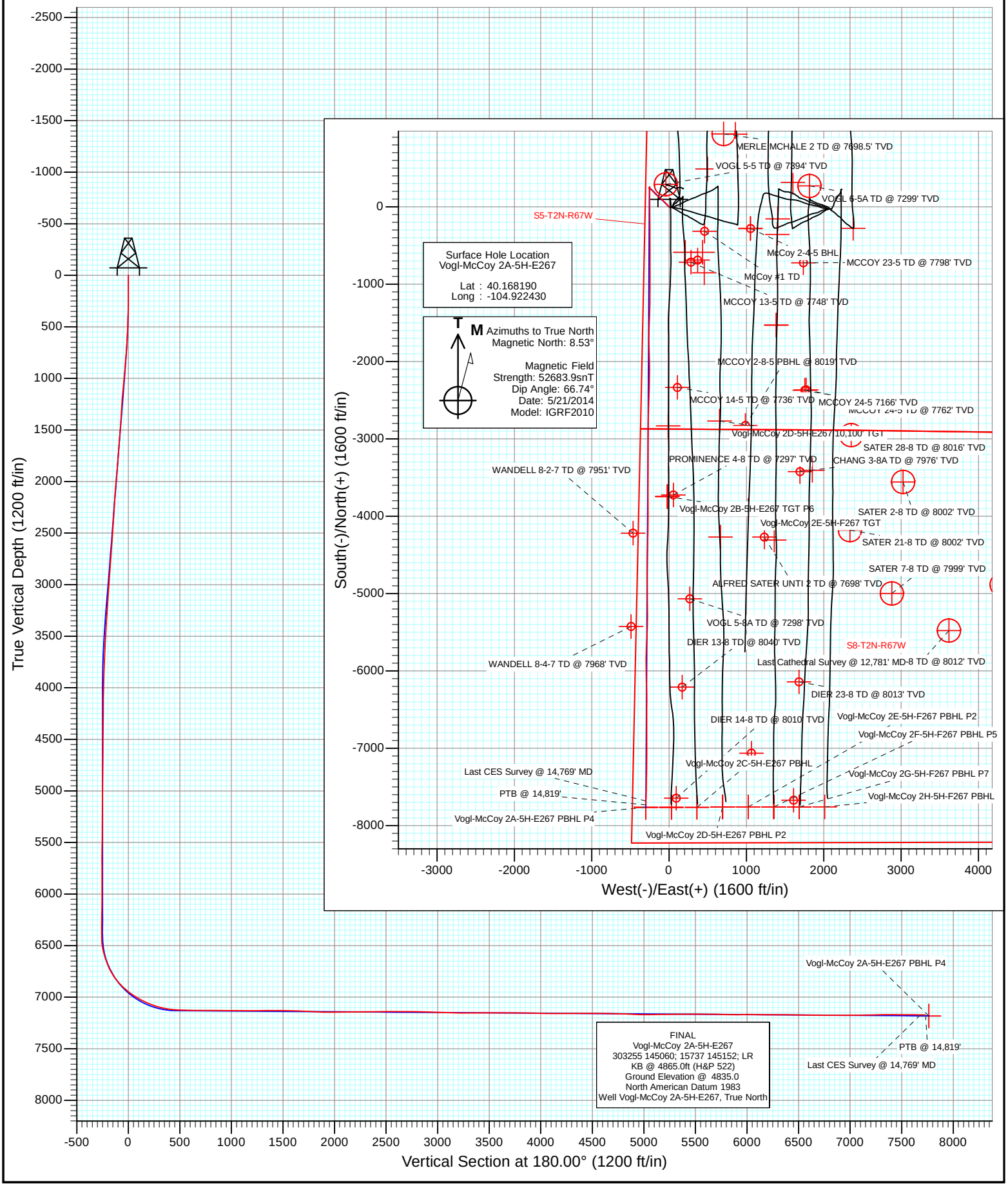
Project: DJ Wattenberg
Site: S5-T2N-R67W (Vogl-McCoy)
Well: Vogl-McCoy 2A-5H-E267
Wellbore: Hz
Design: FINAL



