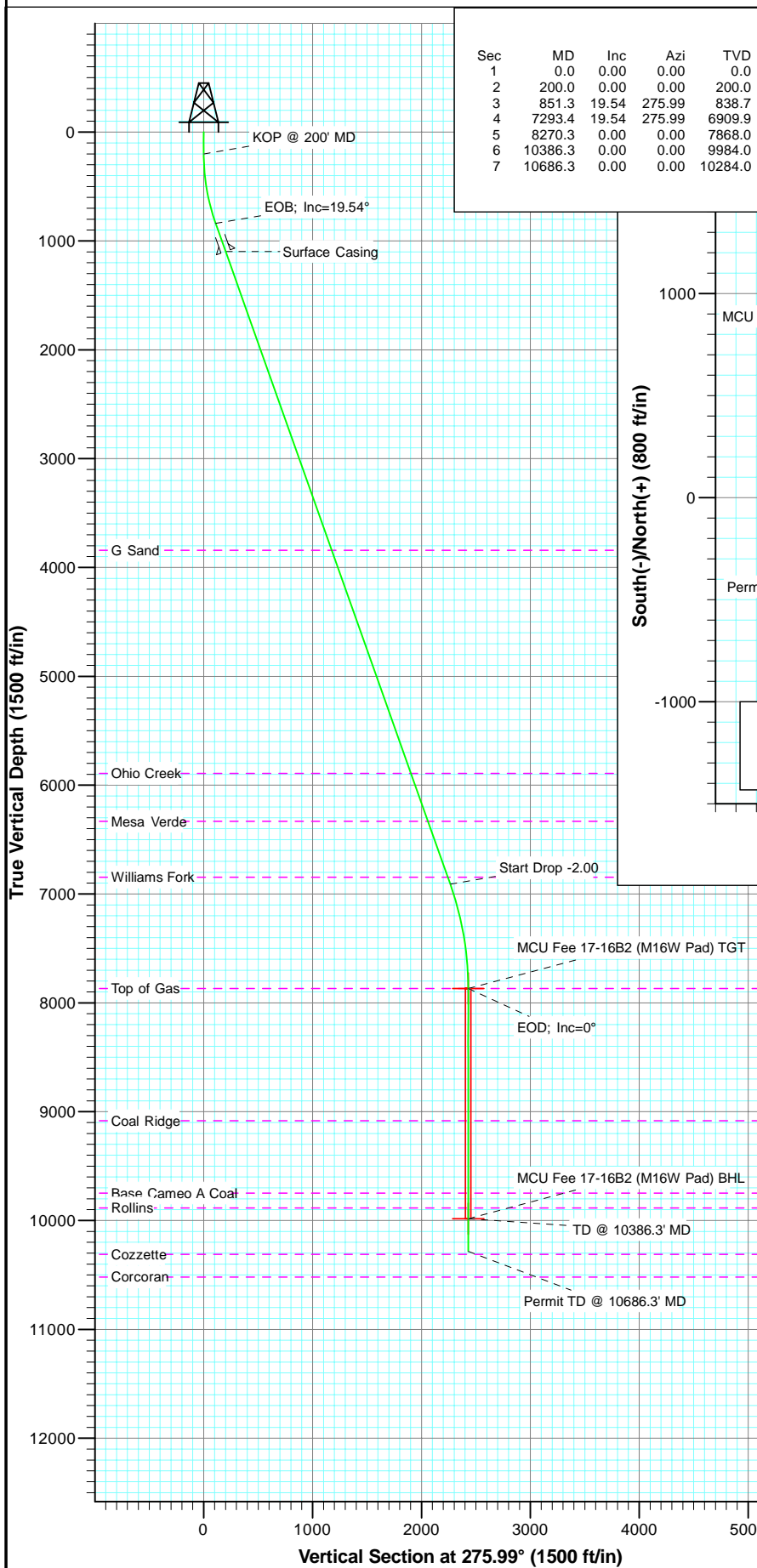
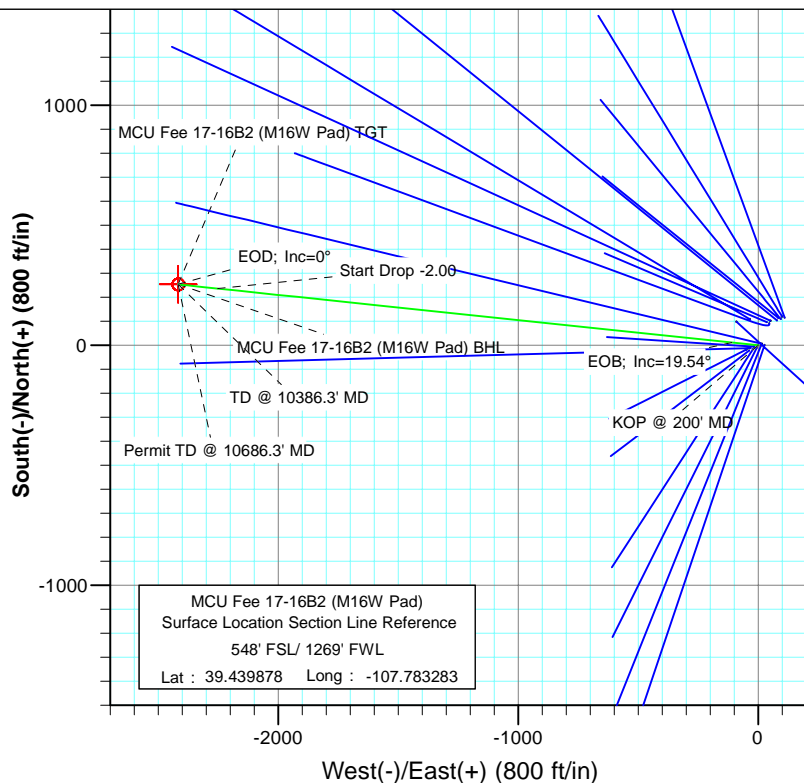




Project: Mamm Creek
 Site: SWSW S16-T7S-R93W (M16W Pad)
 Well: MCU Fee 17-16B2 (M16W Pad)
 Wellbore: DD
 Plan: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	851.3	19.54	275.99	838.7	11.5	-109.4	3.00	275.99	110.0	
4	7293.4	19.54	275.99	6909.9	236.4	-2252.1	0.00	0.00	2264.4	
5	8270.3	0.00	0.00	7868.0	253.6	-2416.1	2.00	180.00	2429.4	MCU Fee 17-16B2 (M16W Pad) TGT
6	10386.3	0.00	0.00	9984.0	253.6	-2416.1	0.00	0.00	2429.4	MCU Fee 17-16B2 (M16W Pad) BHL
7	10686.3	0.00	0.00	10284.0	253.6	-2416.1	0.00	0.00	2429.4	

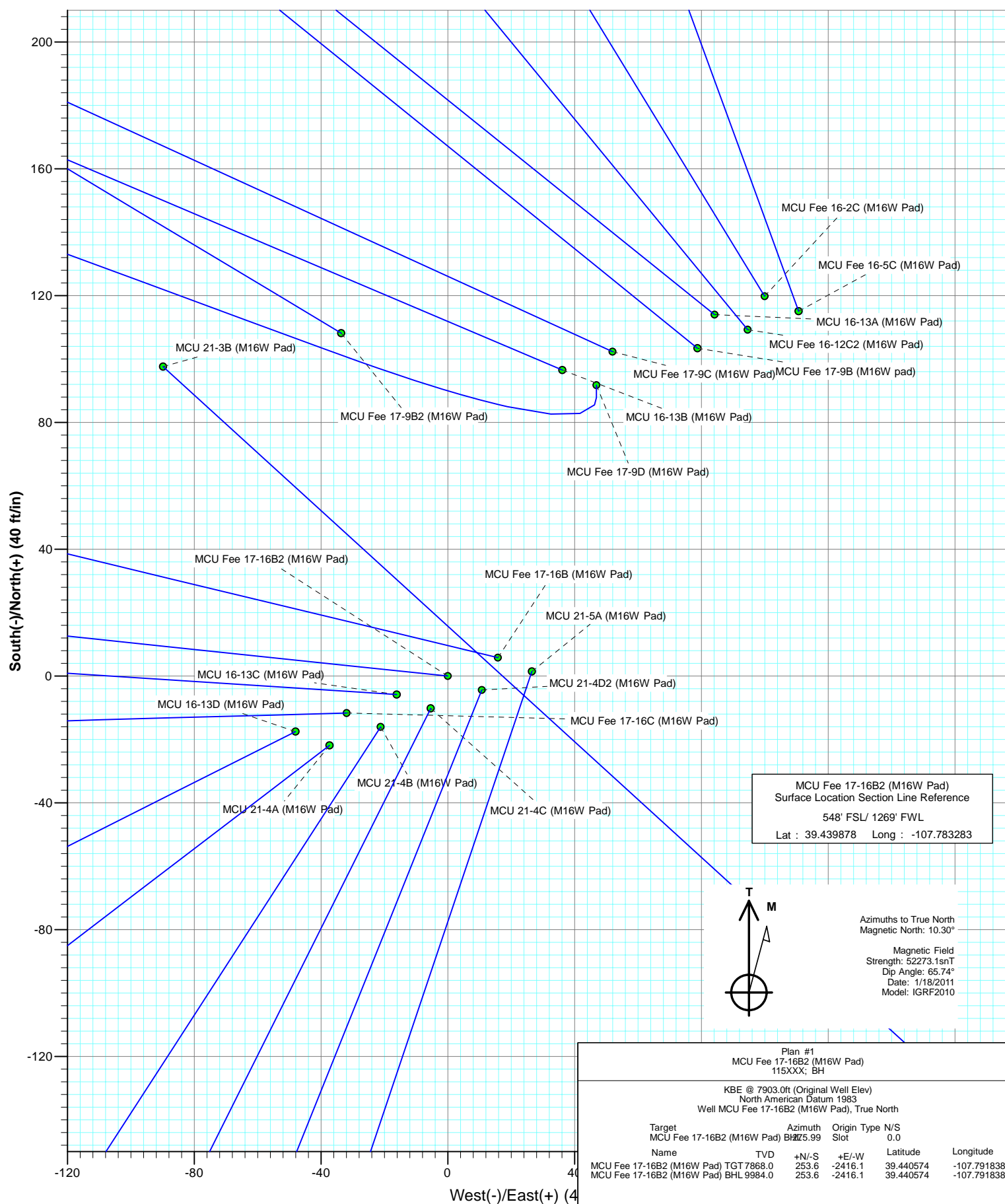


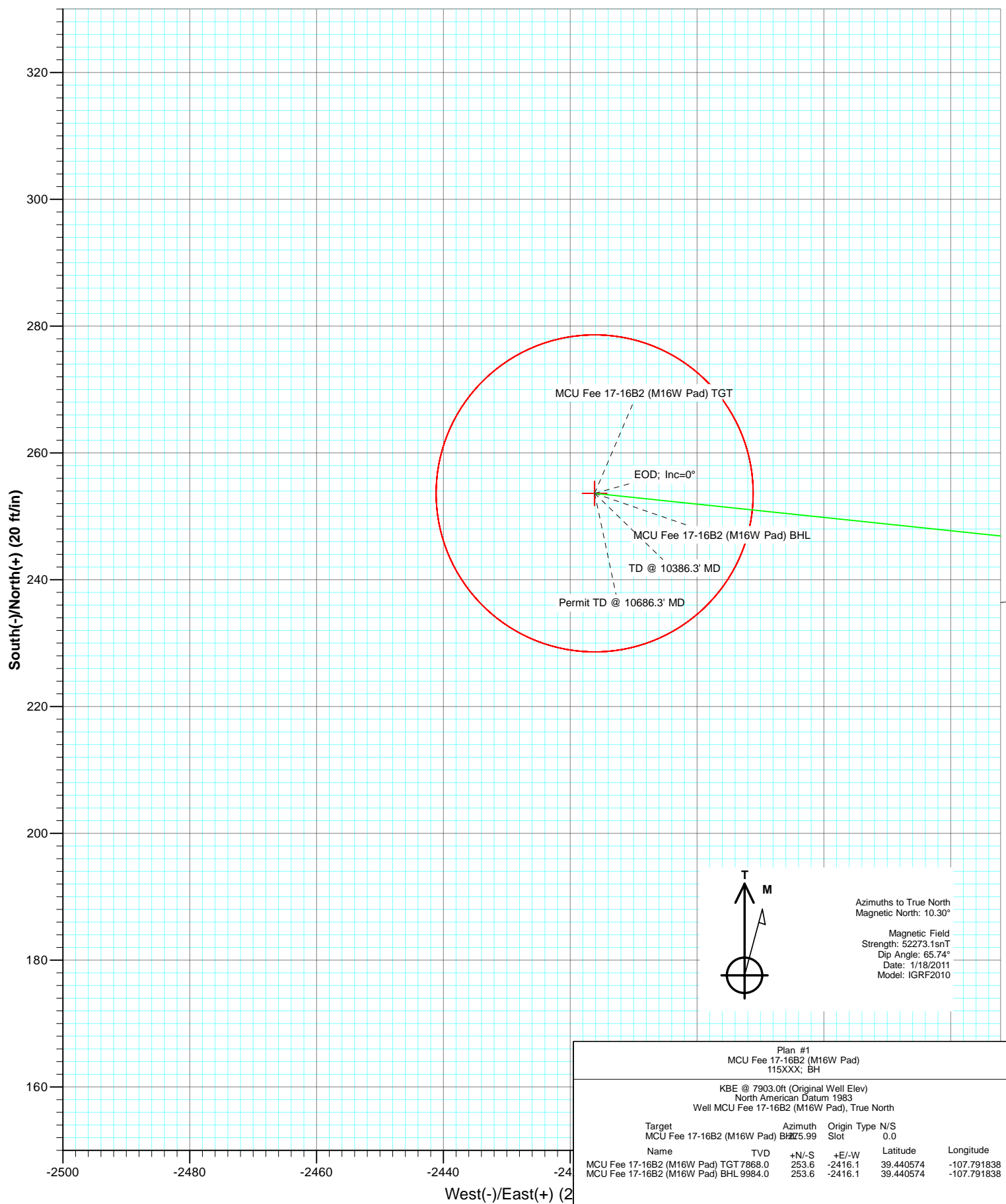
FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
3842.0	4038.0	G Sand
5892.0	6213.3	Ohio Creek
6333.0	6681.2	Mesa Verde
6845.0	7224.5	Williams Fork
7868.0	8270.3	Top of Gas
9084.0	9486.3	Coal Ridge
9748.0	10150.3	Base Cameo A Coal
9884.0	10286.3	Rollins



Azimuths to True North
 Magnetic North: 10.30°
 Magnetic Field
 Strength: 52273.1nT
 Dip Angle: 65.74°
 Date: 1/18/2011
 Model: IGRF2010

Plan #1					
MCU Fee 17-16B2 (M16W Pad)					
115XXX; BH					
KBE @ 7903.0ft (Original Well Elev)					
North American Datum 1983					
Well MCU Fee 17-16B2 (M16W Pad), True North					
Target	Azimuth	Origin	Type	N/S	
MCU Fee 17-16B2 (M16W Pad) BHL	75.99	Slot		0.0	
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MCU Fee 17-16B2 (M16W Pad) TGT	7868.0	253.6	-2416.1	39.440574	-107.791838
MCU Fee 17-16B2 (M16W Pad) BHL	9984.0	253.6	-2416.1	39.440574	-107.791838





Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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 Fee 17-16B2 (M16W Pad)					
Well Position	+N/-S	0.0 ft	Northing:	1,593,211.65 ft	Latitude:	39.439878
	+E/-W	0.0 ft	Easting:	2,355,215.29 ft	Longitude:	-107.783283
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	275.99

