

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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	667.4	14.02	135.67	662.8	-40.7	39.8	3.00	135.67	56.9	
4	7399.1	14.02	135.67	7193.8	-1207.5	1179.7	0.00	0.00	1688.1	MCU 21-3B (M16W Pad) TGT
5	8100.3	0.00	0.00	7888.0	-1268.6	1239.3	2.00	180.00	1773.5	MCU 21-3B (M16W Pad) BHL
6	10216.3	0.00	0.00	10004.0	-1268.6	1239.3	0.00	0.00	1773.5	
7	10516.3	0.00	0.00	10304.0	-1268.6	1239.3	0.00	0.00	1773.5	

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3862.0	3964.9	G Sand
5912.0	6077.9	Ohio Creek
6353.0	6532.4	Meas Verde
6865.0	7060.2	Williams Fork
7888.0	8100.3	Top of Gas
9104.0	9316.3	Coal Ridge
9768.0	9980.3	Base Cameo A Coal
9904.0	10116.3	Rollins

MCU 21-3B (M16W Pad) Surface Location Section Line Reference
 645' FSL/ 1335' FWL
 Lat : 39.440146 Long : -107.783061

MCU 21-3B (M16W Pad)
 Plan #1
 MCU 21-3B (M16W Pad)
 115XXX; BH

KBE @ 7903.0ft (Original Well Elev)
 North American Datum 1983
 Well MCU 21-3B (M16W Pad), True North

Target	Azimuth	Origin	Type	N/S
MCU 21-3B (M16W Pad) BHL	135.67	Slot		0.0
MCU 21-3B (M16W Pad) TGT	7888.0	+N/-S	+E/-W	Latitude
MCU 21-3B (M16W Pad) BHL	10004.0	-1268.6	1239.3	39.436663
		-1268.6	1239.3	39.436663

MCU 21-3B (M16W Pad) TGT
 Name TVD +N/-S +E/-W Latitude Longitude
 MCU 21-3B (M16W Pad) TGT 7888.0 -1268.6 1239.3 39.436663 -107.778673
 MCU 21-3B (M16W Pad) BHL 10004.0 -1268.6 1239.3 39.436663 -107.778673

MCU 21-3B (M16W Pad) BHL
 Name TVD +N/-S +E/-W Latitude Longitude
 MCU 21-3B (M16W Pad) BHL 10004.0 -1268.6 1239.3 39.436663 -107.778673

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MCU 21-3B (M16W Pad) TGT
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MCU 21-3B (M16W Pad) BHL
 Name TVD +N/-S +E/-W Latitude Longitude
 MCU 21-3B (M16W Pad) BHL 10004.0 -1268.6 1239.3 39.436663 -107.778673

MCU 21-3B (M16W Pad) TGT
 Name TVD +N/-S +E/-W Latitude Longitude
 MCU 21-3B (M16W Pad) TGT 7888.0 -1268.6 1239.3 39.436663 -107.778673

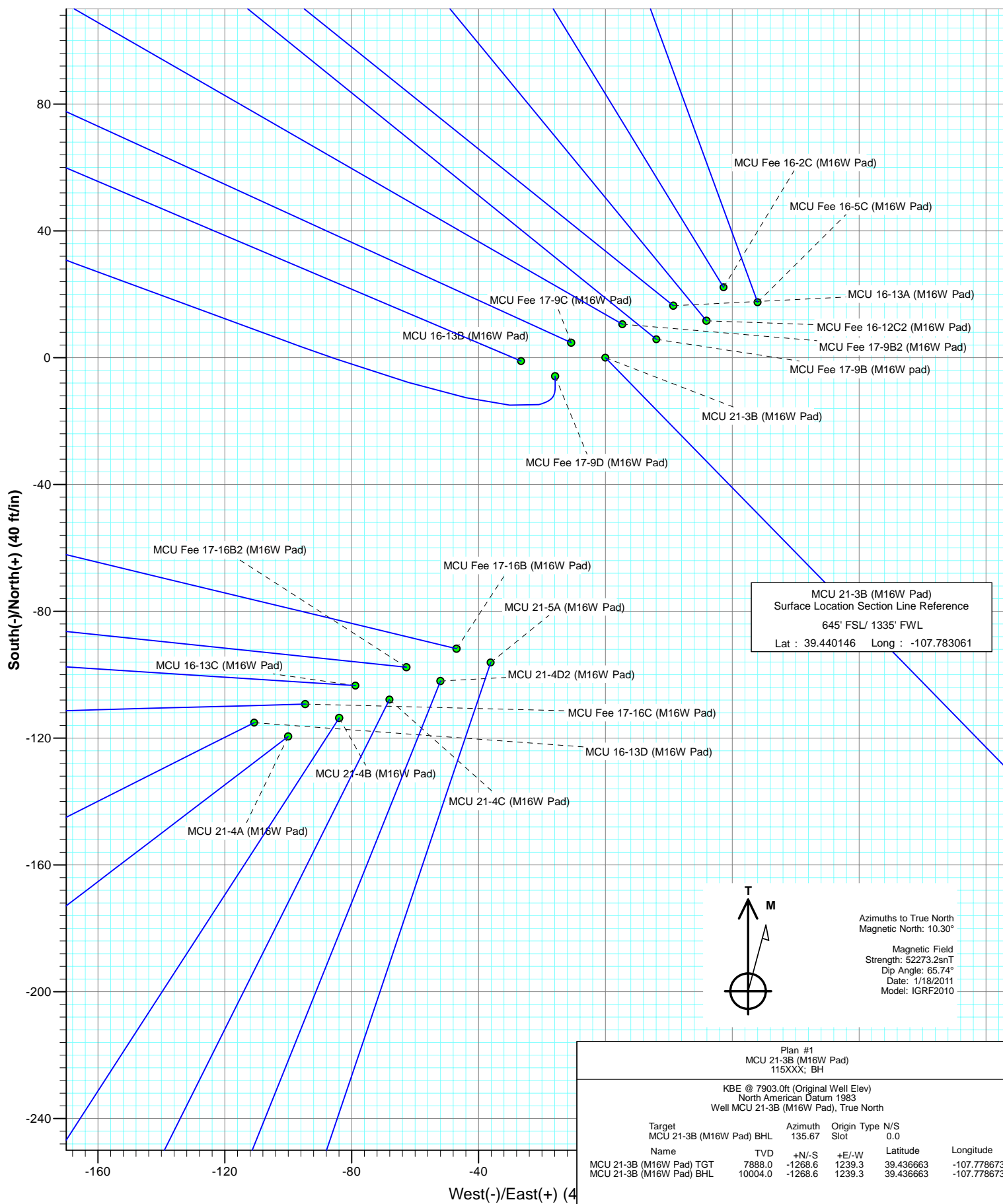
MCU 21-3B (M16W Pad) BHL
 Name TVD +N/-S +E/-W Latitude Longitude
 MCU 21-3B (M16W Pad) BHL 10004.0 -1268.6 1239.3 39.436663 -107.778673

MCU 21-3B (M16W Pad) TGT
 Name TVD +N/-S +E/-W Latitude Longitude
 MCU 21-3B (M16W Pad) TGT 7888.0 -1268.6 1239.3 39.436663 -107.778673

MCU 21-3B (M16W Pad) BHL
 Name TVD +N/-S +E/-W Latitude Longitude
 MCU 21-3B (M16W Pad) BHL 10004.0 -1268.6 1239.3 39.4366

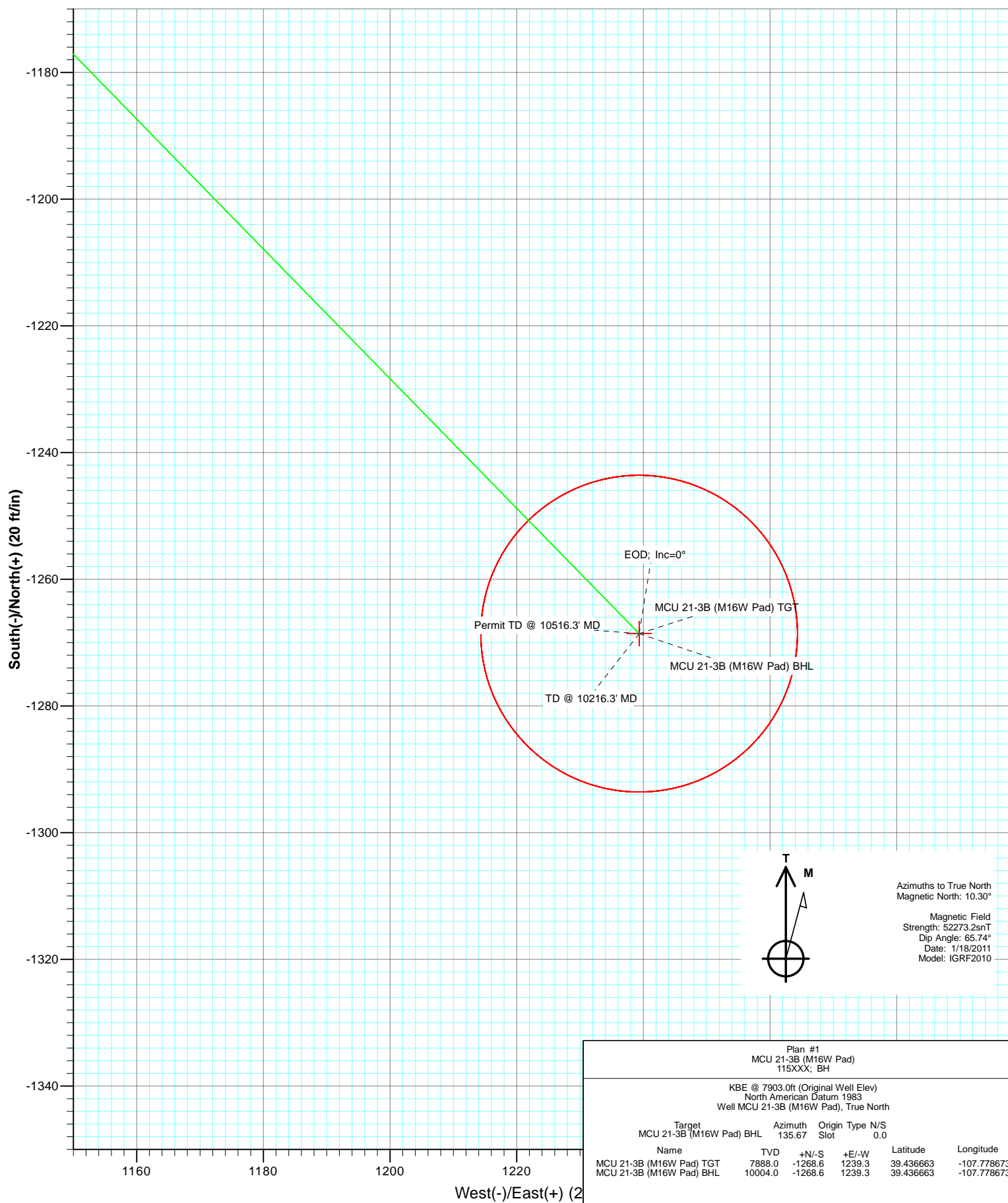


Project: Mamm Creek
Site: SWSW S16-T7S-R93W (M16W Pad)
Well: MCU 21-3B (M16W Pad)
Wellbore: DD
Plan: Plan #1