Project: DJ Wattenberg
Site: S5-T2N-R67W (Vogl-McCoy)
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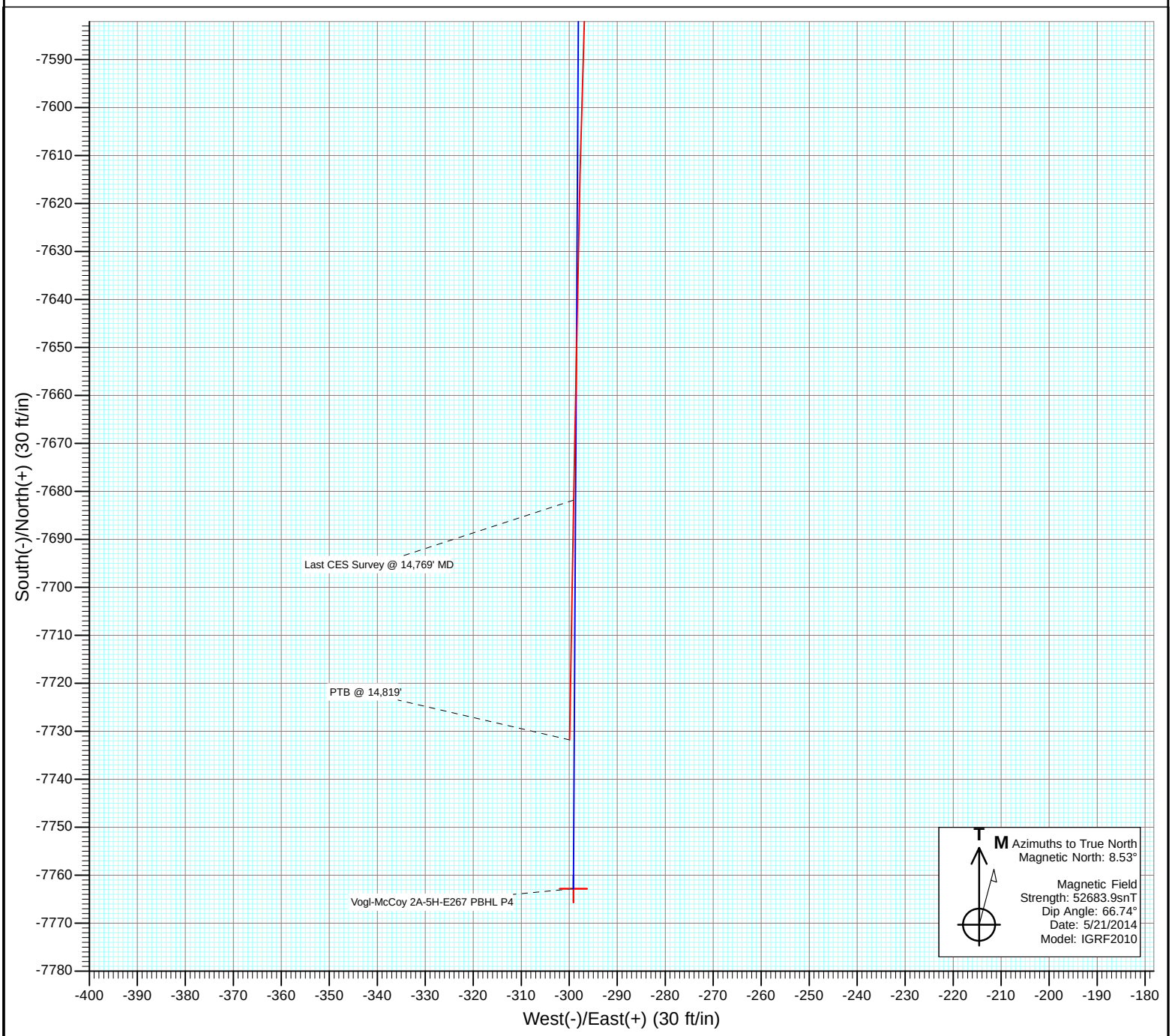
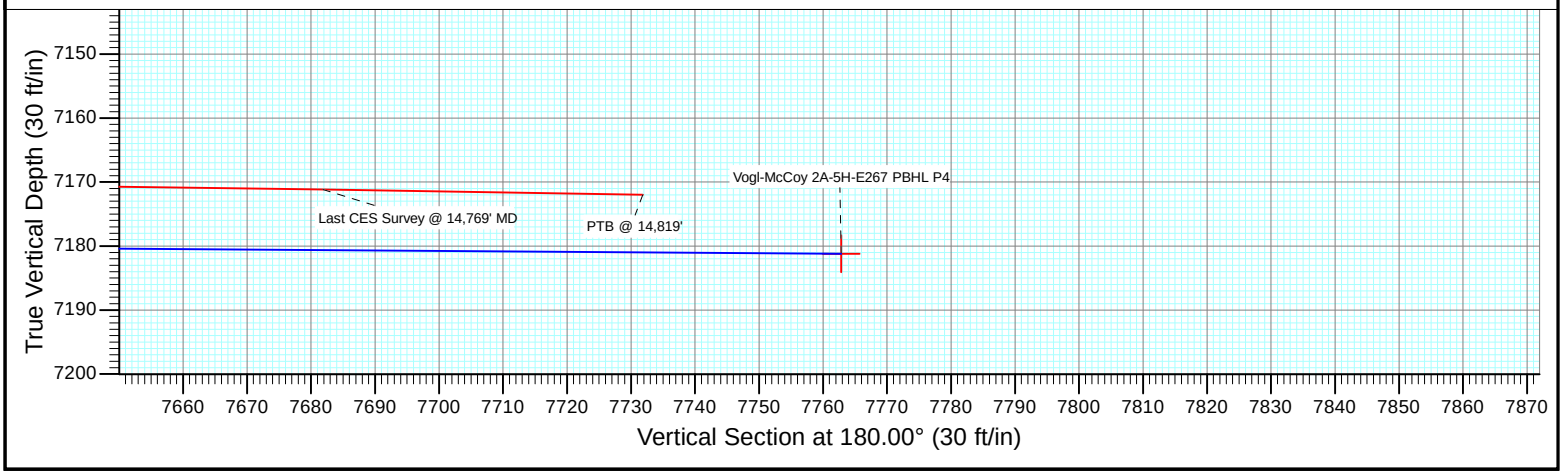
Design: FINAL





Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**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 S5-T2N-R67W (Vogl-McCoy)

Site Position:		**Northing:**	1,303,967.76 ft	**Latitude:**	40.166330
From:	Lat/Long	**Easting:**	3,161,787.74 ft	**Longitude:**	-104.921110
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.37 °

Well Vogl-McCoy 2A-5H-E267

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,304,642.89 ft	**Latitude:**	40.168190
	+E/-W	0.0 ft	**Easting:**	3,161,414.43 ft	**Longitude:**	-104.922430
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,835.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/21/2014	8.53	66.74	52,684

