435.2	6.8	12.1	-43.27	-614.3	-229.2	446.3	436.0	10.27	43.444		
2,700.0	2,681.9	2,634.2	2,526.5	7.0	12.7	-43.55	-645.8	-237.4	470.8	460.1	10.73	43.895		
2,800.0	2,781.1	2,731.1	2,617.8	7.3	13.3	-43.81	-677.4	-245.6	495.3	484.1	11.18	44.305		
2,900.0	2,880.3	2,828.1	2,709.1	7.6	13.9	-44.04	-708.9	-253.8	519.7	508.1	11.63	44.679		
3,000.0	2,979.5	2,925.0	2,800.4	7.9	14.5	-44.24	-740.4	-262.0	544.2	532.1	12.09	45.021		
3,100.0	3,078.8	3,021.9	2,891.7	8.1	15.1	-44.43	-772.0	-270.2	568.7	556.2	12.54	45.336		
3,200.0	3,178.0	3,118.9	2,983.0	8.4	15.6	-44.61	-803.5	-278.4	593.2	580.2	13.00	45.627		
3,300.0	3,277.2	3,215.8	3,074.3	8.7	16.2	-44.77	-835.1	-286.6	617.7	604.3	13.46	45.895		
3,400.0	3,376.5	3,312.8	3,165.6	9.0	16.8	-44.92	-866.6	-294.8	642.2	628.3	13.92	46.144		
3,500.0	3,475.7	3,409.7	3,256.9	9.3	17.4	-45.06	-898.2	-303.0	666.7	652.4	14.38	46.376		
3,600.0	3,574.9	3,506.6	3,348.2	9.5	18.0	-45.18	-929.7	-311.2	691.2	676.4	14.84	46.592		
3,700.0	3,674.1	3,603.6	3,439.4	9.8	18.6	-45.30	-961.3	-319.4	715.8	700.5	15.30	46.793		
3,800.0	3,773.4	3,700.5	3,530.7	10.1	19.2	-45.41	-992.8	-327.6	740.3	724.5	15.76	46.982		
3,900.0	3,872.6	3,797.4	3,622.0	10.4	19.8	-45.52	-1,024.4	-335.8	764.8	748.6	16.22	47.159		
4,000.0	3,971.8	3,894.4	3,713.3	10.7	20.4	-45.62	-1,055.9	-344.0	789.3	772.7	16.68	47.326		
4,100.0	4,071.0	3,991.3	3,804.6	10.9	21.0	-45.71	-1,087.5	-352.2	813.9	796.7	17.14	47.482		
4,200.0	4,170.3	4,088.3	3,895.9	11.2	21.6	-45.79	-1,119.0	-360.4	838.4	820.8	17.60	47.630		
4,300.0	4,269.5	4,185.2	3,987.2	11.5	22.2	-45.88	-1,150.6	-368.6	862.9	844.9	18.06	47.770		
4,400.0	4,368.7	4,282.1	4,078.5	11.8	22.8	-45.95	-1,182.1	-376.8	887.5	868.9	18.53	47.902		
4,500.0	4,468.0	4,379.1	4,169.8	12.0	23.4	-46.03	-1,213.7	-385.0	912.0	893.0	18.99	48.028		
4,600.0	4,567.2	4,476.0	4,261.1	12.3	24.0	-46.10	-1,245.2	-393.2	936.5	917.1	19.45	48.146		
4,700.0	4,666.4	4,572.9	4,352.4	12.6	24.6	-46.16	-1,276.8	-401.5	961.1	941.1	19.91	48.259		
4,800.0	4,765.6	4,669.9	4,443.7	12.9	25.2	-46.22	-1,308.3	-409.7	985.6	965.2	20.38	48.367		
4,900.0	4,864.9	4,766.8	4,535.0	13.2	25.8	-46.28	-1,339.9	-417.9	1,010.1	989.3	20.84	48.469		
5,000.0	4,964.1	4,863.8	4,626.2	13.4	26.3	-46.34	-1,371.4	-426.1	1,034.7	1,013.4	21.30	48.567		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> K28NW Pad - Benjamin Federal 33-3B - DD - Plan #2													<b>Offset Site Error:</b> 0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b> 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
5,100.0	5,063.3	4,960.7	4,717.5	13.7	26.9	-46.39	-1,403.0	-434.3	1,059.2	1,037.4	21.77	48.660	
5,200.0	5,162.6	5,057.6	4,808.8	14.0	27.5	-46.44	-1,434.5	-442.5	1,083.8	1,061.5	22.23	48.749	
5,300.0	5,261.8	5,154.6	4,900.1	14.3	28.1	-46.49	-1,466.1	-450.7	1,108.3	1,085.6	22.69	48.834	
5,400.0	5,361.0	5,251.5	4,991.4	14.6	28.7	-46.54	-1,497.6	-458.9	1,132.8	1,109.7	23.16	48.916	
5,500.0	5,460.2	5,348.4	5,082.7	14.8	29.3	-46.58	-1,529.2	-467.1	1,157.4	1,133.8	23.62	48.994	
5,600.0	5,559.5	5,445.4	5,174.0	15.1	29.9	-46.63	-1,560.7	-475.3	1,181.9	1,157.8	24.09	49.069	



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Federal 33-4B - DD - 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	-76.69	25.5	-107.8	110.8					
100.0	100.0	100.0	100.0	0.1	0.1	-76.69	25.5	-107.8	110.8	110.5	0.27	406.864		
200.0	200.0	200.0	200.0	0.3	0.3	-76.69	25.5	-107.8	110.8	110.2	0.62	178.289 CC, ES		
300.0	299.9	296.8	296.8	0.5	0.5	85.55	23.8	-109.6	112.7	111.7	0.98	114.986		
400.0	399.6	393.7	393.3	0.7	0.7	62.30	18.9	-115.0	114.2	112.8	1.39	82.009		
500.0	498.9	490.5	489.4	1.0	1.0	56.71	10.6	-124.0	114.7	112.8	1.87	61.362		
600.0	598.1	587.1	584.5	1.2	1.3	54.59	-1.0	-136.6	117.6	115.2	2.39	49.134		
700.0	697.3	683.0	677.8	1.5	1.7	50.80	-15.6	-152.5	123.7	120.8	2.94	42.142		
800.0	796.5	777.6	768.8	1.8	2.2	45.91	-33.2	-171.6	133.8	130.4	3.46	38.627		
900.0	895.8	870.5	856.8	2.0	2.8	40.59	-53.3	-193.6	148.5	144.5	3.95	37.591 SF		
1,000.0	995.0	961.4	941.4	2.3	3.4	35.39	-75.9	-218.1	168.1	163.7	4.38	38.391		
1,100.0	1,094.2	1,049.9	1,022.2	2.6	4.1	30.68	-100.4	-244.7	192.9	188.1	4.75	40.562		
1,200.0	1,193.4	1,135.8	1,098.8	2.9	4.9	26.60	-126.6	-273.2	222.7	217.6	5.09	43.752		
1,300.0	1,292.7	1,221.2	1,173.2	3.1	5.7	23.09	-154.8	-304.0	257.2	251.8	5.39	47.698		
1,400.0	1,391.9	1,313.3	1,253.0	3.4	6.5	20.07	-186.0	-337.9	293.6	287.9	5.69	51.631		
1,500.0	1,491.1	1,405.4	1,332.8	3.7	7.4	17.72	-217.2	-371.8	330.6	324.6	5.98	55.293		
1,600.0	1,590.4	1,497.5	1,412.5	4.0	8.2	15.83	-248.4	-405.7	368.0	361.7	6.27	58.675		
1,700.0	1,689.6	1,589.6	1,492.3	4.3	9.1	14.29	-279.6	-439.7	405.7	399.1	6.57	61.785		
1,800.0	1,788.8	1,681.8	1,572.1	4.5	10.0	13.01	-310.8	-473.6	443.6	436.7	6.86	64.644		
1,900.0	1,888.0	1,773.9	1,651.8	4.8	10.8	11.93	-342.0	-507.5	481.6	474.4	7.16	67.270		
2,000.0	1,987.3	1,866.0	1,731.6	5.1	11.7	11.00	-373.2	-541.4	519.8	512.3	7.46	69.685		
2,100.0	2,086.5	1,958.1	1,811.4	5.4	12.6	10.21	-404.4	-575.4	558.0	550.3	7.76	71.907		
2,200.0	2,185.7	2,050.3	1,891.1	5.6	13.4	9.51	-435.6	-609.3	596.4	588.3	8.06	73.957		
2,300.0	2,285.0	2,142.4	1,970.9	5.9	14.3	8.90	-466.8	-643.2	634.8	626.5	8.37	75.849		
2,400.0	2,384.2	2,234.5	2,050.7	6.2	15.2	8.36	-498.0	-677.2	673.3	664.6	8.68	77.600		
2,500.0	2,483.4	2,326.6	2,130.4	6.5	16.0	7.87	-529.2	-711.1	711.8	702.8	8.99	79.223		
2,600.0	2,582.6	2,418.8	2,210.2	6.8	16.9	7.44	-560.3	-745.0	750.4	741.1	9.30	80.730		
2,700.0	2,681.9	2,510.9	2,290.0	7.0	17.8	7.05	-591.5	-778.9	789.0	779.4	9.61	82.133		
2,800.0	2,781.1	2,603.0	2,369.7	7.3	18.7	6.69	-622.7	-812.9	827.6	817.7	9.92	83.440		
2,900.0	2,880.3	2,695.1	2,449.5	7.6	19.5	6.37	-653.9	-846.8	866.3	856.0	10.23	84.660		
3,000.0	2,979.5	2,787.3	2,529.3	7.9	20.4	6.07	-685.1	-880.7	904.9	894.4	10.55	85.801		
3,100.0	3,078.8	2,879.4	2,609.0	8.1	21.3	5.80	-716.3	-914.6	943.6	932.8	10.86	86.871		
3,200.0	3,178.0	2,971.5	2,688.8	8.4	22.1	5.55	-747.5	-948.6	982.3	971.1	11.18	87.875		
3,300.0	3,277.2	3,063.6	2,768.6	8.7	23.0	5.32	-778.7	-982.5	1,021.0	1,009.5	11.50	88.818		
3,400.0	3,376.5	3,155.8	2,848.3	9.0	23.9	5.10	-809.9	-1,016.4	1,059.8	1,048.0	11.81	89.707		
3,500.0	3,475.7	3,247.9	2,928.1	9.3	24.7	4.90	-841.1	-1,050.4	1,098.5	1,086.4	12.13	90.544		
3,600.0	3,574.9	3,340.0	3,007.9	9.5	25.6	4.72	-872.3	-1,084.3	1,137.3	1,124.8	12.45	91.335		
3,700.0	3,674.1	3,432.1	3,087.6	9.8	26.5	4.54	-903.5	-1,118.2	1,176.0	1,163.3	12.77	92.083		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Fee 28-10D2 - DD - 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	10.87	42.6	8.2	43.4					
