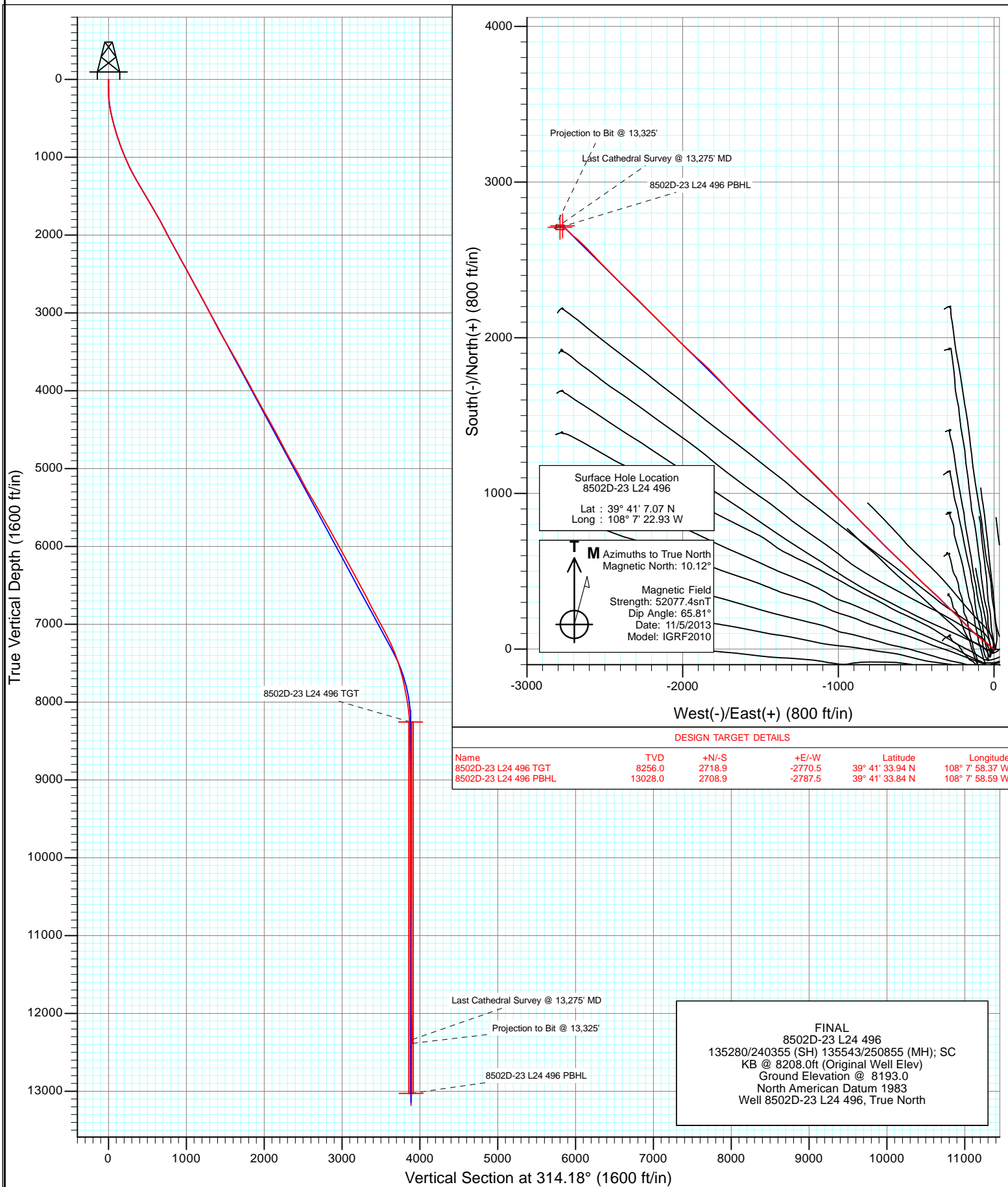


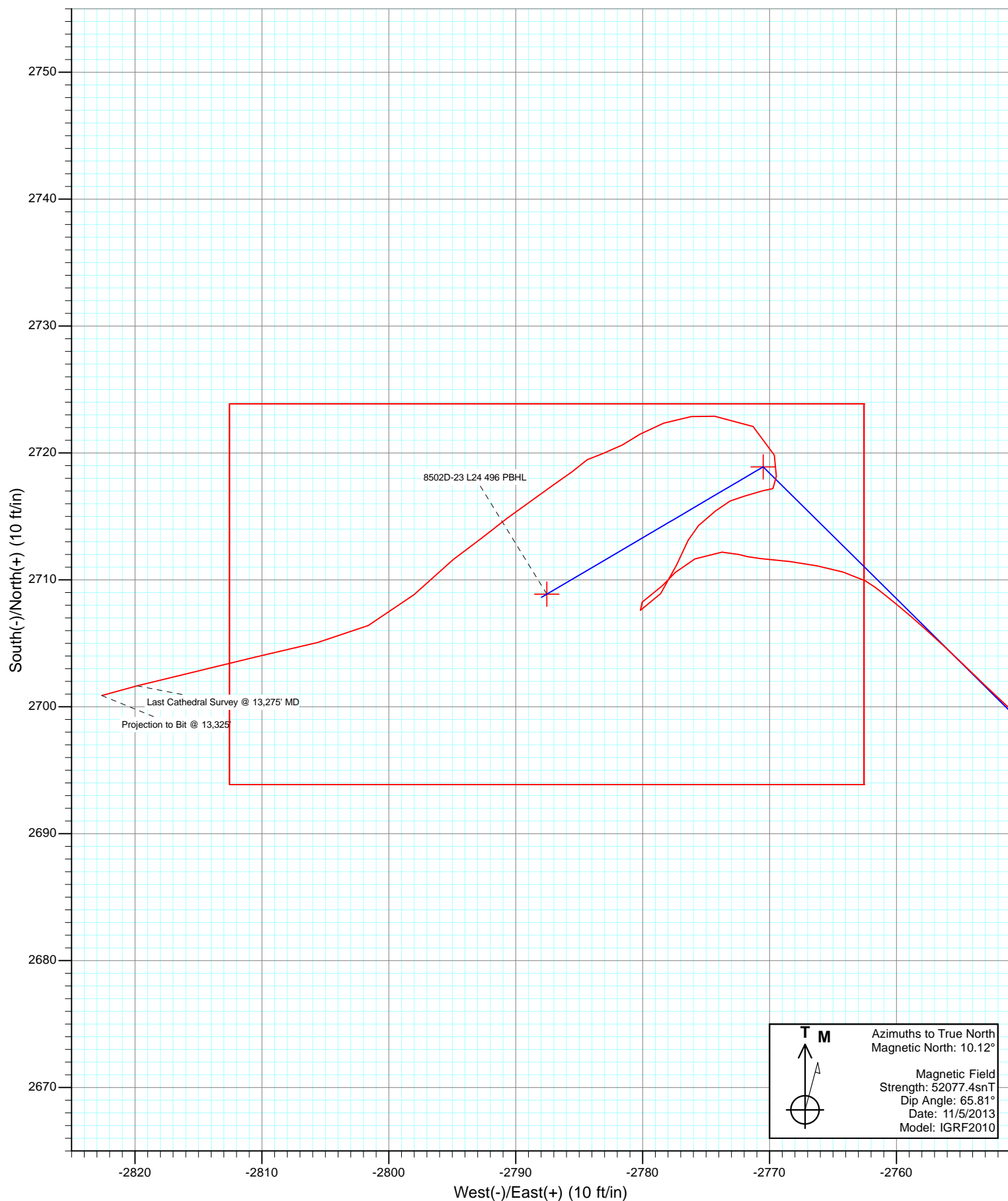


Project: Story Gulch
Site: L24 496
Well: 8502D-23 L24 496
Wellbore: DD
Design: FINAL





Project: Story Gulch
Site: L24 496
Well: 8502D-23 L24 496
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502D-23 L24 496
Project:	Story Gulch	TVD Reference:	KB @ 8208.0ft (Original Well Elev)
Site:	L24 496	MD Reference:	KB @ 8208.0ft (Original Well Elev)
Well:	8502D-23 L24 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	L24 496				
Site Position:		Northing:	1,685,024.52 ft	Latitude:	39° 41' 5.72 N
From:	Lat/Long	Easting:	2,261,789.15 ft	Longitude:	108° 7' 23.99 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.65 °

Well	8502D-23 L24 496					
Well Position	+N/-S	0.0 ft	Northing:	1,685,158.65 ft	Latitude:	39° 41' 7.07 N
	+E/-W	0.0 ft	Easting:	2,261,875.93 ft	Longitude:	108° 7' 22.93 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,193.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/5/2013	10.12	65.81	52,077

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	314.18	

Survey Program	Date	11/14/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
180.0	13,325.0	Survey #1 (DD)	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		
180.0	1.40	303.60	180.0	1.2	-1.8	2.2	0.78	0.78		
210.0	2.50	304.90	210.0	1.8	-2.7	3.2	3.67	3.67		
241.0	4.00	301.60	240.9	2.7	-4.1	4.9	4.87	4.84		
271.0	5.40	304.00	270.8	4.1	-6.2	7.3	4.71	4.67		
302.0	6.70	308.50	301.6	6.0	-8.8	10.5	4.46	4.19		
332.0	8.00	310.00	331.4	8.5	-11.8	14.4	4.38	4.33		
363.0	9.30	310.90	362.0	11.5	-15.4	19.0	4.22	4.19		
393.0	10.50	313.00	391.6	14.9	-19.2	24.2	4.18	4.00		
424.0	11.80	305.70	422.0	18.7	-23.8	30.1	6.18	4.19		
453.0	12.90	310.90	450.3	22.6	-28.7	36.3	5.39	3.79		
484.0	13.70	313.10	480.5	27.3	-34.0	43.4	3.05	2.58		
