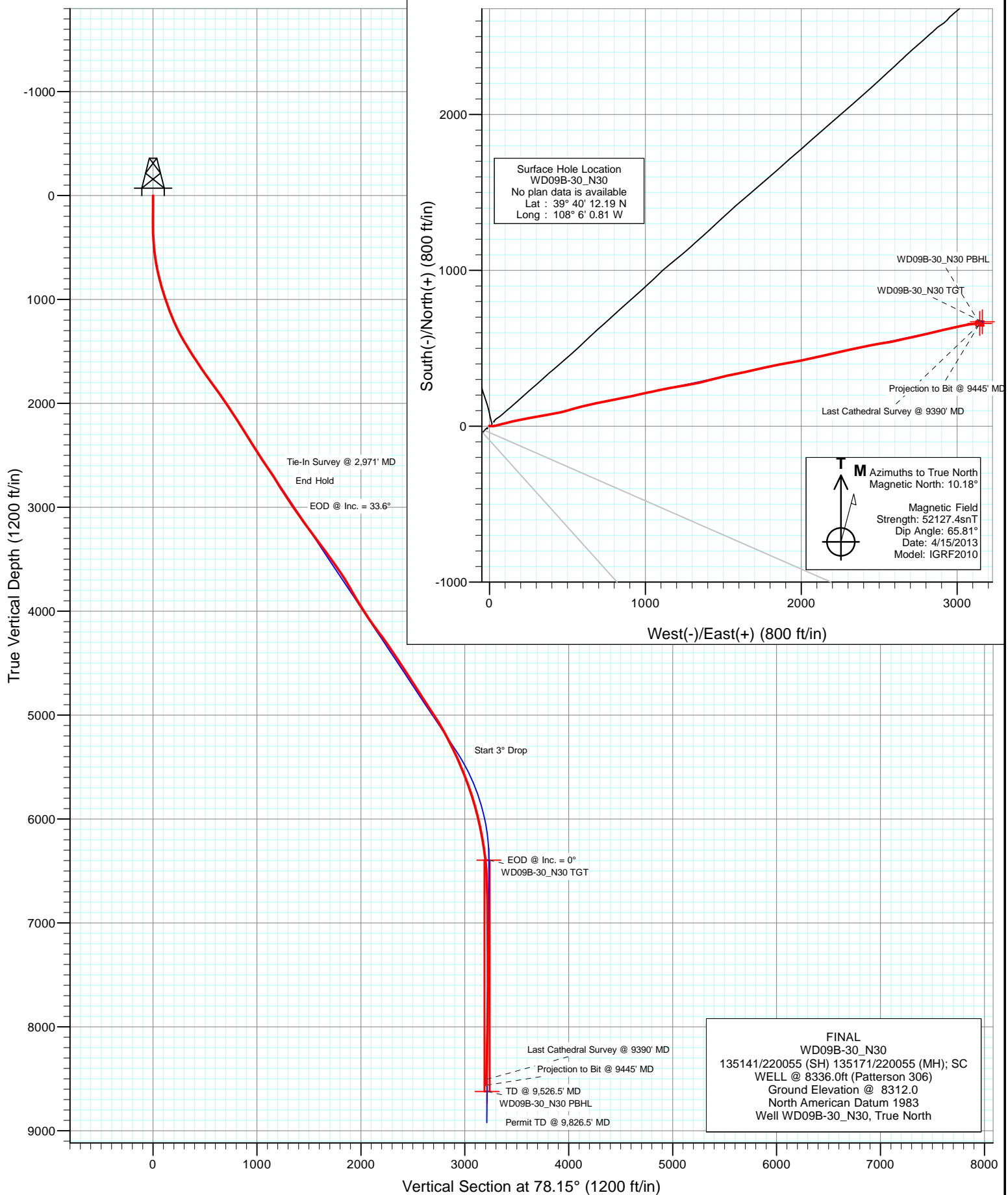


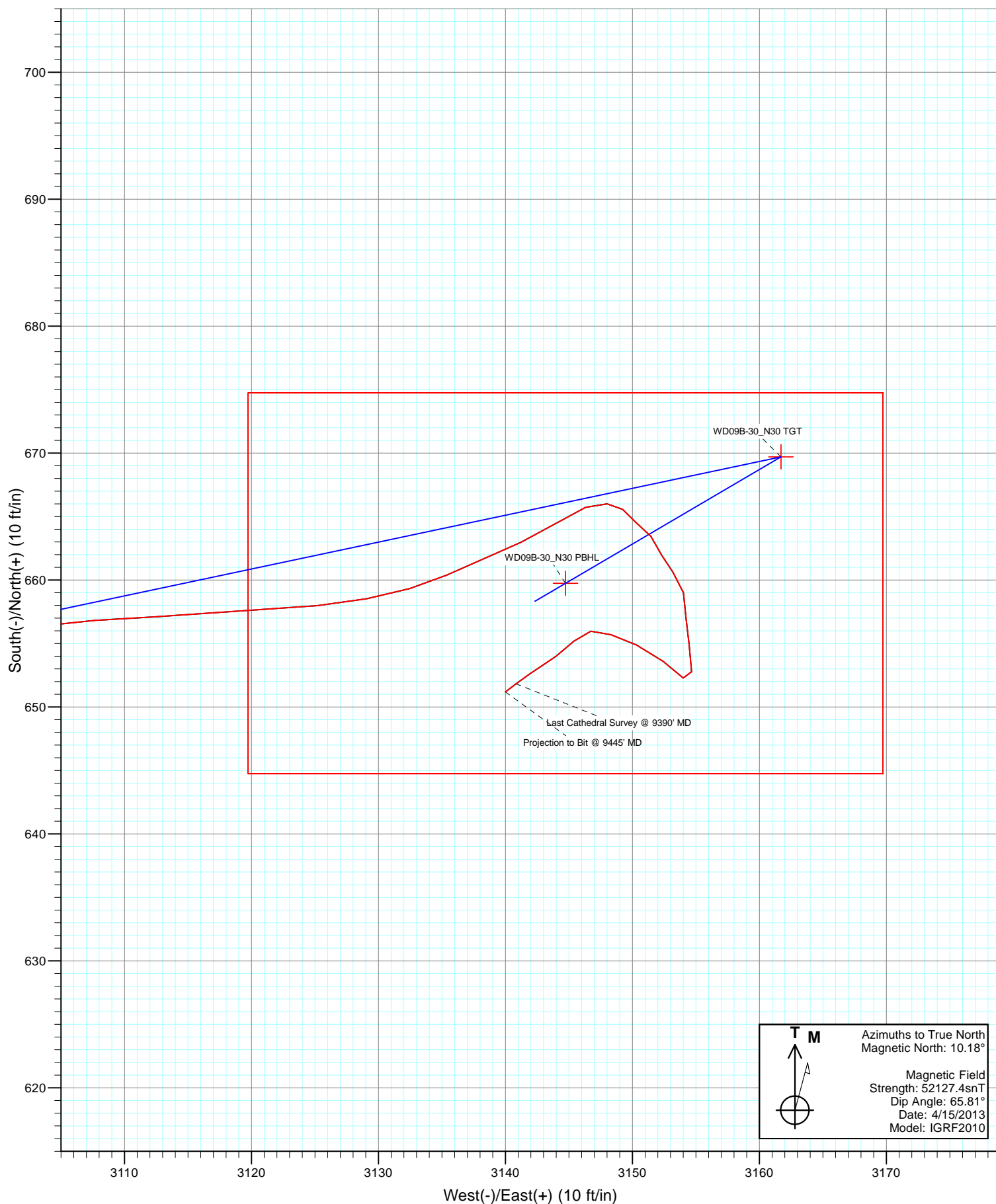


Project: Story Gulch
Site: N30 495
Well: WD09B-30_N30
Wellbore: DD
Design: FINAL





Project: Story Gulch
Site: N30 495
Well: WD09B-30_N30
Wellbore: DD
Design: FINAL





Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well WD09B-30_N30
Project:	Story Gulch	TVD Reference:	WELL @ 8336.0ft (Patterson 306)
Site:	N30 495	MD Reference:	WELL @ 8336.0ft (Patterson 306)
Well:	WD09B-30_N30	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	N30 495			
Site Position:		Northing:	1,679,450.30 ft	Latitude: 39° 40' 12.46 N
From:	Lat/Long	Easting:	2,268,163.89 ft	Longitude: 108° 6' 0.44 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence: -1.64 °

Well	WD09B-30_N30			
Well Position	+N/-S	0.0 ft	Northing:	1,679,422.94 ft
	+E/-W	0.0 ft	Easting:	2,268,134.72 ft
Position Uncertainty	0.0 ft		Wellhead Elevation:	ft
			Ground Level:	8,312.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/15/2013	10.18	65.81	52,127

