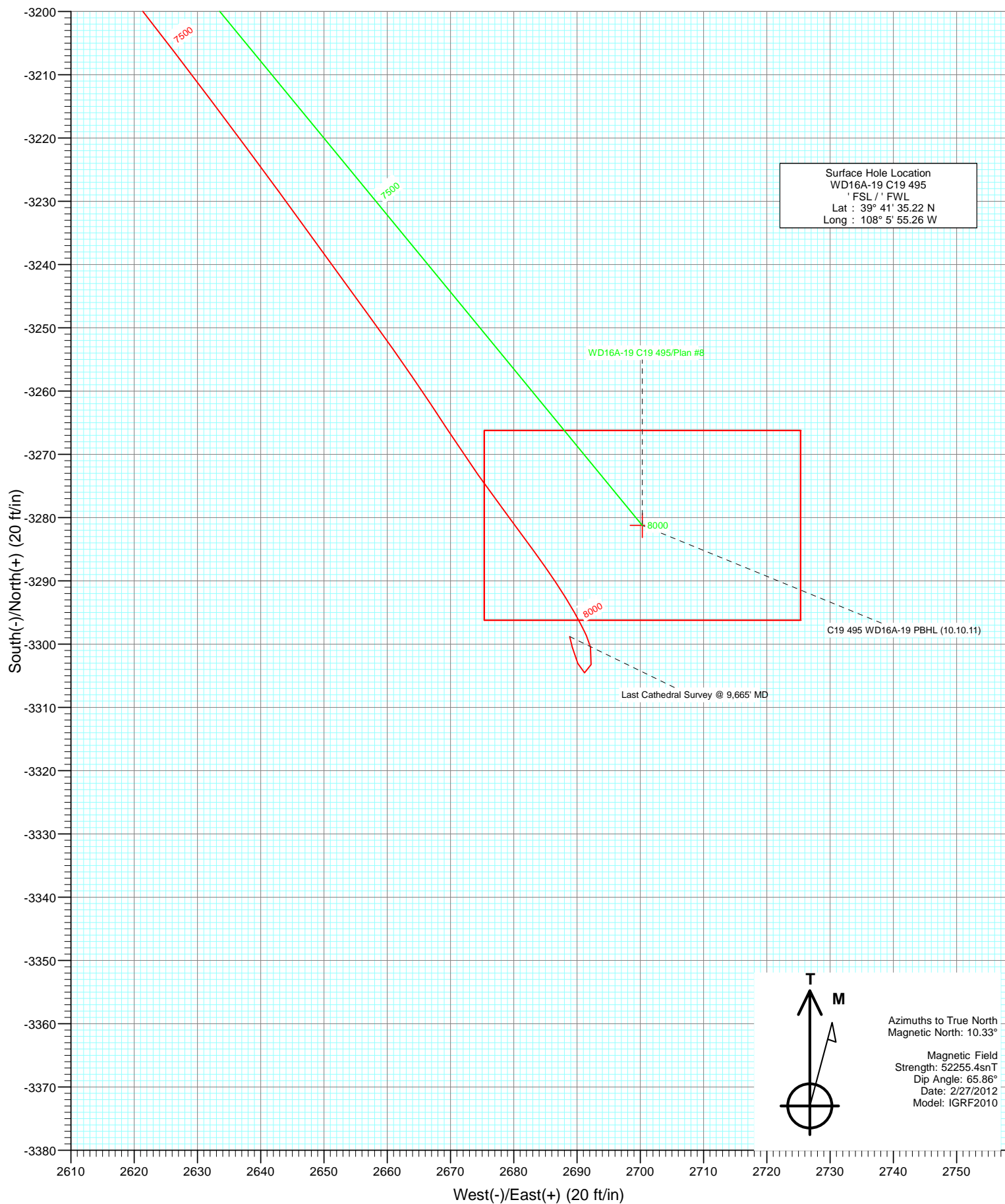


Azimuths to True North
Magnetic North: 10.33°

Magnetic Field
Strength: 52255.4snT
Dip Angle: 65.86°
Date: 2/27/2012
Model: IGRF2010