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	180.00

Survey Program **Date** 6/2/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
143.0	14,819.0	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	
143.0	0.26	147.60	143.0	-0.3	0.2	0.3	0.18	0.18	
235.0	0.18	338.76	235.0	-0.3	0.2	0.3	0.48	-0.09	
327.0	1.01	331.56	327.0	0.5	-0.2	-0.5	0.90	0.90	
419.0	2.11	317.50	419.0	2.5	-1.7	-2.5	1.26	1.20	
511.0	3.25	321.01	510.9	5.8	-4.5	-5.8	1.25	1.24	
603.0	4.61	316.79	602.6	10.5	-8.7	-10.5	1.51	1.48	
695.0	5.23	314.07	694.3	16.1	-14.2	-16.1	0.72	0.67	
787.0	6.15	314.33	785.8	22.5	-20.8	-22.5	1.00	1.00	
812.0	6.28	314.95	810.7	24.4	-22.7	-24.4	0.59	0.52	
912.0	6.90	319.80	910.0	32.8	-30.4	-32.8	0.83	0.62	
1,004.0	7.00	319.00	1,001.4	41.3	-37.7	-41.3	0.15	0.11	
1,096.0	7.20	320.70	1,092.7	50.0	-45.0	-50.0	0.32	0.22	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**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
1,187.0	7.00	308.10	1,183.0	57.8	-53.0	-57.8	1.72	-0.22	
1,279.0	5.80	308.10	1,274.4	64.1	-61.1	-64.1	1.30	-1.30	
1,371.0	5.60	304.10	1,365.9	69.5	-68.4	-69.5	0.48	-0.22	
1,463.0	5.90	317.60	1,457.5	75.5	-75.4	-75.5	1.50	0.33	
1,555.0	5.60	317.40	1,549.0	82.3	-81.6	-82.3	0.33	-0.33	
1,647.0	5.80	315.10	1,640.6	88.9	-87.9	-88.9	0.33	0.22	
1,739.0	5.80	320.20	1,732.1	95.8	-94.2	-95.8	0.56	0.00	
1,830.0	7.30	317.60	1,822.5	103.6	-101.0	-103.6	1.68	1.65	
1,922.0	8.10	309.40	1,913.7	112.0	-109.9	-112.0	1.48	0.87	
2,014.0	7.80	307.40	2,004.8	119.9	-119.9	-119.9	0.44	-0.33	
2,106.0	7.70	303.10	2,095.9	127.1	-130.0	-127.1	0.64	-0.11	
2,198.0	5.90	308.00	2,187.3	133.3	-138.9	-133.3	2.05	-1.96	
2,290.0	5.70	302.70	2,278.8	138.7	-146.5	-138.7	0.62	-0.22	
2,382.0	5.10	311.30	2,370.4	143.9	-153.4	-143.9	1.09	-0.65	
2,474.0	6.00	317.30	2,462.0	150.1	-159.7	-150.1	1.16	0.98	
2,566.0	5.80	316.10	2,553.5	157.0	-166.2	-157.0	0.26	-0.22	
2,658.0	6.10	314.70	2,645.0	163.8	-172.9	-163.8	0.36	0.33	
2,750.0	5.50	314.10	2,736.5	170.3	-179.6	-170.3	0.66	-0.65	
2,844.0	5.20	312.50	2,830.1	176.3	-185.9	-176.3	0.36	-0.32	
2,938.0	6.40	315.40	2,923.6	182.9	-192.8	-182.9	1.31	1.28	
3,033.0	5.90	318.10	3,018.1	190.3	-199.7	-190.3	0.61	-0.53	
3,127.0	5.10	314.60	3,111.7	196.9	-205.9	-196.9	0.92	-0.85	
3,221.0	4.50	311.40	3,205.3	202.2	-211.7	-202.2	0.70	-0.64	
3,315.0	5.80	313.20	3,298.9	207.9	-217.9	-207.9	1.39	1.38	
3,409.0	5.00	314.30	3,392.5	214.0	-224.3	-214.0	0.86	-0.85	
3,503.0	4.70	312.50	3,486.2	219.5	-230.1	-219.5	0.36	-0.32	
3,598.0	4.20	305.90	3,580.9	224.2	-235.8	-224.2	0.75	-0.53	
3,693.0	4.00	318.80	3,675.7	228.7	-240.8	-228.7	0.99	-0.21	
3,787.0	4.30	314.30	3,769.4	233.6	-245.5	-233.6	0.47	0.32	
3,882.0	2.90	310.00	3,864.2	237.7	-249.8	-237.7	1.50	-1.47	
3,977.0	2.50	306.30	3,959.1	240.4	-253.4	-240.4	0.46	-0.42	
4,072.0	1.20	276.30	4,054.1	241.8	-256.0	-241.8	1.66	-1.37	
4,166.0	1.70	278.00	4,148.0	242.1	-258.4	-242.1	0.53	0.53	
4,261.0	0.70	27.10	4,243.0	242.8	-259.5	-242.8	2.15	-1.05	
4,355.0	0.60	340.10	4,337.0	243.8	-259.4	-243.8	0.56	-0.11	
4,450.0	0.90	46.10	4,432.0	244.7	-259.0	-244.7	0.90	0.32	
4,545.0	0.60	13.90	4,527.0	245.7	-258.4	-245.7	0.53	-0.32	
4,639.0	0.50	1.10	4,621.0	246.6	-258.3	-246.6	0.17	-0.11	
4,734.0	0.50	12.00	4,716.0	247.5	-258.2	-247.5	0.10	0.00	
4,828.0	0.40	349.10	4,810.0	248.2	-258.1	-248.2	0.22	-0.11	
4,923.0	1.70	64.50	4,905.0	249.1	-256.9	-249.1	1.73	1.37	
5,018.0	1.10	65.50	5,000.0	250.1	-254.8	-250.1	0.63	-0.63	
5,112.0	1.00	63.40	5,093.9	250.8	-253.3	-250.8	0.11	-0.11	
5,207.0	1.00	64.20	5,188.9	251.6	-251.8	-251.6	0.01	0.00	
5,301.0	0.70	336.70	5,282.9	252.4	-251.3	-252.4	1.27	-0.32	
5,396.0	0.40	343.10	5,377.9	253.3	-251.6	-253.3	0.32	-0.32	
5,491.0	0.40	343.30	5,472.9	253.9	-251.8	-253.9	0.00	0.00	
5,585.0	0.60	346.20	5,566.9	254.7	-252.0	-254.7	0.21	0.21	
5,680.0	0.40	297.60	5,661.9	255.4	-252.4	-255.4	0.47	-0.21	
5,774.0	0.60	178.20	5,755.9	255.0	-252.7	-255.0	0.92	0.21	
5,869.0	0.50	191.70	5,850.9	254.1	-252.8	-254.1	0.17	-0.11	
5,964.0	0.70	39.00	5,945.9	254.2	-252.5	-254.2	1.23	0.21	
6,058.0	0.70	10.90	6,039.9	255.2	-252.0	-255.2	0.36	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**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
6,153.0	0.80	16.80	6,134.9	256.4	-251.7	-256.4	0.13	0.11	
6,247.0	0.80	15.70	6,228.9	257.6	-251.3	-257.6	0.02	0.00	
6,343.0	0.70	348.20	6,324.9	258.9	-251.3	-258.9	0.38	-0.10	
6,438.0	0.80	181.90	6,419.9	258.8	-251.4	-258.8	1.57	0.11	
6,485.0	4.70	185.80	6,466.8	256.5	-251.6	-256.5	8.30	8.30	
6,532.0	9.10	182.10	6,513.5	250.9	-252.0	-250.9	9.40	9.36	
6,580.0	14.20	178.70	6,560.4	241.2	-252.0	-241.2	10.72	10.62	
6,627.0	17.20	178.20	6,605.7	228.5	-251.6	-228.5	6.39	6.38	
6,675.0	20.10	179.90	6,651.2	213.1	-251.4	-213.1	6.15	6.04	
6,722.0	23.40	181.10	6,694.8	195.7	-251.5	-195.7	7.08	7.02	
6,769.0	27.00	180.40	6,737.3	175.7	-251.8	-175.7	7.69	7.66	
6,816.0	31.20	178.90	6,778.4	152.9	-251.6	-152.9	9.07	8.94	
6,864.0	36.40	179.60	6,818.3	126.2	-251.3	-126.2	10.86	10.83	
6,911.0	40.70	180.10	6,855.0	96.9	-251.2	-96.9	9.17	9.15	
6,959.0	45.30	179.70	6,890.1	64.2	-251.2	-64.2	9.60	9.58	
7,006.0	49.10	178.60	6,922.0	29.7	-250.6	-29.7	8.27	8.09	
7,053.0	52.70	179.00	6,951.7	-6.8	-249.9	6.8	7.69	7.66	
7,100.0	55.70	179.40	6,979.2	-44.9	-249.4	44.9	6.42	6.38	
7,148.0	59.30	179.80	7,005.0	-85.3	-249.1	85.3	7.53	7.50	
7,195.0	62.80	179.10	7,027.7	-126.5	-248.7	126.5	7.56	7.45	
7,242.0	65.50	178.70	7,048.2	-168.7	-247.9	168.7	5.80	5.74	
7,289.0	68.00	178.50	7,066.7	-211.9	-246.8	211.9	5.33	5.32	
7,337.0	71.80	179.50	7,083.2	-257.0	-246.0	257.0	8.15	7.92	
