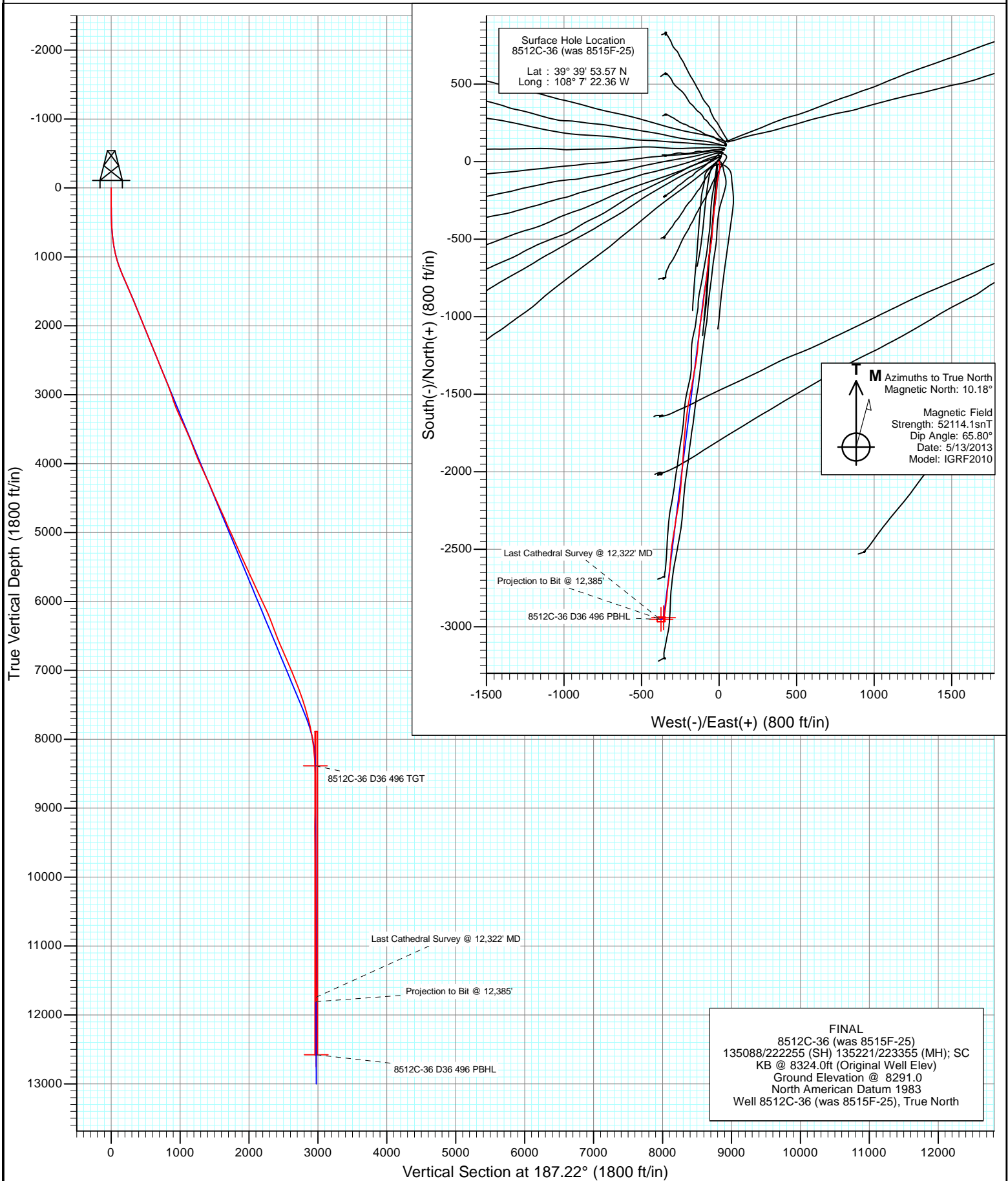


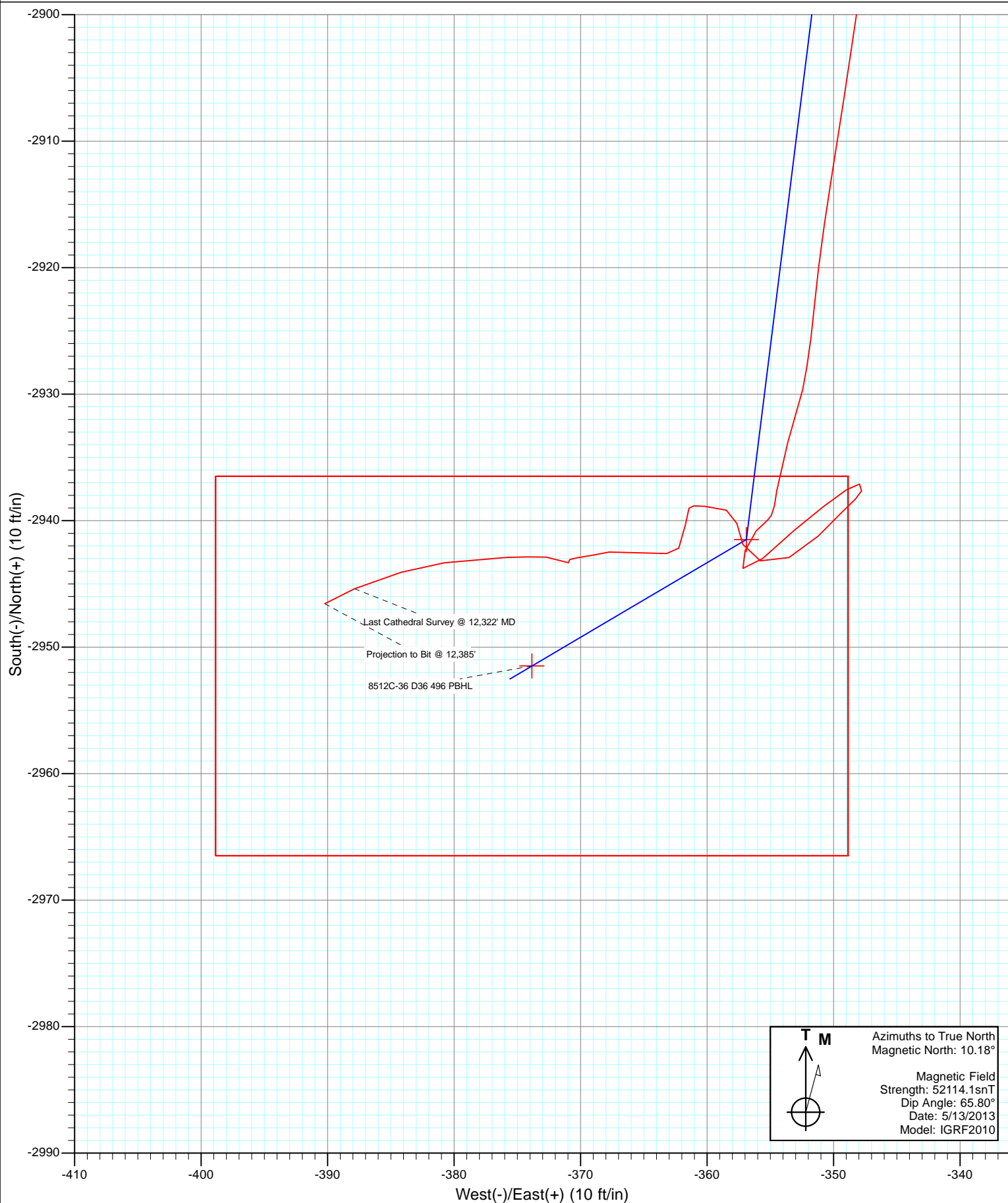


Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8512C-36 (was 8515F-25)
Wellbore: DD
Design: FINAL





Project: Story Gulch
Site: S36-T4S-R96W (D36 496)
Well: 8512C-36 (was 8515F-25)
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8512C-36 (was 8515F-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Original Well Elev)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Original Well Elev)
Well:	8512C-36 (was 8515F-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	8512C-36 (was 8515F-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,677,723.46 ft	Latitude:	39° 39' 53.57 N
	+E/-W	0.0 ft	Easting:	2,261,705.79 ft	Longitude:	108° 7' 22.36 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	5/13/2013	10.18	65.80	52,114

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	187.22	

Survey Program	Date	5/20/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
206.0	12,385.0	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		
206.0	0.10	214.10	206.0	-0.1	-0.1	0.2	0.05	0.05		
237.0	0.20	214.90	237.0	-0.2	-0.1	0.2	0.32	0.32		
267.0	0.20	179.50	267.0	-0.3	-0.2	0.3	0.41	0.00		
298.0	0.60	180.20	298.0	-0.5	-0.2	0.5	1.29	1.29		
328.0	1.00	171.90	328.0	-0.9	-0.1	1.0	1.38	1.33		
359.0	1.10	164.20	359.0	-1.5	0.0	1.5	0.56	0.32		
389.0	1.40	152.20	389.0	-2.1	0.2	2.1	1.32	1.00		
419.0	1.70	163.40	419.0	-2.8	0.5	2.8	1.42	1.00		
450.0	2.10	159.60	450.0	-3.8	0.9	3.7	1.35	1.29		
480.0	2.50	171.20	479.9	-5.0	1.1	4.8	2.04	1.33		
511.0	3.10	143.90	510.9	-6.3	1.7	6.1	4.66	1.94		