Project: Mamm Creek
 Site: SWSW S16-T7S-R93W (M16W Pad)
 Well: MCU 21-3B (M16W Pad)
 Wellbore: DD
 Plan: Plan #1



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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

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

Well	MCU 21-3B (M16W Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,593,307.64 ft	Latitude:	39.440146
	+E/-W	0.0 ft	Easting:	2,355,280.42 ft	Longitude:	-107.783061
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,881.0 ft

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

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	135.67

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
667.4	14.02	135.67	662.8	-40.7	39.8	3.00	3.00	0.00	135.67	
7,399.1	14.02	135.67	7,193.8	-1,207.5	1,179.7	0.00	0.00	0.00	0.00	
8,100.3	0.00	0.00	7,888.0	-1,268.6	1,239.3	2.00	-2.00	0.00	180.00	MCU 21-3B (M16W P
10,216.3	0.00	0.00	10,004.0	-1,268.6	1,239.3	0.00	0.00	0.00	0.00	MCU 21-3B (M16W P
10,516.3	0.00	0.00	10,304.0	-1,268.6	1,239.3	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200' MD
300.0	3.00	135.67	300.0	-1.9	1.8	2.6	3.00	3.00	
400.0	6.00	135.67	399.6	-7.5	7.3	10.5	3.00	3.00	
500.0	9.00	135.67	498.8	-16.8	16.4	23.5	3.00	3.00	
600.0	12.00	135.67	597.1	-29.9	29.2	41.7	3.00	3.00	
667.4	14.02	135.67	662.8	-40.7	39.8	56.9	3.00	3.00	EOB; Inc=14.02°
700.0	14.02	135.67	694.4	-46.4	45.3	64.8	0.00	0.00	
800.0	14.02	135.67	791.4	-63.7	62.2	89.0	0.00	0.00	
900.0	14.02	135.67	888.4	-81.0	79.2	113.3	0.00	0.00	
1,000.0	14.02	135.67	985.4	-98.4	96.1	137.5	0.00	0.00	
1,100.0	14.02	135.67	1,082.5	-115.7	113.0	161.7	0.00	0.00	
1,130.5	14.02	135.67	1,112.0	-121.0	118.2	169.1	0.00	0.00	Surface Casing
1,200.0	14.02	135.67	1,179.5	-133.0	130.0	186.0	0.00	0.00	
1,300.0	14.02	135.67	1,276.5	-150.4	146.9	210.2	0.00	0.00	
1,400.0	14.02	135.67	1,373.5	-167.7	163.8	234.4	0.00	0.00	
1,500.0	14.02	135.67	1,470.5	-185.0	180.8	258.7	0.00	0.00	
1,600.0	14.02	135.67	1,567.6	-202.4	197.7	282.9	0.00	0.00	
1,700.0	14.02	135.67	1,664.6	-219.7	214.6	307.1	0.00	0.00	
1,800.0	14.02	135.67	1,761.6	-237.0	231.6	331.4	0.00	0.00	
1,900.0	14.02	135.67	1,858.6	-254.4	248.5	355.6	0.00	0.00	
2,000.0	14.02	135.67	1,955.6	-271.7	265.4	379.8	0.00	0.00	
2,100.0	14.02	135.67	2,052.7	-289.0	282.4	404.1	0.00	0.00	
2,200.0	14.02	135.67	2,149.7	-306.4	299.3	428.3	0.00	0.00	
2,300.0	14.02	135.67	2,246.7	-323.7	316.2	452.5	0.00	0.00	
2,400.0	14.02	135.67	2,343.7	-341.0	333.2	476.7	0.00	0.00	
2,500.0	14.02	135.67	2,440.7	-358.3	350.1	501.0	0.00	0.00	
2,600.0	14.02	135.67	2,537.8	-375.7	367.0	525.2	0.00	0.00	
2,700.0	14.02	135.67	2,634.8	-393.0	384.0	549.4	0.00	0.00	
2,800.0	14.02	135.67	2,731.8	-410.3	400.9	573.7	0.00	0.00	
2,900.0	14.02	135.67	2,828.8	-427.7	417.8	597.9	0.00	0.00	
3,000.0	14.02	135.67	2,925.8	-445.0	434.8	622.1	0.00	0.00	
3,100.0	14.02	135.67	3,022.9	-462.3	451.7	646.4	0.00	0.00	
3,200.0	14.02	135.67	3,119.9	-479.7	468.6	670.6	0.00	0.00	
3,300.0	14.02	135.67	3,216.9	-497.0	485.6	694.8	0.00	0.00	
3,400.0	14.02	135.67	3,313.9	-514.3	502.5	719.1	0.00	0.00	
3,500.0	14.02	135.67	3,410.9	-531.7	519.4	743.3	0.00	0.00	
3,600.0	14.02	135.67	3,507.9	-549.0	536.4	767.5	0.00	0.00	
3,700.0	14.02	135.67	3,605.0	-566.3	553.3	791.8	0.00	0.00	
3,800.0	14.02	135.67	3,702.0	-583.7	570.2	816.0	0.00	0.00	
3,900.0	14.02	135.67	3,799.0	-601.0	587.2	840.2	0.00	0.00	
3,964.9	14.02	135.67	3,862.0	-612.3	598.2	856.0	0.00	0.00	G Sand
4,000.0	14.02	135.67	3,896.0	-618.3	604.1	864.5	0.00	0.00	
4,100.0	14.02	135.67	3,993.0	-635.7	621.0	888.7	0.00	0.00	
4,200.0	14.02	135.67	4,090.1	-653.0	638.0	912.9	0.00	0.00	
4,300.0	14.02	135.67	4,187.1	-670.3	654.9	937.1	0.00	0.00	
4,400.0	14.02	135.67	4,284.1	-687.7	671.8	961.4	0.00	0.00	
4,500.0	14.02	135.67	4,381.1	-705.0	688.8	985.6	0.00	0.00	
4,600.0	14.02	135.67	4,478.1	-722.3	705.7	1,009.8	0.00	0.00	
4,700.0	14.02	135.67	4,575.2	-739.7	722.6	1,034.1	0.00	0.00	
4,800.0	14.02	135.67	4,672.2	-757.0	739.6	1,058.3	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	14.02	135.67	4,769.2	-774.3	756.5	1,082.5	0.00	0.00	
5,000.0	14.02	135.67	4,866.2	-791.7	773.4	1,106.8	0.00	0.00	
5,100.0	14.02	135.67	4,963.2	-809.0	790.4	1,131.0	0.00	0.00	
5,200.0	14.02	135.67	5,060.3	-826.3	807.3	1,155.2	0.00	0.00	
5,300.0	14.02	135.67	5,157.3	-843.7	824.2	1,179.5	0.00	0.00	
5,400.0	14.02	135.67	5,254.3	-861.0	841.2	1,203.7	0.00	0.00	
5,500.0	14.02	135.67	5,351.3	-878.3	858.1	1,227.9	0.00	0.00	
5,600.0	14.02	135.67	5,448.3	-895.7	875.0	1,252.2	0.00	0.00	
5,700.0	14.02	135.67	5,545.4	-913.0	892.0	1,276.4	0.00	0.00	
5,800.0	14.02	135.67	5,642.4	-930.3	908.9	1,300.6	0.00	0.00	
5,900.0	14.02	135.67	5,739.4	-947.7	925.8	1,324.9	0.00	0.00	
6,000.0	14.02	135.67	5,836.4	-965.0	942.8	1,349.1	0.00	0.00	
6,077.9	14.02	135.67	5,912.0	-978.5	956.0	1,368.0	0.00	0.00	ohio Creek
6,100.0	14.02	135.67	5,933.4	-982.3	959.7	1,373.3	0.00	0.00	
6,200.0	14.02	135.67	6,030.5	-999.7	976.6	1,397.5	0.00	0.00	
6,300.0	14.02	135.67	6,127.5	-1,017.0	993.6	1,421.8	0.00	0.00	
6,400.0	14.02	135.67	6,224.5	-1,034.3	1,010.5	1,446.0	0.00	0.00	
6,500.0	14.02	135.67	6,321.5	-1,051.7	1,027.4	1,470.2	0.00	0.00	
6,532.4	14.02	135.67	6,353.0	-1,057.3	1,032.9	1,478.1	0.00	0.00	Meas Verde
6,600.0	14.02	135.67	6,418.5	-1,069.0	1,044.4	1,494.5	0.00	0.00	
6,700.0	14.02	135.67	6,515.6	-1,086.3	1,061.3	1,518.7	0.00	0.00	
6,800.0	14.02	135.67	6,612.6	-1,103.7	1,078.2	1,542.9	0.00	0.00	
6,900.0	14.02	135.67	6,709.6	-1,121.0	1,095.2	1,567.2	0.00	0.00	
7,000.0	14.02	135.67	6,806.6	-1,138.3	1,112.1	1,591.4	0.00	0.00	
7,060.2	14.02	135.67	6,865.0	-1,148.8	1,122.3	1,606.0	0.00	0.00	Williams Fork
7,100.0	14.02	135.67	6,903.6	-1,155.7	1,129.0	1,615.6	0.00	0.00	
7,200.0	14.02	135.67	7,000.7	-1,173.0	1,146.0	1,639.9	0.00	0.00	
7,300.0	14.02	135.67	7,097.7	-1,190.3	1,162.9	1,664.1	0.00	0.00	
7,399.1	14.02	135.67	7,193.8	-1,207.5	1,179.7	1,688.1	0.00	0.00	Start Drop -2.00
7,400.0	14.01	135.67	7,194.7	-1,207.7	1,179.8	1,688.3	2.00	-2.00	
7,500.0	12.01	135.67	7,292.1	-1,223.8	1,195.6	1,710.8	2.00	-2.00	
7,600.0	10.01	135.67	7,390.3	-1,237.4	1,208.9	1,729.9	2.00	-2.00	
7,700.0	8.01	135.67	7,489.0	-1,248.6	1,219.8	1,745.6	2.00	-2.00	
7,800.0	6.01	135.67	7,588.3	-1,257.3	1,228.4	1,757.8	2.00	-2.00	
7,900.0	4.01	135.67	7,687.9	-1,263.6	1,234.5	1,766.5	2.00	-2.00	
8,000.0	2.01	135.67	7,787.8	-1,267.3	1,238.1	1,771.7	2.00	-2.00	
8,100.0	0.01	135.67	7,887.7	-1,268.6	1,239.3	1,773.5	2.00	-2.00	
8,100.3	0.00	0.00	7,888.0	-1,268.6	1,239.3	1,773.5	2.00	-2.00	EOD; Inc=0° - Top of Gas - MCU 21-3B (M16W)
8,200.0	0.00	0.00	7,987.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
8,300.0	0.00	0.00	8,087.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
8,400.0	0.00	0.00	8,187.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
8,500.0	0.00	0.00	8,287.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
8,600.0	0.00	0.00	8,387.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
8,700.0	0.00	0.00	8,487.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
8,800.0	0.00	0.00	8,587.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
8,900.0	0.00	0.00	8,687.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,000.0	0.00	0.00	8,787.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,100.0	0.00	0.00	8,887.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,200.0	0.00	0.00	8,987.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,300.0	0.00	0.00	9,087.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,316.3	0.00	0.00	9,104.0	-1,268.6	1,239.3	1,773.5	0.00	0.00	Coal Ridge
9,400.0	0.00	0.00	9,187.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,500.0	0.00	0.00	9,287.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,600.0	0.00	0.00	9,387.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,700.0	0.00	0.00	9,487.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,800.0	0.00	0.00	9,587.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,900.0	0.00	0.00	9,687.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
9,980.3	0.00	0.00	9,768.0	-1,268.6	1,239.3	1,773.5	0.00	0.00	Base Cameo A Coal
10,000.0	0.00	0.00	9,787.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
10,100.0	0.00	0.00	9,887.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
10,116.3	0.00	0.00	9,904.0	-1,268.6	1,239.3	1,773.5	0.00	0.00	Rollins
10,200.0	0.00	0.00	9,987.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
10,216.3	0.00	0.00	10,004.0	-1,268.6	1,239.3	1,773.5	0.00	0.00	TD @ 10216.3' MD - MCU 21-3B (M16W Pad) I
10,300.0	0.00	0.00	10,087.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
10,400.0	0.00	0.00	10,187.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
10,500.0	0.00	0.00	10,287.7	-1,268.6	1,239.3	1,773.5	0.00	0.00	
10,516.3	0.00	0.00	10,304.0	-1,268.6	1,239.3	1,773.5	0.00	0.00	

