



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Davis 1B-9H
Project:	DJ Wattenberg	TVD Reference:	KB=13' @ 4928.0ft (Ensign 124)
Site:	SWNW S9-T2N-R66W (Davis)	MD Reference:	KB=13' @ 4928.0ft (Ensign 124)
Well:	Davis 1B-9H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	Hz	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		SWNW S9-T2N-R66W (Davis)			
Site Position:		Northing:	1,299,903.26 ft	Latitude:	40.154440
From:	Lat/Long	Easting:	3,198,510.39 ft	Longitude:	-104.789830
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.46 °

Well	Davis 1B-9H					
Well Position	+N/-S	0.0 ft	Northing:	1,299,597.27 ft	Latitude:	40.153530
	+E/-W	0.0 ft	Easting:	3,201,674.35 ft	Longitude:	-104.778520
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,915.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/7/2012	8.73	66.82	52,905

Design	Hz				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	358.00	

Survey Program	Date	5/21/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
79.0	14,524.0	Survey #1 (Hz)	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		
79.0	0.40	218.40	79.0	-0.2	-0.2	-0.2	0.51	0.51		
172.0	0.40	194.70	172.0	-0.8	-0.5	-0.8	0.18	0.00		
265.0	0.40	220.50	265.0	-1.3	-0.7	-1.3	0.19	0.00		
358.0	0.70	212.60	358.0	-2.1	-1.3	-2.0	0.33	0.32		
451.0	0.80	229.50	451.0	-3.0	-2.1	-2.9	0.26	0.11		
544.0	0.80	229.30	544.0	-3.8	-3.1	-3.7	0.00	0.00		
637.0	1.10	244.40	637.0	-4.6	-4.3	-4.5	0.42	0.32		
730.0	1.00	252.30	729.9	-5.3	-5.9	-5.0	0.19	-0.11		
823.0	0.80	236.20	822.9	-5.9	-7.2	-5.6	0.34	-0.22		
916.0	0.70	259.80	915.9	-6.3	-8.3	-6.0	0.35	-0.11		
930.0	0.70	266.30	929.9	-6.3	-8.5	-6.0	0.57	0.00		
1,005.0	0.70	275.90	1,004.9	-6.3	-9.4	-6.0	0.16	0.00		

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Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	Hz	Database:	USA EDM 5000 Multi Users DB

