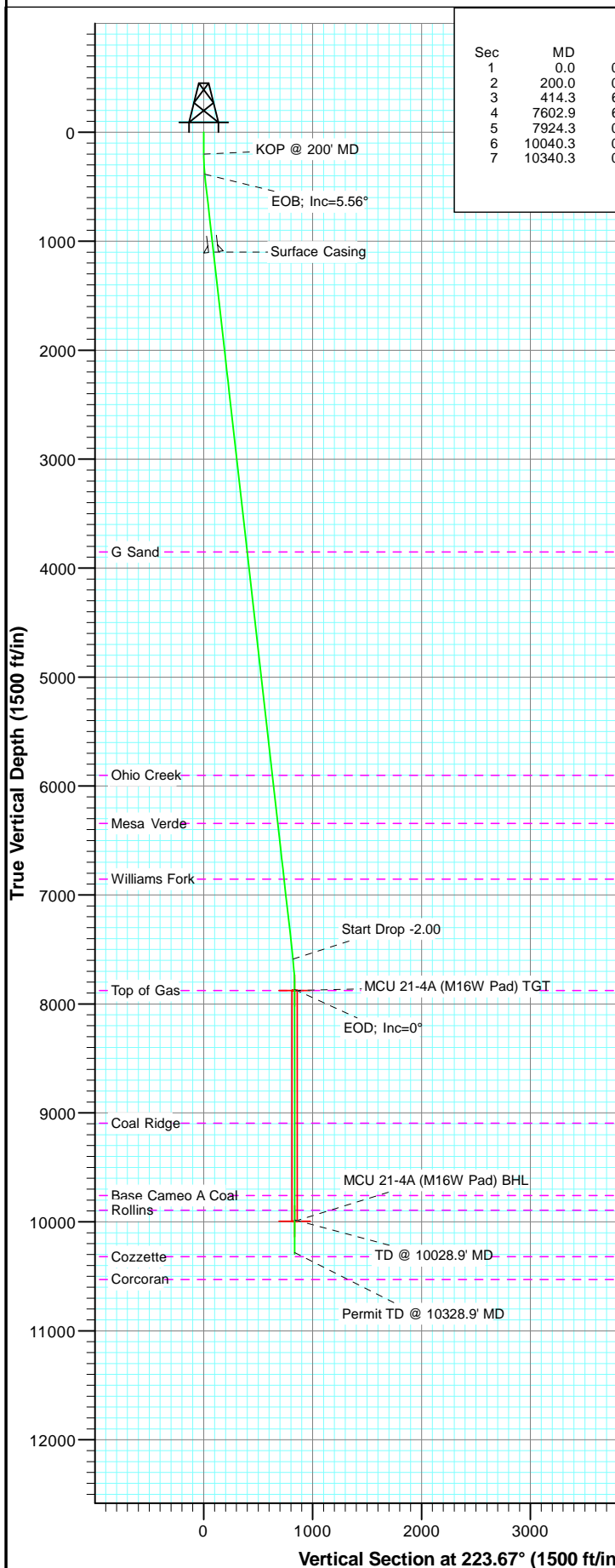
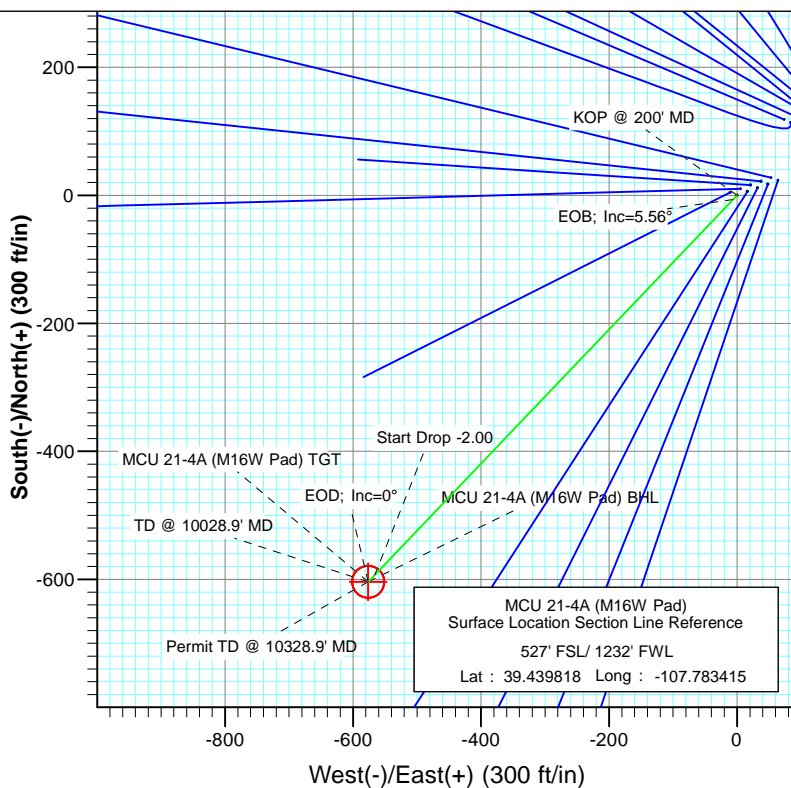




Project: Mamm Creek
Site: SWSW S16-T7S-R93W (M16W Pad)
Well: MCU 21-4A (M16W Pad)
Wellbore: DD
Plan: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	414.3	6.43	223.67	413.8	-8.7	-8.3	3.00	223.67	12.0	
4	7602.9	6.43	223.67	7557.3	-590.9	-564.0	0.00	0.00	816.8	
5	7924.3	0.00	0.00	7878.0	-603.9	-576.4	2.00	180.00	834.8	MCU 21-4A (M16W Pad) TGT
6	10040.3	0.00	0.00	9994.0	-603.9	-576.4	0.00	0.00	834.8	MCU 21-4A (M16W Pad) BHL
7	10340.3	0.00	0.00	10294.0	-603.9	-576.4	0.00	0.00	834.8	



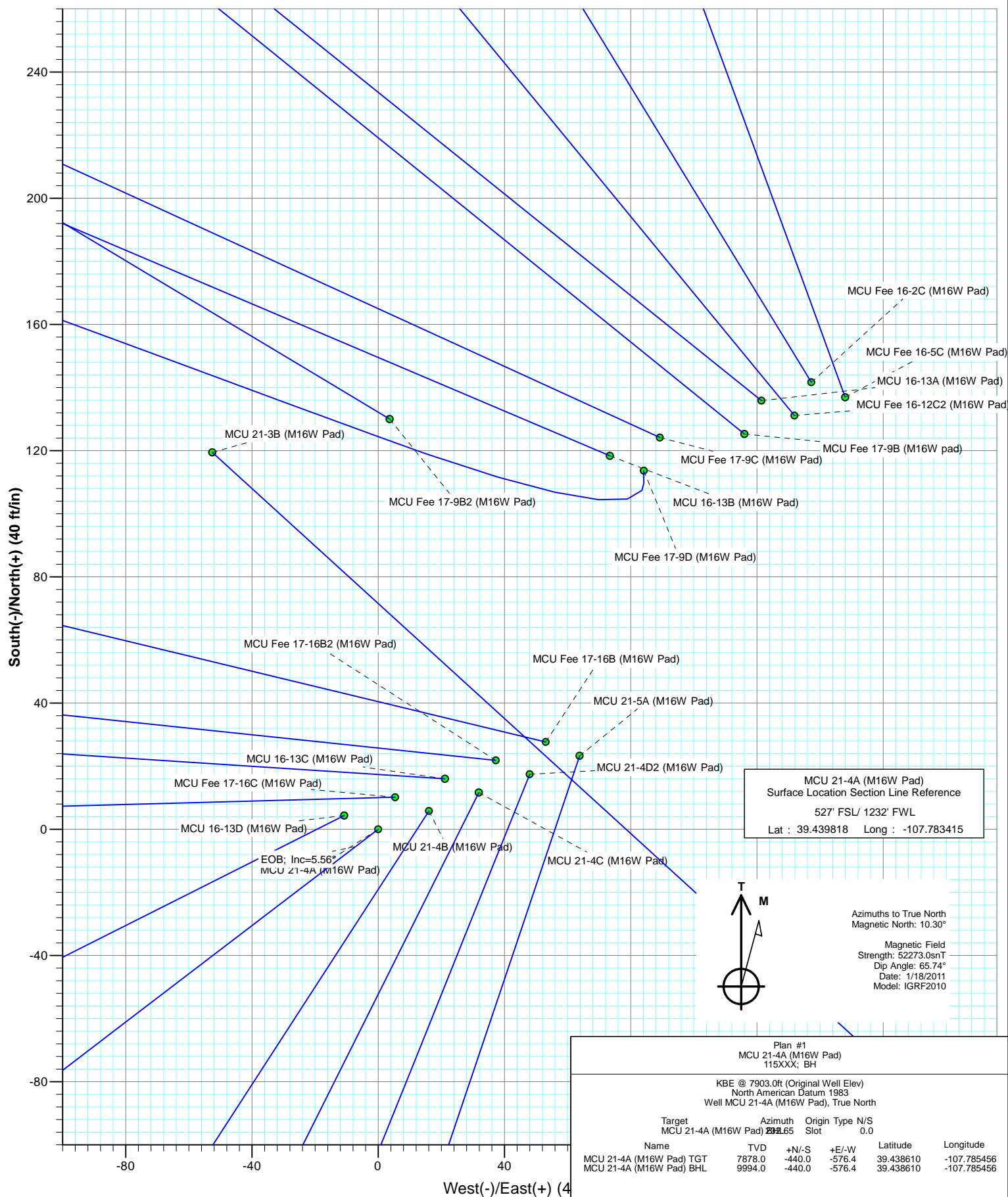
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3852.0	3874.2	G Sand
5902.0	5937.2	Ohio Creek
6343.0	6381.0	Mesa Verde
6855.0	6896.2	Williams Fork
7878.0	7924.3	Top of Gas
9094.0	9140.3	Coal Ridge
9758.0	9804.3	Base Cameo A Coal
9894.0	9940.3	Rollins



Azimuths to True North
Magnetic North: 10.30°

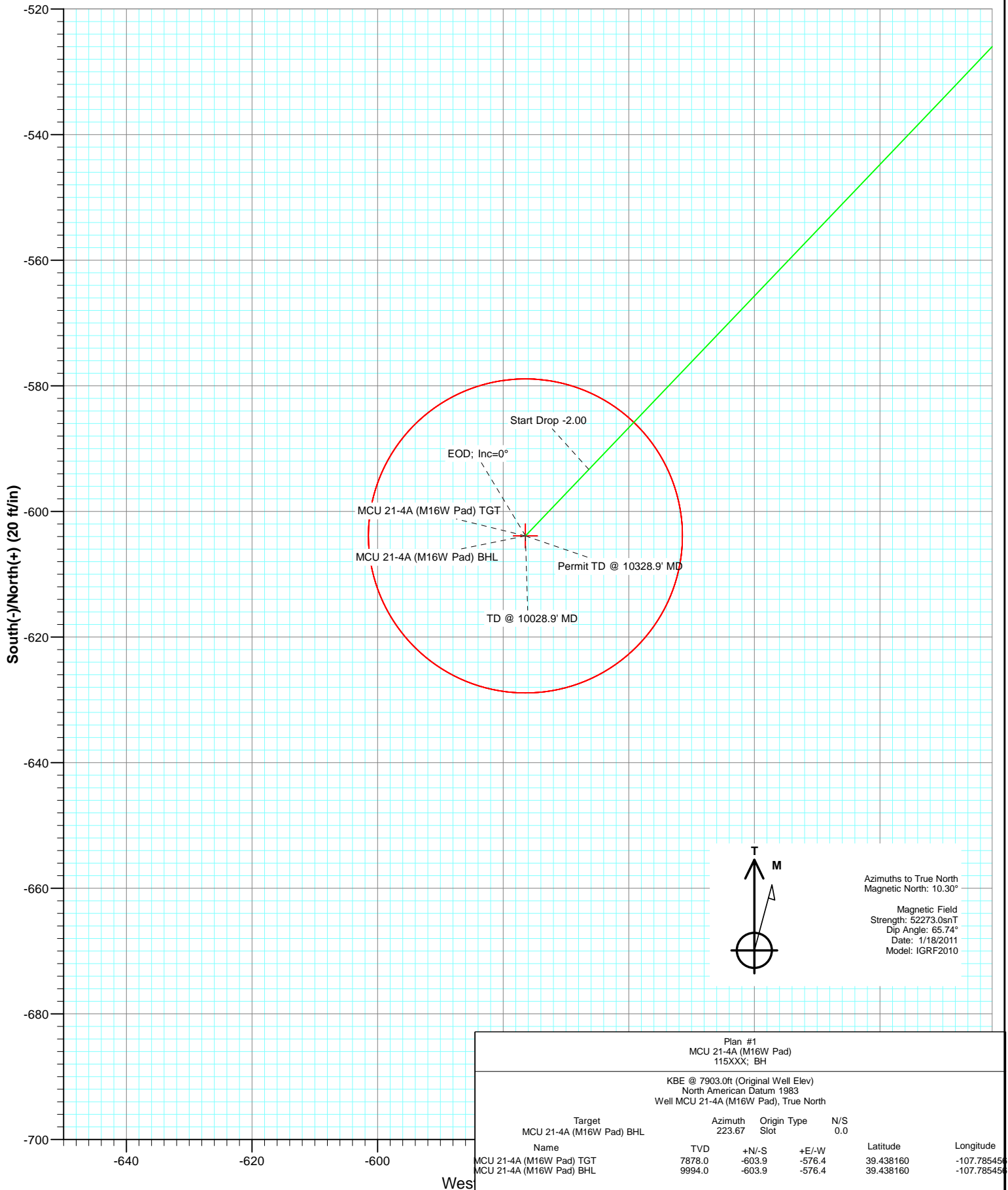
Magnetic Field
Strength: 52273.0nT
Dip Angle: 65.74°
Date: 1/18/2011
Model: IGRF2010

Plan #1 MCU 21-4A (M16W Pad) 115XXX; BH					
KBE @ 7903.0ft (Original Well Elev) North American Datum 1983 Well MCU 21-4A (M16W Pad), True North					
Target	Azimuth	Origin Type	N/S		
MCU 21-4A (M16W Pad) BHL	223.67	Slot	0.0		
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MCU 21-4A (M16W Pad) TGT	7878.0	-603.9	-576.4	39.438160	-107.785456
MCU 21-4A (M16W Pad) BHL	9994.0	-603.9	-576.4	39.438160	-107.785456





Project: Mamm Creek
Site: SWSW S16-T7S-R93W (M16W Pad)
Well: MCU 21-4A (M16W Pad)
Wellbore: DD
Plan: Plan #1



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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

Site		SWSW S16-T7S-R93W (M16W Pad)			
Site Position:		Northing:	1,593,196.17 ft	Latitude:	39.439834
From:	Lat/Long	Easting:	2,355,193.71 ft	Longitude:	-107.783358
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.44 °

Well	MCU 21-4A (M16W Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,593,190.74 ft	Latitude:	39.439818
	+E/-W	0.0 ft	Easting:	2,355,177.47 ft	Longitude:	-107.783415
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,881.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/18/2011	10.30	65.74	52,273

