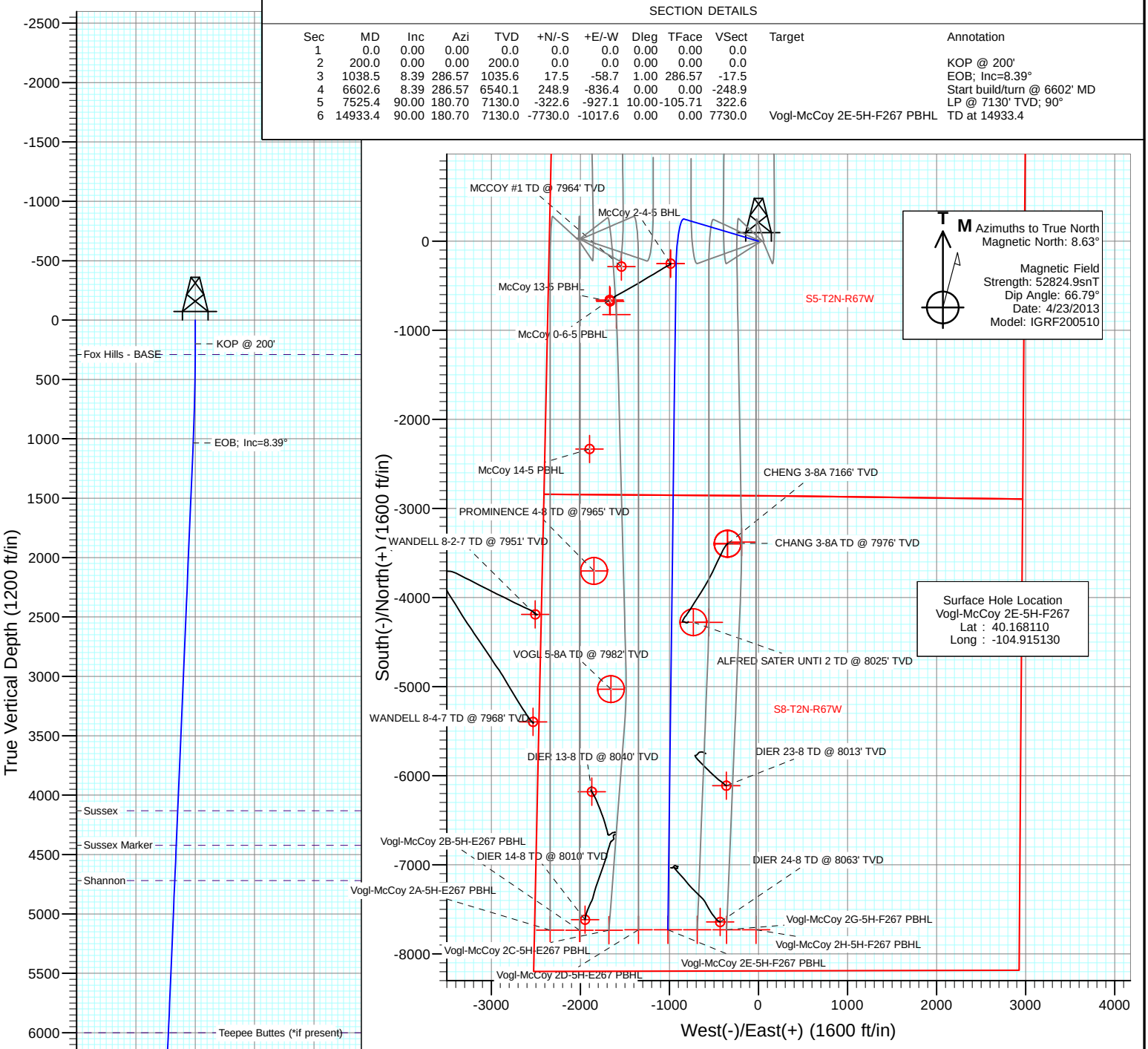
encana

Project: DJ Wattenberg
Site: S5-T2N-R67W (Vogl-McCoy)
Well: Vogl-McCoy 2E-5H-F267
Wellbore: Hz
Design: Plan #1

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0		KOP @ 200'
3	1038.5	8.39	286.57	1035.6	17.5	-58.7	1.00	286.57	-17.5		EOB; Inc=8.39°
4	6602.6	8.39	286.57	6540.1	248.9	-836.4	0.00	0.00	-248.9		Start build/turn @ 6602' MD
5	7525.4	90.00	180.70	7130.0	-322.6	-927.1	10.00	-105.71	322.6		LP @ 7130' TVD; 90°
6	14933.4	90.00	180.70	7130.0	-7730.0	-1017.6	0.00	0.00	7730.0	Vogl-McCoy 2E-5H-F267 PBHL	TD at 14933.4



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Vogl-McCoy 2E-5H-F267 PBHL	-7730.0	-1017.6	1296890.56	3162488.10	40.146890	-104.918770

Plan #1
Vogl-McCoy 2E-5H-F267
13xxx; LR
KB @ 4890.0ft (Ensign)
Ground Elevation @ 4860.0
North American Datum 1983
Well Vogl-McCoy 2E-5H-F267, True North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Project:	DJ Wattenberg	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	**North Reference:**	True
Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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 2E-5H-F267

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,304,627.12 ft	**Latitude:**	40.168110
	+E/-W	0.0 ft	**Easting:**	3,163,454.66 ft	**Longitude:**	-104.915130
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,860.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	4/23/2013	8.63	66.79	52,825

Design Plan #1

Audit Notes:

Version:		**Phase:**	PLAN	**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

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,038.5	8.39	286.57	1,035.6	17.5	-58.7	1.00	1.00	0.00	286.57	
6,602.6	8.39	286.57	6,540.1	248.9	-836.4	0.00	0.00	0.00	0.00	
7,525.4	90.00	180.70	7,130.0	-322.6	-927.1	10.00	8.84	-11.47	-105.71	
14,933.4	90.00	180.70	7,130.0	-7,730.0	-1,017.6	0.00	0.00	0.00	0.00	Vogl-McCoy 2E-5H-F:

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Project:	DJ Wattenberg	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	**North Reference:**	True
Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
290.0	0.90	286.57	290.0	0.2	-0.7	-0.2	1.00	1.00	Fox Hills - BASE
300.0	1.00	286.57	300.0	0.2	-0.8	-0.2	1.00	1.00	
400.0	2.00	286.57	400.0	1.0	-3.3	-1.0	1.00	1.00	
500.0	3.00	286.57	499.9	2.2	-7.5	-2.2	1.00	1.00	
600.0	4.00	286.57	599.7	4.0	-13.4	-4.0	1.00	1.00	
700.0	5.00	286.57	699.4	6.2	-20.9	-6.2	1.00	1.00	
800.0	6.00	286.57	798.9	9.0	-30.1	-9.0	1.00	1.00	
900.0	7.00	286.57	898.3	12.2	-40.9	-12.2	1.00	1.00	
1,000.0	8.00	286.57	997.4	15.9	-53.4	-15.9	1.00	1.00	
1,038.5	8.39	286.57	1,035.6	17.5	-58.7	-17.5	1.00	1.00	EOB; Inc=8.39°
1,100.0	8.39	286.57	1,096.4	20.0	-67.3	-20.0	0.00	0.00	
1,200.0	8.39	286.57	1,195.3	24.2	-81.3	-24.2	0.00	0.00	
1,300.0	8.39	286.57	1,294.2	28.3	-95.3	-28.3	0.00	0.00	
1,400.0	8.39	286.57	1,393.1	32.5	-109.2	-32.5	0.00	0.00	
1,500.0	8.39	286.57	1,492.1	36.7	-123.2	-36.7	0.00	0.00	
1,600.0	8.39	286.57	1,591.0	40.8	-137.2	-40.8	0.00	0.00	
1,700.0	8.39	286.57	1,689.9	45.0	-151.2	-45.0	0.00	0.00	
1,800.0	8.39	286.57	1,788.9	49.1	-165.1	-49.1	0.00	0.00	
1,900.0	8.39	286.57	1,887.8	53.3	-179.1	-53.3	0.00	0.00	
2,000.0	8.39	286.57	1,986.7	57.5	-193.1	-57.5	0.00	0.00	
2,100.0	8.39	286.57	2,085.7	61.6	-207.1	-61.6	0.00	0.00	
2,200.0	8.39	286.57	2,184.6	65.8	-221.1	-65.8	0.00	0.00	
2,300.0	8.39	286.57	2,283.5	69.9	-235.0	-69.9	0.00	0.00	
2,400.0	8.39	286.57	2,382.5	74.1	-249.0	-74.1	0.00	0.00	
2,500.0	8.39	286.57	2,481.4	78.2	-263.0	-78.2	0.00	0.00	
2,600.0	8.39	286.57	2,580.3	82.4	-277.0	-82.4	0.00	0.00	
2,700.0	8.39	286.57	2,679.2	86.6	-290.9	-86.6	0.00	0.00	
2,800.0	8.39	286.57	2,778.2	90.7	-304.9	-90.7	0.00	0.00	
2,900.0	8.39	286.57	2,877.1	94.9	-318.9	-94.9	0.00	0.00	
3,000.0	8.39	286.57	2,976.0	99.0	-332.9	-99.0	0.00	0.00	
3,100.0	8.39	286.57	3,075.0	103.2	-346.9	-103.2	0.00	0.00	
3,200.0	8.39	286.57	3,173.9	107.4	-360.8	-107.4	0.00	0.00	
3,300.0	8.39	286.57	3,272.8	111.5	-374.8	-111.5	0.00	0.00	
3,400.0	8.39	286.57	3,371.8	115.7	-388.8	-115.7	0.00	0.00	
3,500.0	8.39	286.57	3,470.7	119.8	-402.8	-119.8	0.00	0.00	
3,600.0	8.39	286.57	3,569.6	124.0	-416.7	-124.0	0.00	0.00	
3,700.0	8.39	286.57	3,668.6	128.2	-430.7	-128.2	0.00	0.00	
3,800.0	8.39	286.57	3,767.5	132.3	-444.7	-132.3	0.00	0.00	
3,900.0	8.39	286.57	3,866.4	136.5	-458.7	-136.5	0.00	0.00	
4,000.0	8.39	286.57	3,965.3	140.6	-472.7	-140.6	0.00	0.00	
4,100.0	8.39	286.57	4,064.3	144.8	-486.6	-144.8	0.00	0.00	
4,167.4	8.39	286.57	4,131.0	147.6	-496.1	-147.6	0.00	0.00	Sussex
4,200.0	8.39	286.57	4,163.2	148.9	-500.6	-148.9	0.00	0.00	
4,300.0	8.39	286.57	4,262.1	153.1	-514.6	-153.1	0.00	0.00	
4,400.0	8.39	286.57	4,361.1	157.3	-528.6	-157.3	0.00	0.00	
4,461.6	8.39	286.57	4,422.0	159.8	-537.2	-159.8	0.00	0.00	Sussex Marker
4,500.0	8.39	286.57	4,460.0	161.4	-542.5	-161.4	0.00	0.00	
4,600.0	8.39	286.57	4,558.9	165.6	-556.5	-165.6	0.00	0.00	
4,700.0	8.39	286.57	4,657.9	169.7	-570.5	-169.7	0.00	0.00	

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Project:	DJ Wattenberg	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	**North Reference:**	True
Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,761.8	8.39	286.57	4,719.0	172.3	-579.1	-172.3	0.00	0.00	Shannon
4,800.0	8.39	286.57	4,756.8	173.9	-584.5	-173.9	0.00	0.00	
4,900.0	8.39	286.57	4,855.7	178.1	-598.5	-178.1	0.00	0.00	
5,000.0	8.39	286.57	4,954.7	182.2	-612.4	-182.2	0.00	0.00	
5,100.0	8.39	286.57	5,053.6	186.4	-626.4	-186.4	0.00	0.00	
5,200.0	8.39	286.57	5,152.5	190.5	-640.4	-190.5	0.00	0.00	
5,300.0	8.39	286.57	5,251.5	194.7	-654.4	-194.7	0.00	0.00	
5,400.0	8.39	286.57	5,350.4	198.9	-668.3	-198.9	0.00	0.00	
5,500.0	8.39	286.57	5,449.3	203.0	-682.3	-203.0	0.00	0.00	
5,600.0	8.39	286.57	5,548.2	207.2	-696.3	-207.2	0.00	0.00	
5,700.0	8.39	286.57	5,647.2	211.3	-710.3	-211.3	0.00	0.00	
5,800.0	8.39	286.57	5,746.1	215.5	-724.2	-215.5	0.00	0.00	
5,900.0	8.39	286.57	5,845.0	219.6	-738.2	-219.6	0.00	0.00	
6,000.0	8.39	286.57	5,944.0	223.8	-752.2	-223.8	0.00	0.00	
6,056.6	8.39	286.57	6,000.0	226.2	-760.1	-226.2	0.00	0.00	Teepee Buttes (*if present)
6,100.0	8.39	286.57	6,042.9	228.0	-766.2	-228.0	0.00	0.00	
6,200.0	8.39	286.57	6,141.8	232.1	-780.2	-232.1	0.00	0.00	
6,300.0	8.39	286.57	6,240.8	236.3	-794.1	-236.3	0.00	0.00	
6,400.0	8.39	286.57	6,339.7	240.4	-808.1	-240.4	0.00	0.00	
6,500.0	8.39	286.57	6,438.6	244.6	-822.1	-244.6	0.00	0.00	
6,600.0	8.39	286.57	6,537.6	248.8	-836.1	-248.8	0.00	0.00	
6,602.6	8.39	286.57	6,540.1	248.9	-836.4	-248.9	0.00	0.00	Start build/turn @ 6602' MD
6,700.0	10.97	227.70	6,636.3	244.6	-850.1	-244.6	10.00	2.65	
6,800.0	19.18	204.76	6,732.9	223.3	-864.1	-223.3	10.00	8.21	
6,900.0	28.53	195.82	6,824.3	185.3	-877.5	-185.3	10.00	9.35	
7,000.0	38.19	191.08	6,907.7	131.8	-890.0	-131.8	10.00	9.66	
7,100.0	47.98	188.04	6,980.7	64.5	-901.2	-64.5	10.00	9.78	
7,115.7	49.51	187.65	6,991.0	52.9	-902.8	-52.9	10.00	9.82	Sharon Springs
7,200.0	57.82	185.82	7,040.9	-14.5	-910.7	14.5	10.00	9.85	
7,283.1	66.02	184.32	7,080.0	-87.5	-917.1	87.5	10.00	9.87	Niobrara
7,300.0	67.69	184.03	7,086.7	-103.0	-918.2	103.0	10.00	9.88	
7,400.0	77.58	182.49	7,116.5	-198.2	-923.6	198.2	10.00	9.89	
7,417.7	79.33	182.23	7,120.0	-215.5	-924.3	215.5	10.00	9.90	B Chalk
7,500.0	87.48	181.06	7,129.4	-297.2	-926.7	297.2	10.00	9.90	
7,525.4	90.00	180.70	7,130.0	-322.6	-927.1	322.6	10.00	9.90	LP @ 7130' TVD; 90° - 7"
7,600.0	90.00	180.70	7,130.0	-397.1	-928.0	397.1	0.00	0.00	
7,700.0	90.00	180.70	7,130.0	-497.1	-929.2	497.1	0.00	0.00	
7,800.0	90.00	180.70	7,130.0	-597.1	-930.4	597.1	0.00	0.00	
7,900.0	90.00	180.70	7,130.0	-697.1	-931.6	697.1	0.00	0.00	
8,000.0	90.00	180.70	7,130.0	-797.1	-932.9	797.1	0.00	0.00	
8,100.0	90.00	180.70	7,130.0	-897.1	-934.1	897.1	0.00	0.00	
8,200.0	90.00	180.70	7,130.0	-997.1	-935.3	997.1	0.00	0.00	
8,300.0	90.00	180.70	7,130.0	-1,097.1	-936.5	1,097.1	0.00	0.00	
8,400.0	90.00	180.70	7,130.0	-1,197.1	-937.7	1,197.1	0.00	0.00	
8,500.0	90.00	180.70	7,130.0	-1,297.1	-939.0	1,297.1	0.00	0.00	
8,600.0	90.00	180.70	7,130.0	-1,397.1	-940.2	1,397.1	0.00	0.00	
8,700.0	90.00	180.70	7,130.0	-1,497.1	-941.4	1,497.1	0.00	0.00	
8,800.0	90.00	180.70	7,130.0	-1,597.1	-942.6	1,597.1	0.00	0.00	
8,900.0	90.00	180.70	7,130.0	-1,697.0	-943.9	1,697.0	0.00	0.00	
9,000.0	90.00	180.70	7,130.0	-1,797.0	-945.1	1,797.0	0.00	0.00	
9,100.0	90.00	180.70	7,130.0	-1,897.0	-946.3	1,897.0	0.00	0.00	
9,200.0	90.00	180.70	7,130.0	-1,997.0	-947.5	1,997.0	0.00	0.00	