541.0	3.30	157.90	540.8	-7.8	2.5	7.4	2.68	0.67		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8512C-36 (was 8515F-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Original Well Elev)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Original Well Elev)
Well:	8512C-36 (was 8515F-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
571.0	3.60	155.80	570.8	-9.4	3.3	9.0	1.08	1.00	
602.0	4.20	152.20	601.7	-11.3	4.2	10.7	2.09	1.94	
651.0	5.00	175.60	650.6	-15.1	5.2	14.3	4.13	1.63	
696.0	6.20	172.70	695.4	-19.4	5.6	18.6	2.74	2.67	
742.0	7.20	182.70	741.0	-24.8	5.8	23.8	3.33	2.17	
788.0	8.10	184.80	786.6	-30.9	5.4	29.9	2.05	1.96	
834.0	9.30	184.00	832.1	-37.8	4.9	36.9	2.62	2.61	
879.0	10.80	184.50	876.4	-45.6	4.3	44.7	3.34	3.33	
925.0	12.20	188.40	921.5	-54.7	3.3	53.9	3.48	3.04	
971.0	13.50	190.50	966.3	-64.8	1.6	64.1	3.00	2.83	
1,016.0	14.70	191.50	1,010.0	-75.6	-0.5	75.1	2.72	2.67	
1,062.0	16.20	191.90	1,054.3	-87.6	-3.0	87.3	3.27	3.26	
1,108.0	18.50	191.90	1,098.2	-101.0	-5.8	100.9	5.00	5.00	
1,153.0	20.80	190.50	1,140.6	-115.9	-8.8	116.0	5.22	5.11	
1,245.0	22.80	187.00	1,226.0	-149.6	-13.9	150.2	2.59	2.17	
1,336.0	23.60	184.70	1,309.7	-185.3	-17.6	186.0	1.33	0.88	
1,428.0	23.60	184.80	1,394.0	-222.0	-20.6	222.8	0.04	0.00	
1,520.0	22.60	185.60	1,478.6	-257.9	-23.9	258.9	1.14	-1.09	
1,611.0	23.00	188.10	1,562.5	-292.9	-28.1	294.1	1.15	0.44	
1,702.0	22.90	186.40	1,646.3	-328.1	-32.6	329.6	0.74	-0.11	
1,799.0	21.90	184.20	1,736.0	-364.9	-36.0	366.6	1.35	-1.03	
1,890.0	22.10	185.80	1,820.3	-398.9	-39.0	400.6	0.69	0.22	
1,981.0	22.30	184.40	1,904.6	-433.1	-42.0	435.0	0.62	0.22	
2,073.0	22.50	184.40	1,989.6	-468.1	-44.7	470.0	0.22	0.22	
2,164.0	22.50	185.30	2,073.7	-502.8	-47.7	504.8	0.38	0.00	
2,253.0	21.40	191.10	2,156.3	-535.7	-52.4	538.0	2.73	-1.24	
2,345.0	22.30	189.20	2,241.7	-569.4	-58.4	572.2	1.24	0.98	