Design	FINAL			
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	78.15

Survey Program	Date	4/21/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
197.0	9,445.0	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	
197.0	1.10	320.30	197.0	1.5	-1.2	-0.9	0.56	0.56	
243.0	0.90	326.20	243.0	2.1	-1.7	-1.2	0.49	-0.43	
289.0	0.40	338.00	289.0	2.5	-2.0	-1.4	1.12	-1.09	
335.0	1.50	71.00	335.0	2.9	-1.4	-0.8	3.42	2.39	
381.0	2.30	108.70	380.9	2.8	0.0	0.6	3.14	1.74	
426.0	3.70	98.30	425.9	2.3	2.3	2.7	3.33	3.11	
472.0	5.20	100.90	471.7	1.7	5.8	6.0	3.29	3.26	
519.0	6.20	96.30	518.5	1.0	10.4	10.4	2.34	2.13	
611.0	8.70	87.80	609.7	0.7	22.3	22.0	2.96	2.72	
705.0	11.80	76.30	702.2	3.3	38.8	38.6	3.94	3.30	
797.0	14.10	73.70	791.9	8.6	58.7	59.2	2.58	2.50	
887.0	15.30	77.30	878.9	14.3	80.8	82.0	1.68	1.33	



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well WD09B-30_N30
Project:	Story Gulch	TVD Reference:	WELL @ 8336.0ft (Patterson 306)
Site:	N30 495	MD Reference:	WELL @ 8336.0ft (Patterson 306)
Well:	WD09B-30_N30	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
978.0	18.40	75.10	966.0	20.7	106.4	108.3	3.48	3.41	
1,070.0	19.50	76.00	1,053.0	28.1	135.3	138.2	1.24	1.20	
1,162.0	21.50	78.70	1,139.2	35.1	166.7	170.4	2.40	2.17	
1,253.0	23.80	79.10	1,223.2	41.9	201.1	205.4	2.53	2.53	
1,343.0	27.00	79.40	1,304.5	49.1	239.0	244.0	3.56	3.56	
1,435.0	29.70	80.10	1,385.4	56.8	282.0	287.7	2.96	2.93	
1,526.0	32.30	78.30	1,463.4	65.6	328.1	334.5	3.03	2.86	
1,618.0	32.90	80.60	1,540.9	74.7	376.8	384.1	1.50	0.65	
1,710.0	33.00	79.70	1,618.1	83.3	426.1	434.1	0.54	0.11	
1,801.0	34.60	75.50	1,693.8	94.2	475.5	484.7	3.11	1.76	
1,893.0	36.50	72.70	1,768.6	108.8	526.9	538.0	2.72	2.07	
1,985.0	35.60	75.10	1,843.0	123.9	578.9	592.0	1.82	-0.98	
2,077.0	34.80	78.50	1,918.2	136.0	630.5	645.0	2.30	-0.87	
2,168.0	34.80	78.70	1,992.9	146.3	681.4	696.9	0.13	0.00	
2,260.0	33.20	78.40	2,069.2	156.5	731.8	748.4	1.75	-1.74	
2,352.0	32.80	77.90	2,146.3	166.8	780.9	798.5	0.53	-0.43	
2,444.0	32.30	78.90	2,223.9	176.7	829.4	848.0	0.80	-0.54	
2,535.0	31.80	77.90	2,301.0	186.4	876.7	896.3	0.80	-0.55	
2,627.0	32.80	78.30	2,378.8	196.6	924.8	945.4	1.11	1.09	
2,718.0	32.60	77.50	2,455.4	206.9	972.8	994.6	0.52	-0.22	
2,810.0	32.80	78.60	2,532.8	217.1	1,021.5	1,044.3	0.68	0.22	
2,902.0	34.50	77.40	2,609.4	227.8	1,071.3	1,095.3	1.98	1.85	
2,971.0	34.50	78.60	2,666.2	235.9	1,109.6	1,134.3	0.99	0.00	
3,073.0	31.50	78.70	2,751.8	246.8	1,164.0	1,189.9	2.94	-2.94	
3,168.0	30.90	80.20	2,833.0	255.8	1,212.4	1,239.1	1.03	-0.63	
3,263.0	35.00	81.50	2,912.7	264.0	1,263.4	1,290.7	4.38	4.32	
3,357.0	33.80	78.80	2,990.3	273.1	1,315.7	1,343.8	2.06	-1.28	
3,452.0	35.70	75.90	3,068.3	285.0	1,368.5	1,397.9	2.65	2.00	
3,547.0	34.90	75.70	3,145.9	298.4	1,421.7	1,452.7	0.85	-0.84	
3,642.0	35.90	75.70	3,223.3	312.0	1,475.1	1,507.7	1.05	1.05	
3,737.0	37.00	77.40	3,299.7	325.1	1,530.0	1,564.1	1.57	1.16	
3,832.0	37.40	79.00	3,375.4	336.9	1,586.2	1,621.6	1.10	0.42	
3,926.0	35.60	77.10	3,451.0	348.4	1,640.9	1,677.5	2.26	-1.91	
4,021.0	36.10	77.40	3,528.0	360.7	1,695.1	1,733.1	0.56	0.53	
4,116.0	34.40	76.60	3,605.5	373.0	1,748.6	1,787.9	1.85	-1.79	
4,211.0	32.20	79.60	3,685.0	383.8	1,799.6	1,840.0	2.89	-2.32	
4,306.0	29.80	78.40	3,766.4	393.1	1,847.6	1,889.0	2.61	-2.53	
4,400.0	29.90	79.50	3,847.9	402.1	1,893.5	1,935.7	0.59	0.11	
4,495.0	32.00	79.90	3,929.4	410.8	1,941.6	1,984.6	2.22	2.21	
4,590.0	32.90	79.30	4,009.5	420.0	1,991.7	2,035.5	1.01	0.95	
4,685.0	34.10	77.80	4,088.8	430.5	2,043.1	2,088.0	1.53	1.26	
4,780.0	36.40	76.90	4,166.3	442.5	2,096.6	2,142.8	2.48	2.42	
4,874.0	37.10	77.30	4,241.7	455.0	2,151.4	2,199.0	0.79	0.74	
4,970.0	34.60	76.70	4,319.5	467.7	2,206.2	2,255.2	2.63	-2.60	
5,065.0	33.90	76.60	4,398.0	480.0	2,258.2	2,308.7	0.74	-0.74	
5,160.0	33.50	78.80	4,477.0	491.3	2,309.7	2,361.4	1.35	-0.42	
5,255.0	33.20	78.90	4,556.4	501.4	2,361.0	2,413.6	0.32	-0.32	
5,350.0	33.40	77.90	4,635.8	511.8	2,412.0	2,465.7	0.62	0.21	
5,444.0	32.40	78.90	4,714.7	522.1	2,462.1	2,516.8	1.21	-1.06	
5,539.0	32.30	80.40	4,795.0	531.2	2,512.1	2,567.6	0.85	-0.11	
5,634.0	33.40	80.10	4,874.8	540.0	2,562.8	2,619.1	1.17	1.16	
5,729.0	34.00	77.90	4,953.8	550.0	2,614.6	2,671.8	1.43	0.63	
5,824.0	32.10	77.30	5,033.4	561.2	2,665.2	2,723.6	2.03	-2.00	