100.0	100.0	100.0	100.0	0.1	0.1	10.87	42.6	8.2	43.4	43.1	0.27	159.381		
200.0	200.0	200.0	200.0	0.3	0.3	10.87	42.6	8.2	43.4	42.8	0.62	69.841 CC, ES		
300.0	299.9	299.3	299.2	0.5	0.5	174.91	42.7	10.8	47.9	46.9	0.98	49.033		
400.0	399.6	397.3	396.9	0.7	0.7	160.74	43.1	18.4	58.5	57.1	1.36	43.133 SF		
500.0	498.9	492.8	491.6	1.0	1.0	167.20	43.6	30.6	76.7	74.9	1.75	43.797		
600.0	598.1	586.6	584.0	1.2	1.3	176.41	44.4	47.0	100.8	98.7	2.14	47.090		
700.0	697.3	682.2	677.8	1.5	1.6	-177.44	45.2	65.2	127.6	125.1	2.52	50.562		
800.0	796.5	777.8	771.7	1.8	2.0	-173.43	46.0	83.3	155.4	152.5	2.90	53.505		
900.0	895.8	873.4	865.6	2.0	2.3	-170.64	46.8	101.4	183.6	180.3	3.28	55.943		
1,000.0	995.0	969.0	959.4	2.3	2.7	-168.59	47.6	119.6	212.1	208.5	3.66	57.965		
1,100.0	1,094.2	1,064.6	1,053.3	2.6	3.1	-167.03	48.5	137.7	240.8	236.8	4.04	59.658		
1,200.0	1,193.4	1,160.2	1,147.2	2.9	3.4	-165.80	49.3	155.9	269.7	265.3	4.41	61.090		
1,300.0	1,292.7	1,255.8	1,241.0	3.1	3.8	-164.80	50.1	174.0	298.6	293.8	4.79	62.315		
1,400.0	1,391.9	1,351.4	1,334.9	3.4	4.1	-163.99	50.9	192.2	327.6	322.5	5.17	63.372		
1,500.0	1,491.1	1,447.0	1,428.8	3.7	4.5	-163.30	51.7	210.3	356.7	351.2	5.55	64.293		
1,600.0	1,590.4	1,542.6	1,522.6	4.0	4.9	-162.72	52.6	228.4	385.8	379.9	5.93	65.102		
1,700.0	1,689.6	1,638.2	1,616.5	4.3	5.2	-162.22	53.4	246.6	414.9	408.6	6.30	65.818		
1,800.0	1,788.8	1,733.8	1,710.3	4.5	5.6	-161.78	54.2	264.7	444.1	437.4	6.68	66.456		
1,900.0	1,888.0	1,829.4	1,804.2	4.8	5.9	-161.40	55.0	282.9	473.3	466.2	7.06	67.028		
2,000.0	1,987.3	1,925.1	1,898.1	5.1	6.3	-161.07	55.8	301.0	502.5	495.0	7.44	67.543		
2,100.0	2,086.5	2,020.7	1,991.9	5.4	6.7	-160.77	56.7	319.2	531.7	523.9	7.82	68.009		
2,200.0	2,185.7	2,116.3	2,085.8	5.6	7.0	-160.50	57.5	337.3	560.9	552.7	8.20	68.434		
2,300.0	2,285.0	2,211.9	2,179.7	5.9	7.4	-160.26	58.3	355.5	590.1	581.5	8.57	68.821		
2,400.0	2,384.2	2,307.5	2,273.5	6.2	7.8	-160.04	59.1	373.6	619.4	610.4	8.95	69.177		
2,500.0	2,483.4	2,403.1	2,367.4	6.5	8.1	-159.84	59.9	391.7	648.6	639.3	9.33	69.504		
2,600.0	2,582.6	2,498.7	2,461.2	6.8	8.5	-159.65	60.8	409.9	677.9	668.1	9.71	69.806		
2,700.0	2,681.9	2,594.3	2,555.1	7.0	8.8	-159.49	61.6	428.0	707.1	697.0	10.09	70.086		
2,800.0	2,781.1	2,689.9	2,649.0	7.3	9.2	-159.33	62.4	446.2	736.4	725.9	10.47	70.346		
2,900.0	2,880.3	2,785.5	2,742.8	7.6	9.6	-159.19	63.2	464.3	765.6	754.8	10.85	70.588		
3,000.0	2,979.5	2,881.1	2,836.7	7.9	9.9	-159.06	64.0	482.5	794.9	783.7	11.23	70.813		
3,100.0	3,078.8	2,976.7	2,930.6	8.1	10.3	-158.94	64.9	500.6	824.2	812.6	11.60	71.024		
3,200.0	3,178.0	3,072.3	3,024.4	8.4	10.7	-158.82	65.7	518.7	853.5	841.5	11.98	71.222		
3,300.0	3,277.2	3,167.9	3,118.3	8.7	11.0	-158.72	66.5	536.9	882.8	870.4	12.36	71.408		
3,400.0	3,376.5	3,263.5	3,212.2	9.0	11.4	-158.62	67.3	555.0	912.0	899.3	12.74	71.583		
3,500.0	3,475.7	3,359.1	3,306.0	9.3	11.7	-158.52	68.1	573.2	941.3	928.2	13.12	71.748		
3,600.0	3,574.9	3,454.7	3,399.9	9.5	12.1	-158.44	69.0	591.3	970.6	957.1	13.50	71.904		
3,700.0	3,674.1	3,550.3	3,493.7	9.8	12.5	-158.35	69.8	609.5	999.9	986.0	13.88	72.052		
3,800.0	3,773.4	3,645.9	3,587.6	10.1	12.8	-158.28	70.6	627.6	1,029.2	1,014.9	14.26	72.191		
3,900.0	3,872.6	3,741.5	3,681.5	10.4	13.2	-158.20	71.4	645.7	1,058.5	1,043.9	14.64	72.324		
4,000.0	3,971.8	3,837.1	3,775.3	10.7	13.6	-158.13	72.2	663.9	1,087.8	1,072.8	15.01	72.449		
4,100.0	4,071.0	3,932.7	3,869.2	10.9	13.9	-158.07	73.0	682.0	1,117.1	1,101.7	15.39	72.569		
4,200.0	4,170.3	4,028.4	3,963.1	11.2	14.3	-158.00	73.9	700.2	1,146.4	1,130.6	15.77	72.683		
4,300.0	4,269.5	4,124.0	4,056.9	11.5	14.6	-157.94	74.7	718.3	1,175.7	1,159.5	16.15	72.792		
4,400.0	4,368.7	4,219.6	4,150.8	11.8	15.0	-157.89	75.5	736.5	1,205.0	1,188.4	16.53	72.895		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Fee 28-11A - DD - 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	0.00	51.0	0.0	51.0					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	51.0	0.0	51.0	50.7	0.27	187.290		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	51.0	0.0	51.0	50.4	0.62	82.071 CC, ES		
300.0	299.9	298.4	298.4	0.5	0.5	159.54	52.3	-2.2	56.1	55.2	0.97	57.693		
400.0	399.6	396.1	395.7	0.7	0.7	133.86	56.1	-8.7	66.9	65.5	1.36	49.026		
500.0	498.9	494.7	493.8	1.0	0.9	128.34	61.7	-18.1	80.7	78.9	1.80	44.856		
600.0	598.1	593.7	592.2	1.2	1.2	128.59	67.4	-27.7	94.7	92.5	2.25	42.048		
700.0	697.3	692.8	690.5	1.5	1.4	128.78	73.0	-37.3	108.7	106.0	2.71	40.056		
800.0	796.5	791.8	788.9	1.8	1.7	128.93	78.7	-46.8	122.8	119.6	3.18	38.585		
900.0	895.8	890.8	887.3	2.0	2.0	129.05	84.4	-56.4	136.8	133.1	3.65	37.460		
1,000.0	995.0	989.8	985.7	2.3	2.2	129.14	90.0	-66.0	150.8	146.7	4.12	36.575		
1,100.0	1,094.2	1,088.8	1,084.1	2.6	2.5	129.22	95.7	-75.6	164.8	160.2	4.60	35.861		
1,200.0	1,193.4	1,187.8	1,182.5	2.9	2.7	129.29	101.4	-85.1	178.9	173.8	5.07	35.274		
1,300.0	1,292.7	1,286.8	1,280.9	3.1	3.0	129.34	107.0	-94.7	192.9	187.3	5.55	34.783		
1,400.0	1,391.9	1,385.8	1,379.2	3.4	3.3	129.39	112.7	-104.3	206.9	200.9	6.02	34.366		
1,500.0	1,491.1	1,484.9	1,477.6	3.7	3.5	129.43	118.4	-113.9	220.9	214.4	6.50	34.008		
1,600.0	1,590.4	1,583.9	1,576.0	4.0	3.8	129.47	124.0	-123.4	234.9	228.0	6.97	33.697		
1,700.0	1,689.6	1,682.9	1,674.4	4.3	4.0	129.50	129.7	-133.0	249.0	241.5	7.45	33.425		
1,800.0	1,788.8	1,781.9	1,772.8	4.5	4.3	129.53	135.4	-142.6	263.0	255.1	7.93	33.185		
1,900.0	1,888.0	1,880.9	1,871.2	4.8	4.6	129.56	141.0	-152.2	277.0	268.6	8.40	32.971		
2,000.0	1,987.3	1,979.9	1,969.5	5.1	4.8	129.58	146.7	-161.7	291.0	282.2	8.88	32.779		
2,100.0	2,086.5	2,078.9	2,067.9	5.4	5.1	129.61	152.4	-171.3	305.1	295.7	9.36	32.607		
2,200.0	2,185.7	2,177.9	2,166.3	5.6	5.3	129.63	158.0	-180.9	319.1	309.3	9.83	32.451		
2,300.0	2,285.0	2,276.9	2,264.7	5.9	5.6	129.64	163.7	-190.5	333.1	322.8	10.31	32.309		
2,400.0	2,384.2	2,376.0	2,363.1	6.2	5.9	129.66	169.4	-200.0	347.1	336.4	10.79	32.180		
2,500.0	2,483.4	2,475.0	2,461.5	6.5	6.1	129.68	175.0	-209.6	361.2	349.9	11.27	32.061		
2,600.0	2,582.6	2,574.0	2,559.9	6.8	6.4	129.69	180.7	-219.2	375.2	363.5	11.74	31.952		
2,700.0	2,681.9	2,673.0	2,658.2	7.0	6.6	129.70	186.4	-228.8	389.2	377.0	12.22	31.851		
2,800.0	2,781.1	2,772.0	2,756.6	7.3	6.9	129.72	192.0	-238.3	403.2	390.5	12.70	31.757		
2,900.0	2,880.3	2,871.0	2,855.0	7.6	7.2	129.73	197.7	-247.9	417.3	404.1	13.18	31.671		
