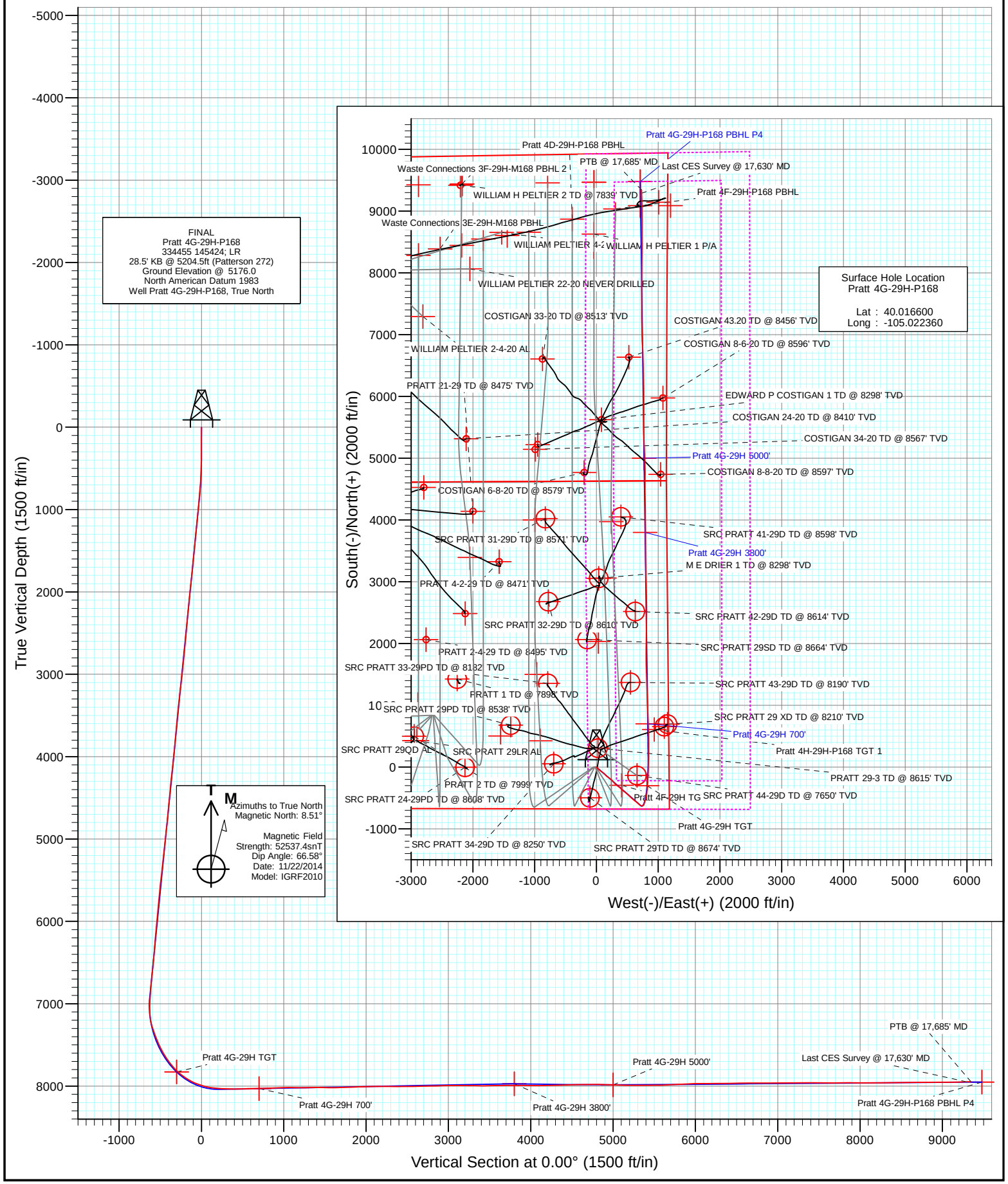
Project: DJ Wattenberg
Site: S29-T1N-R68W (Pratt/Waste Connections)
Well: Pratt 4G-29H-P168
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**Database:**	USA EDM 5000 Multi Users DB

Project DJ Wattenberg

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site S29-T1N-R68W (Pratt/Waste Connections)

Site Position:		**Northing:**	1,249,256.24 ft	**Latitude:**	40.016600
From:	Lat/Long	**Easting:**	3,133,726.79 ft	**Longitude:**	-105.022570
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.31 °

Well Pratt 4G-29H-P168

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,249,256.52 ft	**Latitude:**	40.016600
	+E/-W	0.0 ft	**Easting:**	3,133,785.61 ft	**Longitude:**	-105.022360
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,176.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/22/2014	8.51	66.58	52,537

