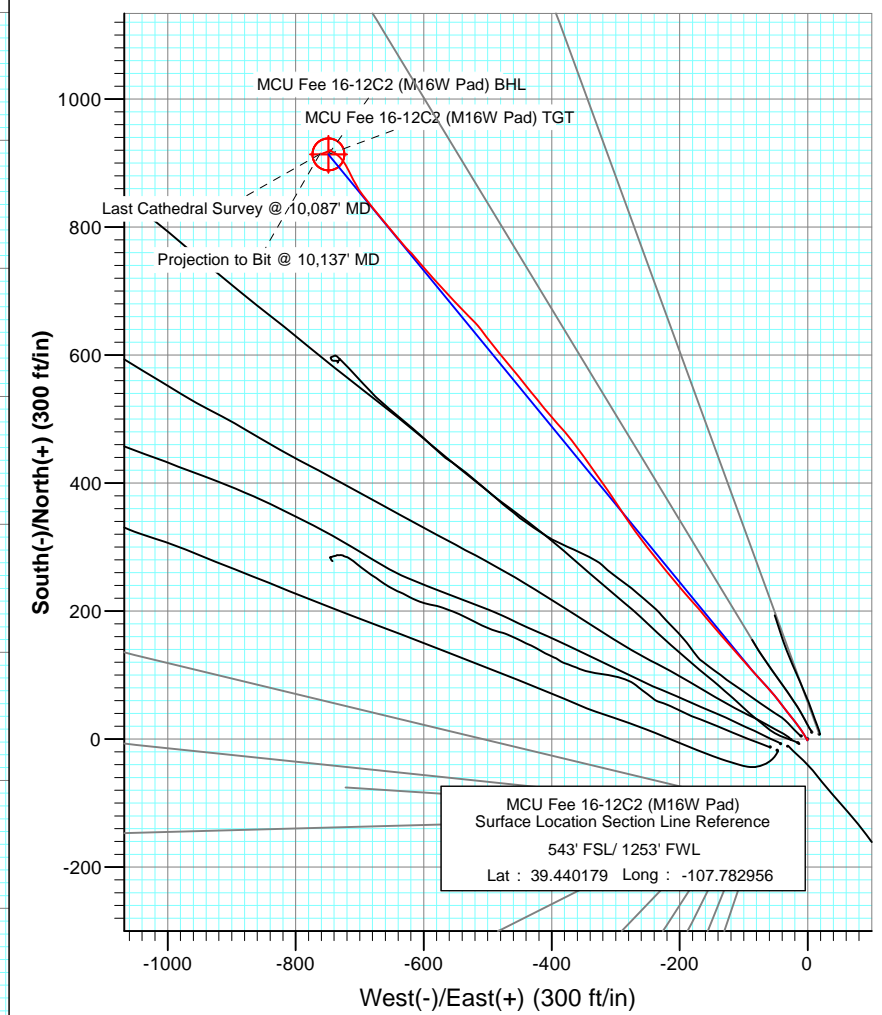
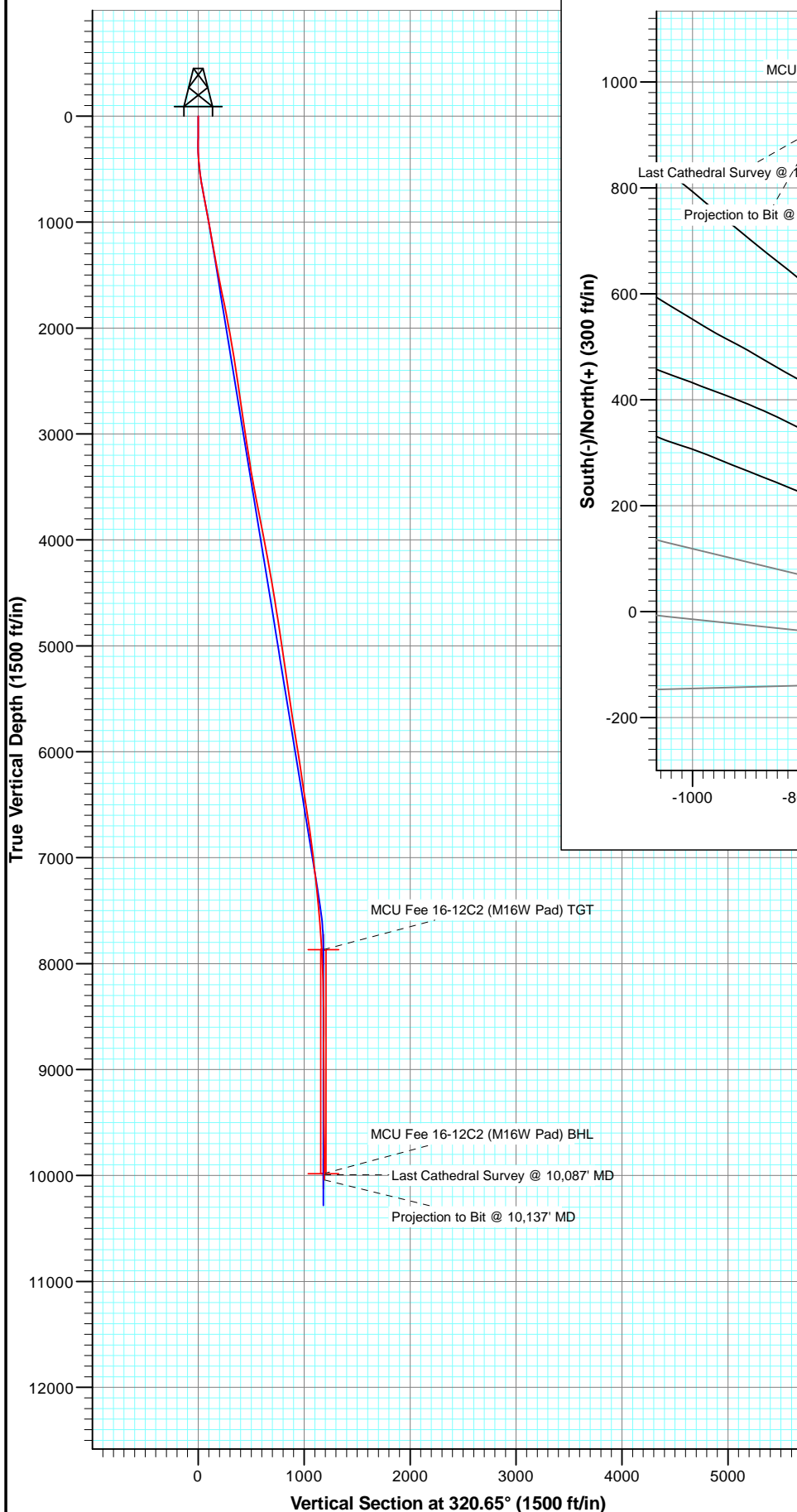