2,436.0	23.10	188.30	2,325.6	-604.1	-63.7	607.3	0.96	0.88	
2,527.0	21.90	186.40	2,409.7	-638.6	-68.2	642.1	1.54	-1.32	
2,619.0	21.70	185.40	2,495.1	-672.6	-71.7	676.3	0.46	-0.22	
2,710.0	21.80	186.30	2,579.6	-706.1	-75.1	710.0	0.38	0.11	
2,802.0	21.80	187.10	2,665.0	-740.1	-79.1	744.1	0.32	0.00	
2,894.0	22.90	188.70	2,750.1	-774.7	-83.9	779.1	1.37	1.20	
2,972.0	22.20	189.10	2,822.2	-804.3	-88.6	809.0	0.92	-0.90	
3,082.0	19.40	186.50	2,925.0	-843.0	-93.9	848.1	2.68	-2.55	
3,173.0	18.60	184.90	3,011.0	-872.4	-96.9	877.7	1.05	-0.88	
3,265.0	18.80	186.50	3,098.2	-901.8	-99.8	907.2	0.60	0.22	
3,356.0	22.80	188.50	3,183.2	-933.8	-104.1	939.5	4.46	4.40	
3,448.0	24.00	188.80	3,267.7	-969.9	-109.6	976.0	1.31	1.30	
3,539.0	23.90	188.70	3,350.8	-1,006.4	-115.2	1,012.9	0.12	-0.11	
3,631.0	25.30	187.30	3,434.5	-1,044.4	-120.5	1,051.2	1.65	1.52	
3,722.0	24.70	187.60	3,517.0	-1,082.5	-125.5	1,089.7	0.67	-0.66	
3,814.0	22.20	184.80	3,601.4	-1,118.9	-129.5	1,126.3	2.97	-2.72	
3,905.0	21.70	185.40	3,685.8	-1,152.7	-132.5	1,160.3	0.60	-0.55	
3,997.0	21.50	186.00	3,771.3	-1,186.4	-135.9	1,194.1	0.32	-0.22	
4,089.0	21.20	186.50	3,857.0	-1,219.7	-139.5	1,227.6	0.38	-0.33	
4,179.0	22.10	184.60	3,940.6	-1,252.8	-142.7	1,260.8	1.27	1.00	
4,270.0	24.70	188.70	4,024.1	-1,288.7	-147.0	1,296.9	3.37	2.86	
4,362.0	25.90	191.90	4,107.3	-1,327.3	-154.0	1,336.1	1.98	1.30	
4,454.0	24.20	189.80	4,190.7	-1,365.6	-161.4	1,375.0	2.09	-1.85	
4,545.0	25.50	190.00	4,273.2	-1,403.2	-168.0	1,413.2	1.43	1.43	
4,636.0	23.00	188.70	4,356.2	-1,440.1	-174.0	1,450.6	2.81	-2.75	
4,728.0	23.20	192.50	4,440.8	-1,475.6	-180.7	1,486.6	1.63	0.22	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8512C-36 (was 8515F-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Original Well Elev)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Original Well Elev)
