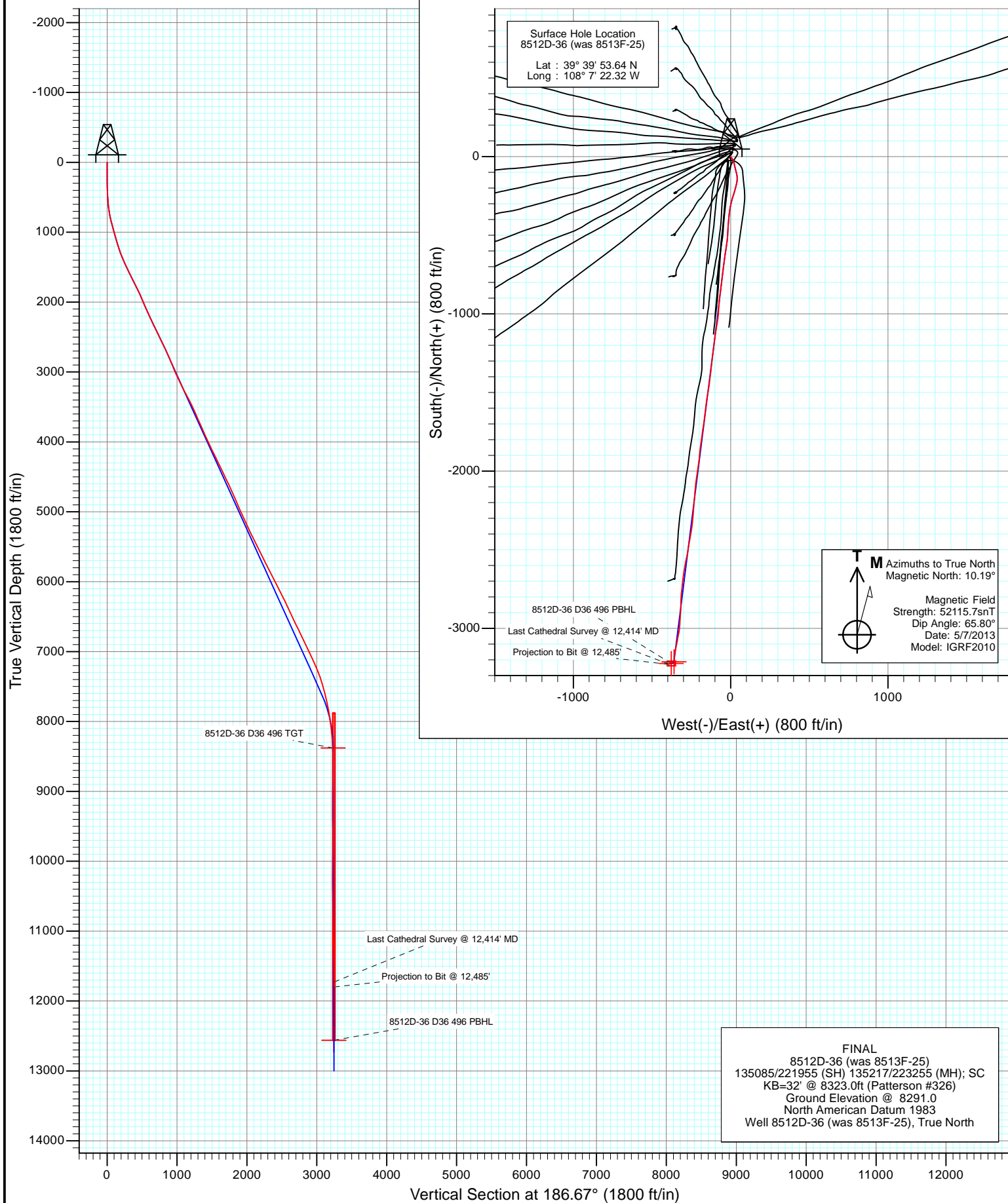


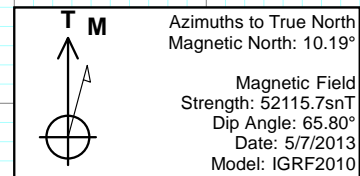
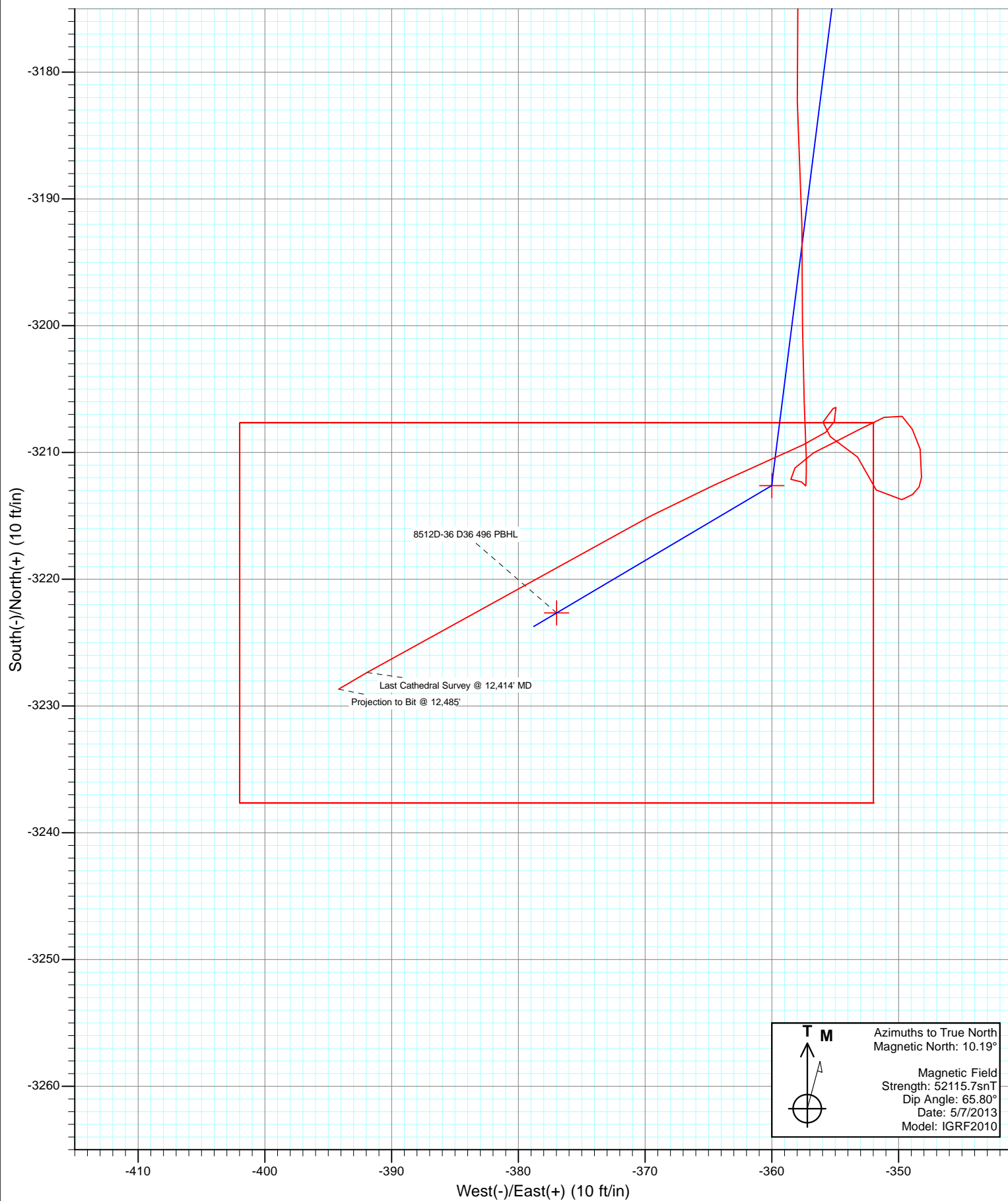


Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8512D-36 (was 8513F-25)
Wellbore: DD
Design: FINAL





Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8512D-36 (was 8513F-25)
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8512D-36 (was 8513F-25)
Project:	Story Gulch	TVD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Well:	8512D-36 (was 8513F-25)	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		S36-T4S-R96W (D36 496)			
Site Position:		Northing:	1,590,537.44 ft	Latitude:	39° 25' 42.24 N
From:	Lat/Long	Easting:	2,297,786.47 ft	Longitude:	107° 59' 10.64 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.57 °

Well	8512D-36 (was 8513F-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,677,730.45 ft	Latitude:	39° 39' 53.64 N
	+E/-W	0.0 ft	Easting:	2,261,709.12 ft	Longitude:	108° 7' 22.32 W
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	5/7/2013	10.19	65.80	52,116

Design	DD				
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	186.67	

Survey Program	Date	5/16/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
175.0	12,485.0	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		
175.0	0.50	127.60	175.0	-0.5	0.6	0.4	0.29	0.29		
205.0	0.70	136.30	205.0	-0.7	0.8	0.6	0.73	0.67		
236.0	0.60	129.00	236.0	-0.9	1.1	0.8	0.42	-0.32		
266.0	0.80	128.20	266.0	-1.1	1.4	1.0	0.67	0.67		
296.0	0.80	136.90	296.0	-1.4	1.7	1.2	0.40	0.00		
328.0	1.20	140.60	328.0	-1.9	2.1	1.6	1.27	1.25		
358.0	1.90	149.90	358.0	-2.5	2.5	2.2	2.47	2.33		
389.0	2.50	152.70	388.9	-3.6	3.1	3.2	1.97	1.94		
418.0	3.10	150.70	417.9	-4.8	3.7	4.3	2.10	2.07		
449.0	3.90	145.30	448.9	-6.4	4.8	5.8	2.79	2.58		
479.0	4.90	140.70	478.8	-8.2	6.1	7.5	3.53	3.33		