Design SURVEYS

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	0.00

Survey Program **Date** 12/16/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
167.0	17,685.0	Survey #1 (Hz)	Geolink 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	
167.0	0.40	100.40	167.0	-0.1	0.6	-0.1	0.24	0.24	
229.0	0.30	81.90	229.0	-0.1	0.9	-0.1	0.24	-0.16	
323.0	0.40	103.70	323.0	-0.2	1.5	-0.2	0.18	0.11	
416.0	1.30	151.80	416.0	-1.2	2.3	-1.2	1.16	0.97	
510.0	2.20	146.30	509.9	-3.6	3.8	-3.6	0.97	0.96	
604.0	3.80	134.80	603.8	-7.3	7.0	-7.3	1.81	1.70	
697.0	5.40	135.50	696.5	-12.6	12.3	-12.6	1.72	1.72	
791.0	7.60	135.10	789.9	-20.2	19.8	-20.2	2.34	2.34	
884.0	8.50	130.20	882.0	-29.0	29.4	-29.0	1.22	0.97	
924.0	7.90	131.70	921.6	-32.7	33.7	-32.7	1.59	-1.50	
981.0	6.90	128.00	978.1	-37.4	39.3	-37.4	1.94	-1.75	
1,075.0	7.80	134.10	1,071.3	-45.3	48.3	-45.3	1.27	0.96	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**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
1,168.0	9.60	131.40	1,163.3	-54.8	58.7	-54.8	1.98	1.94	
1,262.0	9.50	127.80	1,255.9	-64.8	70.7	-64.8	0.64	-0.11	
1,355.0	9.50	125.50	1,347.7	-73.9	83.0	-73.9	0.41	0.00	
1,449.0	9.30	120.30	1,440.4	-82.3	95.9	-82.3	0.93	-0.21	
1,542.0	8.40	126.50	1,532.3	-90.1	107.8	-90.1	1.41	-0.97	
1,636.0	8.60	136.90	1,625.3	-99.3	118.2	-99.3	1.65	0.21	
1,729.0	8.60	132.20	1,717.2	-109.1	128.1	-109.1	0.76	0.00	
1,823.0	8.00	130.10	1,810.3	-118.0	138.3	-118.0	0.72	-0.64	
1,916.0	9.20	138.10	1,902.2	-127.7	148.2	-127.7	1.82	1.29	
2,010.0	9.10	134.10	1,995.0	-138.5	158.5	-138.5	0.68	-0.11	
2,104.0	8.70	130.20	2,087.9	-148.2	169.3	-148.2	0.77	-0.43	
2,197.0	8.60	128.00	2,179.8	-157.1	180.2	-157.1	0.37	-0.11	
2,291.0	8.70	125.80	2,272.8	-165.5	191.5	-165.5	0.37	0.11	
2,384.0	8.60	123.10	2,364.7	-173.5	203.0	-173.5	0.45	-0.11	
2,479.0	8.30	132.70	2,458.7	-182.0	214.0	-182.0	1.52	-0.32	
2,573.0	8.20	131.10	2,551.7	-191.0	224.0	-191.0	0.27	-0.11	
2,668.0	8.40	128.00	2,645.7	-199.7	234.6	-199.7	0.52	0.21	
2,762.0	8.10	126.60	2,738.7	-207.9	245.3	-207.9	0.38	-0.32	
2,857.0	8.40	137.10	2,832.8	-217.0	255.4	-217.0	1.61	0.32	
2,951.0	7.90	135.80	2,925.8	-226.6	264.6	-226.6	0.57	-0.53	
3,046.0	9.10	141.70	3,019.8	-237.2	273.8	-237.2	1.56	1.26	
3,140.0	9.00	140.10	3,112.6	-248.7	283.1	-248.7	0.29	-0.11	
3,235.0	8.10	139.00	3,206.5	-259.4	292.3	-259.4	0.96	-0.95	
3,329.0	9.40	131.70	3,299.4	-269.5	302.4	-269.5	1.82	1.38	
3,423.0	9.30	131.10	3,392.2	-279.6	313.8	-279.6	0.15	-0.11	
3,518.0	8.60	131.70	3,486.0	-289.4	324.9	-289.4	0.74	-0.74	
3,612.0	8.00	132.90	3,579.0	-298.5	334.9	-298.5	0.66	-0.64	
3,706.0	7.10	125.90	3,672.2	-306.4	344.4	-306.4	1.37	-0.96	
3,801.0	8.40	122.20	3,766.4	-313.5	355.1	-313.5	1.47	1.37	
3,896.0	8.60	128.80	3,860.3	-321.7	366.5	-321.7	1.05	0.21	
3,991.0	10.20	133.40	3,954.0	-331.9	378.1	-331.9	1.86	1.68	
4,085.0	9.00	128.80	4,046.7	-342.2	389.9	-342.2	1.51	-1.28	
4,180.0	9.70	133.70	4,140.5	-352.4	401.5	-352.4	1.12	0.74	
4,274.0	8.90	133.20	4,233.2	-362.9	412.5	-362.9	0.86	-0.85	
4,369.0	8.40	132.00	4,327.2	-372.5	423.0	-372.5	0.56	-0.53	
4,463.0	7.40	129.20	4,420.3	-381.0	432.8	-381.0	1.14	-1.06	
4,557.0	9.20	128.70	4,513.3	-389.5	443.4	-389.5	1.92	1.91	
4,652.0	8.90	128.90	4,607.1	-398.9	455.0	-398.9	0.32	-0.32	
4,747.0	7.50	126.20	4,701.1	-407.1	465.7	-407.1	1.53	-1.47	
4,841.0	9.30	128.80	4,794.1	-415.5	476.6	-415.5	1.96	1.91	
4,936.0	8.80	127.90	4,887.9	-424.8	488.3	-424.8	0.55	-0.53	
5,031.0	9.60	135.50	4,981.7	-434.9	499.6	-434.9	1.53	0.84	
5,125.0	9.40	135.80	5,074.4	-446.0	510.5	-446.0	0.22	-0.21	
5,219.0	8.80	134.20	5,167.2	-456.5	521.0	-456.5	0.69	-0.64	
5,314.0	8.10	134.50	5,261.2	-466.3	530.9	-466.3	0.74	-0.74	
5,408.0	8.20	132.90	5,354.2	-475.5	540.6	-475.5	0.26	0.11	
5,503.0	10.10	135.90	5,448.0	-486.1	551.3	-486.1	2.06	2.00	
5,597.0	10.00	128.90	5,540.6	-497.1	563.4	-497.1	1.30	-0.11	
5,691.0	9.00	129.40	5,633.3	-506.9	575.5	-506.9	1.07	-1.06	
5,786.0	8.00	127.00	5,727.3	-515.6	586.5	-515.6	1.12	-1.05	
5,881.0	8.50	132.10	5,821.3	-524.3	597.0	-524.3	0.93	0.53	
5,975.0	8.40	130.80	5,914.3	-533.4	607.3	-533.4	0.23	-0.11	
6,070.0	7.30	127.80	6,008.4	-541.7	617.3	-541.7	1.24	-1.16	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**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
6,164.0	8.60	126.70	6,101.5	-549.5	627.7	-549.5	1.39	1.38	
6,258.0	8.00	125.00	6,194.5	-557.5	638.7	-557.5	0.69	-0.64	
6,353.0	8.70	128.80	6,288.5	-565.8	649.7	-565.8	0.94	0.74	
6,448.0	7.50	128.00	6,382.5	-574.1	660.2	-574.1	1.27	-1.26	
6,543.0	8.00	132.00	6,476.7	-582.3	670.0	-582.3	0.77	0.53	
6,636.0	8.80	135.30	6,568.7	-591.7	679.8	-591.7	1.00	0.86	
6,730.0	7.60	134.50	6,661.7	-601.2	689.3	-601.2	1.28	-1.28	
6,825.0	8.70	132.10	6,755.7	-610.4	699.1	-610.4	1.21	1.16	
6,919.0	8.80	118.90	6,848.6	-618.7	710.7	-618.7	2.13	0.11	
7,014.0	7.80	113.50	6,942.7	-624.7	723.0	-624.7	1.33	-1.05	
7,061.0	7.70	104.40	6,989.2	-626.8	728.9	-626.8	2.62	-0.21	
7,108.0	8.00	99.60	7,035.8	-628.1	735.2	-628.1	1.53	0.64	
7,162.0	9.10	84.40	7,089.2	-628.3	743.2	-628.3	4.64	2.04	
7,203.0	10.00	72.70	7,129.6	-627.0	749.8	-627.0	5.21	2.20	
7,250.0	12.50	48.40	7,175.7	-622.4	757.5	-622.4	11.28	5.32	
7,297.0	15.30	31.40	7,221.4	-613.7	764.5	-613.7	10.47	5.96	
7,344.0	17.80	21.30	7,266.4	-601.7	770.4	-601.7	8.09	5.32	
7,391.0	19.00	17.30	7,311.0	-587.7	775.3	-587.7	3.70	2.55	
7,438.0	20.50	17.70	7,355.3	-572.5	780.0	-572.5	3.20	3.19	
7,486.0	21.80	18.90	7,400.0	-556.1	785.5	-556.1	2.85	2.71	
7,533.0	23.60	18.80	7,443.4	-538.9	791.3	-538.9	3.83	3.83	
7,581.0	25.10	16.20	7,487.1	-520.1	797.3	-520.1	3.84	3.12	
7,628.0	25.80	12.60	7,529.6	-500.5	802.3	-500.5	3.61	1.49	
7,675.0	27.80	10.70	7,571.5	-479.8	806.6	-479.8	4.63	4.26	
7,722.0	30.90	8.70	7,612.5	-457.1	810.4	-457.1	6.92	6.60	
7,770.0	34.10	8.40	7,653.0	-431.6	814.2	-431.6	6.68	6.67	
7,817.0	36.50	6.90	7,691.3	-404.6	817.9	-404.6	5.43	5.11	
7,868.0	39.40	6.30	7,731.5	-373.5	821.5	-373.5	5.73	5.69	
7,915.0	41.10	4.30	7,767.4	-343.3	824.2	-343.3	4.54	3.62	
7,963.0	43.10	2.70	7,803.0	-311.1	826.2	-311.1	4.73	4.17	
8,010.0	48.60	3.20	7,835.7	-277.5	827.9	-277.5	11.73	11.70	
8,058.0	53.30	3.40	7,866.0	-240.3	830.1	-240.3	9.80	9.79	
8,105.0	54.50	3.90	7,893.7	-202.4	832.5	-202.4	2.69	2.55	
8,152.0	58.50	3.40	7,919.6	-163.3	835.0	-163.3	8.56	8.51	
8,199.0	63.30	2.70	7,942.4	-122.3	837.2	-122.3	10.30	10.21	
8,246.0	67.30	1.70	7,962.1	-79.6	838.8	-79.6	8.73	8.51	
8,293.0	70.40	1.80	7,979.0	-35.8	840.2	-35.8	6.60	6.60	
8,342.0	73.30	2.40	7,994.3	10.7	841.9	10.7	6.03	5.92	
8,389.0	76.60	1.70	8,006.5	56.1	843.5	56.1	7.17	7.02	
8,437.0	79.90	0.80	8,016.3	103.1	844.5	103.1	7.12	6.87	
8,484.0	83.20	0.70	8,023.2	149.5	845.1	149.5	7.02	7.02	
8,505.0	84.50	0.70	8,025.4	170.4	845.4	170.4	6.19	6.19	
8,568.0	86.90	0.60	8,030.2	233.2	846.1	233.2	3.81	3.81	
8,662.0	88.50	359.90	8,033.9	327.1	846.5	327.1	1.86	1.70	
8,755.0	90.00	359.90	8,035.1	420.1	846.3	420.1	1.61	1.61	
8,849.0	91.60	358.60	8,033.8	514.1	845.1	514.1	2.19	1.70	
8,942.0	91.70	358.50	8,031.2	607.0	842.7	607.0	0.15	0.11	
9,035.0	91.60	358.10	8,028.5	700.0	840.0	700.0	0.44	-0.11	
9,128.0	91.90	358.60	8,025.6	792.9	837.3	792.9	0.63	0.32	
9,222.0	92.10	358.30	8,022.4	886.8	834.8	886.8	0.38	0.21	
9,316.0	92.30	357.90	8,018.8	980.7	831.7	980.7	0.48	0.21	
9,409.0	89.80	356.70	8,017.0	1,073.5	827.3	1,073.5	2.98	-2.69	
9,503.0	89.50	357.10	8,017.6	1,167.4	822.2	1,167.4	0.53	-0.32	