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Project:	DJ Wattenberg	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	**North Reference:**	True
Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,300.0	90.00	180.70	7,130.0	-2,097.0	-948.7	2,097.0	0.00	0.00	
9,400.0	90.00	180.70	7,130.0	-2,197.0	-950.0	2,197.0	0.00	0.00	
9,500.0	90.00	180.70	7,130.0	-2,297.0	-951.2	2,297.0	0.00	0.00	
9,600.0	90.00	180.70	7,130.0	-2,397.0	-952.4	2,397.0	0.00	0.00	
9,700.0	90.00	180.70	7,130.0	-2,497.0	-953.6	2,497.0	0.00	0.00	
9,800.0	90.00	180.70	7,130.0	-2,597.0	-954.8	2,597.0	0.00	0.00	
9,900.0	90.00	180.70	7,130.0	-2,697.0	-956.1	2,697.0	0.00	0.00	
10,000.0	90.00	180.70	7,130.0	-2,797.0	-957.3	2,797.0	0.00	0.00	
10,100.0	90.00	180.70	7,130.0	-2,897.0	-958.5	2,897.0	0.00	0.00	
10,200.0	90.00	180.70	7,130.0	-2,997.0	-959.7	2,997.0	0.00	0.00	
10,300.0	90.00	180.70	7,130.0	-3,096.9	-961.0	3,096.9	0.00	0.00	
10,400.0	90.00	180.70	7,130.0	-3,196.9	-962.2	3,196.9	0.00	0.00	
10,500.0	90.00	180.70	7,130.0	-3,296.9	-963.4	3,296.9	0.00	0.00	
10,600.0	90.00	180.70	7,130.0	-3,396.9	-964.6	3,396.9	0.00	0.00	
10,700.0	90.00	180.70	7,130.0	-3,496.9	-965.8	3,496.9	0.00	0.00	
10,800.0	90.00	180.70	7,130.0	-3,596.9	-967.1	3,596.9	0.00	0.00	
10,900.0	90.00	180.70	7,130.0	-3,696.9	-968.3	3,696.9	0.00	0.00	
11,000.0	90.00	180.70	7,130.0	-3,796.9	-969.5	3,796.9	0.00	0.00	
11,100.0	90.00	180.70	7,130.0	-3,896.9	-970.7	3,896.9	0.00	0.00	
11,200.0	90.00	180.70	7,130.0	-3,996.9	-972.0	3,996.9	0.00	0.00	
11,300.0	90.00	180.70	7,130.0	-4,096.9	-973.2	4,096.9	0.00	0.00	
11,400.0	90.00	180.70	7,130.0	-4,196.9	-974.4	4,196.9	0.00	0.00	
11,500.0	90.00	180.70	7,130.0	-4,296.9	-975.6	4,296.9	0.00	0.00	
11,600.0	90.00	180.70	7,130.0	-4,396.8	-976.8	4,396.8	0.00	0.00	
11,700.0	90.00	180.70	7,130.0	-4,496.8	-978.1	4,496.8	0.00	0.00	
11,800.0	90.00	180.70	7,130.0	-4,596.8	-979.3	4,596.8	0.00	0.00	
11,900.0	90.00	180.70	7,130.0	-4,696.8	-980.5	4,696.8	0.00	0.00	
12,000.0	90.00	180.70	7,130.0	-4,796.8	-981.7	4,796.8	0.00	0.00	
12,100.0	90.00	180.70	7,130.0	-4,896.8	-982.9	4,896.8	0.00	0.00	
12,200.0	90.00	180.70	7,130.0	-4,996.8	-984.2	4,996.8	0.00	0.00	
12,300.0	90.00	180.70	7,130.0	-5,096.8	-985.4	5,096.8	0.00	0.00	
12,400.0	90.00	180.70	7,130.0	-5,196.8	-986.6	5,196.8	0.00	0.00	
12,500.0	90.00	180.70	7,130.0	-5,296.8	-987.8	5,296.8	0.00	0.00	
12,600.0	90.00	180.70	7,130.0	-5,396.8	-989.1	5,396.8	0.00	0.00	
12,700.0	90.00	180.70	7,130.0	-5,496.8	-990.3	5,496.8	0.00	0.00	
12,800.0	90.00	180.70	7,130.0	-5,596.8	-991.5	5,596.8	0.00	0.00	
12,900.0	90.00	180.70	7,130.0	-5,696.8	-992.7	5,696.8	0.00	0.00	
13,000.0	90.00	180.70	7,130.0	-5,796.7	-993.9	5,796.7	0.00	0.00	
13,100.0	90.00	180.70	7,130.0	-5,896.7	-995.2	5,896.7	0.00	0.00	
13,200.0	90.00	180.70	7,130.0	-5,996.7	-996.4	5,996.7	0.00	0.00	
13,300.0	90.00	180.70	7,130.0	-6,096.7	-997.6	6,096.7	0.00	0.00	
13,400.0	90.00	180.70	7,130.0	-6,196.7	-998.8	6,196.7	0.00	0.00	
13,500.0	90.00	180.70	7,130.0	-6,296.7	-1,000.1	6,296.7	0.00	0.00	
13,600.0	90.00	180.70	7,130.0	-6,396.7	-1,001.3	6,396.7	0.00	0.00	
13,700.0	90.00	180.70	7,130.0	-6,496.7	-1,002.5	6,496.7	0.00	0.00	
13,800.0	90.00	180.70	7,130.0	-6,596.7	-1,003.7	6,596.7	0.00	0.00	
13,900.0	90.00	180.70	7,130.0	-6,696.7	-1,004.9	6,696.7	0.00	0.00	
14,000.0	90.00	180.70	7,130.0	-6,796.7	-1,006.2	6,796.7	0.00	0.00	
14,100.0	90.00	180.70	7,130.0	-6,896.7	-1,007.4	6,896.7	0.00	0.00	
14,200.0	90.00	180.70	7,130.0	-6,996.7	-1,008.6	6,996.7	0.00	0.00	
14,300.0	90.00	180.70	7,130.0	-7,096.6	-1,009.8	7,096.6	0.00	0.00	
14,400.0	90.00	180.70	7,130.0	-7,196.6	-1,011.0	7,196.6	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Project:	DJ Wattenberg	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	**North Reference:**	True
Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
14,500.0	90.00	180.70	7,130.0	-7,296.6	-1,012.3	7,296.6	0.00	0.00	
14,600.0	90.00	180.70	7,130.0	-7,396.6	-1,013.5	7,396.6	0.00	0.00	
14,700.0	90.00	180.70	7,130.0	-7,496.6	-1,014.7	7,496.6	0.00	0.00	
14,800.0	90.00	180.70	7,130.0	-7,596.6	-1,015.9	7,596.6	0.00	0.00	
14,900.0	90.00	180.70	7,130.0	-7,696.6	-1,017.2	7,696.6	0.00	0.00	
14,933.4	90.00	180.70	7,130.0	-7,730.0	-1,017.6	7,730.0	0.00	0.00	TD at 14933.4 - Vogl-McCoy 2E-5H-F267 PBHL

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 2E-5H-F26 - plan hits target center - Point	0.00	0.00	7,130.0	-7,730.0	-1,017.6	1,296,890.56	3,162,488.10	40.146890	-104.918770

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
7,525.4	7,130.0	7"	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
290.0	290.0	Fox Hills - BASE			
4,167.4	4,131.0	Sussex			
4,461.6	4,422.0	Sussex Marker			
4,761.8	4,719.0	Shannon			
6,056.6	6,000.0	Teepee Buttes (*if present)			
7,115.7	6,991.0	Sharon Springs			
7,283.1	7,080.0	Niobrara			
7,417.7	7,120.0	B Chalk			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
200.0	200.0	0.0	0.0	KOP @ 200'
1,038.5	1,035.6	17.5	-58.7	EOB; Inc=8.39°
6,602.6	6,540.1	248.9	-836.4	Start build/turn @ 6602' MD
7,525.4	7,130.0	-322.6	-927.1	LP @ 7130' TVD; 90°
14,933.4	7,130.0	-7,730.0	-1,017.6	TD at 14933.4

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S5-T2N-R67W (Vogl-McCoy)
Vogl-McCoy 2E-5H-F267
Hz
Plan #1

Anticollision Report

10 May, 2013

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Plan #1

Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	**Error Model:**	Systematic Ellipse
Depth Range:	Unlimited	**Scan Method:**	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	**Error Surface:**	Elliptical Conic
Warning Levels Evaluated at:	2.00 **Sigma**		

Survey Tool Program **Date** 5/10/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	14,933.4	Plan #1 (Hz)	MWD	Geolink MWD

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S5-T2N-R67W (Vogl-McCoy)						
ALFRED SATER UNIT 2 (EXISTING) - KMG WELL - NO	11,476.8	7,111.0	243.6	153.4	2.700	CC, ES, SF
CHENG 3-8A (EXISTING) - KMG WELL - SURVEYS						Out of range
DIER 13-8 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
DIER 14-8 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
DIER 23-8 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
DIER 24-8 (EXISTING) - ENCANA WELL - SURVEYS	14,738.6	7,182.8	500.0	353.4	3.411	CC, ES, SF
DIER 4-8 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
MCCOY #1 (EXISTING) - ENCANA WELL - NO SURVEY						Out of range
MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURV						Out of range
MCCOY 13-5 (EXISTING) - ENCANA WELL - NO SURV						Out of range
MCCOY 14-5 (EXISTING) - ENCANA WELL - NO SURV						Out of range
MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS	7,457.4	7,152.0	62.0	33.7	2.190	CC, ES, SF
PROMINENCE 4-8 (EXISTING) - KMG WELL - NO SUR						Out of range
VOGL 5-8A (EXISTING) - KMG WELL - NO SURVEYS						Out of range
Vogl-Geist 2A-5H-E267 - Hz - Plan #1						Out of range
Vogl-Geist 2B-5H-E267 - Hz - Plan #1						Out of range
Vogl-Geist 2C-5H-E267 - Hz - Plan #1	7,337.0	7,168.1	292.1	266.3	11.314	CC, ES, SF
Vogl-Geist 2D-5H-F267 - Hz - Plan #1	200.0	200.0	11.2	10.6	18.838	CC, ES
Vogl-Geist 2D-5H-F267 - Hz - Plan #1	7,151.1	7,181.6	160.6	135.6	6.427	SF
Vogl-Geist 2E-5H-F267 - Hz - Plan #1	200.0	200.0	30.7	30.1	51.804	CC, ES
Vogl-Geist 2E-5H-F267 - Hz - Plan #1	900.0	901.4	63.1	60.0	20.693	SF
Vogl-Geist 2F-5H-F267 - Hz - Plan #1	200.0	199.0	50.3	49.7	85.020	CC, ES
Vogl-Geist 2F-5H-F267 - Hz - Plan #1	800.0	797.9	80.9	78.2	30.153	SF
Vogl-McCoy 2A-5H-E267 - Hz - Plan #1						Out of range
Vogl-McCoy 2B-5H-E267 - Hz - Plan #1						Out of range
Vogl-McCoy 2C-5H-E267 - Hz - Plan #1						Out of range
Vogl-McCoy 2D-5H-E267 - Hz - Plan #1	14,933.4	15,135.9	403.3	175.5	1.771	CC, ES, SF
Vogl-McCoy 2F-5H-F267 - Hz - Plan #1	200.0	200.0	19.6	19.0	32.966	CC, ES
Vogl-McCoy 2F-5H-F267 - Hz - Plan #1	14,933.4	15,142.6	415.1	193.5	1.873	SF
Vogl-McCoy 2G-5H-F267 - Hz - Plan #1	200.0	199.0	41.9	41.3	70.850	CC, ES
Vogl-McCoy 2G-5H-F267 - Hz - Plan #1	5,400.0	5,381.4	499.5	479.5	24.930	SF
Vogl-McCoy 2H-5H-F267 - Hz - Plan #1	200.0	199.0	61.5	60.9	103.913	CC, ES
Vogl-McCoy 2H-5H-F267 - Hz - Plan #1	1,000.0	998.3	111.4	108.0	32.687	SF
WANDELL 8-2-7 (EXISTING) - ENCANA WELL - SURVE						Out of range
WANDELL 8-4-7 (EXISTING) - ENCANA WELL - SURVE						Out of range