514.0	14.40	312.40	509.6	32.3	-39.3	50.7	2.40	2.33		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502D-23 L24 496
Project:	Story Gulch	TVD Reference:	KB @ 8208.0ft (Original Well Elev)
Site:	L24 496	MD Reference:	KB @ 8208.0ft (Original Well Elev)
Well:	8502D-23 L24 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
563.0	14.70	307.50	557.0	40.2	-48.8	63.0	2.58	0.61	
609.0	15.30	305.90	601.5	47.3	-58.3	74.8	1.58	1.30	
655.0	16.00	308.50	645.8	54.8	-68.2	87.1	2.15	1.52	
701.0	16.70	310.00	689.9	63.0	-78.2	100.0	1.78	1.52	
793.0	19.10	308.10	777.4	80.8	-100.2	128.1	2.68	2.61	
885.0	20.50	313.00	864.0	101.0	-123.8	159.2	2.36	1.52	
977.0	21.80	314.80	949.8	124.1	-147.7	192.4	1.58	1.41	
1,068.0	23.60	314.70	1,033.8	148.8	-172.7	227.5	1.98	1.98	
1,160.0	25.30	315.80	1,117.5	175.8	-199.4	265.6	1.91	1.85	
1,252.0	27.50	316.10	1,199.9	205.2	-227.9	306.5	2.40	2.39	
1,344.0	30.30	313.00	1,280.4	236.4	-259.6	350.9	3.45	3.04	
1,436.0	30.80	314.00	1,359.7	268.6	-293.5	397.7	0.77	0.54	
1,528.0	30.20	316.40	1,438.9	301.7	-326.4	444.3	1.48	-0.65	
1,620.0	30.20	313.70	1,518.5	334.4	-359.1	490.6	1.48	0.00	
1,711.0	30.20	312.00	1,597.1	365.6	-392.7	536.4	0.94	0.00	
1,803.0	30.30	313.20	1,676.6	396.9	-426.8	582.7	0.67	0.11	
1,895.0	29.70	314.00	1,756.3	428.7	-460.1	628.7	0.78	-0.65	
1,987.0	29.00	315.00	1,836.5	460.3	-492.2	673.8	0.93	-0.76	
2,079.0	27.60	315.50	1,917.5	491.2	-523.0	717.4	1.54	-1.52	
2,171.0	27.40	314.40	1,999.1	521.2	-553.0	759.9	0.59	-0.22	
2,263.0	28.00	312.80	2,080.5	550.7	-584.0	802.6	1.04	0.65	
2,355.0	28.60	314.20	2,161.5	580.8	-615.6	846.2	0.97	0.65	
2,446.0	28.70	313.40	2,241.4	611.0	-647.1	889.9	0.44	0.11	
2,538.0	29.20	313.80	2,321.9	641.7	-679.4	934.4	0.58	0.54	
2,630.0	29.50	315.50	2,402.1	673.4	-711.4	979.5	0.96	0.33	
