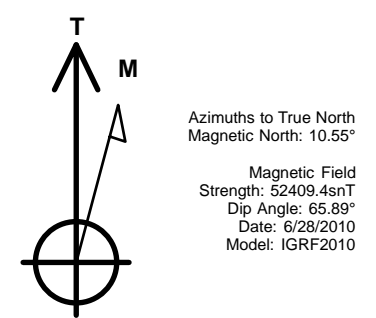
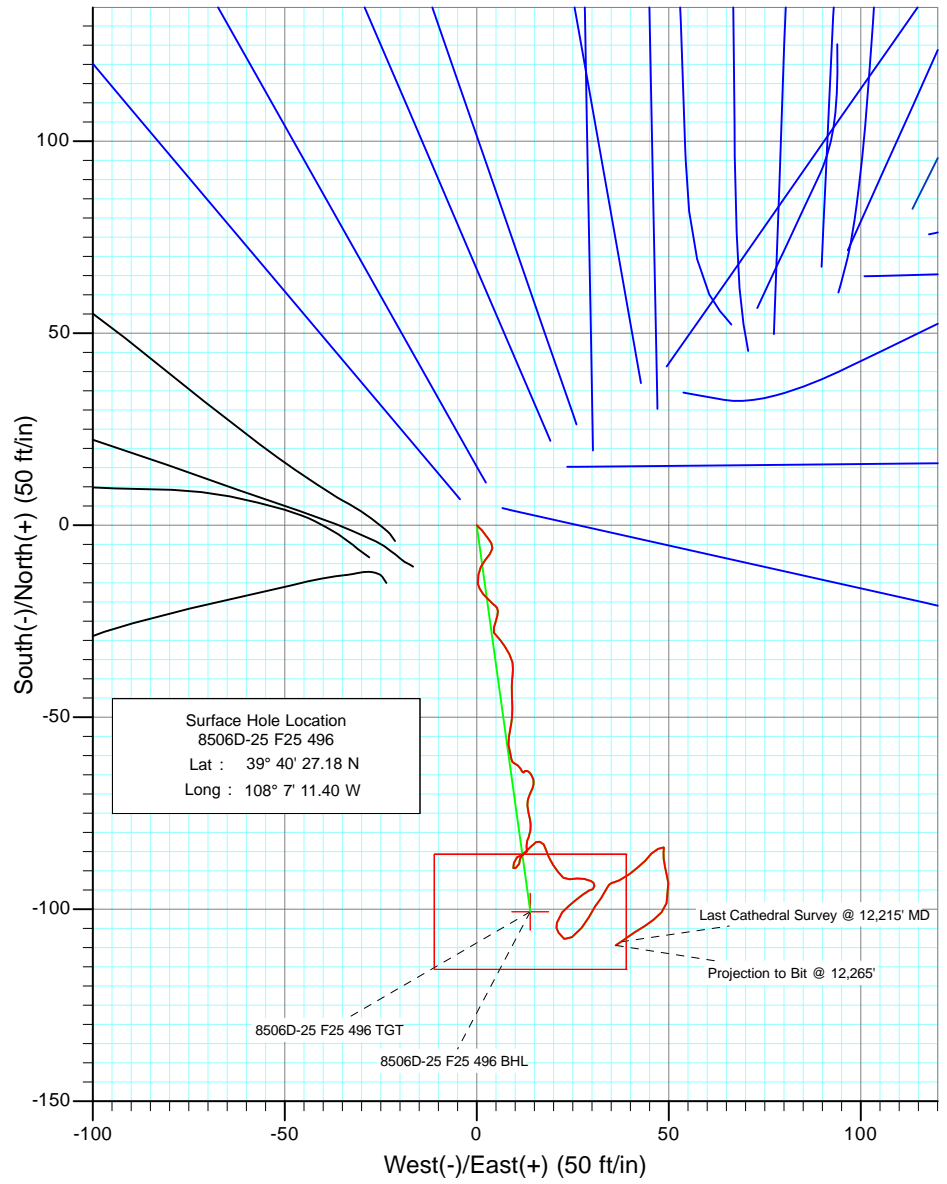
