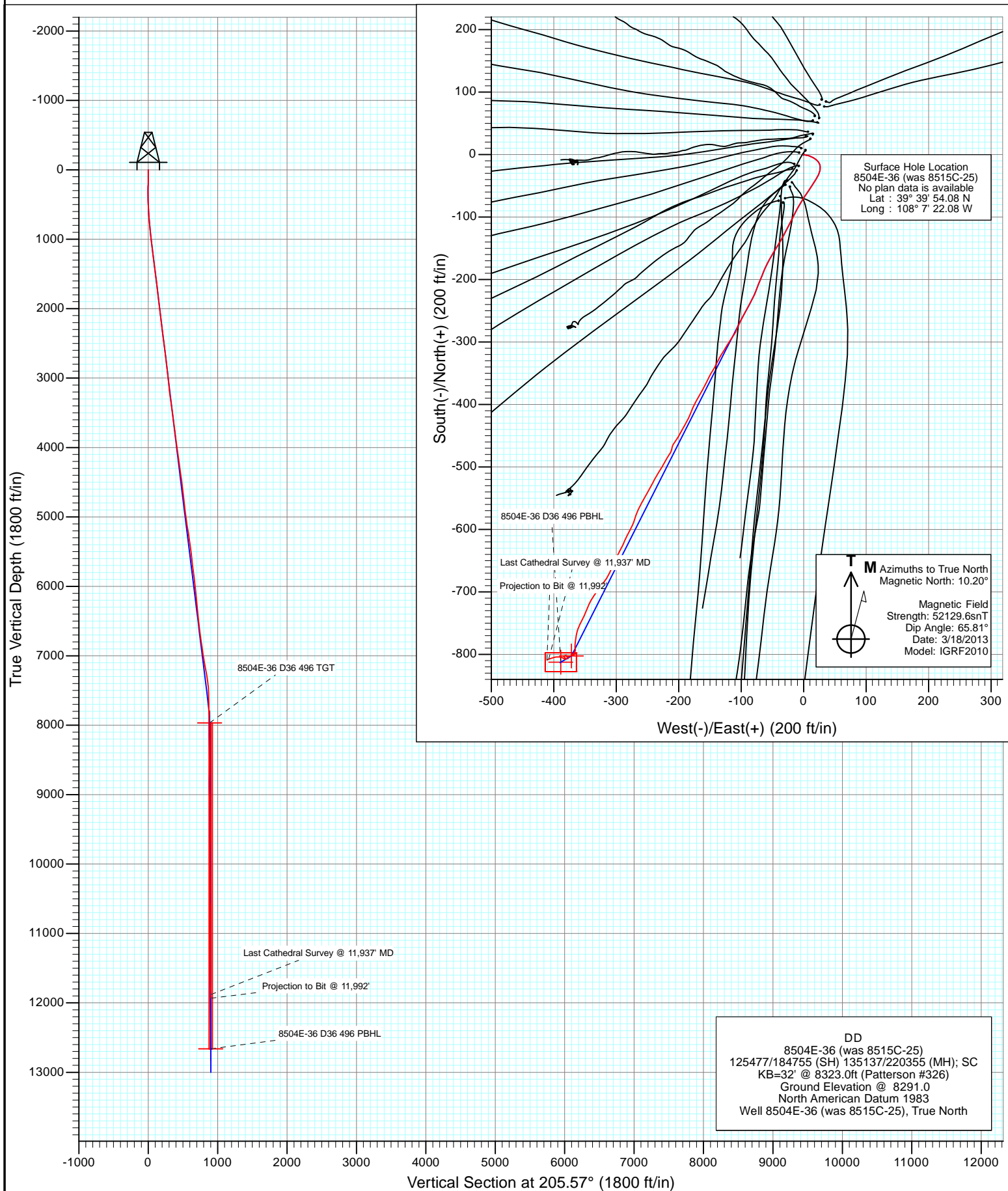


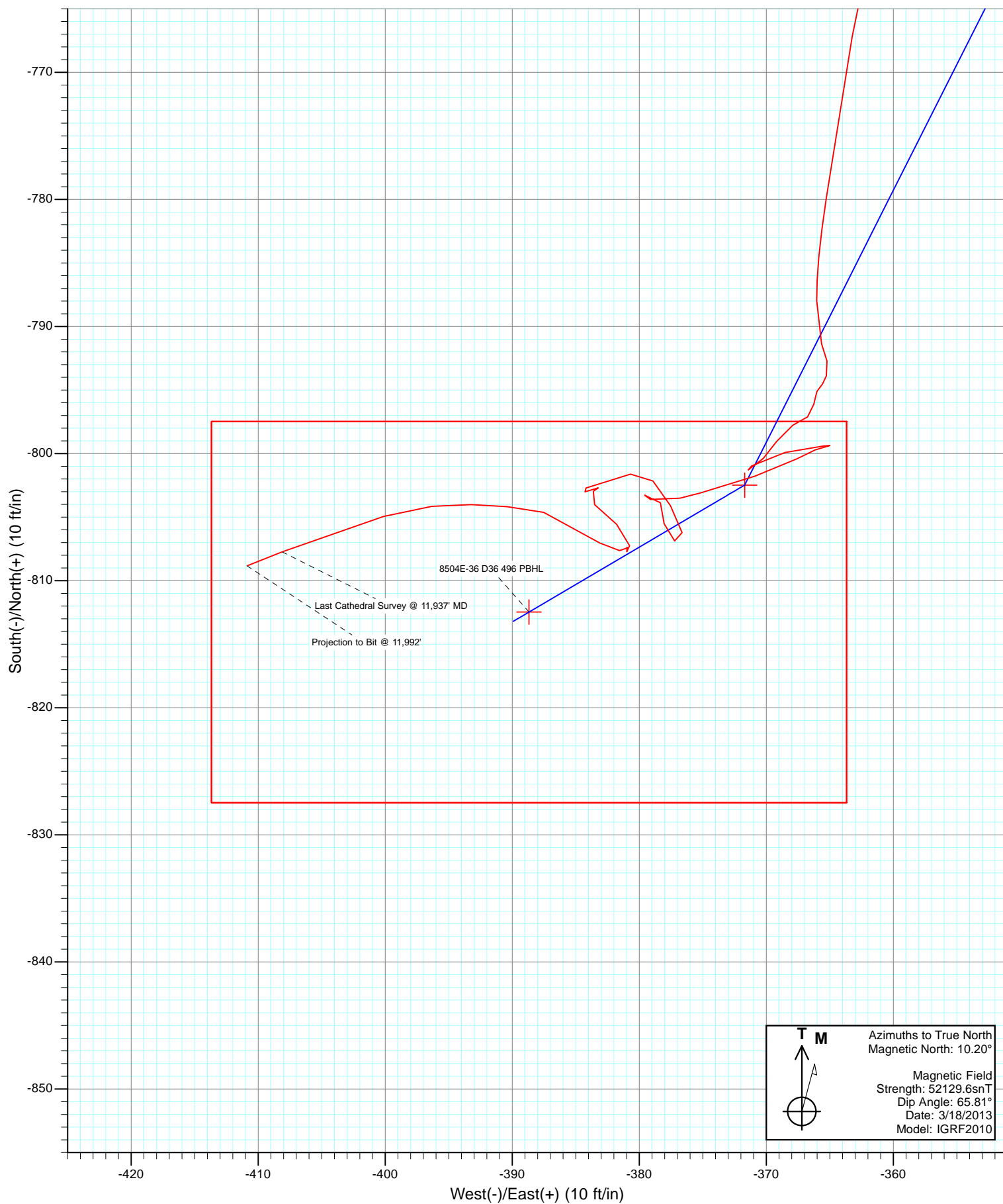


Project: Story Gulch  
Site: S36-T4S-R96W (D36 496)  
Well: 8504E-36 (was 8515C-25)  
Wellbore: DD  
Design: FINAL





Project: Story Gulch  
Site: S36-T4S-R96W (D36 496)  
Well: 8504E-36 (was 8515C-25)  
Wellbore: DD  
Design: FINAL



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8504E-36 (was 8515C-25)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB=32' @ 8323.0ft (Patterson #326)
<b>Site:</b>	S36-T4S-R96W (D36 496)	<b>MD Reference:</b>	KB=32' @ 8323.0ft (Patterson #326)
<b>Well:</b>	8504E-36 (was 8515C-25)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

<b>Project</b>	Story Gulch		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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	8504E-36 (was 8515C-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,677,774.40 ft	Latitude:	39° 39' 54.08 N
	+E/-W	0.0 ft	Easting:	2,261,729.16 ft	Longitude:	108° 7' 22.08 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	8,291.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	3/18/2013	10.20	65.81	52,130

<b>Design</b>	DD				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	205.57	

<b>Survey Program</b>	<b>Date</b>	4/16/2013			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
0.0	11,992.0	Survey #1 (DD)	MWD	Geolink MWD	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
179.0	1.80	105.00	179.0	-0.7	2.7	-0.5	1.01	1.01		
209.0	2.40	97.20	209.0	-0.9	3.8	-0.8	2.21	2.00		
239.0	2.90	101.70	238.9	-1.2	5.2	-1.2	1.80	1.67		
330.0	4.90	109.70	329.7	-2.9	11.1	-2.1	2.27	2.20		
421.0	5.50	127.20	420.3	-6.9	18.2	-1.6	1.85	0.66		
512.0	4.40	142.40	511.0	-12.3	23.8	0.8	1.87	-1.21		
606.0	3.90	172.90	604.8	-18.3	26.4	5.1	2.38	-0.53		