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	
851.3	19.54	275.99	838.7	11.5	-109.4	3.00	3.00	0.00	275.99	
7,293.4	19.54	275.99	6,909.9	236.4	-2,252.1	0.00	0.00	0.00	0.00	
8,270.3	0.00	0.00	7,868.0	253.6	-2,416.1	2.00	-2.00	0.00	180.00	MCU Fee 17-16B2 (N
10,386.3	0.00	0.00	9,984.0	253.6	-2,416.1	0.00	0.00	0.00	0.00	MCU Fee 17-16B2 (N
10,686.3	0.00	0.00	10,284.0	253.6	-2,416.1	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 Fee 17-16B2 (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 Fee 17-16B2 (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	275.99	300.0	0.3	-2.6	2.6	3.00	3.00	
400.0	6.00	275.99	399.6	1.1	-10.4	10.5	3.00	3.00	
500.0	9.00	275.99	498.8	2.5	-23.4	23.5	3.00	3.00	
600.0	12.00	275.99	597.1	4.4	-41.5	41.7	3.00	3.00	
700.0	15.00	275.99	694.3	6.8	-64.7	65.1	3.00	3.00	
800.0	18.00	275.99	790.2	9.8	-93.0	93.5	3.00	3.00	
851.3	19.54	275.99	838.7	11.5	-109.4	110.0	3.00	3.00	EOB; Inc=19.54°
900.0	19.54	275.99	884.6	13.2	-125.6	126.3	0.00	0.00	
1,000.0	19.54	275.99	978.9	16.7	-158.8	159.7	0.00	0.00	
1,100.0	19.54	275.99	1,073.1	20.2	-192.1	193.2	0.00	0.00	
1,126.4	19.54	275.99	1,098.0	21.1	-200.9	202.0	0.00	0.00	Surface Casing
1,200.0	19.54	275.99	1,167.4	23.7	-225.4	226.6	0.00	0.00	
1,300.0	19.54	275.99	1,261.6	27.1	-258.6	260.0	0.00	0.00	
1,400.0	19.54	275.99	1,355.9	30.6	-291.9	293.5	0.00	0.00	
1,500.0	19.54	275.99	1,450.1	34.1	-325.1	326.9	0.00	0.00	
1,600.0	19.54	275.99	1,544.3	37.6	-358.4	360.4	0.00	0.00	
1,700.0	19.54	275.99	1,638.6	41.1	-391.7	393.8	0.00	0.00	
1,800.0	19.54	275.99	1,732.8	44.6	-424.9	427.3	0.00	0.00	
1,900.0	19.54	275.99	1,827.1	48.1	-458.2	460.7	0.00	0.00	
2,000.0	19.54	275.99	1,921.3	51.6	-491.4	494.1	0.00	0.00	
2,100.0	19.54	275.99	2,015.5	55.1	-524.7	527.6	0.00	0.00	
2,200.0	19.54	275.99	2,109.8	58.6	-558.0	561.0	0.00	0.00	
2,300.0	19.54	275.99	2,204.0	62.1	-591.2	594.5	0.00	0.00	
2,400.0	19.54	275.99	2,298.3	65.6	-624.5	627.9	0.00	0.00	
2,500.0	19.54	275.99	2,392.5	69.0	-657.8	661.4	0.00	0.00	
2,600.0	19.54	275.99	2,486.8	72.5	-691.0	694.8	0.00	0.00	
2,700.0	19.54	275.99	2,581.0	76.0	-724.3	728.3	0.00	0.00	
2,800.0	19.54	275.99	2,675.2	79.5	-757.5	761.7	0.00	0.00	
2,900.0	19.54	275.99	2,769.5	83.0	-790.8	795.1	0.00	0.00	
3,000.0	19.54	275.99	2,863.7	86.5	-824.1	828.6	0.00	0.00	
3,100.0	19.54	275.99	2,958.0	90.0	-857.3	862.0	0.00	0.00	
3,200.0	19.54	275.99	3,052.2	93.5	-890.6	895.5	0.00	0.00	
3,300.0	19.54	275.99	3,146.5	97.0	-923.8	928.9	0.00	0.00	
3,400.0	19.54	275.99	3,240.7	100.5	-957.1	962.4	0.00	0.00	
3,500.0	19.54	275.99	3,334.9	104.0	-990.4	995.8	0.00	0.00	
3,600.0	19.54	275.99	3,429.2	107.5	-1,023.6	1,029.2	0.00	0.00	
3,700.0	19.54	275.99	3,523.4	110.9	-1,056.9	1,062.7	0.00	0.00	
3,800.0	19.54	275.99	3,617.7	114.4	-1,090.1	1,096.1	0.00	0.00	
3,900.0	19.54	275.99	3,711.9	117.9	-1,123.4	1,129.6	0.00	0.00	
4,000.0	19.54	275.99	3,806.1	121.4	-1,156.7	1,163.0	0.00	0.00	
4,038.0	19.54	275.99	3,842.0	122.7	-1,169.3	1,175.7	0.00	0.00	G Sand
4,100.0	19.54	275.99	3,900.4	124.9	-1,189.9	1,196.5	0.00	0.00	
4,200.0	19.54	275.99	3,994.6	128.4	-1,223.2	1,229.9	0.00	0.00	
4,300.0	19.54	275.99	4,088.9	131.9	-1,256.4	1,263.3	0.00	0.00	
4,400.0	19.54	275.99	4,183.1	135.4	-1,289.7	1,296.8	0.00	0.00	
4,500.0	19.54	275.99	4,277.4	138.9	-1,323.0	1,330.2	0.00	0.00	
4,600.0	19.54	275.99	4,371.6	142.4	-1,356.2	1,363.7	0.00	0.00	
4,700.0	19.54	275.99	4,465.8	145.9	-1,389.5	1,397.1	0.00	0.00	
4,800.0	19.54	275.99	4,560.1	149.4	-1,422.7	1,430.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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	19.54	275.99	4,654.3	152.8	-1,456.0	1,464.0	0.00	0.00	
5,000.0	19.54	275.99	4,748.6	156.3	-1,489.3	1,497.5	0.00	0.00	
5,100.0	19.54	275.99	4,842.8	159.8	-1,522.5	1,530.9	0.00	0.00	
5,200.0	19.54	275.99	4,937.0	163.3	-1,555.8	1,564.3	0.00	0.00	
5,300.0	19.54	275.99	5,031.3	166.8	-1,589.1	1,597.8	0.00	0.00	
5,400.0	19.54	275.99	5,125.5	170.3	-1,622.3	1,631.2	0.00	0.00	
5,500.0	19.54	275.99	5,219.8	173.8	-1,655.6	1,664.7	0.00	0.00	
5,600.0	19.54	275.99	5,314.0	177.3	-1,688.8	1,698.1	0.00	0.00	
5,700.0	19.54	275.99	5,408.3	180.8	-1,722.1	1,731.6	0.00	0.00	
5,800.0	19.54	275.99	5,502.5	184.3	-1,755.4	1,765.0	0.00	0.00	
5,900.0	19.54	275.99	5,596.7	187.8	-1,788.6	1,798.4	0.00	0.00	
6,000.0	19.54	275.99	5,691.0	191.2	-1,821.9	1,831.9	0.00	0.00	
6,100.0	19.54	275.99	5,785.2	194.7	-1,855.1	1,865.3	0.00	0.00	
6,200.0	19.54	275.99	5,879.5	198.2	-1,888.4	1,898.8	0.00	0.00	
6,213.3	19.54	275.99	5,892.0	198.7	-1,892.8	1,903.2	0.00	0.00	Ohio Creek
6,300.0	19.54	275.99	5,973.7	201.7	-1,921.7	1,932.2	0.00	0.00	
6,400.0	19.54	275.99	6,067.9	205.2	-1,954.9	1,965.7	0.00	0.00	
6,500.0	19.54	275.99	6,162.2	208.7	-1,988.2	1,999.1	0.00	0.00	
6,600.0	19.54	275.99	6,256.4	212.2	-2,021.4	2,032.5	0.00	0.00	
6,681.2	19.54	275.99	6,333.0	215.0	-2,048.5	2,059.7	0.00	0.00	Mesa Verde
6,700.0	19.54	275.99	6,350.7	215.7	-2,054.7	2,066.0	0.00	0.00	
6,800.0	19.54	275.99	6,444.9	219.2	-2,088.0	2,099.4	0.00	0.00	
6,900.0	19.54	275.99	6,539.2	222.7	-2,121.2	2,132.9	0.00	0.00	
7,000.0	19.54	275.99	6,633.4	226.2	-2,154.5	2,166.3	0.00	0.00	
7,100.0	19.54	275.99	6,727.6	229.7	-2,187.7	2,199.8	0.00	0.00	
7,200.0	19.54	275.99	6,821.9	233.1	-2,221.0	2,233.2	0.00	0.00	
7,224.5	19.54	275.99	6,845.0	234.0	-2,229.2	2,241.4	0.00	0.00	Williams Fork
7,293.4	19.54	275.99	6,909.9	236.4	-2,252.1	2,264.4	0.00	0.00	Start Drop -2.00
7,300.0	19.41	275.99	6,916.1	236.6	-2,254.3	2,266.6	2.00	-2.00	
7,400.0	17.41	275.99	7,011.0	239.9	-2,285.7	2,298.2	2.00	-2.00	
7,500.0	15.41	275.99	7,106.9	242.9	-2,313.7	2,326.5	2.00	-2.00	
7,600.0	13.41	275.99	7,203.8	245.5	-2,338.5	2,351.3	2.00	-2.00	
7,700.0	11.41	275.99	7,301.4	247.7	-2,359.9	2,372.8	2.00	-2.00	
7,800.0	9.41	275.99	7,399.8	249.6	-2,377.8	2,390.9	2.00	-2.00	
7,900.0	7.41	275.99	7,498.7	251.1	-2,392.4	2,405.5	2.00	-2.00	
8,000.0	5.41	275.99	7,598.1	252.3	-2,403.5	2,416.7	2.00	-2.00	
8,100.0	3.41	275.99	7,697.8	253.1	-2,411.1	2,424.3	2.00	-2.00	
8,200.0	1.41	275.99	7,797.7	253.5	-2,415.3	2,428.5	2.00	-2.00	
8,270.3	0.00	0.00	7,868.0	253.6	-2,416.1	2,429.4	2.00	-2.00	EOD; Inc=0° - Top of Gas - MCU Fee 17-16B2
8,300.0	0.00	0.00	7,897.7	253.6	-2,416.1	2,429.4	0.00	0.00	
8,400.0	0.00	0.00	7,997.7	253.6	-2,416.1	2,429.4	0.00	0.00	
8,500.0	0.00	0.00	8,097.7	253.6	-2,416.1	2,429.4	0.00	0.00	
8,600.0	0.00	0.00	8,197.7	253.6	-2,416.1	2,429.4	0.00	0.00	
8,700.0	0.00	0.00	8,297.7	253.6	-2,416.1	2,429.4	0.00	0.00	
8,800.0	0.00	0.00	8,397.7	253.6	-2,416.1	2,429.4	0.00	0.00	
8,900.0	0.00	0.00	8,497.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,000.0	0.00	0.00	8,597.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,100.0	0.00	0.00	8,697.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,200.0	0.00	0.00	8,797.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,300.0	0.00	0.00	8,897.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,400.0	0.00	0.00	8,997.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,486.3	0.00	0.00	9,084.0	253.6	-2,416.1	2,429.4	0.00	0.00	Coal Ridge

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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	9,097.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,600.0	0.00	0.00	9,197.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,700.0	0.00	0.00	9,297.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,800.0	0.00	0.00	9,397.7	253.6	-2,416.1	2,429.4	0.00	0.00	
9,900.0	0.00	0.00	9,497.7	253.6	-2,416.1	2,429.4	0.00	0.00	
10,000.0	0.00	0.00	9,597.7	253.6	-2,416.1	2,429.4	0.00	0.00	
10,100.0	0.00	0.00	9,697.7	253.6	-2,416.1	2,429.4	0.00	0.00	
10,150.3	0.00	0.00	9,748.0	253.6	-2,416.1	2,429.4	0.00	0.00	Base Cameo A Coal
10,200.0	0.00	0.00	9,797.7	253.6	-2,416.1	2,429.4	0.00	0.00	
10,286.3	0.00	0.00	9,884.0	253.6	-2,416.1	2,429.4	0.00	0.00	Rollins
10,300.0	0.00	0.00	9,897.7	253.6	-2,416.1	2,429.4	0.00	0.00	
10,386.3	0.00	0.00	9,984.0	253.6	-2,416.1	2,429.4	0.00	0.00	TD @ 10386.3' MD - MCU Fee 17-16B2 (M16W)
10,400.0	0.00	0.00	9,997.7	253.6	-2,416.1	2,429.4	0.00	0.00	
10,500.0	0.00	0.00	10,097.7	253.6	-2,416.1	2,429.4	0.00	0.00	
10,600.0	0.00	0.00	10,197.7	253.6	-2,416.1	2,429.4	0.00	0.00	
10,686.3	0.00	0.00	10,284.0	253.6	-2,416.1	2,429.4	0.00	0.00	Permit TD @ 10686.3' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
MCU Fee 17-16B2 (M16) - plan hits target center - Circle (radius 25.0)	0.00	0.00	9,984.0	253.6	-2,416.1	1,593,525.92	2,352,806.30	39.440574	-107.791838
MCU Fee 17-16B2 (M16) - plan hits target center - Circle (radius 25.0)	0.00	0.00	7,868.0	253.6	-2,416.1	1,593,525.92	2,352,806.30	39.440574	-107.791838

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,126.4	1,098.0	Surface Casing	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,038.0	3,842.0	G Sand		0.00	
6,213.3	5,892.0	Ohio Creek		0.00	
6,681.2	6,333.0	Mesa Verde		0.00	
7,224.5	6,845.0	Williams Fork		0.00	
8,270.3	7,868.0	Top of Gas		0.00	
9,486.3	9,084.0	Coal Ridge		0.00	
10,150.3	9,748.0	Base Cameo A Coal		0.00	
10,286.3	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 Fee 17-16B2 (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 Fee 17-16B2 (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
851.3	838.7	11.5	-109.4	EOB; Inc=19.54°
7,293.4	6,909.9	236.4	-2,252.1	Start Drop -2.00
8,270.3	7,868.0	253.6	-2,416.1	EOD; Inc=0°
10,386.3	9,984.0	253.6	-2,416.1	TD @ 10386.3' MD
10,686.3	10,284.0	253.6	-2,416.1	Permit TD @ 10686.3' MD

EnCana Oil & Gas (USA) Inc

Mamm Creek

SWSW S16-T7S-R93W (M16W Pad)

MCU Fee 17-16B2 (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 Fee 17-16B2 (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 Fee 17-16B2 (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

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

Survey Tool Program	Date	1/19/2011		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,686.3	Plan #1 (DD)	MWD	Geolink MWD