Well:	8512C-36 (was 8515F-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
4,819.0	23.40	192.30	4,524.4	-1,510.7	-188.4	1,522.4	0.24	0.22	
4,911.0	25.20	188.80	4,608.3	-1,547.9	-195.3	1,560.2	2.51	1.96	
5,002.0	23.60	188.10	4,691.1	-1,585.1	-200.8	1,597.8	1.79	-1.76	
5,094.0	24.60	186.90	4,775.1	-1,622.4	-205.7	1,635.3	1.21	1.09	
5,185.0	22.60	187.90	4,858.5	-1,658.5	-210.4	1,671.8	2.24	-2.20	
5,277.0	24.30	186.50	4,942.9	-1,694.8	-215.0	1,708.4	1.94	1.85	
5,368.0	24.80	184.50	5,025.7	-1,732.4	-218.6	1,746.2	1.07	0.55	
5,460.0	23.40	187.20	5,109.7	-1,769.8	-222.4	1,783.7	1.94	-1.52	
5,551.0	24.00	183.70	5,193.0	-1,806.2	-225.9	1,820.3	1.68	0.66	
5,643.0	25.70	182.30	5,276.5	-1,844.8	-227.9	1,858.8	1.96	1.85	
5,734.0	24.40	183.00	5,358.9	-1,883.3	-229.6	1,897.2	1.47	-1.43	
5,825.0	25.10	184.10	5,441.5	-1,921.3	-232.0	1,935.2	0.92	0.77	
5,917.0	23.10	185.30	5,525.5	-1,958.7	-235.1	1,972.8	2.24	-2.17	
6,009.0	24.30	185.90	5,609.8	-1,995.5	-238.7	2,009.7	1.33	1.30	
6,101.0	25.40	183.00	5,693.2	-2,034.1	-241.7	2,048.3	1.78	1.20	
6,192.0	26.30	184.90	5,775.1	-2,073.7	-244.4	2,087.9	1.34	0.99	
6,283.0	23.40	184.10	5,857.7	-2,111.8	-247.4	2,126.1	3.21	-3.19	
6,375.0	25.60	187.80	5,941.4	-2,149.7	-251.4	2,164.3	2.91	2.39	
6,466.0	25.70	187.90	6,023.5	-2,188.7	-256.8	2,203.6	0.12	0.11	
6,557.0	26.00	191.00	6,105.3	-2,227.8	-263.3	2,243.3	1.52	0.33	
6,649.0	21.90	190.20	6,189.4	-2,264.5	-270.2	2,280.6	4.47	-4.46	
6,740.0	21.90	189.40	6,273.8	-2,298.0	-276.0	2,314.5	0.33	0.00	
6,832.0	19.50	187.90	6,359.9	-2,330.1	-280.9	2,347.0	2.67	-2.61	
6,923.0	21.10	189.80	6,445.2	-2,361.3	-285.8	2,378.5	1.90	1.76	