2,722.0	28.10	315.90	2,482.7	705.1	-742.4	1,023.8	1.54	-1.52	
2,814.0	28.20	316.00	2,563.8	736.3	-772.6	1,067.2	0.12	0.11	
2,906.0	28.30	314.80	2,644.9	767.3	-803.1	1,110.7	0.63	0.11	
2,997.0	29.00	315.50	2,724.7	798.2	-833.9	1,154.3	0.85	0.77	
3,089.0	28.30	315.50	2,805.5	829.7	-864.8	1,198.4	0.76	-0.76	
3,181.0	28.50	315.90	2,886.4	861.0	-895.4	1,242.2	0.30	0.22	
3,282.0	28.40	315.90	2,975.2	895.5	-928.9	1,290.3	0.10	-0.10	
3,366.0	26.20	313.70	3,049.8	922.7	-956.2	1,328.8	2.88	-2.62	
3,458.0	26.60	315.00	3,132.2	951.3	-985.4	1,369.7	0.76	0.43	
3,550.0	29.60	317.80	3,213.4	982.7	-1,015.3	1,413.0	3.56	3.26	
3,642.0	29.30	317.00	3,293.5	1,016.0	-1,045.9	1,458.1	0.54	-0.33	
3,733.0	30.80	314.70	3,372.3	1,048.7	-1,077.6	1,503.7	2.08	1.65	
3,825.0	30.70	314.80	3,451.3	1,081.8	-1,111.0	1,550.7	0.12	-0.11	
3,917.0	29.40	313.30	3,531.0	1,113.8	-1,144.1	1,596.8	1.63	-1.41	
4,009.0	29.70	315.50	3,611.0	1,145.6	-1,176.6	1,642.1	1.22	0.33	
4,101.0	27.20	313.20	3,691.9	1,176.2	-1,207.9	1,685.9	2.97	-2.72	
4,193.0	28.40	314.50	3,773.3	1,206.0	-1,238.8	1,728.8	1.46	1.30	
4,285.0	30.40	314.70	3,853.4	1,237.7	-1,270.9	1,774.0	2.18	2.17	
4,377.0	27.60	313.10	3,933.9	1,268.6	-1,303.1	1,818.6	3.16	-3.04	
4,468.0	26.90	313.30	4,014.8	1,297.1	-1,333.4	1,860.3	0.78	-0.77	
4,560.0	29.60	314.50	4,095.8	1,327.3	-1,364.8	1,903.8	3.00	2.93	
4,652.0	28.80	314.90	4,176.1	1,358.9	-1,396.7	1,948.7	0.90	-0.87	
4,744.0	29.80	314.80	4,256.3	1,390.7	-1,428.6	1,993.7	1.09	1.09	
4,836.0	28.70	314.10	4,336.6	1,422.1	-1,460.7	2,038.7	1.25	-1.20	
4,928.0	29.70	313.20	4,416.9	1,453.1	-1,493.2	2,083.5	1.19	1.09	
5,020.0	28.10	312.50	4,497.5	1,483.4	-1,525.8	2,128.0	1.78	-1.74	
5,112.0	28.80	315.10	4,578.3	1,513.7	-1,557.4	2,171.8	1.55	0.76	
