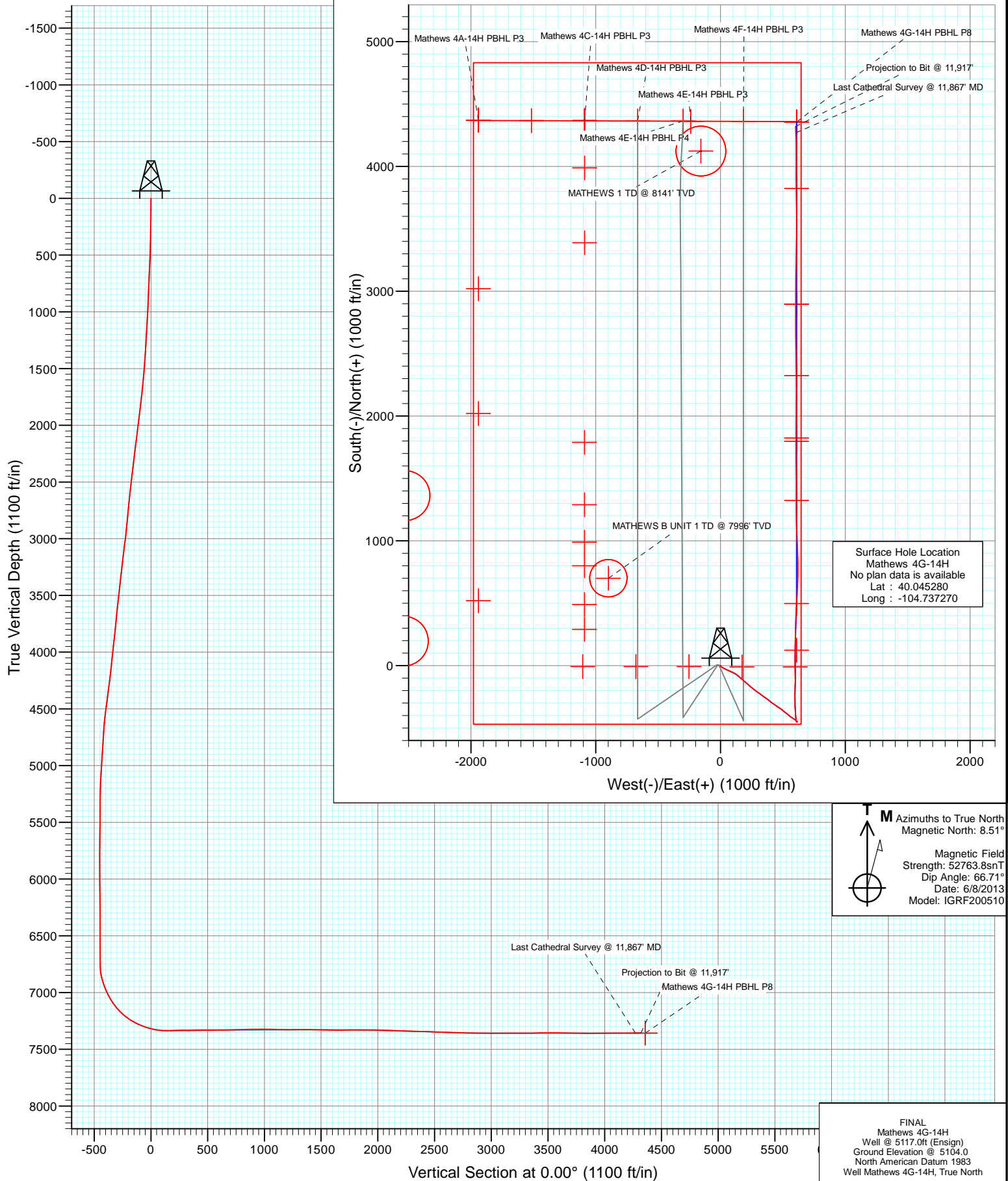


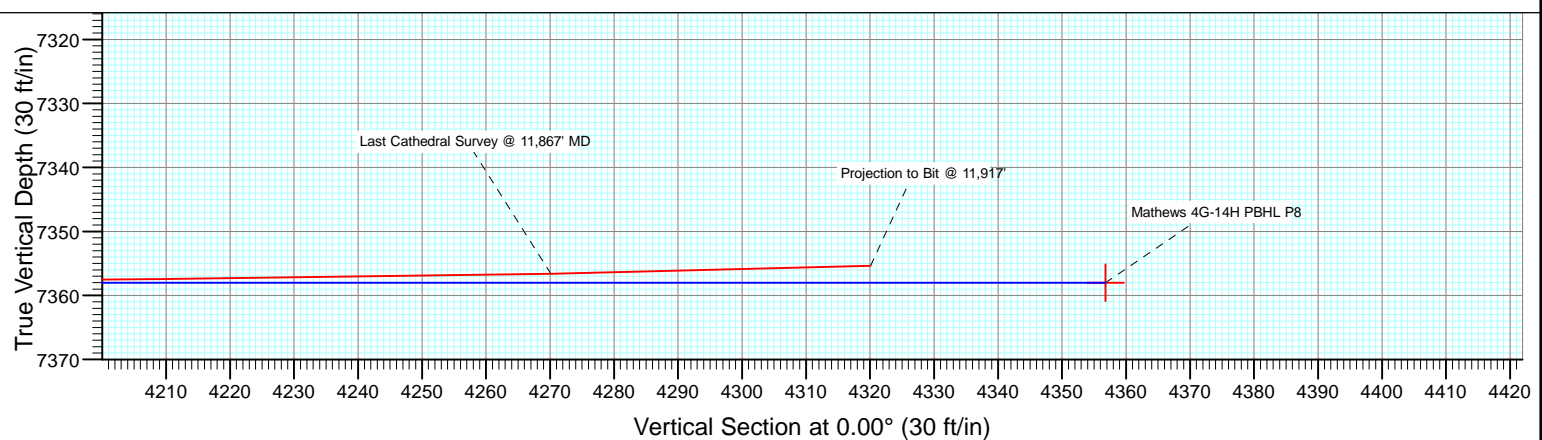
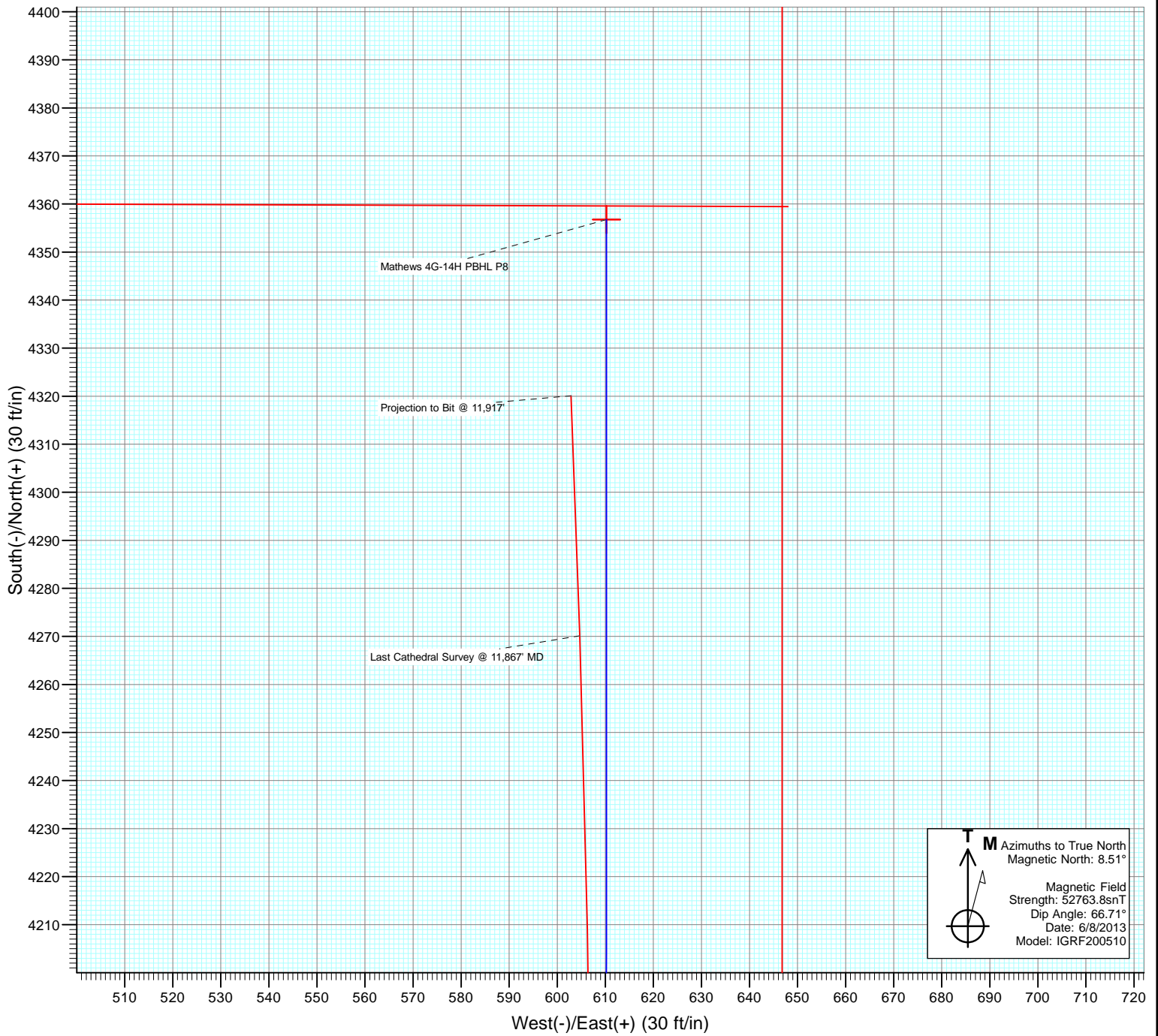


Project: DJ Wattenberg
Site: S14 T1N-R66W (Mathews)
Well: Mathews 4G-14H
Wellbore: HZ
Design: FINAL





Project: DJ Wattenberg
Site: S14 T1N-R66W (Mathews)
Well: Mathews 4G-14H
Wellbore: HZ
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mathews 4G-14H
Project:	DJ Wattenberg	TVD Reference:	Well @ 5117.0ft (Ensign)
Site:	S14 T1N-R66W (Mathews)	MD Reference:	Well @ 5117.0ft (Ensign)
Well:	Mathews 4G-14H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Project	DJ Wattenberg		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		S14 T1N-R66W (Mathews)			
Site Position:		Northing:	1,260,084.79 ft	Latitude:	40.044810
From:	Lat/Long	Easting:	3,212,836.64 ft	Longitude:	-104.739800
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.49 °

Well	Mathews 4G-14H					
Well Position	+N/-S	0.0 ft	Northing:	1,260,262.07 ft	Latitude:	40.045280
	+E/-W	0.0 ft	Easting:	3,213,543.47 ft	Longitude:	-104.737270
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,104.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/8/2013	8.51	66.71	52,764

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	0.00	

Survey Program	Date	6/18/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
172.0	11,917.0	Survey #1 (HZ)	Geolink 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		
172.0	0.30	199.00	172.0	-0.4	-0.1	-0.4	0.17	0.17		
264.0	1.20	153.90	264.0	-1.5	0.2	-1.5	1.10	0.98		
355.0	2.00	137.80	355.0	-3.6	1.7	-3.6	1.00	0.88		
447.0	2.60	127.80	446.9	-6.0	4.4	-6.0	0.78	0.65		
539.0	3.50	129.50	538.7	-9.1	8.2	-9.1	0.98	0.98		
631.0	4.30	128.40	630.5	-13.0	13.1	-13.0	0.87	0.87		
723.0	4.60	121.70	722.3	-17.1	18.9	-17.1	0.65	0.33		
815.0	4.70	112.70	814.0	-20.5	25.6	-20.5	0.80	0.11		
907.0	5.90	117.30	905.6	-24.1	33.2	-24.1	1.38	1.30		
999.0	7.20	118.50	997.0	-29.0	42.5	-29.0	1.42	1.41		
1,091.0	7.90	113.60	1,088.2	-34.3	53.4	-34.3	1.03	0.76		
1,183.0	8.10	114.20	1,179.3	-39.5	65.1	-39.5	0.24	0.22		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mathews 4G-14H
Project:	DJ Wattenberg	TVD Reference:	Well @ 5117.0ft (Ensign)
Site:	S14 T1N-R66W (Mathews)	MD Reference:	Well @ 5117.0ft (Ensign)
Well:	Mathews 4G-14H	North Reference:	True
Wellbore:	HZ	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
1,271.0	7.80	113.60	1,266.4	-44.4	76.2	-44.4	0.35	-0.34	
1,382.0	8.00	114.00	1,376.4	-50.6	90.2	-50.6	0.19	0.18	
1,474.0	8.90	118.60	1,467.4	-56.6	102.3	-56.6	1.22	0.98	
1,565.0	9.50	118.50	1,557.2	-63.6	115.0	-63.6	0.66	0.66	
1,657.0	9.80	125.30	1,647.9	-71.7	128.1	-71.7	1.28	0.33	
1,749.0	9.80	131.40	1,738.6	-81.4	140.4	-81.4	1.13	0.00	
1,841.0	10.90	131.00	1,829.1	-92.3	152.8	-92.3	1.20	1.20	