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1,098.0	0.90	284.60	1,097.9	-6.1	-10.7	-5.7	0.25	0.22	
1,191.0	1.90	209.20	1,190.9	-7.2	-12.2	-6.8	2.03	1.08	
1,284.0	5.10	196.60	1,283.7	-12.6	-14.1	-12.1	3.52	3.44	
1,377.0	6.30	210.10	1,376.2	-20.9	-17.8	-20.3	1.93	1.29	
1,470.0	5.70	192.30	1,468.7	-29.9	-21.4	-29.1	2.09	-0.65	
1,566.0	4.80	169.80	1,564.4	-38.5	-21.7	-37.7	2.32	-0.94	
1,661.0	2.70	174.00	1,659.1	-44.6	-20.7	-43.9	2.23	-2.21	
1,756.0	2.20	182.40	1,754.1	-48.7	-20.6	-47.9	0.65	-0.53	
1,851.0	2.50	181.80	1,849.0	-52.6	-20.7	-51.8	0.32	0.32	
1,946.0	2.00	178.00	1,943.9	-56.3	-20.7	-55.5	0.55	-0.53	
2,041.0	0.70	183.60	2,038.9	-58.5	-20.7	-57.8	1.37	-1.37	
2,137.0	2.80	183.70	2,134.8	-61.4	-20.9	-60.7	2.19	2.19	
2,232.0	2.90	177.70	2,229.7	-66.2	-20.9	-65.4	0.33	0.11	
2,327.0	3.20	182.10	2,324.6	-71.2	-20.9	-70.4	0.40	0.32	
2,422.0	2.90	177.10	2,419.4	-76.3	-20.9	-75.5	0.42	-0.32	
2,517.0	2.90	179.60	2,514.3	-81.1	-20.8	-80.3	0.13	0.00	
2,612.0	2.60	180.70	2,609.2	-85.6	-20.8	-84.8	0.32	-0.32	
2,707.0	2.50	189.10	2,704.1	-89.8	-21.1	-89.0	0.41	-0.11	
2,803.0	4.00	191.70	2,800.0	-95.2	-22.2	-94.3	1.57	1.56	
2,898.0	4.40	169.60	2,894.7	-102.0	-22.2	-101.2	1.74	0.42	
2,993.0	4.30	168.50	2,989.4	-109.1	-20.8	-108.3	0.14	-0.11	
3,088.0	2.90	173.90	3,084.2	-115.0	-19.8	-114.2	1.51	-1.47	
3,183.0	2.30	174.10	3,179.1	-119.2	-19.4	-118.5	0.63	-0.63	
3,279.0	2.20	164.50	3,275.1	-122.9	-18.7	-122.2	0.41	-0.10	
3,374.0	2.00	138.00	3,370.0	-125.9	-17.1	-125.2	1.03	-0.21	
3,469.0	2.40	170.00	3,464.9	-129.1	-15.6	-128.5	1.34	0.42	
3,564.0	2.50	167.30	3,559.9	-133.1	-14.8	-132.5	0.16	0.11	
3,659.0	2.50	166.90	3,654.8	-137.1	-13.9	-136.6	0.02	0.00	
3,754.0	3.40	187.60	3,749.6	-141.9	-13.8	-141.4	1.45	0.95	
3,850.0	4.10	174.20	3,845.4	-148.2	-13.9	-147.6	1.16	0.73	
3,945.0	3.10	209.40	3,940.3	-153.8	-14.8	-153.2	2.50	-1.05	
4,040.0	2.40	200.60	4,035.1	-157.9	-16.7	-157.2	0.86	-0.74	
4,135.0	4.00	198.90	4,130.0	-162.9	-18.5	-162.1	1.69	1.68	
4,230.0	4.10	198.50	4,224.8	-169.2	-20.7	-168.4	0.11	0.11	
4,325.0	4.40	185.80	4,319.5	-176.1	-22.1	-175.2	1.04	0.32	
4,421.0	4.10	180.80	4,415.2	-183.2	-22.5	-182.3	0.50	-0.31	
4,516.0	4.20	184.90	4,510.0	-190.0	-22.9	-189.1	0.33	0.11	
4,611.0	3.90	181.90	4,604.8	-196.7	-23.3	-195.8	0.39	-0.32	
4,706.0	3.60	182.90	4,699.5	-203.0	-23.5	-202.0	0.32	-0.32	
4,801.0	3.40	182.30	4,794.4	-208.7	-23.8	-207.8	0.21	-0.21	
4,897.0	3.40	151.50	4,890.2	-214.1	-22.5	-213.2	1.88	0.00	
4,992.0	4.70	163.90	4,985.0	-220.3	-20.1	-219.5	1.64	1.37	
5,087.0	5.50	179.70	5,079.6	-228.6	-19.0	-227.8	1.69	0.84	
5,182.0	5.60	176.30	5,174.2	-237.8	-18.7	-237.0	0.36	0.11	
5,277.0	3.70	181.40	5,268.8	-245.5	-18.5	-244.7	2.04	-2.00	
5,373.0	2.80	184.00	5,364.7	-250.9	-18.7	-250.1	0.95	-0.94	
5,468.0	2.50	193.60	5,459.6	-255.2	-19.4	-254.4	0.56	-0.32	
5,563.0	3.10	216.20	5,554.5	-259.3	-21.4	-258.4	1.31	0.63	
5,658.0	3.50	195.90	5,649.3	-264.2	-23.7	-263.2	1.29	0.42	
5,753.0	3.80	187.10	5,744.1	-270.1	-24.9	-269.1	0.67	0.32	
5,848.0	3.70	160.80	5,838.9	-276.1	-24.2	-275.1	1.80	-0.11	
5,944.0	2.40	178.70	5,934.8	-281.0	-23.2	-280.1	1.66	-1.35	
6,039.0	2.20	182.10	6,029.7	-284.9	-23.2	-283.9	0.25	-0.21	

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Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	Hz	Database:	USA EDM 5000 Multi Users DB

