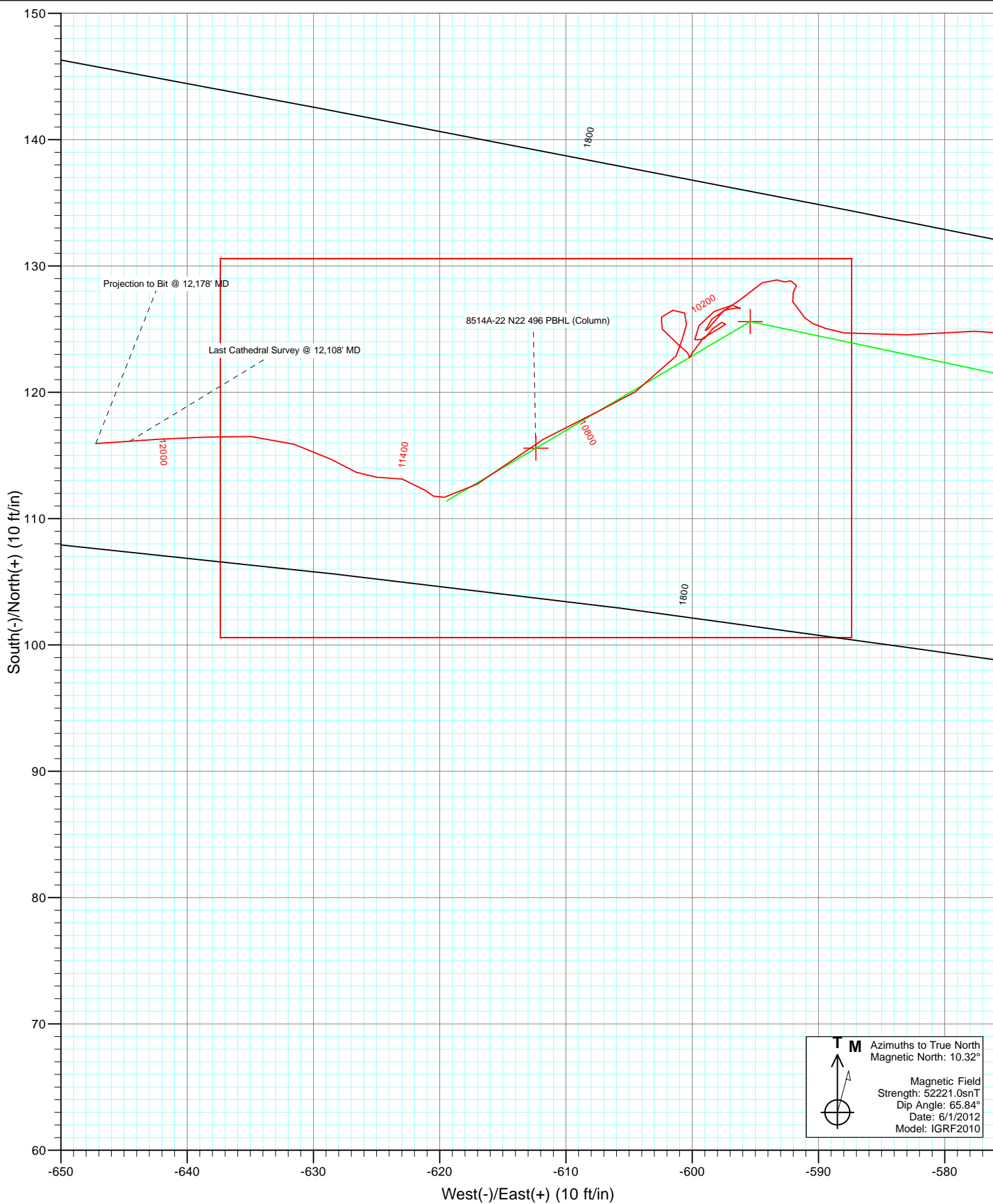


Azimuths to True North
 Magnetic North: 10.32°

Magnetic Field
 Strength: 52221.0snT
 Dip Angle: 65.84°
 Date: 6/1/2012
 Model: IGRF2010