5,204.0	26.60	314.00	4,659.8	1,543.7	-1,587.9	2,214.6	2.45	-2.39	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502D-23 L24 496
Project:	Story Gulch	TVD Reference:	KB @ 8208.0ft (Original Well Elev)
Site:	L24 496	MD Reference:	KB @ 8208.0ft (Original Well Elev)
Well:	8502D-23 L24 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
5,296.0	28.00	315.40	4,741.6	1,573.4	-1,617.8	2,256.7	1.67	1.52	
5,387.0	29.40	316.90	4,821.4	1,604.9	-1,648.1	2,300.4	1.73	1.54	
5,479.0	29.40	317.80	4,901.5	1,638.1	-1,678.7	2,345.5	0.48	0.00	
5,571.0	29.10	315.70	4,981.8	1,670.9	-1,709.5	2,390.4	1.16	-0.33	
5,663.0	29.30	316.80	5,062.1	1,703.3	-1,740.5	2,435.3	0.62	0.22	
5,755.0	27.50	319.10	5,143.0	1,735.8	-1,769.8	2,478.9	2.29	-1.96	
5,847.0	28.50	315.80	5,224.3	1,767.5	-1,799.1	2,522.0	2.00	1.09	
5,938.0	29.70	313.30	5,303.8	1,798.6	-1,830.6	2,566.3	1.88	1.32	
6,030.0	29.80	313.90	5,383.7	1,830.1	-1,863.7	2,611.9	0.34	0.11	
6,122.0	31.00	311.70	5,463.0	1,861.7	-1,897.8	2,658.5	1.78	1.30	
6,214.0	29.20	311.20	5,542.6	1,892.2	-1,932.4	2,704.5	1.98	-1.96	
6,306.0	29.80	314.80	5,622.7	1,923.1	-1,965.5	2,749.8	2.03	0.65	
6,397.0	29.80	313.30	5,701.6	1,954.5	-1,998.0	2,795.0	0.82	0.00	
6,489.0	29.20	315.40	5,781.7	1,986.2	-2,030.4	2,840.3	1.30	-0.65	
6,581.0	29.60	315.00	5,861.9	2,018.3	-2,062.2	2,885.5	0.48	0.43	
6,672.0	29.30	314.00	5,941.1	2,049.6	-2,094.1	2,930.2	0.63	-0.33	
6,764.0	27.20	314.30	6,022.2	2,079.9	-2,125.4	2,973.8	2.29	-2.28	
6,856.0	28.90	316.60	6,103.3	2,110.8	-2,155.7	3,017.0	2.19	1.85	
6,948.0	29.70	315.70	6,183.6	2,143.2	-2,186.9	3,062.0	0.99	0.87	
7,040.0	27.50	315.40	6,264.3	2,174.7	-2,217.7	3,106.0	2.40	-2.39	
7,132.0	28.20	314.30	6,345.7	2,205.0	-2,248.2	3,149.0	0.94	0.76	
7,224.0	29.10	313.60	6,426.4	2,235.6	-2,280.0	3,193.1	1.04	0.98	
7,316.0	28.50	314.10	6,507.0	2,266.3	-2,311.9	3,237.4	0.70	-0.65	