509.0	5.10	135.10	508.7	-10.2	7.9	9.2	1.76	0.67		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8512D-36 (was 8513F-25)
Project:	Story Gulch	TVD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Well:	8512D-36 (was 8513F-25)	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
601.0	7.00	147.10	600.1	-17.8	13.8	16.1	2.47	2.07	
695.0	9.80	161.60	693.1	-30.2	19.5	27.7	3.71	2.98	
787.0	12.80	168.50	783.3	-47.6	24.0	44.5	3.57	3.26	
879.0	15.50	166.90	872.5	-69.6	28.8	65.8	2.97	2.93	
970.0	16.90	164.80	959.9	-94.2	35.0	89.5	1.67	1.54	
1,061.0	16.30	170.60	1,047.1	-119.5	40.6	114.0	1.94	-0.66	
1,153.0	16.50	181.90	1,135.4	-145.3	42.2	139.5	3.47	0.22	
1,244.0	17.80	192.30	1,222.4	-171.9	38.9	166.2	3.65	1.43	
1,336.0	20.70	196.80	1,309.2	-201.2	31.2	196.2	3.54	3.15	
1,427.0	23.50	197.40	1,393.6	-233.9	21.1	229.9	3.09	3.08	
1,519.0	25.40	196.70	1,477.3	-270.3	9.9	267.3	2.09	2.07	
1,610.0	26.20	192.00	1,559.2	-308.6	0.1	306.5	2.41	0.88	
1,702.0	26.30	188.20	1,641.8	-348.7	-7.0	347.1	1.83	0.11	
1,793.0	27.10	184.60	1,723.1	-389.3	-11.5	388.0	1.98	0.88	
1,884.0	26.20	183.80	1,804.4	-430.0	-14.5	428.8	1.06	-0.99	
1,976.0	24.20	182.90	1,887.6	-469.1	-16.8	467.9	2.21	-2.17	
2,067.0	23.20	184.20	1,971.0	-505.6	-19.1	504.4	1.24	-1.10	
2,159.0	23.30	187.20	2,055.5	-541.7	-22.7	540.7	1.29	0.11	
2,250.0	24.30	188.80	2,138.7	-578.1	-27.8	577.4	1.31	1.10	
2,342.0	25.10	189.30	2,222.3	-616.1	-33.9	615.8	0.90	0.87	
2,433.0	25.40	187.90	2,304.6	-654.4	-39.7	654.6	0.73	0.33	
2,524.0	26.30	186.70	2,386.5	-693.8	-44.7	694.3	1.14	0.99	
2,616.0	25.90	186.60	2,469.1	-734.0	-49.4	734.8	0.44	-0.43	
2,707.0	26.00	187.00	2,551.0	-773.5	-54.1	774.6	0.22	0.11	
2,799.0	25.60	187.20	2,633.8	-813.3	-59.0	814.6	0.44	-0.43	
2,891.0	24.30	186.80	2,717.2	-851.8	-63.8	853.4	1.42	-1.41	
2,980.0	23.70	186.60	2,798.5	-887.7	-68.0	889.6	0.68	-0.67	
