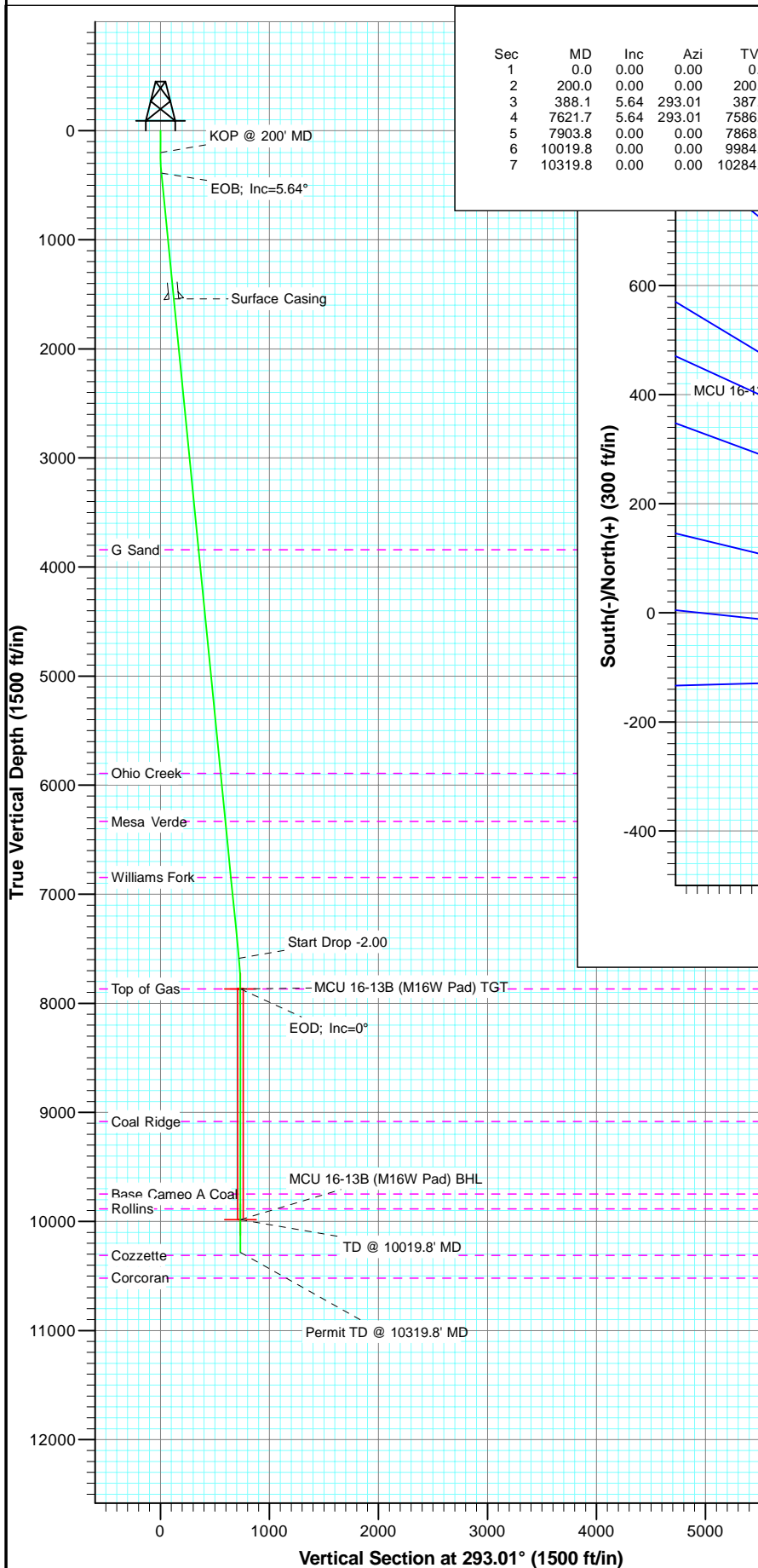
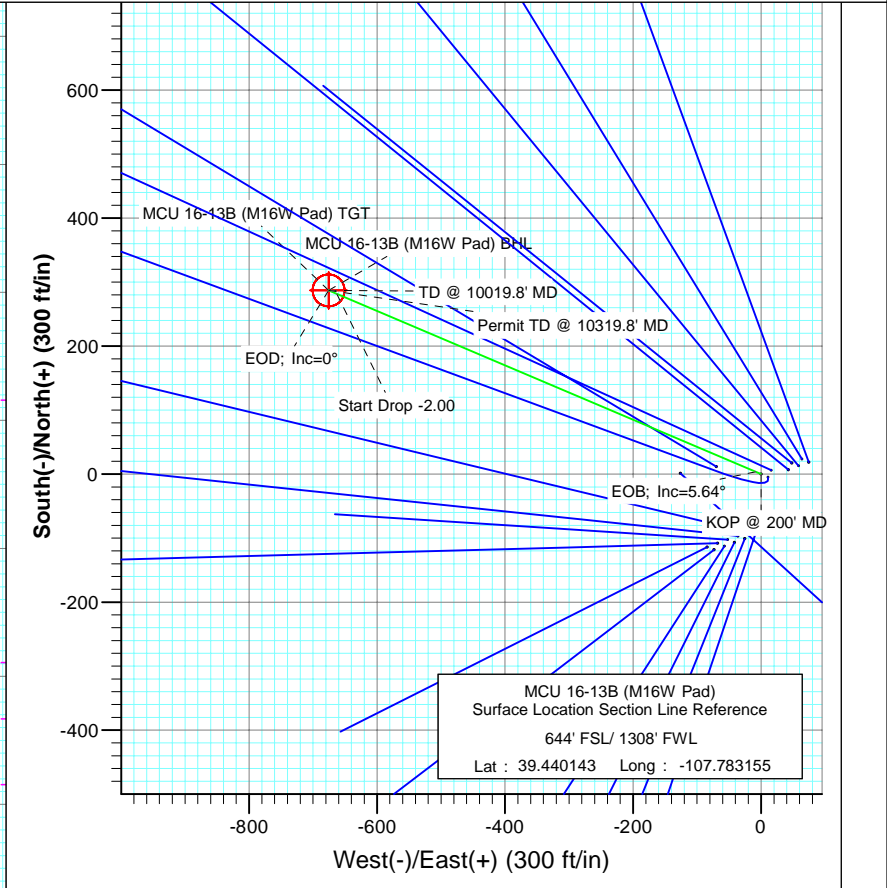




Project: Mamm Creek
 Site: SWSW S16-T7S-R93W (M16W Pad)
 Well: MCU 16-13B (M16W Pad)
 Wellbore: DD
 Plan: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	388.1	5.64	293.01	387.8	3.6	-8.5	3.00	293.01	9.3	
4	7621.7	5.64	293.01	7586.4	281.6	-663.1	0.00	0.00	720.4	
5	7903.8	0.00	0.00	7868.0	287.0	-675.8	2.00	180.00	734.3	MCU 16-13B (M16W Pad) TGT
6	10019.8	0.00	0.00	9984.0	287.0	-675.8	0.00	0.00	734.3	MCU 16-13B (M16W Pad) BHL
7	10319.8	0.00	0.00	10284.0	287.0	-675.8	0.00	0.00	734.3	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3842.0	3859.1	G Sand
5892.0	5919.1	Ohio Creek
6333.0	6362.2	Mesa Verde
6845.0	6876.7	Williams Fork
7868.0	7903.8	Top of Gas
9084.0	9119.8	Coal Ridge
9748.0	9783.8	Base Cameo A Coal
9884.0	9919.8	Rollins



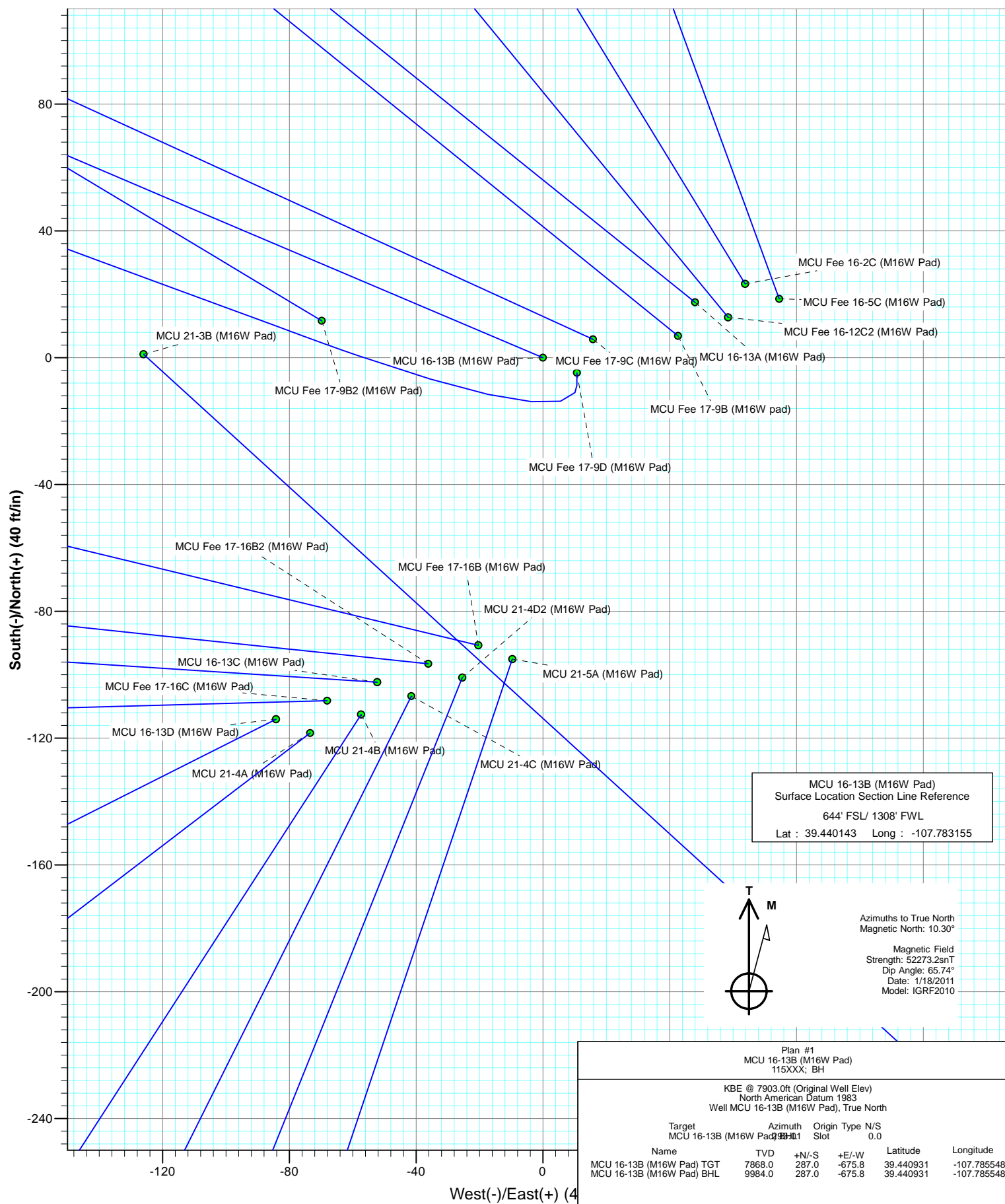
Azimuths to True North
 Magnetic North: 10.30°

Magnetic Field
 Strength: 52273.2snT
 Dip Angle: 65.74°
 Date: 1/18/2011
 Model: IGRF2010

Plan #1 MCU 16-13B (M16W Pad) 115XXX; BH					
KBE @ 7903.0ft (Original Well Elev) North American Datum 1983 Well MCU 16-13B (M16W Pad), True North					
Target	Azimuth	Origin	Type	N/S	
MCU 16-13B (M16W Pad) TGT	287.0	Slot		0.0	
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MCU 16-13B (M16W Pad) TGT	7868.0	287.0	-675.8	39.440931	-107.785548
MCU 16-13B (M16W Pad) BHL	9984.0	287.0	-675.8	39.440931	-107.785548

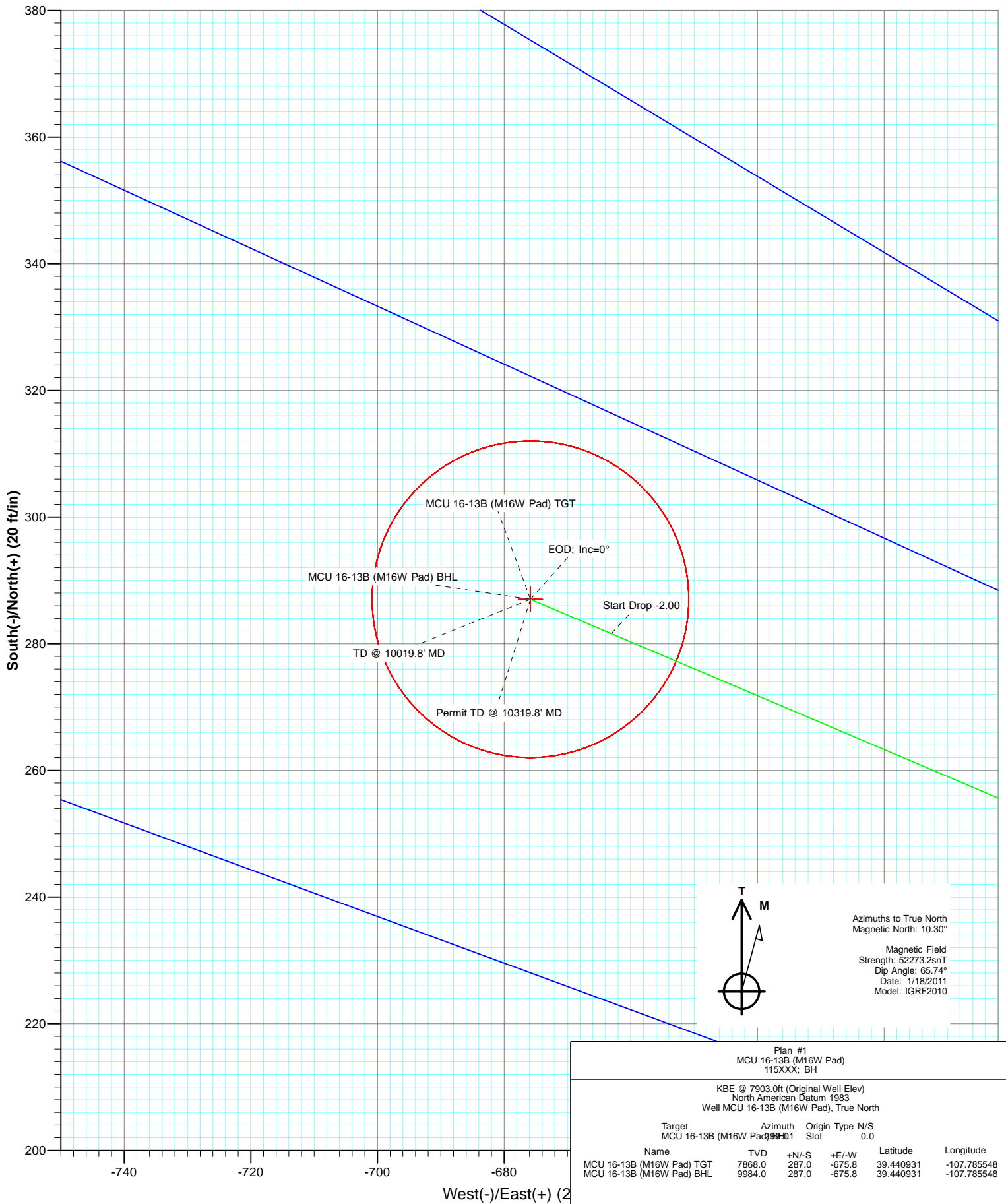


Project: Mamm Creek
Site: SWSW S16-T7S-R93W (M16W Pad)
Well: MCU 16-13B (M16W Pad)
Wellbore: DD
Plan: Plan #1





Project: Mamm Creek
Site: SWSW S16-T7S-R93W (M16W Pad)
Well: MCU 16-13B (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 16-13B (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 16-13B (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 16-13B (M16W Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,593,307.23 ft	Latitude:	39.440143
	+E/-W	0.0 ft	Easting:	2,355,253.86 ft	Longitude:	-107.783155
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	293.01