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - ALFRED SATER UNIT 2 (EXISTING) - KMG WELL - NO SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference		Offset		Semi Major Axis			Offset Wellbore Centre		Distance				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
11,100.0	7,130.0	7,111.0	7,111.0	73.1	12.4	-90.00	-4,276.7	-731.8	448.7	365.0	83.69	5.362	
11,200.0	7,130.0	7,111.0	7,111.0	74.8	12.4	-90.00	-4,276.7	-731.8	368.7	283.3	85.42	4.317	
11,300.0	7,130.0	7,111.0	7,111.0	76.5	12.4	-90.00	-4,276.7	-731.8	301.0	213.9	87.15	3.454	
11,400.0	7,130.0	7,111.0	7,111.0	78.2	12.4	-90.00	-4,276.7	-731.8	255.4	166.5	88.88	2.874	
11,476.8	7,130.0	7,111.0	7,111.0	79.5	12.4	-90.00	-4,276.7	-731.8	243.6	153.4	90.21	2.700	CC, ES, SF
11,500.0	7,130.0	7,111.0	7,111.0	79.9	12.4	-90.00	-4,276.7	-731.8	244.7	154.1	90.61	2.701	
11,600.0	7,130.0	7,111.0	7,111.0	81.6	12.4	-90.00	-4,276.7	-731.8	273.0	180.6	92.34	2.956	
11,700.0	7,130.0	7,111.0	7,111.0	83.3	12.4	-90.00	-4,276.7	-731.8	330.4	236.3	94.07	3.512	
11,800.0	7,130.0	7,111.0	7,111.0	85.0	12.4	-90.00	-4,276.7	-731.8	404.7	308.9	95.81	4.224	
11,900.0	7,130.0	7,111.0	7,111.0	86.7	12.4	-90.00	-4,276.7	-731.8	488.3	390.7	97.54	5.006	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - DIER 24-8 (EXISTING) - ENCANA WELL - SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 740-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
14,738.6	7,130.0	7,182.8	7,062.8	135.6	17.1	-76.92	-7,541.2	-528.2	500.0	353.4	146.60	3.411	CC, ES, SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS

Offset Site Error: 0.0 ft

Survey Program: 718-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
6,800.0	6,732.9	6,759.8	6,707.8	19.7	17.5	-11.08	-253.3	-985.5	491.8	458.8	33.01	14.898	
6,900.0	6,824.3	6,849.8	6,797.8	19.9	17.6	-2.20	-253.2	-985.9	451.7	420.4	31.23	14.461	
7,000.0	6,907.7	6,933.6	6,881.6	20.0	17.7	3.79	-253.1	-986.4	396.9	368.3	28.55	13.901	
7,100.0	6,980.7	7,006.4	6,954.4	20.2	17.8	10.50	-253.0	-986.9	329.0	303.9	25.09	13.110	
7,200.0	7,040.9	7,066.6	7,014.6	20.4	17.9	21.73	-253.0	-987.4	250.5	228.9	21.56	11.620	
7,300.0	7,086.7	7,112.5	7,060.5	20.7	17.9	44.90	-253.0	-987.6	165.2	143.4	21.83	7.569	
7,400.0	7,116.5	7,142.4	7,090.4	21.2	18.0	78.56	-253.0	-987.6	84.3	57.0	27.25	3.093	
7,457.4	7,126.0	7,152.0	7,099.9	21.4	18.0	89.93	-253.0	-987.7	62.0	33.7	28.32	2.190	CC, ES, SF
7,500.0	7,129.4	7,155.4	7,103.4	21.7	18.0	91.70	-253.0	-987.7	75.3	46.8	28.54	2.639	
7,600.0	7,130.0	7,156.0	7,103.9	22.3	18.0	89.94	-253.0	-987.7	156.0	126.6	29.41	5.305	
7,700.0	7,130.0	7,156.0	7,103.9	23.0	18.0	89.93	-253.0	-987.7	251.1	220.6	30.50	8.233	
7,800.0	7,130.0	7,156.0	7,103.9	23.9	18.0	89.93	-253.0	-987.7	348.9	317.2	31.69	11.010	
7,900.0	7,130.0	7,156.0	7,103.9	24.8	18.0	89.92	-253.0	-987.7	447.7	414.7	32.97	13.579	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2C-5H-E267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
7,000.0	6,907.7	7,180.6	7,103.8	20.0	18.8	70.28	-106.5	-1,209.9	455.6	430.5	25.09	18.157	
7,100.0	6,980.7	7,205.6	7,123.3	20.2	18.8	88.37	-91.0	-1,207.5	381.9	357.0	24.84	15.373	
7,200.0	7,040.9	7,199.4	7,118.5	20.4	18.8	95.42	-95.0	-1,208.1	324.4	299.2	25.26	12.845	
7,300.0	7,086.7	7,178.2	7,101.9	20.7	18.8	95.23	-108.0	-1,210.1	294.6	268.9	25.63	11.494	
7,337.0	7,099.6	7,168.1	7,093.8	20.9	18.7	93.77	-114.0	-1,211.1	292.1	266.3	25.82	11.314	CC, ES, SF
7,400.0	7,116.5	7,150.0	7,079.1	21.2	18.7	90.02	-124.3	-1,212.9	298.9	272.7	26.15	11.430	
7,500.0	7,129.4	7,114.8	7,049.5	21.7	18.7	80.42	-143.1	-1,216.5	333.0	306.4	26.61	12.515	
7,600.0	7,130.0	7,080.4	7,019.6	22.3	18.7	73.67	-159.6	-1,220.1	386.3	359.3	27.05	14.282	
7,700.0	7,130.0	7,050.0	6,992.3	23.0	18.6	69.13	-172.7	-1,223.4	452.5	424.9	27.58	16.408	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2D-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.04	0.0	11.2	11.2				
100.0	100.0	100.0	100.0	0.1	0.1	90.04	0.0	11.2	11.2	10.9	0.24	45.749	
200.0	200.0	200.0	200.0	0.3	0.3	90.04	0.0	11.2	11.2	10.6	0.59	18.838	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	164.65	0.0	11.2	12.0	11.1	0.94	12.751	
400.0	400.0	400.2	400.2	0.7	0.6	168.85	-0.3	10.4	13.8	12.5	1.29	10.653	
500.0	499.9	500.4	500.3	0.8	0.8	175.98	-1.2	7.9	15.8	14.1	1.64	9.618	
600.0	599.7	600.5	600.4	1.0	1.0	-175.37	-2.7	3.8	18.4	16.4	2.00	9.216	
700.0	699.4	700.7	700.4	1.3	1.2	-166.47	-4.7	-2.0	21.9	19.5	2.36	9.245	
800.0	798.9	800.8	800.1	1.5	1.4	-158.24	-7.4	-9.4	26.4	23.6	2.76	9.558	
900.0	898.3	900.8	899.7	1.7	1.6	-151.13	-10.6	-18.4	32.1	28.9	3.19	10.038	
1,000.0	997.4	1,000.7	999.0	2.0	1.9	-145.21	-14.5	-29.1	38.9	35.3	3.67	10.599	
1,100.0	1,096.4	1,100.4	1,097.9	2.3	2.2	-140.81	-18.7	-40.8	46.9	42.7	4.18	11.209	
1,200.0	1,195.3	1,200.0	1,196.7	2.6	2.4	-137.77	-22.9	-52.6	55.1	50.4	4.71	11.714	
1,300.0	1,294.2	1,299.6	1,295.5	2.9	2.7	-135.52	-27.1	-64.4	63.5	58.2	5.24	12.120	
1,400.0	1,393.1	1,399.2	1,394.4	3.2	3.0	-133.80	-31.3	-76.1	71.9	66.1	5.78	12.452	
1,500.0	1,492.1	1,498.9	1,493.2	3.5	3.2	-132.44	-35.5	-87.9	80.4	74.1	6.32	12.726	
1,600.0	1,591.0	1,598.5	1,592.0	3.8	3.5	-131.33	-39.7	-99.6	88.9	82.0	6.86	12.957	
1,700.0	1,689.9	1,698.1	1,690.9	4.1	3.8	-130.43	-44.0	-111.4	97.4	90.0	7.41	13.154	
1,800.0	1,788.9	1,797.7	1,789.7	4.4	4.0	-129.66	-48.2	-123.1	106.0	98.0	7.96	13.322	
1,900.0	1,887.8	1,897.4	1,888.6	4.7	4.3	-129.02	-52.4	-134.9	114.6	106.1	8.51	13.469	
2,000.0	1,986.7	1,997.0	1,987.4	5.0	4.6	-128.46	-56.6	-146.7	123.2	114.1	9.06	13.597	
2,100.0	2,085.7	2,096.6	2,086.2	5.3	4.9	-127.97	-60.8	-158.4	131.8	122.2	9.61	13.710	
2,200.0	2,184.6	2,196.2	2,185.1	5.6	5.1	-127.55	-65.1	-170.2	140.4	130.2	10.16	13.811	
2,300.0	2,283.5	2,295.9	2,283.9	6.0	5.4	-127.17	-69.3	-181.9	149.0	138.3	10.72	13.901	
2,400.0	2,382.5	2,395.5	2,382.7	6.3	5.7	-126.84	-73.5	-193.7	157.6	146.3	11.27	13.982	
2,500.0	2,481.4	2,495.1	2,481.6	6.6	6.0	-126.54	-77.7	-205.4	166.2	154.4	11.83	14.055	
2,600.0	2,580.3	2,594.7	2,580.4	6.9	6.3	-126.26	-81.9	-217.2	174.9	162.5	12.38	14.121	
2,700.0	2,679.2	2,694.4	2,679.3	7.2	6.5	-126.02	-86.1	-229.0	183.5	170.6	12.94	14.182	
2,800.0	2,778.2	2,794.0	2,778.1	7.5	6.8	-125.80	-90.4	-240.7	192.1	178.6	13.49	14.238	
2,900.0	2,877.1	2,893.6	2,876.9	7.8	7.1	-125.59	-94.6	-252.5	200.8	186.7	14.05	14.289	
3,000.0	2,976.0	2,993.2	2,975.8	8.1	7.4	-125.40	-98.8	-264.2	209.4	194.8	14.61	14.336	
3,100.0	3,075.0	3,092.9	3,074.6	8.4	7.6	-125.23	-103.0	-276.0	218.0	202.9	15.16	14.379	
3,200.0	3,173.9	3,192.5	3,173.4	8.7	7.9	-125.07	-107.2	-287.7	226.7	211.0	15.72	14.420	
3,300.0	3,272.8	3,292.1	3,272.3	9.0	8.2	-124.93	-111.4	-299.5	235.3	219.1	16.28	14.457	
3,400.0	3,371.8	3,391.7	3,371.1	9.3	8.5	-124.79	-115.7	-311.3	244.0	227.1	16.84	14.492	
3,500.0	3,470.7	3,491.3	3,470.0	9.7	8.8	-124.66	-119.9	-323.0	252.6	235.2	17.39	14.525	
3,600.0	3,569.6	3,591.0	3,568.8	10.0	9.0	-124.54	-124.1	-334.8	261.3	243.3	17.95	14.556	
3,700.0	3,668.6	3,690.6	3,667.6	10.3	9.3	-124.43	-128.3	-346.5	269.9	251.4	18.51	14.584	
3,800.0	3,767.5	3,790.2	3,766.5	10.6	9.6	-124.32	-132.5	-358.3	278.6	259.5	19.07	14.611	
3,900.0	3,866.4	3,889.8	3,865.3	10.9	9.9	-124.23	-136.7	-370.1	287.2	267.6	19.62	14.637	
4,000.0	3,965.3	3,989.5	3,964.1	11.2	10.2	-124.13	-141.0	-381.8	295.9	275.7	20.18	14.661	
4,100.0	4,064.3	4,089.1	4,063.0	11.5	10.4	-124.05	-145.2	-393.6	304.5	283.8	20.74	14.684	
4,200.0	4,163.2	4,188.7	4,161.8	11.8	10.7	-123.96	-149.4	-405.3	313.2	291.9	21.30	14.705	
4,300.0	4,262.1	4,288.3	4,260.7	12.1	11.0	-123.89	-153.6	-417.1	321.8	300.0	21.86	14.726	
4,400.0	4,361.1	4,388.0	4,359.5	12.4	11.3	-123.81	-157.8	-428.8	330.5	308.1	22.41	14.745	
4,500.0	4,460.0	4,487.6	4,458.3	12.8	11.6	-123.74	-162.0	-440.6	339.2	316.2	22.97	14.763	
4,600.0	4,558.9	4,587.2	4,557.2	13.1	11.8	-123.68	-166.3	-452.4	347.8	324.3	23.53	14.781	
4,700.0	4,657.9	4,686.8	4,656.0	13.4	12.1	-123.61	-170.5	-464.1	356.5	332.4	24.09	14.798	
4,800.0	4,756.8	4,786.5	4,754.8	13.7	12.4	-123.55	-174.7	-475.9	365.1	340.5	24.65	14.814	
4,900.0	4,855.7	4,886.1	4,853.7	14.0	12.7	-123.49	-178.9	-487.6	373.8	348.6	25.21	14.829	
5,000.0	4,954.7	4,985.7	4,952.5	14.3	12.9	-123.44	-183.1	-499.4	382.4	356.7	25.77	14.843	
5,100.0	5,053.6	5,085.3	5,051.4	14.6	13.2	-123.39	-187.3	-511.1	391.1	364.8	26.32	14.857	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2D-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,152.5	5,185.0	5,150.2	14.9	13.5	-123.34	-191.6	-522.9	399.8	372.9	26.88	14.871	
5,300.0	5,251.5	5,284.6	5,249.0	15.2	13.8	-123.29	-195.8	-534.7	408.4	381.0	27.44	14.883	
5,400.0	5,350.4	5,384.2	5,347.9	15.5	14.1	-123.24	-200.0	-546.4	417.1	389.1	28.00	14.896	
5,500.0	5,449.3	5,483.8	5,446.7	15.9	14.3	-123.20	-204.2	-558.2	425.7	397.2	28.56	14.907	
5,600.0	5,548.2	5,583.5	5,545.5	16.2	14.6	-123.15	-208.4	-569.9	434.4	405.3	29.12	14.919	
5,700.0	5,647.2	5,683.1	5,644.4	16.5	14.9	-123.11	-212.7	-581.7	443.1	413.4	29.68	14.930	
5,800.0	5,746.1	5,782.7	5,743.2	16.8	15.2	-123.07	-216.9	-593.5	451.7	421.5	30.24	14.940	
5,900.0	5,845.0	5,882.3	5,842.1	17.1	15.5	-123.04	-221.1	-605.2	460.4	429.6	30.79	14.950	
6,000.0	5,944.0	5,981.9	5,940.9	17.4	15.7	-123.00	-225.3	-617.0	469.0	437.7	31.35	14.960	
6,100.0	6,042.9	6,081.6	6,039.7	17.7	16.0	-122.96	-229.5	-628.7	477.7	445.8	31.91	14.969	
6,200.0	6,141.8	6,181.2	6,138.6	18.0	16.3	-122.93	-233.7	-640.5	486.4	453.9	32.47	14.978	
6,300.0	6,240.8	6,280.8	6,237.4	18.3	16.6	-122.90	-238.0	-652.2	495.0	462.0	33.03	14.987	
6,700.0	6,636.3	7,130.6	7,007.2	19.5	18.2	-84.36	-18.9	-743.8	467.2	435.9	31.36	14.897	
6,800.0	6,732.9	7,235.3	7,061.1	19.7	18.5	-97.41	70.4	-750.2	379.6	354.8	24.71	15.361	
6,900.0	6,824.3	7,246.6	7,066.0	19.9	18.5	-110.88	80.7	-750.8	292.3	266.9	25.40	11.506	
7,000.0	6,907.7	7,229.2	7,058.4	20.0	18.5	-112.66	64.9	-749.9	216.4	190.7	25.62	8.444	
7,100.0	6,980.7	7,199.4	7,044.5	20.2	18.4	-106.06	38.7	-748.3	167.7	142.6	25.04	6.695	
7,151.1	7,013.2	7,181.6	7,035.5	20.3	18.3	-100.04	23.4	-747.2	160.6	135.6	24.99	6.427	SF
7,200.0	7,040.9	7,163.4	7,025.9	20.4	18.3	-92.87	8.0	-746.0	166.9	141.7	25.11	6.645	
7,300.0	7,086.7	7,123.8	7,003.1	20.7	18.2	-75.78	-24.3	-743.3	209.2	183.9	25.23	8.291	
7,400.0	7,116.5	7,081.9	6,976.8	21.2	18.1	-59.50	-56.8	-740.2	270.5	246.6	23.81	11.357	
7,500.0	7,129.4	7,038.4	6,947.1	21.7	18.1	-47.11	-88.2	-736.7	336.2	314.9	21.24	15.827	
7,600.0	7,130.0	7,000.0	6,918.8	22.3	18.0	-42.16	-114.1	-733.3	403.2	382.6	20.61	19.564	
7,700.0	7,130.0	6,950.0	6,879.7	23.0	18.0	-38.09	-144.8	-728.6	476.5	456.0	20.44	23.310	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2E-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	30.7	30.7				
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	30.7	30.7	30.5	0.24	125.809	
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	30.7	30.7	30.1	0.59	51.804	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	163.93	0.0	30.7	31.6	30.6	0.94	33.506	
400.0	400.0	400.0	400.0	0.7	0.6	165.14	0.0	30.7	34.1	32.8	1.29	26.404	
500.0	499.9	499.9	499.9	0.8	0.8	166.80	0.0	30.7	38.3	36.7	1.64	23.369	
600.0	599.7	600.3	600.3	1.0	1.0	169.31	-0.5	30.0	43.6	41.6	1.99	21.919	
700.0	699.4	700.7	700.6	1.3	1.2	172.91	-1.9	27.8	49.4	47.0	2.34	21.107	
800.0	798.9	801.1	800.9	1.5	1.4	177.16	-4.3	24.1	55.8	53.1	2.69	20.739	
900.0	898.3	901.4	901.0	1.7	1.6	-178.27	-7.6	18.9	63.1	60.0	3.05	20.693	SF
1,000.0	997.4	1,001.2	1,000.5	2.0	1.8	-173.87	-11.7	12.6	71.6	68.2	3.42	20.950	
1,100.0	1,096.4	1,100.5	1,099.6	2.3	2.0	-170.50	-15.8	6.1	81.8	78.0	3.80	21.523	
1,200.0	1,195.3	1,199.9	1,198.7	2.6	2.2	-167.90	-20.0	-0.3	92.2	88.1	4.19	22.017	
1,300.0	1,294.2	1,299.3	1,297.8	2.9	2.4	-165.84	-24.1	-6.8	102.9	98.3	4.59	22.424	
1,400.0	1,393.1	1,398.7	1,396.9	3.2	2.6	-164.16	-28.2	-13.2	113.6	108.6	4.99	22.760	
1,500.0	1,492.1	1,498.0	1,495.9	3.5	2.8	-162.78	-32.4	-19.7	124.5	119.1	5.40	23.040	
1,600.0	1,591.0	1,597.4	1,595.0	3.8	3.0	-161.62	-36.5	-26.1	135.4	129.5	5.82	23.275	
1,700.0	1,689.9	1,696.8	1,694.1	4.1	3.2	-160.63	-40.6	-32.6	146.3	140.1	6.23	23.475	
1,800.0	1,788.9	1,796.1	1,793.2	4.4	3.4	-159.78	-44.8	-39.0	157.3	150.6	6.65	23.646	
1,900.0	1,887.8	1,895.5	1,892.2	4.7	3.6	-159.04	-48.9	-45.5	168.3	161.2	7.07	23.793	
2,000.0	1,986.7	1,994.9	1,991.3	5.0	3.9	-158.39	-53.0	-51.9	179.3	171.8	7.50	23.922	
2,100.0	2,085.7	2,094.3	2,090.4	5.3	4.1	-157.81	-57.2	-58.4	190.4	182.4	7.92	24.034	
2,200.0	2,184.6	2,193.6	2,189.5	5.6	4.3	-157.30	-61.3	-64.8	201.4	193.1	8.35	24.134	
2,300.0	2,283.5	2,293.0	2,288.5	6.0	4.5	-156.84	-65.4	-71.3	212.5	203.7	8.77	24.222	
2,400.0	2,382.5	2,392.4	2,387.6	6.3	4.7	-156.43	-69.6	-77.7	223.6	214.4	9.20	24.301	
2,500.0	2,481.4	2,491.7	2,486.7	6.6	4.9	-156.06	-73.7	-84.2	234.7	225.1	9.63	24.372	
2,600.0	2,580.3	2,591.1	2,585.8	6.9	5.2	-155.72	-77.8	-90.6	245.8	235.7	10.06	24.436	
2,700.0	2,679.2	2,690.5	2,684.8	7.2	5.4	-155.41	-82.0	-97.1	256.9	246.4	10.49	24.494	
2,800.0	2,778.2	2,789.8	2,783.9	7.5	5.6	-155.12	-86.1	-103.6	268.1	257.1	10.92	24.546	
2,900.0	2,877.1	2,889.2	2,883.0	7.8	5.8	-154.86	-90.2	-110.0	279.2	267.8	11.35	24.594	
3,000.0	2,976.0	2,988.6	2,982.1	8.1	6.0	-154.62	-94.4	-116.5	290.3	278.5	11.78	24.639	
3,100.0	3,075.0	3,088.0	3,081.1	8.4	6.3	-154.39	-98.5	-122.9	301.5	289.3	12.22	24.679	
3,200.0	3,173.9	3,187.3	3,180.2	8.7	6.5	-154.19	-102.7	-129.4	312.6	300.0	12.65	24.717	
3,300.0	3,272.8	3,286.7	3,279.3	9.0	6.7	-153.99	-106.8	-135.8	323.8	310.7	13.08	24.751	
3,400.0	3,371.8	3,386.1	3,378.4	9.3	6.9	-153.81	-110.9	-142.3	334.9	321.4	13.51	24.784	
3,500.0	3,470.7	3,485.4	3,477.4	9.7	7.1	-153.64	-115.1	-148.7	346.1	332.1	13.95	24.813	
