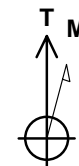
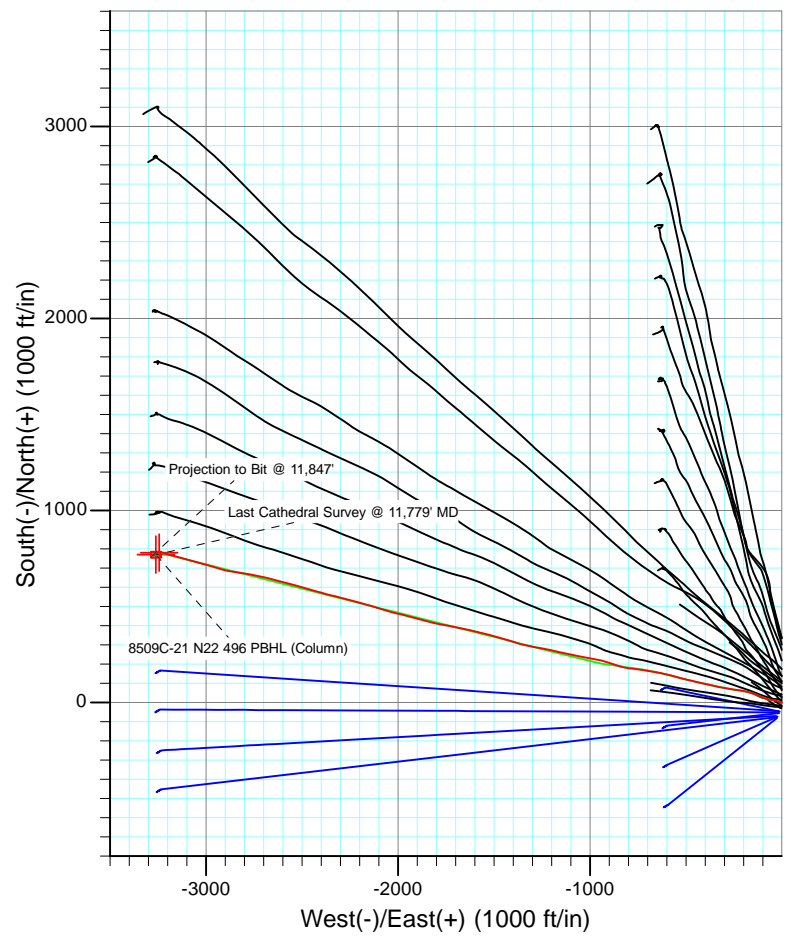
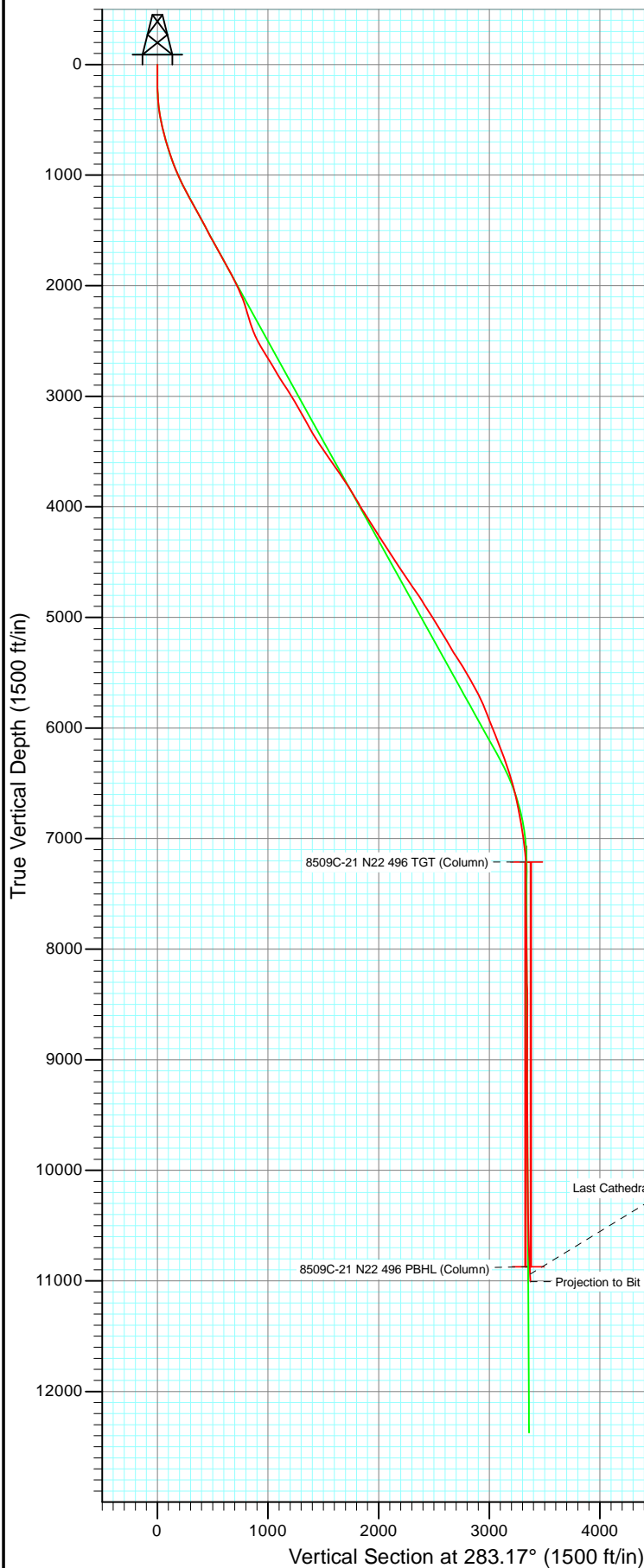




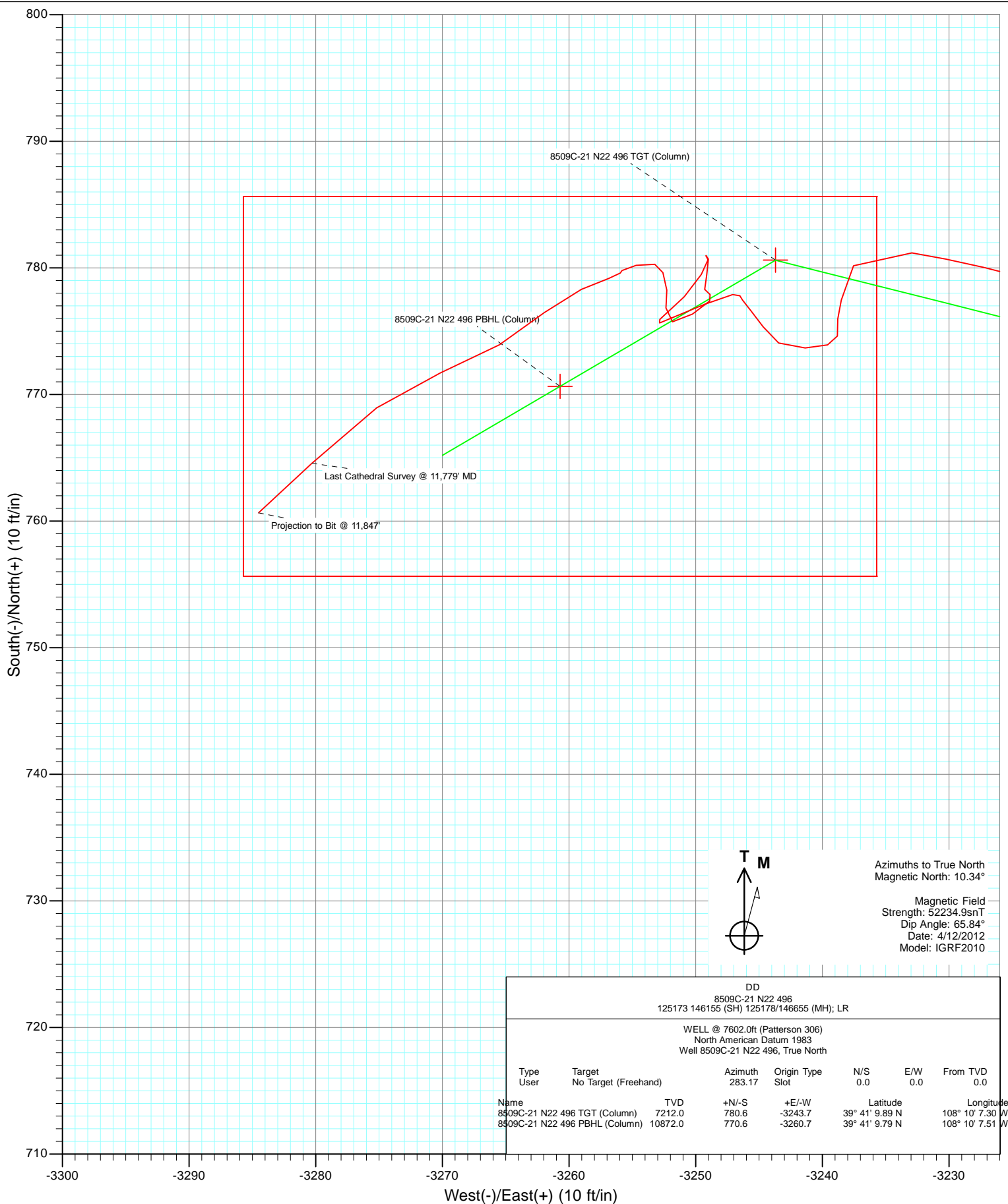
Project: Story Gulch
 Site: S22-T4S-R96W (N22 496) (Column Pattern)
 Well: 8509C-21 N22 496
 Wellbore: DD
 Design: FINAL



Azimuths to True North
 Magnetic North: 10.34°

Magnetic Field
 Strength: 52234.9snT
 Dip Angle: 65.84°
 Date: 4/12/2012
 Model: IGRF2010

DD						
8509C-21 N22 496						
125173 146155 (SH) 125178/146655 (MH); LR						
WELL @ 7602.0ft (Patterson 306)						
North American Datum 1983						
Well 8509C-21 N22 496, True North						
Type User	Target No Target (Freehand)	Azimuth 283.17	Origin Type Slot	N/S 0.0	E/W 0.0	From TVD 0.0
Name						
8509C-21 N22 496 TGT (Column)	TVD 7212.0	+N/-S 780.6	+E/-W -3243.7	Latitude 39° 41' 9.89 N	Longitude 108° 10' 7.30 W	
8509C-21 N22 496 PBHL (Column)	10872.0	770.6	-3260.7	39° 41' 9.79 N	108° 10' 7.51 W	



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8509C-21 N22 496
Project:	Story Gulch	TVD Reference:	WELL @ 7602.0ft (Patterson 306)
Site:	S22-T4S-R96W (N22 496) (Column Pattern)	MD Reference:	WELL @ 7602.0ft (Patterson 306)
Well:	8509C-21 N22 496	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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° 41' 3.24 N
From:	Lat/Long	Easting:	2,252,316.79 ft	Longitude:	108° 9' 25.11 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.68 °

Well	8509C-21 N22 496					
Well Position	+N/-S	0.0 ft	Northing:	1,684,942.89 ft	Latitude:	39° 41' 2.18 N
	+E/-W	0.0 ft	Easting:	2,252,259.41 ft	Longitude:	108° 9' 25.80 W
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	4/12/2012	10.34	65.84	52,235