1,933.0	11.40	130.60	1,919.3	-103.9	166.3	-103.9	0.55	0.54	
2,028.0	10.70	129.60	2,012.6	-115.6	180.2	-115.6	0.76	-0.74	
2,122.0	10.50	129.70	2,105.0	-126.7	193.5	-126.7	0.21	-0.21	
2,217.0	11.10	132.90	2,198.3	-138.4	206.9	-138.4	0.89	0.63	
2,311.0	10.20	129.90	2,290.7	-149.9	219.9	-149.9	1.12	-0.96	
2,406.0	9.60	132.60	2,384.2	-160.7	232.2	-160.7	0.80	-0.63	
2,501.0	10.10	132.40	2,477.8	-171.7	244.1	-171.7	0.53	0.53	
2,595.0	10.60	129.10	2,570.3	-182.7	256.9	-182.7	0.82	0.53	
2,690.0	9.10	122.80	2,663.9	-192.3	270.0	-192.3	1.94	-1.58	
2,785.0	10.00	124.20	2,757.6	-201.0	283.2	-201.0	0.98	0.95	
2,879.0	9.50	125.30	2,850.2	-210.0	296.3	-210.0	0.57	-0.53	
2,974.0	9.60	125.50	2,943.9	-219.2	309.1	-219.2	0.11	0.11	
3,069.0	12.30	131.60	3,037.2	-230.5	323.1	-230.5	3.09	2.84	
3,164.0	11.60	124.80	3,130.1	-242.7	338.5	-242.7	1.65	-0.74	
3,258.0	11.80	122.80	3,222.2	-253.3	354.4	-253.3	0.48	0.21	
3,353.0	10.30	128.20	3,315.4	-263.8	369.2	-263.8	1.92	-1.58	
3,448.0	9.90	125.00	3,408.9	-273.7	382.6	-273.7	0.73	-0.42	
3,543.0	9.80	130.70	3,502.5	-283.7	395.4	-283.7	1.03	-0.11	
3,637.0	10.80	131.10	3,595.0	-294.7	408.1	-294.7	1.07	1.06	
3,732.0	10.10	122.30	3,688.5	-305.0	421.8	-305.0	1.83	-0.74	
3,827.0	10.00	121.40	3,782.0	-313.7	435.9	-313.7	0.20	-0.11	
3,922.0	11.00	126.10	3,875.4	-323.4	450.3	-323.4	1.39	1.05	
4,016.0	10.50	125.80	3,967.8	-333.7	464.5	-333.7	0.54	-0.53	
4,111.0	10.20	121.40	4,061.2	-343.1	478.7	-343.1	0.89	-0.32	
4,206.0	9.80	129.10	4,154.8	-352.6	492.1	-352.6	1.47	-0.42	
4,301.0	12.10	130.90	4,248.0	-364.2	505.9	-364.2	2.45	2.42	
4,396.0	10.70	127.40	4,341.2	-376.1	520.5	-376.1	1.64	-1.47	
4,490.0	12.10	128.80	4,433.3	-387.6	535.1	-387.6	1.52	1.49	
4,585.0	11.80	130.50	4,526.3	-400.1	550.2	-400.1	0.49	-0.32	
4,680.0	9.00	125.30	4,619.7	-410.7	563.7	-410.7	3.11	-2.95	
4,775.0	6.30	120.30	4,713.8	-417.6	574.3	-417.6	2.92	-2.84	
4,870.0	7.10	125.40	4,808.2	-423.7	583.5	-423.7	1.05	0.84	
4,964.0	6.20	122.90	4,901.6	-429.8	592.5	-429.8	1.01	-0.96	
5,059.0	5.20	127.90	4,996.1	-435.2	600.2	-435.2	1.17	-1.05	
5,154.0	5.30	133.70	5,090.7	-440.9	606.8	-440.9	0.57	0.11	
5,249.0	2.90	131.60	5,185.4	-445.5	611.8	-445.5	2.53	-2.53	
5,343.0	2.20	121.60	5,279.3	-448.0	615.1	-448.0	0.88	-0.74	
5,438.0	0.50	75.30	5,374.3	-448.9	617.0	-448.9	1.99	-1.79	
5,532.0	0.30	244.50	5,468.3	-448.9	617.2	-448.9	0.85	-0.21	
5,627.0	1.90	240.50	5,563.3	-449.8	615.6	-449.8	1.69	1.68	
5,721.0	0.90	234.90	5,657.3	-451.0	613.7	-451.0	1.07	-1.06	
5,816.0	0.40	183.80	5,752.3	-451.7	613.0	-451.7	0.76	-0.53	
5,911.0	0.90	251.10	5,847.2	-452.3	612.3	-452.3	0.88	0.53	
6,005.0	0.50	330.50	5,941.2	-452.2	611.4	-452.2	1.01	-0.43	
6,100.0	0.50	342.10	6,036.2	-451.4	611.1	-451.4	0.11	0.00	