Project: Mamm Creek
Site: M16W Pad (SWSW S16-T7S-R93W)
Well: MCU Fee 16-12C2 (M16W Pad)
Wellbore: DD
Plan: FINAL

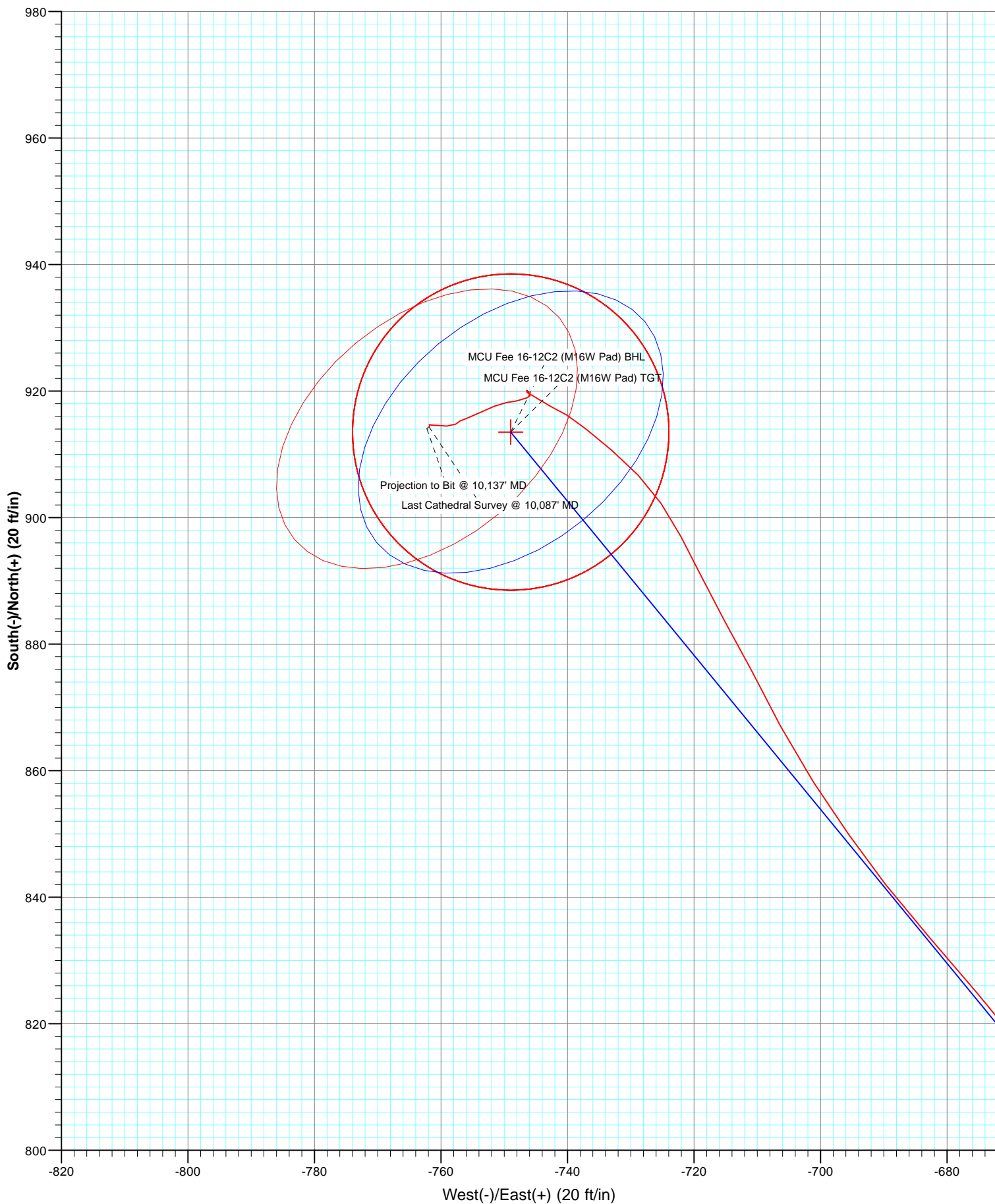


Azimuths to True North
Magnetic North: 10.08°

Magnetic Field
Strength: 52103.3snT
Dip Angle: 65.70°
Date: 9/23/2012
Model: IGRF2010



Project: Mamm Creek
Site: M16W Pad (SWSW S16-T7S-R93W)
Well: MCU Fee 16-12C2 (M16W Pad)
Wellbore: DD
Plan: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 16-12C2 (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Well:	MCU Fee 16-12C2 (M16W Pad)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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

Site	M16W Pad (SWSW S16-T7S-R93W)			
Site Position:		Northing:	1,593,196.15 ft	Latitude: 39.439834
From:	Lat/Long	Easting:	2,355,193.71 ft	Longitude: -107.783358
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.44 °

Well	MCU Fee 16-12C2 (M16W Pad)			
Well Position	+N/-S	0.0 ft	Northing:	1,593,318.92 ft
	+E/-W	0.0 ft	Easting:	2,355,310.37 ft
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	9/23/2012	10.08	65.70	52,103

Design	FINAL			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	320.65

Survey Program	Date	10/5/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
206.0	10,137.0	Survey #1 (DD)	MWD	Geolink MWD

