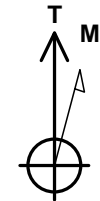
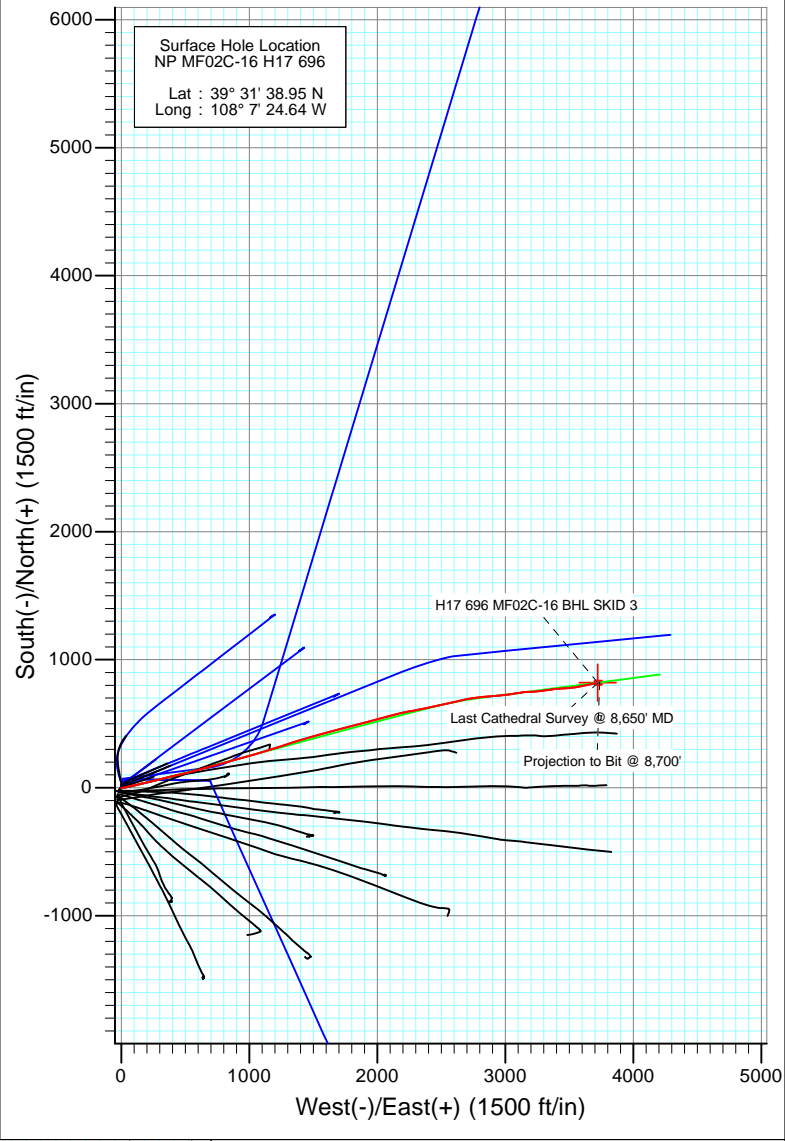