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
MCU 21-3B (M16W Pad - plan hits target center - Circle (radius 25.0)	0.00	0.00	7,888.0	-1,268.6	1,239.3	1,592,008.33	2,356,487.50	39.436663	-107.778673
MCU 21-3B (M16W Pad - plan hits target center - Circle (radius 25.0)	0.00	0.00	10,004.0	-1,268.6	1,239.3	1,592,008.33	2,356,487.50	39.436663	-107.778673

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,130.5	1,112.0	Surface Casing	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,964.9	3,862.0	G Sand		0.00	
6,077.9	5,912.0	ohio Creek		0.00	
6,532.4	6,353.0	Meas Verde		0.00	
7,060.2	6,865.0	Williams Fork		0.00	
8,100.3	7,888.0	Top of Gas		0.00	
9,316.3	9,104.0	Coal Ridge		0.00	
9,980.3	9,768.0	Base Cameo A Coal		0.00	
10,116.3	9,904.0	Rollins		0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	SWSW S16-T7S-R93W (M16W Pad)	North Reference:	True
Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200' MD
667.4	662.8	-40.7	39.8	EOB; Inc=14.02°
7,399.1	7,193.8	-1,207.5	1,179.7	Start Drop -2.00
8,100.3	7,888.0	-1,268.6	1,239.3	EOD; Inc=0°
10,216.3	10,004.0	-1,268.6	1,239.3	TD @ 10216.3' MD
10,516.3	10,304.0	-1,268.6	1,239.3	Permit TD @ 10516.3' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

SWSW S16-T7S-R93W (M16W Pad)

MCU 21-3B (M16W Pad)

DD

Plan #1

Anticollision Report

27 January, 2011

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date	1/27/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,516.3	Plan #1 (DD)	MWD	Geolink MWD