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6,134.0	1.60	161.60	6,124.7	-287.9	-22.8	-287.0	0.94	-0.63	
6,229.0	2.00	170.40	6,219.6	-290.8	-22.2	-289.9	0.51	0.42	
6,324.0	2.20	161.80	6,314.6	-294.2	-21.3	-293.3	0.39	0.21	
6,419.0	2.10	175.30	6,409.5	-297.7	-20.6	-296.8	0.54	-0.11	
6,515.0	2.00	186.50	6,505.4	-301.1	-20.6	-300.2	0.43	-0.10	
6,610.0	2.10	203.60	6,600.4	-304.3	-21.5	-303.4	0.65	0.11	
6,642.0	0.80	249.40	6,632.4	-304.9	-22.0	-304.0	5.14	-4.06	
6,673.0	2.20	343.60	6,663.3	-304.4	-22.3	-303.5	7.73	4.52	
6,705.0	4.40	354.10	6,695.3	-302.6	-22.6	-301.7	7.10	6.87	
6,737.0	7.30	357.10	6,727.1	-299.4	-22.9	-298.4	9.11	9.06	
6,768.0	10.50	359.20	6,757.7	-294.6	-23.0	-293.6	10.37	10.32	
6,800.0	13.50	358.80	6,789.0	-287.9	-23.1	-287.0	9.38	9.37	
6,832.0	16.40	359.80	6,820.0	-279.7	-23.2	-278.7	9.10	9.06	
6,864.0	19.60	0.40	6,850.4	-269.8	-23.2	-268.8	10.02	10.00	
6,895.0	23.10	359.90	6,879.3	-258.5	-23.2	-257.5	11.31	11.29	
6,927.0	26.60	0.20	6,908.3	-245.1	-23.2	-244.1	10.94	10.94	
6,959.0	30.10	1.30	6,936.4	-229.9	-23.0	-228.9	11.06	10.94	
6,990.0	33.80	2.20	6,962.7	-213.5	-22.4	-212.6	12.03	11.94	
7,022.0	38.20	2.80	6,988.6	-194.7	-21.6	-193.8	13.79	13.75	
7,054.0	40.60	3.00	7,013.4	-174.4	-20.6	-173.6	7.51	7.50	
7,086.0	43.30	1.90	7,037.1	-153.0	-19.7	-152.3	8.74	8.44	
7,117.0	46.60	1.40	7,059.1	-131.2	-19.1	-130.4	10.71	10.65	
7,149.0	49.60	2.10	7,080.5	-107.4	-18.3	-106.6	9.52	9.37	
7,181.0	52.80	2.90	7,100.5	-82.4	-17.2	-81.8	10.19	10.00	
7,213.0	55.50	3.80	7,119.2	-56.6	-15.7	-56.0	8.74	8.44	
7,244.0	59.00	3.40	7,136.0	-30.5	-14.1	-30.0	11.34	11.29	
7,276.0	63.00	3.20	7,151.5	-2.6	-12.5	-2.2	12.51	12.50	
7,308.0	67.00	2.40	7,165.0	26.4	-11.1	26.7	12.70	12.50	
7,339.0	71.40	2.30	7,176.0	55.3	-9.9	55.6	14.20	14.19	
7,371.0	75.10	2.10	7,185.3	85.9	-8.7	86.2	11.58	11.56	
7,403.0	78.80	1.40	7,192.5	117.1	-7.7	117.3	11.76	11.56	
7,435.0	82.90	0.90	7,197.6	148.7	-7.1	148.8	12.90	12.81	
7,497.0	91.80	0.80	7,200.4	210.5	-6.2	210.6	14.36	14.35	
7,561.0	91.00	1.00	7,198.9	274.5	-5.2	274.5	1.29	-1.25	
7,624.0	89.80	0.20	7,198.4	337.5	-4.5	337.4	2.29	-1.90	
7,688.0	88.90	0.60	7,199.2	401.5	-4.1	401.4	1.54	-1.41	
7,751.0	89.00	359.80	7,200.3	464.5	-3.9	464.3	1.28	0.16	
7,812.0	89.50	0.40	7,201.1	525.5	-3.8	525.3	1.28	0.82	
7,874.0	91.50	359.50	7,200.6	587.5	-3.8	587.2	3.54	3.23	
7,936.0	91.30	359.20	7,199.1	649.4	-4.5	649.2	0.58	-0.32	
7,998.0	91.30	358.90	7,197.7	711.4	-5.5	711.2	0.48	0.00	
8,060.0	92.30	358.50	7,195.7	773.4	-6.9	773.1	1.74	1.61	
8,122.0	92.60	359.30	7,193.1	835.3	-8.1	835.1	1.38	0.48	
8,184.0	91.40	359.80	7,190.9	897.3	-8.6	897.0	2.10	-1.94	
8,246.0	92.20	0.50	7,188.9	959.2	-8.5	958.9	1.71	1.29	
8,309.0	92.10	0.40	7,186.6	1,022.2	-8.0	1,021.8	0.22	-0.16	
8,371.0	91.60	1.20	7,184.6	1,084.1	-7.1	1,083.7	1.52	-0.81	
8,433.0	91.40	0.60	7,183.0	1,146.1	-6.1	1,145.6	1.02	-0.32	
8,495.0	90.90	0.80	7,181.7	1,208.1	-5.4	1,207.5	0.87	-0.81	
8,557.0	90.50	0.00	7,181.0	1,270.1	-4.9	1,269.5	1.44	-0.65	
8,650.0	90.20	0.70	7,180.4	1,363.1	-4.4	1,362.4	0.82	-0.32	
8,743.0	90.00	359.60	7,180.2	1,456.1	-4.1	1,455.3	1.20	-0.22	
8,836.0	91.00	0.30	7,179.4	1,549.1	-4.2	1,548.3	1.31	1.08	