Design	DD				
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	283.17	

Survey Program	Date	4/12/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
180.0	2,072.0	Survey #1 (DD)	MWD	Geolink MWD	
2,168.0	11,847.0	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		
180.0	0.60	225.60	180.0	-0.7	-0.7	0.5	0.33	0.33		
210.0	1.30	249.80	210.0	-0.9	-1.1	0.9	2.64	2.33		
240.0	1.90	258.80	240.0	-1.1	-1.9	1.6	2.16	2.00		
271.0	2.60	268.20	271.0	-1.2	-3.1	2.8	2.55	2.26		
301.0	3.00	286.90	300.9	-1.0	-4.6	4.2	3.30	1.33		
332.0	4.00	290.60	331.9	-0.4	-6.3	6.1	3.31	3.23		
423.0	9.40	296.70	422.2	4.1	-16.0	16.5	5.98	5.93		
514.0	12.20	282.80	511.6	9.5	-32.0	33.3	4.18	3.08		
609.0	13.80	277.70	604.2	13.3	-53.0	54.6	2.07	1.68		
700.0	15.30	284.80	692.3	17.8	-75.4	77.4	2.56	1.65		
791.0	17.90	293.00	779.5	26.3	-99.9	103.2	3.84	2.86		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8509C-21 N22 496
Project:	Story Gulch	TVD Reference:	WELL @ 7602.0ft (Patterson 306)
Site:	S22-T4S-R96W (N22 496) (Column Pattern)	MD Reference:	WELL @ 7602.0ft (Patterson 306)
Well:	8509C-21 N22 496	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
883.0	20.20	291.30	866.4	37.6	-127.7	132.9	2.57	2.50	
975.0	22.50	288.70	952.1	49.0	-159.1	166.1	2.70	2.50	
1,067.0	25.10	281.60	1,036.3	58.6	-194.9	203.2	4.20	2.83	
1,158.0	27.70	278.00	1,117.8	65.4	-234.8	243.5	3.35	2.86	
1,249.0	28.50	278.10	1,198.1	71.4	-277.2	286.2	0.88	0.88	
1,341.0	29.40	282.70	1,278.6	79.5	-321.0	330.7	2.61	0.98	
1,432.0	28.60	282.30	1,358.2	89.0	-364.1	374.8	0.90	-0.88	
1,524.0	27.40	282.20	1,439.4	98.2	-406.3	418.0	1.31	-1.30	
1,616.0	28.00	282.40	1,520.9	107.3	-448.1	460.7	0.66	0.65	