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	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)		
SWSW S16-T7S-R93W (M16W Pad)						
MCU 16-13A (M16W Pad) - DD - Plan #1	296.4	296.5	26.6	25.6	27.277	CC
MCU 16-13A (M16W Pad) - DD - Plan #1	300.0	300.1	26.6	25.6	26.912	ES
MCU 16-13A (M16W Pad) - DD - Plan #1	400.0	398.5	31.0	29.6	22.189	SF
MCU 16-13B (M16W Pad) - DD - Plan #1	200.0	200.0	26.6	25.9	42.762	CC, ES
MCU 16-13B (M16W Pad) - DD - Plan #1	300.0	298.5	30.8	29.8	31.683	SF
MCU 16-13C (M16W Pad) - DD - Plan #1	200.0	200.0	130.0	129.4	209.267	CC, ES
MCU 16-13C (M16W Pad) - DD - Plan #1	900.0	873.5	208.2	204.4	54.728	SF
MCU 16-13D (M16W Pad) - DD - Plan #1	200.0	200.0	159.7	159.1	257.013	CC, ES
MCU 16-13D (M16W Pad) - DD - Plan #1	1,500.0	1,446.5	382.3	375.6	56.567	SF
MCU 21-4A (M16W Pad) - DD - Plan #1	200.0	200.0	155.8	155.2	250.707	CC, ES
MCU 21-4A (M16W Pad) - DD - Plan #1	1,700.0	1,639.6	420.1	412.0	52.316	SF
MCU 21-4B (M16W Pad) - DD - Plan #1	200.0	200.0	141.2	140.6	227.296	CC, ES
MCU 21-4B (M16W Pad) - DD - Plan #1	2,000.0	1,929.4	478.9	467.9	43.479	SF
MCU 21-4C (M16W Pad) - DD - Plan #1	200.0	200.0	127.5	126.9	205.186	CC, ES
MCU 21-4C (M16W Pad) - DD - Plan #1	2,100.0	2,024.4	496.1	483.5	39.367	SF
MCU 21-4D2 (M16W Pad) - DD - Plan #1	200.0	200.0	114.5	113.8	184.206	CC, ES
MCU 21-4D2 (M16W Pad) - DD - Plan #1	2,100.0	2,019.9	496.6	483.1	36.798	SF
MCU 21-5A (M16W Pad) - DD - Plan #1	200.0	200.0	102.7	102.1	165.315	CC, ES
MCU 21-5A (M16W Pad) - DD - Plan #1	2,000.0	1,916.3	478.0	464.6	35.895	SF
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	355.4	355.3	31.6	30.3	25.678	CC, ES
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	400.0	399.0	32.6	31.2	22.965	SF
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	301.5	301.3	43.1	42.1	43.368	CC, ES
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	500.0	493.0	59.3	57.5	32.300	SF
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	345.6	344.8	49.9	48.8	42.251	CC, ES
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	500.0	493.1	60.7	58.8	32.307	SF
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	298.4	296.9	102.9	102.0	105.307	CC
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	300.0	298.5	102.9	102.0	104.682	ES
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	600.0	580.0	126.1	123.6	51.351	SF
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	200.0	200.0	116.0	115.4	186.702	CC, ES
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	700.0	660.2	173.4	170.5	59.453	SF
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	200.0	200.0	144.5	143.9	232.610	CC, ES
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	700.0	651.6	208.8	205.9	72.410	SF
MCU Fee 17-9B (M16W pad) - DD - Plan #1	323.5	323.6	15.2	14.1	13.917	CC, ES, SF
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	200.0	200.0	11.8	11.2	19.068	CC, ES
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	300.0	299.7	13.8	12.8	14.055	SF
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	200.0	200.0	11.7	11.1	18.879	CC, ES
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	300.0	299.1	16.8	15.8	17.321	SF
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	200.0	200.0	16.9	16.2	27.120	CC, ES
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	400.0	399.0	24.1	22.7	17.619	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13A (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	52.61	16.4	21.5	27.0				
100.0	100.0	100.0	100.0	0.1	0.1	52.61	16.4	21.5	27.0	26.7	0.27	99.220	
200.0	200.0	200.0	200.0	0.3	0.3	52.61	16.4	21.5	27.0	26.4	0.62	43.478	
296.4	296.4	296.5	296.4	0.5	0.5	-93.43	17.9	19.6	26.6	25.6	0.97	27.277 CC	
300.0	300.0	300.1	300.0	0.5	0.5	-94.22	18.0	19.4	26.6	25.6	0.99	26.912 ES	
400.0	399.6	398.5	398.1	0.7	0.7	-123.87	22.9	13.4	31.0	29.6	1.40	22.189 SF	
500.0	498.8	494.9	493.8	1.0	1.0	-149.33	30.2	4.3	48.8	47.1	1.75	27.936	
600.0	597.1	590.1	588.3	1.4	1.2	-161.72	37.8	-5.1	76.3	74.2	2.06	37.055	
700.0	694.4	683.7	681.1	1.8	1.5	-168.03	45.2	-14.3	110.0	107.7	2.37	46.502	
800.0	791.4	776.9	773.6	2.2	1.7	-171.57	52.6	-23.5	145.6	142.9	2.69	54.194	
900.0	888.4	870.1	866.0	2.7	2.0	-173.71	60.0	-32.7	181.4	178.4	3.01	60.266	
1,000.0	985.4	963.3	958.5	3.1	2.2	-175.15	67.4	-41.9	217.3	214.0	3.34	65.156	
1,100.0	1,082.5	1,056.5	1,050.9	3.6	2.5	-176.18	74.8	-51.1	253.4	249.7	3.66	69.169	
1,200.0	1,179.5	1,149.7	1,143.3	4.0	2.8	-176.96	82.2	-60.3	289.5	285.5	3.99	72.517	
1,300.0	1,276.5	1,242.9	1,235.8	4.5	3.0	-177.56	89.6	-69.5	325.6	321.3	4.32	75.350	
1,400.0	1,373.5	1,336.1	1,328.2	5.0	3.3	-178.04	97.0	-78.7	361.8	357.1	4.65	77.778	
1,500.0	1,470.5	1,429.3	1,420.7	5.4	3.5	-178.44	104.4	-87.8	398.0	393.0	4.98	79.880	
1,600.0	1,567.6	1,522.5	1,513.1	5.9	3.8	-178.77	111.8	-97.0	434.2	428.9	5.31	81.718	
1,700.0	1,664.6	1,615.6	1,605.6	6.3	4.1	-179.05	119.2	-106.2	470.4	464.7	5.64	83.337	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13B (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-92.33	-1.1	-26.5	26.6					
100.0	100.0	100.0	100.0	0.1	0.1	-92.33	-1.1	-26.5	26.6	26.3	0.27	97.586		
200.0	200.0	200.0	200.0	0.3	0.3	-92.33	-1.1	-26.5	26.6	25.9	0.62	42.762 CC, ES		
300.0	300.0	298.5	298.5	0.5	0.5	137.52	-0.1	-28.9	30.8	29.8	0.97	31.683 SF		
400.0	399.6	395.7	395.3	0.7	0.7	147.34	2.8	-35.8	44.5	43.2	1.33	33.540		
500.0	498.8	493.1	492.3	1.0	0.9	154.66	6.6	-44.6	65.7	64.0	1.68	39.118		
600.0	597.1	589.3	588.0	1.4	1.2	159.46	10.3	-53.3	92.1	90.1	2.02	45.497		
700.0	694.4	684.0	682.3	1.8	1.4	162.80	13.9	-61.8	123.5	121.1	2.37	52.166		
800.0	791.4	778.4	776.2	2.2	1.6	165.04	17.5	-70.4	156.2	153.5	2.72	57.537		
900.0	888.4	872.7	870.1	2.7	1.8	166.51	21.2	-78.9	189.1	186.1	3.06	61.743		
1,000.0	985.4	967.1	964.0	3.1	2.1	167.54	24.8	-87.5	222.1	218.7	3.41	65.120		
1,100.0	1,082.5	1,061.5	1,057.9	3.6	2.3	168.30	28.4	-96.0	255.1	251.3	3.76	67.888		
1,200.0	1,179.5	1,155.8	1,151.8	4.0	2.5	168.89	32.0	-104.5	288.1	284.0	4.10	70.196		
1,300.0	1,276.5	1,250.2	1,245.7	4.5	2.8	169.36	35.7	-113.1	321.1	316.7	4.45	72.151		
1,400.0	1,373.5	1,344.5	1,339.6	5.0	3.0	169.74	39.3	-121.6	354.2	349.4	4.80	73.826		
1,500.0	1,470.5	1,438.9	1,433.5	5.4	3.2	170.06	42.9	-130.1	387.3	382.1	5.14	75.277		
1,600.0	1,567.6	1,533.2	1,527.4	5.9	3.4	170.32	46.5	-138.7	420.4	414.9	5.49	76.547		
1,700.0	1,664.6	1,627.6	1,621.3	6.3	3.7	170.55	50.2	-147.2	453.5	447.6	5.84	77.668		
1,800.0	1,761.6	1,721.9	1,715.1	6.8	3.9	170.75	53.8	-155.8	486.6	480.4	6.19	78.663		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13C (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				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	-142.70	-103.4	-78.8	130.0					
100.0	100.0	100.0	100.0	0.1	0.1	-142.70	-103.4	-78.8	130.0	129.8	0.27	477.557		
200.0	200.0	200.0	200.0	0.3	0.3	-142.70	-103.4	-78.8	130.0	129.4	0.62	209.267	CC, ES	
300.0	300.0	296.1	296.1	0.5	0.5	83.57	-103.3	-81.2	131.1	130.1	0.98	134.131		
400.0	399.6	392.6	392.3	0.7	0.7	89.05	-102.8	-88.1	135.1	133.7	1.38	97.684		
500.0	498.8	490.6	490.0	1.0	0.9	96.48	-102.3	-96.2	141.6	139.8	1.85	76.588		
600.0	597.1	587.5	586.5	1.4	1.1	104.83	-101.8	-104.1	151.8	149.4	2.36	64.198		
700.0	694.4	683.0	681.8	1.8	1.3	113.44	-101.3	-111.9	167.0	164.1	2.89	57.857		
800.0	791.4	778.3	776.7	2.2	1.5	121.07	-100.8	-119.7	186.2	182.9	3.36	55.370		
900.0	888.4	873.5	871.6	2.7	1.7	127.26	-100.3	-127.5	208.2	204.4	3.80	54.728	SF	
1,000.0	985.4	968.7	966.5	3.1	2.0	132.26	-99.8	-135.3	232.1	227.9	4.22	55.025		
1,100.0	1,082.5	1,063.9	1,061.3	3.6	2.2	136.34	-99.3	-143.1	257.5	252.9	4.61	55.794		
1,200.0	1,179.5	1,159.1	1,156.2	4.0	2.4	139.69	-98.8	-150.8	283.8	278.8	5.00	56.785		
1,300.0	1,276.5	1,254.3	1,251.1	4.5	2.6	142.47	-98.3	-158.6	311.0	305.6	5.37	57.864		
1,400.0	1,373.5	1,349.6	1,346.0	5.0	2.8	144.82	-97.8	-166.4	338.7	332.9	5.74	58.958		
1,500.0	1,470.5	1,444.8	1,440.9	5.4	3.0	146.81	-97.3	-174.2	366.9	360.7	6.11	60.028		
1,600.0	1,567.6	1,540.0	1,535.8	5.9	3.2	148.52	-96.7	-182.0	395.4	388.9	6.48	61.052		
1,700.0	1,664.6	1,635.2	1,630.7	6.3	3.5	150.00	-96.2	-189.8	424.2	417.4	6.84	62.022		