Design	Plan #1			
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	223.67

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	
385.4	5.56	232.65	385.1	-5.5	-7.1	3.00	3.00	0.00	232.65	
7,634.7	5.56	232.65	7,600.3	-431.8	-565.7	0.00	0.00	0.00	0.00	
7,912.9	0.00	0.00	7,878.0	-440.0	-576.4	2.00	-2.00	0.00	180.00	MCU 21-4A (M16W P
10,028.9	0.00	0.00	9,994.0	-440.0	-576.4	0.00	0.00	0.00	0.00	MCU 21-4A (M16W P
10,328.9	0.00	0.00	10,294.0	-440.0	-576.4	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200' MD
300.0	3.00	232.65	300.0	-1.6	-2.1	2.6	3.00	3.00	
385.4	5.56	232.65	385.1	-5.5	-7.1	8.9	3.00	3.00	EOB; Inc=5.56°
400.0	5.56	232.65	399.6	-6.3	-8.3	10.3	0.00	0.00	
500.0	5.56	232.65	499.2	-12.2	-16.0	19.9	0.00	0.00	
600.0	5.56	232.65	598.7	-18.1	-23.7	29.4	0.00	0.00	
700.0	5.56	232.65	698.2	-24.0	-31.4	39.0	0.00	0.00	
800.0	5.56	232.65	797.8	-29.8	-39.1	48.6	0.00	0.00	
900.0	5.56	232.65	897.3	-35.7	-46.8	58.2	0.00	0.00	
1,000.0	5.56	232.65	996.8	-41.6	-54.5	67.7	0.00	0.00	
1,100.0	5.56	232.65	1,096.3	-47.5	-62.2	77.3	0.00	0.00	
1,102.7	5.56	232.65	1,099.0	-47.6	-62.4	77.6	0.00	0.00	Surface Casing
1,200.0	5.56	232.65	1,195.9	-53.4	-69.9	86.9	0.00	0.00	
1,300.0	5.56	232.65	1,295.4	-59.2	-77.6	96.4	0.00	0.00	
1,400.0	5.56	232.65	1,394.9	-65.1	-85.3	106.0	0.00	0.00	
1,500.0	5.56	232.65	1,494.5	-71.0	-93.0	115.6	0.00	0.00	
1,600.0	5.56	232.65	1,594.0	-76.9	-100.7	125.2	0.00	0.00	
1,700.0	5.56	232.65	1,693.5	-82.8	-108.4	134.7	0.00	0.00	
1,800.0	5.56	232.65	1,793.0	-88.6	-116.1	144.3	0.00	0.00	
1,900.0	5.56	232.65	1,892.6	-94.5	-123.8	153.9	0.00	0.00	
2,000.0	5.56	232.65	1,992.1	-100.4	-131.6	163.5	0.00	0.00	
2,100.0	5.56	232.65	2,091.6	-106.3	-139.3	173.0	0.00	0.00	
2,200.0	5.56	232.65	2,191.2	-112.2	-147.0	182.6	0.00	0.00	
2,300.0	5.56	232.65	2,290.7	-118.1	-154.7	192.2	0.00	0.00	
2,400.0	5.56	232.65	2,390.2	-123.9	-162.4	201.8	0.00	0.00	
2,500.0	5.56	232.65	2,489.8	-129.8	-170.1	211.3	0.00	0.00	
2,600.0	5.56	232.65	2,589.3	-135.7	-177.8	220.9	0.00	0.00	
2,700.0	5.56	232.65	2,688.8	-141.6	-185.5	230.5	0.00	0.00	
2,800.0	5.56	232.65	2,788.3	-147.5	-193.2	240.1	0.00	0.00	
2,900.0	5.56	232.65	2,887.9	-153.3	-200.9	249.6	0.00	0.00	
3,000.0	5.56	232.65	2,987.4	-159.2	-208.6	259.2	0.00	0.00	
3,100.0	5.56	232.65	3,086.9	-165.1	-216.3	268.8	0.00	0.00	
3,200.0	5.56	232.65	3,186.5	-171.0	-224.0	278.4	0.00	0.00	
3,300.0	5.56	232.65	3,286.0	-176.9	-231.7	287.9	0.00	0.00	
3,400.0	5.56	232.65	3,385.5	-182.7	-239.4	297.5	0.00	0.00	
3,500.0	5.56	232.65	3,485.0	-188.6	-247.1	307.1	0.00	0.00	
3,600.0	5.56	232.65	3,584.6	-194.5	-254.8	316.7	0.00	0.00	
3,700.0	5.56	232.65	3,684.1	-200.4	-262.5	326.2	0.00	0.00	
3,800.0	5.56	232.65	3,783.6	-206.3	-270.2	335.8	0.00	0.00	
3,868.7	5.56	232.65	3,852.0	-210.3	-275.5	342.4	0.00	0.00	G Sand
3,900.0	5.56	232.65	3,883.2	-212.2	-278.0	345.4	0.00	0.00	
4,000.0	5.56	232.65	3,982.7	-218.0	-285.7	355.0	0.00	0.00	
4,100.0	5.56	232.65	4,082.2	-223.9	-293.4	364.5	0.00	0.00	
4,200.0	5.56	232.65	4,181.7	-229.8	-301.1	374.1	0.00	0.00	
4,300.0	5.56	232.65	4,281.3	-235.7	-308.8	383.7	0.00	0.00	
4,400.0	5.56	232.65	4,380.8	-241.6	-316.5	393.3	0.00	0.00	
4,500.0	5.56	232.65	4,480.3	-247.4	-324.2	402.8	0.00	0.00	
4,600.0	5.56	232.65	4,579.9	-253.3	-331.9	412.4	0.00	0.00	
4,700.0	5.56	232.65	4,679.4	-259.2	-339.6	422.0	0.00	0.00	
4,800.0	5.56	232.65	4,778.9	-265.1	-347.3	431.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	5.56	232.65	4,878.5	-271.0	-355.0	441.1	0.00	0.00	
5,000.0	5.56	232.65	4,978.0	-276.8	-362.7	450.7	0.00	0.00	
5,100.0	5.56	232.65	5,077.5	-282.7	-370.4	460.3	0.00	0.00	
5,200.0	5.56	232.65	5,177.0	-288.6	-378.1	469.8	0.00	0.00	
5,300.0	5.56	232.65	5,276.6	-294.5	-385.8	479.4	0.00	0.00	
5,400.0	5.56	232.65	5,376.1	-300.4	-393.5	489.0	0.00	0.00	
5,500.0	5.56	232.65	5,475.6	-306.2	-401.2	498.6	0.00	0.00	
5,600.0	5.56	232.65	5,575.2	-312.1	-408.9	508.1	0.00	0.00	
5,700.0	5.56	232.65	5,674.7	-318.0	-416.6	517.7	0.00	0.00	
5,800.0	5.56	232.65	5,774.2	-323.9	-424.3	527.3	0.00	0.00	
5,900.0	5.56	232.65	5,873.7	-329.8	-432.1	536.9	0.00	0.00	
5,928.4	5.56	232.65	5,902.0	-331.4	-434.2	539.6	0.00	0.00	Ohio Creek
6,000.0	5.56	232.65	5,973.3	-335.7	-439.8	546.4	0.00	0.00	
6,100.0	5.56	232.65	6,072.8	-341.5	-447.5	556.0	0.00	0.00	
6,200.0	5.56	232.65	6,172.3	-347.4	-455.2	565.6	0.00	0.00	
6,300.0	5.56	232.65	6,271.9	-353.3	-462.9	575.2	0.00	0.00	
6,371.5	5.56	232.65	6,343.0	-357.5	-468.4	582.0	0.00	0.00	Mesa Verde
6,400.0	5.56	232.65	6,371.4	-359.2	-470.6	584.7	0.00	0.00	
6,500.0	5.56	232.65	6,470.9	-365.1	-478.3	594.3	0.00	0.00	
6,600.0	5.56	232.65	6,570.4	-370.9	-486.0	603.9	0.00	0.00	
6,700.0	5.56	232.65	6,670.0	-376.8	-493.7	613.5	0.00	0.00	
6,800.0	5.56	232.65	6,769.5	-382.7	-501.4	623.0	0.00	0.00	
6,885.9	5.56	232.65	6,855.0	-387.8	-508.0	631.3	0.00	0.00	Williams Fork
6,900.0	5.56	232.65	6,869.0	-388.6	-509.1	632.6	0.00	0.00	
7,000.0	5.56	232.65	6,968.6	-394.5	-516.8	642.2	0.00	0.00	
7,100.0	5.56	232.65	7,068.1	-400.3	-524.5	651.8	0.00	0.00	
7,200.0	5.56	232.65	7,167.6	-406.2	-532.2	661.3	0.00	0.00	
7,300.0	5.56	232.65	7,267.1	-412.1	-539.9	670.9	0.00	0.00	
7,400.0	5.56	232.65	7,366.7	-418.0	-547.6	680.5	0.00	0.00	
7,500.0	5.56	232.65	7,466.2	-423.9	-555.3	690.1	0.00	0.00	
7,600.0	5.56	232.65	7,565.7	-429.8	-563.0	699.6	0.00	0.00	
7,634.7	5.56	232.65	7,600.3	-431.8	-565.7	703.0	0.00	0.00	Start Drop -2.00
7,700.0	4.26	232.65	7,665.3	-435.2	-570.2	708.5	2.00	-2.00	
7,800.0	2.26	232.65	7,765.2	-438.6	-574.7	714.1	2.00	-2.00	
7,900.0	0.26	232.65	7,865.1	-440.0	-576.4	716.3	2.00	-2.00	
7,912.9	0.00	0.00	7,878.0	-440.0	-576.4	716.3	2.00	-2.00	EOD; Inc=0° - Top of Gas - MCU 21-4A (M16W
8,000.0	0.00	0.00	7,965.1	-440.0	-576.4	716.3	0.00	0.00	
8,100.0	0.00	0.00	8,065.1	-440.0	-576.4	716.3	0.00	0.00	
8,200.0	0.00	0.00	8,165.1	-440.0	-576.4	716.3	0.00	0.00	
8,300.0	0.00	0.00	8,265.1	-440.0	-576.4	716.3	0.00	0.00	
8,400.0	0.00	0.00	8,365.1	-440.0	-576.4	716.3	0.00	0.00	
8,500.0	0.00	0.00	8,465.1	-440.0	-576.4	716.3	0.00	0.00	
8,600.0	0.00	0.00	8,565.1	-440.0	-576.4	716.3	0.00	0.00	
8,700.0	0.00	0.00	8,665.1	-440.0	-576.4	716.3	0.00	0.00	
8,800.0	0.00	0.00	8,765.1	-440.0	-576.4	716.3	0.00	0.00	
8,900.0	0.00	0.00	8,865.1	-440.0	-576.4	716.3	0.00	0.00	
9,000.0	0.00	0.00	8,965.1	-440.0	-576.4	716.3	0.00	0.00	
9,100.0	0.00	0.00	9,065.1	-440.0	-576.4	716.3	0.00	0.00	
9,128.9	0.00	0.00	9,094.0	-440.0	-576.4	716.3	0.00	0.00	Coal Ridge
9,200.0	0.00	0.00	9,165.1	-440.0	-576.4	716.3	0.00	0.00	
9,300.0	0.00	0.00	9,265.1	-440.0	-576.4	716.3	0.00	0.00	
9,400.0	0.00	0.00	9,365.1	-440.0	-576.4	716.3	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,500.0	0.00	0.00	9,465.1	-440.0	-576.4	716.3	0.00	0.00	
9,600.0	0.00	0.00	9,565.1	-440.0	-576.4	716.3	0.00	0.00	
9,700.0	0.00	0.00	9,665.1	-440.0	-576.4	716.3	0.00	0.00	
9,792.9	0.00	0.00	9,758.0	-440.0	-576.4	716.3	0.00	0.00	Base Cameo A Coal
9,800.0	0.00	0.00	9,765.1	-440.0	-576.4	716.3	0.00	0.00	
9,900.0	0.00	0.00	9,865.1	-440.0	-576.4	716.3	0.00	0.00	
9,928.9	0.00	0.00	9,894.0	-440.0	-576.4	716.3	0.00	0.00	Rollins
10,000.0	0.00	0.00	9,965.1	-440.0	-576.4	716.3	0.00	0.00	
10,028.9	0.00	0.00	9,994.0	-440.0	-576.4	716.3	0.00	0.00	TD @ 10028.9' MD - MCU 21-4A (M16W Pad) I
10,100.0	0.00	0.00	10,065.1	-440.0	-576.4	716.3	0.00	0.00	
10,200.0	0.00	0.00	10,165.1	-440.0	-576.4	716.3	0.00	0.00	
10,300.0	0.00	0.00	10,265.1	-440.0	-576.4	716.3	0.00	0.00	
10,328.9	0.00	0.00	10,294.0	-440.0	-576.4	716.3	0.00	0.00	Permit TD @ 10328.9' MD

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
MCU 21-4A (M16W Pad	0.00	0.00	9,994.0	-603.9	-576.4	1,592,601.53	2,354,586.03	39.438160	-107.785456
- plan misses target center by 163.9ft at 10028.9ft MD (9994.0 TVD, -440.0 N, -576.4 E)									
- Circle (radius 25.0)									
MCU 21-4A (M16W Pad	0.00	0.00	7,878.0	-440.0	-576.4	1,592,765.38	2,354,590.16	39.438610	-107.785456
- plan hits target center									
- Circle (radius 25.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)	
1,102.7	1,099.0	Surface Casing	0.000	0.000	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
3,868.7	3,852.0	G Sand		0.00		
5,928.4	5,902.0	Ohio Creek		0.00		
6,371.5	6,343.0	Mesa Verde		0.00		
6,885.9	6,855.0	Williams Fork		0.00		
7,912.9	7,878.0	Top of Gas		0.00		
9,128.9	9,094.0	Coal Ridge		0.00		
9,792.9	9,758.0	Base Cameo A Coal		0.00		
9,928.9	9,894.0	Rollins		0.00		

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
385.4	385.1	-5.5	-7.1	EOB; Inc=5.56°
7,634.7	7,600.3	-431.8	-565.7	Start Drop -2.00
7,912.9	7,878.0	-440.0	-576.4	EOD; Inc=0°
10,028.9	9,994.0	-440.0	-576.4	TD @ 10028.9' MD
10,328.9	10,294.0	-440.0	-576.4	Permit TD @ 10328.9' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

SWSW S16-T7S-R93W (M16W Pad)

MCU 21-4A (M16W Pad)

DD

Plan #1

Anticollision Report

28 January, 2011

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	1/28/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,328.9	Plan #1 (DD)	MWD	Geolink MWD