6,194.0	1.30	349.30	6,130.2	-450.0	610.8	-450.0	0.86	0.85	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mathews 4G-14H
Project:	DJ Wattenberg	TVD Reference:	Well @ 5117.0ft (Ensign)
Site:	S14 T1N-R66W (Mathews)	MD Reference:	Well @ 5117.0ft (Ensign)
Well:	Mathews 4G-14H	North Reference:	True
Wellbore:	HZ	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
6,289.0	0.90	60.50	6,225.2	-448.6	611.2	-448.6	1.39	-0.42	
6,384.0	0.70	117.00	6,320.2	-448.5	612.4	-448.5	0.82	-0.21	
6,479.0	0.70	290.10	6,415.2	-448.5	612.3	-448.5	1.47	0.00	
6,573.0	0.60	286.30	6,509.2	-448.2	611.3	-448.2	0.12	-0.11	
6,668.0	0.60	271.10	6,604.2	-448.0	610.4	-448.0	0.17	0.00	
6,763.0	0.60	286.10	6,699.2	-447.9	609.4	-447.9	0.16	0.00	
6,794.0	0.80	305.60	6,730.2	-447.7	609.0	-447.7	0.99	0.65	
6,826.0	1.00	306.80	6,762.2	-447.4	608.6	-447.4	0.63	0.62	
6,858.0	3.10	338.00	6,794.2	-446.5	608.1	-446.5	7.20	6.56	
6,889.0	7.60	349.30	6,825.0	-443.7	607.4	-443.7	14.84	14.52	
6,921.0	12.90	353.80	6,856.5	-438.0	606.6	-438.0	16.74	16.56	
6,952.0	16.30	353.50	6,886.5	-430.3	605.8	-430.3	10.97	10.97	
6,984.0	19.40	353.60	6,916.9	-420.5	604.7	-420.5	9.69	9.69	
7,016.0	21.40	353.70	6,946.9	-409.4	603.4	-409.4	6.25	6.25	
7,047.0	23.30	354.30	6,975.6	-397.7	602.2	-397.7	6.17	6.13	
7,079.0	25.80	356.60	7,004.7	-384.5	601.1	-384.5	8.36	7.81	
7,110.0	28.30	357.90	7,032.3	-370.4	600.5	-370.4	8.29	8.06	
7,142.0	31.20	358.10	7,060.1	-354.5	599.9	-354.5	9.07	9.06	
7,173.0	32.80	358.00	7,086.4	-338.1	599.4	-338.1	5.16	5.16	
7,205.0	35.80	358.40	7,112.8	-320.1	598.8	-320.1	9.40	9.37	
7,237.0	39.20	358.00	7,138.2	-300.6	598.2	-300.6	10.65	10.62	
7,268.0	43.90	357.50	7,161.4	-280.1	597.4	-280.1	15.20	15.16	
7,300.0	47.50	359.30	7,183.7	-257.2	596.7	-257.2	11.95	11.25	
7,331.0	51.00	1.00	7,204.0	-233.7	596.8	-233.7	12.03	11.29	
7,363.0	53.90	1.90	7,223.5	-208.3	597.5	-208.3	9.33	9.06	
7,395.0	57.80	2.10	7,241.4	-181.9	598.4	-181.9	12.20	12.19	
7,426.0	60.80	1.90	7,257.3	-155.2	599.3	-155.2	9.69	9.68	
7,458.0	63.80	1.00	7,272.1	-126.9	600.0	-126.9	9.70	9.37	
7,489.0	66.30	359.90	7,285.2	-98.8	600.3	-98.8	8.68	8.06	
7,521.0	69.20	359.50	7,297.3	-69.2	600.1	-69.2	9.14	9.06	
7,552.0	72.20	359.60	7,307.6	-39.9	599.9	-39.9	9.68	9.68	
7,584.0	74.70	0.00	7,316.7	-9.3	599.8	-9.3	7.90	7.81	
7,616.0	78.20	0.20	7,324.2	21.8	599.8	21.8	10.95	10.94	
7,647.0	80.70	0.00	7,329.9	52.3	599.9	52.3	8.09	8.06	
7,675.0	84.50	359.50	7,333.5	80.1	599.7	80.1	13.69	13.57	
7,733.0	90.20	0.10	7,336.1	138.0	599.5	138.0	9.88	9.83	
7,827.0	90.60	1.00	7,335.5	232.0	600.4	232.0	1.05	0.43	
7,922.0	90.70	2.20	7,334.4	326.9	603.1	326.9	1.27	0.11	
8,017.0	90.50	2.40	7,333.4	421.8	606.9	421.8	0.30	-0.21	
8,112.0	89.80	3.30	7,333.2	516.7	611.6	516.7	1.20	-0.74	
8,206.0	91.70	2.80	7,331.9	610.6	616.6	610.6	2.09	2.02	
