

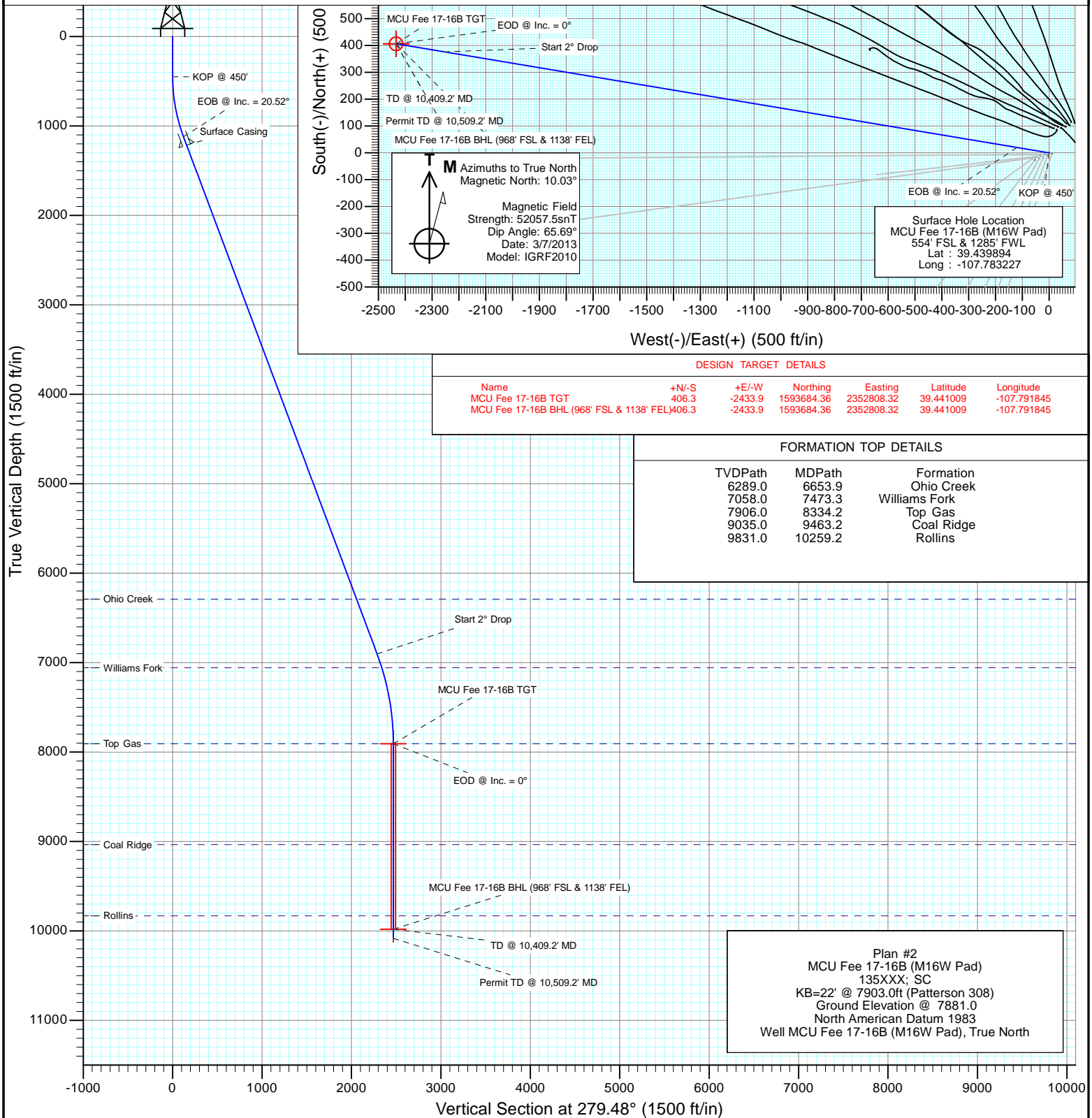


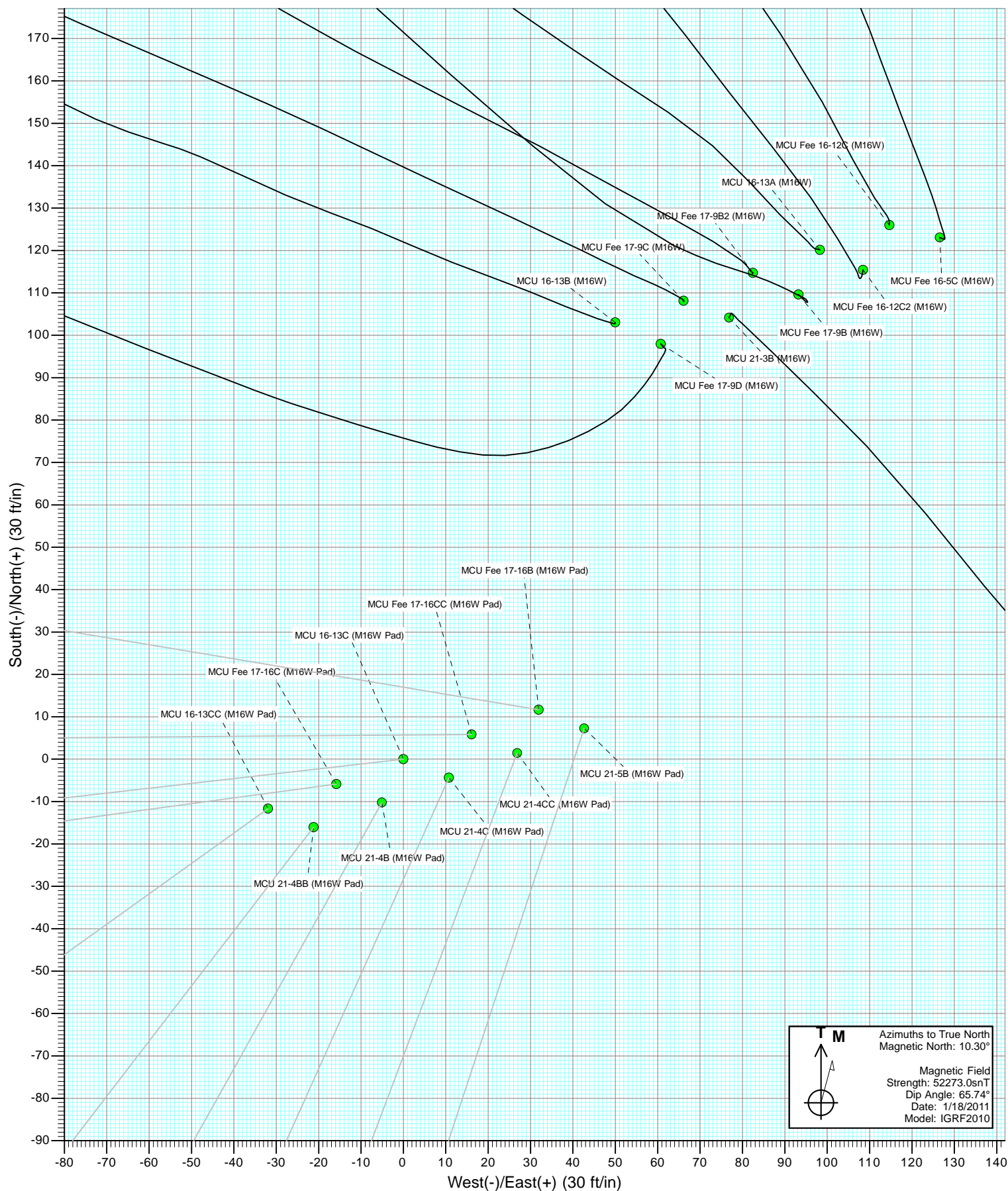
Project: Mamm Creek
Site: M16W Pad (SWSW S16-T7S-R93W)
Well: MCU Fee 17-16B (M16W Pad)
Wellbore: DD
Design: Plan #2

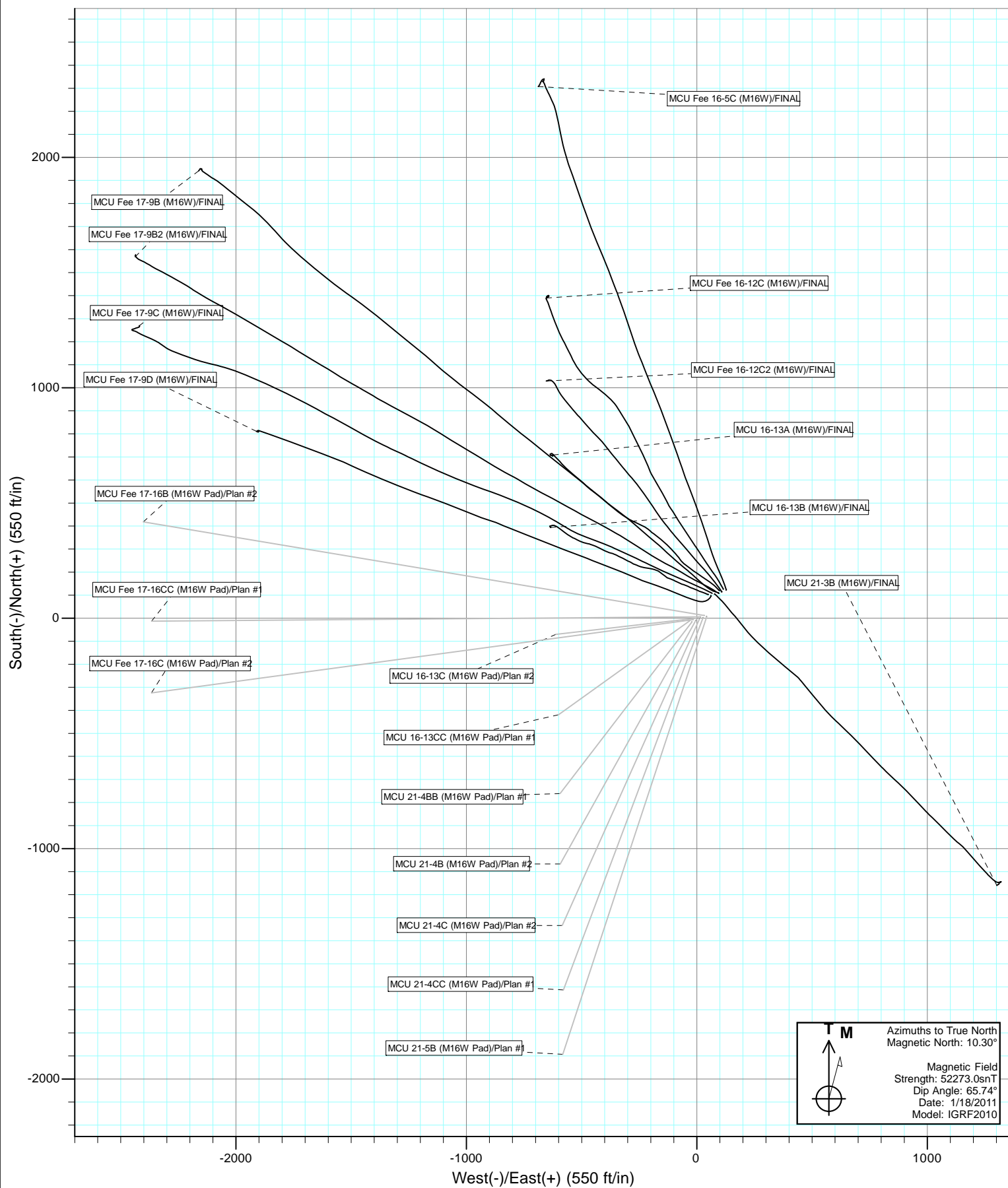


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.0	
3	1134.1	20.52	279.48	1119.6	20.0	-119.6	3.00	279.48	121.2	
4	7308.0	20.52	279.48	6901.6	376.3	-2254.6	0.00	0.00	2285.7	
5	8334.2	0.00	0.00	7906.0	406.3	-2433.9	2.00	180.00	2467.6	MCU Fee 17-16B TGT
6	10409.2	0.00	0.00	9981.0	406.3	-2433.9	0.00	0.00	2467.6	MCU Fee 17-16B BHL (968' FSL & 1138' FEL)
7	10509.2	0.00	0.00	10081.0	406.3	-2433.9	0.00	0.00	2467.6	

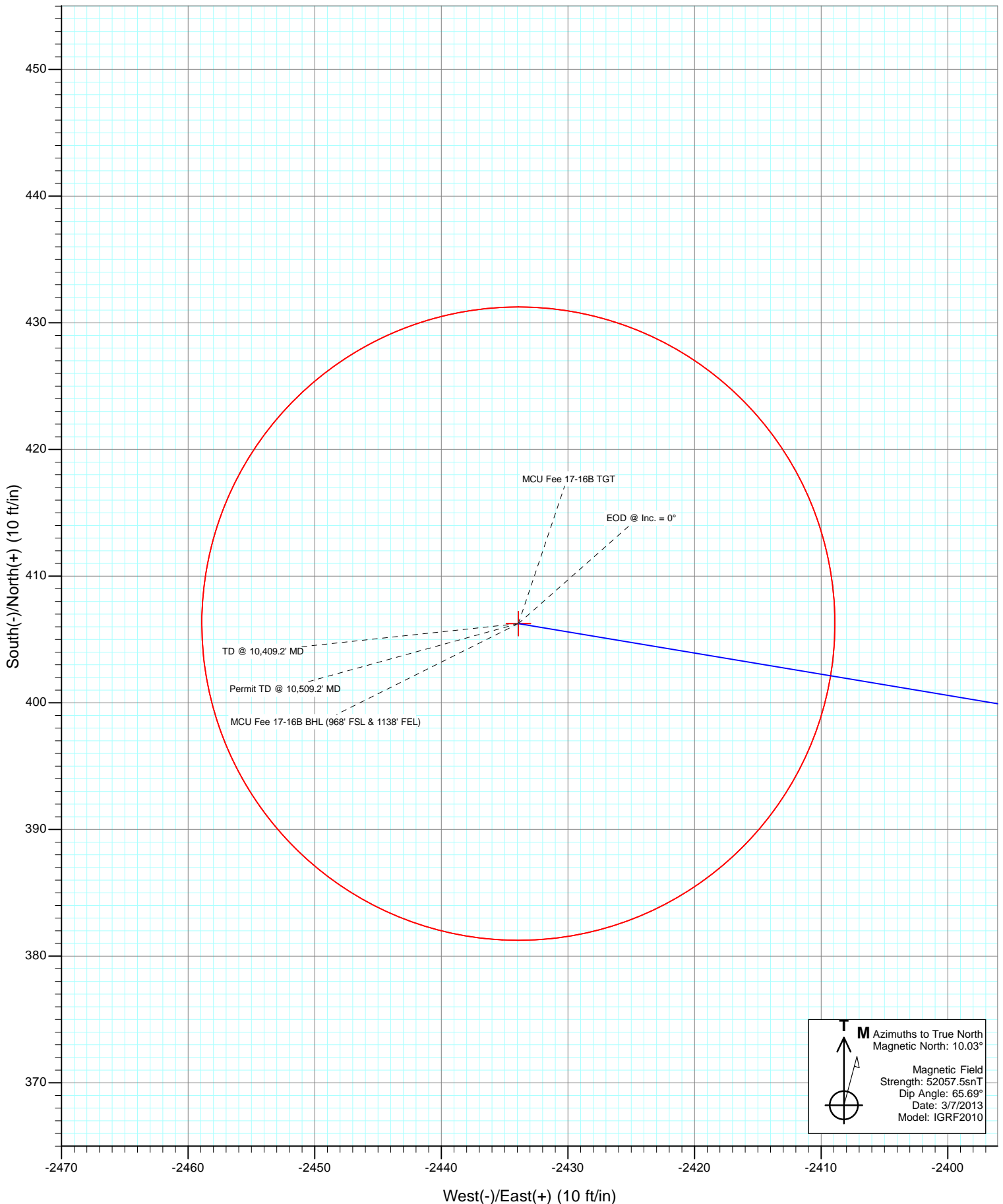








Project: Mamm Creek
Site: M16W Pad (SWSW S16-T7S-R93W)
Well: MCU Fee 17-16B (M16W Pad)
Wellbore: DD
Design: Plan #2



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site:	M16W Pad (SWSW S16-T7S-R93W)	North Reference:	True
Well:	MCU Fee 17-16B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

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

Site	M16W Pad (SWSW S16-T7S-R93W)				
Site Position:		Northing:	1,593,196.15 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 Fee 17-16B (M16W Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,593,217.07 ft	Latitude:	39.439894
	+E/-W	0.0 ft	Easting:	2,355,231.25 ft	Longitude:	-107.783227
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	3/7/2013	10.03	65.69	52,058

Design	Plan #2				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.0	
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	279.48	

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	
450.0	0.00	0.00	450.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,134.1	20.52	279.48	1,119.6	20.0	-119.6	3.00	3.00	0.00	279.48	
7,308.0	20.52	279.48	6,901.6	376.3	-2,254.6	0.00	0.00	0.00	0.00	
8,334.2	0.00	0.00	7,906.0	406.3	-2,433.9	2.00	-2.00	0.00	180.00	MCU Fee 17-16B TG
10,409.2	0.00	0.00	9,981.0	406.3	-2,433.9	0.00	0.00	0.00	0.00	MCU Fee 17-16B BHI
10,509.2	0.00	0.00	10,081.0	406.3	-2,433.9	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 Fee 17-16B (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site:	M16W Pad (SWSW S16-T7S-R93W)	North Reference:	True
Well:	MCU Fee 17-16B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
450.0	0.00	0.00	450.0	0.0	0.0	0.0	0.00	0.00	KOP @ 450'
500.0	1.50	279.48	500.0	0.1	-0.6	0.7	3.00	3.00	
600.0	4.50	279.48	599.8	1.0	-5.8	5.9	3.00	3.00	
700.0	7.50	279.48	699.3	2.7	-16.1	16.3	3.00	3.00	
800.0	10.50	279.48	798.0	5.3	-31.5	32.0	3.00	3.00	
900.0	13.50	279.48	895.8	8.7	-52.0	52.8	3.00	3.00	
1,000.0	16.50	279.48	992.4	12.9	-77.6	78.6	3.00	3.00	
1,100.0	19.50	279.48	1,087.5	18.0	-108.1	109.5	3.00	3.00	
1,134.1	20.52	279.48	1,119.6	20.0	-119.6	121.2	3.00	3.00	EOB @ Inc. = 20.52°
1,200.0	20.52	279.48	1,181.3	23.8	-142.4	144.3	0.00	0.00	
1,234.1	20.52	279.48	1,213.2	25.7	-154.1	156.3	0.00	0.00	Surface Casing
1,300.0	20.52	279.48	1,274.9	29.5	-176.9	179.4	0.00	0.00	
1,400.0	20.52	279.48	1,368.6	35.3	-211.5	214.4	0.00	0.00	
1,500.0	20.52	279.48	1,462.2	41.1	-246.1	249.5	0.00	0.00	
1,600.0	20.52	279.48	1,555.9	46.8	-280.7	284.6	0.00	0.00	
1,700.0	20.52	279.48	1,649.5	52.6	-315.3	319.6	0.00	0.00	
1,800.0	20.52	279.48	1,743.2	58.4	-349.8	354.7	0.00	0.00	
1,900.0	20.52	279.48	1,836.9	64.2	-384.4	389.7	0.00	0.00	
2,000.0	20.52	279.48	1,930.5	69.9	-419.0	424.8	0.00	0.00	
2,100.0	20.52	279.48	2,024.2	75.7	-453.6	459.9	0.00	0.00	
2,200.0	20.52	279.48	2,117.8	81.5	-488.2	494.9	0.00	0.00	
2,300.0	20.52	279.48	2,211.5	87.3	-522.7	530.0	0.00	0.00	
2,400.0	20.52	279.48	2,305.1	93.0	-557.3	565.0	0.00	0.00	
2,500.0	20.52	279.48	2,398.8	98.8	-591.9	600.1	0.00	0.00	
2,600.0	20.52	279.48	2,492.4	104.6	-626.5	635.1	0.00	0.00	
2,700.0	20.52	279.48	2,586.1	110.3	-661.1	670.2	0.00	0.00	
2,800.0	20.52	279.48	2,679.7	116.1	-695.6	705.3	0.00	0.00	
2,900.0	20.52	279.48	2,773.4	121.9	-730.2	740.3	0.00	0.00	
3,000.0	20.52	279.48	2,867.0	127.7	-764.8	775.4	0.00	0.00	
3,100.0	20.52	279.48	2,960.7	133.4	-799.4	810.4	0.00	0.00	
3,200.0	20.52	279.48	3,054.3	139.2	-834.0	845.5	0.00	0.00	
3,300.0	20.52	279.48	3,148.0	145.0	-868.5	880.6	0.00	0.00	
3,400.0	20.52	279.48	3,241.6	150.7	-903.1	915.6	0.00	0.00	
3,500.0	20.52	279.48	3,335.3	156.5	-937.7	950.7	0.00	0.00	
3,600.0	20.52	279.48	3,429.0	162.3	-972.3	985.7	0.00	0.00	
3,700.0	20.52	279.48	3,522.6	168.1	-1,006.9	1,020.8	0.00	0.00	
3,800.0	20.52	279.48	3,616.3	173.8	-1,041.5	1,055.9	0.00	0.00	
3,900.0	20.52	279.48	3,709.9	179.6	-1,076.0	1,090.9	0.00	0.00	
4,000.0	20.52	279.48	3,803.6	185.4	-1,110.6	1,126.0	0.00	0.00	
4,100.0	20.52	279.48	3,897.2	191.1	-1,145.2	1,161.0	0.00	0.00	
4,200.0	20.52	279.48	3,990.9	196.9	-1,179.8	1,196.1	0.00	0.00	
4,300.0	20.52	279.48	4,084.5	202.7	-1,214.4	1,231.2	0.00	0.00	
4,400.0	20.52	279.48	4,178.2	208.5	-1,248.9	1,266.2	0.00	0.00	
4,500.0	20.52	279.48	4,271.8	214.2	-1,283.5	1,301.3	0.00	0.00	
4,600.0	20.52	279.48	4,365.5	220.0	-1,318.1	1,336.3	0.00	0.00	
4,700.0	20.52	279.48	4,459.1	225.8	-1,352.7	1,371.4	0.00	0.00	
4,800.0	20.52	279.48	4,552.8	231.6	-1,387.3	1,406.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site:	M16W Pad (SWSW S16-T7S-R93W)	North Reference:	True
Well:	MCU Fee 17-16B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	20.52	279.48	4,646.4	237.3	-1,421.8	1,441.5	0.00	0.00	
5,000.0	20.52	279.48	4,740.1	243.1	-1,456.4	1,476.6	0.00	0.00	
5,100.0	20.52	279.48	4,833.7	248.9	-1,491.0	1,511.6	0.00	0.00	
5,200.0	20.52	279.48	4,927.4	254.6	-1,525.6	1,546.7	0.00	0.00	
5,300.0	20.52	279.48	5,021.0	260.4	-1,560.2	1,581.7	0.00	0.00	
5,400.0	20.52	279.48	5,114.7	266.2	-1,594.7	1,616.8	0.00	0.00	
5,500.0	20.52	279.48	5,208.4	272.0	-1,629.3	1,651.9	0.00	0.00	
5,600.0	20.52	279.48	5,302.0	277.7	-1,663.9	1,686.9	0.00	0.00	
5,700.0	20.52	279.48	5,395.7	283.5	-1,698.5	1,722.0	0.00	0.00	
5,800.0	20.52	279.48	5,489.3	289.3	-1,733.1	1,757.0	0.00	0.00	
5,900.0	20.52	279.48	5,583.0	295.0	-1,767.6	1,792.1	0.00	0.00	
6,000.0	20.52	279.48	5,676.6	300.8	-1,802.2	1,827.2	0.00	0.00	
6,100.0	20.52	279.48	5,770.3	306.6	-1,836.8	1,862.2	0.00	0.00	
6,200.0	20.52	279.48	5,863.9	312.4	-1,871.4	1,897.3	0.00	0.00	
6,300.0	20.52	279.48	5,957.6	318.1	-1,906.0	1,932.3	0.00	0.00	
6,400.0	20.52	279.48	6,051.2	323.9	-1,940.6	1,967.4	0.00	0.00	
6,500.0	20.52	279.48	6,144.9	329.7	-1,975.1	2,002.5	0.00	0.00	
6,600.0	20.52	279.48	6,238.5	335.4	-2,009.7	2,037.5	0.00	0.00	
6,653.9	20.52	279.48	6,289.0	338.6	-2,028.3	2,056.4	0.00	0.00	Ohio Creek
6,700.0	20.52	279.48	6,332.2	341.2	-2,044.3	2,072.6	0.00	0.00	
6,800.0	20.52	279.48	6,425.8	347.0	-2,078.9	2,107.6	0.00	0.00	
6,900.0	20.52	279.48	6,519.5	352.8	-2,113.5	2,142.7	0.00	0.00	
7,000.0	20.52	279.48	6,613.1	358.5	-2,148.0	2,177.8	0.00	0.00	
7,100.0	20.52	279.48	6,706.8	364.3	-2,182.6	2,212.8	0.00	0.00	
7,200.0	20.52	279.48	6,800.5	370.1	-2,217.2	2,247.9	0.00	0.00	
7,308.0	20.52	279.48	6,901.6	376.3	-2,254.6	2,285.7	0.00	0.00	Start 2° Drop
7,400.0	18.68	279.48	6,988.3	381.4	-2,285.0	2,316.6	2.00	-2.00	
7,473.3	17.22	279.48	7,058.0	385.1	-2,307.3	2,339.2	2.00	-2.00	Williams Fork
7,500.0	16.68	279.48	7,083.5	386.4	-2,315.0	2,347.0	2.00	-2.00	
7,600.0	14.68	279.48	7,179.8	390.8	-2,341.6	2,374.0	2.00	-2.00	
7,700.0	12.68	279.48	7,277.0	394.7	-2,364.9	2,397.7	2.00	-2.00	
7,800.0	10.68	279.48	7,374.9	398.1	-2,384.9	2,417.9	2.00	-2.00	
7,900.0	8.68	279.48	7,473.5	400.8	-2,401.5	2,434.7	2.00	-2.00	
8,000.0	6.68	279.48	7,572.5	403.0	-2,414.7	2,448.1	2.00	-2.00	
8,100.0	4.68	279.48	7,672.1	404.7	-2,424.5	2,458.0	2.00	-2.00	
8,200.0	2.68	279.48	7,771.8	405.7	-2,430.8	2,464.4	2.00	-2.00	
8,300.0	0.68	279.48	7,871.8	406.2	-2,433.7	2,467.4	2.00	-2.00	
8,334.2	0.00	0.00	7,906.0	406.3	-2,433.9	2,467.6	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
8,400.0	0.00	0.00	7,971.8	406.3	-2,433.9	2,467.6	0.00	0.00	
8,500.0	0.00	0.00	8,071.8	406.3	-2,433.9	2,467.6	0.00	0.00	
8,600.0	0.00	0.00	8,171.8	406.3	-2,433.9	2,467.6	0.00	0.00	
8,700.0	0.00	0.00	8,271.8	406.3	-2,433.9	2,467.6	0.00	0.00	
8,800.0	0.00	0.00	8,371.8	406.3	-2,433.9	2,467.6	0.00	0.00	
8,900.0	0.00	0.00	8,471.8	406.3	-2,433.9	2,467.6	0.00	0.00	
9,000.0	0.00	0.00	8,571.8	406.3	-2,433.9	2,467.6	0.00	0.00	
9,100.0	0.00	0.00	8,671.8	406.3	-2,433.9	2,467.6	0.00	0.00	
9,200.0	0.00	0.00	8,771.8	406.3	-2,433.9	2,467.6	0.00	0.00	
9,300.0	0.00	0.00	8,871.8	406.3	-2,433.9	2,467.6	0.00	0.00	
9,400.0	0.00	0.00	8,971.8	406.3	-2,433.9	2,467.6	0.00	0.00	
9,463.2	0.00	0.00	9,035.0	406.3	-2,433.9	2,467.6	0.00	0.00	Coal Ridge
9,500.0	0.00	0.00	9,071.8	406.3	-2,433.9	2,467.6	0.00	0.00	
9,600.0	0.00	0.00	9,171.8	406.3	-2,433.9	2,467.6	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site:	M16W Pad (SWSW S16-T7S-R93W)	North Reference:	True
Well:	MCU Fee 17-16B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,700.0	0.00	0.00	9,271.8	406.3	-2,433.9	2,467.6	0.00	0.00	
9,800.0	0.00	0.00	9,371.8	406.3	-2,433.9	2,467.6	0.00	0.00	
9,900.0	0.00	0.00	9,471.8	406.3	-2,433.9	2,467.6	0.00	0.00	
10,000.0	0.00	0.00	9,571.8	406.3	-2,433.9	2,467.6	0.00	0.00	
10,100.0	0.00	0.00	9,671.8	406.3	-2,433.9	2,467.6	0.00	0.00	
10,200.0	0.00	0.00	9,771.8	406.3	-2,433.9	2,467.6	0.00	0.00	
10,259.2	0.00	0.00	9,831.0	406.3	-2,433.9	2,467.6	0.00	0.00	Rollins
10,300.0	0.00	0.00	9,871.8	406.3	-2,433.9	2,467.6	0.00	0.00	
10,409.2	0.00	0.00	9,981.0	406.3	-2,433.9	2,467.6	0.00	0.00	TD @ 10,409.2' MD
10,509.2	0.00	0.00	10,081.0	406.3	-2,433.9	2,467.6	0.00	0.00	Permit TD @ 10,509.2' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
MCU Fee 17-16B BHL (f) - plan hits target center - Circle (radius 25.0)	0.00	0.00	9,981.0	406.3	-2,433.9	1,593,684.36	2,352,808.32	39.441009	-107.791845
MCU Fee 17-16B TGT - plan hits target center - Point	0.00	0.00	7,906.0	406.3	-2,433.9	1,593,684.36	2,352,808.32	39.441009	-107.791845