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured	Offset Measured	Distance		Separation Factor	Warning
	Depth (ft)	Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
SWSW S16-T7S-R93W (M16W Pad)						
MCU 16-13A (M16W Pad) - DD - Plan #1	200.0	200.0	182.2	181.6	293.280	CC, ES
MCU 16-13A (M16W Pad) - DD - Plan #1	2,900.0	2,875.7	498.1	485.1	38.510	SF
MCU 16-13B (M16W Pad) - DD - Plan #1	200.0	200.0	139.3	138.7	224.197	CC, ES
MCU 16-13B (M16W Pad) - DD - Plan #1	4,200.0	4,183.3	498.4	479.9	26.865	SF
MCU 16-13C (M16W Pad) - DD - Plan #1	200.0	200.0	26.6	25.9	42.749	CC, ES
MCU 16-13C (M16W Pad) - DD - Plan #1	10,328.9	10,319.0	496.0	454.3	11.904	SF
MCU 16-13D (M16W Pad) - DD - Plan #1	200.0	200.0	11.6	11.0	18.650	CC, ES
MCU 16-13D (M16W Pad) - DD - Plan #1	10,328.9	10,321.2	156.1	114.6	3.762	SF
MCU 21-3B (M16W Pad) - DD - Plan #1	200.0	200.0	155.8	155.2	250.707	CC, ES
MCU 21-3B (M16W Pad) - DD - Plan #1	1,700.0	1,653.4	421.8	413.8	52.776	SF
MCU 21-4B (M16W Pad) - DD - Plan #1	200.0	200.0	17.1	16.5	27.559	CC, ES
MCU 21-4B (M16W Pad) - DD - Plan #1	700.0	701.3	23.8	20.8	7.995	SF
MCU 21-4C (M16W Pad) - DD - Plan #1	200.0	200.0	34.0	33.4	54.682	CC, ES
MCU 21-4C (M16W Pad) - DD - Plan #1	800.0	802.2	46.0	42.3	12.610	SF
MCU 21-4D2 (M16W Pad) - DD - Plan #1	100.0	100.0	51.1	50.8	187.662	CC
MCU 21-4D2 (M16W Pad) - DD - Plan #1	200.0	200.0	51.1	50.5	82.234	ES
MCU 21-4D2 (M16W Pad) - DD - Plan #1	900.0	902.2	72.8	68.4	16.628	SF
MCU 21-5A (M16W Pad) - DD - Plan #1	100.0	100.0	68.0	67.7	249.574	CC
MCU 21-5A (M16W Pad) - DD - Plan #1	200.0	200.0	68.0	67.3	109.364	ES
MCU 21-5A (M16W Pad) - DD - Plan #1	900.0	902.5	90.9	86.4	19.994	SF
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	200.0	200.0	186.0	185.4	299.325	CC, ES
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	2,300.0	2,263.3	497.1	486.7	48.128	SF
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	200.0	200.0	197.3	196.6	317.492	CC, ES
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	1,800.0	1,750.5	480.7	472.6	59.452	SF
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	200.0	200.0	201.6	201.0	324.520	CC, ES
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	1,400.0	1,306.9	482.9	476.6	76.858	SF
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	100.0	100.0	59.9	59.6	219.923	CC
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	200.0	200.0	59.9	59.3	96.371	ES
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	800.0	801.8	79.8	75.9	20.537	SF
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	200.0	200.0	43.2	42.6	69.549	CC, ES
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	800.0	800.0	64.1	60.2	16.552	SF
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	200.0	200.0	11.5	10.9	18.547	CC, ES
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	500.0	500.2	21.9	20.0	11.449	SF
MCU Fee 17-9B (M16W pad) - DD - Plan #1	200.0	200.0	170.8	170.2	274.888	CC, ES
MCU Fee 17-9B (M16W pad) - DD - Plan #1	1,300.0	1,247.1	356.7	349.8	51.518	SF
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	200.0	200.0	167.3	166.7	269.321	CC, ES
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	1,300.0	1,258.1	331.2	324.0	46.099	SF
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	100.0	100.0	152.9	152.7	561.690	CC
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	200.0	200.0	152.9	152.3	246.134	ES
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	1,300.0	1,266.6	304.9	297.7	42.430	SF
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	200.0	200.0	141.4	140.8	227.595	CC, ES
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	1,500.0	1,484.4	258.8	250.8	32.566	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13A (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	41.79	135.9	121.4	182.2					
100.0	100.0	100.0	100.0	0.1	0.1	41.79	135.9	121.4	182.2	182.0	0.27	669.279		
200.0	200.0	200.0	200.0	0.3	0.3	41.79	135.9	121.4	182.2	181.6	0.62	293.280	CC, ES	
300.0	300.0	300.4	300.3	0.5	0.5	168.47	137.5	119.4	184.7	183.7	0.98	188.568		
400.0	399.6	400.2	399.8	0.7	0.7	166.55	142.4	113.3	192.1	190.7	1.37	139.794		
500.0	499.2	499.2	498.1	0.9	1.0	163.73	150.0	103.9	201.7	199.9	1.81	111.574		
600.0	598.7	598.2	596.3	1.2	1.2	161.05	157.9	94.1	211.7	209.5	2.25	93.903		
700.0	698.2	697.3	694.6	1.4	1.5	158.62	165.7	84.3	222.2	219.5	2.71	82.012		
800.0	797.8	796.3	792.8	1.7	1.8	156.40	173.6	74.6	233.1	229.9	3.17	73.550		
900.0	897.3	895.3	891.0	1.9	2.1	154.38	181.4	64.8	244.2	240.6	3.63	67.263		
1,000.0	996.8	994.3	989.2	2.1	2.3	152.55	189.3	55.0	255.7	251.6	4.10	62.434		
1,100.0	1,096.3	1,093.3	1,087.5	2.4	2.6	150.86	197.2	45.3	267.4	262.8	4.56	58.625		
1,200.0	1,195.9	1,192.4	1,185.7	2.6	2.9	149.33	205.0	35.5	279.2	274.2	5.03	55.554		
1,300.0	1,295.4	1,291.4	1,283.9	2.9	3.2	147.91	212.9	25.7	291.3	285.8	5.49	53.034		
1,400.0	1,394.9	1,390.4	1,382.1	3.1	3.4	146.61	220.7	16.0	303.6	297.6	5.96	50.934		
1,500.0	1,494.5	1,489.4	1,480.4	3.3	3.7	145.41	228.6	6.2	315.9	309.5	6.43	49.161		
1,600.0	1,594.0	1,588.4	1,578.6	3.6	4.0	144.30	236.5	-3.6	328.4	321.5	6.89	47.647		
1,700.0	1,693.5	1,687.5	1,676.8	3.8	4.3	143.27	244.3	-13.3	341.1	333.7	7.36	46.341		
1,800.0	1,793.0	1,786.5	1,775.0	4.1	4.6	142.32	252.2	-23.1	353.8	345.9	7.83	45.206		
1,900.0	1,892.6	1,885.5	1,873.2	4.3	4.8	141.43	260.0	-32.9	366.6	358.3	8.29	44.210		
2,000.0	1,992.1	1,984.5	1,971.5	4.6	5.1	140.60	267.9	-42.6	379.5	370.7	8.76	43.331		
2,100.0	2,091.6	2,083.6	2,069.7	4.8	5.4	139.83	275.8	-52.4	392.4	383.2	9.22	42.551		
2,200.0	2,191.2	2,182.6	2,167.9	5.0	5.7	139.10	283.6	-62.2	405.5	395.8	9.69	41.853		
2,300.0	2,290.7	2,281.6	2,266.1	5.3	5.9	138.42	291.5	-71.9	418.5	408.4	10.15	41.227		
2,400.0	2,390.2	2,380.6	2,364.4	5.5	6.2	137.78	299.4	-81.7	431.7	421.1	10.62	40.662		
2,500.0	2,489.8	2,479.6	2,462.6	5.8	6.5	137.18	307.2	-91.5	444.9	433.8	11.08	40.150		
2,600.0	2,589.3	2,578.7	2,560.8	6.0	6.8	136.62	315.1	-101.2	458.1	446.6	11.54	39.684		
2,700.0	2,688.8	2,677.7	2,659.0	6.3	7.1	136.08	322.9	-111.0	471.4	459.4	12.01	39.259		
2,800.0	2,788.3	2,776.7	2,757.3	6.5	7.3	135.58	330.8	-120.8	484.7	472.2	12.47	38.869		
2,900.0	2,887.9	2,875.7	2,855.5	6.7	7.6	135.10	338.7	-130.5	498.1	485.1	12.93	38.510	SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13B (M16W Pad) - DD - Plan #1													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	31.81	118.4	73.4	139.3					
100.0	100.0	100.0	100.0	0.1	0.1	31.81	118.4	73.4	139.3	139.0	0.27	511.628		
200.0	200.0	200.0	200.0	0.3	0.3	31.81	118.4	73.4	139.3	138.7	0.62	224.197 CC, ES		
300.0	300.0	301.1	301.0	0.5	0.5	158.45	119.4	71.0	141.4	140.4	0.98	144.019		
400.0	399.6	401.6	401.2	0.7	0.7	156.47	122.5	63.7	147.6	146.2	1.38	107.044		
500.0	499.2	501.1	500.2	0.9	0.9	154.29	126.3	54.7	155.5	153.7	1.80	86.627		
600.0	598.7	600.6	599.3	1.2	1.2	152.33	130.2	45.7	163.7	161.4	2.22	73.643		
700.0	698.2	700.1	698.3	1.4	1.4	150.55	134.0	36.7	172.0	169.3	2.66	64.745		
800.0	797.8	799.7	797.4	1.7	1.7	148.94	137.8	27.7	180.5	177.4	3.10	58.302		
900.0	897.3	899.2	896.4	1.9	1.9	147.48	141.6	18.7	189.1	185.5	3.54	53.441		
1,000.0	996.8	998.7	995.4	2.1	2.1	146.14	145.5	9.7	197.8	193.8	3.98	49.653		
1,100.0	1,096.3	1,098.2	1,094.5	2.4	2.4	144.92	149.3	0.7	206.6	202.1	4.43	46.626		
1,200.0	1,195.9	1,197.7	1,193.5	2.6	2.6	143.79	153.1	-8.3	215.5	210.6	4.88	44.157		
1,300.0	1,295.4	1,297.2	1,292.5	2.9	2.9	142.76	156.9	-17.4	224.4	219.1	5.33	42.106		
1,400.0	1,394.9	1,396.8	1,391.6	3.1	3.1	141.80	160.8	-26.4	233.5	227.7	5.78	40.379		
1,500.0	1,494.5	1,496.3	1,490.6	3.3	3.4	140.92	164.6	-35.4	242.6	236.3	6.23	38.906		
1,600.0	1,594.0	1,595.8	1,589.6	3.6	3.6	140.10	168.4	-44.4	251.7	245.0	6.69	37.636		
1,700.0	1,693.5	1,695.3	1,688.7	3.8	3.8	139.34	172.2	-53.4	260.9	253.8	7.14	36.530		
1,800.0	1,793.0	1,794.8	1,787.7	4.1	4.1	138.63	176.1	-62.4	270.2	262.6	7.60	35.560		
1,900.0	1,892.6	1,894.4	1,886.8	4.3	4.3	137.97	179.9	-71.4	279.4	271.4	8.05	34.703		
2,000.0	1,992.1	1,993.9	1,985.8	4.6	4.6	137.34	183.7	-80.4	288.8	280.2	8.51	33.940		
2,100.0	2,091.6	2,093.4	2,084.8	4.8	4.8	136.76	187.5	-89.4	298.1	289.1	8.96	33.257		
2,200.0	2,191.2	2,192.9	2,183.9	5.0	5.1	136.22	191.4	-98.4	307.5	298.1	9.42	32.642		
2,300.0	2,290.7	2,292.4	2,282.9	5.3	5.3	135.70	195.2	-107.4	316.9	307.0	9.88	32.087		
2,400.0	2,390.2	2,391.9	2,381.9	5.5	5.5	135.22	199.0	-116.4	326.3	316.0	10.33	31.582		
2,500.0	2,489.8	2,491.5	2,481.0	5.8	5.8	134.76	202.8	-125.4	335.7	325.0	10.79	31.121		
2,600.0	2,589.3	2,591.0	2,580.0	6.0	6.0	134.33	206.7	-134.4	345.2	334.0	11.24	30.699		
2,700.0	2,688.8	2,690.5	2,679.0	6.3	6.3	133.92	210.5	-143.4	354.7	343.0	11.70	30.312		
2,800.0	2,788.3	2,790.0	2,778.1	6.5	6.5	133.53	214.3	-152.4	364.2	352.0	12.16	29.955		
2,900.0	2,887.9	2,889.5	2,877.1	6.7	6.8	133.17	218.1	-161.4	373.7	361.1	12.62	29.624		
3,000.0	2,987.4	2,989.1	2,976.1	7.0	7.0	132.82	222.0	-170.4	383.2	370.2	13.07	29.318		
3,100.0	3,086.9	3,088.6	3,075.2	7.2	7.3	132.48	225.8	-179.4	392.8	379.3	13.53	29.034		
3,200.0	3,186.5	3,188.1	3,174.2	7.5	7.5	132.17	229.6	-188.4	402.3	388.4	13.99	28.769		
3,300.0	3,286.0	3,287.6	3,273.3	7.7	7.7	131.86	233.4	-197.5	411.9	397.5	14.44	28.521		
3,400.0	3,385.5	3,387.1	3,372.3	8.0	8.0	131.58	237.2	-206.5	421.5	406.6	14.90	28.290		
3,500.0	3,485.0	3,486.6	3,471.3	8.2	8.2	131.30	241.1	-215.5	431.1	415.7	15.36	28.073		
3,600.0	3,584.6	3,586.2	3,570.4	8.4	8.5	131.04	244.9	-224.5	440.7	424.9	15.81	27.869		
3,700.0	3,684.1	3,685.7	3,669.4	8.7	8.7	130.78	248.7	-233.5	450.3	434.0	16.27	27.677		
3,800.0	3,783.6	3,785.2	3,768.4	8.9	9.0	130.54	252.5	-242.5	459.9	443.2	16.73	27.496		
3,900.0	3,883.2	3,884.7	3,867.5	9.2	9.2	130.31	256.4	-251.5	469.5	452.3	17.18	27.325		
4,000.0	3,982.7	3,984.2	3,966.5	9.4	9.4	130.09	260.2	-260.5	479.2	461.5	17.64	27.163		
4,100.0	4,082.2	4,083.8	4,065.5	9.7	9.7	129.87	264.0	-269.5	488.8	470.7	18.10	27.010		
4,200.0	4,181.7	4,183.3	4,164.6	9.9	9.9	129.67	267.8	-278.5	498.4	479.9	18.55	26.865 SF		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13C (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	52.89	16.0	21.2	26.6					
100.0	100.0	100.0	100.0	0.1	0.1	52.89	16.0	21.2	26.6	26.3	0.27	97.555		
200.0	200.0	200.0	200.0	0.3	0.3	52.89	16.0	21.2	26.6	25.9	0.62	42.749	CC, ES	
300.0	300.0	301.0	301.0	0.5	0.5	176.54	16.2	18.5	27.2	26.3	0.98	27.906		
400.0	399.6	401.4	401.1	0.7	0.7	167.49	16.7	11.1	30.1	28.8	1.35	22.324		
500.0	499.2	501.2	500.6	0.9	0.9	160.11	17.2	2.9	35.0	33.2	1.74	20.057		
600.0	598.7	601.0	600.0	1.2	1.1	154.61	17.7	-5.2	40.3	38.2	2.16	18.685		
700.0	698.2	700.8	699.5	1.4	1.4	150.41	18.3	-13.4	45.9	43.3	2.58	17.785		
800.0	797.8	800.6	798.9	1.7	1.6	147.14	18.8	-21.5	51.7	48.7	3.01	17.159		
900.0	897.3	900.4	898.4	1.9	1.8	144.54	19.3	-29.7	57.6	54.2	3.45	16.704		
1,000.0	996.8	1,000.2	997.9	2.1	2.0	142.42	19.8	-37.9	63.7	59.8	3.89	16.362		
1,100.0	1,096.3	1,100.0	1,097.3	2.4	2.3	140.68	20.4	-46.0	69.8	65.4	4.33	16.098		
1,200.0	1,195.9	1,199.8	1,196.8	2.6	2.5	139.21	20.9	-54.2	75.9	71.1	4.78	15.888		
1,300.0	1,295.4	1,299.6	1,296.2	2.9	2.7	137.97	21.4	-62.4	82.1	76.9	5.22	15.719		
1,400.0	1,394.9	1,399.4	1,395.7	3.1	2.9	136.90	22.0	-70.5	88.3	82.7	5.67	15.580		
1,500.0	1,494.5	1,499.2	1,495.1	3.3	3.2	135.97	22.5	-78.7	94.6	88.5	6.12	15.464		
1,600.0	1,594.0	1,599.0	1,594.6	3.6	3.4	135.15	23.0	-86.9	100.9	94.3	6.56	15.366		
1,700.0	1,693.5	1,698.7	1,694.1	3.8	3.6	134.44	23.5	-95.0	107.2	100.1	7.01	15.282		
1,800.0	1,793.0	1,798.5	1,793.5	4.1	3.8	133.80	24.1	-103.2	113.5	106.0	7.46	15.210		
1,900.0	1,892.6	1,898.3	1,893.0	4.3	4.1	133.23	24.6	-111.3	119.8	111.9	7.91	15.147		
2,000.0	1,992.1	1,998.1	1,992.4	4.6	4.3	132.71	25.1	-119.5	126.1	117.8	8.36	15.092		
2,100.0	2,091.6	2,097.9	2,091.9	4.8	4.5	132.25	25.7	-127.7	132.5	123.7	8.81	15.043		
2,200.0	2,191.2	2,197.7	2,191.3	5.0	4.7	131.82	26.2	-135.8	138.8	129.6	9.25	14.999		
2,300.0	2,290.7	2,297.5	2,290.8	5.3	5.0	131.44	26.7	-144.0	145.2	135.5	9.70	14.960		
2,400.0	2,390.2	2,397.3	2,390.3	5.5	5.2	131.09	27.2	-152.2	151.5	141.4	10.15	14.925		
2,500.0	2,489.8	2,497.1	2,489.7	5.8	5.4	130.76	27.8	-160.3	157.9	147.3	10.60	14.894		
2,600.0	2,589.3	2,596.9	2,589.2	6.0	5.6	130.46	28.3	-168.5	164.3	153.2	11.05	14.865		
2,700.0	2,688.8	2,696.7	2,688.6	6.3	5.9	130.19	28.8	-176.6	170.6	159.1	11.50	14.839		
2,800.0	2,788.3	2,796.5	2,788.1	6.5	6.1	129.93	29.4	-184.8	177.0	165.1	11.95	14.815		
2,900.0	2,887.9	2,896.3	2,887.5	6.7	6.3	129.69	29.9	-193.0	183.4	171.0	12.40	14.793		
3,000.0	2,987.4	2,996.1	2,987.0	7.0	6.5	129.47	30.4	-201.1	189.8	176.9	12.85	14.773		
3,100.0	3,086.9	3,095.9	3,086.5	7.2	6.8	129.26	30.9	-209.3	196.2	182.9	13.30	14.754		
3,200.0	3,186.5	3,195.6	3,185.9	7.5	7.0	129.06	31.5	-217.5	202.6	188.8	13.75	14.737		
3,300.0	3,286.0	3,295.4	3,285.4	7.7	7.2	128.88	32.0	-225.6	209.0	194.8	14.19	14.721		
3,400.0	3,385.5	3,395.2	3,384.8	8.0	7.4	128.71	32.5	-233.8	215.3	200.7	14.64	14.706		
3,500.0	3,485.0	3,495.0	3,484.3	8.2	7.7	128.54	33.1	-242.0	221.7	206.7	15.09	14.692		
3,600.0	3,584.6	3,594.8	3,583.7	8.4	7.9	128.39	33.6	-250.1	228.1	212.6	15.54	14.678		
3,700.0	3,684.1	3,694.6	3,683.2	8.7	8.1	128.25	34.1	-258.3	234.5	218.6	15.99	14.666		
3,800.0	3,783.6	3,794.4	3,782.7	8.9	8.3	128.11	34.6	-266.4	240.9	224.5	16.44	14.655		
3,900.0	3,883.2	3,894.2	3,882.1	9.2	8.6	127.98	35.2	-274.6	247.3	230.5	16.89	14.644		
4,000.0	3,982.7	3,994.0	3,981.6	9.4	8.8	127.85	35.7	-282.8	253.7	236.4	17.34	14.634		
4,100.0	4,082.2	4,093.8	4,081.0	9.7	9.0	127.74	36.2	-290.9	260.2	242.4	17.79	14.624		
4,200.0	4,181.7	4,193.6	4,180.5	9.9	9.2	127.62	36.8	-299.1	266.6	248.3	18.24	14.615		
4,300.0	4,281.3	4,293.4	4,279.9	10.2	9.5	127.52	37.3	-307.3	273.0	254.3	18.69	14.606		
4,400.0	4,380.8	4,393.2	4,379.4	10.4	9.7	127.42	37.8	-315.4	279.4	260.2	19.14	14.598		
4,500.0	4,480.3	4,493.0	4,478.9	10.6	9.9	127.32	38.3	-323.6	285.8	266.2	19.59	14.590		
4,600.0	4,579.9	4,592.8	4,578.3	10.9	10.1	127.23	38.9	-331.8	292.2	272.2	20.04	14.583		
4,700.0	4,679.4	4,692.5	4,677.8	11.1	10.4	127.14	39.4	-339.9	298.6	278.1	20.49	14.576		
4,800.0	4,778.9	4,792.3	4,777.2	11.4	10.6	127.05	39.9	-348.1	305.0	284.1	20.94	14.569		
4,900.0	4,878.5	4,892.1	4,876.7	11.6	10.8	126.97	40.5	-356.2	311.4	290.0	21.38	14.563		