8,301.0	92.00	1.60	7,328.9	705.5	620.3	705.5	1.30	0.32	
8,364.0	91.60	359.70	7,326.9	768.4	621.0	768.4	3.08	-0.63	
8,428.0	91.00	359.30	7,325.4	832.4	620.4	832.4	1.13	-0.94	
8,491.0	90.90	357.90	7,324.4	895.4	618.9	895.4	2.23	-0.16	
8,554.0	90.20	357.80	7,323.8	958.3	616.5	958.3	1.12	-1.11	
8,617.0	89.50	357.60	7,324.0	1,021.3	614.0	1,021.3	1.16	-1.11	
8,681.0	88.20	357.80	7,325.2	1,085.2	611.4	1,085.2	2.06	-2.03	
8,744.0	88.50	359.10	7,327.1	1,148.2	609.7	1,148.2	2.12	0.48	
8,807.0	90.00	358.80	7,327.9	1,211.1	608.6	1,211.1	2.43	2.38	
8,870.0	91.00	0.10	7,327.3	1,274.1	608.0	1,274.1	2.60	1.59	
8,965.0	90.00	0.60	7,326.5	1,369.1	608.6	1,369.1	1.18	-1.05	
9,060.0	87.60	359.60	7,328.5	1,464.1	608.7	1,464.1	2.74	-2.53	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mathews 4G-14H
Project:	DJ Wattenberg	TVD Reference:	Well @ 5117.0ft (Ensign)
Site:	S14 T1N-R66W (Mathews)	MD Reference:	Well @ 5117.0ft (Ensign)
Well:	Mathews 4G-14H	North Reference:	True
Wellbore:	HZ	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
9,123.0	88.70	358.80	7,330.5	1,527.1	607.8	1,527.1	2.16	1.75	
9,186.0	89.80	359.00	7,331.3	1,590.0	606.6	1,590.0	1.77	1.75	
9,249.0	90.30	359.50	7,331.3	1,653.0	605.8	1,653.0	1.12	0.79	
9,344.0	90.10	0.20	7,331.0	1,748.0	605.6	1,748.0	0.77	-0.21	
9,439.0	91.40	0.40	7,329.7	1,843.0	606.1	1,843.0	1.38	1.37	
9,502.0	90.10	0.20	7,328.9	1,906.0	606.4	1,906.0	2.09	-2.06	
9,565.0	88.50	0.50	7,329.7	1,969.0	606.8	1,969.0	2.58	-2.54	
9,628.0	88.40	1.10	7,331.4	2,032.0	607.6	2,032.0	0.97	-0.16	
9,723.0	87.80	0.50	7,334.5	2,126.9	609.0	2,126.9	0.89	-0.63	
9,817.0	87.40	359.60	7,338.5	2,220.8	609.1	2,220.8	1.05	-0.43	
9,912.0	89.20	359.40	7,341.3	2,315.8	608.2	2,315.8	1.91	1.89	
10,006.0	88.40	358.70	7,343.2	2,409.7	606.7	2,409.7	1.13	-0.85	
10,101.0	86.30	359.90	7,347.6	2,504.6	605.5	2,504.6	2.55	-2.21	
10,195.0	88.80	359.20	7,351.6	2,598.5	604.8	2,598.5	2.76	2.66	
10,290.0	88.60	359.40	7,353.8	2,693.5	603.6	2,693.5	0.30	-0.21	
10,385.0	88.00	0.10	7,356.6	2,788.5	603.2	2,788.5	0.97	-0.63	
10,479.0	89.20	0.20	7,358.9	2,882.4	603.4	2,882.4	1.28	1.28	
10,574.0	90.20	359.90	7,359.4	2,977.4	603.5	2,977.4	1.10	1.05	
10,669.0	90.30	0.90	7,359.0	3,072.4	604.2	3,072.4	1.06	0.11	
10,763.0	89.70	1.10	7,359.0	3,166.4	605.8	3,166.4	0.67	-0.64	
10,858.0	89.90	0.70	7,359.3	3,261.4	607.3	3,261.4	0.47	0.21	
10,953.0	90.20	1.60	7,359.3	3,356.4	609.2	3,356.4	1.00	0.32	
11,048.0	92.30	1.20	7,357.2	3,451.3	611.5	3,451.3	2.25	2.21	
11,142.0	90.10	359.60	7,355.2	3,545.3	612.2	3,545.3	2.89	-2.34	
11,237.0	88.00	359.20	7,356.8	3,640.3	611.2	3,640.3	2.25	-2.21	
11,332.0	88.90	358.80	7,359.4	3,735.2	609.6	3,735.2	1.04	0.95	
11,427.0	89.90	359.10	7,360.3	3,830.2	607.8	3,830.2	1.10	1.05	
11,521.0	90.60	0.20	7,359.9	3,924.2	607.2	3,924.2	1.39	0.74	