1,800.0	1,761.6	1,730.4	1,725.6	6.8	3.7	151.30	-95.7	-197.6	453.2	446.0	7.20	62.934		
1,900.0	1,858.6	1,825.6	1,820.5	7.3	3.9	152.43	-95.2	-205.4	482.5	474.9	7.56	63.788		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13D (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-136.11	-115.1	-110.7	159.7					
100.0	100.0	100.0	100.0	0.1	0.1	-136.11	-115.1	-110.7	159.7	159.4	0.27	586.516		
200.0	200.0	200.0	200.0	0.3	0.3	-136.11	-115.1	-110.7	159.7	159.1	0.62	257.013 CC, ES		
300.0	300.0	292.5	292.5	0.5	0.5	89.28	-116.1	-112.7	161.9	161.0	0.97	167.478		
400.0	399.6	385.9	385.7	0.7	0.7	92.28	-119.1	-118.7	168.9	167.5	1.35	124.887		
500.0	498.8	484.4	483.7	1.0	0.9	96.85	-122.9	-126.2	178.4	176.6	1.81	98.764		
600.0	597.1	581.9	580.9	1.4	1.1	102.32	-126.6	-133.6	190.1	187.8	2.32	81.790		
700.0	694.4	678.2	676.9	1.8	1.3	108.38	-130.3	-141.0	205.1	202.2	2.88	71.243		
800.0	791.4	774.2	772.5	2.2	1.5	114.10	-134.0	-148.3	222.8	219.4	3.42	65.197		
900.0	888.4	870.3	868.2	2.7	1.8	118.98	-137.7	-155.7	242.4	238.5	3.94	61.579		
1,000.0	985.4	966.3	963.9	3.1	2.0	123.13	-141.4	-163.0	263.5	259.1	4.44	59.382		
1,100.0	1,082.5	1,062.4	1,059.6	3.6	2.2	126.66	-145.1	-170.3	285.8	280.9	4.92	58.050		
1,200.0	1,179.5	1,158.4	1,155.3	4.0	2.4	129.69	-148.8	-177.7	309.0	303.6	5.40	57.263		
1,300.0	1,276.5	1,254.4	1,251.0	4.5	2.6	132.30	-152.5	-185.0	332.9	327.0	5.86	56.827		
1,400.0	1,373.5	1,350.5	1,346.6	5.0	2.9	134.56	-156.2	-192.4	357.4	351.1	6.31	56.621		
1,500.0	1,470.5	1,446.5	1,442.3	5.4	3.1	136.53	-159.9	-199.7	382.3	375.6	6.76	56.567 SF		
1,600.0	1,567.6	1,542.5	1,538.0	5.9	3.3	138.27	-163.6	-207.0	407.6	400.4	7.20	56.615		
1,700.0	1,664.6	1,638.6	1,633.7	6.3	3.5	139.80	-167.3	-214.4	433.3	425.6	7.64	56.731		
1,800.0	1,761.6	1,734.6	1,729.4	6.8	3.7	141.16	-171.0	-221.7	459.2	451.1	8.07	56.891		
1,900.0	1,858.6	1,830.6	1,825.1	7.3	4.0	142.38	-174.7	-229.0	485.3	476.8	8.50	57.080		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4A (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	-140.07	-119.5	-100.0	155.8					
100.0	100.0	100.0	100.0	0.1	0.1	-140.07	-119.5	-100.0	155.8	155.5	0.27	572.125		
200.0	200.0	200.0	200.0	0.3	0.3	-140.07	-119.5	-100.0	155.8	155.2	0.62	250.707	CC, ES	
300.0	300.0	292.5	292.5	0.5	0.5	85.25	-120.8	-101.8	157.9	156.9	0.97	163.406		
400.0	399.6	385.4	385.1	0.7	0.7	88.07	-124.9	-107.1	164.6	163.3	1.35	121.948		
500.0	498.8	482.6	481.9	1.0	0.9	92.45	-130.6	-114.6	174.4	172.6	1.80	96.721		
600.0	597.1	580.3	579.1	1.4	1.1	97.84	-136.4	-122.1	185.9	183.6	2.33	79.813		
700.0	694.4	676.8	675.2	1.8	1.4	103.90	-142.1	-129.6	200.3	197.4	2.90	68.995		
800.0	791.4	773.1	771.0	2.2	1.6	109.64	-147.7	-137.0	217.2	213.7	3.47	62.626		
900.0	888.4	869.4	866.8	2.7	1.8	114.55	-153.4	-144.4	236.0	232.0	4.02	58.710		
1,000.0	985.4	965.7	962.7	3.1	2.1	118.73	-159.0	-151.8	256.3	251.7	4.56	56.243		
1,100.0	1,082.5	1,062.0	1,058.5	3.6	2.3	122.30	-164.7	-159.3	277.7	272.6	5.08	54.669		
1,200.0	1,179.5	1,158.2	1,154.3	4.0	2.5	125.36	-170.4	-166.7	300.0	294.4	5.59	53.663		
1,300.0	1,276.5	1,254.5	1,250.1	4.5	2.7	128.00	-176.0	-174.1	323.1	317.0	6.09	53.030		
1,400.0	1,373.5	1,350.8	1,346.0	5.0	3.0	130.29	-181.7	-181.5	346.7	340.1	6.59	52.645		
1,500.0	1,470.5	1,447.1	1,441.8	5.4	3.2	132.30	-187.3	-188.9	370.8	363.7	7.07	52.431		
1,600.0	1,567.6	1,543.3	1,537.6	5.9	3.4	134.05	-193.0	-196.3	395.3	387.7	7.55	52.333		
1,700.0	1,664.6	1,639.6	1,633.4	6.3	3.7	135.61	-198.7	-203.8	420.1	412.0	8.03	52.316	SF	
1,800.0	1,761.6	1,735.9	1,729.2	6.8	3.9	136.99	-204.3	-211.2	445.1	436.6	8.50	52.355		
1,900.0	1,858.6	1,832.2	1,825.1	7.3	4.2	138.23	-210.0	-218.6	470.4	461.4	8.97	52.433		
2,000.0	1,955.6	1,928.5	1,920.9	7.7	4.4	139.34	-215.7	-226.0	495.8	486.4	9.44	52.539		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4B (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-143.56	-113.6	-83.9	141.2					
100.0	100.0	100.0	100.0	0.1	0.1	-143.56	-113.6	-83.9	141.2	141.0	0.27	518.701		
200.0	200.0	200.0	200.0	0.3	0.3	-143.56	-113.6	-83.9	141.2	140.6	0.62	227.296	CC, ES	
300.0	300.0	293.0	293.0	0.5	0.5	81.61	-115.5	-85.1	143.3	142.3	0.97	148.173		
400.0	399.6	385.5	385.2	0.7	0.7	83.99	-121.2	-88.8	149.6	148.2	1.35	110.788		
500.0	498.8	477.0	476.0	1.0	0.9	87.44	-130.5	-94.8	160.6	158.8	1.80	89.372		
600.0	597.1	574.6	572.5	1.4	1.2	92.03	-142.4	-102.5	175.0	172.6	2.34	74.665		
700.0	694.4	671.6	668.5	1.8	1.5	97.39	-154.3	-110.2	191.1	188.1	2.96	64.539		
800.0	791.4	768.3	764.2	2.2	1.8	102.48	-166.2	-117.9	209.0	205.4	3.59	58.164		
900.0	888.4	865.1	859.9	2.7	2.1	106.76	-178.1	-125.6	228.4	224.1	4.23	53.972		
1,000.0	985.4	961.8	955.7	3.1	2.4	110.37	-190.0	-133.3	248.8	243.9	4.87	51.107		
1,100.0	1,082.5	1,058.6	1,051.4	3.6	2.7	113.43	-201.9	-140.9	270.0	264.5	5.50	49.085		
1,200.0	1,179.5	1,155.4	1,147.1	4.0	3.0	116.05	-213.8	-148.6	291.8	285.7	6.13	47.619		
1,300.0	1,276.5	1,252.1	1,242.8	4.5	3.3	118.31	-225.6	-156.3	314.2	307.5	6.75	46.533		
1,400.0	1,373.5	1,348.9	1,338.5	5.0	3.6	120.27	-237.5	-164.0	337.0	329.6	7.37	45.714		
1,500.0	1,470.5	1,445.6	1,434.3	5.4	3.9	121.98	-249.4	-171.7	360.1	352.1	7.99	45.087		
1,600.0	1,567.6	1,542.4	1,530.0	5.9	4.2	123.48	-261.3	-179.4	383.5	374.9	8.60	44.600		
1,700.0	1,664.6	1,639.2	1,625.7	6.3	4.5	124.82	-273.2	-187.0	407.1	397.9	9.21	44.218		
1,800.0	1,761.6	1,735.9	1,721.4	6.8	4.8	126.00	-285.0	-194.7	430.8	421.0	9.81	43.915		
1,900.0	1,858.6	1,832.7	1,817.1	7.3	5.1	127.07	-296.9	-202.4	454.8	444.4	10.41	43.673		
2,000.0	1,955.6	1,929.4	1,912.9	7.7	5.4	128.02	-308.8	-210.1	478.9	467.9	11.01	43.479	SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4C (M16W Pad) - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-147.73	-107.8	-68.1	127.5				
100.0	100.0	100.0	100.0	0.1	0.1	-147.73	-107.8	-68.1	127.5	127.2	0.27	468.245	
200.0	200.0	200.0	200.0	0.3	0.3	-147.73	-107.8	-68.1	127.5	126.9	0.62	205.186	CC, ES
300.0	300.0	293.7	293.7	0.5	0.5	77.50	-109.9	-69.1	129.3	128.4	0.97	133.651	
400.0	399.6	386.9	386.6	0.7	0.7	80.03	-116.0	-72.1	135.1	133.8	1.35	99.951	
500.0	498.8	479.2	478.2	1.0	0.9	83.72	-126.0	-77.2	145.3	143.5	1.80	80.546	
600.0	597.1	571.7	569.4	1.4	1.2	88.05	-140.0	-84.1	160.4	158.0	2.35	68.291	
700.0	694.4	668.7	664.8	1.8	1.6	93.26	-155.8	-92.0	178.1	175.1	2.99	59.569	
800.0	791.4	765.6	760.0	2.2	1.9	98.14	-171.7	-99.9	197.3	193.7	3.66	53.921	
900.0	888.4	862.4	855.2	2.7	2.3	102.15	-187.5	-107.8	217.8	213.4	4.34	50.123	
1,000.0	985.4	959.2	950.4	3.1	2.6	105.47	-203.4	-115.7	239.0	234.0	5.04	47.466	
1,100.0	1,082.5	1,056.1	1,045.6	3.6	2.9	108.25	-219.2	-123.6	260.9	255.2	5.73	45.544	
1,200.0	1,179.5	1,152.9	1,140.8	4.0	3.3	110.60	-235.1	-131.6	283.4	276.9	6.42	44.114	
1,300.0	1,276.5	1,249.7	1,236.0	4.5	3.6	112.61	-250.9	-139.5	306.2	299.1	7.12	43.023	
1,400.0	1,373.5	1,346.6	1,331.2	5.0	4.0	114.34	-266.7	-147.4	329.3	321.5	7.81	42.174	
1,500.0	1,470.5	1,443.4	1,426.4	5.4	4.3	115.84	-282.6	-155.3	352.7	344.2	8.50	41.501	
1,600.0	1,567.6	1,540.3	1,521.6	5.9	4.7	117.16	-298.4	-163.2	376.2	367.1	9.19	40.959	
1,700.0	1,664.6	1,637.1	1,616.8	6.3	5.0	118.32	-314.3	-171.1	400.0	390.1	9.87	40.516	
1,800.0	1,761.6	1,733.9	1,712.0	6.8	5.4	119.35	-330.1	-179.0	423.9	413.3	10.56	40.150	
1,900.0	1,858.6	1,830.8	1,807.2	7.3	5.8	120.27	-345.9	-186.9	447.9	436.6	11.24	39.845	
2,000.0	1,955.6	1,927.6	1,902.4	7.7	6.1	121.10	-361.8	-194.8	472.0	460.0	11.92	39.587	
2,100.0	2,052.7	2,024.4	1,997.6	8.2	6.5	121.85	-377.6	-202.7	496.1	483.5	12.60	39.367	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4D2 (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-153.00	-102.0	-52.0	114.5					
100.0	100.0	100.0	100.0	0.1	0.1	-153.00	-102.0	-52.0	114.5	114.2	0.27	420.368		
200.0	200.0	200.0	200.0	0.3	0.3	-153.00	-102.0	-52.0	114.5	113.8	0.62	184.206 CC, ES		
300.0	300.0	294.3	294.3	0.5	0.5	72.34	-104.1	-52.8	116.1	115.1	0.97	119.890		
400.0	399.6	388.2	387.9	0.7	0.7	75.16	-110.6	-55.4	121.2	119.9	1.35	89.691		
500.0	498.8	481.2	480.2	1.0	0.9	79.28	-121.2	-59.7	130.5	128.7	1.80	72.317		
600.0	597.1	573.0	570.7	1.4	1.3	84.02	-135.7	-65.5	144.4	142.1	2.35	61.335		
700.0	694.4	665.7	661.1	1.8	1.6	89.01	-154.2	-72.9	163.4	160.4	3.00	54.420		