		DD					
		WD16A-19 C19 495					
		125106 140955, 145155 125167; LR					
		KB-32 @ 8159.0ft (Patterson 330)					
		GL @ 8127.0					
		North American Datum 1983					
		Well WD16A-19 C19 495, True North					
Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD
Target	C19 495 WD16A-19 PBHL (10.10.11)	101.85	Slot		0.0	0.0	0.0
Name		TVD	+N/-S	+E/-W	Latitude	Longitude	
C19 495 WD16A-19 PBHL (10.10.11)		8443.0	-3281.2	2700.3	39° 41' 27.9 N	108° 5' 20.72 W	



Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well WD16A-19 C19 495
Project:	Story Gulch	TVD Reference:	KB-32' @ 8159.0ft (Patterson 330)
Site:	C19 495	MD Reference:	KB-32' @ 8159.0ft (Patterson 330)
Well:	WD16A-19 C19 495	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		C19 495			
Site Position:		Northing:	1,687,624.39 ft	Latitude:	39° 41' 33.36 N
From:	Lat/Long	Easting:	2,268,676.50 ft	Longitude:	108° 5' 56.88 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.64 °

Well	WD16A-19 C19 495					
Well Position	+N/-S	0.0 ft	Northing:	1,687,808.85 ft	Latitude:	39° 41' 35.22 N
	+E/-W	0.0 ft	Easting:	2,268,808.46 ft	Longitude:	108° 5' 55.26 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,127.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/27/2012	10.33	65.86	52,255

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	140.55	

Survey Program	Date	3/9/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
172.0	9,665.0	Survey #1 (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		
172.0	0.70	136.90	172.0	-0.8	0.7	1.0	0.41	0.41		
202.0	0.70	133.30	202.0	-1.0	1.0	1.4	0.15	0.00		
233.0	0.80	140.70	233.0	-1.3	1.3	1.8	0.45	0.32		
263.0	1.30	159.10	263.0	-1.8	1.5	2.3	1.99	1.67		
294.0	2.60	153.30	294.0	-2.8	1.9	3.4	4.24	4.19		
325.0	4.30	145.20	324.9	-4.3	2.9	5.2	5.69	5.48		
355.0	5.36	147.90	354.8	-6.5	4.3	7.7	3.61	3.53		
385.0	6.15	144.80	384.7	-9.0	6.0	10.7	2.83	2.63		
417.0	7.70	148.90	416.4	-12.2	8.1	14.5	5.08	4.84		
447.0	8.00	146.60	446.1	-15.7	10.3	18.6	1.45	1.00		
478.0	8.90	142.79	476.8	-19.4	12.9	23.2	3.42	2.90		
511.0	9.30	147.40	509.4	-23.6	15.9	28.4	2.52	1.21		