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,234.1	1,213.2	Surface Casing		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,653.9	6,289.0	Ohio Creek			
7,473.3	7,058.0	Williams Fork			
8,334.2	7,906.0	Top Gas			
9,463.2	9,035.0	Coal Ridge			
10,259.2	9,831.0	Rollins			

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Project:	Mamm Creek	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site:	M16W Pad (SWSW S16-T7S-R93W)	North Reference:	True
Well:	MCU Fee 17-16B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
450.0	450.0	0.0	0.0	KOP @ 450'
1,134.1	1,119.6	20.0	-119.6	EOB @ Inc. = 20.52°
7,308.0	6,901.6	376.3	-2,254.6	Start 2° Drop
8,334.2	7,906.0	406.3	-2,433.9	EOD @ Inc. = 0°
10,409.2	9,981.0	406.3	-2,433.9	TD @ 10,409.2' MD
10,509.2	10,081.0	406.3	-2,433.9	Permit TD @ 10,509.2' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

M16W Pad (SWSW S16-T7S-R93W)

MCU Fee 17-16B (M16W Pad)

DD

Plan #2

Anticollision Report

07 March, 2013

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,250.9ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	3/7/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,509.2	Plan #2 (DD)	MWD	Geolink MWD

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning
			Between Centres (ft)	Between Ellipses (ft)		
M16W Pad (SWSW S16-T7S-R93W)						
MCU 16-13A (M16W) - DD - FINAL	275.1	275.1	126.8	125.9	143.515	CC
MCU 16-13A (M16W) - DD - FINAL	300.0	299.6	126.8	125.8	130.764	ES
MCU 16-13A (M16W) - DD - FINAL	1,400.0	1,384.6	229.3	221.8	30.422	SF
MCU 16-13B (M16W) - DD - FINAL	215.1	215.1	92.8	92.1	137.605	CC
MCU 16-13B (M16W) - DD - FINAL	300.0	299.4	93.1	92.1	95.943	ES
MCU 16-13B (M16W) - DD - FINAL	1,200.0	1,189.0	124.7	118.6	20.573	SF
MCU 16-13C (M16W Pad) - DD - Plan #2	1,000.3	993.9	32.0	27.7	7.428	CC, ES, SF
MCU 16-13CC (M16W Pad) - DD - Plan #1	200.0	200.0	68.0	67.3	109.366	CC, ES
MCU 16-13CC (M16W Pad) - DD - Plan #1	1,200.0	1,180.7	96.1	90.2	16.365	SF
MCU 21-3B (M16W) - DD - FINAL	522.2	525.0	100.3	98.5	54.212	CC, ES
MCU 21-3B (M16W) - DD - FINAL	700.0	697.5	112.6	109.8	40.875	SF
MCU 21-4B (M16W Pad) - DD - Plan #2	255.6	255.6	43.0	42.2	52.711	CC
MCU 21-4B (M16W Pad) - DD - Plan #2	300.0	299.5	43.1	42.1	44.465	ES
MCU 21-4B (M16W Pad) - DD - Plan #2	1,100.0	1,077.9	135.1	130.1	26.986	SF
MCU 21-4BB (M16W Pad) - DD - Plan #1	300.0	300.0	59.9	58.9	61.705	CC, ES
MCU 21-4BB (M16W Pad) - DD - Plan #1	1,100.0	1,081.4	112.8	107.9	22.665	SF
MCU 21-4C (M16W Pad) - DD - Plan #2	233.5	233.5	26.6	25.8	35.973	CC, ES
MCU 21-4C (M16W Pad) - DD - Plan #2	400.0	397.9	31.8	30.4	23.834	SF
MCU 21-4CC (M16W Pad) - DD - Plan #1	200.0	200.0	11.4	10.8	18.353	CC, ES
MCU 21-4CC (M16W Pad) - DD - Plan #1	300.0	299.5	12.9	11.9	13.227	SF
MCU 21-5B (M16W Pad) - DD - Plan #1	200.0	200.0	11.6	11.0	18.653	CC
MCU 21-5B (M16W Pad) - DD - Plan #1	204.3	204.3	11.6	11.0	18.214	ES
MCU 21-5B (M16W Pad) - DD - Plan #1	400.0	399.2	16.1	14.8	12.071	SF
MCU Fee 16-12C (M16W) - DD - FINAL	0.0	0.0	141.1			
MCU Fee 16-12C (M16W) - DD - FINAL	100.0	99.6	141.3	141.0	484.289	ES
MCU Fee 16-12C (M16W) - DD - FINAL	2,800.0	2,706.3	658.0	637.5	32.041	SF
MCU Fee 16-12C2 (M16W) - DD - FINAL	299.5	299.5	126.8	125.8	130.514	CC
MCU Fee 16-12C2 (M16W) - DD - FINAL	300.0	300.0	126.8	125.8	130.305	ES
MCU Fee 16-12C2 (M16W) - DD - FINAL	2,100.0	2,057.9	424.6	411.0	31.231	SF
MCU Fee 16-5C (M16W) - DD - FINAL	0.0	0.0	146.2			
MCU Fee 16-5C (M16W) - DD - FINAL	300.0	298.7	146.6	145.7	151.427	ES
MCU Fee 16-5C (M16W) - DD - FINAL	3,900.0	3,695.8	1,231.1	1,195.6	34.644	SF
MCU Fee 17-16C (M16W Pad) - DD - Plan #2	200.0	200.0	50.8	50.2	81.824	CC, ES
MCU Fee 17-16C (M16W Pad) - DD - Plan #2	10,509.2	10,463.2	743.1	648.3	7.836	SF
MCU Fee 17-16CC (M16W Pad) - DD - Plan #1	300.0	300.0	16.9	15.9	17.371	CC, ES
MCU Fee 17-16CC (M16W Pad) - DD - Plan #1	10,509.2	10,470.9	432.0	337.2	4.556	SF
MCU Fee 17-9B (M16W) - DD - FINAL	588.2	591.5	114.7	112.6	55.814	CC
MCU Fee 17-9B (M16W) - DD - FINAL	600.0	603.0	114.7	112.6	54.436	ES
MCU Fee 17-9B (M16W) - DD - FINAL	6,700.0	6,579.8	1,234.5	1,155.7	15.665	SF
MCU Fee 17-9B2 (M16W) - DD - FINAL	221.8	221.8	114.6	113.9	164.316	CC, ES
MCU Fee 17-9B2 (M16W) - DD - FINAL	7,500.0	7,438.1	1,013.6	923.1	11.203	SF
MCU Fee 17-9C (M16W) - DD - FINAL	213.3	213.4	102.2	101.5	152.944	CC, ES
MCU Fee 17-9C (M16W) - DD - FINAL	7,700.0	7,690.3	754.2	661.9	8.165	SF
MCU Fee 17-9D (M16W) - DD - FINAL	742.8	745.2	57.1	54.2	19.942	CC, ES
MCU Fee 17-9D (M16W) - DD - FINAL	3,300.0	3,288.7	237.5	207.4	7.903	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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 16-13A (M16W) - DD - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 206-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	31.46	108.5	66.4	127.2					
100.0	100.0	100.1	100.1	0.1	0.2	31.38	108.5	66.2	127.1	126.8	0.29	435.013		
200.0	200.0	200.3	200.3	0.3	0.3	31.16	108.7	65.7	127.0	126.4	0.62	203.856		
275.1	275.1	275.1	275.1	0.4	0.4	30.90	108.8	65.1	126.8	125.9	0.88	143.515 CC		
300.0	300.0	299.6	299.6	0.5	0.5	30.72	109.0	64.8	126.8	125.8	0.97	130.764 ES		
400.0	400.0	398.4	398.3	0.7	0.7	29.02	111.8	62.0	127.8	126.5	1.32	96.962		
500.0	500.0	495.1	494.6	0.8	0.9	106.01	118.1	55.7	130.9	129.1	1.71	76.325		
600.0	599.8	594.3	593.1	1.0	1.1	103.26	126.8	47.6	136.8	134.7	2.14	63.986		
700.0	699.3	695.6	693.5	1.2	1.4	102.05	136.0	37.5	143.8	141.2	2.63	54.669		
800.0	798.0	797.0	793.7	1.5	1.7	102.16	144.4	25.1	150.3	147.1	3.21	46.862		
900.0	895.8	896.3	891.9	1.9	2.0	103.95	152.8	12.5	157.9	154.1	3.86	40.883		
1,000.0	992.4	995.0	989.5	2.4	2.3	107.39	160.9	0.6	167.3	162.7	4.60	36.403		
1,100.0	1,087.5	1,092.9	1,086.3	2.9	2.6	111.94	169.0	-11.0	179.5	174.1	5.39	33.326		
1,200.0	1,181.3	1,189.6	1,182.1	3.6	2.9	117.18	177.0	-22.0	194.9	188.7	6.15	31.680		
1,300.0	1,274.9	1,288.1	1,279.7	4.2	3.2	121.99	184.9	-33.2	211.7	204.8	6.87	30.793		
1,400.0	1,368.6	1,384.6	1,375.2	4.8	3.5	126.07	192.0	-44.3	229.3	221.8	7.54	30.422 SF		
1,500.0	1,462.2	1,479.1	1,469.0	5.5	3.7	129.67	199.2	-53.8	249.0	240.9	8.14	30.575		
1,600.0	1,555.9	1,577.0	1,566.1	6.1	4.0	132.80	207.0	-63.7	269.8	261.1	8.73	30.907		
1,700.0	1,649.5	1,673.9	1,662.1	6.8	4.3	135.43	214.4	-74.0	290.8	281.5	9.29	31.296		
1,800.0	1,743.2	1,770.7	1,758.2	7.5	4.6	137.75	221.9	-83.8	312.6	302.8	9.82	31.828		
1,900.0	1,836.9	1,861.4	1,848.2	8.1	4.8	139.72	228.7	-92.6	335.2	324.9	10.32	32.473		
2,000.0	1,930.5	1,951.5	1,937.7	8.8	5.0	141.43	236.6	-99.3	360.6	349.8	10.82	33.342		
2,100.0	2,024.2	2,047.7	2,033.2	9.4	5.3	142.91	246.0	-106.2	387.0	375.7	11.33	34.161		
2,200.0	2,117.8	2,148.0	2,132.6	10.1	5.6	144.10	256.5	-114.4	413.0	401.1	11.89	34.745		
2,300.0	2,211.5	2,248.1	2,231.5	10.8	5.9	144.95	267.8	-124.1	438.1	425.6	12.47	35.140		
2,400.0	2,305.1	2,346.7	2,329.2	11.4	6.2	145.81	277.9	-133.8	462.7	449.7	13.02	35.531		
2,500.0	2,398.8	2,441.3	2,422.8	12.1	6.5	146.57	287.5	-143.1	487.4	473.9	13.56	35.935		
2,600.0	2,492.4	2,531.9	2,512.6	12.8	6.7	147.28	296.6	-151.2	513.0	498.9	14.08	36.439		
2,700.0	2,586.1	2,642.2	2,621.9	13.4	7.1	148.03	307.5	-161.8	538.0	523.3	14.64	36.747		
2,800.0	2,679.7	2,738.3	2,717.0	14.1	7.4	148.64	316.5	-172.1	561.8	546.6	15.16	37.059		
2,900.0	2,773.4	2,834.4	2,812.1	14.8	7.7	149.25	325.1	-182.1	585.8	570.2	15.67	37.388		
3,000.0	2,867.0	2,930.6	2,907.5	15.4	7.9	149.82	333.7	-191.9	610.2	594.0	16.17	37.730		
3,100.0	2,960.7	3,032.1	3,008.0	16.1	8.2	150.40	342.3	-202.5	634.2	617.5	16.67	38.039		
3,200.0	3,054.3	3,129.5	3,104.6	16.8	8.5	150.97	350.0	-213.0	657.6	640.5	17.15	38.357		
3,300.0	3,148.0	3,223.1	3,197.3	17.5	8.8	151.50	357.1	-222.7	681.6	664.0	17.60	38.723		
3,400.0	3,241.6	3,316.5	3,290.0	18.1	9.0	152.01	364.3	-231.9	706.0	687.9	18.06	39.096		
3,500.0	3,335.3	3,408.5	3,381.4	18.8	9.3	152.45	371.8	-240.6	731.1	712.6	18.52	39.481		
3,600.0	3,429.0	3,521.9	3,493.8	19.5	9.6	152.97	380.7	-251.4	756.1	737.1	19.00	39.800		
3,700.0	3,522.6	3,632.1	3,602.9	20.1	9.9	153.47	388.2	-264.8	778.2	758.8	19.46	39.997		
3,800.0	3,616.3	3,732.4	3,702.3	20.8	10.2	153.93	394.4	-277.6	799.7	779.8	19.90	40.192		
3,900.0	3,709.9	3,828.7	3,797.6	21.5	10.5	154.36	400.1	-289.9	821.2	800.8	20.32	40.415		
4,000.0	3,803.6	3,918.2	3,886.3	22.1	10.8	154.79	404.9	-300.7	843.2	822.5	20.71	40.718		
4,100.0	3,897.2	4,008.9	3,976.3	22.8	11.0	155.21	409.9	-310.9	866.1	845.0	21.10	41.053		
4,200.0	3,990.9	4,106.7	4,073.4	23.5	11.3	155.67	415.0	-321.4	889.5	868.0	21.48	41.416		
4,300.0	4,084.5	4,209.1	4,174.9	24.1	11.6	155.99	422.2	-333.4	912.4	890.5	21.94	41.590		
4,400.0	4,178.2	4,304.5	4,269.3	24.8	11.9	156.24	429.4	-344.8	935.2	912.8	22.40	41.751		
4,500.0	4,271.8	4,397.7	4,361.6	25.5	12.2	156.46	436.7	-355.6	958.4	935.6	22.86	41.924		
4,600.0	4,365.5	4,492.7	4,455.6	26.2	12.5	156.67	444.2	-366.6	981.7	958.4	23.33	42.086		
4,700.0	4,459.1	4,579.8	4,541.9	26.8	12.7	156.85	451.4	-375.9	1,005.9	982.1	23.78	42.296		
4,800.0	4,552.8	4,672.3	4,633.7	27.5	13.0	157.04	459.0	-385.2	1,030.7	1,006.5	24.24	42.525		
4,900.0	4,646.4	4,766.8	4,727.4	28.2	13.2	157.25	466.4	-394.4	1,055.8	1,031.1	24.68	42.776		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 16-13A (M16W) - DD - FINAL												Offset Site Error:	0.0 ft
Survey Program: 206-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	
5,000.0	4,740.1	4,858.4	4,818.4	28.8	13.5	157.45	473.5	-402.9	1,081.3	1,056.1	25.12	43.044	
5,100.0	4,833.7	4,955.8	4,915.0	29.5	13.7	157.65	481.3	-411.7	1,107.0	1,081.4	25.57	43.288	
5,200.0	4,927.4	5,052.7	5,011.2	30.2	14.0	157.84	488.9	-420.8	1,132.5	1,106.5	26.02	43.526	
5,300.0	5,021.0	5,144.3	5,102.1	30.8	14.3	158.02	496.1	-428.9	1,158.3	1,131.9	26.46	43.784	
5,400.0	5,114.7	5,241.5	5,198.7	31.5	14.5	158.19	503.8	-437.4	1,184.4	1,157.5	26.90	44.031	
5,500.0	5,208.4	5,342.5	5,299.0	32.2	14.8	158.39	511.3	-446.4	1,210.3	1,182.9	27.34	44.268	
5,600.0	5,302.0	5,441.3	5,397.1	32.9	15.1	158.58	518.6	-455.6	1,235.8	1,208.0	27.77	44.501	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 16-13B (M16W) - DD - FINAL													Offset Site Error:	0.0 ft
Survey Program: 175-MWD, 1703-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	11.19	91.4	18.1	93.1					
100.0	100.0	100.2	100.2	0.1	0.2	11.20	91.3	18.1	93.0	92.8	0.29	321.846		
200.0	200.0	200.1	200.1	0.3	0.3	11.18	91.0	18.0	92.8	92.2	0.62	149.251		
215.1	215.1	215.1	215.1	0.3	0.3	11.13	91.0	17.9	92.8	92.1	0.67	137.605 CC		
300.0	300.0	299.4	299.4	0.5	0.5	9.71	91.7	15.7	93.1	92.1	0.97	95.943 ES		
400.0	400.0	397.7	397.3	0.7	0.7	5.09	94.3	8.4	94.7	93.3	1.32	71.562		
500.0	500.0	497.2	496.4	0.8	0.9	80.44	98.1	-0.7	98.0	96.3	1.76	55.818		
600.0	599.8	596.9	595.6	1.0	1.2	77.77	101.7	-10.4	101.0	98.8	2.17	46.465		
700.0	699.3	696.6	694.6	1.2	1.4	77.74	105.6	-20.7	103.1	100.5	2.64	39.109		
800.0	798.0	795.8	793.1	1.5	1.7	80.43	110.0	-31.1	104.9	101.7	3.18	33.027		
900.0	895.8	895.9	892.6	1.9	1.9	85.84	114.4	-41.6	106.3	102.4	3.82	27.809		
1,000.0	992.4	994.7	990.8	2.4	2.2	93.62	118.4	-52.2	108.5	103.9	4.56	23.762		
1,100.0	1,087.5	1,092.1	1,087.4	2.9	2.5	103.04	122.8	-62.9	114.1	108.7	5.35	21.303		
1,200.0	1,181.3	1,189.0	1,183.6	3.6	2.7	113.03	127.7	-73.5	124.7	118.6	6.06	20.573 SF		
1,300.0	1,274.9	1,286.6	1,280.5	4.2	3.0	121.70	132.1	-84.1	138.5	131.8	6.63	20.891		
1,400.0	1,368.6	1,382.5	1,376.0	4.8	3.2	129.43	134.9	-92.8	155.1	148.1	7.04	22.025		
1,500.0	1,462.2	1,478.2	1,471.3	5.5	3.4	135.72	137.8	-100.9	174.7	167.3	7.39	23.654		
1,600.0	1,555.9	1,573.8	1,566.6	6.1	3.7	140.61	141.2	-109.0	196.2	188.5	7.70	25.470		
1,700.0	1,649.5	1,668.8	1,661.2	6.8	3.9	144.49	144.9	-116.5	219.4	211.4	8.01	27.392		
1,800.0	1,743.2	1,765.3	1,757.3	7.5	4.1	147.72	148.7	-123.8	243.8	235.5	8.30	29.351		
1,900.0	1,836.9	1,860.8	1,852.5	8.1	4.3	150.42	151.9	-131.1	268.6	260.0	8.59	31.253		
2,000.0	1,930.5	1,960.8	1,952.2	8.8	4.6	152.67	155.7	-139.0	293.6	284.7	8.90	32.995		
2,100.0	2,024.2	2,059.8	2,050.6	9.4	4.8	154.51	159.3	-148.2	317.7	308.5	9.21	34.491		
2,200.0	2,117.8	2,152.9	2,143.3	10.1	5.0	156.10	162.2	-156.6	342.2	332.7	9.51	35.985		
2,300.0	2,211.5	2,249.2	2,239.1	10.8	5.3	157.22	167.1	-165.1	367.5	357.6	9.88	37.190		
2,400.0	2,305.1	2,345.5	2,334.7	11.4	5.5	157.88	174.1	-174.0	392.9	382.6	10.30	38.145		
2,500.0	2,398.8	2,441.8	2,430.4	12.1	5.8	158.56	180.4	-182.6	418.6	407.9	10.70	39.106		
2,600.0	2,492.4	2,552.8	2,540.4	12.8	6.1	158.93	189.8	-194.5	442.9	431.7	11.20	39.527		
2,700.0	2,586.1	2,661.7	2,647.8	13.4	6.5	159.33	197.5	-210.2	463.3	451.6	11.66	39.720		
2,800.0	2,679.7	2,756.6	2,741.8	14.1	6.7	160.02	201.3	-223.4	483.9	471.9	12.02	40.273		
2,900.0	2,773.4	2,853.9	2,838.1	14.8	7.0	160.79	204.1	-236.6	504.6	492.3	12.33	40.912		
3,000.0	2,867.0	2,944.3	2,927.7	15.4	7.3	161.55	205.9	-248.2	526.0	513.4	12.62	41.668		
3,100.0	2,960.7	3,034.1	3,017.0	16.1	7.5	162.33	207.2	-258.1	549.2	536.3	12.89	42.591		
3,200.0	3,054.3	3,124.8	3,107.2	16.8	7.7	163.03	209.0	-267.3	573.4	560.2	13.18	43.513		
3,300.0	3,148.0	3,211.7	3,193.7	17.5	7.9	163.58	211.4	-275.0	599.0	585.5	13.48	44.450		
3,400.0	3,241.6	3,301.9	3,283.6	18.1	8.1	164.11	214.2	-281.6	626.2	612.4	13.78	45.453		
3,500.0	3,335.3	3,396.3	3,377.8	18.8	8.3	164.65	216.7	-288.2	653.7	639.6	14.07	46.447		
3,600.0	3,429.0	3,490.8	3,472.0	19.5	8.5	165.14	219.3	-294.4	681.6	667.3	14.38	47.417		
3,700.0	3,522.6	3,587.6	3,568.6	20.1	8.7	165.64	221.5	-300.8	709.6	694.9	14.67	48.373		
3,800.0	3,616.3	3,686.4	3,667.1	20.8	8.9	166.09	224.1	-307.6	737.4	722.4	14.99	49.203		
3,900.0	3,709.9	3,785.5	3,765.8	21.5	9.2	166.33	228.9	-315.0	764.7	749.4	15.35	49.819		
4,000.0	3,803.6	3,875.3	3,855.3	22.1	9.3	166.61	232.3	-321.5	792.2	776.5	15.68	50.531		
4,100.0	3,897.2	3,979.5	3,959.2	22.8	9.6	166.96	235.5	-328.8	820.0	804.0	16.01	51.214		
4,200.0	3,990.9	4,092.5	4,071.6	23.5	9.9	167.18	240.7	-338.8	846.0	829.6	16.40	51.571		
4,300.0	4,084.5	4,189.8	4,168.4	24.1	10.1	167.31	245.9	-348.5	871.0	854.2	16.79	51.886		
4,400.0	4,178.2	4,278.5	4,256.6	24.8	10.4	167.46	250.2	-356.8	896.6	879.4	17.14	52.299		
4,500.0	4,271.8	4,372.2	4,349.8	25.5	10.6	167.64	254.1	-365.0	922.6	905.1	17.49	52.745		
4,600.0	4,365.5	4,462.9	4,440.1	26.2	10.8	167.82	257.8	-372.5	949.2	931.4	17.84	53.217		
4,700.0	4,459.1	4,559.4	4,536.2	26.8	11.0	168.01	261.5	-380.3	976.1	957.9	18.18	53.679		
4,800.0	4,552.8	4,652.6	4,629.1	27.5	11.2	168.21	264.7	-387.7	1,003.0	984.5	18.52	54.170		
4,900.0	4,646.4	4,746.8	4,723.0	28.2	11.4	168.40	268.0	-394.7	1,030.5	1,011.6	18.85	54.661		
5,000.0	4,740.1	4,852.0	4,827.8	28.8	11.7	168.64	270.8	-403.3	1,057.1	1,038.0	19.18	55.110		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 16-13B (M16W) - DD - FINAL													Offset Site Error:	0.0 ft
Survey Program: 175-MWD, 1703-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	4,833.7	4,948.5	4,923.9	29.5	11.9	168.88	273.0	-411.2	1,083.8	1,064.3	19.50	55.585		
5,200.0	4,927.4	5,049.2	5,024.2	30.2	12.1	169.09	275.7	-419.9	1,110.1	1,090.2	19.83	55.976		
5,300.0	5,021.0	5,140.6	5,115.2	30.8	12.4	169.23	279.0	-427.9	1,136.4	1,116.2	20.17	56.339		
5,400.0	5,114.7	5,232.2	5,206.5	31.5	12.6	169.36	282.3	-435.2	1,163.2	1,142.7	20.51	56.714		
5,500.0	5,208.4	5,328.6	5,302.4	32.2	12.8	169.47	286.3	-442.9	1,190.3	1,169.4	20.87	57.028		
5,600.0	5,302.0	5,470.9	5,443.9	32.9	13.2	169.55	293.5	-456.7	1,215.7	1,194.3	21.33	56.995		
5,700.0	5,395.7	5,554.6	5,527.0	33.5	13.4	169.61	297.6	-466.0	1,239.6	1,217.9	21.68	57.167		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 16-13C (M16W Pad) - DD - Plan #2													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-110.06	-11.7	-31.9	34.0					
100.0	100.0	100.0	100.0	0.1	0.1	-110.06	-11.7	-31.9	34.0	33.7	0.27	124.787		
200.0	200.0	200.0	200.0	0.3	0.3	-110.06	-11.7	-31.9	34.0	33.4	0.62	54.682		
233.4	233.4	233.4	233.4	0.4	0.4	-110.06	-11.7	-31.9	34.0	33.2	0.74	46.050		
300.0	300.0	299.1	299.1	0.5	0.5	-109.82	-11.7	-32.5	34.6	33.6	0.97	35.696		
400.0	400.0	397.2	397.0	0.7	0.7	-108.14	-12.3	-37.5	39.6	38.3	1.33	29.733		
500.0	500.0	496.7	496.2	0.8	0.9	-25.94	-13.2	-45.6	47.1	45.4	1.66	28.282		
600.0	599.8	596.6	595.8	1.0	1.1	-26.88	-14.2	-53.8	50.5	48.4	2.02	25.027		
700.0	699.3	696.5	695.4	1.2	1.3	-30.59	-15.1	-61.9	49.3	46.9	2.38	20.697		
800.0	798.0	796.2	794.7	1.5	1.5	-38.37	-16.0	-70.1	44.1	41.3	2.80	15.762		
900.0	895.8	895.3	893.5	1.9	1.8	-54.02	-16.9	-78.1	36.6	33.2	3.39	10.795		
1,000.0	992.4	993.6	991.4	2.4	2.0	-83.68	-17.9	-86.1	32.0	27.7	4.30	7.433		
1,000.3	992.7	993.9	991.7	2.4	2.0	-83.78	-17.9	-86.2	32.0	27.7	4.31	7.428	CC, ES, SF	
1,100.0	1,087.5	1,090.8	1,088.3	2.9	2.2	-119.18	-18.8	-94.1	39.4	34.5	4.88	8.067		
1,200.0	1,181.3	1,187.0	1,184.2	3.6	2.4	-141.26	-19.7	-101.9	59.4	54.4	4.98	11.940		
1,300.0	1,274.9	1,283.1	1,280.0	4.2	2.6	-151.82	-20.5	-109.7	83.9	78.8	5.13	16.362		
1,400.0	1,368.6	1,379.2	1,375.7	4.8	2.8	-157.55	-21.4	-117.6	110.0	104.6	5.37	20.490		
1,500.0	1,462.2	1,475.3	1,471.5	5.5	3.1	-161.08	-22.3	-125.4	136.6	131.0	5.65	24.189		
1,600.0	1,555.9	1,571.4	1,567.3	6.1	3.3	-163.46	-23.2	-133.3	163.6	157.7	5.95	27.480		
1,700.0	1,649.5	1,667.5	1,663.1	6.8	3.5	-165.16	-24.1	-141.1	190.8	184.5	6.27	30.409		
1,800.0	1,743.2	1,763.6	1,758.9	7.5	3.7	-166.44	-25.0	-148.9	218.1	211.5	6.60	33.026		
1,900.0	1,836.9	1,859.7	1,854.6	8.1	3.9	-167.43	-25.9	-156.8	245.5	238.5	6.94	35.376		
2,000.0	1,930.5	1,955.8	1,950.4	8.8	4.1	-168.23	-26.8	-164.6	272.9	265.6	7.28	37.495		
2,100.0	2,024.2	2,051.9	2,046.2	9.4	4.4	-168.88	-27.7	-172.4	300.4	292.8	7.62	39.415		
2,200.0	2,117.8	2,148.0	2,142.0	10.1	4.6	-169.42	-28.6	-180.3	327.9	319.9	7.97	41.162		
2,300.0	2,211.5	2,244.1	2,237.7	10.8	4.8	-169.88	-29.5	-188.1	355.4	347.1	8.31	42.759		
2,400.0	2,305.1	2,340.2	2,333.5	11.4	5.0	-170.27	-30.4	-195.9	382.9	374.3	8.66	44.223		
2,500.0	2,398.8	2,436.3	2,429.3	12.1	5.2	-170.61	-31.3	-203.8	410.5	401.5	9.01	45.570		
2,600.0	2,492.4	2,532.4	2,525.1	12.8	5.4	-170.90	-32.2	-211.6	438.1	428.7	9.36	46.814		
2,700.0	2,586.1	2,628.5	2,620.9	13.4	5.7	-171.16	-33.1	-219.4	465.6	455.9	9.71	47.967		
2,800.0	2,679.7	2,724.6	2,716.6	14.1	5.9	-171.40	-34.0	-227.3	493.2	483.2	10.06	49.037		
2,900.0	2,773.4	2,820.7	2,812.4	14.8	6.1	-171.60	-34.9	-235.1	520.8	510.4	10.41	50.033		
3,000.0	2,867.0	2,916.8	2,908.2	15.4	6.3	-171.79	-35.8	-242.9	548.4	537.6	10.76	50.963		
3,100.0	2,960.7	3,012.9	3,004.0	16.1	6.5	-171.96	-36.7	-250.8	576.0	564.9	11.11	51.833		
3,200.0	3,054.3	3,109.0	3,099.8	16.8	6.7	-172.11	-37.6	-258.6	603.6	592.1	11.46	52.649		
3,300.0	3,148.0	3,205.1	3,195.5	17.5	7.0	-172.25	-38.4	-266.4	631.2	619.4	11.82	53.415		
3,400.0	3,241.6	3,301.2	3,291.3	18.1	7.2	-172.38	-39.3	-274.3	658.8	646.7	12.17	54.136		
3,500.0	3,335.3	3,397.3	3,387.1	18.8	7.4	-172.50	-40.2	-282.1	686.4	673.9	12.52	54.816		
3,600.0	3,429.0	3,493.5	3,482.9	19.5	7.6	-172.61	-41.1	-289.9	714.1	701.2	12.88	55.458		
3,700.0	3,522.6	3,589.6	3,578.6	20.1	7.8	-172.71	-42.0	-297.8	741.7	728.4	13.23	56.066		
3,800.0	3,616.3	3,685.7	3,674.4	20.8	8.0	-172.80	-42.9	-305.6	769.3	755.7	13.58	56.641		
3,900.0	3,709.9	3,781.8	3,770.2	21.5	8.3	-172.89	-43.8	-313.5	796.9	783.0	13.94	57.187		
4,000.0	3,803.6	3,877.9	3,866.0	22.1	8.5	-172.97	-44.7	-321.3	824.5	810.3	14.29	57.706		
4,100.0	3,897.2	3,974.0	3,961.8	22.8	8.7	-173.05	-45.6	-329.1	852.2	837.5	14.64	58.199		
4,200.0	3,990.9	4,070.1	4,057.5	23.5	8.9	-173.12	-46.5	-337.0	879.8	864.8	15.00	58.669		
4,300.0	4,084.5	4,166.2	4,153.3	24.1	9.1	-173.18	-47.4	-344.8	907.4	892.1	15.35	59.116		
4,400.0	4,178.2	4,262.3	4,249.1	24.8	9.4	-173.25	-48.3	-352.6	935.1	919.4	15.70	59.544		
4,500.0	4,271.8	4,358.4	4,344.9	25.5	9.6	-173.31	-49.2	-360.5	962.7	946.6	16.06	59.953		
4,600.0	4,365.5	4,454.5	4,440.6	26.2	9.8	-173.36	-50.1	-368.3	990.3	973.9	16.41	60.343		
4,700.0	4,459.1	4,550.6	4,536.4	26.8	10.0	-173.41	-51.0	-376.1	1,017.9	1,001.2	16.77	60.717		
4,800.0	4,552.8	4,646.7	4,632.2	27.5	10.2	-173.46	-51.9	-384.0	1,045.6	1,028.5	17.12	61.076		
4,900.0	4,646.4	4,742.8	4,728.0	28.2	10.4	-173.51	-52.8	-391.8	1,073.2	1,055.7	17.47	61.420		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 16-13C (M16W Pad) - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,000.0	4,740.1	4,838.9	4,823.8	28.8	10.7	-173.56	-53.7	-399.6	1,100.8	1,083.0	17.83	61.750		
5,100.0	4,833.7	4,935.0	4,919.5	29.5	10.9	-173.60	-54.6	-407.5	1,128.5	1,110.3	18.18	62.067		
5,200.0	4,927.4	5,031.1	5,015.3	30.2	11.1	-173.64	-55.5	-415.3	1,156.1	1,137.6	18.54	62.372		
5,300.0	5,021.0	5,127.2	5,111.1	30.8	11.3	-173.68	-56.3	-423.1	1,183.8	1,164.9	18.89	62.665		
5,400.0	5,114.7	5,223.3	5,206.9	31.5	11.5	-173.72	-57.2	-431.0	1,211.4	1,192.1	19.24	62.948		
5,500.0	5,208.4	5,319.4	5,302.7	32.2	11.7	-173.75	-58.1	-438.8	1,239.0	1,219.4	19.60	63.220		