Cathedral Energy Services

Survey Report

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Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**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
9,596.0	90.20	358.60	8,017.9	1,260.4	818.7	1,260.4	1.78	0.75	
9,690.0	90.60	358.40	8,017.2	1,354.3	816.2	1,354.3	0.48	0.43	
9,783.0	89.70	357.60	8,017.0	1,447.3	813.0	1,447.3	1.29	-0.97	
9,877.0	89.20	358.00	8,017.9	1,541.2	809.4	1,541.2	0.68	-0.53	
9,970.0	90.90	358.40	8,017.8	1,634.1	806.5	1,634.1	1.88	1.83	
10,064.0	91.30	0.30	8,016.0	1,728.1	805.4	1,728.1	2.07	0.43	
10,157.0	92.40	0.40	8,013.0	1,821.1	806.0	1,821.1	1.19	1.18	
10,251.0	91.80	359.20	8,009.5	1,915.0	805.6	1,915.0	1.43	-0.64	
10,344.0	92.40	1.00	8,006.1	2,007.9	805.8	2,007.9	2.04	0.65	
10,438.0	90.90	2.20	8,003.4	2,101.8	808.4	2,101.8	2.04	-1.60	
10,532.0	89.50	1.50	8,003.1	2,195.8	811.5	2,195.8	1.67	-1.49	
10,625.0	89.60	0.20	8,003.8	2,288.8	812.8	2,288.8	1.40	0.11	
10,719.0	90.00	359.70	8,004.2	2,382.8	812.8	2,382.8	0.68	0.43	
10,812.0	90.50	0.40	8,003.7	2,475.8	812.8	2,475.8	0.92	0.54	
10,906.0	90.90	0.00	8,002.6	2,569.8	813.2	2,569.8	0.60	0.43	
11,000.0	91.00	359.50	8,001.0	2,663.8	812.8	2,663.8	0.54	0.11	
11,094.0	90.90	358.80	7,999.5	2,757.7	811.4	2,757.7	0.75	-0.11	
11,188.0	91.90	358.50	7,997.2	2,851.7	809.1	2,851.7	1.11	1.06	
11,283.0	91.00	358.80	7,994.8	2,946.6	806.9	2,946.6	1.00	-0.95	
11,377.0	90.80	359.20	7,993.3	3,040.6	805.3	3,040.6	0.48	-0.21	
11,471.0	89.50	358.40	7,993.1	3,134.6	803.3	3,134.6	1.62	-1.38	
11,566.0	89.50	357.40	7,993.9	3,229.5	799.8	3,229.5	1.05	0.00	
11,660.0	89.30	358.70	7,994.9	3,323.4	796.6	3,323.4	1.40	-0.21	
11,756.0	89.70	359.70	7,995.7	3,419.4	795.3	3,419.4	1.12	0.42	
11,850.0	91.30	0.10	7,994.9	3,513.4	795.1	3,513.4	1.75	1.70	
11,945.0	91.80	0.20	7,992.3	3,608.4	795.4	3,608.4	0.54	0.53	
12,039.0	89.60	0.20	7,991.2	3,702.4	795.7	3,702.4	2.34	-2.34	
12,134.0	90.30	0.10	7,991.3	3,797.4	795.9	3,797.4	0.74	0.74	
12,228.0	89.10	359.50	7,991.7	3,891.4	795.6	3,891.4	1.43	-1.28	
12,323.0	89.10	359.60	7,993.2	3,986.3	794.9	3,986.3	0.11	0.00	
12,417.0	90.40	359.20	7,993.6	4,080.3	793.9	4,080.3	1.45	1.38	
12,512.0	90.50	358.80	7,992.9	4,175.3	792.2	4,175.3	0.43	0.11	
12,606.0	92.20	358.90	7,990.7	4,269.3	790.3	4,269.3	1.81	1.81	
12,701.0	91.70	358.80	7,987.5	4,364.2	788.4	4,364.2	0.54	-0.53	
12,795.0	91.90	359.60	7,984.5	4,458.1	787.1	4,458.1	0.88	0.21	
12,889.0	91.00	0.10	7,982.1	4,552.1	786.9	4,552.1	1.10	-0.96	
12,984.0	90.80	0.20	7,980.6	4,647.1	787.1	4,647.1	0.24	-0.21	
13,078.0	90.50	0.40	7,979.6	4,741.1	787.6	4,741.1	0.38	-0.32	
13,173.0	88.70	359.90	7,980.2	4,836.1	787.9	4,836.1	1.97	-1.89	
13,267.0	88.00	357.90	7,982.9	4,930.0	786.1	4,930.0	2.25	-0.74	
13,362.0	88.40	357.50	7,985.9	5,024.9	782.3	5,024.9	0.60	0.42	
13,457.0	88.70	357.20	7,988.3	5,119.7	777.9	5,119.7	0.45	0.32	
13,551.0	89.30	357.30	7,990.0	5,213.6	773.4	5,213.6	0.65	0.64	
13,646.0	90.30	358.40	7,990.3	5,308.5	769.8	5,308.5	1.56	1.05	
13,740.0	90.90	358.80	7,989.3	5,402.5	767.5	5,402.5	0.77	0.64	
13,834.0	89.50	358.80	7,989.0	5,496.5	765.5	5,496.5	1.49	-1.49	
13,929.0	91.60	359.80	7,988.1	5,591.5	764.4	5,591.5	2.45	2.21	
14,024.0	92.80	0.40	7,984.4	5,686.4	764.5	5,686.4	1.41	1.26	
14,118.0	93.20	0.30	7,979.5	5,780.3	765.1	5,780.3	0.44	0.43	
14,213.0	92.80	0.90	7,974.5	5,875.1	766.1	5,875.1	0.76	-0.42	
14,308.0	91.70	0.60	7,970.8	5,970.1	767.3	5,970.1	1.20	-1.16	
14,402.0	90.20	359.20	7,969.2	6,064.0	767.2	6,064.0	2.18	-1.60	
14,496.0	90.30	358.80	7,968.8	6,158.0	765.5	6,158.0	0.44	0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**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
14,591.0	90.80	358.90	7,967.9	6,253.0	763.6	6,253.0	0.54	0.53	
14,685.0	90.90	358.80	7,966.5	6,347.0	761.7	6,347.0	0.15	0.11	
14,780.0	90.80	358.10	7,965.1	6,441.9	759.2	6,441.9	0.74	-0.11	
14,874.0	90.40	359.50	7,964.1	6,535.9	757.2	6,535.9	1.55	-0.43	
14,968.0	90.50	358.70	7,963.4	6,629.9	755.7	6,629.9	0.86	0.11	
15,063.0	90.70	357.30	7,962.4	6,724.8	752.4	6,724.8	1.49	0.21	
15,158.0	89.20	356.60	7,962.5	6,819.7	747.4	6,819.7	1.74	-1.58	
15,252.0	90.90	358.00	7,962.4	6,913.6	742.9	6,913.6	2.34	1.81	
15,347.0	91.20	358.40	7,960.7	7,008.5	739.9	7,008.5	0.53	0.32	
15,441.0	89.70	358.80	7,959.9	7,102.5	737.7	7,102.5	1.65	-1.60	
15,535.0	89.50	357.90	7,960.6	7,196.4	734.9	7,196.4	0.98	-0.21	
15,630.0	90.70	359.70	7,960.4	7,291.4	733.0	7,291.4	2.28	1.26	
15,724.0	91.40	0.60	7,958.7	7,385.4	733.2	7,385.4	1.21	0.74	
15,819.0	88.40	1.20	7,958.9	7,480.4	734.7	7,480.4	3.22	-3.16	
15,914.0	89.10	359.30	7,960.9	7,575.3	735.1	7,575.3	2.13	0.74	
16,008.0	90.40	359.20	7,961.3	7,669.3	733.9	7,669.3	1.39	1.38	
16,102.0	91.40	359.70	7,959.9	7,763.3	733.0	7,763.3	1.19	1.06	
16,196.0	89.90	1.10	7,958.8	7,857.3	733.6	7,857.3	2.18	-1.60	
16,291.0	89.70	0.80	7,959.1	7,952.3	735.2	7,952.3	0.38	-0.21	
16,385.0	89.70	0.80	7,959.6	8,046.3	736.5	8,046.3	0.00	0.00	
16,480.0	89.20	0.20	7,960.5	8,141.3	737.3	8,141.3	0.82	-0.53	
16,574.0	91.40	0.50	7,960.0	8,235.2	737.9	8,235.2	2.36	2.34	
16,668.0	91.60	1.20	7,957.6	8,329.2	739.3	8,329.2	0.77	0.21	
16,763.0	89.40	0.50	7,956.7	8,424.2	740.7	8,424.2	2.43	-2.32	
16,857.0	90.20	359.70	7,957.1	8,518.2	740.9	8,518.2	1.20	0.85	
16,952.0	90.80	359.40	7,956.2	8,613.2	740.1	8,613.2	0.71	0.63	
17,047.0	89.90	359.70	7,955.7	8,708.2	739.4	8,708.2	1.00	-0.95	
17,141.0	91.80	0.50	7,954.3	8,802.1	739.6	8,802.1	2.19	2.02	
17,237.0	89.90	358.80	7,952.8	8,898.1	739.0	8,898.1	2.66	-1.98	
17,332.0	90.30	359.30	7,952.7	8,993.1	737.4	8,993.1	0.67	0.42	
17,426.0	90.50	359.00	7,952.0	9,087.1	736.0	9,087.1	0.38	0.21	
17,521.0	91.80	359.50	7,950.1	9,182.1	734.8	9,182.1	1.47	1.37	
17,615.0	91.10	358.20	7,947.7	9,276.0	732.9	9,276.0	1.57	-0.74	
17,630.0	91.40	357.60	7,947.4	9,291.0	732.3	9,291.0	4.47	2.00	**Last CES Survey @ 17,630' MD**
17,685.0	91.40	357.60	7,946.1	9,345.9	730.0	9,345.9	0.00	0.00	**PTB @ 17,685' MD**