8514A-22 N22 496							
125183/147155 (SH) 125389/162855 (MH); SC							
WELL @ 7602.0ft (Original Well Elev)							
North American Datum 1983							
Well 8514A-22 N22 496, True North							
Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD
User	No Target (Freehand)	280.19	Slot		0.0	0.0	0.0
Name	TVD						
8514A-22 N22 496 TGT (Column)	332.0	+N/-S	+E/-W			Latitude	Longitude
8514A-22 N22 496 PBHL (Column)	1092.0	125.6	-595.4			39.68415	-108.15932
		115.6	-612.4			39.68413	-108.15938



Cathedral Energy Services

Survey Report

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

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

Site		S22-T4S-R96W (N22 496) (Column Pattern)			
Site Position:		Northing:	1,685,048.56 ft	Latitude:	39.68423
From:	Lat/Long	Easting:	2,252,316.79 ft	Longitude:	-108.15697
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.68 °

Well		8514A-22 N22 496				
Well Position	+N/-S	0.0 ft	Northing:	1,684,895.92 ft	Latitude:	39.68381
	+E/-W	0.0 ft	Easting:	2,252,246.72 ft	Longitude:	-108.15721
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,569.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/1/2012	10.32	65.84	52,221

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	280.19	

Survey Program	Date	6/27/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
209.0	2,070.0	Survey #1 (DD)	MWD	Geolink MWD	
2,163.0	12,178.0	Survey #2 (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		
209.0	1.00	82.20	209.0	0.2	1.8	-1.7	0.48	0.48		
239.0	1.00	97.80	239.0	0.2	2.3	-2.2	0.90	0.00		
269.0	0.00	100.30	269.0	0.2	2.6	-2.5	3.33	-3.33		
299.0	0.80	228.40	299.0	0.1	2.4	-2.4	2.67	2.67		
332.0	1.70	254.60	332.0	-0.2	1.8	-1.8	3.16	2.73		
424.0	5.80	267.70	423.8	-0.8	-4.2	4.0	4.52	4.46		
515.0	7.20	276.60	514.2	-0.3	-14.4	14.2	1.89	1.54		
609.0	8.00	291.40	607.4	2.8	-26.4	26.5	2.24	0.85		
701.0	7.70	287.80	698.5	7.0	-38.2	38.8	0.63	-0.33		
791.0	7.00	277.60	787.8	9.6	-49.4	50.3	1.64	-0.78		
883.0	6.30	275.50	879.1	10.8	-60.0	60.9	0.81	-0.76		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8514A-22 N22 496
Project:	Story Gulch	TVD Reference:	WELL @ 7602.0ft (Original Well Elev)
Site:	S22-T4S-R96W (N22 496) (Column Pattern)	MD Reference:	WELL @ 7602.0ft (Original Well Elev)
Well:	8514A-22 N22 496	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
974.0	5.50	277.40	969.7	11.8	-69.3	70.3	0.90	-0.88	
1,066.0	4.60	279.60	1,061.3	13.0	-77.3	78.4	1.00	-0.98	
1,157.0	4.90	278.20	1,152.0	14.2	-84.7	85.9	0.35	0.33	
1,249.0	5.40	272.20	1,243.6	14.9	-92.9	94.1	0.80	0.54	
1,341.0	6.20	270.10	1,335.1	15.1	-102.2	103.3	0.90	0.87	
1,432.0	7.70	282.50	1,425.5	16.4	-113.1	114.2	2.32	1.65	
1,524.0	7.20	285.20	1,516.7	19.3	-124.7	126.1	0.66	-0.54	