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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	200.0	200.0	141.7	141.1	228.066	CC, ES
MCU 16-13A (M16W Pad) - DD - Plan #1	1,600.0	1,571.8	364.8	356.2	42.439	SF
MCU 16-13B (M16W Pad) - DD - Plan #1	200.0	200.0	103.1	102.4	165.884	CC, ES
MCU 16-13B (M16W Pad) - DD - Plan #1	900.0	893.1	151.3	147.0	34.839	SF
MCU 16-13C (M16W Pad) - DD - Plan #1	597.1	595.2	8.5	6.0	3.435	CC
MCU 16-13C (M16W Pad) - DD - Plan #1	600.0	598.1	8.5	6.0	3.414	ES, SF
MCU 16-13D (M16W Pad) - DD - Plan #1	703.7	696.6	42.8	39.7	13.884	CC, ES
MCU 16-13D (M16W Pad) - DD - Plan #1	800.0	790.6	47.2	43.3	12.168	SF
MCU 21-3B (M16W Pad) - DD - Plan #1	694.3	698.8	52.1	48.6	14.917	CC, ES
MCU 21-3B (M16W Pad) - DD - Plan #1	700.0	703.8	52.2	48.6	14.760	SF
MCU 21-4A (M16W Pad) - DD - Plan #1	200.0	200.0	43.2	42.6	69.549	CC, ES
MCU 21-4A (M16W Pad) - DD - Plan #1	800.0	790.1	63.3	59.5	16.453	SF
MCU 21-4B (M16W Pad) - DD - Plan #1	200.0	200.0	26.6	25.9	42.740	CC, ES
MCU 21-4B (M16W Pad) - DD - Plan #1	600.0	592.9	51.8	49.4	21.274	SF
MCU 21-4C (M16W Pad) - DD - Plan #1	200.0	200.0	11.5	10.9	18.547	CC, ES
MCU 21-4C (M16W Pad) - DD - Plan #1	300.0	299.3	13.4	12.4	13.691	SF
MCU 21-4D2 (M16W Pad) - DD - Plan #1	200.0	200.0	11.6	11.0	18.653	CC, ES
MCU 21-4D2 (M16W Pad) - DD - Plan #1	300.0	299.9	14.2	13.3	14.545	SF
MCU 21-5A (M16W Pad) - DD - Plan #1	200.0	200.0	26.6	26.0	42.792	CC, ES
MCU 21-5A (M16W Pad) - DD - Plan #1	400.0	400.2	34.9	33.6	25.471	SF
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	200.0	200.0	144.5	143.9	232.626	CC, ES
MCU Fee 16-12C2 (M16W Pad) - DD - Plan #1	2,000.0	1,952.9	494.6	482.3	40.191	SF
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	200.0	200.0	156.1	155.4	251.173	CC, ES
MCU Fee 16-2C (M16W Pad) - DD - Plan #1	1,800.0	1,746.3	491.2	479.0	40.217	SF
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	200.0	200.0	159.7	159.1	257.028	CC, ES
MCU Fee 16-5C (M16W Pad) - DD - Plan #1	1,500.0	1,418.2	494.8	483.9	45.360	SF
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	200.0	200.0	16.9	16.2	27.128	CC
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	300.0	300.7	17.0	16.0	17.435	ES
MCU Fee 17-16B (M16W Pad) - DD - Plan #1	7,300.0	7,298.1	308.5	220.8	3.518	SF
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	200.0	200.0	34.0	33.4	54.682	CC
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	400.0	396.7	34.4	33.0	25.810	ES
MCU Fee 17-16C (M16W Pad) - DD - Plan #1	10,686.3	10,668.8	330.1	234.9	3.468	SF
MCU Fee 17-9B (M16W pad) - DD - Plan #1	200.0	200.0	130.0	129.4	209.278	CC, ES
MCU Fee 17-9B (M16W pad) - DD - Plan #1	2,400.0	2,373.1	481.7	458.1	20.435	SF
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	200.0	200.0	113.3	112.7	182.313	CC, ES
MCU Fee 17-9B2 (M16W Pad) - DD - Plan #1	3,100.0	3,039.4	490.4	457.8	15.028	SF
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	200.0	200.0	114.8	114.2	184.722	CC, ES
MCU Fee 17-9C (M16W Pad) - DD - Plan #1	4,000.0	3,979.7	498.0	452.6	10.957	SF
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	389.2	393.7	101.6	100.3	76.312	CC
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	400.0	404.4	101.6	100.3	74.039	ES
MCU Fee 17-9D (M16W Pad) - DD - Plan #1	5,100.0	5,095.6	498.5	450.3	10.340	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	36.44	114.0	84.2	141.7					
100.0	100.0	100.0	100.0	0.1	0.1	36.44	114.0	84.2	141.7	141.4	0.27	520.458		
200.0	200.0	200.0	200.0	0.3	0.3	36.44	114.0	84.2	141.7	141.1	0.62	228.066	CC, ES	
300.0	300.0	299.7	299.6	0.5	0.5	120.27	115.6	82.1	143.1	142.2	0.98	145.396		
400.0	399.6	399.2	398.8	0.7	0.7	119.75	120.5	76.1	147.4	146.0	1.41	104.344		
500.0	498.8	498.8	497.7	1.0	1.0	119.26	128.1	66.6	154.6	152.7	1.93	80.224		
600.0	597.1	598.2	596.3	1.4	1.2	120.16	136.0	56.8	164.3	161.8	2.51	65.429		
700.0	694.3	697.2	694.5	1.8	1.5	122.31	143.9	47.1	176.9	173.7	3.15	56.066		
800.0	790.2	795.3	791.8	2.4	1.8	125.34	151.6	37.4	192.7	188.8	3.84	50.204		
900.0	884.6	892.5	888.2	3.0	2.0	128.97	159.4	27.8	211.9	207.4	4.51	46.952		
1,000.0	978.9	989.5	984.5	3.6	2.3	132.32	167.1	18.2	232.4	227.2	5.16	45.061		
1,100.0	1,073.1	1,086.6	1,080.7	4.2	2.6	135.13	174.8	8.7	253.5	247.7	5.77	43.903		
1,200.0	1,167.4	1,183.6	1,177.0	4.9	2.9	137.50	182.5	-0.9	275.1	268.8	6.37	43.197		
1,300.0	1,261.6	1,280.6	1,273.2	5.5	3.1	139.53	190.2	-10.5	297.1	290.2	6.95	42.781		
1,400.0	1,355.9	1,377.7	1,369.5	6.1	3.4	141.28	197.9	-20.1	319.4	311.9	7.51	42.554		
1,500.0	1,450.1	1,474.7	1,465.8	6.8	3.7	142.81	205.6	-29.6	342.0	334.0	8.06	42.453		
1,600.0	1,544.3	1,571.8	1,562.0	7.4	3.9	144.14	213.3	-39.2	364.8	356.2	8.60	42.439	SF	
1,700.0	1,638.6	1,668.8	1,658.3	8.0	4.2	145.32	221.0	-48.8	387.7	378.6	9.13	42.482		
1,800.0	1,732.8	1,765.8	1,754.5	8.7	4.5	146.37	228.7	-58.3	410.8	401.1	9.65	42.566		
1,900.0	1,827.1	1,862.9	1,850.8	9.3	4.8	147.30	236.4	-67.9	434.0	423.8	10.17	42.676		
2,000.0	1,921.3	1,959.9	1,947.1	9.9	5.0	148.14	244.1	-77.5	457.3	446.6	10.68	42.804		
2,100.0	2,015.5	2,057.0	2,043.3	10.6	5.3	148.90	251.8	-87.1	480.6	469.4	11.19	42.943		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 16-13B (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	20.53	96.5	36.2	103.1					
100.0	100.0	100.0	100.0	0.1	0.1	20.53	96.5	36.2	103.1	102.8	0.27	378.555		
200.0	200.0	200.0	200.0	0.3	0.3	20.53	96.5	36.2	103.1	102.4	0.62	165.884 CC, ES		
300.0	300.0	299.8	299.7	0.5	0.5	104.48	97.5	33.8	103.8	102.9	0.99	105.266		
400.0	399.6	399.5	399.2	0.7	0.7	104.31	100.6	26.6	106.1	104.7	1.42	74.727		
500.0	498.8	499.4	498.6	1.0	0.9	105.68	104.4	17.6	109.9	107.9	1.93	57.004		
600.0	597.1	598.9	597.6	1.4	1.2	109.39	108.2	8.6	115.3	112.8	2.50	46.058		
700.0	694.3	697.9	696.1	1.8	1.4	114.87	112.0	-0.4	123.4	120.2	3.13	39.432		
800.0	790.2	796.0	793.7	2.4	1.6	121.40	115.8	-9.3	135.1	131.4	3.76	35.905		
900.0	884.6	893.1	890.3	3.0	1.9	128.24	119.5	-18.1	151.3	147.0	4.34	34.839 SF		
1,000.0	978.9	990.0	986.8	3.6	2.1	134.05	123.3	-26.8	169.9	165.0	4.86	34.978		
1,100.0	1,073.1	1,086.9	1,083.2	4.2	2.4	138.70	127.0	-35.6	189.8	184.4	5.32	35.660		
1,200.0	1,167.4	1,183.9	1,179.7	4.9	2.6	142.47	130.7	-44.4	210.6	204.9	5.75	36.611		
1,300.0	1,261.6	1,280.8	1,276.2	5.5	2.8	145.56	134.4	-53.1	232.3	226.1	6.16	37.683		
1,400.0	1,355.9	1,377.7	1,372.6	6.1	3.1	148.12	138.2	-61.9	254.4	247.9	6.56	38.794		
1,500.0	1,450.1	1,474.6	1,469.1	6.8	3.3	150.28	141.9	-70.7	277.0	270.0	6.94	39.898		
1,600.0	1,544.3	1,571.6	1,565.5	7.4	3.5	152.10	145.6	-79.5	299.9	292.6	7.32	40.971		
1,700.0	1,638.6	1,668.5	1,662.0	8.0	3.8	153.68	149.3	-88.2	323.0	315.3	7.69	41.999		
1,800.0	1,732.8	1,765.4	1,758.5	8.7	4.0	155.04	153.1	-97.0	346.3	338.3	8.06	42.975		
1,900.0	1,827.1	1,862.4	1,854.9	9.3	4.3	156.23	156.8	-105.8	369.8	361.4	8.43	43.898		
2,000.0	1,921.3	1,959.3	1,951.4	9.9	4.5	157.27	160.5	-114.5	393.5	384.7	8.79	44.767		
2,100.0	2,015.5	2,056.2	2,047.8	10.6	4.7	158.20	164.2	-123.3	417.2	408.1	9.15	45.586		
2,200.0	2,109.8	2,153.1	2,144.3	11.2	5.0	159.03	168.0	-132.1	441.1	431.5	9.51	46.355		
2,300.0	2,204.0	2,250.1	2,240.7	11.9	5.2	159.78	171.7	-140.9	465.0	455.1	9.88	47.078		
2,400.0	2,298.3	2,347.0	2,337.2	12.5	5.4	160.45	175.4	-149.6	489.0	478.7	10.24	47.758		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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	-109.90	-5.8	-16.1	17.1					
100.0	100.0	100.0	100.0	0.1	0.1	-109.90	-5.8	-16.1	17.1	16.8	0.27	62.881		
200.0	200.0	200.0	200.0	0.3	0.3	-109.90	-5.8	-16.1	17.1	16.5	0.62	27.555		
300.0	300.0	299.2	299.1	0.5	0.5	-26.24	-5.7	-18.7	17.1	16.2	0.97	17.648		
400.0	399.6	398.7	398.4	0.7	0.7	-27.93	-5.2	-25.9	16.8	15.5	1.34	12.589		
500.0	498.8	498.6	497.9	1.0	0.9	-39.52	-4.7	-34.1	12.9	11.1	1.76	7.318		
597.1	594.3	595.2	594.2	1.4	1.1	-88.51	-4.2	-42.0	8.5	6.0	2.48	3.435 CC		
600.0	597.1	598.1	597.1	1.4	1.1	-90.93	-4.1	-42.3	8.5	6.0	2.50	3.414 ES, SF		
700.0	694.3	696.9	695.5	1.8	1.4	-149.78	-3.6	-50.3	17.8	15.2	2.58	6.886		
800.0	790.2	794.7	793.1	2.4	1.6	-165.29	-3.1	-58.3	37.0	34.3	2.77	13.360		
900.0	884.6	891.6	889.6	3.0	1.8	-170.84	-2.6	-66.3	61.6	58.5	3.06	20.118		
1,000.0	978.9	988.2	985.9	3.6	2.0	-173.31	-2.1	-74.2	87.0	83.6	3.39	25.691		
1,100.0	1,073.1	1,084.9	1,082.3	4.2	2.2	-174.66	-1.6	-82.1	112.5	108.8	3.72	30.237		
1,200.0	1,167.4	1,181.6	1,178.6	4.9	2.4	-175.52	-1.0	-90.0	138.1	134.0	4.06	34.013		
1,300.0	1,261.6	1,278.2	1,275.0	5.5	2.7	-176.10	-0.5	-97.9	163.6	159.2	4.40	37.199		
1,400.0	1,355.9	1,374.9	1,371.3	6.1	2.9	-176.53	0.0	-105.8	189.2	184.5	4.74	39.923		
1,500.0	1,450.1	1,471.6	1,467.6	6.8	3.1	-176.86	0.5	-113.7	214.8	209.7	5.08	42.279		
1,600.0	1,544.3	1,568.2	1,564.0	7.4	3.3	-177.11	1.0	-121.6	240.4	235.0	5.42	44.337		
1,700.0	1,638.6	1,664.9	1,660.3	8.0	3.5	-177.32	1.5	-129.5	266.0	260.2	5.76	46.150		
1,800.0	1,732.8	1,761.5	1,756.6	8.7	3.7	-177.49	2.0	-137.4	291.6	285.5	6.11	47.759		
1,900.0	1,827.1	1,858.2	1,853.0	9.3	4.0	-177.64	2.5	-145.3	317.2	310.8	6.45	49.197		
2,000.0	1,921.3	1,954.9	1,949.3	9.9	4.2	-177.76	3.0	-153.2	342.8	336.0	6.79	50.489		
2,100.0	2,015.5	2,051.5	2,045.7	10.6	4.4	-177.86	3.6	-161.2	368.4	361.3	7.13	51.658		
2,200.0	2,109.8	2,148.2	2,142.0	11.2	4.6	-177.95	4.1	-169.1	394.0	386.6	7.47	52.719		