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
206.0	0.80	190.50	206.0	-1.4	-0.3	-0.9	0.39	0.39	
237.0	0.70	217.90	237.0	-1.8	-0.4	-1.1	1.19	-0.32	
267.0	0.50	226.70	267.0	-2.0	-0.6	-1.2	0.73	-0.67	
298.0	0.60	301.90	298.0	-2.0	-0.9	-1.0	2.18	0.32	
328.0	1.40	348.40	328.0	-1.6	-1.1	-0.5	3.60	2.67	
359.0	2.20	337.90	359.0	-0.7	-1.4	0.4	2.78	2.58	
389.0	3.50	329.20	388.9	0.7	-2.1	1.8	4.55	4.33	
480.0	6.50	329.40	479.6	7.5	-6.1	9.7	3.30	3.30	
571.0	8.00	324.80	569.8	17.1	-12.4	21.1	1.77	1.65	
663.0	10.30	321.20	660.7	28.7	-21.2	35.7	2.58	2.50	
755.0	10.70	322.10	751.1	41.9	-31.6	52.4	0.47	0.43	
846.0	10.90	322.90	840.5	55.4	-42.0	69.5	0.27	0.22	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 16-12C2 (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Well:	MCU Fee 16-12C2 (M16W Pad)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
937.0	10.10	319.50	930.0	68.3	-52.4	86.1	1.11	-0.88	
1,032.0	10.20	319.20	1,023.5	81.0	-63.3	102.8	0.12	0.11	
1,095.0	9.80	317.20	1,085.5	89.2	-70.6	113.7	0.84	-0.63	
1,161.0	10.20	317.30	1,150.5	97.6	-78.3	125.2	0.61	0.61	
1,253.0	10.50	318.10	1,241.0	109.8	-89.5	141.7	0.36	0.33	
1,344.0	10.60	317.50	1,330.5	122.2	-100.7	158.3	0.16	0.11	
1,436.0	10.60	319.40	1,420.9	134.9	-111.9	175.2	0.38	0.00	
1,527.0	10.70	319.70	1,510.4	147.7	-122.8	192.0	0.13	0.11	
1,619.0	11.50	319.20	1,600.7	161.1	-134.3	209.7	0.88	0.87	
1,710.0	11.80	319.20	1,689.8	175.0	-146.3	228.1	0.33	0.33	
1,802.0	11.60	320.00	1,779.9	189.2	-158.4	246.8	0.28	-0.22	
1,894.0	10.80	319.10	1,870.1	202.8	-170.0	264.6	0.89	-0.87	
1,985.0	10.20	319.50	1,959.6	215.4	-180.8	281.2	0.66	-0.66	
2,077.0	10.30	317.70	2,050.1	227.7	-191.6	297.6	0.36	0.11	
2,168.0	10.00	320.20	2,139.7	239.8	-202.2	313.6	0.59	-0.33	
2,260.0	9.30	320.20	2,230.4	251.6	-212.0	329.0	0.76	-0.76	
2,351.0	9.20	321.00	2,320.2	262.9	-221.3	343.6	0.18	-0.11	
2,443.0	8.80	320.60	2,411.1	274.1	-230.4	358.0	0.44	-0.43	
2,534.0	8.10	321.70	2,501.1	284.5	-238.8	371.4	0.79	-0.77	
2,626.0	8.50	321.90	2,592.1	294.9	-247.0	384.7	0.44	0.43	
2,717.0	8.00	321.90	2,682.2	305.2	-255.1	397.7	0.55	-0.55	
2,809.0	8.30	322.50	2,773.3	315.5	-263.1	410.8	0.34	0.33	
2,900.0	8.00	325.30	2,863.3	325.9	-270.7	423.6	0.55	-0.33	
2,992.0	8.80	325.90	2,954.3	337.0	-278.3	437.0	0.87	0.87	
3,083.0	9.10	326.90	3,044.2	348.8	-286.1	451.1	0.37	0.33	
3,175.0	9.00	326.10	3,135.1	360.9	-294.1	465.5	0.17	-0.11	
3,266.0	8.80	325.60	3,225.0	372.5	-302.0	479.5	0.24	-0.22	
3,358.0	8.40	326.50	3,316.0	383.9	-309.7	493.2	0.46	-0.43	