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8,929.0	91.90	0.80	7,177.1	1,642.0	-3.3	1,641.2	1.11	0.97	
9,022.0	91.10	1.00	7,174.6	1,735.0	-1.8	1,734.0	0.89	-0.86	
9,115.0	88.90	1.50	7,174.6	1,828.0	0.2	1,826.8	2.43	-2.37	
9,210.0	87.60	0.70	7,177.5	1,922.9	2.0	1,921.7	1.61	-1.37	
9,305.0	89.30	1.60	7,180.1	2,017.8	3.9	2,016.5	2.02	1.79	
9,400.0	90.20	1.10	7,180.5	2,112.8	6.1	2,111.3	1.08	0.95	
9,495.0	92.10	0.50	7,178.6	2,207.8	7.5	2,206.2	2.10	2.00	
9,590.0	92.40	359.50	7,174.9	2,302.7	7.5	2,301.0	1.10	0.32	
9,599.5	92.22	359.59	7,174.5	2,312.2	7.4	2,310.6	2.10	-1.87	Interp @ 7163.7 (Davis 1B-9H Hz Plan #3)
9,686.0	90.60	0.40	7,172.4	2,398.7	7.4	2,396.9	2.10	-1.88	
9,781.0	90.90	359.60	7,171.1	2,493.7	7.4	2,491.9	0.90	0.32	
9,876.0	91.10	0.30	7,169.5	2,588.6	7.3	2,586.8	0.77	0.21	
9,971.0	90.20	0.50	7,168.4	2,683.6	8.0	2,681.7	0.97	-0.95	
10,035.0	90.50	1.50	7,168.0	2,747.6	9.1	2,745.6	1.63	0.47	
10,098.0	89.70	1.80	7,167.9	2,810.6	10.9	2,808.5	1.36	-1.27	
10,161.0	89.00	1.80	7,168.6	2,873.6	12.9	2,871.4	1.11	-1.11	
10,225.0	88.70	1.20	7,169.9	2,937.5	14.6	2,935.2	1.05	-0.47	
10,288.0	89.70	1.70	7,170.8	3,000.5	16.1	2,998.1	1.77	1.59	
10,351.0	90.00	0.70	7,170.9	3,063.5	17.5	3,061.0	1.66	0.48	
10,415.0	90.20	1.80	7,170.8	3,127.5	18.9	3,124.9	1.75	0.31	
10,478.0	90.50	2.50	7,170.4	3,190.4	21.2	3,187.7	1.21	0.48	
10,542.0	88.90	3.10	7,170.8	3,254.3	24.4	3,251.5	2.67	-2.50	
10,605.0	88.80	3.10	7,172.0	3,317.2	27.8	3,314.2	0.16	-0.16	
10,669.0	89.10	2.80	7,173.2	3,381.1	31.1	3,378.0	0.66	0.47	
10,732.0	89.40	2.10	7,174.0	3,444.1	33.7	3,440.8	1.21	0.48	
10,795.0	89.20	1.40	7,174.8	3,507.0	35.7	3,503.7	1.16	-0.32	
10,857.0	90.50	0.50	7,175.0	3,569.0	36.7	3,565.6	2.55	2.10	
10,920.0	91.30	0.30	7,174.0	3,632.0	37.1	3,628.5	1.31	1.27	
10,984.0	91.10	1.30	7,172.6	3,696.0	38.0	3,692.4	1.59	-0.31	
11,047.0	90.20	0.80	7,171.9	3,759.0	39.2	3,755.3	1.63	-1.43	
11,110.0	89.60	1.40	7,172.0	3,822.0	40.4	3,818.2	1.35	-0.95	
11,174.0	89.60	1.20	7,172.5	3,886.0	41.8	3,882.1	0.31	0.00	
11,237.0	89.50	0.70	7,173.0	3,948.9	42.9	3,945.0	0.81	-0.16	
11,301.0	90.60	1.10	7,172.9	4,012.9	43.9	4,009.0	1.83	1.72	
11,364.0	91.50	0.70	7,171.8	4,075.9	44.9	4,071.9	1.56	1.43	
11,428.0	90.70	1.50	7,170.5	4,139.9	46.1	4,135.8	1.77	-1.25	
11,491.0	90.20	1.20	7,170.0	4,202.9	47.6	4,198.7	0.93	-0.79	
11,555.0	90.40	0.70	7,169.7	4,266.9	48.7	4,262.6	0.84	0.31	
11,618.0	90.50	1.90	7,169.2	4,329.8	50.1	4,325.5	1.91	0.16	
11,681.0	88.60	2.70	7,169.7	4,392.8	52.6	4,388.3	3.27	-3.02	
11,745.0	88.90	2.10	7,171.1	4,456.7	55.3	4,452.1	1.05	0.47	
11,808.0	88.70	1.90	7,172.4	4,519.7	57.5	4,514.9	0.45	-0.32	
11,871.0	90.40	1.20	7,172.9	4,582.6	59.2	4,577.8	2.92	2.70	
11,935.0	90.30	1.00	7,172.5	4,646.6	60.4	4,641.7	0.35	-0.16	
11,998.0	90.80	0.80	7,171.9	4,709.6	61.4	4,704.6	0.85	0.79	
12,062.0	90.90	0.50	7,171.0	4,773.6	62.1	4,768.5	0.49	0.16	