2,300.0	2,204.0	2,244.9	2,238.3	11.9	4.8	-178.03	4.6	-177.0	419.6	411.8	7.82	53.688		
2,400.0	2,298.3	2,341.5	2,334.7	12.5	5.1	-178.10	5.1	-184.9	445.2	437.1	8.16	54.574		
2,500.0	2,392.5	2,438.2	2,431.0	13.1	5.3	-178.17	5.6	-192.8	470.9	462.3	8.50	55.390		
2,600.0	2,486.8	2,534.9	2,527.4	13.8	5.5	-178.22	6.1	-200.7	496.5	487.6	8.84	56.142		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-110.01	-17.5	-48.0	51.1					
100.0	100.0	100.0	100.0	0.1	0.1	-110.01	-17.5	-48.0	51.1	50.8	0.27	187.668		
200.0	200.0	200.0	200.0	0.3	0.3	-110.01	-17.5	-48.0	51.1	50.5	0.62	82.236		
300.0	300.0	297.4	297.3	0.5	0.5	-27.57	-18.6	-50.2	51.3	50.3	0.97	53.031		
400.0	399.6	395.5	395.2	0.7	0.7	-32.23	-21.9	-56.7	51.9	50.5	1.33	39.118		
500.0	498.8	495.2	494.5	1.0	0.9	-40.36	-25.7	-64.3	49.9	48.1	1.73	28.796		
600.0	597.1	594.5	593.4	1.4	1.1	-53.91	-29.5	-71.9	45.7	43.4	2.27	20.129		
700.0	694.3	693.0	691.6	1.8	1.4	-75.40	-33.3	-79.4	42.8	39.7	3.05	14.041		
703.7	697.9	696.6	695.2	1.8	1.4	-76.34	-33.4	-79.7	42.8	39.7	3.08	13.884 CC, ES		
800.0	790.2	790.6	788.8	2.4	1.6	-102.26	-37.1	-86.9	47.2	43.3	3.88	12.168 SF		
900.0	884.6	887.1	885.0	3.0	1.8	-124.61	-40.8	-94.3	62.4	58.0	4.37	14.267		
1,000.0	978.9	983.4	980.9	3.6	2.0	-137.73	-44.5	-101.6	83.8	79.1	4.68	17.888		
1,100.0	1,073.1	1,079.7	1,076.9	4.2	2.2	-145.38	-48.2	-109.0	107.7	102.7	4.98	21.601		
1,200.0	1,167.4	1,176.0	1,172.8	4.9	2.5	-150.23	-51.9	-116.3	132.7	127.4	5.31	25.019		
1,300.0	1,261.6	1,272.3	1,268.8	5.5	2.7	-153.54	-55.6	-123.7	158.4	152.8	5.64	28.069		
1,400.0	1,355.9	1,368.6	1,364.7	6.1	2.9	-155.92	-59.3	-131.0	184.5	178.5	6.00	30.767		
1,500.0	1,450.1	1,464.9	1,460.7	6.8	3.1	-157.72	-63.0	-138.4	210.7	204.4	6.36	33.152		
1,600.0	1,544.3	1,561.2	1,556.6	7.4	3.3	-159.11	-66.7	-145.8	237.2	230.4	6.72	35.268		
1,700.0	1,638.6	1,657.5	1,652.6	8.0	3.6	-160.23	-70.4	-153.1	263.7	256.6	7.10	37.153		
1,800.0	1,732.8	1,753.8	1,748.5	8.7	3.8	-161.14	-74.1	-160.5	290.3	282.8	7.47	38.841		
1,900.0	1,827.1	1,850.1	1,844.5	9.3	4.0	-161.90	-77.8	-167.8	316.9	309.1	7.85	40.359		
2,000.0	1,921.3	1,946.4	1,940.4	9.9	4.2	-162.54	-81.5	-175.2	343.7	335.4	8.23	41.731		
2,100.0	2,015.5	2,042.7	2,036.4	10.6	4.4	-163.09	-85.2	-182.5	370.4	361.8	8.62	42.977		
2,200.0	2,109.8	2,139.0	2,132.3	11.2	4.7	-163.57	-88.9	-189.9	397.2	388.1	9.00	44.112		
2,300.0	2,204.0	2,235.3	2,228.3	11.9	4.9	-163.98	-92.6	-197.3	423.9	414.5	9.39	45.151		
2,400.0	2,298.3	2,331.6	2,324.2	12.5	5.1	-164.35	-96.3	-204.6	450.7	441.0	9.78	46.106		
2,500.0	2,392.5	2,427.9	2,420.2	13.1	5.3	-164.67	-100.0	-212.0	477.6	467.4	10.16	46.985		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-42.62	97.6	-89.8	132.6					
100.0	100.0	100.0	100.0	0.1	0.1	-42.62	97.6	-89.8	132.6	132.4	0.27	487.179		
200.0	200.0	200.0	200.0	0.3	0.3	-42.62	97.6	-89.8	132.6	132.0	0.62	213.483		
300.0	300.0	307.1	307.1	0.5	0.5	42.44	95.6	-87.6	127.9	126.9	0.99	129.593		
400.0	399.6	412.6	412.1	0.7	0.7	46.05	89.7	-81.1	114.0	112.6	1.37	83.138		
500.0	498.8	514.7	513.3	1.0	1.1	54.19	80.2	-70.7	92.1	90.3	1.82	50.565		
600.0	597.1	612.2	609.0	1.4	1.4	72.70	67.8	-57.1	66.4	63.9	2.52	26.367		
694.3	688.8	698.8	693.1	1.8	1.8	108.83	54.0	-41.9	52.1	48.6	3.49	14.917 CC, ES		
700.0	694.3	703.8	698.0	1.8	1.8	111.44	53.1	-41.0	52.2	48.6	3.54	14.760 SF		
800.0	790.2	790.5	781.8	2.4	2.2	149.26	38.1	-24.5	74.6	70.8	3.74	19.955		
900.0	884.6	875.0	863.4	3.0	2.6	167.58	23.4	-8.4	119.5	115.8	3.72	32.151		
1,000.0	978.9	959.1	944.7	3.6	3.0	176.24	8.8	7.6	170.1	166.2	3.90	43.650		
1,100.0	1,073.1	1,043.2	1,025.9	4.2	3.4	-179.00	-5.8	23.6	222.4	218.2	4.19	53.122		
1,200.0	1,167.4	1,127.3	1,107.2	4.9	3.8	-176.03	-20.4	39.7	275.3	270.8	4.53	60.820		
1,300.0	1,261.6	1,211.5	1,188.5	5.5	4.3	-174.01	-35.0	55.7	328.6	323.7	4.90	67.133		
1,400.0	1,355.9	1,295.6	1,269.8	6.1	4.7	-172.55	-49.6	71.7	382.1	376.9	5.28	72.379		
1,500.0	1,450.1	1,379.7	1,351.1	6.8	5.1	-171.45	-64.2	87.7	435.8	430.1	5.67	76.797		
1,600.0	1,544.3	1,463.8	1,432.3	7.4	5.5	-170.58	-78.8	103.7	489.6	483.5	6.08	80.566		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU 21-4A (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total 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	-120.38	-21.9	-37.3	43.2					
100.0	100.0	100.0	100.0	0.1	0.1	-120.38	-21.9	-37.3	43.2	42.9	0.27	158.715		
200.0	200.0	200.0	200.0	0.3	0.3	-120.38	-21.9	-37.3	43.2	42.6	0.62	69.549 CC, ES		
300.0	300.0	297.8	297.7	0.5	0.5	-38.75	-23.4	-39.3	43.7	42.7	0.97	45.056		
400.0	399.6	395.6	395.2	0.7	0.7	-45.53	-27.9	-45.2	45.5	44.2	1.34	33.987		
500.0	498.8	495.2	494.3	1.0	0.9	-56.44	-33.8	-52.9	46.9	45.1	1.78	26.322		
600.0	597.1	594.3	593.0	1.4	1.2	-71.99	-39.6	-60.5	48.1	45.7	2.37	20.241		
700.0	694.3	692.7	691.0	1.8	1.4	-91.25	-45.4	-68.1	52.4	49.3	3.12	16.793		
800.0	790.2	790.1	787.9	2.4	1.6	-110.33	-51.1	-75.6	63.3	59.5	3.85	16.453 SF		
900.0	884.6	886.5	883.8	3.0	1.9	-125.51	-56.8	-83.0	81.9	77.5	4.41	18.588		
1,000.0	978.9	982.6	979.5	3.6	2.1	-135.22	-62.4	-90.4	104.6	99.7	4.85	21.548		
1,100.0	1,073.1	1,078.8	1,075.2	4.2	2.3	-141.43	-68.1	-97.9	129.1	123.9	5.27	24.490		
1,200.0	1,167.4	1,174.9	1,170.9	4.9	2.6	-145.64	-73.7	-105.3	154.7	149.0	5.69	27.191		
1,300.0	1,261.6	1,271.1	1,266.6	5.5	2.8	-148.65	-79.4	-112.7	180.8	174.7	6.11	29.609		
1,400.0	1,355.9	1,367.2	1,362.3	6.1	3.0	-150.91	-85.1	-120.1	207.2	200.7	6.53	31.757		
1,500.0	1,450.1	1,463.4	1,458.0	6.8	3.3	-152.66	-90.7	-127.5	233.9	227.0	6.95	33.663		
1,600.0	1,544.3	1,559.5	1,553.7	7.4	3.5	-154.04	-96.4	-134.9	260.8	253.4	7.37	35.360		
1,700.0	1,638.6	1,655.7	1,649.4	8.0	3.7	-155.17	-102.0	-142.3	287.7	279.9	7.80	36.876		
1,800.0	1,732.8	1,751.9	1,745.1	8.7	4.0	-156.11	-107.7	-149.7	314.8	306.5	8.23	38.237		
1,900.0	1,827.1	1,848.0	1,840.8	9.3	4.2	-156.90	-113.3	-157.1	341.9	333.2	8.66	39.464		
2,000.0	1,921.3	1,944.2	1,936.5	9.9	4.4	-157.57	-119.0	-164.5	369.1	360.0	9.10	40.575		
2,100.0	2,015.5	2,040.3	2,032.2	10.6	4.7	-158.15	-124.6	-171.9	396.3	386.7	9.53	41.584		
2,200.0	2,109.8	2,136.5	2,127.9	11.2	4.9	-158.66	-130.3	-179.4	423.5	413.5	9.96	42.506		
2,300.0	2,204.0	2,232.6	2,223.6	11.9	5.1	-159.10	-135.9	-186.8	450.8	440.4	10.40	43.350		
2,400.0	2,298.3	2,328.8	2,319.3	12.5	5.4	-159.49	-141.6	-194.2	478.1	467.2	10.83	44.126		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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 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	-127.10	-16.0	-21.2	26.6					
100.0	100.0	100.0	100.0	0.1	0.1	-127.10	-16.0	-21.2	26.6	26.3	0.27	97.536		
200.0	200.0	200.0	200.0	0.3	0.3	-127.10	-16.0	-21.2	26.6	25.9	0.62	42.740 CC, ES		
300.0	300.0	298.6	298.6	0.5	0.5	-48.63	-18.2	-22.6	27.2	26.2	0.97	27.952		
400.0	399.6	396.8	396.5	0.7	0.7	-63.13	-24.5	-26.7	30.5	29.2	1.36	22.473		
500.0	498.8	494.5	493.3	1.0	1.0	-79.81	-35.0	-33.5	39.2	37.3	1.83	21.364		
600.0	597.1	592.9	590.7	1.4	1.3	-94.65	-47.1	-41.3	51.8	49.4	2.44	21.274 SF		
700.0	694.3	690.7	687.4	1.8	1.5	-107.32	-59.1	-49.0	68.1	64.9	3.13	21.747		
800.0	790.2	787.4	783.1	2.4	1.8	-117.67	-71.0	-56.7	88.8	84.9	3.85	23.045		
900.0	884.6	883.0	877.7	3.0	2.1	-125.95	-82.7	-64.3	114.0	109.5	4.54	25.119		
1,000.0	978.9	978.4	972.1	3.6	2.4	-131.64	-94.4	-71.9	141.3	136.1	5.19	27.236		
1,100.0	1,073.1	1,073.9	1,066.5	4.2	2.7	-135.48	-106.1	-79.5	169.4	163.6	5.81	29.130		
1,200.0	1,167.4	1,169.3	1,160.9	4.9	3.0	-138.23	-117.9	-87.0	198.0	191.6	6.43	30.778		
1,300.0	1,261.6	1,264.8	1,255.3	5.5	3.3	-140.28	-129.6	-94.6	226.9	219.9	7.05	32.205		
1,400.0	1,355.9	1,360.2	1,349.7	6.1	3.6	-141.88	-141.3	-102.2	256.1	248.4	7.66	33.444		
1,500.0	1,450.1	1,455.6	1,444.2	6.8	3.9	-143.14	-153.0	-109.8	285.4	277.1	8.27	34.525		
1,600.0	1,544.3	1,551.1	1,538.6	7.4	4.2	-144.17	-164.7	-117.3	314.8	305.9	8.87	35.474		
1,700.0	1,638.6	1,646.5	1,633.0	8.0	4.5	-145.03	-176.5	-124.9	344.3	334.8	9.48	36.312		
1,800.0	1,732.8	1,742.0	1,727.4	8.7	4.8	-145.75	-188.2	-132.5	373.8	363.7	10.09	37.057		
1,900.0	1,827.1	1,837.4	1,821.8	9.3	5.1	-146.36	-199.9	-140.1	403.4	392.7	10.69	37.724		
2,000.0	1,921.3	1,932.8	1,916.2	9.9	5.4	-146.89	-211.6	-147.7	433.0	421.7	11.30	38.323		
2,100.0	2,015.5	2,028.3	2,010.6	10.6	5.7	-147.36	-223.3	-155.2	462.7	450.8	11.90	38.864		
2,200.0	2,109.8	2,123.7	2,105.1	11.2	6.0	-147.76	-235.1	-162.8	492.3	479.8	12.51	39.355		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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					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	-152.25	-10.2	-5.4	11.5					
100.0	100.0	100.0	100.0	0.1	0.1	-152.25	-10.2	-5.4	11.5	11.3	0.27	42.326		
200.0	200.0	200.0	200.0	0.3	0.3	-152.25	-10.2	-5.4	11.5	10.9	0.62	18.547 CC, ES		
300.0	300.0	299.3	299.3	0.5	0.5	-78.82	-12.5	-6.5	13.4	12.4	0.98	13.691 SF		
400.0	399.6	398.1	397.7	0.7	0.7	-96.68	-19.4	-9.9	20.6	19.2	1.38	14.884		
500.0	498.8	495.9	494.7	1.0	1.0	-108.01	-30.7	-15.6	34.3	32.4	1.87	18.279		
600.0	597.1	592.9	590.3	1.4	1.3	-114.19	-45.8	-23.1	53.9	51.4	2.46	21.866		
700.0	694.3	690.0	685.7	1.8	1.6	-119.80	-61.7	-31.1	76.8	73.7	3.13	24.532		
800.0	790.2	786.1	780.2	2.4	2.0	-124.96	-77.4	-38.9	103.1	99.2	3.85	26.792		
900.0	884.6	881.1	873.5	3.0	2.3	-129.66	-93.0	-46.7	132.7	128.2	4.57	29.050		
