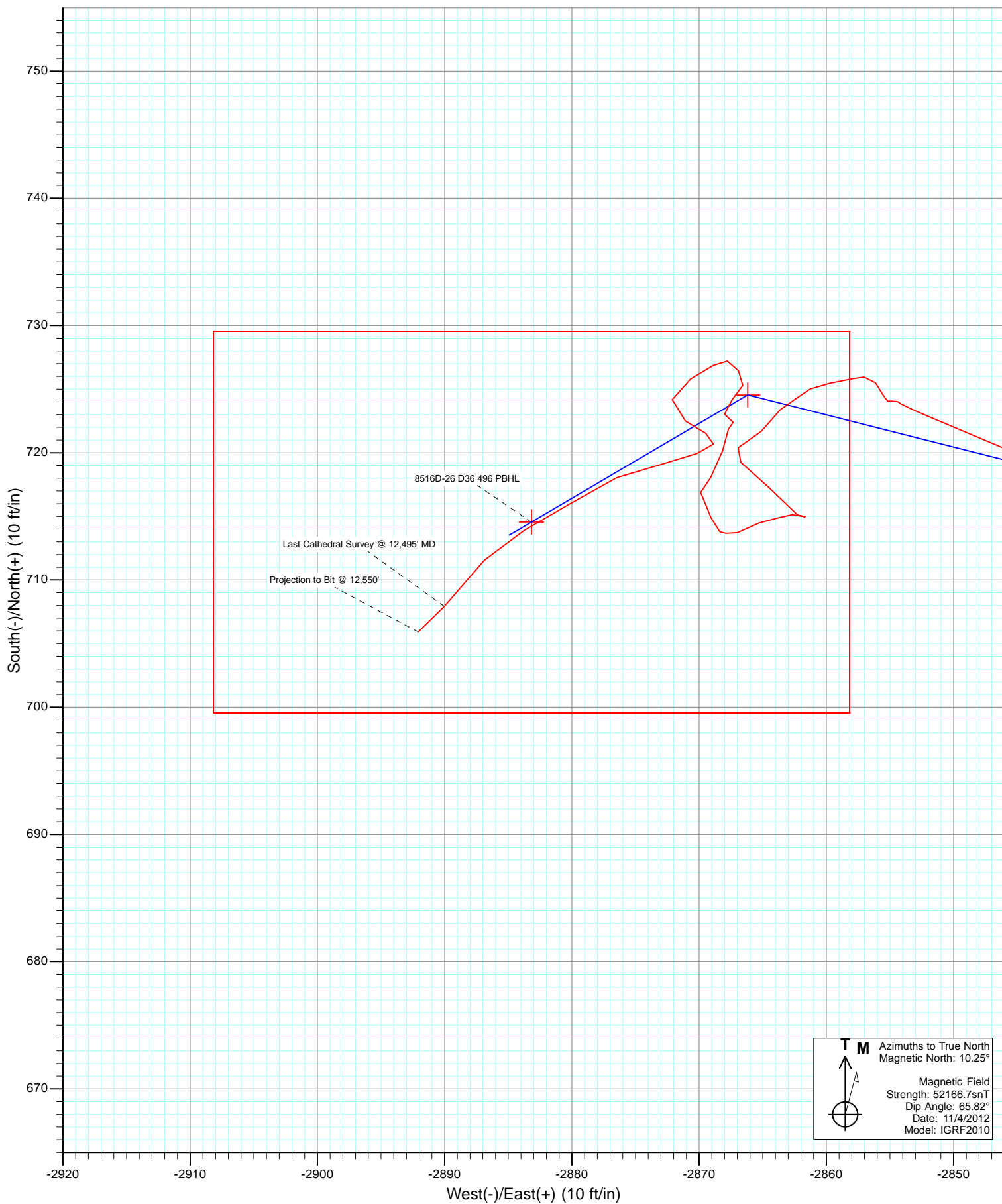


Type	Target	Acimuth	Origin	N/S	E/W	From	TVD
Target	8516D-26 D36 496 PBHL	283.92	Site	0.0	0.0	TVD	0.0
		TVD	+N/S	+E/W	Latitude	Longitude	
8516D-26 D36 496 TGT		724.9	-286.2	39° 40' 2.03 N	108° 7' 58.40 W		
8516D-26 D36 496 PBHL		12533.0	-2883.2	39° 40' 1.93 N	108° 7' 58.62 W		



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8515D-26 (was 8512D-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 326)
Well:	8515D-26 (was 8512D-25)	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	S36-T4S-R96W (D36 496)			
Site Position:		Northing:	1,677,701.75 ft	Latitude: 39° 39' 53.35 N
From:	Lat/Long	Easting:	2,261,687.16 ft	Longitude: 108° 7' 22.59 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.65 °

Well	8515D-26 (was 8512D-25)			
Well Position	+N/-S	0.0 ft	Northing:	1,677,853.55 ft
	+E/-W	0.0 ft	Easting:	2,261,757.26 ft
Position Uncertainty	0.0 ft		Wellhead Elevation:	ft
			Ground Level:	8,291.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/4/2012	10.25	65.82	52,167

Design	FINAL			
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	283.92

Survey Program	Date	12/19/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
208.0	12,550.0	Survey #1 (DD)	MWD	Geolink MWD

Survey									
Measured	Vertical		Vertical	Dogleg	Build	Formations /			
Depth	Inclination	Azimuth	Depth	+N/-S	+E/-W	Section	Rate	Rate	Comments
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
208.0	1.20	247.80	208.0	-0.8	-2.0	1.8	0.58	0.58	
239.0	1.90	266.50	239.0	-1.0	-2.8	2.5	2.76	2.26	
270.0	2.90	274.60	269.9	-0.9	-4.1	3.8	3.40	3.23	
300.0	4.00	282.90	299.9	-0.7	-5.9	5.6	4.02	3.67	
331.0	5.10	287.10	330.8	0.0	-8.3	8.0	3.71	3.55	
361.0	6.10	289.70	360.6	0.9	-11.0	10.9	3.44	3.33	
421.0	8.40	294.20	420.2	3.8	-18.0	18.4	3.95	3.83	
513.0	11.50	284.80	510.8	8.9	-33.0	34.2	3.79	3.37	
607.0	13.60	287.10	602.5	14.5	-52.7	54.6	2.30	2.23	
699.0	15.90	290.80	691.5	22.2	-74.8	77.9	2.70	2.50	
790.0	18.20	287.50	778.5	30.9	-100.0	104.5	2.74	2.53	
882.0	20.20	281.30	865.4	38.3	-129.3	134.7	3.10	2.17	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8515D-26 (was 8512D-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 326)
Well:	8515D-26 (was 8512D-25)	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	22.90	280.50	950.9	44.7	-162.5	168.5	2.95	2.93	
