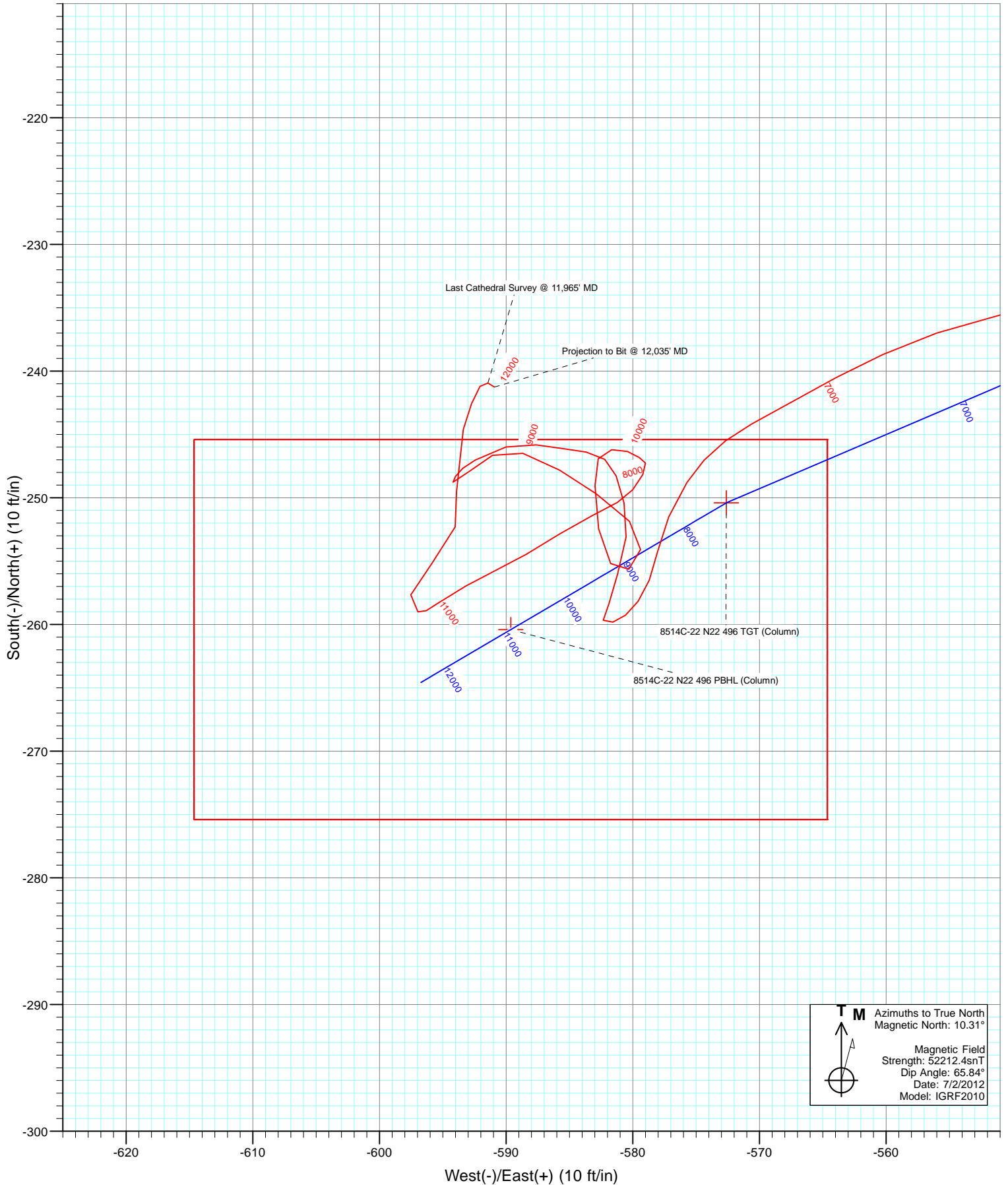


Azimuths to True North  
Magnetic North: 10.31°

Magnetic Field  
Strength: 52212.4nT  
Dip Angle: 65.84°  
Date: 7/2/2012  
Model: IGRF2010

FINAL 8514C-22 N22 496 125298/161155 (SH) 125433/163255 (MH); SC							
WELL @ 7602.0ft (Original Well Elev) North American Datum 1983 Well 8514C-22 N22 496, True North							
Type User	Target	Azimuth	Origin Type	N/S	E/W	From	TVD
	No Target (Freehand)	246.09	Slot	0.0	0.0		0.0
Name		TVD	+N/-S	+E/-W	Latitude		Longitude
8514C-22 N22 496 TGT (Column)		7312.0	-250.4	-572.6	39° 40' 58.98 N	108° 9' 33.41 W	
8514C-22 N22 496 PBHL (Column)		7097.0	-260.4	-589.6	39° 40' 58.88 N	108° 9' 33.63 W	



