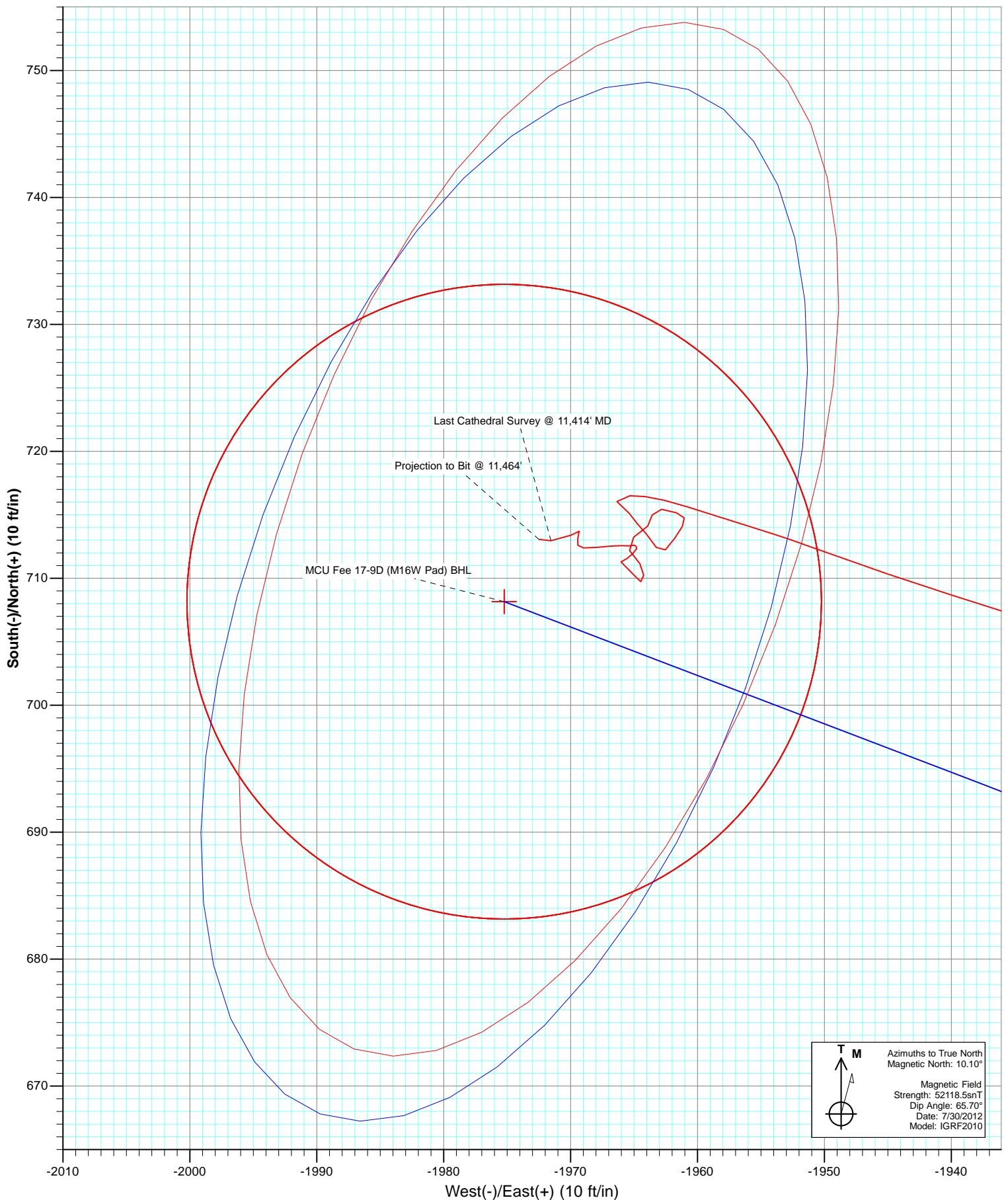
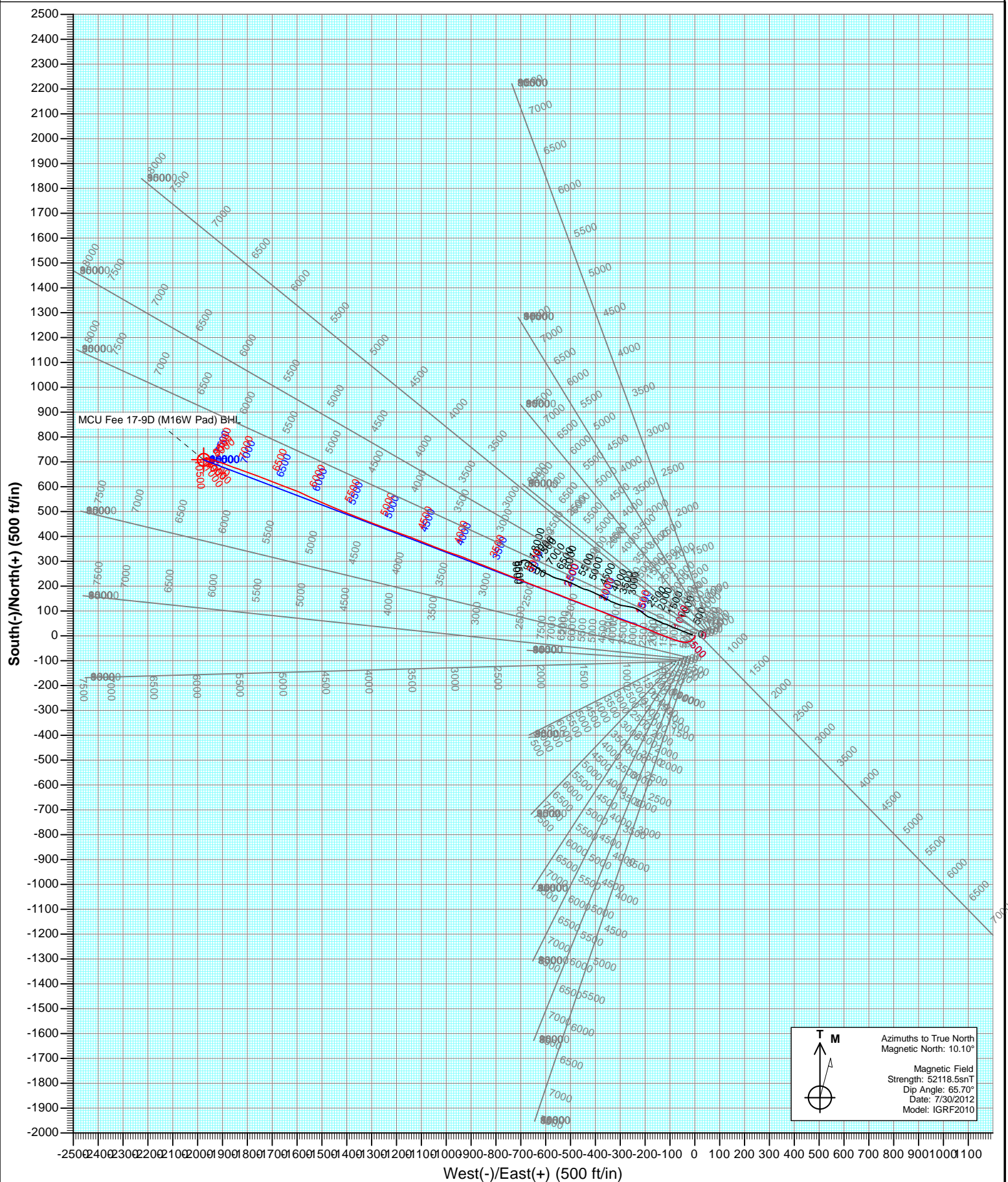


Azimuths to True North  
 Magnetic North: 10.10°

Magnetic Field  
 Strength: 52118.5nT  
 Dip Angle: 65.70°  
 Date: 7/30/2012  
 Model: IGRF2010





# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well MCU Fee 17-9D (M16W Pad)
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KBE @ 7903.0ft (Original Well Elev)
<b>Site:</b>	M16W Pad (SWSW S16-T7S-R93W)	<b>MD Reference:</b>	KBE @ 7903.0ft (Original Well Elev)
<b>Well:</b>	MCU Fee 17-9D (M16W Pad)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

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

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

<b>Well</b>	MCU Fee 17-9D (M16W Pad)			
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,593,302.65 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,355,262.22 ft
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft
			<b>Ground Level:</b>	7,881.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	7/30/2012	10.10	65.70	52,118

<b>Design</b>	DD			
<b>Audit Notes:</b>				
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b> 0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	289.72

<b>Survey Program</b>	<b>Date</b>	9/13/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
206.0	1,215.0	Survey #1 (DD)	MWD	Geolink MWD	
1,298.0	11,464.0	Survey #2 (DD)	MWD	Geolink MWD	

<b>Survey</b>									
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
206.0	0.60	142.30	206.0	-0.9	0.7	-0.9	0.29	0.29	
237.0	0.40	81.00	237.0	-1.0	0.9	-1.1	1.74	-0.65	
267.0	0.50	134.80	267.0	-1.0	1.1	-1.4	1.39	0.33	
298.0	1.10	182.70	298.0	-1.4	1.1	-1.6	2.74	1.94	
328.0	2.00	210.90	328.0	-2.2	0.9	-1.5	3.85	3.00	