3,600.0	3,569.6	3,584.8	3,576.5	10.0	7.3	-153.48	-119.2	-155.2	357.2	342.9	14.38	24.841	
3,700.0	3,668.6	3,684.2	3,675.6	10.3	7.6	-153.34	-123.3	-161.6	368.4	353.6	14.81	24.867	
3,800.0	3,767.5	3,783.6	3,774.7	10.6	7.8	-153.20	-127.5	-168.1	379.6	364.3	15.25	24.892	
3,900.0	3,866.4	3,882.9	3,873.7	10.9	8.0	-153.06	-131.6	-174.5	390.7	375.0	15.68	24.915	
4,000.0	3,965.3	3,982.3	3,972.8	11.2	8.2	-152.94	-135.7	-181.0	401.9	385.8	16.12	24.936	
4,100.0	4,064.3	4,081.7	4,071.9	11.5	8.4	-152.82	-139.9	-187.4	413.1	396.5	16.55	24.957	
4,200.0	4,163.2	4,181.0	4,171.0	11.8	8.7	-152.71	-144.0	-193.9	424.2	407.2	16.99	24.976	
4,300.0	4,262.1	4,280.4	4,270.0	12.1	8.9	-152.60	-148.1	-200.3	435.4	418.0	17.42	24.994	
4,400.0	4,361.1	4,379.8	4,369.1	12.4	9.1	-152.50	-152.3	-206.8	446.6	428.7	17.86	25.011	
4,500.0	4,460.0	4,479.1	4,468.2	12.8	9.3	-152.41	-156.4	-213.2	457.8	439.5	18.29	25.027	
4,600.0	4,558.9	4,578.5	4,567.3	13.1	9.5	-152.31	-160.5	-219.7	468.9	450.2	18.73	25.042	
4,700.0	4,657.9	4,677.9	4,666.3	13.4	9.7	-152.23	-164.7	-226.1	480.1	461.0	19.16	25.057	
4,800.0	4,756.8	4,777.3	4,765.4	13.7	10.0	-152.14	-168.8	-232.6	491.3	471.7	19.60	25.071	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2F-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	50.3	50.3				
100.0	100.0	99.0	99.0	0.1	0.1	90.05	0.0	50.3	50.3	50.1	0.24	206.904	
200.0	200.0	199.0	199.0	0.3	0.3	90.05	0.0	50.3	50.3	49.7	0.59	85.020	CC, ES
300.0	300.0	299.0	299.0	0.5	0.5	163.75	0.0	50.3	51.1	50.2	0.94	54.363	
400.0	400.0	399.0	399.0	0.7	0.6	164.53	0.0	50.3	53.7	52.4	1.29	41.602	
500.0	499.9	498.9	498.9	0.8	0.8	165.67	0.0	50.3	57.9	56.2	1.64	35.314	
600.0	599.7	598.7	598.7	1.0	1.0	167.01	0.0	50.3	63.8	61.8	1.99	32.104	
700.0	699.4	698.4	698.4	1.3	1.2	168.41	0.0	50.3	71.5	69.1	2.34	30.603	
800.0	798.9	797.9	797.9	1.5	1.3	169.76	0.0	50.3	80.9	78.2	2.68	30.153	SF
900.0	898.3	897.3	897.3	1.7	1.5	170.99	0.0	50.3	92.1	89.0	3.03	30.397	
1,000.0	997.4	996.4	996.4	2.0	1.7	172.09	0.0	50.3	105.0	101.6	3.37	31.125	
1,100.0	1,096.4	1,095.4	1,095.4	2.3	1.9	173.04	0.0	50.3	119.3	115.6	3.72	32.089	
1,200.0	1,195.3	1,194.3	1,194.3	2.6	2.0	173.80	0.0	50.3	133.8	129.7	4.06	32.915	
1,300.0	1,294.2	1,293.2	1,293.2	2.9	2.2	174.41	0.0	50.3	148.3	143.9	4.41	33.617	
1,400.0	1,393.1	1,392.1	1,392.1	3.2	2.4	174.91	0.0	50.3	162.8	158.1	4.76	34.221	
1,500.0	1,492.1	1,491.1	1,491.1	3.5	2.6	175.32	0.0	50.3	177.4	172.2	5.10	34.745	
1,600.0	1,591.0	1,590.0	1,590.0	3.8	2.7	175.68	0.0	50.3	191.9	186.4	5.45	35.204	
1,700.0	1,689.9	1,688.9	1,688.9	4.1	2.9	175.98	0.0	50.3	206.4	200.6	5.80	35.610	
1,800.0	1,788.9	1,787.9	1,787.9	4.4	3.1	176.25	0.0	50.3	221.0	214.8	6.14	35.970	
1,900.0	1,887.8	1,886.8	1,886.8	4.7	3.2	176.48	0.0	50.3	235.5	229.1	6.49	36.293	
2,000.0	1,986.7	1,985.7	1,985.7	5.0	3.4	176.69	0.0	50.3	250.1	243.3	6.84	36.584	
2,100.0	2,085.7	2,084.7	2,084.7	5.3	3.6	176.87	0.0	50.3	264.7	257.5	7.18	36.847	
2,200.0	2,184.6	2,183.6	2,183.6	5.6	3.8	177.03	0.0	50.3	279.2	271.7	7.53	37.087	
2,300.0	2,283.5	2,282.5	2,282.5	6.0	3.9	177.18	0.0	50.3	293.8	285.9	7.88	37.305	
2,400.0	2,382.5	2,381.5	2,381.5	6.3	4.1	177.31	0.0	50.3	308.4	300.1	8.22	37.506	
2,500.0	2,481.4	2,480.4	2,480.4	6.6	4.3	177.43	0.0	50.3	322.9	314.4	8.57	37.690	
2,600.0	2,580.3	2,579.3	2,579.3	6.9	4.4	177.54	0.0	50.3	337.5	328.6	8.91	37.860	
2,700.0	2,679.2	2,678.2	2,678.2	7.2	4.6	177.65	0.0	50.3	352.1	342.8	9.26	38.018	
2,800.0	2,778.2	2,777.2	2,777.2	7.5	4.8	177.74	0.0	50.3	366.6	357.0	9.61	38.164	
2,900.0	2,877.1	2,876.1	2,876.1	7.8	5.0	177.83	0.0	50.3	381.2	371.3	9.95	38.300	
3,000.0	2,976.0	2,975.0	2,975.0	8.1	5.1	177.91	0.0	50.3	395.8	385.5	10.30	38.427	
3,100.0	3,075.0	3,074.0	3,074.0	8.4	5.3	177.98	0.0	50.3	410.4	399.7	10.65	38.546	
3,200.0	3,173.9	3,172.9	3,172.9	8.7	5.5	178.05	0.0	50.3	424.9	413.9	10.99	38.657	
3,300.0	3,272.8	3,271.8	3,271.8	9.0	5.7	178.11	0.0	50.3	439.5	428.2	11.34	38.762	
3,400.0	3,371.8	3,370.8	3,370.8	9.3	5.8	178.18	0.0	50.3	454.1	442.4	11.68	38.861	
3,500.0	3,470.7	3,469.7	3,469.7	9.7	6.0	178.23	0.0	50.3	468.7	456.6	12.03	38.953	
3,600.0	3,569.6	3,568.6	3,568.6	10.0	6.2	178.29	0.0	50.3	483.2	470.9	12.38	39.041	
3,700.0	3,668.6	3,667.6	3,667.6	10.3	6.3	178.34	0.0	50.3	497.8	485.1	12.72	39.124	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2D-5H-E267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
7,200.0	7,040.9	7,263.9	7,181.3	20.4	16.7	110.96	101.4	-1,361.3	493.5	467.6	25.91	19.050	
7,300.0	7,086.7	7,405.7	7,264.9	20.7	17.0	115.46	-12.4	-1,353.6	488.5	463.1	25.45	19.198	
7,400.0	7,116.5	7,554.2	7,319.9	21.2	17.6	118.18	-149.8	-1,348.5	484.3	458.9	25.43	19.043	
7,500.0	7,129.4	7,703.0	7,338.0	21.7	18.5	118.91	-297.1	-1,346.8	480.2	453.8	26.44	18.162	
7,600.0	7,130.0	7,803.0	7,338.0	22.3	19.2	118.98	-397.1	-1,346.8	478.8	450.8	28.02	17.090	
7,700.0	7,130.0	7,903.0	7,338.0	23.0	20.1	119.05	-497.1	-1,346.9	477.8	447.9	29.90	15.979	
7,800.0	7,130.0	8,003.0	7,338.0	23.9	21.1	119.12	-597.1	-1,346.9	476.7	444.7	31.96	14.915	
7,900.0	7,130.0	8,103.0	7,338.0	24.8	22.2	119.19	-697.1	-1,346.9	475.7	441.5	34.17	13.920	
8,000.0	7,130.0	8,203.0	7,338.0	25.9	23.4	119.27	-797.1	-1,346.9	474.6	438.1	36.50	13.003	
8,100.0	7,130.0	8,303.0	7,338.0	27.0	24.6	119.34	-897.1	-1,346.9	473.5	434.6	38.92	12.166	
8,200.0	7,130.0	8,402.9	7,338.0	28.2	25.9	119.41	-997.1	-1,346.9	472.5	431.0	41.43	11.405	
8,300.0	7,130.0	8,502.9	7,338.0	29.4	27.3	119.48	-1,097.1	-1,346.9	471.4	427.4	43.99	10.715	
8,400.0	7,130.0	8,602.9	7,338.0	30.7	28.7	119.56	-1,197.1	-1,346.9	470.4	423.7	46.61	10.090	
8,500.0	7,130.0	8,702.9	7,338.0	32.0	30.1	119.63	-1,297.0	-1,346.9	469.3	420.0	49.28	9.524	
8,600.0	7,130.0	8,802.9	7,338.0	33.4	31.6	119.70	-1,397.0	-1,346.9	468.3	416.3	51.98	9.009	
8,700.0	7,130.0	8,902.9	7,338.0	34.8	33.1	119.78	-1,497.0	-1,346.9	467.2	412.5	54.71	8.540	
8,800.0	7,130.0	9,002.9	7,338.0	36.2	34.6	119.85	-1,597.0	-1,346.9	466.1	408.7	57.46	8.112	
8,900.0	7,130.0	9,102.9	7,338.0	37.7	36.1	119.92	-1,697.0	-1,347.0	465.1	404.9	60.24	7.721	
9,000.0	7,130.0	9,202.9	7,338.0	39.1	37.7	120.00	-1,797.0	-1,347.0	464.0	401.0	63.03	7.362	
9,100.0	7,130.0	9,302.9	7,338.0	40.6	39.3	120.07	-1,897.0	-1,347.0	463.0	397.2	65.84	7.032	
9,200.0	7,130.0	9,402.9	7,338.0	42.2	40.9	120.15	-1,997.0	-1,347.0	461.9	393.3	68.66	6.728	
9,300.0	7,130.0	9,502.9	7,338.0	43.7	42.5	120.23	-2,097.0	-1,347.0	460.9	389.4	71.49	6.447	
9,400.0	7,130.0	9,602.9	7,338.0	45.3	44.1	120.30	-2,197.0	-1,347.0	459.8	385.5	74.32	6.187	
9,500.0	7,130.0	9,702.8	7,338.0	46.8	45.7	120.38	-2,297.0	-1,347.0	458.8	381.6	77.17	5.946	
9,600.0	7,130.0	9,802.8	7,338.0	48.4	47.4	120.45	-2,397.0	-1,347.0	457.7	377.7	80.02	5.721	
9,700.0	7,130.0	9,902.8	7,338.0	50.0	49.0	120.53	-2,497.0	-1,347.0	456.7	373.8	82.87	5.511	
9,800.0	7,130.0	10,002.8	7,338.0	51.6	50.6	120.61	-2,597.0	-1,347.0	455.7	369.9	85.72	5.315	
9,900.0	7,130.0	10,102.8	7,338.0	53.2	52.3	120.69	-2,696.9	-1,347.0	454.6	366.0	88.58	5.132	
10,000.0	7,130.0	10,202.8	7,338.0	54.9	54.0	120.77	-2,796.9	-1,347.0	453.6	362.1	91.44	4.960	
10,100.0	7,130.0	10,302.8	7,338.0	56.5	55.6	120.84	-2,896.9	-1,347.0	452.5	358.2	94.30	4.799	
10,200.0	7,130.0	10,402.8	7,338.0	58.1	57.3	120.92	-2,996.9	-1,347.1	451.5	354.3	97.17	4.647	
10,300.0	7,130.0	10,502.8	7,338.0	59.8	59.0	121.00	-3,096.9	-1,347.1	450.4	350.4	100.03	4.503	
10,400.0	7,130.0	10,602.8	7,338.0	61.4	60.7	121.08	-3,196.9	-1,347.1	449.4	346.5	102.89	4.368	
10,500.0	7,130.0	10,702.8	7,338.0	63.1	62.4	121.16	-3,296.9	-1,347.1	448.4	342.6	105.74	4.240	
10,600.0	7,130.0	10,802.8	7,338.0	64.7	64.0	121.24	-3,396.9	-1,347.1	447.3	338.7	108.60	4.119	
10,700.0	7,130.0	10,902.8	7,338.0	66.4	65.7	121.32	-3,496.9	-1,347.1	446.3	334.8	111.46	4.004	
10,800.0	7,130.0	11,002.8	7,338.0	68.1	67.4	121.40	-3,596.9	-1,347.1	445.3	330.9	114.31	3.895	
10,900.0	7,130.0	11,102.7	7,338.0	69.8	69.1	121.49	-3,696.9	-1,347.1	444.2	327.1	117.16	3.792	
11,000.0	7,130.0	11,202.7	7,338.0	71.4	70.8	121.57	-3,796.9	-1,347.1	443.2	323.2	120.01	3.693	
11,100.0	7,130.0	11,302.7	7,338.0	73.1	72.5	121.65	-3,896.9	-1,347.1	442.2	319.3	122.85	3.599	
11,200.0	7,130.0	11,402.7	7,338.0	74.8	74.2	121.73	-3,996.8	-1,347.1	441.1	315.4	125.69	3.510	
11,300.0	7,130.0	11,502.7	7,338.0	76.5	76.0	121.82	-4,096.8	-1,347.1	440.1	311.6	128.53	3.424	
11,400.0	7,130.0	11,602.7	7,338.0	78.2	77.7	121.90	-4,196.8	-1,347.2	439.1	307.7	131.36	3.342	
11,500.0	7,130.0	11,702.7	7,338.0	79.9	79.4	121.98	-4,296.8	-1,347.2	438.0	303.8	134.19	3.264	
11,600.0	7,130.0	11,802.7	7,338.0	81.6	81.1	122.07	-4,396.8	-1,347.2	437.0	300.0	137.01	3.189	
11,700.0	7,130.0	11,902.7	7,338.0	83.3	82.8	122.15	-4,496.8	-1,347.2	436.0	296.1	139.83	3.118	
11,800.0	7,130.0	12,002.7	7,338.0	85.0	84.5	122.24	-4,596.8	-1,347.2	434.9	292.3	142.65	3.049	
11,900.0	7,130.0	12,102.7	7,338.0	86.7	86.2	122.32	-4,696.8	-1,347.2	433.9	288.5	145.46	2.983	
12,000.0	7,130.0	12,202.7	7,338.0	88.4	88.0	122.41	-4,796.8	-1,347.2	432.9	284.6	148.26	2.920	
12,100.0	7,130.0	12,302.7	7,338.0	90.1	89.7	122.50	-4,896.8	-1,347.2	431.9	280.8	151.06	2.859	
12,200.0	7,130.0	12,402.6	7,338.0	91.8	91.4	122.58	-4,996.8	-1,347.2	430.8	277.0	153.86	2.800	
12,300.0	7,130.0	12,502.6	7,338.0	93.5	93.1	122.67	-5,096.8	-1,347.2	429.8	273.2	156.65	2.744	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2D-5H-E267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
12,400.0	7,130.0	12,602.6	7,338.0	95.2	94.9	122.76	-5,196.8	-1,347.2	428.8	269.4	159.43	2.690	
12,500.0	7,130.0	12,702.6	7,338.0	96.9	96.6	122.84	-5,296.8	-1,347.2	427.8	265.6	162.21	2.637	
12,600.0	7,130.0	12,802.6	7,338.0	98.7	98.3	122.93	-5,396.7	-1,347.2	426.8	261.8	164.98	2.587	
12,700.0	7,130.0	12,902.6	7,338.0	100.4	100.0	123.02	-5,496.7	-1,347.3	425.7	258.0	167.75	2.538	
12,800.0	7,130.0	13,002.6	7,338.0	102.1	101.8	123.11	-5,596.7	-1,347.3	424.7	254.2	170.51	2.491	
12,900.0	7,130.0	13,102.6	7,338.0	103.8	103.5	123.20	-5,696.7	-1,347.3	423.7	250.4	173.26	2.445	
13,000.0	7,130.0	13,202.6	7,338.0	105.5	105.2	123.29	-5,796.7	-1,347.3	422.7	246.7	176.01	2.401	
13,100.0	7,130.0	13,302.6	7,338.0	107.3	107.0	123.38	-5,896.7	-1,347.3	421.7	242.9	178.75	2.359	
13,200.0	7,130.0	13,402.6	7,338.0	109.0	108.7	123.47	-5,996.7	-1,347.3	420.7	239.2	181.49	2.318	
13,300.0	7,130.0	13,502.6	7,338.0	110.7	110.4	123.56	-6,096.7	-1,347.3	419.7	235.4	184.22	2.278	
13,400.0	7,130.0	13,602.6	7,338.0	112.4	112.2	123.66	-6,196.7	-1,347.3	418.6	231.7	186.94	2.239	
13,500.0	7,130.0	13,702.6	7,338.0	114.2	113.9	123.75	-6,296.7	-1,347.3	417.6	228.0	189.65	2.202	
13,600.0	7,130.0	13,802.5	7,338.0	115.9	115.6	123.84	-6,396.7	-1,347.3	416.6	224.3	192.36	2.166	
13,700.0	7,130.0	13,902.5	7,338.0	117.6	117.4	123.93	-6,496.7	-1,347.3	415.6	220.6	195.06	2.131	
13,800.0	7,130.0	14,002.5	7,338.0	119.3	119.1	124.03	-6,596.7	-1,347.3	414.6	216.9	197.76	2.097	
13,900.0	7,130.0	14,102.5	7,338.0	121.1	120.8	124.12	-6,696.6	-1,347.4	413.6	213.2	200.44	2.063	
14,000.0	7,130.0	14,202.5	7,338.0	122.8	122.6	124.22	-6,796.6	-1,347.4	412.6	209.5	203.12	2.031	
14,100.0	7,130.0	14,302.5	7,338.0	124.5	124.3	124.31	-6,896.6	-1,347.4	411.6	205.8	205.79	2.000	
14,200.0	7,130.0	14,402.5	7,338.0	126.3	126.0	124.41	-6,996.6	-1,347.4	410.6	202.1	208.46	1.970	
14,300.0	7,130.0	14,502.5	7,338.0	128.0	127.8	124.50	-7,096.6	-1,347.4	409.6	198.5	211.11	1.940	
14,400.0	7,130.0	14,602.5	7,338.0	129.7	129.5	124.60	-7,196.6	-1,347.4	408.6	194.8	213.76	1.911	
14,500.0	7,130.0	14,702.5	7,338.0	131.5	131.3	124.70	-7,296.6	-1,347.4	407.6	191.2	216.40	1.884	
14,600.0	7,130.0	14,802.5	7,338.0	133.2	133.0	124.79	-7,396.6	-1,347.4	406.6	187.6	219.04	1.856	
14,700.0	7,130.0	14,902.5	7,338.0	134.9	134.7	124.89	-7,496.6	-1,347.4	405.6	183.9	221.66	1.830	
14,800.0	7,130.0	15,002.5	7,338.0	136.7	136.5	124.99	-7,596.6	-1,347.4	404.6	180.3	224.28	1.804	
14,900.0	7,130.0	15,102.5	7,338.0	138.4	138.2	125.09	-7,696.6	-1,347.4	403.6	176.7	226.88	1.779	
14,933.4	7,130.0	15,135.9	7,338.0	139.0	138.8	125.12	-7,730.0	-1,347.4	403.3	175.5	227.75	1.771	CC, ES, SF