1,706.0	29.60	284.00	1,599.7	117.2	-490.3	504.1	1.97	1.78	
1,798.0	29.40	284.80	1,679.8	128.5	-534.2	549.4	0.48	-0.22	
1,889.0	28.20	285.10	1,759.5	139.8	-576.5	593.2	1.33	-1.32	
1,981.0	28.30	282.40	1,840.6	150.2	-618.8	636.7	1.39	0.11	
2,072.0	28.20	281.50	1,920.8	159.1	-660.9	679.8	0.48	-0.11	
2,168.0	25.00	276.50	2,006.6	165.9	-703.3	722.6	4.07	-3.33	
2,260.0	22.60	278.80	2,090.8	170.8	-740.1	759.6	2.80	-2.61	
2,351.0	17.50	276.90	2,176.2	175.1	-771.0	790.6	5.65	-5.60	
2,409.0	16.20	274.60	2,231.7	176.8	-787.7	807.3	2.52	-2.24	
2,501.0	18.20	281.50	2,319.6	180.7	-814.6	834.4	3.10	2.17	
2,592.0	20.40	287.90	2,405.5	188.4	-843.6	864.4	3.35	2.42	
2,684.0	26.80	287.60	2,489.8	199.6	-878.7	901.1	6.96	6.96	
2,776.0	30.80	287.20	2,570.4	212.9	-921.0	945.3	4.35	4.35	
2,867.0	32.10	280.90	2,648.0	224.3	-967.0	992.7	3.88	1.43	
2,959.0	31.00	279.40	2,726.4	232.8	-1,014.4	1,040.8	1.47	-1.20	
3,051.0	30.80	281.90	2,805.4	241.6	-1,060.8	1,087.9	1.41	-0.22	
3,142.0	32.70	281.80	2,882.8	251.4	-1,107.7	1,135.8	2.09	2.09	
3,234.0	33.50	282.50	2,959.8	262.0	-1,156.8	1,186.0	0.96	0.87	
3,325.0	30.50	281.70	3,037.0	272.1	-1,203.9	1,234.3	3.33	-3.30	
3,417.0	29.60	281.10	3,116.6	281.2	-1,249.1	1,280.3	1.03	-0.98	
3,508.0	29.40	281.40	3,195.8	289.9	-1,293.0	1,325.1	0.27	-0.22	
3,600.0	28.40	280.80	3,276.4	298.5	-1,336.7	1,369.5	1.13	-1.09	
3,692.0	31.50	287.30	3,356.1	309.8	-1,381.1	1,415.4	4.87	3.37	
3,783.0	34.10	288.60	3,432.6	325.0	-1,428.0	1,464.5	2.96	2.86	
3,875.0	34.20	284.70	3,508.7	339.8	-1,477.5	1,516.0	2.38	0.11	
3,967.0	35.30	285.50	3,584.3	353.4	-1,528.1	1,568.4	1.29	1.20	
4,058.0	34.90	282.50	3,658.8	366.1	-1,578.8	1,620.7	1.95	-0.44	
4,150.0	34.20	281.50	3,734.5	376.9	-1,629.9	1,672.9	0.98	-0.76	