11,616.0	90.90	0.20	7,358.7	4,019.2	607.6	4,019.2	0.32	0.32	
11,711.0	90.20	359.50	7,357.8	4,114.2	607.3	4,114.2	1.04	-0.74	
11,806.0	90.20	359.20	7,357.5	4,209.2	606.2	4,209.2	0.32	0.00	
11,867.0	91.40	357.90	7,356.6	4,270.1	604.7	4,270.1	2.90	1.97	Last Cathedral Survey @ 11,867' MD
11,917.0	91.40	357.90	7,355.4	4,320.1	602.9	4,320.1	0.00	0.00	Projection to Bit @ 11,917'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mathews 4G-14H
Project:	DJ Wattenberg	TVD Reference:	Well @ 5117.0ft (Ensign)
Site:	S14 T1N-R66W (Mathews)	MD Reference:	Well @ 5117.0ft (Ensign)
Well:	Mathews 4G-14H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Mathews 4G-14H 8100'	0.00	0.00	7,329.0	497.7	610.2	1,260,764.99	3,214,149.32	40.046646	-104.735091
- actual wellpath misses target center by 4.1ft at 8092.9ft MD (7333.1 TVD, 497.7 N, 610.6 E)									
- Point									
Mathews 4G-14H LP	0.00	0.00	7,338.0	123.9	610.1	1,260,391.26	3,214,152.53	40.045620	-104.735091
- actual wellpath misses target center by 10.8ft at 7719.0ft MD (7336.0 TVD, 124.0 N, 599.5 E)									
- Point									
Interp @ 7365.1 (Mathews)	0.00	0.00	7,365.1	2,897.0	610.2	1,263,164.19	3,214,128.72	40.053233	-104.735090
- actual wellpath misses target center by 9.0ft at 10493.6ft MD (7359.1 TVD, 2897.0 N, 603.5 E)									
- Point									
Mathews 4G-14H 10500	0.00	0.00	7,358.0	2,897.0	610.2	1,263,164.19	3,214,128.72	40.053233	-104.735090
- actual wellpath misses target center by 6.8ft at 10493.6ft MD (7359.1 TVD, 2897.0 N, 603.5 E)									
- Point									
Mathews 4G-14H 9000'	0.00	0.00	7,346.0	1,324.7	610.2	1,261,591.99	3,214,142.22	40.048917	-104.735090
- actual wellpath misses target center by 19.4ft at 8920.4ft MD (7326.7 TVD, 1324.6 N, 608.2 E)									
- Point									
Mathews 4G-14H 10000	0.00	0.00	7,343.0	2,324.7	610.2	1,262,591.95	3,214,133.64	40.051662	-104.735090
- actual wellpath misses target center by 2.6ft at 9920.9ft MD (7341.4 TVD, 2324.7 N, 608.1 E)									
- Point									
Mathews 4G-14H 9500'	0.00	0.00	7,338.0	1,824.7	610.2	1,262,091.97	3,214,137.93	40.050289	-104.735090
- actual wellpath misses target center by 8.9ft at 9420.6ft MD (7330.1 TVD, 1824.6 N, 605.9 E)									
- Point									
Mathews 4G-14H 11500	0.00	0.00	7,367.0	3,824.7	610.2	1,264,091.90	3,214,120.76	40.055779	-104.735090
- actual wellpath misses target center by 7.1ft at 11421.6ft MD (7360.3 TVD, 3824.7 N, 607.9 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,358.0	4,356.8	610.2	1,264,623.92	3,214,116.19	40.057240	-104.735090
- actual wellpath misses target center by 37.5ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									
Mathews 4G-14H 9400'	0.00	0.00	7,329.0	1,797.6	610.2	1,262,064.83	3,214,138.16	40.050215	-104.735090