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well WD16A-19 C19 495
Project:	Story Gulch	TVD Reference:	KB-32' @ 8159.0ft (Patterson 330)
Site:	C19 495	MD Reference:	KB-32' @ 8159.0ft (Patterson 330)
Well:	WD16A-19 C19 495	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
541.0	10.30	144.00	538.9	-27.9	18.8	33.4	3.85	3.33	
572.0	10.90	142.00	569.4	-32.4	22.2	39.1	2.27	1.94	
602.0	11.60	139.50	598.8	-36.9	25.9	45.0	2.84	2.33	
633.0	11.80	140.30	629.2	-41.7	30.0	51.3	0.83	0.65	
663.0	13.14	138.48	658.5	-46.7	34.2	57.7	4.65	4.47	
694.0	13.70	138.70	688.6	-52.1	38.9	64.9	1.81	1.81	
724.0	14.80	139.00	717.7	-57.6	43.8	72.3	3.67	3.67	
755.0	15.20	140.00	747.7	-63.7	49.0	80.3	1.54	1.29	
785.0	15.80	141.70	776.6	-69.9	54.1	88.4	2.51	2.00	
815.0	16.20	141.10	805.4	-76.4	59.2	96.6	1.44	1.33	
847.0	16.40	140.80	836.1	-83.4	64.9	105.6	0.68	0.62	
878.0	16.40	140.50	865.9	-90.1	70.4	114.4	0.27	0.00	
909.0	17.00	140.60	895.6	-97.0	76.1	123.3	1.94	1.94	
938.0	17.84	139.40	923.2	-103.7	81.7	131.9	3.15	2.90	
969.0	18.20	137.40	952.7	-110.8	88.0	141.5	2.31	1.16	
1,000.0	19.30	137.00	982.1	-118.1	94.8	151.5	3.57	3.55	
1,030.0	19.60	137.00	1,010.3	-125.5	101.6	161.4	1.00	1.00	
1,061.0	19.60	138.40	1,039.6	-133.1	108.6	171.8	1.51	0.00	
1,092.0	20.20	140.30	1,068.7	-141.2	115.5	182.4	2.85	1.94	
1,123.0	20.40	141.40	1,097.8	-149.5	122.3	193.1	1.39	0.65	
1,152.0	21.90	140.80	1,124.8	-157.6	128.9	203.6	5.23	5.17	
1,213.0	24.60	143.00	1,180.9	-176.6	143.7	227.7	4.65	4.43	
1,305.0	25.60	142.60	1,264.2	-207.7	167.3	266.7	1.10	1.09	
1,396.0	26.80	141.40	1,345.8	-239.3	192.0	306.8	1.44	1.32	
1,487.0	29.20	140.30	1,426.2	-272.4	219.0	349.5	2.70	2.64	
1,578.0	30.30	141.10	1,505.2	-307.4	247.6	394.7	1.29	1.21	
1,669.0	31.30	140.80	1,583.3	-343.6	277.0	441.3	1.11	1.10	
1,761.0	32.90	138.00	1,661.3	-380.7	308.8	490.1	2.37	1.74	
1,852.0	33.40	138.20	1,737.5	-417.7	342.0	539.9	0.56	0.55	
1,944.0	35.30	137.30	1,813.4	-456.1	376.9	591.7	2.14	2.07	
2,036.0	35.10	139.30	1,888.6	-495.7	412.2	644.7	1.27	-0.22	
2,127.0	34.00	138.00	1,963.5	-534.5	446.3	696.3	1.46	-1.21	
2,219.0	32.70	140.60	2,040.4	-572.8	479.3	746.8	2.10	-1.41	
2,265.0	32.40	140.60	2,079.2	-591.9	495.0	771.6	0.65	-0.65	
2,311.0	33.50	140.20	2,117.8	-611.2	510.9	796.6	2.44	2.39	
2,403.0	34.50	139.70	2,194.0	-650.6	544.0	848.0	1.13	1.09	
2,494.0	34.40	139.50	2,269.1	-689.8	577.4	899.5	0.17	-0.11	
2,586.0	35.00	142.00	2,344.7	-730.3	610.5	951.9	1.68	0.65	
2,677.0	35.10	142.80	2,419.2	-771.7	642.4	1,004.1	0.52	0.11	
2,769.0	34.20	142.40	2,494.9	-813.3	674.2	1,056.4	1.01	-0.98	
2,860.0	33.80	140.80	2,570.4	-853.2	705.8	1,107.2	1.08	-0.44	
2,952.0	33.20	141.60	2,647.1	-892.7	737.6	1,158.0	0.81	-0.65	
2,990.0	32.30	140.80	2,679.0	-908.7	750.5	1,178.6	2.63	-2.37	
3,084.0	29.00	140.20	2,759.9	-945.7	780.9	1,226.5	3.53	-3.51	
3,175.0	27.20	138.00	2,840.2	-978.1	809.0	1,269.3	2.28	-1.98	
3,266.0	28.20	140.20	2,920.7	-1,010.1	836.7	1,311.6	1.57	1.10	
3,358.0	28.80	136.20	3,001.6	-1,042.8	865.9	1,355.4	2.17	0.65	
3,449.0	29.80	139.90	3,080.9	-1,075.9	895.7	1,399.9	2.27	1.10	
3,541.0	30.20	141.80	3,160.6	-1,111.6	924.7	1,445.9	1.12	0.43	
3,633.0	31.70	145.80	3,239.5	-1,149.8	952.6	1,493.1	2.77	1.63	
3,724.0	35.10	144.20	3,315.5	-1,190.8	981.4	1,543.1	3.86	3.74	
3,816.0	38.50	139.90	3,389.2	-1,234.2	1,015.3	1,598.1	4.63	3.70	
3,908.0	36.00	139.60	3,462.4	-1,276.7	1,051.3	1,653.8	2.72	-2.72	