698.0	4.40	189.30	696.5	-24.9	26.2	11.2	1.39	0.54		
789.0	5.30	205.60	787.2	-32.1	23.8	18.7	1.80	0.99		
881.0	6.30	212.10	878.7	-40.2	19.3	28.0	1.30	1.09		
973.0	7.30	212.60	970.1	-49.4	13.5	38.8	1.09	1.09		
1,064.0	7.30	214.40	1,060.3	-59.1	7.1	50.2	0.25	0.00		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8504E-36 (was 8515C-25)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB=32' @ 8323.0ft (Patterson #326)
<b>Site:</b>	S36-T4S-R96W (D36 496)	<b>MD Reference:</b>	KB=32' @ 8323.0ft (Patterson #326)
<b>Well:</b>	8504E-36 (was 8515C-25)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
1,156.0	7.00	213.00	1,151.6	-68.6	0.8	61.6	0.38	-0.33	
1,248.0	6.60	210.90	1,243.0	-77.9	-5.0	72.4	0.51	-0.43	
1,339.0	6.70	208.40	1,333.4	-87.0	-10.2	82.9	0.34	0.11	
1,431.0	7.70	207.20	1,424.6	-97.2	-15.6	94.4	1.10	1.09	
1,523.0	7.60	206.60	1,515.8	-108.1	-21.1	106.7	0.14	-0.11	
1,614.0	7.00	207.20	1,606.1	-118.4	-26.4	118.2	0.66	-0.66	
1,706.0	6.50	207.10	1,697.4	-128.1	-31.3	129.0	0.54	-0.54	
1,798.0	6.70	210.00	1,788.8	-137.4	-36.4	139.6	0.42	0.22	
1,889.0	6.70	212.70	1,879.2	-146.4	-41.9	150.2	0.35	0.00	
1,981.0	7.00	210.90	1,970.6	-155.7	-47.7	161.1	0.40	0.33	
2,072.0	6.80	208.80	2,060.9	-165.2	-53.1	172.0	0.35	-0.22	
2,164.0	6.60	208.00	2,152.3	-174.7	-58.2	182.7	0.24	-0.22	
2,255.0	6.80	201.70	2,242.7	-184.3	-62.7	193.3	0.84	0.22	
2,347.0	7.90	203.30	2,333.9	-195.2	-67.2	205.0	1.22	1.20	
2,438.0	7.70	202.40	2,424.1	-206.5	-72.0	217.4	0.26	-0.22	
2,530.0	7.00	199.10	2,515.3	-217.5	-76.1	229.1	0.89	-0.76	
2,622.0	7.50	206.40	2,606.6	-228.2	-80.6	240.7	1.14	0.54	
2,713.0	7.30	209.70	2,696.8	-238.5	-86.2	252.4	0.52	-0.22	
2,804.0	6.60	207.00	2,787.1	-248.2	-91.4	263.4	0.85	-0.77	
2,896.0	6.50	208.00	2,878.5	-257.5	-96.2	273.9	0.16	-0.11	
2,976.0	6.20	207.60	2,958.0	-265.4	-100.4	282.7	0.38	-0.37	