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	
388.1	5.64	293.01	387.8	3.6	-8.5	3.00	3.00	0.00	293.01	
7,621.7	5.64	293.01	7,586.4	281.6	-663.1	0.00	0.00	0.00	0.00	
7,903.8	0.00	0.00	7,868.0	287.0	-675.8	2.00	-2.00	0.00	180.00	MCU 16-13B (M16W
10,019.8	0.00	0.00	9,984.0	287.0	-675.8	0.00	0.00	0.00	0.00	MCU 16-13B (M16W
10,319.8	0.00	0.00	10,284.0	287.0	-675.8	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 16-13B (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 16-13B (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	293.01	300.0	1.0	-2.4	2.6	3.00	3.00	
388.1	5.64	293.01	387.8	3.6	-8.5	9.3	3.00	3.00	EOB; Inc=5.64°
400.0	5.64	293.01	399.6	4.1	-9.6	10.4	0.00	0.00	
500.0	5.64	293.01	499.2	7.9	-18.6	20.3	0.00	0.00	
600.0	5.64	293.01	598.7	11.8	-27.7	30.1	0.00	0.00	
700.0	5.64	293.01	698.2	15.6	-36.7	39.9	0.00	0.00	
800.0	5.64	293.01	797.7	19.4	-45.8	49.7	0.00	0.00	
900.0	5.64	293.01	897.2	23.3	-54.8	59.6	0.00	0.00	
1,000.0	5.64	293.01	996.7	27.1	-63.9	69.4	0.00	0.00	
1,100.0	5.64	293.01	1,096.2	31.0	-72.9	79.2	0.00	0.00	
1,200.0	5.64	293.01	1,195.8	34.8	-82.0	89.1	0.00	0.00	
1,300.0	5.64	293.01	1,295.3	38.7	-91.0	98.9	0.00	0.00	
1,400.0	5.64	293.01	1,394.8	42.5	-100.1	108.7	0.00	0.00	
1,500.0	5.64	293.01	1,494.3	46.3	-109.1	118.6	0.00	0.00	
1,548.0	5.64	293.01	1,542.1	48.2	-113.5	123.3	0.00	0.00	Surface Casing
1,600.0	5.64	293.01	1,593.8	50.2	-118.2	128.4	0.00	0.00	
1,700.0	5.64	293.01	1,693.3	54.0	-127.2	138.2	0.00	0.00	
1,800.0	5.64	293.01	1,792.9	57.9	-136.3	148.1	0.00	0.00	
1,900.0	5.64	293.01	1,892.4	61.7	-145.3	157.9	0.00	0.00	
2,000.0	5.64	293.01	1,991.9	65.6	-154.4	167.7	0.00	0.00	
2,100.0	5.64	293.01	2,091.4	69.4	-163.4	177.6	0.00	0.00	
2,200.0	5.64	293.01	2,190.9	73.3	-172.5	187.4	0.00	0.00	
2,300.0	5.64	293.01	2,290.4	77.1	-181.5	197.2	0.00	0.00	
2,400.0	5.64	293.01	2,390.0	80.9	-190.6	207.0	0.00	0.00	
2,500.0	5.64	293.01	2,489.5	84.8	-199.6	216.9	0.00	0.00	
2,600.0	5.64	293.01	2,589.0	88.6	-208.7	226.7	0.00	0.00	
2,700.0	5.64	293.01	2,688.5	92.5	-217.7	236.5	0.00	0.00	
2,800.0	5.64	293.01	2,788.0	96.3	-226.8	246.4	0.00	0.00	
2,900.0	5.64	293.01	2,887.5	100.2	-235.8	256.2	0.00	0.00	
3,000.0	5.64	293.01	2,987.0	104.0	-244.9	266.0	0.00	0.00	
3,100.0	5.64	293.01	3,086.6	107.8	-253.9	275.9	0.00	0.00	
3,200.0	5.64	293.01	3,186.1	111.7	-263.0	285.7	0.00	0.00	
3,300.0	5.64	293.01	3,285.6	115.5	-272.0	295.5	0.00	0.00	
3,400.0	5.64	293.01	3,385.1	119.4	-281.1	305.4	0.00	0.00	
3,500.0	5.64	293.01	3,484.6	123.2	-290.1	315.2	0.00	0.00	
3,600.0	5.64	293.01	3,584.1	127.1	-299.2	325.0	0.00	0.00	
3,700.0	5.64	293.01	3,683.7	130.9	-308.2	334.8	0.00	0.00	
3,800.0	5.64	293.01	3,783.2	134.7	-317.2	344.7	0.00	0.00	
3,859.1	5.64	293.01	3,842.0	137.0	-322.6	350.5	0.00	0.00	G Sand
3,900.0	5.64	293.01	3,882.7	138.6	-326.3	354.5	0.00	0.00	
4,000.0	5.64	293.01	3,982.2	142.4	-335.3	364.3	0.00	0.00	
4,100.0	5.64	293.01	4,081.7	146.3	-344.4	374.2	0.00	0.00	
4,200.0	5.64	293.01	4,181.2	150.1	-353.4	384.0	0.00	0.00	
4,300.0	5.64	293.01	4,280.7	154.0	-362.5	393.8	0.00	0.00	
4,400.0	5.64	293.01	4,380.3	157.8	-371.5	403.7	0.00	0.00	
4,500.0	5.64	293.01	4,479.8	161.6	-380.6	413.5	0.00	0.00	
4,600.0	5.64	293.01	4,579.3	165.5	-389.6	423.3	0.00	0.00	
4,700.0	5.64	293.01	4,678.8	169.3	-398.7	433.2	0.00	0.00	
4,800.0	5.64	293.01	4,778.3	173.2	-407.7	443.0	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	5.64	293.01	4,877.8	177.0	-416.8	452.8	0.00	0.00	
5,000.0	5.64	293.01	4,977.4	180.9	-425.8	462.6	0.00	0.00	
5,100.0	5.64	293.01	5,076.9	184.7	-434.9	472.5	0.00	0.00	
5,200.0	5.64	293.01	5,176.4	188.5	-443.9	482.3	0.00	0.00	
5,300.0	5.64	293.01	5,275.9	192.4	-453.0	492.1	0.00	0.00	
5,400.0	5.64	293.01	5,375.4	196.2	-462.0	502.0	0.00	0.00	
5,500.0	5.64	293.01	5,474.9	200.1	-471.1	511.8	0.00	0.00	
5,600.0	5.64	293.01	5,574.4	203.9	-480.1	521.6	0.00	0.00	
5,700.0	5.64	293.01	5,674.0	207.8	-489.2	531.5	0.00	0.00	
5,800.0	5.64	293.01	5,773.5	211.6	-498.2	541.3	0.00	0.00	
5,900.0	5.64	293.01	5,873.0	215.4	-507.3	551.1	0.00	0.00	
5,919.1	5.64	293.01	5,892.0	216.2	-509.0	553.0	0.00	0.00	Ohio Creek
6,000.0	5.64	293.01	5,972.5	219.3	-516.3	561.0	0.00	0.00	
6,100.0	5.64	293.01	6,072.0	223.1	-525.4	570.8	0.00	0.00	
6,200.0	5.64	293.01	6,171.5	227.0	-534.4	580.6	0.00	0.00	
6,300.0	5.64	293.01	6,271.1	230.8	-543.5	590.4	0.00	0.00	
6,362.2	5.64	293.01	6,333.0	233.2	-549.1	596.6	0.00	0.00	Mesa Verde
6,400.0	5.64	293.01	6,370.6	234.7	-552.5	600.3	0.00	0.00	
6,500.0	5.64	293.01	6,470.1	238.5	-561.6	610.1	0.00	0.00	
6,600.0	5.64	293.01	6,569.6	242.3	-570.6	619.9	0.00	0.00	
6,700.0	5.64	293.01	6,669.1	246.2	-579.7	629.8	0.00	0.00	
6,800.0	5.64	293.01	6,768.6	250.0	-588.7	639.6	0.00	0.00	
6,876.7	5.64	293.01	6,845.0	253.0	-595.7	647.1	0.00	0.00	Williams Fork
6,900.0	5.64	293.01	6,868.2	253.9	-597.8	649.4	0.00	0.00	
7,000.0	5.64	293.01	6,967.7	257.7	-606.8	659.3	0.00	0.00	
7,100.0	5.64	293.01	7,067.2	261.6	-615.9	669.1	0.00	0.00	
7,200.0	5.64	293.01	7,166.7	265.4	-624.9	678.9	0.00	0.00	
7,300.0	5.64	293.01	7,266.2	269.2	-634.0	688.8	0.00	0.00	
7,400.0	5.64	293.01	7,365.7	273.1	-643.0	698.6	0.00	0.00	
7,500.0	5.64	293.01	7,465.2	276.9	-652.0	708.4	0.00	0.00	
7,600.0	5.64	293.01	7,564.8	280.8	-661.1	718.3	0.00	0.00	
7,621.7	5.64	293.01	7,586.4	281.6	-663.1	720.4	0.00	0.00	Start Drop -2.00
7,700.0	4.08	293.01	7,664.4	284.2	-669.2	727.0	2.00	-2.00	
7,800.0	2.08	293.01	7,764.2	286.3	-674.1	732.4	2.00	-2.00	
7,900.0	0.08	293.01	7,864.2	287.0	-675.8	734.3	2.00	-2.00	
7,903.8	0.00	0.00	7,868.0	287.0	-675.8	734.3	2.00	-2.00	EOD; Inc=0° - Top of Gas - MCU 16-13B (M16W)
8,000.0	0.00	0.00	7,964.2	287.0	-675.8	734.3	0.00	0.00	
8,100.0	0.00	0.00	8,064.2	287.0	-675.8	734.3	0.00	0.00	
8,200.0	0.00	0.00	8,164.2	287.0	-675.8	734.3	0.00	0.00	
8,300.0	0.00	0.00	8,264.2	287.0	-675.8	734.3	0.00	0.00	
8,400.0	0.00	0.00	8,364.2	287.0	-675.8	734.3	0.00	0.00	
8,500.0	0.00	0.00	8,464.2	287.0	-675.8	734.3	0.00	0.00	
8,600.0	0.00	0.00	8,564.2	287.0	-675.8	734.3	0.00	0.00	
8,700.0	0.00	0.00	8,664.2	287.0	-675.8	734.3	0.00	0.00	
8,800.0	0.00	0.00	8,764.2	287.0	-675.8	734.3	0.00	0.00	
8,900.0	0.00	0.00	8,864.2	287.0	-675.8	734.3	0.00	0.00	
9,000.0	0.00	0.00	8,964.2	287.0	-675.8	734.3	0.00	0.00	
9,100.0	0.00	0.00	9,064.2	287.0	-675.8	734.3	0.00	0.00	
9,119.8	0.00	0.00	9,084.0	287.0	-675.8	734.3	0.00	0.00	Coal Ridge
9,200.0	0.00	0.00	9,164.2	287.0	-675.8	734.3	0.00	0.00	
9,300.0	0.00	0.00	9,264.2	287.0	-675.8	734.3	0.00	0.00	
9,400.0	0.00	0.00	9,364.2	287.0	-675.8	734.3	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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	9,464.2	287.0	-675.8	734.3	0.00	0.00	
9,600.0	0.00	0.00	9,564.2	287.0	-675.8	734.3	0.00	0.00	
9,700.0	0.00	0.00	9,664.2	287.0	-675.8	734.3	0.00	0.00	
9,783.8	0.00	0.00	9,748.0	287.0	-675.8	734.3	0.00	0.00	Base Cameo A Coal
9,800.0	0.00	0.00	9,764.2	287.0	-675.8	734.3	0.00	0.00	
9,900.0	0.00	0.00	9,864.2	287.0	-675.8	734.3	0.00	0.00	
9,919.8	0.00	0.00	9,884.0	287.0	-675.8	734.3	0.00	0.00	Rollins
10,000.0	0.00	0.00	9,964.2	287.0	-675.8	734.3	0.00	0.00	
10,019.8	0.00	0.00	9,984.0	287.0	-675.8	734.3	0.00	0.00	TD @ 10019.8' MD - MCU 16-13B (M16W Pad)
10,100.0	0.00	0.00	10,064.2	287.0	-675.8	734.3	0.00	0.00	
10,200.0	0.00	0.00	10,164.2	287.0	-675.8	734.3	0.00	0.00	
10,300.0	0.00	0.00	10,264.2	287.0	-675.8	734.3	0.00	0.00	
10,319.8	0.00	0.00	10,284.0	287.0	-675.8	734.3	0.00	0.00	Permit TD @ 10319.8' 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 16-13B (M16W Pa - plan hits target center - Circle (radius 25.0)	0.00	0.00	9,984.0	287.0	-675.8	1,593,611.16	2,354,585.45	39.440931	-107.785548
MCU 16-13B (M16W Pa - plan hits target center - Circle (radius 25.0)	0.00	0.00	7,868.0	287.0	-675.8	1,593,611.16	2,354,585.45	39.440931	-107.785548

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,548.0	1,542.1	Surface Casing	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,859.1	3,842.0	G Sand		0.00	
5,919.1	5,892.0	Ohio Creek		0.00	
6,362.2	6,333.0	Mesa Verde		0.00	
6,876.7	6,845.0	Williams Fork		0.00	
7,903.8	7,868.0	Top of Gas		0.00	
9,119.8	9,084.0	Coal Ridge		0.00	
9,783.8	9,748.0	Base Cameo A Coal		0.00	
9,919.8	9,884.0	Rollins		0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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
388.1	387.8	3.6	-8.5	EOB; Inc=5.64°
7,621.7	7,586.4	281.6	-663.1	Start Drop -2.00
7,903.8	7,868.0	287.0	-675.8	EOD; Inc=0°
10,019.8	9,984.0	287.0	-675.8	TD @ 10019.8' MD
10,319.8	10,284.0	287.0	-675.8	Permit TD @ 10319.8' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

SWSW S16-T7S-R93W (M16W Pad)

MCU 16-13B (M16W Pad)

DD

Plan #1

Anticollision Report

19 January, 2011

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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
Depth Range:	Unlimited
Results Limited by:	Maximum center-center distance of 500.0ft
Warning Levels Evaluated at:	2.00 Sigma
Error Model:	Systematic Ellipse
Scan Method:	Closest Approach 3D
Error Surface:	Elliptical Conic

Survey Tool Program	Date	1/19/2011
From (ft)	To (ft)	Survey (Wellbore)
0.0	10,319.8	Plan #1 (DD)
		Tool Name
		MWD
		Description
		Geolink MWD

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
SWSW S16-T7S-R93W (M16W Pad)						
MCU 16-13A (M16W Pad) - DD - Plan #1	100.0	100.0	51.1	50.8	187.667	CC
MCU 16-13A (M16W Pad) - DD - Plan #1	200.0	200.0	51.1	50.5	82.236	ES
MCU 16-13A (M16W Pad) - DD - Plan #1	10,319.8	10,342.9	319.9	276.5	7.372	SF
MCU 16-13C (M16W Pad) - DD - Plan #1	200.0	200.0	114.9	114.3	184.948	CC, ES
MCU 16-13C (M16W Pad) - DD - Plan #1	10,319.8	10,309.0	349.8	307.5	8.260	SF
MCU 16-13D (M16W Pad) - DD - Plan #1	200.0	200.0	141.7	141.1	228.066	CC, ES
MCU 16-13D (M16W Pad) - DD - Plan #1	5,300.0	5,273.9	498.9	475.4	21.170	SF
MCU 21-3B (M16W Pad) - DD - Plan #1	691.7	693.6	71.4	68.3	22.573	CC, ES
MCU 21-3B (M16W Pad) - DD - Plan #1	800.0	795.2	80.7	77.1	21.850	SF
MCU 21-4A (M16W Pad) - DD - Plan #1	200.0	200.0	139.3	138.7	224.197	CC, ES
MCU 21-4A (M16W Pad) - DD - Plan #1	4,200.0	4,168.6	497.7	479.2	26.866	SF
MCU 21-4B (M16W Pad) - DD - Plan #1	200.0	200.0	126.3	125.7	203.274	CC, ES
MCU 21-4B (M16W Pad) - DD - Plan #1	2,700.0	2,650.3	493.2	481.7	42.605	SF
MCU 21-4C (M16W Pad) - DD - Plan #1	200.0	200.0	114.5	113.9	184.299	CC, ES
MCU 21-4C (M16W Pad) - DD - Plan #1	2,300.0	2,238.5	495.7	486.0	50.849	SF
MCU 21-4D2 (M16W Pad) - DD - Plan #1	200.0	200.0	104.0	103.4	167.461	CC, ES
MCU 21-4D2 (M16W Pad) - DD - Plan #1	2,000.0	1,925.7	492.6	484.2	58.713	SF
MCU 21-5A (M16W Pad) - DD - Plan #1	200.0	200.0	95.5	94.9	153.779	CC, ES
MCU 21-5A (M16W Pad) - DD - Plan #1	1,800.0	1,712.4	488.8	481.3	65.146	SF
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	200.0	200.0	59.8	59.2	96.302	CC, ES
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	1,900.0	1,898.6	150.4	141.1	16.127	SF
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	200.0	200.0	68.0	67.3	109.363	CC, ES
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	1,400.0	1,393.6	164.4	157.5	23.883	SF
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	100.0	100.0	76.8	76.6	282.216	CC
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	200.0	200.0	76.8	76.2	123.668	ES
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	900.0	886.9	142.3	137.9	32.313	SF
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	200.0	200.0	92.9	92.3	149.590	CC, ES
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	900.0	889.5	122.4	118.0	27.500	SF
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	200.0	200.0	103.1	102.4	165.884	CC, ES
MCU Fee 17-16B2 (M16W Pad) - DD - Plan #1	900.0	880.0	150.2	145.9	34.983	SF
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	200.0	200.0	127.8	127.2	205.700	CC, ES
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	1,100.0	1,059.0	233.2	228.1	46.068	SF
MCU Fee 17-9B (M16W pad) - DD - Plan #1	200.0	200.0	43.2	42.6	69.533	CC, ES
MCU Fee 17-9B (M16W pad) - DD - Plan #1	1,000.0	1,006.9	51.3	46.6	10.839	SF
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	402.7	395.9	70.0	68.7	52.873	CC, ES
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	700.0	681.0	91.6	89.3	38.586	SF
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	596.9	598.5	12.7	10.2	5.017	CC
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	600.0	601.6	12.7	10.1	4.978	ES, SF
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	200.0	200.0	11.7	11.1	18.879	CC, ES
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	913.7	918.2	22.6	18.5	5.496	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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									
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	69.99	17.5	48.0	51.1						
100.0	100.0	100.0	100.0	0.1	0.1	69.99	17.5	48.0	51.1	50.8	0.27	187.667 CC			
200.0	200.0	200.0	200.0	0.3	0.3	69.99	17.5	48.0	51.1	50.5	0.62	82.236 ES			
300.0	300.0	301.4	301.4	0.5	0.5	136.42	19.2	45.9	51.6	50.7	0.98	52.516			
400.0	399.6	402.8	402.4	0.7	0.7	134.80	24.2	39.6	53.3	51.9	1.39	38.241			
500.0	499.2	503.2	502.1	0.9	1.0	130.82	31.9	30.0	54.4	52.5	1.85	29.358			
600.0	598.7	603.1	601.2	1.2	1.2	126.64	39.9	20.2	55.6	53.2	2.34	23.755			
700.0	698.2	703.0	700.3	1.4	1.5	122.67	47.8	10.3	57.1	54.2	2.85	20.042			
800.0	797.7	802.9	799.4	1.7	1.8	118.91	55.7	0.5	58.8	55.5	3.37	17.462			
900.0	897.2	902.9	898.5	1.9	2.1	115.38	63.7	-9.4	60.8	56.9	3.90	15.601			
1,000.0	996.7	1,002.8	997.6	2.1	2.4	112.09	71.6	-19.2	63.0	58.6	4.43	14.220			
1,100.0	1,096.2	1,102.7	1,096.7	2.4	2.6	109.03	79.5	-29.1	65.4	60.5	4.97	13.171			
1,200.0	1,195.8	1,202.6	1,195.8	2.6	2.9	106.19	87.5	-38.9	68.0	62.5	5.50	12.361			
1,300.0	1,295.3	1,302.5	1,294.9	2.9	3.2	103.57	95.4	-48.8	70.7	64.7	6.03	11.724			
1,400.0	1,394.8	1,402.4	1,394.0	3.1	3.5	101.14	103.3	-58.6	73.6	67.0	6.56	11.217			
1,500.0	1,494.3	1,502.3	1,493.2	3.4	3.8	98.90	111.3	-68.5	76.6	69.5	7.08	10.809			
1,600.0	1,593.8	1,602.2	1,592.3	3.6	4.0	96.84	119.2	-78.4	79.7	72.1	7.60	10.477			
1,700.0	1,693.3	1,702.2	1,691.4	3.9	4.3	94.93	127.1	-88.2	82.9	74.7	8.12	10.206			
1,800.0	1,792.9	1,802.1	1,790.5	4.1	4.6	93.16	135.0	-98.1	86.1	77.5	8.63	9.981			
1,900.0	1,892.4	1,902.0	1,889.6	4.3	4.9	91.52	143.0	-107.9	89.5	80.4	9.14	9.795			
2,000.0	1,991.9	2,001.9	1,988.7	4.6	5.2	90.00	150.9	-117.8	92.9	83.3	9.64	9.639			
2,100.0	2,091.4	2,101.8	2,087.8	4.8	5.4	88.59	158.8	-127.6	96.4	86.3	10.14	9.508			
2,200.0	2,190.9	2,201.7	2,186.9	5.1	5.7	87.28	166.8	-137.5	99.9	89.3	10.63	9.398			
2,300.0	2,290.4	2,301.6	2,286.0	5.3	6.0	86.06	174.7	-147.3	103.5	92.4	11.12	9.305			
2,400.0	2,390.0	2,401.5	2,385.1	5.6	6.3	84.92	182.6	-157.2	107.1	95.5	11.61	9.226			
2,500.0	2,489.5	2,501.5	2,484.2	5.8	6.6	83.86	190.6	-167.1	110.8	98.7	12.10	9.158			
2,600.0	2,589.0	2,601.4	2,583.3	6.1	6.8	82.87	198.5	-176.9	114.5	101.9	12.58	9.100			
2,700.0	2,688.5	2,701.3	2,682.5	6.3	7.1	81.93	206.4	-186.8	118.2	105.2	13.06	9.051			
2,800.0	2,788.0	2,801.2	2,781.6	6.5	7.4	81.06	214.4	-196.6	122.0	108.5	13.54	9.009			
2,900.0	2,887.5	2,901.1	2,880.7	6.8	7.7	80.24	222.3	-206.5	125.8	111.8	14.02	8.973			
3,000.0	2,987.0	3,001.0	2,979.8	7.0	8.0	79.46	230.2	-216.3	129.6	115.1	14.50	8.942			
3,100.0	3,086.6	3,100.9	3,078.9	7.3	8.3	78.73	238.2	-226.2	133.5	118.5	14.97	8.915			
3,200.0	3,186.1	3,200.8	3,178.0	7.5	8.5	78.04	246.1	-236.0	137.3	121.9	15.44	8.893			
3,300.0	3,285.6	3,300.8	3,277.1	7.8	8.8	77.39	254.0	-245.9	141.2	125.3	15.91	8.873			
3,400.0	3,385.1	3,400.7	3,376.2	8.0	9.1	76.78	261.9	-255.8	145.1	128.7	16.38	8.857			
3,500.0	3,484.6	3,500.6	3,475.3	8.3	9.4	76.19	269.9	-265.6	149.0	132.1	16.85	8.843			
3,600.0	3,584.1	3,600.5	3,574.4	8.5	9.7	75.64	277.8	-275.5	152.9	135.6	17.32	8.831			
3,700.0	3,683.7	3,700.4	3,673.5	8.8	10.0	75.11	285.7	-285.3	156.9	139.1	17.78	8.821			
3,800.0	3,783.2	3,800.3	3,772.6	9.0	10.2	74.61	293.7	-295.2	160.8	142.6	18.25	8.812			
3,900.0	3,882.7	3,900.2	3,871.8	9.2	10.5	74.13	301.6	-305.0	164.8	146.1	18.71	8.805			
4,000.0	3,982.2	4,000.1	3,970.9	9.5	10.8	73.68	309.5	-314.9	168.7	149.6	19.18	8.800			
4,100.0	4,081.7	4,100.1	4,070.0	9.7	11.1	73.25	317.5	-324.7	172.7	153.1	19.64	8.795			
4,200.0	4,181.2	4,200.0	4,169.1	10.0	11.4	72.83	325.4	-334.6	176.7	156.6	20.10	8.792			
4,300.0	4,280.7	4,299.9	4,268.2	10.2	11.6	72.44	333.3	-344.4	180.7	160.2	20.56	8.789			
4,400.0	4,380.3	4,399.8	4,367.3	10.5	11.9	72.06	341.3	-354.3	184.7	163.7	21.02	8.787			
4,500.0	4,479.8	4,499.7	4,466.4	10.7	12.2	71.70	349.2	-364.2	188.7	167.3	21.48	8.786			
4,600.0	4,579.3	4,599.6	4,565.5	11.0	12.5	71.35	357.1	-374.0	192.8	170.8	21.94	8.785			
4,700.0	4,678.8	4,699.5	4,664.6	11.2	12.8	71.02	365.1	-383.9	196.8	174.4	22.40	8.785			
4,800.0	4,778.3	4,799.4	4,763.7	11.4	13.1	70.70	373.0	-393.7	200.8	178.0	22.86	8.785			
4,900.0	4,877.8	4,899.4	4,862.8	11.7	13.3	70.39	380.9	-403.6	204.9	181.6	23.32	8.786			
5,000.0	4,977.4	4,999.3	4,961.9	11.9	13.6	70.10	388.8	-413.4	208.9	185.2	23.78	8.787			
5,100.0	5,076.9	5,099.2	5,061.1	12.2	13.9	69.81	396.8	-423.3	213.0	188.7	24.24	8.788			