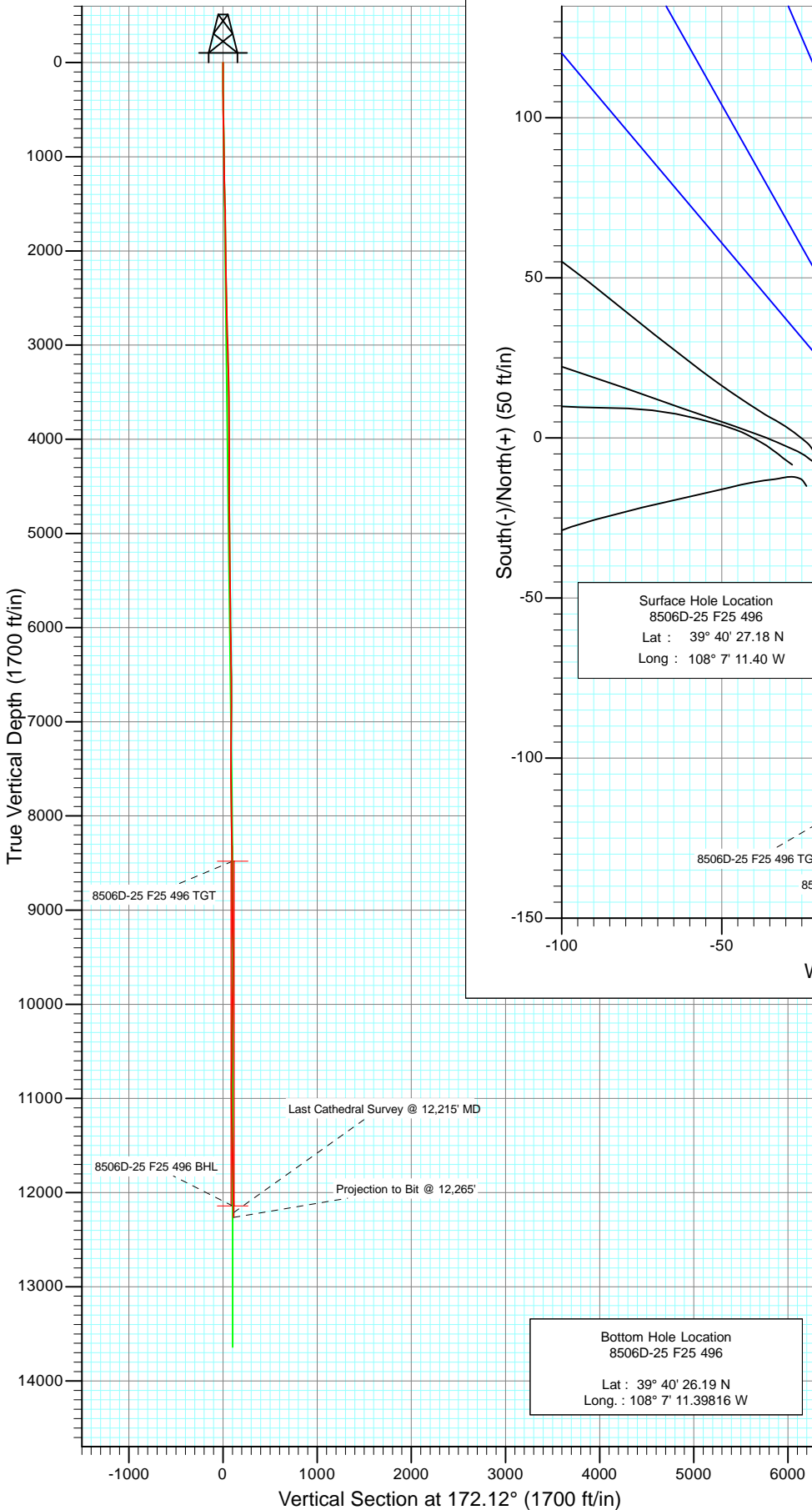