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well WD09B-30_N30
Project:	Story Gulch	TVD Reference:	WELL @ 8336.0ft (Patterson 306)
Site:	N30 495	MD Reference:	WELL @ 8336.0ft (Patterson 306)
Well:	WD09B-30_N30	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
5,919.0	30.50	77.30	5,114.6	572.0	2,713.3	2,773.0	1.68	-1.68	
6,014.0	28.30	77.20	5,197.4	582.3	2,758.8	2,819.6	2.32	-2.32	
6,108.0	26.50	77.20	5,280.8	591.9	2,801.0	2,862.8	1.91	-1.91	
6,203.0	25.20	77.00	5,366.3	601.1	2,841.4	2,904.3	1.37	-1.37	
6,297.0	23.70	77.00	5,451.9	609.9	2,879.3	2,943.2	1.60	-1.60	
6,392.0	22.10	76.50	5,539.4	618.3	2,915.3	2,980.1	1.70	-1.68	
6,487.0	20.70	76.90	5,627.8	626.3	2,949.0	3,014.8	1.48	-1.47	
6,582.0	19.10	76.90	5,717.2	633.7	2,980.5	3,047.1	1.68	-1.68	
6,677.0	17.60	77.60	5,807.3	640.3	3,009.7	3,077.0	1.60	-1.58	
6,771.0	15.10	78.50	5,897.5	645.8	3,035.5	3,103.4	2.67	-2.66	
6,866.0	12.90	81.30	5,989.7	649.8	3,058.1	3,126.4	2.42	-2.32	
6,961.0	11.80	81.50	6,082.5	652.9	3,078.2	3,146.7	1.16	-1.16	
7,056.0	10.90	81.90	6,175.6	655.6	3,096.7	3,165.4	0.95	-0.95	
7,151.0	8.20	87.70	6,269.3	657.1	3,112.4	3,181.0	3.01	-2.84	
7,245.0	7.50	84.30	6,362.4	658.0	3,125.2	3,193.7	0.89	-0.74	
7,340.0	5.30	65.90	6,456.8	660.4	3,135.4	3,204.2	3.14	-2.32	
7,435.0	2.40	66.80	6,551.6	663.0	3,141.2	3,210.4	3.05	-3.05	
7,529.0	1.80	54.80	6,645.6	664.6	3,144.2	3,213.7	0.79	-0.64	
7,624.0	1.10	72.40	6,740.5	665.7	3,146.3	3,216.0	0.87	-0.74	
7,719.0	1.00	90.20	6,835.5	666.0	3,148.0	3,217.7	0.36	-0.11	
7,814.0	0.70	137.60	6,930.5	665.6	3,149.2	3,218.8	0.78	-0.32	
7,909.0	1.00	132.30	7,025.5	664.6	3,150.2	3,219.6	0.33	0.32	
8,004.0	1.00	133.00	7,120.5	663.5	3,151.5	3,220.5	0.01	0.00	
8,099.0	1.10	165.80	7,215.5	662.0	3,152.3	3,221.1	0.63	0.11	
8,194.0	1.00	125.80	7,310.4	660.6	3,153.2	3,221.6	0.76	-0.11	
8,289.0	1.40	171.80	7,405.4	659.0	3,154.0	3,222.1	1.06	0.42	
8,384.0	1.10	177.20	7,500.4	656.9	3,154.2	3,221.9	0.34	-0.32	
8,479.0	1.40	170.30	7,595.4	654.9	3,154.5	3,221.7	0.35	0.32	
8,573.0	1.20	179.90	7,689.4	652.8	3,154.7	3,221.5	0.31	-0.21	
8,668.0	1.00	307.20	7,784.3	652.3	3,154.0	3,220.7	2.08	-0.21	
8,763.0	1.50	311.30	7,879.3	653.6	3,152.4	3,219.4	0.53	0.53	
8,858.0	1.50	291.90	7,974.3	654.9	3,150.3	3,217.7	0.53	0.00	
8,953.0	1.10	292.00	8,069.3	655.7	3,148.3	3,215.9	0.42	-0.42	
9,048.0	0.90	264.40	8,164.3	656.0	3,146.7	3,214.4	0.54	-0.21	
9,143.0	1.10	220.50	8,259.2	655.2	3,145.4	3,212.9	0.81	0.21	
9,238.0	1.20	238.00	8,354.2	654.0	3,144.0	3,211.3	0.38	0.11	
9,333.0	1.70	235.00	8,449.2	652.6	3,142.0	3,209.0	0.53	0.53	
9,390.0	1.10	232.50	8,506.2	651.8	3,140.8	3,207.8	1.06	-1.05	Last Cathedral Survey @ 9390' MD
9,445.0	1.10	232.50	8,561.2	651.2	3,140.0	3,206.8	0.00	0.00	Projection to Bit @ 9445' MD