7,384.0	74.80	180.30	7,096.7	-302.0	-245.9	302.0	6.59	6.38	
7,432.0	78.20	180.70	7,107.9	-348.7	-246.4	348.7	7.13	7.08	
7,479.0	82.30	181.50	7,115.9	-395.0	-247.2	395.0	8.88	8.72	
7,505.0	83.80	181.60	7,119.0	-420.8	-247.9	420.8	5.78	5.77	
7,573.0	87.10	180.60	7,124.4	-488.5	-249.2	488.5	5.07	4.85	
7,667.0	88.80	179.40	7,127.8	-582.4	-249.2	582.4	2.21	1.81	
7,762.0	90.50	180.30	7,128.4	-677.4	-249.0	677.4	2.02	1.79	
7,857.0	89.10	179.20	7,128.7	-772.4	-248.6	772.4	1.87	-1.47	
7,951.0	89.30	178.80	7,130.0	-866.4	-246.9	866.4	0.48	0.21	
8,046.0	90.40	180.10	7,130.3	-961.4	-246.0	961.4	1.79	1.16	
8,144.0	89.30	181.10	7,130.5	-1,059.4	-247.1	1,059.4	1.52	-1.12	
8,236.0	90.20	180.30	7,130.9	-1,151.4	-248.2	1,151.4	1.31	0.98	
8,328.0	89.50	180.10	7,131.2	-1,243.4	-248.5	1,243.4	0.79	-0.76	
8,420.0	90.50	181.70	7,131.2	-1,335.4	-249.9	1,335.4	2.05	1.09	
8,512.0	90.70	182.70	7,130.2	-1,427.3	-253.5	1,427.3	1.11	0.22	
8,604.0	89.80	182.10	7,129.8	-1,519.2	-257.3	1,519.2	1.18	-0.98	
8,696.0	88.00	180.80	7,131.6	-1,611.2	-259.7	1,611.2	2.41	-1.96	
8,788.0	86.50	180.20	7,136.0	-1,703.0	-260.5	1,703.0	1.76	-1.63	
8,880.0	87.30	178.80	7,141.0	-1,794.9	-259.7	1,794.9	1.75	0.87	
8,972.0	88.90	178.30	7,144.0	-1,886.8	-257.3	1,886.8	1.82	1.74	
9,064.0	90.10	177.60	7,144.8	-1,978.7	-254.0	1,978.7	1.51	1.30	
9,156.0	90.40	179.70	7,144.4	-2,070.7	-251.9	2,070.7	2.31	0.33	
9,248.0	90.60	181.40	7,143.6	-2,162.7	-252.8	2,162.7	1.86	0.22	
9,339.0	90.90	181.70	7,142.4	-2,253.7	-255.2	2,253.7	0.47	0.33	
9,431.0	91.60	181.50	7,140.4	-2,345.6	-257.8	2,345.6	0.79	0.76	
9,523.0	90.40	181.60	7,138.8	-2,437.6	-260.3	2,437.6	1.31	-1.30	
9,615.0	89.80	181.80	7,138.6	-2,529.5	-263.0	2,529.5	0.69	-0.65	
9,707.0	89.60	181.30	7,139.1	-2,621.5	-265.5	2,621.5	0.59	-0.22	
9,799.0	88.90	181.10	7,140.3	-2,713.5	-267.4	2,713.5	0.79	-0.76	
9,891.0	89.80	181.00	7,141.4	-2,805.4	-269.1	2,805.4	0.98	0.98	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**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
9,983.0	87.80	181.20	7,143.3	-2,897.4	-270.9	2,897.4	2.18	-2.17	
10,075.0	88.10	180.40	7,146.6	-2,989.3	-272.1	2,989.3	0.93	0.33	
10,166.0	88.60	180.10	7,149.2	-3,080.3	-272.5	3,080.3	0.64	0.55	
10,258.0	88.50	179.70	7,151.5	-3,172.3	-272.4	3,172.3	0.45	-0.11	
10,350.0	89.90	179.90	7,152.8	-3,264.2	-272.1	3,264.2	1.54	1.52	
10,445.0	90.50	179.80	7,152.5	-3,359.2	-271.8	3,359.2	0.64	0.63	
10,539.0	91.10	180.20	7,151.2	-3,453.2	-271.8	3,453.2	0.77	0.64	
10,634.0	90.10	180.10	7,150.2	-3,548.2	-272.1	3,548.2	1.06	-1.05	
10,729.0	89.00	180.00	7,150.9	-3,643.2	-272.1	3,643.2	1.16	-1.16	
10,823.0	90.10	180.10	7,151.7	-3,737.2	-272.2	3,737.2	1.18	1.17	
10,918.0	88.80	179.90	7,152.6	-3,832.2	-272.2	3,832.2	1.38	-1.37	
11,013.0	88.80	180.10	7,154.6	-3,927.2	-272.2	3,927.2	0.21	0.00	
11,107.0	89.10	179.70	7,156.3	-4,021.2	-272.1	4,021.2	0.53	0.32	
11,202.0	89.80	180.80	7,157.2	-4,116.2	-272.5	4,116.2	1.37	0.74	
11,296.0	90.20	181.10	7,157.2	-4,210.1	-274.0	4,210.1	0.53	0.43	
11,391.0	90.20	180.20	7,156.9	-4,305.1	-275.1	4,305.1	0.95	0.00	
11,486.0	90.80	181.40	7,156.1	-4,400.1	-276.4	4,400.1	1.41	0.63	
11,580.0	90.20	181.70	7,155.2	-4,494.1	-279.0	4,494.1	0.71	-0.64	
11,675.0	88.70	181.40	7,156.1	-4,589.0	-281.6	4,589.0	1.61	-1.58	
11,769.0	88.50	180.90	7,158.4	-4,683.0	-283.4	4,683.0	0.57	-0.21	
11,864.0	87.30	179.90	7,161.9	-4,777.9	-284.1	4,777.9	1.64	-1.26	
11,959.0	88.00	179.30	7,165.8	-4,872.8	-283.4	4,872.8	0.97	0.74	
12,053.0	89.10	179.20	7,168.2	-4,966.8	-282.2	4,966.8	1.18	1.17	
12,147.0	90.60	179.30	7,168.4	-5,060.8	-281.0	5,060.8	1.60	1.60	
12,242.0	90.60	179.20	7,167.4	-5,155.8	-279.7	5,155.8	0.11	0.00	
12,336.0	90.90	179.60	7,166.2	-5,249.8	-278.8	5,249.8	0.53	0.32	
12,431.0	90.50	181.70	7,165.1	-5,344.7	-279.8	5,344.7	2.25	-0.42	
12,525.0	90.50	181.10	7,164.2	-5,438.7	-282.1	5,438.7	0.64	0.00	
12,620.0	89.50	181.60	7,164.2	-5,533.7	-284.4	5,533.7	1.18	-1.05	
12,715.0	89.90	183.90	7,164.7	-5,628.6	-288.9	5,628.6	2.46	0.42	
12,809.0	88.00	183.30	7,166.5	-5,722.4	-294.8	5,722.4	2.12	-2.02	
12,904.0	88.70	180.60	7,169.2	-5,817.3	-298.1	5,817.3	2.93	0.74	
12,999.0	90.90	178.70	7,169.5	-5,912.2	-297.5	5,912.2	3.06	2.32	
13,093.0	91.00	179.10	7,168.0	-6,006.2	-295.7	6,006.2	0.44	0.11	
13,187.0	88.80	178.60	7,168.1	-6,100.2	-293.8	6,100.2	2.40	-2.34	
13,282.0	89.70	178.40	7,169.4	-6,195.2	-291.3	6,195.2	0.97	0.95	
13,377.0	89.50	178.80	7,170.0	-6,290.1	-289.0	6,290.1	0.47	-0.21	
13,471.0	90.50	180.60	7,170.0	-6,384.1	-288.5	6,384.1	2.19	1.06	
13,566.0	88.60	180.40	7,170.8	-6,479.1	-289.3	6,479.1	2.01	-2.00	
13,660.0	88.70	179.70	7,173.0	-6,573.1	-289.4	6,573.1	0.75	0.11	
13,755.0	89.30	180.70	7,174.7	-6,668.1	-289.7	6,668.1	1.23	0.63	
13,849.0	90.20	179.80	7,175.1	-6,762.1	-290.1	6,762.1	1.35	0.96	
13,944.0	89.40	178.90	7,175.4	-6,857.1	-289.1	6,857.1	1.27	-0.84	
14,038.0	90.00	180.10	7,175.9	-6,951.1	-288.2	6,951.1	1.43	0.64	
14,133.0	91.20	180.30	7,174.9	-7,046.1	-288.6	7,046.1	1.28	1.26	
14,228.0	92.00	180.10	7,172.2	-7,141.0	-288.9	7,141.0	0.87	0.84	
14,322.0	91.20	181.00	7,169.6	-7,235.0	-289.8	7,235.0	1.28	-0.85	
14,417.0	89.70	180.60	7,168.9	-7,330.0	-291.1	7,330.0	1.63	-1.58	
14,511.0	90.00	181.10	7,169.1	-7,424.0	-292.5	7,424.0	0.62	0.32	
14,606.0	89.60	182.00	7,169.4	-7,518.9	-295.1	7,518.9	1.04	-0.42	
14,701.0	89.40	181.20	7,170.3	-7,613.9	-297.7	7,613.9	0.87	-0.21	
14,769.0	89.10	181.00	7,171.2	-7,681.8	-299.1	7,681.8	0.53	-0.44	**Last CES Survey @ 14,769' MD**
14,819.0	89.10	181.00	7,172.0	-7,731.8	-299.9	7,731.8	0.00	0.00	**PTB @ 14,819'**