5,000.0	4,978.0	4,991.9	4,976.2	11.9	11.0	126.89	41.0	-364.4	317.8	296.0	21.83	14.557		
5,100.0	5,077.5	5,091.7	5,075.6	12.1	11.3	126.82	41.5	-372.6	324.2	302.0	22.28	14.551		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13C (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,177.0	5,191.5	5,175.1	12.3	11.5	126.74	42.0	-380.7	330.7	307.9	22.73	14.545		
5,300.0	5,276.6	5,291.3	5,274.5	12.6	11.7	126.67	42.6	-388.9	337.1	313.9	23.18	14.540		
5,400.0	5,376.1	5,391.1	5,374.0	12.8	11.9	126.61	43.1	-397.1	343.5	319.9	23.63	14.535		
5,500.0	5,475.6	5,490.9	5,473.4	13.1	12.2	126.54	43.6	-405.2	349.9	325.8	24.08	14.530		
5,600.0	5,575.2	5,590.7	5,572.9	13.3	12.4	126.48	44.2	-413.4	356.3	331.8	24.53	14.525		
5,700.0	5,674.7	5,690.5	5,672.4	13.6	12.6	126.42	44.7	-421.6	362.7	337.8	24.98	14.521		
5,800.0	5,774.2	5,790.3	5,771.8	13.8	12.8	126.36	45.2	-429.7	369.1	343.7	25.43	14.516		
5,900.0	5,873.7	5,890.1	5,871.3	14.0	13.1	126.31	45.7	-437.9	375.6	349.7	25.88	14.512		
6,000.0	5,973.3	5,989.9	5,970.7	14.3	13.3	126.25	46.3	-446.0	382.0	355.7	26.33	14.508		
6,100.0	6,072.8	6,089.7	6,070.2	14.5	13.5	126.20	46.8	-454.2	388.4	361.6	26.78	14.504		
6,200.0	6,172.3	6,189.4	6,169.6	14.8	13.7	126.15	47.3	-462.4	394.8	367.6	27.23	14.501		
6,300.0	6,271.9	6,289.2	6,269.1	15.0	14.0	126.10	47.8	-470.5	401.2	373.6	27.68	14.497		
6,400.0	6,371.4	6,389.0	6,368.6	15.3	14.2	126.05	48.4	-478.7	407.6	379.5	28.13	14.493		
6,500.0	6,470.9	6,488.8	6,468.0	15.5	14.4	126.01	48.9	-486.9	414.1	385.5	28.58	14.490		
6,600.0	6,570.4	6,588.6	6,567.5	15.7	14.6	125.96	49.4	-495.0	420.5	391.5	29.03	14.487		
6,700.0	6,670.0	6,688.4	6,666.9	16.0	14.9	125.92	50.0	-503.2	426.9	397.4	29.47	14.484		
6,800.0	6,769.5	6,788.2	6,766.4	16.2	15.1	125.88	50.5	-511.4	433.3	403.4	29.92	14.481		
6,900.0	6,869.0	6,888.0	6,865.8	16.5	15.3	125.84	51.0	-519.5	439.7	409.4	30.37	14.478		
7,000.0	6,968.6	6,987.8	6,965.3	16.7	15.5	125.80	51.5	-527.7	446.2	415.3	30.82	14.475		
7,100.0	7,068.1	7,087.6	7,064.8	17.0	15.8	125.76	52.1	-535.8	452.6	421.3	31.27	14.472		
7,200.0	7,167.6	7,187.4	7,164.2	17.2	16.0	125.72	52.6	-544.0	459.0	427.3	31.72	14.469		
7,300.0	7,267.1	7,287.2	7,263.7	17.5	16.2	125.68	53.1	-552.2	465.4	433.2	32.17	14.467		
7,400.0	7,366.7	7,387.0	7,363.1	17.7	16.4	125.65	53.7	-560.3	471.8	439.2	32.62	14.464		
7,500.0	7,466.2	7,486.8	7,462.6	17.9	16.7	125.61	54.2	-568.5	478.3	445.2	33.07	14.462		
7,600.0	7,565.7	7,586.6	7,562.0	18.2	16.9	125.58	54.7	-576.7	484.7	451.2	33.52	14.459		
7,700.0	7,665.3	7,686.8	7,661.9	18.4	17.1	125.55	55.2	-584.8	490.7	456.7	33.96	14.446		
7,800.0	7,765.2	7,788.3	7,763.3	18.6	17.3	125.50	55.6	-590.4	494.5	460.2	34.33	14.405		
7,900.0	7,865.1	7,890.0	7,865.0	18.7	17.4	125.49	55.7	-592.5	496.0	461.4	34.61	14.328		
8,000.0	7,965.1	7,990.2	7,965.1	18.8	17.6	-1.86	55.7	-592.5	496.0	461.1	34.89	14.215		
8,100.0	8,065.1	8,090.2	8,065.1	19.0	17.7	-1.86	55.7	-592.5	496.0	460.8	35.17	14.102		
8,200.0	8,165.1	8,190.2	8,165.1	19.1	17.9	-1.86	55.7	-592.5	496.0	460.5	35.45	13.991		
8,300.0	8,265.1	8,290.2	8,265.1	19.2	18.0	-1.86	55.7	-592.5	496.0	460.3	35.73	13.880		
8,400.0	8,365.1	8,390.2	8,365.1	19.4	18.1	-1.86	55.7	-592.5	496.0	460.0	36.02	13.771		
8,500.0	8,465.1	8,490.2	8,465.1	19.5	18.3	-1.86	55.7	-592.5	496.0	459.7	36.30	13.664		
8,600.0	8,565.1	8,590.2	8,565.1	19.6	18.4	-1.86	55.7	-592.5	496.0	459.4	36.58	13.557		
8,700.0	8,665.1	8,690.2	8,665.1	19.8	18.6	-1.86	55.7	-592.5	496.0	459.1	36.87	13.452		
8,800.0	8,765.1	8,790.2	8,765.1	19.9	18.7	-1.86	55.7	-592.5	496.0	458.8	37.16	13.348		
8,900.0	8,865.1	8,890.2	8,865.1	20.0	18.9	-1.86	55.7	-592.5	496.0	458.5	37.45	13.245		
9,000.0	8,965.1	8,990.2	8,965.1	20.2	19.0	-1.86	55.7	-592.5	496.0	458.2	37.74	13.144		
9,100.0	9,065.1	9,090.2	9,065.1	20.3	19.1	-1.86	55.7	-592.5	496.0	458.0	38.03	13.044		
9,200.0	9,165.1	9,190.2	9,165.1	20.4	19.3	-1.86	55.7	-592.5	496.0	457.7	38.32	12.944		
9,300.0	9,265.1	9,290.2	9,265.1	20.6	19.4	-1.86	55.7	-592.5	496.0	457.4	38.61	12.846		
9,400.0	9,365.1	9,390.2	9,365.1	20.7	19.6	-1.86	55.7	-592.5	496.0	457.1	38.90	12.750		
9,500.0	9,465.1	9,490.2	9,465.1	20.9	19.7	-1.86	55.7	-592.5	496.0	456.8	39.20	12.654		
9,600.0	9,565.1	9,590.2	9,565.1	21.0	19.9	-1.86	55.7	-592.5	496.0	456.5	39.49	12.559		
9,700.0	9,665.1	9,690.2	9,665.1	21.1	20.0	-1.86	55.7	-592.5	496.0	456.2	39.79	12.466		
9,800.0	9,765.1	9,790.2	9,765.1	21.3	20.2	-1.86	55.7	-592.5	496.0	455.9	40.08	12.374		
9,900.0	9,865.1	9,890.2	9,865.1	21.4	20.3	-1.86	55.7	-592.5	496.0	455.6	40.38	12.283		
10,000.0	9,965.1	9,990.2	9,965.1	21.6	20.5	-1.86	55.7	-592.5	496.0	455.3	40.68	12.193		
10,100.0	10,065.1	10,090.2	10,065.1	21.7	20.6	-1.86	55.7	-592.5	496.0	455.0	40.98	12.104		
10,200.0	10,165.1	10,190.2	10,165.1	21.8	20.8	-1.86	55.7	-592.5	496.0	454.7	41.28	12.016		
10,300.0	10,265.1	10,290.2	10,265.1	22.0	20.9	-1.86	55.7	-592.5	496.0	454.4	41.58	11.929		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13C (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)			
10,328.9	10,294.0	10,319.0	10,294.0	22.0	20.9	-1.86	55.7	-592.5	496.0	454.3	41.67	11.904 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13D (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-67.84	4.4	-10.7	11.6					
100.0	100.0	100.0	100.0	0.1	0.1	-67.84	4.4	-10.7	11.6	11.3	0.27	42.561		
200.0	200.0	200.0	200.0	0.3	0.3	-67.84	4.4	-10.7	11.6	11.0	0.62	18.650 CC, ES		
300.0	300.0	299.6	299.6	0.5	0.5	60.89	3.2	-13.1	12.0	11.0	0.98	12.209		
400.0	399.6	399.3	399.0	0.7	0.7	65.51	-0.2	-19.7	13.0	11.6	1.39	9.375		
500.0	499.2	499.3	498.6	0.9	0.9	72.99	-4.0	-27.4	14.0	12.2	1.83	7.660		
600.0	598.7	599.3	598.2	1.2	1.1	79.37	-7.8	-35.0	15.3	13.0	2.29	6.650		
700.0	698.2	699.3	697.8	1.4	1.4	84.75	-11.7	-42.6	16.6	13.9	2.77	6.020		
800.0	797.8	799.2	797.5	1.7	1.6	89.27	-15.5	-50.3	18.2	14.9	3.24	5.608		
900.0	897.3	899.2	897.1	1.9	1.8	93.07	-19.4	-57.9	19.8	16.1	3.71	5.329		
1,000.0	996.8	999.2	996.7	2.1	2.1	96.29	-23.2	-65.5	21.4	17.3	4.18	5.134		
1,100.0	1,096.3	1,099.2	1,096.3	2.4	2.3	99.04	-27.1	-73.2	23.2	18.5	4.64	4.993		
1,200.0	1,195.9	1,199.2	1,195.9	2.6	2.5	101.39	-30.9	-80.8	25.0	19.9	5.10	4.891		
1,300.0	1,295.4	1,299.1	1,295.5	2.9	2.7	103.44	-34.8	-88.5	26.8	21.2	5.56	4.814		
1,400.0	1,394.9	1,399.1	1,395.1	3.1	3.0	105.21	-38.6	-96.1	28.6	22.6	6.02	4.756		
1,500.0	1,494.5	1,499.1	1,494.7	3.3	3.2	106.78	-42.4	-103.7	30.5	24.0	6.47	4.711		
1,600.0	1,594.0	1,599.1	1,594.4	3.6	3.4	108.16	-46.3	-111.4	32.4	25.5	6.93	4.677		
1,700.0	1,693.5	1,699.1	1,694.0	3.8	3.7	109.38	-50.1	-119.0	34.3	26.9	7.38	4.650		
1,800.0	1,793.0	1,799.0	1,793.6	4.1	3.9	110.48	-54.0	-126.7	36.2	28.4	7.83	4.629		
1,900.0	1,892.6	1,899.0	1,893.2	4.3	4.1	111.47	-57.8	-134.3	38.2	29.9	8.28	4.612		
2,000.0	1,992.1	1,999.0	1,992.8	4.6	4.3	112.36	-61.7	-141.9	40.1	31.4	8.72	4.599		
2,100.0	2,091.6	2,099.0	2,092.4	4.8	4.6	113.17	-65.5	-149.6	42.1	32.9	9.17	4.588		
2,200.0	2,191.2	2,199.0	2,192.0	5.0	4.8	113.90	-69.4	-157.2	44.0	34.4	9.61	4.580		
2,300.0	2,290.7	2,298.9	2,291.6	5.3	5.0	114.58	-73.2	-164.8	46.0	35.9	10.06	4.573		
2,400.0	2,390.2	2,398.9	2,391.3	5.5	5.3	115.20	-77.0	-172.5	48.0	37.5	10.50	4.568		
2,500.0	2,489.8	2,498.9	2,490.9	5.8	5.5	115.77	-80.9	-180.1	50.0	39.0	10.95	4.564		
2,600.0	2,589.3	2,598.9	2,590.5	6.0	5.7	116.29	-84.7	-187.8	51.9	40.6	11.39	4.560		
2,700.0	2,688.8	2,698.9	2,690.1	6.3	5.9	116.78	-88.6	-195.4	53.9	42.1	11.83	4.558		
2,800.0	2,788.3	2,798.8	2,789.7	6.5	6.2	117.23	-92.4	-203.0	55.9	43.6	12.27	4.556		
2,900.0	2,887.9	2,898.8	2,889.3	6.7	6.4	117.65	-96.3	-210.7	57.9	45.2	12.72	4.555		
3,000.0	2,987.4	2,998.8	2,988.9	7.0	6.6	118.04	-100.1	-218.3	59.9	46.8	13.16	4.554		
3,100.0	3,086.9	3,098.8	3,088.5	7.2	6.9	118.41	-104.0	-225.9	61.9	48.3	13.60	4.554		
3,200.0	3,186.5	3,198.7	3,188.2	7.5	7.1	118.76	-107.8	-233.6	63.9	49.9	14.04	4.553		
3,300.0	3,286.0	3,298.7	3,287.8	7.7	7.3	119.08	-111.7	-241.2	65.9	51.4	14.48	4.553		
3,400.0	3,385.5	3,398.7	3,387.4	8.0	7.6	119.39	-115.5	-248.9	67.9	53.0	14.92	4.554		
3,500.0	3,485.0	3,498.7	3,487.0	8.2	7.8	119.67	-119.3	-256.5	69.9	54.6	15.36	4.554		
3,600.0	3,584.6	3,598.7	3,586.6	8.4	8.0	119.94	-123.2	-264.1	72.0	56.2	15.80	4.554		
3,700.0	3,684.1	3,698.6	3,686.2	8.7	8.2	120.20	-127.0	-271.8	74.0	57.7	16.24	4.555		
3,800.0	3,783.6	3,798.6	3,785.8	8.9	8.5	120.44	-130.9	-279.4	76.0	59.3	16.68	4.556		
3,900.0	3,883.2	3,898.6	3,885.5	9.2	8.7	120.67	-134.7	-287.1	78.0	60.9	17.12	4.557		
4,000.0	3,982.7	3,998.6	3,985.1	9.4	8.9	120.89	-138.6	-294.7	80.0	62.5	17.56	4.557		
4,100.0	4,082.2	4,098.6	4,084.7	9.7	9.2	121.10	-142.4	-302.3	82.0	64.0	18.00	4.558		
4,200.0	4,181.7	4,198.5	4,184.3	9.9	9.4	121.30	-146.3	-310.0	84.1	65.6	18.43	4.559		
4,300.0	4,281.3	4,298.5	4,283.9	10.2	9.6	121.49	-150.1	-317.6	86.1	67.2	18.87	4.560		
4,400.0	4,380.8	4,398.5	4,383.5	10.4	9.9	121.67	-153.9	-325.2	88.1	68.8	19.31	4.561		
4,500.0	4,480.3	4,498.5	4,483.1	10.6	10.1	121.84	-157.8	-332.9	90.1	70.4	19.75	4.562		
4,600.0	4,579.9	4,598.5	4,582.7	10.9	10.3	122.00	-161.6	-340.5	92.1	71.9	20.19	4.563		
4,700.0	4,679.4	4,698.4	4,682.4	11.1	10.5	122.16	-165.5	-348.2	94.2	73.5	20.63	4.564		
4,800.0	4,778.9	4,798.4	4,782.0	11.4	10.8	122.31	-169.3	-355.8	96.2	75.1	21.07	4.565		
4,900.0	4,878.5	4,898.4	4,881.6	11.6	11.0	122.45	-173.2	-363.4	98.2	76.7	21.51	4.567		
5,000.0	4,978.0	4,998.4	4,981.2	11.9	11.2	122.59	-177.0	-371.1	100.2	78.3	21.94	4.568		
5,100.0	5,077.5	5,098.4	5,080.8	12.1	11.5	122.73	-180.9	-378.7	102.3	79.9	22.38	4.569		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13D (M16W Pad) - DD - Plan #1												Offset Site Error: 0.0 ft	
Survey Program: O-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
5,200.0	5,177.0	5,198.3	5,180.4	12.3	11.7	122.85	-184.7	-386.3	104.3	81.5	22.82	4.570	
5,300.0	5,276.6	5,298.3	5,280.0	12.6	11.9	122.98	-188.5	-394.0	106.3	83.0	23.26	4.571	
5,400.0	5,376.1	5,398.3	5,379.6	12.8	12.2	123.10	-192.4	-401.6	108.3	84.6	23.70	4.572	
5,500.0	5,475.6	5,498.3	5,479.3	13.1	12.4	123.21	-196.2	-409.3	110.4	86.2	24.13	4.573	
5,600.0	5,575.2	5,598.3	5,578.9	13.3	12.6	123.32	-200.1	-416.9	112.4	87.8	24.57	4.574	
5,700.0	5,674.7	5,698.2	5,678.5	13.6	12.8	123.43	-203.9	-424.5	114.4	89.4	25.01	4.575	
5,800.0	5,774.2	5,798.2	5,778.1	13.8	13.1	123.53	-207.8	-432.2	116.4	91.0	25.45	4.576	
5,900.0	5,873.7	5,898.2	5,877.7	14.0	13.3	123.63	-211.6	-439.8	118.5	92.6	25.89	4.577	
6,000.0	5,973.3	5,998.2	5,977.3	14.3	13.5	123.72	-215.5	-447.5	120.5	94.2	26.32	4.578	
6,100.0	6,072.8	6,098.1	6,076.9	14.5	13.8	123.81	-219.3	-455.1	122.5	95.8	26.76	4.579	
6,200.0	6,172.3	6,198.1	6,176.5	14.8	14.0	123.90	-223.2	-462.7	124.6	97.4	27.20	4.580	
6,300.0	6,271.9	6,298.1	6,276.2	15.0	14.2	123.99	-227.0	-470.4	126.6	99.0	27.64	4.580	
6,400.0	6,371.4	6,398.1	6,375.8	15.3	14.5	124.07	-230.8	-478.0	128.6	100.6	28.08	4.581	
6,500.0	6,470.9	6,498.1	6,475.4	15.5	14.7	124.16	-234.7	-485.6	130.7	102.1	28.51	4.582	
6,600.0	6,570.4	6,598.0	6,575.0	15.7	14.9	124.23	-238.5	-493.3	132.7	103.7	28.95	4.583	
6,700.0	6,670.0	6,698.0	6,674.6	16.0	15.1	124.31	-242.4	-500.9	134.7	105.3	29.39	4.584	
6,800.0	6,769.5	6,798.0	6,774.2	16.2	15.4	124.38	-246.2	-508.6	136.8	106.9	29.83	4.585	
6,900.0	6,869.0	6,898.0	6,873.8	16.5	15.6	124.46	-250.1	-516.2	138.8	108.5	30.26	4.586	
7,000.0	6,968.6	6,998.0	6,973.4	16.7	15.8	124.53	-253.9	-523.8	140.8	110.1	30.70	4.587	
7,100.0	7,068.1	7,097.9	7,073.1	17.0	16.1	124.59	-257.8	-531.5	142.8	111.7	31.14	4.587	
7,200.0	7,167.6	7,197.9	7,172.7	17.2	16.3	124.66	-261.6	-539.1	144.9	113.3	31.58	4.588	
7,300.0	7,267.1	7,297.9	7,272.3	17.5	16.5	124.72	-265.4	-546.7	146.9	114.9	32.01	4.589	
7,400.0	7,366.7	7,397.9	7,371.9	17.7	16.8	124.79	-269.3	-554.4	148.9	116.5	32.45	4.590	
7,500.0	7,466.2	7,497.9	7,471.5	17.9	17.0	124.85	-273.1	-562.0	151.0	118.1	32.89	4.590	
7,600.0	7,565.7	7,597.8	7,571.1	18.2	17.2	124.91	-277.0	-569.7	153.0	119.7	33.33	4.591	
7,700.0	7,665.3	7,697.0	7,669.9	18.4	17.4	124.84	-280.7	-577.0	154.7	121.0	33.76	4.583	
7,800.0	7,765.2	7,794.8	7,767.6	18.6	17.6	124.71	-283.1	-581.9	155.7	121.6	34.12	4.563	
7,900.0	7,865.1	7,892.7	7,865.4	18.7	17.7	124.66	-284.1	-583.8	156.1	121.7	34.40	4.537	
8,000.0	7,965.1	7,992.4	7,965.1	18.8	17.9	-2.70	-284.1	-583.8	156.1	121.4	34.68	4.500	
8,100.0	8,065.1	8,092.4	8,065.1	19.0	18.0	-2.70	-284.1	-583.8	156.1	121.1	34.96	4.464	
8,200.0	8,165.1	8,192.4	8,165.1	19.1	18.1	-2.70	-284.1	-583.8	156.1	120.8	35.24	4.429	
8,300.0	8,265.1	8,292.4	8,265.1	19.2	18.3	-2.70	-284.1	-583.8	156.1	120.5	35.52	4.393	
8,400.0	8,365.1	8,392.4	8,365.1	19.4	18.4	-2.70	-284.1	-583.8	156.1	120.3	35.81	4.358	
8,500.0	8,465.1	8,492.4	8,465.1	19.5	18.6	-2.70	-284.1	-583.8	156.1	120.0	36.09	4.324	
8,600.0	8,565.1	8,592.4	8,565.1	19.6	18.7	-2.70	-284.1	-583.8	156.1	119.7	36.38	4.290	
8,700.0	8,665.1	8,692.4	8,665.1	19.8	18.8	-2.70	-284.1	-583.8	156.1	119.4	36.67	4.256	
8,800.0	8,765.1	8,792.4	8,765.1	19.9	19.0	-2.70	-284.1	-583.8	156.1	119.1	36.96	4.223	
8,900.0	8,865.1	8,892.4	8,865.1	20.0	19.1	-2.70	-284.1	-583.8	156.1	118.8	37.25	4.190	
9,000.0	8,965.1	8,992.4	8,965.1	20.2	19.3	-2.70	-284.1	-583.8	156.1	118.5	37.54	4.158	
9,100.0	9,065.1	9,092.4	9,065.1	20.3	19.4	-2.70	-284.1	-583.8	156.1	118.2	37.83	4.125	
9,200.0	9,165.1	9,192.4	9,165.1	20.4	19.5	-2.70	-284.1	-583.8	156.1	117.9	38.12	4.094	
9,300.0	9,265.1	9,292.4	9,265.1	20.6	19.7	-2.70	-284.1	-583.8	156.1	117.6	38.42	4.062	
9,400.0	9,365.1	9,392.4	9,365.1	20.7	19.8	-2.70	-284.1	-583.8	156.1	117.4	38.71	4.032	
9,500.0	9,465.1	9,492.4	9,465.1	20.9	20.0	-2.70	-284.1	-583.8	156.1	117.1	39.01	4.001	
9,600.0	9,565.1	9,592.4	9,565.1	21.0	20.1	-2.70	-284.1	-583.8	156.1	116.8	39.30	3.971	
9,700.0	9,665.1	9,692.4	9,665.1	21.1	20.3	-2.70	-284.1	-583.8	156.1	116.5	39.60	3.941	
9,800.0	9,765.1	9,792.4	9,765.1	21.3	20.4	-2.70	-284.1	-583.8	156.1	116.2	39.90	3.912	
9,900.0	9,865.1	9,892.4	9,865.1	21.4	20.6	-2.70	-284.1	-583.8	156.1	115.9	40.20	3.883	
10,000.0	9,965.1	9,992.4	9,965.1	21.6	20.7	-2.70	-284.1	-583.8	156.1	115.6	40.50	3.854	
10,100.0	10,065.1	10,092.4	10,065.1	21.7	20.9	-2.70	-284.1	-583.8	156.1	115.3	40.80	3.825	
10,200.0	10,165.1	10,192.4	10,165.1	21.8	21.0	-2.70	-284.1	-583.8	156.1	115.0	41.10	3.797	
10,300.0	10,265.1	10,292.4	10,265.1	22.0	21.1	-2.70	-284.1	-583.8	156.1	114.7	41.40	3.770	