800.0	791.4	762.4	755.4	2.2	2.0	93.68	-174.4	-81.0	184.5	180.8	3.70	49.819		
900.0	888.4	859.1	849.6	2.7	2.4	97.38	-194.6	-89.1	206.6	202.2	4.43	46.646		
1,000.0	985.4	955.9	943.9	3.1	2.8	100.37	-214.8	-97.2	229.4	224.2	5.17	44.371		
1,100.0	1,082.5	1,052.6	1,038.1	3.6	3.2	102.82	-235.0	-105.3	252.7	246.8	5.92	42.689		
1,200.0	1,179.5	1,149.3	1,132.4	4.0	3.7	104.86	-255.1	-113.4	276.3	269.6	6.67	41.409		
1,300.0	1,276.5	1,246.1	1,226.7	4.5	4.1	106.57	-275.3	-121.5	300.2	292.8	7.43	40.411		
1,400.0	1,373.5	1,342.8	1,320.9	5.0	4.5	108.04	-295.5	-129.6	324.3	316.2	8.19	39.617		
1,500.0	1,470.5	1,439.5	1,415.2	5.4	4.9	109.30	-315.7	-137.7	348.6	339.7	8.95	38.974		
1,600.0	1,567.6	1,536.3	1,509.4	5.9	5.3	110.40	-335.9	-145.8	373.1	363.4	9.70	38.445		
1,700.0	1,664.6	1,633.0	1,603.7	6.3	5.7	111.36	-356.1	-153.9	397.6	387.2	10.46	38.003		
1,800.0	1,761.6	1,729.7	1,697.9	6.8	6.1	112.21	-376.3	-162.0	422.3	411.1	11.22	37.630		
1,900.0	1,858.6	1,826.5	1,792.2	7.3	6.5	112.97	-396.5	-170.1	447.0	435.0	11.98	37.311		
2,000.0	1,955.6	1,923.2	1,886.4	7.7	7.0	113.65	-416.7	-178.2	471.8	459.1	12.74	37.036		
2,100.0	2,052.7	2,019.9	1,980.7	8.2	7.4	114.26	-436.9	-186.3	496.6	483.1	13.50	36.798 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-5A (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis		
0.0	0.0	0.0	0.0	0.0	0.0	-159.39	-96.1	-36.2	102.7				
100.0	100.0	100.0	100.0	0.1	0.1	-159.39	-96.1	-36.2	102.7	102.4	0.27	377.257	
200.0	200.0	200.0	200.0	0.3	0.3	-159.39	-96.1	-36.2	102.7	102.1	0.62	165.315 CC, ES	
300.0	300.0	294.8	294.8	0.5	0.5	66.09	-98.4	-36.9	104.1	103.1	0.97	107.495	
400.0	399.6	389.3	389.0	0.7	0.7	69.34	-105.0	-39.1	108.6	107.2	1.35	80.431	
500.0	498.8	483.0	481.9	1.0	0.9	74.11	-116.0	-42.8	116.7	114.9	1.80	64.900	
600.0	597.1	575.5	573.1	1.4	1.3	79.59	-131.0	-47.9	129.4	127.1	2.35	55.095	
700.0	694.4	666.6	662.0	1.8	1.7	85.13	-149.9	-54.2	147.2	144.2	3.00	48.999	
800.0	791.4	759.3	751.5	2.2	2.1	89.57	-172.9	-61.9	170.1	166.4	3.72	45.779	
900.0	888.4	855.7	844.3	2.7	2.6	92.98	-197.4	-70.2	194.4	190.0	4.47	43.496	
1,000.0	985.4	952.1	937.2	3.1	3.0	95.63	-222.0	-78.5	219.3	214.0	5.25	41.805	
1,100.0	1,082.5	1,048.5	1,030.0	3.6	3.5	97.75	-246.6	-86.7	244.5	238.5	6.03	40.520	
1,200.0	1,179.5	1,145.0	1,122.9	4.0	4.0	99.47	-271.2	-95.0	270.0	263.1	6.83	39.520	
1,300.0	1,276.5	1,241.4	1,215.8	4.5	4.5	100.89	-295.7	-103.3	295.6	288.0	7.63	38.725	
1,400.0	1,373.5	1,337.8	1,308.6	5.0	4.9	102.09	-320.3	-111.5	321.4	313.0	8.44	38.082	
1,500.0	1,470.5	1,434.2	1,401.5	5.4	5.4	103.11	-344.9	-119.8	347.3	338.1	9.25	37.552	
1,600.0	1,567.6	1,530.6	1,494.3	5.9	5.9	103.99	-369.5	-128.0	373.3	363.3	10.06	37.109	
1,700.0	1,664.6	1,627.0	1,587.2	6.3	6.4	104.75	-394.0	-136.3	399.4	388.5	10.87	36.735	
1,800.0	1,761.6	1,723.4	1,680.1	6.8	6.9	105.42	-418.6	-144.6	425.6	413.9	11.69	36.414	
1,900.0	1,858.6	1,819.8	1,772.9	7.3	7.3	106.02	-443.2	-152.8	451.7	439.2	12.50	36.137	
2,000.0	1,955.6	1,916.3	1,865.8	7.7	7.8	106.54	-467.8	-161.1	478.0	464.6	13.32	35.895 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
							+N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	69.92	11.7	31.9	34.0					
100.0	100.0	100.0	100.0	0.1	0.1	69.92	11.7	31.9	34.0	33.7	0.27	124.803		
200.0	200.0	200.0	200.0	0.3	0.3	69.92	11.7	31.9	34.0	33.4	0.62	54.689		
300.0	300.0	300.3	300.3	0.5	0.5	-74.45	13.7	30.2	32.4	31.4	0.99	32.824		
355.4	355.2	355.3	355.1	0.6	0.6	-87.54	16.5	27.9	31.6	30.3	1.23	25.678 CC, ES		
400.0	399.6	399.0	398.6	0.7	0.7	-101.85	19.7	25.3	32.6	31.2	1.42	22.965 SF		
500.0	498.8	494.5	493.4	1.0	1.0	-133.18	29.2	17.5	46.3	44.5	1.82	25.447		
600.0	597.1	588.4	586.0	1.4	1.3	-150.95	40.8	8.0	74.6	72.4	2.12	35.103		
700.0	694.4	680.8	677.2	1.8	1.6	-159.70	52.2	-1.4	110.4	108.0	2.42	45.660		
800.0	791.4	772.7	767.9	2.2	1.9	-164.46	63.6	-10.8	148.6	145.9	2.73	54.518		
900.0	888.4	864.5	858.6	2.7	2.2	-167.28	75.0	-20.1	187.3	184.3	3.04	61.600		
1,000.0	985.4	956.4	949.3	3.1	2.5	-169.14	86.4	-29.5	226.3	222.9	3.36	67.343		
1,100.0	1,082.5	1,048.3	1,040.0	3.6	2.8	-170.45	97.7	-38.8	265.4	261.7	3.68	72.079		
1,200.0	1,179.5	1,140.2	1,130.7	4.0	3.1	-171.42	109.1	-48.2	304.5	300.5	4.00	76.044		
1,300.0	1,276.5	1,232.1	1,221.4	4.5	3.4	-172.18	120.5	-57.6	343.8	339.5	4.33	79.408		
1,400.0	1,373.5	1,324.0	1,312.1	5.0	3.7	-172.77	131.9	-66.9	383.1	378.4	4.65	82.297		
1,500.0	1,470.5	1,415.9	1,402.8	5.4	4.0	-173.26	143.3	-76.3	422.4	417.4	4.98	84.804		
1,600.0	1,567.6	1,507.8	1,493.5	5.9	4.3	-173.67	154.7	-85.6	461.7	456.4	5.31	86.998		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 16-2C (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	59.19	22.2	37.3	43.4					
100.0	100.0	100.0	100.0	0.1	0.1	59.19	22.2	37.3	43.4	43.1	0.27	159.420		
200.0	200.0	200.0	200.0	0.3	0.3	59.19	22.2	37.3	43.4	42.8	0.62	69.858		
300.0	300.0	299.8	299.7	0.5	0.5	-83.34	24.5	35.9	43.1	42.1	0.99	43.652		
301.5	301.5	301.3	301.2	0.5	0.5	-83.55	24.5	35.9	43.1	42.1	0.99	43.368 CC, ES		
400.0	399.6	397.9	397.6	0.7	0.7	-102.70	31.0	31.9	45.7	44.3	1.41	32.382		
500.0	498.8	493.0	491.8	1.0	1.0	-125.52	41.4	25.6	59.3	57.5	1.84	32.300 SF		
600.0	597.1	585.1	582.5	1.4	1.3	-141.87	55.3	17.1	87.2	85.0	2.19	39.859		
700.0	694.4	674.4	670.0	1.8	1.6	-151.41	70.5	7.8	125.1	122.6	2.50	50.143		
800.0	791.4	764.7	758.5	2.2	2.0	-157.07	85.9	-1.7	166.0	163.2	2.80	59.228		
900.0	888.4	855.1	847.0	2.7	2.3	-160.51	101.4	-11.1	207.7	204.6	3.12	66.646		
1,000.0	985.4	945.4	935.5	3.1	2.7	-162.80	116.8	-20.5	249.8	246.4	3.43	72.728		
1,100.0	1,082.5	1,035.7	1,024.0	3.6	3.0	-164.43	132.3	-30.0	292.1	288.4	3.76	77.770		
1,200.0	1,179.5	1,126.0	1,112.5	4.0	3.4	-165.65	147.7	-39.4	334.6	330.5	4.08	82.004		
1,300.0	1,276.5	1,216.3	1,200.9	4.5	3.7	-166.60	163.1	-48.8	377.2	372.8	4.41	85.603		
1,400.0	1,373.5	1,306.7	1,289.4	5.0	4.1	-167.36	178.6	-58.3	419.9	415.1	4.73	88.696		
1,500.0	1,470.5	1,397.0	1,377.9	5.4	4.4	-167.97	194.0	-67.7	462.6	457.5	5.06	91.379		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 16-5C (M16W Pad) - DD - Plan #1												Offset Site Error: 0.0 ft			
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	69.98	17.5	48.0	51.1						
100.0	100.0	100.0	100.0	0.1	0.1	69.98	17.5	48.0	51.1	50.8	0.27	187.683			
200.0	200.0	200.0	200.0	0.3	0.3	69.98	17.5	48.0	51.1	50.5	0.62	82.243			
300.0	300.0	299.7	299.7	0.5	0.5	-71.40	19.9	47.1	50.3	49.3	0.99	50.987			
345.6	345.5	344.8	344.7	0.6	0.6	-77.85	22.7	46.1	49.9	48.8	1.18	42.251	CC, ES		
400.0	399.6	397.9	397.6	0.7	0.7	-88.37	27.1	44.5	50.8	49.4	1.42	35.894			
500.0	498.8	493.1	492.0	1.0	1.0	-111.16	38.6	40.3	60.7	58.8	1.88	32.307	SF		
600.0	597.1	584.1	581.5	1.4	1.3	-129.43	53.7	34.8	85.1	82.9	2.27	37.453			
700.0	694.4	669.8	665.1	1.8	1.7	-140.84	71.5	28.3	122.6	120.0	2.61	47.060			
800.0	791.4	751.4	743.8	2.2	2.1	-147.54	91.8	20.9	167.7	164.8	2.92	57.498			
900.0	888.4	829.6	818.3	2.7	2.5	-151.46	114.1	12.8	217.7	214.5	3.23	67.418			
1,000.0	985.4	914.3	898.5	3.1	3.0	-154.19	139.8	3.4	269.9	266.4	3.55	75.936			
1,100.0	1,082.5	999.0	978.7	3.6	3.5	-156.04	165.4	-5.9	322.4	318.5	3.89	82.953			
1,200.0	1,179.5	1,083.8	1,058.9	4.0	4.0	-157.38	191.1	-15.3	375.1	370.8	4.22	88.783			
1,300.0	1,276.5	1,168.5	1,139.1	4.5	4.5	-158.39	216.7	-24.7	427.9	423.3	4.57	93.695			
1,400.0	1,373.5	1,253.2	1,219.3	5.0	5.0	-159.17	242.4	-34.0	480.7	475.8	4.91	97.879			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16B (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
0.0	0.0	0.0	0.0	0.0	0.0	-152.94	-91.8	-46.9	103.1				
100.0	100.0	100.0	100.0	0.1	0.1	-152.94	-91.8	-46.9	103.1	102.8	0.27	378.502	
200.0	200.0	200.0	200.0	0.3	0.3	-152.94	-91.8	-46.9	103.1	102.4	0.62	165.861	
298.4	298.4	296.9	296.9	0.5	0.5	74.04	-91.2	-49.3	102.9	102.0	0.98	105.307 CC	
300.0	300.0	298.5	298.5	0.5	0.5	74.13	-91.2	-49.4	102.9	102.0	0.98	104.682 ES	
400.0	399.6	395.6	395.2	0.7	0.7	82.08	-89.4	-56.6	104.0	102.6	1.41	73.796	
500.0	498.8	489.8	488.7	1.0	1.0	93.94	-86.6	-68.2	110.2	108.3	1.92	57.460	
600.0	597.1	580.0	577.5	1.4	1.3	106.92	-82.9	-83.5	126.1	123.6	2.46	51.351 SF	
700.0	694.4	665.3	660.7	1.8	1.7	118.45	-78.6	-101.7	154.2	151.3	2.94	52.466	