359.0	2.90	212.00	359.0	-3.3	0.2	-1.3	2.91	2.90	
389.0	4.10	207.60	388.9	-4.9	-0.7	-1.0	4.10	4.00	
420.0	5.40	212.80	419.8	-7.1	-2.0	-0.5	4.41	4.19	
450.0	6.70	217.40	449.6	-9.7	-3.9	0.4	4.62	4.33	
480.0	7.50	222.10	479.4	-12.5	-6.2	1.6	3.29	2.67	
511.0	8.30	228.10	510.1	-15.5	-9.3	3.5	3.70	2.58	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well MCU Fee 17-9D (M16W Pad)
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KBE @ 7903.0ft (Original Well Elev)
<b>Site:</b>	M16W Pad (SWSW S16-T7S-R93W)	<b>MD Reference:</b>	KBE @ 7903.0ft (Original Well Elev)
<b>Well:</b>	MCU Fee 17-9D (M16W Pad)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
541.0	9.10	238.30	539.8	-18.2	-12.9	6.0	5.78	2.67	
571.0	9.50	242.00	569.4	-20.6	-17.1	9.1	2.40	1.33	
602.0	9.50	247.90	599.9	-22.8	-21.7	12.8	3.14	0.00	
632.0	9.70	253.60	629.5	-24.4	-26.4	16.6	3.24	0.67	
663.0	9.80	258.70	660.1	-25.7	-31.5	21.0	2.80	0.32	
694.0	9.80	267.50	690.6	-26.3	-36.8	25.7	4.83	0.00	
724.0	10.20	274.60	720.2	-26.2	-42.0	30.6	4.32	1.33	
755.0	10.30	280.80	750.7	-25.5	-47.4	36.0	3.57	0.32	
785.0	11.40	282.90	780.1	-24.3	-52.9	41.6	3.90	3.67	
815.0	12.10	286.30	809.5	-22.8	-58.8	47.7	3.28	2.33	
846.0	13.20	285.90	839.8	-20.9	-65.4	54.5	3.56	3.55	
876.0	14.50	287.80	868.9	-18.8	-72.2	61.7	4.59	4.33	
907.0	14.90	287.30	898.9	-16.4	-79.7	69.5	1.35	1.29	
937.0	15.80	288.30	927.8	-14.0	-87.3	77.5	3.13	3.00	
968.0	16.90	290.80	957.5	-11.1	-95.5	86.2	4.21	3.55	
1,060.0	18.10	291.30	1,045.3	-1.1	-121.3	113.8	1.31	1.30	
1,151.0	18.50	292.20	1,131.7	9.5	-147.9	142.4	0.54	0.44	
1,215.0	18.10	292.90	1,192.4	17.2	-166.4	162.5	0.71	-0.62	
1,298.0	18.30	291.90	1,271.3	27.0	-190.4	188.4	0.45	0.24	
1,344.0	18.30	290.30	1,315.0	32.2	-203.9	202.8	1.09	0.00	