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)				
10,328.9	10,294.0	10,321.2	10,294.0	22.0	21.2	-2.70	-284.1	-583.8	156.1	114.6	41.49	3.762 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-3B (M16W Pad) - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	39.93	119.5	100.0	155.8				
100.0	100.0	100.0	100.0	0.1	0.1	39.93	119.5	100.0	155.8	155.5	0.27	572.125	
200.0	200.0	200.0	200.0	0.3	0.3	39.93	119.5	100.0	155.8	155.2	0.62	250.707 CC, ES	
300.0	300.0	300.7	300.6	0.5	0.5	168.43	117.6	101.8	158.1	157.1	0.98	161.340	
400.0	399.6	400.4	400.0	0.7	0.7	171.66	111.9	107.3	165.4	164.0	1.37	120.445	
500.0	499.2	498.8	497.6	0.9	1.0	176.33	102.8	116.3	175.2	173.4	1.82	96.031	
600.0	598.7	595.5	592.6	1.2	1.3	-178.08	90.3	128.5	186.9	184.6	2.34	79.834	
700.0	698.2	690.6	685.3	1.4	1.7	-171.97	74.7	143.7	201.4	198.5	2.90	69.517	
800.0	797.8	786.9	778.7	1.7	2.2	-166.29	58.0	160.0	218.4	215.0	3.45	63.245	
900.0	897.3	883.2	872.1	1.9	2.6	-161.43	41.3	176.3	237.4	233.4	4.00	59.357	
1,000.0	996.8	979.5	965.5	2.1	3.0	-157.30	24.7	192.6	257.7	253.2	4.53	56.883	
1,100.0	1,096.3	1,075.8	1,058.9	2.4	3.5	-153.77	8.0	208.9	279.2	274.2	5.05	55.287	
1,200.0	1,195.9	1,172.0	1,152.3	2.6	3.9	-150.74	-8.7	225.2	301.6	296.1	5.56	54.255	
1,300.0	1,295.4	1,268.3	1,245.7	2.9	4.4	-148.12	-25.4	241.5	324.7	318.7	6.06	53.593	
1,400.0	1,394.9	1,364.6	1,339.2	3.1	4.8	-145.85	-42.1	257.8	348.4	341.8	6.55	53.180	
1,500.0	1,494.5	1,460.9	1,432.6	3.3	5.2	-143.87	-58.8	274.1	372.5	365.5	7.04	52.939	
1,600.0	1,594.0	1,557.1	1,526.0	3.6	5.7	-142.13	-75.5	290.4	397.0	389.5	7.52	52.816	
1,700.0	1,693.5	1,653.4	1,619.4	3.8	6.1	-140.59	-92.2	306.7	421.8	413.8	7.99	52.776 SF	
1,800.0	1,793.0	1,749.7	1,712.8	4.1	6.6	-139.22	-108.8	323.0	446.9	438.4	8.46	52.795	
1,900.0	1,892.6	1,846.0	1,806.2	4.3	7.0	-137.99	-125.5	339.3	472.2	463.2	8.93	52.853	
2,000.0	1,992.1	1,942.3	1,899.6	4.6	7.5	-136.89	-142.2	355.6	497.6	488.2	9.40	52.940	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4B (M16W Pad) - DD - Plan #1												Offset Site Error: 0.0 ft			
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	70.07	5.8	16.1	17.1						
100.0	100.0	100.0	100.0	0.1	0.1	70.07	5.8	16.1	17.1	16.9	0.27	62.892			
200.0	200.0	200.0	200.0	0.3	0.3	70.07	5.8	16.1	17.1	16.5	0.62	27.559 CC, ES			
300.0	300.0	300.7	300.7	0.5	0.5	-159.91	3.6	14.7	17.5	16.6	0.98	17.976			
400.0	399.6	401.4	401.0	0.7	0.7	-152.61	-3.1	10.3	18.9	17.6	1.36	13.913			
500.0	499.2	501.7	500.5	0.9	1.0	-137.30	-14.0	3.2	19.4	17.5	1.84	10.494			
600.0	598.7	601.5	599.2	1.2	1.3	-119.28	-26.3	-4.7	20.7	18.3	2.41	8.586			
700.0	698.2	701.3	697.9	1.4	1.6	-104.69	-38.5	-12.6	23.8	20.8	2.98	7.995 SF			
800.0	797.8	801.1	796.6	1.7	1.9	-93.96	-50.8	-20.5	28.0	24.5	3.50	8.013			
900.0	897.3	900.9	895.4	1.9	2.2	-86.23	-63.1	-28.4	33.0	29.0	3.99	8.275			
1,000.0	996.8	1,000.7	994.1	2.1	2.5	-80.59	-75.3	-36.4	38.4	33.9	4.45	8.621			
1,100.0	1,096.3	1,100.5	1,092.8	2.4	2.8	-76.36	-87.6	-44.3	44.0	39.1	4.90	8.980			
1,200.0	1,195.9	1,200.3	1,191.5	2.6	3.1	-73.12	-99.8	-52.2	49.9	44.5	5.35	9.326			
1,300.0	1,295.4	1,300.1	1,290.2	2.9	3.4	-70.56	-112.1	-60.1	55.9	50.1	5.79	9.648			
1,400.0	1,394.9	1,399.9	1,389.0	3.1	3.7	-68.50	-124.3	-68.1	62.0	55.7	6.23	9.942			
1,500.0	1,494.5	1,499.7	1,487.7	3.3	4.0	-66.81	-136.6	-76.0	68.1	61.4	6.67	10.210			
1,600.0	1,594.0	1,599.4	1,586.4	3.6	4.3	-65.40	-148.8	-83.9	74.3	67.2	7.11	10.453			
1,700.0	1,693.5	1,699.2	1,685.1	3.8	4.6	-64.20	-161.1	-91.8	80.5	73.0	7.54	10.674			
1,800.0	1,793.0	1,799.0	1,783.9	4.1	4.9	-63.18	-173.3	-99.7	86.7	78.8	7.98	10.875			
1,900.0	1,892.6	1,898.8	1,882.6	4.3	5.3	-62.30	-185.6	-107.7	93.0	84.6	8.41	11.058			
2,000.0	1,992.1	1,998.6	1,981.3	4.6	5.6	-61.53	-197.8	-115.6	99.3	90.5	8.85	11.226			
2,100.0	2,091.6	2,098.4	2,080.0	4.8	5.9	-60.85	-210.1	-123.5	105.6	96.4	9.28	11.380			
2,200.0	2,191.2	2,198.2	2,178.7	5.0	6.2	-60.24	-222.4	-131.4	112.0	102.2	9.72	11.521			
2,300.0	2,290.7	2,298.0	2,277.5	5.3	6.5	-59.71	-234.6	-139.4	118.3	108.1	10.15	11.652			
2,400.0	2,390.2	2,397.8	2,376.2	5.5	6.8	-59.22	-246.9	-147.3	124.6	114.1	10.59	11.773			
2,500.0	2,489.8	2,497.6	2,474.9	5.8	7.1	-58.78	-259.1	-155.2	131.0	120.0	11.02	11.885			
2,600.0	2,589.3	2,597.4	2,573.6	6.0	7.4	-58.39	-271.4	-163.1	137.4	125.9	11.46	11.989			
2,700.0	2,688.8	2,697.2	2,672.3	6.3	7.7	-58.03	-283.6	-171.1	143.7	131.8	11.89	12.086			
2,800.0	2,788.3	2,797.0	2,771.1	6.5	8.0	-57.70	-295.9	-179.0	150.1	137.8	12.33	12.176			
2,900.0	2,887.9	2,896.8	2,869.8	6.7	8.3	-57.39	-308.1	-186.9	156.5	143.7	12.76	12.261			
3,000.0	2,987.4	2,996.5	2,968.5	7.0	8.7	-57.11	-320.4	-194.8	162.9	149.7	13.20	12.340			
3,100.0	3,086.9	3,096.3	3,067.2	7.2	9.0	-56.85	-332.6	-202.7	169.2	155.6	13.63	12.415			
3,200.0	3,186.5	3,196.1	3,165.9	7.5	9.3	-56.61	-344.9	-210.7	175.6	161.6	14.07	12.485			
3,300.0	3,286.0	3,295.9	3,264.7	7.7	9.6	-56.39	-357.1	-218.6	182.0	167.5	14.50	12.551			
3,400.0	3,385.5	3,395.7	3,363.4	8.0	9.9	-56.18	-369.4	-226.5	188.4	173.5	14.94	12.614			
3,500.0	3,485.0	3,495.5	3,462.1	8.2	10.2	-55.99	-381.7	-234.4	194.8	179.4	15.37	12.673			
3,600.0	3,584.6	3,595.3	3,560.8	8.4	10.5	-55.81	-393.9	-242.4	201.2	185.4	15.81	12.729			
3,700.0	3,684.1	3,695.1	3,659.5	8.7	10.8	-55.63	-406.2	-250.3	207.6	191.4	16.24	12.782			
3,800.0	3,783.6	3,794.9	3,758.3	8.9	11.1	-55.47	-418.4	-258.2	214.0	197.3	16.68	12.832			
3,900.0	3,883.2	3,894.7	3,857.0	9.2	11.4	-55.32	-430.7	-266.1	220.4	203.3	17.11	12.880			
4,000.0	3,982.7	3,994.5	3,955.7	9.4	11.7	-55.18	-442.9	-274.0	226.8	209.3	17.55	12.925			
4,100.0	4,082.2	4,094.3	4,054.4	9.7	12.1	-55.05	-455.2	-282.0	233.2	215.2	17.98	12.969			
4,200.0	4,181.7	4,194.1	4,153.1	9.9	12.4	-54.92	-467.4	-289.9	239.6	221.2	18.42	13.010			
4,300.0	4,281.3	4,293.9	4,251.9	10.2	12.7	-54.80	-479.7	-297.8	246.0	227.2	18.85	13.050			
4,400.0	4,380.8	4,393.7	4,350.6	10.4	13.0	-54.68	-491.9	-305.7	252.4	233.1	19.29	13.088			
4,500.0	4,480.3	4,493.4	4,449.3	10.6	13.3	-54.57	-504.2	-313.7	258.8	239.1	19.72	13.124			
4,600.0	4,579.9	4,593.2	4,548.0	10.9	13.6	-54.47	-516.4	-321.6	265.2	245.1	20.16	13.159			
4,700.0	4,679.4	4,693.0	4,646.7	11.1	13.9	-54.37	-528.7	-329.5	271.7	251.1	20.59	13.192			
4,800.0	4,778.9	4,792.8	4,745.5	11.4	14.2	-54.28	-541.0	-337.4	278.1	257.0	21.03	13.224			
4,900.0	4,878.5	4,892.6	4,844.2	11.6	14.5	-54.18	-553.2	-345.4	284.5	263.0	21.46	13.254			
5,000.0	4,978.0	4,992.4	4,942.9	11.9	14.8	-54.10	-565.5	-353.3	290.9	269.0	21.90	13.284			
5,100.0	5,077.5	5,092.2	5,041.6	12.1	15.1	-54.02	-577.7	-361.2	297.3	275.0	22.33	13.312			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4B (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-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		
5,200.0	5,177.0	5,192.0	5,140.4	12.3	15.5	-53.94	-590.0	-369.1	303.7	281.0	22.77	13.340		
5,300.0	5,276.6	5,291.8	5,239.1	12.6	15.8	-53.86	-602.2	-377.0	310.1	286.9	23.20	13.366		
5,400.0	5,376.1	5,391.6	5,337.8	12.8	16.1	-53.79	-614.5	-385.0	316.6	292.9	23.64	13.391		
5,500.0	5,475.6	5,491.4	5,436.5	13.1	16.4	-53.72	-626.7	-392.9	323.0	298.9	24.07	13.416		
5,600.0	5,575.2	5,591.2	5,535.2	13.3	16.7	-53.65	-639.0	-400.8	329.4	304.9	24.51	13.439		
5,700.0	5,674.7	5,691.0	5,634.0	13.6	17.0	-53.59	-651.2	-408.7	335.8	310.9	24.94	13.462		
5,800.0	5,774.2	5,790.8	5,732.7	13.8	17.3	-53.53	-663.5	-416.7	342.2	316.8	25.38	13.484		
5,900.0	5,873.7	5,890.6	5,831.4	14.0	17.6	-53.47	-675.7	-424.6	348.6	322.8	25.82	13.505		
6,000.0	5,973.3	5,990.3	5,930.1	14.3	17.9	-53.41	-688.0	-432.5	355.1	328.8	26.25	13.526		
6,100.0	6,072.8	6,090.1	6,028.8	14.5	18.2	-53.35	-700.3	-440.4	361.5	334.8	26.69	13.546		
6,200.0	6,172.3	6,189.9	6,127.6	14.8	18.5	-53.30	-712.5	-448.4	367.9	340.8	27.12	13.565		
6,300.0	6,271.9	6,289.7	6,226.3	15.0	18.9	-53.25	-724.8	-456.3	374.3	346.8	27.56	13.583		
6,400.0	6,371.4	6,389.5	6,325.0	15.3	19.2	-53.20	-737.0	-464.2	380.7	352.7	27.99	13.602		
6,500.0	6,470.9	6,489.3	6,423.7	15.5	19.5	-53.15	-749.3	-472.1	387.1	358.7	28.43	13.619		
6,600.0	6,570.4	6,589.1	6,522.4	15.7	19.8	-53.10	-761.5	-480.0	393.6	364.7	28.86	13.636		
6,700.0	6,670.0	6,688.9	6,621.2	16.0	20.1	-53.06	-773.8	-488.0	400.0	370.7	29.30	13.653		
6,800.0	6,769.5	6,788.7	6,719.9	16.2	20.4	-53.01	-786.0	-495.9	406.4	376.7	29.73	13.669		
6,900.0	6,869.0	6,888.5	6,818.6	16.5	20.7	-52.97	-798.3	-503.8	412.8	382.7	30.17	13.684		
7,000.0	6,968.6	6,988.3	6,917.3	16.7	21.0	-52.93	-810.5	-511.7	419.3	388.6	30.60	13.700		
7,100.0	7,068.1	7,088.1	7,016.0	17.0	21.3	-52.89	-822.8	-519.7	425.7	394.6	31.04	13.714		
7,200.0	7,167.6	7,187.9	7,114.8	17.2	21.6	-52.85	-835.1	-527.6	432.1	400.6	31.47	13.729		
7,300.0	7,267.1	7,287.7	7,213.5	17.5	21.9	-52.81	-847.3	-535.5	438.5	406.6	31.91	13.743		
7,400.0	7,366.7	7,387.5	7,312.2	17.7	22.3	-52.78	-859.6	-543.4	444.9	412.6	32.34	13.756		
7,500.0	7,466.2	7,487.2	7,410.9	17.9	22.6	-52.74	-871.8	-551.3	451.4	418.6	32.78	13.769		
7,600.0	7,565.7	7,594.9	7,517.5	18.2	22.9	-52.74	-884.5	-559.6	457.3	424.1	33.23	13.761		
7,700.0	7,665.3	7,710.3	7,632.3	18.4	23.1	-52.97	-894.8	-566.2	460.8	427.1	33.71	13.671		
7,800.0	7,765.2	7,825.9	7,747.6	18.6	23.3	-53.14	-901.2	-570.3	462.9	428.8	34.09	13.578		
7,900.0	7,865.1	7,941.5	7,863.1	18.7	23.5	-53.20	-903.6	-571.9	463.7	429.3	34.40	13.481		
8,000.0	7,965.1	8,043.5	7,965.1	18.8	23.6	179.44	-903.7	-571.9	463.7	429.0	34.68	13.372		
8,100.0	8,065.1	8,143.5	8,065.1	19.0	23.7	179.44	-903.7	-571.9	463.7	428.7	34.96	13.264		
8,200.0	8,165.1	8,243.5	8,165.1	19.1	23.8	179.44	-903.7	-571.9	463.7	428.5	35.24	13.158		
8,300.0	8,265.1	8,343.5	8,265.1	19.2	23.9	179.44	-903.7	-571.9	463.7	428.2	35.52	13.053		
8,400.0	8,365.1	8,443.5	8,365.1	19.4	24.0	179.44	-903.7	-571.9	463.7	427.9	35.81	12.949		
8,500.0	8,465.1	8,543.5	8,465.1	19.5	24.1	179.44	-903.7	-571.9	463.7	427.6	36.10	12.846		
8,600.0	8,565.1	8,643.5	8,565.1	19.6	24.2	179.44	-903.7	-571.9	463.7	427.3	36.38	12.744		
8,700.0	8,665.1	8,743.5	8,665.1	19.8	24.3	179.44	-903.7	-571.9	463.7	427.0	36.67	12.644		
8,800.0	8,765.1	8,843.5	8,765.1	19.9	24.4	179.44	-903.7	-571.9	463.7	426.7	36.96	12.545		
8,900.0	8,865.1	8,943.5	8,865.1	20.0	24.5	179.44	-903.7	-571.9	463.7	426.4	37.25	12.447		
9,000.0	8,965.1	9,043.5	8,965.1	20.2	24.7	179.44	-903.7	-571.9	463.7	426.1	37.54	12.351		
9,100.0	9,065.1	9,143.5	9,065.1	20.3	24.8	179.44	-903.7	-571.9	463.7	425.9	37.84	12.255		
9,200.0	9,165.1	9,243.5	9,165.1	20.4	24.9	179.44	-903.7	-571.9	463.7	425.6	38.13	12.161		
9,300.0	9,265.1	9,343.5	9,265.1	20.6	25.0	179.44	-903.7	-571.9	463.7	425.3	38.42	12.068		
9,400.0	9,365.1	9,443.5	9,365.1	20.7	25.1	179.44	-903.7	-571.9	463.7	425.0	38.72	11.975		
9,500.0	9,465.1	9,543.5	9,465.1	20.9	25.2	179.44	-903.7	-571.9	463.7	424.7	39.02	11.885		
9,600.0	9,565.1	9,643.5	9,565.1	21.0	25.3	179.44	-903.7	-571.9	463.7	424.4	39.31	11.795		
9,700.0	9,665.1	9,743.5	9,665.1	21.1	25.4	179.44	-903.7	-571.9	463.7	424.1	39.61	11.706		
9,800.0	9,765.1	9,843.5	9,765.1	21.3	25.6	179.44	-903.7	-571.9	463.7	423.8	39.91	11.618		
9,900.0	9,865.1	9,943.5	9,865.1	21.4	25.7	179.44	-903.7	-571.9	463.7	423.5	40.21	11.532		
10,000.0	9,965.1	10,043.5	9,965.1	21.6	25.8	179.44	-903.7	-571.9	463.7	423.2	40.51	11.446		
10,100.0	10,065.1	10,143.5	10,065.1	21.7	25.9	179.44	-903.7	-571.9	463.7	422.9	40.81	11.362		
10,200.0	10,165.1	10,243.5	10,165.1	21.8	26.0	179.44	-903.7	-571.9	463.7	422.6	41.11	11.278		
10,300.0	10,265.1	10,343.5	10,265.1	22.0	26.2	179.44	-903.7	-571.9	463.7	422.3	41.42	11.196		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4B (M16W Pad) - DD - Plan #1		Offset Site Error:		0.0 ft	
Survey Program: 0-MWD														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning				
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor						
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)							
10,328.9	10,294.0	10,372.3	10,294.0	22.0	26.2	179.44	-903.7	-571.9	463.7	422.2	41.50	11.172					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4C (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft			
Survey Program: 0-MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	69.94	11.7	31.9	34.0							
100.0	100.0	100.0	100.0	0.1	0.1	69.94	11.7	31.9	34.0	33.7	0.27	124.787				
200.0	200.0	200.0	200.0	0.3	0.3	69.94	11.7	31.9	34.0	33.4	0.62	54.682	CC, ES			
300.0	300.0	301.3	301.2	0.5	0.5	-160.95	9.3	30.7	34.6	33.6	0.98	35.357				
400.0	399.6	402.5	402.1	0.7	0.7	-156.01	2.1	27.1	36.5	35.1	1.36	26.719				
500.0	499.2	503.4	502.2	0.9	1.0	-146.35	-9.9	21.2	37.3	35.5	1.84	20.349				
600.0	598.7	603.4	600.5	1.2	1.3	-131.07	-25.7	13.3	37.8	35.4	2.43	15.567				
700.0	698.2	702.8	698.3	1.4	1.7	-116.33	-42.0	5.2	40.7	37.7	3.06	13.337				
800.0	797.8	802.2	796.0	1.7	2.0	-104.23	-58.2	-3.0	46.0	42.3	3.65	12.610	SF			
900.0	897.3	901.7	893.8	1.9	2.4	-94.91	-74.5	-11.1	52.8	48.7	4.19	12.623				
1,000.0	996.8	1,001.1	991.6	2.1	2.7	-87.87	-90.8	-19.2	60.8	56.1	4.68	12.972				
1,100.0	1,096.3	1,100.6	1,089.3	2.4	3.1	-82.50	-107.0	-27.3	69.4	64.2	5.16	13.459				
1,200.0	1,195.9	1,200.0	1,187.1	2.6	3.5	-78.34	-123.3	-35.4	78.5	72.9	5.61	13.987				
1,300.0	1,295.4	1,299.5	1,284.9	2.9	3.8	-75.06	-139.6	-43.5	87.9	81.8	6.06	14.513				
1,400.0	1,394.9	1,398.9	1,382.6	3.1	4.2	-72.41	-155.8	-51.7	97.5	91.0	6.50	15.016				
1,500.0	1,494.5	1,498.3	1,480.4	3.3	4.5	-70.25	-172.1	-59.8	107.4	100.4	6.93	15.487				
1,600.0	1,594.0	1,597.8	1,578.2	3.6	4.9	-68.45	-188.4	-67.9	117.3	109.9	7.37	15.924				
1,700.0	1,693.5	1,697.2	1,675.9	3.8	5.3	-66.93	-204.6	-76.0	127.3	119.5	7.80	16.327				
1,800.0	1,793.0	1,796.7	1,773.7	4.1	5.6	-65.64	-220.9	-84.1	137.5	129.2	8.23	16.699				
1,900.0	1,892.6	1,896.1	1,871.5	4.3	6.0	-64.52	-237.2	-92.2	147.6	139.0	8.66	17.041				
2,000.0	1,992.1	1,995.6	1,969.2	4.6	6.4	-63.55	-253.5	-100.4	157.9	148.8	9.09	17.357				
2,100.0	2,091.6	2,095.0	2,067.0	4.8	6.7	-62.69	-269.7	-108.5	168.1	158.6	9.53	17.648				
2,200.0	2,191.2	2,194.4	2,164.8	5.0	7.1	-61.94	-286.0	-116.6	178.4	168.5	9.96	17.918				
2,300.0	2,290.7	2,293.9	2,262.5	5.3	7.4	-61.26	-302.3	-124.7	188.7	178.4	10.39	18.168				
2,400.0	2,390.2	2,393.3	2,360.3	5.5	7.8	-60.66	-318.5	-132.8	199.1	188.3	10.82	18.400				
2,500.0	2,489.8	2,492.8	2,458.1	5.8	8.2	-60.12	-334.8	-140.9	209.5	198.2	11.25	18.616				
2,600.0	2,589.3	2,592.2	2,555.8	6.0	8.5	-59.62	-351.1	-149.1	219.8	208.2	11.68	18.818				
2,700.0	2,688.8	2,691.6	2,653.6	6.3	8.9	-59.18	-367.3	-157.2	230.2	218.1	12.11	19.006				
2,800.0	2,788.3	2,791.1	2,751.4	6.5	9.2	-58.77	-383.6	-165.3	240.6	228.1	12.55	19.182				
2,900.0	2,887.9	2,890.5	2,849.1	6.7	9.6	-58.39	-399.9	-173.4	251.1	238.1	12.98	19.347				
3,000.0	2,987.4	2,990.0	2,946.9	7.0	10.0	-58.05	-416.1	-181.5	261.5	248.1	13.41	19.503				
3,100.0	3,086.9	3,089.4	3,044.7	7.2	10.3	-57.73	-432.4	-189.6	271.9	258.1	13.84	19.649				
3,200.0	3,186.5	3,188.9	3,142.4	7.5	10.7	-57.43	-448.7	-197.8	282.4	268.1	14.27	19.786				
3,300.0	3,286.0	3,288.3	3,240.2	7.7	11.1	-57.16	-464.9	-205.9	292.8	278.1	14.70	19.916				
3,400.0	3,385.5	3,387.7	3,338.0	8.0	11.4	-56.90	-481.2	-214.0	303.3	288.2	15.14	20.039				
3,500.0	3,485.0	3,487.2	3,435.7	8.2	11.8	-56.66	-497.5	-222.1	313.8	298.2	15.57	20.155				
3,600.0	3,584.6	3,586.6	3,533.5	8.4	12.1	-56.44	-513.8	-230.2	324.2	308.2	16.00	20.266				
3,700.0	3,684.1	3,686.1	3,631.3	8.7	12.5	-56.23	-530.0	-238.3	334.7	318.3	16.43	20.370				
3,800.0	3,783.6	3,785.5	3,729.0	8.9	12.9	-56.03	-546.3	-246.5	345.2	328.3	16.86	20.470				
3,900.0	3,883.2	3,885.0	3,826.8	9.2	13.2	-55.85	-562.6	-254.6	355.7	338.4	17.30	20.565				
4,000.0	3,982.7	3,984.4	3,924.6	9.4	13.6	-55.68	-578.8	-262.7	366.2	348.4	17.73	20.655				
4,100.0	4,082.2	4,083.8	4,022.3	9.7	14.0	-55.51	-595.1	-270.8	376.7	358.5	18.16	20.741				
4,200.0	4,181.7	4,183.3	4,120.1	9.9	14.3	-55.36	-611.4	-278.9	387.2	368.6	18.59	20.823				
4,300.0	4,281.3	4,282.7	4,217.9	10.2	14.7	-55.21	-627.6	-287.0	397.6	378.6	19.02	20.902				
4,400.0	4,380.8	4,382.2	4,315.6	10.4	15.0	-55.07	-643.9	-295.2	408.1	388.7	19.46	20.977				
4,500.0	4,480.3	4,481.6	4,413.4	10.6	15.4	-54.94	-660.2	-303.3	418.6	398.8	19.89	21.049				
4,600.0	4,579.9	4,581.1	4,511.2	10.9	15.8	-54.81	-676.4	-311.4	429.2	408.8	20.32	21.118				
4,700.0	4,679.4	4,680.5	4,608.9	11.1	16.1	-54.69	-692.7	-319.5	439.7	418.9	20.75	21.184				
4,800.0	4,778.9	4,779.9	4,706.7	11.4	16.5	-54.57	-709.0	-327.6	450.2	429.0	21.19	21.247				
4,900.0	4,878.5	4,879.4	4,804.5	11.6	16.9	-54.47	-725.2	-335.7	460.7	439.1	21.62	21.308				
5,000.0	4,978.0	4,978.8	4,902.2	11.9	17.2	-54.36	-741.5	-343.9	471.2	449.1	22.05	21.367				
5,100.0	5,077.5	5,078.3	5,000.0	12.1	17.6	-54.26	-757.8	-352.0	481.7	459.2	22.48	21.423				