1,616.0	5.50	281.30	1,608.1	21.6	-134.6	136.3	1.91	-1.85	
1,708.0	5.90	274.70	1,699.7	22.9	-143.6	145.4	0.83	0.43	
1,799.0	6.60	272.80	1,790.1	23.5	-153.5	155.2	0.80	0.77	
1,891.0	7.20	280.70	1,881.5	24.8	-164.4	166.2	1.22	0.65	
1,978.0	7.50	282.60	1,967.8	27.1	-175.3	177.4	0.44	0.34	
2,070.0	7.20	293.20	2,059.0	30.7	-186.5	189.0	1.51	-0.33	
2,163.0	5.20	293.90	2,151.5	34.7	-195.7	198.7	2.15	-2.15	
2,255.0	4.80	280.90	2,243.1	37.1	-203.3	206.6	1.30	-0.43	
2,347.0	5.00	278.50	2,334.8	38.4	-211.0	214.5	0.31	0.22	
2,438.0	5.40	284.90	2,425.4	40.1	-219.1	222.7	0.77	0.44	
2,529.0	5.60	284.70	2,516.0	42.3	-227.5	231.4	0.22	0.22	
2,621.0	4.50	283.40	2,607.6	44.3	-235.4	239.5	1.20	-1.20	
2,712.0	6.90	294.00	2,698.2	47.4	-243.8	248.4	2.87	2.64	
2,804.0	6.90	283.30	2,789.5	50.9	-254.3	259.3	1.40	0.00	
2,895.0	6.50	285.20	2,879.9	53.5	-264.6	269.9	0.50	-0.44	
2,987.0	5.40	278.30	2,971.4	55.5	-273.9	279.4	1.42	-1.20	
3,078.0	4.00	272.20	3,062.1	56.2	-281.3	286.8	1.63	-1.54	
3,170.0	4.70	288.10	3,153.8	57.5	-288.1	293.7	1.51	0.76	
3,261.0	3.80	286.00	3,244.6	59.5	-294.5	300.4	1.00	-0.99	
3,353.0	5.20	288.60	3,336.3	61.7	-301.4	307.6	1.54	1.52	
3,445.0	5.20	289.80	3,427.9	64.4	-309.3	315.8	0.12	0.00	
3,536.0	6.80	284.40	3,518.4	67.2	-318.4	325.2	1.86	1.76	
3,628.0	6.40	283.00	3,609.8	69.7	-328.6	335.8	0.47	-0.43	
3,719.0	5.90	281.30	3,700.3	71.7	-338.2	345.5	0.58	-0.55	
3,811.0	5.30	280.80	3,791.8	73.4	-347.0	354.5	0.65	-0.65	
3,902.0	4.30	267.20	3,882.5	74.1	-354.5	362.0	1.66	-1.10	
3,994.0	5.00	287.80	3,974.2	75.1	-361.8	369.4	1.95	0.76	
4,085.0	4.60	284.00	4,064.9	77.2	-369.1	376.9	0.56	-0.44	
4,177.0	4.00	280.90	4,156.6	78.7	-375.8	383.8	0.70	-0.65	
4,269.0	5.30	287.30	4,248.3	80.6	-383.0	391.3	1.52	1.41	
4,360.0	5.10	286.60	4,339.0	83.0	-390.9	399.4	0.23	-0.22	
4,452.0	4.80	281.10	4,430.6	84.9	-398.6	407.4	0.61	-0.33	
4,544.0	4.70	282.80	4,522.3	86.5	-406.1	415.0	0.19	-0.11	
4,635.0	4.10	271.90	4,613.0	87.4	-413.0	421.9	1.13	-0.66	
4,727.0	4.30	279.90	4,704.8	88.1	-419.6	428.6	0.67	0.22	
4,818.0	4.80	283.90	4,795.5	89.6	-426.7	435.8	0.65	0.55	
4,910.0	4.80	283.40	4,887.2	91.4	-434.2	443.5	0.05	0.00	
5,001.0	4.80	281.30	4,977.9	93.1	-441.6	451.1	0.19	0.00	
5,092.0	4.40	276.10	5,068.6	94.2	-448.8	458.4	0.63	-0.44	
5,184.0	5.40	283.00	5,160.2	95.5	-456.6	466.3	1.26	1.09	
5,276.0	4.60	288.00	5,251.9	97.6	-464.3	474.2	0.99	-0.87	
5,367.0	3.60	280.20	5,342.6	99.3	-470.6	480.7	1.26	-1.10	
5,458.0	5.30	286.70	5,433.4	101.0	-477.4	487.7	1.95	1.87	
5,550.0	5.40	283.10	5,525.0	103.2	-485.7	496.3	0.38	0.11	
5,641.0	4.70	281.60	5,615.6	104.9	-493.5	504.3	0.78	-0.77	
5,733.0	3.50	268.00	5,707.4	105.6	-500.0	510.8	1.67	-1.30	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8514A-22 N22 496