3,000.0	2,979.5	2,970.0	2,953.4	7.9	7.4	129.74	203.4	-257.5	431.3	417.6	13.65	31.590		
3,100.0	3,078.8	3,069.0	3,051.8	8.1	7.7	129.75	209.0	-267.1	445.3	431.2	14.13	31.514		
3,200.0	3,178.0	3,168.1	3,150.2	8.4	7.9	129.76	214.7	-276.6	459.3	444.7	14.61	31.444		
3,300.0	3,277.2	3,267.1	3,248.5	8.7	8.2	129.77	220.4	-286.2	473.4	458.3	15.09	31.378		
3,400.0	3,376.5	3,366.1	3,346.9	9.0	8.5	129.78	226.0	-295.8	487.4	471.8	15.56	31.316		
3,500.0	3,475.7	3,465.1	3,445.3	9.3	8.7	129.78	231.7	-305.4	501.4	485.4	16.04	31.257		
3,600.0	3,574.9	3,564.1	3,543.7	9.5	9.0	129.79	237.4	-314.9	515.4	498.9	16.52	31.202		
3,700.0	3,674.1	3,663.1	3,642.1	9.8	9.2	129.80	243.0	-324.5	529.5	512.5	17.00	31.150		
3,800.0	3,773.4	3,762.1	3,740.5	10.1	9.5	129.81	248.7	-334.1	543.5	526.0	17.48	31.101		
3,900.0	3,872.6	3,861.1	3,838.9	10.4	9.8	129.81	254.4	-343.7	557.5	539.6	17.95	31.054		
4,000.0	3,971.8	3,960.1	3,937.2	10.7	10.0	129.82	260.0	-353.3	571.5	553.1	18.43	31.010		
4,100.0	4,071.0	4,059.2	4,035.6	10.9	10.3	129.82	265.7	-362.8	585.6	566.7	18.91	30.968		
4,200.0	4,170.3	4,158.2	4,134.0	11.2	10.5	129.83	271.4	-372.4	599.6	580.2	19.39	30.928		
4,300.0	4,269.5	4,257.2	4,232.4	11.5	10.8	129.84	277.0	-382.0	613.6	593.7	19.86	30.890		
4,400.0	4,368.7	4,356.2	4,330.8	11.8	11.1	129.84	282.7	-391.6	627.6	607.3	20.34	30.854		
4,500.0	4,468.0	4,455.2	4,429.2	12.0	11.3	129.85	288.4	-401.1	641.7	620.8	20.82	30.819		
4,600.0	4,567.2	4,554.2	4,527.5	12.3	11.6	129.85	294.0	-410.7	655.7	634.4	21.30	30.786		
4,700.0	4,666.4	4,653.2	4,625.9	12.6	11.8	129.85	299.7	-420.3	669.7	647.9	21.78	30.754		
4,800.0	4,765.6	4,752.2	4,724.3	12.9	12.1	129.86	305.4	-429.9	683.7	661.5	22.25	30.724		
4,900.0	4,864.9	4,851.2	4,822.7	13.2	12.4	129.86	311.0	-439.4	697.8	675.0	22.73	30.695		
5,000.0	4,964.1	4,950.3	4,921.1	13.4	12.6	129.87	316.7	-449.0	711.8	688.6	23.21	30.667		
5,100.0	5,063.3	5,049.3	5,019.5	13.7	12.9	129.87	322.4	-458.6	725.8	702.1	23.69	30.640		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Fee 28-11A - DD - 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	
5,200.0	5,162.6	5,148.3	5,117.8	14.0	13.1	129.87	328.0	-468.2	739.8	715.7	24.17	30.614		
5,300.0	5,261.8	5,247.3	5,216.2	14.3	13.4	129.88	333.7	-477.7	753.9	729.2	24.64	30.590		
5,400.0	5,361.0	5,346.3	5,314.6	14.6	13.7	129.88	339.4	-487.3	767.9	742.8	25.12	30.566		
5,500.0	5,460.2	5,445.3	5,413.0	14.8	13.9	129.88	345.0	-496.9	781.9	756.3	25.60	30.543		
5,600.0	5,559.5	5,544.3	5,511.4	15.1	14.2	129.89	350.7	-506.5	795.9	769.9	26.08	30.521		
5,700.0	5,658.7	5,643.3	5,609.8	15.4	14.4	129.89	356.4	-516.0	810.0	783.4	26.56	30.500		
5,800.0	5,757.9	5,742.4	5,708.2	15.7	14.7	129.89	362.0	-525.6	824.0	797.0	27.03	30.479		
5,900.0	5,857.1	5,841.4	5,806.5	15.9	15.0	129.90	367.7	-535.2	838.0	810.5	27.51	30.459		
6,000.0	5,956.4	5,940.4	5,904.9	16.2	15.2	129.90	373.4	-544.8	852.0	824.0	27.99	30.440		
6,100.0	6,055.6	6,039.4	6,003.3	16.5	15.5	129.90	379.0	-554.3	866.1	837.6	28.47	30.422		
6,200.0	6,154.8	6,138.4	6,101.7	16.8	15.8	129.90	384.7	-563.9	880.1	851.1	28.95	30.404		
6,300.0	6,254.1	6,237.4	6,200.1	17.1	16.0	129.91	390.4	-573.5	894.1	864.7	29.42	30.386		
6,400.0	6,353.3	6,343.8	6,305.8	17.3	16.3	130.03	396.3	-583.5	907.6	877.7	29.92	30.339		
6,500.0	6,453.1	6,464.0	6,425.6	17.5	16.5	130.18	401.0	-591.4	916.6	886.2	30.34	30.206		
6,600.0	6,553.0	6,584.7	6,546.3	17.6	16.7	-2.01	403.1	-595.0	919.8	889.2	30.66	30.001		
6,700.0	6,653.0	6,691.4	6,653.0	17.7	16.8	-2.02	403.2	-595.2	920.0	889.0	30.93	29.740		
6,800.0	6,753.0	6,791.4	6,753.0	17.8	16.9	-2.02	403.2	-595.2	920.0	888.8	31.20	29.489		
6,900.0	6,853.0	6,891.4	6,853.0	18.0	17.1	-2.02	403.2	-595.2	920.0	888.5	31.46	29.240		
7,000.0	6,953.0	6,991.4	6,953.0	18.1	17.2	-2.02	403.2	-595.2	920.0	888.2	31.73	28.994		
7,100.0	7,053.0	7,091.4	7,053.0	18.2	17.3	-2.02	403.2	-595.2	920.0	888.0	32.00	28.751		
7,200.0	7,153.0	7,191.4	7,153.0	18.3	17.4	-2.02	403.2	-595.2	920.0	887.7	32.27	28.510		
7,300.0	7,253.0	7,291.4	7,253.0	18.4	17.6	-2.02	403.2	-595.2	920.0	887.4	32.54	28.272		
7,400.0	7,353.0	7,391.4	7,353.0	18.6	17.7	-2.02	403.2	-595.2	920.0	887.1	32.81	28.037		
7,500.0	7,453.0	7,491.4	7,453.0	18.7	17.8	-2.02	403.2	-595.2	920.0	886.9	33.09	27.804		
7,600.0	7,553.0	7,591.4	7,553.0	18.8	17.9	-2.02	403.2	-595.2	920.0	886.6	33.36	27.574		
7,700.0	7,653.0	7,691.4	7,653.0	18.9	18.1	-2.02	403.2	-595.2	920.0	886.3	33.64	27.347		
7,800.0	7,753.0	7,791.4	7,753.0	19.0	18.2	-2.02	403.2	-595.2	920.0	886.0	33.92	27.122		
7,900.0	7,853.0	7,891.4	7,853.0	19.2	18.3	-2.02	403.2	-595.2	920.0	885.8	34.20	26.900		
8,000.0	7,953.0	7,991.4	7,953.0	19.3	18.5	-2.02	403.2	-595.2	920.0	885.5	34.48	26.681		
8,100.0	8,053.0	8,091.4	8,053.0	19.4	18.6	-2.02	403.2	-595.2	920.0	885.2	34.76	26.464		
8,200.0	8,153.0	8,191.4	8,153.0	19.6	18.7	-2.02	403.2	-595.2	920.0	884.9	35.05	26.250		
8,300.0	8,253.0	8,291.4	8,253.0	19.7	18.9	-2.02	403.2	-595.2	920.0	884.6	35.33	26.038		
8,400.0	8,353.0	8,391.4	8,353.0	19.8	19.0	-2.02	403.2	-595.2	920.0	884.3	35.62	25.829		
8,500.0	8,453.0	8,491.4	8,453.0	19.9	19.1	-2.02	403.2	-595.2	920.0	884.1	35.90	25.623		
8,600.0	8,553.0	8,591.4	8,553.0	20.1	19.3	-2.02	403.2	-595.2	920.0	883.8	36.19	25.419		
8,700.0	8,653.0	8,691.4	8,653.0	20.2	19.4	-2.02	403.2	-595.2	920.0	883.5	36.48	25.217		
8,800.0	8,753.0	8,791.4	8,753.0	20.3	19.5	-2.02	403.2	-595.2	920.0	883.2	36.77	25.018		
8,900.0	8,853.0	8,891.4	8,853.0	20.5	19.7	-2.02	403.2	-595.2	920.0	882.9	37.06	24.822		
8,918.0	8,871.0	8,909.4	8,871.0	20.5	19.7	-2.02	403.2	-595.2	920.0	882.8	37.11	24.787 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Fee 28-11B - DD - 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	0.00	68.1	0.0	68.1					
100.0	100.0	100.0	100.0	0.1	0.1	0.00	68.1	0.0	68.1	67.8	0.27	250.165		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	68.1	0.0	68.1	67.5	0.62	109.623	CC, ES	
300.0	299.9	297.1	297.1	0.5	0.5	160.39	70.0	-1.6	73.8	72.9	0.97	76.251		
400.0	399.6	393.3	392.9	0.7	0.7	135.96	75.4	-6.5	86.2	84.9	1.34	64.240		
500.0	498.9	488.2	487.1	1.0	1.0	130.85	84.3	-14.4	103.7	102.0	1.76	58.893		
600.0	598.1	586.3	584.1	1.2	1.2	130.66	95.3	-24.2	123.2	121.0	2.21	55.772		
700.0	697.3	684.4	681.0	1.5	1.5	130.52	106.3	-33.9	142.6	140.0	2.67	53.511		
800.0	796.5	782.4	778.0	1.8	1.8	130.42	117.3	-43.7	162.1	159.0	3.13	51.818		
900.0	895.8	880.5	875.0	2.0	2.1	130.34	128.3	-53.4	181.5	178.0	3.59	50.512		
1,000.0	995.0	978.6	972.0	2.3	2.5	130.27	139.3	-63.2	201.0	196.9	4.06	49.479		