7,407.0	29.20	314.80	6,586.7	2,297.1	-2,343.3	3,281.3	0.85	0.77	
7,499.0	26.10	313.60	6,668.2	2,326.8	-2,373.9	3,324.0	3.42	-3.37	
7,591.0	27.30	315.50	6,750.4	2,355.8	-2,403.3	3,365.4	1.60	1.30	
7,683.0	26.80	315.10	6,832.4	2,385.6	-2,432.7	3,407.2	0.58	-0.54	
7,775.0	29.80	315.40	6,913.4	2,416.5	-2,463.4	3,450.8	3.26	3.26	
7,867.0	27.40	315.40	6,994.1	2,447.9	-2,494.4	3,494.8	2.61	-2.61	
7,958.0	28.70	316.20	7,074.4	2,478.6	-2,524.2	3,537.6	1.49	1.43	
8,050.0	27.70	316.00	7,155.5	2,509.9	-2,554.3	3,581.0	1.09	-1.09	
8,142.0	24.80	317.20	7,238.0	2,539.5	-2,582.3	3,621.7	3.20	-3.15	
8,234.0	22.20	316.70	7,322.4	2,566.3	-2,607.3	3,658.3	2.83	-2.83	
8,326.0	20.10	314.00	7,408.2	2,589.9	-2,630.6	3,691.5	2.52	-2.28	
8,418.0	18.40	313.10	7,495.0	2,610.8	-2,652.6	3,721.8	1.88	-1.85	
8,510.0	16.00	311.60	7,582.9	2,629.1	-2,672.7	3,749.0	2.65	-2.61	
8,602.0	14.30	309.00	7,671.7	2,644.7	-2,691.0	3,773.0	1.99	-1.85	
8,694.0	13.00	314.50	7,761.1	2,659.1	-2,707.2	3,794.7	2.00	-1.41	
8,786.0	11.20	314.10	7,851.1	2,672.6	-2,721.0	3,814.0	1.96	-1.96	
8,878.0	10.00	314.80	7,941.5	2,684.4	-2,733.1	3,830.9	1.31	-1.30	
8,970.0	8.40	307.20	8,032.3	2,694.1	-2,744.1	3,845.5	2.18	-1.74	
9,061.0	6.40	314.40	8,122.6	2,701.7	-2,753.0	3,857.2	2.42	-2.20	
9,153.0	4.00	310.30	8,214.2	2,707.4	-2,759.1	3,865.5	2.64	-2.61	
9,245.0	1.20	299.80	8,306.1	2,709.9	-2,762.4	3,869.7	3.07	-3.04	
9,337.0	1.20	282.90	8,398.0	2,710.6	-2,764.2	3,871.4	0.38	0.00	
9,429.0	1.40	284.20	8,490.0	2,711.1	-2,766.2	3,873.2	0.22	0.22	
9,521.0	1.30	273.80	8,582.0	2,711.4	-2,768.4	3,875.0	0.29	-0.11	
9,613.0	1.60	277.00	8,674.0	2,711.7	-2,770.7	3,876.8	0.34	0.33	
9,705.0	0.60	290.90	8,765.9	2,712.0	-2,772.4	3,878.3	1.12	-1.09	
9,797.0	1.10	270.60	8,857.9	2,712.2	-2,773.7	3,879.4	0.63	0.54	