Project:	Story Gulch	TVD Reference:	WELL @ 7602.0ft (Original Well Elev)
Site:	S22-T4S-R96W (N22 496) (Column Pattern)	MD Reference:	WELL @ 7602.0ft (Original Well Elev)
Well:	8514A-22 N22 496	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
5,825.0	4.00	266.30	5,799.2	105.3	-506.0	516.7	0.56	0.54	
5,916.0	3.90	268.40	5,890.0	105.0	-512.3	522.8	0.19	-0.11	
6,008.0	4.90	302.40	5,981.7	107.0	-518.7	529.5	2.98	1.09	
6,099.0	4.60	310.90	6,072.4	111.5	-524.8	536.2	0.84	-0.33	
6,191.0	5.30	289.00	6,164.1	115.3	-531.6	543.6	2.17	0.76	
6,282.0	4.90	288.80	6,254.7	117.9	-539.2	551.6	0.44	-0.44	
6,374.0	4.70	284.70	6,346.4	120.1	-546.6	559.2	0.43	-0.22	
6,466.0	4.10	281.90	6,438.1	121.7	-553.5	566.3	0.69	-0.65	
6,557.0	4.10	277.40	6,528.9	122.8	-559.9	572.8	0.35	0.00	
6,649.0	3.60	277.60	6,620.7	123.6	-566.0	578.9	0.54	-0.54	
6,740.0	3.70	277.70	6,711.5	124.4	-571.7	584.7	0.11	0.11	
6,831.0	3.70	270.80	6,802.3	124.8	-577.6	590.5	0.49	0.00	
6,923.0	3.10	262.60	6,894.1	124.6	-583.0	595.8	0.84	-0.65	
7,014.0	3.20	280.60	6,985.0	124.7	-587.9	600.7	1.09	0.11	
7,106.0	1.20	319.30	7,076.9	125.9	-591.1	604.0	2.59	-2.17	
7,197.0	0.80	330.50	7,167.9	127.2	-592.0	605.2	0.49	-0.44	
7,289.0	0.50	65.10	7,259.9	127.9	-592.0	605.3	1.06	-0.33	
7,361.1	0.42	355.82	7,332.0	128.3	-591.7	605.1	0.73	-0.11	8514A-22 N22 496 TGT (Column)
7,380.0	0.50	341.60	7,350.9	128.5	-591.7	605.1	0.73	0.42	
7,472.0	0.40	268.20	7,442.9	128.8	-592.2	605.6	0.59	-0.11	
7,564.0	0.20	237.50	7,534.9	128.7	-592.7	606.1	0.27	-0.22	
7,655.0	0.70	296.10	7,625.9	128.9	-593.3	606.7	0.68	0.55	
7,747.0	1.00	234.50	7,717.9	128.7	-594.4	607.8	0.99	0.33	
7,839.0	1.50	231.40	7,809.9	127.5	-596.0	609.2	0.55	0.54	
7,930.0	1.00	240.70	7,900.8	126.3	-597.7	610.6	0.59	-0.55	
8,022.0	0.20	208.60	7,992.8	125.8	-598.4	611.3	0.91	-0.87	
8,113.0	1.10	210.50	8,083.8	124.9	-599.0	611.6	0.99	0.99	
8,205.0	1.40	37.00	8,175.8	125.0	-598.7	611.4	2.71	0.33	
8,297.0	1.00	45.00	8,267.8	126.5	-597.5	610.4	0.47	-0.43	
8,389.0	0.70	136.40	8,359.8	126.7	-596.5	609.5	1.34	-0.33	
8,480.0	0.50	355.50	8,450.8	126.7	-596.2	609.2	1.24	-0.22	
8,571.0	0.80	255.80	8,541.8	126.9	-596.8	609.9	1.11	0.33	
8,663.0	1.10	247.50	8,633.8	126.4	-598.3	611.2	0.36	0.33	
8,755.0	1.10	206.10	8,725.8	125.3	-599.5	612.2	0.85	0.00	
8,846.0	0.40	168.60	8,816.8	124.2	-599.8	612.3	0.90	-0.77	
8,938.0	0.40	17.80	8,908.8	124.2	-599.6	612.1	0.84	0.00	
9,029.0	0.40	159.80	8,999.8	124.2	-599.4	611.9	0.83	0.00	
9,121.0	0.60	35.70	9,091.8	124.3	-599.0	611.6	0.97	0.22	
9,213.0	0.70	44.20	9,183.7	125.1	-598.4	611.0	0.15	0.11	
9,304.0	0.40	73.60	9,274.7	125.5	-597.7	610.4	0.44	-0.33	
9,395.0	0.30	177.70	9,365.7	125.4	-597.4	610.1	0.61	-0.11	
9,487.0	0.70	258.40	9,457.7	125.0	-597.9	610.6	0.78	0.43	