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Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 16-13CC (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	-110.07	-23.3	-63.8	68.0							
100.0	100.0	100.0	100.0	0.1	0.1	-110.07	-23.3	-63.8	68.0	67.7	0.27	249.579				
200.0	200.0	200.0	200.0	0.3	0.3	-110.07	-23.3	-63.8	68.0	67.3	0.62	109.366	CC, ES			
300.0	300.0	296.6	296.6	0.5	0.5	-110.60	-24.7	-65.8	70.4	69.4	0.97	72.379				
400.0	400.0	393.3	393.0	0.7	0.7	-112.00	-29.0	-71.7	77.7	76.3	1.35	57.461				
500.0	500.0	492.9	492.2	0.8	0.9	-33.09	-34.4	-79.2	86.2	84.5	1.66	51.890				
600.0	599.8	592.7	591.5	1.0	1.1	-36.02	-39.8	-86.8	91.0	89.0	2.01	45.225				
700.0	699.3	692.4	690.8	1.2	1.4	-40.72	-45.1	-94.3	92.0	89.7	2.38	38.697				
800.0	798.0	791.7	789.7	1.5	1.6	-47.68	-50.5	-101.8	90.1	87.3	2.80	32.226				
900.0	895.8	890.5	888.0	1.9	1.8	-57.61	-55.9	-109.2	86.6	83.3	3.33	25.971				
1,000.0	992.4	988.3	985.4	2.4	2.1	-71.10	-61.1	-116.6	84.1	80.0	4.08	20.610				
1,018.7	1,010.4	1,006.6	1,003.6	2.5	2.1	-74.01	-62.1	-118.0	84.0	79.7	4.25	19.760				
1,100.0	1,087.5	1,085.0	1,081.7	2.9	2.3	-87.60	-66.4	-123.9	86.1	81.1	5.01	17.193				
1,200.0	1,181.3	1,180.7	1,177.0	3.6	2.5	-104.32	-71.5	-131.2	96.1	90.2	5.87	16.365	SF			
1,300.0	1,274.9	1,276.2	1,272.1	4.2	2.8	-117.39	-76.7	-138.4	113.1	106.5	6.52	17.333				
1,400.0	1,368.6	1,371.8	1,367.2	4.8	3.0	-126.85	-81.9	-145.6	134.5	127.4	7.03	19.119				
1,500.0	1,462.2	1,467.3	1,462.4	5.5	3.2	-133.67	-87.0	-152.8	158.5	151.0	7.47	21.207				
1,600.0	1,555.9	1,562.9	1,557.5	6.1	3.4	-138.69	-92.2	-160.0	184.1	176.2	7.89	23.349				
1,700.0	1,649.5	1,658.4	1,652.6	6.8	3.7	-142.48	-97.4	-167.2	210.8	202.5	8.29	25.431				
1,800.0	1,743.2	1,754.0	1,747.8	7.5	3.9	-145.43	-102.5	-174.4	238.1	229.4	8.69	27.404				
1,900.0	1,836.9	1,849.5	1,842.9	8.1	4.1	-147.77	-107.7	-181.6	265.9	256.8	9.09	29.250				
2,000.0	1,930.5	1,945.1	1,938.0	8.8	4.3	-149.67	-112.9	-188.8	294.0	284.5	9.49	30.967				
2,100.0	2,024.2	2,040.6	2,033.2	9.4	4.6	-151.24	-118.0	-196.1	322.4	312.5	9.90	32.561				
2,200.0	2,117.8	2,136.1	2,128.3	10.1	4.8	-152.55	-123.2	-203.3	351.0	340.6	10.31	34.037				
2,300.0	2,211.5	2,231.7	2,223.4	10.8	5.0	-153.67	-128.4	-210.5	379.7	368.9	10.72	35.407				
2,400.0	2,305.1	2,327.2	2,318.6	11.4	5.3	-154.63	-133.5	-217.7	408.5	397.3	11.14	36.679				
2,500.0	2,398.8	2,422.8	2,413.7	12.1	5.5	-155.46	-138.7	-224.9	437.4	425.8	11.55	37.861				
2,600.0	2,492.4	2,518.3	2,508.8	12.8	5.7	-156.20	-143.9	-232.1	466.4	454.4	11.97	38.961				
2,700.0	2,586.1	2,613.9	2,604.0	13.4	5.9	-156.84	-149.0	-239.3	495.4	483.0	12.39	39.988				
2,800.0	2,679.7	2,709.4	2,699.1	14.1	6.2	-157.42	-154.2	-246.5	524.5	511.7	12.81	40.948				
2,900.0	2,773.4	2,805.0	2,794.2	14.8	6.4	-157.93	-159.4	-253.8	553.7	540.5	13.23	41.847				
3,000.0	2,867.0	2,900.5	2,889.4	15.4	6.6	-158.39	-164.5	-261.0	582.9	569.2	13.65	42.689				
3,100.0	2,960.7	2,996.1	2,984.5	16.1	6.9	-158.81	-169.7	-268.2	612.1	598.0	14.08	43.481				
3,200.0	3,054.3	3,091.6	3,079.6	16.8	7.1	-159.19	-174.9	-275.4	641.3	626.8	14.50	44.226				
3,300.0	3,148.0	3,187.2	3,174.8	17.5	7.3	-159.54	-180.0	-282.6	670.6	655.7	14.93	44.928				
3,400.0	3,241.6	3,282.7	3,269.9	18.1	7.5	-159.86	-185.2	-289.8	699.9	684.5	15.35	45.591				
3,500.0	3,335.3	3,378.2	3,365.0	18.8	7.8	-160.15	-190.4	-297.0	729.2	713.4	15.78	46.218				
3,600.0	3,429.0	3,473.8	3,460.2	19.5	8.0	-160.42	-195.5	-304.2	758.5	742.3	16.20	46.811				
3,700.0	3,522.6	3,569.3	3,555.3	20.1	8.2	-160.67	-200.7	-311.4	787.8	771.2	16.63	47.374				
3,800.0	3,616.3	3,664.9	3,650.4	20.8	8.4	-160.91	-205.9	-318.7	817.2	800.1	17.06	47.908				
3,900.0	3,709.9	3,760.4	3,745.6	21.5	8.7	-161.12	-211.1	-325.9	846.5	829.0	17.48	48.416				
4,000.0	3,803.6	3,856.0	3,840.7	22.1	8.9	-161.32	-216.2	-333.1	875.9	858.0	17.91	48.899				
4,100.0	3,897.2	3,951.5	3,935.8	22.8	9.1	-161.51	-221.4	-340.3	905.3	886.9	18.34	49.359				
4,200.0	3,990.9	4,047.1	4,031.0	23.5	9.4	-161.69	-226.6	-347.5	934.7	915.9	18.77	49.798				
4,300.0	4,084.5	4,142.6	4,126.1	24.1	9.6	-161.86	-231.7	-354.7	964.1	944.9	19.20	50.217				
4,400.0	4,178.2	4,238.2	4,221.2	24.8	9.8	-162.01	-236.9	-361.9	993.5	973.8	19.63	50.618				
4,500.0	4,271.8	4,333.7	4,316.4	25.5	10.0	-162.16	-242.1	-369.1	1,022.9	1,002.8	20.06	51.001				
4,600.0	4,365.5	4,429.3	4,411.5	26.2	10.3	-162.30	-247.2	-376.4	1,052.3	1,031.8	20.49	51.368				
4,700.0	4,459.1	4,524.8	4,506.6	26.8	10.5	-162.43	-252.4	-383.6	1,081.7	1,060.8	20.91	51.720				
4,800.0	4,552.8	4,620.3	4,601.8	27.5	10.7	-162.55	-257.6	-390.8	1,111.1	1,089.8	21.34	52.057				
4,900.0	4,646.4	4,715.9	4,696.9	28.2	11.0	-162.67	-262.7	-398.0	1,140.5	1,118.8	21.77	52.381				
5,000.0	4,740.1	4,811.4	4,792.0	28.8	11.2	-162.78	-267.9	-405.2	1,170.0	1,147.8	22.20	52.692				

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

Cathedral Energy Services

Anticollision Report

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Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design												M16W Pad (SWSW S16-T7S-R93W) - MCU 16-13CC (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)							
5,100.0	4,833.7	4,907.0	4,887.2	29.5	11.4	-162.89	-273.1	-412.4	1,199.4	1,176.8	22.63	52.992					
5,200.0	4,927.4	5,002.5	4,982.3	30.2	11.6	-162.99	-278.2	-419.6	1,228.9	1,205.8	23.06	53.280					

Cathedral Energy Services

Anticollision Report

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Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 21-3B (M16W) - DD - FINAL													Offset Site Error:	0.0 ft
Survey Program: 206-MWD, 1161-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	25.90	92.5	44.9	102.8					
100.0	100.0	99.7	99.7	0.1	0.2	25.89	92.6	45.0	103.0	102.7	0.29	352.851		
200.0	200.0	199.3	199.3	0.3	0.3	25.89	93.1	45.2	103.5	102.9	0.62	166.352		
300.0	300.0	300.0	300.0	0.5	0.5	25.99	93.5	45.6	104.0	103.0	0.97	107.102		
400.0	400.0	402.2	402.0	0.7	0.7	28.79	89.8	49.4	102.5	101.2	1.32	77.387		
500.0	500.0	503.0	502.2	0.8	0.9	115.84	82.1	57.4	100.5	98.7	1.75	57.476		
522.2	522.2	525.0	524.0	0.9	1.0	117.95	79.9	59.6	100.3	98.5	1.85	54.212 CC, ES		
600.0	599.8	601.3	599.2	1.0	1.2	127.11	71.1	68.6	102.3	100.1	2.23	45.854		
700.0	699.3	697.5	693.3	1.2	1.6	141.38	56.6	82.6	112.6	109.8	2.75	40.875 SF		
800.0	798.0	791.4	784.5	1.5	2.0	154.77	39.5	96.8	133.5	130.3	3.22	41.458		
900.0	895.8	881.6	872.0	1.9	2.4	164.73	22.6	110.7	165.0	161.4	3.60	45.883		
1,000.0	992.4	969.1	956.8	2.4	2.8	171.68	6.2	125.0	205.8	201.8	3.92	52.542		
1,100.0	1,087.5	1,056.8	1,041.8	2.9	3.2	176.61	-10.1	139.1	252.9	248.7	4.21	60.119		
1,200.0	1,181.3	1,145.2	1,127.7	3.6	3.6	-179.87	-26.1	152.7	304.0	299.5	4.53	67.061		
1,300.0	1,274.9	1,231.9	1,212.0	4.2	3.9	-177.31	-42.1	165.0	355.0	350.1	4.89	72.576		
1,400.0	1,368.6	1,317.7	1,295.5	4.8	4.3	-175.45	-57.6	177.1	406.2	400.9	5.26	77.212		
1,500.0	1,462.2	1,393.9	1,369.6	5.5	4.7	-174.17	-71.4	188.2	458.1	452.5	5.62	81.468		
1,600.0	1,555.9	1,463.7	1,437.0	6.1	5.0	-173.16	-84.8	200.2	512.5	506.5	5.98	85.719		
1,700.0	1,649.5	1,532.6	1,503.1	6.8	5.4	-172.32	-98.6	213.7	569.3	563.0	6.34	89.820		
1,800.0	1,743.2	1,619.7	1,586.7	7.5	5.8	-171.48	-116.0	231.4	626.7	620.0	6.74	92.979		
1,900.0	1,836.9	1,701.0	1,664.7	8.1	6.3	-170.86	-131.7	247.8	683.8	676.7	7.13	95.884		
2,000.0	1,930.5	1,787.1	1,747.5	8.8	6.7	-170.34	-148.0	265.0	740.9	733.3	7.53	98.328		
2,100.0	2,024.2	1,871.5	1,828.8	9.4	7.1	-169.94	-163.4	281.7	797.5	789.6	7.93	100.570		
2,200.0	2,117.8	1,959.4	1,913.6	10.1	7.5	-169.65	-178.7	299.0	853.8	845.5	8.32	102.567		
2,300.0	2,211.5	2,046.9	1,998.3	10.8	8.0	-169.46	-193.0	316.0	909.6	900.9	8.72	104.328		
2,400.0	2,305.1	2,133.7	2,082.3	11.4	8.4	-169.29	-207.0	332.5	965.1	956.0	9.11	105.927		
2,500.0	2,398.8	2,226.9	2,172.7	12.1	8.8	-169.16	-221.5	349.8	1,020.1	1,010.6	9.51	107.279		
2,600.0	2,492.4	2,315.9	2,259.4	12.8	9.2	-169.10	-234.3	365.9	1,074.2	1,064.4	9.89	108.589		
2,700.0	2,586.1	2,398.1	2,339.3	13.4	9.5	-169.06	-246.0	380.8	1,128.4	1,118.1	10.27	109.867		
2,800.0	2,679.7	2,475.7	2,414.7	14.1	9.9	-168.97	-257.9	394.7	1,182.8	1,172.1	10.65	111.049		
2,900.0	2,773.4	2,551.4	2,488.1	14.8	10.3	-168.83	-270.8	408.4	1,237.8	1,226.7	11.04	112.084		

Cathedral Energy Services

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Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 21-4B (M16W Pad) - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-120.58	-21.9	-37.0	43.0					
100.0	100.0	100.0	100.0	0.1	0.1	-120.58	-21.9	-37.0	43.0	42.7	0.27	157.838		
200.0	200.0	200.0	200.0	0.3	0.3	-120.58	-21.9	-37.0	43.0	42.4	0.62	69.165		
255.6	255.6	255.6	255.6	0.4	0.4	-120.58	-21.9	-37.0	43.0	42.2	0.82	52.711 CC		
300.0	300.0	299.5	299.5	0.5	0.5	-120.69	-22.0	-37.1	43.1	42.1	0.97	44.465 ES		
400.0	400.0	397.5	397.4	0.7	0.7	-123.03	-25.3	-38.9	46.5	45.2	1.32	35.093		
500.0	500.0	494.8	494.3	0.8	0.9	-47.21	-32.9	-43.1	54.1	52.4	1.67	32.415		
600.0	599.8	591.1	589.7	1.0	1.2	-55.10	-44.7	-49.7	64.1	62.1	2.02	31.707		
700.0	699.3	689.8	687.0	1.2	1.5	-64.58	-58.8	-57.5	75.2	72.8	2.40	31.272		
800.0	798.0	788.1	784.0	1.5	1.8	-74.63	-72.9	-65.4	86.3	83.5	2.86	30.158		
900.0	895.8	885.7	880.3	1.9	2.1	-84.99	-86.9	-73.2	99.1	95.7	3.45	28.713		
1,000.0	992.4	982.4	975.6	2.4	2.4	-95.11	-100.7	-80.9	115.0	110.8	4.18	27.506		
1,100.0	1,087.5	1,077.9	1,069.9	2.9	2.7	-104.47	-114.4	-88.5	135.1	130.1	5.00	26.986 SF		
1,200.0	1,181.3	1,172.3	1,163.0	3.6	3.0	-112.84	-128.0	-96.0	159.7	153.9	5.83	27.382		
1,300.0	1,274.9	1,266.6	1,256.0	4.2	3.3	-119.22	-141.5	-103.5	187.1	180.4	6.62	28.273		
1,400.0	1,368.6	1,360.9	1,349.1	4.8	3.6	-123.97	-155.0	-111.0	216.1	208.7	7.36	29.348		
1,500.0	1,462.2	1,455.2	1,442.1	5.5	4.0	-127.61	-168.5	-118.5	246.2	238.1	8.08	30.456		
1,600.0	1,555.9	1,549.5	1,535.1	6.1	4.3	-130.47	-182.0	-126.0	277.0	268.2	8.78	31.531		
1,700.0	1,649.5	1,643.9	1,628.2	6.8	4.6	-132.75	-195.5	-133.6	308.3	298.8	9.47	32.544		
1,800.0	1,743.2	1,738.2	1,721.2	7.5	4.9	-134.62	-209.0	-141.1	340.0	329.8	10.15	33.486		
1,900.0	1,836.9	1,832.5	1,814.2	8.1	5.2	-136.17	-222.6	-148.6	371.9	361.1	10.83	34.355		
2,000.0	1,930.5	1,926.8	1,907.3	8.8	5.5	-137.47	-236.1	-156.1	404.1	392.6	11.49	35.155		
2,100.0	2,024.2	2,021.1	2,000.3	9.4	5.8	-138.59	-249.6	-163.6	436.4	424.3	12.16	35.892		
2,200.0	2,117.8	2,115.4	2,093.4	10.1	6.2	-139.55	-263.1	-171.1	468.9	456.1	12.82	36.570		
2,300.0	2,211.5	2,209.7	2,186.4	10.8	6.5	-140.39	-276.6	-178.6	501.4	487.9	13.48	37.195		
2,400.0	2,305.1	2,304.1	2,279.4	11.4	6.8	-141.12	-290.1	-186.2	534.1	519.9	14.14	37.773		
2,500.0	2,398.8	2,398.4	2,372.5	12.1	7.1	-141.77	-303.6	-193.7	566.8	552.0	14.80	38.308		
2,600.0	2,492.4	2,492.7	2,465.5	12.8	7.4	-142.35	-317.2	-201.2	599.5	584.1	15.45	38.804		
2,700.0	2,586.1	2,587.0	2,558.5	13.4	7.7	-142.87	-330.7	-208.7	632.4	616.3	16.11	39.264		
2,800.0	2,679.7	2,681.3	2,651.6	14.1	8.1	-143.34	-344.2	-216.2	665.2	648.5	16.76	39.694		
2,900.0	2,773.4	2,775.6	2,744.6	14.8	8.4	-143.77	-357.7	-223.7	698.1	680.7	17.41	40.094		
3,000.0	2,867.0	2,869.9	2,837.7	15.4	8.7	-144.15	-371.2	-231.2	731.0	713.0	18.06	40.469		
3,100.0	2,960.7	2,964.3	2,930.7	16.1	9.0	-144.51	-384.7	-238.8	764.0	745.3	18.72	40.820		
3,200.0	3,054.3	3,058.6	3,023.7	16.8	9.3	-144.83	-398.2	-246.3	797.0	777.6	19.37	41.149		
3,300.0	3,148.0	3,152.9	3,116.8	17.5	9.6	-145.13	-411.8	-253.8	830.0	810.0	20.02	41.459		
3,400.0	3,241.6	3,247.2	3,209.8	18.1	10.0	-145.40	-425.3	-261.3	863.0	842.3	20.67	41.751		
3,500.0	3,335.3	3,341.5	3,302.8	18.8	10.3	-145.66	-438.8	-268.8	896.0	874.7	21.32	42.026		
3,600.0	3,429.0	3,435.8	3,395.9	19.5	10.6	-145.90	-452.3	-276.3	929.1	907.1	21.97	42.286		
3,700.0	3,522.6	3,530.1	3,488.9	20.1	10.9	-146.12	-465.8	-283.8	962.1	939.5	22.62	42.532		
3,800.0	3,616.3	3,624.4	3,582.0	20.8	11.2	-146.33	-479.3	-291.4	995.2	971.9	23.27	42.765		
3,900.0	3,709.9	3,718.8	3,675.0	21.5	11.5	-146.52	-492.9	-298.9	1,028.3	1,004.4	23.92	42.986		
4,000.0	3,803.6	3,813.1	3,768.0	22.1	11.9	-146.70	-506.4	-306.4	1,061.4	1,036.8	24.57	43.196		
4,100.0	3,897.2	3,907.4	3,861.1	22.8	12.2	-146.87	-519.9	-313.9	1,094.5	1,069.3	25.22	43.396		
4,200.0	3,990.9	4,001.7	3,954.1	23.5	12.5	-147.03	-533.4	-321.4	1,127.6	1,101.7	25.87	43.587		
4,300.0	4,084.5	4,096.0	4,047.1	24.1	12.8	-147.18	-546.9	-328.9	1,160.7	1,134.2	26.52	43.768		
4,400.0	4,178.2	4,190.3	4,140.2	24.8	13.1	-147.32	-560.4	-336.4	1,193.9	1,166.7	27.17	43.941		
4,500.0	4,271.8	4,284.6	4,233.2	25.5	13.4	-147.46	-573.9	-343.9	1,227.0	1,199.2	27.82	44.107		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 21-4BB (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	-117.54	-27.7	-53.1	59.9						
100.0	100.0	100.0	100.0	0.1	0.1	-117.54	-27.7	-53.1	59.9	59.6	0.27	219.923			
200.0	200.0	200.0	200.0	0.3	0.3	-117.54	-27.7	-53.1	59.9	59.3	0.62	96.371			
300.0	300.0	300.0	300.0	0.5	0.5	-117.54	-27.7	-53.1	59.9	58.9	0.97	61.705 CC, ES			
400.0	400.0	397.2	397.1	0.7	0.7	-118.49	-29.6	-54.6	62.2	60.9	1.32	47.111			
500.0	500.0	493.8	493.5	0.8	0.9	-40.73	-35.5	-59.1	68.7	67.1	1.66	41.310			
600.0	599.8	591.5	590.5	1.0	1.1	-46.29	-44.8	-66.3	76.4	74.4	2.02	37.882			
700.0	699.3	690.8	688.9	1.2	1.4	-53.77	-54.8	-74.0	82.2	79.8	2.39	34.338			
800.0	798.0	789.7	787.0	1.5	1.6	-63.10	-64.8	-81.6	86.8	84.0	2.84	30.586			
900.0	895.8	887.9	884.5	1.9	1.9	-74.21	-74.7	-89.2	92.0	88.6	3.41	26.972			
1,000.0	992.4	985.3	981.0	2.4	2.2	-86.53	-84.5	-96.8	100.0	95.8	4.14	24.142			
1,100.0	1,087.5	1,081.4	1,076.4	2.9	2.4	-98.91	-94.2	-104.2	112.8	107.9	4.98	22.665 SF			
1,200.0	1,181.3	1,176.5	1,170.7	3.6	2.7	-110.18	-103.8	-111.6	131.6	125.8	5.78	22.749			
1,300.0	1,274.9	1,271.5	1,264.9	4.2	3.0	-118.75	-113.3	-119.0	154.5	148.0	6.51	23.746			
1,400.0	1,368.6	1,366.5	1,359.2	4.8	3.2	-125.09	-122.9	-126.3	179.9	172.8	7.16	25.118			
1,500.0	1,462.2	1,461.5	1,453.4	5.5	3.5	-129.86	-132.5	-133.7	207.0	199.2	7.78	26.602			
1,600.0	1,555.9	1,556.5	1,547.6	6.1	3.8	-133.54	-142.1	-141.0	235.0	226.7	8.37	28.076			
1,700.0	1,649.5	1,651.5	1,641.8	6.8	4.0	-136.43	-151.6	-148.4	263.8	254.9	8.95	29.486			
1,800.0	1,743.2	1,746.5	1,736.1	7.5	4.3	-138.76	-161.2	-155.8	293.1	283.6	9.51	30.810			
1,900.0	1,836.9	1,841.5	1,830.3	8.1	4.6	-140.67	-170.8	-163.1	322.8	312.7	10.07	32.041			
2,000.0	1,930.5	1,936.5	1,924.5	8.8	4.8	-142.25	-180.3	-170.5	352.7	342.1	10.63	33.181			
2,100.0	2,024.2	2,031.4	2,018.7	9.4	5.1	-143.59	-189.9	-177.9	382.9	371.7	11.18	34.235			
2,200.0	2,117.8	2,126.4	2,112.9	10.1	5.4	-144.74	-199.5	-185.2	413.2	401.5	11.74	35.210			
2,300.0	2,211.5	2,221.4	2,207.2	10.8	5.6	-145.73	-209.1	-192.6	443.7	431.4	12.29	36.111			
2,400.0	2,305.1	2,316.4	2,301.4	11.4	5.9	-146.59	-218.6	-199.9	474.2	461.4	12.83	36.946			
2,500.0	2,398.8	2,411.4	2,395.6	12.1	6.2	-147.35	-228.2	-207.3	504.8	491.5	13.38	37.721			
2,600.0	2,492.4	2,506.4	2,489.8	12.8	6.4	-148.02	-237.8	-214.7	535.5	521.6	13.93	38.441			
2,700.0	2,586.1	2,601.4	2,584.0	13.4	6.7	-148.62	-247.4	-222.0	566.3	551.8	14.48	39.112			
2,800.0	2,679.7	2,696.4	2,678.3	14.1	7.0	-149.16	-256.9	-229.4	597.1	582.1	15.03	39.738			
2,900.0	2,773.4	2,791.4	2,772.5	14.8	7.2	-149.65	-266.5	-236.7	628.0	612.4	15.57	40.323			
3,000.0	2,867.0	2,886.4	2,866.7	15.4	7.5	-150.09	-276.1	-244.1	658.9	642.8	16.12	40.872			
3,100.0	2,960.7	2,981.4	2,960.9	16.1	7.8	-150.49	-285.6	-251.5	689.8	673.1	16.67	41.386			
3,200.0	3,054.3	3,076.3	3,055.1	16.8	8.0	-150.85	-295.2	-258.8	720.8	703.5	17.21	41.870			
3,300.0	3,148.0	3,171.3	3,149.4	17.5	8.3	-151.19	-304.8	-266.2	751.7	734.0	17.76	42.325			
3,400.0	3,241.6	3,266.3	3,243.6	18.1	8.6	-151.50	-314.4	-273.6	782.7	764.4	18.31	42.754			
3,500.0	3,335.3	3,361.3	3,337.8	18.8	8.8	-151.78	-323.9	-280.9	813.8	794.9	18.85	43.160			
3,600.0	3,429.0	3,456.3	3,432.0	19.5	9.1	-152.05	-333.5	-288.3	844.8	825.4	19.40	43.543			
3,700.0	3,522.6	3,551.3	3,526.2	20.1	9.4	-152.29	-343.1	-295.6	875.9	855.9	19.95	43.907			
3,800.0	3,616.3	3,646.3	3,620.5	20.8	9.6	-152.52	-352.7	-303.0	906.9	886.4	20.49	44.251			
3,900.0	3,709.9	3,741.3	3,714.7	21.5	9.9	-152.74	-362.2	-310.4	938.0	917.0	21.04	44.578			
4,000.0	3,803.6	3,836.3	3,808.9	22.1	10.2	-152.94	-371.8	-317.7	969.1	947.5	21.59	44.890			
4,100.0	3,897.2	3,931.3	3,903.1	22.8	10.4	-153.13	-381.4	-325.1	1,000.2	978.1	22.14	45.186			
4,200.0	3,990.9	4,026.3	3,997.3	23.5	10.7	-153.30	-390.9	-332.4	1,031.3	1,008.6	22.68	45.468			
4,300.0	4,084.5	4,121.3	4,091.6	24.1	11.0	-153.47	-400.5	-339.8	1,062.4	1,039.2	23.23	45.738			
4,400.0	4,178.2	4,216.2	4,185.8	24.8	11.3	-153.63	-410.1	-347.2	1,093.5	1,069.8	23.78	45.995			
4,500.0	4,271.8	4,311.2	4,280.0	25.5	11.5	-153.77	-419.7	-354.5	1,124.7	1,100.4	24.32	46.241			
4,600.0	4,365.5	4,406.2	4,374.2	26.2	11.8	-153.91	-429.2	-361.9	1,155.8	1,131.0	24.87	46.476			
4,700.0	4,459.1	4,501.2	4,468.4	26.8	12.1	-154.05	-438.8	-369.3	1,187.0	1,161.5	25.42	46.702			
4,800.0	4,552.8	4,596.2	4,562.7	27.5	12.3	-154.17	-448.4	-376.6	1,218.1	1,192.2	25.96	46.918			
4,900.0	4,646.4	4,691.2	4,656.9	28.2	12.6	-154.29	-458.0	-384.0	1,249.3	1,222.8	26.51	47.125			