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4C (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,177.0	5,177.7	5,097.8	12.3	17.9	-54.16	-774.1	-360.1	492.2	469.3	22.92	21.478		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4D2 (M16W Pad) - DD - Plan #1													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	70.00	17.5	48.0	51.1					
100.0	100.0	100.0	100.0	0.1	0.1	70.00	17.5	48.0	51.1	50.8	0.27	187.662 CC		
200.0	200.0	200.0	200.0	0.3	0.3	70.00	17.5	48.0	51.1	50.5	0.62	82.234 ES		
300.0	300.0	301.8	301.7	0.5	0.5	-161.29	15.0	47.0	51.8	50.9	0.98	52.927		
400.0	399.6	403.5	403.1	0.7	0.7	-157.42	7.4	44.0	54.1	52.8	1.37	39.547		
500.0	499.2	504.8	503.5	0.9	1.0	-150.15	-5.1	39.0	55.6	53.8	1.84	30.277		
600.0	598.7	605.4	602.3	1.2	1.4	-138.42	-22.3	32.1	56.0	53.6	2.43	23.015		
700.0	698.2	704.5	698.9	1.4	1.8	-123.73	-42.8	23.8	58.4	55.2	3.12	18.692		
800.0	797.8	803.3	795.3	1.7	2.2	-110.77	-63.4	15.6	64.2	60.4	3.78	16.970		
900.0	897.3	902.2	891.6	1.9	2.6	-100.36	-84.1	7.3	72.8	68.4	4.38	16.628 SF		
1,000.0	996.8	1,001.0	987.9	2.1	3.0	-92.33	-104.7	-1.0	83.2	78.3	4.91	16.958		
1,100.0	1,096.3	1,099.9	1,084.2	2.4	3.4	-86.16	-125.4	-9.3	95.0	89.6	5.40	17.592		
1,200.0	1,195.9	1,198.7	1,180.5	2.6	3.9	-81.38	-146.0	-17.5	107.5	101.7	5.86	18.347		
1,300.0	1,295.4	1,297.6	1,276.8	2.9	4.3	-77.61	-166.6	-25.8	120.7	114.4	6.31	19.131		
1,400.0	1,394.9	1,396.4	1,373.2	3.1	4.7	-74.59	-187.3	-34.1	134.2	127.5	6.75	19.899		
1,500.0	1,494.5	1,495.3	1,469.5	3.3	5.1	-72.13	-207.9	-42.4	148.1	140.9	7.18	20.630		
1,600.0	1,594.0	1,594.1	1,565.8	3.6	5.6	-70.09	-228.6	-50.6	162.2	154.6	7.61	21.316		
1,700.0	1,693.5	1,693.0	1,662.1	3.8	6.0	-68.38	-249.2	-58.9	176.5	168.4	8.04	21.955		
1,800.0	1,793.0	1,791.8	1,758.4	4.1	6.4	-66.92	-269.8	-67.2	190.9	182.4	8.46	22.547		
1,900.0	1,892.6	1,890.7	1,854.7	4.3	6.8	-65.67	-290.5	-75.5	205.4	196.5	8.89	23.096		
2,000.0	1,992.1	1,989.5	1,951.1	4.6	7.3	-64.58	-311.1	-83.7	219.9	210.6	9.32	23.603		
2,100.0	2,091.6	2,088.4	2,047.4	4.8	7.7	-63.63	-331.8	-92.0	234.6	224.8	9.74	24.074		
2,200.0	2,191.2	2,187.2	2,143.7	5.0	8.1	-62.79	-352.4	-100.3	249.3	239.1	10.17	24.510		
2,300.0	2,290.7	2,286.1	2,240.0	5.3	8.5	-62.05	-373.0	-108.6	264.0	253.4	10.60	24.915		
2,400.0	2,390.2	2,384.9	2,336.3	5.5	9.0	-61.38	-393.7	-116.8	278.8	267.8	11.02	25.292		
2,500.0	2,489.8	2,483.8	2,432.7	5.8	9.4	-60.78	-414.3	-125.1	293.6	282.2	11.45	25.644		
2,600.0	2,589.3	2,582.6	2,529.0	6.0	9.8	-60.24	-435.0	-133.4	308.5	296.6	11.88	25.972		
2,700.0	2,688.8	2,681.5	2,625.3	6.3	10.2	-59.75	-455.6	-141.7	323.4	311.1	12.31	26.279		
2,800.0	2,788.3	2,780.3	2,721.6	6.5	10.7	-59.30	-476.2	-149.9	338.3	325.5	12.73	26.566		
2,900.0	2,887.9	2,879.2	2,817.9	6.7	11.1	-58.89	-496.9	-158.2	353.2	340.0	13.16	26.837		
3,000.0	2,987.4	2,978.0	2,914.2	7.0	11.5	-58.51	-517.5	-166.5	368.1	354.5	13.59	27.090		
3,100.0	3,086.9	3,076.9	3,010.6	7.2	11.9	-58.16	-538.2	-174.8	383.0	369.0	14.02	27.330		
3,200.0	3,186.5	3,175.7	3,106.9	7.5	12.4	-57.84	-558.8	-183.0	398.0	383.6	14.44	27.555		
3,300.0	3,286.0	3,274.6	3,203.2	7.7	12.8	-57.54	-579.4	-191.3	413.0	398.1	14.87	27.768		
3,400.0	3,385.5	3,373.4	3,299.5	8.0	13.2	-57.26	-600.1	-199.6	428.0	412.7	15.30	27.970		
3,500.0	3,485.0	3,472.3	3,395.8	8.2	13.6	-57.00	-620.7	-207.9	442.9	427.2	15.73	28.161		
3,600.0	3,584.6	3,571.1	3,492.1	8.4	14.1	-56.76	-641.4	-216.1	457.9	441.8	16.16	28.342		
3,700.0	3,684.1	3,670.0	3,588.5	8.7	14.5	-56.53	-662.0	-224.4	472.9	456.4	16.59	28.514		
3,800.0	3,783.6	3,768.9	3,684.8	8.9	14.9	-56.32	-682.6	-232.7	488.0	470.9	17.02	28.677		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-5A (M16W Pad) - DD - Plan #1													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	69.94	23.3	63.8	68.0					
100.0	100.0	100.0	100.0	0.1	0.1	69.94	23.3	63.8	68.0	67.7	0.27	249.574 CC		
200.0	200.0	200.0	200.0	0.3	0.3	69.94	23.3	63.8	68.0	67.3	0.62	109.364 ES		
300.0	300.0	302.2	302.2	0.5	0.5	-161.58	20.7	63.0	68.8	67.8	0.98	70.151		
400.0	399.6	404.3	404.0	0.7	0.7	-158.37	13.0	60.3	71.4	70.0	1.37	52.016		
500.0	499.2	506.1	504.8	0.9	1.0	-152.43	0.1	56.0	73.3	71.4	1.84	39.848		
600.0	598.7	606.9	603.9	1.2	1.4	-143.10	-17.6	50.1	73.9	71.5	2.42	30.489		
700.0	698.2	706.4	700.5	1.4	1.8	-130.43	-40.0	42.6	75.7	72.5	3.15	24.048		
800.0	797.8	804.5	795.0	1.7	2.3	-116.78	-64.9	34.2	81.3	77.4	3.89	20.913		
900.0	897.3	902.5	889.4	1.9	2.8	-105.36	-89.9	25.8	90.9	86.4	4.55	19.994 SF		
1,000.0	996.8	1,000.5	983.8	2.1	3.3	-96.35	-114.9	17.4	103.5	98.3	5.12	20.201		
1,100.0	1,096.3	1,098.6	1,078.2	2.4	3.7	-89.39	-139.9	9.0	118.0	112.4	5.63	20.947		
1,200.0	1,195.9	1,196.6	1,172.6	2.6	4.2	-83.99	-164.9	0.6	133.9	127.8	6.11	21.929		
1,300.0	1,295.4	1,294.6	1,267.0	2.9	4.7	-79.76	-189.8	-7.8	150.8	144.2	6.56	22.991		
1,400.0	1,394.9	1,392.6	1,361.5	3.1	5.2	-76.38	-214.8	-16.2	168.2	161.3	6.99	24.055		
1,500.0	1,494.5	1,490.7	1,455.9	3.3	5.7	-73.64	-239.8	-24.6	186.2	178.8	7.42	25.083		
1,600.0	1,594.0	1,588.7	1,550.3	3.6	6.2	-71.38	-264.8	-33.0	204.5	196.6	7.85	26.057		
1,700.0	1,693.5	1,686.7	1,644.7	3.8	6.7	-69.50	-289.8	-41.4	223.0	214.7	8.27	26.970		
1,800.0	1,793.0	1,784.7	1,739.1	4.1	7.2	-67.90	-314.8	-49.8	241.7	233.1	8.69	27.821		
1,900.0	1,892.6	1,882.7	1,833.5	4.3	7.7	-66.53	-339.8	-58.2	260.6	251.5	9.11	28.612		
2,000.0	1,992.1	1,980.8	1,927.9	4.6	8.1	-65.35	-364.8	-66.6	279.7	270.1	9.53	29.346		
2,100.0	2,091.6	2,078.8	2,022.3	4.8	8.6	-64.32	-389.7	-75.0	298.8	288.8	9.95	30.029		
2,200.0	2,191.2	2,176.8	2,116.7	5.0	9.1	-63.41	-414.7	-83.4	318.0	307.6	10.37	30.664		
2,300.0	2,290.7	2,274.8	2,211.2	5.3	9.6	-62.61	-439.7	-91.9	337.3	326.5	10.79	31.254		
2,400.0	2,390.2	2,372.9	2,305.6	5.5	10.1	-61.89	-464.7	-100.3	356.6	345.4	11.21	31.804		
2,500.0	2,489.8	2,470.9	2,400.0	5.8	10.6	-61.25	-489.7	-108.7	376.0	364.3	11.63	32.318		
2,600.0	2,589.3	2,568.9	2,494.4	6.0	11.1	-60.67	-514.7	-117.1	395.4	383.3	12.05	32.798		
2,700.0	2,688.8	2,666.9	2,588.8	6.3	11.6	-60.14	-539.7	-125.5	414.8	402.3	12.48	33.248		
2,800.0	2,788.3	2,764.9	2,683.2	6.5	12.1	-59.66	-564.6	-133.9	434.3	421.4	12.90	33.670		
2,900.0	2,887.9	2,863.0	2,777.6	6.7	12.6	-59.22	-589.6	-142.3	453.8	440.5	13.32	34.066		
3,000.0	2,987.4	2,961.0	2,872.0	7.0	13.1	-58.82	-614.6	-150.7	473.3	459.6	13.74	34.439		
3,100.0	3,086.9	3,059.0	2,966.4	7.2	13.6	-58.45	-639.6	-159.1	492.9	478.7	14.17	34.791		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1													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	45.17	131.1	131.9	186.0					
100.0	100.0	100.0	100.0	0.1	0.1	45.17	131.1	131.9	186.0	185.7	0.27	683.075		
200.0	200.0	200.0	200.0	0.3	0.3	45.17	131.1	131.9	186.0	185.4	0.62	299.325 CC, ES		
300.0	300.0	299.0	298.9	0.5	0.5	171.84	133.1	130.3	188.8	187.9	0.98	193.419		
400.0	399.6	397.2	396.8	0.7	0.7	169.92	139.0	125.4	197.5	196.1	1.36	144.686		
500.0	499.2	494.2	493.0	0.9	1.0	166.96	148.6	117.5	209.1	207.3	1.82	115.144		
600.0	598.7	592.2	589.8	1.2	1.3	163.50	160.7	107.6	222.0	219.7	2.29	97.025		
700.0	698.2	690.5	686.8	1.4	1.6	160.41	172.9	97.6	235.6	232.8	2.77	85.121		
800.0	797.8	788.8	783.9	1.7	1.9	157.66	185.1	87.6	249.8	246.6	3.25	76.876		
900.0	897.3	887.1	880.9	1.9	2.2	155.20	197.2	77.6	264.6	260.8	3.73	70.899		
1,000.0	996.8	985.4	977.9	2.1	2.6	153.00	209.4	67.5	279.7	275.5	4.21	66.407		
1,100.0	1,096.3	1,083.7	1,074.9	2.4	2.9	151.03	221.6	57.5	295.3	290.6	4.69	62.933		
1,200.0	1,195.9	1,182.0	1,172.0	2.6	3.2	149.26	233.8	47.5	311.1	306.0	5.17	60.182		
1,300.0	1,295.4	1,280.3	1,269.0	2.9	3.5	147.66	245.9	37.5	327.2	321.6	5.65	57.962		
1,400.0	1,394.9	1,378.6	1,366.0	3.1	3.8	146.21	258.1	27.5	343.6	337.5	6.12	56.139		
1,500.0	1,494.5	1,476.9	1,463.0	3.3	4.2	144.89	270.3	17.5	360.1	353.5	6.59	54.622		
1,600.0	1,594.0	1,575.2	1,560.1	3.6	4.5	143.69	282.5	7.5	376.8	369.8	7.06	53.344		
1,700.0	1,693.5	1,673.5	1,657.1	3.8	4.8	142.59	294.6	-2.5	393.7	386.1	7.53	52.255		
1,800.0	1,793.0	1,771.8	1,754.1	4.1	5.1	141.58	306.8	-12.5	410.7	402.7	8.00	51.318		
1,900.0	1,892.6	1,870.1	1,851.1	4.3	5.5	140.65	319.0	-22.5	427.8	419.3	8.47	50.506		
2,000.0	1,992.1	1,968.4	1,948.2	4.6	5.8	139.79	331.2	-32.5	445.0	436.0	8.94	49.797		
2,100.0	2,091.6	2,066.7	2,045.2	4.8	6.1	138.99	343.3	-42.5	462.2	452.8	9.40	49.173		
2,200.0	2,191.2	2,165.0	2,142.2	5.0	6.4	138.25	355.5	-52.6	479.6	469.8	9.86	48.620		
2,300.0	2,290.7	2,263.3	2,239.2	5.3	6.8	137.57	367.7	-62.6	497.1	486.7	10.33	48.128 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 16-2C (M16W Pad) - DD - Plan #1												Offset Site Error: 0.0 ft			
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	44.09	141.7	137.3	197.3						
100.0	100.0	100.0	100.0	0.1	0.1	44.09	141.7	137.3	197.3	197.0	0.27	724.532			
200.0	200.0	200.0	200.0	0.3	0.3	44.09	141.7	137.3	197.3	196.6	0.62	317.492 CC, ES			
300.0	300.0	297.3	297.3	0.5	0.5	170.85	143.8	136.0	200.5	199.5	0.97	206.097			
400.0	399.6	393.8	393.5	0.7	0.7	169.19	150.1	132.1	210.3	208.9	1.35	155.245			
500.0	499.2	489.1	488.0	0.9	1.0	166.66	160.3	125.9	223.6	221.8	1.79	125.143			
600.0	598.7	582.8	580.3	1.2	1.3	163.39	174.3	117.3	239.2	237.0	2.27	105.587			
700.0	698.2	680.0	675.5	1.4	1.6	159.91	190.9	107.2	256.7	253.9	2.77	92.715			
800.0	797.8	777.4	770.9	1.7	2.0	156.87	207.6	97.0	275.0	271.7	3.27	84.065			
900.0	897.3	874.7	866.2	1.9	2.4	154.20	224.2	86.8	293.9	290.1	3.77	77.965			
1,000.0	996.8	972.0	961.5	2.1	2.8	151.86	240.8	76.7	313.4	309.1	4.26	73.493			
1,100.0	1,096.3	1,069.3	1,056.9	2.4	3.1	149.79	257.5	66.5	333.3	328.6	4.75	70.112			
1,200.0	1,195.9	1,166.6	1,152.2	2.6	3.5	147.95	274.1	56.4	353.7	348.4	5.24	67.489			
1,300.0	1,295.4	1,263.9	1,247.6	2.9	3.9	146.31	290.7	46.2	374.3	368.6	5.72	65.411			
1,400.0	1,394.9	1,361.2	1,342.9	3.1	4.3	144.85	307.3	36.0	395.2	389.0	6.20	63.734			
1,500.0	1,494.5	1,458.5	1,438.2	3.3	4.7	143.53	324.0	25.9	416.3	409.6	6.68	62.361			
1,600.0	1,594.0	1,555.8	1,533.6	3.6	5.0	142.33	340.6	15.7	437.6	430.5	7.15	61.221			
1,700.0	1,693.5	1,653.2	1,628.9	3.8	5.4	141.25	357.2	5.5	459.1	451.5	7.62	60.264			
1,800.0	1,793.0	1,750.5	1,724.3	4.1	5.8	140.26	373.9	-4.6	480.7	472.6	8.09	59.452 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 16-5C (M16W Pad) - DD - Plan #1												Offset Site Error:	0.0 ft		
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)					
0.0	0.0	0.0	0.0	0.0	0.0	47.22	137.0	148.0	201.6						
100.0	100.0	100.0	100.0	0.1	0.1	47.22	137.0	148.0	201.6	201.4	0.27	740.571			
200.0	200.0	200.0	200.0	0.3	0.3	47.22	137.0	148.0	201.6	201.0	0.62	324.520	CC, ES		
300.0	300.0	295.9	295.9	0.5	0.5	174.01	139.2	147.2	205.2	204.3	0.97	211.701			
400.0	399.6	390.9	390.6	0.7	0.7	172.43	145.9	144.7	216.0	214.7	1.34	160.936			
500.0	499.2	484.5	483.4	0.9	1.0	170.08	156.8	140.7	231.0	229.3	1.76	131.474			
600.0	598.7	576.4	574.0	1.2	1.3	167.13	171.7	135.3	248.8	246.6	2.21	112.348			
700.0	698.2	666.4	661.8	1.4	1.7	163.83	190.2	128.6	269.8	267.1	2.71	99.636			
800.0	797.8	754.0	746.3	1.7	2.1	160.39	211.9	120.6	294.3	291.1	3.22	91.264			
900.0	897.3	840.5	828.6	1.9	2.6	156.93	236.9	111.6	322.6	318.9	3.74	86.177			
1,000.0	996.8	933.8	916.9	2.1	3.1	153.59	265.1	101.2	353.2	348.9	4.28	82.526			
1,100.0	1,096.3	1,027.1	1,005.2	2.4	3.6	150.77	293.4	90.9	384.6	379.8	4.80	80.154			
1,200.0	1,195.9	1,120.4	1,093.5	2.6	4.2	148.37	321.6	80.6	416.8	411.5	5.30	78.587			
1,300.0	1,295.4	1,213.6	1,181.8	2.9	4.7	146.31	349.8	70.3	449.6	443.8	5.80	77.546			
1,400.0	1,394.9	1,306.9	1,270.1	3.1	5.3	144.52	378.1	60.0	482.9	476.6	6.28	76.858	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16B (M16W Pad) - DD - Plan #1												Offset Site Error: 0.0 ft	
Survey Program: 0-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	62.46	27.7	53.1	59.9				
100.0	100.0	100.0	100.0	0.1	0.1	62.46	27.7	53.1	59.9	59.6	0.27	219.923	CC
200.0	200.0	200.0	200.0	0.3	0.3	62.46	27.7	53.1	59.9	59.3	0.62	96.371	ES
300.0	300.0	302.4	302.3	0.5	0.5	-172.32	28.3	50.4	60.5	59.5	0.98	61.810	
400.0	399.6	404.4	404.0	0.7	0.7	-178.42	30.2	42.5	62.7	61.3	1.36	46.124	
500.0	499.2	505.9	504.6	0.9	1.0	172.20	33.4	29.3	64.5	62.7	1.81	35.647	
600.0	598.7	606.3	603.2	1.2	1.4	159.42	37.8	11.2	66.0	63.6	2.39	27.649	
700.0	698.2	705.1	699.2	1.4	1.8	143.79	43.2	-11.5	70.1	67.0	3.11	22.530	
800.0	797.8	801.8	791.9	1.7	2.4	127.45	49.7	-38.3	79.8	75.9	3.88	20.537	SF
900.0	897.3	897.0	881.8	1.9	3.0	113.06	57.1	-68.8	96.6	92.0	4.56	21.205	
1,000.0	996.8	992.8	971.9	2.1	3.6	102.82	64.6	-100.3	118.3	113.2	5.10	23.180	