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 16-13B (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 16-13B (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: O-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,176.4	5,199.1	5,160.2	12.4	14.2	69.54	404.7	-433.1	217.0	192.4	24.69	8.790		
5,300.0	5,275.9	5,299.0	5,259.3	12.7	14.5	69.28	412.6	-443.0	221.1	196.0	25.15	8.791		
5,400.0	5,375.4	5,398.9	5,358.4	12.9	14.7	69.02	420.6	-452.9	225.2	199.6	25.61	8.794		
5,500.0	5,474.9	5,498.8	5,457.5	13.2	15.0	68.78	428.5	-462.7	229.2	203.2	26.06	8.796		
5,600.0	5,574.4	5,598.7	5,556.6	13.4	15.3	68.54	436.4	-472.6	233.3	206.8	26.52	8.798		
5,700.0	5,674.0	5,698.7	5,655.7	13.7	15.6	68.31	444.4	-482.4	237.4	210.4	26.98	8.801		
5,800.0	5,773.5	5,798.6	5,754.8	13.9	15.9	68.09	452.3	-492.3	241.5	214.1	27.43	8.803		
5,900.0	5,873.0	5,898.5	5,853.9	14.1	16.2	67.88	460.2	-502.1	245.6	217.7	27.89	8.806		
6,000.0	5,972.5	5,998.4	5,953.0	14.4	16.4	67.67	468.2	-512.0	249.7	221.3	28.34	8.809		
6,100.0	6,072.0	6,098.3	6,052.1	14.6	16.7	67.48	476.1	-521.8	253.8	225.0	28.80	8.812		
6,200.0	6,171.5	6,198.2	6,151.2	14.9	17.0	67.28	484.0	-531.7	257.9	228.6	29.25	8.815		
6,300.0	6,271.1	6,298.1	6,250.4	15.1	17.3	67.10	492.0	-541.5	262.0	232.3	29.71	8.818		
6,400.0	6,370.6	6,398.0	6,349.5	15.4	17.6	66.91	499.9	-551.4	266.1	235.9	30.16	8.821		
6,500.0	6,470.1	6,498.0	6,448.6	15.6	17.8	66.74	507.8	-561.3	270.2	239.6	30.62	8.825		
6,600.0	6,569.6	6,597.9	6,547.7	15.9	18.1	66.57	515.7	-571.1	274.3	243.2	31.07	8.828		
6,700.0	6,669.1	6,697.8	6,646.8	16.1	18.4	66.40	523.7	-581.0	278.4	246.9	31.52	8.831		
6,800.0	6,768.6	6,797.7	6,745.9	16.4	18.7	66.24	531.6	-590.8	282.5	250.5	31.98	8.834		
6,900.0	6,868.2	6,897.6	6,845.0	16.6	19.0	66.09	539.5	-600.7	286.6	254.2	32.43	8.838		
7,000.0	6,967.7	6,997.5	6,944.1	16.8	19.3	65.94	547.5	-610.5	290.7	257.8	32.89	8.841		
7,100.0	7,067.2	7,097.4	7,043.2	17.1	19.5	65.79	555.4	-620.4	294.9	261.5	33.34	8.844		
7,200.0	7,166.7	7,197.3	7,142.3	17.3	19.8	65.64	563.3	-630.2	299.0	265.2	33.79	8.847		
7,300.0	7,266.2	7,297.3	7,241.4	17.6	20.1	65.51	571.3	-640.1	303.1	268.9	34.25	8.851		
7,400.0	7,365.7	7,397.2	7,340.5	17.8	20.4	65.37	579.2	-650.0	307.2	272.5	34.70	8.854		
7,500.0	7,465.2	7,497.1	7,439.6	18.1	20.7	65.24	587.1	-659.8	311.3	276.2	35.15	8.857		
7,600.0	7,564.8	7,599.6	7,541.4	18.3	21.0	65.14	595.1	-669.7	315.3	279.7	35.61	8.855		
7,700.0	7,664.4	7,707.3	7,648.6	18.5	21.2	65.31	601.6	-677.7	317.9	281.8	36.06	8.814		
7,800.0	7,764.2	7,815.1	7,756.1	18.7	21.4	65.43	605.5	-682.6	319.4	283.0	36.42	8.769		
7,900.0	7,864.2	7,922.8	7,863.9	18.8	21.5	65.47	606.8	-684.3	319.9	283.2	36.70	8.718		
8,000.0	7,964.2	8,023.1	7,964.2	19.0	21.6	-1.52	606.8	-684.3	319.9	283.0	36.96	8.656		
8,100.0	8,064.2	8,123.1	8,064.2	19.1	21.7	-1.52	606.8	-684.3	319.9	282.7	37.22	8.594		
8,200.0	8,164.2	8,223.1	8,164.2	19.2	21.8	-1.52	606.8	-684.3	319.9	282.4	37.49	8.533		
8,300.0	8,264.2	8,323.1	8,264.2	19.3	21.9	-1.52	606.8	-684.3	319.9	282.2	37.76	8.473		
8,400.0	8,364.2	8,423.1	8,364.2	19.5	22.1	-1.52	606.8	-684.3	319.9	281.9	38.02	8.413		
8,500.0	8,464.2	8,523.1	8,464.2	19.6	22.2	-1.52	606.8	-684.3	319.9	281.6	38.29	8.354		
8,600.0	8,564.2	8,623.1	8,564.2	19.7	22.3	-1.52	606.8	-684.3	319.9	281.3	38.57	8.295		
8,700.0	8,664.2	8,723.1	8,664.2	19.9	22.4	-1.52	606.8	-684.3	319.9	281.1	38.84	8.237		
8,800.0	8,764.2	8,823.1	8,764.2	20.0	22.5	-1.52	606.8	-684.3	319.9	280.8	39.11	8.180		
8,900.0	8,864.2	8,923.1	8,864.2	20.1	22.7	-1.52	606.8	-684.3	319.9	280.5	39.38	8.123		
9,000.0	8,964.2	9,023.1	8,964.2	20.3	22.8	-1.52	606.8	-684.3	319.9	280.3	39.66	8.066		
9,100.0	9,064.2	9,123.1	9,064.2	20.4	22.9	-1.52	606.8	-684.3	319.9	280.0	39.94	8.010		
9,200.0	9,164.2	9,223.1	9,164.2	20.5	23.0	-1.52	606.8	-684.3	319.9	279.7	40.22	7.955		
9,300.0	9,264.2	9,323.1	9,264.2	20.7	23.1	-1.52	606.8	-684.3	319.9	279.4	40.49	7.900		
9,400.0	9,364.2	9,423.1	9,364.2	20.8	23.3	-1.52	606.8	-684.3	319.9	279.1	40.77	7.846		
9,500.0	9,464.2	9,523.1	9,464.2	21.0	23.4	-1.52	606.8	-684.3	319.9	278.9	41.06	7.792		
9,600.0	9,564.2	9,623.1	9,564.2	21.1	23.5	-1.52	606.8	-684.3	319.9	278.6	41.34	7.739		
9,700.0	9,664.2	9,723.1	9,664.2	21.2	23.6	-1.52	606.8	-684.3	319.9	278.3	41.62	7.686		
9,800.0	9,764.2	9,823.1	9,764.2	21.4	23.8	-1.52	606.8	-684.3	319.9	278.0	41.91	7.634		
9,900.0	9,864.2	9,923.1	9,864.2	21.5	23.9	-1.52	606.8	-684.3	319.9	277.7	42.19	7.583		
10,000.0	9,964.2	10,023.1	9,964.2	21.7	24.0	-1.52	606.8	-684.3	319.9	277.4	42.48	7.532		
10,100.0	10,064.2	10,123.1	10,064.2	21.8	24.1	-1.52	606.8	-684.3	319.9	277.1	42.76	7.481		
10,200.0	10,164.2	10,223.1	10,164.2	21.9	24.3	-1.52	606.8	-684.3	319.9	276.9	43.05	7.431		
10,300.0	10,264.2	10,323.1	10,264.2	22.1	24.4	-1.52	606.8	-684.3	319.9	276.6	43.34	7.381		

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 16-13B (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 16-13B (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							
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)				
10,319.8	10,284.0	10,342.9	10,284.0	22.1	24.4	-1.52	606.8	-684.3	319.9	276.5	43.40	7.372 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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							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	-152.96	-102.3	-52.2	114.9					
100.0	100.0	100.0	100.0	0.1	0.1	-152.96	-102.3	-52.2	114.9	114.6	0.27	422.060		
200.0	200.0	200.0	200.0	0.3	0.3	-152.96	-102.3	-52.2	114.9	114.3	0.62	184.948	CC, ES	
300.0	300.0	297.7	297.6	0.5	0.5	-86.07	-102.2	-54.7	115.7	114.8	0.98	117.879		
400.0	399.6	396.2	395.9	0.7	0.7	-86.55	-101.7	-61.9	118.1	116.7	1.40	84.526		
500.0	499.2	496.2	495.5	0.9	0.9	-87.62	-101.2	-70.1	120.7	118.8	1.84	65.643		
600.0	598.7	596.1	595.1	1.2	1.1	-88.65	-100.7	-78.2	123.3	121.0	2.29	53.844		
700.0	698.2	696.0	694.7	1.4	1.3	-89.63	-100.1	-86.4	126.0	123.3	2.75	45.852		
800.0	797.7	796.0	794.3	1.7	1.6	-90.57	-99.6	-94.6	128.7	125.5	3.21	40.110		
900.0	897.2	895.9	893.9	1.9	1.8	-91.47	-99.1	-102.8	131.5	127.8	3.67	35.798		
1,000.0	996.7	995.9	993.5	2.1	2.0	-92.34	-98.6	-110.9	134.2	130.1	4.14	32.447		
1,100.0	1,096.2	1,095.8	1,093.1	2.4	2.2	-93.17	-98.0	-119.1	137.1	132.4	4.60	29.773		
1,200.0	1,195.8	1,195.7	1,192.7	2.6	2.5	-93.97	-97.5	-127.3	139.9	134.8	5.07	27.592		
1,300.0	1,295.3	1,295.7	1,292.4	2.9	2.7	-94.73	-97.0	-135.5	142.8	137.2	5.54	25.782		
1,400.0	1,394.8	1,395.6	1,392.0	3.1	2.9	-95.47	-96.4	-143.6	145.6	139.6	6.00	24.256		
1,500.0	1,494.3	1,495.6	1,491.6	3.4	3.1	-96.17	-95.9	-151.8	148.5	142.1	6.47	22.953		
1,600.0	1,593.8	1,595.5	1,591.2	3.6	3.4	-96.85	-95.4	-160.0	151.5	144.5	6.94	21.829		
1,700.0	1,693.3	1,695.5	1,690.8	3.9	3.6	-97.50	-94.8	-168.2	154.4	147.0	7.41	20.850		
1,800.0	1,792.9	1,795.4	1,790.4	4.1	3.8	-98.13	-94.3	-176.4	157.4	149.5	7.87	19.991		
1,900.0	1,892.4	1,895.3	1,890.0	4.3	4.0	-98.74	-93.8	-184.5	160.4	152.1	8.34	19.230		
2,000.0	1,991.9	1,995.3	1,989.6	4.6	4.3	-99.32	-93.3	-192.7	163.4	154.6	8.81	18.552		
2,100.0	2,091.4	2,095.2	2,089.2	4.8	4.5	-99.88	-92.7	-200.9	166.4	157.1	9.27	17.945		
2,200.0	2,190.9	2,195.2	2,188.8	5.1	4.7	-100.42	-92.2	-209.1	169.5	159.7	9.74	17.398		
2,300.0	2,290.4	2,295.1	2,288.4	5.3	4.9	-100.95	-91.7	-217.2	172.5	162.3	10.21	16.903		
2,400.0	2,390.0	2,395.0	2,388.0	5.6	5.2	-101.45	-91.1	-225.4	175.6	164.9	10.67	16.453		
2,500.0	2,489.5	2,495.0	2,487.6	5.8	5.4	-101.94	-90.6	-233.6	178.7	167.5	11.14	16.043		
2,600.0	2,589.0	2,594.9	2,587.2	6.1	5.6	-102.41	-90.1	-241.8	181.8	170.2	11.60	15.667		
2,700.0	2,688.5	2,694.9	2,686.8	6.3	5.8	-102.86	-89.6	-249.9	184.9	172.8	12.07	15.322		
2,800.0	2,788.0	2,794.8	2,786.4	6.5	6.1	-103.30	-89.0	-258.1	188.0	175.4	12.53	15.003		
2,900.0	2,887.5	2,894.7	2,886.0	6.8	6.3	-103.73	-88.5	-266.3	191.1	178.1	12.99	14.709		
3,000.0	2,987.0	2,994.7	2,985.6	7.0	6.5	-104.14	-88.0	-274.5	194.2	180.8	13.46	14.436		
3,100.0	3,086.6	3,094.6	3,085.2	7.3	6.8	-104.54	-87.4	-282.6	197.4	183.5	13.92	14.182		
3,200.0	3,186.1	3,194.6	3,184.8	7.5	7.0	-104.93	-86.9	-290.8	200.5	186.2	14.38	13.946		
3,300.0	3,285.6	3,294.5	3,284.4	7.8	7.2	-105.30	-86.4	-299.0	203.7	188.9	14.84	13.725		
3,400.0	3,385.1	3,394.5	3,384.1	8.0	7.4	-105.66	-85.9	-307.2	206.9	191.6	15.30	13.519		
3,500.0	3,484.6	3,494.4	3,483.7	8.3	7.7	-106.01	-85.3	-315.3	210.1	194.3	15.76	13.325		
3,600.0	3,584.1	3,594.3	3,583.3	8.5	7.9	-106.35	-84.8	-323.5	213.2	197.0	16.22	13.143		
3,700.0	3,683.7	3,694.3	3,682.9	8.8	8.1	-106.69	-84.3	-331.7	216.4	199.8	16.68	12.972		
3,800.0	3,783.2	3,794.2	3,782.5	9.0	8.3	-107.01	-83.7	-339.9	219.6	202.5	17.14	12.811		
3,900.0	3,882.7	3,894.2	3,882.1	9.2	8.6	-107.32	-83.2	-348.0	222.9	205.2	17.60	12.659		
4,000.0	3,982.2	3,994.1	3,981.7	9.5	8.8	-107.62	-82.7	-356.2	226.1	208.0	18.06	12.516		
4,100.0	4,081.7	4,094.0	4,081.3	9.7	9.0	-107.92	-82.1	-364.4	229.3	210.8	18.52	12.380		
4,200.0	4,181.2	4,194.0	4,180.9	10.0	9.2	-108.20	-81.6	-372.6	232.5	213.5	18.98	12.251		
4,300.0	4,280.7	4,293.9	4,280.5	10.2	9.5	-108.48	-81.1	-380.7	235.8	216.3	19.44	12.128		
4,400.0	4,380.3	4,393.9	4,380.1	10.5	9.7	-108.75	-80.6	-388.9	239.0	219.1	19.90	12.012		
4,500.0	4,479.8	4,493.8	4,479.7	10.7	9.9	-109.02	-80.0	-397.1	242.2	221.9	20.35	11.902		
4,600.0	4,579.3	4,593.7	4,579.3	11.0	10.1	-109.27	-79.5	-405.3	245.5	224.7	20.81	11.796		
4,700.0	4,678.8	4,693.7	4,678.9	11.2	10.4	-109.53	-79.0	-413.4	248.7	227.5	21.27	11.696		
4,800.0	4,778.3	4,793.6	4,778.5	11.4	10.6	-109.77	-78.4	-421.6	252.0	230.3	21.72	11.600		
4,900.0	4,877.8	4,893.6	4,878.1	11.7	10.8	-110.01	-77.9	-429.8	255.3	233.1	22.18	11.509		
5,000.0	4,977.4	4,993.5	4,977.7	11.9	11.0	-110.24	-77.4	-438.0	258.5	235.9	22.64	11.421		
5,100.0	5,076.9	5,093.5	5,077.3	12.2	11.3	-110.46	-76.9	-446.1	261.8	238.7	23.09	11.338		