12,125.0	91.30	359.90	7,169.8	4,836.6	62.4	4,831.5	1.14	0.63	
12,188.0	91.00	1.40	7,168.5	4,899.6	63.1	4,894.4	2.43	-0.48	
12,252.0	89.30	0.80	7,168.3	4,963.6	64.3	4,958.3	2.82	-2.66	
12,315.0	89.50	0.60	7,169.0	5,026.5	65.1	5,021.2	0.45	0.32	
12,379.0	89.50	0.30	7,169.5	5,090.5	65.6	5,085.2	0.47	0.00	
12,442.0	89.60	359.90	7,170.0	5,153.5	65.7	5,148.1	0.65	0.16	
12,505.0	89.50	358.80	7,170.5	5,216.5	65.0	5,211.1	1.75	-0.16	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Davis 1B-9H
Project:	DJ Wattenberg	TVD Reference:	KB=13' @ 4928.0ft (Ensign 124)
Site:	SWNW S9-T2N-R66W (Davis)	MD Reference:	KB=13' @ 4928.0ft (Ensign 124)
Well:	Davis 1B-9H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	Hz	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
12,569.0	89.50	359.90	7,171.1	5,280.5	64.2	5,275.1	1.72	0.00	
12,632.0	91.60	0.70	7,170.5	5,343.5	64.6	5,338.0	3.57	3.33	
12,696.0	89.90	0.10	7,169.6	5,407.5	65.0	5,401.9	2.82	-2.66	
12,759.0	90.30	0.10	7,169.5	5,470.5	65.1	5,464.9	0.63	0.63	
12,823.0	90.20	0.30	7,169.3	5,534.5	65.4	5,528.9	0.35	-0.16	
12,886.0	90.80	0.20	7,168.7	5,597.5	65.6	5,591.8	0.97	0.95	
12,949.0	90.20	0.50	7,168.2	5,660.5	66.0	5,654.7	1.06	-0.95	
13,012.0	90.30	0.20	7,167.9	5,723.5	66.4	5,717.7	0.50	0.16	
13,076.0	90.60	0.10	7,167.4	5,787.5	66.6	5,781.6	0.49	0.47	
13,139.0	91.10	359.90	7,166.4	5,850.5	66.6	5,844.6	0.85	0.79	
13,202.0	90.20	359.50	7,165.7	5,913.5	66.2	5,907.6	1.56	-1.43	
13,266.0	89.80	359.40	7,165.7	5,977.5	65.6	5,971.5	0.64	-0.62	
13,329.0	90.40	359.10	7,165.6	6,040.5	64.8	6,034.5	1.06	0.95	
13,392.0	89.90	358.90	7,165.5	6,103.5	63.7	6,097.5	0.85	-0.79	
13,456.0	90.40	358.40	7,165.3	6,167.4	62.2	6,161.5	1.10	0.78	
13,519.0	89.70	0.10	7,165.2	6,230.4	61.4	6,224.5	2.92	-1.11	
13,582.0	90.70	0.40	7,165.0	6,293.4	61.6	6,287.4	1.66	1.59	
13,646.0	89.60	1.50	7,164.8	6,357.4	62.7	6,351.4	2.43	-1.72	
13,709.0	90.10	1.40	7,165.0	6,420.4	64.3	6,414.2	0.81	0.79	
13,772.0	90.90	0.80	7,164.5	6,483.4	65.5	6,477.2	1.59	1.27	
13,836.0	90.30	1.50	7,163.8	6,547.4	66.8	6,541.1	1.44	-0.94	
13,899.0	88.30	2.50	7,164.6	6,610.3	69.0	6,603.9	3.55	-3.17	
13,962.0	88.60	2.40	7,166.3	6,673.2	71.7	6,666.7	0.50	0.48	
14,026.0	88.90	1.60	7,167.7	6,737.2	73.9	6,730.5	1.33	0.47	
14,089.0	88.90	1.80	7,168.9	6,800.1	75.8	6,793.4	0.32	0.00	
14,152.0	89.90	1.50	7,169.5	6,863.1	77.6	6,856.2	1.66	1.59	
14,216.0	90.50	1.60	7,169.3	6,927.1	79.3	6,920.1	0.95	0.94	
14,311.0	91.00	1.10	7,168.1	7,022.1	81.6	7,014.9	0.74	0.53	
14,380.0	91.36	0.88	7,166.6	7,091.0	82.8	7,083.8	0.61	0.53	Davis 1B-9H PBHL
14,385.1	91.39	0.87	7,166.5	7,096.2	82.8	7,088.9	0.61	0.53	Davis 1B-9H PBHL NEW (5.8.12)
14,406.0	91.50	0.80	7,166.0	7,117.0	83.1	7,109.8	0.61	0.53	
14,500.0	92.20	0.70	7,163.0	7,211.0	84.4	7,203.6	0.75	0.74	
14,524.0	92.40	0.40	7,162.0	7,234.9	84.6	7,227.6	1.50	0.83	Last Cathedral Survey @ 14,524' MD