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**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
Pratt 4G-29H-P168 PBH	0.00	0.00	8,036.0	9,088.7	1,200.0	1,258,351.60	3,134,936.64	40.041550	-105.018074
- survey misses target center by 471.5ft at 17420.2ft MD (7952.1 TVD, 9081.3 N, 736.1 E) - Point									
Pratt 4G-29H 5000'	0.00	0.00	7,985.0	5,000.0	772.2	1,254,260.65	3,134,530.82	40.030326	-105.019603
- survey misses target center by 11.2ft at 13337.6ft MD (7985.2 TVD, 5000.5 N, 783.3 E) - Point									
Pratt 4G-29H-P168 PBH	0.00	0.00	8,036.0	9,478.5	711.1	1,258,738.73	3,134,445.69	40.042620	-105.019820
- survey misses target center by 161.3ft at 17685.0ft MD (7946.1 TVD, 9345.9 N, 730.0 E) - Point									
Pratt 4G-29H-P168 PBH	0.00	0.00	8,051.5	9,088.7	708.4	1,258,348.95	3,134,445.00	40.041550	-105.019830
- survey misses target center by 103.3ft at 17426.0ft MD (7952.0 TVD, 9087.1 N, 736.0 E) - Point									
Pratt 4G-29H TGT	0.00	0.00	7,827.8	-300.5	821.2	1,248,960.47	3,134,608.40	40.015775	-105.019428
- survey misses target center by 11.4ft at 7987.7ft MD (7820.6 TVD, -293.8 N, 827.1 E) - Point									
Pratt 4G-29H 3800'	0.00	0.00	7,972.0	3,800.0	788.5	1,253,060.67	3,134,553.64	40.027031	-105.019544
- survey misses target center by 20.6ft at 12136.5ft MD (7991.2 TVD, 3799.9 N, 795.9 E) - Point									
Pratt 4G-29H-P168 PBH	0.00	0.00	7,950.0	9,478.5	711.1	1,258,738.73	3,134,445.69	40.042620	-105.019820
- survey misses target center by 134.0ft at 17685.0ft MD (7946.1 TVD, 9345.9 N, 730.0 E) - Point									
Pratt 4G-29H 700'	0.00	0.00	8,030.0	700.0	830.7	1,249,961.03	3,134,612.56	40.018522	-105.019394
- survey misses target center by 9.4ft at 9035.3ft MD (8028.5 TVD, 700.3 N, 840.0 E) - Point									

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
17,630.0	7,947.4	9,291.0	732.3	Last CES Survey @ 17,630' MD
17,685.0	7,946.1	9,345.9	730.0	PTB @ 17,685' MD

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S29-T1N-R68W (Pratt/Waste Connections)
Pratt 4G-29H-P168

Hz

Survey: Survey #1

Survey Report - Geographic

16 December, 2014

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**Database:**	USA EDM 5000 Multi Users DB

Project DJ Wattenberg

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site S29-T1N-R68W (Pratt/Waste Connections)

Site Position:		**Northing:**	1,249,256.24 ft	**Latitude:**	40.016600
From:	Lat/Long	**Easting:**	3,133,726.79 ft	**Longitude:**	-105.022570
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.31 °

Well Pratt 4G-29H-P168

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,249,256.52 ft	**Latitude:**	40.016600
	+E/-W	0.0 ft	**Easting:**	3,133,785.61 ft	**Longitude:**	-105.022360
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,176.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/22/2014	8.51	66.58	52,537

Design SURVEYS

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	0.00

Survey Program **Date** 12/16/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
167.0	17,685.0	Survey #1 (Hz)	Geolink MWD	Geolink MWD