Cathedral Energy Services

Survey Report

Company: EnCana Oil & Gas (USA) Inc
Project: Story Gulch
Site: N30 495
Well: WD09B-30_N30
Wellbore: DD
Design: FINAL

Local Co-ordinate Reference: Well WD09B-30_N30
TVD Reference: WELL @ 8336.0ft (Patterson 306)
MD Reference: WELL @ 8336.0ft (Patterson 306)
North Reference: True
Survey Calculation Method: Minimum Curvature
Database: USA EDM 5000 Multi Users DB

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
WD09B-30_N30 PBHL - survey misses target center by 60.6ft at 9445.0ft MD (8561.2 TVD, 651.2 N, 3140.0 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	8,620.9	659.7	3,144.7	1,679,992.41	2,271,297.04	39° 40' 18.70 N	108° 5' 20.59 W
WD09B-30_N30 TGT - survey misses target center by 34.0ft at 7282.5ft MD (6399.7 TVD, 658.7 N, 3129.7 E) - Point	0.00	0.00	6,395.9	669.7	3,161.7	1,680,001.88	2,271,314.29	39° 40' 18.80 N	108° 5' 20.37 W

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
9,390.0	8,506.2	651.8	3,140.8	Last Cathedral Survey @ 9390' MD
9,445.0	8,561.2	651.2	3,140.0	Projection to Bit @ 9445' MD

Checked By: _____ Approved By: _____ Date: _____