1,436.0	18.00	290.00	1,402.4	42.1	-230.8	231.5	0.34	-0.33	
1,527.0	18.00	288.80	1,488.9	51.5	-257.3	259.6	0.41	0.00	
1,619.0	17.90	288.70	1,576.5	60.6	-284.2	287.9	0.11	-0.11	
1,710.0	18.00	293.70	1,663.0	70.7	-310.3	315.9	1.70	0.11	
1,802.0	17.50	292.60	1,750.6	81.7	-336.1	343.9	0.65	-0.54	
1,893.0	17.40	292.20	1,837.5	92.1	-361.3	371.2	0.17	-0.11	
1,985.0	17.10	292.10	1,925.3	102.4	-386.6	398.4	0.33	-0.33	
2,076.0	17.50	292.10	2,012.2	112.6	-411.6	425.5	0.44	0.44	
2,168.0	17.10	290.50	2,100.0	122.5	-437.1	452.8	0.68	-0.43	
2,260.0	16.50	291.30	2,188.1	132.0	-462.0	479.4	0.70	-0.65	
2,351.0	17.30	290.90	2,275.2	141.5	-486.6	505.9	0.89	0.88	
2,443.0	16.90	292.00	2,363.1	151.4	-511.8	532.9	0.56	-0.43	
2,534.0	15.60	292.10	2,450.5	161.0	-535.4	558.3	1.43	-1.43	
2,626.0	18.40	291.10	2,538.5	170.9	-560.4	585.2	3.06	3.04	
2,717.0	17.70	290.40	2,625.0	180.9	-586.8	613.4	0.81	-0.77	
2,809.0	17.10	290.50	2,712.8	190.5	-612.6	640.9	0.65	-0.65	
2,900.0	18.40	290.60	2,799.4	200.2	-638.6	668.7	1.43	1.43	
2,992.0	18.00	291.30	2,886.8	210.5	-665.4	697.4	0.50	-0.43	
3,083.0	17.10	291.00	2,973.6	220.4	-691.0	724.8	0.99	-0.99	
3,175.0	18.40	291.20	3,061.2	230.5	-717.1	752.9	1.41	1.41	
3,266.0	18.00	292.30	3,147.7	241.0	-743.5	781.3	0.58	-0.44	
3,356.0	17.50	292.40	3,233.4	251.5	-768.9	808.7	0.56	-0.56	
3,449.0	16.80	291.70	3,322.2	261.8	-794.3	836.1	0.78	-0.75	
3,541.0	18.20	291.00	3,410.0	271.8	-820.1	863.7	1.54	1.52	
3,632.0	17.80	291.90	3,496.5	282.1	-846.3	891.8	0.54	-0.44	
3,724.0	17.30	291.60	3,584.2	292.4	-872.0	919.6	0.55	-0.54	
3,815.0	17.10	292.10	3,671.2	302.4	-897.0	946.4	0.27	-0.22	
3,906.0	16.50	293.00	3,758.3	312.5	-921.3	972.7	0.72	-0.66	