7,014.0	21.30	188.00	6,530.1	-2,393.8	-290.9	2,411.4	0.75	0.22	
7,106.0	23.50	189.30	6,615.1	-2,428.5	-296.2	2,446.4	2.45	2.39	
7,197.0	23.40	190.00	6,698.6	-2,464.2	-302.2	2,482.6	0.33	-0.11	
7,289.0	23.60	185.50	6,783.0	-2,500.5	-307.2	2,519.3	1.96	0.22	
7,380.0	23.90	184.10	6,866.3	-2,537.0	-310.2	2,555.9	0.70	0.33	
7,472.0	22.50	183.80	6,950.9	-2,573.2	-312.7	2,592.1	1.53	-1.52	
7,564.0	23.40	185.40	7,035.6	-2,608.9	-315.6	2,627.9	1.19	0.98	
7,656.0	22.00	185.00	7,120.4	-2,644.3	-318.8	2,663.4	1.53	-1.52	
7,747.0	21.20	186.60	7,205.1	-2,677.6	-322.2	2,696.9	1.09	-0.88	
7,839.0	20.30	186.50	7,291.1	-2,710.0	-325.9	2,729.5	0.98	-0.98	
7,930.0	19.10	187.40	7,376.8	-2,740.4	-329.6	2,760.1	1.36	-1.32	
8,021.0	18.30	186.10	7,463.0	-2,769.4	-333.1	2,789.3	0.99	-0.88	
8,113.0	16.60	184.00	7,550.7	-2,796.9	-335.5	2,816.9	1.97	-1.85	
8,205.0	15.50	187.80	7,639.1	-2,822.2	-338.1	2,842.3	1.65	-1.20	
8,296.0	13.50	186.10	7,727.2	-2,844.8	-340.9	2,865.1	2.25	-2.20	
8,388.0	12.70	188.00	7,816.8	-2,865.5	-343.4	2,885.9	0.99	-0.87	
8,479.0	10.90	187.60	7,905.9	-2,883.9	-346.0	2,904.5	1.98	-1.98	
8,571.0	9.10	188.20	7,996.5	-2,899.7	-348.2	2,920.5	1.96	-1.96	
8,663.0	7.50	189.20	8,087.5	-2,912.9	-350.2	2,933.8	1.75	-1.74	
8,754.0	5.40	185.40	8,178.0	-2,923.0	-351.5	2,944.0	2.35	-2.31	
8,845.0	3.10	192.50	8,268.7	-2,929.7	-352.4	2,950.7	2.59	-2.53	
8,937.0	2.30	200.10	8,360.6	-2,933.8	-353.6	2,955.0	0.95	-0.87	
8,962.7	2.37	195.93	8,386.3	-2,934.8	-353.9	2,956.0	0.71	0.27	8512C-36 D36 496 TGT
9,029.0	2.60	186.40	8,452.5	-2,937.6	-354.5	2,958.9	0.71	0.35	
9,120.0	0.70	241.20	8,543.5	-2,940.0	-355.2	2,961.3	2.49	-2.09	
9,211.0	0.90	216.20	8,634.5	-2,940.8	-356.1	2,962.2	0.44	0.22	