- actual wellpath misses target center by 4.7ft at 9393.6ft MD (7330.6 TVD, 1797.6 N, 605.8 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,411.0	7,023.3	618.6	1,267,290.40	3,214,101.59	40.064560	-104.735060
- actual wellpath misses target center by 2703.8ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,372.0	4,356.8	610.2	1,264,623.92	3,214,116.19	40.057240	-104.735090
- actual wellpath misses target center by 40.9ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									
Mathews 4G-14H FPP	0.00	0.00	7,411.0	-10.9	599.1	1,260,256.31	3,214,142.67	40.045250	-104.735130
- actual wellpath misses target center by 91.8ft at 7604.5ft MD (7321.7 TVD, 10.6 N, 599.8 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,411.0	4,356.8	610.2	1,264,623.92	3,214,116.19	40.057240	-104.735090
- actual wellpath misses target center by 67.0ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
11,867.0	7,356.6	4,270.1	604.7	Last Cathedral Survey @ 11,867' MD
11,917.0	7,355.4	4,320.1	602.9	Projection to Bit @ 11,917'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mathews 4G-14H
Project:	DJ Wattenberg	TVD Reference:	Well @ 5117.0ft (Ensign)
Site:	S14 T1N-R66W (Mathews)	MD Reference:	Well @ 5117.0ft (Ensign)
Well:	Mathews 4G-14H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Mathews 4G-14H 8100'	0.00	0.00	7,329.0	497.7	610.2	1,260,764.99	3,214,149.32	40.046646	-104.735091
- actual wellpath misses target center by 4.1ft at 8092.9ft MD (7333.1 TVD, 497.7 N, 610.6 E)									
- Point									
Mathews 4G-14H LP	0.00	0.00	7,338.0	123.9	610.1	1,260,391.26	3,214,152.53	40.045620	-104.735091
- actual wellpath misses target center by 10.8ft at 7719.0ft MD (7336.0 TVD, 124.0 N, 599.5 E)									
- Point									
Interp @ 7365.1 (Mathews)	0.00	0.00	7,365.1	2,897.0	610.2	1,263,164.19	3,214,128.72	40.053233	-104.735090
- actual wellpath misses target center by 9.0ft at 10493.6ft MD (7359.1 TVD, 2897.0 N, 603.5 E)									
- Point									
Mathews 4G-14H 10500	0.00	0.00	7,358.0	2,897.0	610.2	1,263,164.19	3,214,128.72	40.053233	-104.735090
- actual wellpath misses target center by 6.8ft at 10493.6ft MD (7359.1 TVD, 2897.0 N, 603.5 E)									
- Point									
Mathews 4G-14H 9000'	0.00	0.00	7,346.0	1,324.7	610.2	1,261,591.99	3,214,142.22	40.048917	-104.735090
- actual wellpath misses target center by 19.4ft at 8920.4ft MD (7326.7 TVD, 1324.6 N, 608.2 E)									
- Point									
Mathews 4G-14H 10000	0.00	0.00	7,343.0	2,324.7	610.2	1,262,591.95	3,214,133.64	40.051662	-104.735090
- actual wellpath misses target center by 2.6ft at 9920.9ft MD (7341.4 TVD, 2324.7 N, 608.1 E)									
- Point									
Mathews 4G-14H 9500'	0.00	0.00	7,338.0	1,824.7	610.2	1,262,091.97	3,214,137.93	40.050289	-104.735090