1,000.0	978.9	975.9	966.7	3.6	2.7	-133.06	-108.5	-54.4	163.5	158.2	5.28	30.941		
1,100.0	1,073.1	1,070.7	1,059.9	4.2	3.0	-135.39	-124.0	-62.1	194.5	188.5	5.99	32.472		
1,200.0	1,167.4	1,165.5	1,153.1	4.9	3.3	-137.08	-139.5	-69.9	225.8	219.1	6.70	33.726		
1,300.0	1,261.6	1,260.3	1,246.3	5.5	3.7	-138.35	-155.0	-77.6	257.3	249.9	7.40	34.768		
1,400.0	1,355.9	1,355.1	1,339.5	6.1	4.0	-139.35	-170.5	-85.4	288.8	280.7	8.10	35.644		
1,500.0	1,450.1	1,449.8	1,432.7	6.8	4.4	-140.15	-186.0	-93.1	320.3	311.5	8.80	36.391		
1,600.0	1,544.3	1,544.6	1,525.9	7.4	4.7	-140.81	-201.5	-100.8	352.0	342.5	9.50	37.034		
1,700.0	1,638.6	1,639.4	1,619.1	8.0	5.1	-141.36	-217.0	-108.6	383.6	373.4	10.20	37.594		
1,800.0	1,732.8	1,734.2	1,712.3	8.7	5.4	-141.83	-232.6	-116.3	415.3	404.4	10.91	38.084		
1,900.0	1,827.1	1,829.0	1,805.5	9.3	5.7	-142.23	-248.1	-124.0	447.0	435.4	11.61	38.518		
2,000.0	1,921.3	1,923.8	1,898.7	9.9	6.1	-142.58	-263.6	-131.8	478.7	466.4	12.31	38.905		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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						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	112.18	-4.4	10.7	11.6					
100.0	100.0	100.0	100.0	0.1	0.1	112.18	-4.4	10.7	11.6	11.3	0.27	42.567		
200.0	200.0	200.0	200.0	0.3	0.3	112.18	-4.4	10.7	11.6	11.0	0.62	18.653 CC, ES		
300.0	300.0	299.9	299.9	0.5	0.5	-156.18	-6.8	9.8	14.2	13.3	0.98	14.545 SF		
400.0	399.6	399.2	398.8	0.7	0.7	-144.56	-14.0	6.9	23.0	21.6	1.38	16.609		
500.0	498.8	497.3	496.1	1.0	1.0	-137.29	-25.8	2.1	38.2	36.3	1.87	20.465		
600.0	597.1	593.8	591.0	1.4	1.3	-133.24	-41.9	-4.3	59.7	57.2	2.45	24.364		
700.0	694.3	689.3	684.2	1.8	1.7	-131.25	-61.5	-12.2	86.8	83.6	3.12	27.835		
800.0	790.2	784.5	776.9	2.4	2.1	-131.65	-81.4	-20.1	117.4	113.6	3.85	30.521		
900.0	884.6	878.6	868.6	3.0	2.5	-133.26	-101.0	-28.0	151.1	146.5	4.61	32.797		
1,000.0	978.9	972.4	960.0	3.6	2.9	-134.71	-120.6	-35.9	185.3	179.9	5.38	34.461		
1,100.0	1,073.1	1,066.3	1,051.5	4.2	3.3	-135.71	-140.2	-43.7	219.6	213.4	6.15	35.699		
1,200.0	1,167.4	1,160.2	1,143.0	4.9	3.7	-136.43	-159.8	-51.6	253.9	247.0	6.93	36.653		
1,300.0	1,261.6	1,254.1	1,234.5	5.5	4.1	-136.99	-179.4	-59.4	288.2	280.5	7.70	37.411		
1,400.0	1,355.9	1,348.0	1,325.9	6.1	4.5	-137.42	-199.0	-67.3	322.6	314.1	8.48	38.025		
1,500.0	1,450.1	1,441.8	1,417.4	6.8	4.9	-137.78	-218.6	-75.2	357.0	347.7	9.26	38.534		
1,600.0	1,544.3	1,535.7	1,508.9	7.4	5.3	-138.07	-238.2	-83.0	391.4	381.3	10.05	38.962		
1,700.0	1,638.6	1,629.6	1,600.4	8.0	5.7	-138.31	-257.8	-90.9	425.8	415.0	10.83	39.327		
1,800.0	1,732.8	1,723.5	1,691.8	8.7	6.1	-138.52	-277.4	-98.7	460.2	448.6	11.61	39.641		
1,900.0	1,827.1	1,817.4	1,783.3	9.3	6.5	-138.69	-297.0	-106.6	494.6	482.2	12.39	39.915		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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							
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	86.86	1.5	26.5	26.6				
100.0	100.0	100.0	100.0	0.1	0.1	86.86	1.5	26.5	26.6	26.3	0.27	97.652	
200.0	200.0	200.0	200.0	0.3	0.3	86.86	1.5	26.5	26.6	26.0	0.62	42.792 CC, ES	
300.0	300.0	300.4	300.4	0.5	0.5	176.67	-1.0	25.7	28.3	27.4	0.98	28.968	
400.0	399.6	400.2	399.8	0.7	0.7	-170.05	-8.5	23.2	34.9	33.6	1.37	25.471 SF	
500.0	498.8	498.7	497.5	1.0	1.0	-157.13	-20.6	19.1	48.4	46.6	1.84	26.311	
600.0	597.1	595.3	592.5	1.4	1.3	-147.97	-37.2	13.6	69.1	66.7	2.41	28.742	
700.0	694.3	689.6	684.2	1.8	1.8	-141.97	-57.7	6.7	96.7	93.6	3.08	31.412	
800.0	790.2	783.0	774.2	2.4	2.2	-138.29	-81.3	-1.3	130.2	126.4	3.83	34.000	
900.0	884.6	875.9	863.7	3.0	2.7	-137.18	-105.0	-9.2	167.1	162.5	4.62	36.146	
1,000.0	978.9	968.6	953.0	3.6	3.1	-136.87	-128.6	-17.2	204.5	199.1	5.44	37.591	
1,100.0	1,073.1	1,061.3	1,042.4	4.2	3.6	-136.65	-152.2	-25.1	242.0	235.7	6.27	38.603	
1,200.0	1,167.4	1,154.1	1,131.7	4.9	4.0	-136.49	-175.9	-33.1	279.4	272.3	7.10	39.347	
1,300.0	1,261.6	1,246.8	1,221.0	5.5	4.5	-136.37	-199.5	-41.0	316.8	308.9	7.94	39.915	
1,400.0	1,355.9	1,339.5	1,310.3	6.1	4.9	-136.28	-223.2	-49.0	354.2	345.5	8.78	40.362	
1,500.0	1,450.1	1,432.3	1,399.6	6.8	5.4	-136.20	-246.8	-56.9	391.7	382.1	9.62	40.722	
1,600.0	1,544.3	1,525.0	1,488.9	7.4	5.9	-136.14	-270.4	-64.9	429.1	418.6	10.46	41.017	
1,700.0	1,638.6	1,617.7	1,578.2	8.0	6.3	-136.09	-294.1	-72.8	466.5	455.2	11.31	41.265	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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)			
0.0	0.0	0.0	0.0	0.0	0.0	40.89	109.3	94.6	144.5				
100.0	100.0	100.0	100.0	0.1	0.1	40.89	109.3	94.6	144.5	144.3	0.27	530.863	CC, ES
200.0	200.0	200.0	200.0	0.3	0.3	40.89	109.3	94.6	144.5	143.9	0.62	232.626	
300.0	300.0	298.7	298.7	0.5	0.5	124.69	111.2	93.0	146.5	145.5	0.98	149.185	
400.0	399.6	397.2	396.8	0.7	0.7	124.11	117.1	88.2	152.3	150.9	1.40	108.544	
500.0	498.8	495.2	494.0	1.0	1.0	123.23	126.9	80.2	161.9	160.0	1.93	83.827	
600.0	597.1	594.1	591.7	1.4	1.3	122.75	139.1	70.1	175.0	172.5	2.54	68.824	
700.0	694.3	692.8	689.0	1.8	1.6	123.55	151.3	60.1	191.0	187.8	3.23	59.221	
800.0	790.2	790.6	785.7	2.4	1.9	125.27	163.4	50.1	210.0	206.0	3.96	52.991	
900.0	884.6	887.6	881.4	3.0	2.2	127.75	175.4	40.2	232.0	227.3	4.71	49.212	
1,000.0	978.9	984.5	977.0	3.6	2.5	130.14	187.4	30.4	254.9	249.4	5.45	46.745	
1,100.0	1,073.1	1,081.3	1,072.6	4.2	2.9	132.15	199.4	20.5	278.1	271.9	6.18	45.024	
1,200.0	1,167.4	1,178.2	1,168.2	4.9	3.2	133.84	211.4	10.6	301.6	294.7	6.89	43.783	
1,300.0	1,261.6	1,275.0	1,263.7	5.5	3.5	135.29	223.4	0.8	325.3	317.7	7.59	42.863	
1,400.0	1,355.9	1,371.8	1,359.3	6.1	3.8	136.54	235.4	-9.1	349.2	340.9	8.28	42.164	
1,500.0	1,450.1	1,468.7	1,454.9	6.8	4.1	137.63	247.4	-18.9	373.2	364.2	8.97	41.625	
1,600.0	1,544.3	1,565.5	1,550.5	7.4	4.5	138.60	259.4	-28.8	397.3	387.7	9.64	41.201	
1,700.0	1,638.6	1,662.4	1,646.1	8.0	4.8	139.45	271.4	-38.7	421.5	411.2	10.32	40.864	
1,800.0	1,732.8	1,759.2	1,741.7	8.7	5.1	140.21	283.4	-48.5	445.8	434.9	10.98	40.593	
1,900.0	1,827.1	1,856.0	1,837.3	9.3	5.4	140.89	295.4	-58.4	470.2	458.6	11.65	40.372	
2,000.0	1,921.3	1,952.9	1,932.9	9.9	5.7	141.50	307.4	-68.2	494.6	482.3	12.31	40.191	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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		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	39.84	119.8	100.0	156.1					
100.0	100.0	100.0	100.0	0.1	0.1	39.84	119.8	100.0	156.1	155.8	0.27	573.189		
200.0	200.0	200.0	200.0	0.3	0.3	39.84	119.8	100.0	156.1	155.4	0.62	251.173 CC, ES		
300.0	300.0	297.4	297.4	0.5	0.5	123.70	122.0	98.7	158.3	157.4	0.98	161.751		
400.0	399.6	394.5	394.2	0.7	0.7	123.30	128.3	94.8	165.2	163.8	1.39	118.510		
500.0	498.8	491.0	489.9	1.0	1.0	122.68	138.7	88.4	176.5	174.6	1.91	92.623		
600.0	597.1	586.7	584.0	1.4	1.3	121.90	153.1	79.6	192.3	189.8	2.53	75.905		
700.0	694.3	684.8	680.2	1.8	1.7	121.68	169.9	69.4	211.6	208.4	3.26	64.944		
800.0	790.2	782.2	775.6	2.4	2.0	122.45	186.5	59.2	233.7	229.7	4.06	57.627		
900.0	884.6	878.7	870.2	3.0	2.4	124.11	203.0	49.1	258.4	253.5	4.89	52.888		
1,000.0	978.9	975.1	964.6	3.6	2.8	125.86	219.5	39.1	283.7	278.0	5.72	49.628		
1,100.0	1,073.1	1,071.5	1,059.1	4.2	3.1	127.33	236.0	29.0	309.3	302.7	6.54	47.260		
1,200.0	1,167.4	1,167.9	1,153.5	4.9	3.5	128.57	252.5	18.9	335.0	327.6	7.37	45.475		
1,300.0	1,261.6	1,264.3	1,247.9	5.5	3.9	129.64	268.9	8.9	360.8	352.6	8.18	44.090		
1,400.0	1,355.9	1,360.7	1,342.4	6.1	4.3	130.56	285.4	-1.2	386.8	377.8	9.00	42.989		
1,500.0	1,450.1	1,457.1	1,436.8	6.8	4.6	131.37	301.9	-11.3	412.8	403.0	9.81	42.095		
1,600.0	1,544.3	1,553.5	1,531.3	7.4	5.0	132.09	318.4	-21.3	438.9	428.2	10.61	41.358		
1,700.0	1,638.6	1,649.9	1,625.7	8.0	5.4	132.72	334.8	-31.4	465.0	453.6	11.41	40.740		
1,800.0	1,732.8	1,746.3	1,720.2	8.7	5.8	133.28	351.3	-41.5	491.2	479.0	12.21	40.217 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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									
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	43.89	115.1	110.7	159.7						
100.0	100.0	100.0	100.0	0.1	0.1	43.89	115.1	110.7	159.7	159.4	0.27	586.551			
200.0	200.0	200.0	200.0	0.3	0.3	43.89	115.1	110.7	159.7	159.1	0.62	257.028	CC, ES		
300.0	300.0	296.4	296.3	0.5	0.5	127.76	117.4	109.9	162.4	161.4	0.98	166.462			
400.0	399.6	392.4	392.0	0.7	0.7	127.38	124.2	107.4	170.6	169.2	1.38	123.549			
500.0	498.8	487.5	486.4	1.0	1.0	126.80	135.4	103.3	184.1	182.2	1.87	98.387			
600.0	597.1	581.4	578.9	1.4	1.3	126.08	150.8	97.7	202.8	200.4	2.47	82.136			
700.0	694.3	673.8	669.0	1.8	1.7	125.26	170.0	90.7	226.8	223.6	3.19	71.134			
800.0	790.2	764.3	756.1	2.4	2.1	124.38	192.8	82.4	255.8	251.7	4.03	63.468			
900.0	884.6	854.5	841.9	3.0	2.6	123.84	219.3	72.7	289.2	284.2	4.95	58.368			
1,000.0	978.9	948.5	930.8	3.6	3.2	123.68	247.7	62.3	323.4	317.5	5.93	54.556			
1,100.0	1,073.1	1,042.4	1,019.7	4.2	3.7	123.55	276.2	52.0	357.7	350.8	6.91	51.737			
1,200.0	1,167.4	1,136.4	1,108.7	4.9	4.3	123.44	304.6	41.6	392.0	384.1	7.91	49.576			
1,300.0	1,261.6	1,230.3	1,197.6	5.5	4.8	123.35	333.0	31.2	426.2	417.3	8.90	47.871			
1,400.0	1,355.9	1,324.3	1,286.5	6.1	5.4	123.28	361.5	20.8	460.5	450.6	9.90	46.494			
1,500.0	1,450.1	1,418.2	1,375.4	6.8	5.9	123.21	389.9	10.5	494.8	483.9	10.91	45.360	SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16B (M16W Pad) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	69.77	5.8	15.8	16.9					