1,100.0	1,096.3	1,088.5	1,062.1	2.4	4.2	95.81	72.2	-131.7	142.6	137.0	5.59	25.504	
1,200.0	1,195.9	1,184.3	1,152.2	2.6	4.8	90.85	79.8	-163.1	168.3	162.2	6.05	27.817	
1,300.0	1,295.4	1,280.0	1,242.3	2.9	5.4	87.21	87.3	-194.6	194.9	188.4	6.50	29.989	
1,400.0	1,394.9	1,375.8	1,332.4	3.1	6.0	84.43	94.9	-226.0	222.1	215.1	6.94	31.980	
1,500.0	1,494.5	1,471.5	1,422.5	3.3	6.6	82.27	102.5	-257.4	249.6	242.2	7.39	33.788	
1,600.0	1,594.0	1,567.3	1,512.7	3.6	7.2	80.53	110.1	-288.9	277.4	269.6	7.83	35.426	
1,700.0	1,693.5	1,663.0	1,602.8	3.8	7.8	79.11	117.6	-320.3	305.4	297.1	8.27	36.909	
1,800.0	1,793.0	1,758.8	1,692.9	4.1	8.4	77.92	125.2	-351.7	333.6	324.8	8.72	38.254	
1,900.0	1,892.6	1,854.5	1,783.0	4.3	9.1	76.92	132.8	-383.2	361.8	352.6	9.17	39.477	
2,000.0	1,992.1	1,950.3	1,873.2	4.6	9.7	76.07	140.3	-414.6	390.2	380.5	9.61	40.592	
2,100.0	2,091.6	2,046.0	1,963.3	4.8	10.3	75.33	147.9	-446.0	418.6	408.5	10.06	41.613	
2,200.0	2,191.2	2,141.8	2,053.4	5.0	10.9	74.68	155.5	-477.5	447.0	436.5	10.51	42.549	
2,300.0	2,290.7	2,237.5	2,143.5	5.3	11.5	74.11	163.1	-508.9	475.6	464.6	10.95	43.411	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1													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	59.62	21.9	37.3	43.2					
100.0	100.0	100.0	100.0	0.1	0.1	59.62	21.9	37.3	43.2	42.9	0.27	158.715		
200.0	200.0	200.0	200.0	0.3	0.3	59.62	21.9	37.3	43.2	42.6	0.62	69.549 CC, ES		
300.0	300.0	301.8	301.8	0.5	0.5	-175.56	22.1	34.6	43.7	42.7	0.98	44.753		
400.0	399.6	403.4	403.0	0.7	0.7	177.26	23.0	26.5	45.6	44.3	1.35	33.689		
500.0	499.2	504.5	503.2	0.9	1.0	165.97	24.4	13.2	47.0	45.2	1.81	25.989		
600.0	598.7	604.7	601.7	1.2	1.4	150.01	26.3	-5.2	48.2	45.8	2.41	19.991		
700.0	698.2	703.4	697.6	1.4	1.8	130.51	28.7	-28.3	52.8	49.6	3.16	16.726		
800.0	797.8	800.0	790.2	1.7	2.4	111.53	31.6	-55.7	64.1	60.2	3.87	16.552 SF		
900.0	897.3	895.6	880.5	1.9	3.0	96.62	34.9	-86.8	82.9	78.5	4.42	18.733		
1,000.0	996.8	991.8	971.2	2.1	3.6	87.11	38.2	-118.8	105.7	100.8	4.88	21.679		
1,100.0	1,096.3	1,088.0	1,061.8	2.4	4.2	81.03	41.6	-150.8	130.3	125.0	5.30	24.595		
1,200.0	1,195.9	1,184.1	1,152.4	2.6	4.8	76.89	45.0	-182.8	155.9	150.2	5.72	27.271		
1,300.0	1,295.4	1,280.3	1,243.0	2.9	5.4	73.92	48.3	-214.8	182.0	175.9	6.13	29.667		
1,400.0	1,394.9	1,376.4	1,333.6	3.1	6.0	71.69	51.7	-246.8	208.5	201.9	6.56	31.796		
1,500.0	1,494.5	1,472.6	1,424.2	3.3	6.6	69.96	55.0	-278.7	235.2	228.2	6.98	33.689		
1,600.0	1,594.0	1,568.7	1,514.9	3.6	7.2	68.59	58.4	-310.7	262.0	254.6	7.41	35.374		
1,700.0	1,693.5	1,664.9	1,605.5	3.8	7.8	67.47	61.7	-342.7	289.0	281.2	7.84	36.882		
1,800.0	1,793.0	1,761.0	1,696.1	4.1	8.4	66.54	65.1	-374.7	316.0	307.8	8.27	38.236		
1,900.0	1,892.6	1,857.2	1,786.7	4.3	9.0	65.76	68.5	-406.7	343.2	334.5	8.70	39.458		
2,000.0	1,992.1	1,953.4	1,877.3	4.6	9.6	65.09	71.8	-438.7	370.3	361.2	9.13	40.564		
2,100.0	2,091.6	2,049.5	1,968.0	4.8	10.3	64.52	75.2	-470.6	397.5	388.0	9.56	41.571		
2,200.0	2,191.2	2,145.7	2,058.6	5.0	10.9	64.01	78.5	-502.6	424.8	414.8	10.00	42.490		
2,300.0	2,290.7	2,241.8	2,149.2	5.3	11.5	63.57	81.9	-534.6	452.0	441.6	10.43	43.333		
2,400.0	2,390.2	2,338.0	2,239.8	5.5	12.1	63.18	85.2	-566.6	479.3	468.5	10.87	44.108		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16C (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	27.75	10.2	5.4	11.5				
100.0	100.0	100.0	100.0	0.1	0.1	27.75	10.2	5.4	11.5	11.3	0.27	42.326	
200.0	200.0	200.0	200.0	0.3	0.3	27.75	10.2	5.4	11.5	10.9	0.62	18.547 CC, ES	
300.0	300.0	300.3	300.2	0.5	0.5	149.70	10.1	2.7	12.7	11.7	0.98	12.931	
400.0	399.6	400.4	400.0	0.7	0.7	138.26	9.9	-5.1	16.5	15.1	1.39	11.861	
500.0	499.2	500.2	498.9	0.9	1.0	121.44	9.6	-18.2	21.9	20.0	1.91	11.449 SF	
600.0	598.7	599.1	596.2	1.2	1.4	102.14	9.1	-36.2	30.0	27.5	2.48	12.098	
700.0	698.2	696.7	691.2	1.4	1.8	86.17	8.4	-58.8	43.1	40.1	2.99	14.388	
800.0	797.8	792.6	783.1	1.7	2.3	74.91	7.7	-85.8	61.7	58.3	3.44	17.940	
900.0	897.3	888.1	873.5	1.9	2.9	67.36	6.9	-116.6	85.1	81.3	3.84	22.185	
1,000.0	996.8	984.7	964.9	2.1	3.5	62.91	6.0	-148.2	109.8	105.6	4.24	25.919	
1,100.0	1,096.3	1,081.4	1,056.2	2.4	4.1	60.09	5.2	-179.7	134.9	130.3	4.64	29.056	
1,200.0	1,195.9	1,178.0	1,147.5	2.6	4.7	58.15	4.3	-211.3	160.2	155.2	5.05	31.703	
1,300.0	1,295.4	1,274.6	1,238.8	2.9	5.3	56.75	3.4	-242.9	185.6	180.2	5.47	33.958	
1,400.0	1,394.9	1,371.2	1,330.1	3.1	5.9	55.68	2.6	-274.5	211.2	205.3	5.88	35.896	
1,500.0	1,494.5	1,467.9	1,421.4	3.3	6.5	54.84	1.7	-306.1	236.7	230.4	6.30	37.578	
1,600.0	1,594.0	1,564.5	1,512.7	3.6	7.1	54.17	0.9	-337.7	262.3	255.6	6.72	39.051	
1,700.0	1,693.5	1,661.1	1,604.0	3.8	7.7	53.62	0.0	-369.3	288.0	280.8	7.14	40.351	
1,800.0	1,793.0	1,757.7	1,695.3	4.1	8.3	53.15	-0.9	-400.9	313.6	306.1	7.56	41.505	
1,900.0	1,892.6	1,854.4	1,786.6	4.3	8.9	52.76	-1.7	-432.5	339.3	331.3	7.98	42.538	
2,000.0	1,992.1	1,951.0	1,878.0	4.6	9.5	52.42	-2.6	-464.1	365.0	356.6	8.40	43.467	
2,100.0	2,091.6	2,047.6	1,969.3	4.8	10.1	52.13	-3.5	-495.7	390.6	381.8	8.82	44.307	
2,200.0	2,191.2	2,144.2	2,060.6	5.0	10.7	51.87	-4.3	-527.3	416.3	407.1	9.24	45.070	
2,300.0	2,290.7	2,240.9	2,151.9	5.3	11.3	51.64	-5.2	-558.9	442.1	432.4	9.66	45.766	
2,400.0	2,390.2	2,337.5	2,243.2	5.5	11.9	51.44	-6.0	-590.5	467.8	457.7	10.08	46.404	
2,500.0	2,489.8	2,434.1	2,334.5	5.8	12.5	51.26	-6.9	-622.1	493.5	483.0	10.50	46.990	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9B (M16W pad) - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	42.81	125.3	116.1	170.8				
100.0	100.0	100.0	100.0	0.1	0.1	42.81	125.3	116.1	170.8	170.5	0.27	627.308	
200.0	200.0	200.0	200.0	0.3	0.3	42.81	125.3	116.1	170.8	170.2	0.62	274.888	CC, ES
300.0	300.0	300.5	300.5	0.5	0.5	169.43	127.0	114.0	173.2	172.2	0.98	176.840	
400.0	399.6	400.4	400.0	0.7	0.7	167.35	131.9	107.9	180.6	179.2	1.37	131.374	
500.0	499.2	499.3	498.0	0.9	1.0	164.07	140.0	97.9	190.1	188.3	1.83	103.589	
600.0	598.7	596.8	593.9	1.2	1.4	159.73	151.1	84.1	200.7	198.3	2.37	84.619	
700.0	698.2	692.5	687.1	1.4	1.8	154.62	165.0	67.0	213.3	210.4	2.98	71.554	
800.0	797.8	786.0	776.8	1.7	2.3	149.09	181.4	46.7	229.0	225.3	3.65	62.767	
900.0	897.3	876.8	862.8	1.9	2.8	143.44	199.9	23.8	248.4	244.1	4.35	57.158	
1,000.0	996.8	967.4	947.1	2.1	3.5	137.87	220.7	-1.9	272.1	267.1	5.03	54.090	
1,100.0	1,096.3	1,060.6	1,033.6	2.4	4.1	132.90	242.5	-28.9	298.6	292.9	5.70	52.420	
1,200.0	1,195.9	1,153.9	1,120.1	2.6	4.7	128.72	264.4	-55.8	326.9	320.6	6.33	51.688	
1,300.0	1,295.4	1,247.1	1,206.7	2.9	5.4	125.20	286.2	-82.8	356.7	349.8	6.92	51.518	SF
1,400.0	1,394.9	1,340.3	1,293.2	3.1	6.0	122.20	308.0	-109.8	387.5	380.0	7.50	51.691	
1,500.0	1,494.5	1,433.6	1,379.8	3.3	6.7	119.63	329.8	-136.7	419.2	411.2	8.05	52.075	
1,600.0	1,594.0	1,526.8	1,466.3	3.6	7.3	117.42	351.6	-163.7	451.6	443.0	8.59	52.584	
1,700.0	1,693.5	1,620.0	1,552.9	3.8	7.9	115.50	373.5	-190.7	484.5	475.4	9.11	53.167	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1												Offset Site Error:	0.0 ft		
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	39.02	130.0	105.3	167.3						
100.0	100.0	100.0	100.0	0.1	0.1	39.02	130.0	105.3	167.3	167.1	0.27	614.603			
200.0	200.0	200.0	200.0	0.3	0.3	39.02	130.0	105.3	167.3	166.7	0.62	269.321	CC, ES		
300.0	300.0	301.3	301.3	0.5	0.5	165.67	131.4	103.0	169.5	168.5	0.98	172.694			
400.0	399.6	402.1	401.7	0.7	0.7	163.68	135.4	96.1	176.0	174.6	1.38	127.471			
500.0	499.2	502.1	500.8	0.9	1.0	160.44	141.9	84.7	184.1	182.2	1.85	99.553			
600.0	598.7	600.8	597.9	1.2	1.4	155.99	150.9	69.0	192.8	190.4	2.40	80.303			
700.0	698.2	697.8	692.1	1.4	1.8	150.63	162.2	49.5	203.0	200.0	3.04	66.871			
800.0	797.8	792.5	783.1	1.7	2.3	144.68	175.5	26.3	216.0	212.3	3.74	57.739			
900.0	897.3	884.8	870.2	1.9	2.9	138.49	190.6	0.1	232.7	228.2	4.49	51.869			
1,000.0	996.8	976.8	955.8	2.1	3.5	132.35	207.5	-29.2	253.7	248.5	5.22	48.641			
1,100.0	1,096.3	1,070.6	1,042.8	2.4	4.2	126.94	224.9	-59.4	277.6	271.7	5.91	46.947			
1,200.0	1,195.9	1,164.3	1,129.9	2.6	4.8	122.36	242.3	-89.7	303.6	297.0	6.57	46.230			
1,300.0	1,295.4	1,258.1	1,216.9	2.9	5.5	118.49	259.7	-119.9	331.2	324.0	7.18	46.099	SF		
1,400.0	1,394.9	1,351.9	1,303.9	3.1	6.1	115.21	277.1	-150.1	360.0	352.3	7.77	46.325			
1,500.0	1,494.5	1,445.7	1,391.0	3.3	6.8	112.40	294.5	-180.4	389.8	381.5	8.34	46.767			
1,600.0	1,594.0	1,539.4	1,478.0	3.6	7.4	109.98	312.0	-210.6	420.4	411.5	8.88	47.339			
1,700.0	1,693.5	1,633.2	1,565.1	3.8	8.1	107.89	329.4	-240.9	451.5	442.1	9.41	47.985			
1,800.0	1,793.0	1,727.0	1,652.1	4.1	8.7	106.06	346.8	-271.1	483.2	473.3	9.93	48.669			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9C (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	35.70	124.2	89.2	152.9					
100.0	100.0	100.0	100.0	0.1	0.1	35.70	124.2	89.2	152.9	152.7	0.27	561.690 CC		
200.0	200.0	200.0	200.0	0.3	0.3	35.70	124.2	89.2	152.9	152.3	0.62	246.134 ES		
300.0	300.0	301.5	301.4	0.5	0.5	162.34	125.3	86.8	154.9	154.0	0.98	157.783		
400.0	399.6	402.5	402.2	0.7	0.7	160.33	128.7	79.5	161.0	159.6	1.38	116.415		
500.0	499.2	502.8	501.6	0.9	1.0	156.97	134.2	67.5	168.5	166.6	1.86	90.779		
600.0	598.7	602.0	599.0	1.2	1.4	152.27	141.7	50.9	176.4	173.9	2.42	73.006		
700.0	698.2	699.4	693.7	1.4	1.8	146.53	151.2	30.2	185.7	182.7	3.06	60.632		
800.0	797.8	794.7	785.1	1.7	2.3	140.12	162.4	5.7	197.8	194.0	3.78	52.272		
900.0	897.3	887.5	872.8	1.9	2.9	133.44	175.1	-22.1	213.7	209.2	4.54	47.122		
1,000.0	996.8	982.3	961.4	2.1	3.5	127.06	189.0	-52.4	233.3	228.0	5.26	44.338		
1,100.0	1,096.3	1,077.0	1,050.1	2.4	4.2	121.67	202.9	-82.7	255.4	249.5	5.94	42.980		
1,200.0	1,195.9	1,171.8	1,138.8	2.6	4.8	117.13	216.8	-113.1	279.4	272.8	6.58	42.455		
1,300.0	1,295.4	1,266.6	1,227.5	2.9	5.4	113.30	230.6	-143.4	304.9	297.7	7.19	42.430 SF		
1,400.0	1,394.9	1,361.3	1,316.2	3.1	6.0	110.05	244.5	-173.8	331.5	323.7	7.76	42.708		
1,500.0	1,494.5	1,456.1	1,404.9	3.3	6.7	107.27	258.4	-204.1	359.0	350.6	8.32	43.167		
1,600.0	1,594.0	1,550.8	1,493.6	3.6	7.3	104.89	272.3	-234.4	387.1	378.3	8.85	43.732		
1,700.0	1,693.5	1,645.6	1,582.3	3.8	7.9	102.82	286.2	-264.8	415.8	406.4	9.37	44.355		
1,800.0	1,793.0	1,740.4	1,671.0	4.1	8.5	101.02	300.0	-295.1	445.0	435.1	9.89	45.005		
1,900.0	1,892.6	1,835.1	1,759.7	4.3	9.2	99.44	313.9	-325.4	474.5	464.1	10.39	45.663		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9D (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	36.52	113.6	84.2	141.4					
100.0	100.0	100.0	100.0	0.1	0.1	36.52	113.6	84.2	141.4	141.1	0.27	519.383		
200.0	200.0	200.0	200.0	0.3	0.3	36.52	113.6	84.2	141.4	140.8	0.62	227.595 CC, ES		
300.0	300.0	304.1	304.1	0.5	0.5	164.63	111.8	84.2	142.5	141.5	0.98	145.527		
400.0	399.6	406.5	406.4	0.7	0.7	166.29	107.2	83.4	146.1	144.7	1.34	109.389		
500.0	499.2	507.8	507.5	0.9	0.9	166.32	104.6	78.4	150.4	148.7	1.69	89.141		
600.0	598.7	608.9	608.1	1.2	1.1	164.38	104.6	68.8	153.9	151.9	2.07	74.479		
700.0	698.2	709.3	707.5	1.4	1.4	160.63	107.2	54.6	157.1	154.6	2.52	62.409		
800.0	797.8	808.3	804.6	1.7	1.7	155.26	112.2	36.1	160.9	157.8	3.07	52.479		
900.0	897.3	905.6	899.0	1.9	2.1	148.57	119.5	13.8	166.6	162.9	3.74	44.560		
1,000.0	996.8	1,001.5	990.8	2.1	2.6	141.06	128.9	-12.1	175.8	171.3	4.50	39.097		
1,100.0	1,096.3	1,098.1	1,083.1	2.4	3.1	134.02	138.8	-39.1	188.2	182.9	5.26	35.812		
1,200.0	1,195.9	1,194.6	1,175.3	2.6	3.6	127.89	148.7	-66.0	203.2	197.2	5.98	33.954		
1,300.0	1,295.4	1,291.2	1,267.5	2.9	4.2	122.61	158.7	-92.9	220.2	213.5	6.67	32.994		
1,400.0	1,394.9	1,387.8	1,359.7	3.1	4.7	118.11	168.6	-119.8	238.9	231.5	7.33	32.601		
1,500.0	1,494.5	1,484.4	1,451.9	3.3	5.2	114.25	178.5	-146.8	258.8	250.8	7.95	32.566 SF		
1,600.0	1,594.0	1,581.0	1,544.1	3.6	5.8	110.94	188.4	-173.7	279.7	271.1	8.54	32.759		
1,700.0	1,693.5	1,677.5	1,636.3	3.8	6.3	108.09	198.4	-200.6	301.3	292.2	9.10	33.096		
1,800.0	1,793.0	1,774.1	1,728.6	4.1	6.8	105.62	208.3	-227.6	323.6	314.0	9.65	33.521		
1,900.0	1,892.6	1,870.7	1,820.8	4.3	7.4	103.47	218.2	-254.5	346.5	336.3	10.19	33.998		
2,000.0	1,992.1	1,967.3	1,913.0	4.6	7.9	101.58	228.1	-281.4	369.7	359.0	10.71	34.503		
2,100.0	2,091.6	2,063.8	2,005.2	4.8	8.5	99.92	238.1	-308.4	393.2	382.0	11.23	35.021		
2,200.0	2,191.2	2,160.4	2,097.4	5.0	9.0	98.44	248.0	-335.3	417.1	405.4	11.74	35.539		
2,300.0	2,290.7	2,257.0	2,189.6	5.3	9.6	97.12	257.9	-362.2	441.2	428.9	12.24	36.052		
2,400.0	2,390.2	2,353.6	2,281.8	5.5	10.1	95.93	267.8	-389.1	465.5	452.7	12.73	36.554		
2,500.0	2,489.8	2,450.1	2,374.0	5.8	10.6	94.87	277.8	-416.1	489.9	476.7	13.23	37.043		