4,242.0	31.70	282.00	3,811.7	387.1	-1,678.9	1,722.9	2.73	-2.72	
4,332.0	31.60	282.00	3,888.4	396.9	-1,725.1	1,770.1	0.11	-0.11	
4,425.0	29.80	279.60	3,968.3	405.9	-1,771.7	1,817.6	2.34	-1.94	
4,516.0	32.20	283.40	4,046.3	415.2	-1,817.6	1,864.4	3.40	2.64	
4,608.0	33.40	284.90	4,123.7	427.4	-1,865.9	1,914.2	1.58	1.30	
4,700.0	32.70	286.00	4,200.8	440.8	-1,914.3	1,964.3	1.00	-0.76	
4,792.0	32.20	283.70	4,278.4	453.5	-1,962.0	2,013.7	1.45	-0.54	
4,883.0	31.80	283.70	4,355.6	464.9	-2,008.8	2,061.9	0.44	-0.44	
4,974.0	32.50	285.80	4,432.6	477.2	-2,055.6	2,110.3	1.45	0.77	
5,065.0	34.20	287.70	4,508.6	491.6	-2,103.5	2,160.2	2.19	1.87	
5,157.0	34.40	285.90	4,584.6	506.6	-2,153.2	2,211.9	1.12	0.22	
5,249.0	34.60	285.90	4,660.5	520.9	-2,203.3	2,264.0	0.22	0.22	
5,340.0	34.70	283.90	4,735.3	534.2	-2,253.3	2,315.7	1.25	0.11	
5,432.0	33.10	284.80	4,811.7	546.9	-2,303.0	2,367.0	1.82	-1.74	
5,523.0	32.00	283.50	4,888.4	558.9	-2,350.4	2,416.0	1.43	-1.21	
5,615.0	31.70	285.70	4,966.5	571.1	-2,397.4	2,464.5	1.30	-0.33	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8509C-21 N22 496
Project:	Story Gulch	TVD Reference:	WELL @ 7602.0ft (Patterson 306)
Site:	S22-T4S-R96W (N22 496) (Column Pattern)	MD Reference:	WELL @ 7602.0ft (Patterson 306)
Well:	8509C-21 N22 496	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
5,707.0	32.90	286.90	5,044.3	584.9	-2,444.6	2,513.6	1.48	1.30	
5,798.0	31.10	285.20	5,121.5	598.3	-2,490.9	2,561.7	2.21	-1.98	
5,890.0	29.40	284.30	5,200.9	610.1	-2,535.7	2,608.0	1.91	-1.85	
5,981.0	31.30	285.80	5,279.5	622.0	-2,580.1	2,654.0	2.25	2.09	
6,073.0	32.60	285.90	5,357.5	635.3	-2,627.0	2,702.6	1.41	1.41	
6,165.0	32.80	283.50	5,435.0	647.9	-2,675.0	2,752.3	1.43	0.22	