1,100.0	1,094.2	1,076.7	1,069.0	2.6	2.8	130.21	150.3	-72.9	220.5	215.9	4.53	48.643		
1,200.0	1,193.4	1,174.8	1,165.9	2.9	3.1	130.17	161.3	-82.7	239.9	234.9	5.00	47.954		
1,300.0	1,292.7	1,272.9	1,262.9	3.1	3.4	130.13	172.3	-92.4	259.4	253.9	5.48	47.375		
1,400.0	1,391.9	1,371.0	1,359.9	3.4	3.7	130.10	183.3	-102.2	278.8	272.9	5.95	46.884		
1,500.0	1,491.1	1,469.1	1,456.9	3.7	4.0	130.07	194.3	-112.0	298.3	291.9	6.42	46.462		
1,600.0	1,590.4	1,567.1	1,553.9	4.0	4.3	130.04	205.3	-121.7	317.8	310.9	6.89	46.095		
1,700.0	1,689.6	1,665.2	1,650.9	4.3	4.6	130.02	216.3	-131.5	337.2	329.9	7.37	45.773		
1,800.0	1,788.8	1,763.3	1,747.8	4.5	4.9	130.00	227.3	-141.2	356.7	348.9	7.84	45.489		
1,900.0	1,888.0	1,861.4	1,844.8	4.8	5.2	129.98	238.3	-151.0	376.2	367.8	8.32	45.236		
2,000.0	1,987.3	1,959.5	1,941.8	5.1	5.5	129.96	249.3	-160.7	395.6	386.8	8.79	45.009		
2,100.0	2,086.5	2,057.6	2,038.8	5.4	5.8	129.95	260.3	-170.5	415.1	405.8	9.26	44.805		
2,200.0	2,185.7	2,155.7	2,135.8	5.6	6.1	129.94	271.3	-180.2	434.5	424.8	9.74	44.620		
2,300.0	2,285.0	2,253.8	2,232.7	5.9	6.5	129.92	282.3	-190.0	454.0	443.8	10.21	44.452		
2,400.0	2,384.2	2,351.9	2,329.7	6.2	6.8	129.91	293.2	-199.7	473.5	462.8	10.69	44.298		
2,500.0	2,483.4	2,449.9	2,426.7	6.5	7.1	129.90	304.2	-209.5	492.9	481.8	11.16	44.157		
2,600.0	2,582.6	2,548.0	2,523.7	6.8	7.4	129.89	315.2	-219.3	512.4	500.7	11.64	44.028		
2,700.0	2,681.9	2,646.1	2,620.7	7.0	7.7	129.88	326.2	-229.0	531.8	519.7	12.11	43.908		
2,800.0	2,781.1	2,744.2	2,717.6	7.3	8.0	129.88	337.2	-238.8	551.3	538.7	12.59	43.797		
2,900.0	2,880.3	2,842.3	2,814.6	7.6	8.3	129.87	348.2	-248.5	570.8	557.7	13.06	43.694		
3,000.0	2,979.5	2,940.4	2,911.6	7.9	8.6	129.86	359.2	-258.3	590.2	576.7	13.54	43.598		
3,100.0	3,078.8	3,038.5	3,008.6	8.1	8.9	129.85	370.2	-268.0	609.7	595.7	14.01	43.509		
3,200.0	3,178.0	3,136.6	3,105.6	8.4	9.2	129.85	381.2	-277.8	629.1	614.7	14.49	43.425		
3,300.0	3,277.2	3,234.6	3,202.5	8.7	9.5	129.84	392.2	-287.5	648.6	633.6	14.96	43.347		
3,400.0	3,376.5	3,332.7	3,299.5	9.0	9.9	129.84	403.2	-297.3	668.1	652.6	15.44	43.273		
3,500.0	3,475.7	3,430.8	3,396.5	9.3	10.2	129.83	414.2	-307.1	687.5	671.6	15.91	43.203		
3,600.0	3,574.9	3,528.9	3,493.5	9.5	10.5	129.83	425.2	-316.8	707.0	690.6	16.39	43.138		
3,700.0	3,674.1	3,627.0	3,590.5	9.8	10.8	129.82	436.2	-326.6	726.5	709.6	16.86	43.076		
3,800.0	3,773.4	3,725.1	3,687.4	10.1	11.1	129.82	447.2	-336.3	745.9	728.6	17.34	43.018		
3,900.0	3,872.6	3,823.2	3,784.4	10.4	11.4	129.81	458.2	-346.1	765.4	747.6	17.82	42.962		
4,000.0	3,971.8	3,921.3	3,881.4	10.7	11.7	129.81	469.2	-355.8	784.8	766.5	18.29	42.910		
4,100.0	4,071.0	4,019.3	3,978.4	10.9	12.0	129.80	480.2	-365.6	804.3	785.5	18.77	42.860		
4,200.0	4,170.3	4,117.4	4,075.4	11.2	12.3	129.80	491.2	-375.3	823.8	804.5	19.24	42.812		
4,300.0	4,269.5	4,215.5	4,172.3	11.5	12.6	129.80	502.1	-385.1	843.2	823.5	19.72	42.767		
4,400.0	4,368.7	4,313.6	4,269.3	11.8	12.9	129.79	513.1	-394.9	862.7	842.5	20.19	42.724		
4,500.0	4,468.0	4,411.7	4,366.3	12.0	13.3	129.79	524.1	-404.6	882.1	861.5	20.67	42.683		
4,600.0	4,567.2	4,509.8	4,463.3	12.3	13.6	129.79	535.1	-414.4	901.6	880.5	21.14	42.643		
4,700.0	4,666.4	4,607.9	4,560.3	12.6	13.9	129.79	546.1	-424.1	921.1	899.4	21.62	42.606		
4,800.0	4,765.6	4,706.0	4,657.2	12.9	14.2	129.78	557.1	-433.9	940.5	918.4	22.09	42.570		
4,900.0	4,864.9	4,804.1	4,754.2	13.2	14.5	129.78	568.1	-443.6	960.0	937.4	22.57	42.535		
5,000.0	4,964.1	4,902.1	4,851.2	13.4	14.8	129.78	579.1	-453.4	979.4	956.4	23.04	42.502		
5,100.0	5,063.3	5,000.2	4,948.2	13.7	15.1	129.77	590.1	-463.1	998.9	975.4	23.52	42.470		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> K28NW Pad - Benjamin Fee 28-11B - DD - Plan #2													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,162.6	5,098.3	5,045.2	14.0	15.4	129.77	601.1	-472.9	1,018.4	994.4	24.00	42.439		
5,300.0	5,261.8	5,196.4	5,142.1	14.3	15.7	129.77	612.1	-482.6	1,037.8	1,013.4	24.47	42.410		
5,400.0	5,361.0	5,294.5	5,239.1	14.6	16.0	129.77	623.1	-492.4	1,057.3	1,032.3	24.95	42.382		
5,500.0	5,460.2	5,392.6	5,336.1	14.8	16.3	129.77	634.1	-502.2	1,076.7	1,051.3	25.42	42.355		
5,600.0	5,559.5	5,490.7	5,433.1	15.1	16.7	129.76	645.1	-511.9	1,096.2	1,070.3	25.90	42.328		
5,700.0	5,658.7	5,588.8	5,530.1	15.4	17.0	129.76	656.1	-521.7	1,115.7	1,089.3	26.37	42.303		
5,800.0	5,757.9	5,686.8	5,627.1	15.7	17.3	129.76	667.1	-531.4	1,135.1	1,108.3	26.85	42.279		
5,900.0	5,857.1	5,784.9	5,724.0	15.9	17.6	129.76	678.1	-541.2	1,154.6	1,127.3	27.32	42.255		
6,000.0	5,956.4	5,883.0	5,821.0	16.2	17.9	129.76	689.1	-550.9	1,174.1	1,146.3	27.80	42.232		
6,100.0	6,055.6	5,981.1	5,918.0	16.5	18.2	129.75	700.1	-560.7	1,193.5	1,165.2	28.28	42.210 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Fee 28-15A - DD - 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	17.80	25.5	8.2	26.8						
100.0	100.0	100.0	100.0	0.1	0.1	17.80	25.5	8.2	26.8	26.5	0.27	98.351			
200.0	200.0	200.0	200.0	0.3	0.3	17.80	25.5	8.2	26.8	26.2	0.62	43.097 CC, ES			
300.0	299.9	300.2	300.1	0.5	0.5	-177.34	24.2	10.5	30.1	29.1	0.98	30.732			
400.0	399.6	399.5	399.1	0.7	0.7	173.01	20.5	17.3	38.1	36.8	1.37	27.866 SF			
500.0	498.9	496.8	495.6	1.0	1.0	-176.11	14.4	28.4	53.5	51.7	1.80	29.730			
600.0	598.1	592.1	589.3	1.2	1.3	-164.20	6.2	43.4	74.5	72.2	2.27	32.888			
700.0	697.3	686.3	681.2	1.5	1.7	-155.71	-3.9	61.9	100.3	97.5	2.73	36.664			
800.0	796.5	781.9	774.1	1.8	2.1	-150.35	-14.6	81.5	127.9	124.7	3.20	39.965			
900.0	895.8	877.4	867.0	2.0	2.6	-146.90	-25.3	101.0	156.3	152.6	3.67	42.649			
1,000.0	995.0	973.0	959.9	2.3	3.0	-144.51	-36.0	120.5	185.0	180.9	4.13	44.835			
1,100.0	1,094.2	1,068.5	1,052.8	2.6	3.4	-142.76	-46.7	140.1	214.0	209.4	4.59	46.636			
1,200.0	1,193.4	1,164.1	1,145.7	2.9	3.8	-141.43	-57.4	159.6	243.1	238.0	5.05	48.140			
1,300.0	1,292.7	1,259.6	1,238.6	3.1	4.2	-140.38	-68.1	179.2	272.2	266.7	5.51	49.412			
1,400.0	1,391.9	1,355.1	1,331.5	3.4	4.7	-139.54	-78.8	198.7	301.5	295.5	5.97	50.501			
1,500.0	1,491.1	1,450.7	1,424.4	3.7	5.1	-138.84	-89.5	218.3	330.8	324.4	6.43	51.442			
1,600.0	1,590.4	1,546.2	1,517.4	4.0	5.5	-138.26	-100.2	237.8	360.1	353.2	6.89	52.264			
1,700.0	1,689.6	1,641.8	1,610.3	4.3	6.0	-137.77	-110.9	257.4	389.5	382.1	7.35	52.986			
1,800.0	1,788.8	1,737.3	1,703.2	4.5	6.4	-137.34	-121.6	276.9	418.9	411.0	7.81	53.627			
1,900.0	1,888.0	1,832.9	1,796.1	4.8	6.8	-136.97	-132.3	296.5	448.3	440.0	8.27	54.199			