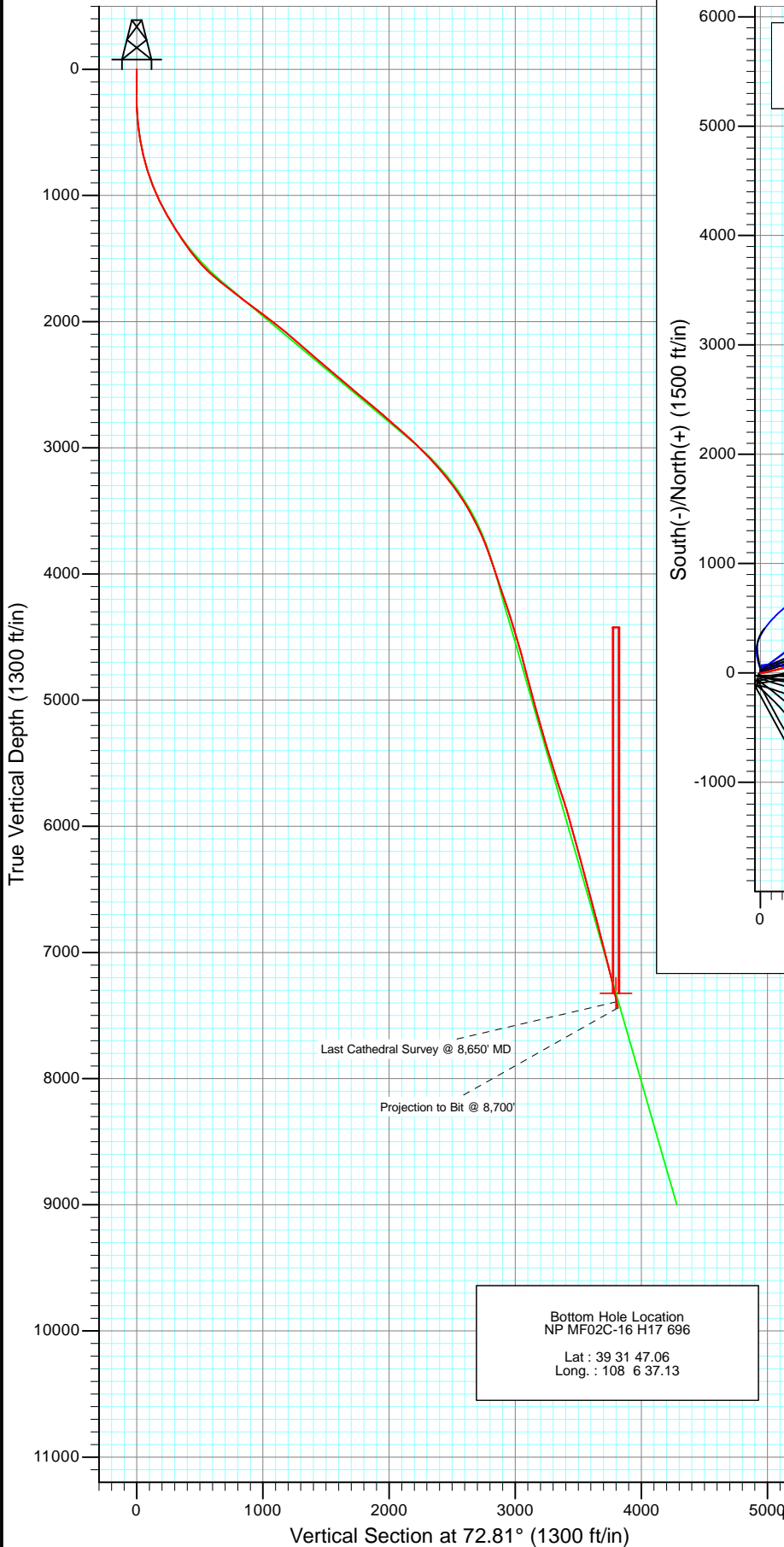