6,255.0	29.70	279.50	5,511.9	657.3	-2,720.7	2,798.9	4.14	-3.44	
6,347.0	29.70	280.10	5,591.8	665.1	-2,765.7	2,844.5	0.32	0.00	
6,438.0	28.10	279.80	5,671.5	672.7	-2,809.0	2,888.4	1.77	-1.76	
6,530.0	24.30	280.30	5,754.0	679.8	-2,849.0	2,928.9	4.14	-4.13	
6,621.0	21.70	279.40	5,837.8	685.9	-2,884.0	2,964.4	2.88	-2.86	
6,713.0	20.50	283.80	5,923.6	692.5	-2,916.4	2,997.5	2.16	-1.30	
6,804.0	22.60	288.50	6,008.2	701.8	-2,948.5	3,030.8	2.99	2.31	
6,896.0	22.30	287.60	6,093.3	712.7	-2,981.9	3,065.8	0.50	-0.33	
6,988.0	20.70	285.70	6,178.9	722.4	-3,014.2	3,099.5	1.90	-1.74	
7,079.0	19.40	284.70	6,264.4	730.6	-3,044.3	3,130.7	1.48	-1.43	
7,171.0	18.20	284.40	6,351.4	738.0	-3,073.0	3,160.3	1.31	-1.30	
7,263.0	17.80	283.70	6,438.9	744.9	-3,100.6	3,188.7	0.49	-0.43	
7,354.0	16.10	285.40	6,526.0	751.6	-3,126.2	3,215.2	1.95	-1.87	
7,446.0	12.40	286.00	6,615.1	757.7	-3,148.0	3,237.9	4.02	-4.02	
7,537.0	11.30	287.50	6,704.2	763.1	-3,165.9	3,256.5	1.26	-1.21	
7,629.0	10.20	285.40	6,794.6	767.9	-3,182.4	3,273.6	1.27	-1.20	
7,720.0	9.50	285.40	6,884.2	772.1	-3,197.4	3,289.2	0.77	-0.77	
7,812.0	8.80	285.00	6,975.1	775.9	-3,211.5	3,303.8	0.76	-0.76	
7,904.0	7.10	284.70	7,066.2	779.2	-3,223.8	3,316.5	1.85	-1.85	
7,995.0	4.70	279.10	7,156.7	781.2	-3,232.9	3,325.9	2.71	-2.64	
8,087.0	2.30	208.70	7,248.5	780.2	-3,237.5	3,330.1	4.88	-2.61	
8,178.0	1.40	184.70	7,339.5	777.5	-3,238.5	3,330.5	1.28	-0.99	
8,270.0	0.50	206.50	7,431.5	776.0	-3,238.8	3,330.4	1.04	-0.98	
8,361.0	0.40	150.20	7,522.5	775.3	-3,238.8	3,330.3	0.48	-0.11	
8,453.0	0.60	201.90	7,614.5	774.6	-3,238.8	3,330.1	0.51	0.22	
8,545.0	0.80	246.40	7,706.5	773.9	-3,239.6	3,330.7	0.61	0.22	