3,169.0	5.10	200.90	3,150.1	-282.6	-108.3	301.7	0.66	-0.57	
3,260.0	8.50	216.90	3,240.5	-291.8	-113.7	312.3	4.24	3.74	
3,352.0	8.50	209.40	3,331.5	-303.1	-121.2	325.7	1.20	0.00	
3,443.0	8.40	213.20	3,421.5	-314.6	-128.1	339.0	0.62	-0.11	
3,534.0	7.30	208.80	3,511.6	-325.2	-134.5	351.4	1.38	-1.21	
3,626.0	6.10	205.10	3,603.0	-334.7	-139.4	362.1	1.39	-1.30	
3,717.0	8.70	211.30	3,693.2	-345.0	-145.0	373.8	2.98	2.86	
3,809.0	7.70	207.30	3,784.3	-356.4	-151.5	386.9	1.25	-1.09	
3,901.0	5.90	204.20	3,875.6	-366.2	-156.2	397.8	2.00	-1.96	
3,992.0	8.60	211.40	3,965.9	-376.3	-161.7	409.2	3.12	2.97	
4,084.0	8.60	208.50	4,056.9	-388.2	-168.6	422.9	0.47	0.00	
4,175.0	8.00	206.70	4,146.9	-399.8	-174.7	436.1	0.72	-0.66	
4,266.0	7.60	201.20	4,237.1	-411.1	-179.7	448.4	0.93	-0.44	
4,357.0	6.70	205.80	4,327.4	-421.5	-184.2	459.7	1.17	-0.99	
4,449.0	8.20	209.80	4,418.6	-432.0	-189.8	471.6	1.72	1.63	
4,541.0	8.10	207.90	4,509.7	-443.4	-196.1	484.6	0.31	-0.11	
4,632.0	6.90	212.40	4,599.9	-453.7	-202.0	496.5	1.47	-1.32	
4,723.0	6.20	213.10	4,690.3	-462.5	-207.6	506.8	0.77	-0.77	
4,815.0	5.80	190.20	4,781.8	-471.2	-211.1	516.2	2.62	-0.43	
4,906.0	7.40	213.90	4,872.2	-480.6	-215.2	526.4	3.43	1.76	
4,998.0	8.00	208.70	4,963.4	-491.1	-221.6	538.7	1.00	0.65	
5,089.0	6.80	211.60	5,053.6	-501.3	-227.5	550.4	1.38	-1.32	
5,181.0	10.00	210.50	5,144.6	-512.8	-234.4	563.7	3.48	3.48	
5,272.0	9.00	208.40	5,234.4	-525.9	-241.8	578.7	1.16	-1.10	
5,364.0	8.10	209.50	5,325.3	-537.8	-248.4	592.4	0.99	-0.98	
5,455.0	7.70	207.20	5,415.5	-548.8	-254.3	604.9	0.56	-0.44	
5,547.0	7.30	210.40	5,506.7	-559.4	-260.1	616.8	0.63	-0.43	
5,638.0	6.40	203.60	5,597.0	-569.0	-265.1	627.7	1.33	-0.99	
5,730.0	5.90	198.60	5,688.5	-578.2	-268.6	637.5	0.80	-0.54	
5,821.0	7.40	198.30	5,778.9	-588.2	-272.0	647.9	1.65	1.65	