Project: Story Gulch
 Site: F25 496
 Well: 8506D-25 F25 496
 Wellbore: DD
 Design: FINAL



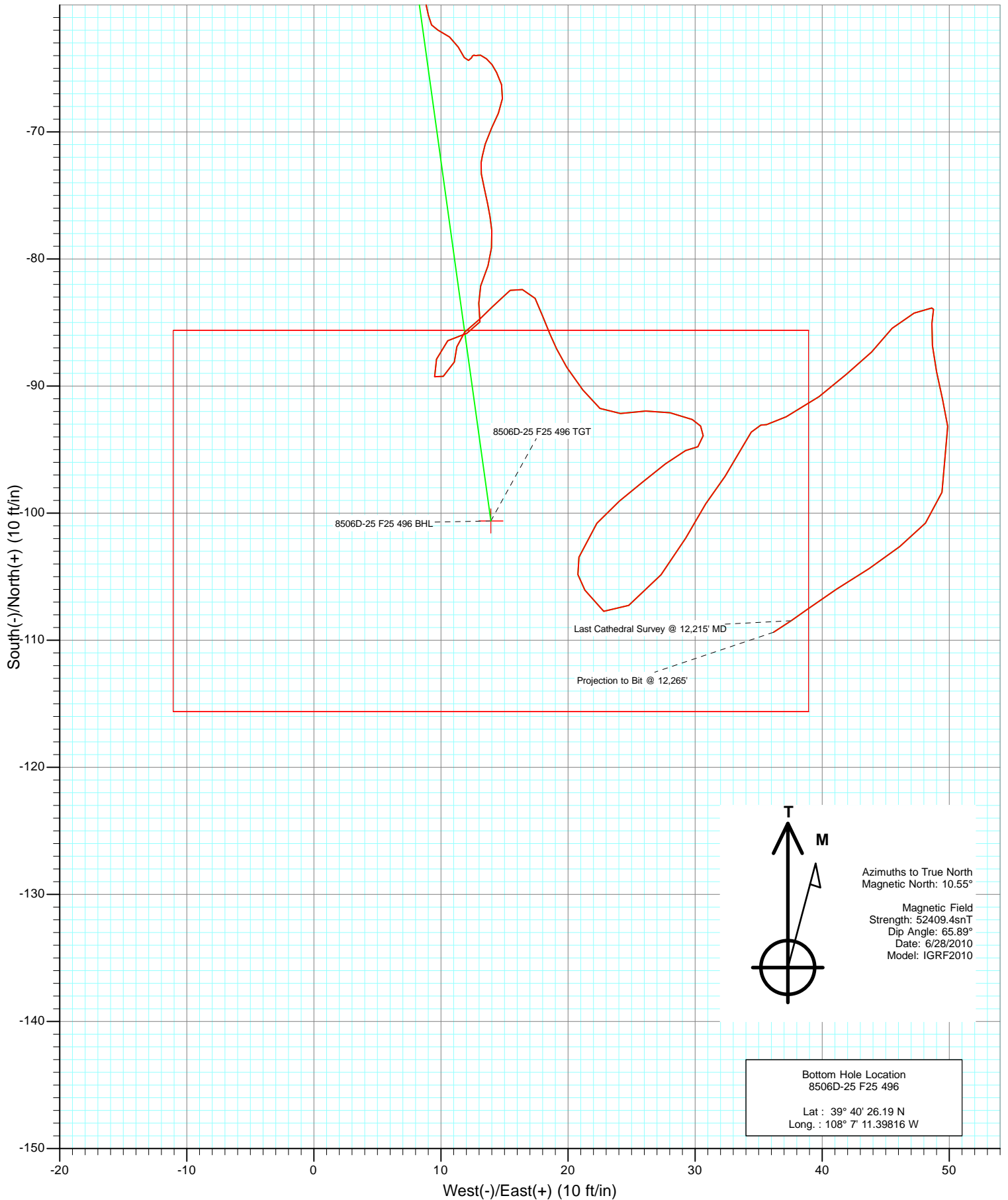
Azimuths to True North
 Magnetic North: 10.55°
 Magnetic Field
 Strength: 52409.4snT
 Dip Angle: 65.89°
 Date: 6/28/2010
 Model: IGRF2010

DESIGN DETAILS: DD
 Job #105157, 105275: KR
 KBE @ 8320.0ft (Patterson 306)

Target	Azimuth	Origin	N/S	E/W	From TVD
8506D-25 F25 496 BHL	172.12	Slot	0.0	0.0	0.0



Project: Story Gulch
Site: F25 496
Well: 8506D-25 F25 496
Wellbore: DD
Design: FINAL