3,998.0	17.10	288.40	3,846.4	321.9	-946.2	999.3	1.58	0.65	
4,089.0	16.40	288.30	3,933.5	330.1	-971.1	1,025.5	0.77	-0.77	
4,181.0	16.80	289.20	4,021.7	338.6	-995.9	1,051.8	0.52	0.43	
4,272.0	18.90	292.00	4,108.3	348.4	-1,022.0	1,079.7	2.49	2.31	
4,364.0	18.00	291.30	4,195.6	359.2	-1,049.1	1,108.8	1.01	-0.98	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well MCU Fee 17-9D (M16W Pad)
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KBE @ 7903.0ft (Original Well Elev)
<b>Site:</b>	M16W Pad (SWSW S16-T7S-R93W)	<b>MD Reference:</b>	KBE @ 7903.0ft (Original Well Elev)
<b>Well:</b>	MCU Fee 17-9D (M16W Pad)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
4,455.0	17.50	291.50	4,282.2	369.3	-1,074.9	1,136.5	0.55	-0.55	
4,547.0	17.20	292.30	4,370.0	379.5	-1,100.4	1,163.9	0.42	-0.33	
4,638.0	16.50	292.50	4,457.1	389.6	-1,124.8	1,190.2	0.77	-0.77	
4,730.0	18.40	289.20	4,544.9	399.3	-1,150.6	1,217.8	2.33	2.07	
4,821.0	17.80	290.70	4,631.4	409.0	-1,177.1	1,246.1	0.83	-0.66	
4,913.0	17.20	290.50	4,719.1	418.7	-1,203.0	1,273.8	0.66	-0.65	
5,004.0	16.40	290.70	4,806.2	428.0	-1,227.6	1,300.1	0.88	-0.88	
5,096.0	18.90	290.40	4,893.9	437.7	-1,253.8	1,327.9	2.72	2.72	
5,188.0	18.10	291.10	4,981.2	448.1	-1,281.1	1,357.1	0.90	-0.87	
5,279.0	17.80	290.30	5,067.7	458.0	-1,307.3	1,385.2	0.43	-0.33	
5,371.0	17.40	290.40	5,155.4	467.7	-1,333.4	1,413.0	0.44	-0.43	
5,462.0	17.30	291.30	5,242.3	477.3	-1,358.7	1,440.1	0.31	-0.11	
5,554.0	17.00	292.80	5,330.2	487.5	-1,383.9	1,467.2	0.58	-0.33	
5,645.0	16.80	292.70	5,417.3	497.7	-1,408.3	1,493.6	0.22	-0.22	
5,737.0	16.10	293.50	5,505.5	508.0	-1,432.2	1,519.6	0.80	-0.76	
5,828.0	16.20	293.20	5,592.9	518.0	-1,455.5	1,544.9	0.14	0.11	
5,920.0	17.80	291.80	5,680.9	528.3	-1,480.3	1,571.8	1.80	1.74	