5,912.0	7.90	210.30	5,869.1	-599.1	-277.0	660.0	1.84	0.55	
6,004.0	6.60	204.40	5,960.4	-609.4	-282.3	671.6	1.63	-1.41	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8504E-36 (was 8515C-25)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB=32' @ 8323.0ft (Patterson #326)
<b>Site:</b>	S36-T4S-R96W (D36 496)	<b>MD Reference:</b>	KB=32' @ 8323.0ft (Patterson #326)
<b>Well:</b>	8504E-36 (was 8515C-25)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
6,096.0	6.30	202.70	6,051.8	-618.9	-286.5	681.9	0.39	-0.33	
6,187.0	5.50	209.10	6,142.3	-627.3	-290.5	691.2	1.14	-0.88	
6,279.0	4.60	206.80	6,233.9	-634.4	-294.3	699.3	1.00	-0.98	
6,370.0	5.70	208.70	6,324.6	-641.7	-298.1	707.5	1.22	1.21	
6,462.0	5.20	203.10	6,416.1	-649.5	-302.0	716.2	0.79	-0.54	
6,553.0	6.90	201.70	6,506.6	-658.4	-305.6	725.8	1.88	1.87	
6,644.0	7.60	205.60	6,596.9	-668.9	-310.2	737.3	0.94	0.77	
6,827.0	7.30	220.70	6,778.4	-688.6	-323.0	760.6	1.08	-0.16	
6,919.0	9.10	212.50	6,869.4	-699.2	-330.8	773.5	2.33	1.96	
7,010.0	8.30	215.30	6,959.4	-710.6	-338.4	787.1	0.99	-0.88	
7,101.0	10.20	200.70	7,049.2	-723.5	-345.1	801.6	3.30	2.09	
7,193.0	10.10	205.00	7,139.8	-738.4	-351.4	817.8	0.83	-0.11	
7,284.0	9.80	207.70	7,229.4	-752.5	-358.3	833.5	0.61	-0.33	
7,376.0	9.80	189.30	7,320.1	-767.2	-363.2	848.8	3.39	0.00	
7,467.0	6.50	188.80	7,410.2	-779.9	-365.3	861.2	3.63	-3.63	
7,559.0	3.60	179.10	7,501.8	-788.0	-366.0	868.8	3.27	-3.15	
7,650.0	0.80	148.30	7,592.7	-791.4	-365.6	871.7	3.23	-3.08	
7,743.0	1.00	173.90	7,685.7	-792.7	-365.2	872.7	0.48	0.22	
7,834.0	0.50	200.00	7,776.7	-793.9	-365.3	873.8	0.65	-0.55	
7,926.0	0.40	212.70	7,868.7	-794.5	-365.6	874.5	0.15	-0.11	
8,017.0	0.50	219.40	7,959.7	-795.1	-366.0	875.2	0.12	0.11	
8,108.0	0.90	179.60	8,050.7	-796.1	-366.3	876.2	0.67	0.44	