Cathedral Energy

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well 8506D-25 F25 496
Project: Story Gulch	TVD Reference: KBE @ 8320.0ft (Patterson 306)
Site: F25 496	MD Reference: KBE @ 8320.0ft (Patterson 306)
Well: 8506D-25 F25 496	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: EDM 5000.1 US 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 F25 496					
Site Position:		Northing: 1,681,091.06 ft	Latitude: 39° 40' 27.10 N		
From: Lat/Long		Easting: 2,262,632.54 ft	Longitude: 108° 7' 11.76 W		
Position Uncertainty: 0.0 ft		Slot Radius: 13.200 in	Grid Convergence: -1.65 °		

Well 8506D-25 F25 496					
Well Position	+N/-S 0.0 ft	Northing: 1,681,098.56 ft	Latitude: 39° 40' 27.18 N		
	+E/-W 0.0 ft	Easting: 2,262,660.73 ft	Longitude: 108° 7' 11.40 W		
Position Uncertainty	0.0 ft	Wellhead Elevation: ft	Ground Level: 8,298.0 ft		

Wellbore DD					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/28/2010	10.55	65.89	52,409

Design DD					
Audit Notes:					
Version: 1.0	Phase: ACTUAL	Tie On Depth: 0.0			
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	172.12	

Survey Program		Date 9/10/2010
From (ft)	To (ft)	Survey (Wellbore)
279.0	12,265.0	Survey #1 (DD)
		Tool Name MWD
		Description 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	
279.0	0.40	134.30	279.0	-0.7	0.7	0.8	0.14	0.14	
309.0	0.40	131.20	309.0	-0.8	0.9	0.9	0.07	0.00	
402.0	0.50	140.10	402.0	-1.3	1.4	1.5	0.13	0.11	
494.0	0.80	141.50	494.0	-2.2	2.0	2.4	0.33	0.33	
586.0	1.10	143.70	586.0	-3.4	2.9	3.7	0.33	0.33	
676.0	0.90	149.50	676.0	-4.7	3.8	5.2	0.25	-0.22	
770.0	0.70	192.40	770.0	-5.9	4.1	6.4	0.65	-0.21	
802.0	0.70	195.50	802.0	-6.3	4.0	6.7	0.12	0.00	
897.0	1.00	210.30	896.9	-7.5	3.4	7.9	0.39	0.32	
992.0	1.40	222.80	991.9	-9.1	2.2	9.3	0.50	0.42	
1,087.0	1.10	199.40	1,086.9	-10.8	1.1	10.9	0.62	-0.32	
1,182.0	1.50	196.70	1,181.9	-12.9	0.4	12.8	0.43	0.42	