Project: North Piceance  
 Site: H17 696 (S17-T6S-R96W)  
 Well: NP MF02C-16 H17 696  
 Wellbore: DD  
 Design: FINAL



Azimuths to True North  
 Magnetic North: 10.44°

Magnetic Field  
 Strength: 52270.2snT  
 Dip Angle: 65.75°  
 Date: 4/14/2011  
 Model: IGRF2010

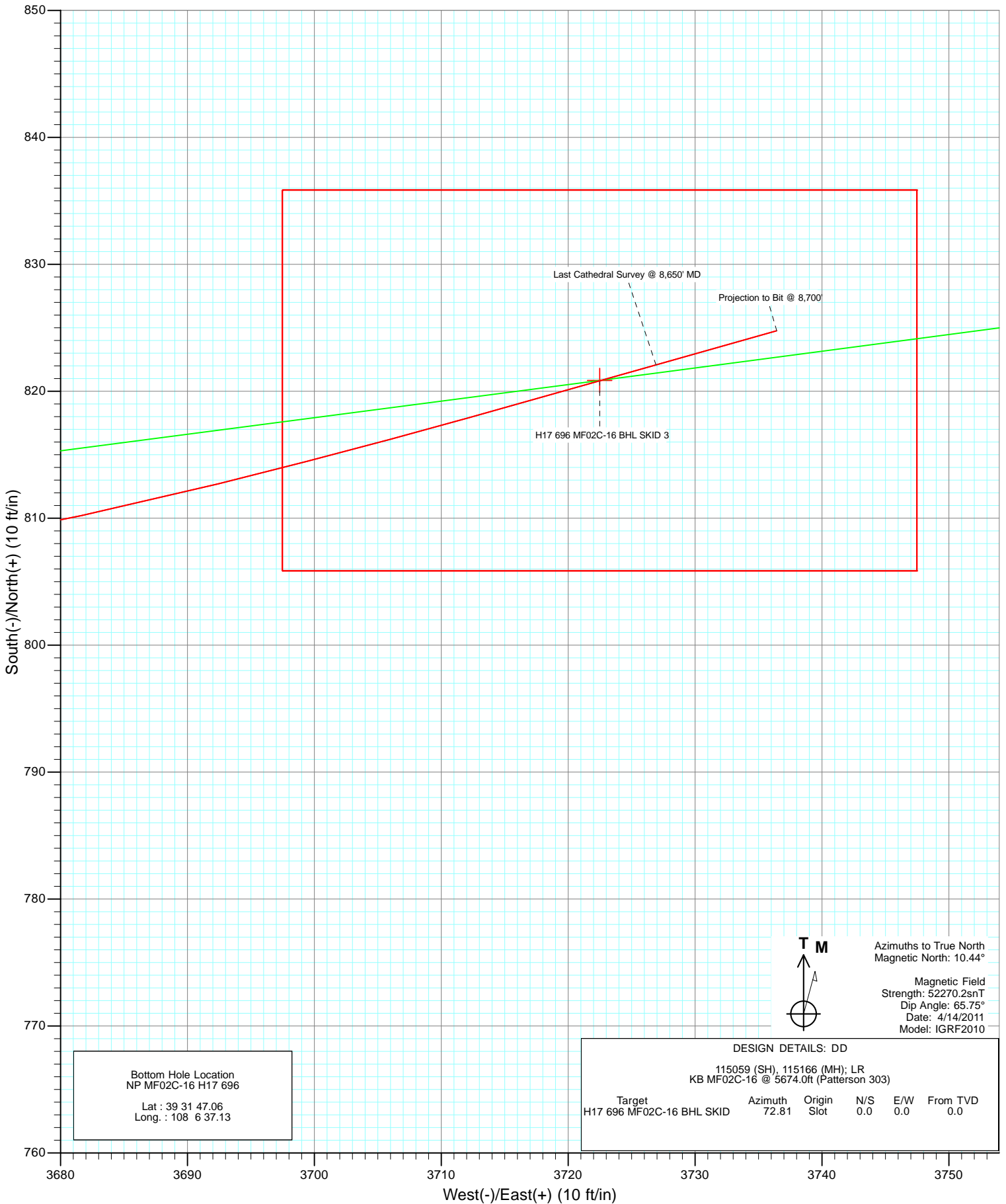
DESIGN DETAILS: DD

115059 (SH), 115166 (MH); LR  
 KB MF02C-16 @ 5674.0ft (Patterson 303)

Target	Azimuth	Origin	N/S	E/W	From TVD
H17 696 MF02C-16 BHL SKID	72.81	Slot	0.0	0.0	0.0



Project: North Piceance  
 Site: H17 696 (S17-T6S-R96W)  
 Well: NP MF02C-16 H17 696  
 Wellbore: DD  
 Design: FINAL



## Survey Report

<b>Company:</b> EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b> Well NP MF02C-16 H17 696
<b>Project:</b> North Piceance	<b>TVD Reference:</b> KB MF02C-16 @ 5674.0ft (Patterson 303)
<b>Site:</b> H17 696 (S17-T6S-R96W)	<b>MD Reference:</b> KB MF02C-16 @ 5674.0ft (Patterson 303)
<b>Well:</b> NP MF02C-16 H17 696	<b>North Reference:</b> True
<b>Wellbore:</b> DD	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> DD	<b>Database:</b> EDM 5000.1 US Multi Users DB