8,200.0	0.70	243.30	8,142.7	-797.1	-366.7	877.3	0.94	-0.22	
8,291.0	1.00	237.70	8,233.7	-797.8	-367.9	878.4	0.34	0.33	
8,383.0	1.30	215.40	8,325.7	-799.1	-369.2	880.1	0.58	0.33	
8,475.0	0.80	221.80	8,417.6	-800.4	-370.2	881.8	0.56	-0.54	
8,566.0	1.10	240.80	8,508.6	-801.3	-371.4	883.1	0.47	0.33	
8,658.0	1.60	54.30	8,600.6	-801.0	-371.1	882.7	2.93	0.54	
8,750.0	2.00	79.30	8,692.6	-799.9	-368.5	880.6	0.95	0.43	
8,841.0	1.90	81.40	8,783.5	-799.4	-365.5	878.8	0.14	-0.11	
8,932.0	1.30	259.40	8,874.5	-799.4	-365.0	878.6	3.52	-0.66	
9,024.0	2.20	241.40	8,966.5	-800.4	-367.6	880.7	1.13	0.98	
9,116.0	2.30	253.20	9,058.4	-801.8	-370.9	883.3	0.51	0.11	
9,207.0	3.40	252.90	9,149.3	-803.1	-375.2	886.4	1.21	1.21	
9,298.0	1.70	282.40	9,240.2	-803.6	-379.1	888.5	2.30	-1.87	
9,390.0	1.10	87.80	9,332.2	-803.3	-379.6	888.4	3.02	-0.65	
9,481.0	0.90	149.80	9,423.2	-803.9	-378.3	888.4	1.15	-0.22	
9,573.0	1.30	183.80	9,515.1	-805.5	-378.0	889.8	0.81	0.43	
9,664.0	1.20	109.70	9,606.1	-806.9	-377.2	890.7	1.66	-0.11	
9,756.0	1.30	341.90	9,698.1	-806.2	-376.6	889.8	2.44	0.11	
9,847.0	1.60	332.30	9,789.1	-804.1	-377.5	888.3	0.42	0.33	
9,939.0	1.40	316.20	9,881.1	-802.2	-378.9	887.1	0.50	-0.22	
10,030.0	1.30	255.50	9,972.0	-801.6	-380.7	887.4	1.50	-0.11	
10,213.0	1.00	249.00	10,155.0	-802.7	-384.2	889.9	0.18	-0.16	
10,396.0	0.90	79.00	10,338.0	-803.0	-384.3	890.2	1.03	-0.05	
10,487.0	0.40	61.40	10,429.0	-802.7	-383.3	889.5	0.59	-0.55	
10,579.0	0.90	236.40	10,521.0	-803.0	-383.6	889.9	1.41	0.54	
10,670.0	1.20	133.40	10,612.0	-804.0	-383.5	890.8	1.82	0.33	
10,762.0	1.70	131.00	10,703.9	-805.6	-381.8	891.4	0.55	0.54	
10,853.0	1.00	180.00	10,794.9	-807.2	-380.8	892.5	1.42	-0.77	
10,945.0	0.50	327.50	10,886.9	-807.7	-381.0	893.0	1.57	-0.54	