9,302.0	1.40	204.90	8,725.5	-2,942.4	-357.0	2,963.9	0.60	0.55	
9,394.0	0.60	139.20	8,817.4	-2,943.8	-357.2	2,965.3	1.39	-0.87	
9,486.0	2.10	47.50	8,909.4	-2,943.0	-355.6	2,964.4	2.39	1.63	

Cathedral Energy Services

Survey Report

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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
9,576.0	2.20	48.90	8,999.4	-2,940.7	-353.1	2,961.8	0.13	0.11	
9,668.0	1.50	54.00	9,091.3	-2,938.9	-350.8	2,959.7	0.78	-0.76	
9,760.0	1.30	53.90	9,183.3	-2,937.6	-349.0	2,958.1	0.22	-0.22	
9,851.0	0.30	131.10	9,274.3	-2,937.1	-347.9	2,957.5	1.39	-1.10	
9,942.0	0.50	182.50	9,365.3	-2,937.7	-347.8	2,958.1	0.43	0.22	
10,034.0	0.70	241.20	9,457.3	-2,938.3	-348.3	2,958.8	0.67	0.22	
10,125.0	1.30	217.50	9,548.2	-2,939.4	-349.4	2,960.0	0.79	0.66	
10,216.0	1.90	230.00	9,639.2	-2,941.2	-351.2	2,962.0	0.76	0.66	
10,308.0	1.70	237.80	9,731.2	-2,942.9	-353.5	2,964.0	0.34	-0.22	
10,400.0	1.50	292.60	9,823.1	-2,943.2	-355.8	2,964.6	1.61	-0.22	
10,491.0	1.10	341.60	9,914.1	-2,941.9	-357.2	2,963.5	1.25	-0.44	
10,582.0	1.10	346.40	10,005.1	-2,940.2	-357.6	2,961.8	0.10	0.00	
10,674.0	0.80	286.20	10,097.1	-2,939.2	-358.5	2,960.9	1.07	-0.33	
10,765.0	1.40	276.80	10,188.1	-2,938.9	-360.2	2,960.8	0.69	0.66	
10,857.0	0.40	203.30	10,280.1	-2,939.0	-361.4	2,961.1	1.46	-1.09	
10,948.0	1.30	188.90	10,371.1	-2,940.3	-361.7	2,962.5	1.01	0.99	
11,040.0	1.10	204.20	10,463.0	-2,942.2	-362.2	2,964.4	0.41	-0.22	
11,131.0	0.90	301.50	10,554.0	-2,942.6	-363.2	2,964.9	1.66	-0.22	
11,315.0	2.10	259.00	10,738.0	-2,942.5	-367.7	2,965.4	0.85	0.65	
11,406.0	1.10	261.30	10,828.9	-2,942.9	-370.2	2,966.1	1.10	-1.10	
11,497.0	0.30	122.60	10,919.9	-2,943.2	-370.9	2,966.5	1.47	-0.88	