1,066.0	24.10	281.90	1,035.3	51.8	-198.5	205.1	1.44	1.30	
1,157.0	23.60	281.80	1,118.5	59.4	-234.5	241.9	0.55	-0.55	
1,249.0	23.30	281.50	1,202.9	66.8	-270.3	278.4	0.35	-0.33	
1,340.0	22.70	283.40	1,286.7	74.4	-305.0	314.0	1.05	-0.66	
1,432.0	22.00	283.60	1,371.8	82.6	-339.1	349.0	0.77	-0.76	
1,524.0	22.80	284.70	1,456.8	91.2	-373.0	384.0	0.98	0.87	
1,615.0	23.70	286.50	1,540.5	100.9	-407.6	419.9	1.26	0.99	
1,707.0	23.00	286.70	1,624.9	111.3	-442.6	456.4	0.77	-0.76	
1,799.0	23.30	285.40	1,709.5	121.3	-477.3	492.5	0.64	0.33	
1,890.0	24.50	286.40	1,792.7	131.4	-512.8	529.3	1.39	1.32	
1,982.0	24.40	286.30	1,876.5	142.1	-549.3	567.4	0.12	-0.11	
2,073.0	24.60	285.20	1,959.3	152.3	-585.7	605.1	0.55	0.22	
2,165.0	25.40	283.60	2,042.6	162.0	-623.3	644.0	1.14	0.87	
2,256.0	24.60	282.60	2,125.1	170.7	-660.8	682.4	0.99	-0.88	
2,348.0	23.60	280.90	2,209.1	178.4	-697.5	720.0	1.32	-1.09	
2,439.0	22.70	281.40	2,292.8	185.3	-732.6	755.7	1.01	-0.99	
2,531.0	22.90	282.60	2,377.6	192.7	-767.5	791.3	0.55	0.22	
2,623.0	22.50	283.60	2,462.5	200.8	-802.1	826.8	0.60	-0.43	
2,714.0	23.40	284.20	2,546.3	209.3	-836.5	862.3	1.02	0.99	
2,806.0	23.90	286.30	2,630.5	219.0	-872.1	899.2	1.06	0.54	
2,897.0	23.10	285.70	2,714.0	229.0	-907.0	935.5	0.92	-0.88	
2,955.0	22.30	285.30	2,767.5	235.0	-928.6	957.8	1.40	-1.38	
3,080.0	19.50	285.40	2,884.3	246.8	-971.6	1,002.4	2.24	-2.24	
3,172.0	19.20	282.40	2,971.1	254.1	-1,001.2	1,032.9	1.13	-0.33	
3,263.0	18.50	284.00	3,057.2	260.8	-1,029.8	1,062.3	0.96	-0.77	
3,355.0	20.90	281.60	3,143.8	267.6	-1,060.0	1,093.3	2.75	2.61	
3,445.0	22.70	284.70	3,227.4	275.3	-1,092.5	1,126.7	2.37	2.00	
3,537.0	22.80	285.90	3,312.2	284.7	-1,126.9	1,162.2	0.52	0.11	
3,628.0	24.70	286.20	3,395.5	294.8	-1,162.1	1,198.9	2.09	2.09	
3,720.0	24.00	283.90	3,479.3	304.7	-1,198.7	1,236.8	1.28	-0.76	
3,812.0	24.60	283.80	3,563.2	313.7	-1,235.5	1,274.6	0.65	0.65	
3,903.0	22.50	282.40	3,646.6	322.0	-1,270.9	1,311.0	2.39	-2.31	
3,994.0	21.00	279.30	3,731.1	328.4	-1,304.0	1,344.7	2.08	-1.65	
4,086.0	20.90	278.80	3,817.0	333.5	-1,336.4	1,377.4	0.22	-0.11	
4,177.0	20.90	280.80	3,902.0	339.1	-1,368.4	1,409.8	0.78	0.00	
4,268.0	21.70	286.80	3,986.8	347.0	-1,400.5	1,442.8	2.55	0.88	
4,360.0	22.80	288.70	4,072.0	357.6	-1,433.7	1,477.6	1.43	1.20	
4,451.0	23.00	286.40	4,155.8	368.3	-1,467.4	1,512.9	1.01	0.22	