Cathedral Energy

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well 8506D-25 F25 496
Project: Story Gulch	TVD Reference: KBE @ 8320.0ft (Patterson 306)
Site: F25 496	MD Reference: KBE @ 8320.0ft (Patterson 306)
Well: 8506D-25 F25 496	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: EDM 5000.1 US 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
1,277.0	1.50	168.60	1,276.8	-15.3	0.3	15.2	0.77	0.00	
1,371.0	2.30	142.50	1,370.8	-18.0	1.7	18.0	1.23	0.85	
1,467.0	1.60	125.90	1,466.7	-20.3	4.0	20.6	0.93	-0.73	
1,561.0	0.60	149.20	1,560.7	-21.5	5.3	22.0	1.14	-1.06	
1,656.0	0.50	183.20	1,655.7	-22.3	5.5	22.9	0.35	-0.11	
1,752.0	0.80	191.80	1,751.7	-23.4	5.4	23.9	0.33	0.31	
1,847.0	1.00	194.80	1,846.7	-24.8	5.0	25.3	0.22	0.21	
1,942.0	1.20	197.60	1,941.7	-26.6	4.5	27.0	0.22	0.21	
2,037.0	0.60	147.00	2,036.7	-28.0	4.5	28.3	0.99	-0.63	
2,132.0	0.80	134.50	2,131.7	-28.8	5.2	29.3	0.26	0.21	
2,227.0	1.00	143.30	2,226.6	-30.0	6.2	30.5	0.26	0.21	
2,323.0	1.20	144.50	2,322.6	-31.5	7.3	32.2	0.21	0.21	
2,418.0	1.70	152.40	2,417.6	-33.5	8.5	34.4	0.57	0.53	
2,513.0	1.10	168.80	2,512.6	-35.7	9.3	36.6	0.75	-0.63	
2,608.0	1.10	183.20	2,607.6	-37.5	9.4	38.4	0.29	0.00	
2,703.0	1.20	185.40	2,702.5	-39.4	9.3	40.3	0.12	0.11	
2,798.0	1.30	185.70	2,797.5	-41.4	9.1	42.3	0.11	0.11	
2,893.0	1.60	173.50	2,892.5	-43.8	9.1	44.7	0.45	0.32	
2,975.0	1.90	179.10	2,974.4	-46.3	9.3	47.2	0.42	0.37	
3,083.0	1.80	185.60	3,082.4	-49.8	9.2	50.6	0.22	-0.09	
3,174.0	1.70	189.00	3,173.3	-52.6	8.8	53.3	0.16	-0.11	
3,266.0	1.50	190.40	3,265.3	-55.1	8.4	55.7	0.22	-0.22	
3,358.0	1.10	172.80	3,357.3	-57.1	8.3	57.7	0.61	-0.43	
3,449.0	1.20	165.10	3,448.3	-58.9	8.6	59.6	0.20	0.11	
3,541.0	1.20	171.70	3,540.2	-60.8	9.0	61.5	0.15	0.00	
3,633.0	0.80	109.30	3,632.2	-62.0	9.8	62.7	1.19	-0.43	
3,724.0	0.60	136.30	3,723.2	-62.5	10.7	63.4	0.42	-0.22	
3,816.0	0.70	141.90	3,815.2	-63.3	11.4	64.3	0.13	0.11	
3,908.0	0.50	160.30	3,907.2	-64.1	11.8	65.2	0.30	-0.22	
3,999.0	0.30	53.90	3,998.2	-64.4	12.2	65.4	0.72	-0.22	
4,091.0	0.10	30.80	4,090.2	-64.2	12.4	65.3	0.23	-0.22	
4,183.0	0.10	24.80	4,182.2	-64.0	12.5	65.1	0.01	0.00	
4,274.0	0.10	100.60	4,273.2	-64.0	12.6	65.1	0.14	0.00	
4,366.0	0.10	100.60	4,365.2	-64.0	12.8	65.1	0.00	0.00	
4,458.0	0.10	59.70	4,457.2	-64.0	12.9	65.1	0.08	0.00	
4,549.0	0.20	100.60	4,548.2	-64.0	13.1	65.2	0.15	0.11	
4,641.0	0.50	129.30	4,640.2	-64.2	13.6	65.5	0.37	0.33	
4,733.0	0.30	149.90	4,732.2	-64.7	14.0	66.0	0.26	-0.22	
4,824.0	0.60	150.30	4,823.2	-65.3	14.4	66.7	0.33	0.33	
4,916.0	0.70	164.40	4,915.2	-66.3	14.8	67.7	0.20	0.11	
5,008.0	0.70	187.80	5,007.2	-67.4	14.8	68.8	0.31	0.00	
5,100.0	0.80	202.20	5,099.2	-68.5	14.5	69.9	0.23	0.11	
5,191.0	0.80	207.30	5,190.2	-69.7	14.0	71.0	0.08	0.00	
5,283.0	0.90	197.10	5,282.2	-71.0	13.5	72.1	0.20	0.11	
5,375.0	0.30	184.40	5,374.2	-71.9	13.3	73.0	0.66	-0.65	
5,466.0	0.40	193.90	5,465.2	-72.4	13.2	73.5	0.13	0.11	
5,558.0	0.70	170.00	5,557.2	-73.3	13.2	74.4	0.40	0.33	
5,650.0	0.80	167.40	5,649.1	-74.5	13.4	75.6	0.11	0.11	
5,741.0	0.70	168.20	5,740.1	-75.6	13.7	76.8	0.11	-0.11	
5,833.0	0.60	171.30	5,832.1	-76.7	13.9	77.8	0.12	-0.11	
5,925.0	0.80	173.70	5,924.1	-77.8	14.0	79.0	0.22	0.22	
6,016.0	0.90	187.40	6,015.1	-79.1	14.0	80.3	0.25	0.11	
6,108.0	0.90	194.60	6,107.1	-80.5	13.7	81.7	0.12	0.00	