<b>Project</b> North Piceance		
<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> H17 696 (S17-T6S-R96W)					
<b>Site Position:</b>	<b>Northing:</b> 1,627,645.46 ft	<b>Latitude:</b> 39° 31' 38.37 N			
<b>From:</b> Lat/Long	<b>Easting:</b> 2,260,053.39 ft	<b>Longitude:</b> 108° 7' 24.99 W			
<b>Position Uncertainty:</b> 0.0 ft	<b>Slot Radius:</b> 13.200 in	<b>Grid Convergence:</b> -1.65 °			

<b>Well</b> NP MF02C-16 H17 696					
<b>Well Position</b>	<b>+N/-S</b> 0.0 ft	<b>Northing:</b> 1,627,703.31 ft	<b>Latitude:</b> 39° 31' 38.95 N		
	<b>+E/-W</b> 0.0 ft	<b>Easting:</b> 2,260,082.50 ft	<b>Longitude:</b> 108° 7' 24.64 W		
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b> ft	<b>Ground Level:</b> 5,652.0 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	4/14/2011	10.44	65.75	52,270

<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	72.81	

<b>Survey Program</b> Date 4/25/2011					
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
201.0	8,700.0	Survey #1 (DD)	MWD	Geolink MWD	

<b>Survey</b>									
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	
201.0	1.40	186.20	201.0	-2.4	-0.3	-1.0	0.70	0.70	
231.0	1.50	164.40	231.0	-3.2	-0.2	-1.1	1.86	0.33	
262.0	1.80	130.70	262.0	-3.9	0.3	-0.9	3.22	0.97	
292.0	2.10	105.90	291.9	-4.3	1.2	-0.2	2.96	1.00	
323.0	2.90	88.20	322.9	-4.5	2.5	1.1	3.56	2.58	
353.0	3.90	80.30	352.9	-4.3	4.3	2.8	3.67	3.33	
383.0	4.70	80.00	382.8	-3.9	6.5	5.0	2.67	2.67	
414.0	5.50	69.80	413.7	-3.2	9.1	7.8	3.89	2.58	
445.0	6.40	67.80	444.5	-2.0	12.1	11.0	2.98	2.90	
476.0	7.30	68.30	475.3	-0.6	15.5	14.7	2.91	2.90	
506.0	7.90	72.80	505.0	0.7	19.3	18.6	2.82	2.00	
552.0	9.10	70.20	550.5	2.9	25.7	25.4	2.74	2.61	