2,000.0	1,987.3	1,928.4	1,889.0	5.1	7.2	-136.65	-143.1	316.0	477.7	468.9	8.73	54.712			
2,100.0	2,086.5	2,023.9	1,981.9	5.4	7.7	-136.36	-153.8	335.6	507.1	497.9	9.19	55.176			
2,200.0	2,185.7	2,119.5	2,074.8	5.6	8.1	-136.11	-164.5	355.1	536.5	526.9	9.65	55.596			
2,300.0	2,285.0	2,215.0	2,167.7	5.9	8.5	-135.88	-175.2	374.7	566.0	555.9	10.11	55.979			
2,400.0	2,384.2	2,310.6	2,260.6	6.2	9.0	-135.67	-185.9	394.2	595.5	584.9	10.57	56.329			
2,500.0	2,483.4	2,406.1	2,353.5	6.5	9.4	-135.48	-196.6	413.7	624.9	613.9	11.03	56.650			
2,600.0	2,582.6	2,501.7	2,446.4	6.8	9.8	-135.31	-207.3	433.3	654.4	642.9	11.49	56.947			
2,700.0	2,681.9	2,597.2	2,539.3	7.0	10.3	-135.16	-218.0	452.8	683.9	671.9	11.95	57.221			
2,800.0	2,781.1	2,692.7	2,632.2	7.3	10.7	-135.02	-228.7	472.4	713.3	700.9	12.41	57.474			
2,900.0	2,880.3	2,788.3	2,725.2	7.6	11.1	-134.89	-239.4	491.9	742.8	729.9	12.87	57.710			
3,000.0	2,979.5	2,883.8	2,818.1	7.9	11.5	-134.77	-250.1	511.5	772.3	759.0	13.33	57.930			
3,100.0	3,078.8	2,979.4	2,911.0	8.1	12.0	-134.65	-260.8	531.0	801.8	788.0	13.79	58.136			
3,200.0	3,178.0	3,074.9	3,003.9	8.4	12.4	-134.55	-271.5	550.6	831.3	817.0	14.25	58.328			
3,300.0	3,277.2	3,170.5	3,096.8	8.7	12.8	-134.45	-282.2	570.1	860.8	846.0	14.71	58.509			
3,400.0	3,376.5	3,266.0	3,189.7	9.0	13.3	-134.36	-292.9	589.7	890.3	875.1	15.17	58.679			
3,500.0	3,475.7	3,361.5	3,282.6	9.3	13.7	-134.28	-303.6	609.2	919.7	904.1	15.63	58.839			
3,600.0	3,574.9	3,457.1	3,375.5	9.5	14.1	-134.20	-314.3	628.8	949.2	933.2	16.09	58.989			
3,700.0	3,674.1	3,552.6	3,468.4	9.8	14.6	-134.12	-325.0	648.3	978.7	962.2	16.55	59.132			
3,800.0	3,773.4	3,648.2	3,561.3	10.1	15.0	-134.05	-335.7	667.9	1,008.2	991.2	17.01	59.267			
3,900.0	3,872.6	3,743.7	3,654.2	10.4	15.4	-133.99	-346.4	687.4	1,037.7	1,020.3	17.47	59.395			
4,000.0	3,971.8	3,839.3	3,747.1	10.7	15.8	-133.92	-357.1	706.9	1,067.2	1,049.3	17.93	59.516			
4,100.0	4,071.0	3,934.8	3,840.0	10.9	16.3	-133.86	-367.8	726.5	1,096.8	1,078.4	18.39	59.631			
4,200.0	4,170.3	4,030.3	3,932.9	11.2	16.7	-133.81	-378.5	746.0	1,126.3	1,107.4	18.85	59.741			
4,300.0	4,269.5	4,125.9	4,025.9	11.5	17.1	-133.75	-389.2	765.6	1,155.8	1,136.5	19.31	59.846			
4,400.0	4,368.7	4,221.4	4,118.8	11.8	17.6	-133.70	-399.9	785.1	1,185.3	1,165.5	19.77	59.945			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Fee 28-6C - DD - 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	6.11	76.5	8.2	76.9						
100.0	100.0	100.0	100.0	0.1	0.1	6.11	76.5	8.2	76.9	76.7	0.27	282.538			
200.0	200.0	200.0	200.0	0.3	0.3	6.11	76.5	8.2	76.9	76.3	0.62	123.809 CC, ES			
300.0	299.9	296.6	296.6	0.5	0.5	166.44	78.6	6.9	82.8	81.8	0.97	85.623			
400.0	399.6	392.2	391.8	0.7	0.7	141.83	84.7	3.1	95.9	94.5	1.33	71.982			
500.0	498.9	486.2	485.2	1.0	1.0	136.60	94.7	-3.1	114.6	112.9	1.74	66.023			
600.0	598.1	578.8	576.3	1.2	1.3	135.84	108.3	-11.6	137.5	135.3	2.17	63.365			
700.0	697.3	675.7	671.3	1.5	1.6	134.80	124.4	-21.7	162.1	159.5	2.63	61.724			
800.0	796.5	772.6	766.4	1.8	2.0	134.04	140.4	-31.7	186.8	183.7	3.09	60.480			
900.0	895.8	869.5	861.4	2.0	2.3	133.45	156.5	-41.7	211.5	208.0	3.55	59.511			
1,000.0	995.0	966.3	956.4	2.3	2.7	132.99	172.6	-51.8	236.3	232.2	4.02	58.741			
1,100.0	1,094.2	1,063.2	1,051.4	2.6	3.1	132.61	188.7	-61.8	261.0	256.5	4.49	58.117			
1,200.0	1,193.4	1,160.1	1,146.4	2.9	3.4	132.30	204.8	-71.8	285.7	280.8	4.96	57.603			
1,300.0	1,292.7	1,257.0	1,241.4	3.1	3.8	132.04	220.9	-81.9	310.5	305.1	5.43	57.172			
1,400.0	1,391.9	1,353.8	1,336.4	3.4	4.2	131.81	237.0	-91.9	335.3	329.4	5.90	56.807			
1,500.0	1,491.1	1,450.7	1,431.4	3.7	4.6	131.62	253.1	-101.9	360.0	353.7	6.37	56.493			
1,600.0	1,590.4	1,547.6	1,526.4	4.0	4.9	131.45	269.1	-112.0	384.8	378.0	6.84	56.221			
1,700.0	1,689.6	1,644.5	1,621.4	4.3	5.3	131.31	285.2	-122.0	409.6	402.3	7.32	55.983			
1,800.0	1,788.8	1,741.4	1,716.4	4.5	5.7	131.18	301.3	-132.0	434.4	426.6	7.79	55.773			
1,900.0	1,888.0	1,838.2	1,811.4	4.8	6.0	131.06	317.4	-142.1	459.1	450.9	8.26	55.586			
2,000.0	1,987.3	1,935.1	1,906.4	5.1	6.4	130.96	333.5	-152.1	483.9	475.2	8.73	55.419			
2,100.0	2,086.5	2,032.0	2,001.4	5.4	6.8	130.86	349.6	-162.1	508.7	499.5	9.20	55.268			
2,200.0	2,185.7	2,128.9	2,096.4	5.6	7.2	130.78	365.7	-172.2	533.5	523.8	9.68	55.132			
2,300.0	2,285.0	2,225.7	2,191.4	5.9	7.5	130.70	381.8	-182.2	558.3	548.1	10.15	55.009			
2,400.0	2,384.2	2,322.6	2,286.4	6.2	7.9	130.63	397.8	-192.2	583.0	572.4	10.62	54.896			
2,500.0	2,483.4	2,419.5	2,381.4	6.5	8.3	130.56	413.9	-202.3	607.8	596.7	11.09	54.793			
2,600.0	2,582.6	2,516.4	2,476.4	6.8	8.6	130.50	430.0	-212.3	632.6	621.0	11.57	54.698			
2,700.0	2,681.9	2,613.3	2,571.4	7.0	9.0	130.45	446.1	-222.3	657.4	645.4	12.04	54.610			
2,800.0	2,781.1	2,710.1	2,666.4	7.3	9.4	130.39	462.2	-232.4	682.2	669.7	12.51	54.529			
2,900.0	2,880.3	2,807.0	2,761.4	7.6	9.8	130.35	478.3	-242.4	707.0	694.0	12.98	54.454			
3,000.0	2,979.5	2,903.9	2,856.4	7.9	10.1	130.30	494.4	-252.4	731.8	718.3	13.46	54.384			
3,100.0	3,078.8	3,000.8	2,951.5	8.1	10.5	130.26	510.5	-262.5	756.5	742.6	13.93	54.319			
3,200.0	3,178.0	3,097.6	3,046.5	8.4	10.9	130.22	526.5	-272.5	781.3	766.9	14.40	54.258			
3,300.0	3,277.2	3,194.5	3,141.5	8.7	11.3	130.18	542.6	-282.6	806.1	791.2	14.87	54.200			
3,400.0	3,376.5	3,291.4	3,236.5	9.0	11.6	130.15	558.7	-292.6	830.9	815.6	15.35	54.147			
3,500.0	3,475.7	3,388.3	3,331.5	9.3	12.0	130.12	574.8	-302.6	855.7	839.9	15.82	54.096			
3,600.0	3,574.9	3,485.2	3,426.5	9.5	12.4	130.09	590.9	-312.7	880.5	864.2	16.29	54.048			
3,700.0	3,674.1	3,582.0	3,521.5	9.8	12.7	130.06	607.0	-322.7	905.3	888.5	16.76	54.003			
3,800.0	3,773.4	3,678.9	3,616.5	10.1	13.1	130.03	623.1	-332.7	930.1	912.8	17.24	53.961			
3,900.0	3,872.6	3,775.8	3,711.5	10.4	13.5	130.00	639.2	-342.8	954.8	937.1	17.71	53.921			
4,000.0	3,971.8	3,872.7	3,806.5	10.7	13.9	129.98	655.3	-352.8	979.6	961.5	18.18	53.882			
4,100.0	4,071.0	3,969.5	3,901.5	10.9	14.2	129.95	671.3	-362.8	1,004.4	985.8	18.65	53.846			
4,200.0	4,170.3	4,066.4	3,996.5	11.2	14.6	129.93	687.4	-372.9	1,029.2	1,010.1	19.13	53.812			
4,300.0	4,269.5	4,163.3	4,091.5	11.5	15.0	129.91	703.5	-382.9	1,054.0	1,034.4	19.60	53.779			
4,400.0	4,368.7	4,260.2	4,186.5	11.8	15.4	129.89	719.6	-392.9	1,078.8	1,058.7	20.07	53.747			
4,500.0	4,468.0	4,357.1	4,281.5	12.0	15.7	129.87	735.7	-403.0	1,103.6	1,083.0	20.54	53.718			
4,600.0	4,567.2	4,453.9	4,376.5	12.3	16.1	129.85	751.8	-413.0	1,128.4	1,107.4	21.02	53.689			
4,700.0	4,666.4	4,550.8	4,471.5	12.6	16.5	129.83	767.9	-423.0	1,153.2	1,131.7	21.49	53.662			