- actual wellpath misses target center by 8.9ft at 9420.6ft MD (7330.1 TVD, 1824.6 N, 605.9 E)									
- Point									
Mathews 4G-14H 11500	0.00	0.00	7,367.0	3,824.7	610.2	1,264,091.90	3,214,120.76	40.055779	-104.735090
- actual wellpath misses target center by 7.1ft at 11421.6ft MD (7360.3 TVD, 3824.7 N, 607.9 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,358.0	4,356.8	610.2	1,264,623.92	3,214,116.19	40.057240	-104.735090
- actual wellpath misses target center by 37.5ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									
Mathews 4G-14H 9400'	0.00	0.00	7,329.0	1,797.6	610.2	1,262,064.83	3,214,138.16	40.050215	-104.735090
- actual wellpath misses target center by 4.7ft at 9393.6ft MD (7330.6 TVD, 1797.6 N, 605.8 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,411.0	7,023.3	618.6	1,267,290.40	3,214,101.59	40.064560	-104.735060
- actual wellpath misses target center by 2703.8ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,372.0	4,356.8	610.2	1,264,623.92	3,214,116.19	40.057240	-104.735090
- actual wellpath misses target center by 40.9ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									
Mathews 4G-14H FPP	0.00	0.00	7,411.0	-10.9	599.1	1,260,256.31	3,214,142.67	40.045250	-104.735130
- actual wellpath misses target center by 91.8ft at 7604.5ft MD (7321.7 TVD, 10.6 N, 599.8 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,411.0	4,356.8	610.2	1,264,623.92	3,214,116.19	40.057240	-104.735090
- actual wellpath misses target center by 67.0ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
11,867.0	7,356.6	4,270.1	604.7	Last Cathedral Survey @ 11,867' MD
11,917.0	7,355.4	4,320.1	602.9	Projection to Bit @ 11,917'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Mathews 4G-14H
Project:	DJ Wattenberg	TVD Reference:	Well @ 5117.0ft (Ensign)
Site:	S14 T1N-R66W (Mathews)	MD Reference:	Well @ 5117.0ft (Ensign)
Well:	Mathews 4G-14H	North Reference:	True
Wellbore:	HZ	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Mathews 4G-14H 8100'	0.00	0.00	7,329.0	497.7	610.2	1,260,764.99	3,214,149.32	40.046646	-104.735091
- actual wellpath misses target center by 4.1ft at 8092.9ft MD (7333.1 TVD, 497.7 N, 610.6 E)									
- Point									
Mathews 4G-14H LP	0.00	0.00	7,338.0	123.9	610.1	1,260,391.26	3,214,152.53	40.045620	-104.735091
- actual wellpath misses target center by 10.8ft at 7719.0ft MD (7336.0 TVD, 124.0 N, 599.5 E)									
- Point									
Interp @ 7365.1 (Mathews)	0.00	0.00	7,365.1	2,897.0	610.2	1,263,164.19	3,214,128.72	40.053233	-104.735090
- actual wellpath misses target center by 9.0ft at 10493.6ft MD (7359.1 TVD, 2897.0 N, 603.5 E)									
- Point									
Mathews 4G-14H 10500	0.00	0.00	7,358.0	2,897.0	610.2	1,263,164.19	3,214,128.72	40.053233	-104.735090