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2F-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	19.6	19.6				
100.0	100.0	100.0	100.0	0.1	0.1	90.05	0.0	19.6	19.6	19.3	0.24	80.060	
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	19.6	19.6	19.0	0.59	32.966	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	164.17	0.0	19.6	20.4	19.5	0.94	21.646	
400.0	400.0	400.0	400.0	0.7	0.6	165.95	0.0	19.6	22.9	21.6	1.29	17.755	
500.0	499.9	500.3	500.3	0.8	0.8	167.53	0.4	18.8	26.4	24.7	1.64	16.064	
600.0	599.7	600.7	600.7	1.0	1.0	168.26	1.5	16.4	29.9	27.9	1.99	15.002	
700.0	699.4	701.2	701.0	1.3	1.2	168.42	3.3	12.4	33.5	31.1	2.34	14.278	
800.0	798.9	801.7	801.3	1.5	1.4	168.16	5.9	6.8	37.1	34.4	2.70	13.754	
900.0	898.3	902.2	901.6	1.7	1.6	167.60	9.2	-0.4	40.8	37.7	3.05	13.357	
1,000.0	997.4	1,002.4	1,001.3	2.0	1.8	166.96	13.2	-8.8	44.9	41.4	3.41	13.139	
1,100.0	1,096.4	1,102.3	1,100.8	2.3	2.0	166.76	17.1	-17.4	50.2	46.4	3.78	13.286	
1,200.0	1,195.3	1,202.1	1,200.2	2.6	2.3	166.64	21.1	-25.9	55.6	51.5	4.14	13.430	
1,300.0	1,294.2	1,302.0	1,299.6	2.9	2.5	166.53	25.1	-34.5	61.1	56.6	4.51	13.548	
1,400.0	1,393.1	1,401.8	1,399.0	3.2	2.7	166.44	29.1	-43.0	66.5	61.7	4.88	13.645	
1,500.0	1,492.1	1,501.7	1,498.4	3.5	3.0	166.37	33.0	-51.6	72.0	66.7	5.24	13.728	
1,600.0	1,591.0	1,601.5	1,597.8	3.8	3.2	166.30	37.0	-60.1	77.4	71.8	5.61	13.798	
1,700.0	1,689.9	1,701.4	1,697.2	4.1	3.4	166.25	41.0	-68.7	82.9	76.9	5.98	13.859	
1,800.0	1,788.9	1,801.2	1,796.6	4.4	3.7	166.20	44.9	-77.2	88.4	82.0	6.35	13.911	
1,900.0	1,887.8	1,901.1	1,896.0	4.7	3.9	166.16	48.9	-85.8	93.8	87.1	6.72	13.958	
2,000.0	1,986.7	2,000.9	1,995.4	5.0	4.1	166.12	52.9	-94.3	99.3	92.2	7.09	13.999	
2,100.0	2,085.7	2,100.8	2,094.8	5.3	4.4	166.08	56.8	-102.9	104.7	97.3	7.46	14.035	
2,200.0	2,184.6	2,200.6	2,194.2	5.6	4.6	166.05	60.8	-111.4	110.2	102.3	7.83	14.068	
2,300.0	2,283.5	2,300.5	2,293.6	6.0	4.8	166.02	64.8	-120.0	115.6	107.4	8.20	14.098	
2,400.0	2,382.5	2,400.3	2,393.0	6.3	5.1	166.00	68.8	-128.5	121.1	112.5	8.57	14.125	
2,500.0	2,481.4	2,500.2	2,492.4	6.6	5.3	165.98	72.7	-137.1	126.5	117.6	8.94	14.149	
2,600.0	2,580.3	2,600.1	2,591.8	6.9	5.5	165.95	76.7	-145.6	132.0	122.7	9.31	14.171	
2,700.0	2,679.2	2,699.9	2,691.2	7.2	5.8	165.93	80.7	-154.2	137.4	127.7	9.68	14.192	
2,800.0	2,778.2	2,799.8	2,790.7	7.5	6.0	165.92	84.6	-162.7	142.9	132.8	10.05	14.210	
2,900.0	2,877.1	2,899.6	2,890.1	7.8	6.3	165.90	88.6	-171.3	148.3	137.9	10.43	14.228	
3,000.0	2,976.0	2,999.5	2,989.5	8.1	6.5	165.88	92.6	-179.8	153.8	143.0	10.80	14.244	
3,100.0	3,075.0	3,099.3	3,088.9	8.4	6.7	165.87	96.5	-188.4	159.2	148.1	11.17	14.259	
3,200.0	3,173.9	3,199.2	3,188.3	8.7	7.0	165.86	100.5	-196.9	164.7	153.2	11.54	14.272	
3,300.0	3,272.8	3,299.0	3,287.7	9.0	7.2	165.84	104.5	-205.5	170.1	158.2	11.91	14.285	
3,400.0	3,371.8	3,398.9	3,387.1	9.3	7.5	165.83	108.5	-214.0	175.6	163.3	12.28	14.297	
3,500.0	3,470.7	3,498.7	3,486.5	9.7	7.7	165.82	112.4	-222.5	181.1	168.4	12.65	14.309	
3,600.0	3,569.6	3,598.6	3,585.9	10.0	7.9	165.81	116.4	-231.1	186.5	173.5	13.02	14.319	
3,700.0	3,668.6	3,698.4	3,685.3	10.3	8.2	165.80	120.4	-239.6	192.0	178.6	13.40	14.329	
3,800.0	3,767.5	3,798.3	3,784.7	10.6	8.4	165.79	124.3	-248.2	197.4	183.6	13.77	14.339	
3,900.0	3,866.4	3,898.1	3,884.1	10.9	8.7	165.78	128.3	-256.7	202.9	188.7	14.14	14.348	
4,000.0	3,965.3	3,998.0	3,983.5	11.2	8.9	165.77	132.3	-265.3	208.3	193.8	14.51	14.356	
4,100.0	4,064.3	4,097.8	4,082.9	11.5	9.1	165.76	136.2	-273.8	213.8	198.9	14.88	14.364	
4,200.0	4,163.2	4,197.7	4,182.3	11.8	9.4	165.76	140.2	-282.4	219.2	204.0	15.25	14.372	
4,300.0	4,262.1	4,297.5	4,281.7	12.1	9.6	165.75	144.2	-290.9	224.7	209.1	15.63	14.379	
4,400.0	4,361.1	4,397.4	4,381.1	12.4	9.9	165.74	148.2	-299.5	230.1	214.1	16.00	14.386	
4,500.0	4,460.0	4,497.2	4,480.5	12.8	10.1	165.74	152.1	-308.0	235.6	219.2	16.37	14.392	
4,600.0	4,558.9	4,597.1	4,579.9	13.1	10.3	165.73	156.1	-316.6	241.0	224.3	16.74	14.399	
4,700.0	4,657.9	4,696.9	4,679.4	13.4	10.6	165.72	160.1	-325.1	246.5	229.4	17.11	14.404	
4,800.0	4,756.8	4,796.8	4,778.8	13.7	10.8	165.72	164.0	-333.7	251.9	234.5	17.48	14.410	
4,900.0	4,855.7	4,896.6	4,878.2	14.0	11.0	165.71	168.0	-342.2	257.4	239.5	17.86	14.416	
5,000.0	4,954.7	4,996.5	4,977.6	14.3	11.3	165.71	172.0	-350.8	262.9	244.6	18.23	14.421	
5,100.0	5,053.6	5,096.3	5,077.0	14.6	11.5	165.70	175.9	-359.3	268.3	249.7	18.60	14.426	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2F-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,152.5	5,196.2	5,176.4	14.9	11.8	165.70	179.9	-367.9	273.8	254.8	18.97	14.430	
5,300.0	5,251.5	5,296.0	5,275.8	15.2	12.0	165.69	183.9	-376.4	279.2	259.9	19.34	14.435	
5,400.0	5,350.4	5,395.9	5,375.2	15.5	12.2	165.69	187.8	-385.0	284.7	265.0	19.71	14.439	
5,500.0	5,449.3	5,495.7	5,474.6	15.9	12.5	165.68	191.8	-393.5	290.1	270.0	20.09	14.444	
5,600.0	5,548.2	5,595.6	5,574.0	16.2	12.7	165.68	195.8	-402.1	295.6	275.1	20.46	14.448	
5,700.0	5,647.2	5,695.4	5,673.4	16.5	13.0	165.68	199.8	-410.6	301.0	280.2	20.83	14.451	
5,800.0	5,746.1	5,795.3	5,772.8	16.8	13.2	165.67	203.7	-419.2	306.5	285.3	21.20	14.455	
5,900.0	5,845.0	5,895.1	5,872.2	17.1	13.4	165.67	207.7	-427.7	311.9	290.4	21.57	14.459	
6,000.0	5,944.0	5,995.0	5,971.6	17.4	13.7	165.66	211.7	-436.3	317.4	295.4	21.95	14.462	
6,100.0	6,042.9	6,094.8	6,071.0	17.7	13.9	165.66	215.6	-444.8	322.8	300.5	22.32	14.466	
6,200.0	6,141.8	6,194.7	6,170.4	18.0	14.2	165.66	219.6	-453.4	328.3	305.6	22.69	14.469	
6,300.0	6,240.8	6,294.5	6,269.8	18.3	14.4	165.65	223.6	-461.9	333.8	310.7	23.06	14.472	
6,400.0	6,339.7	6,394.4	6,369.2	18.7	14.6	165.65	227.5	-470.4	339.2	315.8	23.43	14.475	
6,500.0	6,438.6	6,494.2	6,468.6	19.0	14.9	165.65	231.5	-479.0	344.7	320.9	23.81	14.478	
6,600.0	6,537.6	6,594.1	6,568.1	19.3	15.1	165.64	235.5	-487.5	350.1	325.9	24.18	14.481	
6,700.0	6,636.3	6,693.5	6,667.0	19.5	15.4	-136.98	239.4	-496.1	355.4	330.8	24.59	14.454	
6,800.0	6,732.9	6,790.0	6,763.0	19.7	15.6	-118.01	243.3	-504.3	361.6	336.4	25.22	14.339	
6,900.0	6,824.3	6,888.0	6,860.7	19.9	15.8	-114.55	242.6	-512.7	371.1	345.3	25.80	14.380	
7,000.0	6,907.7	6,994.8	6,965.2	20.0	15.9	-115.21	223.5	-521.7	383.9	357.9	25.94	14.798	
7,100.0	6,980.7	7,111.1	7,072.8	20.2	16.0	-117.24	181.0	-530.9	398.9	373.3	25.57	15.602	
7,200.0	7,040.9	7,238.5	7,178.2	20.4	16.1	-119.63	110.6	-540.0	414.6	389.7	24.86	16.675	
7,300.0	7,086.7	7,378.0	7,272.8	20.7	16.3	-121.85	8.8	-548.1	429.1	404.8	24.30	17.658	
7,400.0	7,116.5	7,528.8	7,344.3	21.2	16.7	-123.49	-123.4	-554.3	440.3	415.8	24.49	17.977	
7,500.0	7,129.4	7,688.0	7,379.8	21.7	17.6	-124.26	-278.0	-557.3	446.6	420.5	26.05	17.144	
7,600.0	7,130.0	7,807.2	7,382.0	22.3	18.5	-124.23	-397.1	-557.5	448.0	420.2	27.87	16.077	
7,700.0	7,130.0	7,907.2	7,382.0	23.0	19.3	-124.14	-497.1	-557.5	449.0	419.4	29.61	15.166	
7,800.0	7,130.0	8,007.2	7,382.0	23.9	20.3	-124.05	-597.1	-557.5	450.0	418.5	31.53	14.274	
7,900.0	7,130.0	8,107.2	7,382.0	24.8	21.4	-123.97	-697.1	-557.5	451.1	417.5	33.60	13.425	
8,000.0	7,130.0	8,207.2	7,382.0	25.9	22.6	-123.88	-797.1	-557.5	452.1	416.3	35.79	12.630	
8,100.0	7,130.0	8,307.2	7,382.0	27.0	23.9	-123.79	-897.1	-557.5	453.1	415.0	38.09	11.894	
8,200.0	7,130.0	8,407.2	7,382.0	28.2	25.2	-123.71	-997.1	-557.5	454.1	413.6	40.48	11.218	
8,300.0	7,130.0	8,507.1	7,382.0	29.4	26.5	-123.62	-1,097.1	-557.5	455.1	412.2	42.94	10.598	
8,400.0	7,130.0	8,607.1	7,382.0	30.7	27.9	-123.54	-1,197.1	-557.5	456.1	410.7	45.47	10.032	
8,500.0	7,130.0	8,707.1	7,382.0	32.0	29.4	-123.45	-1,297.1	-557.5	457.2	409.1	48.05	9.514	
8,600.0	7,130.0	8,807.1	7,382.0	33.4	30.8	-123.37	-1,397.1	-557.5	458.2	407.5	50.68	9.041	
8,700.0	7,130.0	8,907.1	7,382.0	34.8	32.4	-123.29	-1,497.1	-557.5	459.2	405.9	53.35	8.608	
8,800.0	7,130.0	9,007.1	7,382.0	36.2	33.9	-123.20	-1,597.1	-557.5	460.2	404.2	56.05	8.211	
8,900.0	7,130.0	9,107.1	7,382.0	37.7	35.4	-123.12	-1,697.0	-557.5	461.2	402.5	58.79	7.846	
9,000.0	7,130.0	9,207.1	7,382.0	39.1	37.0	-123.04	-1,797.0	-557.5	462.3	400.7	61.55	7.510	
9,100.0	7,130.0	9,307.1	7,382.0	40.6	38.6	-122.95	-1,897.0	-557.5	463.3	399.0	64.34	7.201	
9,200.0	7,130.0	9,407.1	7,382.0	42.2	40.2	-122.87	-1,997.0	-557.5	464.3	397.2	67.15	6.914	
9,300.0	7,130.0	9,507.1	7,382.0	43.7	41.8	-122.79	-2,097.0	-557.5	465.3	395.4	69.98	6.649	
9,400.0	7,130.0	9,607.1	7,382.0	45.3	43.4	-122.71	-2,197.0	-557.5	466.4	393.5	72.84	6.403	
9,500.0	7,130.0	9,707.1	7,382.0	46.8	45.0	-122.63	-2,297.0	-557.5	467.4	391.7	75.70	6.174	
9,600.0	7,130.0	9,807.1	7,382.0	48.4	46.7	-122.55	-2,397.0	-557.5	468.4	389.8	78.59	5.960	
9,700.0	7,130.0	9,907.0	7,382.0	50.0	48.3	-122.47	-2,497.0	-557.5	469.5	388.0	81.49	5.761	
9,800.0	7,130.0	10,007.0	7,382.0	51.6	50.0	-122.39	-2,597.0	-557.5	470.5	386.1	84.40	5.574	
9,900.0	7,130.0	10,107.0	7,382.0	53.2	51.6	-122.31	-2,697.0	-557.5	471.5	384.2	87.33	5.400	
10,000.0	7,130.0	10,207.0	7,382.0	54.9	53.3	-122.23	-2,797.0	-557.5	472.6	382.3	90.26	5.235	
10,100.0	7,130.0	10,307.0	7,382.0	56.5	55.0	-122.15	-2,897.0	-557.5	473.6	380.4	93.21	5.081	
10,200.0	7,130.0	10,407.0	7,382.0	58.1	56.6	-122.07	-2,997.0	-557.5	474.6	378.5	96.17	4.935	
10,300.0	7,130.0	10,507.0	7,382.0	59.8	58.3	-121.99	-3,096.9	-557.5	475.7	376.5	99.14	4.798	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2F-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,400.0	7,130.0	10,607.0	7,382.0	61.4	60.0	-121.92	-3,196.9	-557.5	476.7	374.6	102.12	4.668	