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**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

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
Vogl-McCoy 2A-5H-E26	0.00	0.00	7,181.2	-7,762.8	-299.1	1,296,878.28	3,161,165.88	40.146880	-104.923500
- actual wellpath misses target center by 32.4ft at 14819.0ft MD (7172.0 TVD, -7731.8 N, -299.9 E)									
- Point									
Vogl-McCoy 2A-5H-E26	0.00	0.00	7,130.0	-7,762.8	-299.1	1,296,878.28	3,161,165.88	40.146880	-104.923500
- actual wellpath misses target center by 52.2ft at 14819.0ft MD (7172.0 TVD, -7731.8 N, -299.9 E)									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
14,769.0	7,171.2	-7,681.8	-299.1	Last CES Survey @ 14,769' MD
14,819.0	7,172.0	-7,731.8	-299.9	PTB @ 14,819'

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S5-T2N-R67W (Vogl-McCoy)
Vogl-McCoy 2A-5H-E267

Hz

Design: FINAL

Survey Report - Geographic

02 June, 2014

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**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 S5-T2N-R67W (Vogl-McCoy)

Site Position:		**Northing:**	1,303,967.76 ft	**Latitude:**	40.166330
From:	Lat/Long	**Easting:**	3,161,787.74 ft	**Longitude:**	-104.921110
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.37 °

Well Vogl-McCoy 2A-5H-E267

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,304,642.89 ft	**Latitude:**	40.168190
	+E/-W	0.0 ft	**Easting:**	3,161,414.43 ft	**Longitude:**	-104.922430
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,835.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/21/2014	8.53	66.74	52,684

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	180.00

Survey Program **Date** 6/2/2014

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
143.0	14,819.0	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	1,304,642.89	3,161,414.43	40.168190	-104.922430
143.0	0.26	147.60	143.0	-0.3	0.2	1,304,642.62	3,161,414.61	40.168189	-104.922430
235.0	0.18	338.76	235.0	-0.3	0.2	1,304,642.57	3,161,414.67	40.168189	-104.922429
327.0	1.01	331.56	327.0	0.5	-0.2	1,304,643.42	3,161,414.23	40.168192	-104.922431
419.0	2.11	317.50	419.0	2.5	-1.7	1,304,645.37	3,161,412.68	40.168197	-104.922436
511.0	3.25	321.01	510.9	5.8	-4.5	1,304,648.63	3,161,409.88	40.168206	-104.922446
603.0	4.61	316.79	602.6	10.5	-8.7	1,304,653.32	3,161,405.67	40.168219	-104.922461
695.0	5.23	314.07	694.3	16.1	-14.2	1,304,658.90	3,161,400.09	40.168234	-104.922481
787.0	6.15	314.33	785.8	22.5	-20.8	1,304,665.22	3,161,393.51	40.168252	-104.922505
812.0	6.28	314.95	810.7	24.4	-22.7	1,304,667.11	3,161,391.57	40.168257	-104.922511
912.0	6.90	319.80	910.0	32.8	-30.4	1,304,675.51	3,161,383.77	40.168280	-104.922539
1,004.0	7.00	319.00	1,001.4	41.3	-37.7	1,304,683.91	3,161,376.47	40.168303	-104.922565