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 21-4C (M16W Pad) - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	-127.11	-16.0	-21.2	26.6					
100.0	100.0	100.0	100.0	0.1	0.1	-127.11	-16.0	-21.2	26.6	26.3	0.27	97.555		
200.0	200.0	200.0	200.0	0.3	0.3	-127.11	-16.0	-21.2	26.6	25.9	0.62	42.749		
233.5	233.5	233.5	233.5	0.4	0.4	-127.11	-16.0	-21.2	26.6	25.8	0.74	35.973 CC, ES		
300.0	300.0	299.4	299.4	0.5	0.5	-127.76	-16.6	-21.4	27.1	26.2	0.97	27.975		
400.0	400.0	397.9	397.7	0.7	0.7	-132.10	-21.3	-23.5	31.8	30.4	1.33	23.834 SF		
500.0	500.0	495.6	495.0	0.8	0.9	-57.86	-30.4	-27.6	41.1	39.4	1.67	24.593		
600.0	599.8	592.2	590.4	1.0	1.2	-66.97	-43.9	-33.7	53.7	51.7	2.02	26.574		
700.0	699.3	689.1	685.4	1.2	1.5	-76.52	-61.1	-41.4	70.0	67.6	2.41	29.066		
800.0	798.0	786.7	781.1	1.5	1.9	-85.56	-78.7	-49.2	87.5	84.6	2.89	30.291		
900.0	895.8	883.6	876.1	1.9	2.3	-94.04	-96.2	-57.1	106.9	103.4	3.50	30.577		
1,000.0	992.4	979.6	970.2	2.4	2.6	-101.83	-113.6	-64.8	129.1	124.9	4.23	30.552		
1,100.0	1,087.5	1,074.3	1,063.0	2.9	3.0	-108.81	-130.7	-72.5	154.9	149.8	5.05	30.690		
1,200.0	1,181.3	1,168.0	1,154.8	3.6	3.3	-115.19	-147.6	-80.1	184.2	178.4	5.89	31.290		
1,300.0	1,274.9	1,261.5	1,246.5	4.2	3.7	-120.11	-164.5	-87.6	215.5	208.8	6.71	32.114		
1,400.0	1,368.6	1,355.1	1,338.2	4.8	4.1	-123.79	-181.4	-95.2	247.8	240.3	7.51	33.004		
1,500.0	1,462.2	1,448.6	1,429.9	5.5	4.4	-126.63	-198.3	-102.8	280.9	272.6	8.29	33.880		
1,600.0	1,555.9	1,542.2	1,521.7	6.1	4.8	-128.88	-215.2	-110.3	314.4	305.4	9.06	34.707		
1,700.0	1,649.5	1,635.7	1,613.4	6.8	5.1	-130.69	-232.1	-117.9	348.3	338.5	9.82	35.474		
1,800.0	1,743.2	1,729.3	1,705.1	7.5	5.5	-132.19	-249.0	-125.4	382.5	371.9	10.57	36.178		
1,900.0	1,836.9	1,822.9	1,796.8	8.1	5.9	-133.44	-265.9	-133.0	416.8	405.5	11.32	36.823		
2,000.0	1,930.5	1,916.4	1,888.5	8.8	6.2	-134.50	-282.8	-140.6	451.3	439.3	12.06	37.413		
2,100.0	2,024.2	2,010.0	1,980.2	9.4	6.6	-135.41	-299.7	-148.1	486.0	473.2	12.80	37.952		
2,200.0	2,117.8	2,103.5	2,071.9	10.1	6.9	-136.20	-316.6	-155.7	520.7	507.1	13.54	38.447		
2,300.0	2,211.5	2,197.1	2,163.6	10.8	7.3	-136.89	-333.5	-163.3	555.5	541.2	14.28	38.901		
2,400.0	2,305.1	2,290.6	2,255.3	11.4	7.7	-137.50	-350.4	-170.8	590.3	575.3	15.01	39.319		
2,500.0	2,398.8	2,384.2	2,347.0	12.1	8.0	-138.05	-367.3	-178.4	625.2	609.5	15.75	39.705		
2,600.0	2,492.4	2,477.7	2,438.7	12.8	8.4	-138.53	-384.2	-185.9	660.2	643.7	16.48	40.062		
2,700.0	2,586.1	2,571.3	2,530.4	13.4	8.8	-138.97	-401.1	-193.5	695.2	678.0	17.21	40.393		
2,800.0	2,679.7	2,664.8	2,622.1	14.1	9.1	-139.36	-418.0	-201.1	730.2	712.3	17.94	40.701		
2,900.0	2,773.4	2,758.4	2,713.8	14.8	9.5	-139.72	-434.9	-208.6	765.3	746.6	18.67	40.988		
3,000.0	2,867.0	2,851.9	2,805.5	15.4	9.8	-140.05	-451.8	-216.2	800.3	780.9	19.40	41.255		
3,100.0	2,960.7	2,945.5	2,897.2	16.1	10.2	-140.35	-468.7	-223.8	835.4	815.3	20.13	41.506		
3,200.0	3,054.3	3,039.0	2,988.9	16.8	10.6	-140.63	-485.6	-231.3	870.5	849.7	20.86	41.740		
3,300.0	3,148.0	3,132.6	3,080.6	17.5	10.9	-140.88	-502.5	-238.9	905.7	884.1	21.58	41.961		
3,400.0	3,241.6	3,226.2	3,172.3	18.1	11.3	-141.12	-519.4	-246.4	940.8	918.5	22.31	42.168		
3,500.0	3,335.3	3,319.7	3,264.0	18.8	11.7	-141.34	-536.3	-254.0	976.0	952.9	23.04	42.363		
3,600.0	3,429.0	3,413.3	3,355.7	19.5	12.0	-141.54	-553.2	-261.6	1,011.1	987.4	23.76	42.547		
3,700.0	3,522.6	3,506.8	3,447.4	20.1	12.4	-141.73	-570.1	-269.1	1,046.3	1,021.8	24.49	42.722		
3,800.0	3,616.3	3,600.4	3,539.1	20.8	12.7	-141.91	-587.0	-276.7	1,081.5	1,056.3	25.22	42.887		
3,900.0	3,709.9	3,693.9	3,630.8	21.5	13.1	-142.07	-603.9	-284.3	1,116.7	1,090.8	25.94	43.043		
4,000.0	3,803.6	3,787.5	3,722.5	22.1	13.5	-142.23	-620.8	-291.8	1,151.9	1,125.2	26.67	43.191		
4,100.0	3,897.2	3,881.0	3,814.2	22.8	13.8	-142.38	-637.7	-299.4	1,187.1	1,159.7	27.40	43.332		
4,200.0	3,990.9	3,974.6	3,905.9	23.5	14.2	-142.51	-654.6	-307.0	1,222.3	1,194.2	28.12	43.467		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU 21-4CC (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	-153.52	-10.2	-5.1	11.4					
100.0	100.0	100.0	100.0	0.1	0.1	-153.52	-10.2	-5.1	11.4	11.1	0.27	41.882		
200.0	200.0	200.0	200.0	0.3	0.3	-153.52	-10.2	-5.1	11.4	10.8	0.62	18.353 CC, ES		
300.0	300.0	299.5	299.5	0.5	0.5	-154.19	-11.6	-5.6	12.9	11.9	0.97	13.227 SF		
400.0	400.0	398.5	398.2	0.7	0.7	-155.93	-17.6	-7.9	19.3	18.0	1.35	14.331		
500.0	500.0	496.5	495.6	0.8	0.9	-77.70	-28.2	-11.9	30.8	29.1	1.66	18.522		
600.0	599.8	593.2	590.9	1.0	1.3	-83.82	-43.3	-17.5	46.7	44.7	2.02	23.102		
700.0	699.3	688.4	683.8	1.2	1.6	-90.18	-62.5	-24.7	67.6	65.2	2.43	27.811		
800.0	798.0	785.1	777.8	1.5	2.1	-96.23	-83.8	-32.7	91.3	88.4	2.94	31.076		
900.0	895.8	881.1	871.2	1.9	2.5	-101.99	-104.8	-40.6	116.7	113.2	3.56	32.791		
1,000.0	992.4	976.1	963.6	2.4	2.9	-107.36	-125.7	-48.4	144.6	140.3	4.29	33.693		
1,100.0	1,087.5	1,070.0	1,054.8	2.9	3.3	-112.25	-146.3	-56.2	175.4	170.3	5.11	34.322		
1,200.0	1,181.3	1,162.7	1,144.9	3.6	3.7	-117.01	-166.7	-63.8	209.2	203.2	5.97	35.041		
1,300.0	1,274.9	1,255.3	1,235.0	4.2	4.1	-120.77	-187.0	-71.5	244.1	237.3	6.82	35.784		
1,400.0	1,368.6	1,347.9	1,325.0	4.8	4.5	-123.59	-207.3	-79.1	279.8	272.2	7.66	36.516		
1,500.0	1,462.2	1,440.6	1,415.1	5.5	4.9	-125.78	-227.7	-86.7	316.0	307.5	8.49	37.203		
1,600.0	1,555.9	1,533.2	1,505.1	6.1	5.3	-127.52	-248.0	-94.3	352.5	343.1	9.32	37.834		
1,700.0	1,649.5	1,625.8	1,595.2	6.8	5.7	-128.94	-268.3	-102.0	389.2	379.0	10.13	38.408		
1,800.0	1,743.2	1,718.4	1,685.2	7.5	6.2	-130.11	-288.7	-109.6	426.0	415.1	10.94	38.929		
1,900.0	1,836.9	1,811.1	1,775.2	8.1	6.6	-131.10	-309.0	-117.2	463.1	451.3	11.75	39.401		
2,000.0	1,930.5	1,903.7	1,865.3	8.8	7.0	-131.94	-329.3	-124.9	500.2	487.6	12.56	39.829		
2,100.0	2,024.2	1,996.3	1,955.3	9.4	7.4	-132.67	-349.7	-132.5	537.4	524.0	13.36	40.218		
2,200.0	2,117.8	2,088.9	2,045.4	10.1	7.8	-133.30	-370.0	-140.1	574.6	560.5	14.16	40.573		
2,300.0	2,211.5	2,181.6	2,135.4	10.8	8.2	-133.86	-390.3	-147.8	611.9	597.0	14.96	40.898		
2,400.0	2,305.1	2,274.2	2,225.4	11.4	8.6	-134.35	-410.7	-155.4	649.3	633.5	15.76	41.196		
2,500.0	2,398.8	2,366.8	2,315.5	12.1	9.0	-134.79	-431.0	-163.0	686.7	670.1	16.56	41.470		
2,600.0	2,492.4	2,459.4	2,405.5	12.8	9.4	-135.18	-451.3	-170.7	724.1	706.7	17.36	41.722		
2,700.0	2,586.1	2,552.1	2,495.6	13.4	9.9	-135.54	-471.7	-178.3	761.5	743.4	18.15	41.956		
2,800.0	2,679.7	2,644.7	2,585.6	14.1	10.3	-135.86	-492.0	-185.9	799.0	780.1	18.95	42.173		
2,900.0	2,773.4	2,737.3	2,675.7	14.8	10.7	-136.15	-512.3	-193.6	836.5	816.8	19.74	42.374		
3,000.0	2,867.0	2,829.9	2,765.7	15.4	11.1	-136.42	-532.7	-201.2	874.0	853.5	20.54	42.562		
3,100.0	2,960.7	2,922.6	2,855.7	16.1	11.5	-136.67	-553.0	-208.8	911.5	890.2	21.33	42.737		
3,200.0	3,054.3	3,015.2	2,945.8	16.8	11.9	-136.89	-573.3	-216.5	949.1	927.0	22.12	42.901		
3,300.0	3,148.0	3,107.8	3,035.8	17.5	12.3	-137.10	-593.6	-224.1	986.6	963.7	22.92	43.055		
3,400.0	3,241.6	3,200.4	3,125.9	18.1	12.8	-137.30	-614.0	-231.7	1,024.2	1,000.5	23.71	43.199		
3,500.0	3,335.3	3,293.1	3,215.9	18.8	13.2	-137.48	-634.3	-239.4	1,061.8	1,037.3	24.50	43.335		
3,600.0	3,429.0	3,385.7	3,306.0	19.5	13.6	-137.64	-654.6	-247.0	1,099.3	1,074.0	25.29	43.464		
3,700.0	3,522.6	3,478.3	3,396.0	20.1	14.0	-137.80	-675.0	-254.6	1,136.9	1,110.8	26.09	43.585		
3,800.0	3,616.3	3,570.9	3,486.0	20.8	14.4	-137.95	-695.3	-262.3	1,174.5	1,147.6	26.88	43.699		
3,900.0	3,709.9	3,663.6	3,576.1	21.5	14.8	-138.08	-715.6	-269.9	1,212.1	1,184.4	27.67	43.807		
4,000.0	3,803.6	3,756.2	3,666.1	22.1	15.2	-138.21	-736.0	-277.5	1,249.7	1,221.3	28.46	43.910		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design		M16W Pad (SWSW S16-T7S-R93W) - MCU 21-5B (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	Separation				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor				
0.0	0.0	0.0	0.0	0.0	0.0	112.18	-4.4	10.7	11.6							
100.0	100.0	100.0	100.0	0.1	0.1	112.18	-4.4	10.7	11.6	11.3	0.27	42.567				
200.0	200.0	200.0	200.0	0.3	0.3	112.18	-4.4	10.7	11.6	11.0	0.62	18.653	CC			
204.3	204.3	204.3	204.3	0.3	0.3	112.20	-4.4	10.7	11.6	11.0	0.64	18.214	ES			
300.0	300.0	299.9	299.8	0.5	0.5	124.65	-6.9	9.9	12.1	11.1	0.97	12.426				
400.0	400.0	399.2	398.8	0.7	0.7	152.24	-14.2	7.5	16.1	14.8	1.34	12.071	SF			
500.0	500.0	497.5	496.3	0.8	1.0	-108.21	-26.3	3.5	27.0	25.3	1.70	15.904				
600.0	599.8	594.2	591.4	1.0	1.3	-103.65	-42.9	-1.9	44.8	42.8	2.07	21.614				
700.0	699.3	688.8	683.4	1.2	1.8	-104.02	-63.5	-8.7	68.4	65.9	2.51	27.285				
800.0	798.0	783.2	774.5	1.5	2.2	-105.81	-87.5	-16.6	96.9	93.9	3.03	32.016				
900.0	895.8	878.2	865.9	1.9	2.7	-108.62	-112.1	-24.7	127.4	123.7	3.65	34.876				
1,000.0	992.4	972.2	956.3	2.4	3.1	-111.76	-136.3	-32.6	160.0	155.6	4.38	36.529				
1,100.0	1,087.5	1,065.0	1,045.6	2.9	3.6	-114.90	-160.3	-40.5	195.2	190.0	5.20	37.564				
1,200.0	1,181.3	1,156.7	1,133.9	3.6	4.1	-118.37	-183.9	-48.3	232.9	226.8	6.07	38.379				
1,300.0	1,274.9	1,248.3	1,222.0	4.2	4.5	-121.21	-207.6	-56.1	271.4	264.4	6.95	39.059				
1,400.0	1,368.6	1,339.8	1,310.1	4.8	5.0	-123.35	-231.2	-63.8	310.3	302.4	7.82	39.675				
1,500.0	1,462.2	1,431.4	1,398.2	5.5	5.4	-125.01	-254.9	-71.6	349.5	340.8	8.69	40.224				
1,600.0	1,555.9	1,523.0	1,486.4	6.1	5.9	-126.34	-278.5	-79.4	388.9	379.3	9.55	40.713				
1,700.0	1,649.5	1,614.6	1,574.5	6.8	6.4	-127.43	-302.2	-87.2	428.4	418.0	10.41	41.148				
1,800.0	1,743.2	1,706.1	1,662.6	7.5	6.8	-128.33	-325.8	-94.9	468.1	456.8	11.27	41.536				
1,900.0	1,836.9	1,797.7	1,750.7	8.1	7.3	-129.10	-349.4	-102.7	507.8	495.7	12.12	41.883				
2,000.0	1,930.5	1,889.3	1,838.9	8.8	7.7	-129.75	-373.1	-110.5	547.6	534.6	12.98	42.194				
2,100.0	2,024.2	1,980.8	1,927.0	9.4	8.2	-130.32	-396.7	-118.2	587.4	573.6	13.83	42.475				
2,200.0	2,117.8	2,072.4	2,015.1	10.1	8.7	-130.81	-420.4	-126.0	627.3	612.6	14.68	42.730				
2,300.0	2,211.5	2,164.0	2,103.2	10.8	9.1	-131.24	-444.0	-133.8	667.3	651.7	15.53	42.961				
2,400.0	2,305.1	2,255.6	2,191.4	11.4	9.6	-131.63	-467.6	-141.5	707.2	690.8	16.38	43.172				
2,500.0	2,398.8	2,347.1	2,279.5	12.1	10.1	-131.97	-491.3	-149.3	747.2	730.0	17.23	43.366				
2,600.0	2,492.4	2,438.7	2,367.6	12.8	10.5	-132.28	-514.9	-157.1	787.2	769.1	18.08	43.543				
2,700.0	2,586.1	2,530.3	2,455.7	13.4	11.0	-132.56	-538.6	-164.9	827.2	808.3	18.93	43.707				
2,800.0	2,679.7	2,621.9	2,543.9	14.1	11.4	-132.81	-562.2	-172.6	867.2	847.5	19.77	43.859				
2,900.0	2,773.4	2,713.4	2,632.0	14.8	11.9	-133.05	-585.9	-180.4	907.3	886.7	20.62	43.999				
3,000.0	2,867.0	2,805.0	2,720.1	15.4	12.4	-133.26	-609.5	-188.2	947.3	925.9	21.47	44.130				
3,100.0	2,960.7	2,896.6	2,808.3	16.1	12.8	-133.45	-633.1	-195.9	987.4	965.1	22.31	44.251				
3,200.0	3,054.3	2,988.1	2,896.4	16.8	13.3	-133.63	-656.8	-203.7	1,027.5	1,004.3	23.16	44.365				
3,300.0	3,148.0	3,079.7	2,984.5	17.5	13.8	-133.80	-680.4	-211.5	1,067.6	1,043.6	24.01	44.471				
3,400.0	3,241.6	3,171.3	3,072.6	18.1	14.2	-133.95	-704.1	-219.3	1,107.7	1,082.8	24.85	44.571				
3,500.0	3,335.3	3,262.9	3,160.8	18.8	14.7	-134.09	-727.7	-227.0	1,147.8	1,122.1	25.70	44.664				
3,600.0	3,429.0	3,354.4	3,248.9	19.5	15.2	-134.23	-751.3	-234.8	1,187.9	1,161.3	26.54	44.753				
3,700.0	3,522.6	3,446.0	3,337.0	20.1	15.6	-134.35	-775.0	-242.6	1,228.0	1,200.6	27.39	44.836				