10,500.0	7,130.0	10,707.0	7,382.0	63.1	61.7	-121.84	-3,296.9	-557.5	477.7	372.6	105.10	4.545	
10,600.0	7,130.0	10,807.0	7,382.0	64.7	63.4	-121.76	-3,396.9	-557.5	478.8	370.7	108.10	4.429	
10,700.0	7,130.0	10,907.0	7,382.0	66.4	65.1	-121.68	-3,496.9	-557.5	479.8	368.7	111.11	4.319	
10,800.0	7,130.0	11,007.0	7,382.0	68.1	66.8	-121.61	-3,596.9	-557.5	480.9	366.7	114.12	4.214	
10,900.0	7,130.0	11,107.0	7,382.0	69.8	68.5	-121.53	-3,696.9	-557.5	481.9	364.8	117.14	4.114	
11,000.0	7,130.0	11,206.9	7,382.0	71.4	70.2	-121.46	-3,796.9	-557.5	482.9	362.8	120.16	4.019	
11,100.0	7,130.0	11,306.9	7,382.0	73.1	71.9	-121.38	-3,896.9	-557.5	484.0	360.8	123.20	3.928	
11,200.0	7,130.0	11,406.9	7,382.0	74.8	73.6	-121.30	-3,996.9	-557.5	485.0	358.8	126.24	3.842	
11,300.0	7,130.0	11,506.9	7,382.0	76.5	75.3	-121.23	-4,096.9	-557.5	486.1	356.8	129.29	3.760	
11,400.0	7,130.0	11,606.9	7,382.0	78.2	77.0	-121.16	-4,196.9	-557.5	487.1	354.8	132.34	3.681	
11,500.0	7,130.0	11,708.4	7,382.0	79.9	78.8	-121.08	-4,298.3	-557.6	488.1	352.7	135.42	3.605	
11,600.0	7,130.0	11,816.2	7,382.0	81.6	80.6	-121.09	-4,406.2	-559.0	488.1	349.6	138.50	3.524	
11,700.0	7,130.0	11,923.2	7,382.0	83.3	82.5	-121.21	-4,513.0	-562.3	486.4	345.0	141.39	3.440	
11,800.0	7,130.0	12,023.1	7,382.0	85.0	84.2	-121.38	-4,612.9	-566.2	484.1	340.0	144.13	3.359	
11,900.0	7,130.0	12,123.1	7,382.0	86.7	85.9	-121.54	-4,712.8	-570.1	481.8	335.0	146.85	3.281	
12,000.0	7,130.0	12,223.1	7,382.0	88.4	87.7	-121.71	-4,812.7	-574.0	479.6	330.0	149.55	3.207	
12,100.0	7,130.0	12,323.0	7,382.0	90.1	89.4	-121.88	-4,912.6	-577.9	477.3	325.0	152.25	3.135	
12,200.0	7,130.0	12,423.0	7,382.0	91.8	91.1	-122.05	-5,012.5	-581.8	475.0	320.1	154.93	3.066	
12,300.0	7,130.0	12,522.9	7,382.0	93.5	92.9	-122.22	-5,112.4	-585.7	472.8	315.2	157.60	3.000	
12,400.0	7,130.0	12,622.9	7,382.0	95.2	94.6	-122.39	-5,212.3	-589.6	470.5	310.3	160.26	2.936	
12,500.0	7,130.0	12,722.9	7,382.0	96.9	96.3	-122.57	-5,312.1	-593.5	468.3	305.4	162.90	2.875	
12,600.0	7,130.0	12,822.8	7,382.0	98.7	98.1	-122.75	-5,412.0	-597.4	466.0	300.5	165.52	2.815	
12,700.0	7,130.0	12,922.8	7,382.0	100.4	99.8	-122.92	-5,511.9	-601.3	463.8	295.6	168.13	2.758	
12,800.0	7,130.0	13,022.8	7,382.0	102.1	101.5	-123.10	-5,611.8	-605.2	461.5	290.8	170.73	2.703	
12,900.0	7,130.0	13,122.7	7,382.0	103.8	103.3	-123.29	-5,711.7	-609.0	459.3	286.0	173.31	2.650	
13,000.0	7,130.0	13,222.7	7,382.0	105.5	105.0	-123.47	-5,811.6	-612.9	457.0	281.2	175.87	2.599	
13,100.0	7,130.0	13,322.7	7,382.0	107.3	106.7	-123.66	-5,911.5	-616.8	454.8	276.4	178.42	2.549	
13,200.0	7,130.0	13,422.6	7,382.0	109.0	108.5	-123.84	-6,011.4	-620.7	452.6	271.6	180.95	2.501	
13,300.0	7,130.0	13,522.6	7,382.0	110.7	110.2	-124.03	-6,111.3	-624.6	450.4	266.9	183.47	2.455	
13,400.0	7,130.0	13,622.6	7,382.0	112.4	112.0	-124.22	-6,211.1	-628.5	448.2	262.2	185.96	2.410	
13,500.0	7,130.0	13,722.5	7,382.0	114.2	113.7	-124.42	-6,311.0	-632.4	446.0	257.5	188.44	2.367	
13,600.0	7,130.0	13,822.5	7,382.0	115.9	115.4	-124.61	-6,410.9	-636.3	443.8	252.9	190.90	2.325	
13,700.0	7,130.0	13,922.4	7,382.0	117.6	117.2	-124.81	-6,510.8	-640.2	441.6	248.2	193.34	2.284	
13,800.0	7,130.0	14,022.4	7,382.0	119.3	118.9	-125.01	-6,610.7	-644.1	439.4	243.6	195.76	2.244	
13,900.0	7,130.0	14,122.4	7,382.0	121.1	120.7	-125.21	-6,710.6	-648.0	437.2	239.0	198.16	2.206	
14,000.0	7,130.0	14,222.3	7,382.0	122.8	122.4	-125.41	-6,810.5	-651.9	435.0	234.5	200.54	2.169	
14,100.0	7,130.0	14,322.3	7,382.0	124.5	124.1	-125.62	-6,910.4	-655.8	432.8	229.9	202.90	2.133	
14,200.0	7,130.0	14,422.3	7,382.0	126.3	125.9	-125.82	-7,010.3	-659.6	430.7	225.4	205.23	2.098	
14,300.0	7,130.0	14,522.2	7,382.0	128.0	127.6	-126.03	-7,110.1	-663.5	428.5	220.9	207.55	2.064	
14,400.0	7,130.0	14,622.2	7,382.0	129.7	129.4	-126.24	-7,210.0	-667.4	426.3	216.5	209.84	2.032	
14,500.0	7,130.0	14,722.2	7,382.0	131.5	131.1	-126.46	-7,309.9	-671.3	424.2	212.1	212.11	2.000	
14,600.0	7,130.0	14,822.1	7,382.0	133.2	132.9	-126.67	-7,409.8	-675.2	422.0	207.7	214.36	1.969	
14,700.0	7,130.0	14,922.1	7,382.0	134.9	134.6	-126.89	-7,509.7	-679.1	419.9	203.3	216.59	1.939	
14,800.0	7,130.0	15,022.1	7,382.0	136.7	136.3	-127.11	-7,609.6	-683.0	417.8	199.0	218.79	1.909	
14,900.0	7,130.0	15,122.0	7,382.0	138.4	138.1	-127.33	-7,709.5	-686.9	415.6	194.7	220.96	1.881	
14,929.4	7,130.0	15,142.6	7,382.0	138.9	138.4	-127.38	-7,730.0	-687.7	415.1	193.6	221.53	1.874	
14,933.4	7,130.0	15,142.6	7,382.0	139.0	138.4	-127.38	-7,730.0	-687.7	415.1	193.5	221.58	1.873	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2G-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	41.9	41.9				
100.0	100.0	99.0	99.0	0.1	0.1	90.05	0.0	41.9	41.9	41.7	0.24	172.420	
200.0	200.0	199.0	199.0	0.3	0.3	90.05	0.0	41.9	41.9	41.3	0.59	70.850	CC, ES
300.0	300.0	299.0	299.0	0.5	0.5	163.81	0.0	41.9	42.8	41.8	0.94	45.451	
400.0	400.0	399.0	399.0	0.7	0.6	164.72	0.0	41.9	45.3	44.0	1.29	35.104	
500.0	499.9	498.9	498.9	0.8	0.8	166.04	0.0	41.9	49.5	47.9	1.64	30.204	
600.0	599.7	598.7	598.7	1.0	1.0	167.55	0.0	41.9	55.4	53.5	1.99	27.897	
700.0	699.4	699.2	699.2	1.3	1.2	168.60	0.6	41.3	62.5	60.1	2.34	26.724	
800.0	798.9	799.9	799.8	1.5	1.3	168.81	2.4	39.4	69.8	67.1	2.69	25.971	
900.0	898.3	900.6	900.4	1.7	1.5	168.41	5.4	36.2	77.5	74.5	3.04	25.474	
1,000.0	997.4	1,000.9	1,000.6	2.0	1.7	167.64	9.6	31.9	85.7	82.2	3.40	25.177	
1,100.0	1,096.4	1,100.5	1,100.0	2.3	1.9	167.06	14.0	27.3	94.9	91.1	3.77	25.206	
1,200.0	1,195.3	1,200.1	1,199.3	2.6	2.1	166.61	18.3	22.7	104.3	100.2	4.13	25.238	
1,300.0	1,294.2	1,299.6	1,298.7	2.9	2.3	166.23	22.7	18.1	113.7	109.2	4.50	25.254	
1,400.0	1,393.1	1,399.2	1,398.0	3.2	2.5	165.91	27.1	13.6	123.1	118.2	4.87	25.260	
1,500.0	1,492.1	1,498.7	1,497.4	3.5	2.7	165.64	31.4	9.0	132.5	127.2	5.24	25.260	
1,600.0	1,591.0	1,598.3	1,596.7	3.8	2.9	165.40	35.8	4.4	141.9	136.2	5.62	25.254	
1,700.0	1,689.9	1,697.8	1,696.1	4.1	3.1	165.20	40.2	-0.1	151.3	145.3	5.99	25.246	
1,800.0	1,788.9	1,797.4	1,795.5	4.4	3.3	165.01	44.6	-4.7	160.7	154.3	6.37	25.236	
1,900.0	1,887.8	1,896.9	1,894.8	4.7	3.5	164.85	48.9	-9.3	170.1	163.3	6.74	25.224	
2,000.0	1,986.7	1,996.5	1,994.2	5.0	3.7	164.70	53.3	-13.9	179.5	172.4	7.12	25.212	
2,100.0	2,085.7	2,096.1	2,093.5	5.3	3.9	164.57	57.7	-18.4	188.9	181.4	7.50	25.200	
2,200.0	2,184.6	2,195.6	2,192.9	5.6	4.1	164.45	62.1	-23.0	198.3	190.4	7.87	25.187	
2,300.0	2,283.5	2,295.2	2,292.2	6.0	4.3	164.34	66.4	-27.6	207.7	199.4	8.25	25.174	
2,400.0	2,382.5	2,394.7	2,391.6	6.3	4.5	164.24	70.8	-32.2	217.1	208.5	8.63	25.162	
2,500.0	2,481.4	2,494.3	2,490.9	6.6	4.7	164.15	75.2	-36.7	226.5	217.5	9.01	25.150	
2,600.0	2,580.3	2,593.8	2,590.3	6.9	4.9	164.07	79.5	-41.3	235.9	226.5	9.39	25.138	
2,700.0	2,679.2	2,693.4	2,689.6	7.2	5.1	163.99	83.9	-45.9	245.3	235.6	9.76	25.126	
2,800.0	2,778.2	2,792.9	2,789.0	7.5	5.3	163.92	88.3	-50.5	254.7	244.6	10.14	25.115	
2,900.0	2,877.1	2,892.5	2,888.4	7.8	5.5	163.86	92.7	-55.0	264.2	253.6	10.52	25.104	
3,000.0	2,976.0	2,992.1	2,987.7	8.1	5.7	163.79	97.0	-59.6	273.6	262.7	10.90	25.094	
3,100.0	3,075.0	3,091.6	3,087.1	8.4	5.9	163.74	101.4	-64.2	283.0	271.7	11.28	25.084	
3,200.0	3,173.9	3,191.2	3,186.4	8.7	6.2	163.68	105.8	-68.8	292.4	280.7	11.66	25.074	
3,300.0	3,272.8	3,290.7	3,285.8	9.0	6.4	163.63	110.2	-73.3	301.8	289.8	12.04	25.065	
3,400.0	3,371.8	3,390.3	3,385.1	9.3	6.6	163.58	114.5	-77.9	311.2	298.8	12.42	25.056	
3,500.0	3,470.7	3,489.8	3,484.5	9.7	6.8	163.54	118.9	-82.5	320.6	307.8	12.80	25.047	
3,600.0	3,569.6	3,589.4	3,583.8	10.0	7.0	163.50	123.3	-87.0	330.0	316.9	13.18	25.039	
3,700.0	3,668.6	3,688.9	3,683.2	10.3	7.2	163.46	127.7	-91.6	339.5	325.9	13.56	25.031	
3,800.0	3,767.5	3,788.5	3,782.5	10.6	7.4	163.42	132.0	-96.2	348.9	334.9	13.94	25.023	
3,900.0	3,866.4	3,888.1	3,881.9	10.9	7.6	163.38	136.4	-100.8	358.3	344.0	14.32	25.016	
4,000.0	3,965.3	3,987.6	3,981.3	11.2	7.8	163.35	140.8	-105.3	367.7	353.0	14.70	25.008	
4,100.0	4,064.3	4,087.2	4,080.6	11.5	8.0	163.32	145.1	-109.9	377.1	362.0	15.08	25.002	
4,200.0	4,163.2	4,186.7	4,180.0	11.8	8.2	163.29	149.5	-114.5	386.5	371.1	15.46	24.995	
4,300.0	4,262.1	4,286.3	4,279.3	12.1	8.4	163.26	153.9	-119.1	395.9	380.1	15.85	24.988	
4,400.0	4,361.1	4,385.8	4,378.7	12.4	8.6	163.23	158.3	-123.6	405.4	389.1	16.23	24.982	
4,500.0	4,460.0	4,485.4	4,478.0	12.8	8.8	163.20	162.6	-128.2	414.8	398.2	16.61	24.976	
4,600.0	4,558.9	4,584.9	4,577.4	13.1	9.0	163.18	167.0	-132.8	424.2	407.2	16.99	24.970	
4,700.0	4,657.9	4,684.5	4,676.7	13.4	9.2	163.15	171.4	-137.4	433.6	416.2	17.37	24.965	
4,800.0	4,756.8	4,784.1	4,776.1	13.7	9.4	163.13	175.8	-141.9	443.0	425.3	17.75	24.959	
4,900.0	4,855.7	4,883.6	4,875.4	14.0	9.6	163.11	180.1	-146.5	452.4	434.3	18.13	24.954	
5,000.0	4,954.7	4,983.2	4,974.8	14.3	9.8	163.09	184.5	-151.1	461.8	443.3	18.51	24.949	
5,100.0	5,053.6	5,082.7	5,074.2	14.6	10.1	163.07	188.9	-155.6	471.3	452.4	18.89	24.944	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2G-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,152.5	5,182.3	5,173.5	14.9	10.3	163.05	193.3	-160.2	480.7	461.4	19.27	24.939	
5,300.0	5,251.5	5,281.8	5,272.9	15.2	10.5	163.03	197.6	-164.8	490.1	470.4	19.65	24.935	
5,400.0	5,350.4	5,381.4	5,372.2	15.5	10.7	163.01	202.0	-169.4	499.5	479.5	20.04	24.930	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2H-5H-F267 - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