100.0	100.0	100.0	100.0	0.1	0.1	69.77	5.8	15.8	16.9	16.6	0.27	61.906		
200.0	200.0	200.0	200.0	0.3	0.3	69.77	5.8	15.8	16.9	16.2	0.62	27.128 CC		
300.0	300.0	300.7	300.7	0.5	0.5	152.73	6.4	13.2	17.0	16.0	0.98	17.435 ES		
400.0	399.6	401.5	401.1	0.7	0.7	149.70	8.3	5.5	17.5	16.2	1.36	12.922		
500.0	498.8	502.2	500.9	1.0	1.0	145.05	11.4	-7.4	18.5	16.7	1.81	10.224		
600.0	597.1	602.9	599.9	1.4	1.4	139.34	15.7	-25.3	20.0	17.6	2.40	8.335		
700.0	694.3	703.5	697.7	1.8	1.8	133.24	21.3	-48.3	22.1	18.9	3.19	6.932		
800.0	790.2	804.1	794.1	2.4	2.4	127.30	28.0	-76.3	25.0	20.8	4.23	5.910		
900.0	884.6	904.4	888.7	3.0	3.0	121.95	35.8	-108.5	28.6	23.1	5.46	5.238		
1,000.0	978.9	1,004.3	982.7	3.6	3.6	117.69	43.7	-141.3	32.4	25.7	6.74	4.810		
1,100.0	1,073.1	1,104.2	1,076.8	4.2	4.3	114.35	51.6	-174.1	36.4	28.3	8.04	4.526		
1,200.0	1,167.4	1,204.1	1,170.8	4.9	4.9	111.66	59.5	-206.9	40.4	31.1	9.35	4.327		
1,300.0	1,261.6	1,304.0	1,264.8	5.5	5.5	109.48	67.4	-239.7	44.6	33.9	10.65	4.184		
1,400.0	1,355.9	1,403.9	1,358.9	6.1	6.2	107.66	75.3	-272.5	48.8	36.8	11.96	4.076		
1,500.0	1,450.1	1,503.8	1,452.9	6.8	6.8	106.13	83.2	-305.3	53.0	39.7	13.27	3.994		
1,600.0	1,544.3	1,603.7	1,546.9	7.4	7.5	104.83	91.1	-338.1	57.2	42.7	14.57	3.929		
1,700.0	1,638.6	1,703.6	1,641.0	8.0	8.1	103.71	99.0	-370.9	61.5	45.7	15.87	3.877		
1,800.0	1,732.8	1,803.5	1,735.0	8.7	8.7	102.74	106.9	-403.7	65.8	48.7	17.17	3.834		
1,900.0	1,827.1	1,903.4	1,829.0	9.3	9.4	101.89	114.8	-436.5	70.2	51.7	18.47	3.799		
2,000.0	1,921.3	2,003.3	1,923.1	9.9	10.0	101.13	122.7	-469.3	74.5	54.7	19.76	3.769		
2,100.0	2,015.5	2,103.2	2,017.1	10.6	10.7	100.46	130.6	-502.1	78.8	57.8	21.06	3.744		
2,200.0	2,109.8	2,203.1	2,111.1	11.2	11.3	99.86	138.5	-534.9	83.2	60.8	22.35	3.723		
2,300.0	2,204.0	2,303.0	2,205.2	11.9	11.9	99.32	146.4	-567.7	87.6	63.9	23.64	3.704		
2,400.0	2,298.3	2,402.9	2,299.2	12.5	12.6	98.83	154.3	-600.5	91.9	67.0	24.93	3.688		
2,500.0	2,392.5	2,502.8	2,393.2	13.1	13.2	98.38	162.2	-633.3	96.3	70.1	26.22	3.673		
2,600.0	2,486.8	2,602.7	2,487.3	13.8	13.9	97.97	170.1	-666.1	100.7	73.2	27.50	3.661		
2,700.0	2,581.0	2,702.6	2,581.3	14.4	14.5	97.60	178.0	-698.9	105.1	76.3	28.79	3.650		
2,800.0	2,675.2	2,802.5	2,675.3	15.0	15.2	97.26	185.9	-731.7	109.5	79.4	30.08	3.639		
2,900.0	2,769.5	2,902.4	2,769.4	15.7	15.8	96.94	193.8	-764.5	113.9	82.5	31.36	3.630		
3,000.0	2,863.7	3,002.3	2,863.4	16.3	16.4	96.65	201.7	-797.2	118.3	85.6	32.65	3.622		
3,100.0	2,958.0	3,102.2	2,957.4	17.0	17.1	96.38	209.6	-830.0	122.7	88.7	33.93	3.615		
3,200.0	3,052.2	3,202.1	3,051.5	17.6	17.7	96.12	217.5	-862.8	127.1	91.8	35.22	3.608		
3,300.0	3,146.5	3,302.0	3,145.5	18.2	18.4	95.89	225.4	-895.6	131.5	95.0	36.50	3.602		
3,400.0	3,240.7	3,401.9	3,239.5	18.9	19.0	95.67	233.3	-928.4	135.9	98.1	37.78	3.596		
3,500.0	3,334.9	3,501.8	3,333.6	19.5	19.7	95.46	241.2	-961.2	140.3	101.2	39.07	3.591		
3,600.0	3,429.2	3,601.7	3,427.6	20.2	20.3	95.27	249.1	-994.0	144.7	104.4	40.35	3.586		
3,700.0	3,523.4	3,701.6	3,521.6	20.8	20.9	95.08	257.0	-1,026.8	149.1	107.5	41.63	3.582		
3,800.0	3,617.7	3,801.5	3,615.7	21.4	21.6	94.91	264.9	-1,059.6	153.5	110.6	42.91	3.578		
3,900.0	3,711.9	3,901.4	3,709.7	22.1	22.2	94.75	272.8	-1,092.4	157.9	113.8	44.20	3.574		
4,000.0	3,806.1	4,001.3	3,803.7	22.7	22.9	94.59	280.7	-1,125.2	162.4	116.9	45.48	3.570		
4,100.0	3,900.4	4,101.2	3,897.8	23.3	23.5	94.45	288.6	-1,158.0	166.8	120.0	46.76	3.567		
4,200.0	3,994.6	4,201.1	3,991.8	24.0	24.2	94.31	296.5	-1,190.8	171.2	123.2	48.04	3.564		
4,300.0	4,088.9	4,301.0	4,085.8	24.6	24.8	94.18	304.4	-1,223.6	175.6	126.3	49.32	3.561		
4,400.0	4,183.1	4,400.9	4,179.9	25.3	25.4	94.05	312.3	-1,256.4	180.0	129.4	50.60	3.558		
4,500.0	4,277.4	4,500.8	4,273.9	25.9	26.1	93.94	320.2	-1,289.2	184.5	132.6	51.88	3.556		
4,600.0	4,371.6	4,600.7	4,367.9	26.5	26.7	93.82	328.1	-1,322.0	188.9	135.7	53.16	3.553		
4,700.0	4,465.8	4,700.6	4,462.0	27.2	27.4	93.71	336.0	-1,354.8	193.3	138.9	54.44	3.551		
4,800.0	4,560.1	4,800.5	4,556.0	27.8	28.0	93.61	343.9	-1,387.6	197.7	142.0	55.72	3.549		
4,900.0	4,654.3	4,900.4	4,650.0	28.5	28.7	93.51	351.8	-1,420.4	202.2	145.2	57.00	3.547		
5,000.0	4,748.6	5,000.3	4,744.1	29.1	29.3	93.42	359.7	-1,453.2	206.6	148.3	58.28	3.545		
5,100.0	4,842.8	5,100.2	4,838.1	29.7	30.0	93.33	367.6	-1,486.0	211.0	151.5	59.56	3.543		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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: O-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance					Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis		Separation Factor
5,200.0	4,937.0	5,200.1	4,932.1	30.4	30.6	93.24	375.5	-1,518.8	215.4	154.6	60.84	3.541	
5,300.0	5,031.3	5,300.0	5,026.2	31.0	31.2	93.16	383.4	-1,551.6	219.9	157.7	62.12	3.540	
5,400.0	5,125.5	5,399.9	5,120.2	31.7	31.9	93.08	391.3	-1,584.4	224.3	160.9	63.40	3.538	
5,500.0	5,219.8	5,499.8	5,214.2	32.3	32.5	93.00	399.2	-1,617.2	228.7	164.0	64.68	3.536	
5,600.0	5,314.0	5,599.7	5,308.3	32.9	33.2	92.93	407.1	-1,650.0	233.1	167.2	65.95	3.535	
5,700.0	5,408.3	5,699.6	5,402.3	33.6	33.8	92.86	415.0	-1,682.8	237.6	170.3	67.23	3.534	
5,800.0	5,502.5	5,799.5	5,496.3	34.2	34.5	92.79	422.9	-1,715.6	242.0	173.5	68.51	3.532	
5,900.0	5,596.7	5,899.4	5,590.4	34.9	35.1	92.72	430.8	-1,748.4	246.4	176.6	69.79	3.531	
6,000.0	5,691.0	5,999.3	5,684.4	35.5	35.7	92.66	438.7	-1,781.2	250.9	179.8	71.07	3.530	
6,100.0	5,785.2	6,099.2	5,778.4	36.1	36.4	92.60	446.6	-1,814.0	255.3	182.9	72.35	3.529	
6,200.0	5,879.5	6,199.1	5,872.5	36.8	37.0	92.54	454.5	-1,846.7	259.7	186.1	73.63	3.528	
6,300.0	5,973.7	6,299.0	5,966.5	37.4	37.7	92.48	462.4	-1,879.5	264.2	189.2	74.91	3.526	
6,400.0	6,067.9	6,398.9	6,060.5	38.1	38.3	92.42	470.3	-1,912.3	268.6	192.4	76.18	3.525	
6,500.0	6,162.2	6,498.8	6,154.6	38.7	39.0	92.37	478.2	-1,945.1	273.0	195.6	77.46	3.524	
6,600.0	6,256.4	6,598.7	6,248.6	39.3	39.6	92.32	486.1	-1,977.9	277.4	198.7	78.74	3.524	
6,700.0	6,350.7	6,698.6	6,342.6	40.0	40.2	92.27	494.0	-2,010.7	281.9	201.9	80.02	3.523	
6,800.0	6,444.9	6,798.5	6,436.7	40.6	40.9	92.22	501.9	-2,043.5	286.3	205.0	81.30	3.522	
6,900.0	6,539.2	6,898.4	6,530.7	41.2	41.5	92.17	509.8	-2,076.3	290.7	208.2	82.58	3.521	
7,000.0	6,633.4	6,998.4	6,624.7	41.9	42.2	92.12	517.7	-2,109.1	295.2	211.3	83.85	3.520	
7,100.0	6,727.6	7,098.3	6,718.8	42.5	42.8	92.08	525.6	-2,141.9	299.6	214.5	85.13	3.519	
7,200.0	6,821.9	7,198.2	6,812.8	43.2	43.5	92.04	533.5	-2,174.7	304.0	217.6	86.41	3.519	
7,300.0	6,916.1	7,298.1	6,906.8	43.8	44.1	92.00	541.4	-2,207.5	308.5	220.8	87.69	3.518 SF	
7,400.0	7,011.0	7,397.9	7,000.8	44.4	44.8	91.68	549.3	-2,240.3	312.8	224.0	88.89	3.519	
7,500.0	7,106.9	7,497.7	7,094.7	44.9	45.4	90.75	557.2	-2,273.0	317.2	227.2	89.98	3.525	
7,600.0	7,203.8	7,597.2	7,188.4	45.3	46.0	89.23	565.1	-2,305.7	321.6	230.7	90.92	3.537	
7,700.0	7,301.4	7,698.4	7,284.1	45.7	46.6	87.33	572.8	-2,337.8	326.3	234.6	91.64	3.560	
7,800.0	7,399.8	7,801.2	7,382.8	46.0	47.1	85.72	579.5	-2,365.5	330.5	238.4	92.15	3.587	
7,900.0	7,498.7	7,904.7	7,483.7	46.3	47.5	84.44	584.9	-2,388.2	334.1	241.6	92.52	3.612	
8,000.0	7,598.1	8,008.8	7,586.2	46.5	47.8	83.49	589.1	-2,405.5	337.0	244.2	92.77	3.633	
8,100.0	7,697.8	8,113.3	7,690.0	46.7	48.1	82.86	592.0	-2,417.5	339.0	246.1	92.95	3.648	
8,200.0	7,797.7	8,218.1	7,794.5	46.8	48.2	82.54	593.5	-2,423.9	340.1	247.1	93.06	3.655	
8,300.0	7,897.7	8,321.3	7,897.7	46.8	48.2	-1.52	593.8	-2,425.1	340.3	247.2	93.15	3.653	
8,400.0	7,997.7	8,421.3	7,997.7	46.9	48.3	-1.52	593.8	-2,425.1	340.3	247.1	93.26	3.649	
8,500.0	8,097.7	8,521.3	8,097.7	46.9	48.3	-1.52	593.8	-2,425.1	340.3	246.9	93.37	3.645	
8,600.0	8,197.7	8,621.3	8,197.7	47.0	48.4	-1.52	593.8	-2,425.1	340.3	246.8	93.48	3.640	
8,700.0	8,297.7	8,721.3	8,297.7	47.0	48.4	-1.52	593.8	-2,425.1	340.3	246.7	93.60	3.636	
8,800.0	8,397.7	8,821.3	8,397.7	47.1	48.5	-1.52	593.8	-2,425.1	340.3	246.6	93.71	3.632	
8,900.0	8,497.7	8,921.3	8,497.7	47.1	48.5	-1.52	593.8	-2,425.1	340.3	246.5	93.83	3.627	
9,000.0	8,597.7	9,021.3	8,597.7	47.2	48.6	-1.52	593.8	-2,425.1	340.3	246.4	93.94	3.623	
9,100.0	8,697.7	9,121.3	8,697.7	47.3	48.7	-1.52	593.8	-2,425.1	340.3	246.3	94.06	3.618	
9,200.0	8,797.7	9,221.3	8,797.7	47.3	48.7	-1.52	593.8	-2,425.1	340.3	246.1	94.18	3.614	
9,300.0	8,897.7	9,321.3	8,897.7	47.4	48.8	-1.52	593.8	-2,425.1	340.3	246.0	94.30	3.609	
9,400.0	8,997.7	9,421.3	8,997.7	47.4	48.8	-1.52	593.8	-2,425.1	340.3	245.9	94.42	3.604	
9,500.0	9,097.7	9,521.3	9,097.7	47.5	48.9	-1.52	593.8	-2,425.1	340.3	245.8	94.54	3.600	
9,600.0	9,197.7	9,621.3	9,197.7	47.6	49.0	-1.52	593.8	-2,425.1	340.3	245.7	94.66	3.595	
9,700.0	9,297.7	9,721.3	9,297.7	47.6	49.0	-1.52	593.8	-2,425.1	340.3	245.5	94.79	3.590	
9,800.0	9,397.7	9,821.3	9,397.7	47.7	49.1	-1.52	593.8	-2,425.1	340.3	245.4	94.91	3.586	
9,900.0	9,497.7	9,921.3	9,497.7	47.7	49.1	-1.52	593.8	-2,425.1	340.3	245.3	95.04	3.581	
10,000.0	9,597.7	10,021.3	9,597.7	47.8	49.2	-1.52	593.8	-2,425.1	340.3	245.2	95.16	3.576	
10,100.0	9,697.7	10,121.3	9,697.7	47.9	49.3	-1.52	593.8	-2,425.1	340.3	245.0	95.29	3.571	
10,200.0	9,797.7	10,221.3	9,797.7	47.9	49.3	-1.52	593.8	-2,425.1	340.3	244.9	95.42	3.566	
10,300.0	9,897.7	10,321.3	9,897.7	48.0	49.4	-1.52	593.8	-2,425.1	340.3	244.8	95.55	3.562	