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 16-12C (M16W) - DD - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 206-MWD, 1347-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	35.89	114.3	82.8	141.1					
100.0	100.0	99.6	99.6	0.1	0.2	35.85	114.5	82.8	141.3	141.0	0.29	484.289 ES		
200.0	200.0	199.2	199.2	0.3	0.3	35.73	115.0	82.8	141.7	141.1	0.62	227.855		
300.0	300.0	298.0	298.0	0.5	0.5	35.31	116.2	82.3	142.4	141.5	0.97	147.081		
400.0	400.0	395.3	395.0	0.7	0.7	33.10	121.1	79.0	144.7	143.4	1.32	109.544		
500.0	500.0	488.2	487.3	0.8	0.9	110.00	130.8	73.6	150.9	149.2	1.72	87.782		
600.0	599.8	584.3	581.9	1.0	1.2	106.27	145.6	65.6	162.3	160.1	2.17	74.702		
700.0	699.3	683.2	678.7	1.2	1.6	103.38	163.0	54.7	176.4	173.7	2.70	65.361		
800.0	798.0	782.8	776.0	1.5	2.0	101.99	180.5	42.4	191.5	188.2	3.31	57.903		
900.0	895.8	880.5	871.2	1.9	2.4	101.99	198.1	29.9	207.8	203.8	4.01	51.830		
1,000.0	992.4	977.9	966.1	2.4	2.8	103.13	216.1	17.5	225.8	221.0	4.82	46.842		
1,100.0	1,087.5	1,075.7	1,061.4	2.9	3.2	105.16	234.2	5.0	245.3	239.6	5.73	42.816		
1,200.0	1,181.3	1,171.9	1,155.5	3.6	3.6	108.39	251.2	-5.8	266.6	259.9	6.67	39.961		
1,300.0	1,274.9	1,269.4	1,250.9	4.2	4.0	111.50	268.3	-16.3	288.8	281.2	7.62	37.917		
1,400.0	1,368.6	1,368.5	1,348.0	4.8	4.4	114.22	285.0	-27.4	310.9	302.4	8.55	36.345		
1,500.0	1,462.2	1,464.2	1,441.8	5.5	4.7	116.53	300.5	-38.2	333.1	323.6	9.47	35.178		
1,600.0	1,555.9	1,556.7	1,532.1	6.1	5.1	118.27	317.4	-48.9	357.1	346.7	10.38	34.389		
1,700.0	1,649.5	1,658.3	1,631.3	6.8	5.6	119.89	335.7	-61.3	380.7	369.4	11.32	33.643		
1,800.0	1,743.2	1,755.2	1,726.0	7.5	5.9	121.36	352.1	-73.1	404.0	391.7	12.21	33.087		
1,900.0	1,836.9	1,849.8	1,818.7	8.1	6.3	122.74	367.9	-83.8	427.8	414.7	13.06	32.746		
2,000.0	1,930.5	1,944.4	1,911.6	8.8	6.7	124.14	383.3	-93.3	452.3	438.4	13.89	32.565		
2,100.0	2,024.2	2,042.9	2,008.3	9.4	7.0	125.48	399.0	-103.0	477.2	462.5	14.71	32.442		
2,200.0	2,117.8	2,142.8	2,106.5	10.1	7.4	126.76	414.2	-113.1	501.5	486.0	15.51	32.327		
2,300.0	2,211.5	2,233.0	2,195.2	10.8	7.7	127.76	428.2	-122.4	526.1	509.8	16.31	32.250		
2,400.0	2,305.1	2,329.5	2,289.4	11.4	8.1	128.51	445.5	-132.9	551.9	534.8	17.16	32.165		
2,500.0	2,398.8	2,430.0	2,387.8	12.1	8.5	129.25	462.8	-144.2	577.2	559.2	17.99	32.074		
2,600.0	2,492.4	2,514.1	2,470.2	12.8	8.9	129.83	477.6	-153.3	603.0	584.2	18.81	32.063		
2,700.0	2,586.1	2,606.3	2,559.8	13.4	9.3	130.20	496.4	-163.2	630.6	610.9	19.67	32.059		
2,800.0	2,679.7	2,706.3	2,657.2	14.1	9.7	130.63	516.3	-173.8	658.0	637.5	20.54	32.041 SF		
2,900.0	2,773.4	2,804.1	2,752.8	14.8	10.1	131.13	534.4	-183.8	685.0	663.6	21.37	32.060		
3,000.0	2,867.0	2,896.9	2,843.7	15.4	10.5	131.63	551.1	-192.7	712.1	690.0	22.16	32.137		
3,100.0	2,960.7	3,007.2	2,951.8	16.1	10.9	132.25	569.8	-203.5	738.6	715.6	22.98	32.140		
3,200.0	3,054.3	3,101.1	3,044.1	16.8	11.2	132.80	584.6	-212.9	764.3	740.6	23.74	32.199		
3,300.0	3,148.0	3,187.4	3,128.8	17.5	11.6	133.25	598.9	-221.0	791.0	766.6	24.48	32.310		
3,400.0	3,241.6	3,284.2	3,223.8	18.1	11.9	133.73	615.0	-229.9	818.0	792.7	25.25	32.392		
3,500.0	3,335.3	3,361.0	3,298.8	18.8	12.3	133.94	630.3	-236.9	846.7	820.7	26.05	32.509		
3,600.0	3,429.0	3,453.0	3,388.0	19.5	12.7	134.03	651.0	-245.5	876.8	849.8	26.91	32.576		
3,700.0	3,522.6	3,546.6	3,478.9	20.1	13.1	134.14	671.6	-254.2	906.6	878.8	27.79	32.627		
3,800.0	3,616.3	3,648.6	3,578.1	20.8	13.6	134.29	693.6	-263.6	936.3	907.7	28.67	32.655		
3,900.0	3,709.9	3,754.6	3,681.2	21.5	14.0	134.46	715.4	-273.9	965.1	935.5	29.56	32.642		
4,000.0	3,803.6	3,854.4	3,778.6	22.1	14.4	134.65	735.3	-283.9	993.2	962.8	30.42	32.647		
4,100.0	3,897.2	3,950.1	3,871.9	22.8	14.8	134.82	753.9	-293.6	1,021.0	989.8	31.26	32.664		
4,200.0	3,990.9	4,040.9	3,960.6	23.5	15.2	135.00	771.6	-302.3	1,049.3	1,017.3	32.07	32.723		
4,300.0	4,084.5	4,139.1	4,056.5	24.1	15.6	135.21	790.4	-311.4	1,077.7	1,044.9	32.88	32.776		
4,400.0	4,178.2	4,237.9	4,153.3	24.8	16.0	135.48	808.0	-320.1	1,105.8	1,072.2	33.66	32.856		
4,500.0	4,271.8	4,351.0	4,264.3	25.5	16.4	135.83	827.0	-330.1	1,133.4	1,098.9	34.47	32.878		
4,600.0	4,365.5	4,449.3	4,360.7	26.2	16.8	136.05	843.8	-340.3	1,159.8	1,124.5	35.26	32.891		
4,700.0	4,459.1	4,550.0	4,459.5	26.8	17.2	136.32	860.3	-350.6	1,186.1	1,150.0	36.04	32.913		
4,800.0	4,552.8	4,641.0	4,548.9	27.5	17.5	136.57	874.7	-359.4	1,212.5	1,175.7	36.76	32.984		
4,900.0	4,646.4	4,743.5	4,649.7	28.2	17.9	136.88	890.4	-369.1	1,238.9	1,201.4	37.50	33.039		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 16-12C2 (M16W) - DD - FINAL													Offset Site Error:	0.0 ft
Survey Program: 206-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	36.41	103.8	76.5	129.0					
100.0	100.0	100.8	100.8	0.1	0.2	36.48	103.4	76.5	128.6	128.3	0.29	436.576		
200.0	200.0	201.6	201.6	0.3	0.3	36.68	102.4	76.3	127.7	127.1	0.63	203.476		
299.5	299.5	299.5	299.5	0.5	0.5	36.63	101.8	75.7	126.8	125.8	0.97	130.514 CC		
300.0	300.0	300.0	300.0	0.5	0.5	36.63	101.8	75.7	126.8	125.8	0.97	130.305 ES		
400.0	400.0	396.7	396.6	0.7	0.7	35.30	104.9	74.2	128.5	127.2	1.31	97.760		
500.0	500.0	493.5	493.0	0.8	0.9	112.44	112.6	69.6	132.8	131.1	1.69	78.547		
600.0	599.8	592.4	591.1	1.0	1.1	109.32	123.4	62.4	140.4	138.3	2.12	66.278		
700.0	699.3	690.7	687.9	1.2	1.4	106.91	136.4	52.2	150.6	148.0	2.62	57.507		
800.0	798.0	789.0	784.5	1.5	1.8	105.95	150.7	41.0	163.1	159.9	3.20	51.001		
900.0	895.8	888.8	882.6	1.9	2.1	106.62	165.5	29.7	177.3	173.4	3.87	45.821		
1,000.0	992.4	988.9	981.0	2.4	2.4	108.80	179.1	18.2	192.1	187.5	4.63	41.466		
1,100.0	1,087.5	1,088.1	1,078.8	2.9	2.8	111.95	192.1	6.8	208.7	203.3	5.47	38.146		
1,200.0	1,181.3	1,184.8	1,174.0	3.6	3.1	115.71	204.5	-4.7	227.3	221.0	6.33	35.915		
1,300.0	1,274.9	1,281.4	1,269.0	4.2	3.5	118.96	217.5	-16.4	247.2	240.1	7.18	34.435		
1,400.0	1,368.6	1,378.3	1,364.2	4.8	3.8	121.68	230.6	-28.3	267.8	259.8	8.01	33.415		
1,500.0	1,462.2	1,474.1	1,458.4	5.5	4.2	123.99	244.0	-39.9	289.3	280.5	8.83	32.764		
1,600.0	1,555.9	1,571.1	1,553.7	6.1	4.5	125.95	257.8	-51.7	311.4	301.7	9.64	32.284		
1,700.0	1,649.5	1,668.4	1,649.1	6.8	4.9	127.47	272.4	-64.3	333.6	323.1	10.47	31.858		
1,800.0	1,743.2	1,765.0	1,743.6	7.5	5.3	128.70	287.3	-77.1	356.1	344.8	11.30	31.527		
1,900.0	1,836.9	1,862.3	1,839.0	8.1	5.7	129.86	302.1	-89.5	378.9	366.8	12.09	31.327		
2,000.0	1,930.5	1,959.2	1,934.2	8.8	6.0	131.08	315.7	-101.3	401.7	388.8	12.85	31.251		
2,100.0	2,024.2	2,057.9	2,031.3	9.4	6.4	132.29	328.9	-112.8	424.6	411.0	13.60	31.231 SF		
2,200.0	2,117.8	2,152.4	2,124.3	10.1	6.7	133.35	341.5	-123.9	447.6	433.3	14.31	31.269		
2,300.0	2,211.5	2,248.2	2,218.7	10.8	7.0	134.41	353.9	-134.3	471.2	456.2	15.00	31.409		
2,400.0	2,305.1	2,343.7	2,313.0	11.4	7.3	135.45	365.8	-144.1	495.2	479.6	15.67	31.606		
2,500.0	2,398.8	2,440.4	2,408.5	12.1	7.6	136.46	377.5	-153.6	519.5	503.2	16.32	31.841		
2,600.0	2,492.4	2,534.6	2,501.7	12.8	7.9	137.46	388.3	-162.3	544.1	527.2	16.92	32.156		
2,700.0	2,586.1	2,631.2	2,597.2	13.4	8.2	138.41	399.3	-171.0	569.1	551.5	17.53	32.464		
2,800.0	2,679.7	2,726.9	2,691.9	14.1	8.5	139.30	410.1	-179.4	594.2	576.1	18.12	32.796		
2,900.0	2,773.4	2,822.2	2,786.3	14.8	8.8	140.11	420.8	-187.7	619.6	600.9	18.71	33.118		
3,000.0	2,867.0	2,914.3	2,877.5	15.4	9.1	140.84	431.3	-195.3	645.5	626.2	19.29	33.472		
3,100.0	2,960.7	3,010.3	2,972.4	16.1	9.4	141.48	443.1	-203.3	671.8	651.9	19.90	33.767		
3,200.0	3,054.3	3,105.7	3,066.7	16.8	9.7	142.00	455.6	-211.5	698.3	677.8	20.52	34.025		
3,300.0	3,148.0	3,203.2	3,163.0	17.5	10.0	142.49	468.3	-220.0	724.8	703.7	21.15	34.266		
3,400.0	3,241.6	3,299.0	3,257.7	18.1	10.3	142.96	480.4	-228.3	751.3	729.5	21.76	34.520		
3,500.0	3,335.3	3,395.6	3,353.1	18.8	10.6	143.43	492.5	-236.3	777.9	755.5	22.38	34.756		
3,600.0	3,429.0	3,495.0	3,451.0	19.5	11.0	143.69	507.0	-246.0	804.2	781.1	23.08	34.851		
3,700.0	3,522.6	3,600.2	3,554.5	20.1	11.4	143.95	522.1	-256.7	830.1	806.3	23.80	34.883		
3,800.0	3,616.3	3,697.1	3,649.5	20.8	11.7	144.05	537.2	-268.2	855.0	830.5	24.54	34.835		
3,900.0	3,709.9	3,790.7	3,741.3	21.5	12.1	144.13	552.2	-279.0	880.4	855.2	25.28	34.821		
4,000.0	3,803.6	3,890.0	3,838.8	22.1	12.5	144.23	567.8	-290.2	905.9	879.9	26.03	34.806		
4,100.0	3,897.2	4,001.8	3,948.5	22.8	12.9	144.40	584.2	-303.4	930.4	903.6	26.79	34.734		
4,200.0	3,990.9	4,098.3	4,043.3	23.5	13.2	144.56	597.4	-315.4	954.1	926.6	27.48	34.719		
4,300.0	4,084.5	4,188.7	4,132.2	24.1	13.6	144.72	610.0	-326.2	978.2	950.0	28.16	34.741		
4,400.0	4,178.2	4,284.0	4,225.9	24.8	13.9	144.88	623.2	-337.3	1,002.7	973.9	28.84	34.769		
4,500.0	4,271.8	4,377.9	4,318.4	25.5	14.2	145.04	636.1	-347.8	1,027.4	997.9	29.51	34.817		
4,600.0	4,365.5	4,472.7	4,411.8	26.2	14.6	145.22	649.0	-358.2	1,052.4	1,022.3	30.17	34.884		
4,700.0	4,459.1	4,568.6	4,506.3	26.8	14.9	145.45	661.1	-368.1	1,077.5	1,046.7	30.79	34.995		
4,800.0	4,552.8	4,661.2	4,597.8	27.5	15.2	145.69	672.4	-377.3	1,102.9	1,071.5	31.39	35.132		
4,900.0	4,646.4	4,760.0	4,695.3	28.2	15.5	145.92	684.6	-387.0	1,128.4	1,096.4	32.01	35.248		
5,000.0	4,740.1	4,858.0	4,792.2	28.8	15.8	146.17	696.2	-396.8	1,153.6	1,121.0	32.61	35.375		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design													M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 16-12C2 (M16W) - DD - FINAL		Offset Site Error:		0.0 ft
Survey Program: 206-MWD													Offset Well Error:		0.0 ft		
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
5,100.0	4,833.7	4,952.2	4,885.2	29.5	16.1	146.41	707.2	-405.9	1,179.0	1,145.8	33.20	35.517					
5,200.0	4,927.4	5,044.9	4,976.9	30.2	16.4	146.64	718.0	-414.7	1,204.6	1,170.9	33.77	35.672					
5,300.0	5,021.0	5,134.8	5,065.9	30.8	16.7	146.89	728.0	-422.6	1,230.7	1,196.4	34.32	35.862					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 16-5C (M16W) - DD - FINAL													Offset Site Error:	0.0 ft
Survey Program: 237-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	40.33	111.4	94.6	146.2					
100.0	100.0	99.9	99.9	0.1	0.2	40.39	111.4	94.7	146.2	145.9	0.29	496.851		
200.0	200.0	199.8	199.8	0.3	0.3	40.56	111.2	95.1	146.3	145.7	0.63	233.405		
300.0	300.0	298.7	298.7	0.5	0.5	40.80	111.0	95.8	146.6	145.7	0.97	151.427 ES		
400.0	400.0	395.2	395.1	0.7	0.7	39.83	114.0	95.0	148.5	147.2	1.31	113.034		
500.0	500.0	489.4	488.9	0.8	0.8	117.56	122.8	92.2	154.3	152.6	1.67	92.464		
600.0	599.8	583.4	581.7	1.0	1.1	114.29	136.8	86.8	165.4	163.4	2.07	79.781		
700.0	699.3	674.7	670.7	1.2	1.4	111.31	155.8	79.8	182.9	180.3	2.55	71.663		
800.0	798.0	768.2	760.5	1.5	1.9	108.67	179.7	70.4	205.5	202.3	3.16	64.993		
900.0	895.8	864.6	852.4	1.9	2.4	106.71	206.6	58.4	230.8	226.9	3.88	59.482		
1,000.0	992.4	955.0	938.1	2.4	2.9	106.02	232.6	47.4	258.5	253.9	4.68	55.236		
1,100.0	1,087.5	1,046.7	1,024.9	2.9	3.4	106.19	260.7	37.1	289.6	284.0	5.60	51.763		
1,200.0	1,181.3	1,139.8	1,112.9	3.6	4.0	107.57	289.5	27.3	322.6	316.0	6.58	48.998		
1,300.0	1,274.9	1,233.9	1,202.0	4.2	4.5	109.16	318.2	18.1	355.9	348.3	7.60	46.838		
1,400.0	1,368.6	1,325.2	1,288.3	4.8	5.0	110.43	346.4	9.2	389.8	381.1	8.63	45.165		
1,500.0	1,462.2	1,415.9	1,373.7	5.5	5.6	111.28	375.6	-0.5	424.4	414.7	9.67	43.876		
1,600.0	1,555.9	1,512.8	1,464.7	6.1	6.2	112.03	407.1	-10.8	459.2	448.5	10.74	42.759		
1,700.0	1,649.5	1,608.3	1,554.7	6.8	6.8	112.69	437.4	-21.3	493.4	481.6	11.82	41.748		
1,800.0	1,743.2	1,701.4	1,642.1	7.5	7.4	113.14	467.5	-32.4	527.6	514.7	12.90	40.911		
1,900.0	1,836.9	1,795.9	1,730.9	8.1	8.0	113.55	497.9	-43.4	561.8	547.9	13.97	40.223		
2,000.0	1,930.5	1,896.6	1,825.7	8.8	8.6	114.00	529.6	-55.1	595.5	580.5	15.08	39.497		
2,100.0	2,024.2	1,993.0	1,916.7	9.4	9.1	114.38	559.4	-66.8	628.6	612.4	16.16	38.888		
2,200.0	2,117.8	2,089.9	2,008.5	10.1	9.7	114.82	588.2	-78.1	661.0	643.8	17.23	38.355		
2,300.0	2,211.5	2,168.0	2,082.3	10.8	10.2	115.12	612.4	-86.7	694.7	676.5	18.23	38.113		
2,400.0	2,305.1	2,267.0	2,175.6	11.4	10.8	115.45	643.8	-97.3	729.2	709.9	19.31	37.758		
2,500.0	2,398.8	2,367.0	2,270.2	12.1	11.4	115.82	674.3	-108.1	762.8	742.4	20.40	37.394		
2,600.0	2,492.4	2,453.3	2,351.6	12.8	11.9	116.04	701.3	-117.8	796.7	775.3	21.44	37.165		
2,700.0	2,586.1	2,550.1	2,443.0	13.4	12.5	116.30	731.5	-128.4	830.7	808.2	22.51	36.900		
2,800.0	2,679.7	2,632.8	2,520.6	14.1	13.0	116.42	758.3	-137.9	865.4	841.8	23.55	36.746		
2,900.0	2,773.4	2,736.0	2,617.4	14.8	13.7	116.56	792.0	-149.9	900.1	875.4	24.67	36.482		
3,000.0	2,867.0	2,838.1	2,713.6	15.4	14.3	116.73	824.0	-161.8	933.9	908.1	25.79	36.217		
3,100.0	2,960.7	2,936.3	2,806.4	16.1	14.9	116.93	853.9	-173.0	967.0	940.2	26.86	35.998		
3,200.0	3,054.3	3,029.3	2,894.7	16.8	15.4	117.16	881.6	-183.2	1,000.1	972.2	27.92	35.821		
3,300.0	3,148.0	3,127.3	2,987.2	17.5	16.0	117.31	911.7	-194.8	1,033.3	1,004.3	29.01	35.619		
3,400.0	3,241.6	3,221.1	3,076.0	18.1	16.6	117.46	939.8	-206.0	1,065.9	1,035.8	30.09	35.425		
3,500.0	3,335.3	3,314.8	3,164.1	18.8	17.1	117.52	969.4	-218.0	1,099.1	1,067.9	31.18	35.252		
3,600.0	3,429.0	3,417.4	3,260.8	19.5	17.8	117.61	1,000.7	-231.2	1,131.6	1,099.3	32.30	35.037		
3,700.0	3,522.6	3,500.5	3,339.4	20.1	18.3	117.70	1,025.9	-241.5	1,164.1	1,130.8	33.33	34.928		
3,800.0	3,616.3	3,589.0	3,422.5	20.8	18.8	117.73	1,054.4	-252.8	1,197.9	1,163.5	34.39	34.828		
3,900.0	3,709.9	3,695.8	3,523.0	21.5	19.5	117.81	1,087.7	-266.0	1,231.1	1,195.6	35.54	34.644 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-16C (M16W Pad) - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-110.15	-17.5	-47.7	50.8					
100.0	100.0	100.0	100.0	0.1	0.1	-110.15	-17.5	-47.7	50.8	50.6	0.27	186.727		
200.0	200.0	200.0	200.0	0.3	0.3	-110.15	-17.5	-47.7	50.8	50.2	0.62	81.824 CC, ES		
300.0	300.0	298.1	298.0	0.5	0.5	-109.82	-17.7	-49.1	52.2	51.3	0.97	53.897		
400.0	400.0	395.1	394.9	0.7	0.7	-108.54	-18.5	-55.2	58.5	57.1	1.34	43.681		
500.0	500.0	491.4	490.5	0.8	0.9	-26.47	-20.0	-66.1	69.1	67.5	1.66	41.725		
600.0	599.8	587.0	584.8	1.0	1.3	-26.10	-22.1	-81.6	80.7	78.7	2.00	40.248		
700.0	699.3	682.1	677.7	1.2	1.6	-26.69	-24.8	-101.7	92.4	90.1	2.36	39.126		
800.0	798.0	776.5	768.9	1.5	2.1	-27.90	-28.1	-126.1	104.4	101.7	2.75	38.024		
900.0	895.8	871.1	858.9	1.9	2.7	-29.53	-32.0	-155.0	116.7	113.5	3.18	36.699		
1,000.0	992.4	970.5	952.8	2.4	3.3	-31.94	-36.4	-187.0	126.4	122.7	3.71	34.037		
1,100.0	1,087.5	1,070.0	1,046.9	2.9	3.9	-35.30	-40.7	-219.1	132.0	127.6	4.40	29.989		
1,200.0	1,181.3	1,169.5	1,141.0	3.6	4.5	-39.51	-45.1	-251.2	134.9	129.6	5.29	25.496		
1,300.0	1,274.9	1,268.9	1,235.0	4.2	5.1	-43.63	-49.4	-283.3	138.3	132.0	6.33	21.860		
1,400.0	1,368.6	1,368.4	1,329.1	4.8	5.7	-47.54	-53.8	-315.3	142.4	134.9	7.48	19.042		
1,500.0	1,462.2	1,467.8	1,423.1	5.5	6.3	-51.21	-58.1	-347.4	147.1	138.4	8.72	16.871		
1,600.0	1,555.9	1,567.3	1,517.1	6.1	6.9	-54.65	-62.5	-379.5	152.4	142.3	10.03	15.194		
1,700.0	1,649.5	1,666.7	1,611.2	6.8	7.5	-57.85	-66.8	-411.6	158.2	146.8	11.39	13.890		
1,800.0	1,743.2	1,766.2	1,705.2	7.5	8.1	-60.81	-71.2	-443.6	164.4	151.6	12.78	12.866		
1,900.0	1,836.9	1,865.6	1,799.3	8.1	8.8	-63.56	-75.5	-475.7	171.0	156.9	14.19	12.054		
2,000.0	1,930.5	1,965.1	1,893.3	8.8	9.4	-66.09	-79.8	-507.8	178.1	162.4	15.62	11.403		
2,100.0	2,024.2	2,064.6	1,987.3	9.4	10.0	-68.43	-84.2	-539.9	185.4	168.4	17.05	10.877		
2,200.0	2,117.8	2,164.0	2,081.4	10.1	10.6	-70.59	-88.5	-572.0	193.0	174.5	18.48	10.447		
2,300.0	2,211.5	2,263.5	2,175.4	10.8	11.2	-72.58	-92.9	-604.0	200.9	181.0	19.90	10.093		
2,400.0	2,305.1	2,362.9	2,269.4	11.4	11.8	-74.42	-97.2	-636.1	209.0	187.7	21.33	9.800		
2,500.0	2,398.8	2,462.4	2,363.5	12.1	12.5	-76.12	-101.6	-668.2	217.3	194.5	22.74	9.555		
2,600.0	2,492.4	2,561.8	2,457.5	12.8	13.1	-77.70	-105.9	-700.3	225.8	201.6	24.15	9.348		
2,700.0	2,586.1	2,661.3	2,551.6	13.4	13.7	-79.16	-110.3	-732.3	234.4	208.8	25.55	9.174		
2,800.0	2,679.7	2,760.7	2,645.6	14.1	14.3	-80.51	-114.6	-764.4	243.2	216.2	26.94	9.026		
2,900.0	2,773.4	2,860.2	2,739.6	14.8	14.9	-81.78	-119.0	-796.5	252.1	223.7	28.33	8.899		
3,000.0	2,867.0	2,959.6	2,833.7	15.4	15.5	-82.95	-123.3	-828.6	261.1	231.4	29.70	8.790		
3,100.0	2,960.7	3,059.1	2,927.7	16.1	16.2	-84.05	-127.7	-860.6	270.2	239.1	31.07	8.697		
3,200.0	3,054.3	3,158.6	3,021.8	16.8	16.8	-85.08	-132.0	-892.7	279.4	247.0	32.43	8.616		
3,300.0	3,148.0	3,258.0	3,115.8	17.5	17.4	-86.04	-136.4	-924.8	288.7	254.9	33.78	8.546		
3,400.0	3,241.6	3,357.5	3,209.8	18.1	18.0	-86.94	-140.7	-956.9	298.1	262.9	35.13	8.485		
3,500.0	3,335.3	3,456.9	3,303.9	18.8	18.6	-87.78	-145.0	-989.0	307.5	271.0	36.47	8.431		
3,600.0	3,429.0	3,556.4	3,397.9	19.5	19.2	-88.57	-149.4	-1,021.0	317.0	279.2	37.81	8.385		
3,700.0	3,522.6	3,655.8	3,492.0	20.1	19.9	-89.32	-153.7	-1,053.1	326.5	287.4	39.14	8.344		
3,800.0	3,616.3	3,755.3	3,586.0	20.8	20.5	-90.03	-158.1	-1,085.2	336.1	295.7	40.46	8.308		
3,900.0	3,709.9	3,854.7	3,680.0	21.5	21.1	-90.70	-162.4	-1,117.3	345.8	304.0	41.78	8.277		
4,000.0	3,803.6	3,954.2	3,774.1	22.1	21.7	-91.33	-166.8	-1,149.3	355.5	312.4	43.09	8.249		
4,100.0	3,897.2	4,053.6	3,868.1	22.8	22.3	-91.92	-171.1	-1,181.4	365.2	320.8	44.41	8.225		
4,200.0	3,990.9	4,153.1	3,962.2	23.5	23.0	-92.49	-175.5	-1,213.5	375.0	329.3	45.71	8.204		
4,300.0	4,084.5	4,252.6	4,056.2	24.1	23.6	-93.03	-179.8	-1,245.6	384.8	337.8	47.02	8.185		
4,400.0	4,178.2	4,352.0	4,150.2	24.8	24.2	-93.54	-184.2	-1,277.6	394.7	346.3	48.32	8.168		
4,500.0	4,271.8	4,451.5	4,244.3	25.5	24.8	-94.02	-188.5	-1,309.7	404.5	354.9	49.61	8.154		
4,600.0	4,365.5	4,550.9	4,338.3	26.2	25.4	-94.48	-192.9	-1,341.8	414.4	363.5	50.91	8.141		
4,700.0	4,459.1	4,650.4	4,432.4	26.8	26.0	-94.92	-197.2	-1,373.9	424.4	372.2	52.20	8.129		
4,800.0	4,552.8	4,749.8	4,526.4	27.5	26.7	-95.35	-201.5	-1,406.0	434.3	380.8	53.49	8.120		
4,900.0	4,646.4	4,849.3	4,620.4	28.2	27.3	-95.75	-205.9	-1,438.0	444.3	389.5	54.77	8.111		
5,000.0	4,740.1	4,948.7	4,714.5	28.8	27.9	-96.13	-210.2	-1,470.1	454.3	398.2	56.06	8.103		
5,100.0	4,833.7	5,048.2	4,808.5	29.5	28.5	-96.50	-214.6	-1,502.2	464.3	406.9	57.34	8.097		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-16C (M16W Pad) - DD - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
5,200.0	4,927.4	5,147.6	4,902.5	30.2	29.1	-96.85	-218.9	-1,534.3	474.3	415.7	58.62	8.091		
5,300.0	5,021.0	5,247.1	4,996.6	30.8	29.8	-97.19	-223.3	-1,566.3	484.3	424.5	59.90	8.086		
5,400.0	5,114.7	5,346.6	5,090.6	31.5	30.4	-97.51	-227.6	-1,598.4	494.4	433.2	61.17	8.082		
5,500.0	5,208.4	5,446.0	5,184.7	32.2	31.0	-97.82	-232.0	-1,630.5	504.5	442.0	62.45	8.078		
5,600.0	5,302.0	5,545.5	5,278.7	32.9	31.6	-98.12	-236.3	-1,662.6	514.6	450.9	63.72	8.075		
5,700.0	5,395.7	5,644.9	5,372.7	33.5	32.2	-98.41	-240.7	-1,694.6	524.7	459.7	64.99	8.073		
5,800.0	5,489.3	5,744.4	5,466.8	34.2	32.8	-98.69	-245.0	-1,726.7	534.8	468.5	66.26	8.071		
5,900.0	5,583.0	5,843.8	5,560.8	34.9	33.5	-98.95	-249.4	-1,758.8	544.9	477.4	67.53	8.069		
6,000.0	5,676.6	5,943.3	5,654.9	35.5	34.1	-99.21	-253.7	-1,790.9	555.1	486.3	68.80	8.068		
6,100.0	5,770.3	6,042.7	5,748.9	36.2	34.7	-99.45	-258.1	-1,823.0	565.2	495.1	70.06	8.067		
6,200.0	5,863.9	6,142.2	5,842.9	36.9	35.3	-99.69	-262.4	-1,855.0	575.4	504.0	71.33	8.066		
6,300.0	5,957.6	6,241.6	5,937.0	37.5	35.9	-99.92	-266.7	-1,887.1	585.5	513.0	72.59	8.066		
6,400.0	6,051.2	6,341.1	6,031.0	38.2	36.6	-100.15	-271.1	-1,919.2	595.7	521.9	73.86	8.066		
6,500.0	6,144.9	6,440.5	6,125.1	38.9	37.2	-100.36	-275.4	-1,951.3	605.9	530.8	75.12	8.066		
6,600.0	6,238.5	6,540.0	6,219.1	39.6	37.8	-100.57	-279.8	-1,983.3	616.1	539.7	76.38	8.067		
6,700.0	6,332.2	6,639.5	6,313.1	40.2	38.4	-100.77	-284.1	-2,015.4	626.3	548.7	77.64	8.067		
6,800.0	6,425.8	6,738.9	6,407.2	40.9	39.0	-100.96	-288.5	-2,047.5	636.5	557.6	78.90	8.068		
6,900.0	6,519.5	6,838.4	6,501.2	41.6	39.6	-101.15	-292.8	-2,079.6	646.7	566.6	80.15	8.069		
7,000.0	6,613.1	6,937.8	6,595.3	42.2	40.3	-101.34	-297.2	-2,111.6	657.0	575.5	81.41	8.070		
7,100.0	6,706.8	7,037.3	6,689.3	42.9	40.9	-101.51	-301.5	-2,143.7	667.2	584.5	82.67	8.071		
7,200.0	6,800.5	7,136.7	6,783.3	43.6	41.5	-101.68	-305.9	-2,175.8	677.4	593.5	83.92	8.072		
7,300.0	6,894.1	7,236.2	6,877.4	44.2	42.1	-101.85	-310.2	-2,207.9	687.7	602.5	85.18	8.073		
7,400.0	6,988.3	7,335.7	6,971.5	44.9	42.7	-102.07	-314.6	-2,240.0	697.6	611.2	86.40	8.074		
7,500.0	7,083.5	7,436.9	7,067.6	45.4	43.3	-102.12	-318.8	-2,271.3	706.7	619.2	87.54	8.074		
7,600.0	7,179.8	7,538.5	7,165.1	45.9	43.8	-102.16	-322.6	-2,299.4	714.9	626.3	88.54	8.074		
7,700.0	7,277.0	7,640.3	7,263.8	46.3	44.3	-102.19	-326.0	-2,324.1	722.0	632.6	89.42	8.074		
7,800.0	7,374.9	7,742.1	7,363.4	46.7	44.7	-102.22	-328.8	-2,345.4	728.1	637.9	90.18	8.074		
7,900.0	7,473.5	7,844.2	7,463.8	47.0	45.0	-102.23	-331.2	-2,363.1	733.2	642.3	90.81	8.074		
8,000.0	7,572.5	7,946.3	7,564.9	47.2	45.2	-102.24	-333.2	-2,377.3	737.2	645.9	91.32	8.073		
8,100.0	7,672.1	8,048.5	7,666.5	47.4	45.4	-102.23	-334.6	-2,387.9	740.2	648.5	91.71	8.071		
8,200.0	7,771.8	8,150.7	7,768.5	47.5	45.6	-102.22	-335.6	-2,394.9	742.2	650.2	91.98	8.068		
8,300.0	7,871.8	8,253.0	7,870.8	47.6	45.7	-102.20	-336.0	-2,398.3	743.1	650.9	92.14	8.064		
8,400.0	7,971.8	8,354.0	7,971.8	47.7	45.7	177.28	-336.1	-2,398.7	743.1	650.9	92.26	8.055		
8,500.0	8,071.8	8,454.0	8,071.8	47.7	45.8	177.28	-336.1	-2,398.7	743.1	650.8	92.37	8.046		
8,600.0	8,171.8	8,554.0	8,171.8	47.8	45.8	177.28	-336.1	-2,398.7	743.1	650.7	92.48	8.036		
8,700.0	8,271.8	8,654.0	8,271.8	47.8	45.9	177.28	-336.1	-2,398.7	743.1	650.6	92.59	8.026		
8,800.0	8,371.8	8,754.0	8,371.8	47.9	46.0	177.28	-336.1	-2,398.7	743.1	650.4	92.71	8.016		
8,900.0	8,471.8	8,854.0	8,471.8	47.9	46.0	177.28	-336.1	-2,398.7	743.1	650.3	92.82	8.006		
9,000.0	8,571.8	8,954.0	8,571.8	48.0	46.1	177.28	-336.1	-2,398.7	743.1	650.2	92.94	7.996		
9,100.0	8,671.8	9,054.0	8,671.8	48.1	46.1	177.28	-336.1	-2,398.7	743.1	650.1	93.06	7.986		
9,200.0	8,771.8	9,154.0	8,771.8	48.1	46.2	177.28	-336.1	-2,398.7	743.1	650.0	93.18	7.976		
9,300.0	8,871.8	9,254.0	8,871.8	48.2	46.2	177.28	-336.1	-2,398.7	743.1	649.9	93.30	7.966		
9,400.0	8,971.8	9,354.0	8,971.8	48.2	46.3	177.28	-336.1	-2,398.7	743.1	649.7	93.42	7.955		
9,500.0	9,071.8	9,454.0	9,071.8	48.3	46.4	177.28	-336.1	-2,398.7	743.1	649.6	93.54	7.945		
9,600.0	9,171.8	9,554.0	9,171.8	48.3	46.4	177.28	-336.1	-2,398.7	743.1	649.5	93.66	7.934		
9,700.0	9,271.8	9,654.0	9,271.8	48.4	46.5	177.28	-336.1	-2,398.7	743.1	649.4	93.79	7.924		
9,800.0	9,371.8	9,754.0	9,371.8	48.5	46.6	177.28	-336.1	-2,398.7	743.1	649.2	93.91	7.913		
9,900.0	9,471.8	9,854.0	9,471.8	48.5	46.6	177.28	-336.1	-2,398.7	743.1	649.1	94.04	7.902		
10,000.0	9,571.8	9,954.0	9,571.8	48.6	46.7	177.28	-336.1	-2,398.7	743.1	649.0	94.17	7.892		
10,100.0	9,671.8	10,054.0	9,671.8	48.7	46.8	177.28	-336.1	-2,398.7	743.1	648.8	94.30	7.881		
10,200.0	9,771.8	10,154.0	9,771.8	48.7	46.8	177.28	-336.1	-2,398.7	743.1	648.7	94.43	7.870		
10,300.0	9,871.8	10,254.0	9,871.8	48.8	46.9	177.28	-336.1	-2,398.7	743.1	648.6	94.56	7.859		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design													M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-16C (M16W Pad) - DD - Plan #2		Offset Site Error:		0.0 ft	
Survey Program: 0-MWD															Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance											
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)								
10,400.0	9,971.8	10,354.0	9,971.8	48.8	47.0	177.28	-336.1	-2,398.7	743.1	648.5	94.69	7.848						
10,500.0	10,071.8	10,454.0	10,071.8	48.9	47.0	177.28	-336.1	-2,398.7	743.1	648.3	94.83	7.837						
10,509.2	10,081.0	10,463.2	10,081.0	48.9	47.0	177.28	-336.1	-2,398.7	743.1	648.3	94.84	7.836 SF						