8,636.0	1.50	270.60	7,797.5	773.7	-3,241.4	3,332.4	0.92	0.77	
8,728.0	1.20	293.20	7,889.4	774.1	-3,243.4	3,334.5	0.66	-0.33	
8,819.0	1.20	338.90	7,980.4	775.3	-3,244.7	3,336.0	1.02	0.00	
8,911.0	0.90	301.60	8,072.4	776.6	-3,245.6	3,337.2	0.79	-0.33	
9,002.0	0.60	353.20	8,163.4	777.5	-3,246.3	3,338.0	0.78	-0.33	
9,094.0	0.90	266.90	8,255.4	777.9	-3,247.1	3,338.9	1.14	0.33	
9,185.0	2.10	244.20	8,346.4	777.1	-3,249.3	3,340.9	1.45	1.32	
9,215.0	1.90	250.10	8,376.3	776.7	-3,250.3	3,341.7	0.96	-0.67	
9,307.0	1.60	244.60	8,468.3	775.7	-3,252.8	3,344.0	0.37	-0.33	
9,398.0	1.80	54.60	8,559.3	775.9	-3,252.8	3,344.1	3.72	0.22	
9,490.0	1.50	38.40	8,651.2	777.7	-3,250.9	3,342.6	0.60	-0.33	
9,581.0	1.30	35.70	8,742.2	779.5	-3,249.6	3,341.7	0.23	-0.22	
9,672.0	0.40	346.70	8,833.2	780.6	-3,249.0	3,341.4	1.19	-0.99	
9,764.0	0.10	287.60	8,925.2	781.0	-3,249.2	3,341.7	0.39	-0.33	
9,856.0	0.50	138.90	9,017.2	780.7	-3,249.0	3,341.4	0.64	0.43	
9,947.0	1.30	202.40	9,108.2	779.4	-3,249.1	3,341.3	1.28	0.88	
10,034.0	0.40	135.80	9,195.2	778.3	-3,249.3	3,341.2	1.38	-1.03	
10,131.0	0.30	133.10	9,292.2	777.9	-3,248.9	3,340.7	0.10	-0.10	
10,223.0	0.50	210.40	9,384.2	777.4	-3,248.9	3,340.6	0.57	0.22	
10,314.0	1.70	239.40	9,475.2	776.4	-3,250.3	3,341.7	1.41	1.32	
10,406.0	0.50	282.30	9,567.1	775.7	-3,251.8	3,343.0	1.50	-1.30	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8509C-21 N22 496
Project:	Story Gulch	TVD Reference:	WELL @ 7602.0ft (Patterson 306)
Site:	S22-T4S-R96W (N22 496) (Column Pattern)	MD Reference:	WELL @ 7602.0ft (Patterson 306)
Well:	8509C-21 N22 496	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
10,589.0	0.60	15.60	9,750.1	776.8	-3,252.3	3,343.8	0.44	0.05	