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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											
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)								
10,400.0	9,997.7	10,421.3	9,997.7	48.1	49.4	-1.52	593.8	-2,425.1	340.3	244.6	95.68	3.557						
10,500.0	10,097.7	10,521.3	10,097.7	48.1	49.5	-1.52	593.8	-2,425.1	340.3	244.5	95.82	3.552						
10,600.0	10,197.7	10,621.3	10,197.7	48.2	49.6	-1.52	593.8	-2,425.1	340.3	244.4	95.95	3.547						
10,655.8	10,253.5	10,677.0	10,253.5	48.2	49.6	-1.52	593.8	-2,425.1	340.3	244.3	96.03	3.544						
10,686.3	10,284.0	10,702.6	10,279.0	48.3	49.6	-1.52	593.8	-2,425.1	340.4	244.3	96.06	3.543						

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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: O-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
0.0	0.0	0.0	0.0	0.0	0.0	-110.06	-11.7	-31.9	34.0						
100.0	100.0	100.0	100.0	0.1	0.1	-110.06	-11.7	-31.9	34.0	33.7	0.27	124.787			
200.0	200.0	200.0	200.0	0.3	0.3	-110.06	-11.7	-31.9	34.0	33.4	0.62	54.682 CC			
300.0	300.0	298.3	298.3	0.5	0.5	-26.60	-11.7	-34.4	34.1	33.1	0.97	35.135			
400.0	399.6	396.7	396.3	0.7	0.7	-28.23	-11.9	-42.0	34.4	33.0	1.33	25.810 ES			
500.0	498.8	495.0	493.8	1.0	1.0	-30.88	-12.3	-54.6	34.9	33.2	1.73	20.186			
600.0	597.1	593.3	590.6	1.4	1.3	-34.42	-12.8	-72.3	35.8	33.6	2.21	16.231			
700.0	694.3	691.7	686.2	1.8	1.8	-38.68	-13.4	-94.8	37.1	34.3	2.82	13.162			
800.0	790.2	790.0	780.6	2.4	2.3	-43.44	-14.1	-122.3	39.0	35.4	3.64	10.708			
900.0	884.6	889.1	874.5	3.0	2.9	-48.51	-15.0	-154.2	41.4	36.7	4.68	8.849			
1,000.0	978.9	989.0	968.9	3.6	3.5	-53.23	-15.9	-186.8	44.1	38.2	5.85	7.540			
1,100.0	1,073.1	1,088.9	1,063.3	4.2	4.1	-57.39	-16.8	-219.5	47.0	39.9	7.09	6.634			
1,200.0	1,167.4	1,188.8	1,157.7	4.9	4.7	-61.04	-17.7	-252.2	50.2	41.8	8.38	5.991			
1,300.0	1,261.6	1,288.7	1,252.1	5.5	5.4	-64.24	-18.5	-284.8	53.5	43.8	9.69	5.523			
1,400.0	1,355.9	1,388.6	1,346.5	6.1	6.0	-67.07	-19.4	-317.5	57.0	46.0	11.02	5.173			
1,500.0	1,450.1	1,488.5	1,440.9	6.8	6.6	-69.56	-20.3	-350.2	60.6	48.3	12.36	4.906			
1,600.0	1,544.3	1,588.4	1,535.3	7.4	7.2	-71.76	-21.2	-382.8	64.3	50.6	13.70	4.698			
1,700.0	1,638.6	1,688.3	1,629.7	8.0	7.8	-73.73	-22.1	-415.5	68.1	53.1	15.03	4.533			
1,800.0	1,732.8	1,788.2	1,724.1	8.7	8.5	-75.48	-23.0	-448.2	72.0	55.6	16.36	4.400			
1,900.0	1,827.1	1,888.1	1,818.5	9.3	9.1	-77.06	-23.9	-480.8	75.9	58.2	17.69	4.292			
2,000.0	1,921.3	1,988.0	1,913.0	9.9	9.7	-78.48	-24.8	-513.5	79.9	60.9	19.02	4.203			
2,100.0	2,015.5	2,087.9	2,007.4	10.6	10.3	-79.76	-25.7	-546.2	83.9	63.6	20.34	4.128			
2,200.0	2,109.8	2,187.8	2,101.8	11.2	10.9	-80.93	-26.6	-578.8	88.0	66.4	21.65	4.065			
2,300.0	2,204.0	2,287.7	2,196.2	11.9	11.6	-81.99	-27.4	-611.5	92.1	69.2	22.96	4.012			
2,400.0	2,298.3	2,387.6	2,290.6	12.5	12.2	-82.96	-28.3	-644.2	96.2	72.0	24.27	3.966			
2,500.0	2,392.5	2,487.5	2,385.0	13.1	12.8	-83.85	-29.2	-676.8	100.4	74.8	25.57	3.926			
2,600.0	2,486.8	2,587.4	2,479.4	13.8	13.4	-84.67	-30.1	-709.5	104.6	77.7	26.87	3.892			
2,700.0	2,581.0	2,687.3	2,573.8	14.4	14.1	-85.43	-31.0	-742.2	108.8	80.6	28.16	3.862			
2,800.0	2,675.2	2,787.2	2,668.2	15.0	14.7	-86.13	-31.9	-774.8	113.0	83.5	29.45	3.836			
2,900.0	2,769.5	2,887.1	2,762.6	15.7	15.3	-86.78	-32.8	-807.5	117.2	86.5	30.74	3.812			
3,000.0	2,863.7	2,987.0	2,857.0	16.3	15.9	-87.39	-33.7	-840.2	121.4	89.4	32.03	3.792			
3,100.0	2,958.0	3,086.9	2,951.4	17.0	16.6	-87.95	-34.6	-872.8	125.7	92.4	33.31	3.773			
3,200.0	3,052.2	3,186.8	3,045.8	17.6	17.2	-88.48	-35.5	-905.5	130.0	95.4	34.59	3.757			
3,300.0	3,146.5	3,286.8	3,140.2	18.2	17.8	-88.97	-36.3	-938.2	134.2	98.4	35.87	3.742			
3,400.0	3,240.7	3,386.7	3,234.6	18.9	18.4	-89.44	-37.2	-970.8	138.5	101.4	37.15	3.729			
3,500.0	3,334.9	3,486.6	3,329.0	19.5	19.1	-89.87	-38.1	-1,003.5	142.8	104.4	38.42	3.717			
3,600.0	3,429.2	3,586.5	3,423.4	20.2	19.7	-90.28	-39.0	-1,036.2	147.1	107.4	39.70	3.706			
3,700.0	3,523.4	3,686.4	3,517.9	20.8	20.3	-90.67	-39.9	-1,068.8	151.4	110.5	40.97	3.696			
3,800.0	3,617.7	3,786.3	3,612.3	21.4	20.9	-91.03	-40.8	-1,101.5	155.7	113.5	42.24	3.687			
3,900.0	3,711.9	3,886.2	3,706.7	22.1	21.6	-91.38	-41.7	-1,134.2	160.1	116.6	43.51	3.679			
4,000.0	3,806.1	3,986.1	3,801.1	22.7	22.2	-91.71	-42.6	-1,166.8	164.4	119.6	44.78	3.671			
4,100.0	3,900.4	4,086.0	3,895.5	23.3	22.8	-92.02	-43.5	-1,199.5	168.7	122.7	46.04	3.664			
4,200.0	3,994.6	4,185.9	3,989.9	24.0	23.4	-92.31	-44.4	-1,232.2	173.1	125.7	47.31	3.658			
4,300.0	4,088.9	4,285.8	4,084.3	24.6	24.1	-92.59	-45.2	-1,264.8	177.4	128.8	48.57	3.652			
4,400.0	4,183.1	4,385.7	4,178.7	25.3	24.7	-92.86	-46.1	-1,297.5	181.7	131.9	49.84	3.647			
4,500.0	4,277.4	4,485.6	4,273.1	25.9	25.3	-93.12	-47.0	-1,330.2	186.1	135.0	51.10	3.642			
4,600.0	4,371.6	4,585.5	4,367.5	26.5	25.9	-93.36	-47.9	-1,362.9	190.4	138.1	52.36	3.637			
4,700.0	4,465.8	4,685.4	4,461.9	27.2	26.6	-93.59	-48.8	-1,395.5	194.8	141.2	53.62	3.633			
4,800.0	4,560.1	4,785.3	4,556.3	27.8	27.2	-93.81	-49.7	-1,428.2	199.2	144.3	54.88	3.629			
4,900.0	4,654.3	4,885.2	4,650.7	28.5	27.8	-94.03	-50.6	-1,460.9	203.5	147.4	56.14	3.625			
5,000.0	4,748.6	4,985.1	4,745.1	29.1	28.4	-94.23	-51.5	-1,493.5	207.9	150.5	57.40	3.622			
5,100.0	4,842.8	5,085.0	4,839.5	29.7	29.1	-94.42	-52.4	-1,526.2	212.2	153.6	58.66	3.618			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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: O-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	4,937.0	5,184.9	4,933.9	30.4	29.7	-94.61	-53.3	-1,558.9	216.6	156.7	59.92	3.615		
5,300.0	5,031.3	5,284.8	5,028.3	31.0	30.3	-94.79	-54.1	-1,591.5	221.0	159.8	61.17	3.612		
5,400.0	5,125.5	5,384.7	5,122.8	31.7	30.9	-94.96	-55.0	-1,624.2	225.4	162.9	62.43	3.610		
5,500.0	5,219.8	5,484.6	5,217.2	32.3	31.6	-95.13	-55.9	-1,656.9	229.7	166.0	63.69	3.607		
5,600.0	5,314.0	5,584.5	5,311.6	32.9	32.2	-95.29	-56.8	-1,689.5	234.1	169.2	64.94	3.605		
5,700.0	5,408.3	5,684.4	5,406.0	33.6	32.8	-95.45	-57.7	-1,722.2	238.5	172.3	66.20	3.603		
5,800.0	5,502.5	5,784.3	5,500.4	34.2	33.4	-95.59	-58.6	-1,754.9	242.9	175.4	67.45	3.601		
5,900.0	5,596.7	5,884.2	5,594.8	34.9	34.1	-95.74	-59.5	-1,787.5	247.3	178.5	68.71	3.599		
6,000.0	5,691.0	5,984.1	5,689.2	35.5	34.7	-95.88	-60.4	-1,820.2	251.6	181.7	69.96	3.597		
6,100.0	5,785.2	6,084.0	5,783.6	36.1	35.3	-96.01	-61.3	-1,852.9	256.0	184.8	71.21	3.595		
6,200.0	5,879.5	6,183.9	5,878.0	36.8	35.9	-96.14	-62.2	-1,885.5	260.4	187.9	72.47	3.593		
6,300.0	5,973.7	6,283.8	5,972.4	37.4	36.6	-96.26	-63.0	-1,918.2	264.8	191.1	73.72	3.592		
6,400.0	6,067.9	6,383.7	6,066.8	38.1	37.2	-96.38	-63.9	-1,950.9	269.2	194.2	74.97	3.590		
6,500.0	6,162.2	6,483.6	6,161.2	38.7	37.8	-96.50	-64.8	-1,983.5	273.6	197.3	76.23	3.589		
6,600.0	6,256.4	6,583.5	6,255.6	39.3	38.4	-96.61	-65.7	-2,016.2	278.0	200.5	77.48	3.588		
6,700.0	6,350.7	6,683.4	6,350.0	40.0	39.1	-96.72	-66.6	-2,048.9	282.4	203.6	78.73	3.586		
6,800.0	6,444.9	6,783.3	6,444.4	40.6	39.7	-96.83	-67.5	-2,081.5	286.7	206.8	79.98	3.585		
6,900.0	6,539.2	6,883.2	6,538.8	41.2	40.3	-96.93	-68.4	-2,114.2	291.1	209.9	81.23	3.584		
7,000.0	6,633.4	6,983.1	6,633.3	41.9	40.9	-97.03	-69.3	-2,146.9	295.5	213.1	82.48	3.583		
7,100.0	6,727.6	7,083.0	6,727.7	42.5	41.5	-97.13	-70.2	-2,179.5	299.9	216.2	83.74	3.582		
7,200.0	6,821.9	7,182.9	6,822.1	43.2	42.2	-97.23	-71.1	-2,212.2	304.3	219.3	84.99	3.581		
7,300.0	6,916.1	7,282.8	6,916.5	43.8	42.8	-97.32	-71.9	-2,244.9	308.7	222.5	86.24	3.580		
7,400.0	7,011.0	7,382.7	7,011.3	44.4	43.4	-97.36	-72.8	-2,276.3	312.9	225.5	87.38	3.581		
7,500.0	7,106.9	7,482.6	7,107.1	44.9	43.9	-97.39	-73.6	-2,304.5	316.6	228.2	88.40	3.581		
7,600.0	7,203.8	7,582.6	7,203.9	45.3	44.3	-97.42	-74.2	-2,329.4	319.9	230.6	89.29	3.582		
7,700.0	7,301.4	7,682.5	7,301.5	45.7	44.7	-97.44	-74.8	-2,350.9	322.7	232.6	90.06	3.583		
7,800.0	7,399.8	7,782.5	7,399.8	46.0	45.0	-97.46	-75.3	-2,368.9	325.1	234.3	90.71	3.583		
7,900.0	7,498.7	7,882.5	7,498.7	46.3	45.3	-97.48	-75.7	-2,383.5	327.0	235.7	91.24	3.584		
8,000.0	7,598.1	7,982.4	7,598.1	46.5	45.5	-97.49	-76.0	-2,394.7	328.4	236.8	91.65	3.583		
8,100.0	7,697.8	8,082.4	7,697.8	46.7	45.7	-97.50	-76.2	-2,402.3	329.5	237.5	91.95	3.583		
8,200.0	7,797.7	8,182.5	7,797.7	46.8	45.8	-97.51	-76.3	-2,406.5	330.0	237.9	92.14	3.582		
8,300.0	7,897.7	8,282.5	7,897.7	46.8	45.8	178.49	-76.4	-2,407.4	330.1	237.9	92.25	3.578		
8,400.0	7,997.7	8,382.5	7,997.7	46.9	45.9	178.49	-76.4	-2,407.4	330.1	237.8	92.36	3.574		
8,500.0	8,097.7	8,482.5	8,097.7	46.9	45.9	178.49	-76.4	-2,407.4	330.1	237.6	92.47	3.570		
8,600.0	8,197.7	8,582.5	8,197.7	47.0	46.0	178.49	-76.4	-2,407.4	330.1	237.5	92.59	3.566		
8,700.0	8,297.7	8,682.5	8,297.7	47.0	46.0	178.49	-76.4	-2,407.4	330.1	237.4	92.70	3.561		
8,800.0	8,397.7	8,782.5	8,397.7	47.1	46.1	178.49	-76.4	-2,407.4	330.1	237.3	92.81	3.557		
8,900.0	8,497.7	8,882.5	8,497.7	47.1	46.2	178.49	-76.4	-2,407.4	330.1	237.2	92.93	3.552		
9,000.0	8,597.7	8,982.5	8,597.7	47.2	46.2	178.49	-76.4	-2,407.4	330.1	237.1	93.05	3.548		
9,100.0	8,697.7	9,082.5	8,697.7	47.3	46.3	178.49	-76.4	-2,407.4	330.1	237.0	93.16	3.543		
9,200.0	8,797.7	9,182.5	8,797.7	47.3	46.3	178.49	-76.4	-2,407.4	330.1	236.8	93.28	3.539		
9,300.0	8,897.7	9,282.5	8,897.7	47.4	46.4	178.49	-76.4	-2,407.4	330.1	236.7	93.40	3.534		
9,400.0	8,997.7	9,382.5	8,997.7	47.4	46.5	178.49	-76.4	-2,407.4	330.1	236.6	93.52	3.530		
9,500.0	9,097.7	9,482.5	9,097.7	47.5	46.5	178.49	-76.4	-2,407.4	330.1	236.5	93.65	3.525		
9,600.0	9,197.7	9,582.5	9,197.7	47.6	46.6	178.49	-76.4	-2,407.4	330.1	236.3	93.77	3.520		
9,700.0	9,297.7	9,682.5	9,297.7	47.6	46.6	178.49	-76.4	-2,407.4	330.1	236.2	93.90	3.516		
9,800.0	9,397.7	9,782.5	9,397.7	47.7	46.7	178.49	-76.4	-2,407.4	330.1	236.1	94.02	3.511		
9,900.0	9,497.7	9,882.5	9,497.7	47.7	46.8	178.49	-76.4	-2,407.4	330.1	236.0	94.15	3.506		
10,000.0	9,597.7	9,982.5	9,597.7	47.8	46.8	178.49	-76.4	-2,407.4	330.1	235.8	94.28	3.502		
10,100.0	9,697.7	10,082.5	9,697.7	47.9	46.9	178.49	-76.4	-2,407.4	330.1	235.7	94.41	3.497		
10,200.0	9,797.7	10,182.5	9,797.7	47.9	47.0	178.49	-76.4	-2,407.4	330.1	235.6	94.54	3.492		
10,300.0	9,897.7	10,282.5	9,897.7	48.0	47.0	178.49	-76.4	-2,407.4	330.1	235.4	94.67	3.487		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-16C (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	9,997.7	10,382.5	9,997.7	48.1	47.1	178.49	-76.4	-2,407.4	330.1	235.3	94.80	3.482	
10,500.0	10,097.7	10,482.5	10,097.7	48.1	47.2	178.49	-76.4	-2,407.4	330.1	235.2	94.94	3.477	
10,600.0	10,197.7	10,582.5	10,197.7	48.2	47.2	178.49	-76.4	-2,407.4	330.1	235.0	95.07	3.472	
10,686.3	10,284.0	10,668.8	10,284.0	48.3	47.3	178.49	-76.4	-2,407.4	330.1	234.9	95.19	3.468 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	37.30	103.4	78.8	130.0					
100.0	100.0	100.0	100.0	0.1	0.1	37.30	103.4	78.8	130.0	129.8	0.27	477.583		
200.0	200.0	200.0	200.0	0.3	0.3	37.30	103.4	78.8	130.0	129.4	0.62	209.278 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	122.25	103.4	78.8	131.4	130.4	0.98	134.611		
400.0	399.6	399.6	399.6	0.7	0.7	124.93	103.4	78.8	135.8	134.4	1.36	100.193		
500.0	498.8	499.5	499.5	1.0	0.8	128.01	105.1	76.8	143.4	141.6	1.78	80.787		
600.0	597.1	599.6	599.3	1.4	1.0	130.24	110.0	70.7	154.1	151.9	2.27	68.039		
700.0	694.3	699.9	698.6	1.8	1.3	131.66	118.2	60.5	167.7	164.8	2.86	58.686		
800.0	790.2	800.1	797.2	2.4	1.6	132.35	129.7	46.3	184.0	180.4	3.58	51.370		
900.0	884.6	900.3	894.6	3.0	2.1	132.54	144.4	28.2	202.4	197.9	4.44	45.614		
1,000.0	978.9	1,000.6	990.8	3.6	2.6	131.64	162.3	6.0	220.3	214.9	5.44	40.528		
1,100.0	1,073.1	1,100.7	1,085.1	4.2	3.2	129.61	183.4	-20.0	237.5	230.9	6.59	36.013		
1,200.0	1,167.4	1,199.4	1,176.5	4.9	3.9	126.88	206.7	-48.9	254.4	246.6	7.86	32.361		
1,300.0	1,261.6	1,297.2	1,266.9	5.5	4.5	124.38	230.2	-77.9	271.9	262.7	9.16	29.690		
1,400.0	1,355.9	1,395.0	1,357.3	6.1	5.2	122.18	253.8	-107.0	289.8	279.3	10.47	27.686		
1,500.0	1,450.1	1,492.8	1,447.6	6.8	5.9	120.24	277.3	-136.1	308.0	296.2	11.78	26.144		
1,600.0	1,544.3	1,590.6	1,538.0	7.4	6.6	118.52	300.8	-165.1	326.6	313.5	13.10	24.930		
1,700.0	1,638.6	1,688.4	1,628.4	8.0	7.3	116.98	324.3	-194.2	345.4	331.0	14.42	23.955		
1,800.0	1,732.8	1,786.2	1,718.8	8.7	8.0	115.60	347.8	-223.2	364.4	348.7	15.73	23.160		