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8514C-22 N22 496
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 7602.0ft (Original Well Elev)
<b>Site:</b>	S22-T4S-R96W (N22 496) (Column Pattern)	<b>MD Reference:</b>	WELL @ 7602.0ft (Original Well Elev)
<b>Well:</b>	8514C-22 N22 496	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	USA EDM 5000 Multi Users DB

<b>Project</b>	Story Gulch		
<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>	S22-T4S-R96W (N22 496) (Column Pattern)			
<b>Site Position:</b>		<b>Northing:</b>	1,685,048.56 ft	<b>Latitude:</b> 39° 41' 3.24 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,252,316.79 ft	<b>Longitude:</b> 108° 9' 25.11 W
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.68 °

<b>Well</b>	8514C-22 N22 496			
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,684,870.53 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,252,234.93 ft
<b>Position Uncertainty</b>	0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b> 7,569.0 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	7/2/2012	10.31	65.84	52,212

<b>Design</b>	FINAL			
<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	246.09

<b>Survey Program</b>	<b>Date</b>	7/13/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
237.0	2,040.0	Survey #1 (DD)	MWD	Geolink MWD	
2,168.0	12,035.0	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	
237.0	0.40	288.60	237.0	0.3	-0.8	0.6	0.17	0.17	
268.0	0.60	268.60	268.0	0.3	-1.0	0.8	0.85	0.65	
299.0	1.10	259.60	299.0	0.2	-1.5	1.3	1.66	1.61	
329.0	1.50	241.80	329.0	0.0	-2.1	2.0	1.88	1.33	
421.0	5.80	246.90	420.8	-2.4	-7.5	7.8	4.68	4.67	
482.0	6.50	245.90	481.4	-5.0	-13.5	14.3	1.16	1.15	
577.0	5.70	249.10	575.9	-8.9	-22.8	24.4	0.91	-0.84	
669.0	5.20	237.10	667.5	-12.8	-30.5	33.1	1.35	-0.54	
760.0	5.20	235.90	758.1	-17.3	-37.4	41.2	0.12	0.00	
852.0	6.10	232.70	849.7	-22.6	-44.8	50.1	1.04	0.98	
943.0	5.30	249.20	940.2	-27.1	-52.5	59.0	1.99	-0.88	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8514C-22 N22 496
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 7602.0ft (Original Well Elev)
<b>Site:</b>	S22-T4S-R96W (N22 496) (Column Pattern)	<b>MD Reference:</b>	WELL @ 7602.0ft (Original Well Elev)
<b>Well:</b>	8514C-22 N22 496	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<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
1,034.0	4.70	258.00	1,030.9	-29.3	-60.1	66.8	1.07	-0.66	
1,126.0	4.40	254.70	1,122.6	-31.0	-67.2	74.0	0.43	-0.33	
1,218.0	4.30	252.20	1,214.3	-33.0	-73.9	80.9	0.23	-0.11	
1,309.0	3.80	256.40	1,305.1	-34.8	-80.1	87.3	0.64	-0.55	
1,401.0	4.90	240.60	1,396.8	-37.4	-86.5	94.2	1.76	1.20	
1,492.0	5.80	236.50	1,487.4	-41.9	-93.7	102.6	1.07	0.99	
1,583.0	5.10	237.40	1,578.0	-46.6	-100.9	111.1	0.77	-0.77	
1,675.0	4.90	228.50	1,669.7	-51.4	-107.3	118.9	0.87	-0.22	