11,037.0	0.30	89.80	10,978.9	-807.4	-380.9	892.7	0.77	-0.22	
11,128.0	1.10	252.50	11,069.9	-807.6	-381.5	893.2	1.53	0.88	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well 8504E-36 (was 8515C-25)
<b>Project:</b>	Story Gulch	<b>TVD Reference:</b>	KB=32' @ 8323.0ft (Patterson #326)
<b>Site:</b>	S36-T4S-R96W (D36 496)	<b>MD Reference:</b>	KB=32' @ 8323.0ft (Patterson #326)
<b>Well:</b>	8504E-36 (was 8515C-25)	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
11,220.0	1.40	320.10	11,161.9	-807.0	-383.1	893.3	1.54	0.33	
11,404.0	1.90	283.00	11,345.8	-804.6	-387.5	893.1	0.63	0.27	
11,495.0	1.80	274.60	11,436.8	-804.2	-390.4	893.9	0.32	-0.11	
11,587.0	1.70	271.80	11,528.7	-804.0	-393.2	895.0	0.14	-0.11	
11,678.0	2.20	264.20	11,619.7	-804.1	-396.3	896.4	0.62	0.55	
11,770.0	2.70	253.40	11,711.6	-804.9	-400.1	898.8	0.74	0.54	
11,937.0	3.10	248.30	11,878.4	-807.7	-408.1	904.8	0.28	0.24	Last Cathedral Survey @ 11,937' MD Projection to Bit @ 11,992'
11,992.0	3.10	248.30	11,933.3	-808.8	-410.9	907.0	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
8504E-36 D36 496 PBH	0.00	0.00	12,662.0	-812.5	-388.7	1,676,973.49	2,261,317.20	39° 39' 46.05 N	108° 7' 27.05 W
- hit/miss target									
- Shape									
- actual wellpath misses target center by 729.0ft at 11992.0ft MD (11933.3 TVD, -808.8 N, -410.9 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
8504E-36 D36 496 TGT	0.00	0.00	7,968.0	-802.5	-371.7	1,676,982.98	2,261,334.45	39° 39' 46.15 N	108° 7' 26.83 W
- actual wellpath misses target center by 9.2ft at 8025.4ft MD (7968.1 TVD, -795.2 N, -366.0 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
11,937.0	11,878.4	-807.7	-408.1	Last Cathedral Survey @ 11,937' MD	
11,992.0	11,933.3	-808.8	-410.9	Projection to Bit @ 11,992'	

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_