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Davis 1B-9H
Project:	DJ Wattenberg	TVD Reference:	KB=13' @ 4928.0ft (Ensign 124)
Site:	SWNW S9-T2N-R66W (Davis)	MD Reference:	KB=13' @ 4928.0ft (Ensign 124)
Well:	Davis 1B-9H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	Hz	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Davis 1B-9H PBHL NEV	0.00	0.00	7,168.0	7,096.2	80.0	1,306,693.92	3,201,696.61	40.173010	-104.778234
- actual wellpath misses target center by 3.2ft at 14385.1ft MD (7166.5 TVD, 7096.2 N, 82.8 E)									
- Point									
Interp @ 7163.7 (Davis	0.00	0.00	7,167.3	2,312.1	17.4	1,301,909.39	3,201,672.91	40.159877	-104.778458
- actual wellpath misses target center by 12.3ft at 9599.5ft MD (7174.5 TVD, 2312.2 N, 7.4 E)									
- Point									
Davis 1B-9H PBHL	0.00	0.00	7,141.0	7,096.2	-251.5	1,306,691.23	3,201,365.13	40.173010	-104.779420
- actual wellpath misses target center by 335.3ft at 14380.7ft MD (7166.6 TVD, 7091.8 N, 82.8 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
14,524.0	7,162.0	7,234.9	84.6	Last Cathedral Survey @ 14,524' MD

Checked By: _____ Approved By: _____ Date: _____