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP MF02C-16 H17 696
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	KB MF02C-16 @ 5674.0ft (Patterson 303)
<b>Site:</b>	H17 696 (S17-T6S-R96W)	<b>MD Reference:</b>	KB MF02C-16 @ 5674.0ft (Patterson 303)
<b>Well:</b>	NP MF02C-16 H17 696	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	EDM 5000.1 US 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
601.0	10.70	79.00	598.8	5.0	33.8	33.8	4.49	3.27	
647.0	11.90	78.50	643.9	6.8	42.7	42.8	2.62	2.61	
693.0	13.40	78.80	688.8	8.8	52.6	52.8	3.26	3.26	
738.0	15.60	79.40	732.3	10.9	63.6	64.0	4.90	4.89	
784.0	16.70	77.50	776.5	13.5	76.2	76.7	2.65	2.39	
830.0	18.30	77.90	820.4	16.4	89.7	90.5	3.49	3.48	
876.0	19.40	78.00	863.9	19.5	104.2	105.3	2.39	2.39	
922.0	21.00	76.40	907.1	23.1	119.7	121.2	3.68	3.48	
968.0	22.90	77.20	949.7	27.0	136.4	138.3	4.18	4.13	
1,013.0	24.00	76.20	991.0	31.1	153.9	156.2	2.60	2.44	
1,059.0	25.50	76.20	1,032.8	35.7	172.6	175.4	3.26	3.26	
1,105.0	27.20	77.30	1,074.0	40.4	192.4	195.8	3.84	3.70	
1,151.0	28.30	77.50	1,114.7	45.0	213.3	217.1	2.40	2.39	
1,197.0	29.60	77.50	1,155.0	49.9	235.1	239.3	2.83	2.83	
1,242.0	30.80	76.60	1,193.9	54.9	257.1	261.9	2.85	2.67	
1,290.0	32.00	76.20	1,234.8	60.8	281.4	286.8	2.54	2.50	
1,343.0	31.60	74.00	1,279.9	68.0	308.4	314.7	2.31	-0.75	
1,434.0	34.10	77.40	1,356.3	80.1	356.2	364.0	3.41	2.75	
1,526.0	36.90	76.40	1,431.2	92.3	408.3	417.3	3.11	3.04	
1,618.0	40.30	76.90	1,503.1	105.5	464.1	474.6	3.71	3.70	
1,709.0	44.00	77.00	1,570.6	119.3	523.6	535.4	4.07	4.07	
1,801.0	49.00	75.00	1,633.9	135.5	588.3	602.1	5.66	5.43	
1,892.0	51.70	74.60	1,691.9	153.8	655.9	672.1	2.99	2.97	
1,984.0	52.00	74.70	1,748.8	173.0	725.7	744.4	0.34	0.33	
2,075.0	52.30	74.00	1,804.6	192.4	794.9	816.2	0.69	0.33	
2,167.0	52.80	74.30	1,860.6	212.3	865.1	889.2	0.60	0.54	
2,258.0	53.70	75.00	1,915.0	231.6	935.4	962.1	1.17	0.99	
2,349.0	52.70	74.30	1,969.5	250.9	1,005.7	1,034.9	1.26	-1.10	
2,440.0	52.50	73.90	2,024.8	270.7	1,075.2	1,107.2	0.41	-0.22	
2,532.0	49.40	73.50	2,082.7	290.8	1,143.8	1,178.6	3.39	-3.37	
2,623.0	49.60	72.80	2,141.8	310.8	1,210.0	1,247.8	0.62	0.22	
2,715.0	49.20	72.00	2,201.7	331.9	1,276.6	1,317.7	0.79	-0.43	
2,806.0	49.40	70.70	2,261.0	354.0	1,342.0	1,386.6	1.11	0.22	
2,898.0	48.50	72.40	2,321.5	376.0	1,407.8	1,456.0	1.70	-0.98	
2,989.0	50.20	74.30	2,380.7	395.7	1,473.9	1,525.0	2.45	1.87	
3,081.0	49.70	74.40	2,439.9	414.7	1,541.7	1,595.4	0.55	-0.54	
3,173.0	49.90	76.70	2,499.3	432.2	1,609.8	1,665.6	1.92	0.22	
3,264.0	50.30	75.50	2,557.7	449.0	1,677.5	1,735.3	1.10	0.44	
3,356.0	50.20	75.40	2,616.5	466.8	1,746.0	1,806.0	0.14	-0.11	
3,447.0	49.40	74.50	2,675.3	484.8	1,813.1	1,875.4	1.16	-0.88	
3,539.0	49.20	74.10	2,735.3	503.7	1,880.3	1,945.1	0.39	-0.22	
3,630.0	49.50	76.30	2,794.5	521.3	1,947.0	2,014.1	1.86	0.33	
3,722.0	48.80	75.20	2,854.7	538.5	2,014.5	2,083.6	1.18	-0.76	
3,813.0	48.20	74.70	2,915.0	556.2	2,080.3	2,151.7	0.78	-0.66	
3,905.0	46.10	76.30	2,977.6	573.1	2,145.6	2,219.1	2.61	-2.28	
3,996.0	43.70	77.20	3,042.0	587.8	2,208.1	2,283.2	2.73	-2.64	
4,088.0	41.90	79.10	3,109.5	600.6	2,269.2	2,345.4	2.41	-1.96	
4,179.0	41.60	78.20	3,177.4	612.6	2,328.7	2,405.7	0.74	-0.33	
4,271.0	39.30	79.10	3,247.4	624.3	2,387.2	2,465.0	2.58	-2.50	
4,362.0	36.40	78.50	3,319.3	635.2	2,441.9	2,520.6	3.21	-3.19	
4,454.0	33.10	78.50	3,394.9	645.6	2,493.3	2,572.7	3.59	-3.59	
4,545.0	30.40	77.50	3,472.2	655.6	2,540.2	2,620.4	3.02	-2.97	
4,637.0	27.90	75.70	3,552.6	665.9	2,583.7	2,665.1	2.88	-2.72	