10,680.0	1.20	356.60	9,841.1	778.2	-3,252.3	3,344.1	0.73	0.66	
10,772.0	0.60	329.00	9,933.1	779.6	-3,252.6	3,344.7	0.79	-0.65	
10,863.0	0.60	302.80	10,024.1	780.3	-3,253.2	3,345.4	0.30	0.00	
10,955.0	1.40	252.30	10,116.1	780.2	-3,254.7	3,346.9	1.22	0.87	
11,047.0	0.10	214.60	10,208.1	779.8	-3,255.8	3,347.9	1.44	-1.41	
11,139.0	0.20	214.20	10,300.1	779.6	-3,256.0	3,347.9	0.11	0.11	
11,230.0	1.10	249.60	10,391.1	779.2	-3,256.9	3,348.7	1.04	0.99	
11,322.0	1.80	247.70	10,483.0	778.3	-3,259.0	3,350.6	0.76	0.76	
11,413.0	2.60	231.10	10,574.0	776.5	-3,262.0	3,353.1	1.12	0.88	
11,504.0	2.90	237.10	10,664.9	773.9	-3,265.5	3,355.9	0.46	0.33	
11,596.0	3.60	250.50	10,756.7	771.7	-3,270.2	3,360.0	1.12	0.76	
11,687.0	3.70	232.20	10,847.5	768.9	-3,275.2	3,364.2	1.28	0.11	
11,779.0	4.70	227.20	10,939.3	764.6	-3,280.3	3,368.2	1.16	1.09	Last Cathedral Survey @ 11,779' MD Projection to Bit @ 11,847'
11,847.0	5.00	227.20	11,007.1	760.7	-3,284.5	3,371.4	0.44	0.44	

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									
8509C-21 N22 496 TGT	0.00	0.00	7,212.0	780.6	-3,243.7	1,685,818.03	2,249,039.92	39° 41' 9.89 N	108° 10' 7.30 W
- actual wellpath misses target center by 7.3ft at 8050.8ft MD (7212.4 TVD, 781.1 N, -3236.4 E)									
- Point									
8509C-21 N22 496 PBH	0.00	0.00	10,872.0	770.6	-3,260.7	1,685,808.56	2,249,022.63	39° 41' 9.79 N	108° 10' 7.51 W
- actual wellpath misses target center by 16.0ft at 11710.5ft MD (10871.0 TVD, 768.0 N, -3276.4 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)	
11,779.0	10,939.3	764.6	-3,280.3	Last Cathedral Survey @ 11,779' MD
11,847.0	11,007.1	760.7	-3,284.5	Projection to Bit @ 11,847'

Checked By: _____ Approved By: _____ Date: _____