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**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)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
1,096.0	7.20	320.70	1,092.7	50.0	-45.0	1,304,692.56	3,161,369.09	40.168327	-104.922591
1,187.0	7.00	308.10	1,183.0	57.8	-53.0	1,304,700.34	3,161,361.06	40.168349	-104.922620
1,279.0	5.80	308.10	1,274.4	64.1	-61.1	1,304,706.61	3,161,352.95	40.168366	-104.922649
1,371.0	5.60	304.10	1,365.9	69.5	-68.4	1,304,711.95	3,161,345.54	40.168381	-104.922675
1,463.0	5.90	317.60	1,457.5	75.5	-75.4	1,304,717.91	3,161,338.59	40.168397	-104.922700
1,555.0	5.60	317.40	1,549.0	82.3	-81.6	1,304,724.67	3,161,332.32	40.168416	-104.922722
1,647.0	5.80	315.10	1,640.6	88.9	-87.9	1,304,731.23	3,161,325.96	40.168434	-104.922745
1,739.0	5.80	320.20	1,732.1	95.8	-94.2	1,304,738.05	3,161,319.66	40.168453	-104.922767
1,830.0	7.30	317.60	1,822.5	103.6	-101.0	1,304,745.81	3,161,312.77	40.168474	-104.922792
1,922.0	8.10	309.40	1,913.7	112.0	-109.9	1,304,754.18	3,161,303.76	40.168498	-104.922824
2,014.0	7.80	307.40	2,004.8	119.9	-119.9	1,304,762.02	3,161,293.74	40.168519	-104.922859
2,106.0	7.70	303.10	2,095.9	127.1	-130.0	1,304,769.11	3,161,283.57	40.168539	-104.922896
2,198.0	5.90	308.00	2,187.3	133.3	-138.9	1,304,775.33	3,161,274.64	40.168556	-104.922927
2,290.0	5.70	302.70	2,278.8	138.7	-146.5	1,304,780.66	3,161,267.04	40.168571	-104.922954
2,382.0	5.10	311.30	2,370.4	143.9	-153.4	1,304,785.78	3,161,260.09	40.168585	-104.922979
2,474.0	6.00	317.30	2,462.0	150.1	-159.7	1,304,791.97	3,161,253.71	40.168602	-104.923002
2,566.0	5.80	316.10	2,553.5	157.0	-166.2	1,304,798.81	3,161,247.18	40.168621	-104.923025
2,658.0	6.10	314.70	2,645.0	163.8	-172.9	1,304,805.56	3,161,240.44	40.168640	-104.923049
2,750.0	5.50	314.10	2,736.5	170.3	-179.6	1,304,812.02	3,161,233.76	40.168658	-104.923073
2,844.0	5.20	312.50	2,830.1	176.3	-185.9	1,304,817.99	3,161,227.34	40.168674	-104.923096
2,938.0	6.40	315.40	2,923.6	182.9	-192.8	1,304,824.56	3,161,220.48	40.168692	-104.923120
3,033.0	5.90	318.10	3,018.1	190.3	-199.7	1,304,831.92	3,161,213.45	40.168713	-104.923145
3,127.0	5.10	314.60	3,111.7	196.9	-205.9	1,304,838.40	3,161,207.21	40.168730	-104.923167
3,221.0	4.50	311.40	3,205.3	202.2	-211.7	1,304,843.74	3,161,201.43	40.168745	-104.923188
3,315.0	5.80	313.20	3,298.9	207.9	-217.9	1,304,849.39	3,161,195.17	40.168761	-104.923210
3,409.0	5.00	314.30	3,392.5	214.0	-224.3	1,304,855.46	3,161,188.73	40.168778	-104.923233
3,503.0	4.70	312.50	3,486.2	219.5	-230.1	1,304,860.88	3,161,182.93	40.168793	-104.923254
3,598.0	4.20	305.90	3,580.9	224.2	-235.8	1,304,865.52	3,161,177.21	40.168805	-104.923274
3,693.0	4.00	318.80	3,675.7	228.7	-240.8	1,304,870.02	3,161,172.18	40.168818	-104.923292
3,787.0	4.30	314.30	3,769.4	233.6	-245.5	1,304,874.91	3,161,167.47	40.168831	-104.923309
3,882.0	2.90	310.00	3,864.2	237.7	-249.8	1,304,878.92	3,161,163.05	40.168842	-104.923324
3,977.0	2.50	306.30	3,959.1	240.4	-253.4	1,304,881.67	3,161,159.52	40.168850	-104.923337
4,072.0	1.20	276.30	4,054.1	241.8	-256.0	1,304,882.99	3,161,156.85	40.168854	-104.923346
4,166.0	1.70	278.00	4,148.0	242.1	-258.4	1,304,883.27	3,161,154.49	40.168855	-104.923355
4,261.0	0.70	27.10	4,243.0	242.8	-259.5	1,304,883.98	3,161,153.36	40.168857	-104.923359
4,355.0	0.60	340.10	4,337.0	243.8	-259.4	1,304,884.95	3,161,153.45	40.168859	-104.923359
4,450.0	0.90	46.10	4,432.0	244.7	-259.0	1,304,885.94	3,161,153.81	40.168862	-104.923357
4,545.0	0.60	13.90	4,527.0	245.7	-258.4	1,304,886.94	3,161,154.46	40.168865	-104.923355
4,639.0	0.50	1.10	4,621.0	246.6	-258.3	1,304,887.83	3,161,154.58	40.168867	-104.923354
4,734.0	0.50	12.00	4,716.0	247.5	-258.2	1,304,888.65	3,161,154.67	40.168869	-104.923354
4,828.0	0.40	349.10	4,810.0	248.2	-258.1	1,304,889.38	3,161,154.69	40.168871	-104.923354
4,923.0	1.70	64.50	4,905.0	249.1	-256.9	1,304,890.32	3,161,155.89	40.168874	-104.923350
5,018.0	1.10	65.50	5,000.0	250.1	-254.8	1,304,891.32	3,161,157.98	40.168877	-104.923342
5,112.0	1.00	63.40	5,093.9	250.8	-253.3	1,304,892.07	3,161,159.53	40.168879	-104.923337
5,207.0	1.00	64.20	5,188.9	251.6	-251.8	1,304,892.81	3,161,161.02	40.168881	-104.923331
5,301.0	0.70	336.70	5,282.9	252.4	-251.3	1,304,893.70	3,161,161.52	40.168883	-104.923329
5,396.0	0.40	343.10	5,377.9	253.3	-251.6	1,304,894.54	3,161,161.19	40.168885	-104.923331
5,491.0	0.40	343.30	5,472.9	253.9	-251.8	1,304,895.18	3,161,160.99	40.168887	-104.923331
5,585.0	0.60	346.20	5,566.9	254.7	-252.0	1,304,895.97	3,161,160.78	40.168889	-104.923332
5,680.0	0.40	297.60	5,661.9	255.4	-252.4	1,304,896.60	3,161,160.36	40.168891	-104.923333
5,774.0	0.60	178.20	5,755.9	255.0	-252.7	1,304,896.26	3,161,160.09	40.168890	-104.923334
5,869.0	0.50	191.70	5,850.9	254.1	-252.8	1,304,895.36	3,161,160.03	40.168888	-104.923335
5,964.0	0.70	39.00	5,945.9	254.2	-252.5	1,304,895.40	3,161,160.31	40.168888	-104.923334
6,058.0	0.70	10.90	6,039.9	255.2	-252.0	1,304,896.42	3,161,160.77	40.168891	-104.923332
6,153.0	0.80	16.80	6,134.9	256.4	-251.7	1,304,897.62	3,161,161.06	40.168894	-104.923331