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-16CC (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	-110.24	-5.8	-15.8	16.9					
100.0	100.0	100.0	100.0	0.1	0.1	-110.24	-5.8	-15.8	16.9	16.6	0.27	61.912		
200.0	200.0	200.0	200.0	0.3	0.3	-110.24	-5.8	-15.8	16.9	16.2	0.62	27.130		
300.0	300.0	300.0	300.0	0.5	0.5	-110.24	-5.8	-15.8	16.9	15.9	0.97	17.371	CC, ES	
400.0	400.0	399.1	399.0	0.7	0.7	-107.66	-5.9	-18.4	19.3	18.0	1.32	14.603		
500.0	500.0	497.7	497.4	0.8	0.9	-22.76	-5.9	-26.0	26.2	24.6	1.67	15.738		
600.0	599.8	595.9	594.7	1.0	1.1	-21.27	-6.0	-38.7	34.0	32.0	2.02	16.867		
700.0	699.3	693.7	690.9	1.2	1.5	-21.50	-6.1	-56.2	41.9	39.6	2.37	17.672		
800.0	798.0	791.0	785.7	1.5	1.9	-22.62	-6.3	-78.6	50.0	47.3	2.75	18.186		
900.0	895.8	888.0	878.8	1.9	2.4	-24.24	-6.5	-105.6	58.2	55.1	3.17	18.387		
1,000.0	992.4	986.0	971.5	2.4	3.0	-26.29	-6.8	-137.2	66.2	62.6	3.66	18.112		
1,100.0	1,087.5	1,085.8	1,065.7	2.9	3.6	-29.72	-7.0	-170.2	70.5	66.2	4.30	16.408		
1,200.0	1,181.3	1,185.6	1,159.9	3.6	4.2	-34.57	-7.3	-203.3	71.6	66.5	5.17	13.848		
1,300.0	1,274.9	1,285.4	1,254.0	4.2	4.8	-39.40	-7.5	-236.3	73.0	66.8	6.23	11.721		
1,400.0	1,368.6	1,385.2	1,348.2	4.8	5.4	-44.02	-7.8	-269.3	74.9	67.4	7.43	10.081		
1,500.0	1,462.2	1,485.0	1,442.4	5.5	6.1	-48.39	-8.0	-302.3	77.2	68.5	8.74	8.836		
1,600.0	1,555.9	1,584.8	1,536.6	6.1	6.7	-52.48	-8.3	-335.3	80.0	69.8	10.13	7.894		
1,700.0	1,649.5	1,684.6	1,630.8	6.8	7.3	-56.28	-8.6	-368.3	83.1	71.5	11.57	7.180		
1,800.0	1,743.2	1,784.4	1,725.0	7.5	7.9	-59.79	-8.8	-401.3	86.6	73.5	13.05	6.634		
1,900.0	1,836.9	1,884.2	1,819.2	8.1	8.6	-63.02	-9.1	-434.3	90.3	75.8	14.54	6.212		
2,000.0	1,930.5	1,984.0	1,913.4	8.8	9.2	-65.98	-9.3	-467.3	94.4	78.3	16.04	5.884		
2,100.0	2,024.2	2,083.8	2,007.6	9.4	9.8	-68.69	-9.6	-500.3	98.6	81.1	17.53	5.626		
2,200.0	2,117.8	2,183.6	2,101.8	10.1	10.4	-71.18	-9.8	-533.3	103.1	84.1	19.02	5.422		
2,300.0	2,211.5	2,283.4	2,195.9	10.8	11.1	-73.45	-10.1	-566.3	107.8	87.3	20.49	5.259		
2,400.0	2,305.1	2,383.2	2,290.1	11.4	11.7	-75.54	-10.3	-599.3	112.6	90.6	21.95	5.128		
2,500.0	2,398.8	2,483.0	2,384.3	12.1	12.3	-77.45	-10.6	-632.3	117.5	94.1	23.40	5.022		
2,600.0	2,492.4	2,582.8	2,478.5	12.8	13.0	-79.20	-10.9	-665.3	122.6	97.7	24.83	4.936		
2,700.0	2,586.1	2,682.6	2,572.7	13.4	13.6	-80.82	-11.1	-698.3	127.7	101.5	26.25	4.867		
2,800.0	2,679.7	2,782.5	2,666.9	14.1	14.2	-82.30	-11.4	-731.3	133.0	105.3	27.65	4.810		
2,900.0	2,773.4	2,882.3	2,761.1	14.8	14.9	-83.68	-11.6	-764.3	138.3	109.3	29.04	4.763		
3,000.0	2,867.0	2,982.1	2,855.3	15.4	15.5	-84.95	-11.9	-797.3	143.8	113.3	30.42	4.725		
3,100.0	2,960.7	3,081.9	2,949.5	16.1	16.1	-86.13	-12.1	-830.3	149.2	117.4	31.79	4.694		
3,200.0	3,054.3	3,181.7	3,043.6	16.8	16.7	-87.22	-12.4	-863.3	154.8	121.6	33.15	4.669		
3,300.0	3,148.0	3,281.5	3,137.8	17.5	17.4	-88.24	-12.6	-896.3	160.4	125.9	34.50	4.648		
3,400.0	3,241.6	3,381.3	3,232.0	18.1	18.0	-89.19	-12.9	-929.3	166.0	130.2	35.84	4.631		
3,500.0	3,335.3	3,481.1	3,326.2	18.8	18.6	-90.08	-13.2	-962.3	171.7	134.5	37.18	4.618		
3,600.0	3,429.0	3,580.9	3,420.4	19.5	19.3	-90.91	-13.4	-995.3	177.4	138.9	38.50	4.608		
3,700.0	3,522.6	3,680.7	3,514.6	20.1	19.9	-91.69	-13.7	-1,028.3	183.2	143.3	39.82	4.599		
3,800.0	3,616.3	3,780.5	3,608.8	20.8	20.5	-92.42	-13.9	-1,061.3	189.0	147.8	41.14	4.593		
3,900.0	3,709.9	3,880.3	3,703.0	21.5	21.2	-93.11	-14.2	-1,094.3	194.8	152.3	42.45	4.589		
4,000.0	3,803.6	3,980.1	3,797.2	22.1	21.8	-93.75	-14.4	-1,127.3	200.6	156.9	43.75	4.585		
4,100.0	3,897.2	4,079.9	3,891.3	22.8	22.4	-94.37	-14.7	-1,160.3	206.5	161.4	45.05	4.583		
4,200.0	3,990.9	4,179.7	3,985.5	23.5	23.0	-94.94	-14.9	-1,193.3	212.4	166.0	46.34	4.582		
4,300.0	4,084.5	4,279.5	4,079.7	24.1	23.7	-95.49	-15.2	-1,226.3	218.3	170.6	47.64	4.582		
4,400.0	4,178.2	4,379.3	4,173.9	24.8	24.3	-96.00	-15.5	-1,259.3	224.2	175.3	48.92	4.583		
4,500.0	4,271.8	4,479.1	4,268.1	25.5	24.9	-96.50	-15.7	-1,292.4	230.2	179.9	50.21	4.584		
4,600.0	4,365.5	4,578.9	4,362.3	26.2	25.6	-96.96	-16.0	-1,325.4	236.1	184.6	51.49	4.586		
4,700.0	4,459.1	4,678.7	4,456.5	26.8	26.2	-97.40	-16.2	-1,358.4	242.1	189.3	52.76	4.588		
4,800.0	4,552.8	4,778.5	4,550.7	27.5	26.8	-97.82	-16.5	-1,391.4	248.1	194.0	54.04	4.591		
4,900.0	4,646.4	4,878.3	4,644.9	28.2	27.5	-98.23	-16.7	-1,424.4	254.1	198.8	55.31	4.594		
5,000.0	4,740.1	4,978.1	4,739.1	28.8	28.1	-98.61	-17.0	-1,457.4	260.1	203.5	56.58	4.597		
5,100.0	4,833.7	5,078.0	4,833.2	29.5	28.7	-98.97	-17.2	-1,490.4	266.1	208.3	57.85	4.600		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-16CC (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	4,927.4	5,177.8	4,927.4	30.2	29.4	-99.32	-17.5	-1,523.4	272.2	213.0	59.12	4.604		
5,300.0	5,021.0	5,277.6	5,021.6	30.8	30.0	-99.66	-17.8	-1,556.4	278.2	217.8	60.38	4.607		
5,400.0	5,114.7	5,377.4	5,115.8	31.5	30.6	-99.98	-18.0	-1,589.4	284.3	222.6	61.64	4.611		
5,500.0	5,208.4	5,477.2	5,210.0	32.2	31.2	-100.28	-18.3	-1,622.4	290.3	227.4	62.90	4.615		
5,600.0	5,302.0	5,577.0	5,304.2	32.9	31.9	-100.58	-18.5	-1,655.4	296.4	232.2	64.16	4.619		
5,700.0	5,395.7	5,676.8	5,398.4	33.5	32.5	-100.86	-18.8	-1,688.4	302.5	237.0	65.42	4.623		
5,800.0	5,489.3	5,776.6	5,492.6	34.2	33.1	-101.13	-19.0	-1,721.4	308.5	241.9	66.68	4.628		
5,900.0	5,583.0	5,876.4	5,586.8	34.9	33.8	-101.39	-19.3	-1,754.4	314.6	246.7	67.93	4.632		
6,000.0	5,676.6	5,976.2	5,680.9	35.5	34.4	-101.64	-19.5	-1,787.4	320.7	251.6	69.18	4.636		
6,100.0	5,770.3	6,076.0	5,775.1	36.2	35.0	-101.89	-19.8	-1,820.4	326.8	256.4	70.44	4.640		
6,200.0	5,863.9	6,175.8	5,869.3	36.9	35.7	-102.12	-20.1	-1,853.4	332.9	261.3	71.69	4.644		
6,300.0	5,957.6	6,275.6	5,963.5	37.5	36.3	-102.34	-20.3	-1,886.4	339.1	266.1	72.94	4.649		
6,400.0	6,051.2	6,375.4	6,057.7	38.2	36.9	-102.56	-20.6	-1,919.4	345.2	271.0	74.19	4.653		
6,500.0	6,144.9	6,475.2	6,151.9	38.9	37.6	-102.77	-20.8	-1,952.4	351.3	275.9	75.44	4.657		
6,600.0	6,238.5	6,575.0	6,246.1	39.6	38.2	-102.97	-21.1	-1,985.4	357.4	280.7	76.69	4.661		
6,700.0	6,332.2	6,674.8	6,340.3	40.2	38.8	-103.16	-21.3	-2,018.4	363.6	285.6	77.93	4.665		
6,800.0	6,425.8	6,774.6	6,434.5	40.9	39.5	-103.35	-21.6	-2,051.4	369.7	290.5	79.18	4.669		
6,900.0	6,519.5	6,874.4	6,528.6	41.6	40.1	-103.53	-21.8	-2,084.4	375.8	295.4	80.42	4.673		
7,000.0	6,613.1	6,974.2	6,622.8	42.2	40.7	-103.71	-22.1	-2,117.4	382.0	300.3	81.67	4.677		
7,100.0	6,706.8	7,074.0	6,717.0	42.9	41.3	-103.88	-22.4	-2,150.4	388.1	305.2	82.91	4.681		
7,200.0	6,800.5	7,173.8	6,811.2	43.6	42.0	-104.05	-22.6	-2,183.4	394.3	310.1	84.16	4.685		
7,300.0	6,894.1	7,273.6	6,905.4	44.2	42.6	-104.21	-22.9	-2,216.4	400.4	315.0	85.40	4.689		
7,400.0	6,988.3	7,373.0	6,999.3	44.9	43.2	-104.30	-23.1	-2,249.1	406.3	319.7	86.61	4.691		
7,500.0	7,083.5	7,471.7	7,093.3	45.4	43.8	-104.30	-23.4	-2,278.9	411.4	323.8	87.69	4.692		
7,600.0	7,179.8	7,570.4	7,188.4	45.9	44.2	-104.30	-23.6	-2,305.5	416.1	327.4	88.66	4.693		
7,700.0	7,277.0	7,669.2	7,284.4	46.3	44.7	-104.29	-23.7	-2,328.8	420.1	330.6	89.50	4.694		
7,800.0	7,374.9	7,767.9	7,381.1	46.7	45.0	-104.29	-23.9	-2,348.7	423.6	333.3	90.23	4.694		
7,900.0	7,473.5	7,866.8	7,478.5	47.0	45.3	-104.28	-24.0	-2,365.4	426.4	335.6	90.84	4.695		
8,000.0	7,572.5	7,965.6	7,576.4	47.2	45.6	-104.27	-24.1	-2,378.6	428.7	337.4	91.33	4.694		
8,100.0	7,672.1	8,064.4	7,674.8	47.4	45.7	-104.25	-24.2	-2,388.5	430.4	338.7	91.70	4.693		
8,200.0	7,771.8	8,163.3	7,773.4	47.5	45.9	-104.23	-24.3	-2,395.0	431.5	339.5	91.96	4.692		
8,300.0	7,871.8	8,262.2	7,872.2	47.6	45.9	-104.21	-24.3	-2,398.1	432.0	339.8	92.12	4.689		
8,400.0	7,971.8	8,361.7	7,971.8	47.7	46.0	175.28	-24.3	-2,398.4	432.0	339.8	92.23	4.684		
8,500.0	8,071.8	8,461.7	8,071.8	47.7	46.1	175.28	-24.3	-2,398.4	432.0	339.7	92.34	4.678		
8,600.0	8,171.8	8,561.7	8,171.8	47.8	46.1	175.28	-24.3	-2,398.4	432.0	339.5	92.45	4.673		
8,700.0	8,271.8	8,661.7	8,271.8	47.8	46.2	175.28	-24.3	-2,398.4	432.0	339.4	92.56	4.667		
8,800.0	8,371.8	8,761.7	8,371.8	47.9	46.2	175.28	-24.3	-2,398.4	432.0	339.3	92.68	4.661		
8,900.0	8,471.8	8,861.7	8,471.8	47.9	46.3	175.28	-24.3	-2,398.4	432.0	339.2	92.79	4.655		
9,000.0	8,571.8	8,961.7	8,571.8	48.0	46.3	175.28	-24.3	-2,398.4	432.0	339.1	92.91	4.650		
9,100.0	8,671.8	9,061.7	8,671.8	48.1	46.4	175.28	-24.3	-2,398.4	432.0	339.0	93.03	4.644		
9,200.0	8,771.8	9,161.7	8,771.8	48.1	46.5	175.28	-24.3	-2,398.4	432.0	338.8	93.15	4.638		
9,300.0	8,871.8	9,261.7	8,871.8	48.2	46.5	175.28	-24.3	-2,398.4	432.0	338.7	93.27	4.632		
9,400.0	8,971.8	9,361.7	8,971.8	48.2	46.6	175.28	-24.3	-2,398.4	432.0	338.6	93.39	4.626		
9,500.0	9,071.8	9,461.7	9,071.8	48.3	46.6	175.28	-24.3	-2,398.4	432.0	338.5	93.51	4.620		
9,600.0	9,171.8	9,561.7	9,171.8	48.3	46.7	175.28	-24.3	-2,398.4	432.0	338.4	93.64	4.613		
9,700.0	9,271.8	9,661.7	9,271.8	48.4	46.8	175.28	-24.3	-2,398.4	432.0	338.2	93.76	4.607		
9,800.0	9,371.8	9,761.7	9,371.8	48.5	46.8	175.28	-24.3	-2,398.4	432.0	338.1	93.89	4.601		
9,900.0	9,471.8	9,861.7	9,471.8	48.5	46.9	175.28	-24.3	-2,398.4	432.0	338.0	94.02	4.595		
10,000.0	9,571.8	9,961.7	9,571.8	48.6	47.0	175.28	-24.3	-2,398.4	432.0	337.8	94.14	4.589		
10,100.0	9,671.8	10,061.7	9,671.8	48.7	47.0	175.28	-24.3	-2,398.4	432.0	337.7	94.27	4.582		
10,200.0	9,771.8	10,161.7	9,771.8	48.7	47.1	175.28	-24.3	-2,398.4	432.0	337.6	94.40	4.576		
10,300.0	9,871.8	10,261.7	9,871.8	48.8	47.2	175.28	-24.3	-2,398.4	432.0	337.5	94.54	4.570		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-16CC (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	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)			
10,400.0	9,971.8	10,361.7	9,971.8	48.8	47.2	175.28	-24.3	-2,398.4	432.0	337.3	94.67	4.563	
10,500.0	10,071.8	10,461.7	10,071.8	48.9	47.3	175.28	-24.3	-2,398.4	432.0	337.2	94.80	4.557	
10,509.2	10,081.0	10,470.9	10,081.0	48.9	47.3	175.28	-24.3	-2,398.4	432.0	337.2	94.81	4.556 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9B (M16W) - DD - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 206-MWD, 1163-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	32.03	98.0	61.3	115.5					
100.0	100.0	100.2	100.2	0.1	0.2	32.24	97.7	61.6	115.5	115.2	0.29	394.406		
200.0	200.0	200.4	200.4	0.3	0.3	32.86	96.7	62.5	115.2	114.6	0.62	184.642		
248.7	248.7	248.7	248.7	0.4	0.4	33.26	96.2	63.1	115.1	114.3	0.79	145.295		
300.0	300.0	299.6	299.6	0.5	0.5	33.42	96.1	63.4	115.2	114.2	0.97	118.724		
400.0	400.0	400.7	400.6	0.7	0.7	32.39	97.5	61.9	115.5	114.1	1.32	87.415		
500.0	500.0	501.7	501.4	0.8	0.8	109.46	100.8	55.0	115.0	113.4	1.68	68.394		
588.2	588.1	591.5	590.3	1.0	1.1	105.56	104.8	43.5	114.7	112.6	2.05	55.814 CC		
600.0	599.8	603.0	601.7	1.0	1.1	105.05	105.3	41.8	114.7	112.6	2.11	54.436 ES		
700.0	699.3	698.4	695.4	1.2	1.4	101.02	112.7	25.7	117.8	115.2	2.63	44.791		
800.0	798.0	792.9	787.6	1.5	1.7	98.18	124.7	8.8	126.5	123.2	3.26	38.747		
900.0	895.8	888.4	879.9	1.9	2.2	96.37	140.5	-10.2	139.3	135.2	4.04	34.454		
1,000.0	992.4	983.7	970.6	2.4	2.7	95.24	159.7	-31.8	155.2	150.2	4.97	31.227		
1,100.0	1,087.5	1,080.0	1,061.2	2.9	3.3	94.78	181.5	-56.1	173.6	167.5	6.06	28.654		
1,200.0	1,181.3	1,179.3	1,153.6	3.6	4.0	94.98	204.8	-83.9	192.2	185.0	7.27	26.444		
1,300.0	1,274.9	1,273.2	1,240.3	4.2	4.6	94.88	228.3	-111.5	212.1	203.6	8.49	24.988		
1,400.0	1,368.6	1,372.1	1,331.8	4.8	5.3	95.03	253.0	-139.6	232.2	222.4	9.74	23.844		
1,500.0	1,462.2	1,467.1	1,419.5	5.5	6.0	95.08	277.5	-166.7	253.0	242.1	10.98	23.044		
1,600.0	1,555.9	1,566.5	1,511.3	6.1	6.7	95.20	303.4	-194.6	274.3	262.0	12.26	22.371		
1,700.0	1,649.5	1,667.7	1,604.7	6.8	7.4	95.10	328.8	-224.4	294.1	280.6	13.56	21.690		
1,800.0	1,743.2	1,764.1	1,693.8	7.5	8.1	95.11	352.6	-252.3	313.8	299.0	14.84	21.143		
1,900.0	1,836.9	1,860.8	1,782.7	8.1	8.8	94.92	377.4	-281.2	334.2	318.1	16.13	20.725		
2,000.0	1,930.5	1,959.3	1,873.4	8.8	9.5	94.81	402.6	-310.3	354.6	337.2	17.42	20.350		
2,100.0	2,024.2	2,064.5	1,970.2	9.4	10.3	94.63	428.7	-342.0	374.2	355.4	18.78	19.925		
2,200.0	2,117.8	2,162.2	2,060.0	10.1	11.0	94.36	452.0	-372.6	392.4	372.3	20.10	19.528		
2,300.0	2,211.5	2,262.2	2,151.8	10.8	11.7	94.09	476.0	-404.0	410.8	389.4	21.41	19.184		
2,400.0	2,305.1	2,358.5	2,240.9	11.4	12.4	94.06	498.7	-432.9	429.1	406.5	22.69	18.915		
2,500.0	2,398.8	2,455.1	2,330.2	12.1	13.1	94.07	521.8	-461.5	448.0	424.0	23.98	18.682		
2,600.0	2,492.4	2,554.7	2,422.6	12.8	13.8	94.19	545.3	-490.1	466.6	441.4	25.27	18.464		
2,700.0	2,586.1	2,648.4	2,509.4	13.4	14.4	94.23	568.1	-517.5	485.9	459.3	26.55	18.300		
2,800.0	2,679.7	2,748.2	2,601.5	14.1	15.2	94.21	592.7	-547.0	505.3	477.5	27.86	18.136		
2,900.0	2,773.4	2,851.0	2,696.3	14.8	15.9	94.13	617.5	-578.0	524.1	494.9	29.20	17.950		
3,000.0	2,867.0	2,948.5	2,786.4	15.4	16.6	94.10	640.3	-607.4	542.3	511.8	30.51	17.777		
3,100.0	2,960.7	3,045.9	2,876.0	16.1	17.3	93.97	663.9	-637.4	561.1	529.3	31.81	17.640		
3,200.0	3,054.3	3,146.9	2,969.5	16.8	18.0	93.99	687.7	-667.3	579.5	546.4	33.11	17.504		
3,300.0	3,148.0	3,244.4	3,060.3	17.5	18.7	94.14	710.2	-695.0	597.7	563.3	34.41	17.369		
3,400.0	3,241.6	3,339.0	3,147.8	18.1	19.4	94.16	732.6	-722.8	616.3	580.6	35.68	17.272		
3,500.0	3,335.3	3,441.1	3,242.3	18.8	20.1	94.20	756.9	-752.7	635.1	598.0	37.02	17.155		
3,600.0	3,429.0	3,540.2	3,334.0	19.5	20.8	94.19	780.1	-782.4	653.3	615.0	38.32	17.047		
3,700.0	3,522.6	3,622.9	3,410.1	20.1	21.4	94.09	800.6	-807.7	672.6	633.0	39.56	17.000		
3,800.0	3,616.3	3,726.0	3,504.0	20.8	22.2	93.83	827.4	-840.6	692.9	652.0	40.91	16.937		
3,900.0	3,709.9	3,823.0	3,593.0	21.5	22.9	93.71	852.0	-870.5	712.7	670.5	42.20	16.888		
4,000.0	3,803.6	3,925.1	3,687.4	22.1	23.6	93.76	877.1	-900.1	732.3	688.8	43.52	16.828		
4,100.0	3,897.2	4,023.0	3,777.9	22.8	24.4	93.80	901.1	-928.6	751.8	706.9	44.83	16.771		
4,200.0	3,990.9	4,128.0	3,874.7	23.5	25.1	93.74	926.5	-960.5	770.6	724.4	46.18	16.687		
4,300.0	4,084.5	4,231.8	3,970.6	24.1	25.8	93.73	950.8	-991.6	788.8	741.3	47.51	16.602		
4,400.0	4,178.2	4,332.0	4,063.6	24.8	26.6	93.76	973.5	-1,021.4	806.4	757.5	48.85	16.509		
4,500.0	4,271.8	4,426.7	4,151.1	25.5	27.2	93.71	995.5	-1,050.4	824.2	774.0	50.12	16.443		
4,600.0	4,365.5	4,517.6	4,235.1	26.2	27.9	93.72	1,016.9	-1,077.5	842.6	791.2	51.39	16.395		
4,700.0	4,459.1	4,620.8	4,330.3	26.8	28.6	93.69	1,041.9	-1,108.6	861.5	808.8	52.71	16.343		
4,800.0	4,552.8	4,709.8	4,412.9	27.5	29.3	93.76	1,062.8	-1,134.2	880.1	826.2	53.96	16.312		
4,900.0	4,646.4	4,796.6	4,493.0	28.2	29.9	93.76	1,084.6	-1,159.6	900.1	844.9	55.20	16.306		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9B (M16W) - DD - FINAL												Offset Site Error:	0.0 ft
Survey Program: 206-MWD, 1163-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	
5,000.0	4,740.1	4,888.9	4,577.5	28.8	30.6	93.68	1,109.0	-1,187.7	921.1	864.7	56.47	16.312	
5,100.0	4,833.7	5,000.6	4,679.9	29.5	31.4	93.62	1,138.0	-1,221.2	941.8	884.0	57.87	16.274	
5,200.0	4,927.4	5,107.5	4,778.3	30.2	32.2	93.53	1,164.4	-1,254.1	961.1	901.8	59.24	16.223	
5,300.0	5,021.0	5,203.9	4,867.2	30.8	32.9	93.52	1,187.7	-1,283.1	980.0	919.5	60.53	16.191	
5,400.0	5,114.7	5,300.9	4,956.6	31.5	33.6	93.51	1,211.3	-1,312.0	999.0	937.2	61.83	16.159	
5,500.0	5,208.4	5,398.0	5,046.4	32.2	34.3	93.53	1,235.0	-1,340.5	1,018.4	955.3	63.12	16.134	
5,600.0	5,302.0	5,501.4	5,142.0	32.9	35.0	93.55	1,259.7	-1,371.0	1,037.2	972.7	64.46	16.091	
5,700.0	5,395.7	5,597.0	5,230.5	33.5	35.7	93.57	1,282.7	-1,399.1	1,056.1	990.4	65.74	16.065	
5,800.0	5,489.3	5,698.3	5,324.4	34.2	36.4	93.61	1,307.0	-1,428.5	1,075.0	1,007.9	67.06	16.030	
5,900.0	5,583.0	5,812.0	5,429.8	34.9	37.2	93.66	1,333.4	-1,461.9	1,093.2	1,024.7	68.47	15.966	
6,000.0	5,676.6	5,911.4	5,521.7	35.5	37.9	93.63	1,355.7	-1,492.5	1,110.3	1,040.5	69.80	15.906	
6,100.0	5,770.3	6,015.8	5,618.0	36.2	38.7	93.57	1,379.2	-1,525.1	1,127.3	1,056.2	71.15	15.843	
6,200.0	5,863.9	6,112.6	5,707.7	36.9	39.4	93.56	1,400.6	-1,554.6	1,144.2	1,071.7	72.45	15.793	
6,300.0	5,957.6	6,218.2	5,806.1	37.5	40.1	93.62	1,423.3	-1,585.7	1,160.6	1,086.8	73.79	15.728	
6,400.0	6,051.2	6,304.9	5,887.0	38.2	40.7	93.69	1,442.0	-1,610.8	1,177.2	1,102.2	75.02	15.692	
6,500.0	6,144.9	6,379.0	5,955.4	38.9	41.2	93.67	1,459.4	-1,633.3	1,195.5	1,119.3	76.19	15.690	
6,600.0	6,238.5	6,471.0	6,039.7	39.6	41.9	93.60	1,482.6	-1,661.8	1,215.1	1,137.6	77.46	15.687	
6,700.0	6,332.2	6,579.8	6,140.4	40.2	42.7	93.64	1,509.1	-1,693.2	1,234.5	1,155.7	78.81	15.665 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9B2 (M16W) - DD - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 206-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	26.13	103.1	50.6	114.8					
100.0	100.0	100.1	100.1	0.1	0.2	26.12	103.0	50.5	114.7	114.5	0.29	392.717		
200.0	200.0	200.2	200.2	0.3	0.3	26.10	102.9	50.4	114.6	114.0	0.62	184.066		
221.8	221.8	221.8	221.8	0.3	0.3	26.09	102.9	50.4	114.6	113.9	0.70	164.316	CC, ES	
300.0	300.0	299.2	299.1	0.5	0.5	25.90	103.4	50.2	114.9	114.0	0.97	118.604		
400.0	400.0	398.4	398.3	0.7	0.7	23.94	106.4	47.3	116.5	115.1	1.32	88.301		
500.0	500.0	497.9	497.3	0.8	0.9	100.29	111.5	39.5	118.4	116.7	1.72	68.866		
600.0	599.8	597.1	595.5	1.0	1.2	96.12	118.2	27.3	121.9	119.7	2.18	55.990		
700.0	699.3	695.1	691.9	1.2	1.5	92.60	126.9	11.5	127.4	124.7	2.72	46.759		
800.0	798.0	793.9	788.2	1.5	1.9	89.92	137.2	-7.9	134.4	131.0	3.40	39.551		
900.0	895.8	891.2	882.0	1.9	2.4	87.79	148.8	-31.0	142.4	138.1	4.21	33.789		
1,000.0	992.4	986.5	972.6	2.4	3.0	86.24	163.0	-57.1	152.8	147.6	5.18	29.494		
1,100.0	1,087.5	1,082.3	1,062.2	2.9	3.6	85.31	180.0	-86.3	165.4	159.1	6.29	26.285		
1,200.0	1,181.3	1,182.9	1,155.8	3.6	4.3	85.70	198.9	-117.8	178.7	171.2	7.52	23.764		
1,300.0	1,274.9	1,285.0	1,251.3	4.2	4.9	86.41	216.2	-149.6	190.1	181.3	8.79	21.629		
1,400.0	1,368.6	1,382.6	1,342.4	4.8	5.6	86.87	232.5	-180.5	201.4	191.3	10.05	20.032		
1,500.0	1,462.2	1,478.4	1,431.7	5.5	6.2	87.29	249.9	-210.5	214.0	202.7	11.31	18.919		
1,600.0	1,555.9	1,574.7	1,521.1	6.1	6.9	87.50	268.8	-241.1	228.2	215.6	12.60	18.115		
1,700.0	1,649.5	1,671.6	1,610.4	6.8	7.6	87.38	289.0	-272.8	243.3	229.4	13.89	17.512		
1,800.0	1,743.2	1,770.3	1,700.9	7.5	8.4	87.06	310.1	-306.0	259.0	243.7	15.21	17.023		
1,900.0	1,836.9	1,868.0	1,790.2	8.1	9.1	86.58	331.0	-339.7	274.6	258.1	16.52	16.621		
2,000.0	1,930.5	1,971.9	1,885.3	8.8	9.9	86.17	353.1	-375.3	290.0	272.2	17.87	16.232		
2,100.0	2,024.2	2,074.0	1,979.3	9.4	10.6	85.97	372.7	-409.8	303.6	284.4	19.19	15.819		
2,200.0	2,117.8	2,176.5	2,073.9	10.1	11.4	85.82	391.6	-444.5	316.2	295.7	20.54	15.394		
2,300.0	2,211.5	2,275.6	2,165.6	10.8	12.1	85.78	409.3	-477.5	328.4	306.6	21.84	15.039		
2,400.0	2,305.1	2,377.6	2,260.6	11.4	12.8	85.98	426.8	-510.4	340.0	316.8	23.17	14.672		
2,500.0	2,398.8	2,474.1	2,350.3	12.1	13.4	86.12	443.6	-541.6	351.8	327.4	24.47	14.377		
2,600.0	2,492.4	2,573.1	2,442.3	12.8	14.1	86.25	461.3	-573.5	364.1	338.4	25.79	14.118		
2,700.0	2,586.1	2,671.4	2,533.5	13.4	14.8	86.26	478.9	-605.9	376.3	349.2	27.12	13.878		
2,800.0	2,679.7	2,767.1	2,621.7	14.1	15.6	86.08	496.8	-638.6	389.3	360.9	28.43	13.693		
2,900.0	2,773.4	2,868.3	2,714.2	14.8	16.3	85.68	516.4	-674.5	402.8	373.0	29.76	13.532		
3,000.0	2,867.0	2,970.7	2,808.5	15.4	17.1	85.47	534.9	-709.9	415.1	384.0	31.09	13.350		
3,100.0	2,960.7	3,067.1	2,897.7	16.1	17.8	85.44	552.3	-742.1	427.4	395.0	32.39	13.196		
3,200.0	3,054.3	3,161.4	2,985.0	16.8	18.4	85.46	570.2	-773.1	440.7	407.1	33.68	13.087		
3,300.0	3,148.0	3,260.1	3,076.0	17.5	19.2	85.43	589.6	-805.8	454.8	419.7	35.00	12.991		
3,400.0	3,241.6	3,366.8	3,174.1	18.1	20.0	85.23	609.8	-842.7	467.9	431.5	36.38	12.861		
3,500.0	3,335.3	3,464.2	3,263.9	18.8	20.7	85.13	627.4	-875.8	480.3	442.6	37.68	12.748		
3,600.0	3,429.0	3,553.1	3,345.8	19.5	21.3	85.06	644.9	-905.7	494.2	455.3	38.93	12.694		
3,700.0	3,522.6	3,655.2	3,440.1	20.1	22.1	85.09	665.3	-939.2	508.6	468.3	40.26	12.632		
3,800.0	3,616.3	3,754.4	3,531.6	20.8	22.8	85.07	685.0	-972.2	522.8	481.2	41.59	12.571		
3,900.0	3,709.9	3,854.3	3,623.8	21.5	23.5	85.09	704.6	-1,005.0	536.7	493.8	42.91	12.508		
4,000.0	3,803.6	3,949.3	3,711.5	22.1	24.2	85.08	723.5	-1,036.4	551.0	506.7	44.21	12.463		
4,100.0	3,897.2	4,052.4	3,806.5	22.8	24.9	85.06	744.6	-1,070.7	565.7	520.2	45.54	12.424		
4,200.0	3,990.9	4,150.8	3,897.8	23.5	25.6	85.20	763.3	-1,101.9	579.2	532.3	46.86	12.361		
4,300.0	4,084.5	4,245.3	3,985.2	24.1	26.3	85.26	782.4	-1,132.4	593.8	545.7	48.16	12.331		
4,400.0	4,178.2	4,349.6	4,081.5	24.8	27.1	85.29	803.4	-1,166.5	608.3	558.8	49.49	12.291		
4,500.0	4,271.8	4,456.8	4,181.3	25.5	27.8	85.46	823.6	-1,200.3	621.6	570.7	50.87	12.219		
4,600.0	4,365.5	4,553.2	4,270.6	26.2	28.5	85.52	841.3	-1,231.6	634.5	582.3	52.19	12.156		
4,700.0	4,459.1	4,658.3	4,367.6	26.8	29.3	85.43	860.4	-1,267.4	646.9	593.3	53.56	12.077		
4,800.0	4,552.8	4,751.4	4,453.3	27.5	30.0	85.31	877.6	-1,299.6	659.5	604.7	54.85	12.024		
4,900.0	4,646.4	4,849.6	4,543.2	28.2	30.7	85.10	896.3	-1,334.4	672.7	616.6	56.16	11.979		
5,000.0	4,740.1	4,952.5	4,637.9	28.8	31.5	85.00	915.6	-1,369.5	685.7	628.2	57.50	11.927		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9B2 (M16W) - DD - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 206-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	4,833.7	5,044.9	4,723.0	29.5	32.2	84.90	932.6	-1,401.4	698.4	639.6	58.78	11.882		
5,200.0	4,927.4	5,134.6	4,804.8	30.2	32.9	84.73	951.2	-1,433.0	713.3	653.3	60.02	11.884		
5,300.0	5,021.0	5,241.8	4,903.4	30.8	33.7	84.67	972.4	-1,469.2	727.3	665.9	61.39	11.848		
5,400.0	5,114.7	5,352.4	5,005.7	31.5	34.4	84.67	993.5	-1,505.9	740.7	678.0	62.77	11.801		
5,500.0	5,208.4	5,448.6	5,095.2	32.2	35.1	84.77	1,010.6	-1,536.9	752.9	688.8	64.08	11.749		
5,600.0	5,302.0	5,531.8	5,172.0	32.9	35.7	84.79	1,026.5	-1,564.1	766.5	701.2	65.31	11.737		
5,700.0	5,395.7	5,626.8	5,259.5	33.5	36.4	84.78	1,046.4	-1,595.6	781.8	715.2	66.59	11.740		
5,800.0	5,489.3	5,737.7	5,361.9	34.2	37.2	84.82	1,068.8	-1,631.7	796.4	728.4	67.99	11.713		
5,900.0	5,583.0	5,838.0	5,454.7	34.9	38.0	84.84	1,088.2	-1,664.7	810.0	740.7	69.32	11.685		
6,000.0	5,676.6	5,938.1	5,547.3	35.5	38.7	84.90	1,107.4	-1,697.1	823.6	753.0	70.64	11.659		
6,100.0	5,770.3	6,039.3	5,641.6	36.2	39.3	85.05	1,126.2	-1,728.6	836.7	764.7	71.97	11.625		
6,200.0	5,863.9	6,128.4	5,724.7	36.9	40.0	85.20	1,143.5	-1,756.0	850.6	777.3	73.24	11.613		
6,300.0	5,957.6	6,228.4	5,817.3	37.5	40.7	85.28	1,163.7	-1,787.9	865.2	790.6	74.58	11.601		
6,400.0	6,051.2	6,340.4	5,921.3	38.2	41.4	85.37	1,184.9	-1,823.7	878.5	802.5	75.98	11.563		
6,500.0	6,144.9	6,442.0	6,016.3	38.9	42.1	85.54	1,203.2	-1,854.9	891.1	813.8	77.33	11.524		
6,600.0	6,238.5	6,538.5	6,106.2	39.6	42.8	85.67	1,220.7	-1,885.0	903.7	825.1	78.63	11.493		
6,700.0	6,332.2	6,636.1	6,197.1	40.2	43.5	85.78	1,238.7	-1,915.7	916.7	836.7	79.97	11.463		
6,800.0	6,425.8	6,732.8	6,287.0	40.9	44.1	85.85	1,256.8	-1,946.5	929.8	848.5	81.26	11.443		
6,900.0	6,519.5	6,829.8	6,377.4	41.6	44.8	85.97	1,275.1	-1,976.7	943.2	860.6	82.59	11.420		
7,000.0	6,613.1	6,939.0	6,478.8	42.2	45.6	86.05	1,295.3	-2,011.4	956.2	872.2	83.97	11.388		
7,100.0	6,706.8	7,045.6	6,578.8	42.9	46.3	86.26	1,313.9	-2,043.5	968.2	882.9	85.34	11.346		
7,200.0	6,800.5	7,147.5	6,674.4	43.6	46.9	86.44	1,331.1	-2,074.4	979.7	893.0	86.70	11.300		
7,300.0	6,894.1	7,246.1	6,766.6	44.2	47.6	86.57	1,347.8	-2,104.9	991.3	903.2	88.02	11.262		
7,400.0	6,988.3	7,358.7	6,872.6	44.9	48.3	86.92	1,365.9	-2,138.3	1,002.1	912.7	89.40	11.209		
7,500.0	7,083.5	7,438.1	6,947.4	45.4	48.8	87.13	1,379.0	-2,161.2	1,013.6	923.1	90.48	11.203 SF		
7,600.0	7,179.8	7,522.0	7,026.0	45.9	49.4	87.12	1,394.0	-2,186.7	1,026.6	935.1	91.49	11.221		
7,700.0	7,277.0	7,613.0	7,110.7	46.3	50.0	86.90	1,411.6	-2,215.0	1,041.3	948.9	92.40	11.270		
7,800.0	7,374.9	7,737.4	7,227.2	46.7	50.8	86.38	1,435.0	-2,251.8	1,055.8	962.5	93.27	11.320		
7,900.0	7,473.5	7,857.9	7,341.6	47.0	51.5	85.83	1,453.9	-2,284.5	1,067.8	973.8	93.99	11.361		
8,000.0	7,572.5	7,973.7	7,452.6	47.2	52.1	85.23	1,470.2	-2,313.4	1,078.6	984.1	94.54	11.410		
8,100.0	7,672.1	8,077.8	7,552.8	47.4	52.6	84.62	1,483.5	-2,337.8	1,088.9	993.9	94.93	11.470		
8,200.0	7,771.8	8,192.0	7,663.3	47.5	53.1	83.81	1,496.9	-2,363.3	1,098.6	1,003.4	95.18	11.543		
8,300.0	7,871.8	8,293.9	7,762.4	47.6	53.6	83.02	1,507.7	-2,384.3	1,108.0	1,012.7	95.27	11.630		
8,400.0	7,971.8	8,396.8	7,863.1	47.7	54.0	1.60	1,518.5	-2,402.9	1,118.0	1,022.8	95.22	11.742		
8,500.0	8,071.8	8,520.4	7,984.7	47.7	54.4	0.60	1,529.6	-2,422.2	1,126.8	1,031.7	95.12	11.846		
8,600.0	8,171.8	8,631.3	8,094.2	47.8	54.7	-0.17	1,537.8	-2,437.3	1,134.2	1,039.2	95.04	11.934		
8,700.0	8,271.8	8,763.2	8,225.2	47.8	55.0	-0.88	1,544.4	-2,451.4	1,139.2	1,044.3	94.95	11.998		
8,800.0	8,371.8	8,858.7	8,320.4	47.9	55.1	-1.21	1,548.1	-2,458.0	1,143.3	1,048.3	94.95	12.040		
8,900.0	8,471.8	8,963.8	8,425.3	47.9	55.3	-1.43	1,552.8	-2,462.5	1,147.9	1,052.9	94.99	12.084		
9,000.0	8,571.8	9,067.9	8,529.2	48.0	55.4	-1.57	1,556.7	-2,465.4	1,151.6	1,056.6	95.07	12.113		
9,100.0	8,671.8	9,181.5	8,642.8	48.1	55.5	-1.69	1,560.1	-2,467.9	1,154.7	1,059.5	95.15	12.135		
9,200.0	8,771.8	9,278.1	8,739.4	48.1	55.6	-1.72	1,562.7	-2,468.6	1,157.4	1,062.2	95.25	12.151		
9,300.0	8,871.8	9,390.5	8,851.7	48.2	55.7	-1.75	1,565.3	-2,469.3	1,159.8	1,064.4	95.37	12.160		
9,400.0	8,971.8	9,502.5	8,963.7	48.2	55.7	-1.81	1,566.5	-2,470.5	1,160.9	1,065.4	95.48	12.159		
9,500.0	9,071.8	9,607.2	9,068.4	48.3	55.8	-1.83	1,567.0	-2,470.9	1,161.3	1,065.7	95.60	12.148		
9,600.0	9,171.8	9,721.1	9,182.3	48.3	55.8	-1.80	1,566.7	-2,470.5	1,161.1	1,065.4	95.72	12.131		
9,700.0	9,271.8	9,822.6	9,283.8	48.4	55.9	-1.73	1,565.8	-2,468.9	1,160.1	1,064.2	95.87	12.101		
9,800.0	9,371.8	9,918.8	9,380.0	48.5	55.9	-1.68	1,565.0	-2,467.8	1,159.2	1,063.2	96.01	12.075		
9,900.0	9,471.8	10,017.2	9,478.3	48.5	55.9	-1.66	1,564.4	-2,467.4	1,158.7	1,062.5	96.14	12.051		
10,000.0	9,571.8	10,122.5	9,583.7	48.6	56.0	-1.66	1,563.7	-2,467.4	1,157.9	1,061.7	96.28	12.027		
10,100.0	9,671.8	10,228.1	9,689.2	48.7	56.0	-1.67	1,562.2	-2,467.7	1,156.5	1,060.1	96.40	11.997		
10,200.0	9,771.8	10,326.9	9,788.0	48.7	56.1	-1.70	1,560.7	-2,468.2	1,155.1	1,058.5	96.53	11.966		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design													M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9B2 (M16W) - DD - FINAL		Offset Site Error:		0.0 ft
Survey Program:													206-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)							
10,300.0	9,871.8	10,425.1	9,886.3	48.8	56.2	-1.73	1,559.4	-2,468.7	1,153.7	1,057.1	96.64	11.938					
10,400.0	9,971.8	10,523.1	9,984.3	48.8	56.2	-1.74	1,558.2	-2,468.8	1,152.6	1,055.8	96.77	11.911					
10,484.1	10,055.9	10,595.0	10,056.1	48.9	56.2	-1.74	1,557.5	-2,468.8	1,151.7	1,054.9	96.87	11.889					
10,500.0	10,071.8	10,595.0	10,056.1	48.9	56.2	-1.74	1,557.5	-2,468.8	1,151.9	1,055.0	96.88	11.889					
10,509.2	10,081.0	10,595.0	10,056.1	48.9	56.2	-1.74	1,557.5	-2,468.8	1,152.0	1,055.1	96.89	11.890					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9C (M16W) - DD - FINAL													Offset Site Error:	0.0 ft
Survey Program: 206-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	19.51	96.5	34.2	102.3					
100.0	100.0	100.1	100.1	0.1	0.2	19.51	96.4	34.2	102.3	102.0	0.29	350.126		
200.0	200.0	200.2	200.2	0.3	0.3	19.53	96.3	34.2	102.2	101.6	0.62	164.069		
213.3	213.3	213.4	213.4	0.3	0.3	19.53	96.3	34.2	102.2	101.5	0.67	152.944	CC, ES	
300.0	300.0	299.6	299.6	0.5	0.5	19.38	96.8	34.0	102.6	101.6	0.97	105.769		
400.0	400.0	398.6	398.5	0.7	0.7	16.89	99.0	30.1	103.5	102.2	1.32	78.499		
500.0	500.0	497.3	496.6	0.8	0.9	92.16	103.3	20.7	105.4	103.7	1.71	61.485		
600.0	599.8	594.7	592.8	1.0	1.2	86.81	110.1	6.8	110.0	107.9	2.18	50.568		
700.0	699.3	692.2	687.9	1.2	1.6	81.59	119.0	-12.6	116.9	114.1	2.75	42.542		
800.0	798.0	788.8	781.0	1.5	2.0	77.40	129.9	-35.7	125.8	122.4	3.42	36.769		
900.0	895.8	886.4	873.9	1.9	2.6	74.19	142.4	-62.8	135.9	131.7	4.22	32.181		
1,000.0	992.4	984.8	966.7	2.4	3.2	72.10	155.5	-93.2	145.7	140.5	5.15	28.292		
1,100.0	1,087.5	1,083.5	1,059.2	2.9	3.8	71.71	169.1	-124.6	154.6	148.4	6.21	24.878		
1,200.0	1,181.3	1,184.0	1,153.4	3.6	4.5	72.76	182.6	-157.1	162.0	154.6	7.41	21.858		
1,300.0	1,274.9	1,280.4	1,243.5	4.2	5.1	73.87	196.9	-188.2	170.7	162.1	8.61	19.825		
1,400.0	1,368.6	1,380.6	1,337.4	4.8	5.8	75.25	212.0	-219.5	179.6	169.7	9.87	18.199		
1,500.0	1,462.2	1,478.8	1,429.3	5.5	6.4	76.25	227.2	-250.9	189.1	177.9	11.14	16.972		
1,600.0	1,555.9	1,578.0	1,521.4	6.1	7.1	76.74	242.7	-284.0	198.9	186.5	12.41	16.028		
1,700.0	1,649.5	1,677.7	1,614.2	6.8	7.8	77.32	258.5	-316.9	208.9	195.2	13.72	15.231		
1,800.0	1,743.2	1,778.2	1,707.3	7.5	8.5	77.37	274.0	-351.7	218.6	203.6	15.00	14.569		
1,900.0	1,836.9	1,877.7	1,799.9	8.1	9.2	77.82	289.1	-384.7	227.9	211.6	16.29	13.996		
2,000.0	1,930.5	1,979.0	1,894.2	8.8	9.9	78.22	304.3	-418.3	237.1	219.5	17.63	13.450		
2,100.0	2,024.2	2,080.8	1,988.3	9.4	10.6	77.99	318.5	-454.6	245.4	226.5	18.94	12.957		
2,200.0	2,117.8	2,182.1	2,082.3	10.1	11.3	77.98	331.9	-489.8	252.9	232.7	20.24	12.497		
2,300.0	2,211.5	2,280.4	2,173.8	10.8	12.0	78.12	344.8	-523.3	260.3	238.8	21.54	12.086		
2,400.0	2,305.1	2,375.0	2,261.6	11.4	12.7	78.19	358.3	-555.8	268.9	246.1	22.80	11.793		
2,500.0	2,398.8	2,466.7	2,347.0	12.1	13.3	78.68	374.0	-585.4	280.1	256.1	24.05	11.645		
2,600.0	2,492.4	2,564.0	2,437.4	12.8	14.0	79.22	392.2	-616.4	293.1	267.7	25.36	11.555		
2,700.0	2,586.1	2,664.4	2,530.9	13.4	14.7	79.90	411.0	-647.6	306.0	279.3	26.71	11.457		
2,800.0	2,679.7	2,766.3	2,625.4	14.1	15.4	80.19	429.5	-681.1	318.4	290.4	28.05	11.353		
2,900.0	2,773.4	2,867.0	2,718.9	14.8	16.1	80.44	446.8	-714.2	329.8	300.5	29.39	11.224		
3,000.0	2,867.0	2,968.7	2,812.9	15.4	16.9	80.46	464.1	-749.0	341.2	310.5	30.70	11.111		
3,100.0	2,960.7	3,074.0	2,910.8	16.1	17.6	80.67	480.7	-783.9	351.2	319.1	32.06	10.952		
3,200.0	3,054.3	3,181.7	3,011.7	16.8	18.3	81.02	495.5	-818.8	359.1	325.7	33.43	10.741		
3,300.0	3,148.0	3,279.2	3,103.0	17.5	18.9	81.34	508.1	-850.4	366.3	331.6	34.77	10.536		
3,400.0	3,241.6	3,378.6	3,195.2	18.1	19.7	81.21	521.2	-885.3	373.8	337.7	36.10	10.355		
3,500.0	3,335.3	3,478.6	3,287.7	18.8	20.4	81.08	534.8	-920.4	381.6	344.2	37.40	10.203		
3,600.0	3,429.0	3,580.1	3,382.2	19.5	21.1	81.05	547.5	-955.5	388.4	349.6	38.74	10.025		
3,700.0	3,522.6	3,678.0	3,472.7	20.1	21.8	80.84	560.7	-990.5	396.2	356.1	40.03	9.896		
3,800.0	3,616.3	3,778.4	3,565.9	20.8	22.5	80.77	573.5	-1,025.4	403.2	361.8	41.36	9.749		
3,900.0	3,709.9	3,872.3	3,652.7	21.5	23.2	80.60	586.5	-1,058.8	411.2	368.6	42.63	9.647		
4,000.0	3,803.6	3,969.3	3,742.3	22.1	23.9	80.46	601.0	-1,093.1	420.5	376.6	43.90	9.578		
4,100.0	3,897.2	4,077.7	3,843.2	22.8	24.6	80.60	616.6	-1,129.3	429.2	383.9	45.27	9.480		
4,200.0	3,990.9	4,169.6	3,929.3	23.5	25.2	80.87	629.2	-1,159.0	437.1	390.6	46.56	9.389		
4,300.0	4,084.5	4,268.5	4,021.7	24.1	25.9	81.14	644.1	-1,191.0	446.5	398.6	47.90	9.321		
4,400.0	4,178.2	4,362.5	4,109.3	24.8	26.6	81.32	658.7	-1,221.8	456.3	407.1	49.19	9.277		
4,500.0	4,271.8	4,465.3	4,204.7	25.5	27.3	81.38	675.0	-1,256.4	466.5	415.9	50.55	9.227		
4,600.0	4,365.5	4,561.0	4,293.6	26.2	28.0	81.50	690.4	-1,288.2	476.7	424.9	51.84	9.197		
4,700.0	4,459.1	4,665.3	4,390.5	26.8	28.7	81.58	706.8	-1,323.2	486.8	433.6	53.20	9.150		
4,800.0	4,552.8	4,763.6	4,482.2	27.5	29.4	81.75	721.7	-1,355.4	496.2	441.7	54.52	9.100		
4,900.0	4,646.4	4,858.7	4,570.5	28.2	30.0	81.85	737.3	-1,386.9	506.9	451.1	55.82	9.081		
5,000.0	4,740.1	4,961.8	4,666.8	28.8	30.7	82.10	753.6	-1,420.0	517.0	459.8	57.16	9.044		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9C (M16W) - DD - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 206-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	4,833.7	5,064.2	4,763.3	29.5	31.3	82.60	769.5	-1,450.5	527.0	468.4	58.53	9.003		
5,200.0	4,927.4	5,158.1	4,851.9	30.2	31.9	83.11	783.7	-1,477.9	536.6	476.7	59.87	8.963		
5,300.0	5,021.0	5,247.0	4,935.2	30.8	32.6	83.43	799.0	-1,505.0	548.2	487.0	61.15	8.963		
5,400.0	5,114.7	5,349.3	5,030.5	31.5	33.2	83.67	817.6	-1,537.2	560.8	498.3	62.50	8.973		
5,500.0	5,208.4	5,451.6	5,126.4	32.2	33.9	84.05	835.1	-1,568.1	572.3	508.5	63.85	8.963		
5,600.0	5,302.0	5,552.2	5,220.6	32.9	34.6	84.32	852.0	-1,599.3	583.6	518.4	65.24	8.946		
5,700.0	5,395.7	5,655.2	5,316.6	33.5	35.3	84.45	869.1	-1,632.6	594.5	528.0	66.57	8.930		
5,800.0	5,489.3	5,754.2	5,409.7	34.2	35.9	84.86	885.0	-1,661.8	605.2	537.3	67.89	8.915		
5,900.0	5,583.0	5,856.2	5,506.3	34.9	36.5	85.40	901.0	-1,690.6	615.6	546.3	69.27	8.887		
6,000.0	5,676.6	5,950.0	5,594.4	35.5	37.2	85.69	916.1	-1,719.0	626.3	555.7	70.61	8.870		
6,100.0	5,770.3	6,043.2	5,680.4	36.2	37.9	85.60	932.5	-1,750.9	638.2	566.3	71.91	8.875		
6,200.0	5,863.9	6,147.1	5,776.0	36.9	38.6	85.42	951.0	-1,787.2	650.2	576.9	73.25	8.876		
6,300.0	5,957.6	6,252.9	5,873.7	37.5	39.4	85.31	968.6	-1,823.7	661.0	586.4	74.60	8.860		
6,400.0	6,051.2	6,351.4	5,965.3	38.2	40.1	85.36	984.5	-1,856.2	671.5	595.6	75.91	8.846		
6,500.0	6,144.9	6,464.8	6,071.5	38.9	40.8	85.56	1,002.1	-1,892.0	681.5	604.1	77.34	8.811		
6,600.0	6,238.5	6,567.4	6,167.1	39.6	41.5	85.58	1,016.4	-1,926.2	689.8	611.1	78.71	8.764		
6,700.0	6,332.2	6,668.9	6,262.0	40.2	42.2	85.66	1,030.2	-1,959.7	697.7	617.7	80.04	8.717		
6,800.0	6,425.8	6,762.0	6,349.2	40.9	42.8	85.78	1,043.4	-1,989.5	706.3	625.0	81.34	8.684		
6,900.0	6,519.5	6,874.3	6,454.1	41.6	43.6	85.86	1,058.7	-2,026.5	714.3	631.5	82.78	8.629		
7,000.0	6,613.1	6,985.5	6,556.9	42.2	44.4	85.64	1,072.2	-2,066.7	720.5	636.3	84.20	8.557		
7,100.0	6,706.8	7,100.2	6,662.3	42.9	45.3	85.28	1,084.4	-2,110.1	725.1	639.5	85.61	8.470		
7,200.0	6,800.5	7,205.0	6,759.3	43.6	46.0	85.05	1,093.6	-2,148.8	727.9	640.9	86.94	8.372		
7,300.0	6,894.1	7,297.0	6,845.3	44.2	46.6	85.05	1,102.0	-2,180.3	731.3	643.1	88.20	8.291		
7,400.0	6,988.3	7,389.0	6,931.8	44.9	47.2	85.14	1,111.7	-2,210.3	736.2	646.8	89.42	8.234		
7,500.0	7,083.5	7,482.4	7,019.7	45.4	47.8	85.09	1,122.0	-2,239.9	742.1	651.6	90.50	8.201		
7,600.0	7,179.8	7,586.8	7,118.9	45.9	48.4	84.94	1,133.4	-2,270.5	748.4	656.9	91.50	8.180		
7,700.0	7,277.0	7,690.3	7,218.3	46.3	48.9	84.78	1,143.7	-2,297.8	754.2	661.9	92.37	8.165 SF		
7,800.0	7,374.9	7,775.9	7,300.7	46.7	49.3	84.60	1,152.5	-2,318.5	761.0	667.9	93.06	8.178		
7,900.0	7,473.5	7,847.3	7,369.6	47.0	49.7	84.40	1,162.1	-2,335.0	771.1	677.5	93.61	8.238		
8,000.0	7,572.5	7,950.9	7,469.5	47.2	50.2	83.89	1,177.6	-2,357.7	783.4	689.3	94.10	8.325		
8,100.0	7,672.1	8,080.2	7,595.1	47.4	50.7	83.04	1,193.3	-2,383.9	793.4	699.0	94.47	8.399		
8,200.0	7,771.8	8,198.3	7,710.2	47.5	51.2	81.99	1,204.4	-2,407.7	801.4	706.7	94.62	8.469		
8,300.0	7,871.8	8,295.2	7,805.0	47.6	51.6	81.01	1,212.2	-2,426.1	808.7	714.1	94.61	8.548		
8,400.0	7,971.8	8,396.0	7,904.0	47.7	52.0	-0.68	1,220.2	-2,443.6	816.8	722.4	94.45	8.648		
8,500.0	8,071.8	8,487.0	7,993.6	47.7	52.3	-1.63	1,227.9	-2,457.4	825.7	731.4	94.28	8.757		
8,600.0	8,171.8	8,632.0	8,137.0	47.8	52.6	-2.97	1,236.2	-2,476.9	831.8	737.8	93.99	8.850		
8,700.0	8,271.8	8,745.8	8,250.6	47.8	52.8	-3.43	1,239.6	-2,483.8	835.1	741.2	93.91	8.893		
8,800.0	8,371.8	8,859.1	8,363.8	47.9	52.8	-3.32	1,241.6	-2,482.4	836.8	742.8	94.03	8.900		
8,900.0	8,471.8	8,959.2	8,463.9	47.9	52.8	-3.11	1,242.7	-2,479.3	837.7	743.5	94.21	8.892		
9,000.0	8,571.8	9,053.5	8,558.0	48.0	52.8	-2.78	1,244.2	-2,474.6	839.0	744.6	94.41	8.887		
9,100.0	8,671.8	9,150.8	8,655.1	48.1	52.8	-2.40	1,246.3	-2,469.1	840.9	746.3	94.64	8.885		
9,200.0	8,771.8	9,256.9	8,761.0	48.1	52.7	-2.02	1,248.3	-2,463.6	842.6	747.7	94.88	8.881		
9,300.0	8,871.8	9,359.8	8,863.8	48.2	52.8	-1.74	1,249.4	-2,459.5	843.6	748.5	95.09	8.871		
9,400.0	8,971.8	9,458.5	8,962.5	48.2	52.8	-1.50	1,250.5	-2,456.0	844.6	749.3	95.28	8.865		
9,500.0	9,071.8	9,561.3	9,065.3	48.3	52.8	-1.31	1,251.6	-2,453.2	845.6	750.1	95.47	8.858		
9,600.0	9,171.8	9,661.2	9,165.2	48.3	52.8	-1.21	1,252.4	-2,451.8	846.3	750.7	95.61	8.852		
9,700.0	9,271.8	9,754.1	9,258.0	48.4	52.9	-1.14	1,253.5	-2,450.8	847.5	751.7	95.76	8.850		
9,800.0	9,371.8	9,853.2	9,357.1	48.5	53.0	-1.11	1,255.2	-2,450.4	849.2	753.3	95.89	8.857		
9,900.0	9,471.8	9,968.2	9,472.1	48.5	53.0	-1.11	1,255.8	-2,450.4	849.8	753.7	96.03	8.849		
9,902.2	9,474.0	9,970.1	9,474.0	48.5	53.0	-1.11	1,255.8	-2,450.4	849.8	753.7	96.03	8.848		
10,000.0	9,571.8	10,060.8	9,564.7	48.6	53.1	-1.13	1,256.4	-2,450.6	850.4	754.2	96.15	8.844		
10,100.0	9,671.8	10,167.0	9,670.9	48.7	53.2	-1.14	1,256.8	-2,450.9	850.7	754.4	96.27	8.836		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design													M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9C (M16W) - DD - FINAL		Offset Site Error:		0.0 ft
Survey Program: 206-MWD															Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty	Separation Factor						
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis						
10,200.0	9,771.8	10,265.8	9,769.7	48.7	53.2	-1.15	1,256.9	-2,451.0	850.8	754.4	96.40	8.826					
10,300.0	9,871.8	10,367.9	9,871.8	48.8	53.3	-1.18	1,257.2	-2,451.4	851.1	754.6	96.53	8.818					
10,375.4	9,947.2	10,443.1	9,947.0	48.8	53.3	-1.19	1,257.1	-2,451.6	851.0	754.4	96.62	8.808					
10,400.0	9,971.8	10,465.6	9,969.5	48.8	53.3	-1.19	1,257.1	-2,451.6	851.0	754.4	96.65	8.806					
10,500.0	10,071.8	10,566.4	10,070.3	48.9	53.4	-1.18	1,257.4	-2,451.5	851.4	754.6	96.78	8.797					
10,509.2	10,081.0	10,575.6	10,079.5	48.9	53.4	-1.18	1,257.4	-2,451.5	851.4	754.6	96.79	8.796					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9D (M16W) - DD - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 206-MWD, 1298-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	18.46	86.3	28.8	91.0					
100.0	100.0	100.3	100.3	0.1	0.2	18.59	86.1	29.0	90.8	90.5	0.29	310.213		
200.0	200.0	200.5	200.5	0.3	0.3	19.00	85.5	29.4	90.4	89.8	0.62	144.892		
300.0	300.0	301.8	301.8	0.5	0.5	19.45	84.8	29.9	89.9	89.0	0.98	92.248		
400.0	400.0	407.2	407.0	0.7	0.7	18.85	80.2	27.4	85.0	83.7	1.35	63.128		
500.0	500.0	510.0	509.1	0.8	0.9	96.71	70.9	19.7	74.2	72.5	1.69	43.875		
600.0	599.8	607.6	605.5	1.0	1.2	91.86	63.2	6.2	63.6	61.5	2.10	30.318		
700.0	699.3	704.0	700.4	1.2	1.5	87.14	59.9	-9.7	57.6	55.0	2.61	22.122		
742.8	741.7	745.2	741.0	1.4	1.6	85.71	60.5	-16.9	57.1	54.2	2.86	19.942 CC, ES		
800.0	798.0	801.0	795.9	1.5	1.8	84.48	62.8	-27.3	57.7	54.5	3.22	17.909		
900.0	895.8	899.7	891.8	1.9	2.1	82.57	69.3	-49.1	60.8	56.8	3.99	15.245		
1,000.0	992.4	997.7	985.9	2.4	2.6	81.58	78.3	-74.9	65.8	60.9	4.92	13.369		
1,100.0	1,087.5	1,096.9	1,080.3	2.9	3.1	82.79	89.4	-103.2	71.9	65.9	6.00	11.980		
1,200.0	1,181.3	1,196.2	1,174.5	3.6	3.6	86.38	101.2	-132.2	78.4	71.2	7.17	10.939		
1,300.0	1,274.9	1,296.1	1,269.5	4.2	4.2	89.92	113.1	-161.0	85.3	76.9	8.36	10.198		
1,400.0	1,368.6	1,396.7	1,365.0	4.8	4.7	92.78	124.2	-190.5	91.4	81.9	9.57	9.557		
1,500.0	1,462.2	1,496.9	1,460.3	5.5	5.3	95.47	134.7	-219.7	97.3	86.6	10.77	9.039		
1,600.0	1,555.9	1,596.9	1,555.5	6.1	5.9	97.89	144.7	-248.9	102.9	90.9	11.95	8.606		
1,700.0	1,649.5	1,694.3	1,648.1	6.8	6.4	100.04	155.1	-277.0	109.4	96.3	13.11	8.341		
1,800.0	1,743.2	1,794.0	1,743.0	7.5	7.0	102.10	167.1	-305.0	117.6	103.3	14.26	8.246		
1,900.0	1,836.9	1,893.9	1,838.3	8.1	7.6	104.17	178.5	-332.7	125.5	110.1	15.38	8.160		
2,000.0	1,930.5	1,993.5	1,933.5	8.8	8.1	106.15	189.7	-360.1	133.5	117.0	16.47	8.103		
2,100.0	2,024.2	2,093.4	2,028.8	9.4	8.7	107.84	200.9	-387.7	141.5	124.0	17.56	8.058		
2,200.0	2,117.8	2,193.6	2,124.5	10.1	9.2	109.48	211.5	-415.3	149.2	130.5	18.62	8.011		
2,300.0	2,211.5	2,292.8	2,219.6	10.8	9.8	111.25	221.7	-441.9	157.1	137.5	19.63	8.005		
2,400.0	2,305.1	2,392.4	2,314.7	11.4	10.3	112.62	232.3	-469.3	165.0	144.4	20.65	7.990		
2,500.0	2,398.8	2,490.8	2,409.0	12.1	10.8	113.99	242.8	-495.7	173.6	151.9	21.63	8.025		
2,600.0	2,492.4	2,591.8	2,505.9	12.8	11.4	115.56	253.4	-521.8	182.4	159.8	22.59	8.077		
2,700.0	2,586.1	2,692.7	2,601.8	13.4	12.0	116.10	264.6	-551.0	190.1	166.4	23.68	8.027		
2,800.0	2,679.7	2,791.8	2,696.3	14.1	12.5	116.85	275.0	-579.0	197.8	173.1	24.71	8.006		
2,900.0	2,773.4	2,892.5	2,792.3	14.8	13.1	117.52	285.7	-607.5	205.5	179.8	25.77	7.977		
3,000.0	2,867.0	2,991.1	2,886.0	15.4	13.7	117.85	296.7	-636.3	213.2	186.3	26.86	7.936		
3,100.0	2,960.7	3,090.2	2,980.4	16.1	14.3	118.44	307.5	-664.1	221.3	193.4	27.88	7.937		
3,200.0	3,054.3	3,190.8	3,076.2	16.8	14.9	118.84	318.6	-693.0	229.2	200.3	28.96	7.914		
3,300.0	3,148.0	3,288.7	3,169.3	17.5	15.4	119.09	330.0	-721.2	237.5	207.4	30.05	7.903 SF		
3,400.0	3,241.6	3,387.8	3,263.7	18.1	16.0	119.52	341.4	-748.9	246.2	215.1	31.08	7.921		
3,500.0	3,335.3	3,488.5	3,360.0	18.8	16.6	120.14	352.3	-776.3	254.9	222.9	32.07	7.950		
3,600.0	3,429.0	3,588.9	3,455.5	19.5	17.2	120.42	363.5	-805.2	262.9	229.8	33.14	7.934		
3,700.0	3,522.6	3,687.5	3,549.4	20.1	17.7	120.72	374.7	-833.1	271.3	237.1	34.18	7.937		
3,800.0	3,616.3	3,786.3	3,643.7	20.8	18.3	121.16	385.5	-860.4	279.9	244.8	35.17	7.959		
3,900.0	3,709.9	3,883.8	3,737.0	21.5	18.8	121.66	396.3	-886.7	289.1	252.9	36.12	8.004		
4,000.0	3,803.6	3,989.6	3,838.4	22.1	19.4	122.28	407.4	-915.0	297.9	260.8	37.06	8.039		
4,100.0	3,897.2	4,089.0	3,933.5	22.8	19.9	122.92	416.4	-942.3	305.4	267.4	37.93	8.051		
4,200.0	3,990.9	4,187.9	4,028.3	23.5	20.5	123.55	425.5	-969.0	313.2	274.4	38.80	8.072		
4,300.0	4,084.5	4,287.6	4,123.1	24.1	21.1	123.67	436.6	-997.9	321.0	281.1	39.89	8.047		
4,400.0	4,178.2	4,386.3	4,216.8	24.8	21.7	123.70	448.0	-1,026.7	329.0	288.0	40.98	8.028		
4,500.0	4,271.8	4,484.3	4,310.2	25.5	22.2	123.90	458.8	-1,054.3	337.4	295.4	41.99	8.035		
4,600.0	4,365.5	4,581.8	4,403.3	26.2	22.8	124.18	469.7	-1,081.0	346.4	303.4	42.95	8.064		
4,700.0	4,459.1	4,685.5	4,502.5	26.8	23.3	124.57	481.0	-1,108.9	355.6	311.7	43.91	8.098		
4,800.0	4,552.8	4,787.6	4,599.6	27.5	23.9	124.69	491.7	-1,138.7	362.8	317.9	44.98	8.067		
4,900.0	4,646.4	4,884.8	4,692.2	28.2	24.5	124.86	502.1	-1,166.4	370.7	324.8	45.97	8.065		
5,000.0	4,740.1	4,982.1	4,785.3	28.8	25.0	125.19	512.1	-1,193.0	379.2	332.3	46.88	8.088		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9D (M16W) - DD - FINAL													Offset Site Error: 0.0 ft	
Survey Program: 206-MWD, 1298-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	4,833.7	5,088.1	4,886.4	29.5	25.7	125.46	523.2	-1,222.6	387.4	339.5	47.90	8.087		
5,200.0	4,927.4	5,185.0	4,978.3	30.2	26.2	125.41	534.0	-1,251.4	394.8	345.8	49.00	8.057		
5,300.0	5,021.0	5,285.1	5,073.5	30.8	26.8	125.51	544.9	-1,280.2	402.6	352.5	50.04	8.045		
5,400.0	5,114.7	5,383.2	5,167.1	31.5	27.4	125.69	555.2	-1,308.0	410.5	359.5	51.02	8.046		
5,500.0	5,208.4	5,480.3	5,259.7	32.2	27.9	125.89	565.6	-1,335.0	418.9	367.0	51.98	8.059		
5,600.0	5,302.0	5,576.6	5,351.8	32.9	28.5	126.09	576.4	-1,361.2	428.2	375.2	52.93	8.090		
5,700.0	5,395.7	5,674.7	5,445.7	33.5	29.0	126.34	587.3	-1,387.3	437.8	383.9	53.85	8.130		
5,800.0	5,489.3	5,771.9	5,539.0	34.2	29.5	126.67	598.1	-1,412.3	448.0	393.3	54.70	8.190		
5,900.0	5,583.0	5,876.3	5,639.2	34.9	30.1	126.99	609.6	-1,439.4	458.1	402.5	55.61	8.238		
6,000.0	5,676.6	5,977.7	5,735.8	35.5	30.7	127.05	621.3	-1,467.9	466.9	410.2	56.66	8.240		
6,100.0	5,770.3	6,073.5	5,826.9	36.2	31.2	127.02	633.2	-1,494.9	476.2	418.5	57.74	8.248		
6,200.0	5,863.9	6,171.3	5,920.1	36.9	31.8	127.01	645.6	-1,521.9	486.2	427.4	58.81	8.267		
6,300.0	5,957.6	6,268.2	6,012.5	37.5	32.3	127.00	658.2	-1,548.4	496.5	436.6	59.89	8.291		
6,400.0	6,051.2	6,377.4	6,116.6	38.2	33.0	127.06	671.5	-1,578.2	506.4	445.4	60.95	8.308		
6,500.0	6,144.9	6,481.2	6,215.6	38.9	33.6	127.17	682.8	-1,607.5	514.7	452.7	61.98	8.303		
6,600.0	6,238.5	6,583.7	6,313.1	39.6	34.2	127.23	693.5	-1,637.2	522.1	459.0	63.03	8.283		
6,700.0	6,332.2	6,677.3	6,402.1	40.2	34.7	127.26	703.9	-1,664.2	530.0	465.9	64.05	8.275		
6,800.0	6,425.8	6,775.2	6,495.7	40.9	35.3	127.39	714.7	-1,691.1	539.0	473.9	65.00	8.291		
6,900.0	6,519.5	6,878.1	6,593.7	41.6	35.9	127.47	725.8	-1,720.3	547.0	481.0	66.04	8.284		
7,000.0	6,613.1	6,977.2	6,688.2	42.2	36.4	127.57	736.7	-1,748.0	555.6	488.6	67.01	8.291		
7,100.0	6,706.8	7,074.5	6,781.5	42.9	36.9	127.86	745.7	-1,774.1	563.8	496.0	67.82	8.314		
7,200.0	6,800.5	7,167.7	6,871.3	43.6	37.4	128.27	754.1	-1,797.6	573.2	504.7	68.49	8.370		
7,300.0	6,894.1	7,260.0	6,960.9	44.2	37.8	128.86	761.4	-1,818.8	583.7	514.7	68.97	8.462		
7,400.0	6,988.3	7,351.7	7,050.3	44.9	38.2	129.64	768.4	-1,837.9	594.5	525.3	69.30	8.580		
7,500.0	7,083.5	7,444.5	7,141.1	45.4	38.5	130.30	775.1	-1,855.6	604.5	534.9	69.61	8.684		
7,600.0	7,179.8	7,540.9	7,235.8	45.9	38.9	130.82	781.5	-1,872.5	613.1	543.1	69.95	8.764		
7,700.0	7,277.0	7,637.7	7,331.0	46.3	39.2	131.17	787.4	-1,888.5	619.8	549.4	70.35	8.810		
7,800.0	7,374.9	7,732.5	7,424.7	46.7	39.5	131.40	792.3	-1,902.7	624.8	554.1	70.73	8.834		
7,900.0	7,473.5	7,822.1	7,513.5	47.0	39.7	131.59	795.9	-1,914.0	628.8	557.7	71.04	8.851		
8,000.0	7,572.5	7,915.0	7,605.8	47.2	39.9	131.71	799.2	-1,923.5	631.9	560.6	71.36	8.856		
8,100.0	7,672.1	8,006.5	7,697.1	47.4	40.1	131.77	801.5	-1,930.7	634.0	562.3	71.62	8.852		
8,200.0	7,771.8	8,100.3	7,790.6	47.5	40.2	131.81	802.8	-1,935.9	634.8	563.0	71.80	8.842		
8,300.0	7,871.8	8,184.4	7,874.7	47.6	40.3	131.90	802.5	-1,937.7	634.9	563.1	71.84	8.838		
8,400.0	7,971.8	8,281.0	7,971.3	47.7	40.3	51.50	801.6	-1,936.7	635.2	563.4	71.84	8.842		
8,500.0	8,071.8	8,381.5	8,071.8	47.7	40.3	51.62	800.7	-1,936.0	635.2	563.3	71.88	8.837		
8,509.3	8,081.1	8,390.8	8,081.1	47.7	40.4	51.62	800.6	-1,935.9	635.2	563.3	71.89	8.836		
8,600.0	8,171.8	8,480.7	8,171.0	47.8	40.4	51.71	799.9	-1,935.3	635.3	563.3	71.93	8.832		
8,700.0	8,271.8	8,582.2	8,272.5	47.8	40.4	51.85	798.7	-1,934.4	635.2	563.3	71.94	8.830		
8,708.3	8,280.1	8,589.8	8,280.1	47.8	40.4	51.86	798.6	-1,934.3	635.2	563.3	71.95	8.829		
8,800.0	8,371.8	8,673.8	8,364.1	47.9	40.5	51.89	798.6	-1,933.7	635.8	563.8	72.05	8.824		
8,900.0	8,471.8	8,773.3	8,463.6	47.9	40.6	51.86	799.6	-1,932.8	637.1	564.9	72.23	8.821		
9,000.0	8,571.8	8,877.0	8,567.2	48.0	40.6	51.83	800.6	-1,932.3	638.1	565.7	72.42	8.812		
9,100.0	8,671.8	8,982.9	8,673.2	48.1	40.7	51.77	801.3	-1,932.4	638.4	565.8	72.62	8.790		
9,200.0	8,771.8	9,086.9	8,777.1	48.1	40.8	51.69	801.6	-1,933.5	637.8	564.9	72.87	8.753		
9,300.0	8,871.8	9,187.5	8,877.8	48.2	40.9	51.63	801.6	-1,934.6	636.8	563.8	73.06	8.717		
9,400.0	8,971.8	9,287.0	8,977.3	48.2	40.9	51.68	800.6	-1,935.0	635.9	562.8	73.17	8.691		
9,500.0	9,071.8	9,395.6	9,085.8	48.3	41.0	51.68	799.6	-1,936.2	634.6	561.2	73.33	8.653		
9,598.2	9,169.9	9,479.7	9,169.9	48.3	41.1	51.73	798.6	-1,936.6	633.4	560.0	73.42	8.627		
9,600.0	9,171.8	9,481.3	9,171.5	48.3	41.1	51.73	798.6	-1,936.6	633.4	560.0	73.42	8.627		
9,700.0	9,271.8	9,583.7	9,273.9	48.4	41.1	51.86	797.4	-1,935.7	633.4	560.0	73.46	8.623		
9,800.0	9,371.8	9,684.1	9,374.3	48.5	41.2	51.95	796.5	-1,935.4	633.1	559.5	73.55	8.608		
9,900.0	9,471.8	9,784.4	9,474.6	48.5	41.3	51.96	796.0	-1,935.7	632.5	558.8	73.70	8.583		