11,589.0	0.30	270.50	11,011.9	-2,943.3	-370.9	2,966.6	0.63	0.00	
11,681.0	0.50	291.90	11,103.9	-2,943.2	-371.6	2,966.5	0.27	0.22	
11,772.0	1.00	280.20	11,194.9	-2,942.9	-372.7	2,966.4	0.57	0.55	
11,864.0	0.90	260.00	11,286.9	-2,942.9	-374.2	2,966.6	0.38	-0.11	
11,955.0	1.20	275.50	11,377.9	-2,942.9	-375.9	2,966.8	0.45	0.33	
12,139.0	1.90	258.20	11,561.8	-2,943.3	-380.8	2,967.9	0.45	0.38	
12,230.0	2.50	257.40	11,652.7	-2,944.1	-384.2	2,969.0	0.66	0.66	
12,322.0	2.40	243.40	11,744.7	-2,945.4	-387.9	2,970.8	0.66	-0.11	Last Cathedral Survey @ 12,322' MD
12,385.0	2.40	243.40	11,807.6	-2,946.6	-390.2	2,972.2	0.00	0.00	Projection to Bit @ 12,385' - 8512C-36 D36 496 f

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well 8512C-36 (was 8515F-25)
Project:	Story Gulch	TVD Reference:	KB @ 8324.0ft (Original Well Elev)
Site:	S36-T4S-R96W (D36 496)	MD Reference:	KB @ 8324.0ft (Original Well Elev)
Well:	8512C-36 (was 8515F-25)	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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									
8512C-36 D36 496 TGT	0.00	0.00	8,386.0	-2,941.5	-356.9	1,674,793.50	2,261,264.13	39° 39' 24.50 N	108° 7' 26.92 W
- actual wellpath misses target center by 7.3ft at 8962.7ft MD (8386.3 TVD, -2934.8 N, -353.9 E)									
- Point									
8512C-36 D36 496 PBH	0.00	0.00	12,577.0	-2,951.5	-373.8	1,674,783.99	2,261,246.89	39° 39' 24.40 N	108° 7' 27.14 W
- actual wellpath misses target center by 769.6ft at 12385.0ft MD (11807.6 TVD, -2946.6 N, -390.2 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)	
12,322.0	11,744.7	-2,945.4	-387.9	Last Cathedral Survey @ 12,322' MD
12,385.0	11,807.6	-2,946.6	-390.2	Projection to Bit @ 12,385'

Checked By: _____ Approved By: _____ Date: _____