4,800.0	4,765.6	4,647.7	4,566.5	12.9	16.9	129.82	784.0	-433.1	1,178.0	1,156.0	21.96	53.636			
4,900.0	4,864.9	4,744.6	4,661.5	13.2	17.2	129.80	800.0	-443.1	1,202.7	1,180.3	22.43	53.611 SF			

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Fee 28-9B - DD - 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	7.80	59.7	8.2	60.3					
100.0	100.0	100.0	100.0	0.1	0.1	7.80	59.7	8.2	60.3	60.0	0.27	221.446		
200.0	200.0	200.0	200.0	0.3	0.3	7.80	59.7	8.2	60.3	59.7	0.62	97.038 CC, ES		
300.0	299.9	298.2	298.1	0.5	0.5	171.02	60.7	10.5	65.4	64.5	0.97	67.290		
400.0	399.6	394.9	394.6	0.7	0.7	153.96	63.5	17.4	77.4	76.1	1.34	57.650		
500.0	498.9	489.1	488.0	1.0	1.0	157.54	67.9	28.4	96.9	95.2	1.72	56.210 SF		
600.0	598.1	580.6	578.1	1.2	1.3	164.89	74.0	43.2	122.2	120.1	2.10	58.301		
700.0	697.3	669.3	664.6	1.5	1.7	170.48	81.3	61.3	152.9	150.4	2.46	62.274		
800.0	796.5	761.8	754.2	1.8	2.1	174.78	90.0	82.6	187.0	184.2	2.81	66.541		
900.0	895.8	855.0	844.4	2.0	2.5	177.79	98.7	104.1	221.8	218.6	3.16	70.189		
1,000.0	995.0	948.2	934.7	2.3	3.0	179.99	107.4	125.6	257.0	253.5	3.51	73.282		
1,100.0	1,094.2	1,041.4	1,025.0	2.6	3.4	-178.34	116.1	147.1	292.4	288.6	3.85	75.914		
1,200.0	1,193.4	1,134.6	1,115.3	2.9	3.8	-177.03	124.9	168.6	328.0	323.8	4.20	78.169		
1,300.0	1,292.7	1,227.8	1,205.6	3.1	4.3	-175.98	133.6	190.1	363.8	359.2	4.54	80.115		
1,400.0	1,391.9	1,321.0	1,295.8	3.4	4.7	-175.11	142.3	211.5	399.6	394.7	4.88	81.809		
1,500.0	1,491.1	1,414.2	1,386.1	3.7	5.2	-174.39	151.0	233.0	435.5	430.2	5.23	83.294		
1,600.0	1,590.4	1,507.4	1,476.4	4.0	5.6	-173.78	159.8	254.5	471.4	465.8	5.57	84.605		
1,700.0	1,689.6	1,600.7	1,566.7	4.3	6.0	-173.25	168.5	276.0	507.4	501.5	5.92	85.770		
1,800.0	1,788.8	1,693.9	1,656.9	4.5	6.5	-172.79	177.2	297.5	543.4	537.1	6.26	86.812		
1,900.0	1,888.0	1,787.1	1,747.2	4.8	6.9	-172.39	185.9	319.0	579.4	572.8	6.60	87.748		
2,000.0	1,987.3	1,880.3	1,837.5	5.1	7.4	-172.04	194.7	340.5	615.5	608.6	6.95	88.595		
2,100.0	2,086.5	1,973.5	1,927.8	5.4	7.8	-171.72	203.4	362.0	651.6	644.3	7.29	89.363		
2,200.0	2,185.7	2,066.7	2,018.1	5.6	8.3	-171.44	212.1	383.4	687.7	680.0	7.64	90.063		
2,300.0	2,285.0	2,159.9	2,108.3	5.9	8.7	-171.19	220.8	404.9	723.8	715.8	7.98	90.704		
2,400.0	2,384.2	2,253.1	2,198.6	6.2	9.2	-170.96	229.6	426.4	759.9	751.6	8.32	91.292		
2,500.0	2,483.4	2,346.3	2,288.9	6.5	9.6	-170.75	238.3	447.9	796.0	787.4	8.67	91.835		
2,600.0	2,582.6	2,439.5	2,379.2	6.8	10.0	-170.56	247.0	469.4	832.2	823.1	9.01	92.336		
2,700.0	2,681.9	2,532.7	2,469.4	7.0	10.5	-170.38	255.7	490.9	868.3	858.9	9.36	92.801		
2,800.0	2,781.1	2,625.9	2,559.7	7.3	10.9	-170.22	264.5	512.4	904.5	894.8	9.70	93.233		
2,900.0	2,880.3	2,719.2	2,650.0	7.6	11.4	-170.07	273.2	533.8	940.6	930.6	10.05	93.636		
3,000.0	2,979.5	2,812.4	2,740.3	7.9	11.8	-169.94	281.9	555.3	976.8	966.4	10.39	94.012		
3,100.0	3,078.8	2,905.6	2,830.6	8.1	12.3	-169.81	290.6	576.8	1,012.9	1,002.2	10.73	94.364		
3,200.0	3,178.0	2,998.8	2,920.8	8.4	12.7	-169.69	299.4	598.3	1,049.1	1,038.0	11.08	94.694		
3,300.0	3,277.2	3,092.0	3,011.1	8.7	13.2	-169.58	308.1	619.8	1,085.3	1,073.9	11.42	95.004		
3,400.0	3,376.5	3,185.2	3,101.4	9.0	13.6	-169.48	316.8	641.3	1,121.5	1,109.7	11.77	95.296		
3,500.0	3,475.7	3,278.4	3,191.7	9.3	14.1	-169.38	325.5	662.8	1,157.6	1,145.5	12.11	95.572		
3,600.0	3,574.9	3,371.6	3,281.9	9.5	14.5	-169.29	334.2	684.3	1,193.8	1,181.4	12.46	95.832		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - Benjamin Fee 33-1B - DD - 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	-71.06	34.2	-99.8	105.5					
100.0	100.0	100.0	100.0	0.1	0.1	-71.06	34.2	-99.8	105.5	105.2	0.27	387.548		
200.0	200.0	200.0	200.0	0.3	0.3	-71.06	34.2	-99.8	105.5	104.9	0.62	169.825		
300.0	299.9	299.9	299.9	0.5	0.5	92.37	34.2	-99.8	106.4	105.5	0.98	108.681		
400.0	399.6	399.6	399.6	0.7	0.7	72.85	34.2	-99.8	105.0	103.6	1.37	76.672		
500.0	498.9	503.4	503.4	1.0	0.8	74.98	34.2	-97.0	98.9	97.1	1.80	54.929		
600.0	598.1	606.1	605.7	1.2	1.1	85.44	33.9	-88.9	90.3	88.0	2.26	39.984		
700.0	697.3	708.4	707.2	1.5	1.3	98.05	29.8	-77.4	80.1	77.4	2.72	29.411		
800.0	796.5	809.6	807.1	1.8	1.6	114.14	21.2	-63.3	69.3	66.1	3.19	21.712		
900.0	895.8	909.2	904.5	2.0	2.0	136.11	8.3	-46.7	61.0	57.3	3.67	16.622		
954.0	949.4	962.2	955.8	2.2	2.2	150.61	-0.4	-36.8	59.5	55.5	3.93	15.115 CC, ES		
1,000.0	995.0	1,006.8	998.7	2.3	2.4	163.59	-8.6	-27.9	60.8	56.6	4.16	14.623 SF		
1,100.0	1,094.2	1,101.8	1,089.1	2.6	2.9	-170.55	-28.9	-7.2	73.4	68.7	4.72	15.557		
1,200.0	1,193.4	1,193.9	1,175.4	2.9	3.5	-151.88	-52.3	15.0	97.8	92.5	5.32	18.382		
1,300.0	1,292.7	1,282.9	1,257.2	3.1	4.2	-139.49	-78.3	38.5	130.7	124.8	5.89	22.183		
1,400.0	1,391.9	1,371.9	1,337.8	3.4	4.8	-131.09	-106.8	63.3	169.1	162.7	6.40	26.423		
1,500.0	1,491.1	1,461.7	1,419.1	3.7	5.5	-125.66	-135.6	88.5	209.7	202.8	6.89	30.419		
1,600.0	1,590.4	1,551.6	1,500.4	4.0	6.2	-121.97	-164.4	113.7	251.4	244.0	7.38	34.046		
1,700.0	1,689.6	1,641.5	1,581.7	4.3	6.9	-119.32	-193.3	138.9	293.7	285.8	7.87	37.301		
1,800.0	1,788.8	1,731.3	1,663.0	4.5	7.6	-117.33	-222.1	164.1	336.4	328.1	8.37	40.215		
1,900.0	1,888.0	1,821.2	1,744.3	4.8	8.3	-115.79	-250.9	189.3	379.4	370.6	8.86	42.828		
2,000.0	1,987.3	1,911.1	1,825.6	5.1	9.0	-114.56	-279.8	214.5	422.6	413.2	9.35	45.178		
2,100.0	2,086.5	2,000.9	1,906.9	5.4	9.7	-113.55	-308.6	239.7	465.9	456.0	9.85	47.300		
2,200.0	2,185.7	2,090.8	1,988.2	5.6	10.4	-112.72	-337.4	264.9	509.3	498.9	10.35	49.222		
2,300.0	2,285.0	2,180.7	2,069.5	5.9	11.1	-112.02	-366.3	290.0	552.7	541.9	10.84	50.971		
2,400.0	2,384.2	2,270.5	2,150.8	6.2	11.8	-111.41	-395.1	315.2	596.3	584.9	11.34	52.568		
2,500.0	2,483.4	2,360.4	2,232.1	6.5	12.5	-110.89	-423.9	340.4	639.8	628.0	11.84	54.032		
2,600.0	2,582.6	2,450.3	2,313.4	6.8	13.2	-110.44	-452.8	365.6	683.4	671.1	12.34	55.379		
2,700.0	2,681.9	2,540.1	2,394.7	7.0	13.9	-110.04	-481.6	390.8	727.1	714.2	12.84	56.620		
2,800.0	2,781.1	2,630.0	2,476.0	7.3	14.6	-109.69	-510.4	416.0	770.7	757.4	13.34	57.769		
2,900.0	2,880.3	2,719.9	2,557.3	7.6	15.3	-109.37	-539.3	441.2	814.4	800.6	13.84	58.835		
3,000.0	2,979.5	2,809.7	2,638.6	7.9	16.0	-109.09	-568.1	466.4	858.1	843.8	14.34	59.826		
3,100.0	3,078.8	2,899.6	2,719.9	8.1	16.8	-108.83	-596.9	491.6	901.9	887.0	14.85	60.751		
3,200.0	3,178.0	2,989.5	2,801.2	8.4	17.5	-108.60	-625.8	516.7	945.6	930.2	15.35	61.614		
3,300.0	3,277.2	3,079.3	2,882.5	8.7	18.2	-108.39	-654.6	541.9	989.3	973.5	15.85	62.423		