4,543.0	23.80	284.80	4,240.2	378.1	-1,502.6	1,549.4	1.11	0.87	
4,634.0	24.30	282.70	4,323.3	386.9	-1,538.6	1,586.5	1.09	0.55	
4,726.0	25.00	286.90	4,407.0	396.7	-1,575.7	1,624.9	2.05	0.76	
4,817.0	23.70	285.90	4,489.9	407.3	-1,611.7	1,662.3	1.50	-1.43	
4,908.0	24.50	286.80	4,572.9	417.8	-1,647.3	1,699.5	0.97	0.88	
5,000.0	24.50	286.80	4,656.6	428.8	-1,683.9	1,737.6	0.00	0.00	
5,091.0	25.70	286.10	4,739.0	439.7	-1,720.9	1,776.1	1.36	1.32	
5,182.0	26.90	286.90	4,820.6	451.2	-1,759.5	1,816.4	1.37	1.32	
5,274.0	26.00	284.20	4,903.0	462.2	-1,799.0	1,857.4	1.63	-0.98	
5,365.0	25.10	279.00	4,985.1	470.1	-1,837.4	1,896.5	2.65	-0.99	
5,456.0	25.50	282.10	5,067.4	477.2	-1,875.6	1,935.3	1.52	0.44	
5,547.0	26.10	280.60	5,149.3	485.0	-1,914.5	1,974.9	0.97	0.66	
5,639.0	26.80	285.50	5,231.7	494.3	-1,954.3	2,015.8	2.49	0.76	
5,730.0	27.10	284.10	5,312.8	504.8	-1,994.2	2,057.1	0.77	0.33	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8515D-26 (was 8512D-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 326)
Well:	8515D-26 (was 8512D-25)	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
5,822.0	26.90	284.80	5,394.8	515.2	-2,034.7	2,098.8	0.41	-0.22	
5,913.0	26.30	280.80	5,476.2	524.3	-2,074.4	2,139.6	2.08	-0.66	
6,004.0	25.90	283.70	5,557.9	532.7	-2,113.5	2,179.6	1.47	-0.44	
6,096.0	25.50	285.80	5,640.8	542.9	-2,152.1	2,219.5	1.08	-0.43	
6,187.0	26.60	285.30	5,722.5	553.6	-2,190.6	2,259.4	1.23	1.21	
6,278.0	27.40	284.20	5,803.6	564.1	-2,230.5	2,300.7	1.04	0.88	
6,369.0	27.10	283.20	5,884.5	574.0	-2,271.0	2,342.4	0.60	-0.33	
6,460.0	27.00	283.20	5,965.6	583.4	-2,311.3	2,383.8	0.11	-0.11	
6,552.0	26.90	282.80	6,047.6	592.8	-2,351.9	2,425.4	0.23	-0.11	
6,643.0	23.90	281.70	6,129.8	601.1	-2,390.0	2,464.5	3.34	-3.30	
6,735.0	25.00	282.40	6,213.5	609.1	-2,427.3	2,502.5	1.24	1.20	
6,826.0	25.80	278.10	6,295.7	616.0	-2,465.7	2,541.4	2.21	0.88	
6,917.0	25.90	282.60	6,377.6	623.1	-2,504.7	2,581.0	2.16	0.11	
7,008.0	26.10	287.00	6,459.4	633.3	-2,543.2	2,620.9	2.13	0.22	
7,100.0	23.90	286.30	6,542.8	644.5	-2,580.5	2,659.7	2.41	-2.39	
7,191.0	21.90	286.50	6,626.6	654.5	-2,614.4	2,695.1	2.20	-2.20	
7,283.0	20.30	286.30	6,712.5	663.8	-2,646.2	2,728.2	1.74	-1.74	
7,374.0	19.30	286.80	6,798.1	672.6	-2,675.7	2,759.0	1.11	-1.10	
7,466.0	18.90	285.20	6,885.0	680.9	-2,704.7	2,789.0	0.72	-0.43	