Cathedral Energy

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well 8506D-25 F25 496
Project: Story Gulch	TVD Reference: KBE @ 8320.0ft (Patterson 306)
Site: F25 496	MD Reference: KBE @ 8320.0ft (Patterson 306)
Well: 8506D-25 F25 496	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: EDM 5000.1 US 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
6,200.0	1.20	204.20	6,199.1	-82.1	13.1	83.1	0.38	0.33	
6,291.0	0.70	154.30	6,290.1	-83.5	13.0	84.5	1.01	-0.55	
6,383.0	1.20	189.00	6,382.1	-84.9	13.1	85.9	0.81	0.54	
6,475.0	1.10	273.10	6,474.1	-85.8	12.0	86.7	1.68	-0.11	
6,567.0	1.10	224.10	6,566.0	-86.4	10.5	87.1	0.99	0.00	
6,658.0	1.10	199.10	6,657.0	-87.9	9.7	88.4	0.52	0.00	
6,750.0	0.70	166.00	6,749.0	-89.3	9.5	89.7	0.70	-0.43	
6,842.0	1.00	44.50	6,841.0	-89.2	10.2	89.8	1.62	0.33	
6,933.0	0.80	28.00	6,932.0	-88.1	11.1	88.8	0.36	-0.22	
7,025.0	0.80	351.00	7,024.0	-86.9	11.3	87.6	0.55	0.00	
7,117.0	1.10	54.20	7,116.0	-85.8	11.9	86.6	1.12	0.33	
7,209.0	0.90	42.90	7,208.0	-84.7	13.1	85.7	0.30	-0.22	
7,300.0	0.80	49.70	7,299.0	-83.8	14.0	84.9	0.16	-0.11	
7,392.0	0.60	42.70	7,390.9	-83.0	14.9	84.3	0.24	-0.22	
7,484.0	0.40	53.20	7,482.9	-82.5	15.5	83.8	0.24	-0.22	
7,576.0	0.90	100.60	7,574.9	-82.4	16.4	83.9	0.76	0.54	
7,667.0	0.80	152.40	7,665.9	-83.1	17.4	84.7	0.82	-0.11	
7,759.0	1.10	160.70	7,757.9	-84.5	18.0	86.2	0.36	0.33	
7,851.0	0.80	153.20	7,849.9	-85.9	18.6	87.6	0.35	-0.33	
7,943.0	0.80	159.00	7,941.9	-87.1	19.1	88.9	0.09	0.00	
8,034.0	1.30	146.10	8,032.9	-88.5	19.9	90.4	0.60	0.55	
8,126.0	1.40	143.40	8,124.9	-90.3	21.2	92.3	0.13	0.11	
8,218.0	1.10	129.20	8,216.8	-91.8	22.5	94.0	0.47	-0.33	
8,309.0	1.20	80.50	8,307.8	-92.2	24.1	94.6	1.05	0.11	
8,401.0	1.30	88.30	8,399.8	-92.0	26.1	94.7	0.21	0.11	
8,493.0	1.10	100.60	8,491.8	-92.1	28.0	95.1	0.35	-0.22	
8,585.0	1.20	113.30	8,583.8	-92.6	29.8	95.8	0.30	0.11	
8,677.0	1.10	181.60	8,675.7	-93.9	30.6	97.2	1.41	-0.11	
8,768.0	0.50	269.70	8,766.7	-94.8	30.2	98.0	1.31	-0.66	
8,860.0	0.80	242.90	8,858.7	-95.1	29.3	98.2	0.46	0.33	
8,960.0	1.40	232.70	8,958.7	-96.1	27.7	99.0	0.63	0.60	
9,044.0	1.70	230.50	9,042.7	-97.5	25.9	100.2	0.36	0.36	
9,135.0	1.30	230.60	9,133.6	-99.1	24.0	101.4	0.44	-0.44	
9,227.0	1.80	221.60	9,225.6	-100.8	22.3	102.9	0.60	0.54	
9,323.0	1.90	195.20	9,321.6	-103.5	20.9	105.3	0.89	0.10	
9,414.0	1.80	142.70	9,412.5	-106.1	21.3	108.0	1.80	-0.11	
9,506.0	1.00	130.80	9,504.5	-107.7	22.8	109.8	0.92	-0.87	
9,598.0	2.10	53.70	9,596.5	-107.3	24.8	109.6	2.30	1.20	
9,690.0	2.30	39.80	9,688.4	-104.8	27.3	107.6	0.62	0.22	
9,781.0	2.10	27.70	9,779.3	-102.0	29.3	105.0	0.55	-0.22	
9,873.0	1.80	33.40	9,871.3	-99.3	30.8	102.6	0.39	-0.33	
9,965.0	1.50	36.90	9,963.2	-97.1	32.4	100.6	0.34	-0.33	
10,056.0	1.40	24.10	10,054.2	-95.1	33.5	98.8	0.37	-0.11	
10,148.0	0.80	42.50	10,146.2	-93.6	34.4	97.5	0.75	-0.65	
10,240.0	0.40	76.60	10,238.2	-93.1	35.2	97.0	0.56	-0.43	
10,331.0	0.20	100.60	10,329.2	-93.0	35.6	97.0	0.25	-0.22	
10,423.0	1.90	65.00	10,421.2	-92.4	37.2	96.6	1.89	1.85	
10,515.0	1.90	52.00	10,513.1	-90.8	39.8	95.4	0.47	0.00	
10,606.0	1.60	49.20	10,604.1	-89.1	41.9	94.0	0.34	-0.33	
10,698.0	1.70	48.20	10,696.0	-87.3	43.9	92.5	0.11	0.11	
10,790.0	1.40	31.40	10,788.0	-85.5	45.5	90.9	0.59	-0.33	
10,881.0	1.50	77.40	10,879.0	-84.3	47.2	89.9	1.25	0.11	
10,973.0	0.30	57.00	10,971.0	-83.9	48.6	89.7	1.33	-1.30	