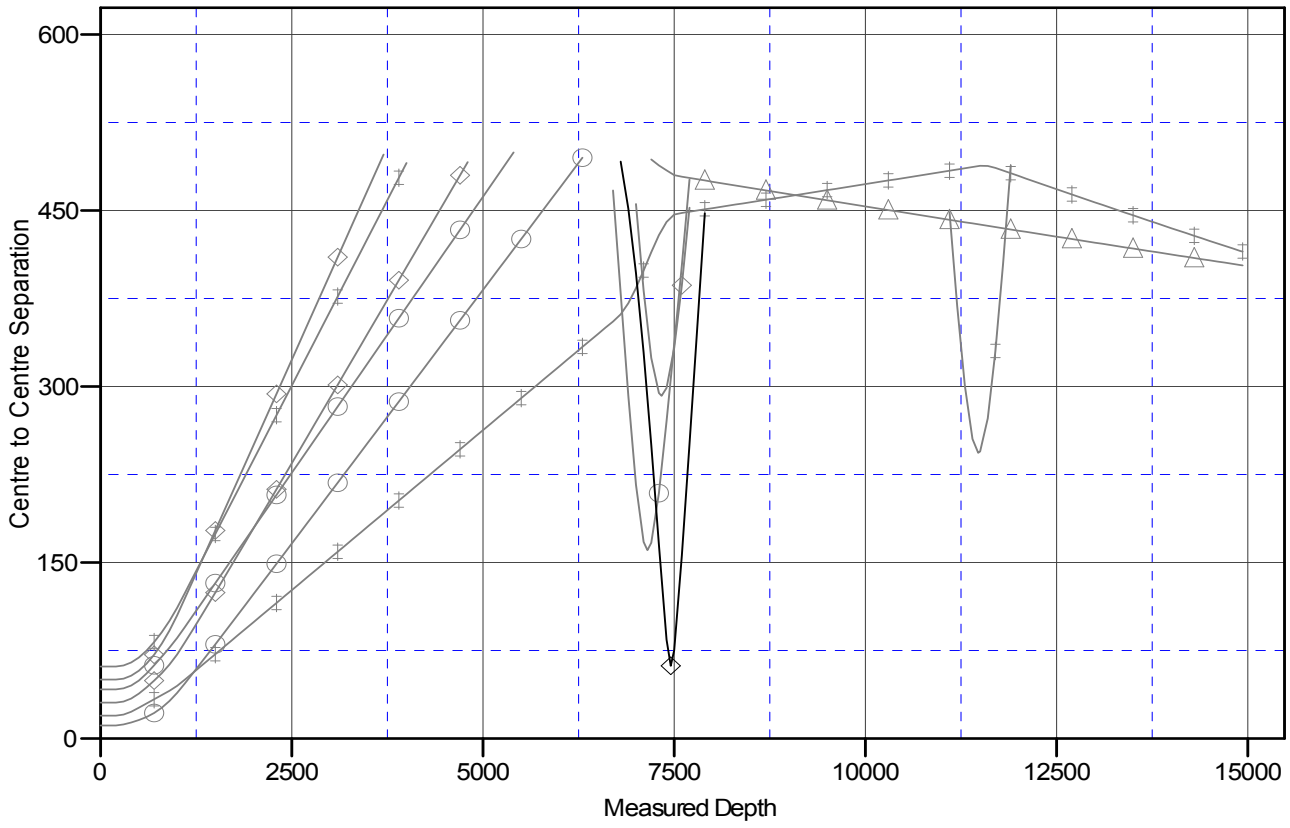
Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	61.5	61.5				
100.0	100.0	99.0	99.0	0.1	0.1	90.05	0.0	61.5	61.5	61.2	0.24	252.883	
200.0	200.0	199.0	199.0	0.3	0.3	90.05	0.0	61.5	61.5	60.9	0.59	103.913	CC, ES
300.0	300.0	299.0	299.0	0.5	0.5	163.70	0.0	61.5	62.3	61.4	0.94	66.246	
400.0	400.0	399.0	399.0	0.7	0.6	164.35	0.0	61.5	64.8	63.5	1.29	50.267	
500.0	499.9	498.9	498.9	0.8	0.8	165.31	0.0	61.5	69.0	67.4	1.64	42.129	
600.0	599.7	598.7	598.7	1.0	1.0	166.48	0.0	61.5	75.0	73.0	1.99	37.715	
700.0	699.4	698.9	698.9	1.3	1.2	167.19	0.8	61.2	82.3	80.0	2.34	35.205	
800.0	798.9	799.1	799.1	1.5	1.3	166.99	3.2	60.4	90.7	88.0	2.69	33.705	
900.0	898.3	898.9	898.8	1.7	1.5	166.23	7.2	59.1	100.2	97.2	3.05	32.884	
1,000.0	997.4	998.3	998.1	2.0	1.7	165.72	11.3	57.8	111.4	108.0	3.41	32.687	SF
1,100.0	1,096.4	1,097.5	1,097.2	2.3	1.9	165.47	15.4	56.5	123.9	120.1	3.77	32.856	
1,200.0	1,195.3	1,196.7	1,196.3	2.6	2.1	165.30	19.5	55.1	136.5	132.4	4.14	32.999	
1,300.0	1,294.2	1,295.9	1,295.4	2.9	2.3	165.15	23.5	53.8	149.2	144.7	4.50	33.110	
1,400.0	1,393.1	1,395.1	1,394.5	3.2	2.4	165.03	27.6	52.5	161.8	156.9	4.87	33.196	
1,500.0	1,492.1	1,494.3	1,493.6	3.5	2.6	164.93	31.7	51.1	174.4	169.2	5.24	33.265	
1,600.0	1,591.0	1,593.5	1,592.7	3.8	2.8	164.83	35.8	49.8	187.1	181.5	5.61	33.320	
1,700.0	1,689.9	1,692.7	1,691.8	4.1	3.0	164.76	39.9	48.5	199.7	193.7	5.99	33.366	
1,800.0	1,788.9	1,791.9	1,790.9	4.4	3.2	164.69	44.0	47.2	212.4	206.0	6.36	33.404	
1,900.0	1,887.8	1,891.1	1,890.0	4.7	3.4	164.62	48.1	45.8	225.0	218.3	6.73	33.435	
2,000.0	1,986.7	1,990.3	1,989.1	5.0	3.6	164.57	52.2	44.5	237.7	230.6	7.10	33.462	
2,100.0	2,085.7	2,089.5	2,088.2	5.3	3.7	164.52	56.3	43.2	250.3	242.8	7.48	33.485	
2,200.0	2,184.6	2,188.7	2,187.3	5.6	3.9	164.47	60.4	41.8	263.0	255.1	7.85	33.504	
2,300.0	2,283.5	2,287.9	2,286.5	6.0	4.1	164.43	64.5	40.5	275.6	267.4	8.22	33.521	
2,400.0	2,382.5	2,387.1	2,385.6	6.3	4.3	164.40	68.6	39.2	288.3	279.7	8.60	33.536	
2,500.0	2,481.4	2,486.3	2,484.7	6.6	4.5	164.36	72.7	37.8	300.9	291.9	8.97	33.548	
2,600.0	2,580.3	2,585.5	2,583.8	6.9	4.7	164.33	76.8	36.5	313.5	304.2	9.34	33.560	
2,700.0	2,679.2	2,684.7	2,682.9	7.2	4.9	164.30	80.9	35.2	326.2	316.5	9.72	33.570	
2,800.0	2,778.2	2,783.9	2,782.0	7.5	5.1	164.27	85.0	33.8	338.8	328.7	10.09	33.578	
2,900.0	2,877.1	2,883.1	2,881.1	7.8	5.3	164.25	89.1	32.5	351.5	341.0	10.47	33.586	
3,000.0	2,976.0	2,982.3	2,980.2	8.1	5.4	164.23	93.2	31.2	364.1	353.3	10.84	33.593	
3,100.0	3,075.0	3,081.5	3,079.3	8.4	5.6	164.20	97.3	29.8	376.8	365.6	11.21	33.599	
3,200.0	3,173.9	3,180.7	3,178.4	8.7	5.8	164.18	101.4	28.5	389.4	377.8	11.59	33.605	
3,300.0	3,272.8	3,279.9	3,277.5	9.0	6.0	164.17	105.5	27.2	402.1	390.1	11.96	33.610	
3,400.0	3,371.8	3,379.1	3,376.6	9.3	6.2	164.15	109.6	25.8	414.7	402.4	12.34	33.615	
3,500.0	3,470.7	3,478.2	3,475.7	9.7	6.4	164.13	113.6	24.5	427.4	414.7	12.71	33.619	
3,600.0	3,569.6	3,577.4	3,574.8	10.0	6.6	164.12	117.7	23.2	440.0	426.9	13.09	33.623	
3,700.0	3,668.6	3,676.6	3,673.9	10.3	6.8	164.10	121.8	21.9	452.7	439.2	13.46	33.626	
3,800.0	3,767.5	3,775.8	3,773.0	10.6	6.9	164.09	125.9	20.5	465.3	451.5	13.84	33.629	
3,900.0	3,866.4	3,875.0	3,872.1	10.9	7.1	164.07	130.0	19.2	478.0	463.7	14.21	33.632	
4,000.0	3,965.3	3,974.2	3,971.2	11.2	7.3	164.06	134.1	17.9	490.6	476.0	14.59	33.635	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Vogl-McCoy 2E-5H-F267
Project:	DJ Wattenberg	**TVD Reference:**	KB @ 4890.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	**MD Reference:**	KB @ 4890.0ft (Ensign)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Vogl-McCoy 2E-5H-F267	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to KB @ 4890.0ft (Ensign)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Vogl-McCoy 2E-5H-F267
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.38°



L E G E N D

, Plan #1 V0
XISTING), KMG WELL, NO SURVEYS V0
-Iz, Plan #1 V0
-Iz, Plan #1 V0
Vogl-Geist 2F-5H-F267, Hz, Plan #1 V0
MCCOY 2-4-5 (EXISTING), ENCANA WELL, SURVEYS V0
Vogl-McCoy 2G-5H-F267, Hz, Plan #1 V0
Vogl-Geist 2E-5H-F267, Hz, Plan #1 V0
Vogl-McCoy 2D-5H-E267, Hz, Plan #
DIER 24-8 (EXISTING), ENCANA WE
Vogl-Geist 2C-5H-E267, Hz, Plan #1