7,557.0	17.50	285.30	6,971.5	688.4	-2,732.1	2,817.5	1.54	-1.54	
7,648.0	14.80	283.60	7,058.9	694.7	-2,756.6	2,842.8	3.01	-2.97	
7,740.0	13.60	284.20	7,148.0	700.1	-2,778.5	2,865.3	1.31	-1.30	
7,831.0	12.60	288.00	7,236.7	705.8	-2,798.3	2,885.9	1.45	-1.10	
7,923.0	10.50	280.90	7,326.8	710.5	-2,816.1	2,904.3	2.75	-2.28	
8,014.0	8.40	289.30	7,416.6	714.3	-2,830.5	2,919.2	2.76	-2.31	
8,105.0	7.10	292.90	7,506.7	718.7	-2,842.0	2,931.4	1.52	-1.43	
8,196.0	4.70	292.60	7,597.3	722.3	-2,850.6	2,940.6	2.64	-2.64	
8,287.0	0.60	310.80	7,688.1	724.0	-2,854.4	2,944.7	4.54	-4.51	
8,379.0	0.40	213.50	7,780.1	724.1	-2,854.9	2,945.3	0.83	-0.22	
8,469.0	1.10	330.20	7,870.1	724.6	-2,855.5	2,946.0	1.48	0.78	
8,561.0	0.30	319.80	7,962.1	725.5	-2,856.1	2,946.8	0.88	-0.87	
8,652.0	1.00	290.10	8,053.1	726.0	-2,857.0	2,947.8	0.83	0.77	
8,744.0	0.50	190.60	8,145.1	725.8	-2,857.9	2,948.5	1.29	-0.54	
8,927.0	1.10	283.70	8,328.1	725.5	-2,859.7	2,950.3	0.67	0.33	
9,019.0	1.20	226.10	8,420.1	725.0	-2,861.3	2,951.7	1.21	0.11	
9,110.0	0.60	255.60	8,511.1	724.2	-2,862.4	2,952.6	0.81	-0.66	
9,201.0	1.30	225.20	8,602.1	723.4	-2,863.6	2,953.5	0.92	0.77	
9,293.0	1.50	218.10	8,694.0	721.7	-2,865.1	2,954.6	0.29	0.22	
9,383.0	1.50	250.60	8,784.0	720.4	-2,866.9	2,956.0	0.93	0.00	
9,475.0	1.90	118.50	8,876.0	719.3	-2,866.7	2,955.6	3.38	0.43	
9,566.0	2.00	144.60	8,967.0	717.2	-2,864.5	2,952.9	0.97	0.11	
9,658.0	1.90	122.60	9,058.9	715.1	-2,862.3	2,950.2	0.82	-0.11	
9,750.0	1.20	315.20	9,150.9	715.0	-2,861.7	2,949.6	3.35	-0.76	
9,841.0	0.80	215.30	9,241.9	715.1	-2,862.7	2,950.7	1.71	-0.44	
9,933.0	1.10	286.00	9,333.9	714.9	-2,863.9	2,951.8	1.22	0.33	
10,019.0	1.10	224.20	9,419.8	714.5	-2,865.3	2,953.0	1.31	0.00	
10,110.0	1.40	262.70	9,510.8	713.7	-2,867.0	2,954.5	0.96	0.33	
10,202.0	0.40	309.60	9,602.8	713.8	-2,868.4	2,955.8	1.27	-1.09	
10,293.0	1.30	333.50	9,693.8	714.9	-2,869.1	2,956.8	1.04	0.99	
10,385.0	0.50	349.50	9,785.8	716.2	-2,869.6	2,957.6	0.90	-0.87	
10,476.0	0.40	320.20	9,876.8	716.9	-2,869.9	2,958.1	0.27	-0.11	
10,567.0	1.70	47.30	9,967.8	718.0	-2,869.1	2,957.6	1.90	1.43	
10,659.0	1.50	356.90	10,059.7	720.2	-2,868.2	2,957.2	1.49	-0.22	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8515D-26 (was 8512D-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Patterson 326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Patterson 326)