3,400.0	3,376.5	3,169.2	2,963.8	9.0	18.9	-108.19	-683.4	567.1	1,033.1	1,016.7	16.35	63.181		
3,500.0	3,475.7	3,259.1	3,045.1	9.3	19.6	-108.01	-712.3	592.3	1,076.9	1,060.0	16.85	63.895		
3,600.0	3,574.9	3,348.9	3,126.4	9.5	20.3	-107.85	-741.1	617.5	1,120.6	1,103.3	17.36	64.567		
3,700.0	3,674.1	3,438.8	3,207.7	9.8	21.0	-107.70	-770.0	642.7	1,164.4	1,146.5	17.86	65.201		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - GMR 28-7D Existing - DD - Schlumberger Surveys													Offset Site Error:	0.0 ft
Survey Program: 140-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	0.0	0.0	0.0	0.0	-100.99	-19.4	-99.8	101.7					
100.0	100.0	101.3	101.3	0.1	0.2	-100.52	-18.4	-99.3	101.0	100.7	0.29	351.892		
200.0	200.0	203.1	203.0	0.3	0.3	-99.22	-15.8	-97.6	99.0	98.3	0.63	156.982		
300.0	299.9	306.2	306.0	0.5	0.6	66.66	-12.0	-93.4	93.5	92.5	1.01	92.157		
400.0	399.6	407.0	406.3	0.7	0.8	51.03	-6.3	-85.8	81.4	79.9	1.43	56.766		
500.0	498.9	503.9	502.6	1.0	1.1	59.76	0.9	-77.3	66.8	64.9	1.95	34.287		
600.0	598.1	601.6	599.3	1.2	1.4	82.41	10.7	-67.6	58.6	56.0	2.57	22.772		
626.5	624.4	626.9	624.3	1.3	1.4	89.43	13.4	-64.6	58.1	55.4	2.73	21.251 CC, ES		
700.0	697.3	697.0	693.3	1.5	1.7	108.92	21.9	-55.8	62.2	59.1	3.08	20.188 SF		
800.0	796.5	790.0	784.5	1.8	2.1	129.56	35.3	-43.3	79.9	76.6	3.35	23.860		
900.0	895.8	882.0	874.1	2.0	2.5	142.53	51.0	-29.4	107.3	103.8	3.55	30.193		
1,000.0	995.0	970.6	959.8	2.3	2.9	150.19	68.2	-14.9	140.5	136.8	3.77	37.230		
1,100.0	1,094.2	1,057.9	1,043.5	2.6	3.4	155.15	87.0	0.7	177.9	173.8	4.03	44.142		
1,200.0	1,193.4	1,143.7	1,125.1	2.9	3.8	158.71	107.1	18.1	218.6	214.3	4.29	50.908		
1,300.0	1,292.7	1,229.3	1,205.9	3.1	4.4	161.32	128.3	36.7	261.7	257.1	4.58	57.119		
1,400.0	1,391.9	1,313.7	1,285.1	3.4	4.9	163.39	149.8	56.4	306.6	301.7	4.87	63.000		
1,500.0	1,491.1	1,403.5	1,369.0	3.7	5.5	165.14	173.1	78.4	352.6	347.5	5.15	68.425		
1,600.0	1,590.4	1,496.0	1,456.0	4.0	6.1	166.36	196.7	99.4	397.7	392.2	5.46	72.856		
1,700.0	1,689.6	1,580.6	1,535.4	4.3	6.6	167.31	218.2	119.2	443.1	437.3	5.76	76.905		
1,800.0	1,788.8	1,668.9	1,617.9	4.5	7.2	168.22	240.8	140.8	489.3	483.2	6.06	80.690		
1,900.0	1,888.0	1,762.6	1,705.8	4.8	7.8	168.96	264.5	163.0	534.9	528.6	6.38	83.887		
2,000.0	1,987.3	1,854.1	1,791.9	5.1	8.4	169.50	287.5	183.8	580.0	573.4	6.69	86.705		
2,100.0	2,086.5	1,935.5	1,868.4	5.4	8.9	169.90	308.2	202.4	625.4	618.4	6.99	89.411		
2,200.0	2,185.7	2,016.0	1,943.5	5.6	9.4	170.34	329.1	222.2	672.2	664.9	7.29	92.145		
2,300.0	2,285.0	2,108.2	2,029.6	5.9	10.1	170.79	353.0	245.1	719.1	711.5	7.61	94.472		
2,400.0	2,384.2	2,195.7	2,111.4	6.2	10.6	171.15	375.5	266.6	765.8	757.9	7.92	96.646		
2,500.0	2,483.4	2,288.4	2,198.0	6.5	11.2	171.48	399.6	289.3	812.6	804.4	8.24	98.589		
2,600.0	2,582.6	2,392.3	2,295.6	6.8	11.9	171.74	426.0	313.2	858.2	849.6	8.58	100.034		
2,700.0	2,681.9	2,491.8	2,389.6	7.0	12.5	171.91	450.7	334.6	902.3	893.4	8.91	101.242		
2,800.0	2,781.1	2,588.8	2,481.5	7.3	13.0	172.05	474.3	354.8	945.8	936.5	9.24	102.317		
2,900.0	2,880.3	2,682.0	2,570.0	7.6	13.6	172.18	496.5	374.0	988.7	979.2	9.57	103.313		
3,000.0	2,979.5	2,770.5	2,654.0	7.9	14.1	172.30	517.3	392.4	1,031.5	1,021.6	9.89	104.306		
3,100.0	3,078.8	2,845.5	2,725.0	8.1	14.6	172.41	535.3	408.5	1,075.1	1,064.9	10.19	105.545		
3,200.0	3,178.0	2,923.5	2,798.4	8.4	15.1	172.52	554.8	426.0	1,120.0	1,109.5	10.49	106.786		
3,300.0	3,277.2	3,024.2	2,893.4	8.7	15.7	172.66	579.8	448.5	1,164.8	1,153.9	10.83	107.590		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - GMU 28-14D Existing - Schlumberger Surveys - Schlumberger Surveys													Offset Site Error: 0.0 ft	
Survey Program: 270-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	-115.90	-56.8	-117.1	130.1					
100.0	100.0	100.1	100.1	0.1	0.2	-115.87	-56.8	-117.1	130.1	129.8	0.30	438.592		
200.0	200.0	200.2	200.2	0.3	0.3	-115.80	-56.6	-117.0	130.0	129.4	0.63	205.826		
300.0	299.9	300.0	300.0	0.5	0.5	47.25	-56.3	-117.0	127.9	126.9	0.98	130.935		
400.0	399.6	398.6	398.6	0.7	0.7	25.26	-56.7	-117.1	121.3	120.0	1.33	91.007		
500.0	498.9	496.4	496.4	1.0	0.8	21.80	-57.8	-118.4	112.0	110.3	1.69	66.109		
600.0	598.1	595.4	595.3	1.2	1.0	23.53	-60.0	-120.1	102.9	100.8	2.06	49.835		
700.0	697.3	693.5	693.4	1.5	1.2	24.36	-64.4	-122.0	94.7	92.3	2.44	38.824		
800.0	796.5	791.8	791.4	1.8	1.4	24.29	-70.8	-125.2	88.5	85.7	2.82	31.420		
900.0	895.8	890.5	889.7	2.0	1.6	23.92	-78.1	-129.6	83.7	80.5	3.20	26.189		
1,000.0	995.0	987.8	986.4	2.3	1.8	23.46	-86.0	-136.0	81.1	77.5	3.58	22.663		
1,023.2	1,018.0	1,010.3	1,008.7	2.4	1.9	23.19	-88.2	-137.8	81.0	77.3	3.66	22.104 CC, ES		
1,100.0	1,094.2	1,084.7	1,082.3	2.6	2.1	21.89	-96.5	-145.1	82.2	78.2	3.95	20.797		
1,200.0	1,193.4	1,181.3	1,177.3	2.9	2.4	19.47	-109.6	-157.1	87.2	82.8	4.31	20.227 SF		
1,300.0	1,292.7	1,278.9	1,272.6	3.1	2.8	16.34	-125.5	-171.3	95.4	90.8	4.65	20.503		
1,400.0	1,391.9	1,375.9	1,366.6	3.4	3.2	12.51	-144.1	-186.0	106.0	101.0	4.98	21.277		
1,500.0	1,491.1	1,472.1	1,459.1	3.7	3.7	8.84	-164.8	-201.9	119.4	114.1	5.29	22.558		
1,600.0	1,590.4	1,568.7	1,551.7	4.0	4.2	6.29	-186.0	-220.0	135.4	129.8	5.61	24.138		
1,700.0	1,689.6	1,668.1	1,646.8	4.3	4.7	4.60	-207.1	-239.4	151.7	145.8	5.94	25.555		
1,800.0	1,788.8	1,766.6	1,741.2	4.5	5.2	3.53	-227.2	-258.9	167.7	161.5	6.27	26.738		
1,900.0	1,888.0	1,863.1	1,833.6	4.8	5.7	2.59	-247.5	-278.3	184.6	178.0	6.61	27.930		
2,000.0	1,987.3	1,959.9	1,925.9	5.1	6.2	1.66	-268.8	-298.3	202.5	195.6	6.94	29.175		
2,100.0	2,086.5	2,057.3	2,018.6	5.4	6.8	0.84	-290.7	-318.6	221.0	213.7	7.28	30.370		
2,200.0	2,185.7	2,156.4	2,112.8	5.6	7.3	0.21	-312.9	-339.7	239.7	232.1	7.61	31.499		
2,300.0	2,285.0	2,257.3	2,209.1	5.9	7.8	0.14	-333.4	-361.9	257.6	249.6	7.95	32.391		
2,400.0	2,384.2	2,353.6	2,301.1	6.2	8.4	0.47	-351.3	-384.0	275.0	266.7	8.30	33.152		
2,500.0	2,483.4	2,447.0	2,389.9	6.5	9.0	0.84	-369.2	-406.8	294.0	285.4	8.64	34.046		
2,600.0	2,582.6	2,539.9	2,477.7	6.8	9.5	1.21	-387.9	-430.8	314.7	305.7	8.97	35.064		
2,700.0	2,681.9	2,637.5	2,569.7	7.0	10.1	1.25	-409.2	-455.4	336.1	326.7	9.33	36.018		
2,800.0	2,781.1	2,737.9	2,664.3	7.3	10.7	0.71	-433.7	-478.2	357.4	347.7	9.68	36.936		
2,900.0	2,880.3	2,840.5	2,761.5	7.6	11.3	0.01	-458.9	-499.6	377.2	367.2	10.02	37.644		
3,000.0	2,979.5	2,940.5	2,856.2	7.9	11.9	-0.92	-484.7	-518.7	396.9	386.5	10.36	38.291		
3,100.0	3,078.8	3,046.3	2,956.6	8.1	12.5	-2.40	-513.8	-534.6	414.8	404.1	10.72	38.706		