3,081.0	21.80	187.10	2,891.7	-926.5	-72.7	928.7	1.89	-1.88	
3,172.0	23.50	182.40	2,975.6	-961.4	-75.5	963.7	2.73	1.87	
3,264.0	24.00	184.10	3,059.9	-998.4	-77.6	1,000.7	0.92	0.54	
3,355.0	26.90	188.30	3,142.0	-1,037.2	-81.9	1,039.7	3.75	3.19	
3,447.0	25.80	190.40	3,224.5	-1,077.5	-88.5	1,080.5	1.57	-1.20	
3,538.0	28.30	186.60	3,305.5	-1,118.5	-94.6	1,121.9	3.34	2.75	
3,630.0	26.70	190.40	3,387.1	-1,160.5	-100.8	1,164.3	2.58	-1.74	
3,721.0	27.40	185.40	3,468.2	-1,201.4	-106.5	1,205.6	2.61	0.77	
3,813.0	24.30	187.60	3,551.0	-1,241.3	-111.0	1,245.7	3.53	-3.37	
3,905.0	23.10	186.90	3,635.2	-1,277.9	-115.6	1,282.7	1.34	-1.30	
3,996.0	24.10	187.30	3,718.6	-1,314.1	-120.2	1,319.2	1.11	1.10	
4,088.0	25.10	185.30	3,802.2	-1,352.2	-124.3	1,357.4	1.41	1.09	
4,178.0	22.40	187.50	3,884.6	-1,388.2	-128.3	1,393.7	3.16	-3.00	
4,270.0	24.90	186.90	3,968.9	-1,424.8	-133.0	1,430.6	2.73	2.72	
4,361.0	25.90	188.70	4,051.1	-1,463.5	-138.3	1,469.6	1.39	1.10	
4,453.0	26.30	189.80	4,133.7	-1,503.4	-144.8	1,510.0	0.68	0.43	
4,544.0	25.80	187.70	4,215.5	-1,542.9	-150.9	1,550.0	1.15	-0.55	
4,636.0	25.80	188.10	4,298.3	-1,582.5	-156.4	1,590.0	0.19	0.00	
4,727.0	26.10	185.70	4,380.1	-1,622.1	-161.1	1,629.8	1.20	0.33	
4,819.0	25.20	187.20	4,463.0	-1,661.6	-165.6	1,669.6	1.21	-0.98	
4,910.0	25.70	188.90	4,545.2	-1,700.4	-171.1	1,708.7	0.97	0.55	
5,001.0	24.70	189.10	4,627.6	-1,738.6	-177.1	1,747.4	1.10	-1.10	
5,093.0	24.90	186.20	4,711.1	-1,776.9	-182.3	1,786.0	1.34	0.22	
5,185.0	24.80	188.90	4,794.6	-1,815.2	-187.4	1,824.7	1.24	-0.11	
5,276.0	23.70	186.90	4,877.5	-1,852.2	-192.5	1,862.0	1.51	-1.21	
5,368.0	22.90	185.10	4,962.0	-1,888.4	-196.3	1,898.4	1.16	-0.87	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8512D-36 (was 8513F-25)