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 16-13B (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 16-13B (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: O-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,176.4	5,193.4	5,176.9	12.4	11.5	-110.68	-76.3	-454.3	265.1	241.5	23.55	11.258		
5,300.0	5,275.9	5,293.3	5,276.5	12.7	11.7	-110.90	-75.8	-462.5	268.4	244.4	24.00	11.181		
5,400.0	5,375.4	5,393.3	5,376.2	12.9	11.9	-111.11	-75.3	-470.7	271.6	247.2	24.46	11.107		
5,500.0	5,474.9	5,493.2	5,475.8	13.2	12.2	-111.31	-74.7	-478.8	274.9	250.0	24.91	11.036		
5,600.0	5,574.4	5,593.2	5,575.4	13.4	12.4	-111.51	-74.2	-487.0	278.2	252.8	25.37	10.968		
5,700.0	5,674.0	5,693.1	5,675.0	13.7	12.6	-111.71	-73.7	-495.2	281.5	255.7	25.82	10.903		
5,800.0	5,773.5	5,793.0	5,774.6	13.9	12.8	-111.90	-73.2	-503.4	284.8	258.5	26.27	10.840		
5,900.0	5,873.0	5,893.0	5,874.2	14.1	13.1	-112.08	-72.6	-511.6	288.1	261.4	26.73	10.779		
6,000.0	5,972.5	5,992.9	5,973.8	14.4	13.3	-112.27	-72.1	-519.7	291.4	264.2	27.18	10.721		
6,100.0	6,072.0	6,092.9	6,073.4	14.6	13.5	-112.44	-71.6	-527.9	294.7	267.1	27.63	10.665		
6,200.0	6,171.5	6,192.8	6,173.0	14.9	13.8	-112.62	-71.0	-536.1	298.0	269.9	28.09	10.611		
6,300.0	6,271.1	6,292.7	6,272.6	15.1	14.0	-112.79	-70.5	-544.3	301.3	272.8	28.54	10.558		
6,400.0	6,370.6	6,392.7	6,372.2	15.4	14.2	-112.96	-70.0	-552.4	304.6	275.7	28.99	10.508		
6,500.0	6,470.1	6,492.6	6,471.8	15.6	14.4	-113.12	-69.5	-560.6	308.0	278.5	29.44	10.459		
6,600.0	6,569.6	6,592.6	6,571.4	15.9	14.7	-113.28	-68.9	-568.8	311.3	281.4	29.90	10.412		
6,700.0	6,669.1	6,692.5	6,671.0	16.1	14.9	-113.43	-68.4	-577.0	314.6	284.2	30.35	10.366		
6,800.0	6,768.6	6,792.5	6,770.6	16.4	15.1	-113.59	-67.9	-585.1	317.9	287.1	30.80	10.322		
6,900.0	6,868.2	6,892.4	6,870.2	16.6	15.3	-113.74	-67.3	-593.3	321.2	290.0	31.25	10.279		
7,000.0	6,967.7	6,992.3	6,969.8	16.8	15.6	-113.88	-66.8	-601.5	324.6	292.9	31.70	10.238		
7,100.0	7,067.2	7,092.3	7,069.4	17.1	15.8	-114.03	-66.3	-609.7	327.9	295.7	32.16	10.197		
7,200.0	7,166.7	7,192.2	7,169.0	17.3	16.0	-114.17	-65.7	-617.8	331.2	298.6	32.61	10.158		
7,300.0	7,266.2	7,292.2	7,268.6	17.6	16.2	-114.30	-65.2	-626.0	334.6	301.5	33.06	10.121		
7,400.0	7,365.7	7,392.1	7,368.2	17.8	16.5	-114.44	-64.7	-634.2	337.9	304.4	33.51	10.084		
7,500.0	7,465.2	7,492.0	7,467.9	18.1	16.7	-114.57	-64.2	-642.4	341.2	307.3	33.96	10.048		
7,600.0	7,564.8	7,592.0	7,567.5	18.3	16.9	-114.70	-63.6	-650.5	344.6	310.2	34.41	10.014		
7,700.0	7,664.4	7,691.6	7,666.8	18.5	17.1	-114.73	-63.1	-658.5	347.5	312.6	34.84	9.972		
7,800.0	7,764.2	7,790.5	7,765.5	18.7	17.3	-114.67	-62.8	-663.9	349.2	314.0	35.19	9.922		
7,900.0	7,864.2	7,889.3	7,864.3	18.8	17.4	-114.63	-62.6	-665.9	349.8	314.3	35.47	9.863		
8,000.0	7,964.2	7,989.2	7,964.2	19.0	17.6	-178.38	-62.6	-666.0	349.8	314.1	35.74	9.788		
8,100.0	8,064.2	8,089.2	8,064.2	19.1	17.7	-178.38	-62.6	-666.0	349.8	313.8	36.01	9.714		
8,200.0	8,164.2	8,189.2	8,164.2	19.2	17.9	-178.38	-62.6	-666.0	349.8	313.5	36.28	9.641		
8,300.0	8,264.2	8,289.2	8,264.2	19.3	18.0	-178.38	-62.6	-666.0	349.8	313.2	36.56	9.568		
8,400.0	8,364.2	8,389.2	8,364.2	19.5	18.1	-178.38	-62.6	-666.0	349.8	313.0	36.84	9.496		
8,500.0	8,464.2	8,489.2	8,464.2	19.6	18.3	-178.38	-62.6	-666.0	349.8	312.7	37.11	9.425		
8,600.0	8,564.2	8,589.2	8,564.2	19.7	18.4	-178.38	-62.6	-666.0	349.8	312.4	37.39	9.355		
8,700.0	8,664.2	8,689.2	8,664.2	19.9	18.6	-178.38	-62.6	-666.0	349.8	312.1	37.67	9.285		
8,800.0	8,764.2	8,789.2	8,764.2	20.0	18.7	-178.38	-62.6	-666.0	349.8	311.9	37.95	9.217		
8,900.0	8,864.2	8,889.2	8,864.2	20.1	18.9	-178.38	-62.6	-666.0	349.8	311.6	38.24	9.149		
9,000.0	8,964.2	8,989.2	8,964.2	20.3	19.0	-178.38	-62.6	-666.0	349.8	311.3	38.52	9.081		
9,100.0	9,064.2	9,089.2	9,064.2	20.4	19.1	-178.38	-62.6	-666.0	349.8	311.0	38.80	9.015		
9,200.0	9,164.2	9,189.2	9,164.2	20.5	19.3	-178.38	-62.6	-666.0	349.8	310.7	39.09	8.949		
9,300.0	9,264.2	9,289.2	9,264.2	20.7	19.4	-178.38	-62.6	-666.0	349.8	310.4	39.38	8.884		
9,400.0	9,364.2	9,389.2	9,364.2	20.8	19.6	-178.38	-62.6	-666.0	349.8	310.1	39.66	8.819		
9,500.0	9,464.2	9,489.2	9,464.2	21.0	19.7	-178.38	-62.6	-666.0	349.8	309.9	39.95	8.756		
9,600.0	9,564.2	9,589.2	9,564.2	21.1	19.9	-178.38	-62.6	-666.0	349.8	309.6	40.24	8.693		
9,700.0	9,664.2	9,689.2	9,664.2	21.2	20.0	-178.38	-62.6	-666.0	349.8	309.3	40.53	8.630		
9,800.0	9,764.2	9,789.2	9,764.2	21.4	20.2	-178.38	-62.6	-666.0	349.8	309.0	40.82	8.569		
9,900.0	9,864.2	9,889.2	9,864.2	21.5	20.3	-178.38	-62.6	-666.0	349.8	308.7	41.11	8.508		
10,000.0	9,964.2	9,989.2	9,964.2	21.7	20.5	-178.38	-62.6	-666.0	349.8	308.4	41.41	8.448		
10,100.0	10,064.2	10,089.2	10,064.2	21.8	20.6	-178.38	-62.6	-666.0	349.8	308.1	41.70	8.388		
10,200.0	10,164.2	10,189.2	10,164.2	21.9	20.8	-178.38	-62.6	-666.0	349.8	307.8	42.00	8.329		
10,300.0	10,264.2	10,289.2	10,264.2	22.1	20.9	-178.38	-62.6	-666.0	349.8	307.5	42.29	8.271		

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 16-13B (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 16-13B (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						Warning				
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)							
10,319.8	10,284.0	10,309.0	10,284.0	22.1	20.9	178.38	-62.6	-666.0	349.8	307.5	42.35	8.260 SF					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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							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	-143.56	-114.0	-84.2	141.7					
100.0	100.0	100.0	100.0	0.1	0.1	-143.56	-114.0	-84.2	141.7	141.4	0.27	520.458		
200.0	200.0	200.0	200.0	0.3	0.3	-143.56	-114.0	-84.2	141.7	141.1	0.62	228.066	CC, ES	
300.0	300.0	293.8	293.7	0.5	0.5	-77.07	-115.0	-86.2	143.3	142.3	0.97	147.812		
400.0	399.6	388.9	388.6	0.7	0.7	-78.54	-118.1	-92.3	148.0	146.6	1.36	108.975		
500.0	499.2	488.6	487.9	0.9	0.9	-80.59	-122.0	-100.0	153.6	151.9	1.78	86.537		
600.0	598.7	588.3	587.2	1.2	1.1	-82.50	-125.8	-107.6	159.5	157.3	2.20	72.374		
700.0	698.2	688.0	686.6	1.4	1.3	-84.26	-129.6	-115.2	165.5	162.8	2.64	62.712		
800.0	797.7	787.6	785.9	1.7	1.6	-85.91	-133.5	-122.8	171.6	168.5	3.08	55.741		
900.0	897.2	887.3	885.2	1.9	1.8	-87.43	-137.3	-130.4	177.9	174.4	3.52	50.496		
1,000.0	996.7	987.0	984.6	2.1	2.0	-88.86	-141.1	-138.0	184.3	180.3	3.97	46.420		
1,100.0	1,096.2	1,086.7	1,083.9	2.4	2.3	-90.18	-145.0	-145.7	190.8	186.4	4.42	43.170		
1,200.0	1,195.8	1,186.4	1,183.2	2.6	2.5	-91.42	-148.8	-153.3	197.4	192.5	4.87	40.524		
1,300.0	1,295.3	1,286.1	1,282.5	2.9	2.7	-92.58	-152.6	-160.9	204.0	198.7	5.32	38.333		
1,400.0	1,394.8	1,385.8	1,381.9	3.1	2.9	-93.67	-156.5	-168.5	210.8	205.0	5.78	36.491		
1,500.0	1,494.3	1,485.5	1,481.2	3.4	3.2	-94.68	-160.3	-176.1	217.6	211.4	6.23	34.923		
1,600.0	1,593.8	1,585.2	1,580.5	3.6	3.4	-95.64	-164.1	-183.7	224.5	217.8	6.69	33.575		
1,700.0	1,693.3	1,684.9	1,679.9	3.9	3.6	-96.54	-168.0	-191.4	231.5	224.3	7.14	32.405		
1,800.0	1,792.9	1,784.6	1,779.2	4.1	3.8	-97.38	-171.8	-199.0	238.5	230.9	7.60	31.380		
1,900.0	1,892.4	1,884.3	1,878.5	4.3	4.1	-98.18	-175.6	-206.6	245.5	237.5	8.06	30.476		
2,000.0	1,991.9	1,984.0	1,977.8	4.6	4.3	-98.93	-179.5	-214.2	252.6	244.1	8.51	29.673		
2,100.0	2,091.4	2,083.7	2,077.2	4.8	4.5	-99.65	-183.3	-221.8	259.8	250.8	8.97	28.956		
2,200.0	2,190.9	2,183.4	2,176.5	5.1	4.8	-100.32	-187.1	-229.4	266.9	257.5	9.43	28.313		
2,300.0	2,290.4	2,283.1	2,275.8	5.3	5.0	-100.96	-191.0	-237.1	274.1	264.3	9.89	27.732		
2,400.0	2,390.0	2,382.8	2,375.2	5.6	5.2	-101.56	-194.8	-244.7	281.4	271.0	10.34	27.206		
2,500.0	2,489.5	2,482.5	2,474.5	5.8	5.5	-102.14	-198.6	-252.3	288.7	277.9	10.80	26.727		
2,600.0	2,589.0	2,582.1	2,573.8	6.1	5.7	-102.68	-202.5	-259.9	296.0	284.7	11.26	26.290		
2,700.0	2,688.5	2,681.8	2,673.1	6.3	5.9	-103.21	-206.3	-267.5	303.3	291.6	11.71	25.889		
2,800.0	2,788.0	2,781.5	2,772.5	6.5	6.1	-103.70	-210.1	-275.1	310.6	298.5	12.17	25.520		
2,900.0	2,887.5	2,881.2	2,871.8	6.8	6.4	-104.17	-214.0	-282.8	318.0	305.4	12.63	25.180		
3,000.0	2,987.0	2,980.9	2,971.1	7.0	6.6	-104.63	-217.8	-290.4	325.4	312.3	13.09	24.865		
3,100.0	3,086.6	3,080.6	3,070.5	7.3	6.8	-105.06	-221.6	-298.0	332.8	319.3	13.54	24.573		
3,200.0	3,186.1	3,180.3	3,169.8	7.5	7.1	-105.47	-225.5	-305.6	340.2	326.2	14.00	24.302		
3,300.0	3,285.6	3,280.0	3,269.1	7.8	7.3	-105.86	-229.3	-313.2	347.7	333.2	14.46	24.049		
3,400.0	3,385.1	3,379.7	3,368.4	8.0	7.5	-106.24	-233.1	-320.8	355.1	340.2	14.91	23.813		
3,500.0	3,484.6	3,479.4	3,467.8	8.3	7.7	-106.61	-237.0	-328.5	362.6	347.2	15.37	23.592		
3,600.0	3,584.1	3,579.1	3,567.1	8.5	8.0	-106.95	-240.8	-336.1	370.1	354.3	15.83	23.385		
3,700.0	3,683.7	3,678.8	3,666.4	8.8	8.2	-107.29	-244.6	-343.7	377.6	361.3	16.28	23.191		
3,800.0	3,783.2	3,778.5	3,765.8	9.0	8.4	-107.61	-248.5	-351.3	385.1	368.4	16.74	23.008		
3,900.0	3,882.7	3,878.2	3,865.1	9.2	8.7	-107.92	-252.3	-358.9	392.6	375.5	17.19	22.835		
4,000.0	3,982.2	3,977.9	3,964.4	9.5	8.9	-108.22	-256.1	-366.5	400.2	382.5	17.65	22.672		
4,100.0	4,081.7	4,077.6	4,063.8	9.7	9.1	-108.50	-260.0	-374.2	407.7	389.6	18.11	22.519		
4,200.0	4,181.2	4,177.3	4,163.1	10.0	9.3	-108.78	-263.8	-381.8	415.3	396.7	18.56	22.373		
4,300.0	4,280.7	4,277.0	4,262.4	10.2	9.6	-109.04	-267.6	-389.4	422.9	403.8	19.02	22.235		
4,400.0	4,380.3	4,376.6	4,361.7	10.5	9.8	-109.30	-271.5	-397.0	430.4	411.0	19.47	22.104		
4,500.0	4,479.8	4,476.3	4,461.1	10.7	10.0	-109.55	-275.3	-404.6	438.0	418.1	19.93	21.979		
4,600.0	4,579.3	4,576.0	4,560.4	11.0	10.3	-109.79	-279.1	-412.2	445.6	425.2	20.38	21.861		
4,700.0	4,678.8	4,675.7	4,659.7	11.2	10.5	-110.02	-283.0	-419.9	453.2	432.4	20.84	21.748		
4,800.0	4,778.3	4,775.4	4,759.1	11.4	10.7	-110.24	-286.8	-427.5	460.8	439.5	21.29	21.640		
4,900.0	4,877.8	4,875.1	4,858.4	11.7	11.0	-110.46	-290.7	-435.1	468.4	446.7	21.75	21.537		
5,000.0	4,977.4	4,974.8	4,957.7	11.9	11.2	-110.67	-294.5	-442.7	476.0	453.8	22.20	21.439		
5,100.0	5,076.9	5,074.5	5,057.0	12.2	11.4	-110.87	-298.3	-450.3	483.7	461.0	22.66	21.346		