1,766.0	4.70	245.50	1,760.3	-55.5	-113.6	126.4	1.57	-0.22	
1,857.0	4.60	247.90	1,851.0	-58.4	-120.4	133.7	0.24	-0.11	
1,949.0	3.90	252.60	1,942.8	-60.8	-126.8	140.5	0.85	-0.76	
2,040.0	5.10	249.30	2,033.5	-63.1	-133.5	147.6	1.35	1.32	
2,168.0	4.60	240.60	2,161.1	-67.6	-143.3	158.4	0.69	-0.39	
2,260.0	5.70	249.30	2,252.7	-71.1	-150.8	166.7	1.46	1.20	
2,352.0	5.60	247.20	2,344.2	-74.4	-159.2	175.7	0.25	-0.11	
2,444.0	5.50	241.00	2,435.8	-78.3	-167.2	184.6	0.66	-0.11	
2,535.0	6.10	256.50	2,526.3	-81.5	-175.7	193.7	1.84	0.66	
2,627.0	6.20	255.10	2,617.8	-84.0	-185.3	203.4	0.20	0.11	
2,718.0	6.00	256.30	2,708.3	-86.4	-194.7	212.9	0.26	-0.22	
2,810.0	6.60	243.10	2,799.7	-89.9	-204.0	223.0	1.70	0.65	
2,901.0	6.40	235.70	2,890.2	-95.1	-212.9	233.2	0.95	-0.22	
2,992.0	5.50	249.40	2,980.7	-99.5	-221.2	242.5	1.84	-0.99	
3,084.0	5.20	247.70	3,072.3	-102.6	-229.2	251.1	0.37	-0.33	
3,175.0	4.60	241.50	3,162.9	-105.9	-236.2	258.8	0.88	-0.66	
3,266.0	3.80	249.70	3,253.7	-108.7	-242.2	265.5	1.10	-0.88	
3,358.0	5.20	254.00	3,345.4	-110.9	-249.1	272.7	1.56	1.52	
3,450.0	5.30	252.60	3,437.0	-113.4	-257.1	281.0	0.18	0.11	
3,542.0	4.60	247.60	3,528.7	-116.0	-264.6	288.9	0.89	-0.76	
3,634.0	4.40	249.90	3,620.4	-118.7	-271.3	296.1	0.29	-0.22	
3,725.0	4.10	244.50	3,711.2	-121.3	-277.5	302.9	0.55	-0.33	
3,816.0	4.80	244.70	3,801.9	-124.3	-283.9	309.9	0.77	0.77	
3,908.0	4.30	243.30	3,893.6	-127.5	-290.5	317.2	0.56	-0.54	
4,000.0	5.00	254.20	3,985.3	-130.1	-297.4	324.6	1.22	0.76	
4,091.0	4.90	252.00	4,075.9	-132.4	-304.9	332.4	0.24	-0.11	
4,183.0	3.90	251.90	4,167.7	-134.6	-311.6	339.4	1.09	-1.09	
4,274.0	4.90	239.00	4,258.4	-137.5	-317.9	346.4	1.54	1.10	
4,366.0	6.20	238.50	4,350.0	-142.2	-325.5	355.2	1.41	1.41	
4,458.0	6.50	231.40	4,441.4	-148.0	-333.8	365.2	0.91	0.33	
4,549.0	6.40	239.50	4,531.8	-153.8	-342.2	375.2	1.01	-0.11	
4,640.0	6.60	249.50	4,622.3	-158.2	-351.5	385.4	1.26	0.22	
4,732.0	6.20	247.50	4,713.7	-162.0	-361.0	395.7	0.50	-0.43	
4,823.0	5.10	246.50	4,804.2	-165.5	-369.3	404.7	1.21	-1.21	
4,915.0	5.10	246.30	4,895.9	-168.7	-376.8	412.8	0.02	0.00	
5,007.0	4.50	242.60	4,987.6	-172.0	-383.7	420.5	0.73	-0.65	
5,098.0	4.30	247.50	5,078.3	-175.0	-390.0	427.5	0.47	-0.22	
5,190.0	5.50	266.80	5,170.0	-176.5	-397.6	435.1	2.20	1.30	
5,282.0	3.70	272.20	5,261.7	-176.7	-405.0	441.9	2.01	-1.96	
5,373.0	4.80	250.80	5,352.4	-177.8	-411.5	448.3	2.10	1.21	
5,464.0	6.80	244.60	5,442.9	-181.4	-420.0	457.5	2.30	2.20	
5,556.0	6.80	239.50	5,534.3	-186.5	-429.6	468.3	0.66	0.00	
5,648.0	6.20	236.60	5,625.7	-192.0	-438.5	478.6	0.74	-0.65	
5,739.0	5.50	236.70	5,716.2	-197.1	-446.2	487.8	0.77	-0.77	
5,831.0	5.10	237.70	5,807.8	-201.7	-453.3	496.2	0.45	-0.43	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8514C-22 N22 496
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 7602.0ft (Original Well Elev)