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**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)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
6,247.0	0.80	15.70	6,228.9	257.6	-251.3	1,304,898.89	3,161,161.42	40.168897	-104.923330
6,343.0	0.70	348.20	6,324.9	258.9	-251.3	1,304,900.11	3,161,161.48	40.168901	-104.923329
6,438.0	0.80	181.90	6,419.9	258.8	-251.4	1,304,900.01	3,161,161.34	40.168900	-104.923330
6,485.0	4.70	185.80	6,466.8	256.5	-251.6	1,304,897.76	3,161,161.14	40.168894	-104.923331
6,532.0	9.10	182.10	6,513.5	250.9	-252.0	1,304,892.13	3,161,160.85	40.168879	-104.923332
6,580.0	14.20	178.70	6,560.4	241.2	-252.0	1,304,882.44	3,161,160.91	40.168852	-104.923332
6,627.0	17.20	178.20	6,605.7	228.5	-251.6	1,304,869.74	3,161,161.34	40.168817	-104.923331
6,675.0	20.10	179.90	6,651.2	213.1	-251.4	1,304,854.39	3,161,161.68	40.168775	-104.923330
6,722.0	23.40	181.10	6,694.8	195.7	-251.5	1,304,836.98	3,161,161.63	40.168727	-104.923330
6,769.0	27.00	180.40	6,737.3	175.7	-251.8	1,304,816.97	3,161,161.50	40.168672	-104.923331
6,816.0	31.20	178.90	6,778.4	152.9	-251.6	1,304,794.12	3,161,161.81	40.168610	-104.923331
6,864.0	36.40	179.60	6,818.3	126.2	-251.3	1,304,767.44	3,161,162.32	40.168536	-104.923329
6,911.0	40.70	180.10	6,855.0	96.9	-251.2	1,304,738.15	3,161,162.58	40.168456	-104.923329
6,959.0	45.30	179.70	6,890.1	64.2	-251.2	1,304,705.43	3,161,162.86	40.168366	-104.923329
7,006.0	49.10	178.60	6,922.0	29.7	-250.6	1,304,670.96	3,161,163.60	40.168272	-104.923327
7,053.0	52.70	179.00	6,951.7	-6.8	-249.9	1,304,634.50	3,161,164.60	40.168171	-104.923324
7,100.0	55.70	179.40	6,979.2	-44.9	-249.4	1,304,596.40	3,161,165.38	40.168067	-104.923323
7,148.0	59.30	179.80	7,005.0	-85.3	-249.1	1,304,555.92	3,161,165.92	40.167956	-104.923322
7,195.0	62.80	179.10	7,027.7	-126.5	-248.7	1,304,514.81	3,161,166.59	40.167843	-104.923320
7,242.0	65.50	178.70	7,048.2	-168.7	-247.9	1,304,472.53	3,161,167.68	40.167727	-104.923317
7,289.0	68.00	178.50	7,066.7	-211.9	-246.8	1,304,429.37	3,161,169.02	40.167608	-104.923313
7,337.0	71.80	179.50	7,083.2	-257.0	-246.0	1,304,384.31	3,161,170.09	40.167485	-104.923311
7,384.0	74.80	180.30	7,096.7	-302.0	-245.9	1,304,339.30	3,161,170.46	40.167361	-104.923310
7,432.0	78.20	180.70	7,107.9	-348.7	-246.4	1,304,292.64	3,161,170.36	40.167233	-104.923312
7,479.0	82.30	181.50	7,115.9	-395.0	-247.2	1,304,246.33	3,161,169.77	40.167106	-104.923315
7,505.0	83.80	181.60	7,119.0	-420.8	-247.9	1,304,220.53	3,161,169.24	40.167035	-104.923317
7,573.0	87.10	180.60	7,124.4	-488.5	-249.2	1,304,152.77	3,161,168.38	40.166849	-104.923322
7,667.0	88.80	179.40	7,127.8	-582.4	-249.2	1,304,058.84	3,161,168.99	40.166591	-104.923322
7,762.0	90.50	180.30	7,128.4	-677.4	-249.0	1,303,963.85	3,161,169.86	40.166330	-104.923321
7,857.0	89.10	179.20	7,128.7	-772.4	-248.6	1,303,868.86	3,161,170.89	40.166070	-104.923320
7,951.0	89.30	178.80	7,130.0	-866.4	-246.9	1,303,774.90	3,161,173.14	40.165812	-104.923314
8,046.0	90.40	180.10	7,130.3	-961.4	-246.0	1,303,679.91	3,161,174.67	40.165551	-104.923311
8,144.0	89.30	181.10	7,130.5	-1,059.4	-247.1	1,303,581.92	3,161,174.29	40.165282	-104.923314
8,236.0	90.20	180.30	7,130.9	-1,151.4	-248.2	1,303,489.92	3,161,173.76	40.165029	-104.923318
8,328.0	89.50	180.10	7,131.2	-1,243.4	-248.5	1,303,397.92	3,161,174.04	40.164777	-104.923319
8,420.0	90.50	181.70	7,131.2	-1,335.4	-249.9	1,303,305.93	3,161,173.19	40.164524	-104.923325
8,512.0	90.70	182.70	7,130.2	-1,427.3	-253.5	1,303,213.98	3,161,170.26	40.164272	-104.923337
8,604.0	89.80	182.10	7,129.8	-1,519.2	-257.3	1,303,122.04	3,161,167.01	40.164020	-104.923351
8,696.0	88.00	180.80	7,131.6	-1,611.2	-259.7	1,303,030.08	3,161,165.28	40.163767	-104.923359
8,788.0	86.50	180.20	7,136.0	-1,703.0	-260.5	1,302,938.19	3,161,165.08	40.163515	-104.923362
8,880.0	87.30	178.80	7,141.0	-1,794.9	-259.7	1,302,846.34	3,161,166.48	40.163263	-104.923359
8,972.0	88.90	178.30	7,144.0	-1,886.8	-257.3	1,302,754.44	3,161,169.40	40.163010	-104.923351
9,064.0	90.10	177.60	7,144.8	-1,978.7	-254.0	1,302,662.53	3,161,173.29	40.162758	-104.923339
9,156.0	90.40	179.70	7,144.4	-2,070.7	-251.9	1,302,570.58	3,161,176.06	40.162506	-104.923331
9,248.0	90.60	181.40	7,143.6	-2,162.7	-252.8	1,302,478.58	3,161,175.77	40.162253	-104.923335
9,339.0	90.90	181.70	7,142.4	-2,253.7	-255.2	1,302,387.61	3,161,173.90	40.162003	-104.923343
9,431.0	91.60	181.50	7,140.4	-2,345.6	-257.8	1,302,295.65	3,161,171.94	40.161751	-104.923353
9,523.0	90.40	181.60	7,138.8	-2,437.6	-260.3	1,302,203.69	3,161,170.05	40.161499	-104.923361
9,615.0	89.80	181.80	7,138.6	-2,529.5	-263.0	1,302,111.71	3,161,167.92	40.161246	-104.923371
9,707.0	89.60	181.30	7,139.1	-2,621.5	-265.5	1,302,019.73	3,161,166.03	40.160994	-104.923380
9,799.0	88.90	181.10	7,140.3	-2,713.5	-267.4	1,301,927.75	3,161,164.70	40.160741	-104.923387
9,891.0	89.80	181.00	7,141.4	-2,805.4	-269.1	1,301,835.77	3,161,163.61	40.160489	-104.923393
9,983.0	87.80	181.20	7,143.3	-2,897.4	-270.9	1,301,743.80	3,161,162.45	40.160236	-104.923399
10,075.0	88.10	180.40	7,146.6	-2,989.3	-272.1	1,301,651.86	3,161,161.76	40.159984	-104.923404
10,166.0	88.60	180.10	7,149.2	-3,080.3	-272.5	1,301,560.90	3,161,161.96	40.159734	-104.923405