Project:	Story Gulch	TVD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Well:	8512D-36 (was 8513F-25)	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
5,459.0	22.50	186.20	5,046.0	-1,923.3	-199.8	1,933.5	0.64	-0.44	
5,551.0	24.60	189.20	5,130.3	-1,959.7	-204.7	1,970.2	2.63	2.28	
5,642.0	25.90	187.10	5,212.6	-1,998.2	-210.2	2,009.0	1.73	1.43	
5,733.0	25.80	188.90	5,294.5	-2,037.4	-215.7	2,048.7	0.87	-0.11	
5,825.0	26.50	185.90	5,377.1	-2,077.6	-221.0	2,089.2	1.63	0.76	
5,916.0	27.20	186.00	5,458.3	-2,118.5	-225.2	2,130.3	0.77	0.77	
6,008.0	25.10	184.30	5,540.9	-2,158.9	-228.9	2,170.9	2.42	-2.28	
6,100.0	26.20	184.60	5,623.8	-2,198.6	-232.0	2,210.7	1.20	1.20	
6,191.0	27.00	184.90	5,705.2	-2,239.2	-235.3	2,251.4	0.89	0.88	
6,282.0	27.30	184.50	5,786.1	-2,280.6	-238.7	2,292.9	0.39	0.33	
6,374.0	26.90	185.30	5,868.0	-2,322.3	-242.3	2,334.8	0.59	-0.43	
6,465.0	27.20	188.30	5,949.1	-2,363.4	-247.2	2,376.1	1.53	0.33	
6,556.0	27.20	189.60	6,030.0	-2,404.5	-253.7	2,417.7	0.65	0.00	
6,648.0	27.40	191.20	6,111.8	-2,446.0	-261.3	2,459.8	0.83	0.22	
6,739.0	26.30	188.40	6,193.0	-2,486.5	-268.3	2,500.8	1.84	-1.21	
6,831.0	26.30	190.90	6,275.4	-2,526.7	-275.2	2,541.5	1.20	0.00	
6,922.0	25.00	191.80	6,357.5	-2,565.3	-282.9	2,580.8	1.49	-1.43	
7,014.0	25.70	190.50	6,440.6	-2,603.9	-290.5	2,620.1	0.97	0.76	
7,105.0	24.60	187.60	6,523.0	-2,642.1	-296.6	2,658.7	1.82	-1.21	
7,196.0	25.60	187.80	6,605.4	-2,680.4	-301.8	2,697.3	1.10	1.10	
7,288.0	26.90	185.30	6,687.9	-2,720.8	-306.4	2,738.0	1.85	1.41	
7,379.0	25.60	187.90	6,769.5	-2,760.8	-311.0	2,778.2	1.91	-1.43	
7,471.0	25.80	182.10	6,852.4	-2,800.5	-314.5	2,818.0	2.74	0.22	
7,563.0	24.60	181.70	6,935.7	-2,839.6	-315.8	2,857.1	1.32	-1.30	
7,655.0	25.50	182.80	7,019.0	-2,878.5	-317.3	2,895.9	1.10	0.98	
7,747.0	25.30	183.70	7,102.1	-2,917.9	-319.6	2,935.3	0.47	-0.22	
7,838.0	24.00	182.90	7,184.8	-2,955.8	-321.7	2,973.2	1.47	-1.43	