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 16-13B (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 16-13B (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						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)			
5,200.0	5,176.4	5,174.2	5,156.4	12.4	11.6	-111.07	-302.2	-457.9	491.3	468.2	23.11	21.256	
5,300.0	5,275.9	5,273.9	5,255.7	12.7	11.9	-111.26	-306.0	-465.6	498.9	475.4	23.57	21.170 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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 21-3B (M16W Pad) - DD - Plan #1											Offset Site Error:		0.0 ft	
Survey Program:		0-MWDD											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	Separation			Warning	
Depth (ft)	Depth (ft)	Depth (ft)	Depth (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	-89.50	1.1	-126.0	126.0							
100.0	100.0	100.0	100.0	0.1	0.1	-89.50	1.1	-126.0	126.0	125.7	0.27	462.649				
200.0	200.0	200.0	200.0	0.3	0.3	-89.50	1.1	-126.0	126.0	125.3	0.62	202.734				
300.0	300.0	304.9	304.8	0.5	0.5	-23.97	-0.8	-123.8	121.5	120.6	0.98	123.422				
400.0	399.6	408.0	407.6	0.7	0.7	-28.94	-6.5	-117.6	108.8	107.4	1.38	78.932				
500.0	499.2	508.6	507.3	0.9	1.0	-38.31	-15.7	-107.6	92.4	90.5	1.86	49.781				
600.0	598.7	606.6	603.5	1.2	1.4	-54.31	-27.9	-94.1	77.5	75.0	2.49	31.171				
691.7	689.9	693.6	688.2	1.4	1.8	-75.83	-41.6	-79.1	71.4	68.3	3.16	22.573	CC, ES			
700.0	698.2	701.5	695.7	1.4	1.8	-78.00	-43.0	-77.6	71.5	68.3	3.22	22.208				
800.0	797.7	795.2	786.3	1.7	2.3	-102.12	-59.3	-59.7	80.7	77.1	3.70	21.850	SF			
900.0	897.2	889.0	876.9	1.9	2.7	-119.36	-75.5	-41.9	101.7	97.8	3.93	25.888				
1,000.0	996.7	982.7	967.5	2.1	3.1	-130.40	-91.8	-24.0	128.8	124.7	4.11	31.328				
1,100.0	1,096.2	1,076.5	1,058.1	2.4	3.6	-137.58	-108.1	-6.2	158.9	154.6	4.32	36.819				
1,200.0	1,195.8	1,170.3	1,148.7	2.6	4.1	-142.48	-124.4	11.7	190.6	186.1	4.55	41.881				
1,300.0	1,295.3	1,264.0	1,239.3	2.9	4.5	-145.99	-140.6	29.5	223.2	218.4	4.81	46.395				
1,400.0	1,394.8	1,357.8	1,329.9	3.1	5.0	-148.60	-156.9	47.4	256.4	251.3	5.09	50.376				
1,500.0	1,494.3	1,451.6	1,420.5	3.4	5.4	-150.63	-173.2	65.3	289.9	284.5	5.38	53.880				
1,600.0	1,593.8	1,545.3	1,511.1	3.6	5.9	-152.23	-189.5	83.1	323.7	318.0	5.68	56.970				
1,700.0	1,693.3	1,639.1	1,601.7	3.9	6.3	-153.53	-205.7	101.0	357.7	351.7	5.99	59.706				
1,800.0	1,792.9	1,732.9	1,692.3	4.1	6.8	-154.61	-222.0	118.8	391.8	385.5	6.31	62.141				
1,900.0	1,892.4	1,826.6	1,782.9	4.3	7.2	-155.51	-238.3	136.7	426.0	419.4	6.62	64.317				
2,000.0	1,991.9	1,920.4	1,873.5	4.6	7.7	-156.28	-254.6	154.5	460.3	453.4	6.95	66.273				
2,100.0	2,091.4	2,014.2	1,964.1	4.8	8.2	-156.95	-270.8	172.4	494.7	487.4	7.27	68.039				

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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: O-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	-148.19	-118.4	-73.4	139.3					
100.0	100.0	100.0	100.0	0.1	0.1	-148.19	-118.4	-73.4	139.3	139.0	0.27	511.628		
200.0	200.0	200.0	200.0	0.3	0.3	-148.19	-118.4	-73.4	139.3	138.7	0.62	224.197 CC, ES		
300.0	300.0	293.6	293.5	0.5	0.5	-81.79	-119.8	-75.3	141.2	140.2	0.97	145.752		
400.0	399.6	386.9	386.6	0.7	0.7	-83.49	-123.9	-80.7	147.0	145.6	1.35	108.592		
500.0	499.2	486.4	485.6	0.9	0.9	-85.68	-129.8	-88.4	154.9	153.2	1.77	87.521		
600.0	598.7	585.9	584.7	1.2	1.1	-87.66	-135.6	-96.0	163.1	160.9	2.20	74.223		
700.0	698.2	685.4	683.7	1.4	1.4	-89.45	-141.5	-103.7	171.4	168.7	2.63	65.145		
800.0	797.7	784.9	782.8	1.7	1.6	-91.07	-147.3	-111.4	179.8	176.8	3.07	58.592		
900.0	897.2	884.5	881.8	1.9	1.9	-92.55	-153.2	-119.0	188.4	184.9	3.51	53.658		
1,000.0	996.7	984.0	980.9	2.1	2.1	-93.89	-159.0	-126.7	197.1	193.2	3.96	49.821		
1,100.0	1,096.2	1,083.5	1,079.9	2.4	2.3	-95.12	-164.9	-134.4	205.9	201.5	4.40	46.758		
1,200.0	1,195.8	1,183.0	1,179.0	2.6	2.6	-96.26	-170.7	-142.0	214.8	210.0	4.85	44.262		
1,300.0	1,295.3	1,282.5	1,278.0	2.9	2.8	-97.30	-176.6	-149.7	223.8	218.5	5.30	42.192		
1,400.0	1,394.8	1,382.1	1,377.1	3.1	3.1	-98.26	-182.4	-157.4	232.8	227.1	5.76	40.450		
1,500.0	1,494.3	1,481.6	1,476.1	3.4	3.3	-99.14	-188.3	-165.0	241.9	235.7	6.21	38.965		
1,600.0	1,593.8	1,581.1	1,575.2	3.6	3.5	-99.97	-194.2	-172.7	251.0	244.4	6.66	37.685		
1,700.0	1,693.3	1,680.6	1,674.2	3.9	3.8	-100.73	-200.0	-180.4	260.2	253.1	7.12	36.573		
1,800.0	1,792.9	1,780.1	1,773.3	4.1	4.0	-101.45	-205.9	-188.0	269.5	261.9	7.57	35.596		
1,900.0	1,892.4	1,879.6	1,872.3	4.3	4.3	-102.11	-211.7	-195.7	278.8	270.7	8.03	34.734		
2,000.0	1,991.9	1,979.2	1,971.4	4.6	4.5	-102.74	-217.6	-203.4	288.1	279.6	8.48	33.967		
2,100.0	2,091.4	2,078.7	2,070.4	4.8	4.7	-103.32	-223.4	-211.0	297.4	288.5	8.94	33.280		
2,200.0	2,190.9	2,178.2	2,169.5	5.1	5.0	-103.87	-229.3	-218.7	306.8	297.4	9.39	32.663		
2,300.0	2,290.4	2,277.7	2,268.5	5.3	5.2	-104.39	-235.1	-226.4	316.2	306.3	9.85	32.104		
2,400.0	2,390.0	2,377.2	2,367.6	5.6	5.5	-104.87	-241.0	-234.1	325.6	315.3	10.30	31.597		
2,500.0	2,489.5	2,476.8	2,466.6	5.8	5.7	-105.33	-246.8	-241.7	335.0	324.3	10.76	31.134		
2,600.0	2,589.0	2,576.3	2,565.7	6.1	6.0	-105.77	-252.7	-249.4	344.5	333.3	11.22	30.711		
2,700.0	2,688.5	2,675.8	2,664.7	6.3	6.2	-106.18	-258.5	-257.1	354.0	342.3	11.67	30.322		
2,800.0	2,788.0	2,775.3	2,763.8	6.5	6.4	-106.56	-264.4	-264.7	363.5	351.4	12.13	29.964		
2,900.0	2,887.5	2,874.8	2,862.8	6.8	6.7	-106.93	-270.2	-272.4	373.0	360.4	12.59	29.632		
3,000.0	2,987.0	2,974.3	2,961.9	7.0	6.9	-107.28	-276.1	-280.1	382.5	369.5	13.04	29.325		
3,100.0	3,086.6	3,073.9	3,060.9	7.3	7.2	-107.62	-281.9	-287.7	392.1	378.6	13.50	29.040		
3,200.0	3,186.1	3,173.4	3,160.0	7.5	7.4	-107.94	-287.8	-295.4	401.6	387.7	13.96	28.774		
3,300.0	3,285.6	3,272.9	3,259.0	7.8	7.7	-108.24	-293.6	-303.1	411.2	396.8	14.42	28.526		
3,400.0	3,385.1	3,372.4	3,358.1	8.0	7.9	-108.53	-299.5	-310.7	420.8	405.9	14.87	28.294		
3,500.0	3,484.6	3,471.9	3,457.1	8.3	8.1	-108.81	-305.4	-318.4	430.4	415.0	15.33	28.076		
3,600.0	3,584.1	3,571.5	3,556.2	8.5	8.4	-109.07	-311.2	-326.1	440.0	424.2	15.79	27.872		
3,700.0	3,683.7	3,671.0	3,655.2	8.8	8.6	-109.32	-317.1	-333.7	449.6	433.3	16.24	27.679		
3,800.0	3,783.2	3,770.5	3,754.3	9.0	8.9	-109.57	-322.9	-341.4	459.2	442.5	16.70	27.498		
3,900.0	3,882.7	3,870.0	3,853.3	9.2	9.1	-109.80	-328.8	-349.1	468.8	451.7	17.16	27.327		
4,000.0	3,982.2	3,969.5	3,952.4	9.5	9.3	-110.02	-334.6	-356.7	478.5	460.8	17.61	27.165		
4,100.0	4,081.7	4,069.0	4,051.4	9.7	9.6	-110.24	-340.5	-364.4	488.1	470.0	18.07	27.011		
4,200.0	4,181.2	4,168.6	4,150.5	10.0	9.8	-110.44	-346.3	-372.1	497.7	479.2	18.53	26.866 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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				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	-112.5	-57.3	126.3					
100.0	100.0	100.0	100.0	0.1	0.1	-153.00	-112.5	-57.3	126.3	126.0	0.27	463.882		
200.0	200.0	200.0	200.0	0.3	0.3	-153.00	-112.5	-57.3	126.3	125.7	0.62	203.274 CC, ES		
300.0	300.0	293.7	293.7	0.5	0.5	-86.93	-114.5	-58.6	128.6	127.6	0.97	132.800		
400.0	399.6	386.9	386.6	0.7	0.7	-89.49	-120.2	-62.3	135.6	134.3	1.35	100.524		
500.0	499.2	480.3	479.3	0.9	0.9	-92.34	-129.8	-68.5	147.8	146.0	1.75	84.577		
600.0	598.7	577.8	575.7	1.2	1.2	-94.64	-141.8	-76.2	162.6	160.5	2.16	75.159		
700.0	698.2	676.5	673.4	1.4	1.5	-96.59	-153.9	-84.1	177.7	175.1	2.59	68.632		
800.0	797.7	775.2	771.0	1.7	1.8	-98.23	-166.0	-91.9	192.9	189.9	3.02	63.882		
900.0	897.2	873.9	868.6	1.9	2.1	-99.63	-178.1	-99.7	208.3	204.9	3.46	60.279		
1,000.0	996.7	972.5	966.2	2.1	2.4	-100.83	-190.2	-107.6	223.8	219.9	3.89	57.456		
1,100.0	1,096.2	1,071.2	1,063.9	2.4	2.7	-101.89	-202.3	-115.4	239.4	235.0	4.34	55.187		
1,200.0	1,195.8	1,169.9	1,161.5	2.6	3.0	-102.81	-214.5	-123.2	255.0	250.2	4.78	53.327		
1,300.0	1,295.3	1,268.6	1,259.1	2.9	3.3	-103.62	-226.6	-131.1	270.7	265.4	5.23	51.773		
1,400.0	1,394.8	1,367.3	1,356.8	3.1	3.6	-104.35	-238.7	-138.9	286.4	280.7	5.68	50.459		
1,500.0	1,494.3	1,466.0	1,454.4	3.4	3.9	-105.00	-250.8	-146.7	302.2	296.1	6.13	49.332		
1,600.0	1,593.8	1,564.7	1,552.0	3.6	4.2	-105.59	-262.9	-154.6	318.0	311.4	6.58	48.355		
1,700.0	1,693.3	1,663.4	1,649.7	3.9	4.5	-106.12	-275.1	-162.4	333.8	326.8	7.03	47.502		
1,800.0	1,792.9	1,762.1	1,747.3	4.1	4.8	-106.60	-287.2	-170.2	349.7	342.2	7.48	46.749		
1,900.0	1,892.4	1,860.8	1,844.9	4.3	5.1	-107.04	-299.3	-178.1	365.6	357.7	7.93	46.081		
2,000.0	1,991.9	1,959.5	1,942.6	4.6	5.4	-107.45	-311.4	-185.9	381.5	373.1	8.39	45.484		
2,100.0	2,091.4	2,058.2	2,040.2	4.8	5.7	-107.82	-323.5	-193.8	397.4	388.6	8.84	44.948		
2,200.0	2,190.9	2,156.9	2,137.8	5.1	6.1	-108.16	-335.7	-201.6	413.4	404.1	9.30	44.463		
2,300.0	2,290.4	2,255.5	2,235.5	5.3	6.4	-108.48	-347.8	-209.4	429.3	419.6	9.75	44.023		
2,400.0	2,390.0	2,354.2	2,333.1	5.6	6.7	-108.77	-359.9	-217.3	445.3	435.1	10.21	43.621		
2,500.0	2,489.5	2,452.9	2,430.7	5.8	7.0	-109.05	-372.0	-225.1	461.3	450.6	10.66	43.254		
2,600.0	2,589.0	2,551.6	2,528.4	6.1	7.3	-109.30	-384.1	-232.9	477.2	466.1	11.12	42.916		
2,700.0	2,688.5	2,650.3	2,626.0	6.3	7.6	-109.54	-396.2	-240.8	493.2	481.7	11.58	42.605 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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	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	-158.74	-106.7	-41.5	114.5					
100.0	100.0	100.0	100.0	0.1	0.1	-158.74	-106.7	-41.5	114.5	114.2	0.27	420.579		
200.0	200.0	200.0	200.0	0.3	0.3	-158.74	-106.7	-41.5	114.5	113.9	0.62	184.299	CC, ES	
300.0	300.0	294.3	294.2	0.5	0.5	-92.78	-108.8	-42.6	117.1	116.1	0.97	120.807		
400.0	399.6	387.8	387.5	0.7	0.7	-95.59	-115.0	-45.6	125.0	123.6	1.35	92.573		
500.0	499.2	480.4	479.4	0.9	0.9	-98.62	-125.1	-50.7	138.2	136.5	1.75	79.173		
600.0	598.7	573.4	571.1	1.2	1.2	-100.72	-139.2	-57.7	156.3	154.2	2.15	72.616		
700.0	698.2	671.4	667.4	1.4	1.6	-102.35	-155.2	-65.7	176.0	173.4	2.58	68.256		
800.0	797.7	769.3	763.7	1.7	1.9	-103.65	-171.2	-73.7	195.7	192.7	3.01	65.036		
900.0	897.2	867.3	860.0	1.9	2.3	-104.71	-187.2	-81.7	215.5	212.0	3.44	62.555		
1,000.0	996.7	965.2	956.3	2.1	2.6	-105.60	-203.3	-89.7	235.3	231.5	3.88	60.586		
1,100.0	1,096.2	1,063.2	1,052.5	2.4	3.0	-106.35	-219.3	-97.7	255.3	250.9	4.33	58.987		
1,200.0	1,195.8	1,161.1	1,148.8	2.6	3.3	-106.99	-235.3	-105.7	275.2	270.4	4.77	57.663		
1,300.0	1,295.3	1,259.0	1,245.1	2.9	3.7	-107.54	-251.3	-113.7	295.2	290.0	5.22	56.549		
1,400.0	1,394.8	1,357.0	1,341.4	3.1	4.0	-108.02	-267.4	-121.7	315.2	309.5	5.67	55.599		
1,500.0	1,494.3	1,454.9	1,437.7	3.4	4.4	-108.45	-283.4	-129.7	335.2	329.1	6.12	54.779		
1,600.0	1,593.8	1,552.9	1,534.0	3.6	4.7	-108.82	-299.4	-137.7	355.2	348.6	6.57	54.066		
1,700.0	1,693.3	1,650.8	1,630.3	3.9	5.1	-109.16	-315.4	-145.6	375.3	368.2	7.02	53.438		
1,800.0	1,792.9	1,748.8	1,726.6	4.1	5.5	-109.46	-331.5	-153.6	395.3	387.8	7.48	52.883		
1,900.0	1,892.4	1,846.7	1,822.9	4.3	5.8	-109.74	-347.5	-161.6	415.4	407.4	7.93	52.388		
2,000.0	1,991.9	1,944.7	1,919.2	4.6	6.2	-109.99	-363.5	-169.6	435.4	427.1	8.38	51.943		
2,100.0	2,091.4	2,042.6	2,015.5	4.8	6.5	-110.21	-379.5	-177.6	455.5	446.7	8.84	51.543		
2,200.0	2,190.9	2,140.6	2,111.8	5.1	6.9	-110.42	-395.6	-185.6	475.6	466.3	9.29	51.179		
2,300.0	2,290.4	2,238.5	2,208.1	5.3	7.2	-110.61	-411.6	-193.6	495.7	486.0	9.75	50.849	SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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							
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	-165.86	-100.9	-25.4	104.0				
100.0	100.0	100.0	100.0	0.1	0.1	-165.86	-100.9	-25.4	104.0	103.8	0.27	382.155	
200.0	200.0	200.0	200.0	0.3	0.3	-165.86	-100.9	-25.4	104.0	103.4	0.62	167.461	CC, ES
300.0	300.0	294.8	294.7	0.5	0.5	-99.93	-103.1	-26.3	106.9	106.0	0.97	110.269	
400.0	399.6	388.8	388.5	0.7	0.7	-102.78	-109.5	-28.9	115.8	114.4	1.35	85.761	
500.0	499.2	481.7	480.7	0.9	0.9	-105.70	-120.1	-33.1	130.2	128.5	1.75	74.592	
600.0	598.7	573.3	570.9	1.2	1.3	-107.52	-134.7	-39.0	149.4	147.3	2.15	69.455	
700.0	698.2	665.7	661.2	1.4	1.6	-108.49	-153.1	-46.3	173.0	170.4	2.57	67.330	
800.0	797.7	762.7	755.6	1.7	2.0	-109.19	-173.3	-54.5	197.5	194.5	3.00	65.771	
900.0	897.2	859.6	850.1	1.9	2.4	-109.72	-193.6	-62.6	222.1	218.6	3.44	64.522	
1,000.0	996.7	956.5	944.5	2.1	2.8	-110.15	-213.8	-70.7	246.6	242.7	3.88	63.500	
1,100.0	1,096.2	1,053.4	1,039.0	2.4	3.2	-110.51	-234.0	-78.8	271.2	266.9	4.33	62.650	
1,200.0	1,195.8	1,150.3	1,133.4	2.6	3.7	-110.80	-254.3	-86.9	295.8	291.0	4.78	61.933	
1,300.0	1,295.3	1,247.3	1,227.8	2.9	4.1	-111.05	-274.5	-95.0	320.4	315.2	5.22	61.321	
1,400.0	1,394.8	1,344.2	1,322.3	3.1	4.5	-111.26	-294.8	-103.1	345.0	339.3	5.67	60.794	
1,500.0	1,494.3	1,441.1	1,416.7	3.4	4.9	-111.45	-315.0	-111.3	369.6	363.5	6.13	60.334	
1,600.0	1,593.8	1,538.0	1,511.1	3.6	5.3	-111.61	-335.2	-119.4	394.2	387.6	6.58	59.930	
1,700.0	1,693.3	1,634.9	1,605.6	3.9	5.7	-111.75	-355.5	-127.5	418.8	411.8	7.03	59.573	
1,800.0	1,792.9	1,731.9	1,700.0	4.1	6.1	-111.88	-375.7	-135.6	443.4	435.9	7.48	59.255	
1,900.0	1,892.4	1,828.8	1,794.4	4.3	6.6	-112.00	-395.9	-143.7	468.0	460.1	7.94	58.970	
2,000.0	1,991.9	1,925.7	1,888.9	4.6	7.0	-112.10	-416.2	-151.8	492.6	484.2	8.39	58.713	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-174.23	-95.1	-9.6	95.5					
100.0	100.0	100.0	100.0	0.1	0.1	-174.23	-95.1	-9.6	95.5	95.3	0.27	350.932		
200.0	200.0	200.0	200.0	0.3	0.3	-174.23	-95.1	-9.6	95.5	94.9	0.62	153.779	CC, ES	
300.0	300.0	295.2	295.2	0.5	0.5	-108.23	-97.3	-10.4	98.8	97.8	0.97	101.811		
400.0	399.6	389.7	389.3	0.7	0.7	-110.82	-104.0	-12.6	108.6	107.2	1.35	80.471		
500.0	499.2	482.9	481.9	0.9	0.9	-113.29	-114.9	-16.3	124.0	122.3	1.74	71.090		
600.0	598.7	574.8	572.4	1.2	1.3	-114.54	-129.8	-21.3	144.1	142.0	2.15	66.929		
700.0	698.2	664.9	660.3	1.4	1.6	-114.93	-148.4	-27.5	168.6	166.0	2.57	65.502		
800.0	797.7	756.0	748.3	1.7	2.1	-114.79	-170.9	-35.1	197.0	194.0	3.00	65.562		
900.0	897.2	851.6	840.4	1.9	2.5	-114.59	-195.3	-43.3	226.2	222.7	3.45	65.570		
1,000.0	996.7	947.3	932.5	2.1	3.0	-114.44	-219.7	-51.5	255.3	251.4	3.90	65.538		
1,100.0	1,096.2	1,042.9	1,024.6	2.4	3.5	-114.32	-244.1	-59.7	284.5	280.2	4.34	65.489		
1,200.0	1,195.8	1,138.6	1,116.8	2.6	3.9	-114.22	-268.4	-67.9	313.7	308.9	4.79	65.434		
1,300.0	1,295.3	1,234.2	1,208.9	2.9	4.4	-114.14	-292.8	-76.1	342.9	337.6	5.24	65.379		
1,400.0	1,394.8	1,329.9	1,301.0	3.1	4.9	-114.08	-317.2	-84.3	372.1	366.4	5.70	65.326		
1,500.0	1,494.3	1,425.5	1,393.1	3.4	5.4	-114.02	-341.6	-92.5	401.3	395.1	6.15	65.276		
1,600.0	1,593.8	1,521.2	1,485.2	3.6	5.8	-113.97	-366.0	-100.7	430.5	423.9	6.60	65.229		
1,700.0	1,693.3	1,616.8	1,577.4	3.9	6.3	-113.92	-390.4	-108.9	459.6	452.6	7.05	65.186		
1,800.0	1,792.9	1,712.4	1,669.5	4.1	6.8	-113.89	-414.7	-117.1	488.8	481.3	7.50	65.146	SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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 +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	77.70	12.7	58.5	59.8					
100.0	100.0	100.0	100.0	0.1	0.1	77.70	12.7	58.5	59.8	59.6	0.27	219.765		
200.0	200.0	200.0	200.0	0.3	0.3	77.70	12.7	58.5	59.8	59.2	0.62	96.302	CC, ES	
300.0	300.0	301.4	301.4	0.5	0.5	143.86	14.8	56.8	60.8	59.8	0.98	61.832		
400.0	399.6	402.8	402.4	0.7	0.7	141.51	21.1	51.6	63.6	62.2	1.39	45.717		
500.0	499.2	503.8	502.5	0.9	1.0	136.26	31.4	43.1	66.2	64.3	1.88	35.145		
600.0	598.7	603.5	600.9	1.2	1.3	129.23	43.7	33.0	68.6	66.2	2.42	28.333		
700.0	698.2	703.1	699.3	1.4	1.6	122.77	56.1	22.9	72.0	69.1	2.99	24.125		
800.0	797.7	802.7	797.6	1.7	2.0	116.95	68.4	12.7	76.3	72.7	3.56	21.437		
900.0	897.2	902.4	895.9	1.9	2.3	111.79	80.7	2.6	81.2	77.1	4.13	19.675		
1,000.0	996.7	1,002.0	994.3	2.1	2.6	107.25	93.1	-7.6	86.8	82.1	4.69	18.496		
1,100.0	1,096.2	1,101.6	1,092.6	2.4	2.9	103.28	105.4	-17.7	92.8	87.5	5.24	17.697		
1,200.0	1,195.8	1,201.2	1,190.9	2.6	3.3	99.80	117.8	-27.9	99.2	93.4	5.78	17.150		
1,300.0	1,295.3	1,300.9	1,289.3	2.9	3.6	96.75	130.1	-38.0	105.9	99.6	6.31	16.776		
1,400.0	1,394.8	1,400.5	1,387.6	3.1	3.9	94.07	142.4	-48.1	112.9	106.0	6.83	16.521		
1,500.0	1,494.3	1,500.1	1,485.9	3.4	4.2	91.71	154.8	-58.3	120.0	112.7	7.34	16.351		
1,600.0	1,593.8	1,599.7	1,584.3	3.6	4.6	89.61	167.1	-68.4	127.4	119.6	7.85	16.241		
1,700.0	1,693.3	1,699.4	1,682.6	3.9	4.9	87.75	179.5	-78.6	135.0	126.6	8.34	16.174		
1,800.0	1,792.9	1,799.0	1,781.0	4.1	5.2	86.09	191.8	-88.7	142.6	133.8	8.84	16.139		
1,900.0	1,892.4	1,898.6	1,879.3	4.3	5.6	84.59	204.1	-98.9	150.4	141.1	9.32	16.127	SF	
2,000.0	1,991.9	1,998.2	1,977.6	4.6	5.9	83.24	216.5	-109.0	158.2	148.4	9.81	16.132		
2,100.0	2,091.4	2,097.9	2,076.0	4.8	6.2	82.03	228.8	-119.1	166.2	155.9	10.29	16.149		
2,200.0	2,190.9	2,197.5	2,174.3	5.1	6.5	80.92	241.2	-129.3	174.2	163.4	10.77	16.175		
2,300.0	2,290.4	2,297.1	2,272.6	5.3	6.9	79.91	253.5	-139.4	182.2	171.0	11.24	16.208		
2,400.0	2,390.0	2,396.7	2,371.0	5.6	7.2	78.98	265.8	-149.6	190.3	178.6	11.72	16.245		
2,500.0	2,489.5	2,496.4	2,469.3	5.8	7.5	78.13	278.2	-159.7	198.5	186.3	12.19	16.285		
2,600.0	2,589.0	2,596.0	2,567.6	6.1	7.9	77.35	290.5	-169.9	206.7	194.0	12.66	16.328		
2,700.0	2,688.5	2,695.6	2,666.0	6.3	8.2	76.63	302.9	-180.0	214.9	201.8	13.13	16.372		
2,800.0	2,788.0	2,795.2	2,764.3	6.5	8.5	75.96	315.2	-190.2	223.2	209.6	13.60	16.416		
2,900.0	2,887.5	2,894.9	2,862.7	6.8	8.8	75.34	327.5	-200.3	231.5	217.4	14.06	16.461		
3,000.0	2,987.0	2,994.5	2,961.0	7.0	9.2	74.76	339.9	-210.4	239.8	225.3	14.53	16.506		
3,100.0	3,086.6	3,094.1	3,059.3	7.3	9.5	74.23	352.2	-220.6	248.1	233.1	14.99	16.550		
3,200.0	3,186.1	3,193.7	3,157.7	7.5	9.8	73.72	364.6	-230.7	256.5	241.0	15.46	16.594		
3,300.0	3,285.6	3,293.4	3,256.0	7.8	10.2	73.25	376.9	-240.9	264.9	249.0	15.92	16.637		
3,400.0	3,385.1	3,393.0	3,354.3	8.0	10.5	72.81	389.2	-251.0	273.3	256.9	16.38	16.679		
3,500.0	3,484.6	3,492.6	3,452.7	8.3	10.8	72.39	401.6	-261.2	281.7	264.8	16.85	16.720		
3,600.0	3,584.1	3,592.2	3,551.0	8.5	11.2	72.00	413.9	-271.3	290.1	272.8	17.31	16.761		
3,700.0	3,683.7	3,691.9	3,649.3	8.8	11.5	71.63	426.3	-281.4	298.5	280.8	17.77	16.800		
3,800.0	3,783.2	3,791.5	3,747.7	9.0	11.8	71.28	438.6	-291.6	307.0	288.8	18.23	16.838		
3,900.0	3,882.7	3,891.1	3,846.0	9.2	12.1	70.95	450.9	-301.7	315.5	296.8	18.69	16.876		
4,000.0	3,982.2	3,990.8	3,944.4	9.5	12.5	70.63	463.3	-311.9	323.9	304.8	19.15	16.912		
4,100.0	4,081.7	4,090.4	4,042.7	9.7	12.8	70.33	475.6	-322.0	332.4	312.8	19.61	16.947		
4,200.0	4,181.2	4,190.0	4,141.0	10.0	13.1	70.05	488.0	-332.2	340.9	320.8	20.07	16.982		
4,300.0	4,280.7	4,289.6	4,239.4	10.2	13.5	69.78	500.3	-342.3	349.4	328.9	20.53	17.015		
4,400.0	4,380.3	4,389.3	4,337.7	10.5	13.8	69.52	512.6	-352.5	357.9	336.9	20.99	17.047		
4,500.0	4,479.8	4,488.9	4,436.0	10.7	14.1	69.28	525.0	-362.6	366.4	344.9	21.45	17.079		
4,600.0	4,579.3	4,588.5	4,534.4	11.0	14.5	69.05	537.3	-372.7	374.9	353.0	21.91	17.110		
4,700.0	4,678.8	4,688.1	4,632.7	11.2	14.8	68.82	549.7	-382.9	383.4	361.1	22.37	17.139		
4,800.0	4,778.3	4,787.8	4,731.0	11.4	15.1	68.61	562.0	-393.0	392.0	369.1	22.83	17.168		
4,900.0	4,877.8	4,887.4	4,829.4	11.7	15.4	68.41	574.3	-403.2	400.5	377.2	23.29	17.196		
5,000.0	4,977.4	4,987.0	4,927.7	11.9	15.8	68.21	586.7	-413.3	409.0	385.3	23.75	17.224		
5,100.0	5,076.9	5,086.6	5,026.1	12.2	16.1	68.02	599.0	-423.5	417.6	393.4	24.21	17.250		