6,012.0	18.00	293.60	5,768.4	539.2	-1,506.4	1,600.0	0.64	0.22	
6,103.0	17.70	294.80	5,855.0	550.6	-1,531.9	1,627.8	0.52	-0.33	
6,194.0	17.60	294.90	5,941.8	562.2	-1,556.9	1,655.3	0.11	-0.11	
6,286.0	17.80	296.40	6,029.4	574.3	-1,582.1	1,683.1	0.54	0.22	
6,377.0	16.90	290.80	6,116.3	585.2	-1,606.9	1,710.2	2.08	-0.99	
6,469.0	18.10	291.30	6,204.0	595.1	-1,632.8	1,737.8	1.31	1.30	
6,561.0	17.90	289.00	6,291.5	604.9	-1,659.4	1,766.2	0.80	-0.22	
6,652.0	18.10	291.60	6,378.1	614.7	-1,685.8	1,794.3	0.91	0.22	
6,744.0	16.80	292.20	6,465.8	625.0	-1,711.4	1,821.9	1.43	-1.41	
6,836.0	18.00	290.40	6,553.6	635.0	-1,737.0	1,849.4	1.43	1.30	
6,927.0	17.50	292.20	6,640.3	645.0	-1,762.9	1,877.1	0.82	-0.55	
7,019.0	16.60	288.30	6,728.2	654.4	-1,788.2	1,904.1	1.58	-0.98	
7,111.0	15.70	290.00	6,816.6	662.8	-1,812.3	1,929.7	1.10	-0.98	
7,202.0	14.20	288.90	6,904.5	670.6	-1,834.5	1,953.2	1.68	-1.65	
7,294.0	13.00	289.90	6,993.9	677.8	-1,854.9	1,974.8	1.33	-1.30	
7,386.0	11.90	290.70	7,083.8	684.6	-1,873.5	1,994.6	1.21	-1.20	
7,477.0	10.80	290.90	7,173.0	691.0	-1,890.2	2,012.5	1.21	-1.21	
7,569.0	10.40	290.50	7,263.4	697.0	-1,906.1	2,029.4	0.44	-0.43	
7,660.0	9.50	289.50	7,353.1	702.4	-1,920.8	2,045.2	1.01	-0.99	
7,752.0	8.10	287.40	7,444.0	706.8	-1,934.2	2,059.2	1.56	-1.52	
7,843.0	6.30	288.50	7,534.3	710.3	-1,945.0	2,070.6	1.98	-1.98	
7,903.0	6.10	290.30	7,593.9	712.5	-1,951.1	2,077.1	0.46	-0.33	
7,935.0	5.10	287.50	7,625.7	713.5	-1,954.1	2,080.2	3.24	-3.12	
8,026.0	3.80	287.60	7,716.5	715.6	-1,960.8	2,087.3	1.43	-1.43	
8,118.0	2.00	268.20	7,808.4	716.5	-1,965.3	2,091.8	2.20	-1.96	
8,210.0	0.90	125.00	7,900.3	716.0	-1,966.3	2,092.6	3.01	-1.20	
8,302.0	0.80	143.00	7,992.3	715.1	-1,965.4	2,091.4	0.31	-0.11	