7,929.0	22.20	185.10	7,268.5	-2,991.4	-324.2	3,008.8	2.19	-1.98	
8,021.0	19.60	190.20	7,354.5	-3,023.9	-328.5	3,041.6	3.45	-2.83	
8,112.0	17.30	191.70	7,440.8	-3,052.2	-333.9	3,070.3	2.58	-2.53	
8,204.0	16.90	190.50	7,528.7	-3,078.8	-339.1	3,097.3	0.58	-0.43	
8,295.0	12.80	191.00	7,616.7	-3,101.7	-343.5	3,120.6	4.51	-4.51	
8,387.0	12.00	192.00	7,706.5	-3,121.0	-347.4	3,140.3	0.90	-0.87	
8,478.0	10.70	191.90	7,795.8	-3,138.5	-351.1	3,158.1	1.43	-1.43	
8,570.0	9.80	195.50	7,886.3	-3,154.4	-355.0	3,174.3	1.20	-0.98	
8,662.0	9.10	184.60	7,977.0	-3,169.2	-357.7	3,189.3	2.08	-0.76	
8,754.0	7.20	177.50	8,068.1	-3,182.3	-358.0	3,202.3	2.33	-2.07	
8,845.0	5.10	178.40	8,158.6	-3,192.0	-357.6	3,211.9	2.31	-2.31	
8,936.0	4.80	180.90	8,249.2	-3,199.9	-357.6	3,219.7	0.41	-0.33	
9,028.0	2.80	175.30	8,341.0	-3,205.9	-357.4	3,225.8	2.21	-2.17	
9,119.0	2.90	180.20	8,431.9	-3,210.5	-357.3	3,230.2	0.29	0.11	
9,211.0	0.20	343.40	8,523.9	-3,212.6	-357.3	3,232.4	3.36	-2.93	
9,301.0	0.40	298.00	8,613.9	-3,212.3	-357.6	3,232.1	0.33	0.22	
9,393.0	0.70	276.90	8,705.9	-3,212.1	-358.5	3,232.0	0.39	0.33	
9,485.0	1.50	47.10	8,797.9	-3,211.2	-358.2	3,231.1	2.20	0.87	
9,576.0	0.90	56.90	8,888.9	-3,210.0	-356.7	3,229.7	0.69	-0.66	
9,668.0	1.40	67.00	8,980.8	-3,209.2	-355.1	3,228.7	0.58	0.54	
9,760.0	1.30	58.40	9,072.8	-3,208.2	-353.1	3,227.5	0.25	-0.11	
9,851.0	1.50	68.50	9,163.8	-3,207.2	-351.1	3,226.3	0.35	0.22	
9,942.0	0.60	137.80	9,254.8	-3,207.1	-349.7	3,226.1	1.54	-0.99	
10,034.0	1.00	143.60	9,346.8	-3,208.2	-348.9	3,227.0	0.44	0.43	
10,125.0	1.20	171.10	9,437.7	-3,209.7	-348.3	3,228.5	0.61	0.22	
10,217.0	1.60	181.70	9,529.7	-3,212.0	-348.2	3,230.7	0.52	0.43	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8512D-36 (was 8513F-25)
Project:	Story Gulch	TVD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB=32' @ 8323.0ft (Patterson #326)