3,200.0	3,178.0	3,147.6	3,052.8	8.4	13.0	-4.17	-543.3	-546.5	432.0	420.9	11.07	39.034		
3,300.0	3,277.2	3,248.5	3,148.5	8.7	13.6	-6.14	-573.8	-555.8	448.7	437.3	11.42	39.276		
3,400.0	3,376.5	3,348.0	3,242.8	9.0	14.1	-8.22	-604.9	-562.9	465.4	453.6	11.80	39.442		
3,500.0	3,475.7	3,451.1	3,340.5	9.3	14.6	-10.39	-637.3	-568.7	481.9	469.7	12.20	39.500		
3,600.0	3,574.9	3,554.7	3,439.0	9.5	15.1	-12.45	-668.8	-573.4	497.7	485.0	12.62	39.434		
3,700.0	3,674.1	3,655.4	3,535.3	9.8	15.6	-14.14	-698.0	-578.9	513.1	500.0	13.04	39.331		
3,800.0	3,773.4	3,755.0	3,630.7	10.1	16.1	-15.61	-725.9	-585.0	528.3	514.8	13.47	39.222		
3,900.0	3,872.6	3,848.5	3,720.2	10.4	16.5	-17.03	-752.7	-589.8	544.1	530.2	13.90	39.149		
4,000.0	3,971.8	3,946.8	3,814.0	10.7	17.0	-18.40	-781.4	-595.5	560.9	546.6	14.34	39.113		
4,100.0	4,071.0	4,051.5	3,914.0	10.9	17.5	-20.01	-812.1	-599.1	577.1	562.3	14.82	38.932		
4,200.0	4,170.3	4,154.4	4,012.4	11.2	18.0	-21.63	-842.0	-600.8	592.7	577.4	15.32	38.678		
4,300.0	4,269.5	4,252.8	4,106.8	11.5	18.5	-23.10	-870.0	-602.4	608.2	592.4	15.82	38.434		
4,400.0	4,368.7	4,347.8	4,197.8	11.8	18.9	-24.48	-897.3	-603.6	624.1	607.8	16.31	38.260		
4,500.0	4,468.0	4,443.9	4,289.4	12.0	19.4	-26.07	-926.4	-602.1	641.0	624.1	16.85	38.039		
4,600.0	4,567.2	4,544.5	4,385.4	12.3	19.8	-27.64	-956.5	-600.8	657.9	640.5	17.42	37.774		
4,700.0	4,666.4	4,645.7	4,482.1	12.6	20.3	-29.04	-985.9	-600.2	674.8	656.8	17.98	37.536		
4,800.0	4,765.6	4,744.6	4,577.0	12.9	20.8	-30.33	-1,014.1	-599.8	691.5	673.0	18.52	37.345		
4,900.0	4,864.9	4,841.4	4,669.5	13.2	21.2	-31.69	-1,042.2	-597.4	708.6	689.5	19.08	37.145		
5,000.0	4,964.1	4,941.0	4,764.7	13.4	21.7	-33.08	-1,071.2	-594.3	725.9	706.3	19.67	36.903		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design K28NW Pad - GMU 28-14D Existing - Schlumberger Surveys - Schlumberger Surveys													Offset Site Error:	0.0 ft
Survey Program: 270-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		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	Separation Factor		
5,100.0	5,063.3	5,032.6	4,852.4	13.7	22.1	-34.23	-1,097.7	-592.3	743.7	723.5	20.23	36.770		
5,200.0	5,162.6	5,124.1	4,939.7	14.0	22.6	-35.33	-1,125.0	-590.4	762.7	742.0	20.78	36.705		
5,300.0	5,261.8	5,220.4	5,031.5	14.3	23.1	-36.47	-1,154.2	-588.2	782.4	761.0	21.36	36.632		
5,400.0	5,361.0	5,330.3	5,136.3	14.6	23.6	-37.75	-1,186.9	-584.7	801.7	779.7	21.99	36.460		
5,500.0	5,460.2	5,426.6	5,228.4	14.8	24.0	-38.92	-1,214.5	-580.1	820.1	797.5	22.59	36.306		
5,600.0	5,559.5	5,513.0	5,310.9	15.1	24.5	-39.95	-1,240.1	-575.7	839.8	816.6	23.16	36.268		
5,700.0	5,658.7	5,605.1	5,398.4	15.4	24.9	-41.03	-1,268.3	-570.7	860.7	836.9	23.75	36.242		
5,800.0	5,757.9	5,703.8	5,492.1	15.7	25.4	-42.16	-1,298.9	-565.0	882.2	857.9	24.37	36.198		
5,900.0	5,857.1	5,826.5	5,609.3	15.9	26.0	-43.47	-1,334.4	-558.1	902.1	877.0	25.10	35.935		
6,000.0	5,956.4	5,942.4	5,721.0	16.2	26.5	-44.47	-1,365.4	-554.2	920.0	894.2	25.77	35.698		
6,100.0	6,055.6	6,082.8	5,857.2	16.5	27.1	-45.43	-1,398.8	-552.6	935.3	908.8	26.50	35.292		
6,200.0	6,154.8	6,191.8	5,963.9	16.8	27.5	-45.99	-1,421.3	-553.8	947.5	920.4	27.09	34.981		
6,300.0	6,254.1	6,335.3	6,105.1	17.1	27.9	-46.72	-1,446.6	-555.2	956.5	928.8	27.79	34.423		
6,400.0	6,353.3	6,458.8	6,227.4	17.3	28.3	-47.30	-1,464.2	-557.5	962.8	934.4	28.38	33.928		
6,500.0	6,453.1	6,595.0	6,362.7	17.5	28.6	-47.82	-1,479.5	-558.6	969.0	940.1	28.87	33.562		
6,600.0	6,553.0	6,756.0	6,523.3	17.6	28.8	-47.77	-1,489.8	-558.7	974.1	944.8	29.26	33.291		
6,700.0	6,653.0	6,855.1	6,622.4	17.7	28.9	-47.74	-1,492.8	-558.2	977.2	947.6	29.55	33.074		
6,800.0	6,753.0	6,954.3	6,721.5	17.8	29.1	-47.71	-1,496.0	-557.8	980.4	950.5	29.83	32.864		
6,900.0	6,853.0	7,053.4	6,820.6	18.0	29.2	-47.68	-1,499.2	-557.3	983.6	953.5	30.12	32.661		
7,000.0	6,953.0	7,152.5	6,919.6	18.1	29.3	-47.66	-1,502.5	-556.9	987.0	956.6	30.40	32.465		
7,100.0	7,053.0	7,251.6	7,018.7	18.2	29.4	-47.65	-1,505.9	-556.6	990.4	959.7	30.68	32.276		
7,200.0	7,153.0	7,351.4	7,118.4	18.3	29.6	-47.63	-1,509.4	-556.3	993.9	962.9	30.98	32.085		
7,300.0	7,253.0	7,451.4	7,218.3	18.4	29.7	-47.62	-1,512.9	-556.2	997.3	966.1	31.27	31.897		
7,400.0	7,353.0	7,551.3	7,318.2	18.6	29.8	-47.62	-1,516.3	-556.1	1,000.8	969.3	31.56	31.714		
7,500.0	7,453.0	7,651.2	7,418.0	18.7	30.0	-47.62	-1,519.8	-556.0	1,004.3	972.5	31.85	31.535		
7,600.0	7,553.0	7,751.2	7,517.9	18.8	30.1	-47.62	-1,523.3	-556.1	1,007.8	975.6	32.14	31.360		
7,700.0	7,653.0	7,852.1	7,618.8	18.9	30.2	-47.63	-1,526.8	-556.3	1,011.3	978.8	32.42	31.192		
7,800.0	7,753.0	7,956.0	7,722.7	19.0	30.3	-47.63	-1,530.1	-556.2	1,014.4	981.7	32.70	31.023		
7,900.0	7,853.0	8,060.0	7,826.6	19.2	30.4	-47.61	-1,533.0	-555.7	1,017.2	984.3	32.99	30.839		
8,000.0	7,953.0	8,163.9	7,930.5	19.3	30.4	-47.56	-1,535.5	-554.9	1,019.6	986.4	33.28	30.640		
8,100.0	8,053.0	8,267.9	8,034.5	19.4	30.5	-47.49	-1,537.6	-553.7	1,021.7	988.1	33.58	30.426		
8,200.0	8,153.0	8,371.9	8,138.4	19.6	30.6	-47.41	-1,539.3	-552.1	1,023.3	989.4	33.88	30.199		
8,300.0	8,253.0	8,475.9	8,242.4	19.7	30.7	-47.30	-1,540.5	-550.2	1,024.5	990.3	34.20	29.960		
8,400.0	8,353.0	8,579.9	8,346.3	19.8	30.8	-47.17	-1,541.4	-547.9	1,025.4	990.8	34.51	29.708		
8,500.0	8,453.0	8,682.0	8,448.4	19.9	30.8	-47.03	-1,541.9	-545.3	1,025.9	991.0	34.84	29.447		
8,600.0	8,553.0	8,696.0	8,462.4	20.1	30.9	-47.01	-1,541.9	-544.9	1,029.9	994.9	35.01	29.420		
8,700.0	8,653.0	8,696.0	8,462.4	20.2	30.9	-47.01	-1,541.9	-544.9	1,043.5	1,008.3	35.15	29.684		
8,800.0	8,753.0	8,696.0	8,462.4	20.3	30.9	-47.01	-1,541.9	-544.9	1,066.3	1,031.0	35.30	30.208		
8,900.0	8,853.0	8,696.0	8,462.4	20.5	30.9	-47.01	-1,541.9	-544.9	1,097.8	1,062.3	35.44	30.971		
8,918.0	8,871.0	8,696.0	8,462.4	20.5	30.9	-47.01	-1,541.9	-544.9	1,104.3	1,068.8	35.47	31.132		

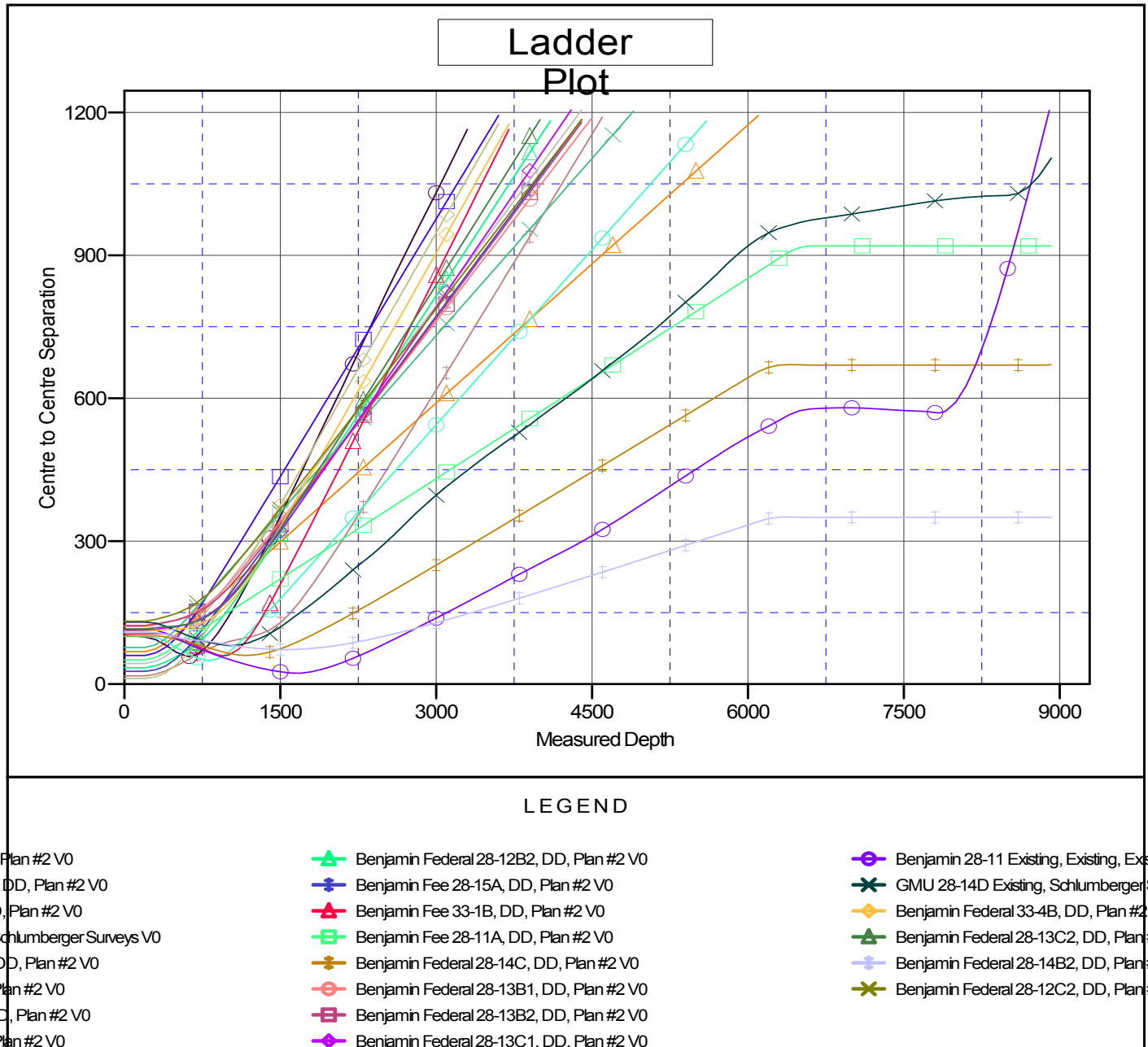
# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-14B1
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Reference Site:</b>	K28NW Pad	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Benjamin Federal 28-14B1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	DD	<b>Database:</b>	EDM 5000.1 US Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 5965.0ft (Original Well Elev)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: Benjamin Federal 28-14B1  
 Coordinate System is US State Plane 1983, Colorado Central Zone  
 Grid Convergence at Surface is: -1.44°



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