<b>Site:</b>	S22-T4S-R96W (N22 496) (Column Pattern)	<b>MD Reference:</b>	WELL @ 7602.0ft (Original Well Elev)
<b>Well:</b>	8514C-22 N22 496	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<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
5,922.0	5.10	245.30	5,898.5	-205.5	-460.4	504.2	0.74	0.00	
6,014.0	6.50	257.20	5,990.0	-208.4	-469.2	513.4	2.00	1.52	
6,106.0	6.20	257.10	6,081.4	-210.7	-479.2	523.4	0.33	-0.33	
6,197.0	5.80	253.10	6,171.9	-213.1	-488.3	532.8	0.64	-0.44	
6,289.0	5.40	254.50	6,263.5	-215.6	-497.0	541.7	0.46	-0.43	
6,380.0	5.10	250.30	6,354.1	-218.1	-504.9	550.0	0.54	-0.33	
6,472.0	4.80	252.80	6,445.8	-220.6	-512.4	557.9	0.40	-0.33	
6,564.0	5.80	243.00	6,537.4	-223.9	-520.2	566.3	1.46	1.09	
6,655.0	5.80	239.80	6,627.9	-228.3	-528.3	575.5	0.36	0.00	
6,747.0	6.20	254.10	6,719.4	-232.0	-537.1	585.0	1.68	0.43	
6,839.0	6.20	258.00	6,810.9	-234.4	-546.7	594.8	0.46	0.00	
6,930.0	6.00	250.20	6,901.4	-237.0	-556.0	604.4	0.94	-0.22	
7,022.0	4.80	241.00	6,993.0	-240.5	-563.9	613.0	1.60	-1.30	
7,113.0	4.80	241.50	7,083.6	-244.2	-570.6	620.6	0.05	0.00	
7,205.0	4.10	212.00	7,175.4	-248.8	-575.7	627.1	2.57	-0.76	
7,296.0	3.40	192.30	7,266.2	-254.2	-578.0	631.4	1.60	-0.77	
7,341.5	2.70	201.28	7,311.6	-256.5	-578.7	633.0	1.87	-1.55	8514C-22 N22 496 TGT (Column)
7,387.0	2.10	215.90	7,357.1	-258.2	-579.6	634.5	1.87	-1.31	
7,479.0	1.30	254.70	7,449.0	-259.8	-581.6	637.0	1.48	-0.87	
7,570.0	0.60	29.70	7,540.0	-259.7	-582.3	637.6	1.95	-0.77	
7,661.0	1.10	12.70	7,631.0	-258.4	-581.9	636.7	0.61	0.55	
7,753.0	2.00	18.50	7,723.0	-256.0	-581.2	635.1	0.99	0.98	
7,844.0	1.80	6.50	7,813.9	-253.1	-580.5	633.3	0.49	-0.22	
7,936.0	1.60	345.50	7,905.9	-250.4	-580.7	632.3	0.71	-0.22	
8,027.0	1.20	341.80	7,996.9	-248.3	-581.3	632.0	0.45	-0.44	
8,119.0	0.90	303.20	8,088.9	-247.0	-582.2	632.3	0.81	-0.33	
8,211.0	1.10	282.10	8,180.8	-246.4	-583.7	633.4	0.45	0.22	
8,302.0	1.20	275.00	8,271.8	-246.1	-585.5	635.0	0.19	0.11	
8,394.0	1.50	280.30	8,363.8	-245.8	-587.6	636.8	0.35	0.33	
8,485.0	1.60	252.80	8,454.8	-246.0	-590.0	639.1	0.82	0.11	
8,577.0	1.70	241.10	8,546.7	-247.0	-592.4	641.7	0.38	0.11	
8,669.0	0.90	210.80	8,638.7	-248.3	-594.0	643.7	1.12	-0.87	
8,760.0	0.30	48.90	8,729.7	-248.8	-594.2	644.0	1.31	-0.66	
8,852.0	1.50	58.00	8,821.7	-248.0	-593.0	642.6	1.31	1.30	
8,944.0	1.40	52.70	8,913.7	-246.6	-591.1	640.3	0.18	-0.11	
9,035.0	2.00	108.90	9,004.6	-246.5	-588.7	638.1	1.85	0.66	
9,127.0	2.00	120.40	9,096.6	-247.8	-585.8	635.9	0.44	0.00	
9,219.0	2.30	124.70	9,188.5	-249.7	-582.9	634.0	0.37	0.33	
9,310.0	2.00	135.30	9,279.4	-251.9	-580.3	632.5	0.55	-0.33	
9,402.0	1.40	193.40	9,371.4	-254.1	-579.4	632.6	1.88	-0.65	
9,494.0	1.00	235.60	9,463.4	-255.6	-580.3	634.1	1.02	-0.43	
9,585.0	1.50	318.60	9,554.4	-255.2	-581.7	635.3	1.87	0.55	
9,677.0	2.30	355.40	9,646.3	-252.4	-582.7	635.0	1.54	0.87	
9,768.0	2.00	355.20	9,737.3	-249.0	-583.0	633.9	0.33	-0.33	