1,900.0	1,827.1	1,884.0	1,809.2	9.3	8.7	114.35	371.3	-252.3	383.6	366.6	17.05	22.502		
2,000.0	1,921.3	1,981.8	1,899.6	9.9	9.4	113.22	394.8	-281.4	403.0	384.6	18.36	21.951		
2,100.0	2,015.5	2,079.7	1,990.0	10.6	10.0	112.20	418.3	-310.4	422.5	402.8	19.67	21.483		
2,200.0	2,109.8	2,177.5	2,080.4	11.2	10.7	111.27	441.8	-339.5	442.1	421.2	20.97	21.082		
2,300.0	2,204.0	2,275.3	2,170.7	11.9	11.4	110.42	465.3	-368.5	461.9	439.6	22.27	20.737		
2,400.0	2,298.3	2,373.1	2,261.1	12.5	12.1	109.63	488.8	-397.6	481.7	458.1	23.57	20.435 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-17.26	108.2	-33.6	113.3					
100.0	100.0	100.0	100.0	0.1	0.1	-17.26	108.2	-33.6	113.3	113.0	0.27	416.048		
200.0	200.0	200.0	200.0	0.3	0.3	-17.26	108.2	-33.6	113.3	112.7	0.62	182.313 CC, ES		
300.0	300.0	295.8	295.7	0.5	0.5	67.08	109.4	-35.7	114.1	113.1	0.97	117.172		
400.0	399.6	391.4	391.1	0.7	0.7	68.04	113.1	-41.8	116.7	115.3	1.38	84.757		
500.0	498.8	487.0	485.9	1.0	1.0	69.54	119.3	-52.1	121.0	119.1	1.87	64.665		
600.0	597.1	582.4	579.9	1.4	1.3	71.45	127.8	-66.3	127.1	124.6	2.49	50.961		
700.0	694.3	677.6	672.6	1.8	1.7	73.62	138.7	-84.5	135.2	131.9	3.28	41.250		
800.0	790.2	772.5	763.9	2.4	2.2	75.91	152.0	-106.6	145.3	141.0	4.24	34.262		
900.0	884.6	867.1	853.6	3.0	2.8	78.15	167.5	-132.5	157.6	152.2	5.36	29.420		
1,000.0	978.9	964.0	944.1	3.6	3.4	79.38	185.3	-162.2	172.2	165.7	6.52	26.417		
1,100.0	1,073.1	1,062.8	1,036.3	4.2	4.1	80.33	203.7	-192.8	187.2	179.5	7.72	24.263		
1,200.0	1,167.4	1,161.7	1,128.4	4.9	4.8	81.15	222.1	-223.5	202.2	193.3	8.93	22.653		
1,300.0	1,261.6	1,260.5	1,220.6	5.5	5.4	81.85	240.5	-254.1	217.3	207.1	10.15	21.409		
1,400.0	1,355.9	1,359.3	1,312.7	6.1	6.1	82.45	258.8	-284.7	232.4	221.0	11.38	20.420		
1,500.0	1,450.1	1,458.2	1,404.9	6.8	6.8	82.99	277.2	-315.3	247.5	234.8	12.61	19.618		
1,600.0	1,544.3	1,557.0	1,497.0	7.4	7.4	83.46	295.6	-346.0	262.6	248.7	13.85	18.955		
1,700.0	1,638.6	1,655.8	1,589.2	8.0	8.1	83.88	314.0	-376.6	277.7	262.6	15.10	18.397		
1,800.0	1,732.8	1,754.7	1,681.3	8.7	8.8	84.26	332.4	-407.2	292.9	276.5	16.34	17.922		
1,900.0	1,827.1	1,853.5	1,773.5	9.3	9.4	84.60	350.7	-437.8	308.0	290.4	17.59	17.513		
2,000.0	1,921.3	1,952.3	1,865.6	9.9	10.1	84.91	369.1	-468.5	323.2	304.3	18.84	17.157		
2,100.0	2,015.5	2,051.1	1,957.8	10.6	10.8	85.19	387.5	-499.1	338.4	318.3	20.09	16.845		
2,200.0	2,109.8	2,150.0	2,049.9	11.2	11.5	85.45	405.9	-529.7	353.5	332.2	21.34	16.568		
2,300.0	2,204.0	2,248.8	2,142.1	11.9	12.1	85.69	424.2	-560.4	368.7	346.1	22.59	16.322		
2,400.0	2,298.3	2,347.6	2,234.2	12.5	12.8	85.90	442.6	-591.0	383.9	360.1	23.84	16.101		
2,500.0	2,392.5	2,446.5	2,326.4	13.1	13.5	86.10	461.0	-621.6	399.1	374.0	25.10	15.903		
2,600.0	2,486.8	2,545.3	2,418.5	13.8	14.2	86.29	479.4	-652.2	414.3	388.0	26.35	15.722		
2,700.0	2,581.0	2,644.1	2,510.7	14.4	14.8	86.46	497.7	-682.9	429.5	401.9	27.61	15.558		
2,800.0	2,675.2	2,742.9	2,602.8	15.0	15.5	86.62	516.1	-713.5	444.7	415.9	28.86	15.409		
2,900.0	2,769.5	2,841.8	2,695.0	15.7	16.2	86.77	534.5	-744.1	460.0	429.8	30.12	15.271		
3,000.0	2,863.7	2,940.6	2,787.1	16.3	16.8	86.91	552.9	-774.7	475.2	443.8	31.38	15.145		
3,100.0	2,958.0	3,039.4	2,879.3	17.0	17.5	87.05	571.2	-805.4	490.4	457.8	32.63	15.028 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9C (M16W Pad) - DD - Plan #1												Offset Site Error: 0.0 ft			
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	26.92	102.3	52.0	114.8						
100.0	100.0	100.0	100.0	0.1	0.1	26.92	102.3	52.0	114.8	114.5	0.27	421.546	CC, ES		
200.0	200.0	200.0	200.0	0.3	0.3	26.92	102.3	52.0	114.8	114.2	0.62	184.722			
300.0	300.0	300.2	300.2	0.5	0.5	110.82	103.4	49.6	115.6	114.6	0.99	117.147			
400.0	399.6	400.4	400.1	0.7	0.7	110.49	106.7	42.4	118.1	116.7	1.42	82.958			
500.0	498.8	500.5	499.3	1.0	1.0	109.98	112.2	30.5	122.2	120.2	1.98	61.678			
600.0	597.1	600.5	597.6	1.4	1.4	109.31	119.7	13.9	128.0	125.3	2.70	47.498			
700.0	694.3	700.3	694.6	1.8	1.8	108.53	129.4	-7.3	135.4	131.9	3.58	37.799			
800.0	790.2	799.9	790.1	2.4	2.4	107.67	141.2	-33.0	144.5	139.8	4.66	31.033			
900.0	884.6	899.3	883.8	3.0	3.0	106.71	155.0	-63.1	155.0	149.1	5.87	26.383			
1,000.0	978.9	998.7	976.8	3.6	3.6	105.55	169.5	-94.9	165.7	158.6	7.12	23.268			
1,100.0	1,073.1	1,098.1	1,069.8	4.2	4.3	104.53	184.1	-126.8	176.5	168.1	8.38	21.054			
1,200.0	1,167.4	1,197.4	1,162.8	4.9	4.9	103.62	198.7	-158.6	187.4	177.7	9.65	19.408			
1,300.0	1,261.6	1,296.8	1,255.8	5.5	5.6	102.82	213.2	-190.4	198.3	187.3	10.93	18.141			
1,400.0	1,355.9	1,396.2	1,348.8	6.1	6.3	102.10	227.8	-222.2	209.2	197.0	12.21	17.137			
1,500.0	1,450.1	1,495.5	1,441.9	6.8	6.9	101.45	242.3	-254.0	220.2	206.7	13.49	16.323			
1,600.0	1,544.3	1,594.9	1,534.9	7.4	7.6	100.86	256.9	-285.8	231.2	216.4	14.77	15.651			
1,700.0	1,638.6	1,694.3	1,627.9	8.0	8.2	100.33	271.4	-317.6	242.2	226.1	16.05	15.087			
1,800.0	1,732.8	1,793.6	1,720.9	8.7	8.9	99.84	286.0	-349.4	253.2	235.9	17.33	14.608			
1,900.0	1,827.1	1,893.0	1,813.9	9.3	9.6	99.40	300.5	-381.2	264.2	245.6	18.61	14.195			
2,000.0	1,921.3	1,992.4	1,906.9	9.9	10.2	98.98	315.1	-413.1	275.3	255.4	19.90	13.837			
2,100.0	2,015.5	2,091.7	1,999.9	10.6	10.9	98.61	329.6	-444.9	286.4	265.2	21.18	13.522			
2,200.0	2,109.8	2,191.1	2,092.9	11.2	11.5	98.26	344.2	-476.7	297.4	275.0	22.46	13.245			
2,300.0	2,204.0	2,290.5	2,185.9	11.9	12.2	97.93	358.8	-508.5	308.5	284.8	23.74	12.997			
2,400.0	2,298.3	2,389.8	2,278.9	12.5	12.9	97.63	373.3	-540.3	319.6	294.6	25.02	12.776			
2,500.0	2,392.5	2,489.2	2,371.9	13.1	13.5	97.34	387.9	-572.1	330.8	304.5	26.30	12.577			
2,600.0	2,486.8	2,588.6	2,464.9	13.8	14.2	97.08	402.4	-603.9	341.9	314.3	27.58	12.397			
2,700.0	2,581.0	2,687.9	2,557.9	14.4	14.9	96.83	417.0	-635.7	353.0	324.1	28.86	12.233			
2,800.0	2,675.2	2,787.3	2,650.9	15.0	15.5	96.60	431.5	-667.5	364.1	334.0	30.14	12.083			
2,900.0	2,769.5	2,886.7	2,743.9	15.7	16.2	96.38	446.1	-699.3	375.3	343.9	31.41	11.946			
3,000.0	2,863.7	2,986.0	2,837.0	16.3	16.8	96.17	460.6	-731.2	386.4	353.7	32.69	11.820			
3,100.0	2,958.0	3,085.4	2,930.0	17.0	17.5	95.98	475.2	-763.0	397.6	363.6	33.97	11.703			
3,200.0	3,052.2	3,184.8	3,023.0	17.6	18.2	95.80	489.7	-794.8	408.7	373.5	35.25	11.596			
3,300.0	3,146.5	3,284.2	3,116.0	18.2	18.8	95.62	504.3	-826.6	419.9	383.3	36.52	11.496			
3,400.0	3,240.7	3,383.5	3,209.0	18.9	19.5	95.46	518.8	-858.4	431.0	393.2	37.80	11.403			
3,500.0	3,334.9	3,482.9	3,302.0	19.5	20.2	95.30	533.4	-890.2	442.2	403.1	39.08	11.316			
3,600.0	3,429.2	3,582.3	3,395.0	20.2	20.8	95.15	548.0	-922.0	453.4	413.0	40.35	11.235			
3,700.0	3,523.4	3,681.6	3,488.0	20.8	21.5	95.01	562.5	-953.8	464.5	422.9	41.63	11.159			
3,800.0	3,617.7	3,781.0	3,581.0	21.4	22.2	94.87	577.1	-985.6	475.7	432.8	42.90	11.087			
3,900.0	3,711.9	3,880.4	3,674.0	22.1	22.8	94.74	591.6	-1,017.5	486.9	442.7	44.18	11.020			
4,000.0	3,806.1	3,979.7	3,767.0	22.7	23.5	94.62	606.2	-1,049.3	498.0	452.6	45.45	10.957 SF			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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-MWDD													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	27.06	91.8	46.9	103.1					
100.0	100.0	100.0	100.0	0.1	0.1	27.06	91.8	46.9	103.1	102.8	0.27	378.546		
200.0	200.0	200.0	200.0	0.3	0.3	27.06	91.8	46.9	103.1	102.4	0.62	165.880		
300.0	300.0	303.2	303.2	0.5	0.5	112.96	89.9	46.9	102.5	101.5	0.98	104.106		
389.2	388.9	393.7	393.6	0.7	0.7	117.44	85.8	46.4	101.6	100.3	1.33	76.312 CC		
400.0	399.6	404.4	404.3	0.7	0.7	118.01	85.4	46.2	101.6	100.3	1.37	74.039 ES		
500.0	498.8	504.7	504.5	1.0	0.9	122.98	82.8	41.4	103.3	101.5	1.79	57.571		
600.0	597.1	605.5	604.8	1.4	1.1	127.22	82.7	31.9	107.6	105.4	2.27	47.325		
700.0	694.3	706.7	704.9	1.8	1.4	130.53	85.2	17.7	114.3	111.5	2.84	40.293		
800.0	790.2	808.3	804.6	2.4	1.7	132.88	90.3	-1.1	123.0	119.5	3.50	35.186		
900.0	884.6	910.2	903.4	3.0	2.2	134.25	98.1	-24.7	133.2	128.9	4.27	31.163		
1,000.0	978.9	1,011.3	1,000.2	3.6	2.7	133.89	108.0	-52.1	142.1	136.9	5.18	27.446		
1,100.0	1,073.1	1,110.9	1,095.3	4.2	3.2	133.28	118.3	-79.9	150.7	144.6	6.12	24.605		
1,200.0	1,167.4	1,210.5	1,190.4	4.9	3.7	132.73	128.5	-107.7	159.3	152.2	7.10	22.447		
1,300.0	1,261.6	1,310.2	1,285.6	5.5	4.3	132.24	138.8	-135.5	167.9	159.8	8.09	20.764		
1,400.0	1,355.9	1,409.8	1,380.7	6.1	4.8	131.79	149.0	-163.3	176.5	167.5	9.09	19.422		
1,500.0	1,450.1	1,509.4	1,475.8	6.8	5.4	131.39	159.2	-191.0	185.2	175.1	10.10	18.329		
1,600.0	1,544.3	1,609.0	1,570.9	7.4	5.9	131.02	169.5	-218.8	193.8	182.7	11.13	17.424		
1,700.0	1,638.6	1,708.6	1,666.0	8.0	6.5	130.69	179.7	-246.6	202.5	190.4	12.15	16.662		
1,800.0	1,732.8	1,808.2	1,761.1	8.7	7.0	130.38	189.9	-274.4	211.2	198.0	13.19	16.014		
1,900.0	1,827.1	1,907.9	1,856.3	9.3	7.6	130.10	200.2	-302.1	219.8	205.6	14.22	15.455		
2,000.0	1,921.3	2,007.5	1,951.4	9.9	8.1	129.83	210.4	-329.9	228.5	213.3	15.27	14.969		
2,100.0	2,015.5	2,107.1	2,046.5	10.6	8.7	129.59	220.7	-357.7	237.2	220.9	16.31	14.542		
2,200.0	2,109.8	2,206.7	2,141.6	11.2	9.3	129.36	230.9	-385.5	245.9	228.5	17.36	14.165		
2,300.0	2,204.0	2,306.3	2,236.7	11.9	9.8	129.15	241.1	-413.3	254.6	236.2	18.41	13.829		
2,400.0	2,298.3	2,406.0	2,331.9	12.5	10.4	128.96	251.4	-441.0	263.3	243.8	19.46	13.528		
2,500.0	2,392.5	2,505.6	2,427.0	13.1	10.9	128.77	261.6	-468.8	272.0	251.4	20.51	13.257		
2,600.0	2,486.8	2,605.2	2,522.1	13.8	11.5	128.60	271.8	-496.6	280.7	259.1	21.57	13.011		
2,700.0	2,581.0	2,704.8	2,617.2	14.4	12.1	128.44	282.1	-524.4	289.4	266.7	22.63	12.788		
2,800.0	2,675.2	2,804.4	2,712.3	15.0	12.6	128.29	292.3	-552.1	298.1	274.4	23.69	12.584		
2,900.0	2,769.5	2,904.0	2,807.4	15.7	13.2	128.14	302.5	-579.9	306.8	282.0	24.74	12.397		
3,000.0	2,863.7	3,003.7	2,902.6	16.3	13.8	128.01	312.8	-607.7	315.5	289.7	25.81	12.225		
3,100.0	2,958.0	3,103.3	2,997.7	17.0	14.3	127.88	323.0	-635.5	324.2	297.3	26.87	12.066		
3,200.0	3,052.2	3,202.9	3,092.8	17.6	14.9	127.75	333.3	-663.3	332.9	305.0	27.93	11.919		
3,300.0	3,146.5	3,302.5	3,187.9	18.2	15.4	127.64	343.5	-691.0	341.6	312.6	28.99	11.782		
3,400.0	3,240.7	3,402.1	3,283.0	18.9	16.0	127.53	353.7	-718.8	350.3	320.2	30.06	11.655		
3,500.0	3,334.9	3,501.7	3,378.1	19.5	16.6	127.42	364.0	-746.6	359.0	327.9	31.12	11.536		
3,600.0	3,429.2	3,601.4	3,473.3	20.2	17.1	127.32	374.2	-774.4	367.7	335.5	32.19	11.425		
3,700.0	3,523.4	3,701.0	3,568.4	20.8	17.7	127.23	384.4	-802.1	376.4	343.2	33.25	11.321		
3,800.0	3,617.7	3,800.6	3,663.5	21.4	18.3	127.14	394.7	-829.9	385.2	350.8	34.32	11.223		
3,900.0	3,711.9	3,900.2	3,758.6	22.1	18.8	127.05	404.9	-857.7	393.9	358.5	35.38	11.131		
4,000.0	3,806.1	3,999.8	3,853.7	22.7	19.4	126.97	415.2	-885.5	402.6	366.1	36.45	11.045		
4,100.0	3,900.4	4,099.5	3,948.8	23.3	19.9	126.89	425.4	-913.3	411.3	373.8	37.52	10.963		
4,200.0	3,994.6	4,199.1	4,044.0	24.0	20.5	126.81	435.6	-941.0	420.0	381.4	38.59	10.885		
4,300.0	4,088.9	4,298.7	4,139.1	24.6	21.1	126.74	445.9	-968.8	428.8	389.1	39.66	10.812		
4,400.0	4,183.1	4,398.3	4,234.2	25.3	21.6	126.67	456.1	-996.6	437.5	396.8	40.72	10.742		
4,500.0	4,277.4	4,497.9	4,329.3	25.9	22.2	126.60	466.3	-1,024.4	446.2	404.4	41.79	10.676		
4,600.0	4,371.6	4,597.5	4,424.4	26.5	22.8	126.54	476.6	-1,052.1	454.9	412.1	42.86	10.613		
4,700.0	4,465.8	4,697.2	4,519.5	27.2	23.3	126.47	486.8	-1,079.9	463.6	419.7	43.93	10.554		
4,800.0	4,560.1	4,796.8	4,614.7	27.8	23.9	126.41	497.0	-1,107.7	472.4	427.4	45.00	10.497		
4,900.0	4,654.3	4,896.4	4,709.8	28.5	24.5	126.36	507.3	-1,135.5	481.1	435.0	46.07	10.442		
5,000.0	4,748.6	4,996.0	4,804.9	29.1	25.0	126.30	517.5	-1,163.3	489.8	442.7	47.14	10.390		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (M16W Pad)	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	EDM 5000.1 US Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SWSW S16-T7S-R93W (M16W Pad) - MCU Fee 17-9D (M16W Pad) - DD - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	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)			
5,100.0	4,842.8	5,095.6	4,900.0	29.7	25.6	126.25	527.8	-1,191.0	498.5	450.3	48.21	10.340 SF	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 17-16B2 (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 Fee 17-16B2 (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 Fee 17-16B2 (M16W Pad)
Coordinate System is US State Plane 1983, Colorado Central Zone
Grid Convergence at Surface is: -1.44°