Well:	8515D-26 (was 8512D-25)	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
10,751.0	0.90	47.00	10,151.7	721.9	-2,867.7	2,957.1	1.25	-0.65	
10,842.0	0.20	288.30	10,242.7	722.4	-2,867.3	2,956.9	1.11	-0.77	
10,933.0	1.00	318.80	10,333.7	723.0	-2,868.0	2,957.7	0.92	0.88	
11,024.0	1.50	65.80	10,424.7	724.1	-2,867.4	2,957.4	2.23	0.55	
11,116.0	0.90	341.50	10,516.7	725.3	-2,866.6	2,956.9	1.82	-0.65	
11,208.0	0.60	345.20	10,608.7	726.5	-2,866.9	2,957.5	0.33	-0.33	
11,299.0	1.00	291.40	10,699.7	727.2	-2,867.8	2,958.5	0.89	0.44	
11,391.0	0.90	208.90	10,791.7	726.9	-2,868.9	2,959.5	1.36	-0.11	
11,482.0	1.90	253.10	10,882.6	725.8	-2,870.7	2,961.0	1.54	1.10	
11,573.0	1.50	180.10	10,973.6	724.2	-2,872.1	2,962.0	2.25	-0.44	
11,665.0	1.40	114.50	11,065.6	722.5	-2,871.1	2,960.6	1.71	-0.11	
11,756.0	1.00	130.60	11,156.6	721.5	-2,869.5	2,958.8	0.57	-0.44	
11,848.0	0.40	182.20	11,248.5	720.7	-2,868.9	2,958.0	0.89	-0.65	
11,939.0	1.70	252.10	11,339.6	719.9	-2,870.2	2,959.1	1.77	1.43	
12,030.0	2.00	253.60	11,430.5	719.1	-2,873.0	2,961.6	0.33	0.33	
12,121.0	2.60	253.30	11,521.4	718.0	-2,876.5	2,964.7	0.66	0.66	
12,213.0	2.80	229.10	11,613.3	716.0	-2,880.2	2,967.8	1.25	0.22	
12,304.0	2.50	251.70	11,704.2	713.9	-2,883.7	2,970.8	1.19	-0.33	
12,396.0	2.60	215.70	11,796.2	711.6	-2,886.9	2,973.3	1.72	0.11	
12,495.0	3.00	225.50	11,895.0	707.9	-2,890.0	2,975.5	0.63	0.40	Last Cathedral Survey @ 12,495' MD Projection to Bit @ 12,550'
12,550.0	3.00	225.50	11,949.9	705.9	-2,892.1	2,977.0	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
8516D-26 D36 496 PBH - hit/miss target - Shape	0.00	0.00	12,533.0	714.6	-2,883.2	1,678,651.03	2,258,895.91	39° 40' 1.93 N	108° 7' 58.62 W
- actual wellpath misses target center by 583.2ft at 12550.0ft MD (11949.9 TVD, 705.9 N, -2892.1 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
8516D-26 D36 496 TGT - actual wellpath misses target center by 10.1ft at 8557.9ft MD (7959.1 TVD, 725.5 N, -2856.1 E)	0.00	0.00	7,959.0	724.5	-2,866.2	1,678,660.53	2,258,913.19	39° 40' 2.03 N	108° 7' 58.40 W
- Point									

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
12,495.0	11,895.0	707.9	-2,890.0	Last Cathedral Survey @ 12,495' MD
12,550.0	11,949.9	705.9	-2,892.1	Projection to Bit @ 12,550'

Checked By: _____ Approved By: _____ Date: _____