9,889.0	1.70	246.70	8,949.9	2,711.7	-2,775.9	3,880.5	0.90	0.65	
9,980.0	0.80	210.30	9,040.9	2,710.6	-2,777.4	3,880.9	1.27	-0.99	
10,072.0	1.00	235.20	9,132.9	2,709.6	-2,778.4	3,880.9	0.47	0.22	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502D-23 L24 496
Project:	Story Gulch	TVD Reference:	KB @ 8208.0ft (Original Well Elev)
Site:	L24 496	MD Reference:	KB @ 8208.0ft (Original Well Elev)
Well:	8502D-23 L24 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
10,164.0	1.60	228.30	9,224.9	2,708.2	-2,780.0	3,881.1	0.67	0.65	
10,263.0	1.10	72.90	9,323.8	2,707.6	-2,780.2	3,880.8	2.67	-0.51	
10,355.0	1.60	35.30	9,415.8	2,708.9	-2,778.6	3,880.5	1.08	0.54	
10,447.0	1.60	23.00	9,507.8	2,711.1	-2,777.3	3,881.2	0.37	0.00	
10,539.0	1.10	28.00	9,599.8	2,713.1	-2,776.4	3,881.9	0.56	-0.54	
10,631.0	0.70	46.60	9,691.7	2,714.3	-2,775.6	3,882.1	0.53	-0.43	
10,723.0	1.50	50.70	9,783.7	2,715.4	-2,774.3	3,882.0	0.87	0.87	
10,814.0	0.30	79.40	9,874.7	2,716.2	-2,773.1	3,881.7	1.37	-1.32	
10,906.0	1.20	69.30	9,966.7	2,716.6	-2,772.0	3,881.2	0.98	0.98	
10,998.0	0.70	82.10	10,058.7	2,717.0	-2,770.5	3,880.4	0.59	-0.54	
11,090.0	0.30	67.50	10,150.7	2,717.2	-2,769.7	3,880.0	0.45	-0.43	
11,182.0	1.10	3.10	10,242.7	2,718.2	-2,769.5	3,880.5	1.09	0.87	
11,274.0	1.00	344.50	10,334.7	2,719.8	-2,769.6	3,881.7	0.38	-0.11	
11,458.0	0.90	299.90	10,518.6	2,722.1	-2,771.3	3,884.5	0.40	-0.05	
11,642.0	1.10	272.90	10,702.6	2,722.9	-2,774.3	3,887.2	0.27	0.11	
11,734.0	1.20	265.60	10,794.6	2,722.9	-2,776.2	3,888.5	0.19	0.11	
11,826.0	1.60	249.80	10,886.6	2,722.4	-2,778.3	3,889.7	0.60	0.43	
11,918.0	1.00	237.70	10,978.5	2,721.5	-2,780.2	3,890.5	0.71	-0.65	
12,009.0	1.00	239.00	11,069.5	2,720.6	-2,781.6	3,890.9	0.02	0.00	
12,101.0	1.10	252.30	11,161.5	2,720.0	-2,783.1	3,891.5	0.29	0.11	
12,193.0	0.60	241.70	11,253.5	2,719.5	-2,784.4	3,892.0	0.57	-0.54	