800.0	791.4	746.7	739.2	2.2	2.1	127.25	-73.6	-122.4	192.1	188.8	3.34	57.602	
900.0	888.4	824.5	813.4	2.7	2.5	133.34	-68.1	-145.3	237.0	233.3	3.69	64.244	
1,000.0	985.4	904.8	889.1	3.1	3.0	137.89	-61.8	-171.4	286.6	282.6	4.02	71.225	
1,100.0	1,082.5	989.2	968.5	3.6	3.5	141.33	-55.1	-199.1	337.7	333.3	4.36	77.494	
1,200.0	1,179.5	1,073.6	1,048.0	4.0	4.1	143.88	-48.4	-226.8	389.5	384.8	4.70	82.935	
1,300.0	1,276.5	1,157.9	1,127.4	4.5	4.6	145.85	-41.8	-254.5	441.7	436.7	5.04	87.628	
1,400.0	1,373.5	1,242.3	1,206.8	5.0	5.1	147.40	-35.1	-282.2	494.2	488.9	5.39	91.672	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1												Offset Site Error: 0.0 ft			
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							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	-147.28	-97.6	-62.7	116.0						
100.0	100.0	100.0	100.0	0.1	0.1	-147.28	-97.6	-62.7	116.0	115.7	0.27	426.064			
200.0	200.0	200.0	200.0	0.3	0.3	-147.28	-97.6	-62.7	116.0	115.4	0.62	186.702	CC, ES		
300.0	300.0	297.1	297.1	0.5	0.5	79.33	-97.3	-65.2	116.7	115.7	0.98	119.049			
400.0	399.6	392.9	392.5	0.7	0.7	85.81	-96.6	-72.4	119.7	118.4	1.40	85.772			
500.0	498.8	486.0	484.9	1.0	1.0	95.25	-95.4	-84.0	128.2	126.3	1.89	68.010			
600.0	597.1	575.4	573.0	1.4	1.3	105.58	-93.8	-99.3	145.5	143.1	2.41	60.256			
700.0	694.4	660.2	655.7	1.8	1.6	115.11	-91.8	-117.6	173.4	170.5	2.92	59.453	SF		
800.0	791.4	741.3	734.1	2.2	2.0	122.79	-89.6	-138.5	210.3	207.0	3.35	62.779			
900.0	888.4	819.0	808.2	2.7	2.5	128.31	-87.2	-161.6	253.8	250.1	3.74	67.799			
1,000.0	985.4	899.9	884.6	3.1	3.0	132.59	-84.4	-188.2	302.0	297.9	4.12	73.317			
1,100.0	1,082.5	985.1	964.9	3.6	3.5	135.92	-81.4	-216.6	351.6	347.1	4.49	78.282			
1,200.0	1,179.5	1,070.3	1,045.1	4.0	4.0	138.44	-78.5	-244.9	401.9	397.1	4.87	82.578			
1,300.0	1,276.5	1,155.5	1,125.4	4.5	4.6	140.41	-75.5	-273.3	452.7	447.5	5.25	86.255			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16C (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
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	-139.11	-109.3	-94.6	144.5					
100.0	100.0	100.0	100.0	0.1	0.1	-139.11	-109.3	-94.6	144.5	144.3	0.27	530.827		
200.0	200.0	200.0	200.0	0.3	0.3	-139.11	-109.3	-94.6	144.5	143.9	0.62	232.610 CC, ES		
300.0	300.0	294.9	294.9	0.5	0.5	86.83	-109.3	-97.0	146.1	145.1	0.97	149.909		
400.0	399.6	388.6	388.3	0.7	0.7	91.35	-109.5	-103.9	151.4	150.0	1.38	109.947		
500.0	498.8	480.0	479.0	1.0	0.9	97.87	-109.8	-115.1	162.3	160.4	1.84	87.987		
600.0	597.1	567.9	565.6	1.4	1.2	105.14	-110.2	-129.9	181.0	178.6	2.36	76.599		
700.0	694.4	651.6	647.5	1.8	1.6	112.24	-110.7	-147.7	208.8	205.9	2.88	72.410 SF		
800.0	791.4	732.0	725.2	2.2	2.0	118.41	-111.3	-168.2	244.4	241.1	3.36	72.848		
900.0	888.4	809.2	799.0	2.7	2.4	123.11	-111.9	-190.9	286.2	282.4	3.79	75.430		
1,000.0	985.4	891.5	876.7	3.1	2.9	126.98	-112.6	-217.6	332.3	328.1	4.22	78.814		
1,100.0	1,082.5	977.8	958.3	3.6	3.4	130.10	-113.4	-245.9	379.8	375.1	4.63	81.942		
1,200.0	1,179.5	1,064.1	1,039.8	4.0	4.0	132.55	-114.1	-274.1	427.9	422.8	5.05	84.681		
1,300.0	1,276.5	1,150.4	1,121.4	4.5	4.5	134.51	-114.9	-302.3	476.5	471.1	5.48	87.030		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9B (M16W pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	70.07	5.8	16.1	17.1					
100.0	100.0	100.0	100.0	0.1	0.1	70.07	5.8	16.1	17.1	16.9	0.27	62.892		
200.0	200.0	200.0	200.0	0.3	0.3	70.07	5.8	16.1	17.1	16.5	0.62	27.559		
300.0	300.0	300.2	300.1	0.5	0.5	-83.15	7.5	14.1	15.4	14.4	0.99	15.598		
323.5	323.4	323.6	323.5	0.5	0.5	-93.36	8.3	13.0	15.2	14.1	1.09	13.917	CC, ES, SF	
400.0	399.6	398.8	398.4	0.7	0.7	-133.06	12.3	8.1	19.9	18.5	1.38	14.393		
500.0	498.8	494.2	493.0	1.0	1.0	-160.94	20.1	-1.5	41.4	39.7	1.70	24.379		
600.0	597.1	585.1	582.5	1.4	1.3	-170.81	30.2	-14.0	75.4	73.3	2.00	37.606		
700.0	694.4	670.6	665.9	1.8	1.7	-175.16	42.1	-28.8	118.8	116.5	2.31	51.558		
800.0	791.4	751.8	744.2	2.2	2.1	-177.48	55.6	-45.5	167.5	164.9	2.61	64.137		
900.0	888.4	829.2	817.9	2.7	2.5	-178.88	70.4	-63.7	219.9	216.9	2.91	75.490		
1,000.0	985.4	902.7	886.9	3.1	3.0	-179.82	86.2	-83.3	275.6	272.4	3.21	85.974		
1,100.0	1,082.5	980.1	958.9	3.6	3.5	179.44	104.3	-105.6	333.8	330.3	3.51	95.191		
1,200.0	1,179.5	1,061.2	1,034.2	4.0	4.1	178.89	123.2	-129.0	392.2	388.4	3.81	102.853		
1,300.0	1,276.5	1,142.3	1,109.4	4.5	4.6	178.48	142.2	-152.5	450.7	446.6	4.12	109.394		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	26.93	10.6	5.4	11.8					
100.0	100.0	100.0	100.0	0.1	0.1	26.93	10.6	5.4	11.8	11.6	0.27	43.514		
200.0	200.0	200.0	200.0	0.3	0.3	26.93	10.6	5.4	11.8	11.2	0.62	19.068 CC, ES		
300.0	300.0	299.7	299.7	0.5	0.5	-130.24	11.9	3.1	13.8	12.8	0.98	14.055 SF		
400.0	399.6	397.8	397.5	0.7	0.7	-160.43	15.7	-3.5	25.6	24.3	1.34	19.190		
500.0	498.8	492.9	491.7	1.0	1.0	-173.78	21.7	-14.1	49.7	48.0	1.67	29.753		
600.0	597.1	583.5	581.0	1.4	1.3	-179.40	29.7	-27.9	84.0	82.1	1.99	42.224		
700.0	694.4	668.9	664.2	1.8	1.7	177.81	39.1	-44.3	127.4	125.1	2.31	55.264		
800.0	791.4	750.1	742.5	2.2	2.1	176.19	49.8	-62.8	175.8	173.2	2.63	66.900		
900.0	888.4	827.4	816.2	2.7	2.5	175.08	61.5	-83.2	227.8	224.8	2.94	77.353		
1,000.0	985.4	900.0	884.4	3.1	3.0	174.27	73.9	-104.6	283.1	279.8	3.25	87.021		
1,100.0	1,082.5	978.4	957.3	3.6	3.5	173.58	88.3	-129.7	340.9	337.3	3.57	95.372		
1,200.0	1,179.5	1,059.8	1,032.8	4.0	4.1	173.06	103.4	-155.9	398.9	395.0	3.90	102.273		
1,300.0	1,276.5	1,141.2	1,108.4	4.5	4.7	172.67	118.5	-182.2	457.0	452.8	4.23	108.122		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9C (M16W Pad) - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (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	-66.19	4.7	-10.7	11.7				
100.0	100.0	100.0	100.0	0.1	0.1	-66.19	4.7	-10.7	11.7	11.5	0.27	43.083	
200.0	200.0	200.0	200.0	0.3	0.3	-66.19	4.7	-10.7	11.7	11.1	0.62	18.879 CC, ES	
300.0	300.0	299.1	299.1	0.5	0.5	161.52	5.8	-13.1	16.8	15.8	0.97	17.321 SF	
400.0	399.6	396.7	396.4	0.7	0.7	165.19	8.9	-19.9	32.0	30.7	1.31	24.344	
500.0	498.8	491.3	490.2	1.0	1.0	166.91	14.0	-30.9	57.1	55.5	1.65	34.536	
600.0	597.1	581.7	579.1	1.4	1.3	167.65	20.5	-45.3	91.7	89.7	1.99	46.167	
700.0	694.4	666.8	662.2	1.8	1.7	168.04	28.4	-62.4	134.9	132.6	2.31	58.289	
800.0	791.4	747.9	740.4	2.2	2.1	168.20	37.2	-81.7	183.0	180.4	2.65	69.080	
900.0	888.4	825.2	814.1	2.7	2.5	168.12	46.9	-103.0	234.7	231.7	2.98	78.758	
1,000.0	985.4	900.6	885.0	3.1	3.0	167.96	57.6	-126.2	289.5	286.2	3.31	87.531	
1,100.0	1,082.5	983.4	962.5	3.6	3.5	167.79	69.7	-152.8	345.5	341.9	3.65	94.616	
1,200.0	1,179.5	1,066.3	1,040.1	4.0	4.1	167.67	81.8	-179.3	401.5	397.5	4.00	100.476	
1,300.0	1,276.5	1,149.1	1,117.6	4.5	4.6	167.58	94.0	-205.8	457.5	453.2	4.34	105.397	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9D (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						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	-110.19	-5.8	-15.8	16.9					
100.0	100.0	100.0	100.0	0.1	0.1	-110.19	-5.8	-15.8	16.9	16.6	0.27	61.889		
200.0	200.0	200.0	200.0	0.3	0.3	-110.19	-5.8	-15.8	16.9	16.2	0.62	27.120 CC, ES		
300.0	300.0	299.8	299.8	0.5	0.5	116.43	-7.6	-15.8	18.5	17.6	0.98	18.913		
400.0	399.6	399.0	398.9	0.7	0.7	123.23	-12.0	-16.4	24.1	22.7	1.37	17.619 SF		
500.0	498.8	496.6	496.3	1.0	0.9	136.82	-14.7	-20.7	37.3	35.6	1.75	21.267		
600.0	597.1	591.1	590.5	1.4	1.1	147.30	-15.0	-29.2	60.5	58.4	2.12	28.504		
700.0	694.4	681.6	680.1	1.8	1.3	153.69	-13.2	-41.0	93.5	91.0	2.48	37.732		
800.0	791.4	768.3	765.5	2.2	1.6	157.27	-9.6	-55.8	132.4	129.6	2.83	46.788		
900.0	888.4	851.7	846.8	2.7	1.9	159.28	-4.3	-73.3	175.7	172.5	3.19	55.131		
1,000.0	985.4	931.4	923.9	3.1	2.3	160.53	2.4	-92.9	222.8	219.3	3.53	63.161		
1,100.0	1,082.5	1,013.3	1,002.1	3.6	2.7	161.39	10.7	-115.4	273.1	269.2	3.88	70.453		
1,200.0	1,179.5	1,099.5	1,084.4	4.0	3.1	162.03	19.5	-139.4	323.8	319.6	4.23	76.484		
1,300.0	1,276.5	1,185.6	1,166.6	4.5	3.6	162.49	28.4	-163.4	374.6	370.0	4.59	81.526		
1,400.0	1,373.5	1,271.7	1,248.9	5.0	4.1	162.85	37.2	-187.5	425.3	420.4	4.96	85.824		
1,500.0	1,470.5	1,357.9	1,331.1	5.4	4.5	163.12	46.1	-211.5	476.1	470.8	5.32	89.529		