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,249,256.52	3,133,785.61	40.016600	-105.022360
167.0	0.40	100.40	167.0	-0.1	0.6	1,249,256.41	3,133,786.19	40.016600	-105.022358
229.0	0.30	81.90	229.0	-0.1	0.9	1,249,256.40	3,133,786.56	40.016600	-105.022357
323.0	0.40	103.70	323.0	-0.2	1.5	1,249,256.36	3,133,787.12	40.016599	-105.022355
416.0	1.30	151.80	416.0	-1.2	2.3	1,249,255.36	3,133,787.94	40.016597	-105.022352
510.0	2.20	146.30	509.9	-3.6	3.8	1,249,252.93	3,133,789.46	40.016590	-105.022347
604.0	3.80	134.80	603.8	-7.3	7.0	1,249,249.25	3,133,792.69	40.016580	-105.022335
697.0	5.40	135.50	696.5	-12.6	12.3	1,249,243.98	3,133,797.97	40.016565	-105.022316
791.0	7.60	135.10	789.9	-20.2	19.8	1,249,236.46	3,133,805.50	40.016545	-105.022290
884.0	8.50	130.20	882.0	-29.0	29.4	1,249,227.72	3,133,815.14	40.016520	-105.022255
924.0	7.90	131.70	921.6	-32.7	33.7	1,249,224.01	3,133,819.47	40.016510	-105.022240
981.0	6.90	128.00	978.1	-37.4	39.3	1,249,219.33	3,133,825.12	40.016497	-105.022220

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
1,075.0	7.80	134.10	1,071.3	-45.3	48.3	1,249,211.46	3,133,834.19	40.016476	-105.022188
1,168.0	9.60	131.40	1,163.3	-54.8	58.7	1,249,201.99	3,133,844.59	40.016449	-105.022151
1,262.0	9.50	127.80	1,255.9	-64.8	70.7	1,249,192.12	3,133,856.66	40.016422	-105.022108
1,355.0	9.50	125.50	1,347.7	-73.9	83.0	1,249,183.03	3,133,869.02	40.016397	-105.022064
1,449.0	9.30	120.30	1,440.4	-82.3	95.9	1,249,174.76	3,133,881.94	40.016374	-105.022018
1,542.0	8.40	126.50	1,532.3	-90.1	107.8	1,249,166.99	3,133,893.93	40.016353	-105.021975
1,636.0	8.60	136.90	1,625.3	-99.3	118.2	1,249,157.83	3,133,904.30	40.016327	-105.021938
1,729.0	8.60	132.20	1,717.2	-109.1	128.1	1,249,148.14	3,133,914.25	40.016301	-105.021903
1,823.0	8.00	130.10	1,810.3	-118.0	138.3	1,249,139.26	3,133,924.51	40.016276	-105.021867
1,916.0	9.20	138.10	1,902.2	-127.7	148.2	1,249,129.61	3,133,934.48	40.016249	-105.021831
2,010.0	9.10	134.10	1,995.0	-138.5	158.5	1,249,118.90	3,133,944.89	40.016220	-105.021794
2,104.0	8.70	130.20	2,087.9	-148.2	169.3	1,249,109.19	3,133,955.71	40.016193	-105.021756
2,197.0	8.60	128.00	2,179.8	-157.1	180.2	1,249,100.43	3,133,966.61	40.016169	-105.021717
2,291.0	8.70	125.80	2,272.8	-165.5	191.5	1,249,092.01	3,133,977.96	40.016145	-105.021677
2,384.0	8.60	123.10	2,364.7	-173.5	203.0	1,249,084.16	3,133,989.53	40.016124	-105.021636
2,479.0	8.30	132.70	2,458.7	-182.0	214.0	1,249,075.69	3,134,000.57	40.016100	-105.021596
2,573.0	8.20	131.10	2,551.7	-191.0	224.0	1,249,066.73	3,134,010.66	40.016076	-105.021560
2,668.0	8.40	128.00	2,645.7	-199.7	234.6	1,249,058.06	3,134,021.28	40.016052	-105.021523
2,762.0	8.10	126.60	2,738.7	-207.9	245.3	1,249,049.95	3,134,032.05	40.016029	-105.021484
2,857.0	8.40	137.10	2,832.8	-217.0	255.4	1,249,040.93	3,134,042.19	40.016004	-105.021448
2,951.0	7.90	135.80	2,925.8	-226.6	264.6	1,249,031.32	3,134,051.42	40.015978	-105.021416
3,046.0	9.10	141.70	3,019.8	-237.2	273.8	1,249,020.79	3,134,060.69	40.015949	-105.021383
3,140.0	9.00	140.10	3,112.6	-248.7	283.1	1,249,009.37	3,134,070.07	40.015917	-105.021349
3,235.0	8.10	139.00	3,206.5	-259.4	292.3	1,248,998.66	3,134,079.29	40.015888	-105.021317
3,329.0	9.40	131.70	3,299.4	-269.5	302.4	1,248,988.61	3,134,089.42	40.015860	-105.021281
3,423.0	9.30	131.10	3,392.2	-279.6	313.8	1,248,978.57	3,134,100.93	40.015832	-105.021240
3,518.0	8.60	131.70	3,486.0	-289.4	324.9	1,248,968.86	3,134,112.07	40.015805	-105.021200
3,612.0	8.00	132.90	3,579.0	-298.5	334.9	1,248,959.79	3,134,122.16	40.015780	-105.021164
3,706.0	7.10	125.90	3,672.2	-306.4	344.4	1,248,951.98	3,134,131.70	40.015759	-105.021131
3,801.0	8.40	122.20	3,766.4	-313.5	355.1	1,248,944.90	3,134,142.36	40.015739	-105.021093
3,896.0	8.60	128.80	3,860.3	-321.7	366.5	1,248,936.81	3,134,153.81	40.015717	-105.021052
3,991.0	10.20	133.40	3,954.0	-331.9	378.1	1,248,926.64	3,134,165.52	40.015689	-105.021010
4,085.0	9.00	128.80	4,046.7	-342.2	389.9	1,248,916.38	3,134,177.35	40.015660	-105.020968
4,180.0	9.70	133.70	4,140.5	-352.4	401.5	1,248,906.26	3,134,188.98	40.015632	-105.020927
4,274.0	8.90	133.20	4,233.2	-362.9	412.5	1,248,895.87	3,134,200.07	40.015604	-105.020888
4,369.0	8.40	132.00	4,327.2	-372.5	423.0	1,248,886.25	3,134,210.63	40.015577	-105.020850
4,463.0	7.40	129.20	4,420.3	-381.0	432.8	1,248,877.88	3,134,220.47	40.015554	-105.020815
4,557.0	9.20	128.70	4,513.3	-389.5	443.4	1,248,869.42	3,134,231.07	40.015531	-105.020777
4,652.0	8.90	128.90	4,607.1	-398.9	455.0	1,248,860.12	3,134,242.77	40.015505	-105.020736
4,747.0	7.50	126.20	4,701.1	-407.1	465.7	1,248,851.90	3,134,253.54	40.015482	-105.020697
4,841.0	9.30	128.80	4,794.1	-415.5	476.6	1,248,843.57	3,134,264.45	40.015459	-105.020659
4,936.0	8.80	127.90	4,887.9	-424.8	488.3	1,248,834.36	3,134,276.22	40.015434	-105.020617
5,031.0	9.60	135.50	4,981.7	-434.9	499.6	1,248,824.31	3,134,287.56	40.015406	-105.020577
5,125.0	9.40	135.80	5,074.4	-446.0	510.5	1,248,813.27	3,134,298.46	40.015376	-105.020538
5,219.0	8.80	134.20	5,167.2	-456.5	521.0	1,248,802.81	3,134,309.03	40.015347	-105.020500
5,314.0	8.10	134.50	5,261.2	-466.3	530.9	1,248,793.11	3,134,319.06	40.015320	-105.020465
5,408.0	8.20	132.90	5,354.2	-475.5	540.6	1,248,783.96	3,134,328.75	40.015295	-105.020430
5,503.0	10.10	135.90	5,448.0	-486.1	551.3	1,248,773.42	3,134,339.56	40.015266	-105.020392
5,597.0	10.00	128.90	5,540.6	-497.1	563.4	1,248,762.44	3,134,351.71	40.015235	-105.020349
5,691.0	9.00	129.40	5,633.3	-506.9	575.5	1,248,752.71	3,134,363.80	40.015208	-105.020306
5,786.0	8.00	127.00	5,727.3	-515.6	586.5	1,248,744.08	3,134,374.87	40.015184	-105.020266
5,881.0	8.50	132.10	5,821.3	-524.3	597.0	1,248,735.45	3,134,385.40	40.015161	-105.020229
5,975.0	8.40	130.80	5,914.3	-533.4	607.3	1,248,726.36	3,134,395.80	40.015136	-105.020192
6,070.0	7.30	127.80	6,008.4	-541.7	617.3	1,248,718.18	3,134,405.87	40.015113	-105.020156
6,164.0	8.60	126.70	6,101.5	-549.5	627.7	1,248,710.38	3,134,416.27	40.015091	-105.020119