Well:	8512D-36 (was 8513F-25)	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
10,308.0	2.00	252.00	9,620.7	-3,213.7	-349.7	3,232.6	2.31	0.44	
10,400.0	1.70	338.80	9,712.7	-3,213.0	-351.8	3,232.1	2.77	-0.33	
10,491.0	2.10	323.60	9,803.6	-3,210.4	-353.2	3,229.6	0.70	0.44	
10,582.0	1.50	283.00	9,894.6	-3,208.7	-355.4	3,228.3	1.51	-0.66	
10,674.0	1.30	35.30	9,986.5	-3,207.6	-356.0	3,227.3	2.53	-0.22	
10,765.0	0.40	40.40	10,077.5	-3,206.5	-355.2	3,226.1	0.99	-0.99	
10,857.0	0.20	177.40	10,169.5	-3,206.4	-354.9	3,226.0	0.61	-0.22	
11,040.0	0.50	190.10	10,352.5	-3,207.6	-355.1	3,227.1	0.17	0.16	
11,223.0	1.60	245.60	10,535.5	-3,209.4	-357.5	3,229.2	0.75	0.60	
11,498.0	1.60	245.60	10,810.4	-3,212.6	-364.5	3,233.2	0.00	0.00	
11,681.0	1.90	242.90	10,993.3	-3,215.0	-369.5	3,236.2	0.17	0.16	
12,414.0	2.10	239.50	11,725.9	-3,227.4	-391.9	3,251.0	0.03	0.03	Last Cathedral Survey @ 12,414' MD
12,485.0	2.10	239.50	11,796.8	-3,228.7	-394.2	3,252.6	0.00	0.00	Projection to Bit @ 12,485'

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									
8512D-36 D36 496 PBH	0.00	0.00	12,560.0	-3,222.7	-377.0	1,674,520.02	2,261,239.27	39° 39' 21.79 N	108° 7' 27.14 W
- actual wellpath misses target center by 763.4ft at 12485.0ft MD (11796.8 TVD, -3228.7 N, -394.2 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
8512D-36 D36 496 TGT	0.00	0.00	8,380.0	-3,212.6	-360.0	1,674,529.56	2,261,256.53	39° 39' 21.89 N	108° 7' 26.92 W
- actual wellpath misses target center by 5.5ft at 9067.2ft MD (8380.2 TVD, -3207.9 N, -357.3 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
12,414.0	11,725.9	-3,227.4	-391.9	Last Cathedral Survey @ 12,414' MD	
12,485.0	11,796.8	-3,228.7	-394.2	Projection to Bit @ 12,485'	

Checked By: _____ Approved By: _____ Date: _____