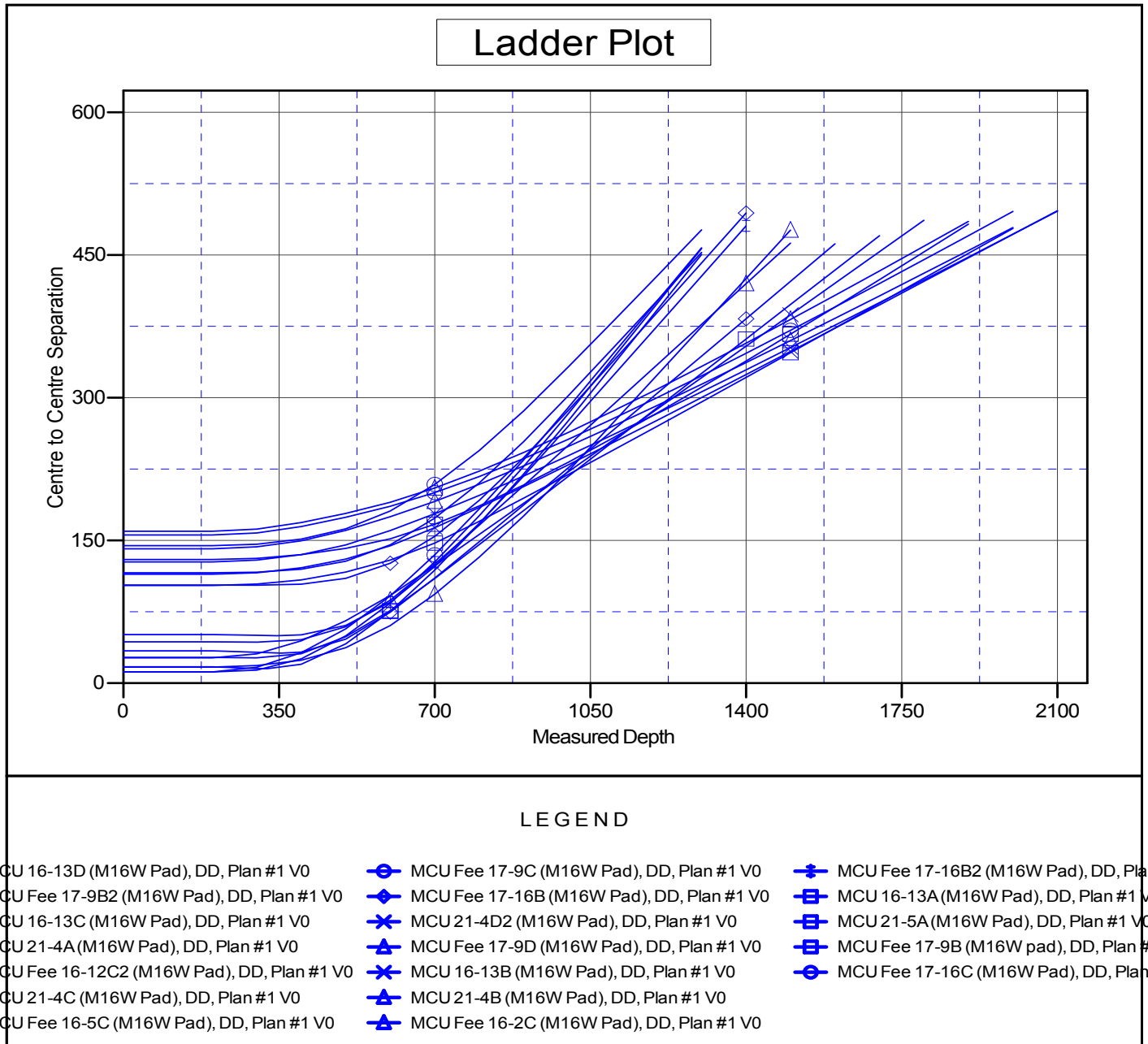
Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 21-3B (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Reference Site:	SWSW S16-T7S-R93W (M16W Pad)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 21-3B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Coordinates are relative to: MCU 21-3B (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