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
6,258.0	8.00	125.00	6,194.5	-557.5	638.7	1,248,702.48	3,134,427.30	40.015070	-105.020080
6,353.0	8.70	128.80	6,288.5	-565.8	649.7	1,248,694.25	3,134,438.36	40.015047	-105.020041
6,448.0	7.50	128.00	6,382.5	-574.1	660.2	1,248,685.99	3,134,448.89	40.015024	-105.020003
6,543.0	8.00	132.00	6,476.7	-582.3	670.0	1,248,677.80	3,134,458.73	40.015001	-105.019968
6,636.0	8.80	135.30	6,568.7	-591.7	679.8	1,248,668.46	3,134,468.60	40.014976	-105.019933
6,730.0	7.60	134.50	6,661.7	-601.2	689.3	1,248,659.05	3,134,478.14	40.014950	-105.019899
6,825.0	8.70	132.10	6,755.7	-610.4	699.1	1,248,649.88	3,134,488.00	40.014924	-105.019864
6,919.0	8.80	118.90	6,848.6	-618.7	710.7	1,248,641.70	3,134,499.62	40.014902	-105.019823
7,014.0	7.80	113.50	6,942.7	-624.7	723.0	1,248,635.68	3,134,511.92	40.014885	-105.019779
7,061.0	7.70	104.40	6,989.2	-626.8	728.9	1,248,633.66	3,134,517.91	40.014879	-105.019758
7,108.0	8.00	99.60	7,035.8	-628.1	735.2	1,248,632.37	3,134,524.19	40.014876	-105.019735
7,162.0	9.10	84.40	7,089.2	-628.3	743.2	1,248,632.20	3,134,532.15	40.014875	-105.019707
7,203.0	10.00	72.70	7,129.6	-627.0	749.8	1,248,633.61	3,134,538.77	40.014879	-105.019683
7,250.0	12.50	48.40	7,175.7	-622.4	757.5	1,248,638.25	3,134,546.45	40.014891	-105.019656
7,297.0	15.30	31.40	7,221.4	-613.7	764.5	1,248,646.96	3,134,553.44	40.014915	-105.019631
7,344.0	17.80	21.30	7,266.4	-601.7	770.4	1,248,658.98	3,134,559.22	40.014948	-105.019610
7,391.0	19.00	17.30	7,311.0	-587.7	775.3	1,248,673.01	3,134,564.03	40.014987	-105.019592
7,438.0	20.50	17.70	7,355.3	-572.5	780.0	1,248,688.18	3,134,568.72	40.015028	-105.019575
7,486.0	21.80	18.90	7,400.0	-556.1	785.5	1,248,704.65	3,134,574.08	40.015073	-105.019556
7,533.0	23.60	18.80	7,443.4	-538.9	791.3	1,248,721.84	3,134,579.84	40.015120	-105.019535
7,581.0	25.10	16.20	7,487.1	-520.1	797.3	1,248,740.75	3,134,585.68	40.015172	-105.019514
7,628.0	25.80	12.60	7,529.6	-500.5	802.3	1,248,760.33	3,134,590.59	40.015226	-105.019496
7,675.0	27.80	10.70	7,571.5	-479.8	806.6	1,248,781.11	3,134,594.74	40.015283	-105.019481
7,722.0	30.90	8.70	7,612.5	-457.1	810.4	1,248,803.83	3,134,598.48	40.015345	-105.019467
7,770.0	34.10	8.40	7,653.0	-431.6	814.2	1,248,829.35	3,134,602.17	40.015415	-105.019453
7,817.0	36.50	6.90	7,691.3	-404.6	817.9	1,248,856.29	3,134,605.63	40.015489	-105.019440
7,868.0	39.40	6.30	7,731.5	-373.5	821.5	1,248,887.46	3,134,609.06	40.015575	-105.019427
7,915.0	41.10	4.30	7,767.4	-343.3	824.2	1,248,917.71	3,134,611.70	40.015658	-105.019417
7,963.0	43.10	2.70	7,803.0	-311.1	826.2	1,248,949.83	3,134,613.48	40.015746	-105.019410
8,010.0	48.60	3.20	7,835.7	-277.5	827.9	1,248,983.51	3,134,615.04	40.015838	-105.019404
8,058.0	53.30	3.40	7,866.0	-240.3	830.1	1,249,020.72	3,134,616.99	40.015940	-105.019397
8,105.0	54.50	3.90	7,893.7	-202.4	832.5	1,249,058.63	3,134,619.20	40.016044	-105.019388
8,152.0	58.50	3.40	7,919.6	-163.3	835.0	1,249,097.75	3,134,621.48	40.016152	-105.019379
8,199.0	63.30	2.70	7,942.4	-122.3	837.2	1,249,138.76	3,134,623.44	40.016264	-105.019371
8,246.0	67.30	1.70	7,962.1	-79.6	838.8	1,249,181.43	3,134,624.84	40.016381	-105.019365
8,293.0	70.40	1.80	7,979.0	-35.8	840.2	1,249,225.24	3,134,625.95	40.016502	-105.019361
8,342.0	73.30	2.40	7,994.3	10.7	841.9	1,249,271.78	3,134,627.40	40.016629	-105.019355
8,389.0	76.60	1.70	8,006.5	56.1	843.5	1,249,317.14	3,134,628.78	40.016754	-105.019349
8,437.0	79.90	0.80	8,016.3	103.1	844.5	1,249,364.12	3,134,629.55	40.016883	-105.019345
8,484.0	83.20	0.70	8,023.2	149.5	845.1	1,249,410.60	3,134,629.91	40.017010	-105.019343
8,505.0	84.50	0.70	8,025.4	170.4	845.4	1,249,431.48	3,134,630.05	40.017068	-105.019342
8,568.0	86.90	0.60	8,030.2	233.2	846.1	1,249,494.29	3,134,630.42	40.017240	-105.019339
8,662.0	88.50	359.90	8,033.9	327.1	846.5	1,249,588.22	3,134,630.33	40.017498	-105.019338
8,755.0	90.00	359.90	8,035.1	420.1	846.3	1,249,681.20	3,134,629.66	40.017753	-105.019339
8,849.0	91.60	358.60	8,033.8	514.1	845.1	1,249,775.17	3,134,627.93	40.018011	-105.019343
8,942.0	91.70	358.50	8,031.2	607.0	842.7	1,249,868.09	3,134,625.08	40.018266	-105.019351
9,035.0	91.60	358.10	8,028.5	700.0	840.0	1,249,960.99	3,134,621.82	40.018521	-105.019361
9,128.0	91.90	358.60	8,025.6	792.9	837.3	1,250,053.90	3,134,618.64	40.018776	-105.019371
9,222.0	92.10	358.30	8,022.4	886.8	834.8	1,250,147.79	3,134,615.59	40.019034	-105.019380
9,316.0	92.30	357.90	8,018.8	980.7	831.7	1,250,241.65	3,134,611.97	40.019292	-105.019391
9,409.0	89.80	356.70	8,017.0	1,073.5	827.3	1,250,334.50	3,134,607.09	40.019547	-105.019406
9,503.0	89.50	357.10	8,017.6	1,167.4	822.2	1,250,428.35	3,134,601.50	40.019805	-105.019425
9,596.0	90.20	358.60	8,017.9	1,260.4	818.7	1,250,521.26	3,134,597.51	40.020060	-105.019437
9,690.0	90.60	358.40	8,017.2	1,354.3	816.2	1,250,615.21	3,134,594.55	40.020318	-105.019446
9,783.0	89.70	357.60	8,017.0	1,447.3	813.0	1,250,708.13	3,134,590.80	40.020573	-105.019457