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 Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Offset Design											M16W Pad (SWSW S16-T7S-R93W) - MCU Fee 17-9D (M16W) - DD - FINAL			Offset Site Error:		0.0 ft
Survey Program:											206-MWD, 1298-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)						
9,930.0	9,501.8	9,811.9	9,502.1	48.5	41.3	51.95	796.0	-1,935.9	632.4	558.7	73.75	8.575				
10,000.0	9,571.8	9,880.3	9,570.5	48.6	41.4	51.91	796.6	-1,936.0	632.6	558.7	73.92	8.559				
10,100.0	9,671.8	9,983.3	9,673.5	48.7	41.4	51.79	797.3	-1,937.2	632.2	558.0	74.19	8.522				
10,117.8	9,689.6	9,999.4	9,689.6	48.7	41.5	51.78	797.4	-1,937.3	632.2	558.0	74.23	8.517				
10,200.0	9,771.8	10,077.7	9,767.9	48.7	41.5	51.77	797.7	-1,937.0	632.6	558.2	74.37	8.507				
10,300.0	9,871.8	10,177.3	9,867.6	48.8	41.6	51.78	798.0	-1,936.5	633.2	558.6	74.52	8.496				
10,400.0	9,971.8	10,278.8	9,969.0	48.8	41.7	51.76	798.6	-1,936.0	633.9	559.2	74.71	8.485				
10,500.0	10,071.8	10,381.3	10,071.5	48.9	41.7	51.75	798.8	-1,936.0	634.0	559.1	74.89	8.466				
10,509.2	10,081.0	10,390.6	10,080.8	48.9	41.7	51.75	798.8	-1,936.0	634.0	559.1	74.91	8.464				