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well WD16A-19 C19 495
Project:	Story Gulch	TVD Reference:	KB-32' @ 8159.0ft (Patterson 330)
Site:	C19 495	MD Reference:	KB-32' @ 8159.0ft (Patterson 330)
Well:	WD16A-19 C19 495	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
4,000.0	37.80	138.80	3,536.0	-1,318.5	1,087.4	1,709.0	2.02	1.96	
4,091.0	37.40	141.00	3,608.1	-1,360.9	1,123.1	1,764.5	1.54	-0.44	
4,183.0	36.90	139.60	3,681.4	-1,403.7	1,158.6	1,820.1	1.07	-0.54	
4,274.0	35.80	140.10	3,754.7	-1,444.9	1,193.4	1,874.0	1.25	-1.21	
4,366.0	35.00	140.80	3,829.7	-1,486.0	1,227.3	1,927.3	0.97	-0.87	
4,457.0	34.80	139.50	3,904.3	-1,526.0	1,260.7	1,979.4	0.85	-0.22	
4,549.0	35.10	139.10	3,979.7	-1,565.9	1,295.0	2,032.1	0.41	0.33	
4,640.0	32.10	137.60	4,055.5	-1,603.6	1,328.5	2,082.4	3.42	-3.30	
4,732.0	31.30	136.80	4,133.8	-1,639.0	1,361.3	2,130.6	0.98	-0.87	
4,824.0	32.40	140.20	4,211.9	-1,675.4	1,393.5	2,179.1	2.29	1.20	
4,915.0	32.70	140.60	4,288.6	-1,713.1	1,424.7	2,228.1	0.41	0.33	
5,007.0	35.30	143.00	4,364.9	-1,753.6	1,456.5	2,279.5	3.18	2.83	
5,098.0	34.50	143.60	4,439.5	-1,795.3	1,487.6	2,331.5	0.96	-0.88	
5,190.0	35.00	141.20	4,515.1	-1,836.8	1,519.6	2,383.9	1.58	0.54	
5,282.0	34.80	141.80	4,590.6	-1,878.0	1,552.3	2,436.5	0.43	-0.22	
5,373.0	34.90	142.60	4,665.3	-1,919.1	1,584.2	2,488.5	0.51	0.11	
5,465.0	34.20	143.00	4,741.0	-1,960.7	1,615.8	2,540.7	0.80	-0.76	
5,556.0	33.00	142.00	4,816.8	-2,000.6	1,646.4	2,591.0	1.45	-1.32	
5,648.0	33.10	138.80	4,894.0	-2,039.3	1,678.4	2,641.1	1.90	0.11	
5,739.0	32.30	140.00	4,970.5	-2,076.6	1,710.4	2,690.3	1.13	-0.88	
5,830.0	32.60	138.70	5,047.3	-2,113.6	1,742.2	2,739.1	0.83	0.33	
5,922.0	31.90	138.70	5,125.1	-2,150.5	1,774.6	2,788.2	0.76	-0.76	
6,013.0	31.00	140.50	5,202.8	-2,186.7	1,805.4	2,835.6	1.43	-0.99	
6,104.0	32.00	143.10	5,280.4	-2,224.0	1,834.7	2,883.2	1.85	1.10	
6,196.0	34.40	142.80	5,357.3	-2,264.2	1,865.1	2,933.5	2.61	2.61	
6,288.0	34.70	142.80	5,433.1	-2,305.8	1,896.6	2,985.6	0.33	0.33	
6,379.0	33.10	141.30	5,508.6	-2,345.8	1,927.8	3,036.4	1.98	-1.76	
6,471.0	32.40	139.10	5,586.0	-2,384.1	1,959.7	3,086.1	1.50	-0.76	
6,562.0	34.00	136.60	5,662.2	-2,421.0	1,993.1	3,135.9	2.31	1.76	
6,654.0	33.80	138.40	5,738.5	-2,458.8	2,027.8	3,187.1	1.11	-0.22	
6,745.0	33.50	140.60	5,814.3	-2,497.1	2,060.5	3,237.5	1.38	-0.33	
6,837.0	31.90	142.30	5,891.7	-2,536.0	2,091.5	3,287.2	2.01	-1.74	
6,929.0	31.40	138.70	5,970.0	-2,573.2	2,122.2	3,335.5	2.12	-0.54	
7,020.0	33.40	143.90	6,046.9	-2,611.3	2,152.6	3,384.2	3.77	2.20	
7,111.0	33.40	142.90	6,122.8	-2,651.5	2,182.5	3,434.2	0.60	0.00	
7,203.0	33.00	141.70	6,199.8	-2,691.4	2,213.3	3,484.6	0.84	-0.43	
7,295.0	32.30	142.43	6,277.3	-2,730.5	2,243.8	3,534.2	0.87	-0.76	
7,387.0	32.00	142.60	6,355.2	-2,769.4	2,273.6	3,583.1	0.34	-0.33	
7,478.0	31.25	140.06	6,432.7	-2,806.6	2,303.4	3,630.8	1.68	-0.82	
7,569.0	30.00	139.80	6,511.0	-2,842.1	2,333.2	3,677.2	1.38	-1.37	
7,660.0	27.33	143.00	6,590.8	-2,876.2	2,360.5	3,720.8	3.38	-2.93	
7,752.0	27.30	140.10	6,672.6	-2,909.2	2,386.8	3,763.0	1.45	-0.03	
7,844.0	27.80	141.80	6,754.1	-2,942.3	2,413.6	3,805.5	1.01	0.54	
7,936.0	26.70	143.80	6,835.9	-2,975.8	2,439.0	3,847.6	1.56	-1.20	
8,027.0	25.80	142.70	6,917.5	-3,008.1	2,463.1	3,887.8	1.12	-0.99	
8,119.0	25.30	141.40	7,000.6	-3,039.4	2,487.5	3,927.5	0.82	-0.54	
8,211.0	25.90	139.10	7,083.5	-3,069.9	2,512.9	3,967.2	1.26	0.65	
8,303.0	25.60	139.40	7,166.4	-3,100.2	2,539.0	4,007.2	0.36	-0.33	
8,394.0	23.40	139.90	7,249.2	-3,128.9	2,563.5	4,044.9	2.43	-2.42	
8,486.0	22.60	139.90	7,333.9	-3,156.4	2,586.6	4,080.9	0.87	-0.87	
8,578.0	20.20	141.90	7,419.5	-3,182.5	2,607.8	4,114.4	2.73	-2.61	
8,669.0	18.80	142.60	7,505.3	-3,206.5	2,626.4	4,144.8	1.56	-1.54	
8,761.0	16.10	143.90	7,593.1	-3,228.6	2,642.9	4,172.4	2.97	-2.93	