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
9,877.0	89.20	358.00	8,017.9	1,541.2	809.4	1,250,802.04	3,134,586.69	40.020831	-105.019470
9,970.0	90.90	358.40	8,017.8	1,634.1	806.5	1,250,894.97	3,134,583.27	40.021086	-105.019481
10,064.0	91.30	0.30	8,016.0	1,728.1	805.4	1,250,988.94	3,134,581.69	40.021344	-105.019485
10,157.0	92.40	0.40	8,013.0	1,821.1	806.0	1,251,081.89	3,134,581.76	40.021599	-105.019482
10,251.0	91.80	359.20	8,009.5	1,915.0	805.6	1,251,175.82	3,134,580.93	40.021857	-105.019484
10,344.0	92.40	1.00	8,006.1	2,007.9	805.8	1,251,268.75	3,134,580.59	40.022112	-105.019483
10,438.0	90.90	2.20	8,003.4	2,101.8	808.4	1,251,362.68	3,134,582.70	40.022370	-105.019474
10,532.0	89.50	1.50	8,003.1	2,195.8	811.5	1,251,456.65	3,134,585.23	40.022628	-105.019463
10,625.0	89.60	0.20	8,003.8	2,288.8	812.8	1,251,549.64	3,134,586.11	40.022883	-105.019458
10,719.0	90.00	359.70	8,004.2	2,382.8	812.8	1,251,643.63	3,134,585.52	40.023141	-105.019458
10,812.0	90.50	0.40	8,003.7	2,475.8	812.8	1,251,736.63	3,134,585.10	40.023396	-105.019458
10,906.0	90.90	0.00	8,002.6	2,569.8	813.2	1,251,830.62	3,134,584.93	40.023654	-105.019457
11,000.0	91.00	359.50	8,001.0	2,663.8	812.8	1,251,924.61	3,134,584.01	40.023912	-105.019458
11,094.0	90.90	358.80	7,999.5	2,757.7	811.4	1,252,018.57	3,134,582.11	40.024170	-105.019463
11,188.0	91.90	358.50	7,997.2	2,851.7	809.1	1,252,112.51	3,134,579.39	40.024428	-105.019471
11,283.0	91.00	358.80	7,994.8	2,946.6	806.9	1,252,207.43	3,134,576.64	40.024689	-105.019479
11,377.0	90.80	359.20	7,993.3	3,040.6	805.3	1,252,301.40	3,134,574.49	40.024947	-105.019485
11,471.0	89.50	358.40	7,993.1	3,134.6	803.3	1,252,395.36	3,134,572.02	40.025205	-105.019492
11,566.0	89.50	357.40	7,993.9	3,229.5	799.8	1,252,490.27	3,134,568.03	40.025465	-105.019504
11,660.0	89.30	358.70	7,994.9	3,323.4	796.6	1,252,584.19	3,134,564.32	40.025723	-105.019516
11,756.0	89.70	359.70	7,995.7	3,419.4	795.3	1,252,680.17	3,134,562.47	40.025987	-105.019520
11,850.0	91.30	0.10	7,994.9	3,513.4	795.1	1,252,774.16	3,134,561.79	40.026245	-105.019521
11,945.0	91.80	0.20	7,992.3	3,608.4	795.4	1,252,869.13	3,134,561.53	40.026506	-105.019520
12,039.0	89.60	0.20	7,991.2	3,702.4	795.7	1,252,963.11	3,134,561.35	40.026764	-105.019519
12,134.0	90.30	0.10	7,991.3	3,797.4	795.9	1,253,058.11	3,134,561.09	40.027024	-105.019518
12,228.0	89.10	359.50	7,991.7	3,891.4	795.6	1,253,152.11	3,134,560.26	40.027282	-105.019519
12,323.0	89.10	359.60	7,993.2	3,986.3	794.9	1,253,247.09	3,134,559.00	40.027543	-105.019522
12,417.0	90.40	359.20	7,993.6	4,080.3	793.9	1,253,341.07	3,134,557.51	40.027801	-105.019525
12,512.0	90.50	358.80	7,992.9	4,175.3	792.2	1,253,436.04	3,134,555.34	40.028062	-105.019531
12,606.0	92.20	358.90	7,990.7	4,269.3	790.3	1,253,529.98	3,134,552.95	40.028320	-105.019538
12,701.0	91.70	358.80	7,987.5	4,364.2	788.4	1,253,624.87	3,134,550.53	40.028580	-105.019545
12,795.0	91.90	359.60	7,984.5	4,458.1	787.1	1,253,718.81	3,134,548.71	40.028838	-105.019549
12,889.0	91.00	0.10	7,982.1	4,552.1	786.9	1,253,812.77	3,134,547.96	40.029096	-105.019550
12,984.0	90.80	0.20	7,980.6	4,647.1	787.1	1,253,907.76	3,134,547.70	40.029357	-105.019549
13,078.0	90.50	0.40	7,979.6	4,741.1	787.6	1,254,001.76	3,134,547.68	40.029615	-105.019548
13,173.0	88.70	359.90	7,980.2	4,836.1	787.9	1,254,096.75	3,134,547.42	40.029876	-105.019547
13,267.0	88.00	357.90	7,982.9	4,930.0	786.1	1,254,190.68	3,134,545.11	40.030134	-105.019553
13,362.0	88.40	357.50	7,985.9	5,024.9	782.3	1,254,285.53	3,134,540.79	40.030394	-105.019567
13,457.0	88.70	357.20	7,988.3	5,119.7	777.9	1,254,380.37	3,134,535.89	40.030654	-105.019582
13,551.0	89.30	357.30	7,990.0	5,213.6	773.4	1,254,474.22	3,134,530.87	40.030912	-105.019599
13,646.0	90.30	358.40	7,990.3	5,308.5	769.8	1,254,569.13	3,134,526.80	40.031173	-105.019611
13,740.0	90.90	358.80	7,989.3	5,402.5	767.5	1,254,663.09	3,134,524.00	40.031431	-105.019619
13,834.0	89.50	358.80	7,989.0	5,496.5	765.5	1,254,757.05	3,134,521.52	40.031689	-105.019626
13,929.0	91.60	359.80	7,988.1	5,591.5	764.4	1,254,852.03	3,134,519.85	40.031949	-105.019631
14,024.0	92.80	0.40	7,984.4	5,686.4	764.5	1,254,946.95	3,134,519.50	40.032210	-105.019630
14,118.0	93.20	0.30	7,979.5	5,780.3	765.1	1,255,040.82	3,134,519.57	40.032468	-105.019628
14,213.0	92.80	0.90	7,974.5	5,875.1	766.1	1,255,135.69	3,134,520.05	40.032728	-105.019624
14,308.0	91.70	0.60	7,970.8	5,970.1	767.3	1,255,230.61	3,134,520.78	40.032989	-105.019620
14,402.0	90.20	359.20	7,969.2	6,064.0	767.2	1,255,324.59	3,134,520.11	40.033247	-105.019621
14,496.0	90.30	358.80	7,968.8	6,158.0	765.5	1,255,418.57	3,134,517.97	40.033505	-105.019626
14,591.0	90.80	358.90	7,967.9	6,253.0	763.6	1,255,513.53	3,134,515.55	40.033765	-105.019633
14,685.0	90.90	358.80	7,966.5	6,347.0	761.7	1,255,607.49	3,134,513.16	40.034023	-105.019640
14,780.0	90.80	358.10	7,965.1	6,441.9	759.2	1,255,702.43	3,134,510.08	40.034284	-105.019649
14,874.0	90.40	359.50	7,964.1	6,535.9	757.2	1,255,796.39	3,134,507.60	40.034542	-105.019656
14,968.0	90.50	358.70	7,963.4	6,629.9	755.7	1,255,890.37	3,134,505.62	40.034800	-105.019661