8,393.0	0.50	141.60	8,083.3	714.3	-1,964.7	2,090.5	0.33	-0.33	
8,485.0	0.80	136.60	8,175.3	713.5	-1,964.0	2,089.6	0.33	0.33	
8,576.0	0.90	149.70	8,266.3	712.4	-1,963.2	2,088.5	0.24	0.11	
8,667.0	0.70	40.70	8,357.3	712.2	-1,962.5	2,087.8	1.44	-0.22	
8,759.0	0.80	37.10	8,449.3	713.2	-1,961.8	2,087.4	0.12	0.11	
8,850.0	0.60	26.70	8,540.3	714.1	-1,961.2	2,087.1	0.26	-0.22	
8,942.0	0.30	338.10	8,632.3	714.8	-1,961.0	2,087.2	0.50	-0.33	
9,033.0	0.70	288.80	8,723.3	715.2	-1,961.7	2,087.9	0.61	0.44	
9,125.0	0.80	278.00	8,815.3	715.4	-1,962.8	2,089.1	0.19	0.11	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well MCU Fee 17-9D (M16W Pad)
<b>Project:</b>	Mamm Creek	<b>TVD Reference:</b>	KBE @ 7903.0ft (Original Well Elev)
<b>Site:</b>	M16W Pad (SWSW S16-T7S-R93W)	<b>MD Reference:</b>	KBE @ 7903.0ft (Original Well Elev)
<b>Well:</b>	MCU Fee 17-9D (M16W Pad)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
9,216.0	0.70	190.90	8,906.3	715.0	-1,963.6	2,089.7	1.14	-0.11	
9,308.0	0.50	218.60	8,998.3	714.1	-1,963.9	2,089.7	0.38	-0.22	
9,399.0	1.30	236.30	9,089.2	713.2	-1,965.0	2,090.4	0.92	0.88	
9,491.0	0.90	130.10	9,181.2	712.2	-1,965.3	2,090.4	1.93	-0.43	
9,582.0	0.80	155.80	9,272.2	711.1	-1,964.5	2,089.3	0.43	-0.11	
9,674.0	0.40	173.70	9,364.2	710.2	-1,964.2	2,088.7	0.48	-0.43	
9,766.0	0.40	234.20	9,456.2	709.7	-1,964.5	2,088.7	0.44	0.00	
9,857.0	0.60	354.80	9,547.2	710.0	-1,964.8	2,089.1	0.96	0.22	
9,949.0	1.00	292.10	9,639.2	710.8	-1,965.5	2,090.1	0.98	0.43	
10,040.0	0.40	53.90	9,730.2	711.3	-1,966.0	2,090.7	1.38	-0.66	
10,132.0	0.30	70.30	9,822.2	711.6	-1,965.5	2,090.4	0.15	-0.11	
10,223.0	0.50	36.90	9,913.2	712.0	-1,965.1	2,090.1	0.33	0.22	
10,315.0	0.10	41.00	10,005.2	712.3	-1,964.8	2,089.9	0.44	-0.43	