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well WD16A-19 C19 495
Project:	Story Gulch	TVD Reference:	KB-32' @ 8159.0ft (Patterson 330)
Site:	C19 495	MD Reference:	KB-32' @ 8159.0ft (Patterson 330)
Well:	WD16A-19 C19 495	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
8,853.0	15.20	144.10	7,681.7	-3,248.6	2,657.5	4,197.1	0.98	-0.98	
8,944.0	11.50	147.10	7,770.2	-3,265.9	2,669.4	4,218.0	4.14	-4.07	
9,036.0	9.80	142.70	7,860.6	-3,279.9	2,679.2	4,235.0	2.05	-1.85	
9,128.0	7.30	146.90	7,951.6	-3,291.0	2,687.1	4,248.6	2.80	-2.72	
9,219.0	3.90	156.50	8,042.1	-3,298.7	2,691.5	4,257.3	3.86	-3.74	
9,311.0	2.20	196.80	8,134.0	-3,303.2	2,692.2	4,261.3	2.87	-1.85	
9,402.0	0.83	303.90	8,225.0	-3,304.5	2,691.2	4,261.7	2.82	-1.51	
9,494.0	1.50	335.50	8,317.0	-3,303.1	2,690.1	4,259.9	0.98	0.73	
9,600.0	1.50	347.00	8,422.9	-3,300.4	2,689.2	4,257.3	0.28	0.00	C19 495 WD16A-19 PBHL (10.10.11)
9,665.0	1.50	347.00	8,487.9	-3,298.8	2,688.9	4,255.8	0.00	0.00	Last Cathedral Survey @ 9,665' MD

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									
C19 495 WD16A-19 PBI	0.00	0.00	8,443.0	-3,281.2	2,700.3	1,684,451.73	2,271,413.83	39° 41' 2.79 N	108° 5' 20.72 W
- actual wellpath misses target center by 29.9ft at 9600.0ft MD (8422.9 TVD, -3300.4 N, 2689.2 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
9,665.0	8,487.9	-3,298.8	2,688.9	Last Cathedral Survey @ 9,665' MD	

Checked By: _____	Approved By: _____	Date: _____
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