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP MF02C-16 H17 696
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	KB MF02C-16 @ 5674.0ft (Patterson 303)
<b>Site:</b>	H17 696 (S17-T6S-R96W)	<b>MD Reference:</b>	KB MF02C-16 @ 5674.0ft (Patterson 303)
<b>Well:</b>	NP MF02C-16 H17 696	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	EDM 5000.1 US 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
4,729.0	25.40	76.50	3,634.8	675.8	2,623.8	2,706.3	2.75	-2.72	
4,820.0	23.60	76.90	3,717.6	684.5	2,660.5	2,744.0	1.99	-1.98	
4,912.0	20.30	78.70	3,802.9	691.8	2,694.1	2,778.2	3.66	-3.59	
5,003.0	19.10	82.30	3,888.6	696.9	2,724.4	2,808.6	1.87	-1.32	
5,095.0	18.40	81.20	3,975.7	701.2	2,753.6	2,837.8	0.85	-0.76	
5,186.0	19.20	82.60	4,061.9	705.3	2,782.7	2,866.8	1.01	0.88	
5,278.0	19.40	81.80	4,148.7	709.4	2,812.8	2,896.8	0.36	0.22	
5,370.0	19.20	87.50	4,235.5	712.2	2,843.0	2,926.5	2.06	-0.22	
5,461.0	18.20	87.60	4,321.7	713.5	2,872.2	2,954.7	1.10	-1.10	
5,553.0	17.60	87.20	4,409.3	714.8	2,900.4	2,982.1	0.67	-0.65	
5,644.0	16.70	86.40	4,496.2	716.3	2,927.2	3,008.1	1.02	-0.99	
5,736.0	17.00	82.40	4,584.3	718.9	2,953.7	3,034.2	1.30	0.33	
5,827.0	15.30	82.00	4,671.7	722.3	2,978.8	3,059.2	1.87	-1.87	
5,919.0	14.30	80.10	4,760.6	725.9	3,002.0	3,082.5	1.21	-1.09	
6,010.0	13.60	82.30	4,849.0	729.3	3,023.7	3,104.2	0.96	-0.77	
6,102.0	14.80	84.40	4,938.1	731.9	3,046.1	3,126.3	1.42	1.30	
6,193.0	15.70	81.70	5,025.9	734.8	3,069.9	3,149.9	1.26	0.99	
6,286.0	17.50	80.70	5,115.1	738.9	3,096.1	3,176.2	1.96	1.94	
6,377.0	16.30	79.40	5,202.1	743.5	3,122.2	3,202.4	1.38	-1.32	
6,469.0	16.40	85.70	5,290.4	746.8	3,147.8	3,227.9	1.93	0.11	
6,560.0	16.90	87.20	5,377.6	748.4	3,173.8	3,253.2	0.72	0.55	
6,652.0	15.90	87.60	5,465.9	749.6	3,199.8	3,278.4	1.09	-1.09	
6,743.0	18.00	86.90	5,552.9	750.9	3,226.3	3,304.1	2.32	2.31	
6,835.0	19.20	83.80	5,640.1	753.3	3,255.5	3,332.7	1.69	1.30	
6,927.0	18.20	83.60	5,727.2	756.5	3,284.8	3,361.7	1.09	-1.09	
7,018.0	18.10	82.10	5,813.7	760.0	3,313.0	3,389.6	0.53	-0.11	
7,110.0	15.90	80.60	5,901.7	764.1	3,339.5	3,416.2	2.44	-2.39	
7,201.0	16.50	82.30	5,989.1	767.8	3,364.6	3,441.3	0.84	0.66	
7,293.0	15.90	83.90	6,077.4	770.9	3,390.1	3,466.5	0.81	-0.65	
7,384.0	14.30	86.20	6,165.3	773.0	3,413.7	3,489.7	1.88	-1.76	
7,476.0	15.70	86.30	6,254.1	774.6	3,437.5	3,512.8	1.52	1.52	
7,567.0	16.30	86.80	6,341.6	776.1	3,462.5	3,537.2	0.68	0.66	
7,659.0	14.90	85.00	6,430.2	777.8	3,487.2	3,561.3	1.61	-1.52	
7,750.0	15.70	82.10	6,518.0	780.5	3,511.1	3,584.9	1.22	0.88	
7,842.0	15.10	85.50	6,606.7	783.2	3,535.3	3,608.9	1.18	-0.65	
7,933.0	14.90	82.80	6,694.6	785.6	3,558.8	3,631.9	0.80	-0.22	
8,025.0	15.30	76.50	6,783.4	789.9	3,582.3	3,655.7	1.84	0.43	
8,116.0	13.50	74.80	6,871.6	795.5	3,604.2	3,678.3	2.03	-1.98	
8,208.0	13.80	80.30	6,961.0	800.1	3,625.4	3,699.9	1.45	0.33	
8,299.0	14.80	80.20	7,049.1	803.9	3,647.6	3,722.2	1.10	1.10	
8,391.0	14.60	79.70	7,138.1	808.0	3,670.5	3,745.4	0.26	-0.22	
8,482.0	13.90	76.00	7,226.3	812.7	3,692.4	3,767.7	1.26	-0.77	
8,574.0	11.80	74.30	7,316.0	817.9	3,712.2	3,788.1	2.32	-2.28	
8,650.0	11.40	74.20	7,390.5	822.1	3,726.9	3,803.4	0.53	-0.53	Last Cathedral Survey @ 8,650' MD
8,700.0	11.40	74.20	7,439.5	824.8	3,736.4	3,813.3	0.00	0.00	Projection to Bit @ 8,700'