3,450.0	10.50	326.10	3,406.7	396.5	-318.1	508.3	2.28	2.28	
3,541.0	9.80	325.50	3,496.3	409.8	-327.1	524.2	0.78	-0.77	
3,633.0	11.40	322.00	3,586.7	423.4	-337.1	541.1	1.87	1.74	
3,724.0	11.40	324.40	3,675.9	437.8	-347.9	559.1	0.52	0.00	
3,815.0	11.30	324.80	3,765.1	452.4	-358.3	577.0	0.14	-0.11	
3,907.0	10.80	323.00	3,855.4	466.6	-368.6	594.6	0.66	-0.54	
3,998.0	10.90	318.30	3,944.8	479.9	-379.5	611.7	0.98	0.11	
4,089.0	10.50	317.60	4,034.2	492.4	-390.8	628.6	0.46	-0.44	
4,181.0	10.60	320.20	4,124.7	505.1	-401.9	645.4	0.53	0.11	
4,272.0	10.30	320.20	4,214.2	517.8	-412.4	661.9	0.33	-0.33	
4,364.0	10.20	321.00	4,304.7	530.4	-422.8	678.3	0.19	-0.11	
4,455.0	10.00	321.50	4,394.3	542.9	-432.8	694.2	0.24	-0.22	
4,547.0	9.10	319.80	4,485.0	554.7	-442.5	709.5	1.03	-0.98	
4,638.0	9.00	321.60	4,574.9	565.7	-451.6	723.8	0.33	-0.11	
4,730.0	9.20	321.50	4,665.7	577.1	-460.6	738.3	0.22	0.22	
4,821.0	8.80	319.50	4,755.6	588.1	-469.7	752.6	0.56	-0.44	
4,913.0	8.70	320.20	4,846.5	598.8	-478.7	766.6	0.16	-0.11	
5,004.0	8.70	320.90	4,936.5	609.5	-487.4	780.3	0.12	0.00	
5,096.0	8.10	321.70	5,027.5	619.9	-495.8	793.8	0.66	-0.65	
5,188.0	8.00	324.10	5,118.6	630.2	-503.6	806.6	0.38	-0.11	
5,279.0	7.90	323.80	5,208.7	640.4	-511.0	819.2	0.12	-0.11	
5,371.0	8.80	316.00	5,299.7	650.6	-519.6	832.5	1.57	0.98	
5,462.0	9.20	315.10	5,389.6	660.7	-529.6	846.7	0.47	0.44	
5,554.0	8.40	314.10	5,480.5	670.6	-539.6	860.7	0.89	-0.87	
5,645.0	8.20	317.30	5,570.6	680.0	-548.8	873.8	0.55	-0.22	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 16-12C2 (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Well:	MCU Fee 16-12C2 (M16W Pad)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
5,737.0	8.10	318.00	5,661.7	689.6	-557.6	886.8	0.15	-0.11	
5,828.0	8.80	317.60	5,751.7	699.5	-566.6	900.2	0.77	0.77	
5,920.0	8.90	317.50	5,842.6	710.0	-576.1	914.3	0.11	0.11	
6,012.0	9.60	317.40	5,933.4	720.9	-586.1	929.1	0.76	0.76	
6,103.0	9.40	319.50	6,023.1	732.1	-596.1	944.1	0.44	-0.22	
6,194.0	9.30	319.80	6,112.9	743.4	-605.6	958.9	0.12	-0.11	
6,286.0	8.50	318.90	6,203.8	754.2	-614.9	973.1	0.88	-0.87	
6,377.0	7.60	314.50	6,293.9	763.5	-623.6	985.8	1.20	-0.99	
6,469.0	8.70	319.80	6,385.0	773.0	-632.5	998.8	1.45	1.20	
6,561.0	8.30	320.30	6,476.0	783.5	-641.2	1,012.4	0.44	-0.43	
6,652.0	8.70	318.60	6,566.0	793.7	-649.9	1,025.8	0.52	0.44	
6,744.0	8.40	322.40	6,656.9	804.2	-658.6	1,039.5	0.70	-0.33	
6,836.0	8.40	321.30	6,748.0	814.8	-666.9	1,053.0	0.17	0.00	
6,927.0	7.90	319.60	6,838.0	824.7	-675.2	1,065.9	0.61	-0.55	