9,578.0	1.10	227.50	9,548.7	124.3	-599.1	611.6	0.68	0.44	
9,669.0	0.90	204.10	9,639.7	123.1	-600.0	612.3	0.49	-0.22	
9,761.0	0.40	18.90	9,731.7	122.7	-600.2	612.5	1.41	-0.54	
9,852.0	1.50	306.50	9,822.7	123.7	-601.1	613.5	1.57	1.21	
10,036.0	0.60	36.50	10,006.7	126.0	-602.4	615.2	0.88	-0.49	
10,127.0	0.80	75.80	10,097.7	126.5	-601.5	614.4	0.56	0.22	
10,219.0	0.60	140.50	10,189.7	126.3	-600.6	613.5	0.83	-0.22	
10,310.0	0.70	196.70	10,280.7	125.4	-600.5	613.2	0.68	0.11	
10,402.0	0.80	194.00	10,372.7	124.2	-600.8	613.3	0.12	0.11	
10,494.0	1.00	205.40	10,464.6	122.9	-601.3	613.5	0.29	0.22	
10,677.0	1.80	241.50	10,647.6	120.1	-604.5	616.2	0.63	0.44	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8514A-22 N22 496
Project:	Story Gulch	TVD Reference:	WELL @ 7602.0ft (Original Well Elev)
Site:	S22-T4S-R96W (N22 496) (Column Pattern)	MD Reference:	WELL @ 7602.0ft (Original Well Elev)
Well:	8514A-22 N22 496	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
10,769.0	1.70	242.80	10,739.5	118.7	-607.0	618.4	0.12	-0.11	
10,952.0	1.70	243.10	10,922.5	116.3	-611.8	622.7	0.00	0.00	
11,021.5	1.92	232.53	10,992.0	115.1	-613.6	624.3	0.58	0.32	8514A-22 N22 496 PBHL (Column)
11,042.0	2.00	229.90	11,012.4	114.7	-614.2	624.8	0.58	0.37	
11,134.0	2.30	240.90	11,104.4	112.7	-617.0	627.2	0.55	0.33	
11,227.0	1.20	263.00	11,197.3	111.7	-619.6	629.6	1.37	-1.18	
11,317.0	1.10	318.60	11,287.3	112.2	-621.1	631.2	1.20	-0.11	
11,408.0	1.60	281.10	11,378.3	113.1	-623.0	633.1	1.09	0.55	
11,499.0	1.00	262.80	11,469.2	113.3	-625.0	635.2	0.79	-0.66	
11,590.0	1.20	301.20	11,560.2	113.7	-626.6	636.8	0.82	0.22	
11,774.0	2.20	290.30	11,744.1	115.9	-631.6	642.1	0.57	0.54	
11,865.0	2.20	270.20	11,835.1	116.5	-634.9	645.5	0.84	0.00	
11,957.0	2.30	268.40	11,927.0	116.5	-638.6	649.1	0.13	0.11	
12,049.0	2.30	266.20	12,018.9	116.3	-642.2	652.7	0.10	0.00	
12,108.0	2.20	266.00	12,077.9	116.1	-644.6	654.9	0.17	-0.17	Last Cathedral Survey @ 12,108' MD Projection to Bit @ 12,178' MD
12,178.0	2.20	266.00	12,147.8	115.9	-647.2	657.5	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									
8514A-22 N22 496 PBH	0.00	0.00	10,992.0	115.6	-612.4	1,685,029.35	2,251,637.98	39.68413	-108.15938
- actual wellpath misses target center by 1.4ft at 11021.5ft MD (10992.0 TVD, 115.1 N, -613.6 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
8514A-22 N22 496 TGT	0.00	0.00	7,332.0	125.6	-595.4	1,685,038.88	2,251,655.25	39.68415	-108.15932
- actual wellpath misses target center by 4.6ft at 7361.1ft MD (7332.0 TVD, 128.3 N, -591.7 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
12,108.0	12,077.9	116.1	-644.6	Last Cathedral Survey @ 12,108' MD	
12,178.0	12,147.8	115.9	-647.2	Projection to Bit @ 12,178' MD	

Checked By: _____ Approved By: _____ Date: _____