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 16-13B (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 16-13B (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										
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)							
5,200.0	5,176.4	5,186.3	5,124.4	12.4	16.4	67.84	611.4	-433.6	426.1	401.5	24.67	17.276					
5,300.0	5,275.9	5,285.9	5,222.7	12.7	16.8	67.67	623.7	-443.7	434.7	409.5	25.12	17.301					
5,400.0	5,375.4	5,385.5	5,321.1	12.9	17.1	67.50	636.0	-453.9	443.2	417.6	25.58	17.326					
5,500.0	5,474.9	5,485.1	5,419.4	13.2	17.4	67.34	648.4	-464.0	451.8	425.7	26.04	17.349					
5,600.0	5,574.4	5,584.8	5,517.7	13.4	17.7	67.19	660.7	-474.2	460.3	433.8	26.50	17.373					
5,700.0	5,674.0	5,684.4	5,616.1	13.7	18.1	67.04	673.1	-484.3	468.9	442.0	26.96	17.395					
5,800.0	5,773.5	5,784.0	5,714.4	13.9	18.4	66.90	685.4	-494.5	477.5	450.1	27.41	17.417					
5,900.0	5,873.0	5,883.6	5,812.7	14.1	18.7	66.76	697.7	-504.6	486.0	458.2	27.87	17.438					
6,000.0	5,972.5	5,983.3	5,911.1	14.4	19.1	66.62	710.1	-514.7	494.6	466.3	28.33	17.459					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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	69.94	23.3	63.8	68.0					
100.0	100.0	100.0	100.0	0.1	0.1	69.94	23.3	63.8	68.0	67.7	0.27	249.573		
200.0	200.0	200.0	200.0	0.3	0.3	69.94	23.3	63.8	68.0	67.3	0.62	109.363	CC, ES	
300.0	300.0	300.7	300.6	0.5	0.5	136.23	25.6	62.4	69.3	68.4	0.98	70.490		
400.0	399.6	401.2	400.8	0.7	0.7	134.31	32.3	58.3	73.6	72.2	1.40	52.505		
500.0	499.2	501.4	500.1	0.9	1.0	129.95	43.6	51.5	78.6	76.7	1.90	41.413		
600.0	598.7	600.8	597.9	1.2	1.4	122.69	59.0	42.0	84.2	81.7	2.48	33.917		
700.0	698.2	699.9	695.0	1.4	1.7	115.28	75.9	31.7	91.3	88.2	3.08	29.609		
800.0	797.7	799.0	792.0	1.7	2.1	109.02	92.9	21.3	99.6	96.0	3.67	27.122		
900.0	897.2	898.1	889.1	1.9	2.5	103.77	109.8	11.0	109.0	104.8	4.25	25.663		
1,000.0	996.7	997.2	986.2	2.1	2.9	99.37	126.8	0.6	119.1	114.3	4.80	24.805		
1,100.0	1,096.2	1,096.3	1,083.3	2.4	3.2	95.68	143.7	-9.7	129.9	124.5	5.34	24.311		
1,200.0	1,195.8	1,195.4	1,180.4	2.6	3.6	92.55	160.6	-20.1	141.1	135.2	5.87	24.042		
1,300.0	1,295.3	1,294.5	1,277.5	2.9	4.0	89.90	177.6	-30.4	152.6	146.2	6.38	23.917		
1,400.0	1,394.8	1,393.6	1,374.6	3.1	4.4	87.61	194.5	-40.8	164.4	157.5	6.88	23.883	SF	
1,500.0	1,494.3	1,492.7	1,471.7	3.4	4.8	85.64	211.4	-51.1	176.4	169.1	7.38	23.909		
1,600.0	1,593.8	1,591.8	1,568.8	3.6	5.2	83.91	228.4	-61.5	188.7	180.8	7.87	23.973		
1,700.0	1,693.3	1,690.9	1,665.9	3.9	5.6	82.40	245.3	-71.8	201.0	192.7	8.35	24.061		
1,800.0	1,792.9	1,790.0	1,763.0	4.1	5.9	81.07	262.3	-82.2	213.5	204.7	8.84	24.165		
1,900.0	1,892.4	1,889.1	1,860.1	4.3	6.3	79.88	279.2	-92.5	226.1	216.8	9.31	24.278		
2,000.0	1,991.9	1,988.2	1,957.2	4.6	6.7	78.81	296.1	-102.9	238.8	229.0	9.79	24.395		
2,100.0	2,091.4	2,087.3	2,054.2	4.8	7.1	77.86	313.1	-113.2	251.5	241.3	10.26	24.514		
2,200.0	2,190.9	2,186.4	2,151.3	5.1	7.5	77.00	330.0	-123.6	264.3	253.6	10.73	24.632		
2,300.0	2,290.4	2,285.5	2,248.4	5.3	7.9	76.21	346.9	-133.9	277.2	266.0	11.20	24.749		
2,400.0	2,390.0	2,384.6	2,345.5	5.6	8.3	75.50	363.9	-144.3	290.1	278.5	11.67	24.863		
2,500.0	2,489.5	2,483.7	2,442.6	5.8	8.7	74.84	380.8	-154.6	303.1	290.9	12.14	24.974		
2,600.0	2,589.0	2,582.8	2,539.7	6.1	9.0	74.25	397.7	-165.0	316.1	303.5	12.60	25.082		
2,700.0	2,688.5	2,681.9	2,636.8	6.3	9.4	73.69	414.7	-175.3	329.1	316.0	13.07	25.186		
2,800.0	2,788.0	2,781.0	2,733.9	6.5	9.8	73.18	431.6	-185.7	342.1	328.6	13.53	25.287		
2,900.0	2,887.5	2,880.1	2,831.0	6.8	10.2	72.71	448.6	-196.0	355.2	341.2	13.99	25.383		
3,000.0	2,987.0	2,979.2	2,928.1	7.0	10.6	72.27	465.5	-206.4	368.3	353.8	14.46	25.476		
3,100.0	3,086.6	3,078.3	3,025.2	7.3	11.0	71.86	482.4	-216.7	381.4	366.5	14.92	25.566		
3,200.0	3,186.1	3,177.4	3,122.3	7.5	11.4	71.48	499.4	-227.1	394.5	379.2	15.38	25.652		
3,300.0	3,285.6	3,276.5	3,219.4	7.8	11.8	71.12	516.3	-237.4	407.7	391.8	15.84	25.734		
3,400.0	3,385.1	3,375.6	3,316.5	8.0	12.2	70.79	533.2	-247.8	420.8	404.5	16.30	25.814		
3,500.0	3,484.6	3,474.7	3,413.5	8.3	12.5	70.47	550.2	-258.1	434.0	417.3	16.76	25.890		
3,600.0	3,584.1	3,573.8	3,510.6	8.5	12.9	70.18	567.1	-268.5	447.2	430.0	17.22	25.963		
3,700.0	3,683.7	3,672.9	3,607.7	8.8	13.3	69.90	584.1	-278.8	460.4	442.7	17.69	26.034		
3,800.0	3,783.2	3,772.0	3,704.8	9.0	13.7	69.64	601.0	-289.2	473.6	455.5	18.15	26.102		
3,900.0	3,882.7	3,871.1	3,801.9	9.2	14.1	69.39	617.9	-299.5	486.8	468.2	18.61	26.167		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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	76.01	18.6	74.6	76.8					
100.0	100.0	100.0	100.0	0.1	0.1	76.01	18.6	74.6	76.8	76.6	0.27	282.216 CC		
200.0	200.0	200.0	200.0	0.3	0.3	76.01	18.6	74.6	76.8	76.2	0.62	123.668 ES		
300.0	300.0	300.4	300.3	0.5	0.5	142.21	21.1	73.7	78.7	77.7	0.98	80.067		
400.0	399.6	400.5	400.1	0.7	0.7	140.03	28.5	71.0	84.2	82.8	1.39	60.347		
500.0	499.2	500.1	498.9	0.9	1.0	135.79	40.7	66.5	91.2	89.3	1.88	48.428		
600.0	598.7	598.8	595.9	1.2	1.4	129.25	57.6	60.3	99.3	96.8	2.46	40.352		
700.0	698.2	696.1	690.6	1.4	1.8	121.27	78.8	52.6	109.7	106.6	3.11	35.311		
800.0	797.7	791.5	782.1	1.7	2.3	112.78	103.9	43.4	123.9	120.1	3.78	32.782		
900.0	897.2	886.9	872.5	1.9	2.8	104.75	132.5	33.0	142.3	137.9	4.41	32.313 SF		
1,000.0	996.7	983.3	963.7	2.1	3.4	98.44	161.7	22.4	163.2	158.2	4.98	32.764		
1,100.0	1,096.2	1,079.7	1,055.0	2.4	3.9	93.57	190.9	11.7	185.6	180.1	5.52	33.631		
1,200.0	1,195.8	1,176.0	1,146.2	2.6	4.5	89.75	220.1	1.1	209.0	203.0	6.03	34.665		
1,300.0	1,295.3	1,272.4	1,237.4	2.9	5.1	86.70	249.3	-9.6	233.1	226.6	6.52	35.743		
1,400.0	1,394.8	1,368.8	1,328.6	3.1	5.6	84.22	278.4	-20.2	257.7	250.7	7.00	36.807		
1,500.0	1,494.3	1,465.1	1,419.9	3.4	6.2	82.17	307.6	-30.9	282.7	275.2	7.47	37.826		
1,600.0	1,593.8	1,561.5	1,511.1	3.6	6.8	80.46	336.8	-41.5	308.0	300.1	7.94	38.789		
1,700.0	1,693.3	1,657.9	1,602.3	3.9	7.3	79.00	366.0	-52.1	333.5	325.1	8.40	39.691		
1,800.0	1,792.9	1,754.2	1,693.6	4.1	7.9	77.75	395.2	-62.8	359.2	350.3	8.86	40.532		
1,900.0	1,892.4	1,850.6	1,784.8	4.3	8.5	76.66	424.3	-73.4	385.0	375.7	9.32	41.316		
2,000.0	1,991.9	1,947.0	1,876.0	4.6	9.0	75.71	453.5	-84.1	410.9	401.2	9.77	42.044		
2,100.0	2,091.4	2,043.3	1,967.2	4.8	9.6	74.88	482.7	-94.7	437.0	426.7	10.23	42.723		
2,200.0	2,190.9	2,139.7	2,058.5	5.1	10.2	74.14	511.9	-105.4	463.1	452.4	10.68	43.355		
2,300.0	2,290.4	2,236.1	2,149.7	5.3	10.8	73.47	541.0	-116.0	489.2	478.1	11.13	43.944		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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	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	-167.36	-90.7	-20.3	92.9				
100.0	100.0	100.0	100.0	0.1	0.1	-167.36	-90.7	-20.3	92.9	92.7	0.27	341.373	
200.0	200.0	200.0	200.0	0.3	0.3	-167.36	-90.7	-20.3	92.9	92.3	0.62	149.590	CC, ES
300.0	300.0	300.1	300.0	0.5	0.5	-100.33	-90.1	-22.9	93.4	92.4	0.99	94.572	
400.0	399.6	400.1	399.8	0.7	0.7	-100.20	-88.2	-30.5	94.7	93.2	1.42	66.479	
500.0	499.2	500.1	498.8	0.9	1.0	-98.18	-85.2	-43.2	96.3	94.4	1.94	49.662	
600.0	598.7	599.4	596.5	1.2	1.4	-93.23	-81.0	-60.8	98.5	95.9	2.54	38.815	
700.0	698.2	697.5	691.9	1.4	1.8	-85.80	-75.6	-83.0	102.5	99.3	3.20	32.045	
800.0	797.7	794.0	784.5	1.7	2.3	-76.75	-69.2	-109.4	109.9	106.1	3.86	28.451	
900.0	897.2	889.5	874.7	1.9	2.9	-67.22	-61.9	-139.8	122.4	118.0	4.45	27.500	SF
1,000.0	996.7	986.5	966.0	2.1	3.5	-59.10	-54.3	-171.6	138.5	133.5	4.94	28.036	
1,100.0	1,096.2	1,083.4	1,057.2	2.4	4.1	-52.71	-46.6	-203.5	156.8	151.4	5.36	29.261	
1,200.0	1,195.8	1,180.4	1,148.5	2.6	4.8	-47.68	-38.9	-235.3	176.6	170.8	5.73	30.802	
1,300.0	1,295.3	1,277.3	1,239.7	2.9	5.4	-43.66	-31.3	-267.1	197.4	191.3	6.08	32.461	
1,400.0	1,394.8	1,374.3	1,331.0	3.1	6.0	-40.42	-23.6	-298.9	219.0	212.6	6.42	34.133	
1,500.0	1,494.3	1,471.2	1,422.2	3.4	6.6	-37.76	-15.9	-330.8	241.2	234.5	6.75	35.760	
1,600.0	1,593.8	1,568.1	1,513.5	3.6	7.2	-35.54	-8.3	-362.6	263.8	256.8	7.07	37.315	
1,700.0	1,693.3	1,665.1	1,604.7	3.9	7.8	-33.68	-0.6	-394.4	286.7	279.3	7.39	38.784	
1,800.0	1,792.9	1,762.0	1,696.0	4.1	8.5	-32.09	7.1	-426.2	309.9	302.2	7.72	40.163	
1,900.0	1,892.4	1,859.0	1,787.2	4.3	9.1	-30.72	14.7	-458.1	333.3	325.2	8.04	41.452	
2,000.0	1,991.9	1,955.9	1,878.5	4.6	9.7	-29.53	22.4	-489.9	356.8	348.4	8.36	42.656	
2,100.0	2,091.4	2,052.9	1,969.7	4.8	10.3	-28.48	30.1	-521.7	380.4	371.7	8.69	43.778	
2,200.0	2,190.9	2,149.8	2,061.0	5.1	11.0	-27.56	37.7	-553.5	404.2	395.2	9.02	44.825	
2,300.0	2,290.4	2,246.8	2,152.2	5.3	11.6	-26.74	45.4	-585.4	428.0	418.7	9.34	45.801	
2,400.0	2,390.0	2,343.7	2,243.5	5.6	12.2	-26.01	53.1	-617.2	451.9	442.2	9.67	46.713	
2,500.0	2,489.5	2,440.6	2,334.7	5.8	12.8	-25.35	60.7	-649.0	475.9	465.9	10.01	47.565	
2,600.0	2,589.0	2,537.6	2,426.0	6.1	13.5	-24.75	68.4	-680.8	499.9	489.6	10.34	48.363	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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					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	-159.47	-96.5	-36.2	103.1					
100.0	100.0	100.0	100.0	0.1	0.1	-159.47	-96.5	-36.2	103.1	102.8	0.27	378.555		
200.0	200.0	200.0	200.0	0.3	0.3	-159.47	-96.5	-36.2	103.1	102.4	0.62	165.884 CC, ES		
300.0	300.0	298.7	298.6	0.5	0.5	-92.52	-96.3	-38.7	103.8	102.8	0.98	105.467		
400.0	399.6	397.3	396.9	0.7	0.7	-92.63	-95.5	-46.3	106.1	104.7	1.42	74.948		
500.0	499.2	495.8	494.6	0.9	1.0	-91.25	-94.1	-58.9	109.8	107.9	1.92	57.250		
600.0	598.7	593.6	590.8	1.2	1.3	-87.58	-92.3	-76.3	115.1	112.7	2.49	46.311		
700.0	698.2	690.3	685.0	1.4	1.8	-82.16	-90.0	-98.4	123.0	119.9	3.10	39.676		
800.0	797.7	785.5	776.4	1.7	2.3	-75.70	-87.2	-124.7	134.4	130.7	3.72	36.116		
900.0	897.2	880.0	865.8	1.9	2.9	-68.93	-84.0	-155.1	150.2	145.9	4.29	34.983 SF		
1,000.0	996.7	976.9	957.2	2.1	3.5	-63.04	-80.7	-187.3	168.6	163.8	4.81	35.049		
1,100.0	1,096.2	1,073.9	1,048.5	2.4	4.1	-58.31	-77.3	-219.6	188.4	183.1	5.28	35.689		
1,200.0	1,195.8	1,170.8	1,139.9	2.6	4.7	-54.49	-73.9	-251.8	209.2	203.5	5.71	36.612		
1,300.0	1,295.3	1,267.7	1,231.2	2.9	5.3	-51.36	-70.5	-284.0	230.8	224.7	6.13	37.665		
1,400.0	1,394.8	1,364.7	1,322.6	3.1	5.9	-48.77	-67.1	-316.3	252.9	246.4	6.53	38.763		
1,500.0	1,494.3	1,461.6	1,413.9	3.4	6.5	-46.59	-63.7	-348.5	275.5	268.6	6.91	39.858		
1,600.0	1,593.8	1,558.5	1,505.2	3.6	7.1	-44.74	-60.3	-380.8	298.3	291.1	7.29	40.924		
1,700.0	1,693.3	1,655.5	1,596.6	3.9	7.7	-43.16	-57.0	-413.0	321.5	313.8	7.66	41.946		
1,800.0	1,792.9	1,752.4	1,687.9	4.1	8.4	-41.78	-53.6	-445.2	344.8	336.8	8.03	42.919		
1,900.0	1,892.4	1,849.3	1,779.3	4.3	9.0	-40.58	-50.2	-477.5	368.3	359.9	8.40	43.839		
2,000.0	1,991.9	1,946.2	1,870.6	4.6	9.6	-39.53	-46.8	-509.7	391.9	383.1	8.77	44.707		
2,100.0	2,091.4	2,043.2	1,962.0	4.8	10.2	-38.59	-43.4	-542.0	415.7	406.5	9.13	45.524		
2,200.0	2,190.9	2,140.1	2,053.3	5.1	10.8	-37.76	-40.0	-574.2	439.5	430.0	9.49	46.292		
2,300.0	2,290.4	2,237.0	2,144.7	5.3	11.5	-37.01	-36.7	-606.4	463.4	453.5	9.86	47.015		
2,400.0	2,390.0	2,334.0	2,236.0	5.6	12.1	-36.33	-33.3	-638.7	487.4	477.2	10.22	47.695		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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				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	-147.82	-108.2	-68.1	127.8					
100.0	100.0	100.0	100.0	0.1	0.1	-147.82	-108.2	-68.1	127.8	127.5	0.27	469.418		
200.0	200.0	200.0	200.0	0.3	0.3	-147.82	-108.2	-68.1	127.8	127.2	0.62	205.700 CC, ES		
300.0	300.0	296.4	296.4	0.5	0.5	-81.01	-108.2	-70.5	128.8	127.8	0.98	131.664		