7,019.0	6.90	319.20	6,929.3	833.7	-682.9	1,077.7	1.09	-1.09	
7,111.0	6.60	321.70	7,020.6	842.1	-689.7	1,088.5	0.46	-0.33	
7,202.0	5.80	325.70	7,111.1	850.0	-695.6	1,098.3	1.00	-0.88	
7,294.0	6.70	326.30	7,202.6	858.3	-701.2	1,108.3	0.98	0.98	
7,386.0	6.10	333.30	7,294.0	867.1	-706.4	1,118.4	1.07	-0.65	
7,477.0	6.10	331.80	7,384.5	875.7	-710.8	1,127.9	0.18	0.00	
7,569.0	5.20	331.00	7,476.0	883.7	-715.1	1,136.8	0.98	-0.98	
7,660.0	4.80	334.00	7,566.7	890.7	-718.8	1,144.5	0.52	-0.44	
7,752.0	4.10	331.40	7,658.4	897.0	-722.1	1,151.5	0.79	-0.76	
7,843.0	3.60	326.50	7,749.2	902.3	-725.2	1,157.5	0.66	-0.55	
7,935.0	3.60	315.40	7,841.0	906.7	-728.8	1,163.3	0.76	0.00	
7,963.2	3.63	314.01	7,869.1	908.0	-730.1	1,165.1	0.33	0.10	MCU Fee 16-12C2 (M16W Pad) TGT
8,026.0	3.70	311.00	7,931.8	910.7	-733.1	1,169.0	0.33	0.11	
8,118.0	2.80	307.60	8,023.7	914.0	-737.1	1,174.1	1.00	-0.98	
8,209.0	1.90	303.60	8,114.6	916.2	-740.1	1,177.7	1.00	-0.99	
8,301.0	1.50	291.20	8,206.6	917.5	-742.5	1,180.3	0.59	-0.43	
8,393.0	1.20	312.20	8,298.6	918.6	-744.3	1,182.3	0.62	-0.33	
8,485.0	0.60	280.10	8,390.5	919.3	-745.5	1,183.6	0.83	-0.65	
8,576.0	0.70	314.20	8,481.5	919.8	-746.4	1,184.5	0.43	0.11	
8,668.0	0.40	95.30	8,573.5	920.1	-746.5	1,184.8	1.13	-0.33	
8,759.0	0.30	174.30	8,664.5	919.9	-746.1	1,184.4	0.50	-0.11	
8,850.0	0.50	152.60	8,755.5	919.3	-745.9	1,183.8	0.27	0.22	
8,942.0	0.80	272.10	8,847.5	918.9	-746.4	1,183.8	1.23	0.33	
9,033.0	1.10	240.40	8,938.5	918.5	-747.8	1,184.4	0.65	0.33	
9,070.0	1.00	271.30	8,975.5	918.4	-748.4	1,184.7	1.53	-0.27	
9,124.0	1.40	257.60	9,029.5	918.2	-749.5	1,185.3	0.91	0.74	
9,216.0	1.20	248.10	9,121.5	917.6	-751.5	1,186.1	0.32	-0.22	
9,308.0	1.80	244.70	9,213.4	916.7	-753.7	1,186.7	0.66	0.65	
9,399.0	1.20	248.90	9,304.4	915.7	-755.9	1,187.4	0.67	-0.66	
9,491.0	0.20	251.90	9,396.4	915.3	-756.9	1,187.7	1.09	-1.09	
9,583.0	0.90	230.30	9,488.4	914.8	-757.6	1,187.8	0.78	0.76	
9,674.0	1.10	278.00	9,579.4	914.5	-759.1	1,188.4	0.91	0.22	
9,765.0	0.70	269.20	9,670.4	914.6	-760.5	1,189.4	0.46	-0.44	
9,857.0	0.50	280.10	9,762.4	914.6	-761.4	1,190.1	0.25	-0.22	
9,949.0	0.00	344.90	9,854.3	914.7	-761.8	1,190.4	0.54	-0.54	
10,041.0	0.20	156.90	9,946.3	914.6	-761.8	1,190.2	0.22	0.22	
10,078.6	0.42	223.03	9,984.0	914.4	-761.8	1,190.1	1.03	0.59	MCU Fee 16-12C2 (M16W Pad) BHL
10,087.0	0.50	227.70	9,992.3	914.4	-761.9	1,190.1	1.03	0.93	Last Cathedral Survey @ 10,087' MD
10,137.0	0.50	227.70	10,042.3	914.1	-762.2	1,190.1	0.00	0.00	Projection to Bit @ 10,137' MD