## Survey Report

<b>Company:</b> EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b> Well NP MF02C-16 H17 696
<b>Project:</b> North Piceance	<b>TVD Reference:</b> KB MF02C-16 @ 5674.0ft (Patterson 303)
<b>Site:</b> H17 696 (S17-T6S-R96W)	<b>MD Reference:</b> KB MF02C-16 @ 5674.0ft (Patterson 303)
<b>Well:</b> NP MF02C-16 H17 696	<b>North Reference:</b> True
<b>Wellbore:</b> DD	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Design:</b> DD	<b>Database:</b> EDM 5000.1 US 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									
H17 696 MF02C-16 BHL - survey misses target center by 8.7ft at 8583.9ft MD (7325.8 TVD, 818.5 N, 3714.2 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	7,324.0	820.8	3,722.4	1,628,416.25	2,263,827.05	39° 31' 47.06 N	108° 6' 37.13 W
H17 696 MF02C-16 BHL - survey misses target center by 231.5ft at 5855.3ft MD (4699.0 TVD, 723.4 N, 2986.1 E) - Point	0.00	0.00	4,737.0	876.3	2,816.5	1,628,497.92	2,262,923.13	39° 31' 47.61 N	108° 6' 48.69 W
H17 696 MF02C-16 BHL - survey misses target center by 8.8ft at 8584.0ft MD (7325.8 TVD, 818.5 N, 3714.2 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	7,324.0	820.9	3,722.5	1,628,416.33	2,263,827.13	39° 31' 47.06 N	108° 6' 37.13 W
H17 696 MF02C-16 TG1 - survey misses target center by 231.5ft at 5855.3ft MD (4699.0 TVD, 723.4 N, 2986.1 E) - Point	0.00	0.00	4,737.0	876.3	2,816.5	1,628,497.92	2,262,923.13	39° 31' 47.61 N	108° 6' 48.69 W

Survey Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
8,650.0	7,390.5	822.1	3,726.9	Last Cathedral Survey @ 8,650' MD
8,700.0	7,439.5	824.8	3,736.4	Projection to Bit @ 8,700'

Checked By: _____	Approved By: _____	Date: _____
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