400.0	399.6	392.8	392.4	0.7	0.7	-81.53	-108.4	-77.8	131.8	130.4	1.39	94.574		
500.0	499.2	488.9	487.8	0.9	1.0	-81.19	-108.8	-89.9	137.2	135.3	1.86	73.611		
600.0	598.7	584.5	581.9	1.2	1.3	-79.30	-109.2	-106.6	145.4	143.0	2.38	61.036		
700.0	698.2	679.0	674.0	1.4	1.7	-76.24	-109.8	-127.8	156.9	153.9	2.94	53.431		
800.0	797.7	772.0	763.5	1.7	2.2	-72.46	-110.5	-153.1	171.9	168.4	3.50	49.108		
900.0	897.2	865.1	851.8	1.9	2.8	-68.34	-111.3	-182.5	191.0	186.9	4.04	47.225		
1,000.0	996.7	962.0	943.4	2.1	3.3	-64.62	-112.2	-214.2	211.7	207.2	4.57	46.360		
1,100.0	1,096.2	1,059.0	1,035.0	2.4	3.9	-61.56	-113.0	-245.9	233.2	228.1	5.06	46.068 SF		
1,200.0	1,195.8	1,156.0	1,126.7	2.6	4.5	-59.02	-113.9	-277.6	255.2	249.7	5.54	46.103		
1,300.0	1,295.3	1,252.9	1,218.3	2.9	5.1	-56.88	-114.7	-309.3	277.7	271.7	5.99	46.328		
1,400.0	1,394.8	1,349.9	1,309.9	3.1	5.7	-55.06	-115.6	-341.0	300.4	294.0	6.44	46.663		
1,500.0	1,494.3	1,446.9	1,401.6	3.4	6.3	-53.49	-116.5	-372.7	323.4	316.5	6.87	47.059		
1,600.0	1,593.8	1,543.8	1,493.2	3.6	6.9	-52.13	-117.3	-404.4	346.6	339.3	7.30	47.486		
1,700.0	1,693.3	1,640.8	1,584.8	3.9	7.5	-50.95	-118.2	-436.1	369.9	362.2	7.72	47.924		
1,800.0	1,792.9	1,737.8	1,676.5	4.1	8.1	-49.90	-119.1	-467.8	393.4	385.3	8.13	48.363		
1,900.0	1,892.4	1,834.7	1,768.1	4.3	8.7	-48.97	-119.9	-499.5	417.0	408.5	8.55	48.795		
2,000.0	1,991.9	1,931.7	1,859.7	4.6	9.4	-48.14	-120.8	-531.2	440.7	431.7	8.95	49.215		
2,100.0	2,091.4	2,028.7	1,951.4	4.8	10.0	-47.39	-121.7	-562.9	464.5	455.1	9.36	49.620		
2,200.0	2,190.9	2,125.6	2,043.0	5.1	10.6	-46.72	-122.5	-594.6	488.3	478.5	9.76	50.010		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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		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	80.79	6.9	42.6	43.2					
100.0	100.0	100.0	100.0	0.1	0.1	80.79	6.9	42.6	43.2	42.9	0.27	158.677		
200.0	200.0	200.0	200.0	0.3	0.3	80.79	6.9	42.6	43.2	42.6	0.62	69.533 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	149.50	6.9	42.6	45.4	44.5	0.97	46.750		
400.0	399.6	399.6	399.6	0.7	0.7	153.77	6.9	42.6	52.3	51.0	1.33	39.444		
500.0	499.2	501.6	501.6	0.9	0.8	156.30	8.6	40.5	59.2	57.6	1.69	35.074		
600.0	598.7	604.1	603.7	1.2	1.1	155.22	13.8	34.2	62.1	60.0	2.07	29.983		
700.0	698.2	706.4	705.1	1.4	1.3	150.81	22.3	23.6	61.1	58.6	2.50	24.400		
800.0	797.7	808.0	804.9	1.7	1.7	142.17	34.2	8.9	57.1	54.1	3.05	18.718		
900.0	897.2	908.3	902.4	1.9	2.1	127.46	49.2	-9.6	52.4	48.6	3.81	13.745		
968.5	965.4	976.1	967.4	2.1	2.5	113.22	61.1	-24.4	50.9	46.4	4.45	11.435		
1,000.0	996.7	1,006.9	996.7	2.1	2.6	105.81	67.1	-31.7	51.3	46.6	4.73	10.839 SF		
1,100.0	1,096.2	1,103.2	1,087.4	2.4	3.2	82.08	87.4	-56.9	59.3	53.9	5.41	10.964		
1,200.0	1,195.8	1,198.1	1,175.4	2.6	3.8	63.67	109.9	-84.7	77.9	72.2	5.70	13.672		
1,300.0	1,295.3	1,293.7	1,263.7	2.9	4.5	52.50	132.9	-113.1	101.8	95.9	5.88	17.314		
1,400.0	1,394.8	1,389.3	1,352.0	3.1	5.2	45.64	155.9	-141.5	128.0	121.9	6.09	21.016		
1,500.0	1,494.3	1,484.9	1,440.3	3.4	5.8	41.13	178.8	-169.9	155.4	149.1	6.34	24.505		
1,600.0	1,593.8	1,580.4	1,528.7	3.6	6.5	37.96	201.8	-198.3	183.4	176.8	6.62	27.708		
1,700.0	1,693.3	1,676.0	1,617.0	3.9	7.2	35.64	224.8	-226.6	211.8	204.9	6.92	30.620		
1,800.0	1,792.9	1,771.6	1,705.3	4.1	7.9	33.86	247.7	-255.0	240.5	233.2	7.23	33.263		
1,900.0	1,892.4	1,867.2	1,793.6	4.3	8.5	32.46	270.7	-283.4	269.3	261.7	7.55	35.664		
2,000.0	1,991.9	1,962.7	1,881.9	4.6	9.2	31.33	293.7	-311.8	298.2	290.3	7.88	37.849		
2,100.0	2,091.4	2,058.3	1,970.3	4.8	9.9	30.41	316.7	-340.2	327.2	319.0	8.21	39.843		
2,200.0	2,190.9	2,153.9	2,058.6	5.1	10.6	29.63	339.6	-368.6	356.3	347.7	8.55	41.669		
2,300.0	2,290.4	2,249.5	2,146.9	5.3	11.3	28.97	362.6	-397.0	385.4	376.5	8.89	43.346		
2,400.0	2,390.0	2,345.0	2,235.2	5.6	11.9	28.40	385.6	-425.4	414.6	405.4	9.24	44.891		
2,500.0	2,489.5	2,440.6	2,323.5	5.8	12.6	27.91	408.5	-453.8	443.8	434.2	9.58	46.318		
2,600.0	2,589.0	2,536.2	2,411.9	6.1	13.3	27.47	431.5	-482.2	473.0	463.1	9.93	47.640		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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	-80.51	11.7	-69.8	70.7					
100.0	100.0	100.0	100.0	0.1	0.1	-80.51	11.7	-69.8	70.7	70.5	0.27	259.762		
200.0	200.0	200.0	200.0	0.3	0.3	-80.51	11.7	-69.8	70.7	70.1	0.62	113.829		
300.0	300.0	296.7	296.6	0.5	0.5	-13.28	12.9	-71.9	70.5	69.6	0.97	73.055		
400.0	399.6	393.3	393.0	0.7	0.7	-12.53	16.7	-78.1	70.0	68.7	1.31	53.252		
402.7	402.3	395.9	395.6	0.7	0.7	-12.50	16.8	-78.4	70.0	68.7	1.32	52.873	CC, ES	
500.0	499.2	489.9	488.8	0.9	1.0	-10.78	23.0	-88.6	72.3	70.6	1.67	43.260		
600.0	598.7	585.9	583.3	1.2	1.3	-8.11	31.7	-103.1	79.5	77.4	2.03	39.220		
700.0	698.2	681.0	675.9	1.4	1.7	-5.19	42.7	-121.4	91.6	89.3	2.37	38.586	SF	
800.0	797.7	774.6	766.0	1.7	2.2	-2.51	55.8	-143.3	108.8	106.1	2.72	40.062		
900.0	897.2	866.3	852.9	1.9	2.8	-0.28	70.9	-168.4	130.9	127.8	3.05	42.897		
1,000.0	996.7	959.9	940.3	2.1	3.4	1.52	88.1	-197.1	157.0	153.6	3.38	46.381		
1,100.0	1,096.2	1,056.2	1,030.1	2.4	4.0	2.86	106.0	-226.9	183.6	179.9	3.72	49.320		
1,200.0	1,195.8	1,152.5	1,119.9	2.6	4.7	3.86	123.9	-256.8	210.3	206.3	4.06	51.782		
1,300.0	1,295.3	1,248.8	1,209.7	2.9	5.3	4.63	141.8	-286.6	237.1	232.7	4.40	53.866		
1,400.0	1,394.8	1,345.2	1,299.5	3.1	6.0	5.25	159.7	-316.5	263.9	259.1	4.74	55.650		
1,500.0	1,494.3	1,441.5	1,389.3	3.4	6.6	5.76	177.6	-346.3	290.7	285.6	5.08	57.193		
1,600.0	1,593.8	1,537.8	1,479.1	3.6	7.3	6.17	195.5	-376.2	317.5	312.1	5.42	58.539		
1,700.0	1,693.3	1,634.1	1,568.9	3.9	7.9	6.53	213.4	-406.0	344.4	338.6	5.77	59.722		
1,800.0	1,792.9	1,730.4	1,658.7	4.1	8.6	6.83	231.3	-435.9	371.3	365.1	6.11	60.770		
1,900.0	1,892.4	1,826.7	1,748.5	4.3	9.3	7.09	249.2	-465.7	398.1	391.7	6.45	61.704		
2,000.0	1,991.9	1,923.0	1,838.3	4.6	9.9	7.32	267.1	-495.5	425.0	418.2	6.80	62.542		
2,100.0	2,091.4	2,019.3	1,928.1	4.8	10.6	7.52	285.0	-525.4	451.9	444.7	7.14	63.297		
2,200.0	2,190.9	2,115.6	2,017.9	5.1	11.2	7.70	303.0	-555.2	478.8	471.3	7.48	63.981		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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		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	69.81	5.8	15.8	16.9					
100.0	100.0	100.0	100.0	0.1	0.1	69.81	5.8	15.8	16.9	16.6	0.27	61.889		
200.0	200.0	200.0	200.0	0.3	0.3	69.81	5.8	15.8	16.9	16.2	0.62	27.120		
300.0	300.0	300.6	300.6	0.5	0.5	136.59	6.9	13.4	16.9	15.9	0.98	17.241		
400.0	399.6	401.3	400.9	0.7	0.7	135.85	10.2	6.2	17.0	15.6	1.37	12.348		
500.0	499.2	501.7	500.5	0.9	1.0	125.99	15.7	-5.8	15.1	13.2	1.86	8.100		
596.9	595.6	598.5	595.6	1.2	1.4	92.96	23.1	-21.9	12.7	10.2	2.53	5.017 CC		
600.0	598.7	601.6	598.7	1.2	1.4	91.41	23.3	-22.4	12.7	10.1	2.55	4.978 ES, SF		
700.0	698.2	700.0	694.3	1.4	1.8	45.33	32.9	-43.4	18.9	16.1	2.83	6.685		
800.0	797.7	797.4	787.7	1.7	2.4	24.13	44.4	-68.5	35.1	32.2	2.96	11.883		
900.0	897.2	892.5	877.4	1.9	3.0	15.48	57.5	-97.1	57.8	54.6	3.20	18.061		
1,000.0	996.7	989.1	967.8	2.1	3.6	11.38	71.6	-128.0	83.2	79.7	3.50	23.759		
1,100.0	1,096.2	1,085.7	1,058.3	2.4	4.2	9.20	85.8	-158.9	108.8	105.0	3.83	28.450		
1,200.0	1,195.8	1,182.3	1,148.7	2.6	4.8	7.85	99.9	-189.9	134.5	130.4	4.16	32.367		
1,300.0	1,295.3	1,278.9	1,239.1	2.9	5.5	6.93	114.1	-220.8	160.3	155.8	4.49	35.684		
1,400.0	1,394.8	1,375.5	1,329.5	3.1	6.1	6.26	128.2	-251.7	186.0	181.2	4.83	38.529		
1,500.0	1,494.3	1,472.1	1,419.9	3.4	6.8	5.76	142.4	-282.7	211.8	206.6	5.17	40.994		
1,600.0	1,593.8	1,568.7	1,510.4	3.6	7.4	5.37	156.5	-313.6	237.6	232.1	5.51	43.151		
1,700.0	1,693.3	1,665.3	1,600.8	3.9	8.0	5.05	170.7	-344.5	263.4	257.6	5.85	45.055		
1,800.0	1,792.9	1,761.9	1,691.2	4.1	8.7	4.79	184.8	-375.4	289.2	283.0	6.19	46.747		
1,900.0	1,892.4	1,858.5	1,781.6	4.3	9.3	4.58	199.0	-406.4	315.0	308.5	6.53	48.261		
2,000.0	1,991.9	1,955.1	1,872.0	4.6	10.0	4.39	213.1	-437.3	340.8	334.0	6.87	49.623		
2,100.0	2,091.4	2,051.7	1,962.5	4.8	10.6	4.23	227.3	-468.2	366.7	359.5	7.21	50.855		
2,200.0	2,190.9	2,148.3	2,052.9	5.1	11.3	4.10	241.4	-499.1	392.5	384.9	7.55	51.976		
2,300.0	2,290.4	2,244.9	2,143.3	5.3	11.9	3.98	255.6	-530.1	418.3	410.4	7.89	52.999		
2,400.0	2,390.0	2,341.6	2,233.7	5.6	12.5	3.87	269.7	-561.0	444.1	435.9	8.23	53.937		
2,500.0	2,489.5	2,438.2	2,324.1	5.8	13.2	3.77	283.9	-591.9	470.0	461.4	8.58	54.799		
2,600.0	2,589.0	2,534.8	2,414.6	6.1	13.8	3.69	298.0	-622.8	495.8	486.9	8.92	55.595		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU 16-13B (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 16-13B (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		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	113.81	-4.7	10.7	11.7					
100.0	100.0	100.0	100.0	0.1	0.1	113.81	-4.7	10.7	11.7	11.5	0.27	43.083		
200.0	200.0	200.0	200.0	0.3	0.3	113.81	-4.7	10.7	11.7	11.1	0.62	18.879 CC, ES		
300.0	300.0	299.7	299.7	0.5	0.5	-173.30	-6.5	10.7	15.1	14.2	0.97	15.564		
400.0	399.6	399.6	399.5	0.7	0.7	-165.69	-10.9	10.2	24.8	23.5	1.33	18.664		
500.0	499.2	500.8	500.5	0.9	0.9	-161.19	-13.7	5.5	32.4	30.7	1.71	19.012		
600.0	598.7	602.5	601.7	1.2	1.1	-156.02	-13.8	-3.9	35.1	33.0	2.11	16.644		
700.0	698.2	704.0	702.3	1.4	1.4	-148.06	-11.4	-18.0	33.1	30.6	2.57	12.902		
800.0	797.7	804.9	801.3	1.7	1.7	-133.04	-6.4	-36.6	27.7	24.5	3.18	8.694		
900.0	897.2	904.6	898.0	1.9	2.1	-101.53	1.1	-59.4	22.7	18.7	4.01	5.660		
913.7	910.9	918.2	911.1	1.9	2.2	-95.59	2.3	-62.9	22.6	18.5	4.11	5.496 SF		
1,000.0	996.7	1,002.8	992.1	2.1	2.6	-59.12	10.6	-85.9	27.9	23.6	4.28	6.513		
1,100.0	1,096.2	1,100.7	1,085.6	2.4	3.1	-36.58	20.7	-113.2	42.9	38.7	4.27	10.059		
1,200.0	1,195.8	1,198.7	1,179.1	2.6	3.7	-26.36	30.8	-140.5	61.0	56.6	4.43	13.763		
1,300.0	1,295.3	1,296.6	1,272.6	2.9	4.2	-20.89	40.8	-167.8	80.1	75.4	4.69	17.078		
1,400.0	1,394.8	1,394.5	1,366.1	3.1	4.7	-17.53	50.9	-195.2	99.7	94.7	4.99	19.977		
1,500.0	1,494.3	1,492.5	1,459.6	3.4	5.3	-15.28	61.0	-222.5	119.4	114.1	5.30	22.511		
1,600.0	1,593.8	1,590.4	1,553.2	3.6	5.8	-13.67	71.0	-249.8	139.3	133.7	5.63	24.738		
1,700.0	1,693.3	1,688.3	1,646.7	3.9	6.4	-12.46	81.1	-277.1	159.3	153.3	5.96	26.708		
1,800.0	1,792.9	1,786.3	1,740.2	4.1	6.9	-11.52	91.2	-304.4	179.3	173.0	6.30	28.462		
1,900.0	1,892.4	1,884.2	1,833.7	4.3	7.5	-10.77	101.2	-331.7	199.3	192.7	6.64	30.032		
2,000.0	1,991.9	1,982.2	1,927.2	4.6	8.0	-10.16	111.3	-359.0	219.4	212.5	6.98	31.447		
2,100.0	2,091.4	2,080.1	2,020.7	4.8	8.6	-9.65	121.4	-386.3	239.5	232.2	7.32	32.728		
2,200.0	2,190.9	2,178.0	2,114.2	5.1	9.1	-9.22	131.4	-413.6	259.7	252.0	7.66	33.892		
2,300.0	2,290.4	2,276.0	2,207.7	5.3	9.7	-8.85	141.5	-440.9	279.8	271.8	8.00	34.956		
2,400.0	2,390.0	2,373.9	2,301.3	5.6	10.2	-8.53	151.5	-468.2	299.9	291.6	8.35	35.931		
2,500.0	2,489.5	2,471.9	2,394.8	5.8	10.8	-8.25	161.6	-495.6	320.1	311.4	8.69	36.828		
2,600.0	2,589.0	2,569.8	2,488.3	6.1	11.3	-8.00	171.7	-522.9	340.2	331.2	9.04	37.657		
2,700.0	2,688.5	2,667.7	2,581.8	6.3	11.9	-7.78	181.7	-550.2	360.4	351.0	9.38	38.424		
2,800.0	2,788.0	2,765.7	2,675.3	6.5	12.4	-7.59	191.8	-577.5	380.6	370.8	9.72	39.136		
2,900.0	2,887.5	2,863.6	2,768.8	6.8	13.0	-7.41	201.9	-604.8	400.7	390.7	10.07	39.799		
3,000.0	2,987.0	2,961.5	2,862.3	7.0	13.5	-7.25	211.9	-632.1	420.9	410.5	10.41	40.419		
3,100.0	3,086.6	3,059.5	2,955.9	7.3	14.1	-7.11	222.0	-659.4	441.1	430.3	10.76	40.998		
3,200.0	3,186.1	3,157.4	3,049.4	7.5	14.6	-6.97	232.1	-686.7	461.3	450.2	11.10	41.541		
3,300.0	3,285.6	3,255.4	3,142.9	7.8	15.2	-6.85	242.1	-714.0	481.4	470.0	11.45	42.051		