Cathedral Energy

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well 8506D-25 F25 496
Project: Story Gulch	TVD Reference: KBE @ 8320.0ft (Patterson 306)
Site: F25 496	MD Reference: KBE @ 8320.0ft (Patterson 306)
Well: 8506D-25 F25 496	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: EDM 5000.1 US 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
11,065.0	0.30	195.10	11,063.0	-84.0	48.8	89.9	0.61	0.00	
11,157.0	1.10	183.40	11,155.0	-85.1	48.6	90.9	0.88	0.87	
11,248.0	1.10	173.70	11,245.9	-86.8	48.7	92.7	0.20	0.00	
11,340.0	1.50	169.40	11,337.9	-88.9	49.0	94.8	0.45	0.43	
11,432.0	1.30	165.70	11,429.9	-91.1	49.5	97.0	0.24	-0.22	
11,523.0	1.40	172.40	11,520.9	-93.2	49.9	99.1	0.21	0.11	
11,707.0	1.90	194.20	11,704.8	-98.4	49.4	104.2	0.43	0.27	
11,798.0	1.70	224.00	11,795.7	-100.8	48.1	106.4	1.04	-0.22	
11,890.0	1.70	231.20	11,887.7	-102.6	46.1	108.0	0.23	0.00	
11,982.0	2.00	237.10	11,979.7	-104.4	43.7	109.4	0.39	0.33	
12,074.0	1.80	238.30	12,071.6	-106.0	41.1	110.6	0.22	-0.22	
12,165.0	1.70	232.10	12,162.6	-107.6	38.8	111.9	0.24	-0.11	
12,215.0	1.90	237.10	12,212.5	-108.5	37.6	112.6	0.51	0.40	Last Cathedral Survey @ 12,215' MD
12,265.0	1.90	237.10	12,262.5	-109.4	36.2	113.3	0.00	0.00	Projection to Bit @ 12,265'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
8506D-25 F25 496 TGT - hit/miss target - Shape	0.00	0.00	8,480.0	-100.6	13.9	1,680,997.58	2,262,671.75	39° 40' 26.19 N	108° 7' 11.22 W
- survey misses target center by 16.3ft at 8480.9ft MD (8479.7 TVD, -92.1 N, 27.8 E)									
- Point									
8506D-25 F25 496 BHL - survey misses target center by 26.3ft at 12142.9ft MD (12140.5 TVD, -107.2 N, 39.4 E)	0.00	0.00	12,140.0	-100.6	13.9	1,680,997.58	2,262,671.75	39° 40' 26.19 N	108° 7' 11.22 W
- Rectangle (sides W30.0 H50.0 D0.0)									

Survey Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
12,215.0	12,212.5	-108.5	37.6	Last Cathedral Survey @ 12,215' MD	
12,265.0	12,262.5	-109.4	36.2	Projection to Bit @ 12,265'	

Checked By: _____	Approved By: _____	Date: _____
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