- actual wellpath misses target center by 6.8ft at 10493.6ft MD (7359.1 TVD, 2897.0 N, 603.5 E)									
- Point									
Mathews 4G-14H 9000'	0.00	0.00	7,346.0	1,324.7	610.2	1,261,591.99	3,214,142.22	40.048917	-104.735090
- actual wellpath misses target center by 19.4ft at 8920.4ft MD (7326.7 TVD, 1324.6 N, 608.2 E)									
- Point									
Mathews 4G-14H 10000	0.00	0.00	7,343.0	2,324.7	610.2	1,262,591.95	3,214,133.64	40.051662	-104.735090
- actual wellpath misses target center by 2.6ft at 9920.9ft MD (7341.4 TVD, 2324.7 N, 608.1 E)									
- Point									
Mathews 4G-14H 9500'	0.00	0.00	7,338.0	1,824.7	610.2	1,262,091.97	3,214,137.93	40.050289	-104.735090
- actual wellpath misses target center by 8.9ft at 9420.6ft MD (7330.1 TVD, 1824.6 N, 605.9 E)									
- Point									
Mathews 4G-14H 11500	0.00	0.00	7,367.0	3,824.7	610.2	1,264,091.90	3,214,120.76	40.055779	-104.735090
- actual wellpath misses target center by 7.1ft at 11421.6ft MD (7360.3 TVD, 3824.7 N, 607.9 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,358.0	4,356.8	610.2	1,264,623.92	3,214,116.19	40.057240	-104.735090
- actual wellpath misses target center by 37.5ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									
Mathews 4G-14H 9400'	0.00	0.00	7,329.0	1,797.6	610.2	1,262,064.83	3,214,138.16	40.050215	-104.735090
- actual wellpath misses target center by 4.7ft at 9393.6ft MD (7330.6 TVD, 1797.6 N, 605.8 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,411.0	7,023.3	618.6	1,267,290.40	3,214,101.59	40.064560	-104.735060
- actual wellpath misses target center by 2703.8ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,372.0	4,356.8	610.2	1,264,623.92	3,214,116.19	40.057240	-104.735090
- actual wellpath misses target center by 40.9ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									
Mathews 4G-14H FPP	0.00	0.00	7,411.0	-10.9	599.1	1,260,256.31	3,214,142.67	40.045250	-104.735130
- actual wellpath misses target center by 91.8ft at 7604.5ft MD (7321.7 TVD, 10.6 N, 599.8 E)									
- Point									
Mathews 4G-14H PBHL	0.00	0.00	7,411.0	4,356.8	610.2	1,264,623.92	3,214,116.19	40.057240	-104.735090
- actual wellpath misses target center by 67.0ft at 11917.0ft MD (7355.4 TVD, 4320.1 N, 602.9 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
11,867.0	7,356.6	4,270.1	604.7	Last Cathedral Survey @ 11,867' MD
11,917.0	7,355.4	4,320.1	602.9	Projection to Bit @ 11,917'

Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: DJ Wattenberg
Site: S14 T1N-R66W (Mathews)
Well: Mathews 4G-14H
Wellbore: HZ
Design: FINAL

Local Co-ordinate Reference: Well Mathews 4G-14H
TVD Reference: Well @ 5117.0ft (Ensign)
MD Reference: Well @ 5117.0ft (Ensign)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Checked By: _____ Approved By: _____ Date: _____