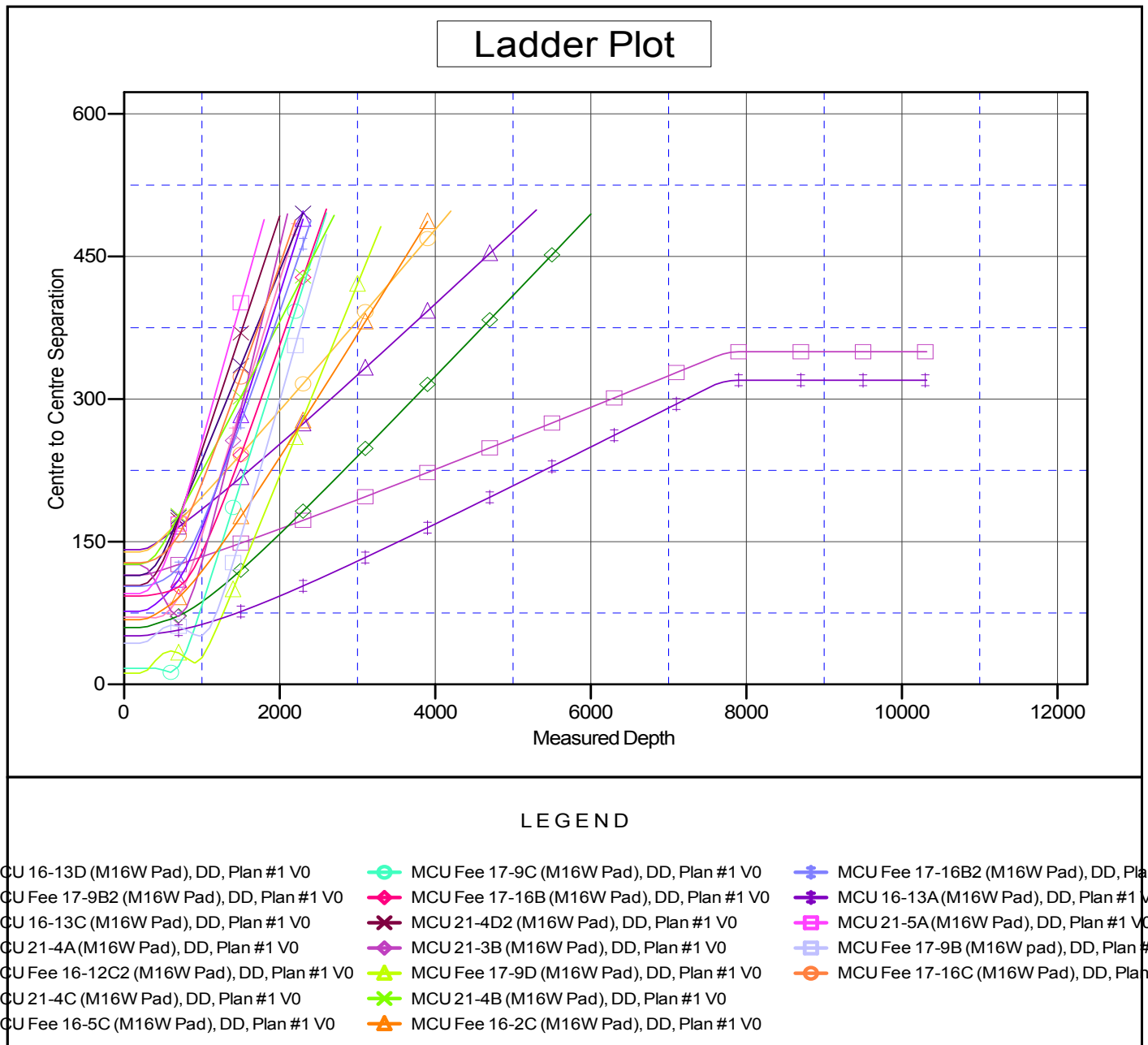
Cathedral Energy Services

Anticollision Report

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Site Error:	0.0ft	North Reference:	True
Reference Well:	MCU 16-13B (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 16-13B (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