10,406.0	0.20	321.50	10,096.2	712.5	-1,964.8	2,090.0	0.23	0.11	
10,498.0	0.10	238.50	10,188.2	712.6	-1,965.0	2,090.2	0.23	-0.11	
10,589.0	0.40	268.10	10,279.2	712.6	-1,965.4	2,090.6	0.35	0.33	
10,681.0	0.40	274.40	10,371.2	712.6	-1,966.0	2,091.2	0.05	0.00	
10,773.0	0.60	262.30	10,463.2	712.5	-1,966.8	2,091.9	0.24	0.22	
10,864.0	0.80	267.30	10,554.2	712.4	-1,967.9	2,092.9	0.23	0.22	
10,955.0	0.50	267.70	10,645.2	712.4	-1,969.0	2,093.9	0.33	-0.33	
11,047.0	0.30	344.90	10,737.2	712.6	-1,969.4	2,094.4	0.57	-0.22	
11,139.0	0.40	11.70	10,829.2	713.2	-1,969.4	2,094.6	0.21	0.11	
11,230.0	0.30	10.80	10,920.2	713.7	-1,969.3	2,094.6	0.11	-0.11	
11,322.0	1.10	232.40	11,012.2	713.4	-1,970.0	2,095.2	1.46	0.87	
11,414.0	1.10	276.80	11,104.2	713.0	-1,971.5	2,096.5	0.90	0.00	Last Cathedral Survey @ 11,414' MD
11,464.0	1.10	276.80	11,154.1	713.1	-1,972.5	2,097.4	0.00	0.00	Projection to Bit @ 11,464'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
MCU Fee 17-9D (M16W)	0.00	0.00	11,069.0	708.2	-1,975.2	1,594,060.22	2,353,305.41	39.442075	-107.790119
- hit/miss target									
- Shape									
- actual wellpath misses target center by 6.5ft at 11378.9ft MD (11069.1 TVD, 713.0 N, -1970.9 E)									
- Circle (radius 25.0)									
MCU Fee 17-9D (M16W)	0.00	0.00	7,868.0	708.2	-1,975.2	1,594,060.22	2,353,305.41	39.442075	-107.790119
- actual wellpath misses target center by 11.9ft at 8177.8ft MD (7868.1 TVD, 716.3 N, -1966.5 E)									
- Circle (radius 25.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
11,414.0	11,104.2	713.0	-1,971.5	Last Cathedral Survey @ 11,414' MD	
11,464.0	11,154.1	713.1	-1,972.5	Projection to Bit @ 11,464'	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_