9,860.0	0.80	36.30	9,829.2	-246.9	-582.7	632.8	1.62	-1.30	
9,952.0	0.90	73.95	9,921.2	-246.2	-581.7	631.5	0.61	0.11	
10,043.0	0.80	120.90	10,012.2	-246.3	-580.4	630.5	0.75	-0.11	
10,135.0	0.50	112.00	10,104.2	-246.8	-579.5	629.8	0.34	-0.33	
10,226.0	0.40	155.70	10,195.2	-247.3	-579.0	629.5	0.38	-0.11	
10,317.0	0.90	207.80	10,286.2	-248.2	-579.2	630.1	0.80	0.55	
10,409.0	0.90	219.70	10,378.2	-249.4	-580.0	631.3	0.20	0.00	
10,500.0	1.10	239.10	10,469.2	-250.4	-581.2	632.8	0.43	0.22	
10,592.0	1.70	244.70	10,561.1	-251.4	-583.2	635.0	0.67	0.65	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8514C-22 N22 496
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	WELL @ 7602.0ft (Original Well Elev)
<b>Site:</b>	S22-T4S-R96W (N22 496) (Column Pattern)	<b>MD Reference:</b>	WELL @ 7602.0ft (Original Well Elev)
<b>Well:</b>	8514C-22 N22 496	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<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
10,683.0	2.00	237.30	10,652.1	-252.8	-585.8	638.0	0.42	0.33	
10,775.0	1.90	239.60	10,744.0	-254.5	-588.4	641.1	0.14	-0.11	
10,957.0	1.50	245.90	10,926.0	-257.0	-593.2	646.4	0.24	-0.22	
11,003.0	1.59	238.30	10,971.9	-257.6	-594.3	647.7	0.48	0.19	8514C-22 N22 496 PBHL (Column)
11,049.0	1.70	231.60	11,017.9	-258.3	-595.4	649.0	0.48	0.24	
11,140.0	0.70	285.60	11,108.9	-259.0	-597.0	650.7	1.55	-1.10	
11,232.0	1.50	359.30	11,200.9	-257.7	-597.5	650.7	1.59	0.87	
11,323.0	2.70	52.20	11,291.8	-255.1	-595.8	648.1	2.37	1.32	
11,415.0	1.90	4.20	11,383.8	-252.3	-594.0	645.3	2.18	-0.87	
11,507.0	1.60	359.60	11,475.7	-249.5	-593.9	644.1	0.36	-0.33	
11,690.0	1.50	13.40	11,658.7	-244.6	-593.4	641.6	0.21	-0.05	
11,781.0	1.20	23.10	11,749.6	-242.6	-592.7	640.2	0.41	-0.33	
11,873.0	0.70	30.50	11,841.6	-241.2	-592.1	639.0	0.56	-0.54	
11,965.0	0.50	122.10	11,933.6	-240.9	-591.4	638.3	0.95	-0.22	Last Cathedral Survey @ 11,965' MD Projection to Bit @ 12,035' MD
12,035.0	0.50	122.10	12,003.6	-241.3	-590.9	638.0	0.00	0.00	

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
8514C-22 N22 496 TGT	0.00	0.00	7,312.0	-250.4	-572.6	1,684,636.99	2,251,655.25	39° 40' 58.98 N	108° 9' 33.41 W
- actual wellpath misses target center by 8.6ft at 7341.5ft MD (7311.7 TVD, -256.5 N, -578.7 E)									
- Point									
8514C-22 N22 496 PBH	0.00	0.00	10,972.0	-260.4	-589.6	1,684,627.49	2,251,637.95	39° 40' 58.88 N	108° 9' 33.63 W
- actual wellpath misses target center by 5.5ft at 11003.0ft MD (10971.9 TVD, -257.6 N, -594.3 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

### Design Annotations

	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S (ft)	+E/-W (ft)	
	11,965.0	11,933.6	-240.9	-591.4	Last Cathedral Survey @ 11,965' MD
	12,035.0	12,003.6	-241.3	-590.9	Projection to Bit @ 12,035' MD

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