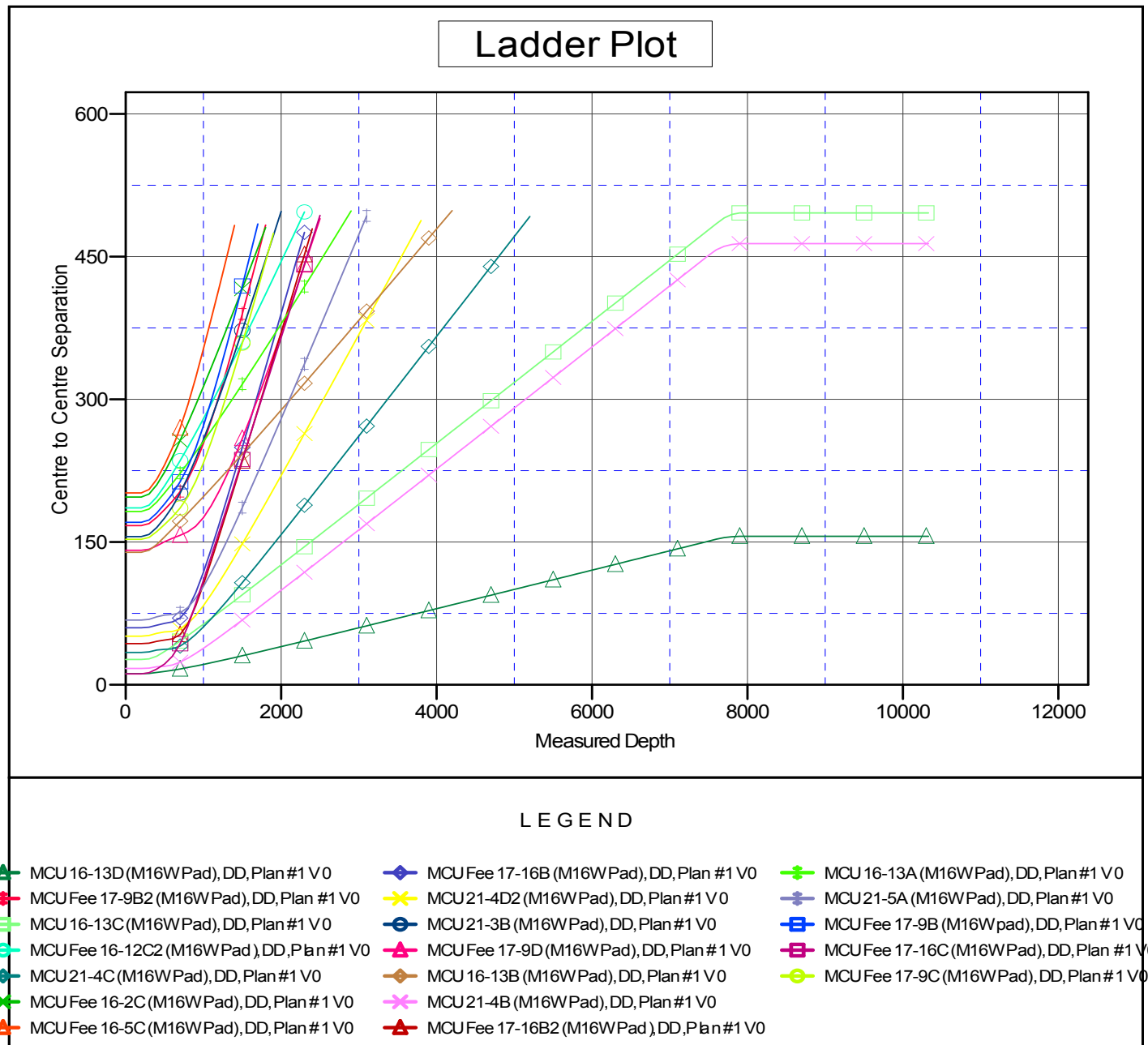
Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-4A (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-4A (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 7903.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: MCU 21-4A (M16W Pad)
 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