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**Database:**	USA EDM 5000 Multi Users DB

Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
15,063.0	90.70	357.30	7,962.4	6,724.8	752.4	1,255,985.28	3,134,501.79	40.035061	-105.019673
15,158.0	89.20	356.60	7,962.5	6,819.7	747.4	1,256,080.11	3,134,496.23	40.035321	-105.019691
15,252.0	90.90	358.00	7,962.4	6,913.6	742.9	1,256,173.98	3,134,491.29	40.035579	-105.019707
15,347.0	91.20	358.40	7,960.7	7,008.5	739.9	1,256,268.90	3,134,487.80	40.035839	-105.019718
15,441.0	89.70	358.80	7,959.9	7,102.5	737.7	1,256,362.85	3,134,485.00	40.036097	-105.019726
15,535.0	89.50	357.90	7,960.6	7,196.4	734.9	1,256,456.79	3,134,481.78	40.036355	-105.019736
15,630.0	90.70	359.70	7,960.4	7,291.4	733.0	1,256,551.75	3,134,479.28	40.036616	-105.019743
15,724.0	91.40	0.60	7,958.7	7,385.4	733.2	1,256,645.74	3,134,479.02	40.036874	-105.019742
15,819.0	88.40	1.20	7,958.9	7,480.4	734.7	1,256,740.72	3,134,480.00	40.037135	-105.019736
15,914.0	89.10	359.30	7,960.9	7,575.3	735.1	1,256,835.69	3,134,479.90	40.037395	-105.019735
16,008.0	90.40	359.20	7,961.3	7,669.3	733.9	1,256,929.67	3,134,478.17	40.037654	-105.019739
16,102.0	91.40	359.70	7,959.9	7,763.3	733.0	1,257,023.65	3,134,476.76	40.037912	-105.019742
16,196.0	89.90	1.10	7,958.8	7,857.3	733.6	1,257,117.64	3,134,476.91	40.038170	-105.019740
16,291.0	89.70	0.80	7,959.1	7,952.3	735.2	1,257,212.63	3,134,477.97	40.038430	-105.019734
16,385.0	89.70	0.80	7,959.6	8,046.3	736.5	1,257,306.63	3,134,478.78	40.038688	-105.019730
16,480.0	89.20	0.20	7,960.5	8,141.3	737.3	1,257,401.62	3,134,479.10	40.038949	-105.019727
16,574.0	91.40	0.50	7,960.0	8,235.2	737.9	1,257,495.61	3,134,479.16	40.039207	-105.019725
16,668.0	91.60	1.20	7,957.6	8,329.2	739.3	1,257,589.58	3,134,480.05	40.039465	-105.019720
16,763.0	89.40	0.50	7,956.7	8,424.2	740.7	1,257,684.56	3,134,480.95	40.039726	-105.019715
16,857.0	90.20	359.70	7,957.1	8,518.2	740.9	1,257,778.56	3,134,480.61	40.039984	-105.019714
16,952.0	90.80	359.40	7,956.2	8,613.2	740.1	1,257,873.55	3,134,479.35	40.040245	-105.019717
17,047.0	89.90	359.70	7,955.7	8,708.2	739.4	1,257,968.54	3,134,478.09	40.040505	-105.019719
17,141.0	91.80	0.50	7,954.3	8,802.1	739.6	1,258,062.52	3,134,477.75	40.040763	-105.019719
17,237.0	89.90	358.80	7,952.8	8,898.1	739.0	1,258,158.50	3,134,476.65	40.041027	-105.019721
17,332.0	90.30	359.30	7,952.7	8,993.1	737.4	1,258,253.47	3,134,474.56	40.041288	-105.019727
17,426.0	90.50	359.00	7,952.0	9,087.1	736.0	1,258,347.45	3,134,472.66	40.041546	-105.019732
17,521.0	91.80	359.50	7,950.1	9,182.1	734.8	1,258,442.41	3,134,470.90	40.041806	-105.019736
17,615.0	91.10	358.20	7,947.7	9,276.0	732.9	1,258,536.35	3,134,468.51	40.042064	-105.019743
17,630.0	91.40	357.60	7,947.4	9,291.0	732.3	1,258,551.33	3,134,467.88	40.042105	-105.019745
Last CES Survey @ 17,630' MD									
17,685.0	91.40	357.60	7,946.1	9,345.9	730.0	1,258,606.26	3,134,465.28	40.042256	-105.019753
PTB @ 17,685' MD									

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Pratt 4G-29H-P168
Project:	DJ Wattenberg	**TVD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Site:	S29-T1N-R68W (Pratt/Waste Connections)	**MD Reference:**	28.5' KB @ 5204.5ft (Patterson 272)
Well:	Pratt 4G-29H-P168	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	SURVEYS	**Database:**	USA EDM 5000 Multi Users DB

Design 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
Pratt 4G-29H TGT	0.00	0.00	7,827.8	-300.5	821.2	1,248,960.47	3,134,608.40	40.015775	-105.019428
- survey misses target center by 11.4ft at 7987.7ft MD (7820.6 TVD, -293.8 N, 827.1 E)									
- Point									
Pratt 4G-29H-P168 PBH	0.00	0.00	7,950.0	9,478.5	711.1	1,258,738.73	3,134,445.69	40.042620	-105.019820
- survey misses target center by 134.0ft at 17685.0ft MD (7946.1 TVD, 9345.9 N, 730.0 E)									
- Point									
Pratt 4G-29H 3800'	0.00	0.00	7,972.0	3,800.0	788.5	1,253,060.67	3,134,553.64	40.027031	-105.019545
- survey misses target center by 20.6ft at 12136.5ft MD (7991.2 TVD, 3799.9 N, 795.9 E)									
- Point									
Pratt 4G-29H 5000'	0.00	0.00	7,985.0	5,000.0	772.2	1,254,260.65	3,134,530.82	40.030326	-105.019603
- survey misses target center by 11.2ft at 13337.6ft MD (7985.2 TVD, 5000.5 N, 783.3 E)									
- Point									
Pratt 4G-29H 700'	0.00	0.00	8,030.0	700.0	830.7	1,249,961.03	3,134,612.56	40.018522	-105.019394
- survey misses target center by 9.4ft at 9035.3ft MD (8028.5 TVD, 700.3 N, 840.0 E)									
- Point									

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
17,630.0	7,947.4	9,291.0	732.3	Last CES Survey @ 17,630' MD
17,685.0	7,946.1	9,345.9	730.0	PTB @ 17,685' MD

Checked By: _____ Approved By: _____ Date: _____