12,285.0	1.30	227.00	11,345.5	2,718.5	-2,785.5	3,892.2	0.80	0.76	
12,377.0	1.00	244.80	11,437.5	2,717.5	-2,787.0	3,892.6	0.50	-0.33	
12,561.0	1.80	228.50	11,621.4	2,714.9	-2,790.6	3,893.4	0.48	0.43	
12,653.0	1.30	236.60	11,713.4	2,713.3	-2,792.6	3,893.7	0.59	-0.54	
12,745.0	2.30	231.10	11,805.3	2,711.6	-2,794.9	3,894.1	1.10	1.09	
12,837.0	2.90	225.90	11,897.2	2,708.8	-2,798.0	3,894.4	0.70	0.65	
12,929.0	2.60	247.40	11,989.1	2,706.4	-2,801.6	3,895.3	1.16	-0.33	
13,020.0	2.70	255.20	12,080.0	2,705.1	-2,805.6	3,897.2	0.41	0.11	
13,112.0	3.50	258.10	12,171.9	2,703.9	-2,810.4	3,899.9	0.89	0.87	
13,275.0	3.30	254.50	12,334.6	2,701.7	-2,819.8	3,905.1	0.18	-0.12	Last Cathedral Survey @ 13,275' MD
13,325.0	3.30	254.50	12,384.5	2,700.9	-2,822.6	3,906.5	0.00	0.00	Projection to Bit @ 13,325'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8502D-23 L24 496
Project:	Story Gulch	TVD Reference:	KB @ 8208.0ft (Original Well Elev)
Site:	L24 496	MD Reference:	KB @ 8208.0ft (Original Well Elev)
Well:	8502D-23 L24 496	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
8502D-23 L24 496 TGT	0.00	0.00	8,256.0	2,718.9	-2,770.5	1,687,956.41	2,259,185.08	39° 41' 33.94 N	108° 7' 58.37 W
- actual wellpath misses target center by 13.7ft at 9195.5ft MD (8256.6 TVD, 2708.9 N, -2761.1 E)									
- Point									
8502D-23 L24 496 PBHI	0.00	0.00	13,028.0	2,708.9	-2,787.5	1,687,946.87	2,259,167.75	39° 41' 33.84 N	108° 7' 58.59 W
- actual wellpath misses target center by 644.5ft at 13325.0ft MD (12384.5 TVD, 2700.9 N, -2822.6 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
13,275.0	12,334.6	2,701.7	-2,819.8	Last Cathedral Survey @ 13,275' MD
13,325.0	12,384.5	2,700.9	-2,822.6	Projection to Bit @ 13,325'

Checked By: _____ Approved By: _____ Date: _____