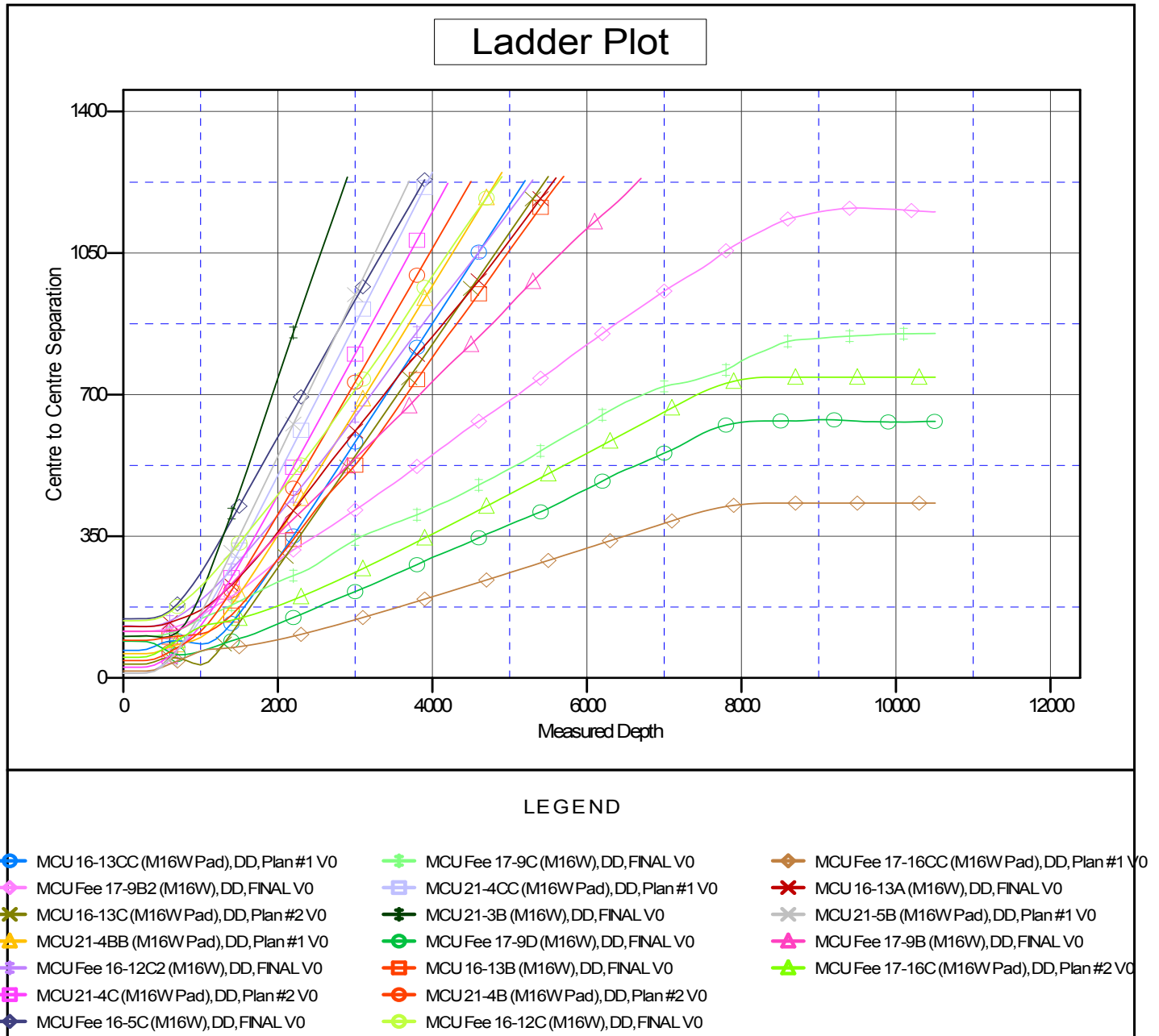
Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Reference Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KB=22' @ 7903.0ft (Patterson 308)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU Fee 17-16B (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 #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=22' @ 7903.0ft (Patterson 308)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: MCU Fee 17-16B (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