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well MCU Fee 16-12C2 (M16W Pad)
Project:	Mamm Creek	TVD Reference:	KBE @ 7903.0ft (Original Well Elev)
Site:	M16W Pad (SWSW S16-T7S-R93W)	MD Reference:	KBE @ 7903.0ft (Original Well Elev)
Well:	MCU Fee 16-12C2 (M16W Pad)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
MCU Fee 16-12C2 (M16W Pad)	0.00	0.00	7,868.0	913.5	-749.0	1,594,250.98	2,354,584.60	39.442687	-107.785608
- actual wellpath misses target center by 19.7ft at 7963.1ft MD (7869.1 TVD, 908.0 N, -730.1 E)									
- Circle (radius 25.0)									
MCU Fee 16-12C2 (M16W Pad)	0.00	0.00	9,984.0	913.5	-749.0	1,594,250.98	2,354,584.60	39.442687	-107.785608
- actual wellpath misses target center by 12.9ft at 10078.6ft MD (9984.0 TVD, 914.4 N, -761.8 E)									
- Circle (radius 25.0)									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
10,087.0	9,992.3	914.4	-761.9	Last Cathedral Survey @ 10,087' MD
10,137.0	10,042.3	914.1	-762.2	Projection to Bit @ 10,137' MD

Checked By: _____ Approved By: _____ Date: _____