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**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)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
10,258.0	88.50	179.70	7,151.5	-3,172.3	-272.4	1,301,468.93	3,161,162.72	40.159482	-104.923405
10,350.0	89.90	179.90	7,152.8	-3,264.2	-272.1	1,301,376.95	3,161,163.64	40.159229	-104.923404
10,445.0	90.50	179.80	7,152.5	-3,359.2	-271.8	1,301,281.95	3,161,164.50	40.158969	-104.923403
10,539.0	91.10	180.20	7,151.2	-3,453.2	-271.8	1,301,187.96	3,161,165.12	40.158710	-104.923403
10,634.0	90.10	180.10	7,150.2	-3,548.2	-272.1	1,301,092.97	3,161,165.49	40.158450	-104.923404
10,729.0	89.00	180.00	7,150.9	-3,643.2	-272.1	1,300,997.98	3,161,166.02	40.158189	-104.923404
10,823.0	90.10	180.10	7,151.7	-3,737.2	-272.2	1,300,903.98	3,161,166.55	40.157931	-104.923404
10,918.0	88.80	179.90	7,152.6	-3,832.2	-272.2	1,300,808.99	3,161,167.17	40.157670	-104.923404
11,013.0	88.80	180.10	7,154.6	-3,927.2	-272.2	1,300,714.01	3,161,167.79	40.157409	-104.923404
11,107.0	89.10	179.70	7,156.3	-4,021.2	-272.1	1,300,620.03	3,161,168.57	40.157151	-104.923404
11,202.0	89.80	180.80	7,157.2	-4,116.2	-272.5	1,300,525.04	3,161,168.77	40.156891	-104.923405
11,296.0	90.20	181.10	7,157.2	-4,210.1	-274.0	1,300,431.05	3,161,167.82	40.156633	-104.923411
11,391.0	90.20	180.20	7,156.9	-4,305.1	-275.1	1,300,336.05	3,161,167.36	40.156372	-104.923415
11,486.0	90.80	181.40	7,156.1	-4,400.1	-276.4	1,300,241.06	3,161,166.66	40.156111	-104.923419
11,580.0	90.20	181.70	7,155.2	-4,494.1	-279.0	1,300,147.08	3,161,164.73	40.155853	-104.923428
11,675.0	88.70	181.40	7,156.1	-4,589.0	-281.6	1,300,052.11	3,161,162.78	40.155593	-104.923438
11,769.0	88.50	180.90	7,158.4	-4,683.0	-283.4	1,299,958.14	3,161,161.50	40.155335	-104.923444
11,864.0	87.30	179.90	7,161.9	-4,777.9	-284.1	1,299,863.21	3,161,161.46	40.155074	-104.923447
11,959.0	88.00	179.30	7,165.8	-4,872.8	-283.4	1,299,768.30	3,161,162.74	40.154813	-104.923444
12,053.0	89.10	179.20	7,168.2	-4,966.8	-282.2	1,299,674.35	3,161,164.58	40.154556	-104.923440
12,147.0	90.60	179.30	7,168.4	-5,060.8	-281.0	1,299,580.37	3,161,166.42	40.154298	-104.923435
12,242.0	90.60	179.20	7,167.4	-5,155.8	-279.7	1,299,485.40	3,161,168.28	40.154037	-104.923431
12,336.0	90.90	179.60	7,166.2	-5,249.8	-278.8	1,299,391.42	3,161,169.88	40.153779	-104.923428
12,431.0	90.50	181.70	7,165.1	-5,344.7	-279.8	1,299,296.43	3,161,169.42	40.153518	-104.923431
12,525.0	90.50	181.10	7,164.2	-5,438.7	-282.1	1,299,202.45	3,161,167.74	40.153260	-104.923440
12,620.0	89.50	181.60	7,164.2	-5,533.7	-284.4	1,299,107.47	3,161,166.12	40.152999	-104.923448
12,715.0	89.90	183.90	7,164.7	-5,628.6	-288.9	1,299,012.55	3,161,162.18	40.152739	-104.923464
12,809.0	88.00	183.30	7,166.5	-5,722.4	-294.8	1,298,918.72	3,161,156.89	40.152481	-104.923485
12,904.0	88.70	180.60	7,169.2	-5,817.3	-298.1	1,298,823.81	3,161,154.28	40.152221	-104.923497
12,999.0	90.90	178.70	7,169.5	-5,912.2	-297.5	1,298,728.83	3,161,155.47	40.151960	-104.923494
13,093.0	91.00	179.10	7,168.0	-6,006.2	-295.7	1,298,634.87	3,161,157.89	40.151702	-104.923488
13,187.0	88.80	178.60	7,168.1	-6,100.2	-293.8	1,298,540.91	3,161,160.39	40.151444	-104.923481
13,282.0	89.70	178.40	7,169.4	-6,195.2	-291.3	1,298,445.97	3,161,163.49	40.151184	-104.923472
13,377.0	89.50	178.80	7,170.0	-6,290.1	-289.0	1,298,351.02	3,161,166.43	40.150923	-104.923464
13,471.0	90.50	180.60	7,170.0	-6,384.1	-288.5	1,298,257.03	3,161,167.54	40.150665	-104.923462
13,566.0	88.60	180.40	7,170.8	-6,479.1	-289.3	1,298,162.04	3,161,167.33	40.150404	-104.923465
13,660.0	88.70	179.70	7,173.0	-6,573.1	-289.4	1,298,068.04	3,161,167.86	40.150146	-104.923466
13,755.0	89.30	180.70	7,174.7	-6,668.1	-289.7	1,297,973.06	3,161,168.15	40.149885	-104.923467
13,849.0	90.20	179.80	7,175.1	-6,762.1	-290.1	1,297,879.06	3,161,168.35	40.149627	-104.923468
13,944.0	89.40	178.90	7,175.4	-6,857.1	-289.1	1,297,784.08	3,161,170.04	40.149366	-104.923464
14,038.0	90.00	180.10	7,175.9	-6,951.1	-288.2	1,297,690.09	3,161,171.48	40.149108	-104.923461
14,133.0	91.20	180.30	7,174.9	-7,046.1	-288.6	1,297,595.10	3,161,171.76	40.148848	-104.923463
14,228.0	92.00	180.10	7,172.2	-7,141.0	-288.9	1,297,500.14	3,161,172.05	40.148587	-104.923464
14,322.0	91.20	181.00	7,169.6	-7,235.0	-289.8	1,297,406.17	3,161,171.76	40.148329	-104.923467
14,417.0	89.70	180.60	7,168.9	-7,330.0	-291.1	1,297,311.18	3,161,171.05	40.148068	-104.923472
14,511.0	90.00	181.10	7,169.1	-7,424.0	-292.5	1,297,217.19	3,161,170.27	40.147810	-104.923477
14,606.0	89.60	182.00	7,169.4	-7,518.9	-295.1	1,297,122.21	3,161,168.32	40.147550	-104.923486
14,701.0	89.40	181.20	7,170.3	-7,613.9	-297.7	1,297,027.23	3,161,166.29	40.147289	-104.923495
14,769.0	89.10	181.00	7,171.2	-7,681.8	-299.1	1,296,959.27	3,161,165.42	40.147102	-104.923500
Last CES Survey @ 14,769' MD									
14,819.0	89.10	181.00	7,172.0	-7,731.8	-299.9	1,296,909.28	3,161,164.88	40.146965	-104.923503
PTB @ 14,819'									

Cathedral Energy Services

Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2A-5H-E267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4865.0ft (H&P 522)
Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4865.0ft (H&P 522)
Well:	Vogl-McCoy 2A-5H-E267	**North Reference:**	True
Wellbore:	Hz	**Survey Calculation Method:**	Minimum Curvature
Design:	FINAL	**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
Vogl-McCoy 2A-5H-E26	0.00	0.00	7,181.2	-7,762.8	-299.1	1,296,878.28	3,161,165.88	40.146880	-104.923500
- actual wellpath misses target center by 32.4ft at 14819.0ft MD (7172.0 TVD, -7731.8 N, -299.9 E)									
- Point									

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
14,769.0	7,171.2	-7,681.8	-299.1	Last CES Survey @ 14,769' MD
14,819.0	7,172.0	-7,731.8	-299.9	PTB @ 14,819'

Checked By: _____ Approved By: _____ Date: _____